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DEPARTMENT OF DEFENSE HANDBOOK

ARMY DIGITAL PUBLICATIONS DEVELOPMENT IMPLEMENTATION GUIDE



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FORWARD

1. This military handbook is approved for use by the Department of the Army (DA) and is available for use by all Departments and Agencies of the Department of Defense.
2. This handbook provides guidance on the implementation of Standard Generalized Markup Language (SGML) and Extensible Markup Language (XML) as it pertains to MIL-STD-2361, Department of Defense, Interface Standard, Army Digital Publications (ADP).
3. This document supplements Army Departmental Manuals, Directives, and Military Standards, and provides basic information on Extensible Markup Language (XML) as it applies to MIL-STD-2361.
4. The use of Courier font changes in this handbook represent XML document instance fragments. See the following example for the courier font.

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1 INTRODUCTION TO MIL-HDBK-2361

1.1 Scope.

This handbook provides implementation guidance for the development of Army Technical Publications in Extensible Markup Language (XML) in accordance with MIL-STD-40051-1C/2C, Department of Defense, Standard Practice, Preparation of Digital Technical Publications. This handbook is for guidance only and cannot be cited as a requirement.

1.2 Purpose.

The purpose of the handbook is to facilitate the work of technical publications developers and users responsible for creating or using XML publications in compliance with the requirements of MIL-STD-40051. This handbook is a guide for use by publications developers and users to allow maximum reuse and sharing of common publications source data. Army technical information publications data prepared in accordance with MIL-HDBK-2361 will facilitate the automated storage, retrieval, interchange, and processing of technical information documents from varied data sources.

1.3 Applicability.

This handbook is applicable for use by the Department of the Army (DA) and its contractors, and may be used by other Services and Departments of the Government. It applies to all publications digital data and document development required for compliance with MIL-HDBK-2361. This handbook will provide knowledge and information about XML and its application, tutorials in the various ways it may be used, helpful hints and guidance regarding specific XML characteristics and other user assistance type features.

1.4 Introduction.

Department of Defense Interface Standard, Army Digital Publications established the XML requirements for use in Army digital publications. The military standard was developed as part of the Army Publication Content Management Program (APCMP). Army Publishing Directorate (APD) effort to re-engineer the way Army publication source data by developing, delivering, storing, exchanging, and accessing through business processes. The application of MIL-STD-40051 requirements provides the Army a capability to develop weapons systems source databases that allow reuse and sharing of common publication data. This Department of Defense Handbook, MIL-HDBK-2361, Army Digital Publications Development (DPD) Implementation Guide, provides implementation guidance for MIL-STD-40051. The handbook is designed to support the requirements contained in MIL-STD-40051, and provides guidance, tutorials, and examples to aid publication developers in the publication development process. MIL-HDBK-2361 is designed to provide users a tool that is simple to use and functionally accurate to the Army publication processes. The body of MIL-HDBK-2361 contains publication development and implementation guidance information to assist the publication developer in the use and application of XML. Detailed guidance is provided in the respective appendices. The appendices include an XML Tutorial and Reference Material, applications for the respective publication types, stylesheets and an application of the FOSI as a style guide.

1.5 Why SGML to XML.

Administrative Publications and Technical Manuals changed from SGML to XML mark up due to the wide spread application of XML. XML is a subset of SGML but has the following benefits over SGML. The change from SGML to XML are described in the present edition of MIL-HDBK-2361.

1. XML is straightforwardly usable over the Internet.
2. XML is supported by a wide variety of applications.

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3. XML is compatible with SGML.
4. It is easy to write applications which process XML documents.
5. XML documents are easy to create.
6. Well-formed XML allows data to be chunked into smaller bits of information and distributed. Examples of chunked data are:
 - a. A Technical Manual (TM) can be divided into stand alone work packages.
 - b. Work packages chunked into tasks.
 - c. Tasks chunked into procedures.

2 APPLICABLE DOCUMENTS

2.1 General.

The documents listed below are not necessarily all of the documents referenced herein, but are the ones that are needed in order to fully understand the information provided by this handbook.

2.2 Government documents.

2.2.1 Specifications, standards and handbooks.

The following specifications, standards, and handbooks form a part of this document to the extent specified herein.

STANDARDS

DEPARTMENT OF DEFENSE

- | | |
|-----------------|-----------------------------------------------------------------------------------------------------|
| MIL-STD-2361 | - Digital Publications Development |
| MIL-STD-40051-1 | - Preparation of Digital Technical Information For Interactive Electronic Technical Manuals (IETMs) |
| MIL-STD-40051-2 | - Preparation of Digital Technical Information For Page-Based Technical Manuals |

HANDBOOKS

DEPARTMENT OF DEFENSE

- | | |
|---------------|-------------------------------------------------------------------------------------|
| MIL-HDBK-1222 | - Guide to the General Style and Format of U.S. Army Work Package Technical Manuals |
|---------------|-------------------------------------------------------------------------------------|

(Copies of the above specifications, standards, and handbooks are available online from <https://assist.dla.mil/online/start/>)).

2.2.2 Other government documents and publications.

The following other Government documents, drawings, and publications form a part of this document to the extent specified herein.

REGULATIONS AND PAMPHLETS

- | | |
|--------------|---------------------------------------------------------------------------------|
| AR 25-30 | - The Army Integrated Publishing Program |
| DA PAM 25-40 | - Preparation Of Digital Technical Information For Page-Based Technical Manuals |
| AMC-R 25-76 | - Preparation Of Digital Technical Information For Page-Based Technical Manuals |

(Application for copies should be addressed to U.S. Army Publications Distribution Center, 1655 Woodson Road, St. Louis, MO 63114-6181).

DEPARTMENT OF DEFENSE DIRECTIVES

- | | |
|--------------|---------------------------------------------------------------------|
| DoD 5200.1-R | - Information Security Program Regulation |
| DODD 5230.25 | - Withholding Of Unclassified Technical Data From Public Disclosure |

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- | | |
|--------------|--------------------------------------------------|
| DODI 5230.24 | - Distribution Statements on Technical Documents |
| DODI 7930.2 | - ADP Software Exchange And Release |

DEFENSE TECHNICAL INFORMATION CENTER, 8725 John J. Kingman Road, Fort Belvoir, VA 22060-6218, 1-800-CAL-DTIC (1-800-225-3842), <http://www.esd.whs.mil/DD/>.

TRADOC TRADOC Regulation Training Development Management, Processes, and Products Systems
350-70 Approach to Training Management Processes and Products, Army
Learning Policy and Systems, <http://adminpubs.tradoc.army.mil/regulations.html>.

(Copies of TRADOC Pamphlet 350-70-1 and TRADOC Regulation 350-70 are available from (<http://www.tradoc.army.mil/tpubs/>)). (Copies of Pamphlets, Regulations, and other Government Documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity).

2.3 Non-Government publications.

The following documents form a part of this document to the extent specified herein.

WORLD WIDE WEB CONSORTIUM

REC-xml-20081126	Extensible Markup Language (XML) 1.0 (Fifth Edition)
------------------	------------------------------------------------------

(Copies can be obtained from (<http://www.w3.org/TR/>)).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- | | |
|------------|--------------------------------------------------------------------------------------------------|
| ISO 8879 | - Information Processing - Text and Office Systems - Standard Generalized Markup Language (SGML) |
| ISO 8632-2 | - CGM - Character Encoding |
| ISO 8632-3 | - CGM - Binary Encoding |
| ISO 8632-4 | - CGM - Clear Text Encoding |

(Copies of International Organization of Standards (ISO) documents can be obtained from (<https://www.iso.org/home.html>)).

2.3.1 Information documents for XML.

The following documents are listed for informational purposes only and do not form a part of this handbook. They may be obtained from their publishers.

1. The XML Handbook (5th Edition), by Charles M. Goldfarb and Paul Prescod, Prentice Hall PTR, December 15, 2003, ISBN: 0-13-049765-7
2. Learning XML 2nd Edition, by Erik T. Ray, O'Reilly, September 2003, ISBN: 0-596-00420-6
3. Beginning XML, 4th Edition by David Hunter, Jeff Rafter, Joe Fawcett, Eric van der Vlist, Danny Ayers, Jon. Publisher: Wiley / Wrox Release Date: May 2007
4. Definitive XSL-FO: G. Ken Holman Prentice Hall, 2003, ISBN 0-13-140374-5
5. XML-FO, by Dave Pawson, O'Reilly
6. The XML Companion (3rd Edition), by Neil Bradley, Addison Wesley Professional, August 7, 2002, ISBN 0-201-77059-8

3 DEFINITIONS

3.1 Acronyms.

The acronyms used in this handbook are defined as follows:

AAL	Additional Authorization List
ADTLP	Army-Wide Doctrine and Training Literature Program
AIF	Audio Interchange File
AIFC	Audio Interchange File (Compressed)
AIFF	Audio Interchange File Format
APCMP	Army Publication Content Management Program
APD	Army Publishing Directorate
AMC	Army Materiel Command
AMMO	Ammunition
ANSI	American National Standards Institute
AOAP	Army Oil Analysis Program
APCMP	Army Publication content Management Program
APPIP	Administrative Publication Proponent/Editor Interface Process
AR	Army Regulation
ARTEP	Army Training and Evaluation Program
ASAT	Automated System Approach to Training
ASCII	American Standard Code for Information Interchange
ASR	Automap Street Route (Microsoft)
ASX	Advanced Stream Redirector (Windows Media Video File)
ATE	Automatic Test Equipment
ATIA	Army Training Information Architecture
AU	Audio
AVMAC	Aviation Maintenance Allocation Chart
AVI	Audio Video Interleaved
BDAR	Battle Damage Assessment and Repair
BFIST	Bradley Fire Support Team
BFV	Bradley Fighting Vehicle
BII	Basic Issue Items
BIT	Built-in Test

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BITE	Built-in Test Equipment
BMP	Bit Map Picture
BOI	Basis of Issue
BOS	Battlefield Operating System
C4I	Command, Control, Communication, Computer Intelligence System
CAD	Computer Aided Design
CAD	Course Administration Data
CAGEC	Commercial and Government Entity Code
CALS	Continuous Acquisition Life-Cycle Support
CAM	Computer-Aided Manufacturing
CATS	Combined Arms Training Strategies
CBRN	Chemical, Biological, Radiological, and Nuclear
CCITT	Consultative Committee for International Telephone & Telegraph
CDA	Compact Disc Audio
CDDA	Compact Disc Digital Audio
CD-ROM	Compact Disk-Read Only Memory
CDRL	Contract Data Requirements List
CFR	Code of Federal Regulations
CGM	Computer Graphics Metafile
CGM-CHAR	Computer Graphic Metafile with character encoding
CGM-BINARY	Computer Graphic Metafile with binary encoding
CGM-CLEAR	Computer Graphic Metafile with clear text
CIO	Chief Information Officer
COEI	Components of End Item
CPC	Corrosion Prevention and Control
CRD	Consolidated Requirements Document
CSI	Critical Safety Items
CTA	Common Table(s) of Allowance
DA	Department of the Army
DAPS	Document Automation & Production Services
DEP	Draft Equipment Publications
DIF	Digital Interface Format
DISA	Defense Information Systems Agency

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DITROFF	Device Independent Typesetter Runoff
DM	Data Module
DMS	Data Management System
DMWR	Depot Maintenance Work Requirement
DoD	Department of Defense
DoDISS	Department of Defense Index of Specifications and Standards
DPD	Digital Publications Development
DTD	Document Type Definition
DV	Digital Video
DVD	Digital Versatile Disc
DVI	Device Independent (File format TeX typesetting program)
EAR	Export Administration Regulations
ECM	Electronic Countermeasures
ECP	Engineering Change Proposal
EDS	Electronic Display System
EIC	End Item Code
EIR	Equipment Improvement Recommendations
EP	Electronic Publishing
EPS	Electronic Publishing System
EQN	Equation (UNIX Typesetting program)
ESD	Electrostatic Discharge
ETM	Electronic Technical Manual
FAX	Facsimile
FRC	Final Reproducible Copy
FDEP	Final Draft Equipment Publication
FGC	Functional Group Code
FM	Field Manual
FOSI	Formatting Output Specification Instances
FPI	Formal Public Identifier
FRC	Final Reproducible Copy
FSCAP	Flight Safety Critical Aircraft Parts
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GIF	Graphic Interchange Format

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HCI	Hardness Critical Item
HCP	Nuclear Hardness
HEMMT	Heavy Expanded-Mobility Tactical Trucks
HHA	Next Higher Assembly
HR	Hand Receipt
IAW	In Accordance With
IEP	Interactive Electronic Publications
IETM	Interactive Electronic Technical Manual
IGES	Initial Graphics Exchange Specification
ISO	International Organization for Standardization
ITAR	International Traffic in Arms Regulations
JPG/JPEF	Joint Photographic Experts Group
KAR	Karaoke files
LCN	Logistic Control Number
LD	Logistics Demonstration
LMI	Logistics Management Information
LPD	Logistics Product Data
LRU	Line Replacement Unit
LSA	Logistic Support Analysis
LOEP	List of Effective Pages
LOGSA	Logistic Support Activity
MAC	Maintenance Allocation Chart
MDC	Maintenance Data Collection, Markup Declaration Close
MDO	Markup Declaration Open
MFRR	Maintenance Forms, Records, and Reports
MID/MIDI	Musical Instrument Digital Interface
MODPATH	Modernization Path
MOS	Military Occupational Speciality
MOV	Movie (QuickTime)
MPE	Media Processing Engine
MPEG	Moving Picture Experts Group
MSD	Army Maintenance Support Device
MTA	Maintenance Task Analysis
MTP	Mission Training Plan

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MUX	Multiplex
MWO	Modification Work Orders
NATO	North Atlantic Treaty Organization
NDI	Nondestructive Information
NET	New Equipment Training
NII	Networks and Information Integration
NIIN	National Item Identification Number
NMWR	National Maintenance Work Requirement
NSN	National Stock Number
OAASA	Office of the Administrative Assistance to the Secretary of the Army
OASD	Office of the Assistant Secretary of Defense
OEM	Original Equipment Manufacturer
OIP	Overhaul Inspection Procedure
OS	Output Specification
OTJAG	Office of the Judge Advocate General
PAM	DA Pamphlet
PCX	PiCture eXchange (image file by ZSoft)
PCO	Publication Control Officer
PDF	Portable Document File
PDL	Page Description Language
PDP	Procurement Data Packages
PI	Parts Information
PIC	Picture image file
PIS	Placing In Service
PMC	Preventive Maintenance Daily Checklist
PMCS	Preventive Maintenance Checks and Services
PMD	Preventive Maintenance Daily Inspection
PMI	Phased Maintenance Inspection
PMS	Preventive Maintenance Services
PNG	Portable Network Graphics
POC	Point of Contact
POI	Program of Instruction
PS	Postscript
PSS	Packing, Shipment, and Storage

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QA	Quality Assurance
QT	Quicktime Movie
RDL	Reimer Digital Library
RFP	Request For Proposal
RIS	Radio Interference Suppression
RPSTL	Repair Parts and Special Tools List
RTF	Rich Text Format
RTS	Real Time Streaming
RTSP	Real Time Streaming Protocol
SAM	Software Administrators Manual
SAMS	Standard Army Maintenance System
SC	Supply Catalog
SDP	Session Description Protocol
SGML	Standard Generalized Markup Language
SME	Subject Matter Expert
SMI/SML	Synchronized Multimedia Integration Language
SMR	Source, Maintenance, and Recoverability
SND	SouND (Audio File)
SOW	Statement of Work
SRU	Shop Replacement Units
STP	Soldier's Training Publication
STRAP	System Training Plan
SUM	Software Users Manual
SWF	Shockwave Flash Movie
TAMMS	The Army Maintenance Management System
TBL	Table
TC	Training Circulars
TIFF	Tagged Image File Form
TM	Technical Manual
TMDE	Test Measurement & Diagnostic Equipmencion
TOC	Table of Contents
TOE	Table of Organization and Equipment
TRADOC	U.S. Army Training and Doctrine Command
ULLS	Unit Level Logistics System

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UOC	Usable on Code
URL	Uniform Resource Locator
VB	Visual Basic
VBA	Visual Basic for Applications
VFW	Video For Windows
W3C	World Wide Web Consortium
WAV	Waveform
WM	Windows Media
WMA	Windows Media Audio
WMP	Windows Media Player
WMV	Windows Media Video
WP	Work Package
WPG	WordPerfect Graphic
WWW	World Wide Web
WYSIWYG	What You See Is What You Get
XML	Extensible Markup Language
XPATH	XML Path Language
XSL	Extensible Stylesheet Language
XSL-FO	Extensible Stylesheet Language for Formatting Objects
XLST	Extensible Stylesheet Language Transformations

3.2 Abstract.

A narrative which describes, defines, or synthesizes a Digital Publications Development SGML/XML asset.

3.3 Attribute.

A member of an attribute definition list within an attribute list declaration. It declares an attribute name, specifies the form and SGML/XML-specific aspects of possible values, and specifies the action (such as providing a default value) to be taken if an attribute's value is not specified. In the display under attribute (Definition) list declaration, each attribute definition is shown as: `name_of_attribute allowable_values default`.

3.4 Attribute (Definition) List Declaration.

A markup declaration that associates an attribute definition list with one or more element types, shown as: `<!ATTLIST name_of_associated_element(s) name_of_attribute allowable_values default>`.

3.5 Attribute (of an element).

A qualifier indicating a property of an element, other than its type (which is done by a generic identifier) or its content (which is delimited by start- tags and end-tags). Attributes are only found on start-tags and can indicate reference identifiers, confidentiality, formatting information, and so on.

3.6 Attribute (Specification) List.

Markup that is a set of one or more attribute specifications, shown as: attribute=value attribute=value attribute=value. The markup is used within a Start Tag, as in `<element_name_attribute=value attribute=valueattribute=value>`.

3.7 Attribute Definition.

A member of an attribute definition list within an attribute list declaration. It declares an attribute name, specifies the form and SGML/XML-specific aspects of possible values, and specifies the action (such as providing a default value) to be taken if an attribute's value is not specified. In the display under ATTRIBUTE (Definition) LIST DECLARATION, each attribute definition is shown as: name_of_attribute allowable_valuesdefault.

3.8 Contract Data Requirements List.

The Contract Data Requirements List (CDRL) defines the data that is to be delivered to the Government by the contractor. This data may be in hardcopy, electronic, electronic mailable, or any other form specified. The specific form of delivery needs to be specified either in the SOW and/or in each individual CDRL item.

3.9 Constructs.

Document Type Definitions (DTDs), Formatting Output Specification Instances (FOSIs), and SGML/XML tag narrative definitions.

3.10 Declaration.

The SGML/XML declaration defines which characters are used in a document instance, which syntax the DTD is written in, and which SGML/ XML features are used. It should accompany each SGML/XML document, although a default to the one described in the standard may be assumed.

3.11 Declaration Subset.

A delimited portion of a markup declaration in which other declaration scan occur.

3.12 Document Instance

The instance is the actual document text and its accompanying SGML/ XML tags conforming to the specifications and restrictions set forth in the DTD and stored in an ASCII text format.

3.13 Document Type Declaration.

A markup declaration that contains the formal specifications of a document type definition, shown as: `<!DOCTYPE document_type_name optional_external_identifier [optional_document_type_declaration_subset]>`. The declaration invokes a DTD in an SGML/XML document. The document instance of an SGML/XML document is always to be preceded by a document type declaration.

3.14 Document Type Definition (DTD).

A DTD, or Document Type Definition, is an SGML/XML construct used to rigorously and unambiguously describe the structure and content of classes of documents in terms of SGML/XML instances (elements, attributes, entities, etc.). The DTD is occasionally but not in compliance with ISO 8879 terminology used as an abbreviation for 'document type declaration'; it is also an SGML/XML reserved word used in formal public identifiers to indicate that the identified entity is a document type declaration set, and is often used to identify such a set.

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3.15 Electronic Publication (EP).

An electronic page-based representation that provides concise, user- friendly information for instruction, repair, policy or guidance. The EP may interact with other EP or IEP information.

3.16 Element.

A component of the hierarchical structure defined by a document type declaration or DTD. It is identified in a document instance by descriptive markup, usually a start-tag and end-tag, shown as: `<element_type_name attribute="value" attribute="value"> content of the element </element_type_name>..`

3.17 Element Type Declaration.

A markup declaration that contains the formal specification of the part of the definition of an element type that deals with the content and markup minimization shown as: `<!ELEMENT element_type_name start_tag_minimization end_tag_minimization content_model_group_or_declared_content content_exceptions>.`

3.18 Entity.

A unit of information that may be referred to by a symbol in a DTD or in a document instance. Entities may be used for character strings, characters that cannot be keyed in on a keyboard, or for separate files that may or may not contain SGML/XML data.

3.19 Entity Reference.

A reference that is replaced by an entity, shown as: `&entity_name` or `%entity_name`; the ampersand is used for general entities (referenced in the document instance); the percent sign is used for parameter entities (typically referenced in the document type declaration).

3.20 Entity Set.

A set of entity (and comment) declarations that are used together.

3.21 Extensible Markup Language (XML).

Extensible Markup Language, as specified in <http://www.w3.org/TR/REC-xml>, is a subset of SGML and requires conformance to ISO 8879. XML defines a group of data objects called XML documents and partially describes the behavior of computer programs which process them.

3.22 Electronic Technical Manual- Interface (ETM-I).

ETM-I is a prototype software interface, through which the user can electronically transfer parts request information and work order data between the ETM platform and the Unit Level Logistics System (ULLS) and the Standard Army Maintenance System (SAMS). The interface will reduce extensive data entry and eliminate transposition errors that could lead to faulty requisitions and excess parts.

3.23 Interactive Electronic Publication (IEP).

A computerized screen-based representation that provides interaction with weapon system, instructor, student or technician. The IEP can provide training feedback, troubleshoot, fault isolation, and/or training instruction. The functionality is provided by communicating and interacting with selected weapon system components.

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3.24 Interactive Electronic Technical Manual (IETM).

Interactive Electronic Technical Manual (IETM). A technical manual prepared in digital form and designed for interactive display to the maintenance technicians or system operator end users by means of a computer controlled Electronic Display System (EDS).

3.25 ISO 8879 Information Processing.

Text and Office Systems - Standard Generalized Markup Language (SGML) and Extensible Markup Language (XML) completely specifies the SGML/XML Meta-language with regard to the grammar and syntax required for the SGML/XML language along with the features that may be optionally enabled for a given SGML/XML application. In addition, ISO 8879 also specifies various procedures for processing SGML/XML notation.

3.26 Legacy Data.

Legacy data, for purposes of this standard, is defined as any data (paper or digital) that has not been SGML/XML-tagged in compliance with the respective content requirement standards or specifications.

3.27 Markup.

To add text to data of a document to convey information about the document.

3.28 Output file.

A text presentation metafile developed through use of a Page Description Language (PDL) is referred to as an output file.

3.29 Output Specification (OS).

An OS, or Output Specification, provides a rigorously defined set of options for the style characteristics which provide the formatting intent for interchanged SGML/XML-tagged technical publications. The OS has a mechanism for binding the style characteristics to SGML/XML elements and attributes in a document's DTD. The OS is in the form of an SGML/XML DTD. At present, the OS is intended for hard copy composition but can be applied to digital display in limited applications (non- interactive).

3.30 Parsing.

A SGML/XML parser is a computer application that breaks down an SGML/XML-coded document into a series of logical elements and checks that these elements conform to the model defined in the associated document type declaration. When parsing a document, the SGML/XML parser:

1. Checks each new character to see if it is part of a general delimiter string that identifies the start of a piece of markup.
2. Checks whether or not the character is a short reference delimiter that needs to be expanded.
3. Checks if the character is a separator character that should be ignored.
4. Identifies the various markup tags, identifying any entities that need to be expanded or recalled from external sources.
5. Checks if identified markup tags are valid according to the declared model.

3.31 Reuse.

The use of authored publication information or publications source data in more than one type of publication product. For example, information authored initially for a TM (a maintenance work package, task, etc.) that is used verbatim, or in part, for inclusion in a training or doctrine product (Soldier's Manual, Field Manual, etc.). The intent

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of reuse may also be fulfilled when the information is reused in a different TM (for a different level of maintenance, different version of an equipment/weapon system, or a different equipment/weapon system altogether).

3.32 SGML/XML Constructs.

SGML/XML constructs are DTDs, schemas, stylesheets, and their fragments.

3.33 SGML Declaration.

A SGML Declaration is an SGML construct which specifies an SGML implementation in terms of the values of the SGML parameters, character set, concrete syntax, optional features, and capacity requirements and the SGML features used. The SGML Declaration is described in ISO 8879. XML does not expressly declare an SGML Declaration, but one is provided by default. The XML Declaration does not provide the same information as does the SGML declaration.

3.34 SGML/XML Entity.

An entity whose characters are interpreted as markup or data in accordance with (IAW) ISO 8879.

3.35 SGML/XML Instance.

A SGML/XML Instance or SGML/XML-tagged document is the collection of data composing a specific document that includes SGML/XML tags (SGML/XML markup) corresponding to elements, their attributes, entity references, etc. The SGML/XML markup conforms to the document's DTD or schema.

3.36 SGML/XML Objects.

SGML/XML objects are elements, entities, attributes of elements, public identifiers, notations, and standard tagging schemes.

3.37 SGML/XML Parser.

A parser is a computer program or a specialized code compiler used to validate SGML/XML. A parser first processes (or "parses") the SGML and/or XML Declaration defining the particular implementation and stores this environment. Then the parser can be used to process (or "parse") a DTD or schema (XML only) to determine its conformance regarding grammar and syntax to ISO 8879 or the W3C XML standard. The parser can then be used to process an instance of a particular document to determine the conformance of the instance to both markup grammar and syntax and the DTD/schema.

3.38 Standard Generalized Markup Language.

Standard Generalized Markup Language, as detailed in ISO 8879 is a meta-language that provides a coherent and unambiguous syntax for describing the logical structure of publications in unambiguous grammar. It formalizes the markup process and frees it of system and processing dependencies.

3.39 Table of Organization and Equipment (TOE).

The Table of Organization and Equipment (TOE) is a document that prescribes the wartime mission, capabilities, organizational structure, and mission essential personnel and equipment requirements for military units. It portrays the doctrinal Modernization Path (MODPATH) of a unit overtime from the least modernized configuration (base TOE) to the most modernized (objective TOE).

3.40 Tag or Tagging.

Adding tags (descriptive markups) to document data.

3.41 Task.

A sequence of user actions with a definite beginning and an end. User tasks relate to installation checkout operation, and maintenance of systems or equipment. Tasks may contain procedures and in turn steps to complete the assigned task.

3.42 Technical Publication Verification.

This term refers to the parsing of the digital data stream containing a publication to assure compliance with the standard (SGML, CCITT, CGM, IGES) to which it was written. There is no intent in this term to imply the validation/verification process used to certify the content of the publication.

3.43 XML Path Language (XPath).

XPATH is a language for addressing parts of an XML document, designed to be used by XSL-T.

3.44 XML Stylesheet Language for Formatting Objects(XSL-FO).

Extensible Stylesheet Language for Formatting Objects is a pagination markup language describing a rendering vocabulary capturing the semantics of formatting information for paginated presentation. The paginated presentation may be displaying multiple separated pages on a screen, on paper or audibly.

3.45 XML Stylesheet Language Transformations (XSL-T).

Extensible Stylesheet Language Transformations is a templating markup language used to express how a processor creates a transformed result from an instance of XML information. Else the XML transformation is a process that rearranges parts of a document into a new form.

3.46 Well-formed XML Document.

Compliant with REC-xml-19980210 requirements, the basic rules for writing well-formed XML documents:

1. Start tags have corresponding end tags.
2. Elements cannot overlap.
3. XML tags are case-sensitive.
4. Empty elements either have an end tag or close the empty tag with "</>."
5. Reserved characters (< & > " ') are replaced with corresponding character sequence (< & > " ') are replaced with corresponding character sequence (*< & > " '*).
6. Each XML document has a unique root element.
7. Each attribute name in an element is unique.
8. Each attribute name is followed by a value indicator (=) and a quoted string.

3.47 Work Package.

Presentation of information divided into individual task packages in the logical order of work sequence. The work packages will be stand alone general information, operating, maintenance, troubleshooting, parts, or supporting information units containing all information required to satisfy the information requirements. Work packages may be given to a soldier(s) so they may have complete instructions for accomplishing a task.

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3.48 World Wide Web Consortium (W3C).

The international organization responsible for providing standardization on world wide web (WWW) issues. The W3C may be reached at <http://www.w3.org/>.

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4 ACQUISITION OF ARMY PUBLICATIONS INFORMATION USING MIL-STD-40051

4.1 Purpose.

The primary purpose of MIL-STD-40051 is to provide the requirements for the acquisition, development, and delivery of common publication source data that can be used, reused, and shared throughout the Army. There are many ways in which common publication source data may be used throughout the Army for technical and equipment publications, training and doctrine publications, and administrative publications. The potential uses of common publication source data are to be understood. These uses are identified and planned for in the earliest possible stages of an acquisition contract. Close coordination is to be established and maintained by organizations throughout the publications information life cycle. This section contains information describing the processes used to acquire publications information for each Army publication domain.

4.2 Publications information process by domain.

Processes and procedures for acquisition of publications information vary within each of the publication domains. Contracting for Army publication development ranges from very formal for technical manuals to practically no contracting for administrative publications.

4.2.1 Technical Manual (TM).

Normally, TM information is obtained as part of a formal weapon or Command, Control, Communication, Computer or Intelligence system (C4I) development contract. TMs developed by contractors or other government agencies are delivered as the system development moves through the states of development. Specific levels of TMs such as operator (-10), field maintenance (-23), or sustainment maintenance (-40), are specified in the development Statement of Work (SOW).

4.2.2 Training and doctrine.

Training and doctrine information is normally developed in-house by the Training and Doctrine Command (TRADOC) schools and centers. In some cases, certain training information is developed by a contractor under a weapon or C4I contract. But it is rare that information such as new equipment training or individual and collective task analysis/development, developed by the system developer, is provided to the TRADOC proponent school.

4.2.3 Administrative.

Administrative publications, such as Army Regulations, circulars and pamphlets, are developed and produced in-house by DA staff organizations.

4.2.4 Publications development requirements and guidance.

Requirements for TM information development and delivery are contained in MIL-STD-40051-1/-2. MIL-STD-40051-1/-2 and its companion handbook, MIL-HDBK-1222, contain requirements for TM source information development and guidance for its application, respectively. Handbook, MIL-HDBK-2361, contain XML requirements and procedures for applying XML to publications development, respectively.

4.3 MIL-STD-40051 acquisition, development and delivery process.

Under MIL-STD-40051, the acquisition of publications information should be developed and delivered using an integrated team concept. An integrated team should be comprised of staff from both systems development, Army Materiel Command (AMC) and TRADOC organizations. Members of each staff should have an understanding of all potential uses of the publication data requirements and the interrelationships existing between the different types of data. They should have a thorough understanding of the need for the end-to-end flow of common source data, and be able to specify these interrelationships in the development contract as shown in FIGURE 1. The figure not only depicts the interrelationships of the data, it also reflects the fact that a significant amount of information required for training and doctrine product development is derived from TM source information. The interface required to achieve the end-to-end flow of information is described in the training and doctrine segment of this handbook.

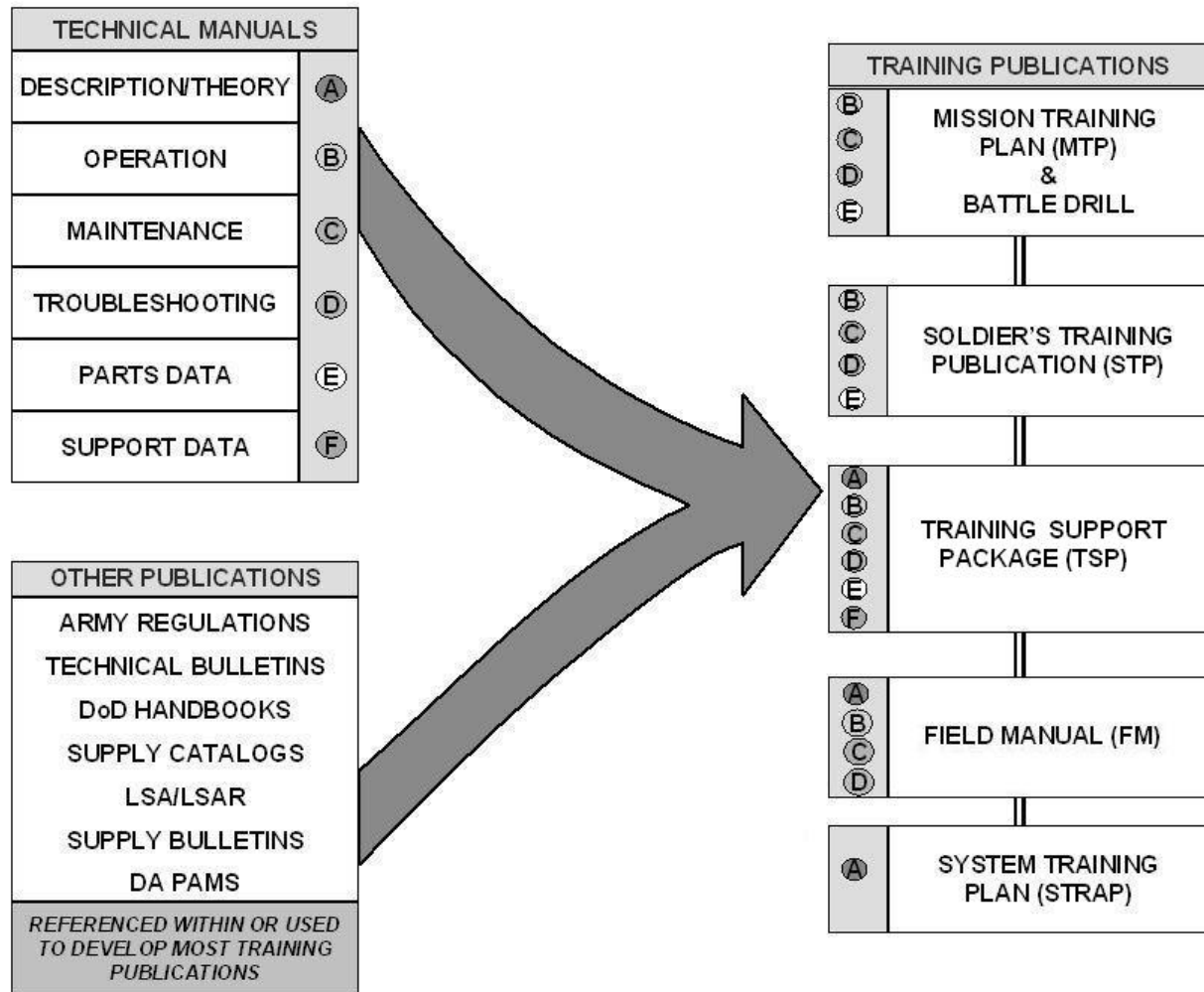


FIGURE 1. Interrelationships of Army publications data.

4.3.1 Acquisition planning.

The first step in the process of acquiring common source data is the planning that takes place prior to issuing the contract for publications information. An integrated team comprised of AMC and the appropriate TRADOC school (s) or center(s) personnel should perform this planning. The output of the planning process should be a data acquisition plan that clearly identifies specific data to be acquired, such as Technical Manuals, New Equipment

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Training (NET) Plans, literature, and training individual and collective task analysis. This plan should also contain points of contact and schedules for source data development milestones and joint in-process reviews.

4.3.2 Contract/statement of work.

Guidance is to be included in the publication data development and delivery statement of work for the weapon or C4I system that clearly identifies source data to be developed and the method and destinations for delivery. MIL-STD-40051-1/-2 contain requirements for development and delivery of TM and Depot Maintenance Work Requirements (DMWR)/National Maintenance Work Requirement (NMWR) data. Both MIL-STD-40051-1/-2 contain a series of tables containing TM and DMWR/NMWR Requirement Selection Matrices. Figure 2 contains a sample of one of these matrices. The appropriate matrix(s) should be completed by the integrated team, for use in the development of specific SOW requirements. As can be seen from the sample, the matrix contains specific DMWR/NMWR content requirements, as well as MIL-STD-40051-1/-2 reference paragraphs where detailed content requirements can be found. The associated MIL-STD-40051 XML element name is also contained in the matrix. See MIL-STD-40051-1 or MIL-STD-40051-2 for more information on how to use the TM and DMWR/NMWR Requirement Selection Matrices.

4.3.3 Data delivery.

The Contract Data Requirements List (CDRL) and underlying SOW should mandate the delivery of, or unrestricted access to, the database containing the common source data. The CDRL and SOW specify the delivery of training and doctrine data that is not contained in TMs, such as NET Plans, training material, and task analysis summaries, to the TRADOC school(s) or center(s) requiring the data.

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TABLE A-VII. DMWR/NMWR requirements matrix for

DMWR/NMWR Content	DMWR with RPSTL	NMWR with RPSTL	MIL-STD-40051- 2C Reference	Element Name
FRONT MATTER	R	R	5.2.1	<paper.frnt>
Front cover	R	R	5.2.1.1	<frntcover>
(MC) Promulgation letter			5.2.1.3	<promulgation>
Warning summary			5.2.1.4	<warnsum>
Change transmittal page			5.2.1.5	<chgsheet>
List of effective pages/work packages	R	R	5.2.1.6	<loepwp>
Title page	R	R	5.2.1.7	<titleblk>
Table of contents	R	R	5.2.1.9	<contents>
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION	R	R	APPENDIX B	<gim>
<i>GENERAL INFORMATION WORK PACKAGE</i>	R	R	B.5.2	<ginfowp>
Scope	R	R	B.5.2.3	<scope>
Maintenance forms, records, and reports	R	R	B.5.2.4	<mfrf>
Reporting Equipment Improvement Recommendations (EIR)	R	R	B.5.2.5	<eir>
Hand receipt (HR)			B.5.2.6	<handreceipt>
Corrosion Prevention and Control (CPC)	R	R	B.5.2.7	<cpdata>
Ozone Depleting Substances (ODS)			B.5.2.8	<odsdata>
Destruction of Army materiel to prevent enemy use	R	R	B.5.2.9	<destructmat>
Preparation for storage or shipment	R	R	B.5.2.10	<pssref>
Transportability guidance	R	R	B.5.2.11	<transportability>
Warranty information			B.5.2.12	<wrntyref>
Nomenclature cross-reference list			B.5.2.13	<nomenreflist>
List of abbreviations/acronyms	R	R	B.5.2.14	<loa>
Quality Assurance (QA)			B.5.2.15	<qainfo>
Quality of material	R	R	B.5.2.16	<qual.mat.info>
Safety, care, and handling			B.5.2.17	<sftyinfo>
Nuclear hardness			B.5.2.18	<hcp>

FIGURE 2. Example of a MIL-STD-40051-2 requirements matrix for a paper manual DMWR/NMWR.

5 INTRODUCTION TO XML

5.1 Introduction.

This section provides a foundation for working with, and understanding, XML. Handbook users will find this section invaluable in identifying and defining the uniqueness peculiar to XML. Users are provided information regarding "what XML is," and why its use (and "reuse") is beneficial for sharing document-based information among applications and between different computer platforms. There are references within the section that point the user to other areas of information and guidance, such as the parts for XML Tutorial (see Chapter 6) and References. There are also graphic examples of the concepts under discussion to assist in the handbook user's understanding of the material being presented.

5.1.1 XML experience.

There are varying degrees of XML experience and expertise (see Section 5.3) required for different levels of function processes. For example, a publication author and his manager need not necessarily have the same XML background. This section addresses the levels and types of XML experience and expertise that may be needed for different implementation considerations.

5.1.2 Four primary components.

The user will find discussions regarding the four primary components of XML composition: the Document Type Definition (DTD)/schema, document instances, the XML declaration, and XML markup. Each of the components is described as to its role in the composition process. The XML markup discussion breaks markup into its essential parts (tags, elements, attributes, and entities), and describes how the DTD structure and the document instance comprised of these parts are validated through the parsing process.

5.2 What is XML.

Extensible Markup Language (XML) "is the universal format for structured documents and data on the Web." XML is a simplified subset of SGML and has Hyper Text Markup Language (HTML) capability to process information on the Web. It is an international, platform-neutral standard for creating and using documents and information across multiple software applications and computer platforms. XML establishes a consistent language and terminology which provides publications developer and user activities the capability to share and reuse publication information, and to preserve the organization and content of documents. The application of XML in accordance with MIL-STD-40051 and this handbook is fully compliant with the international, federal, and W3C standards for XML used throughout the Government and industry (see Chapter 2). Refer to Section 1.5 for additional information regarding XML.

5.2.1 XML requirements.

MIL-HDBK-2361 establishes XML requirements which reflect the requirements associated with the different types of Army publications. For example, the XML requirements contained in the Technical Manual (TM) segment of MIL-HDBK-2361 reflect the requirements contained in MIL-STD-40051-1/-2. XML provides capabilities for developers and users of publication information to output the information on a variety of media (paper, CD-ROM, WWW, etc.).

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5.2.2 Why use XML.

XML allows developers to update and maintain critical source information over the life-cycle of weapon systems and other equipment. XML makes it easy and straightforward for use on the Web and in turn provides a better means for the reuse and exchange of information among its developers and users. XML is an industry standard for sharing document-based information among applications and is compliant with open systems environments. See Section 1.5 for more information concerning the advantages of using XML.

5.2.3 The Digital Publications Development (DPD) program concept.

The Digital Publications Development (DPD) Program provides a seamless flow of integrated operations, diagnostics, maintenance, and training information from developer to the soldier. XML, as applied to the DPD Program concept and implemented by MIL-STD-40051, provides the following:

1. Description of the logical structure of documents in unambiguous syntax.
2. Assurance of automated quality control over adherence to that structure.
3. Delivery and storage of publication text in an easily maintained and updatable form.
4. XML well-formed document allows data to be chunked into smaller bits of information and distributed.

5.2.4 XML reference.

XML reference information can be found in Section 2.3 of this handbook.

5.2.5 MIL-STD-40051 XML tags.

The MIL-STD-40051 DTDs/schemas contain two specific types of XML tags: structural and content tags. Structural tags identify data by its place in the hierarchy of the document and by how the material is formatted on the page (primary paragraph, subparagraph, list, or table). Content tags identify material by its functional use or the type of data (definition, maintenance task, parts information, controls and indicators, or components of end item table).

5.2.6 XML tutorial.

A tutorial for MIL-STD-40051 XML application and use is contained in Chapter 6 of this handbook. The tutorial section in this handbook is intended to provide an overview of the use of XML. There is a large selection of books on XML. A few of those non-government books containing XML guidance can be found in Section 2.3.1.

5.3 XML experience and expertise.

There are varying degrees of XML experience and expertise required for different functions. For example, a publications author and his manager need not necessarily have the same XML background. This portion of the handbook will address the levels and types of XML experience and expertise that may be needed for different implementing considerations. The following considerations offered are applicable to both Government and private industry publications developers, authors, and other functions involved with the development and acquisition of publications and publication services. This section addresses the types of XML knowledge that will be required by personnel at different functional levels.

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5.3.1 Publications manager.

A publications manager needs a good overall understanding of XML. The managers experience and depth of XML knowledge may not be as great as the publication authors or computer specialists, but it should be sufficient to evaluate their technical input and make informed decisions. These decisions may involve the evaluation and selection of an XML authoring/composition system for the organization, or contracting work to an XML conversion contractor, a publications developer, or XML consultant. XML knowledge provides the manager with tools for evaluation of technical XML input, whether it comes from within his own organization or some other source.

5.3.2 Publications author.

The publications author will be the primary user of XML. The author will be authoring new material, developing publication revisions, and working with legacy data converted (or scheduled for conversion) to XML. The author will require the ability to read, understand, and work with XML concepts, rules, DTDs/schemas, and stylesheets. See Section 5.5.1 for information on DTDs/schemas and Section 5.5.4.7 for information on stylesheets.

5.3.3 Publications editor.

The editor, responsible for editing the tagged XML information requires at least the same level of expertise as the publication authors.

5.3.4 Computer specialist.

The computer specialist (including programmers and System Manager) will be the key technical person(s) for accomplishing the detailed technical requirements associated with computer equipment used to develop XML publications (the author/editor, composition system, database, etc.). The computer specialist XML knowledge should be sufficient to allow interpretation of DTDs/schemas in order to develop composition scripts, conversion rules, and database management requirements.

5.4 XML overview.**5.4.1 XML is a markup language.**

XML is officially recommended by the World Wide Web Consortium (W3C) (<http://www.w3c.org>). XML has been designed for ease of implementation. A MIL-STD-2361 application of XML should contain: document type declaration, Section 5.5.1, Section 5.5.2, a stylesheet or an XML Schema. The fact that the markup used in XML is standardized facilitates the exchange of tagged documents between software applications. XML markup is commonly spoken of as tagging, because tags are inserted into the text.

5.4.1.1 Well-formed XML document.

Compliance with the XML standard requirements, the basic rules for writing well-formed XML documents includes:

1. Start tags must have corresponding end tags.
2. Elements cannot overlap (this means one element cannot start inside one tag and end inside another).
3. Element names should start only with letters and underscores. Also, element names may contain letters, numbers, hyphens, periods, and underscores.
4. XML tags are case-sensitive.
5. Empty elements must either have an end tag or close the empty tag with (/>).

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6. Reserved characters (< & > " ') are replaced with corresponding character sequence (*< & > " '*).
7. Each XML document must have a unique root element.
8. Each attribute name in an element is unique.
9. Each attribute name is followed by a value indicator (=) and a quoted string.

5.4.2 XML is not a processing language.

XML is not a processing language. It does not perform calculations, actions and decisions in the way that a computer program, written in a language like C++ or Java does. Instead it is a markup specification language with which you can design ways of describing text information or data information usually for storage, transmission, or processing by a program. XML supplies a structured, tagged text database upon which a software application can act. It is like having the record definition of a traditional database without the ability to sort and retrieve. Sorting and retrieving in XML are accomplished by software that “speaks” XML.

5.4.3 Understanding XML as a text database.

Understanding XML as a text database reinforces its separation of content markup and specific presentation instructions. XML aims to encourage descriptive markup rather than process-oriented markup. For instance, MIL-STD-2361 uses the tag **<remove>** rather than a code that describes the format of this subhead; the fact that the tag will be presented as 10 point, boldface Courier is inferred rather than expressed directly (in MIL-STD-2361 the stylesheet provides this information).

5.5 XML composition.

XML is used to define the structure and contents of a set (or class) of documents, whether those documents consist of one page or a thousand pages. This definition is accomplished and portrayed through the utility in the different parts that comprise MIL-STD-2361 XML.

5.5.1 Document Type Definition (DTD).

A functional unit for MIL-STD-40051 XML is the DTD. MIL-STD-40051 DTDs form a generalized picture of the types of data found technical and equipment publications, rather than descriptions of the specific contents in any one publication.

1. The DTD declares which elements make up the document, the possible sequences in which they will be found, the number of occurrences in that sequence, and what lower-level elements each element may contain. In turn, lower-level elements are described in those same terms. In general, text characters form the lowest-level content of a document.
2. The DTD describes the hierarchical relationships of the elements. For instance, the maintenance information chapter in MIL-STD-40051 module contains several possible types of work packages; one type of work package, the maintenance work package, contains a maintenance task or procedure that are made up of steps, and so on.
3. An element can occur at different levels of the hierarchy or in different branches of the hierarchy. For example, lists can occur in Step1, Step2, or Step3 (different levels of a single branch); and in paragraphs and warnings (different branches).

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5.5.2 Document instances.

What we commonly think of as documents, actual pages of text and graphics, are known in markup as document instances. In the context of a TM developed in XML in accordance with MIL-STD-40051, a document instance is any part of a content volume(s) with a complete structure as dictated by the relevant DTD. For instance, the minimum structure of an information chapter includes at least one work package and any mandatory lower-level markup. The “document” described in a DTD is a generalized, virtual template. In simplified terms, a document instance consists of:

1. An XML declaration.
2. Text marked up with XML tags.
3. Illustrations incorporated by tagged references to graphic files.
4. Every document instance either incorporates or references its governing DTD.
5. If the document instance uses external file or text entities not defined in the DTD, those entities are to be declared in the document instance.

5.5.3 XML declaration.

Every document and DTD is accompanied by an opening XML declaration. The XML declaration describes some of the most general properties of the document and telling the XML processor that it needs an XML parser to interpret this document. Each DTD in MIL-STD-40051 uses the defined XML declaration in MIL-STD-40051.

5.5.4 XML markup.

XML markup includes element tag names, element attributes, and reference entities. These markup categories each have a standardized syntax defined in the ISO 8879 standard. The MIL-STD-40051 DTDs use this standard syntax.

5.5.4.1 XML tags.

Tags contain two parts: start-tags and end-tags as shown in TABLE I. Where the end tag should occur is guided by the DTD hierarchy. It cannot be inserted until all required content of an element has been included. For instance, the end tag of a maintenance task in a work package cannot occur until a procedure has been inserted, ensuring that a maintenance task has associated text.

EXAMPLE

- DTD fragment:

```
<!ELEMENT crew (#PCDATA)>
```

- Document instance fragment

```
<crew>2.6</crew>
```

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TABLE I. XML tags.

Order	Part	Description
1	<	Start Tag Open Delimiter
	</	End Tag Open Delimiter
2	crew	Generic Identifier
3	>	Tag Close Delimiter
4	/>	Empty Element End Tag Delimiter

5.5.4.2 Markup minimization.

Compliance with <http://www.w3.org/TR/REC-xml> requires XML start tags have corresponding end tags. Empty elements are to be tagged with the empty tag (</>).

- DTD fragment for corresponding end tags:

```
<!ELEMENT date (#PCDATA)>
```

- Document instance fragment for corresponding end tags:

```
<date>11 September 2001</date>
```

- DTD fragment for an empty element:

```
<!ELEMENT figno EMPTY>
```

```
<!ATTLIST figno idref IDREF #REQUIRED>
```

- Document instance fragment for an empty element. XML allows two methods of tagging an EMPTY element

```
<figno idref="f25"/>
```

or

```
<figno idref="f25"></figno>
```

5.5.4.3 Distinct categories.

Elements are distinct categories of content, such as “work package,” “procedure,” “stepl,” “table,” and “tools.”

1. Elements range from the largest divisions of the document down to single words if they are significant data. An important criteria for creating an element is its usefulness for applications such as database retrieval and page composition. An element can contain other elements, such as a warning summary that contains general paragraphs, warnings, hazard symbols, etc. Elements in running text, such as “part number,” often contain only character data, which, in the DTD, is identified as “#PCDATA,” parsable character data. Elements are identified by an element name. When that name occurs in text, surrounded by characteristic syntactical markers, it is called a tag.
2. In the DTD, an element declaration includes an element name, the contents of the element, and any attributes of the element. The contents portion of the declaration is often called a “content model,” which refers to the generalized nature of this representation of all possible contents and sequencing. The content model is surrounded by parenthesis.

```
<!ELEMENT surwp (wp.metadata?, wpidinfo, initial_setup, warning*, csi.alert*, caution*, note*, geninfo?, surtsk+)>
```

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3. The MIL-STD-40051 elements identify generic contents rather than precise, literal contents. For instance, **<remove>** identifies “a removal task” rather than “removal of the Abrams M-1 rear exhaust components.” On the other hand, MIL-STD-40051 uses **<remove>** rather than **<para0>**, a structural text object from the Continuous Acquisition Life-Cycle Support (CALS) base tag set. In the CALS base DTD, **<para0>** could be used indiscriminately for removal, assembly, inspection, install, repair-replace, and all other types of information.

5.5.4.4 Attribute.

This section will include examples of parameter entities. They are used by the DTD author to simplify the construction of the DTD. Parameter entities are a significant feature of XML which is why they are included in this Introduction to XML section. However, TM/IETM authors are mainly concerned with the tag or attribute names that the entity represents. Therefore, in order to familiarize the TM/IETM author with these tag and attribute names, the parameter entity notation will only be used sparingly in subsequent sections of this handbook. Elements can be qualified by adding attributes. Attributes are part of the element declaration in the MIL-STD-40051 DTD and address such aspects of the data as security classifications, maintenance levels, reference IDs, and column widths of tables. An attribute has a name and an expected data type specified in the DTD and also has its status as required entry, implied value, or defaulted value defined. <http://www.w3.org/TR/REC-xml> and ISO 8879 define several data types, depending on whether the value consist of numbers only, numbers and alpha characters, reference XML elements, cross-references, or an unlimited text string. Rather than a data type, the DTD can also declare a discrete list of legal values, or it can use a Boolean true-false test (any value other than “0” represents true).

```
<!ATTLIST pmcstable
  use-manhours      (yes | no)           "no"
  applicable        IDREFS              #IMPLIED
  assocfig          IDREFS              #IMPLIED
  changeref         IDREFS              #IMPLIED
  comment           CDATA               #IMPLIED
  delchlvl          (0-99)              "0"
  id                ID                  #IMPLIED
  idref             IDREFS              #IMPLIED
  inschlvl          (0-99)              "0"
  security          (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA               #IMPLIED
  tocentry          (0 | 1 | 2 | 3 | 4 | 5) "1">
```

5.5.4.4.1 Yes-No.

A value of an attribute may be given as yes or no in which **yes** implies true and **no** implies false. The attribute use-manhours in the example above for the element **<pmcstable>** specifies whether or not the Preventive Maintenance Checks and Services (PMCS) requires the man-hours entry. A “yes” value indicates that the manhours entry is required and a “no” entry indicates that it is not.

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5.5.4.4.2 Value list.

An attribute can contain a discrete list of legal values. The attribute security in the example above for the element **<pmcstable>** specifies the security level for the table as being unclassified (**uc**), for official use only (**fouo**), classified (**c**), secret (**s**), or top secret (**ts**). Attributes can have a default if specified. The attribute tocentry has a default value of “1.”

5.5.4.4.3 Name Token (NMTOKEN).

The attribute value NMTOKEN is a string of characters that can contain numbers, letters and certain punctuation. The NMTOKEN starts with a letter character, a colon (:) or an underscore (_). The attribute **tabstyle** in the following example for the element **<table>**.

```
<!ATTLIST table
  tabstyle          NMTOKEN                #IMPLIED
  %stdinfoatt;
  frame             (top | bottom | topbot | all | sides |
                    none)                  #IMPLIED
  colsep            (0 | 1)                #IMPLIED
  rowsep            (0 | 1)                #IMPLIED
  orient            (port | land)          #IMPLIED
  label             CDATA                  #IMPLIED>
```

5.5.4.4.4 Name token list (NMTOKENS).

The attribute value NMTOKENS is a sequence of one or more NMTOKEN, separated by spaces. In the following example, the element **<testblock>** contains the attribute **valueloc** having the value NMTOKENS that contain one or more NMTOKEN to create a list of NMTOKEN.

```
<!ATTLIST testblock
  type              (yes | no | pass | fail | true | nottrue |
                    | value | unantic)      #REQUIRED
  valueloc          NMTOKENS                #IMPLIED
  valuetype         (boolean | string | sequence | set |
                    real | integer | float | nil | input |
                    outcome)                #IMPLIED
  value             CDATA                  #IMPLIED
  branch            ID                     #REQUIRED
  branchlabel       CDATA                  #IMPLIED
  branchfrom        IDREFS                 #IMPLIED
  branchto          IDREFS                 #IMPLIED>
```

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5.5.4.4.5 Unique identifier (ID).

The attribute value **ID** is a special type of attribute that gives an element a label guaranteed to be unique in the document. The instance is not allowed to have two elements having the same **ID** attribute value. The parser will report an error if there is more than one occurrence of the same **ID** value. It is used as a cross reference attribute with the attribute value identifier reference **IDREF** or the attribute identifier reference list **IDREFS**. For example, the value **ID** of the attribute branch contains the unique value assigned to this test block (see 5.5.4.4.4). The **ID** attribute must start with a name character as specified in REC-xml.

5.5.4.4.6 Identifier reference (IDREF).

The attribute value **IDREF** is the unique identifier reference referring to the ID of another element. The attribute wpref value **IDREF** is used as a cross reference attribute with the attribute value **ID** of another element. When an "IDREF" is used and there is not an **ID** with the same value as **IDREF**, the parser reports an error. See the following example of the attribute value **IDREF** of the attribute wpref of element work package number **<wpno>**.

```
<!ATTLIST wpno
    wpref          IDREF          #REQUIRED
    security       (uc | fouo | c | s | ts)  #IMPLIED>
```

5.5.4.4.7 Identifier reference list (IDREFS).

The attribute value **IDREFS** is a space-separated list of **IDREF** values. The attribute value of branchfrom and branchto of the element **<testblock>** (see 5.5.4.4.4) are examples of cross reference identifiers **IDREFS** to other branches. Every **IDREF** in the list should match an **ID** value in the instance or the parser reports an error.

5.5.4.4.8 Entity name (ENTITY).

Used to reference a general entity. The entity must be declared to identify the data being provided. See 6.2.7.3 for details using the graphic data type. The example above **<wpno>** (see 5.5.4.4.6) contains the entity set security **%secur;** that contains one or more attributes.

5.5.4.4.9 Entity name list (ENTITIES).

Used to reference more than one general entity. The rules for a general entity (see 5.5.4.4.8) apply. See 6.2.7.3 for details using the graphic data type. The element **<pms-item>** contains the entity set **%bodyatt;** that contains attributes but also contains the entity set references **%changelevel;**, **%refs;**, and **%secur;**.

1. Entity set for **<pms-item>**:

```
<!ATTLIST pms-item %bodyatt;>
```

2. Entity set **%bodyatt;**

```
<!ENTITY %bodyatt " %changelevel
%refs;
skilltrk CDATA #IMPLIED
%secur;">
```

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5.5.4.4.10 Character data (CDATA).

The attribute value **CDATA** contains any character data. Character data can be a number, alpha character or a combination but cannot contain elements or processing instructions. The element electronic mail **<email>** contains an attribute address that contains the value **CDATA** that specifies the address of the electronic mail.

```
<!ATTLIST email                address CDATA #REQUIRED>
```

5.5.4.5 Entities.

XML allows the user to store text in named modules referred to as entities that can then be referenced in the document instance by their entity names. Entity content may be up to 300,000 characters. In MIL-HDBK-2361, for example, the entire boilerplate explanation of the maintenance allocation chart is declared as an entity and can be included in the work package by a single entity reference. Entities are also often used to reference external files, such as graphics. Indeed, users working with MIL-HDBK-2361 documents, although they do not need to be able to write DTDs (which may use parameter entities), do need to learn the syntax for declaring general entities in order to include specific illustrations within the document instance. The DTDs for MIL-HDBK-2361 also include entity declarations of standard ISO 8879 character sets. A non-keyboard character, such as “plus-or-minus” or “ohm,” should be inserted into the document instance through one of the entity references in these ISO character sets.

1. Text entity example:**a. in the DTD:**

```
<!ENTITY surwp.surmat.chkeqp.inspect ' <step1><para>
Inspect the equipment for damage incurred during shipment. If the equipment
has been damaged, report the damage on <extref docno="SF 361" posttext=" ,
Transportation Discrepancy Report"/>.</para></step1>
<step1>
<para>Check the equipment against the packing slip to see if the shipment is
complete. Report all discrepancies in accordance with applicable service
instructions (for Army instructions, see <extref docno="DA PAM 750-8"/> ) .
</para></step1>
<step1><para>
Check to see whether the equipment has been modified. ' </para></step1>
```

b. Referenced in the instance: *&surwp.surmat.chkeqp.inspect;***5.5.4.6 Validation of XML markup.**

A distinctive characteristic of XML is the parsing process, which allows the DTD/schema structure and the document instance markup to be tested. Unlike most proprietary markup languages, XML is self-validating through the medium of the XML parser.

1. In order to proof document instance markup, the DTD/schema must be parsed first. Parsing creates a file that encodes the sequence, number, content model, and required tagging rules of the DTD/schema. In short, the full structure of the DTD/schema. Errors in the DTD/schema are identified during this parsing process to ensure the DTD/schema conforms to the REC-xml and ISO 8879 standards.
2. The encoded file is used thereafter whenever a document instance governed by that DTD/schema is parsed. Parsing a document instance checks that all conditions of the DTD/schema have been met, as well as the general rules of XML. The parsing process guarantees that any XML application software receives files with the expected structure, since the operation of XML software is built on the tags context within the document.

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5.5.4.7 Stylesheets.

The stylesheet provides a set of formatting characteristic values used to rigorously describe composition processing functions to be performed on the elements of a text document to provide the format style required by a specification or standard, such as MIL-STD-40051-1/-2, AR 25-30. A stylesheet delivered with the document should contain values of characteristics for every tag used in the DTD/schema, in every context in which the tag has a unique formatting requirement, and with its attributes if they affect the formatting.

5.5.4.7.1 Generated text.

Stylesheets may provide specified text that is automatically output for your application during the formatting of the document. Text can be generated by an element or an attribute when applied. Generated text can be a word, title or a paragraph of text.

5.5.4.7.1.1 Generating text with elements.

Elements can be used to generate text that are specified by the assigned stylesheet as a word, title or a paragraph of text. The following are examples of elements that are commonly used in MIL-STD-40051 to generate text:

- Chapter title – **<gim>**

```
<gim>General Information, Equipment Description and Theory of Operation....
</gim>
```
- Requirement title – **<reporting>**

```
<reporting>Reporting Errors and Recommending Improvements Statement....
</reporting>
```
- Maintenance task title – **<disassem>**

```
<disassem>Disassembly....</disassem>
```
- Warning – **<warning>**

```
<warning>WARNING....</warning>
```

5.5.4.7.1.2 Generating text with attributes.

Attribute values of elements can be assigned specific text to be generated by the assigned stylesheet when the attribute is applied. The following are examples of attributes that are commonly used in MIL-STD-40051 to generate text:

- Bullet List **bullet** - Specifies whether the item is preceded by a bullet character of the element **<randlist>** "*"

```
<randlist bullet="1"><item><para>Example of the attribute "bullet." </para></item></randlist>
```
- Level **level** – Specifies the level of the information module contained in the element **maintlvl**, in this case, "field."

```
<maintlvl level="field"/>
```

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5.5.4.8 Extensible Stylesheet Language for Formatting Objects (XSL-FO).

Extensible stylesheet language for formatting objects is a pagination markup language describing a rendering vocabulary capturing the semantics of formatting information for paginated presentation. The paginated presentation may be displaying multiple separated pages on a screen, on paper or audibly providing the format style required by a specification or standard, such as MIL-STD-40051-1/-2, AR 25-30.

6 XML TUTORIAL.

6.1 Scope.

This section contains tutorial-type information on MIL-STD-40051 XML. The information contained in the handbook is intended to provide an overview of the use of XML.

6.2 Document Type Definition (DTD)/schema.

XML provides two methods to describe the structure and content of a document. The first and oldest is through a DTD. The DTD may be used for both SGML and XML. It is comprised of document elements and their related elements, attributes, entities, etc. The second, and newer, method is the schema. Schema development is detailed in xml-schema-req-19990215 available through the W3C. The following paragraphs discuss DTD structure. Schema are more program language oriented, but perform the same basic function.

6.2.1 Document elements.

6.2.1.1 Element information.

Document elements begin with document element declarations. Element declarations may be identified in the DTD by the Markup Declaration Open (MDO) “<!” and the reserved word “ELEMENT,” which is always the first word in the element declaration. The next component of the element declaration is the element name (“deflist” in the following example). The element declaration component is either declared content, an element content, or mixed content. Declared content is either “PCDATA” or “EMPTY.” A declared content of “EMPTY” is a special case and may not be used with any other content. The MIL-STD-40051 application makes use of the concept of “EMPTY” elements (for example the table of contents). The content model is a model group that identifies the elements as having either mixed content (see Section 6.2.4) or element content (see Section 6.2.3). Sequence and occurrence indicators contained in the content model determine whether or not a sub-element may be in the document (see Section 6.2.5) and in what order the sub-elements may occur. After the content model is completed the last component is the Markup Declaration Close (MDC) “>”. An example of an element declaration is as follows:

```
<!ELEMENT deflist (title?, (term.def)+)>
```

6.2.1.2 Root-element.

Every XML document using a DTD requires what is called a ‘root element.’ The ‘root element’ is the very top level tag in the document. It may, and usually does have child tags. However the XML standard states it may not be used as a child in any other elements. Schema development is less restrictive in this respect.

6.2.2 Character data types.

XML supports two basic character data types. These are parsable character data (see Section 6.2.2.1) and character data (see Section 6.2.2.2).

6.2.2.1 Parsable character data #PCDATA.

The reserved name #PCDATA is used inside the content model to indicate zero or more data characters that are evaluated by the parser. Note no information is required to be entered to maintain a valid document. #PCDATA contains the narrative (content) text for the document, non-keyboard character general entity and text general entity, but no sub-elements are allowed, unless the current content model permits them.

6.2.2.2 Character data (CDATA).

CDATA is nearly identical to PCDATA. The main difference is that except for tag open (“<”), tag close (“>”) and entity open markup, no other characters are read by the parser.

6.2.3 Element content.

Element content means the only content allowed in the current element are other elements declared in the DTD/schema. The following example, using the **<table>** element, shows an element with only element content. The **<table>** allows for one optional **<precond>**, one optional **<title>**, and one or more required **<tgroup>** elements. No character data is allowed.

```
<!ELEMENT table (precond?, title?, tgroup+)>
```

6.2.4 Mixed content.

A mixed content model is one that allows both parsable character data (see Section 6.2.2.1) and element content (see Section 6.2.3). A mixed content model element example is **<pretext>** **<!ELEMENT pretext (#PCDATA | emphasis | subscript | superscript) *>**. It should be noted that in an XML mixed content model, the first item in the list must be (per the XML standard) #PCDATA and the XML optional occurrence indicator, the asterisk (see Section 6.2.5).

6.2.5 Sequence and occurrence indicators.

Sequence and occurrence indicators determine the required (mandatory) content and element groups within a DTD. Sequence and occurrence indicators are identified within the DTD by standard XML codes, see Section 6.2.5.1 and Section 6.2.5.2.

6.2.5.1 Sequence indicators.

Sequence indicators determine how the elements are arranged within the document. Elements which will occur in a particular order are separated by commas (,), such as the comma after “title?” in the element **<deflist>**. In this example, the “title?” of the definition list **<deflist>** will precede term definition **<term.def>** (The “?” is an occurrence indicator that is discussed below). Elements that have alternative relationships (use one but not the other) or have no specific order, are designated by vertical bars (|), such as “(xref | extref).”

Sequence Indicators

,	The comma indicates that a sequence is to be followed in order from left to right within the current grouping. If the comma follows an element with no occurrence indicator, that element is required.
()	Used to group markup and character data.
	The vertical bars, or pipe bar, is used within a group. Choose one element listed from this group. If there is an occurrence indicator after the grouping, follow instructions for that occurrence indicator.

6.2.5.2 Occurrence indicators.

Occurrence indicators determine the number of times an element will occur. An element that may or may not occur (optional) and that, if used, will occur only once, is designated by a question mark (?). An optional element that may occur zero or more times is designated by an asterisk (*). A mandatory element that will occur at least once, and that

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may occur many times, is designated by a plus sign (+). An element with no occurrence indicator is a mandatory element and will occur once only.

Occurrence Indicators

?	The question marks represents that this element is optional (0 or 1).
*	The asterisk represents that this element is optional and repeatable (0 or more).
+	The plus sign represents that this element is required and repeatable (1 or more).

6.2.5.3 Content model element sub-groups.

Element sub-groups within a content model are enclosed in parentheses. Inside the parentheses, individual elements are governed by the same sequence and occurrence indicators as other elements, creating a sequence/occurrence model within the sub-group. The entire sub-group is governed by the sequence indicator before the open parentheses and the occurrence indicator after the close parentheses. Examples of markup for various combinations of sequence, occurrence, and element sub-groups are provided.

1. When elements are mandatory in sequence and occurrence: (name, xref) = **<name>** followed by **<xref>**.
2. When elements have a mandatory sequence, but the occurrence of second element is optional: (name, xref?) = **<name>** which may be followed by a single optional **<xref>**.
3. When elements have a mandatory sequence, occurrence of third element is optional: (name, xref, extref?) = **<name>** followed by one **<xref>** which may be followed by an optional **<extref>**.
4. When elements have an optional sequence and occurrence: (name | xref)? = either one **<name>** or one **<xref>** may occur but neither has to occur.
5. When elements have an optional sequence and occurrence: (name | xref)* = either a **<name>** or an **<xref>** may occur but neither has to occur; either or both of the tags may occur many times with no specified sequence; this model could be empty of content.
6. When elements have a mandatory sequence and occurrence, but with alternative second elements: (name, (xref | extref)) = **<name>** followed by either one **<xref>** or one **<extref>**.
7. When elements have a mandatory sequence and minimum occurrence requirements for the alternative second element: (name, (xref | extref)+) = **<name>** followed by at least one **<xref>** or **<extref>**. Either or both the **<xref>** or one **<extref>** can occur more than once, in no particular order.
8. When elements have a mandatory sequence but occurrence is required only for the first element: (name, (xref | extref)*) = **<name>** which may be followed by an **<xref>** or **<extref>**; either or both the **<xref>** and **<extref>** can occur more than once, in no particular order, but neither has to occur.
9. When elements have a mandatory sequence but are modified by having no mandatory occurrences: (name*, (xref | extref)?) = **<name>** may occur any number of times, but is not mandatory, followed optionally by either a single **<xref>** or **<extref>**; this model could be empty of content.

6.2.6 Attribute declaration.

Attribute declarations are prefaced in the DTDs by the “MDO” “!” and the XML reserved word “ATTLIST.” The next component is the element name to which the attributes apply (**ginfowp** in the following example). The element is followed by the attribute name(s) (**wpno** in the following example). The attribute name is followed by the allowable attribute values (**CDATA** in the following example). The last part of the attribute declaration is the default value or value source keyword (“#REQUIRED” in the following example). The attribute name, value and

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declaration may have multiple attributes to better qualify the XML element to which it is associated. The example, upon which the above descriptions are based, is as follows:

```
<!ATTLIST ginfowp wpno CDATA #REQUIRED>
```

6.2.6.1 Attribute value types and reserved XML names.

The attribute value types and reserved XML names should be used in the context presented and should follow the rules contained in the definitions associated with the respective terms.

1. NMTOKEN – Will consist of either valid digits or letters.
2. NMTOKENS – Contains multiple occurrences of NMTOKEN.
3. CDATA – Free text that is not parsed internally.
4. ID – Unique identifier that may be referenced by the attribute with NAME value.
5. IDREF – Used to generate cross-references and to link elements, such as footnote text and footnote reference. The **IDREF** references the **ID** value.
6. IDREFS – Contains multiple occurrences of IDREF.
7. ENTITY – Used to reference a general entity. The general entity must be declared to identify the data being declared. See Section 6.2.7.3 on details using the graphic data type.
8. ENTITYS – Contains multiple occurrences of ENTITYS.
9. List – List of text values within parentheses usually separated by “|” (the “or” indicator). Only one value will parse for each attribute instance and only values that are contained in the list are valid.
10. True-False (0 | 1) – A value of an attribute may be given as true or false in which “0” implies “no” or “false” and “1” (or any non-zero number) implies “yes” or “true.”
11. Notation – Identifies permissible notation types.
12. Name Group – Lists permissible values.

6.2.6.2 Keyword attribute defaults.

The following keyword attribute defaults are used by MIL-STD-40051:

1. #REQUIRED – Indicates that a value must be supplied in the instance.
2. #IMPLIED – Indicates that a value is not required to be included in the instance. #IMPLIED should be used when a system is expected to resolve the current attribute value, or when it would be difficult to supply a specific value for each attribute.
 - a. In the MIL-STD-40051 application, an example of the first case is the security attribute “security.” When the parent element defines the “security” attribute, the system will imply the value for the attribute to be the same as the parent attribute, unless otherwise defined.
 - b. In the MIL-STD-40051 application, an example of the second case is the attribute list of cross reference (**<xref>**). Since the reference may be to a table (attribute “tableid IDREF #IMPLIED”), or a figure (attribute “figid IDREF #IMPLIED”), but never to both. Therefore, one cannot require any of these attributes be supplied. If the user does not supply an appropriate ID, the cross-reference will not be expressed.
3. Specified default value – When a value is supplied in the keyword attribute default, the system will use the value if no value is entered for the element. In the following example, the attribute “insert” has the default value of “none.”

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```
<!ATTLIST null
insert          (NA | NR | dash | secure | none)          "none">
                %secur;>
```

6.2.7 Entities.

There are two types of entity declarations: parameter and general.

6.2.7.1 Parameter entity.

Parameter entities are often used as a short cut in the DTD in order to insert common DTD declaration data. Parameter entity declarations will be prefaced by the MDO “<!” and the XML reserved word “ENTITY.” The reserved word, ENTITY will be followed by at least one space, then a “%” followed by a space, followed by the entity name, an additional space, and the ENTITY content delimited by quotes. When referenced, typically in a DTD, the entity name is preceded by the percent sign (“%”) and followed by a semi-colon (“;”). There is no space between the percent sign and the entity name when the entity is referenced.

6.2.7.1.1 Replacement text entities.

Parameter entities can be used within the DTD to reference often used content such as:

```
<!ENTITY %mixparagraph "((note*, para)+, (%para0_ent;)* ) | (%para0_ent;)+)">
```

Referenced as:

```
<!ELEMENT eqpdesc (%mixparagraph;)>
```

Resolved as:

```
<!ELEMENT eqpdesc (((note*, para)+, (%para0_ent;)* ) | (%para0_ent;)+)>
```

6.2.7.1.2 Nested entities.

Parameter entities may be nested. That is, one entity may occur within another entity declaration. In the MIL-STD-40051 example, the entity *%text_ent*, reference *%data*; and *%misc*. In essence, *%format*;, *%linkref*;, and *%linkdata*; have been “nested” within *% text*;. Note however, an entity being referenced, should have been declared prior to its reference.

```
<!ENTITY % text_ent "%data; | %linkdata; | %format; | %linkref; | change">
<!ENTITY % format "#PCDATA | emphasis | subscript | superscript">
<!ENTITY % linkref "xref | extref | link">
<!ENTITY % linkdata "%format; | %linkref; | help.info | indxref | term | term.def">
<!ENTITY % data "%linkdata; | %format; | %linkref; | callout | ftnote | ftnref |
graphic">
```

6.2.7.1.3 External files.

Parameter entities are also used to declare external files that may be referenced in the DTD. Once referenced, the content of that external file is then considered to be a part of the DTD being defined. External files may contain sets of “boilerplate” text that have been declared as general entities (see Section 6.2.7.2), sets of graphic entities (see Section 6.2.7.3), or ISO character sets (see Section 6.2.7.5.2). The entity must be declared then referenced in the DTD. In the following example, *%boilertxt*; references the entity which has given a name and location to an external

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file. The contents of that file “replaces” the entity reference to it. The boilerplate text entity described above contains numerous general entities that have already been defined in the MIL-STD-40051 application. Some DTDs may declare all general entities directly within the document rather than making use of the parameter entity reference. (These entities may be referred to as direct entities).

```
<!ENTITY % mim_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-40051 MIM
Boilerplate REV D.05 20100129//EN" "boilerplate/mimboil.ent"> %mim_boilertext;
```

6.2.7.2 General entity.

General entities are frequently used to enter commonly used text into the narrative. Within the DTD, general entity declarations are prefaced by the MDO “<!” and the XML reserved word ENTITY. The reserved word ENTITY will be followed by at least one space and the entity name. The entity name will be followed by at least one space and the text of the entity which is contained within quotation marks (typically double quotation marks are used; however single quotation marks may also be used and must be used if the text itself contains double quotations). When referenced in the document instance, the entity name is prefaced with an ampersand (“&”) and followed by a semi-colon (“;”).

1. The general entity declaration in a DTD:

```
<!ENTITY siname "Driver's Night Vision Viewer">
```
2. The general entity used in a document instance:

```
<para>If your %siname; needs improvement, let us know.</para>
```
3. The resolved general entity:

```
<para>If your Driver's Night Vision Viewer needs improvement, let us know.
</para>
```

6.2.7.2.1 Replacement text entities.

General entities are defined for often used text or “boilerplate” text. For example, the warranty statement may occur in numerous documents and should appear in the same wording. By defining it as a general entity in the DTD, users may reference the entity *&pmcs.warranty*; in the document instance without retyping and/or retagging the text.

```
<!ENTITY pmcs.warranty "<para>For equipment under manufacturer's warranty,
hardtime oil service intervals will be followed. Intervals will be shortened if
lubricants are known to be contaminated or if operation is under adverse conditions
(such as longer-than-usual operating hours, extended idling periods, extreme dust) .
</para>">
```

6.2.7.2.2 Nested entities.

General entities may be nested. In the MIL-STD-2361 application, this concept is used to allow for customization for a specific document or document class. MIL-STD-2361 DTDs, provide for use of nested entities to allow local revision of boilerplate text. In the following example , the entity *&eir.short.name*; needs to be changed to reflect the equipment short item name.

```
<!ENTITY eir.short.name "Replace text with equipment short item name">

<!ENTITY eir.state "<para> If your &eir.short.name; needs improvement, let us know.
Send us an EIR. You, the user, are the only one who can tell us what you don't like about
your equipment. Let us know why you don't like the design or performance. Put it on an
<extref docno="SF 368" posttext=" (Product Quality Deficiency Report) "/>. Mail it to
the address specified in <extref docno="DA PAM 738-750" posttext=" , Functional users
```

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Manual for the Army Maintenance Management System (TAMMS)"/>, or as specified by the contracting activity. We will send you a reply."></para>

6.2.7.3 Graphic entities.

Graphic entities will be declared through the use of entity templates for graphics. An external file, containing graphic declarations, will be included in each DTD as in the following example:

```
<!ENTITY % graph PUBLIC "-// 'ENTER OWNER' //ENTITIES 'ENTER FORMAL PUBLIC IDENTIFIER' //EN"> %graph;
```

In the example above, the external file should contain a set of graphic entity declarations needed for a given document instance. The external file contains a template to follow when naming the graphic.

```
<!ENTITY graph PUBLIC "-// 'ENTER OWNER' //ENTITIES 'ENTER FORMAL PUBLIC IDENTIFIER' //EN" NDATA 'ENTER GRAPHIC NOTATION'>
```

6.2.7.3.1 Graphic notation identifier.

The graphic notation identifier must be declared in a separate notation declaration located in the document file. A graphic notation states the graphical format type. The notation declaration example below states that Portable Network Graphics (PNG) are recognized in the document file.

```
<!NOTATION png SYSTEM "PNG">
```

6.2.7.3.2 SYSTEM vs. PUBLIC Identifier.

A SYSTEM identifier specifies the location of an external file in the particular system on which the document instance was developed. When the document instance is provided to another user, the document instance must be changed to identify the new location for the external files. A PUBLIC identifier specifies a unique name identifying the information. The FPI is mapped to the external file location. The mapping information is stored in a catalog (see example below). When the document instance is provided to another user, the catalog is changed, but not the document instance. The preferred method for identifying the external files is PUBLIC.

```
PUBLIC "-//DA-APD//ENTITIES BFV Left Side 19971001//EN"
    "c:\graphics\bfvleft.cgm"
PUBLIC "-//DA-APD//ENTITIES BFV Right Side 19971001//EN"
    "c:\graphics\revised\bfvright.cgm"
```

6.2.7.3.3 Graphic entity key names.

Once a graphic entity is declared in a document, it will be referred to by its entity name. In a tagged document instance, the entity name will be used as the value of the graphic attribute "boardno." The key name will point to the Public Identifier of a specific graphic file.

6.2.7.3.4 Exchanging graphic files.

When tagged documents are required to be exchanged with another (external) site, the graphic files will be converted to an acceptable graphic format (see 31.2.2). The appropriate graphic notation type will be added to the graphic file entity declarations. "Graph" will represent the key name used in "boardno" and "NDATA" will be used as a reserved word for coding non-XML data, such as graphic formats, as in the following example:

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```
<!ENTITY graph PUBLIC "ENTER FORMAL PUBLIC IDENTIFIER" NDATA cgm - enter "cgm", "png"
or "bmp" here as appropriate ->
```

6.2.7.4 Unicode character set.

XML recognizes Unicode as its primary character set. A major subset of Unicode is UTF-8 character set. UTF-8 is the default character encoding for XML. If the XML file does not contain an encoding statement in either the XML declaration or text declaration, the parser will assume UTF-8 text encoding.

6.2.7.4.1 Unicode two-byte value.

Unicode allows for over 65,000 characters. At this point in time, Unicode is the basis for the more universal character International Standard ISO/IEC 10646. Both the ISO 10646 and Unicode encoding provide a unique number for each character defined in the applicable standard. Unicode uses a two-byte value for each character. Compared to the single byte used for the characters defined in the ASCII or ISO-8859 series character sets, ISO 10646 will use a four-byte value for each character. ISO 10646 can encode over two billion individual characters.

6.2.7.4.2 UTF-8.

Though there are numerous character sets available for use, the two defined for use with the 40051 XML DTD are UTF-8 and ISO-8859-1 (Latin-1). These two character sets use the first 127 character values to define the characters that make up the ASCII (keyboard) set. UTF-8 and the extended Latin-1 set also define values for characters commonly used, but not available from the keyboard. These non-keyboard characters are often represented by character entities.

6.2.7.5 ISO character entities.

6.2.7.5.1 Non-keyboard characters.

ISO character entities are normally used to insert non-keyboard characters, such as the plus/minus sign, in text. As Unicode or ISO 10646 gain support, non-keyboard characters will most likely be accessed through their character number rather than an entity name.

1. Plus or minus declared as an entity name in the ISO num (ISO 8879:1986 Numeric and Special Graphic) entity declared in ISO 8879. `%plusmn; <!ENTITY plusmn "[plusmn]">`
2. Plus or minus sign declared as through character value. `%plusmn; <!ENTITY plusmn "#176;">`

At this time, all non keyboard characters should be declared using the character entity name method.

6.2.7.5.2 MIL-HDBK-2361 DTDs ISO character sets.

A general entity must be declared for the character and the replacement text is the appropriate text or coding that allows a given system to process the non-keyboard character. If the “plus-or-minus” sign has been defined as in the example below, *±* may be used in the document instance to obtain the plus-or-minus sign when the document is processed.

```
<!ENTITY plusmn SDATA "[plusmn]" -/pm B: =plus-or-minus sign->
```

In order to use ISO character sets the ISO character set files must be available to your system. ISO character set files are a series of entity declarations which may be referenced with an external entity declaration. XML parsers can be

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used to resolve ISO entities to system-specific references to a character. The following ISO character sets are examples included in the MIL-STD-2361 DTDs, and will be used when requirements call for their use.

```
<!ENTITY % ISOpub PUBLIC "ISO 8879-1986//ENTITIES Publishing//EN">
```

```
<!ENTITY % ISOgrk3 PUBLIC "ISO 8879-1986//ENTITIES Greek Symbols//EN">
```

```
<!ENTITY % ISOnum PUBLIC "ISO 8879-1986//ENTITIES Numeric and Special Graphic//EN">
```

```
<!ENTITY % ISotech PUBLIC "ISO 8879-1986//ENTITIES General Technical//EN">
```

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7 INTRODUCTION TO MIL-STD-40051 XML MARKUP

7.1 Scope.

This section describes methods to markup XML documents in accordance with MIL-STD-40051 XML constructs. Adhering to the methods defined in this section will assist in applying MIL-STD-40051 XML constructs to both legacy and new document development.

7.2 Introduction to MIL-STD-40051 XML Markup.

7.2.1 Types of tags in MIL-STD-40051.

The elements used by MIL-STD-40051 fall into two types of tags: content tags and structural tags. Content tags embody the content requirements contained in the respective standards and specifications, such as MIL-STD-40051. Content tags have names indicating their data content, such as `<maintsk>`, `<install>`, or `<mac>`. Structural tags, such as `<para>` (paragraphs), are based on the physical structure of the document, and are used to "chunk up" the data within the content tags. MIL-STD-40051 tags mix content identification and structural uses, such as `<step1>`, `<step2>`, etc.

7.2.1.1 Applying content tags.

Each of MIL-STD-40051 content parts are comprised of a similar structure. The top level is an information module tag, such as `<gim>`, `<mim>`, `<opim>`, `<tim>`, `<pim>`, or `<sim>`. These top-level tags contain specialized sets of work package elements that are, in some cases, unique to the respective information modules, while, in other cases, common to one or more information module. For example, maintenance information chapter `<mim>` can contain service upon receipt work packages `<surwp>`, preventive maintenance work packages `<pmcswp>`, maintenance instruction work packages `<maintwp>`, etc. The top level information chapter tag will be used for building even a single work package.

7.2.1.2 Tagging legacy data.

There is a great deal of legacy data within the Army. Legacy data, for purposes of this standard, will be defined as any data (paper or digital) that has not been SGML or XML-tagged in compliance with the respective content requirements standard or specification, MIL-STD-40051. To ensure appropriate tagging conventions and methodology are applied, the following procedures are offered as guidance for applying XML to legacy data. These procedures are oriented toward the TM requirements set forth in MIL-STD-40051, due to the maturity of that standard and its close association with MIL-STD-40051. However, all of the procedures may be applied regardless of the types of data being converted and tagged.

1. Determine the type(s) of publication material to be tagged (TMs, training products). Publications developed in compliance with traditional requirements documents are produced as complete books (front, body, and rear matter) in which the publication technical content is not functionally grouped. XML tagging of legacy data in compliance with this standard can be accomplished only after the publication data has been restructured into functional groupings.
2. Determine the legacy data (TM, training product, etc.) restructuring requirements for compliance with the respective content requirements standard or specification and MIL-STD-40051.
3. Once the restructuring requirements have been determined, an outline of the restructured document(s) should be developed. The outline will be used as a guide for restructuring the documents in compliance with the standard or specification and tagging the restructured document in compliance with the applicable MIL-STD-

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40051 DTD(s). In the case of TMs, an outline may be developed by selecting applicable MIL-STD-40051 content tags which conform to content requirements, specified in MIL-STD-40051-1/-2, pertaining to the type and maintenance level of the legacy manual.

4. The appropriate top-level tag from the DTD (**<mim>**, **<opim>**, etc.) will be selected and applied to the legacy data. Any #REQUIRED attributes of the top-level tag can then be inserted. In particular, **<tmno>** and **<imlevel>** are necessary to construct page header, page footer, and chapter cover page.
5. Select the appropriate text for the module from your legacy data and determine the type of work package for the legacy material being tagged. Work packages will contain complete "start-to-finish" tasks for a particular component, and they may contain multiple tasks and procedures. Work packages may have starting conditions that require completing a previous work package. Starting conditions that are dependent upon completion of another work package must contain a reference to the requisite work package in the Initial Setup under the reference tag **<ref>**. Starting conditions may be referenced in several work packages.
6. Once the work package has been determined, the appropriate work package tag may be applied and any #REQUIRED attributes of that tag inserted. In particular, **<wpno>** is used as source of the work package number.
7. Every work package has its own unique set of content tags. Some work package content is mandatory while other content is optional. First, determine the content-specific tags in the work package. For instance, a maintenance work package **<maintwp>** requires the content specific tags work package identification information **<wpidinfo>**, work package information **<initial_setup>**, and at least one maintenance task **<maintsk>**. In addition, **<maintwp>** may include tags for warnings **<warning>**, cautions **<caution>**, and/or notes **<note>** and general information **<geninfo>**. Apply the tags to the appropriate legacy text data and insert any #REQUIRED attributes of those tags.
8. As the writer continues to fill in the content requirements, checks of the DTD should be made for any content-oriented tags contained in the third-level tags. For instance, work package information **<initial_setup>** can contain eleven optional content tags. As the optional and required content tags are determined and added to the legacy data, the content requirements for the work package are being satisfied. The content tags should be applied to the legacy data to the level of the document requiring content tags.
9. There are some special content tagging considerations that must be addressed when tagging legacy data. The considerations are concerned with General Information with Theory of Operation, Troubleshooting, Maintenance Allocation Chart (MAC), and Repair Parts and Special Tools List (RPSTL).
 - a. General Information with Theory of Operation. When developing the general information with theory of operation portions of a publication chapter, several work packages may require construction, depending on the complexity of the equipment. A work package may contain a whole system theory **<systhry>** followed by subsystem theory **<ssysthry>**, or it may begin immediately with subsystem theory. General information should use an introduction tag **<intro>** rather than a **<systhry>** tag. The **<systhry>** tag will be reserved for theory only. Complex systems may need a separate work package constructed for each subsystem. Such work packages will often include data on line replaceable units **<lruthry>** and shop replaceable units **<sruthry>**.
 - b. Maintenance Allocation Chart (MAC). The maintenance allocation charts are tagged with content tags. The functional group number **<groupno>** is followed by the nomenclature of the component or assembly. All of the maintenance information pertaining to that component or assembly should be contained within the qualify function tag **<qualify>**. The qualify tag is comprised of the maintenance function **<maintfunc>**; the level to which the maintenance function is assigned **<maintclass>**, which contains specific maintenance level tags; reference to tools and equipment used in the maintenance **<teref>**; and any additional remarks **<remarks>**. The qualify function may contain multiple **<maintfunc>** entries.

7.2.1.3 Applying structural tags.

Structural tags, such as paragraph **<para>**, contain no intelligence about the content of data, but they do flag material for specific treatment by a presentation system. For instance, tagged text can be numbered automatically by a presentation system, but untagged text cannot be automatically numbered. XML does not recognize carriage returns as processing instructions ("break line here"), but as marking record boundaries. The presentation system, in general, ignores carriage return boundaries and will not trigger paragraph returns.

7.2.1.3.1 Titles.

Many elements contain a title (**<title>** see Section 36.1.1.4) element content. For instance, all work packages will have a title. The title of a work package is found in work package identification information **<wpidinfo>** see Section 16.5 Most title **<title>** elements are mandatory and contain only character data. If a title **<title>** is associated with a counter, the stylesheet will specify the appropriate automatic numbering. Titles are tagged **<title></title>** for a title.

7.2.1.3.2 Paragraphs **<para>**.

Paragraphs are common structural tags, included in many content-oriented element content models. Paragraphs contain a parameter entity, **%content;**, which includes #PCDATA and various XML tags that may be contained in paragraph text, such as references, footnote references, index references, change notices, and emphasis tags. Paragraphs are the element through which lists, figures, and tables are included in documents developed in accordance with MIL-STD-40051.

7.2.1.3.3 Subparagraphs.

Titling paragraphs may be preceded by the usual **<title>** element if the content model follows the pattern "(title?, para)+".

1. The DTD fragment for **<systhry>** is:

```
<!ELEMENT systhry (title , figtab* , ((note* , para , (para0 | para0-alt+)) | para0 | para0-alt+) , (ssysthry* | (lruthry* , sruthry*))>.
```

2. Sample of a XML document fragment for **<systhry>**:

```
<systhry>
<title>Viewer Mount
</title>
<para0>
<title>Bolt Assembly, Vehicle Side</title>There are three bolts needed for the plate next to
the vehicle. By bolting these three bolts the viewer can be fixed to the vehicle.
</para0>
<para0>
<title>Revolving Plate</title>The viewer revolves freely due to the revolving plate that
is start of the viewer mount.
</para0>
</systhry>
```

7.2.1.3.4 Procedures.

A procedure **<proc>** is a set of steps that comprise all or part of a task. A procedure may, but does not have to, contain a title. However, if a task, such as "SERVICING," has more than one procedure, the separate procedures will

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have a title. The distinction between a task name and a procedure title will be maintained and will be explicit. Task names are literals and will be appropriately inserted into the document instance by the stylesheet. Procedure titles will be included as content of the **<title>** tag in the document instance.

7.2.1.3.5 Determination of procedure, task, or work package designation.

There may be publications data where it is difficult to determine if data are procedures, tasks, or work packages. If legacy data contains a long or specific title for a maintenance action, it may be a procedural title. The parameter entity **%maintsk;** tag may have to be included above the title if not present in legacy data. On the other hand, a long or specific title may signal the beginning of a work package. If tasks like "Removal" or "Installation" are subordinate to the title, it should probably be treated as the title of a maintenance work package. The document instance developer will be required to analyze the legacy data to determine its intent for portraying either procedures, tasks, or work packages.

7.2.1.3.6 Steps.

The XML structural tags for steps will be used when tagging legacy data to show the steps within a procedure. Care will be taken to ensure that the step tags are used correctly. The step tag **<step1>** (see Section 17.3) refers to primary-level step, not the first step in a procedure. The step tag **<step2>** refers to first-level substep, not to step number 2. Sub-steps are contained in next higher step level. Element **<step1>** does not end until the end of any **<step2>** sub-element contained within the **<step1>** parent element. Steps are automatically numbered by the stylesheet. To avoid double presentation of step numbers upon printing, delete the literal step numbers from document instance. The same convention applies to indentation of sub-steps, which are indented by stylesheet. To avoid duplication of indentation space, all tabs or spaces will be deleted from the legacy document instance.

7.2.1.3.7 Procedural step content.

Steps consist of a single paragraphs. Good writing practice dictates precise separation into steps rather than merging several actions in one step. If a step has an associated warning, caution, or note, it will be tagged with the **<specpara>** tag. The **<specpara>** may replace **<para>** as the first element in a step. The first step will include the text for the step in a paragraph within the **<specpara>** tag, and the second primary-level step will include a substep. For example:

```
<step1>
<specpara>
<warning>
<warning.group>
<trim.para>Sodium peroxide can cause caustic burns from prolonged skin contact.
</trim.para>
</warning.group>
</warning>
</specpara>
</para>
</step1>
<step1>
<specpara>
<para>Mix the sodium peroxide into a paste with the distilled water.
</para>
</specpara>
</step1>
<step1>
<para>Apply a thick layer of the paste over the corroded plate.
</para>
```

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`<step2>`

`<para>`Use the toothbrush to ensure paste coverage in the threaded holes.

`</para>`

`</step2>`

`</step1>`

`<step1>`

`<para>`After 15 minutes, wash the plate clean of the sodium peroxide paste with distilled water.

`</para>`

`</step1>`

7.2.1.3.8 Lists.

Lists are usually contained within paragraphs. However, any element with a parameter entity *%content*; as a content model can contain a list. Warnings, cautions, and notes may also contain lists. The list tag will identify the type of list being tagged. There are three types of XML lists: random, sequential, and definition lists.

7.2.1.3.8.1 Random lists.

Random lists (`<randlist>` see Section 36.1.2.3) are not numbered. Each item starts a new line of text as is regulated by the stylesheet. If the "bullet" attribute is changed to **yes** (by entering `<randlist bullet = "1">` in the document instance), the items will be bulleted.

7.2.1.3.8.2 Sequential lists.

The numbers on sequential lists `<seqlist>` see Section 36.1.2.1 are provided by the stylesheet. Therefore, any numbers appearing on legacy data numbered lists should be removed during the tagging process, otherwise, the items in the lists will have duplicate item numbers. This applies to nested sequence lists also. Nested sequence list numbering is keyed to the nesting level of the list.

7.2.1.3.8.3 Definition lists.

Definition lists `<deflist>` (see Section 36.1.2.4) are used to for lists defining words. A definition list may have a `<title>`. A definition list may then have one or more term/definition element wrapper `<term.def>` each of which must be followed by a `<term>` and a definition `<def>`.

7.2.1.3.8.4 Numbered lists.

The numbers on numbered lists `<seqlist>` are provided by the stylesheet. Therefore, any numbers appearing on legacy data numbered lists should be removed during the tagging process, otherwise, the items in the lists will have duplicate item numbers. This applies to nested sequence lists also. Nested sequence list numbering is keyed to the nesting level of the list.

7.2.1.4 Tables.

7.2.1.4.1 CALS tables.

MIL-STD-40051-1/-2 utilizes the CALS table model. This model was developed to support the now defunct CALS program. The following conventions apply to CALS tables:

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- May have any number and widths of columns.
- May have multi-level heads, stub columns, and spanning cells or rows.
- May be ruled and rules can be controlled locally.
- May contain graphic elements.
- May contain warnings, cautions, notes, and procedures or steps.
- May be varied by the markup in the document.

1. CALS table structure and markup. The CALS table model follows the general model:

TABLE	<table>
TABLE GROUP	<tgroup>
COLUMN SPECIFICATION	<colspec>
SPAN SPECIFICATION	<spanspec>
TABLE HEAD	<thead>
TABLE BODY	<tbody>
The head, body, and foot each contain:	
ROWS	<row>
CELL ENTRY	<entry>

2. Column specifications **<colspec>**. Colspec are used to define the column characteristics of a **<table>**. Column specifications can be specified separately for head and body (the **<colspec>** of **<tgroup>** control the column specs for the body).

<!ELEMENT colspec EMPTY>		
<!ATTLIST colspec		
char	CDATA	#IMPLIED
column	CDATA	#IMPLIED
colname	NMTOKEN	#IMPLIED
align	(left right center justify char)	#IMPLIED
charoff	CDATA	#IMPLIED
colwidth	CDATA	#IMPLIED
colsep	(0 1)	#IMPLIED
rowsep	(0 1)	#IMPLIED>

3. Table columns and spans. Columns are assigned both a column number **colnum** and a name **colname** in **<colspec>**. The column names are referenced in a cell **<entry>** in **namest** and **nameend** to specify start and end of a spanning column. Spanned rows are controlled in **<entry>** by the attribute more rows **morerows**. The attribute more rows **morerows** is used to define the additional rows to be spanned. An example of spanning three rows:

<entry morerows="2">.

4. Alignment in troubleshooting tables. To indicate how material is aligned within the troubleshooting table, the second column contains, in effect, the third column. For instance, a ruled row in a **<faultproc>** table

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consists of a **<symptom>** (which appears in the first column) and one or more **<malfunc>** tags. The **<malfunc>** tag includes the contents of the second column. It contains an **<action>** (in third column) to be taken in response to the **<malfunc>**. The **<action>** contains a para or steps in the third column. Each **<malfunc>** and **<action>** are aligned. If a second **<malfunc>** tag follows, it starts a new line in the second column, separated by a line space from the material above. When another **<malfunc>** tag occurs, it is separated by a rule from the **<entry>** group above.

7.2.1.5 Figures.

Few systems can handle composite figures in which multiple graphic files are positioned within a single figure area using the attributes of **<graphic>**. Keep figure tagging simple. Single-page figures should contain only a **<graphic>** tag, not **<subfig>** tag. Each illustration should be a single graphic file unless made up of full-page sheets. If a figure contains several sheets, use one **<figure>** tag and a **<subfig>** for each sheet. Suggestion is to perform graphic file sizing and cropping in a graphics editor. Using this suggestion will eliminate guess work and the sizing is performed in an application made specifically for the task.

7.2.1.6 Graphics.

The **<graphic>** tag is used to refer to the graphic file entity and supply its size, clipping, scaling, placement, etc.

<!ELEMENT graphic (mapref*)>		
<!ATTLIST graphic		
alt	CDATA	#IMPLIED
applicable	IDREF	#IMPLIED
assocfig	IDREF	#IMPLIED
boardno	CDATA	#REQUIRED
changeref	IDREF	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
graphsty	NMTOKEN	#IMPLIED
hplace	(left right center none)	#IMPLIED
hscale	CDATA	#IMPLIED
idref	IDREF	#IMPLIED
inschlvl	(0-99)	"0"
reprodep	CDATA	#IMPLIED
reprowid	CDATA	#IMPLIED
scalefit	(yes no)	#IMPLIED
security	scalefit	#IMPLIED
skilltrk	CDATA	#IMPLIED
unitmeasure	mm cm px in pt pi)	"in"
vscale	CDATA	#IMPLIED>

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7.2.1.7 Alphabetic index <aindx>.

The index marker reference <indxref> tag establishes a document location and index text to be referenced within the alphabetic index. Composition systems vary how they generate the data that is referenced by the <indxref> tags. A composition system may be able to generate the index entry <indexentry> to include the topic <topic>, page number <pageno> and work package number <wpno> while another system needs an addition process to generate this information or the data be inserted manually. Automatic systems that need additional support to generate the work package number would use a process script such as PERL. The PERL script process would review the XML instance and search for the <indxref> tag. When an <indxref> tag is found a “unique” id will be added to the tag and the attributes “ref1-4” of the <indxref> tag would be collected and stored in an array. When all the XML instances have been processed the PERL scripts then would create an XML instance of an Index. The array is then sorted, (alphabetical order) and each cell of the array will become an entry in the XML index instance. The XML index instance is imported into composition system with other XML instances and processed along with the TM creating an Index. The Index entries are cross-referenced to their Work Packages. The Index would display up to a four level depth entry with its page number and work package number.

7.2.1.7.1 Methods to develop an index.

Three authoring methods are provided for generating index reference and index by the use of the index reference <indxref> tag. Methods (1) and (2) require an application to generate necessary ID and IDREF automatically. Method (3) is manually input by the author. Using any of the methods will provide the necessary information for any composition system to publish an index and furnish a mechanism to hyperlink between the index and the index reference. **Method 1** – Index reference defines the index level titles. **Method 2** – Reference the index level title generated in the index. **Method 3** – Index reference ID and index entries point to the index reference identifier.

1. **Method 1** has the author to specify for each index reference entry the specific index level title(s). MIL-STD-40051 provides a better tool for the soldier to find the indexed material, when the information is used electronically. To improve the index authoring methodology, an XML Authoring application is required. The application will perform the following tasks:
 - a. Read the document instance to obtain the index level topic and subtopics. Assign an automatic generated ID to the index reference.
 - b. Sort the index level topics and subtopics.
 - c. Generate the index using the XML elements with the associated generated index reference IDs.

The application is necessary for the composition system to generate alphabetically sorted index, the page number, and the work package number for the index reference. The author's responsibility is to enter the index level topics for each XML element. The index reference IDs, IDREFs and index entries will be generated after completing the index reference XML elements. The application will be applied to the document instance to prepare the document for publication.

2. **Method 2** has the author create the index entries and associate a unique identifier to each index level entry. The writer authors the document instance and applies the SGML element for index reference with attribute IDREF pointing to the index entry ID location. This method provides a consistent list of possible entries and will reduce spelling errors. The disadvantage is recalling or looking up the associated index entry ID. Again as with Method 1, an application is required to provide a better tool for the soldier to find the indexed material. The application will perform the following tasks:
 - a. Read the document instance to obtain the index entry reference identifier.
 - b. Assign an automatic generated ID to the index reference.
 - c. Assign to the associated index entry the index reference generated ID.

The application is necessary for the composition system to generate the page number, the work package number for the index reference. The author's responsibility is to enter the sorted index entries with associated

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unique identifiers and enter the XML element index reference with associated attribute index entry IDREF. The application will be applied to the document instance to prepare the document for publication.

3. **Method 3** does not require a separate application applied to the document instance. The author will manually perform the following tasks to permit index generation. Generate the sorted index entries. Create the index reference with a unique identifier. Associate the index reference index to the index entry. Generate new index entries, when required. An application is not required to be applied to the document instance and the author will make the association when creating the index reference entry. However, the author must have a valid list of available IDs and the same index entry document instance needs to be shared or merged with other authors. The author's responsibility is to enter the sorted index entries, enter the index reference with an unique identifier for each XML element, and associate the ID to the index entry IDREF.

```
<!ELEMENT aindx (title , trim.para?, col.title , col.title? , alphaindx?,
indexentry)*>
```

```
<!ATTLIST aindx %bodyatt; %secur;>
```

7.2.1.8 Warnings, cautions, and notes.

Warnings, Cautions, and Notes may be added by two methods: within the **<specpara>** element, or explicitly by including the tags **<warning>**, **<caution>**, and/or **<note>** in the document instance. The method chosen for use will be controlled by content model of an element. If a warning or caution applies to specific step or procedure, it must be contained in that element. This can be accomplished through **<specpara>**. The **<specpara>** element is usually invoked in grouping, (specpara | para). The **<specpara>** element includes a **<para>** element after an optional and repeating warning, caution, and or note. This **<para>** is mandatory in a **<specpara>**. In steps, this **<para>** is the first paragraph normally contained in the step.

7.2.1.9 Assigning attribute values.

Almost every element has associated attributes. There are three global parameter entity sets of attributes that attach to most elements: **%refs;**, **%bodyatts;**, and **%secur;**. These global attributes define, respectively: IDs and ID references; text characteristics like change level or nuclear hardness critical processes; and security level. None of these attributes are required.

1. Local attributes. Many elements have additional attributes, some of which are required. For instance, **tmno** is required on the top module element and **id** is required on the footnote.
2. Cross-reference attributes. To cross-reference an element, insert an ID attribute for the element. Then refer to that ID at the cross-reference point with an **<xref>** or an attribute of the IDREF tag. Insert the ID as a value of the appropriate IDREF attribute. ID values must be unique strings, beginning with an alpha character, after which the IDs can contain both letters and numbers. To help keep ID strings unique, use the beginning alpha character to keep the IDs of work packages, tables, tasks, procedures, figures, index entries, and footnotes separate. These seven elements are the only IDs that must be resolved. The stylesheet specifies resolution of the IDREFs. You can use entire words or abbreviations as IDs and they are not required to contain numbers.
3. Cross reference **<xref>** (see Section 33.2.2). The cross-reference tag **<xref>** uses an IDREF attribute to automatically link to the ID attribute of other elements. The attribute **assocfig** (part of the **%ref;** attribute set) also has an IDREF value type and it is used to link text and graphics, not for cross-references. The external reference tag **<extref>** (see Section 33.2.1) is used to reference other TMs or documents outside the document instance, and the reference is inserted as a literal string in the attribute "docno."

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a. Internal reference:

<!ATTLIST xref		
applicable	IDREF	#IMPLIED
callout	CDATA	#IMPLIED
figid	IDREF	#IMPLIED
itemid	IDREF	#IMPLIED
itemno	CDATA	#IMPLIED
pagelocid	IDREF	#IMPLIED
posttext	CDATA	#IMPLIED
pretext	CDATA	#IMPLIED
security	(uc fouo c s ts)	#IMPLIED
stepend	IDREF	#IMPLIED
stepstart	IDREF	#IMPLIED
tableid	IDREF	#IMPLIED
taskid	IDREF	#IMPLIED
termdefid	IDREF	#IMPLIED
tslocid	IDREF	#IMPLIED
wpid	IDREF	#IMPLIED>

b. External reference :

<!ELEMENT extref EMPTY>		
applicable	IDREFS	#IMPLIED
docno	CDATA	#IMPLIED
figid	CDATA	#IMPLIED
partid	CDATA	#IMPLIED
posttext	CDATA	#IMPLIED
pretext	CDATA	#IMPLIED
revno	CDATA	#IMPLIED
security	(uc fouo c s ts)	#IMPLIED
tableid	CDATA	#IMPLIED
taskid	CDATA	#IMPLIED
wpid	CDATA	#IMPLIED>

4. Cross-reference resolution.

- a.** Text. Text references will be to either a task or a titled procedure within a work package. The resolved value for a task will be its name; for a procedure it will be the title. The attribute **taskid** supplies the IDREF to the ID of a task or titled procedure. Only procedures with titles will be referenced. If a procedure does not have a title, the task containing the procedure will be referenced. The work package

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number will always be invoked through "wpid," if the reference location is in another work package in same information module.

- b. Work packages. The **<xref>** attribute **wpid** will always be used for cross reference resolution for work packages. The **wpid** value for text, tables, and figures located in another work package in the same information module will always be supplied. When referencing complete start-to-finish contents of another work package, only the **wpid** attribute will be used. Each work package tag will have an **id** attribute. The **wpno** attribute is not its ID. The same value will not be used for **wpno** attribute and work package **id** attribute.
 - c. Figures and tables. Only numbered figures and tables will be referenced. The stylesheet will extract the figure id (**figid**) or table number (**tableid**) and use as appropriate. The cross-reference value will not include the title.
 - d. Steps. The word "step" and the step number will be generated by the composition system when ONLY step start reference **stepstart** is used. When reference a sequence of steps the composition system generates the word "steps" with the first step number (using **stepstart** attribute reference) followed by an **&ndash** and the ending step number (using **stepend** attribute reference).
5. Empty tags. Empty elements contain no character data or other elements. Empty tags mark things like cross-references and index entries that will be created by the composition system. Empty tags also mark insertions of external files in non-XML notations, such as graphic files. Empty tags contain the information your composition system needs to resolve reference values in a series of attributes.

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8 STYLESHEET APPLICATION AS A STYLE GUIDE

8.1 Scope.

This section contains information on the application of stylesheets as style guides.

8.2 Using stylesheets.

This section describes methods for interchanging formatting requirements for technical documents whose source files are tagged according to DTDs developed in accordance with MIL-STD-40051. A DTD interprets the content and structural requirements contained in a specification, and the stylesheets interpret the style and formatting requirements.

8.3 Style.

Adherence to rules described in MIL-STD-40051 allows for different receiving processing systems to unambiguously interpret the style and formatting intent of the sending system. By combining the document instance, content-tagged in accordance with the appropriate MIL-STD-40051 DTDs, with the stylesheet, the resulting publication will preserve the information content of the original and allow similar presentation. The stylesheet values for the style characteristics are passed to, or used by, the program that performs layout and final composition.

8.4 Using a stylesheet.

A stylesheet is developed to present the formatting information of a specific document, or class of documents, based on the MIL-STD-40051 DTD with which the document instance was marked up. The stylesheet is typically written using XSL-FO. The process of using a stylesheet to produce a document is as follows.

1. A document would be marked using the SGML/XML tagging scheme provided by the DTD written for that document type.
2. A stylesheet would be prepared designating the formatting information for the document type. The stylesheet provides all the necessary formatting information. Within the stylesheet, this information is associated with the elements and/or attributes of the DTD written for that document. For example, the stylesheet might specify that a chapter title is to be centered, bold, sans-serif, in 10 on 12 type. The document being tagged using SGML/XML tags would simply have the SGML/XML tags:

```
<chapter><title>THIS IS THE TITLE</title></chapter>
```

The user does not have to alter the stylesheet or provide formatting information in any manner, other than to mark up a document using the elements and attributes provided in the DTD. It should be understood, however that the stylesheet has itself been written to a DTD. This is why the formatting information can be interchanged in a standard way. If formatting information needs to be changed for a given document (for example, chapter titles will now be quad left), the stylesheet will have to be changed to reflect this. An organizational policy and procedure for such changes should be developed, implemented, and adhered to. The user should not be allowed to make arbitrary changes to the stylesheet.

8.5 Stylesheets.

Stylesheets define how documents are presented on screens and in print. A stylesheet provides a set of formatting characteristic values used to describe composition processing functions to be performed on the elements of a text document to provide the format style required by a specification or standard, such as MIL-STD-40051-1/-2, AR 25-30 or TRADOC Reg 350-70. A stylesheet (XPath, XSL, XSL-T and XSL-FO) delivered with the document should contain values of characteristics for every tag used in the DTD, in every context in which the tag has a unique

formatting requirement, and with its attributes if they affect the formatting. Stylesheets also provide generated text (see Section 5.5.4.7.1). Generated text is specified text that is automatically output by the stylesheet for your application during the formatting of the document.

8.5.1 XPath (XPATH).

XPath is a type of stylesheet used with XML documents. XPath is fabricated to be an integral part in a host language such as XSLT. It uses a constrain, non-XML syntax for locating parts of an XML document. Xpath locator syntax uses essential functions based on the node hierarchy of a document and evaluate expressions to determine a location object. Its locations are used by XSLT. Additional information on XPath may be obtained from the W3C's XSL website: <http://www.w3.org/Style/XSL/WhatIsXSL.html>.

8.5.2 Extensible Stylesheet Language (XSL).

XSL is a language for formulating stylesheets to be used with XML documents. The XSL stylesheet describes how the XML document is presented as a page-based document or frame-based being displayed by a web browser. The XSL stylesheet is also an XML document in itself. Additional information on XSL may be obtained from the W3C's XSL website: <http://www.w3.org/TR/xsl>.

8.5.3 Extensible Stylesheet Language Transformations (XSLT).

XSLT is a type of stylesheet developed to use with XML to transform a document from one XML application to be used by another application. XSLT is fabricated to be used with XPath. Its instructions are written in a document resembling a stylesheet and then it uses a transformation engine to generate a new form of the document. Additional information on XSLT may be obtained from the W3C's XSLT website: <http://www.w3.org/TR/xslt>.

8.5.4 Extensible Stylesheet Language for Formatting Objects (XSL-FO).

XSL-FO is a type of stylesheet developed to use with XML for formatting objects. It is a pagination markup language describing a rendering vocabulary capturing the semantics of formatting information for paginated presentation. The paginated presentation may be displaying multiple separated pages on a screen, on paper or audibly. Additional information on XSL may be obtained from the W3C's XSLT website: <http://www.w3.org/TR/xsl>.

9 INTRODUCTION TO TECHNICAL AND EQUIPMENT PUBLICATIONS

9.1 Overview.

Sections 9 through 35 provide implementation guidance for TMs, DMWRs, NMWRs, Battle Damage Assessment and Repair (BDAR) manuals, and Destruction of Material manuals. All manual types are discussed in sufficient detail to allow the handbook user a comprehensive understanding of their development processes using XML. Sections 15 through 17 contains general TM, DMWR and NMWR development guidance. Sections 18 through 38 contains detailed guidance for the application of XML to TMs, DMWRs and NMWRs, related training information, and an XML Tutorial for TMs, DMWRs and NMWRs. There are flow charts and other graphic illustrations to amplify the narrative discussions. The differences between the "traditional" publication development processes and development using the Digital Publications Development (DPD) Program, (see Section 5.2.3) concepts are discussed to illustrate the benefits, in time and effort, derived from the DPD Program. These discussions are designed to portray to handbook users sound rationale for developing publications using XML in accordance with MIL-STD-40051. The DPD Program concept of reusing information that is common to more than one type of equipment is explained in the context in which it relates to different publication types. Part I is structured with five Sections, as shown in "Layout, Format and Content," below. Part II is structured with three parts, as shown in "Layout, Format and Content."

9.2 Objectives.

Sections 10 through 35 are designed to provide users with a tool that is simple to use and functionally accurate to the Army TMs, DMWRs, and NMWRs publication processes. They contain TM, DMWR and NMWR publication development and implementation guidance information, designed to assist the publication developer in the use and application of XML Implementation guidance to realize the MIL-STD-40051 objectives to share and reuse common publication information is an underlying theme throughout the handbook.

9.3 Layout, format and content.

An outline of each section is provided.

Overview		
9	Introduction to technical and equipment publications	Intent, layout, format, and contents.
10	Workflow and Processes	Identifies and describes the workflow and processes associated with the development of TMs.
11	Implementation Guidance	This section contains descriptive narrative of the functional and technical relationships between TMs, DMWRs and NMWRs, MIL-STD-40051-2 and MIL-STD-40051. It will include explanations, examples and descriptive narrative of how the TM contents (work packages, tasks, etc.) maps (relates) to the appropriate paragraph/page of the respective standard.
12	TM, DMWR/ NMWR Acquisition	This section provides the handbook user with information relating to contracting for XML/publication development services.
13	MIL-STD-40051 Applications Introduction	This section provides information on the presentation of the XML elements developed for Army digital equipment manuals publications.

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14	General Information	This section provides information on general topics in developing TMs, DMWRs and NMWRs, using MIL-STD-40051-2 and MIL-STD-40051.
15	Production	This section provides an in-depth description and use of the XML elements specifically used in the developing a complete TM, SUM, SAM or DMWR/ NMWR manual.
16	Work Package Basics	This section provides information on the description of the elements and attributes that provide for work package metadata, identification and setup information.
17	Tasks, Procedures, and Steps	This section provides an in-depth description on the use of tasks, procedures and steps used in MIL-STD-40051.
18	General Information, Equipment Description and Theory of Operations Chapter	This section provides an in-depth description and use of the XML elements specifically used in the General Information, Equipment Description with Theory of Operation Chapter (GIM).
19	Operator Instructions Chapter	This section provides an in-depth description and use of the XML elements specifically used in the Operating Procedures Information Chapter (OPIM).
20	Software Operator Instructions Chapter	This section provides an in depth description and use of XML elements specifically used in Software Operator Instructions Chapter.
21	Software Description and Data Chapter	This section provides an in-depth description and use of the XML elements specifically used in the Software Operating Procedures Information Chapter (SOPIM).
22	Troubleshooting Chapter	This section provides an in-depth description and use of the XML elements specifically used in the Troubleshooting Information Chapter (TIM).
23	Maintenance Instructions Chapter	This section provides an in-depth description and use of the XML elements specifically used in the Maintenance Information Chapter (MIM).
24	Part Information Chapter (RPTSL)	This section provides an in-depth description and use of the XML elements specifically used in the Parts Information Chapter (PIM).
25	Destruction of Army Material Chapter	This section provides an in-depth description and use of the XML elements specifically used in the Destruction Information Chapter (DIM).
27	Supporting Information Chapter	This section provides an in-depth description and use of the XML elements specifically used in the Supporting Information Chapter (SIM).
28	Alerts	This section provides an in-depth description and use of Warnings, Cautions and Notes used in MIL-STD-40051-2 and MIL-STD-40051.
29	Tables	This section provides an in-depth description and use of tables used in MIL-STD-40051-2 and MIL-STD-40051.
30	Standard Information	This section provides an in-depth description and use of standard information used in MIL-STD-40051-2 and MIL-STD-40051.
31	Illustration, Graphic and Multimedia	This section provides an in-depth description and use of illustrations, graphics and multimedia used in MIL-STD-40051-2 and MIL-STD-40051.
32	Footnotes	This section provides an in-depth description and use of footnotes and footnote references used in MIL-STD-40051-2 and MIL-STD-40051.
33	Linking	This section provides an in-depth description and use of linking used in MIL-STD-40051-2 and MIL-STD-40051.

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34	Filtering	This section provides an in-depth description and use of filtering used in MIL-STD-40051-2 and MIL-STD-40051.
35	Unique IETM Functionality	This section provides an in-depth description and use of state tables, logic engines and dialog boxes used in MIL-STD-40051-2 and MIL-STD-40051.
36	Common Structure	This section provides an in-depth description and use of the XML elements commonly used throughout TMs, DMWRs and NMWRs development.
37	Boilerplates	This section provides an in-depth description and how to use standard verbatim text to develop specific work packages in a TM, DMWR and NMWRs.

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10 WORKFLOW AND PROCESSES

10.1 Technical and equipment publication workflow and processes.

The flow diagram in FIGURE 3. illustrates a typical contractor TM development cycle. The process shown is a subset of the overall logistics support development which is depicted as “Gather Source Data” in the figure. Typically, a TM develops through two iterations: Preliminary Technical Manual (PTM) and Final Reproducible Copy (FRC), as per AR 25-30.

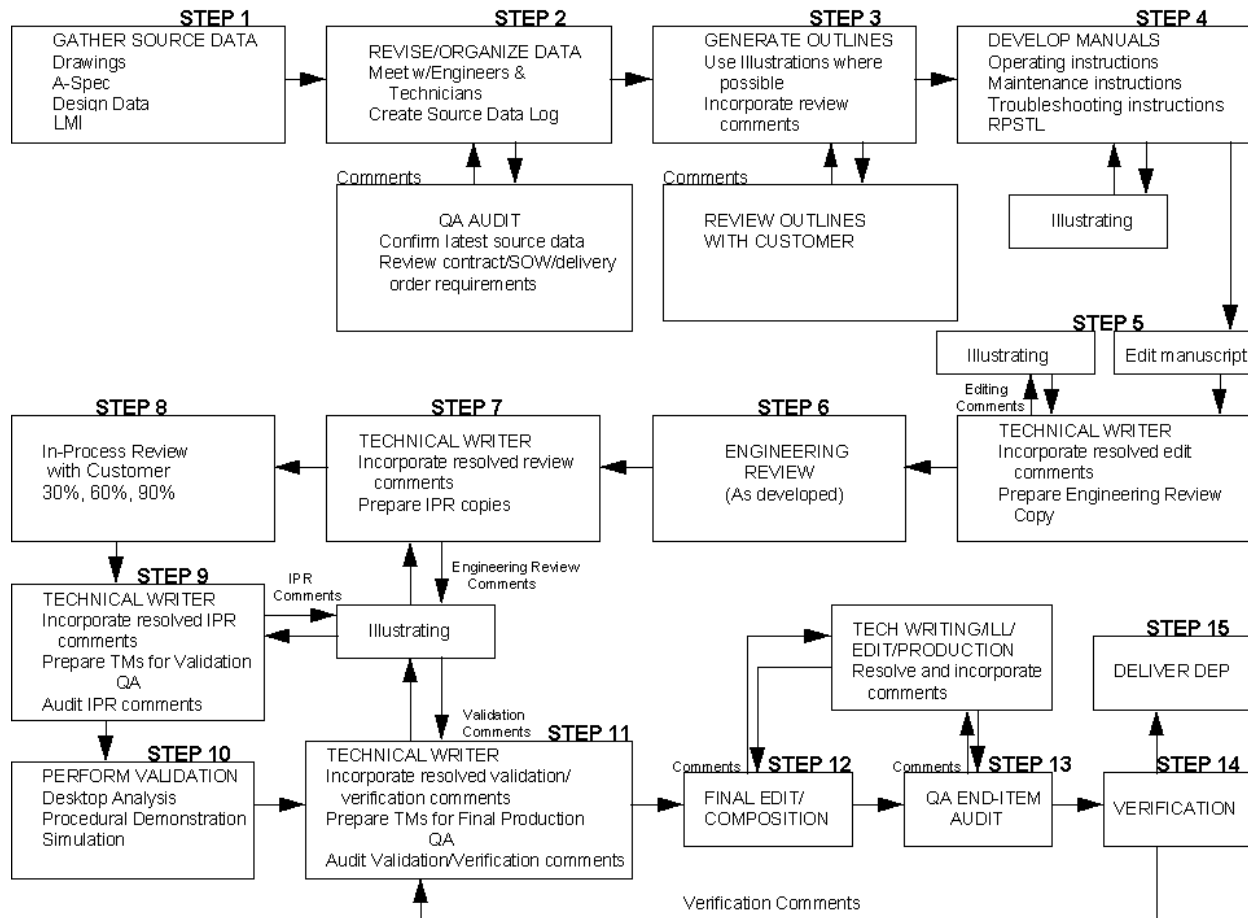


FIGURE 3. Technical manual development cycle.

10.1.1 PTM and FRC development.

The PTM and FRC are prepared during the development cycle of a weapon system and are generally used in testing the weapon system. The FRC is developed in the production cycle of a weapon system and, when distributed electronically or printed, is the TM used in the field. The FRC is usually a modification of the PTM resulting from changes to the weapon system prior to the start of production.

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10.2 MIL-STD-40051 TM development: process and flow.

FIGURE 4. illustrates this flow of TM development under MIL-STD-40051. The gathering of source data will remain essentially unchanged at first, although improved methods of digital capture of data could flow from MIL-STD-40051 as shown below.

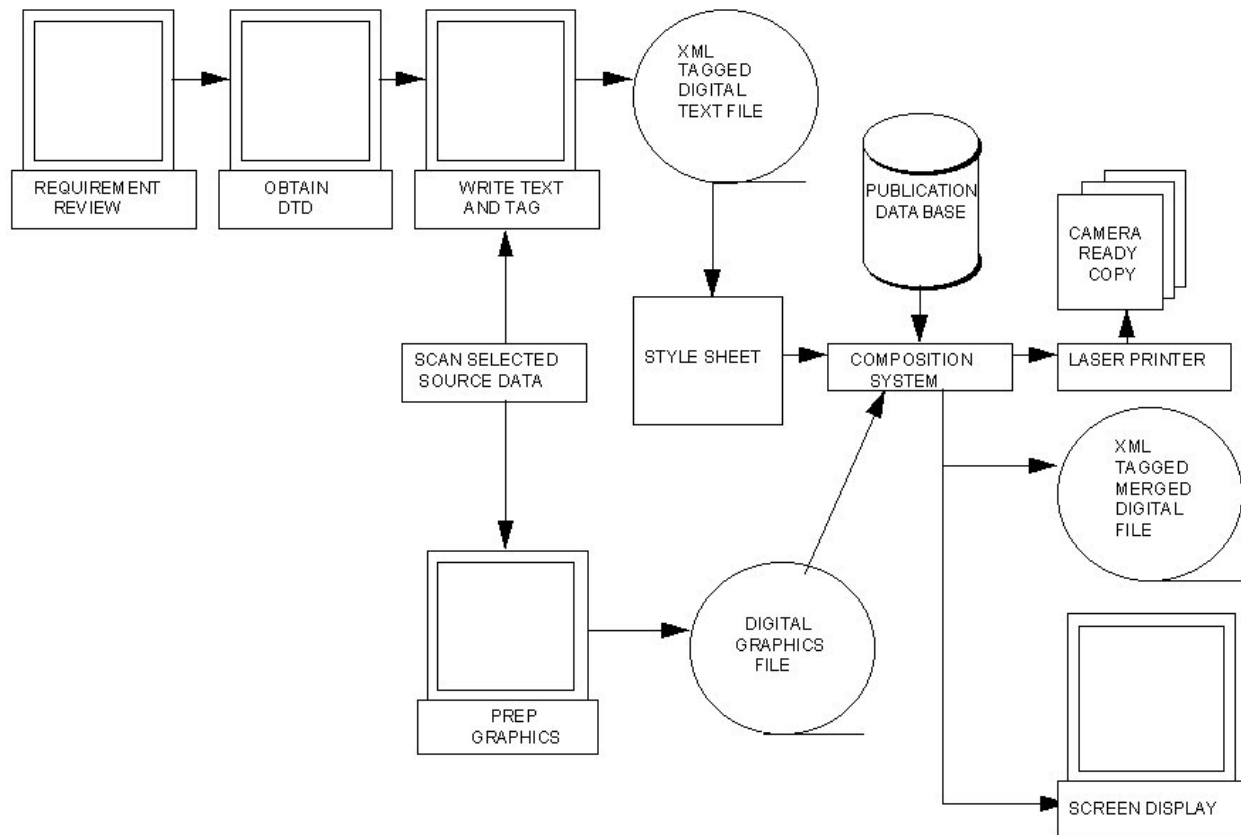


FIGURE 4. TM development with MIL-STD-40051.

10.2.1 Requirements review.

Requirements may be received as a Request for Proposal (RFP), a contract, or modification to a contract. Upon receipt of the requirements, Subject Matter Experts (SME) and managers should review the requirements to determine that they reflect the customer stated end-product (the deliverable). Areas that are unclear or apparently misstated, should be noted for discussion with the requirement proponent. The requirements review should, as a minimum, determine the following:

1. Location of documentation, such as standards or specifications, required to complete the task. The documentation may accompany the contractual document as an attachment or exhibit. Frequently, however, contractual documents specify requirements by reference and direct the TM developer to a specific address to obtain the documentation.
2. Version, identification, and availability of DTD and other XML objects and constructs required to develop the TMs in accordance with the Government requirements. Again, the DTDs may be provided with the contractual document. Or, they may be referenced and direction provided to contact the LOGSA online Library to obtain the DTD and other associated XML objects and constructs.

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3. Legacy and new TM development. This is an important determination for both level of effort required and cost to complete the effort. Application of XML to legacy data requires conversion from either paper or digital documents, and is normally time consuming, labor intensive, and costly.

10.2.2 XML object and construct review and setup.

The DTD, and other XML objects and constructs, will be acquired, either from the contracting activity as part of the contractual document, or from LOGSA.army.mil/40051. If the DTD is not included with the contractual document, a FPI, location, and procedures for access should be provided for the required DTD. FIGURE 5. illustrates a general overview of the functional flow for the XML setup.



FIGURE 5. XML setup process.

Once the DTDs and associated XML objects and constructs (stylesheets, tag description lists, etc.) have been obtained, the following should be accomplished:

1. Check the FPI, abstract, DTD, and stylesheet to ensure the correct, contractually required (version number) XML constructs have been provided. There may be more than one version of a DTD.
2. Load the DTDs and, if appropriate, the stylesheets on the XML platform(s) and setup for the specific XML tools (PTCs Epic Editor, XML Spy, etc). If problems are encountered the EPCO maintains a capability for technical and XML help.

10.2.3 Document Type Definition (DTD) as the outline.

An outline of the manual, traditionally developed by the contractor as a deliverable, is not required when using the DPD concept and MIL-STD-40051. The MIL-STD-40051 DTD, provided by the Government as Government Furnished Information (GFI), can be used to develop the “outline” of the required TM in accordance with the content requirements of MIL-STD-40051-1/-2. The DTD reflects the structure of the content requirement matrices in MIL-STD-40051-1/-2. The main divisions of the manual are information chapters, which are comprised of work packages. Each of these divisions of the DTD have associated markup tags. TM developers are able to prepare and furnish outlines by selecting applicable MIL-STD-40051 content tags which conform to content requirements specified in MIL-STD-40051-1/-2.

10.2.4 TM development.

Upon receipt of the appropriate DTD, the writer can begin developing and writing the individual work packages. The writer can follow much the same development path as usual, EXCEPT that the material being developed will be tagged in accordance with the DTD that applies to the information chapter in which the work package appears. Most of the XML author/editor tools today have “concurrent parsing” (which can be turned on and off) that “parses as you write.” In other words, it will not allow incorrect tagging. The organization to which the technical writer or editor belongs may arrange tagging to suit its own structure and work flow. Tagging may be done by the TM writers themselves, or by specially trained staff. In general, a SME will understand what tags are appropriate to apply. Illustrations may be incorporated by marked-up references to their placement in the manual and called into the TM for outputting the document or portions of the document.

10.2.5 Layout and style.

This special XML file maps the styles to be applied to the tags in the document (see Chapter 8). The composition system interprets the stylesheet for composition of paper or digital output.

10.2.6 Conversion of legacy data.

FIGURE 6. shows a generalized process for converting legacy data to MIL-STD-40051 XML-tagged data. Once the decision to convert legacy data to XML is made, the legacy data should be available in electronic form (text-based, not raster or vector images or pages). If the legacy data to be converted is not available in this form, the data will be re-keyed or captured by text scanning. The digital legacy data will be restructured in accordance with MIL-STD-40051-2 requirements. The structured data may then be tagged and reused in data resources in accordance with the MIL-STD-40051 DTD. Remember that the MIL-STD-40051 XML content tags are included in the MIL-STD-40051-2 narrative. For a more detailed discussion of legacy data conversion refer to Section 7.2.1.2.

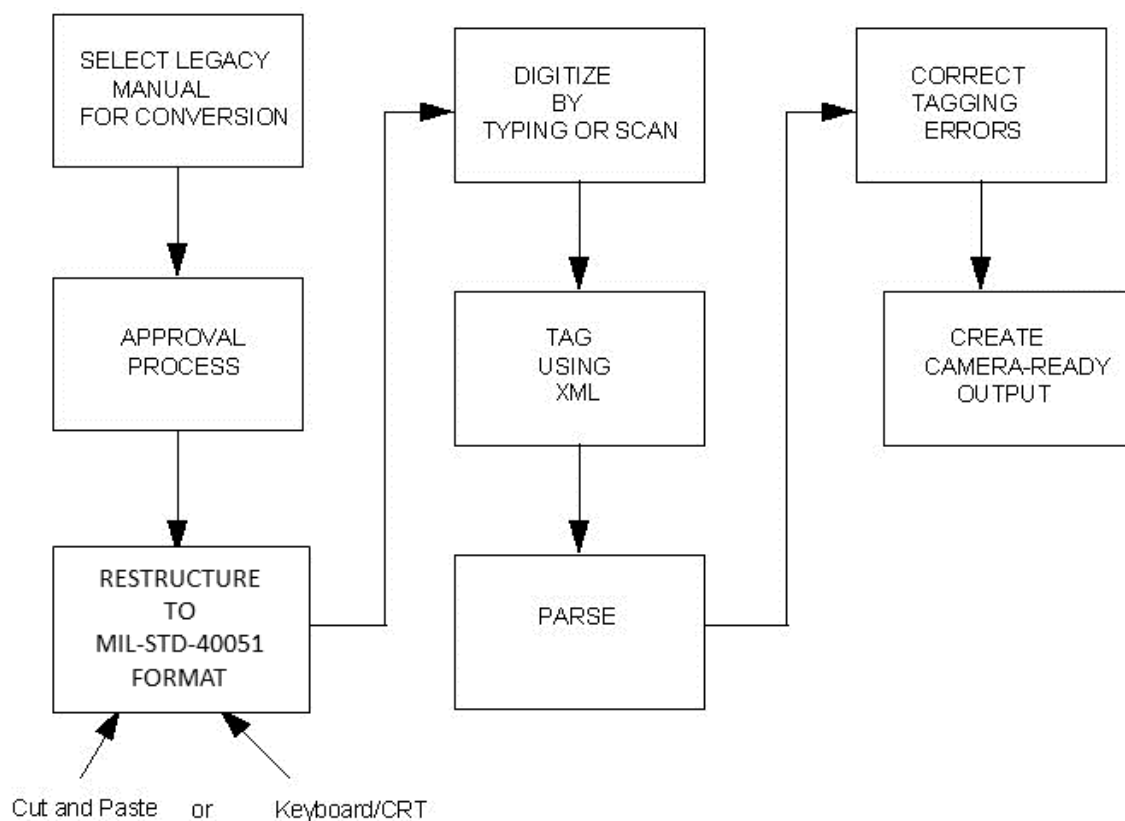


FIGURE 6. Conversion of legacy data to MIL-STD-40051 requirements.

11 IMPLEMENTATION GUIDANCE

11.1 MIL-STD-40051-1/-2.

11.1.1 MIL-STD-40051-1/-2, "Technical Manual Preparation."

MIL-STD-40051-1/-2 establishes the technical and functional content, style, and format requirements for the preparation of paper and frame-oriented TMs, DMWRs, and NMWRs within the Department of the Army. The standard covers the development of these publications, and revisions, for operations and maintenance through depot level. The requirements contained in MIL-STD-40051-1/-2 are divided into the following specific elements (appendixes) to enhance documentation usability in performance of weapon system/equipment and component maintenance.

1. General Information, Equipment Description and Theory of Operation Information (GIM).
2. Operator Instructions (OPIM).
3. Software Operator Instructions Manual (SOPIM).
4. Troubleshooting Procedures (TIM).
5. Maintenance Instructions (MIM).
6. Parts Information (PIM) and Repair Parts and Special Tools List (RPSTL).
7. Supporting Information (SIM).
8. Destruction Information (DIM).
9. Battle Damage Assessment and Repair (BDAR).
10. Preventive Maintenance Checklist (PMC).
11. Lubrication Orders (LO).
12. DMWR for Maintenance or Demilitarization of Ammunition (CMWR_AMMO).
13. Software Users Manual (SUM) and Software Administrators Manual (SAM).
14. General Maintenance Manual.

Each of these appendixes provide instructions on how to develop and structure the required technical information into chapters containing individual work packages in a logical order of work sequence. These work packages are stand-alone units containing all information essential for directing task performance.

11.1.1.1 Technical content selection matrixes.

MIL-STD-40051-1/-2, contain content matrix tables that list all the technical and content requirements for the development of various types of manuals. TABLE II is an example of a content matrix table. The tables indicate which parts of MIL-STD-40051-1/-2 are applicable and lists the content requirements for each type of TM, DMWR and NMWR. The content requirements presented in the tables are in the order in which they should appear in the completed manual. The Technical Content Selection Matrixes appear in Appendix A of MIL-STD-40051-1/-2.

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TABLE II. Technical content selection matrixes.

Table A-1 TM Requirements Matrix for PAGE-BASED (Example)					
TM Content	-10	-13&P	-14&P	MIL-STD-40051-1/-2 Reference	Element Name
FRONT MATTER	R	R	R	5.2.1	<paper.frnt>
Front cover	R	R	R	5.2.1.1	<frntcover>
(MC) Promulgation letter				5.2.1.2	<promulgation>
Warning Summary				5.2.1.3	<warnsum>
Change transmittal page				5.2.1.4	<chgsheet>
List of effective pages /work packages	R	R	R	5.3.1.5	<loepwp>
Title block page	R	R	R	5.3.1.6	<titleblk>
Table of contents	R	R	R	5.3.1.8	<contents>
How to use this manual	R	R	R	5.3.1.9	<howtouse>
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	R	R	R	B.5.1	<gim>
GENERAL INFORMATION WORK PACKAGE	R	R	R	B.5.2	<ginfowp>

11.1.1.1.1 Explanation of matrix column content.

The columns in the Content Selection Matrixes contain specific information to assist the user in determining the appropriate content requirements for the TM, DMWR and NMWR being developed. A brief description of each of the columns is provided:

- Column 1 shows the name of the TM, DMWR and NMWR content part.
- Column 2-4 in an unfinished table may contain an “R,” “P,” or shading. A shaded column block will have an “R,” “P,” or “AR,” added. When completed, all cells are to have an entry.
 - The letter “R” is used to designate an item is required to be included.
 - The letter “P” is used to designate an item is prohibited from use in the TM being acquired by the table.
 - The letters “AR” indicate the designated item may be included if needed.
- Column 5 contains a reference to the MIL-STD-40051-1/-2 paragraph which addresses the TM, DMWR and NMWR content requirement.
- Column 6 contains the TM, DMWR and NMWR content element name from the DTD/schema.

11.1.1.1.2 Intended use on the content selection matrixes.

The proponent of the TM/DMWR will determine the type(s) of TM, DMWR and NMWR required for each acquisition. Once this determination has been made, the proponent may duplicate the appropriate matrixes (the ones that contain the applicable requirements for the TM, DMWR and NMWR being developed. The proponent may

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indicate the type(s) of TM, DMWR and NMWR required by filling in the blank after "TM Requirements Matrix for" at the top of each matrix. The blocks that already contain an "R" are required and cannot be changed. The blocks containing "P" are prohibited for that type of TM and cannot be included. For each type of TM, DMWR and NMWR selected, the proponent will indicate in the open blocks the "TM Content" desired by entering "R" for REQUIRED content; "P" for content that is PROHIBITED. The blocks that are shaded is content determined by the developer that will be changed to "R," "P," or "AR" determining what is necessary in the work package.

11.1.1.1.3 Acquisition impact.

The TM, DMWR and NMWR Content Selection Matrix table(s) will become contractually binding when it is made part of a contract, statement of work, or other contractual instrument.

11.1.2 MIL-STD-40051, "Digital Publications Development."

MIL-STD-40051 establishes the Extensible Markup Language (XML) requirements for use in Army digital publications. This standard is a product-oriented interface standard that addresses XML application to functional requirements set forth in Government functional requirements standards and specifications. This standard establishes the requirements for developing XML publications in accordance with the various Army functional requirements standards and specifications.

11.1.2.1 XML requirements development.

This section of MIL-HDBK-2361 addresses implementation guidance for the development of Army publications using the XML requirements for Army TM, DMWR and NMWR contained in AR 25-30. The AR 25-30 XML requirements were developed in accordance with, and directly reflect, the functional requirements contained in MIL-STD-40051-1/-2.

11.1.2.2 Publication and requirement relationships.

There is an explicit relationship chain between a TM, DMWR and NMWR, their functional requirements document (MIL-STD-40051-1/-2). One of the objectives of this handbook is to provide a clear understanding of these relationships to its users. This paragraph will address the relationships between the elements of the respective documents and show how the element relationships are mapped.

11.1.2.2.1 Element relationships.

TM, DMWR and NMWR content is comprised of document elements as shown in Column 1 of the TM, DMWR and NMWR Content Selection Matrixes. These document elements have a defined relationship with the functional requirements in MIL-STD-40051-1/-2.

11.1.2.2.2 TM, DMWR and NMWR content to MIL-STD-40051-1/-2 requirements.

Each item in TM, DMWR and NMWR content (Front Matter, General Information Work Package, etc.) can be mapped to a functional requirement (paragraph and page) in MIL-STD-40051-1/-2. The TM, DMWR and NMWR content is the result of its corresponding functional requirement in MIL-STD-40051-1/-2. The MIL-STD-40051-1/-2 functional requirement defines the content, specifies its location in the TM, DMWR and NMWR, and defines whether or not the content is required.

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11.1.2.2.3 TM, DMWR and NMWR to MIL-STD-40051-1/-2.

Both the TM, DMWR and NMWR content items and their corresponding functional requirements can be mapped to the XML requirements in MIL-STD-40051-1/-2. As previously stated, the XML requirements in MIL-STD-40051-1/-2 reflect specific functional requirements in MIL-STD-40051-1/-2.

11.2 Element relationships.

TMs developed in accordance with MIL-STD-40051-2 will consist of volumes (if required by number of pages), information chapters, and Work Packages (WP) as indicated in FIGURE 7.

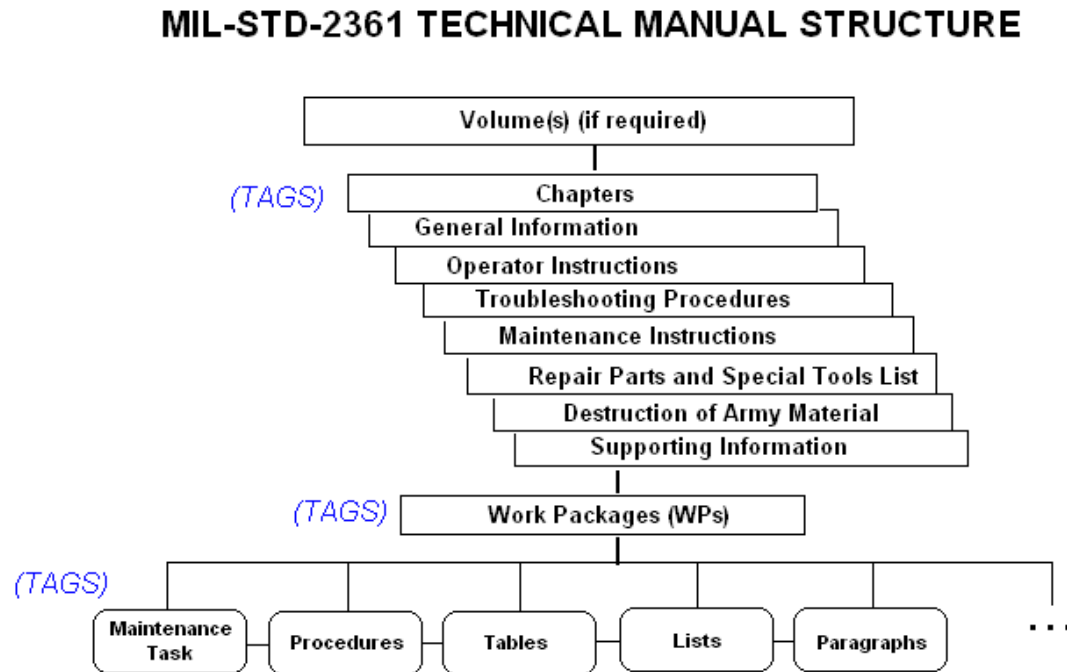


FIGURE 7. MIL-STD-40051 TM structure.

1. Information chapter. An information chapter consists of specific functional matter required by MIL-STD-40051-1/-2, such as introductory information with theory of operations or maintenance instructions. Each information chapter is made up of one or more work packages as shown in FIGURE 8. Examples of Maintenance Information Chapters (MIM) include end items (M16A1 Rifle, M109A1 Truck, or Aircraft) or system components (engine, gun carriage, landing gear, etc.). Other information chapters provide General Information (GIM), Operator Information (OPIM), Troubleshooting Information (TIM), parts or RPSTL information (PIM), Destruction Information (DIM) and Supporting Information (SIM).

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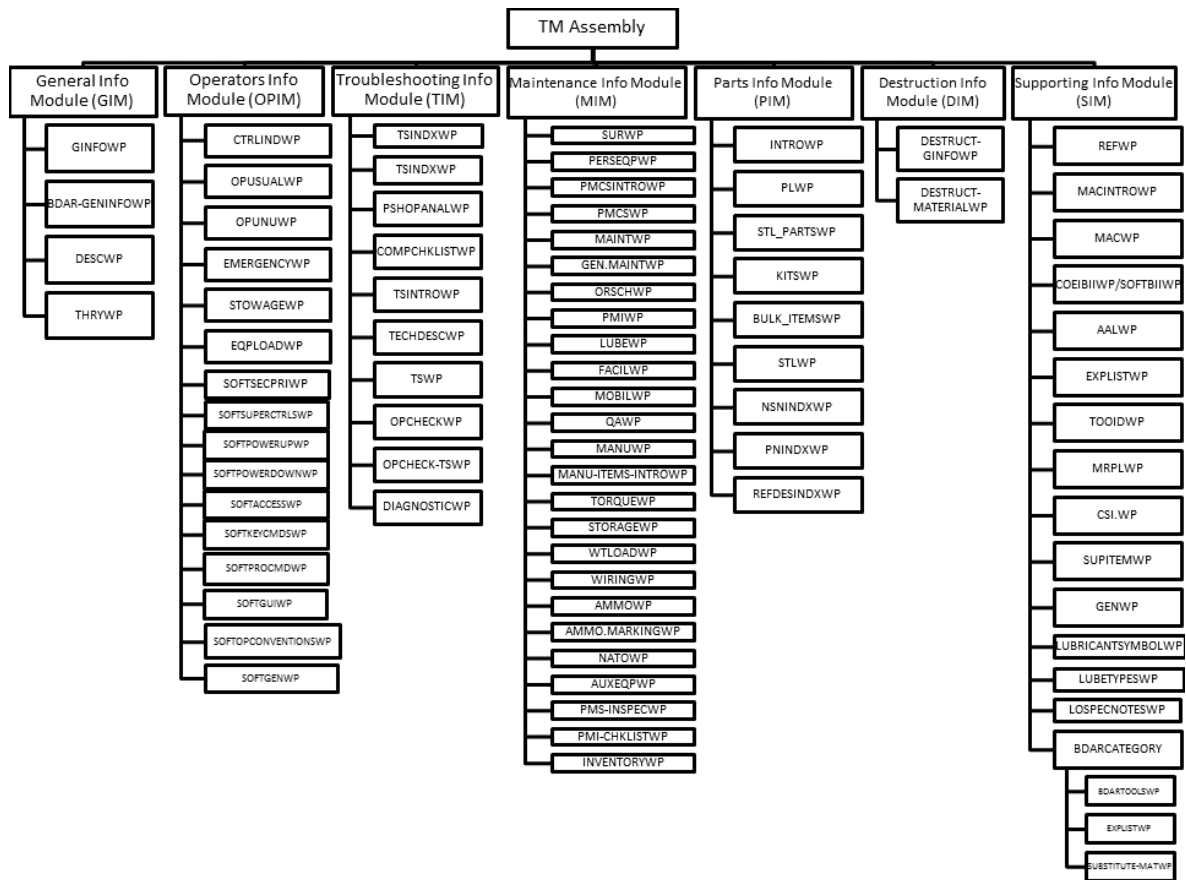


FIGURE 8. MIL-STD-40051-2 TM structure.

2. Work Package. A WP consists of all data required to perform a specific function, such as service upon receipt, Preventative Maintenance Checks and Services (PMCS), or individual maintenance procedure. This structuring allows electronic access to specific pieces of information required by a technician to perform a specified procedure. Each work package is assigned a unique identification number for configuration control and reuse of the information contained in the WP. This number does not change over the life of the work package. XML content tags allow access and use of the same work package for other weapons systems where the same function is performed. Work packages can be printed out, viewed on a computer screen, or otherwise outputted as individual documents and used separately. See FIGURE 9. for an example of a work package.

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HOW TO USE THIS MANUAL

HOW TO USE THIS MANUAL

NOTE

This manual only covers procedures unique to the M7 Bradley Fire Support Vehicle. For any procedures that are common to both M7 and Bradley vehicles, see TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X. Many tasks are common and can be found under a similar task name in those TMs.

This manual tells you how to maintain the hull on the M7 Bradley Fire Support Vehicle. Operator's instructions are covered in TM X-XXXX-XXX-XX-X and TM X-XXXX-XXX-XX-X.

Before starting any task/procedure or before applying power to the hull, make sure you have read this HOW TO USE section and the Controls and Indicators WP in TM X-XXXX-XXX-XX-X.

WHAT'S IN THE MANUAL— FRONT TO BACK

This TM supplement is divided into front and rear matter and Work Packages (WPs) for ease of use. The WARNING SUMMARY section provides safety and first aid information. This section includes general warnings not found in the TM text and a list of the most important detailed warnings extracted from the WPs. All of these warnings cover hazards that could kill or injure personnel.

The TABLE OF CONTENTS lists the WPs.

CHAPTER 1 covers general introductory information with theory of operation. The Equipment Description WP gives a brief description of major parts and features of the hull. The Theory of Operation WP provides information that will help you understand how the hull components work.

CHAPTER 2 covers Troubleshooting Procedures.

CHAPTER 3 contains Unit Maintenance procedures. This includes the Preventive Maintenance Checks and Services (PMCS) WP and corrective maintenance WPs.

CHAPTER 4 contains Direct Support Maintenance WPs. [At this time, there are no Direct Support Maintenance WPs in this document.]

CHAPTER 5 provides supporting information for the TM. It includes the following WPs:

- The REFERENCES WP lists references to be used by personnel in operating and maintaining the hull. These references include technical manuals and other publications.
- The MAC WP lists maintenance functions, levels, and times assigned to each maintenance action.
- The RPSTL WP lists and authorizes spares, repair parts, and special tools required for performance of unit, direct support, and general support maintenance of the M7 hull. It authorizes the requisition, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.
- The TOOL IDENTIFICATION LIST WP lists all unique tools required for maintenance of the M7 hull. This list is compiled from the Initial Setup requirements of all WPs in this TM.
- The EXPENDABLE AND DURABLE ITEMS WP lists expendable supplies and materials that will be needed to maintain the hull.

For all other supporting information, see the appendices in TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X. The INDEX is an alphabetical listing of all the tasks in the WPs of this TM. Each entry is cross-referenced to the WP number and page number.

The back cover includes a METRIC CONVERSION CHART that can be used to convert U.S. customary measurements to their metric equivalents. Measurements in this manual are given in U.S. customary unit with metric units in parentheses.

HOW TO USE THE WORK PACKAGES

See TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X for HOW TO USE information. The WPs in this supplement include the same information categories as maintenance TASKS in the TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X.

FIGURE 9. MIL-STD-40051-2 TM structure.

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3. The following is an example of a tagged instance for a General Information Work Package:

```

<ginfowp wpno="gXXXXX-11-XXXX-XXX" tocentry="2" frame="no" "army="yes"airforce="no"
navy="no" marines="no" deletewp="no">
  <wpidinfo>
    <maintlvl level="maintainer"/>
    <title>GENERAL INFORMATION WORK PACKAGE
  </title>
</wpidinfo>
<scope frame="no">
  <title>SCOPE
</title>
<para> This manual tells how to operate and maintain the hulls of the M2A3 and
M3A3.
<extref docno="TM 9-2350-294-10-2"/> tells how to operate and maintain the turret.
</para>
</scope>
<mfr frame="no">
  <mfr.para service="army">&ginfowp.mfr.army;
</mfr.para>
</mfr>
<eir service="army">&ginfowp.eir;
</eir>
<handreceipt>&ginfowp.handreceipt;
</handreceipt>
<destructmat>
  <title>DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE
</title>
<para>The following manuals tell you how and when to destroy Army materiel to
prevent enemy use:
  <randlist bullet="no">
    <item>
      <extref docno="TM 750-244-2"/>
    </item>
    <item>
      <extref docno="TM 750-244-5-1"/>
    </item>
    <item>
      <extref docno="TM 750-244-6"/>
    </item>
  </randlist>
</para>
</destructmat>
<nomenreflist>
  <title>Nomenclature cross-reference list
</title>
<para>This listing includes nomenclature cross references used in this manual:
  <deflist>
    <term.def>
      <term>Brush guard
    </term>
    <def>
      <para>Duck core rubber sheet
    </para>
  </deflist>
</nomenreflist>

```

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```

</def>
</term.def>
<term.def>
<term>CVC helmet
</term>
<def>
<para>DH 132 helmet
</para>
</def>
</term.def>
<term.def>
<term>Dipstick
</term>
<def>
<para>Liquid measure gage rod
</para>
</def>
</term.def>
<term.def>
<term>Firing port weapon
</term>
<def>
<para>M231 5.56 mm sub machine gun
</para>
</def>
</term.def>
</deflist>
</para>
</nomenreflist>
<loa>
<title>List of abbreviations/acronyms
</title>
<para>Many abbreviations are used in this manual. They are listed below. Learn
what each one means. It will make your job easier.
</para>
<deflist>
<term.def>
<term>A
</term>
<def>
<para>After
</para>
</def>
</term.def>
<term.def>
<term>Ammo
</term>
<def>
<para>Ammunition
</para>
</def>
</term.def>
<term.def>
<term>AP

```


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```

</term>
<def>
<para>Armor Piercing
</para>
</def>
</term.def>
</deflist>
</para>
</loa>
</ginfowp>

```

11.2.1 Work package reuse.

There are instances in which the same work package(s) may be used, without modification, on more than one end-item of equipment. Also, there will be instances when most of the information in a work package will apply and be used on more than one end-item of equipment, but will require minor changes to small portions of the work package information in order to tailor coverage to other end items or systems. The Digital Publications Development concept for information reuse focuses primarily on the reuse of work packages, or portions of work packages, to the maximum possible extent by either direct reuse or by filtering/overlaying information on top of existing work package data.

1. Work package reuse is defined as a single source work package with the same task/procedural intent, that may be used for TM authoring for one or more end-items.
2. Task/procedural intent is defined as a task/procedure required to perform the same or similar function, but may or may not have the same wording. Establishing a publications source database is a mandatory element of work package reuse.

11.2.1.1 Filtering and overlaying work package information.

Overlaying is defined as adding or hiding portions of original information. Filtering is defined as setting a criteria to include or exclude information. The filtered information would be associated to specific work packages by revision number. XML elements and attributes may be used to indicate variations within the modified work package text. The criteria for assigning and controlling filtering/overlaying would be the major end-item(s) National Stock Number (NSN) to which the work package is applied. This methodology could be used by authors to search for work packages by particular end-item equipment that is closely associated, or the same as, the end-item on which they are working, and to note the variations within the work package to determine the best fit or variation needed to satisfy their needs. The element **<step1>** and its attributes **crewmember** and **applicable** is an example of an element and its attributes that can be used to indicate variations.

11.2.1.2 Work package reuse examples.

The following examples are provided as guidance for the various ways work packages may be reused. There are two types of examples: FIGURE 10. is for direct reuse and FIGURE 11. is for reuse using the technique for overlaying information.

1. Direct reuse. Direct reuse is use of the same work package on more than one end-item equipment with no modification to the work package. The direct reuse example represents an instance where one work package (WP 3 data) is used for Bradley Fighting Vehicle (BFV) A2 engine data, and is reused for two different vehicle end-items configured with the same engines (BFV A3 and Bradley Fire Support Team (BFIST) Vehicles).

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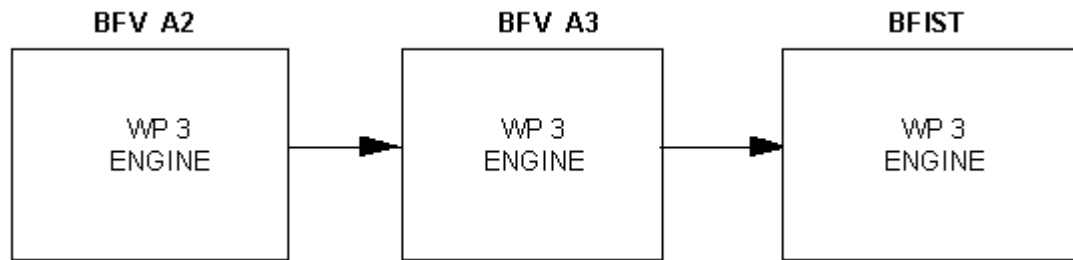


FIGURE 10. Example 1 direct reuse.

2. Overlay reuse. Overlay reuse starts with the original work package contained in the BFV A2 vehicle. The BFV A3 contains the same work package tasks, but requires the addition of two steps to a procedure and a change in the initial setup references to correspond to the BFV A3's system. The BFIST has the same task as the BFV A3, but requires a change of the location of a hatch from "left" to "center" of the BFIST vehicle. The remaining work package information is directly reused. The future prototype vehicle reuses the original configuration with some modification to the initial setup references and the removal of a step.

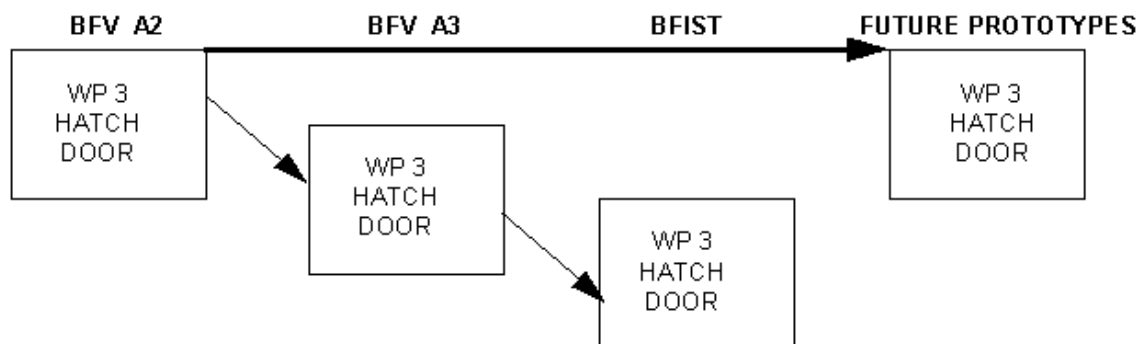


FIGURE 11. Example 1 direct reuse.

11.2.1.3 Work package initial setup.

The "initial setup" is the primary guide to determine if a new work package should be created or could be filtered/overlaid by other text. The initial setup conditions will be the same, except for references, to constitute justification for reuse. For example, modifications to the initial setup which do not change the intent of the work package, but change the work package reference or applicable configuration (for another end-item) are candidates for reuse. The initial setup guide, as shown in TABLE III, may be used to determine if a new work package should be created, or an existing work package can overlay with other text.

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TABLE III. Initial setup guide.

Initial Setup Components	New WP	Filter	Rationale
Test Equipment	X		Changes to the test equipment would indicate changed procedures or steps are needed to use this equipment, possibly changing the intent of the work package.
Tools/Special Tools	X	X	Changes to the tools/special tools would indicate changed procedures or steps needed to use these tools, possibly changing the intent of the work package. ONLY variation is the SIM reference to the SIM work package, tool, and item number for the particular end-item.
Material/Parts	X	X	Changes to the material/parts would indicate changed procedures or steps needed to use these parts, possibly changing the intent of the work package. ONLY variation is the SIM reference to the SIM work package, part, and item number for the particular end-item.
Personnel Requirements		X	Personnel requirements may change. A change is permitted when the sub-equipment is the same, but mounted on various end-items.
Reference		X	Reference may change because of different end-items, but the intent and purpose to the reference are the same.
Equipment Condition	X	X	The equipment should be in the same condition state, otherwise the difference changes the initial purpose for the work package. ONLY variation is the referenced work package in how to put the equipment in the ready state, but should be referencing a similar type of condition.
Special Environment	X		The special environmental conditions remain the same, otherwise how to perform the task would become varied and change the purpose of the task.
Drawing Requirement	X	X	The drawing requirements remain the same, other changes or modifications to the parts or test equipment is possible. The only exception is if the locator drawing is different, then a new work package is not required.

11.2.1.4 Additional guidance for work package reuse.

Besides the initial setup guidance, the following will also govern work package reuse:

1. No variation in the work package title is allowed.
2. No information added to, or removed from, the work package can affect the initial setup new work package column.
3. No changes may be made to warnings or cautions associated with work package steps, except for references to other work packages.
4. New warnings or cautions may be associated with new steps added.
5. Warnings or cautions may be removed only when the associated step is removed.

11.2.2 XML process.

The XML process follows the general outline in the following paragraphs. For a more extensive explanation of XML and its application to TM development see Chapter 5. FIGURE 12. is an overview of the XML process from the developers perspective.

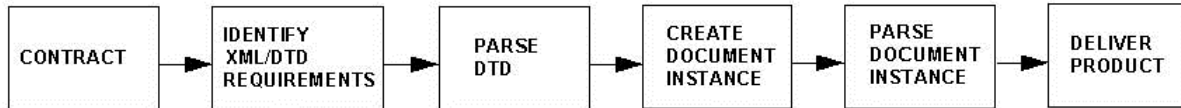


FIGURE 12. XML process.

11.2.2.1 Applying the appropriate DTD.

The first step in the process is to identify the DTD requirement(s) (called out in the contract) relating to the appropriate information chapters (MIM, TIM, etc.) of the material being authored or tagged. Once the determination is made that the correct DTD version is on-hand, it should be parsed to ensure it is valid, error-free DTD prior to use in the development process. The XML tags will have to be applied (in the case of legacy data), or the TM content information created (new publication development), within the context and parameters of the DTD and the content requirements for technical manuals contained in MIL-STD-40051-1/-2. The process can be accomplished by use of XML authoring software, or in a word processing system by manual insertion of tags.

11.2.2.2 Page-based vs frame-based.

The same DTD is used for page-based and frame-based TMs, DMWRs and NMWRs. The information that is not needed for frame-based will be used to provide the detailed information for page-based, by cross-reference linking to the information needed to obtain the detail information. Different stylesheets are used for the formatting of the page-based or frame-based TMs, DMWRs and NMWRs. A page-based and frame-based TM, DMWR and NMWR have the same content coverage. However, the display and presentation of the information is different.

11.2.2.3 Creation of document instance.

To create a document instance, the tags declared in the DTD should be integrated into the text of the document, whether material is being authored for the first time or legacy data is being converted. The XML markup (the tag set) takes the place of any format oriented markup. A document instance is a tagged file with a complete structure conforming to its relevant DTD.

11.2.2.4 Validation (parse) of markup syntax.

Before proceeding to output a document or information chapter, the document instance is to be tested (parsed) to validate that the markup conforms to the syntactic and structural rules of XML and the DTD. Any errors found by the parser will be corrected before proceeding further.

11.2.2.5 Creation of required output.

Creation of the required output may include several forms. Requirements for the appropriate type(s) of output will be contained in the Contract Data Requirements List (CDRL) accompanying the contract vehicle. All of the following options are supported by MIL-STD-40051.

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1. Using a stylesheet to direct the composition of the document in page-based format for printed output, or for the frame-based screen display in the composition software.
2. Generation of a suitable page description language file to drive printer, typesetter, or viewing software.
3. Outputting for on-screen access in a navigable database format.
4. Retrieving directly from a comprehensive XML database of all TMs for on demand printing.

11.2.3 Validation and verification process.

11.2.3.1 Validation of an XML document.

Prepared documents in an automated support environment typically consists of the following steps:

1. Downloading an approved DTD and stylesheet from the LOGSA website.
2. Parsing the DTDs and stylesheets.
3. Creating a document instance.
4. Parsing the document instance.
5. Using the approved stylesheet and DTD to compose the composition of the document so that the produced (printed or displayed) copy corresponds to the proper format and style.

11.2.3.2 Parsing MIL-STD-2361 TM DTD.

The process of validating (compiling) a DTD once it is written is known as parsing. Commonly referred to as a validating XML parser, the REC-xml Standard defines the parser as “A program (or portion of a program or a combination of programs) that recognizes markup in XML conforming documents.” A validating XML parser will read a DTD and check the markup, and report any errors found to an error file log.

1. Most of the commercial XML authoring tools on the market today contain a built-in validating parser. To create XML documents which conform to a DTD downloaded from the LOGSA website, an editor and a parser is needed.
2. The editor is used to input information and insert XML markup into the document; the parser is used to check that the markup and the way it has been used conform to the rules given in the DTD. Many commercial packages offer syntax-directed editors, which ensures that any editing and markup operations conform to the rules of the DTD.
3. Using the approved stylesheet and DTD to compose the composition of the document so that the produced (printed or displayed) copy corresponds to the proper format and style.

11.2.3.3 Valid XML document vs. conformance to MIL-STD-40051-1/-2.

Parsing the XML document does not verify that the information or content of the TM matches the meaning for the XML element and/or MIL-STD-40051-1/-2. The contracting activity will be responsible for verifying that the TM content is in compliance with the contract, applicable SOWs, PWS's, business rules and MIL-STD-40051-1/-2 requirements.

11.2.3.4 Formal public identifiers for entities.

Each FPI for graphics and file entities should have a file name associated with that FPI. The FPI is mapped to the file name by using an XML catalog. The format for the XML catalog is displayed:

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```
PUBLIC "-//Owner//ENTITIES Public_Title Rev X.XX YYYYMMDD//EN" "(DIR) file.name"
PUBLIC "-//USA-DOD//DTD -1/2C TM ** Assembly REV C 6.0 20151230//EN" SYSTEM
"production.dtd"
```

By making modifications as necessary in the XML catalog and changing the directory to the specific directory on the target system or modifying the file name to the corresponding operating system restrictions, the correct mapping will be established. Every file entity with an FPI has an entry in the XML catalog. Verification of the FPI for entities satisfy two criteria. The first criteria is that each file identified in the XML catalog is to be included with the electronic delivery. The second criteria is to verify that each FPI in the XML document instance is defined in the XML catalog. If either criteria fails, the XML document instance is unacceptable.

11.2.3.5 System identifiers for entities.

System identifiers for entities may be found after the formal public identifier in a document file. A system specifies the location of the entity on the users system. The SYSTEM entity maps the graphic "ginfowp.png" to the directory "graphics\ginfowp.png" on the user's system noting from the entity "NDATA png" that the graphic type is "png" (see Section 6.2.7.3.1). An example of a PUBLIC entity containing the system identifier is found below the SYSTEM entity example.

```
<!ENTITY ginfowp.png SYSTEM "graphics\ginfowp.png" NDATA png>
<!ENTITY ginfowp PUBLIC "-//USA-DOD//ENTITIES GINFOWP DTD Hierarchy//EN" "C:
graphics\ginfowp.png">
```

11.2.3.6 ID and IDREF association.

A document instance is required to have an associated ID value for each IDREF attribute in the document instance. A document that does not have an associated ID value for each ID referenced is an incomplete document and unacceptable.

11.2.3.7 ID and IDREF resolved.

The two methods to verify that all IDREF(s) are resolved are to use either an XML editor or a software application.

1. The simplest verification method is to use an XML editor that verifies all IDREF(s) automatically. The XML editor will display the unresolved IDREF(s).
2. The other methodology is to develop a software application to identify all attributes with IDREF and ID, which stores the values in a separate list for each. The application sorts each list and matches the IDREF values to the ID values. The application will display those IDREF(s) with no resolution.

11.2.3.8 Published document produced by XML instance.

The publications developer should verify that the published manual was produced from the XML instance. When the published manual is not produced from the XML document instance, errors may reside in the XML document instance that were corrected or updated in the published manual.

12 TM, DMWR/NMWR ACQUISITION

12.1 Acquisition guidance.

TM requirements proponent personnel (TM writers) develop the portion of Procurement Data Packages (PDP) that provide the TM requirements placed on contract by procurement personnel. The TM portion of PDPs are normally compiled and included in pre-contract documents, such as solicitations and RFP. The following paragraphs address some of the different mechanisms (forms, standards, procedures, etc.) that are involved in applying TM requirements to contractual documents.

12.1.1 Contract Data Requirements List (CDRL).

CDRLs are the primary requirements documents for conveying TM data format, context, and delivery requirements to publications developers. The CDRL is also a primary means for defining XML requirements to a publication developer. Activities involved in a weapon system development are queried, through a "Data Call," to provide data requirements specific to their functional area. The XML aspects of the TM requirements may be provided by the activity responding to the data call, or some other functional activity (an XML specialist on a PM staff), depending on where XML functional expertise is available. One of the major results of a data call is the requirements associated with the development of TMs for the weapon system. Based on the TM requirements received as a result of the data call, CDRLs are developed as a means of explicitly describing the requirements. The TM CDRLs are an integral part of the PDP and each CDRL should be supported by a SOW task, describing the work effort required to develop the TMs associated with the CDRL. Following are some of the areas that may be addressed in a CDRL. These areas are not all inclusive, and are provided as guidance only.

12.1.2 Statement of Work (SOW) or Performance Work Statement (PWS).

Each CDRL will have an accompanying SOW or PWS, or be included in the contract SOW or PWS, describing the work effort and requirements required to develop the respective TMs. The SOWs or PWSs are prepared by the activity that provides CDRL information in response to a data call. The SOW or PWS becomes a binding part of the contractual documentation.

12.1.3 Conversion of legacy data.

The CDRL may direct the contractor to convert specified existing non-XML data (legacy data) into XML. The legacy data may consist of previously developed TMs for an existing weapon system or subsystem. The CDRL will provide the version of the DTD and stylesheet to be used for conversion, and any other applicable XML requirement information.

12.1.4 GFI/GFE source information.

The CDRL will provide identification of required Government Furnished Information (GFI)/Government Furnished Equipment (GFE), such as legacy TMs for conversion, that are required for conversion by the developer. If any required GFI/GFE is not provided as part of the PDP, its location and procedures for acquiring it should be provided as part of the contract.

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12.1.5 TM requirements and standards.

TM content requirements are developed in accordance with MIL-STD-40051-1/-2, ISO 8879 and REC-xml Standard (see Section 2.3) to cover application of XML. The CDRL will identify these standards specifically as requirements.

12.1.6 Location of XML objects, constructs, and other information (DTDs, stylesheets, XML tag description lists, documentation etc.).

All Army-approved XML objects and constructs are contained in the LOGSA website. The XML objects and constructs may be provided with the contractual document, or the TM developer may be directed to obtain the required objects and constructs from LOGSA. If LOGSA is the directed source for the DTDs, stylesheets, tags, etc., the following information will be provided in the CDRL.

1. Formal Public Identifier (FPI) of the DTD. The FPI is the official identifying designation of a particular version of a DTD. Each DTD, and each version of a DTD, has a unique FPI.
2. Information on how to access LOGSA web site. The CDRL will contain, either explicitly or by reference, the procedures to follow to gain access to the LOGSA web site through the various means available.
3. Information on downloading DTDs, stylesheets, tag description lists, and documentation. The CDRL will contain, either explicitly or by reference, the procedures to be followed to download the XML information needed by the TM developer.
4. Information on parsing the DTDs and stylesheets. The CDRL will reference the developer to the appropriate SOW or PWS, standard, etc., for detailed information on the parsing requirements for the TMs. The parsing information should contain requirements regarding parsing the digital XML tagged instance file parsed against the DTD which was provided, and requirements for submitting a parsing log record.

12.1.7 Tailoring the work packages.

MIL-STD-40051-1/-2 establish the requirements for tailoring work packages for each type of TM (-10, -23, etc.). The CDRL will reference the appropriate portions of these standards for tailoring TM work packages. The appropriate SOW paragraphs will also be referenced in the CDRL.

12.1.8 Required output medium.

The TM proponent will determine the output requirements and provide them to the contracting activity for inclusion in the contractual documentation (SOW, PWS, CDRL, etc.). The output requirements are included in the CDRL. Output file delivery requirements may be found in MIL-STD-40051. Output delivery requirements may include the following.

12.1.8.1 Paper.

Delivery of paper products are normally camera-ready output developed from a XML document instance and stylesheet/FOSI. The CDRL will specify the appropriate requirement(s).

12.1.8.2 Electronic Technical Manual (ETM).

ETM delivery is normally a page-oriented digital product (page turner) suitable for viewing on an electronic display. MIL-STD-40051 contains the requirements for ETMs and will be specified in the CDRL, usually a Portable Document File (PDF) format.

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12.1.8.3 Interactive Electronic Technical Manual (IETM).

The IETMs provide functionality to the soldier beyond the capability of either paper based or ETMs. Tailoring guidance for IETMs is contained in the functionality matrix found in MIL-STD-40051-1.

12.1.9 Delivery medium.

The determination of the method in which TMs are delivered to the Government is the responsibility of the TM proponent. Determination of the appropriate method of delivery is often impacted, or directly determined, by Defense or Army policies. The method of delivery is contained in the CDRL as part of the contractual documentation. Possible, but not all inclusive, delivery mediums are provided.

1. Compact Disk-Read Only Memory (CD-ROM).
2. Telecommunications (Internet, WWW, e-mail, etc.).
3. Paper - with one or more of the above methods.

12.1.10 Sample Contract Language.**12.1.10.1 Publications.****12.1.10.1.1 Technical manual development.**

The Contractor shall utilize the Maintenance Task Analysis (MTA) to determine the operational, maintenance, and support functions of the system. The Contractor shall ensure that all logistics documents created under this effort agree with each other and that there is consistency between all products. The Contractor shall use the MAC as the baseline for creation of the Technical Manuals. The following technical publications shall be developed and delivered in accordance with Section (...) and CONTRACT DATA REQUIREMENT LIST (CDRL) (...), "Technical Publications."

12.1.10.1.2 Operator manual.

The Contractor shall develop (...) Operator Manuals (-10). The Operator Manuals shall incorporate changes to reflect the product baselines for the (...) and all associated kits and support items, new or updated tasks. Any associated Logistics Product Data (LPD) IAW MIL-STD-40051-2 (version effective at contract award date), and Content Selection Matrix Operators and Combined Operators/Maintenance Requirements Matrix (-10).

12.1.10.1.3 Interactive Electronic Technical Manuals (IETM).

The Contractor shall develop IETMs (-23&P) IAW MIL-STD-40051-1 (version effect at contract award date), TABLE A-XVII Functionality Matrix, and Attachment (...) TABLE A-XXI Content Selection Matrix. Content for IETMs shall be based upon the results of the MTA and associated support item's LPD contained within (PowerLOGJ (LPD)) SLICwave, or Eagle). IETM content shall be mirrored in (PowerLOGJ, SLICwave, or Eagle), within the appropriate associated record fields, to support and allow for quick updates to IETMs based upon changes to LPD. The Contractor shall ensure IETMs are developed to MIL-STD, created in XML to the Army DTD and compatible with Viewer software and capable of being viewed on a standalone laptop computer with viewer. The Contractor shall develop and incorporate enhanced schematics for electrical, hydraulic and the pneumatic systems.

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12.1.10.1.4 Technical publications.

The Contractor shall provide technical publication deliveries for each manual developed for Government review. These shall be in the form of a Preliminary Technical Manual (PTM) or a Final Reproducible Copy (FRC). These shall include resolution of all comments and recommendations made as a result of all testing, Government reviews, Contractor validation, Logistic Demonstration, Operational Testing and Government Verifications and IKPT. The Contractor shall provide additional updates and reviews based on results of Government's PTM or FRC review(s) at no additional cost to the Government. (CDRL ..., Technical Publications).

1. The Contractor shall provide a Preliminary Technical Manual (PTM). The PTM delivery shall be provided for Government review 150 days prior to Log Demo and 60 days prior to TM Verification. PTM deliveries shall include the results of validation.
2. The Contractor shall provide a Preliminary Technical Manual (PTM). The PTM delivery shall be provided for Government review 30 days after Logistics Demonstration (LD) and TM Verification events and include the results of these events.
3. Final Reproducible Copy (FRC). For FRC delivery, the Contractor shall provide complete publication(s) that shall be representative of the final product. Contents must be clearly legible with content and format as for final. The Contractor shall deliver incremental and accumulative Technical Publications review packages for each (...) publication.

Page based TMs shall be developed IAW the current version of MIL-STD-40051, guidance found in MIL-HDBK-1222, MIL-HDBK-2361 and DTD or Schema and Stylesheets. The Contractor shall create TM volumes that do not exceed 1,500 pages each. The Government and Contractor will negotiate the page count for volume breaks to ensure good flow of the manual.

12.1.10.1.5 Source data.

Notwithstanding Trade Compliance restrictions, technical data restrictions or security classifications, all source data developed exclusively with Government funds shall be delivered with unlimited rights to the Government for reproduction, use, and distribution. The Contractor shall package and deliver all source material, defined as operating plans, standard procedures, computer documents and residual material, source codes, computer disks, computer tapes, and all other media containing digital files developed to fulfill the requirements of this contract to accompany each technical manual FRC, that are deliverables under this contract. All artwork, sketches, photographs, line art, modeling, schematics delivered under this contract shall be turned over concurrent to FRC submission. The Contractor shall grant the Government unlimited right to any and all data/products under this effort that are developed and funded entirely by the Government. Examples of source data are as follows:

1. All XML tagged data files using MIL-STD-40051-2. DTDs and stylesheets in accordance with MIL-STD-40051.
2. All digital Graphic/Illustrations (figure, graphic, drawing, diagram, art work) to include line drawings, photographs, engineering drawings, diagrams, charts and graphs, sketches, schematics, tools and test equipment illustrations.
3. All digital electronic files (PDF) on Digital Versatile Disc (DVD) in searchable, editable, linkable and intelligent format with 100% embedded fonts.
4. Any and all validation/verification records, reports and certifications.
5. All Original Equipment Manufacturer (OEM) or other vendor technical data and graphics used in the TM development and FRC. All copyright releases as applicable.

13 MIL-STD-40051 XML APPLICATIONS INTRODUCTION

13.1 Scope.

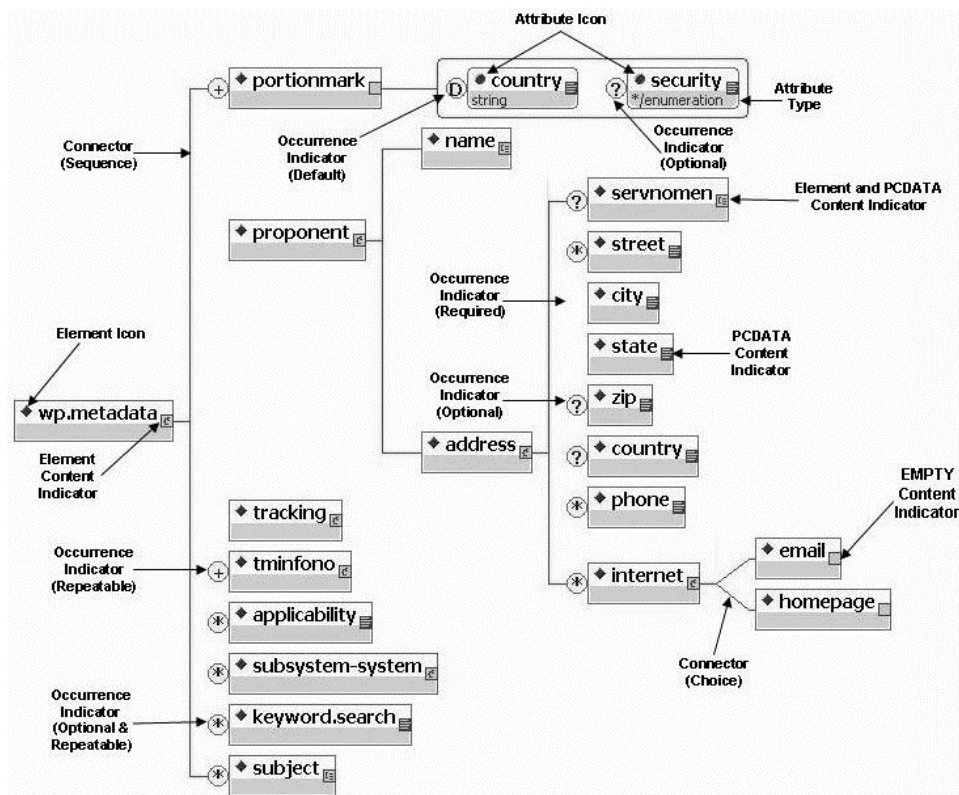
This section contains information on the presentation of the XML elements developed for Army digital equipment manuals publications.

13.2 Introduction to MIL-STD-40051 DTD model.

The MIL-STD-40051-1/2 DTD content models will be displayed in the following manner:

1. The XML element is defined as used in the particular Army publication.
2. A visual representation may be given of the XML content model. The tree structure and its components are given to provide users an understanding of the relationships between the elements and the order of elements. The tree structure contains symbols defined in FIGURE 13.
3. A reproduction of the DTD fragment is provided for each element.
4. A description of associated attributes is provided for each element.
5. A sample document instance fragment is provided for some higher level elements. The fragmented instance shows a correct usage for the higher level element and its children.
6. When a sample document instance fragment is provided a sample output is included showing a facsimile of what is produced by a composition system.

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Content Indicator



#PCDATA



EMPTY



ELEMENT and #PCDATA



ELEMENT ONLY

Connectors

ordered



Occurrence is in this ordered entered (seq) [,]

selection



One and only one must occur (or) [|]

Occurrences

Required Elements

one [] no indicator

one or more [+]

Optional Elements

optional (0 or 1) [?]

zero or more [*]

FIGURE 13. XML tree legend.

14 GENERAL INFORMATION

14.1 Maintenance concepts.

The Army has made major changes to their 'maintenance concept' over the past several years. They have gone from a five level (operator, unit, direct, general, and depot) for ground based systems and a three level (unit, intermediate, and depot) for aviation based systems to a two level concept. The two level maintenance concept consists of 'field' and 'sustainment' levels.

14.1.1 Maintenance classes.

To more accurately display the actual user of a specific work package, MIL-STD-40051-1/-2 added maintenance classes to further subdivide the maintenance levels. The maintenance classes are derived from the maintenance codes used in the MAC or Aviation Maintenance Allocation Chart (AVMAC) (see Section 27.4.1 or Section 27.4.2). These maintenance classes are described below:

1. Field level classes:
 - a. Aviation:
 - i. AMC – Aviation Maintenance Company, primarily performs tasks on the aircraft such as daily inspections, servicing, and component removal and replacement.
 - ii. ASB – Aviation Service Battalion, primarily performs task on removed components or major aircraft repair allowed to be performed at field level.
 - b. Non-aviation:
 - i. Crew – tasks assigned to the operational crew member(s).
 - ii. Maintainer – tasks to be performed by personnel in the field other than the crew/operator.
2. Sustainment level classes:
 - a. Aviation:
 - i. TASMCG – Theater Aviation Sustainment Maintenance Group, typically provides off equipment maintenance or maintenance beyond that allowed in the MAC to be performed by field level units.
 - ii. Depot – Tasks performed at an assigned maintenance depot or equivalent (contractor or production) facility.
 - b. Non-aviation:
 - i. Below depot sustainment – tasks performed at a maintenance facility other than a depot facility.
 - ii. Depot – Tasks performed at an assigned maintenance depot or equivalent (contractor or production) facility.

14.2 Page-base vs. frame-base.

The technical content for IETMs as specified in MIL-STD-40051-1 and the technical content for paper, paged-based TMs as specified in MIL-STD-40051-2 is in most cases, identical. Specifically, work package content, with some variations, is the same except for diagnostic work packages. Style and format differences do occur because the IETM is frame-based whereas the TM is page-based. Functionality differences occur because the IETM can be interfaced with a logic engine that, based on user or other input, determines the correct sequence in which to display technical data in an IETM. There are other differences as well (links will be different). This section will address the tagging

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differences between IETMs and page-based TMs that result. Only elements and attributes that are pertinent to this discussion will be presented.

14.2.1 Production element **<production>**.

Any material to be published according to the DTD in Technical Manual Production begins with this element. The available TM types are Equipment and Technical (frame-base or page-base), Ammunition, Preventive Maintenance Inspection (PMI), Phased Maintenance Services (PMS) Inspections, and Aviation Troubleshooting. The tagging differences between IETMs and page-based TMs start at this root level. The **<framed.manual>** element is for frame-based IETMs. The remaining TM types (**<paper.manual>**, **<ammo>**, **<pmi>**, **<pms>**, **<sys-ts>**, **<destruction_manual>**, **<bdar>**, **<lubeorder>**, **<sam>**, **<sum>**, **<pmc>**, **<genmaintman>**, and **<dmwr_ammo>**) are essentially page-based TMs. The **<paper.manual>** content model will be discussed as an example of page-based markup. The markup for the remaining page-based TM types is similar. These elements contain all of the assembled technical manual contents, including the front matter, the rear matter and the work packages.

14.2.2 Manual differences.

There are several differences in markup between the **<paper.manual>** element and the **<framed.manual>** element. Specifically,

1. The **<paper.manual>** element provides for the creation of volumes **<volume>**, **<vol.rear>** and has attributes for specifying paper requirements such as a page size (**fit.paper.size**).
2. Some attributes are common to both but can have different inputs. See the publication type and title in MIL-STD-40051-1 and MIL-STD-40051-2.
3. The IETM may be structured either by function or by system whereas the page-based manual is structured only by function. The **<functionhierarchy>** and **<systemhierarchy>** elements in the **<framed.manual>** element content model provide IETMs with that capability.
4. The **<systemhierarchy>** element breaks down the end item work packages to the respective subsystems to the lowest defined work package subsystem item. The content model for the **<systemhierarchy>** element includes the **<overallsystem>** element, the **<systembreakdown>** element and the **<systemref>** element. Overall System Information **<overallsystem>** defines the work packages used overall for the equipment in a system/subsystem hierarchy manual. System breakdown **<systembreakdown>** defines a system/subsystem structure. Any work package related to the system is located under this element. Subsystem levels are recursively referenced down to the lowest assemble level. Some work packages are intended for all subsystems and are not identified to any one subsystem item or group. For example, the reference work package **<systemref>** contains the general reference work packages not specifically addressed to any system/subsystem. Page-based TMs are not structured in this manner so they will not have these elements.

14.2.3 Front matter.

All front matter of a technical manual occurs before the first work package. The major difference between frame-based **<framed.frnt>** and page-based **<paper.frnt>** front matter is that a frame-based IETM contains a revision summary whereas the page-based TM has a list of effective work packages, a change sheet, and a title block page. The revision summary frame **<revisionsummary>** contains a list of work packages by title that have been revised (see Section 15.2.1.1.1). The list of effective pages/work packages **<loepwp>** lists the work packages in the page-based TM by work package sequence number and current change (see Section 15.5.1.4). A change transmittal page **<chgsheet>** is prepared for each change to a page-based TM (see Section 15.5.1.3). The title block material **<titleblk>** in the TM's front matter repeats identifying information from the front cover, including the prime title (see Section 15.5.1.5). It also includes a reporting errors statement (see Section 14.5.5).

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14.2.4 IETM interaction.

The key element of IETM interaction is referred to as the ‘logic engine.’ The logic engine is a software component that determines what path to take through the IETM (see Section 35.2). The tags that support logic engine functionality should be ignored for page-based TMs. This includes the following:

1. Tags for determining alternative conditions. This includes the **<precond>** element and elements that represent a set of alternatives, such as those using the naming convention of **<element.alt>**.
2. Tags that create, maintain and evaluate state information. This includes variable declarations **<variable>**, variable references **<variableref>**, expressions **<expression>**, and state information manipulation **<statemanipulation>**.
3. Tags that provide for a dialog box capability. This includes dialog **<dialog>**, enable selection **<enable>**, and dialog box types (fill-in **<fillin>**, menu **<menu>**, binary menu **<bimarymenu>**, group dialog **<dialog.group>**, and/or message **<dialog.message>**.

14.2.5 Filtering.

The technical manual system effectivity list **<applic_ref_list>** is a listing of all possible system effectivity configurations. It is included in the **<production>** element content model as an optional element. The **<applic_ref_list>** element consists of one or more occurrences of the **<applic>** element. When a work package has a system effectivity issue, the work package references or links to the system effectivity list. This level of filtering may be applied to both frame-based IETMs and page-based TMs. Filtering is not performed for page-based TMs at lower levels such as the **<step1>** element level. At that level, attributes that apply to filtering (the **applicable** attribute) should be ignored for page-based TMs.

14.2.6 Rear matter.

Rear matter is for page-based TMs. The **<rear>** element in the **<paper.manual>** content model provides for an optional glossary **<glossary>**, an optional alphabetic index **<aindx>**, required DA-2028 forms **<da2028>**, a required authentication page **<authent>**, an optional foldout (oversize) illustration section **<foldsect>**, and a required back cover **<back>**. The rear matter for frame-based IETMs is explicitly declared as a required DA-2028 forms **<da2028>** and a required authentication page **<authent>**.

14.2.7 Linking.

Both page-based TMs and frame-based IETMs have the capability to specify links to associated information. The various link methods (**<extref>**, **<xref>**, **<link>** etc.) including what is presented for page-based and frame-based display is discussed in Chapter 33.

14.2.8 Frame attribute.

For frame-based IETMs, the author has the capability to specify if certain elements should or should not start on a new frame. This is done by setting a value in the frame attribute for those elements (see Section 36.3.4). The frame attribute setting is ignored for page-based TMs.

14.2.9 Graphics.

There are several tagging differences between frame-based IETMs and page-based TMs. Detailed information is provided in the graphics section (see Section 31.2). Examples are as follows:

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1. The **application** attribute in the **<figure>** element identifies the figure presentation method as for page-base only **page**, frame-base only **frame**, or for either method **both**. The DTD defaults this value to “both.”
2. The “figure size type” as specified in the **figtype** attribute in the **<figure>** element is for page-based TMs only. Frame-based IETMs should ignore this attribute.
3. The “new pane” as specified in the **pane** attribute in the **<figure>** element is for frame-based IETMs only.
4. The **alt** attribute in the **<graphic>** element contains a description or additional information to be displayed when a mouse-over in frame-based IETM application is used. Page-based TMs should ignore this attribute.
5. The element **<mapref>** provides the information to overlay hotspot reference on a graphic. The graphic hotspot is designed for use in frame-based IETM applications.

14.3 Linear vs. non-linear IETMs.

14.3.1 Description.

A linear IETM contains technical data that is displayed in a sequential or document oriented manner. The sequence of the data presentation is largely determined by the data author. It is an organization of technical data that often replicates the order of information found in a page-based document. There is generally a default “path” through the technical data. A non-linear IETM contains technical data that is not displayed in a sequential fashion. In a non-linear IETM there are high levels of interactivity between the data and the user. The order of presentation is dictated by inputs from the user, external sources or events (as in diagnostics). There are multiple paths through the data. Individual paths through the data are generally determined based on user or other input via dialog boxes. Non-linear organization of content does not follow a document or page-based paradigm.

14.3.2 Functionality.

Linear data for some functionality provides a different complexity factor. An example is a “Fully Formatted/Book Version” which is not as complex as for non-linear data. Non-linear data for some functionality provides a different complexity factor than linear data. An example is “Filter by Model Series” which is not as complex as for linear data. In some situations, linear data cannot perform the function, in which case a not available (NA) is shown. In some situations, linear data cannot perform functions that non-linear data can, due to the nature of their functionality. See the functionality matrix in MIL-STD-40051-1 for information on which functions are available and what their complexity factors are for linear and non-linear IETMs.

14.3.3 Tagging.

There is no explicit tag that defines an IETM as being linear or non-linear. However, certain tags that are used to provide functionality such as dynamic diagnostics would not be found in a linear IETM. This would include the **<precond>** element which is evaluated by a Logic Engine using the expression evaluation rules. Also, any element name ending with “-alt” (for example, **<eqpconds-setup-item-alt>**) should not be used in a linear IETM. These tags provide alternative conditions/information based upon evaluations that use preconditions.

14.4 Destruction of Army materiel.

14.4.1 General information.

MIL-STD-40051-1/-2 require that all Army TMs contain information on how to destroy Army equipment in order to keep it from falling into enemy hands. This section discusses the various methods to present the destruction information.

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14.4.1.1 Destruction information options.

There are two methods of presenting destruction procedures. These are:

1. A separate destruction manual, issued as a stand alone TM (page based only). A separate manual **<destruction_manual>** may be developed for a stock class or item grouping at the direction of the stock class or item manager. A separate manual may also be developed for a specific weapons system, though this approach is discouraged to having the destruction procedures contained within the system TM.
2. As one or more work packages **<destruct-materialwp>** contained in a destruction procedures chapter **<dim>**. Regardless of whether a system level destruction manual is prepared, MIL-STD-40051-1/-2 requires at least one **<destruct-materialwp>** be included in the basic system TM(s). This work package may reference the system destruction manual.

14.4.1.2 Information to be contained.

Destruction procedures manuals and work packages are required to contain the following types of information.

1. An order of precedence for destruction of material. This order of destruction applies to all systems. This will be contained in the destruction general information work **<destruct-introwp>**. A general reference to these priorities should be made in at least one of the destruction of material work packages **<destruct-materialwp>**.
 - a. If there is any cryptographic material, it will be destroyed first. Cryptographic material consists of items, systems or information capable of allowing information to be coded or decoded. Capture of cryptographic information could give an enemy the ability to intercept and read/hear classified or sensitive information.
 - b. Any classified equipment or information will be destroyed next.
 - c. Essential material should be destroyed when time precludes the destruction of the entire system. In this case, essential material consists of such material identified for the system or stock class in the manual being prepared. The system manual should include a list of essential material. A statement should be included stating that essential material be destroyed in the order provided and that the same material be destroyed on each system.
 - d. Any repair parts that may be on the verge of capture should be destroyed in the same order as the essential material listed in (c) above. Destruction of the same essential components aids in preventing an enemy from reconstructing a weapons system from spare parts.
2. Destruction information and procedures.
 - a. General destruction concepts may be included. These concepts include topics such as using any self destruction capability prior to other methods, acceptable methods of destruction (burning, blowing up, smashing, etc) and potential hazards associated with various methods of destruction. The general concepts will be placed in the **<destruct-introwp>**.
 - b. Specific destruction procedures for similar class items or specific weapons systems components. These procedures should provide sufficient detail for a soldier in a combat situation to destroy the material as quickly, safely, and completely as possible. Procedures should contain warnings related to the hazards involved in destroying the material. Cautions should not be included as the intent of the procedure is to destroy the equipment. Long involved procedures should be avoided. Simple, expedient procedures are desired so the soldier can destroy the material and continue his/her escape/evasion.
 - c. Alternative procedures to destroy material when lack of time or material preclude destruction by preferred methods. Alternative methods include burying, immersing in water, or physically destroying. When developing alternative procedures, consider the tools that would be available to a soldier in the field in a combat environment. For physical destruction, provide the soldier with the best locations to ensure maximum damage in a minimum of time. Alternative procedures are ideal for specifying the destruction of essential components.

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14.4.1.3 Duplication of data.

To the greatest extent possible, information should not be duplicated. DoD policy is to limit duplication of information. However, given the serious nature in the destruction of material, duplication of some data is allowable. It is felt that duplication is preferable to having material captured due to lack of a procedure. Duplication should attempt to meet the following guidelines:

1. Only specific destruction procedures should be duplicated. For example if there is a stock class stand alone manual with specific instructions related to an asset on a weapons system, the weapons system may duplicate the procedures from the stock class manual. Another example would be where a weapons system has multiple destruction of material work packages based on crew duties or physical separation. Destruction procedures for common components may be duplicated for each crew member or location (a missile system where launchers and control systems are in different geographical locations).
2. Generic destruction procedures or concepts should not be duplicated.

14.5 Marine corps requirements.

14.5.1 When to use Marine Corps variations.

Both MIL-STD-40051-1 and MIL-STD-40051-2 may be used to acquire TMs that are used either exclusively by the Army, the Marine Corps, or as a multi-service manual. Both standards contain instructions on Marine Corps data requirements that either augment, or in the case of a Marine Corps TM only, replace Army requirements.

14.5.2 Marine Corps tagging.

The following paragraphs provide information on how to tag TM source data IAW with these Marine requirements. There are four locations in a TM where Marine Corps specific markup may be used. These locations are:

1. The technical manual number that appears in the technical manual title.
2. The reporting of errors in the title block for page based TMs or in the front cover in an IETM.
3. In the equipment improvement reporting in the general information work package for both page based and IETMs.
4. In the parts list. This is required by the standard for both page based and electronic TMs.

14.5.3 Common tagging and text.

Section 37.6 explains how to use the various boilerplate entities. Use of these entities is the recommended method to enter the common and unique text for the Marines.

14.5.4 TM number.

Each TM is required to have a technical manual number. The TM number is entered in the **<tmtitle>** content model (see Section 15.4.2.5.1) which provides for the entry of either a single TM number, or multiple TM numbers, **<tminfono>** The **<tminfono>** element identifies both the TM number and the branch of service that has assigned an official TM number to the manual. For single service TMs enter the technical manual number using only the **<tmno>** tag. For multi-service TMs, MIL-STD-40051-1/-2 requires that each service's TM number appear. In this case, for each service the TM number and branch of service is entered using the **<tminfono>** tag.

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14.5.4.1 Single service TM number example.

Use this method of entering the TM number (1-1520-238-10) if there is only a single service (Marine Corps or Army) that will be using the TM. This does not preclude other services from using the TM, but indicates only that the TM was acquired primarily for the specific service.

Normally, if a TM is used by another service, it will be adopted by that service and they will assign it a TM number. At that point, the TM manager of the owning service is contacted and a TM change would be issued with the cover page showing all assigned TM numbers.

14.5.4.2 Multi-service TM number example.

When a TM is acquired and will be used by more than one service branch, the TM number and branch of service will be shown for each service. The order of appearance of the TM numbers is dictated using the following criteria. The TM number of the acquiring service is entered first. The other services TM numbers are entered and displayed in alphabetic order.

```
<tminfono><servbranch service="marines"/><tmno>12345-67/1</tmno></tminfono>
<tminfono><servbranch service='army' /><tmno>1-1520-234-10</tmno></tminfono>
```

14.5.5 Reporting of errors.

Regardless of the TM type (paper or electronic) being authored, the tagging of the reporting of errors is the same. There are several options for text that may be used in the reporting of errors. These include:

1. Text for an Army only manual.
2. Text for a Marine Corps only manual.
3. Text for a combined Army/Marine Corps manual.
4. Text for a multi-service manual.
5. Text for each of the above options if the manual is classified.

14.5.6 Example of reporting of errors.

This example illustrates how to tag a combined Army/Marine TM. The tagging for the other options is identical, differing only in the entity selected/entered. A list of the available entities is located at 37.6.3.

```
&titleblk.reporting.std.multi-service;
```

this general entity expands to the following:

```
<reporting><title>REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS</title>
<para>You can help improve this manual. If you find any mistakes or if you know of a way
to improve the procedures, please let us know. Service, should be submitted as
follows: <reporting.para service="army">Mail your letter or <extref docno="DA Form
2028" posttext=" (Recommended Changes to Publications and Blank Forms) "/>, located
in the back of this manual directly to: &proponent-address.army;. You may a
recommended changes via electronic mail or by fax. Our fax number is &proponent-fax.
army;. Our </reporting.para>A reply will be furnished to you.
</para>
</reporting>
```

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14.5.7 General information work package variations.

Within the general information work package, requirement for Equipment Improvement Reporting **<eir>** has Marine unique requirements. As with the previous input, the required text may be entered by using the provided text entity.

```
<eir>&ginfowp.eir;
</eir>
```

Where the **&ginfowp.eir;** is resolved to the following markup.

```
<eir>
<title>REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)</title> <para>If
your &short.end.item.name;
needs improvement, let us know. Send us an EIR. You, the user, are the only one who can
tell us what you don't like about your equipment. Let us know why you don't like the
design or performance. If you have Internet access, the easiest and fastest way to
report problems or suggestions is to go to <internet show.address="yes"> <homepage
protocol="https" uri="jdrs.mil/aejspublic.cfm"/> </internet> (scroll down and
choose the "Submit Quality Deficiency Report" bar). The Internet form lets you choose
to submit an Equipment Improvement Recommendation (EIR), a Product Quality
Deficiency Report (PQDR) or a Warranty Claim Action (WCA). You may also submit your
information using a <extref docno="SF 368" posttext=" (Product Quality Deficiency
Report)"/>. You can send your SF 368 via e-mail, regular mail, or facsimile using the
addresses/facsimile numbers specified in <extref docno="DA PAM 738-750" posttext="
", Functional Users Manual for the Army Maintenance Management System (TAMMS) "/>. We
will send you a reply. </para>
<para>For Marine Corps users: Quality Deficiency Reports (QDR) should be submitted
on <extref docno="SF 368"/> in accordance with <extref docno="MCO 4855.10"/>. A
reply will be furnished to you. </para> </eir>
```

Note that the Marine Corps **<para>** is automatically included from the boilerplate entities when the marked section entity **&usmc-tm;** is set to 'include.' See Chapter 37 on using the boilerplate entities.

14.5.8 Marine Corps parts listing differences.

When a TM with a RPSTL is acquired that is to be used by the Marine Corps, the following change to the **<introwp>** and **<plwp>** will be made.

1. In the **<introwp>**, the following text will be added to the end of the "Explanation of columns in the repair parts list and special tools list work packages" For page based TMs, this will add an eighth column to the parts list. In an IETM this will add a new entry that contains the total quantity of the part used on the weapons system.


```
<![%usmc-tm; [<para>USMC QTY per Equip ()]></para>
```
2. In the **<plwp>** there are two changes that need to be made:
 - a. The first is an optional change in the Source, Maintenance, and Recoverability (SMR) **<smr>** code. The SMR code is normally comprised of five positions found in the Joint Regulation, AR 700-82/OPNAVINST 4410.2A/MCO 4400.120. This regulation allows a sixth character that has a service unique usage. Within the Army, this last character is used to identify demilitarization and the attribute in the **<smr>** for this character is demil. The demil attribute will be used for any sixth character found in an SMR code.


```
<smr sourcecode="PA" maintcode="00" recovercode="O" demil="E"/>
```
 - b. The second change in the **<plwp>** required to support Marine Corps parts data is the addition of a total quantity per end item **<qty_per_end_item>** column. The total quantity per end item will reflect the total number assets used in a end item/weapons system.

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```

<fncgrp>
<fnccode>01</fnccode>
<fnctitle>top level item</fnctitle>
<partno>a1234</partno>
</fncgrp>
<pi.item>
<callout assocfig="fig1" label="1"/>
<uoc>all</uoc>
<qty>1</qty>
<smr maintcode="da" recovercode="z" sourcecode="pa"/>
<nsn><fsc>6610</fsc><niin>012345678</niin>
</nsn>
<partno>a1234-1</partno>
<cageno>81115</cageno>
<name>what's in a name</name>
<desc>top level part for this example</desc>
<qty_per_end_item>10</qty_per_end_item>
<ui>ea</ui>
</pi.item>

```

14.6 How to use LiveDTD.

LiveDTD is an indexed HTML version of a DTD. This enables a user to readily navigate through DTD files, entity declarations, attribute lists and element content models to examine details of the document model. This section will identify how to access/download LiveDTD, and features and functions provided by LiveDTD.

14.6.1 Accessing/downloading LiveDTD.

LiveDTD is located at the LOGSA web site. The URL is <https://www.logsa.army.mil/mil40051/menu.cfm>. LiveDTD is available for selected publications.

Selecting “Live Document Type Definition (DTD) for MIL-STD-40051-1C/2C version 6.0” will bring up a web page containing the indexed HTML from Live DTD (see FIGURE 14.).

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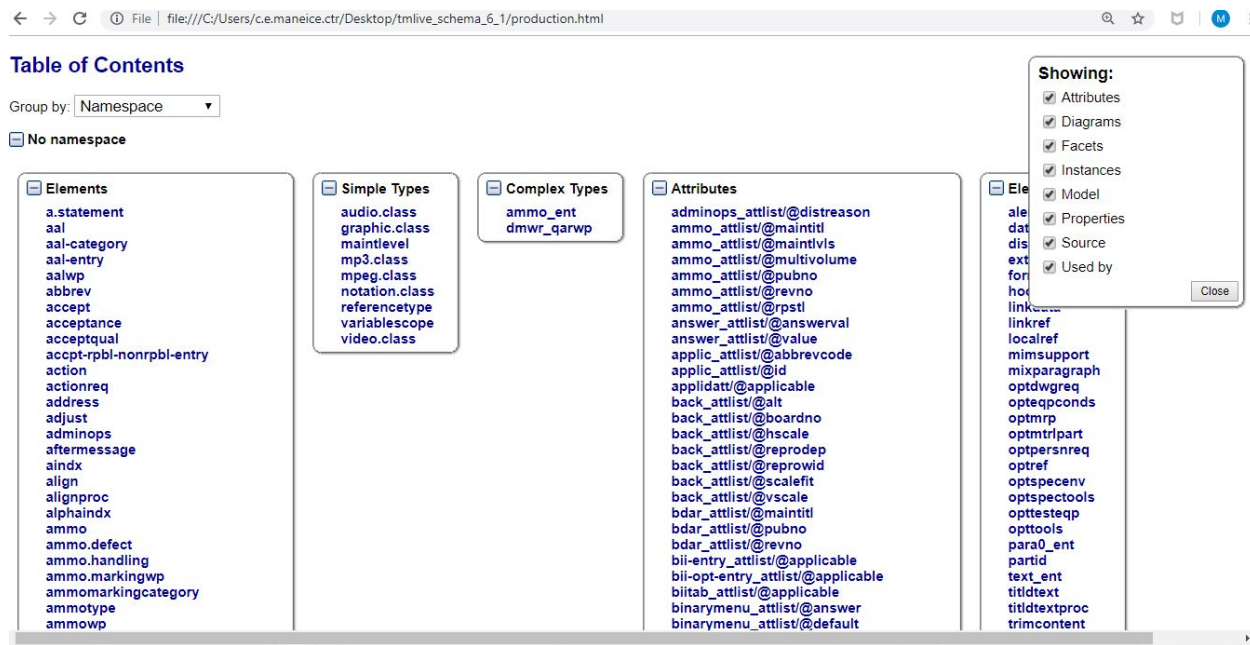


FIGURE 14. LiveDTD at startup example.

14.6.2 Features and functions.

LiveDTD presents a point and click method for examining all DTD files, element content models/usage, and parameter entity declarations/usage. As an HTML file, it will run in a browser. This permits the use of all browser functions (back). When LiveDTD is run, a window is displayed showing the DTD in the right pane. The left pane contains an index. The heading for the index pane will be the name of the DTD, in the example, this is "production." At the top of the index, under the heading "production.dtd," are three items: "DTD Files," "Elements," and "% Entities." These items provide links to the major components of the Live DTD. They will remain at the top of the left pane as the user selects components to view. Note that both panes have scroll bars. At start up, the items in the "production.dtd" list are followed by a list of elements under the heading "Elements." This view is equivalent to selecting the "Elements" link from the "production.dtd" list.

15 PRODUCTION

15.1 Root element **<production>**.

Any material to be published according to the DTD in Technical Manual Production begins with this element. The available TM types are Equipment and Technical (frame-base or page-base), Ammunition (AMMO), PMI, PMS Inspections, System-Wide Troubleshooting Aviation (sys-ts), Destruction of Army Material (destruction_manual), BDAR, Depot level munitions (dmwr_ammo), lubrication orders (lubeorder), and Preventive Maintenance Daily Checklist (PMC), Software Administrators Manual (SAM), Software Users Manual (SUM), and General Maintenance Manual (genmaintman).

1. The components for **<production>** are:
 - a. Technical Manual System Effectivity List **<applic_ref_list>** (optional) (see Section 15.3).
 - b. Select the type of manual to develop the required TM (required).
 - i. Frame Base Manual **<framed_manual>** (see Section 15.2).
 - ii. Paged Base Manual **<paper_manual>** (see Section 15.5).
 - iii. Conventional and Chemical Ammunition **<ammo>** (see Section 15.6).
 - iv. Phased Maintenance Inspections **<pmi>** (see Section 15.7).
 - v. Preventive Maintenance Services **<pms>** (see Section 15.8).
 - vi. System-Wide Troubleshooting Aviation **<sys-ts>** (see Section 15.9).
 - vii. Destruction Manual **<destruction_manual>** (see Section 15.10).
 - viii. Battle Damage Assessment and Repair **<bdar>** (see Section 15.13).
 - ix. Lubrication order **<lubeorder>** (see Section 15.14).
 - x. Software Administrators Manual **<sam>** (see Section 15.12).
 - xi. Software Users Manual **<sum>** (see Section 15.11).
 - xii. Preventive maintenance checklist **<pmc>** (see 15.15).
 - xiii. General Maintenance Manual **<genmaintman>** (see Section 15.17).
 - xiv. Depot demilitarization or maintenance of munitions **<dmwr-ammo>**.

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2. The DTD fragment for **<production>** is graphically depicted.

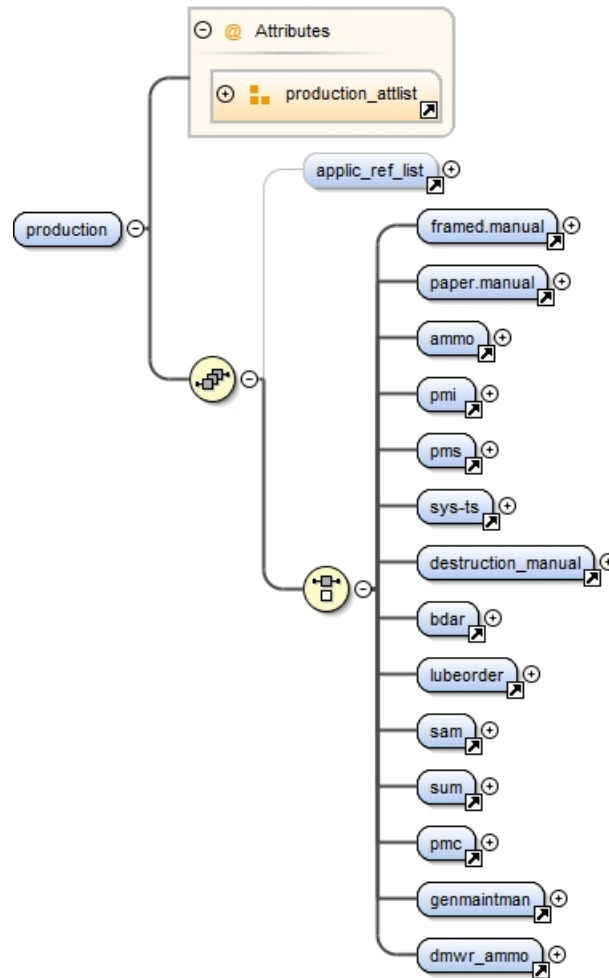


FIGURE 15. Production **<production>** DTD hierarchy.

3. The DTD fragment for **<production>** is:

```
<!ELEMENT production (applic_ref_list?, (framed.manual | paper.man-
ual | ammo | pmi | pms | sys-ts | destruction_manual | bdar | lubeorder |
sam | sum | pmc | genmaintman | dmwr_ammo))>
```

```
<!ATTLIST production
```

chngdate	CDATA	#REQUIRED
chnglevel	(0-9)	"0"
date	CDATA	#REQUIRED
pin	CDATA	#REQUIRED>

4. Attributes for **<production>**:

- date** – Date of the TM (required).
- chnglevel** – Change Level identifies the level the TM was changed to (required).
- chngdate** – Change Date identifies the date the TM was changed to (required).

- d. **pin** – The publication identification number assigned by APD for their publication indexing system.

15.2 Frame base manual <framed.manual>.

The element <framed.manual> contains all the assembled technical manual contents, including the front matter, rear matter, work packages, and any other content specified by the contract (battle damage). The frame base manual can be developed using the IETM functional hierarchy or using system/subsystem hierarchy contents. The manual is developed according to the maintenance level of the manual that is supported by the required attribute **maintlvl**.

1. The components for <framed.manual> are:
 - a. IETM Functional Hierarchy <functionhierarchy> (required) – The element provides the manual to be organized as an IETM by functional grouping (see Section 15.2.1).
 - b. System/Subsystem Hierarchy <systemhierarchy> (required). The element provides the manual to be organized to the system or subsystem of the end item (see Section 15.4.3).
2. The DTD fragment for <framed.manual> is graphically depicted.

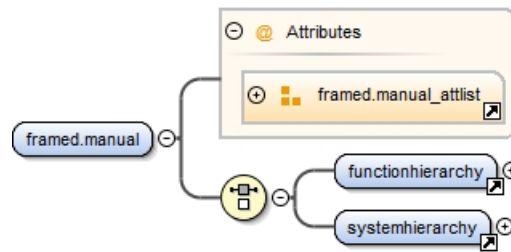


FIGURE 16. Frame base manual <framed.manual> DTD hierarchy.

3. The DTD fragment for <framed.manual> is:

```
<!ELEMENT framed.manual | (functionhierarchy | systemhierarchy)>
<!--ATTLIST framed.manual
maintlvl      (10 | 13 | 14 | 23 | 24 | 40 | avum-avim | #REQUIRED
              dmwr | nmwr | dmwr-nmwr)
pubno        CDATA                                #IMPLIED
revno        CDATA                                #REQUIRED
security     (uc | fouo | c | s | ts)              #IMPLIED-->
```

4. Attributes for <framed.manual>:
 - a. **maintlvl** – Maintenance level. Specifies the maintenance level(s) authorized to use this manual; this attribute value is used in the stylesheet to apply the literal expression of the TM's maintenance level. Select one of the maintenance TM values (10, 13, 14, 23, 24, 40, avum-avim, dmwr, nmwr) (required).
 - b. **pubno** – Publication number. Specifies publication number for the technical manual (optional).
 - c. **revno** – Revision number. Specifies revision number of the overall manual (required).
5. Security is the only common attribute – Security classification. (optional) (see 36.3.14).

15.2.1 IETM functional hierarchy <functionhierarchy>.

The element <functionhierarchy> IETM functional hierarchy identifies the IETM manual to be organized by functional grouping. The organization of the manual is depicted by the requirements for IETM functionality and data

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display (look and feel) and contains data from the IETM technical content selection matrix required by a statement of work. See MIL-STD-40051-1 for more information.

1. The components for **<functionhierarchy>** are:

- a. Frame Base Front Matter **<framed.frnt>** (required). The element provides the frame based front matter of a technical manual (see Section 15.2.1.1).
- b. General Information, Description Information And Theory Of Operation Chapter **<gim>** (required). The element provides the user with information for general requirements, descriptive data about the weapon system or equipment, and an explanation of how the weapon system or equipment works (see Chapter 18).
- c. Operating Instructions **<opim>** (optional – zero or more). The element provides operating instructions for major weapon systems, and their related systems, subsystems, equipment, weapons replacement assemblies, and shop replacement assemblies (see Chapter 19).
- d. Specify either a Troubleshooting Information Chapter **<tim>** (or a Maintenance Information Chapter **<mim>**). At least one is required but may have both or more than one of each.
 - i. Troubleshooting Information Chapter **<tim>**. The element provides the troubleshooting information and procedures authorized to be performed at the stated maintenance level (see Chapter 22).
 - ii. Maintenance Information Chapter **<mim>**. The element provides the maintenance information chapter to prepare maintenance instructions for major weapon systems and their related systems, subsystems, equipment, weapons replacement assemblies, and shop replacement assemblies (see Chapter 23).
- e. Destruction chapter **<dim>** (optional). The element provides destruction procedures, as a chapter, for a weapons system TM (see Chapter 25). If destruction information is being acquired as a standalone manual, use the **<destruction_manual>** see Section 15.10 MIL-STD-40051-2 requires that either a destruction chapter or a destruction manual be prepared. If the standalone destruction manual is not procured, then the **<dim>** chapter is required.
- f. Battle Damage Chapter **<bim>** (optional). This element is used exclusively with the system hierarchy **<systemhierarchy>** or the functional hierarchy **<functionhierarchy>** element. It provides the TM user with procedures to assess and repair battle damages on the field. These procedures are not to be used for routine repairs (see Section 15.13).
- g. Software Operating Instructions **<sopim>**.
- h. Repair Parts and Special Tools List (RPSTL) Information Chapter **<pim>** (optional). The information chapter is used to prepare Parts Information (PI) for major weapon systems and their related systems, subsystems, equipment, assemblies, components, SRUs, and LRUs (see Chapter 24).
- i. Supporting Information Chapter **<sim>** (required). The element provides the information chapter that identifies equipment supporting data (see Chapter 27).
- j. Rear matter. The framed manuals do not have a full rear matter like that found in a page based TM. However, the TM does require the following items at the end of the manual.
 - i. Reporting Errors and Recommending Improvements **<da2028>** (required – one or more). A blank DA Form 2028, or an electronic equivalent, should be provided in the IETM so the users can notify the proponent if any mistakes are found or any recommended improvements can be made to the IETM (see Section 15.5.2.3).
 - ii. Back cover **<back>** (required) (see Section 15.5.2.6). The outside back cover should be blank, except for pocket-sized TMs and classified TMs.
 - iii. Authentication information **<authent>** (required – one) (see Section 15.5.2.4). This element allows for the inclusion of a graphic depicting the signed authentication page required by Army policy. The authentication block should be accessed through an entry in the table of contents.

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2. The DTD fragment for **<functionhierarchy>** is graphically depicted.

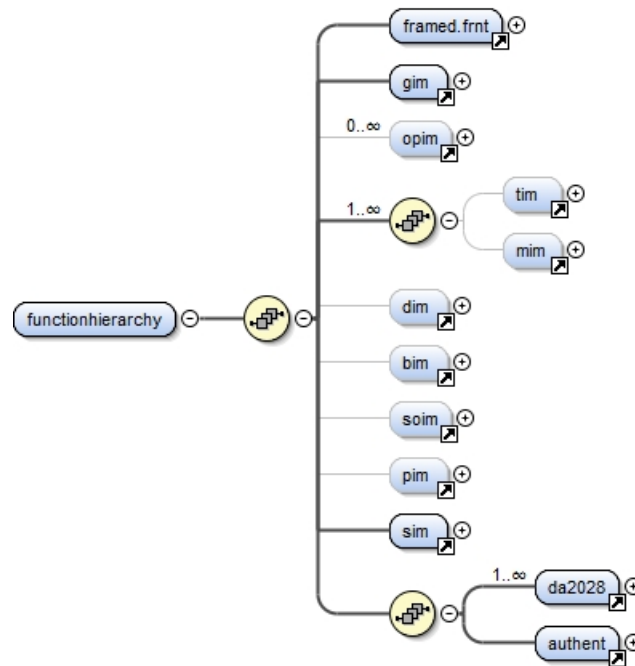


FIGURE 17. Technical manual system effectivity list **<functionhierarchy>** DTD hierarchy.

3. The DTD fragment for **<functionhierarchy>** is:

```
<!ELEMENT functionhierarchy (framed.frnt , gim , opim* , (tim? , mim?)+ , pim? , dim? , bim? , soim? , sim , (da2028+ , authent))>
```

4. The element **<functionhierarchy>** has no attributes.

15.2.1.1 Frame base front matter **<framed.frnt>**.

The element **<framed.frnt>** Frame base front matter identifies all front matter of an IETM technical manual. Front matter occurs before the first work package.

1. The components for **<framed.frnt>** are:

- a. Select either: At least one is required.
 - i. Revision Summary **<revisionsummary>**. The element provides a list of work packages by title that have been revised to a revised manual.(see Section 15.2.1.1.1).
 - ii. Alternative Revision Summary **<revisionsummary-alt>** (see Section 35.2.1).
- b. IETM installation data/access **<data_install>**. Information on installing the disc on the computer and launching the IETM should be prepared (required).
- c. Disc content information **<disc_content>**. Used when more than one publication (IETM, PDF, etc.) is resident on a disc. The first information that should appear on the viewer is the disc content information. This information should provide the publication number and title of all publications that are contained on the disc.
- d. Select either: At least one is required.
 - i. Front Cover **<frntcover>**. The element provides a list of work packages by title that have been revised to a revised manual (see 15.4.2.4).

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- ii. Front Cover Abbreviated **<frntcover-abbreviated>** (see Section 15.14.1).
- e. Select either: One or more may be used.
 - i. Promulgation Letter (USMC) **<promulgation>**. The promulgation letter should be included in Marine Corps only publications and any joint service publication with the Marine Corps as the lead service (see Section 15.4.2.7).
 - ii. Alternative Promulgation Letter **<promulgation-alt>**. (see Section 15.4.2.8).
- f. Change transmittal page **<chgsheet>** (required). Element provides the change sheet required to appear in a changed document (see Section 15.5.1.3).
- g. List of effective pages/work packages history **<chghistory>** (required – one or more) (see Section 15.5.1.4.8).
- h. Title block page **<titleblk>** (optional). Element provides the title block material including titles and notices from the front cover and additional data such as the ‘reporting of errors’ statement. (see Section 15.5.1.5).
- i. Select either:
 - i. Warning Summary **<warnsum>**. The element provides a warning summary for all IETMs containing warnings (see Section 15.5.1.2).
 - ii. Warning Summary Alternative **<warnsum-alt>** (optional - zero or more) (see Section 35.2.1).
- j. Select either: At least one is required.
 - i. Table of Contents **<contents>**. The element provide the table of contents listing sequentially chapter and work package titles for the TM and the IETM (see Section 15.4.2.9).
 - ii. Table of Contents Alternative **<contents-alt>** (see Section 15.4.2.9.10).
- k. Select either: At least one is required.
 - i. How to Use **<howtouse>**. The element provide the section on How To Use This Manual" to familiarize the user with special or unusual features of the IETM and the TM (see Section 15.4.2).
 - ii. How to Use Alternative **<howtouse-alt>** (see Section 35.2.1).

2. The DTD fragment for **<framed.frnt>** is graphically depicted.

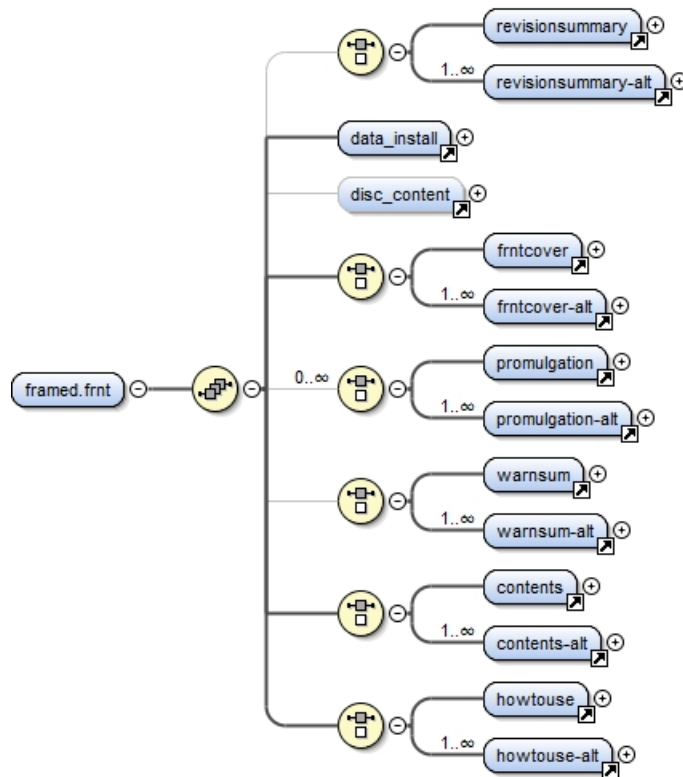


FIGURE 18. Frame base front matter <framed frnt> DTD hierarchy.

3. The DTD fragment for `<framed.frnt>` is:

```
<! ELEMENT framed.frnt ((revisionsummary | revisionsummary-alt +)?, data_
install, disc_content?, (frntcover | frntcover-alt +), (promulgation |
promulgation-alt+)*, (warnsum | warnsum-alt+)?, (contents | contents-alt+),
(howtouse | howtouse-alt+))>
```

4. The element `<framed.frnt>` has no attributes.

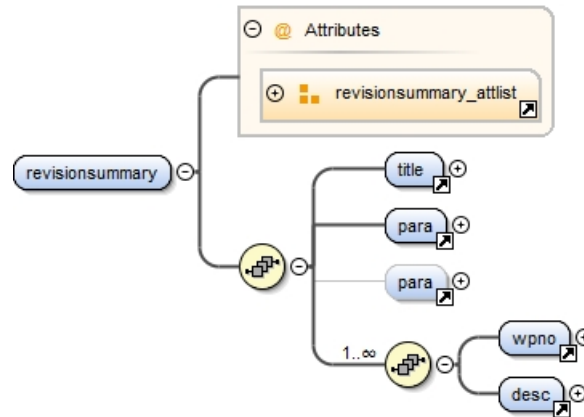
15.2.1.1.1 Revision summary frame <revisionsummary>.

When a change or revision summary should be displayed containing a list of work packages by title that have been changed or revised. For each work package listed, a brief description of the major changes is provided. The change/revised work packages listed on the change/revision summary should be linked to the work package containing the change or revised information. The change/revision summary also indicates those work packages that have been superseded.

1. The components for **<revisionsummary>** are:
 - a. Title **<title>** (required). The element provides the title for the revision summary frame of the IETM (see Section 36.1.1.4).
 - b. General paragraph(s) **<para>** (required). At least one paragraph **<para>** is required to explain the function of a revision summary frame. An additional paragraph may be used if needed (see Section 36.1.1.6).

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- c. One or more of the following element groups is required by the DTD. This grouping provides the work package sequence number and a description of changes made in the work package.
 - i. Work package number **<wpno>** (required). Element provides a unique number to be used for database retrieval purposes. The element **<wpno>** contains the attribute **wpref** that allows linking the revision summary information to the work package containing the revised information (see Section 33.2.4.1.3).
 - ii. Description **<desc>** (required). Element provides a brief description of the revised work package. (see Section 36.1.4.16).
2. The DTD fragment for **<revisionsummary>** is graphically depicted.

FIGURE 19. Effectivity type set **<revisionsummary>** DTD hierarchy.

3. The DTD fragment for **<revisionsummary>** is:

```

<!ELEMENT revisionsummary (title, para, para?, (wpno, desc)+)>
<!ATTLIST revisionsummary
  applicable          IDREFS          #IMPLIED
  frame               (yes | no)      "yes">

```

4. Unique Attributes for **<revisionsummary>**.

- a. **applicable** – Points or links to the master effective list to determine the specific configuration (see Section 16.4.1.4).
- b. **frame** – Set a frame break (default value is **yes**) (see Section 36.3.4).

15.2.1.1.2 How to link revision summary to work packages.

The revised work packages listed on the revision summary frame are listed by the work package title and are linked to the work packages containing the revised information. The element work package number **<wpno>** (see Section 33.2.4.1.3) required in the **<revisionsummary>** contains the attribute work package reference **wpref**. This attribute **wpref** references the work package required attribute **wpno** that serves as a reference target. The work package number element **<wpno wpref="mxxxxx-x-xxxx-xxx">** and its attribute performs a link to the work package and its attribute **<maintwp wpno="mxxxxx-x-xxxx-xxx">** in the IETM. The title of the work packages listed in the revision summary are generated by the stylesheet.

15.2.1.1.3 Example of a revision summary frame <revisionsummary> in an IETM.

The following is an example of a revision summary XML instance and the formatted display of the revision summary.

1. XML document instance fragment:

```
<revisionsummary>
<title>revision summary
</title>
<para> The following work packages have been changed in this IETM:
</para>
<wpno wpref="gxxx3-11-xxx-xxx"/>
<desc>Addition of a new electrical connector.
</desc>
<wpno wpref="txxx3-11-xxx-xxx"/>
<desc>Additional test equipment required to perform Troubleshooting.
</desc>
</revisionsummary>
```

2. Stylesheet output

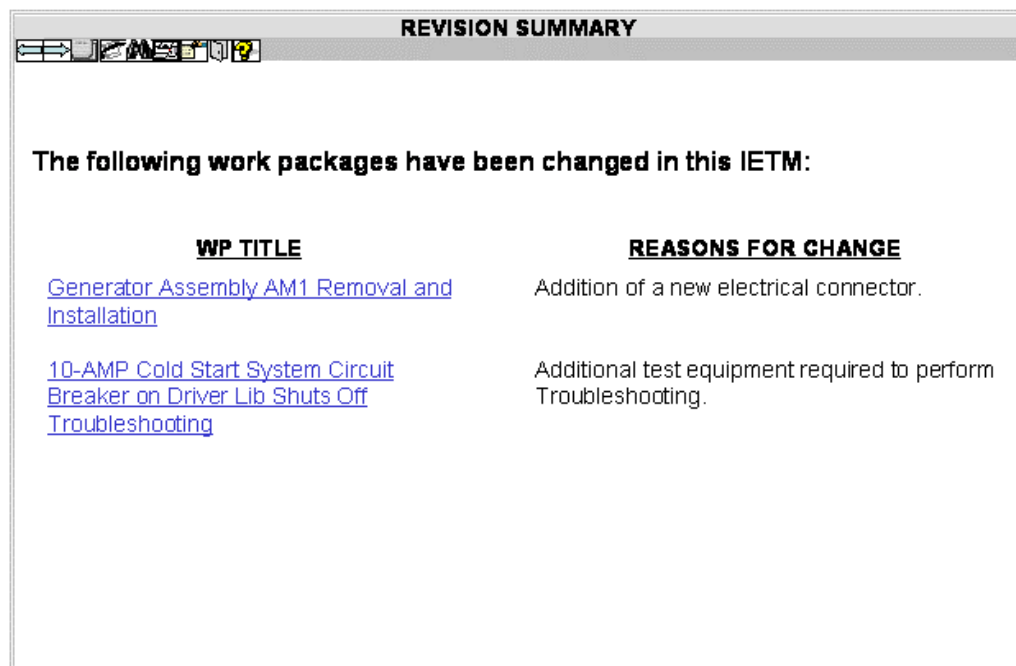


FIGURE 20. Example of a revision summary frame in an IETM.

15.3 Technical manual system effectivity list <applic_ref_list>.

The element <applic_ref_list> contains a listing of all possible system effectivity configurations. When a work package has a system effectivity issue, the work package references or links to the system effectivity list.

1. The components for <applic_ref_list> are Technical Manual System Effectivity List <applic> (optional) (see Section 15.3.1).
2. The DTD fragment for <applic_ref_list> is graphically depicted.

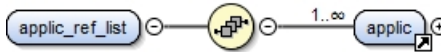


FIGURE 21. Technical manual system effectivity list <applic_ref_list> DTD hierarchy.

3. The DTD fragment for <applic_ref_list> is:

```
<!ELEMENT applic_ref_list (applic+)>
```

4. There are no attributes for <applic_ref_list>.

15.3.1 System effectivity <applic>.

The element <applic> provides the qualifications to identify the effective system by NSN, part number, unique ID, etc. It identifies the effective system to be displayed to in Work Package Identification Block.

1. The components for <applic> are:
 - a. A nomenclature <name> (required) – The approved name or alphanumeric identifier assigned to an item, equipment, or component in agreement with an organized designation system (see Section 36.1.4.18).
 - b. An optional national stock number <nsn> (optional) – A 13-digit number assigned to a repair part to be used for requisitioning purposes.
 - c. An optional group consisting of a part number <partno> and associated Commercial and Government Entity Code (CAGE) code <cageno>. When used, both elements are required by the DTD. The <partno> <cageno> may also be used to identify the equipment or system. (see Section 36.1.4.22 and Section 36.1.4.1.8).
 - d. An optional element <not> (optional) – <not> is used in conjunction with the elements <set>, <range>, or <single> to indicate they are ‘not’ to be included in the effectivity list (see Section 34.2.1.1).

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2. The DTD fragment for **<applic>** is graphically depicted.

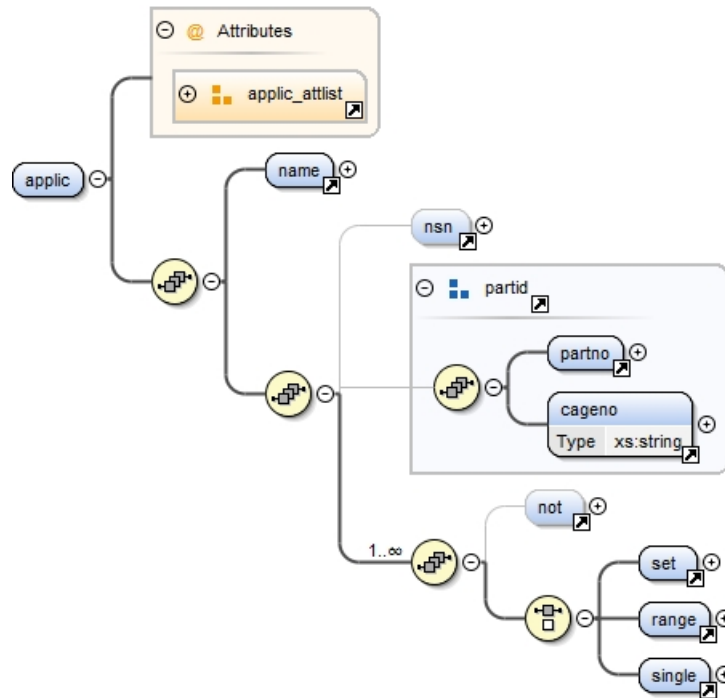


FIGURE 22. Technical manual system effectivity list **<applic>** DTD hierarchy.

3. The DTD fragment for **<applic>** is:

```
<!ELEMENT applic (name , (nsn?, (%partid;)?, (not?, (set | range | single)))>
```

```
<!ATTLIST applic
```

```
abbrevcode          CDATA                      #REQUIRED
```

```
id                  ID                          #REQUIRED>
```

4. Attributes for **<production>**:

- a. **abbrevcode** – Abbreviation code is displayed to identify the step(s) or paragraph(s) that the system has effectivity (required).
- b. **id** – System effectivity unique identifier to reference or link (required).

15.3.1.1 Negate **<not>**.

The element **<not>** provides a return of a negative Boolean expression value. Returns 'True' if the expression is 'False,' otherwise returns 'False' when the expression is 'True.'

1. The element **<not>** is EMPTY
2. The DTD fragment for **<not>** is:

```
<!ELEMENT not EMPTY>
```

3. The element **<not>** has no attributes.

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15.3.1.2 Effectivity type set <set>.

The element <set> defines an effectivity filter group using the same information type.

1. The components for <set> are listed. Only one of the list may be used, however, the element chosen may be used more than once.
 - a. One or more equipment item serial numbers <serialno> (required – one or more) (see Section 34.2.1.3).
 - b. One or more modification work order numbers <mwo> (required – one or more) (see Section 34.2.1.4).
 - c. Usable On-Code (UOC) <uoc> (required – one or more) (see Section 24.4.2.1.6.4).
 - d. One or more listings of software version used <software_version> (required – one or more) (see Section 15.3.1.7).
 - e. One or more equipment identification codes <eqp_id> (required – one or more) (see Section 34.2.1.5).
2. The DTD fragment for <set> is graphically depicted.

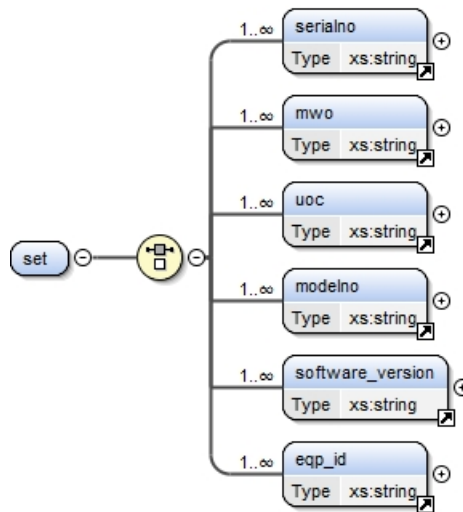


FIGURE 23. Effectivity type set <set> DTD hierarchy.

3. The DTD fragment for <set> is:

```
<!ELEMENT set (serialno+ | mwo+ | uoc+ | modelno+ | software_version+ | eqp_id+)
>
```

4. The element <set> has no attributes.

15.3.1.3 Serial number <serialno>.

Effectivity can be based upon serial numbers. Differences associated with equipment models or units of the same model that would affect operator or maintenance actions may be related explicitly to serial number ranges. The user would reference the content by serial number or by a range of serial numbers.

1. The components for <serialno> element is #PCDATA.
2. The DTD fragment for <serialno> is:


```
<!ELEMENT serialno (#PCDATA)>
```
3. The element <serialno> has no attributes.

15.3.1.4 Modification work order number **<mwo>**.

The element **<mwo>** is any modification work order numbers that may have been accomplished on the equipment and that may be used to identify the equipment configuration.

1. The components for **<mwo>** element is #PCDATA.
2. The DTD fragment for **<mwo>** is:

```
<!ELEMENT mwo (#PCDATA) >
```

3. The element **<mwo>** has no attributes.

15.3.1.5 Usable on Code (UOC) **<uoc>**.

The element **<uoc>** provides a listing of specific UOC that have been assigned to help make applicability identification easier.

1. The components for **<uoc>** element is #PCDATA.
2. The DTD fragment for **<uoc>** is:

```
<!ELEMENT uoc (#PCDATA) >
```

3. The element **<uoc>** has no attributes.

15.3.1.6 Model number **<modelno>**.

The element **<modelno>** lists any variations in model numbers for a given end item.

1. The components for **<modelno>** element is #PCDATA.
2. The DTD fragment for **<modelno>** is:

```
<!ELEMENT modelno (#PCDATA) >
```

3. The element **<modelno>** has no attributes.

15.3.1.7 Software version **<software_version>**.

The element **<software_version>** lists any variations in software for a given end item.

1. The components for **<software_version>** element is #PCDATA.
2. The DTD fragment for **<software_version>** is:

```
<!ELEMENT software_version (#PCDATA) >
```

3. The element **<software_version>** has no attributes.

15.3.1.8 Equipment identification code **<eqp_id>**.

The element **<eqp_id>** is the equipment unique identifier (VIN, tail number) for identification.

1. The components for **<eqp_id>** element is #PCDATA.
2. The DTD fragment for **<eqp_id>** is:

```
<!ELEMENT eqp_id (#PCDATA) >
```

3. The element **<eqp_id>** has no attributes.

15.4 IETM installation data/access <data_install>.

Information on installing the disc on the computer and launching the IETM should be prepared. The installation routine should have an uninstall capability and should determine if ample space is available for the install. Installation data should include instructions for operating the IETM with and without Web access. Installation routine should check for previously installed versions of the IETM or display software and should prompt the user to indicate whether they want to overwrite or uninstall older versions of the software and/or IETM. After a user clicks on “yes” or “uninstall” or “overwrite” at the prompt, the install routine should perform the overwrite or uninstall. The viewer software should not have hardcoding of software versions within the viewing software for other software required for use with the viewing software (Java). The installation information should be printed and should be part of the packaging of the disc. The disc containing the IETM may include third party software (Java, 3D viewers, etc.). However, the disc should only contain third party software if that software has a certificate of networkiness. The following types of install/capabilities should be available to the user.

1. The minimum installation, which is loading to the hard drive only those files necessary to access the program and data on the disc. This requires that the programs for the IETMs be executable from the disc and be able to read the data from the disc. To enable running from disc, all IETM information should be contained on either 1 CD or 1 DVD unless otherwise specified by the acquiring activity.
2. Installation of the required files for the viewer to operate as a workstation on a Local Area Network (LAN). In these cases, the program and data would be loaded to a server and the Portable Maintenance Aid (PMA) would access the program and data via a LAN. This type of install may be desirable in a flight line or motor pool environment. IETM viewers should be server-based rather than client-based so that multiple users can view the IETM from LAN or Web simultaneously.
3. Loading the executable program to the hard drive. This will require the data be accessed from the disc. This may be used when multiple discs for a system use the same reader program and the program is loaded to the hard drive for faster operation.
4. Components of <data_install> are:
5. Primary Level – Titled Paragraph <para0>. (see Section 36.1.1.9) that provides a title, a precondition and paragraphs of text in the description of how to use the manual.
6. The DTD fragment for <data_install> is graphically depicted.

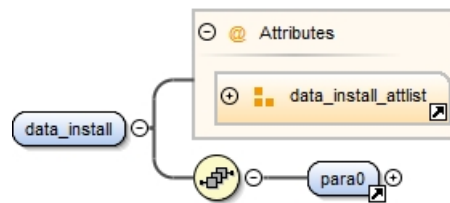


FIGURE 24. Revision summary frame <data_install> DTD hierarchy.

7. Common attributes for <data_install>:
 - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – System effectivity unique identifier to reference or link (optional) (see Section 36.3.7).
 - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

15.4.1 Disc content information <disc_content>.

When more than one publication (IETM, PDF, etc.) is resident on a disc, the first information that should appear on the viewer is the disc content information. This information should provide the publication number and title of all publications that are contained on the disc. An example of disc content information is provided in MIL-HDBK-1222. Only DA-authenticated publications should be placed on a DA-authenticated disc or disc set. Unauthenticated commercial publications, contractor publications, command-authenticated publications, etc., should not be placed on a DA-authenticated disc or disc set. The Electronic Manual (EM) number for the disc should be included in the disc content information.

1. Components of <disc_content> are:
 - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
 - b. Scope <scope>(required) (see Section 27.1.1.1). The element provides a brief statement of what is covered in the technical manual and also includes the following as applicable:
 - c. Publication list <publist> (one or more) (see Section 27.1.1.2). Individual paragraphs should be prepared for each publication type. All related/referenced publications, with the exception of those publications that are currently unpublished, should be listed. This list should identify the publication by number <name> or <extref>, <link> in alphanumeric sequence and should also include the title <title>. If a publication is non-government, the source should be given and all such publications should be listed alphabetically by title.
2. The DTD fragment for <disc_content> is graphically depicted.

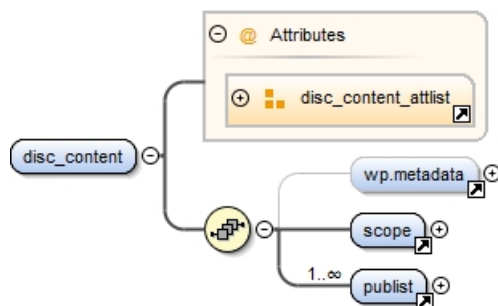


FIGURE 25. Disc Content <disc_content> DTD hierarchy.

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3. The DTD fragment for **<disc_content>** is:

```

<!ELEMENT disc_content (wp.metadata?, scope, publist+)>
<!ATTLIST disc_content %bodyidatt;>

assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
delchlvl          (0-99)          "0"
id                ID              #IMPLIED
idref             IDREF           #IMPLIED
inschlvl          (0-99)          "0"
security           (uc | fouo | c | s | ts) #IMPLIED
skilltrk          CDATA           #IMPLIED>

```

4. Common attributes for **<disc_content>**.

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – System effectivity unique identifier to reference or link (optional) (see 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

15.4.2 How to use **<howtouse>**.

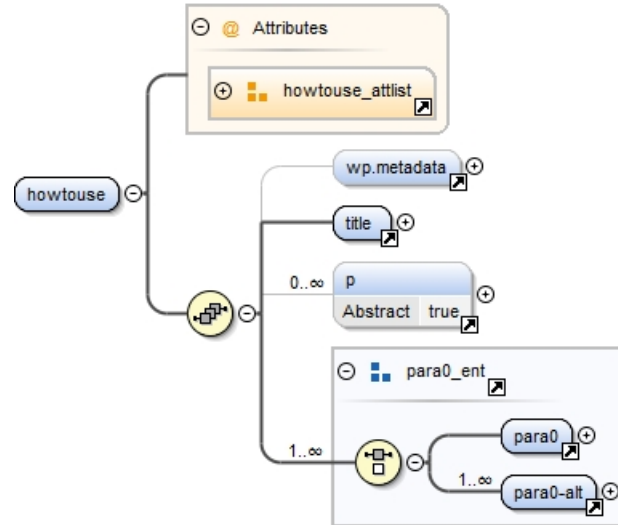
The “How to Use This Manual” provides information on how to read and use information and procedures in a TM. The information leads the user through the TM and explains the important features of the organization and content. When specified by the acquiring activity the “How To Use This Manual” should contain the International Standardization Agreements Statement (see Section 15.4.2.1). Primary paragraphs **<para0>** of text are used to tag the information on “how to use” the TM.

1. Components of **<howtouse>** are:

- a. Work package metadata **<wp.metadata>**. The element provides information about the work package data and usually not used or seen by the end user (optional). (see Section 16.4.1).
- b. Title **<title>** (required). The element provides the title for the section “HOW TO USE THIS MANUAL” (see Section 36.1.1.4).
- c. Select one of the following information types (optional – zero or more):
 - i. General paragraph(s) **<para>**. The paragraph **<para>** element provides the data for the information (see Section 36.1.1.6).

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- d. Select one of the following information types: (required – one or more).
- Primary Level – Titled Paragraph **<para0>** (see Section 36.1.1.9).
 - Primary Level – Conditional – Titled Paragraph(s) **<para0-alt>** (see Section 35.2.1) that provides a title, a precondition and paragraphs of text in the description of the manual.
2. The DTD fragment for **<howtouse>** is graphically depicted.

FIGURE 26. How to use **<howtouse>** DTD hierarchy.

3. The DTD fragment for **<howtouse>** is:

```
<!ELEMENT howtouse (wp.metadata?, title, p*, (para0 | para0-
alt+))>
<!ATTLIST howtouse
applicable IDREFS #IMPLIED
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
chnгно 0-9 "0"
comment CDATA #IMPLIED
delchlvl (0-99) "0"
frame (yes | no) "yes"
id ID #IMPLIED
idref CDATA #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED
tocentry (0 | 1 | 2 | 3) 1>
```

4. Unique attributes for **<howtouse>**:

frame – Set a frame break (default value is **yes**) (see Section 36.3.4).

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5. Common attributes for **<howtouse>**.

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **chnгно** – Change number (required) (see Section 36.3.12).
- e. **comment** – Change information (optional) (see Section 36.3.12).
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either yes or no (default value is yes).
- h. **id** – Unique identifier (optional) (see Section 36.3.7).
- i. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- j. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- k. **security** – Security classification (optional) (see Section 36.3.14).
- l. **skilltrk** – Training skill level (optional) (see Section 36.3.3).
- m. **tocentry** – The attribute tocentry indicates that the data type's title and the indenture level to be used for the TOC entry (see Section 16.3.6).

15.4.2.1 International standardization agreements.

The “How to Use This Manual” should contain the International Standardization Agreements Statement when specified by the acquiring activity. The statement is different when used in a frame manual as to a paper manual. The difference is that the “technical manual” is used in a paper manual and IETM is used in a frame manual. If a page-base manual is selected, then “technical manual” is generated in the entity, but if the frame-base manual is selected then, “IETM” is generated in the International standardization agreements entity. This statement is a boiler plate entity and can be referenced using the entity *&howtouse.intl-agree;*. The general entity also contains two nested entities *&howtouse.intl-agree.ref;* and *&howtouse.intl-agree.pg;* that need to be edited. The nested entities can be edited through the Editable Boilerplate Text file (editboil.ent). Below is the text containing the nested entities for the boiler plate entity *&howtouse.intl-agree;*. The use of boilerplates can reduce text entry time and errors. See Chapter 37 for further information on boilerplates.

```
<note>
<trim.para>Certain provisions of this <![%page-base [technical manual]]><![%
frame-base; [IETM]]><sgmlentity type="general">how-touse.intl-agree.ref</
gmlentity> are the subject of international standardization agreement <sgmlentity
type="general">how-touse.intl-agree.pg</sgmlentity> When revision or
cancellation of this technical manual is proposed which will modify the
international agreement concerned, the technical management activity will take
appropriate action through international standardization channels, including
departmental standardization offices, to change the agreement...
</trim.para>
</note>
```

15.4.2.2 Example of how to use.

Depicted below is an example of a “HOW TO USE THIS MANUAL.” The example includes an XML document instance fragment and the stylesheet output for the element **<howtouse>**. This example does not contain the boiler plate entity *&howtouse.intl-agree;*.

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1. XML document instance fragment:

```

<howtouse>
<title>HOW TO USE THIS MANUAL
</title>
<para0>
<title>How To Use This Manual
</title>
<note>
<trim.para>This manual only covers procedures unique to the M7 Bradley FireSupport
Vehicle. For any procedures that are common to both M7 and Bradley vehicles, see
TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X. Many tasks are common and can
be found under a similar task name in those TMs.
</trim.para>
</note>
<para>This manual tells you how to maintain the hull on the M7 Bradley Fire
Support Vehicle. Operator's instructions are covered in TM X-XXXX-XXX-XX-X and
TM X-XXXX-XXX-XX-X.
</para>
<para>Before starting any task/procedure or before applying power to the hull,
make sure you have read this HOW TO USE section and the Controls and Indicators WP
in TM X-XXXX-XXX-XX-X.
</para>
</para0>
<para0>
<title>WHAT'S IN THE MANUAL- FRONT TO BACK
</title>
<para>This TM supplement is divided into front and rear matter and Work Packages
(WPs) for ease of use.
</para>
<para>The WARNING SUMMARY section provides safety and first aid information.
This section includes general warnings not found in the TM text and a list of the
most important detailed warnings extracted from the WPs. All of these warnings
cover hazards that could kill or injure personnel.
</para>
<para>The TABLE OF CONTENTS lists the WPs.
</para>
<para>CHAPTER 1 covers general introductory information with theory of
operation. The Equipment Description WP gives a brief description of major parts
and features of the hull. The Theory of Operation WP provides information that
will help you understand how the hull components work.
</para>
<para>CHAPTER 2 covers Troubleshooting Procedures.
</para>
<para>CHAPTER 3 contains Field Maintenance procedures. This includes the
Preventive Maintenance Checks and Services (PMCS) WP and corrective
maintenance WPs.
</para>
<para>CHAPTER 4 contains Below Depot Sustainment Maintenance WPs. [At this time,
there are no Below Depot Sustainment Maintenance WPs in this document.]
</para>
<para>CHAPTER 5 provides supporting information for the TM. It includes the
following WPs:
<randlist>

```

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<item>The REFERENCES WP lists references to be used by personnel in operating and maintaining the hull. These references include technical manuals and other publications.

</item>

<item>The MAC WP lists maintenance functions, levels, and times assigned to each maintenance action.

</item>

<item>The RPSTL WP lists and authorizes spares, repair parts, and special tools required for performance of unit, direct support, and general support maintenance of the M7 hull. It authorizes the requisition, issue, and disposition of spares, repair parts, and special tools as indicated by the Source, Maintenance, and Recoverability (SMR) codes.

</item>

<item>The TOOL IDENTIFICATION LIST WP lists all unique tools required for maintenance of the M7 hull. This list is compiled from the Initial Setup requirements of all WPs in this TM.

</item>

<item>The EXPENDABLE AND DURABLE ITEMS WP lists expendable supplies and materials that will be needed to maintain the hull.

</item>

</randlist>

</para>

<para>For all other supporting information, see the appendices in TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X.

</para>

<para>The INDEX is an alphabetical listing of all the tasks in the WPs of this TM. Each entry is cross-referenced to the WP number and page number.

</para>

<para>The back cover includes a METRIC CONVERSION CHART that can be used to convert US customary measurements to their metric equivalents. Measurements in this manual are given in US customary unit with metric units in parentheses.

</para>

</para0>

<para0>

<title>HOW TO USE THE WORK PACKAGES

</title>

<para>See TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X for HOW TO USE information. The WPs in this supplement include the same information categories as maintenance TASKS in the TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X.

</para>

</para0>

</howtouse>

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2. Stylesheet output:

HOW TO USE THIS MANUAL

HOW TO USE THIS MANUAL

NOTE

This manual only covers procedures unique to the M7 Bradley Fire Support Vehicle. For any procedures that are common to both M7 and Bradley vehicles, see TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X. Many tasks are common and can be found under a similar task name in those TMs.

This manual tells you how to maintain the hull on the M7 Bradley Fire Support Vehicle. Operator's instructions are covered in TM X-XXXX-XXX-XX-X and TM X-XXXX-XXX-XX-X.

Before starting any task/procedure or before applying power to the hull, make sure you have read this HOW TO USE section and the Controls and Indicators WP in TM X-XXXX-XXX-XX-X.

WHAT'S IN THE MANUAL— FRONT TO BACK

This TM supplement is divided into front and rear matter and Work Packages (WPs) for ease of use. The WARNING SUMMARY section provides safety and first aid information. This section includes general warnings not found in the TM text and a list of the most important detailed warnings extracted from the WPs. All of these warnings cover hazards that could kill or injure personnel.

The TABLE OF CONTENTS lists the WPs.

CHAPTER 1 covers general introductory information with theory of operation. The Equipment Description WP gives a brief description of major parts and features of the hull. The Theory of Operation WP provides information that will help you understand how the hull components work.

CHAPTER 2 covers Troubleshooting Procedures.

CHAPTER 3 contains Unit Maintenance procedures. This includes the Preventive Maintenance Checks and Services (PMCS) WP and corrective maintenance WPs.

CHAPTER 4 contains Direct Support Maintenance WPs. [At this time, there are no Direct Support Maintenance WPs in this document.]

CHAPTER 5 provides supporting information for the TM. It includes the following WPs:

- The REFERENCES WP lists references to be used by personnel in operating and maintaining the hull. These references include technical manuals and other publications.
- The MAC WP lists maintenance functions, levels, and times assigned to each maintenance action.
- The RPSTL WP lists and authorizes spares, repair parts, and special tools required for performance of unit, direct support, and general support maintenance of the M7 hull. It authorizes the requisition, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.
- The TOOL IDENTIFICATION LIST WP lists all unique tools required for maintenance of the M7 hull. This list is compiled from the Initial Setup requirements of all WPs in this TM.
- The EXPENDABLE AND DURABLE ITEMS WP lists expendable supplies and materials that will be needed to maintain the hull.

For all other supporting information, see the appendices in TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X. The INDEX is an alphabetical listing of all the tasks in the WPs of this TM. Each entry is cross-referenced to the WP number and page number.

The back cover includes a METRIC CONVERSION CHART that can be used to convert U.S. customary measurements to their metric equivalents. Measurements in this manual are given in U.S. customary unit with metric units in parentheses.

HOW TO USE THE WORK PACKAGES

See TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X for HOW TO USE information. The WPs in this supplement include the same information categories as maintenance TASKS in the TM X-XXXX-XXX-XX-X series and TM X-XXXX-XXX-XX-X.

FIGURE 27. Example of a how to use.

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15.4.2.3 How to use alternative <howtouse-alt>.

The element <howtouse-alt> provides configuration filtering for the how to use this manual material.

1. Components of <howtouse-alt> are:

How to Use <howtouse> (required) (see Section 15.4.2).

2. The DTD fragment for <howtouse-alt> is:

```
<!ELEMENT howtouse-alt (howtouse)>
```

3. No attributes for <howtouse-alt>.

15.4.2.4 Front cover <frntcover>.

The element <frntcover> is used for the front cover of a technical manual.

1. Components of <frntcover> are:

- a. Technical Manual Title <tmtitle> (required). (see Section 15.4.2.5.1).
- b. Illustrations <graphic> (optional). (see Section 31.2).
- c. Reporting <reporting> (required). Displays the reporting of errors text. (see Section 15.4.2.5).
- d. Official Notices <notices> (required). Displays the required and optional notices on the front page (see Section 15.4.2.6).
- e. Service Nomenclature <servnomen> (required) (see Section 15.4.2.6.28). Apply the service nomenclature of the proponent activity on the front cover.
- f. Date <date> (required). The publishing date of the technical Manual.
- g. Publication Control Number <pcn> (optional). Publication control number placed at the bottom right corner for Marine Corps only manuals and for joint service manuals involving the Marine Corps.

2. The DTD fragment for <frntcover> is graphically depicted:

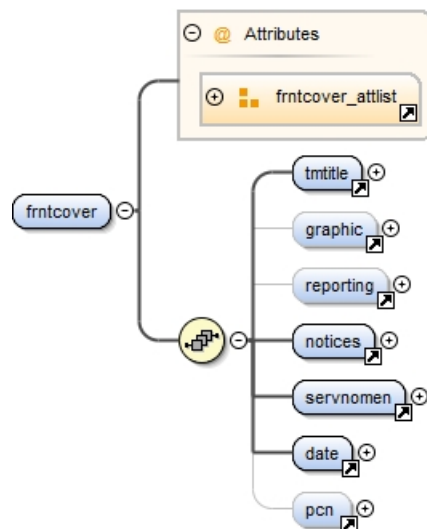


FIGURE 28. Front cover <frntcover> DTD hierarchy.

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3. The DTD fragment for **<frntcover>** is:

```

<!ELEMENT frntcover (tmttitle, graphic?, reporting? notices, servno-
men, date, pcn?)>

<!ATTLIST frntcover
  applicable          IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  inschlvl            (0-99)          "0"
  security            (uc | fouo | c | s | ts)  #IMPLIED>

```

4. Common attributes for **<frntcover>** are:

- a. **applicable** – Applicability Reference to the applicable configuration(s) specified in the WP identification information. When using an IETM that can filter information, this information is not presented when not applicable to the current configuration. Presentations that do not filter information, the information will be identified by the assigned associated abbreviation to designate applicability of information (optional) (see Section 16.4.1.4).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- f. **security** – Security classification (optional) (see Section 36.3.14).

15.4.2.5 Reporting of errors **<reporting>**.

The **<reporting>** element is used exclusively for the **<framed.manual>** front cover information. It displays the reporting of errors text normally found on the title block page of a page based TM. There are variations for the reporting of errors statement. These include variants for classified and unclassified manuals or various service requirements. MIL-STD-40051-1 contains the requirements on how to use this for an IETM. The reporting of errors text may be inserted using boilerplate text see Chapter 37.

1. Components of **<reporting>** are:

- a. Title **<title>** (required) – The title allows the identification of the specific reporting of errors statement (Army or Marines).
- b. General paragraph **<para>** (required) – This paragraph allows the author to enter either a single service reporting paragraph or a generic introduction for a multi-service manual.
 - i. An optional group consisting of **<reporting.para>** (required – one or more) and a **<para>** (required) used to support multi service TM reporting of errors paragraphs see Section 14.5.6 for an example of tagging.

The **<reporting.para>** is used to include service specific reporting of errors information. The attribute **service** allows the author to identify the specific service.
 - ii. The general paragraph **<para>** element allows the author to close the reporting of errors with any generic information (“a reply will be provided.”).

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2. The DTD fragment for **<reporting>** is graphically depicted.

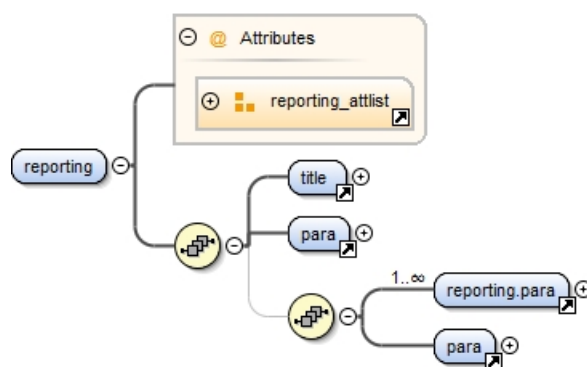


FIGURE 29. Reporting <reporting> DTD hierarchy.

3. The DTD fragment for **<reporting>** is:

```

<!ELEMENT reporting (title, para, (reporting para+ , para)?)>
<!ATTLIST reporting
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>
  
```

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4. Common attributes for **<reporting>**:

- a. **assocfig** - Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** - Unique identifier (optional) (see Section 36.3.7).
- f. **idref** - Reference one or more identifiers (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** - Training skill level (optional) (see Section 36.3.3).

15.4.2.5.1 Technical manual title **<tmtitle>**.

The **<tmtitle>** element contains all the elements that identify a manual, including the manual number, primary title, and subtitle.

1. Components of **<tmtitle>** are:

- a. Select either the **<tminfono>** used for multi service TMs, or **<tmno>** for a single service TM:
 - i. Technical Manual Number and Service Branch **<tminfono>** (required – two or more) (see Section 15.4.2.5.2).
 - ii. Technical Manual Number **<tmno>** (required) (see Section 15.4.2.5.4).
- b. Primary Title **<prtitle>** (required). Display the primary title of the TM on the front page. (see Section 15.4.2.5.5).
 An optional group containing the TM subtitle **<stitle>** and weapons system title **<weapons_system>**. If the **<weapons_system>** element is used, then the **<stitle>** must be included.
 - i. Manual Subtitle **<stitle>** (optional). Displays the TM subtitle, if there is one, on the front page (see Section 36.1.1.3).
 - ii. Weapon System Title **<weapons_system>** (optional). Displays the weapon systems nomenclature on the front page if provided. (see Section 15.4.2.5.8).

2. The DTD fragment for **<tmtitle>** is graphically depicted.

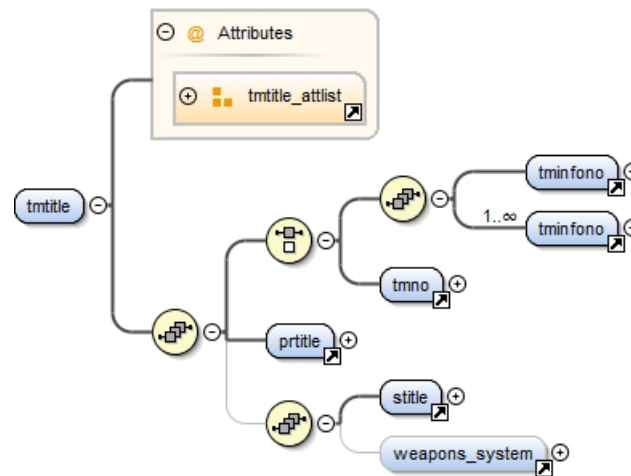


FIGURE 30. Technical manual title **<tmtitle>** DTD hierarchy.

3. The DTD fragment for **<tmtitle>** is:

```
<!ELEMENT tmtitle (((tminfono, tminfono+) | tmno), prtitle, (stitle,
weapons_system?))>
```

```
<!ATTLIST tmtitle
```

changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED>

4. Common attributes for **<tmtitle>**:

- changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- comment** – Change information (optional) (see Section 36.3.12).
- delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- inschlvl** – Insert change level (optional) (see Section 36.3.12).
- security** – Security classification (optional) (see Section 36.3.14).

15.4.2.5.2 Technical manual number and service branch **<tminfono>**.

The element **<tminfono>** contains a combination of branch of service and technical manual number (required) constitutes a unique identification of the TM. If the TM is used by more than one service branch, the proponent's TM number appears first.

1. Components of **<tminfono>** are:

- Branch of Service **<servbranch>** (required) (see Section 15.4.2.5.3).
- Technical Manual Number **<tmno>** (required) (see Section 15.4.2.5.4).

2. The DTD fragment for **<tminfono>** is graphically depicted.

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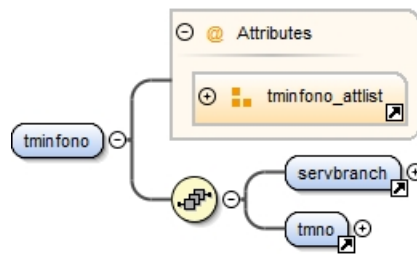


FIGURE 31. Technical manual number and service branch <tminfono> DTD hierarchy.

3. The DTD fragment for **<tminfono>** is:

```

<!ELEMENT tminfono (servbranch, tmno)>
<!ATTLIST tminfono
  changeref      IDREFS          #IMPLIED
  comment        CDATA           #IMPLIED
  delchlvl       (0-99)          "0"
  inschlvl       (0-99)          "0"
  security       (uc | fouo | c | s | ts) #IMPLIED>
  
```

4. Common attributes for **<tminfono>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- e. **security** – Security classification (optional) (see Section 36.3.14).

15.4.2.5.3 Branch of service <servbranch>.

The branch of service that has assigned an official TM number to the manual. The branch of service is selected using the attribute **service** and is generated with an XML stylesheet.

1. The element **<servbranch>** is EMPTY and all pertinent information is entered through its attributes.

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2. The DTD fragment for **<servbranch>** is:

```

<!ELEMENT servbranch EMPTY>
<!ATTLIST servbranch
    changeref          IDREFS          #IMPLIED
    comment            CDATA           #IMPLIED
    delchlvl           (0-99)          "0"
    inschlvl           (0-99)          "0"
    procuring          (yes | no)       "no"
    qualify            CDATA           #IMPLIED
    security           (uc | fouo | c | s | ts) #IMPLIED
    service            (army | af | navy | marines) #REQUIRED>

```

3. Common attributes for **<servbranch>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- e. **security** – Security classification (optional) (see Section 36.3.14).

4. Unique attributes for **<servbranch>**:

- a. **service** - Specifies the service branch (required).
- b. **qualify** - Supplies any further qualification of the service, such as NAVAIR (optional).
- c. **procuring** - If more than one service uses the manual, specifies which branch is the procuring agency. Select either **yes** or **no**. The default is **no**.

15.4.2.5.4 Technical manual number **<tmno>**.

The element **<tmno>** provides the number portion of the TM.

- 1. The components for **<tmno>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
- 2. The DTD fragment for **<tmno>** is:

```

<!ELEMENT tmno (#PCDATA)>
<!ATTLIST tmno
    changeref          IDREFS          #IMPLIED
    comment            CDATA           #IMPLIED
    delchlvl           (0-99)          "0"
    inschlvl           (0-99)          "0"
    security           (uc | fouo | c | s | ts) #IMPLIED>

```

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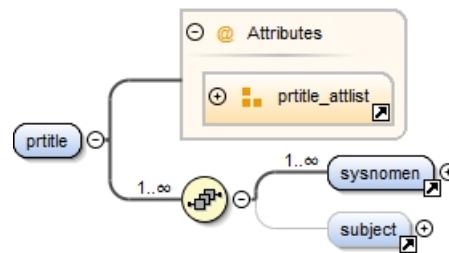
3. Common attributes for **<tmno>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- e. **security** – Security classification (optional) (see Section 36.3.14).

15.4.2.5.5 Primary title **<prtitle>**.

The element **<prtitle>** contains the system nomenclature with any relevant identifying numbers or qualifying subject. The primary title appears on the front cover, change sheet, and title block page of the TM.

1. The primary title may contain one or more required equipment nomenclature and an optional subject.
 - a. Equipment Nomenclature **<sysnomen>** (required – one or more) (see Section 15.4.2.5.6).
 - b. TM Subject Matter **<subject>** (optional) (see Section 16.4.1.7).
2. The DTD fragment for **<prtitle>** is graphically depicted.

FIGURE 32. Primary title **<prtitle>** DTD hierarchy.3. The DTD fragment for **<prtitle>** is:

```
<!ELEMENT prtitle (sysnomen+, subject?)+>
<!ATTLIST prtitle
  changeref      IDREFS          #IMPLIED
  comment        CDATA           #IMPLIED
  delchlvl       (0-99)          "0"
  inschlvl       (0-99)          "0"
  security       (uc | fouo | c | s | ts) #IMPLIED>
```

4. Common attributes for **<prtitle>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- e. **security** – Security classification (optional) (see Section 36.3.14).

15.4.2.5.6 Equipment nomenclature <sysnomen>.

The element <sysnomen> contains the official end item nomenclature covered in the TM. The element consists of a name and one or more optional identifying number elements: model number, part number, NSN, and/or EIC. The National Stock Number (NSN) <nsn> and End Item Code (EIC) <eic> are included on the front cover of equipment publications but may not be required for general equipment and other types of publications.

1. The components for <sysnomen> are:
 - a. Name <name> (required) (see Section 36.1.4.18).
 - b. Model Number <modelno> (optional) (see Section 36.1.4.17).
 - c. National Stock Number <nsn> (optional) (see Section 36.1.4.19).
 - d. Part Number <partno> (optional) (see Section 36.1.4.22).
 - e. Commercial And Government Entity Code <cageno> (optional) (see Section 36.1.4.1.8).
 - f. End-Item Code <eic> (optional) (see Section 15.4.2.5.7).
2. DTD fragment for <sysnomen> is graphically depicted.

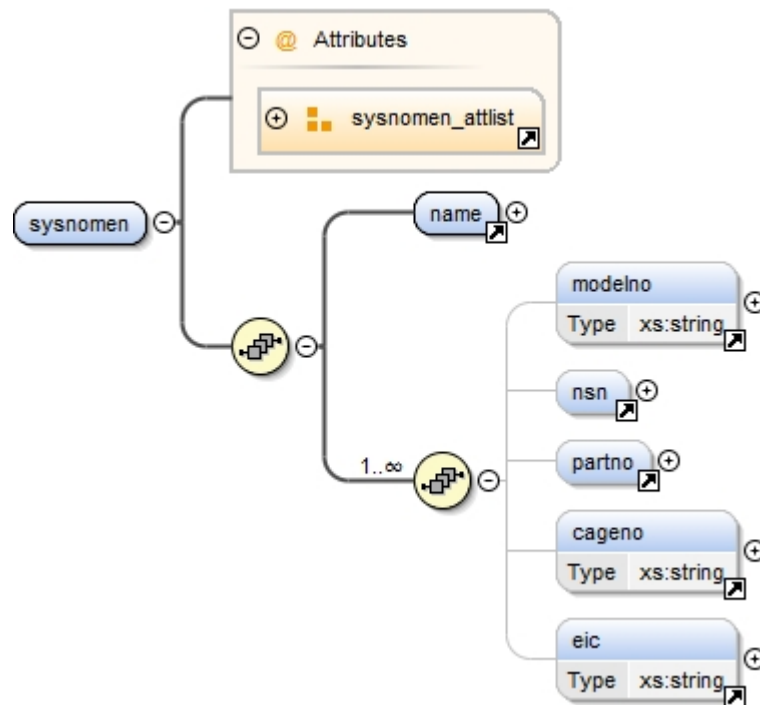


FIGURE 33. Equipment nomenclature <sysnomen> DTD hierarchy.

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3. The DTD fragment for **<sysnomen>** is:

```

<!ELEMENT sysnomen (name, (modelno?, nsn?, partno?, cageno?, eic?)+)
>
<!ATTLIST sysnomen
    applicable            IDREF                #IMPLIED
    assocfig              IDREF                #IMPLIED
    changeref             IDREFS               #IMPLIED
    comment               CDATA                #IMPLIED
    delchlvl              (0-99)               "0"
    id                    ID                   #IMPLIED
    idref                 IDREFS               #IMPLIED
    inschlvl              (0-99)               "0"
    pretext               CDATA                #IMPLIED
    security              (uc | fouo | c | s | ts) #IMPLIED
    skilltrk              CDATA                #IMPLIED>

```

4. Common attributes for **<sysnomen>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

5. Unique attribute for **<sysnomen>**, **pretext** – Any text that precedes the equipment nomenclature." This is the only mechanism for inserting such words on the front cover.15.4.2.5.7 End-Item Code **<eic>**.

The element **<eic>** contains the assigned end-item code, a three-position alphanumeric code, of the equipment covered by the TM. When used it appears as part of the prime title on the front cover and title block page.

1. The **<eic>** element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<eic>** is:

```
<!ELEMENT eic (#PCDATA)>
```

3. No attributes for **<eic>**.

15.4.2.5.8 Weapon system title <weapons_system>.

The element <weapons_system> specifies the weapons system component title for the TM cover page.

1. The components for <weapons_system> are:
 - a. The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
 - b. Emphasis <emphasis> (optional – zero or more) (see Section 36.1.3.1).
 - c. Subscript <subscript> (optional – zero or more) (see Section 36.1.3.4).
 - d. Superscript <supscript> (optional – zero or more) (see Section 36.1.3.5).
 - e. Line Break <brk> (optional – zero or more) (see Section 36.1.3.3).
2. The DTD fragment for <weapons_system> is:


```
<!ELEMENT weapons_system (%format; | brk) *>
```
3. No attributes for <weapons_system>.

15.4.2.6 General notices <notices>.

The element <notices> contains those notices that appear on the TM front cover, change sheet, or title block page.

1. Components of <notices> are:
 - a. Available <avail> (optional) (see Section 15.4.2.6.1).
 - b. Supersededure statement <super> (optional) (see Section 15.4.2.6.2).
 - c. Distribution statement <dist> (required) (see Section 15.4.2.6.3).
 - d. Export Control <export> (optional) (see Section 15.4.2.6.25).
 - e. Destruction of the Manual <destr> (optional) (see Section 15.4.2.6.26).
 - f. General Purpose Destruction <general_purpose_notices> (optional) (see Section 15.4.2.6.27).
2. The DTD fragment for <notices> is graphically depicted.

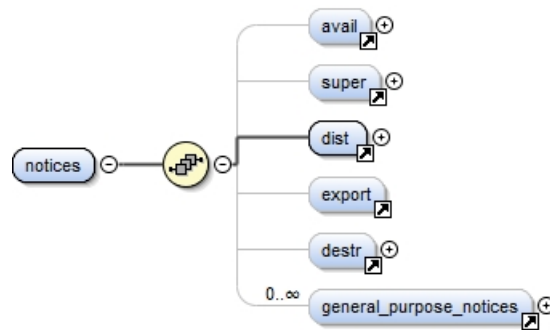


FIGURE 34. Reporting <notices> DTD hierarchy.

3. The DTD fragment for <notices> is:


```
<!ELEMENT notices (avail?, super?, dist, export?, destr?, general_purpose_notices*)>
```
4. No attributes for <notices>.

15.4.2.6.1 Availability statement <avail>.

The element **<avail>** is used for the standard availability notice that appears on the DMWR/NMWR front cover. This statement is a boilerplate and can be referenced using the general entity *¬ices.avail;* (see #5 below). **Depot only.**

1. Components of **<avail>** are:
 - a. Title **<title>** (optional) (see Section 36.1.1.4).
 - b. Narrative Text **<text>** (required) used in two places in the availability element (see Section 15.5.1.4.5.1).
 - c. Proponent **<proponent>** (required) (see Section 36.1.4.23).
2. The DTD fragment for **<avail>** is graphically depicted.

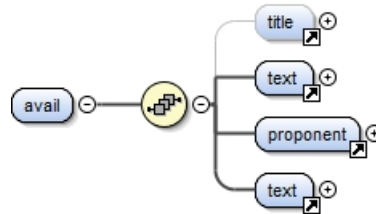


FIGURE 35. Availability statement <avail> DTD hierarchy.

3. The DTD fragment for **<avail>** is:


```
<!ELEMENT avail (title?, text, proponent, text)>
```
4. No attributes for **<avail>**.
5. There is an XML boilerplate text entity *¬ices.avail;* for the availability statement. This entity is located in the Production Boilerplate Text file (prodboil.ent). The availability statement boilerplate contains a nested boilerplate entity *&proponent-address.army;*. The nested entity can be edited to provide the Army's proponent address through the Editable Boilerplate Text file (editboil.ent). The use of boilerplates can reduce text entry time and errors. See Chapter 37 for further information on boilerplates.
6. XML example for **<avail>** with boilerplate text entity.

```
<avail>
<text>This publication is not available through the St. Louis Media Distribution
Division. This publication is available through
</text>&proponent-address.army;
<text>.
</text>
</avail>
```

15.4.2.6.2 Supersedure statement <super>.

The element **<super>** is used for the supersedure notice when the TM, revision or change under preparation supersedes other TMs or portions of TMs.

1. Components of **<super>** are:
 - a. Title **<title>** (optional) (see Section 36.1.1.4).
 - b. Paragraph Text **<para>** (required) (see Section 36.1.1.6).

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2. The DTD fragment for **<super>** is graphically depicted.



FIGURE 36. Supersedure statement **<super>** DTD hierarchy.

3. The DTD fragment for **<super>** is:

```
<!ELEMENT super (title?, para)>
```

4. No attributes for **<super>**.

15.4.2.6.3 Distribution statement **<dist>**.

The element **<dist>** contains the appropriate distribution statement for the TM. The applicable distribution notice is provided by the acquiring activity and appears on the front cover, change sheet, and title block page.

Also available in the Department of Defense Instruction (DoDI 5230.24).

1. Components of **<dist>** are listed. Select the appropriate statement for the TM according to the contracting activity. **At least one is required.**
 - a. Distribution A Statement **<a.statement>** (optional) (see Section 15.4.2.6.4).
 - b. Distribution B Statement **<b.statement>** (optional) (see Section 15.4.2.6.5).
 - c. Distribution C Statement **<c.statement>** (optional) (see Section 15.4.2.6.20).
 - d. Distribution D Statement **<d.statement>** (optional) (see Section 15.4.2.6.21).
 - e. Distribution E Statement **<e.statement>** (optional) (see Section 15.4.2.6.22).
 - f. Distribution F Statement **<f.statement>** (optional) (see Section 15.4.2.6.23).
 - g. Distribution X Statement **<x.statement>** (optional) (see Section 15.4.2.6.24).
2. DTD fragment for **<dist>** is graphically depicted.

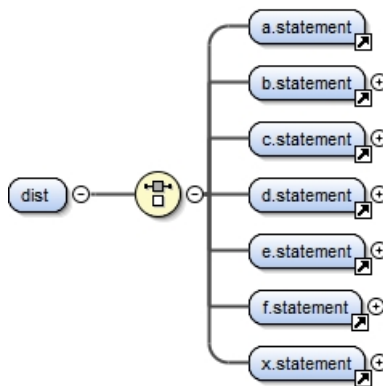


FIGURE 37. Distribution statement **<dist>** DTD hierarchy.

3. The DTD fragment for **<dist>** is:

```
<!ELEMENT dist (a.statement | b.statement | c.statement | d.statement | e.statement | f.statement | x.statement)>
```

4. No attributes for **<dist>**.

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15.4.2.6.4 Distribution A statement <a . statement>.

The element **<a . statement>** contains the DoDD 5230.24 specified text for an unlimited distribution technical manual. This statement is fixed by the DoD Directive and is in a boilerplate that can be referenced using the general entity **¬ices.dist.a.statement;** (see #5 below).

1. Components of **<a . statement>** are:
 - a. Title **<title>** (required) (see Section 36.1.1.4).
 - b. Narrative Text **<text>** (required) (see Section 15.5.1.4.5.1).
2. DTD fragment for **<a . statement>** is graphically depicted.

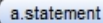


FIGURE 38. Distribution A statement <a.statement> DTD hierarchy.

3. The DTD fragment for **<a . statement>** is:


```
<!ELEMENT a.statement >
```
4. No attributes for **<a.statement>**.
5. XML boilerplate text for the entity Distribution A Statement entity **¬ices.dist.a.statement;**. This entity is located in the Production Boilerplate Text file **prodboil.ent**. The use of boilerplates can reduce text entry time and errors. See Chapter 37 for further information on boilerplates.

```
<dist>
<a.statement>Approved for public release; distribution is unlimited.
</a.statement>
</dist>
```

15.4.2.6.5 Distribution B statement <b . statement>.

The element **<b . statement>** contains the DoDD 5230.24 specified text a technical manual whose distribution is limited to U.S. Government agencies only. This statement is a mixture of required text from the DoD Directive and user entered information. The fixed text is provided by the stylesheet. The user entered information is provided through specific elements (see e.).

1. Components of **<b . statement>** are:
 - a. Select one of the reasons that explains the restricted distribution for the TM.
 - i. The group element **<commondistreason>** is used with distribution statements “B” and contains the following distribution reasons. Select one of the reasons that explains the restricted distribution for the TM.
 - I. Administrative or Operational Use **<adminops>** (see Section 15.4.2.6.6).
 - II. Critical Technology **<crittech>** (see Section 15.4.2.6.7).
 - III. Export Controlled **<exportctrl>** (see Section 15.4.2.6.8).
 - IV. Foreign Government Information **<frngngvt>** (see Section 15.4.2.6.9).
 - V. Software Documentation **<softwaredoc>** (see Section 15.4.2.6.10).
 - VI. Specific Authority **<specauth>** (see Section 15.4.2.6.11).
 - VII. Vulnerability Information **<vulinfo>** (see Section 15.4.2.6.12).
 - ii. Contractor Performance Evaluation **<cntrctperform>** (see Section 15.4.2.6.13).

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- iii. Operations Security **<opsec>** (see Section 15.4.2.6.14).
- iv. Premature Dissemination **<premature>** (see Section 15.4.2.6.15).
- v. Proprietary Information **<proprietary>** (see Section 15.4.2.6.16).
- vi. Test and Evaluation **<testeval>** (see Section 15.4.2.6.17).
- b. Restriction Determination Date **<reasondate>** (required) this element allows the author to enter the date that the distribution restriction was applied. (see Section 15.4.2.6.18).
- c. Controlling DoD Office **<releaseagent>** (required) (see Section 15.4.2.6.19).

2. DTD fragment for **<b.statement>** is graphically depicted.

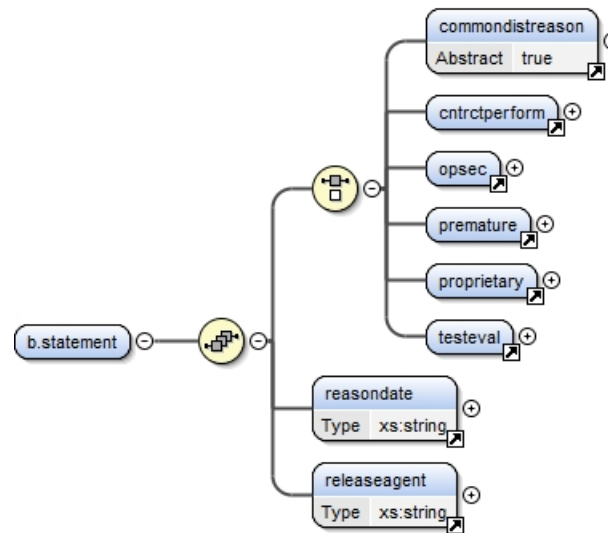


FIGURE 39. Distribution B statement **<b.statement>** DTD hierarchy.

3. The DTD fragment for **<b.statement>** is:

```
<!ELEMENT b.statement (commondistreason | cntrctperform | opsec | premature |
proprietary | testeval) , reasondate , releaseagent)>
```

4. No attributes for **<b.statement>**.

5. XML boilerplate text for the entity Distribution B Statement entity **¬ices.dist.a.statement;**. This entity is located in the Production Boilerplate Text file (prodboil.ent). The use of boilerplates can reduce text entry time and errors. See Chapter 37 for further information on boilerplates.

<b.statement>

<adminops distreason="To protect technical or operational data or information from automatic dissemination under the International Exchange Program or by other means. This protection covers publications required solely for official use or strictly for administrative or operational purposes. This statement may apply to manuals, pamphlets, technical orders, technical reports, and other publications containing valuable technical or operational data."/>

<reasondate>April 2014

</reasondate>

<releaseagent>US Army Logistics Support Agency (LOGSA), Redstone Arsenal, Huntsville, AL

</releaseagent>

</b.statement>

15.4.2.6.6 Administrative or operational use **<adminops>**.

The element **<adminops>** provides the distribution statement restriction reason as the Administrative or Operational Use and is defined as to protect technical or operational data or information from automatic dissemination under the International Exchange Program or by other means. This protection covers publications required solely for official use or strictly for administrative or operational purposes including data or information intended for the sole purpose of operating and sustaining DoD weapon systems. This statement may apply to manuals, pamphlets, weapon system specifications, technical orders, technical reports, and other publications or technical data containing valuable technical or operational information.

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1. Components of **<adminops>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<adminops>** is:

```
<!ELEMENT adminops EMPTY>
```

```
<!-- ATTLIST adminops distreason CDATA #FIXED "To protect technical or
operational data or information from automatic dissemination under the
International Exchange Program or by other means. This protection covers
publications required solely for official use or strictly for administrative or
operational purposes. This statement may apply to manuals, pamphlets,
technical orders, technical reports, and other publications containing
valuable technical or operational data." -->
```

3. Unique attribute for **<adminops>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.7 Critical technology **<crittech>**.

The element **<crittech>** provides the distribution statement restriction reason as the critical technology and is defined as to protect information and technical data that advance current technology or describe new technology in an area of significant or potentially significant military application or that relate to a specific military deficiency of a potential adversary. Information of this type may be classified or unclassified; when unclassified, it is export-controlled and subject to the provisions of DoD Directive 5230.25. The selected distribution reason is generated through the stylesheet.

1. Components of **<crittech>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<crittech>** is:

```
<!ELEMENT crittech EMPTY>
```

```
<!-- ATTLIST crittech distreason CDATA #FIXED "To protect information and
technical data that advance current technology or describe new technology in an
area of significant or potentially significant military application or that
relate to a specific military deficiency of a potential adversary. Information
of this type may be classified or unclassified " -->
```

3. Unique attribute for **<crittech>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.8 Export controlled **<exportctrl>**.

The element **<exportctrl>** provides the export control statement warning for the pubs that contain export controlled data. The statement is contained in DoD Directive 5230.24. Export controls in accordance with DoD Directive 5230.25, "Withholding of Unclassified Technical Data from Public Disclosure," November 6, 1984, as amended; parts 120-130 of Title 22, Code of Federal Regulations (CFR) Parts 120-130 of Title 22, "International Traffic in Arms Regulations" (ITAR); and parts 730-774 of Title 15, CFR (also known and hereinafter referred to as the "Export Administration Regulations" (EAR). The selected distribution reason is generated through the stylesheet.

1. Components of **<exportctrl>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<exportctrl>** is:

```
<!ELEMENT exportctrl EMPTY>
```

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```
<!ATTLIST exportctrl distreason CDATA #FIXED "To protect information subject
to the provisions of DoD Directive 5230.25, 'Withholding of Unclassified
Technical Data from Public Disclosure,' November 6, 1984, as amended" >
```

3. Unique attribute for **<exportctrl>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.9 Foreign government information **<frngngvt>**.

The element **<frngngvt>** provides the distribution statement restriction reason as the foreign government information and is defined as to protect and limit distribution in accordance with the desires of the foreign government that furnished the technical information. Information of this type normally is classified at the CONFIDENTIAL level or higher in accordance with DoD 5200.1-R. The selected distribution reason is generated through the stylesheet.

1. Components of **<frngngvt>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<frngngvt>** is:

```
<!ELEMENT frngngvt EMPTY>
```

```
<!ATTLIST frngngvt distreason CDATA #FIXED "To protect and limit distribution in
accordance with the desires of and agreements with the foreign government that
furnished the technical information. Assigned pursuant to chapter 15 of title
50, U.S.C. and Executive Order 13526" >
```

3. Unique attribute for **<frngngvt>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.10 Software documentation **<softwaredoc>**.

The element **<softwaredoc>** provides the distribution statement restriction reason as the Software Documentation and is to protect technical data relating to computer software that is realisable only in accordance with the software license in subpart 227.72 of Subparts 203, 227 and 252 of Title 48, Code of Federal Regulations. It includes documentation such as user's or owner's manuals, installation instructions, operating instructions, and other information that explains the capabilities of or provides instructions for using or maintaining computer software. The selected distribution reason is generated through the stylesheet.

1. Components of **<softwaredoc>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<softwaredoc>** is:

```
<!ELEMENT softwaredoc EMPTY>
```

```
<! ATTLIST softwaredoc distreason CDATA #FIXED "To protect technical data
relating to computer software that is realisable only in accordance with the
software license in subpart 227.72 of Title 48, Code of Federal Regulations. It
includes documentation such as user or owner manuals, installation
instructions, operating instructions, and other information that explains the
capabilities of or provides instructions for using or maintaining computer
software." >
```

3. Unique attribute for **<softwaredoc>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

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15.4.2.6.11 Specific authority <specauth>.

The element **<specauth>** provides the distribution statement restriction reason as the Specific Authority and is defined as to protect information not specifically included in the above reasons, but which requires protection in accordance with valid documented authority (Executive orders, statutes such as Atomic Energy Federal regulation). When filling in the reason, cite 'Specific Authority (identification of valid documented authority).'

1. Components of **<specauth>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<specauth>** is:

```
<!ELEMENT specauth (#PCDATA)>
```

```
<!-- ATTLIST specauth distreason CDATA #FIXED "To protect information not specifically included in the above reasons, but which requires protection in accordance with valid documented authority (Executive orders, statutes such as Atomic Energy Federal regulation). -->
```

3. Unique attribute for **<specauth>** is **commondistreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.12 Vulnerability information <vulninfo>.

The element **<vulninfo>** provides the distribution statement restriction reason to protect information and technical data that provides insight into vulnerabilities of U.S. critical infrastructure, including DoD war fighting capabilities vital to National Security that are otherwise not publicly available. Assigned pursuant to Public Law 107-296.

1. Components of **<vulninfo>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<vulninfo>** is:

```
<!ELEMENT vulninfo (#PCDATA)>
```

```
<!-- ATTLIST vulninfo distreason CDATA #FIXED "to protect information and technical data that provides insight into vulnerabilities of U. S. critical infrastructure, including DoD war fighting infrastructure, vital to National Security that are otherwise not publicly available" -->
```

3. Unique attribute for **<vulninfo>** is **commondistreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.13 Contractor performance <cntrctperform>.

The element **<cntrctperform>** provides the distribution statement restriction reason as the contractor performance evaluation and is defined as to protect information in management reviews, records of contract performance evaluation, or other advisory documents evaluating programs of contractors. The selected distribution reason is generated through the stylesheet.

1. Components of **<cntrctperform>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<cntrctperform>** is:

```
<!ELEMENT cntrctperform (#PCDATA)>
```

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```
<! ATTLIST cntrectperform distreason CDATA #FIXED "To protect information in
management reviews, records of contract performance evaluation, or other
advisory documents evaluating programs of contractors." >
```

3. Unique attribute for **<cntrectperform>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.14 Operations security **<opsec>**.

The element **<opsec>** provides the distribution statement restriction reason to protect information and technical data that may be observed by adversary intelligence systems and to determine what indicators hostile intelligence systems may obtain that could be interpreted or assembled to derive critical information in time to be useful to adversaries. Assigned in accordance with DoDD 5205.02. The selected distribution reason is generated through the stylesheet.

1. Components of **<opsec>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<opsec>** is:

```
<!ELEMENT opsec EMPTY>
```

```
<! ATTLIST opsec distreason CDATA #FIXED "To protect information and technical
data that may be observed by adversary intelligence systems and determining what
indicators hostile intelligence systems may obtain that could be interpreted or
pieced together to derive critical information in time to be useful to
adversaries." >
```

3. Unique attribute for **<opsec>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.15 Premature dissemination **<premature>**.

The element **<premature>** provides the distribution statement restriction reason as the premature dissemination and is defined as to protect patentable information on systems or processes in the developmental or concept stage from premature dissemination. The selected distribution reason is generated through the stylesheet.

1. Components of **<premature>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<premature>** is:

```
<!ELEMENT premature EMPTY>
```

```
<! ATTLIST premature distreason CDATA #FIXED "To protect patentable information
on systems or processes in the development or concept stage from premature
dissemination." >
```

3. Unique attribute for **<premature>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.16 Proprietary information **<proprietary>**.

The element **<proprietary>** provides the distribution statement restriction reason as the Test and Evaluation and is defined as to protect results of test and evaluation of commercial products or military hardware when such disclosure may cause unfair advantage or disadvantage to the manufacturer of the product. The selected distribution reason is generated through the stylesheet.

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1. Components of **<proprietary>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<proprietary>** is:

```
<!ELEMENT proprietary EMPTY>
```

```
<! ATTLIST proprietary distreason CDATA #FIXED "To protect information not owned by the U. S. Government and marked with a statement of a legal property right. This information is received with the understanding that it will not be routinely transmitted outside the U.S. Government." >
```
3. Unique attribute for **<proprietary>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.17 Test and evaluation <testeval>.

The element **<testeval>** provides the distribution statement restriction reason as the proprietary information and is defined as to protect information not owned by the U.S. Government and protected by a contractor's "limited rights" statement, or received with the understanding that it not be routinely transmitted outside the U.S. Government. The selected distribution reason is generated through the stylesheet.

1. Components of **<testeval>** are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<testeval>** is:

```
<!ELEMENT testeval EMPTY>
```

```
<! ATTLIST testeval distreason CDATA #FIXED "To protect results of test and evaluation of commercial products or military hardware when disclosure may cause unfair advantage or disadvantage to the manufacturer of the product.">
```
3. Unique attribute for **<testeval>** is **distreason** – Distribution reason text for the distribution statement. (required). The value of this attribute is FIXED, providing the DoD Directive text.

15.4.2.6.18 Restriction determination date <reasondate>.

The element **<reasondate>** is used to specify distribution statements B-F and X restriction determination date.

1. Components of **<reasondate>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<reasondate>** is:

```
<!ELEMENT reasondate (#PCDATA)>
```
3. No attribute for **<reasondate>**.

15.4.2.6.19 Controlling DoD office <releaseagent>.

The element **<releaseagent>** is used to specify distribution statements B-F and X restriction determination date.

1. Components of **<releaseagent>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<releaseagent>** is:

```
<!ELEMENT releaseagent (#PCDATA)>
```
3. No attribute for **<releaseagent>**.

15.4.2.6.20 Distribution C statement <c.statement>.

The element <c.statement> contains the DoDD 5230.24 specified text for C restriction distribution (Distribution authorized to U.S. Government Agencies and their contractors) technical manuals. The selected distribution reason is generated through the stylesheet. The identified reason will generate text. (see #5 below).

1. Components of <c.statement> are:

- a. The group element <commondistreason> is used with distribution statements “C” and contains the following distribution reasons. Select one of the reasons that explains the restricted distribution for the TM.
 - i. Administrative or Operational Use <adminops> (see Section 15.4.2.6.6).
 - ii. Critical Technology <crittech> (see Section 15.4.2.6.7).
 - iii. Export Controlled <exportctrl> (see Section 15.4.2.6.8).
 - iv. Foreign Government Information <frngngvt> (see Section 15.4.2.6.9).
 - v. Software Documentation <softwaredoc> (see Section 15.4.2.6.10).
 - vi. Specific Authority <specauth> (see Section 15.4.2.6.11).
 - vii. Vulnerability Information <vulinfo> (see Section 15.4.2.6.12).
- b. Restriction Determination Date <reasondate> (required) this element allows the author to enter the date that the distribution restriction was applied. (see Section 15.4.2.6.18).
- c. Controlling DoD Office <releaseagent> (required) (see Section 15.4.2.6.19).

2. DTD fragment for <c.statement> is graphically depicted.

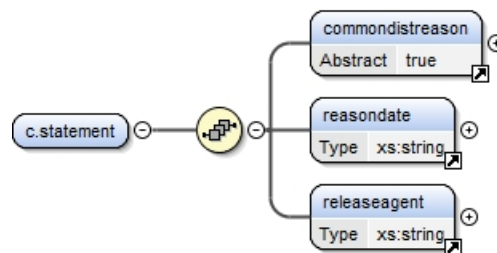


FIGURE 40. Distribution C statement <c.statement> DTD hierarchy.

3. The DTD fragment for <c.statement> is:

```
<!ELEMENT c.statement (commondistreason, reasondate, releaseagent)>
```

4. No attributes for <c.statement>.

5. An example of a tagged distribution statement C is shown below:

```

<dist>
<c.statement>
<adminops distreason="To protect technical or operational data or information from automatic
dissemination under the International Exchange Program or by other means. This protection covers
publications required solely for official use or strictly for administrative or operational purposes. This
statement may apply to manuals, pamphlets, technical orders, technical reports, and other publications
containing valuable technical or operational data."/>
<reasondate>April 2014
</reasondate>
<releaseagent>US Army Logistics Support Agency (LOGSA), Redstone Arsenal,
Huntsville, AL
  
```

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</releaseagent>
</c.statement>
</dist>

15.4.2.6.21 Distribution D statement <d.statement>.

The element **<d.statement>** contains the DoDD 5230.24 specified text for D restriction distribution (Distribution authorized to U.S. Government Agencies and their contractors) technical manuals. The selected distribution reason is generated through the stylesheet. The identified reason will generate text. (see #5 below).

1. Components of <d.statement> are:

- a.** The group element **<commondistreason>** is used with distribution statements “D” and contains the following distribution reasons. Select one of the reasons that explains the restricted distribution for the TM.
 - i.** Administrative or Operational Use **<adminops>** (see Section 15.4.2.6.6).
 - ii.** Critical Technology **<crittech>** (see Section 15.4.2.6.7).
 - iii.** Export Controlled **<exportctrl>** (see Section 15.4.2.6.8).
 - iv.** Foreign Government Information **<frngngvt>** (see Section 15.4.2.6.9).
 - v.** Software Documentation **<softwaredoc>** (see Section 15.4.2.6.10).
 - vi.** Specific Authority **<specauth>** (see Section 15.4.2.6.11).
 - vii.** Vulnerability Information **<vulinfo>** (see Section 15.4.2.6.12).
- b.** Select one of the reasons that explains the restricted distribution for the TM.
- c.** Restriction Determination Date **<reasondate>** (required) this element allows the author to enter the date that the distribution restriction was applied. (see Section 15.4.2.6.18).
- d.** Controlling DoD Office **<releaseagent>** (required) (see Section 15.4.2.6.19).

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2. DTD fragment for **<d.statement>** is graphically depicted.

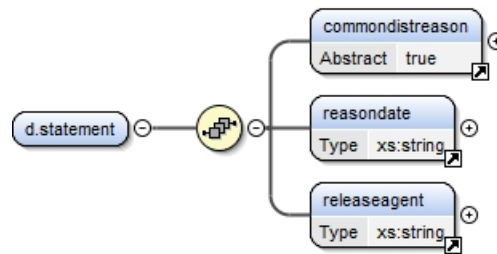


FIGURE 41. Distribution D statement **<d.statement>** DTD hierarchy.

3. The DTD fragment for **<d.statement>** is:

```
<!ELEMENT d.statement (commondistreason , reasondate , releaseagent)>
```

4. No attributes for **<d.statement>**.

5. An example of a tagged distribution statement D is shown below:

```

<dist>
<d.statement>
<adminops distreason="To protect technical or operational data or information from automatic
dissemination under the International Exchange Program or by other means. This protection covers
publications required solely for official use or strictly for administrative or operational purposes. This
statement may apply to manuals, pamphlets, technical orders, technical reports, and other publications
containing valuable technical or operational data."/>
<reasondate>April 2014
</reasondate>
<releaseagent>US Army Logistics Support Agency (LOGSA), Redstone Arsenal,
Huntsville, AL
</releaseagent>
</d.statement>
</dist>
  
```

15.4.2.6.22 Distribution E statement **<e.statement>**.

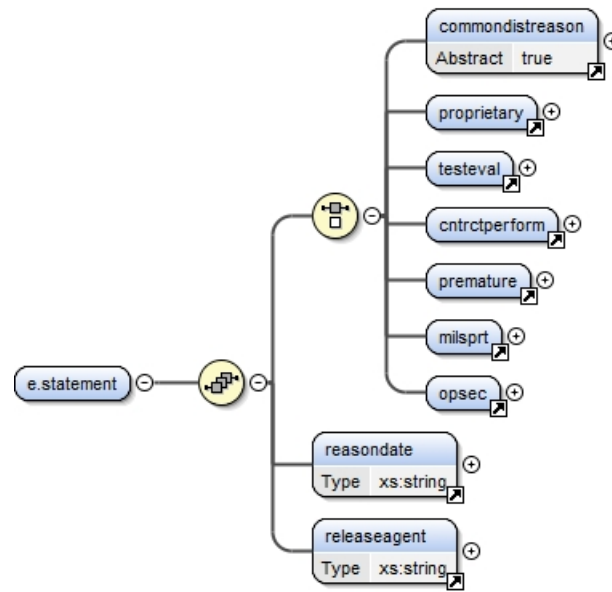
The element **<e.statement>** contains the DoDD 5230.24 specified text for E restricted distribution (Distribution authorized to DoD Components only) technical manuals. The selected distribution reason is generated through the stylesheet (see #5 below).

1. Components of **<e.statement>** are:

- a. The group element **<commondistreason>** is used with distribution statements “E” and contains the following distribution reasons. Select one of the reasons that explains the restricted distribution for the TM.
 - i. Administrative or Operational Use **<adminops>** (see Section 15.4.2.6.6).
 - ii. Critical Technology **<crittech>** (see Section 15.4.2.6.7).
 - iii. Export Controlled **<exportctrl>** (see Section 15.4.2.6.8).
 - iv. Foreign Government Information **<frngngvt>** (see Section 15.4.2.6.9).
 - v. Software Documentation **<softwaredoc>** (see Section 15.4.2.6.10).
 - vi. Specific Authority **<specauth>** (see Section 15.4.2.6.11).

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- vii. Vulnerability Information **<vulinfo>** (see Section 15.4.2.6.12).
 - viii. Proprietary Information **<proprietary>** (see Section 15.4.2.6.16).
 - ix. Test and Evaluation **<testeval>** (see Section 15.4.2.6.17).
 - x. Contractor Performance Evaluation **<cntrctperform>** (see Section 15.4.2.6.13).
 - xi. Premature Dissemination **<premature>** (see Section 15.4.2.6.15).
 - xii. Direct Military Support **<milsprt>** (required) this element allows the author to enter the date that the distribution restriction was applied.
 - xiii. Operations Security **<opsec>** (see Section 15.4.2.6.14).
- b. Restriction Determination Date **<reasondate>** (required) this element allows the author to enter the date that the distribution restriction was applied. (see Section 15.4.2.6.18).
- c. Controlling DoD Office **<releaseagent>** (required) (see Section 15.4.2.6.19).
2. DTD fragment for **<e.statement>** is graphically depicted.

FIGURE 42. Distribution E statement **<e.statement>** DTD hierarchy.

3. The DTD fragment for **<e.statement>** is:

```
<! ELEMENT e.statement ((commondistreason | proprietary | testeval |
cntrctperform | premature | milsprt | opsec) , reasondate , releaseagent)>
```

4. No attributes for **<e.statement>**.
5. An example of a tagged distribution statement E is shown below:

```
<dist>
<e.statement>
<reasondate>15 April 2011
</reasondate>
<releaseagent>US Army Logistics Support Agency (LOGSA), Redstone Arsenal,
Huntsville, AL
</releaseagent>
</e.statement>
</dist>
```

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15.4.2.6.23 Distribution F statement <f.statement>.

The element **<f.statement>** contains the DoD 5230.24 specified text for F restricted distribution (Further dissemination only as directed by controlling DoD office or higher DoD authority) technical manuals. The identified reason will generate text (see #5 below).

1. Components of **<f.statement>** are:
 - a. Restriction Determination Date **<reasondate>** (required) this element allows the author to enter the date that the distribution restriction was applied (see Section 15.4.2.6.18).
 - b. Controlling DoD Office **<releaseagent>** (required) (see Section 15.4.2.6.19).
2. DTD fragment for **<f.statement>** is graphically depicted.

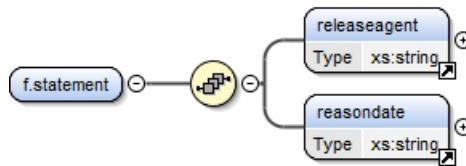


FIGURE 43. Distribution F statement <f.statement> DTD hierarchy.

3. The DTD fragment for **<f.statement>** is:


```
<!ELEMENT f.statement (releaseagent, reasondate)>
```
4. No attributes for **<f.statement>**.
5. An example of a tagged distribution statement F is shown below:

```

<dist>
<f.statement>
<reasondate>15 April 2011
</reasondate>
<releaseagent>US Army Logistics Support Agency (LOGSA), Redstone Arsenal,
Huntsville, AL
</releaseagent>
</f.statement>
</dist>

```

15.4.2.6.24 Distribution X statement <x.statement>.

The element **<x.statement>** contains the DoDD 5230.24 specified text for X restricted distribution (Distribution authorized to DoD Components only) technical manuals. The selected distribution reason is generated through the stylesheet (see e).

1. Components of **<x.statement>** are:
 - a. Restriction Determination Date **<reasondate>** (required) this element allows the author to enter the date that the distribution restriction was applied. (see Section).
 - b. Controlling DoD Office **<releaseagent>** (required) (see Section 15.4.2.6.18).
2. The DTD fragment for **<x.statement>** is graphically depicted.

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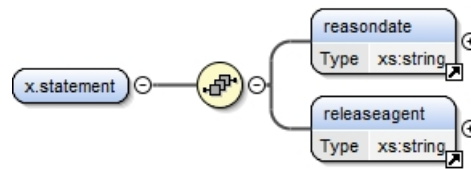


FIGURE 44. Distribution X statement <x.statement> DTD hierarchy.

3. The DTD fragment for <x.statement> is:

```
<!ELEMENT x.statement (releaseagent, reasondate)>
```

4. No attributes for <x.statement>.

5. An example of a tagged distribution statement X is shown below:

```

<dist>
<x.statement>
<reasondate>15 April 2011
</reasondate>
<releaseagent>US Army Logistics Support Agency (LOGSA), Redstone Arsenal,
Huntsville, AL
</releaseagent>
</x.statement>
</dist>
  
```

15.4.2.6.25 Export control <export>.

The element <export> provides the export control statement warning for the pubs that contain export controlled data. The statement is contained in DoD Directive 5230.24.

1. The element <export> is EMPTY
2. The DTD fragment for <export> is graphically depicted.



FIGURE 45. Export <export> DTD hierarchy

3. The DTD fragment for <export> is:

```
<!ELEMENT export EMPTY>
```

4. No attribute for <export>.
5. The text for the export warning control statement is dictated by DoDD 5230.24 and is generated by the stylesheet.

15.4.2.6.26 Destruction of the manual <destr>.

The element <destr> provides a standard notice concerning destruction of the manual. The destruction statement is provided by the acquiring activity and appears on the front cover.

1. The element <destr> is EMPTY
2. The DTD fragment for <destr> is:

```
<!ELEMENT destr (para?)>
```

3. The DTD fragment for **<destr>** is graphically depicted.



FIGURE 46. Destruction of the manual **<destr>** DTD hierarchy.

4. No attribute for **<destr>**.

15.4.2.6.27 General information destruction **<general_purpose_notices>**.

The element **<general_purpose_notices>** provides the author with the ability to include non standard notices required by command or other service policy.

1. The **<general_purpose_notices>** components are:
 - a. Title **<title>** (required) (see Section 36.1.1.4).
 - b. Paragraph Text **<text>** (required) (see 36.1.1.6).
2. The DTD fragment for **<general_purpose_notices>** is:


```
<!ELEMENT general_purpose_notices (title, text)>
```
3. DTD fragment for **<general_purpose_notices>** is graphically depicted.

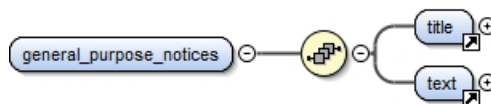


FIGURE 47. General information – destruction **<general_purpose_notices>** DTD hierarchy.

4. No attribute for **<general_purpose_notices>**.

15.4.2.6.28 Service nomenclature **<servnomen>**.

The element **<servnomen>** provides the service nomenclature of the proponent activity; for most Army manuals the text is "HEADQUARTERS, DEPARTMENT OF THE ARMY."

1. The **<servnomen>** components are:
 - a. The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
 - b. Emphasis **<emphasis>** (optional – zero or more) (see Section 36.1.3.1).
 - c. Subscript **<subscript>** (optional – zero or more) (see Section 36.1.3.4).
 - d. Superscript **<supscript>** (optional – zero or more) (see Section 36.1.3.5).
2. The DTD fragment for **<servnomen>** is:


```
<!ELEMENT servnomen (%format;)*>
```
3. No attribute for **<servnomen>**.

15.4.2.6.29 Front cover alternative **<frntcover-alt>**.

The element **<frntcover-alt>** is used for when alternative covers are needed for a manual with multiple configurations.

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1. The **<frntcover-alt>** components are:
 - a. Front Cover (required) **<frntcover>** (see Section 15.4.2.4).
2. The DTD fragment for **<frntcover-alt>** is:


```
<!ELEMENT frntcover-alt (frntcover)>
```
3. No attribute for **<frntcover-alt>**.

15.4.2.7 Promulgation letter (USMC) **<promulgation>**.

The element **<promulgation>** contains the promulgation letter provided by the acquiring activity, used primarily by the Marine Corps (similar to authentication letter).

1. The components for **<promulgation>** are:
 - a. The Illustrations **<graphic>** (required). A graphic portraying the promulgation letter is displayed (see Section 31.2).
2. The DTD fragment for **<promulgation>** is:

```
<!ELEMENT promulgation (graphic)>
<!ATTLIST promulgation
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)          "0"
  security             (uc | fouo | c | s | ts) #IMPLIED
  skilltrk            CDATA           #IMPLIED>
```

3. Common attributes for **<promulgation>**.
 - a. **applicable** – Applicability Reference to the applicable configuration(s) specified in the WP identification information. When using an IETM that can filter information, this information is not presented when not applicable to the current configuration. Presentations that do not filter information, the information will be identified by the assigned associated abbreviation to designate applicability of the information. (optional) (see Section 16.4.1.4).
 - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - d. **comment** – Change information (optional) (see Section 36.3.12).
 - e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
 - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - h. **security** – Security classification (optional) (see Section 36.3.14).
 - i. **skilltrk** – Training skill level (optional) (see Section 36.3.3).

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4. Example of a Promulgation Letter (USMC). An example of a promulgation letter is provided below. The promulgation letter consist of a graphic.
 - a. The XML document instance for a promulgation letter.


```
<promulgation>
<graphic boardno="promul.jpg">
</graphic>
</promulgation>
```
 - b. The XML format output for a promulgation letter using a stylesheet.

DEPARTMENT OF THE NAVY
Headquarters, U.S. Marine Corps
Washington, DC 20380-0001

30 May 2003

Marine Corps Stocklist SL-4-08654B, is effective upon receipt.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

OFFICIAL



R. P. SHOCKEY
Director, Program Support
Marine Corps Systems Command

DISTRIBUTION: PCN 124 086541 00

FIGURE 48. Example of a promulgation letter (USMC) <promulgation>.

15.4.2.8 Alternative promulgation letter <promulgation-alt>.

The element <promulgation-alt> is used when alternative promulgation letters are needed for manual with multiple configurations.

1. The <promulgation-alt> components are:
 - a. Promulgation Letter (required) <promulgation> (see Section 15.4.2.7).

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2. The DTD fragment for **<promulgation-alt>** is:

```
<!ELEMENT promulgation-alt (promulgation)>
```

3. No attribute for **<promulgation-alt>**.

15.4.2.9 Table of Contents (TOC) **<contents>**.

The element **<contents>** is used for generating the TOC including an optional list of figures and/or list of tables for each work package. The TOC is automatically generated, pre-composition process populated, or manually entered. The automatically generated TOC uses an XML attribute **tocentry** to determine if the item is in the TOC and the indenture level. Some composition systems can generate the TOC with the assistance of a pre-composition process. The pre-composition process reads the completed TM XML instance and uses the TOC elements to populate the **<contents>** XML instance while other composition systems cannot handle an automated task or process such as a TOC and has to be manually created. Additional information on the process of the TOC and other optional methods (see Section 15.4.2.9.3) in developing a TOC.

1. The **<contents>** components are:

- a. Title **<title>**. The element provides the title for the TOC, usually the text “TABLE OF CONTENTS” is entered (see Section 36.1.1.4).
- b. Column list title **<col.title>** (required). The element provides the figure/table page number (column title is “Page No.”) and the work package sequence number (column title is “WP Sequence No.”) columns in the TOC. (see Section 15.5.1.4.6).
- c. Content entry **<contententry>** (required – one or more) (see Section 15.4.2.9.1).

2. The DTD fragment for **<contents>** is:

```
<!ELEMENT contents (title, col.title, col.title, contententry+)?>
```

3. DTD fragment for **<contents>** is graphically depicted.

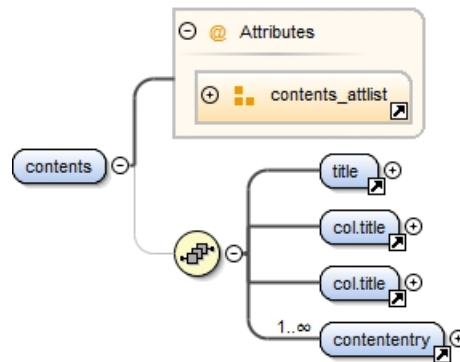


FIGURE 49. Table of contents **<contents>** DTD hierarchy.

4. The DTD fragment for **<contents>** is:

```
<!ATTLIST content >
applicable IDREFS #IMPLIED>
```

5. Attributes for **<contents>** are:

- a. **applicable** – Applicability Reference to the applicable configuration(s) specified in the WP identification information. When using an IETM that can filter information, this information is not presented when not

15.4.2.9.1 Content entry <contententry>.

1. The **<contententry>** components are:

2. The DTD fragment for **<contententry>** is:

3. The DTD fragment for **<contententry>** is graphically depicted.

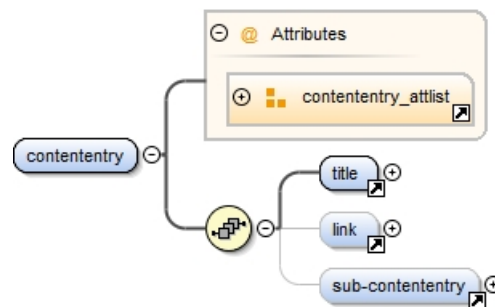


FIGURE 50. Table of content entry `<contententry>` DTD hierarchy.

- #### 4. Attributes for <contententry>:

- a. figuretable** – Indicates if the entries for the subgroup are for tables and/or figures.

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5. Common attributes for <contententry>:

- a. assocfig** – Associate one or more figures. (optional) (see Section 36.3.7).
- b. id** – Unique identifier (optional) (see Section 36.3.7).
- c. idref** – Reference one or more identifiers. (optional) (see Section 36.3.7).
- d. security** – Security classification (optional) (see Section 36.3.14).

15.4.2.9.2 TOC entry <tocentry>.

The attribute **tocentry** indicates the data type's title and the indenture level to be used for the TOC entry. When the **tocentry** attribute is set to "0," no entry is created or used for this information. Some **tocentry** attributes have predefined indenture levels to assist the TM developer with a standard method for building the TOC. The following data types use the **tocentry** attribute (default level is in parenthesis) that are volumes ("1"), information chapters ("1"), work packages ("2"), tasks ("0"), procedures ("0"), figures ("1"), standard information tables ("1"), tables ("1"), warning summary ("1"), how to use ("1"), glossary ("1"), index ("1"), and foldout section ("1").

15.4.2.9.3 How to develop a TOC.

A TOC is developed for each data type with the attribute **tocentry** not being "0." Titles used in the TOC are the same words as in the data type being referenced IAW MIL-STD-40051-1/-2 which states, "They should have the exact same title and should be listed in the same order they appear in the TM." Depending on the composition system, the method used to generate the TOC may vary. The four methods to develop a TOC are:

1. Method 1 – Composition system generated TOC (not using attribute indenture level) (see Section 15.4.2.9.6).
2. Method 2 – Composition system generated TOC (using attribute indenture level) (see Section 15.4.2.9.7).
3. Method 3 – Preprocess application to generate TOC elements (see Section 15.4.2.9.8).
4. Method 4 – Manually enter TOC entries (see Section 15.4.2.9.9).

15.4.2.9.4 Linking to TOC entry to information.

The TOC entry should provide a hyperlink to referenced information. The work package or page reference will be active through the use of the <link> element. The TOC entry title <title> also can be linked to the target information through the attribute **idref**. A reference in the title would allow both the title and page reference to be an active link to the information.

15.4.2.9.5 Figure and table entries.

Generally, figures and tables are grouped together under the work package they are related under. The purpose of listing the figures and tables under the work package is the requirement to have each figure or table to restart numbering at one for each work package. Grouping the figures or tables together would make the figure number or table number almost useless. When grouping figures and tables under a work package, the element <sub-contententry> attribute **figuretable** is set to "yes," which indicates to a stylesheet that the page number reference is inset from the work package sequence reference column.

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15.4.2.9.6 Method 1 – composition system generated TOC (not using attribute indenture level).

Method 1 generates the TOC to the output file only and does not save the markup information to the source document, therefore the TOC is always current to the latest publication. The indenture level is determined by the stylesheet rules, as specified by the acquiring activity. The following is the preferred hierarchy for the data types:

1. Volume (if applicable)
2. Information Chapter, Warning Summary, How to Use, Glossary, and Index
3. Work package
4. Task and Procedures (if applicable)
5. Figures and Tables (if applicable)

The stylesheet stores or transverses the markup tree for the TOC marked data type titles and, if applicable, stores either the Work Package sequence number (work packages) or references the page number (tasks, procedures, figures, tables, and standard information tables).

15.4.2.9.7 Method 2 – composition system generated TOC (using attribute indenture level).

Method 2 is similar to Method 1 except the stylesheet uses the **tocentry** attribute value to determine the indenture level of the data type. The TM developer needs to determine early in the development structure of the TM to avoid the need to relabel the **tocentry** later in the development cycle. Some defaulted **tocentry** attribute value will require modification (when volumes are used).

15.4.2.9.8 Method 3 – preprocess application to generate TOC elements.

Method 3 uses an application, prior to applying the stylesheet, to read the entire TM document instance and capture the necessary information for all data that has the **tocentry** attribute value not equal to “0.” The application may use the indenture levels to determine the TOC information position or use the XML elements hierarchy. Each referenced TOC entry needs an ID attribute set to provide referencing information (page number or hyperlinking), if no ID value is provided the application should generate an ID value and apply the ID value to the referenced text. Generally most items in the TOC would have an ID attribute set, since all work packages require an ID and most figures and tables have ID values. TABLE IV. shows the mapping of data type information into TOC entry.

TABLE IV. TOC entry mapping

Data Type	TOC entry <title> is derived from	TOC entry <link> attribute label value is derived from
Volume	Volume <volume> label attribute	Volume <volume> id attribute
Warning summary	Warning summary <warnsum> title <title>	Warning summary <warnsum> title <title>; id attribute
How to use	How to use <howtouse> title <title>	How to use <howtouse> or how to use title <title>; id attribute
Glossary	Glossary <glossary> title <title>	Glossary <glossary> or glossary title <title>; id attribute
Index	Index <aindx> title <title>	Index <aindx> or index title <title>; id attribute

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TABLE IV. TOC entry mapping (continued)

Data Type	TOC entry <title> is derived from	TOC entry <link> attribute label value is derived from
Information chapter	Title Page <titlepg> content (<name>, <part>, <modelno>, and <nsn>)	Information Chapter (<gim>, <opim>, <tim>, <mim>, <pim>, <dim>, and <sim>); id attribute
Work package	Work package identification information <wpidinfo> title <title>	Each work packages' (<maintwp>) wpno attribute
Task	Task (Clean <clean>) title <title>	Task (Clean <clean>) or task title <title>; id attribute
Procedure	Procedure <proc> title <title>	Procedure <proc> procedure title <title>; id attribute
Figure	Figure <figure> title <title>	Figure <figure> or figure title <title>; id attribute
Data Type	TOC entry title <title> is derived from	TOC entry <link> attribute label value is derived from
Table	Table <table> title <title>	Table <table> or table title <title>; id attribute
Standard information	Standard information (PMCS <pmcstable>) title <title>	Standard information (PMCS <pmcstable>) or standard information title <title>; id attribute

An example of the mapping TM data type information into TOC entry XML markup is provided below.

1. Maintenance information chapter markup example:

```

<mim chap-toc="no" id="CHAP3-X-XXXX-XXX" revno="0" frame="yes" chngno="0" tocentry="1">
<titlepg maintlvl="field">
<name>Chapter 3
</name>
<name>Field Maintenance Instructions
</name>
</titlepg>...
<maintwp wpno="M03451-X-XXXX-XXX" tocentry="2" frame="yes" army="no" airforce="no" navy="no" marines="no" wpseq="0029" deletewp="no">
<wpidinfo>
<maintlvl level="field"/>
<title>24-Volt Connector Receptacle
<brk/>Assembly, Repair, Reassembly
</title>
</wpidinfo>...
<figure application="both" figtype="normal-page" tocentry="3" pane="no" id="M03451-X-XXXX-XXX-fig1">
<title>24-volt connector receptacle.
</title>...
</figure>...
</maintwp>...
</mim>

```

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2. TOC entry markup after preprocess example:

```

<contententry>
<title>Chapter 3 - Fielding Maintenance Instructions
</title>
<sub-contententry figuretable="no">...
<contententry>
<title>24-Volt Connector Receptacle Assembly, Repair, Reassembly
</title>
<link xmlns:xlink="http://www.w3.org/1999/xlink" application="both" local="M03451-X-XXXX-XXX"
xlink:type="simple" linktype="goto" linkaction="prompt">
<ref.generate/>
</link>
<sub-contententry figuretable="yes">...
<contententry>
<title>24-volt connector receptacle
</title>
<link xmlns:xlink="http://www.w3.org/1999/xlink" application="both" local="M03451-X-XXXX-XXX-
fig1" xlink:type="simple" linktype="goto" linkaction="prompt">
<ref.generate/>
</link>
</contententry>...
</sub-contententry>
</contententry>
</sub-contententry>...
</contententry>

```

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3. Generated TOC output example:

*TM 9-4910-784-13&P

TABLE OF CONTENTS

	Page No.
	<u>WP Sequence No.</u>
HOW TO USE THIS MANUAL	vii
CHAPTER 1. GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION	
GENERAL INFORMATION	WP 0000.1-1
Table 1. NOMENCLATURE CROSS-REFERENCE LIST	WP 0001-2
Table 2. Acronyms and Abbreviations List.	WP 0001-3
EQUIPMENT DESCRIPTION AND DATA for the HYDRAULIC SYSTEMS TEST AND REPAIR UNIT (HSTRU)	WP 0001-1
Figure 1. HSTRU Right-Side View Showing Toolboxes	WP 0001-1
Figure 2. HSTRU Left-Side View Showing Components and Toolboxes.	WP 0001-2
Figure 3. HSTRU Rear View Showing Components	WP 0001-3
Figure 4. HSTRU Toolbox Locations (Rear View)	WP 0001-4
Figure 5. HSTRU Data Plate Locations	WP 0001-4
Table 1. HSTRU Components and Toolbox Locations	WP 0001-1
Table 2. HSTRU Components and Toolbox Locations	WP 0001-1
Table 3. HSTRU Components and Toolbox Locations	WP 0001-2
Table 4. HSTRU Components and Toolbox Locations	WP 0001-2
Table 5. HSTRU Component Locations	WP 0001-3
Table 6. HSTRU Component Locations.	WP 0001-4
Table 7. HSTRU Specifications	WP 0001-4
THEORY OF OPERATION	WP 0002-1
Figure 1. HSTRU Front.	WP 0002-1
Figure 2. Figure Alt Test	WP 0002-1
Figure 3. HSTRU	WP 0002-2
Figure 4. HSTRU Front.	WP 0002-2
Figure 5. HSTRU Front.	WP 0002-3
CHAPTER 2. OPERATOR INSTRUCTIONS	
Description and Use of Operator Controls and Indicators	WP 0003-1
Figure 1. Power Distribution Box.	WP 0003-1
Table 1. Power Distribution Box Controls and Indicators	WP 0003-2
DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS for the HYDRAULIC SYSTEMS TEST AND REPAIR UNIT (HSTRU)	WP 0004-1
Figure 1. Circuit Breaker Switch	WP 0004-1
OPERATION UNDER USUAL CONDITIONS - SETUP	WP 0005-1
Figure 1. HSTRU Support Stand, Hand Brakes, Safety Chains, and Taillight Electrical Connector	WP 0005-1
Figure 2. Support Stands (Stored Position)	WP 0005-2
Figure 3. Installing Support Stands.	WP 0005-2
Figure 4. Tailgate Lowering	WP 0005-3
Figure 5. Bed Slide Opening	WP 0005-3
Figure 6. Support Stands (Stored Position)	WP 0005-4
Figure 7. Bed Slide Opening and Support Stand Installation.	WP 0005-4
Figure 8. Grounding Wire Connection	WP 0005-5
OPERATION UNDER USUAL CONDITIONS - CHOCK Placement	WP 0006-1
Figure 1. Chock Placement (Level Ground)	WP 0006-1
Figure 2. Chock Placement (One Side Raised)	WP 0006-2

FIGURE 51. Table of content sample page <contents>.

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15.4.2.9.9 Method 4 – manually enter TOC entries.

Method 4 does not require a separate application applied to the document instance. The author will manually perform the following tasks to permit TOC generation. The author would generate the TOC either as each work package is created or after all work packages have been developed. It is important to note that MIL-STD-40051-1/-2 states the titles in the TOC are an exact match to the target titles. The WP sequence number and page number can be reference generated by the stylesheet (this is the best method to ensure numbers are correct) or by manually entering the information. To manually enter WP sequence numbers or page numbers, the author using the **<link>** element would use the child element **<prompt>** instead of the element **<ref.generate>**. The author would enter within the **<prompt>** element the WP sequence number or page number (manually entering the page number requires the author to have applied the stylesheet and review the generated output). The example markup below shows how to manually enter information (using an example from Section 15.4.2.9.8).

```
<contententry>
<title>Chapter 3 – Fielding Maintenance Instructions
</title>
<sub-contententry figuretable="no"> . . .
<contententry>
<title>24-Volt Connector Receptacle Assembly, Repair, Reassembly
</title>
<link xmlns:xlink="http://www.w3.org/1999/xlink" application="both" local="M03451-X-XXXX-XXX" xlink:
type="simple" linktype="goto" linkaction="prompt">
<prompt>WP 0029
</prompt>
</link>
<sub-contententry figuretable="yes"> . . .
<contententry>
<title>24-volt connector receptacle
</title>
<link xmlns:xlink="http://www.w3.org/1999/xlink" application="both" local="M03451-X-XXXX-XXX-fig1"
xlink:type="simple" linktype="goto" linkaction="prompt">
<prompt>0029-2
</prompt>
</link>
</contententry> . . .
</sub-contententry>
</contententry>
</sub-contententry> . . .
</contententry>
```

15.4.2.9.10 Table of contents alternative <contents-alt>.

The element **<contents-alt>** is used for configuration filtering of front matter material.

1. The components of **<contents-alt>** are table of contents **<contents>**.
2. The DTD fragment for **<contents-alt>** is:

```
<!ELEMENT contents-alt (contents)>
```
3. No attributes for **<contents-alt>**.

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15.4.3 System/subsystem hierarchy <systemhierarchy>.

The element **<systemhierarchy>** breaks down the end item work packages to the respective subsystems to the lowest defined work package subsystem item. Some work packages (general information) are intended for all subsystems and are not identified to any one subsystem item or group. The tagging of this type of IETM is grouped by system tags where the functional IETM is grouped by functional chapter tags.

1. The components of **<systemhierarchy>** are:

- a. Revision Summary **<revisionsummary>** (required). The element provides a list of work packages by title that have been revised to a revised manual (see Section 15.2.1.1.1).
- b. Alternative Revision Summary **<revisionsummary-alt>** (required) (see Section 35.2.1).
- c. Front Cover **<frntcover>** (required). The element provides the data for the front cover of a TM (see Section 15.4.2.4).
- d. Overall System Information **<overallsystem>** (required). The element defines the work packages used overall for the equipment in a system/subsystem hierarchy manual (see Section 15.4.3.1).
- e. Work Packages **<systembreakdown>** (required – one or more). The element is used to define a system/subsystem structure (see Section 15.4.3.2).
 - i. Battle damage chapter **<bim>** (optional). This element is used exclusively with the system **<systemhierarchy>** or the functional **<functionhierarchy>** element. It provides the TM user with procedures to assess and repair battle damages on the field. These procedures are not to be used for routine repairs (see 15.13).
 - ii. Software Information Chapter **<soim>**. This element provides access to various work packages specifically used in the SAM/SUM manuals and or as a standalone software chapter.
 - iii. Destruction Chapter **<dim>** (optional). The element provides destruction procedures, as a chapter, for a weapons system TM (see Section 25.1).
- f. Reference Work Packages **<systemref>** (required). The element provides the general reference work packages.
- g. Parts Introductory Work Package **<introwp>** (required). The element provides the parts information introduction work package (see Section 24.4.1).
- h. Repair Parts List Work Package **<plwp>** (required – one or more). The repair parts list work package contains lists and illustrations of all repair parts in accordance with the functional group code (see Section 24.4.2).
- i. Repair Parts For Special Tools List Work Package **<stl-partswp>** (optional). The element provides a work package when any special tool has repair parts that may be replaced at any maintenance level covered in the TM. (see Section 24.4.3).
- j. Kits Items List Work Package **<kitswp>** (optional – zero or more). The element provides separate work package for listing the kit items (see Section 24.4.4).
- k. Parts Bulk Item List Work Package **<bulk_itemswp>** (optional – zero or more). The element provides a work package for material that is used to make items (see Section 24.4.5).
- l. Special Tools List Work Package **<stlwp>** (optional – zero or more). The element provides a work package that contain lists and illustrations of all special tools (see Section 24.4.6).
- m. An optional group of the NSN index **<nsnindxwp>** and part number index **<pnindxrefwp>** When this group is used, both the stock number and part number index work packages are used.
 - i. National Stock Number Index Work Package **<nsnindxwp>**. The element provides a work package that contains an index listing all NSNs with its associated figure number, and item number (see Section 24.4.7.1).

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- ii. Part Number Index Work Package **<pnindxwp>**. The element provides a work package that contains a part index listing all part numbers with its associated figure number and item number (see Section 24.4.7.2).
 - n. Standard Information Reference Designator Index **<refdesindxwp>** (required). The element provides a work package that contains a cross reference of reference designators with illustration number and callout (see Section 24.4.7.3).
 - o. Reporting Errors and Recommending Improvements **<da2028>** (required – one or more). The element provides the DA Form 2028-2 for reporting errors and recommending equipment improvements (see Section 15.5.2.3).
 - p. Authentication block **<authent>** (required). This allows the author to include the authentication information for the TM as required by DA policy (see Section 15.5.2.4).
2. The DTD fragment for **<systemhierarchy>** is:

```
<! ELEMENT systemhierarchy ((revisionsummary | revisionsummary-alt +),
(frntcover | frntcover-alt+), overallsystem, systembreakdown+, dim?, bim?,
soim?, introwp, plwp +, stl_partswp?, kitswp*, bulk_itemswp*, stlwp*,
nsnindxwp, pnindxwp, refdesindxwp?, systemref, da2028+, authent)>
```

3. The DTD fragment for **<systemhierarchy>** is graphically depicted.

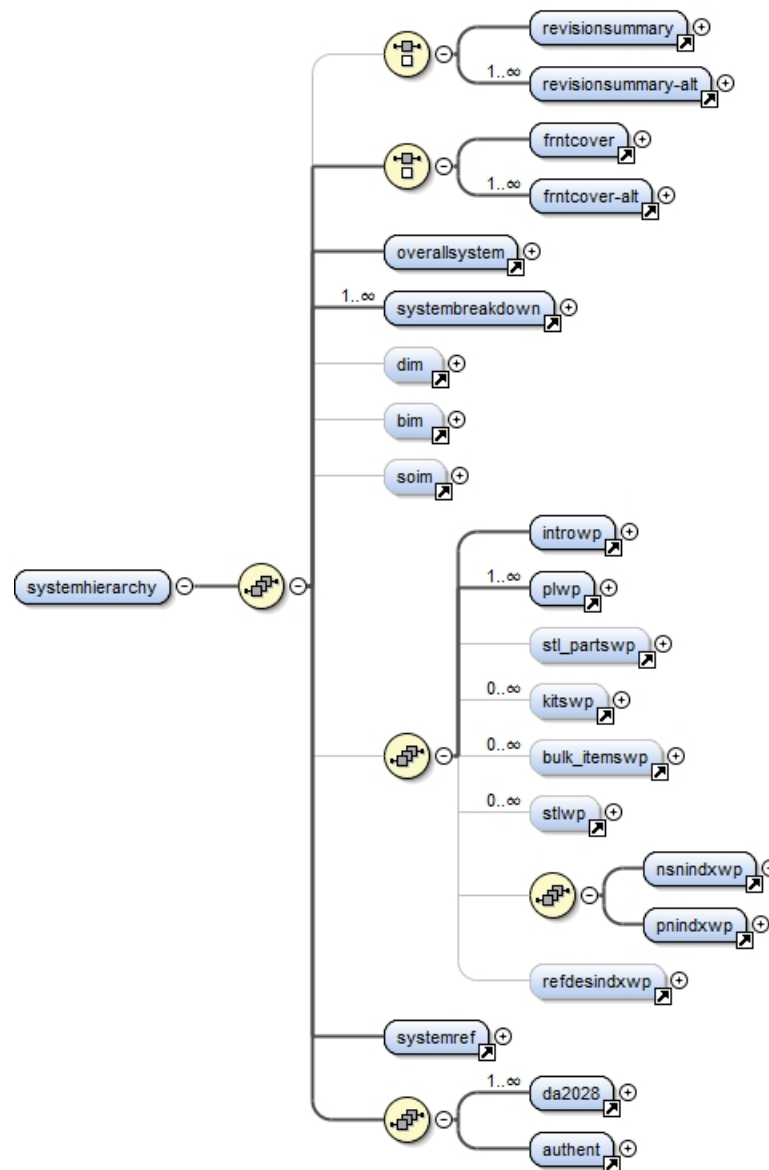


FIGURE 52. System/subsystem hierarchy **<systemhierarchy>** DTD hierarchy.

4. No attributes for **<systemhierarchy>**.

15.4.3.1 Overall system information **<overallsystem>**.

The element **<overallsystem>** is used for the overall system information that defines the work packages used overall for the equipment in a system/subsystem hierarchy manual.

1. The components of **<overallsystem>** are:

- a. Title **<title>** (required). Title for the over all system (see Section 36.1.1.4).
- b. Marine corps promulgation information **<promulgation>** (see Section 15.4.2.7) or **<promulgation-alt>** (optional) (see Section 15.4.2.8).

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- c. A warning summary **<warnsum>** or **<warnsum-alt>** (optional) (see Section 15.5.1.2).
- d. How to use **<howtouse>** (required). Element provides the user any special information on how to read and use information and procedures (see Section 15.4.2).
- e. How to Use Alternative **<howtouse-alt>** (required). (see Section 35.2.1).
- f. General Information Work Package **<ginfowp>** (required). The element provides general information, reference statements and standard statements (see Section 18.1.1).
- g. PMCS Introductory Work Package **<pmcsintrowp>** (optional). The element provides the PMCS introduction (see Section 23.5).
- h. PMCS Work Package **<pmcswp>** (optional). The element provides the required data for a PMCS work package (see Section 23.6).
- i. Equipment Description and Data Work Package **<descwp>** (optional – zero or more). The element provides information that describes the system (see Section 18.1.3).
- j. Theory of Operation Work Package **<thrywp>** (optional – zero or more). The element provides theory of operation information for the system (see Section 18.1.4).
- k. Description and Use of Controls and Indicators Work Package **<ctrlindwp>** (optional – zero or more). The element provides the description and use of all system and equipment controls and indicators (see Section 19.1.1).
- l. Aviation Troubleshooting Introduction Work Package **<tsintrowp>** (optional). The element provides general information needed to supplement the troubleshooting procedures (see Section 22.13.1).
- m. Troubleshooting Index Work Package **<tsindxwp>** (optional). The element provides a reference index to the applicable testing and troubleshooting WP, maintenance WP, or required corrective action (see Section 22.5).

2. The DTD fragment for **<overallsystem>** is:

```
<!ELEMENT overallsystem (title , (promulgation | promulgation-alt+) , (warnsum
| warnsum-alt+)? , (howtouse | howtouse-alt+ ) , ginfowp , (pmcsintrowp ,
pmcswp)? , descwp* , thrywp* , ctrlindwp* , tsintrowp? , tsindxwp?)>
```

3. The DTD fragment for **<overallsystem>** is graphically depicted.

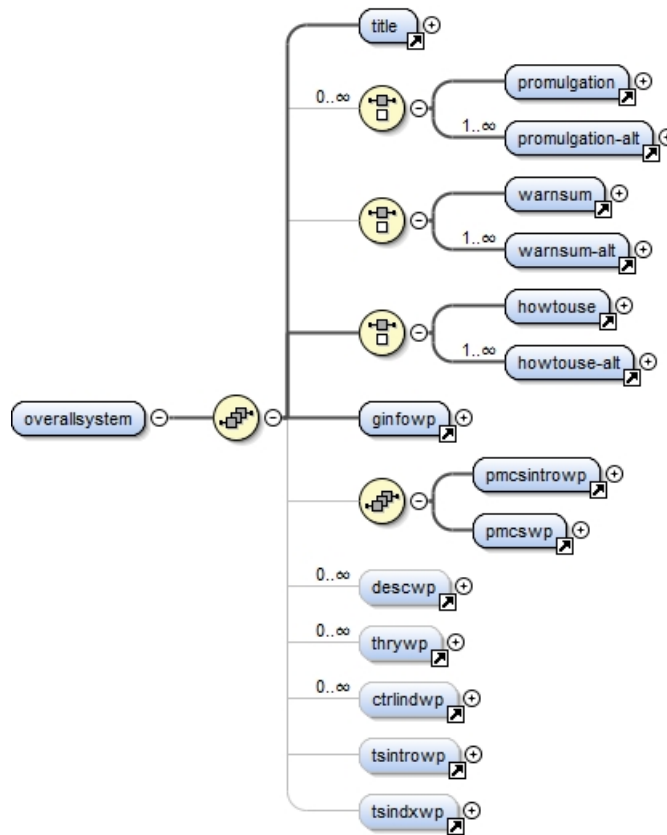


FIGURE 53. Overall system information **<overallsystem>** DTD hierarchy.

4. No attributes for **<overallsystem>**.

15.4.3.2 System/subsystem work packages **<systembreakdown>**.

The element **<systembreakdown>** is used for the system/subsystem work packages that defines a system/subsystem structure. Any work package related to the system is located under this element. Subsystem levels are recursively referenced down to the lowest assemble level.

1. The components of **<systembreakdown>** are:
 - a. System/Subsystem Nomenclature **<systemnomen>** (required). The element provides the nomenclature for the system/subsystem and identification numbers (see Section 15.4.3.2.1).
 - b. Equipment Description and Data Work Package **<descwp>** (required – one or more). The element provides information that describes the system (see Section 18.1.3).
 - c. Theory of Operation Work Package **<thrywp>** (optional – zero or more). The element provides theory of operation information for the system (see Section 18.1.4).
 - d. Description and Use of Controls and Indicators Work Package **<ctrlindwp>** (optional – zero or more). The element provides the description and use of all system and equipment controls and indicators (see Section 19.1.1).
 - e. Operating Under Usual Conditions Work Package **<opusualwp>** (optional – zero or more). The element provides step-by-step instructions for equipment and auxiliary equipment operation in operation under usual or normal conditions modes (see Section 19.1.4).

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- f. Operating Under Unusual Conditions Work Package **<opunuwp>** (optional – zero or more). The element provides step-by-step instructions for equipment and auxiliary equipment operation in all under unusual condition modes (see Section 19.1.5).
- g. Emergency Work Package **<emergencywp>** (optional – zero or more). The element provides emergency procedures using, but not limited to, the operating and equipment shutdown (see Section 19.1.6).
- h. Stowage And Decal/Data Plate Guide Work Package **<stowagewp>** (optional – zero or more). The element provides lists and illustrates the location of all applicable Components of End Item (COEI), Basic Issue Items (BII), Additional Authorization List (AAL) items, decals and data plates (see Section 19.1.7).
- i. On-Vehicle Equipment Loading Plan Work Package **<eqploadwp>** (optional – zero or more). The element provides a loading plan that will be prepared by the contracting activity (see Section 19.1.8).
- j. One of the following two groups is required to be included in the TM:
 - i. For ground based systems, a group consisting of the troubleshooting index, preshop analysis, and component checklist.
 - I. Preshop Analysis Work Package **<pshopanalwp>**(optional). The element provides data used for testing or inspecting an item (see Section 22.11.1).
 - ii. For aviation systems, a group consisting of a troubleshooting introduction, a technical description, and a troubleshooting index.
 - I. Aviation Troubleshooting Introduction Work Package **<tsintrowp>** (required). The element provides general information needed to supplement the troubleshooting procedures (see Section 22.13.1).
 - II. Aviation Troubleshooting Technical Description Work Package **<techdescwp>** (optional – zero or more). The element provides technical description and other supporting information about a system or subsystem/assembly/component (see Section 22.13.2).
 - III. Troubleshooting Index Work Package **<tsindxwp>** (optional). The element provides a reference index to the applicable testing and troubleshooting WP, maintenance WP, or required corrective action (see Section 22.5).
- k. One of the following:
 - i. Troubleshooting Procedures Work Package **<tswp>** (optional – zero or more). The element provides start-to-finish troubleshooting procedures, which result in fault isolation and rectification and ultimately either a return to readiness status or referral to a higher maintenance level (see Section 22.8).
 - ii. Operational Checkout Work Package **<opcheckwp>** (optional – zero or more). The element provides operational checkout procedures that subject prescribed conditions to determine that they will function in accordance with predetermined test parameters (see Section 22.7).
 - iii. Combined Operational Checkout and Troubleshooting Work Package **<opcheck-tswp>** (optional – zero or more). The element provides a combined operational checkout and troubleshooting procedures to verify proper operation to prescribed (see Section 22.9).
 - iv. Combined Operational Checkout and Troubleshooting Work Package **<diagnosticwp>** (optional – zero or more). The element provides a combined operational checkout and troubleshooting procedures to verify proper operation to prescribed (see Section 22.10).
- l. Service Upon Receipt Work Package **<surwp>** (optional – zero or more). The element provides information required for the user to ensure that the equipment will be adequately inspected, serviced and operationally tested before it is subjected to use (see Section 23.3).

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- m. Equipment/User Fitting Instructions Work Package **<perseqpwp>** (optional – zero or more). The element provides equipment/user fitting instructions (see Section 23.4).
- n. Preventive Maintenance Checks and Services Work Package **<pmcswp>** (optional – zero or more). The element provides the required data to perform Preventive Maintenance Checks and Services (PMCS) on the equipment (see Section 23.6).
- o. Auxiliary Equipment Work Package **<auxeqpwp>** (optional – zero or more). The element provides maintenance instructions for peculiar support equipment (see Section 23.15).
- p. Phased Maintenance Inspections Work Package **<pmiwp>** (optional – zero or more). The element provides requirements for special inspections, overhaul and retirement schedule, and standards of serviceability applicable to the aircraft. **Aircraft only** (see Section 23.14.1).
- q. Lubrication Instructions Work Package **<lubewp>** (optional – zero or more). The element provides the lubrication data required for equipment checks and maintenance (see Section 23.9).
- r. Maintenance Work Package **<maintwp>** (optional – zero or more) (see Section 23.7). The element provides maintenance information about a system or subsystem/assembly/component.
- s. General Maintenance Work Package **<gen.maintwp>** (optional – zero or more) (see Section 23.8). The element provides General maintenance information not covered in the maintenance work packages.
- t. Facility Work Package **<facilwp>** Facilities work package (optional) (see Section 23.10.1).
- u. Overhaul Inspection Procedures (OIP) work package **<oipwp>** (optional – zero or more) (see Section 23.10.3).
- v. Depot Mobilization Requirements Work Package **<mobilwp>** (optional) (see Section 23.10.4).
- w. Quality Assurance (QA) requirements work package **<qawp>** (required) (see Section 23.10.4.5).
- x. Ammunition Maintenance Work Package **<ammowp>** (optional) (see Section 23.16.1).
- y. Ammunition Marking Information Work Package **<ammo.markingwp>** (optional) (see Section 23.16.2).
- z. Foreign Ammunition (NATO) Work Package **<natowp>** (optional) (see Section 23.16.3).
- aa. Torque limits work package **<torquewp>** (optional) (see Section 23.12).
- ab. Aircraft Inventory Master Guide Work Package **<inventorywp>** (optional) (see Section 23.14.3).
- ac. Manufactured Items Introduction Work Package **<manu_item_introwp>** (required) (see Section 23.11.1).
- ad. Illustrated List of Manufactured Items Work Package **<manuwp>** (optional) (see Section 23.11.2).
- ae. When aircraft depot specific work packages are developed, the following work packages are available (optional). Section **<manuwp>** (optional) (see 23.11.2).
 - i. Storage of Aircraft Work Package **<storagewp>** (optional – zero or more) (see Section 23.14.4).
 - ii. Weighing and Loading Work Package **<wtloadwp>** (required) (see Section 23.14.5).
- af. Wiring Diagrams Work Package **<wiringwp>** (optional – zero or more) (see Section 23.13).

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2. The DTD fragment for **<systembreakdown>** is:

```
<! ELEMENT systembreakdown (systemnomen, (descwp, thrywp*) +, ctrlindwp*,
opusualwp*, opunuwp*, emergencywp*, stowagewp*, eqploadwp*, ((tsindxwp*,
pshopanalwp?, compchklistwp?) | (tsintrowp, techdescwp*, tsindxwp*)), (tswp |
opcheckwp | opcheck-tswp + | diagnosticwp +)?, surwp*, perseqpwp*, pmcswp*,
(auxeqpwp | pmiwp | lubewp | maintwp | gen.maintwp) *, facilwp*, oipwp*,
mobilwp*, qawp*, (ammowp | ammo.markingwp | natowp | torquewp | inventorywp |
(manu_items_introwp , manuwp +) | storagewp | wtloadwp | wiringwp) *,
systembreakdown*)>
```

3. The DTD fragment for **<systembreakdown>** is graphically depicted.

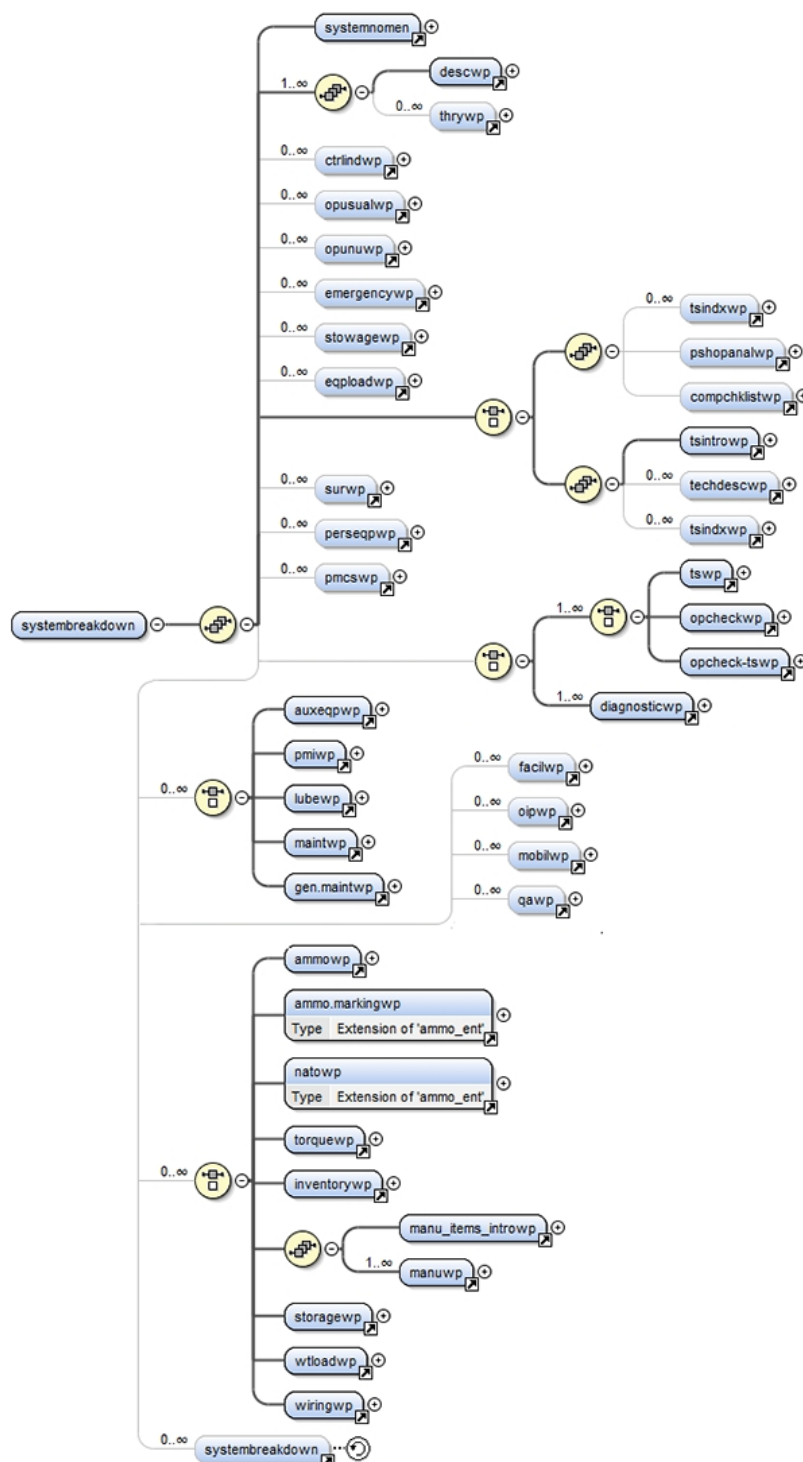


FIGURE 54. System/subsystem work packages <systembreakdown> DTD hierarchy.

4. No attributes for **<systembreakdown>**.

15.4.3.2.1 System/subsystem nomenclature **<systemnomen>**.

The element **<systemnomen>** defines the system/subsystem nomenclature and any identification numbers.

1. The components of **<systemnomen>** are:
 - a. Name **<name>** (required) (see Section 36.1.4.18).
 - b. National Stock Number **<nsn>** (optional) (see Section 36.1.4.19).
 - c. An optional and repeatable grouping of **<partno>** and **<cageno>** where if the part number is used, the CAGE number must also be included.
 - i. Part Number **<partno>** (required) (see Section 36.1.4.22).
 - ii. Commercial and Government Entity Code (CAGEC) **<cageno>** (required) (see Section 36.1.4.1.8).
 - d. Model Number **<modelno>** is used to mark any official model number of a piece of equipment (optional – zero or more) (see Section 36.1.4.17).
 - e. Reference Designation **<refdes>** (optional – zero or more) (see Section 24.4.2.1.7.12).
 - f. Logistic Control Number (LCN) **<lcen>** (optional – zero or more) (see Section 15.4.3.2.1.1).
 - g. Logistic Task Code **<taskcode>** (optional – zero or more) (see Section 15.4.3.2.1.2).
2. The DTD fragment for **<systemnomen>** is:

```
<! ELEMENT systemnomen (name , (nsn | %partid; | modelno | refdes | lcn | taskcode) *) >
```

3. The DTD fragment for **<systemnomen>** is graphically depicted.

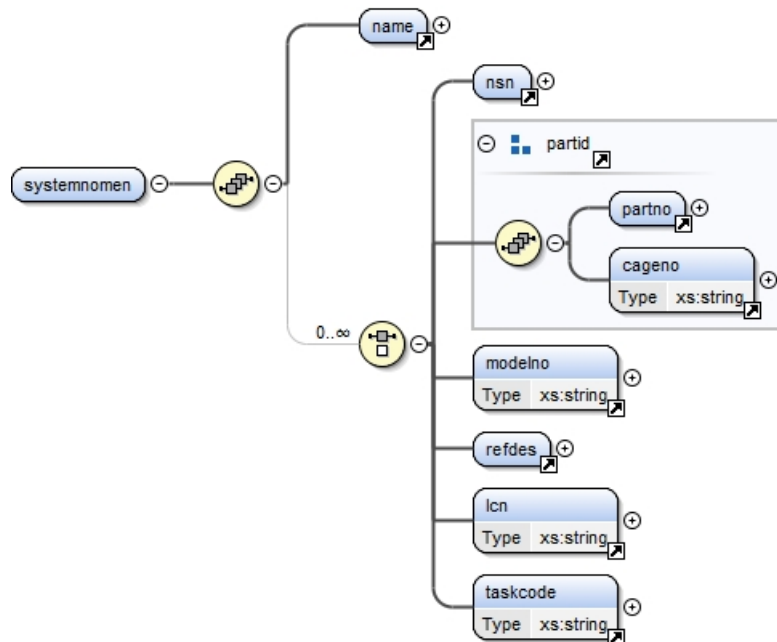


FIGURE 55. Overall system information **<systemnomen>** DTD hierarchy.

4. No attributes for **<systemnomen>**.

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15.4.3.2.1.1 Logistic Control Number (LCN) <1cn>.

The element **<1cn>** provides the Logistic Control Number (LCN) for additional search capability.

1. The components of **<1cn>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<1cn>** is:

```
<!ELEMENT 1cn (#PCDATA)>
```

3. No attributes for **<1cn>**.

15.4.3.2.1.2 Logistic task code <taskcode>.

The element **<taskcode>** identifies information about the task generated from the Logistic Support Analysis (LSA).

1. The components of **<taskcode>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<taskcode>** is:

```
<!ELEMENT taskcode (#PCDATA)>
```

3. No attributes for **<taskcode>**.

15.5 Page base manual <paper .manual>.

The element **<paper .manual>** is for all standard page-based technical manuals. Format style and requirements are prepared IAW MIL-STD-40051-2.

1. The components of **<paper .manual>** are:
 - a. Paper Front **<paper . frnt>** (required) (see Section 15.5.1).
 - b. Select either a General Information group or a Parts Information Chapter for a stand alone parts manual. **At least one is required.**
 - i. General Information Chapter **<gim>**. (required) (see Chapter 18).
 - ii. Volume **<volume>** (optional) (see Section 15.16).
 - iii. Back Matter of Volume **<vol-rear>** (optional) (see Section 15.16.1).
 - iv. Operating Instructions **<opim>** (optional – zero or more) (see Chapter 19).
 - v. Volume **<volume>** (optional) (see Section 15.16).
 - vi. Back Matter of Volume **<vol-rear>** (optional) (see Section 15.16.1).
 - vii. One or more is allowed but at least one of the following is required.
 - I. Troubleshooting Information Chapter **<tim>** (see Chapter 22).
 - II. Volume **<volume>** (optional) (see Section 15.16).
 - III. Back Matter of Volume **<vol-rear>** (optional) (see Section 15.16.1).
 - IV. Maintenance Instructions Chapter **<mim>** (see Chapter 23).
 - V. Volume **<volume>** (optional) (see Section 15.16).
 - VI. Back Matter of Volume **<vol-rear>** (optional) (see Section 15.16.1).
 - VII. Destruction Information Chapter **<dim>** (optional) (see Chapter 25).

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- VIII.** Volume **<volume>** (optional) (see Section 15.16).
- IX.** Back Matter of Volume **<vol-rear>** (optional) (see Section 15.16.1).
- X.** Software Operating Instructions Chapter **<soim>** (see Section 15.4.3).
- XI.** Volume **<volume>** (optional) (see Section 15.16).
- XII.** Back Matter of Volume **<vol-rear>** (optional) (see Section 15.16.1).
- XIII.** Parts Information Chapter **<pim>** (see Chapter 24).
- XIV.** Volume **<volume>** (optional) (see Section 15.16).
- XV.** Back Matter of Volume **<vol-rear>** (optional) (see Section 15.16.1).
- XVI.** Supporting Information Chapter **<sim>** If the author selects the Supporting Chapter, the following two chapters are optional.
 - A.** Parts Information Chapter **<pim>** (optional) (see Chapter 24).
 - B.** Rear **<rear>** (required) (see Section 15.5.2).

Source: <http://assist.dla.mil> Downloaded: 2019 03 19T20:32Z
Check the source to verify that this is the current version before use.

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3. The DTD fragment for **<paper.manual>** is:

```

<!ELEMENT (paper.frnt, ((gim, %volumegroup;, (opim, %volumegroup;)
*, ((tim, %volumegroup;)?, (mim, %volumegroup;)?)+, (dim, %volu-
megroup;)?, (soim, %volumegroup;)?, (pim, %volumegroup;)?, sim) |
pim), rear) (paper.frnt, ((gim, %volumegroup;, (opim, %volumegroup;)
*, ((tim, %volumegroup;)?, (mim, %volumegroup;)?)+, (dim, %volu-
megroup;)?, (soim, %volumegroup;)?, (pim, %volumegroup;)?, sim) |
pim), rear)>

<!ATTLIST paper.manual

dmwr-inclus      (parts | parts-tools)          #IMPLIED
fit.paper.size   (pocket | logbook | standard |   "standard"
double)

maintitl         CDATA                          #REQUIRED
maintlvls        (10 | 13 | 14 | 23 | 24 | 40 | dmwr | nmwr  #REQUIRED
| NA)

multivolume      (yes | no)                      "no"
pubno            CDATA                          #IMPLIED
revno           CDATA                          #REQUIRED
rpstl            (yes | no | only)               "no"
security         (uc | fouo | c | s | ts)        #IMPLIED>

```

4. Common attributes.

- a. **dmwr-inclus** – Specifies whether a DMWR/NMWR includes parts only or parts and tools.
- b. **fit.paper.size** – Fit paper size by selecting an attribute value from the list. The default value is **standard**.
- c. **maintitl** – Maintenance title supplies a literal version of the title for the maintenance-level. (required).
- d. **maintlvls** – Maintenance level identifies the lowest maintenance level/class authorized to use the manual; this attribute value is used in the stylesheet to supply the literal expression of the TM's maintenance level. (required).
- e. **multivolume** – Is the manual broken into volumes. The default value is **no**. This attribute is used by the stylesheet to provide volume numbers when needed.
- f. **pubno** – Publication number attribute specifies the technical manual publication number.
- g. **revno** – The overall revision number for the manual (required).
- h. **rpstl** – Specifies whether or not the manual includes a RPSTL among its chapters or if it is a stand alone parts manual. The default value is **no**.
- i. **security** – Security classification (optional) (see Section 36.3.14).

15.5.1 Paper front matter **<paper.frnt>**.

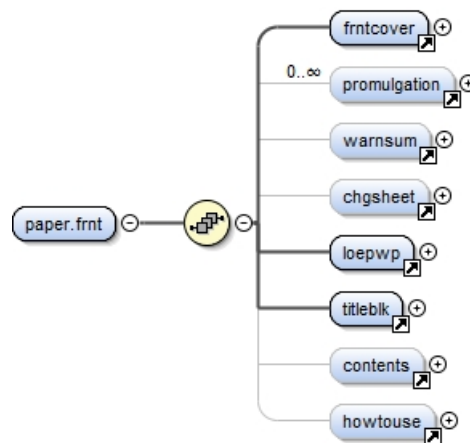
The element **<paper.frnt>** contains all front matter of a technical manual and occurs before the first chapter of the manual. Format style and requirements are prepared for a standard page-oriented presentation. The following paragraphs describe the allowable front matter.

1. The components of **<paper.frnt>** are:

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- a. Front cover **<frntcover>** or abbreviated front cover **<frntcover_abbreviated>** (required). Element provides the data for a front cover for a TM (see Section 15.4.2.4).
 - b. The Promulgation Letter **<promulgation>** (optional – zero or more). Element provides the Marine Corps promulgation letter for a TM that contains Marine Corps data (see Section 15.4.2.7).
 - c. Warning Summary **<warnsum>** (optional). Element lists any first aid, general warnings, any safety warning icons, and hazardous material warnings contained in the TM (see Section 15.5.1.2).
 - d. Change transmittal page **<chgsheet>** (required). Element provides the change sheet required to appear in a changed document (see Section 15.5.1.3).
 - e. List of effective work packages **<loepwp>** (optional). Element provides the user a list of effective work packages that lists the latest work packages in the TM (see Section 15.5.1.4).
 - f. Title block page **<titleblk>** (optional). Element provides the title block material including titles and notices from the front cover and additional data such as the ‘reporting of errors’ statement (see Section 15.5.1.5).
 - g. Table of contents **<contents>** (optional). Element provides the data to construct a table of contents (see Section 15.4.2.9).
 - h. How to use **<howtouse>** (optional). Element provides the user any special information on how to read and use information and procedures contained in the TM (see Section 15.4.2).
2. The DTD fragment for **<paper.frnt>** is :


```
<!ELEMENT paper.frnt (frntcover , promulgation* , warnsum? , chgsheet? , loepwp , titleblk , contents? , howtouse?)>
```
 3. The DTD fragment for **<paper.frnt>** is graphically depicted.

FIGURE 57. Paper front matter **<paper.frnt>** DTD hierarchy.

4. No attributes for **<paper.frnt>**.

15.5.1.1 Front cover **<frntcover>**

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15.5.1.1.1 Example of a front cover.

The following contains an example of an XML instance for a front cover. Example 1 contains the tags and full text. Example 2 contains the stylesheet output of the front cover **<frntcover>**.

1. Example of an XML document instance fragment containing the tags and full text for **<frntcover>**:

```

<frntcover>
  <tmtitle>
    <tmno>3-6665-339-10
  </tmno>
  <prtitle>
    <sysnomen>
      <name>TECHNICAL MANUAL
      <brk/>OPERATOR'S MANUAL FOR NUCLEAR-BIOLOGICAL-CHEMICAL RECONNAISSANCE
      SYSTEM (NBCRS)
    </name>
    <modelno>FOX M93A1
  </modelno>
  <nsn>
    <fsc>6665
  </fsc>
  <niin>01-372-1303
  </niin>
  </nsn>
</sysnomen>
</prtitle>
</tmtitle>
<notices>
  <dist>
    <c.statement>
      <adminops/>
      <reasondate>22 October 1990
    </reasondate>
    <releaseagent>U. S. Army Chemical Research Development and Engineering Center,
    ATTN: SMCRR-MAT, Aberdeen Proving Ground, MD 21010-5423
  </releaseagent>
    </c.statement>
  </dist>
  <export/>
  <destr>
    <para>Destroy by any method that will prevent disclosure of contents or
    reconstruction of the document.
  </para>
  </destr>
</notices>
  <servnomen>HEADQUARTERS, DEPARTMENT OF THE ARMY
  </servnomen>
  <date>1 JUNE 1996
  </date>
</frntcover>

```

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2. Example of the stylesheet output for <frntcover>:

TM 3-6665-339-10

TECHNICAL MANUAL

**OPERATOR'S MANUAL
FOR
NUCLEAR-BIOLOGICAL-CHEMICAL
RECONNAISSANCE SYSTEM (NBCRS)
FOX M93A1
(NSN 6665-01-372-1303)**

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1 JUNE 1996

FIGURE 58. Example of a front cover <frntcover>.

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3. Example of an XML document instance fragment for a phased maintenance TM front cover **<frntcover>**:

```

<frntcover>
  <tmtitle>
    <tminfono>
      <servbranch service="army"/>
      <tmno>TM 1-1520-238-PM
    </tmno>
    </tminfono>
  </tmtitle>
  <prtitle>
    <sysnomen pretext="TECHNICAL MANUAL">
      <name>PHASED MAINTENANCE INSPECTION CHECKLIST
    </name>
    <modelno>AH-64A HELICOPTER
    </modelno>
    <nsn>
      <fsc>6665
    </fsc>
    <niin>01-372-1303
    </niin>
    </nsn>
    </sysnomen>
  </prtitle>
</tmtitle>
<notices>
  <a.statement>
    </a.statement>
  </dist>
</notices>
<servnomen>HEADQUARTERS , DEPARTMENT OF THE ARMY
</servnomen>
<date>28 FEBRUARY 2002
</date>
</frntcover>

```

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4. Example of the stylesheet output for phased maintenance TM front cover <frntcover>.

TM 3-6665-339-10

TECHNICAL MANUAL

**OPERATOR'S MANUAL
FOR
NUCLEAR-BIOLOGICAL-CHEMICAL
RECONNAISSANCE SYSTEM (NBCRS)
FOX M93A1
(NSN 6665-01-372-1303)**

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FIGURE 59. Example of a phased maintenance TM front cover <frntcover>.

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5. Example of an XML document instance fragment for DMWR front cover **<frntcover>**:

```

<frntcover>
  <tmtitle>
    <tminfono>
      <servbranch service="army"/>
      <tmno>DMWR 11-5895-532-2
    </tmno>
    </tminfono>
    <prtitle>
      <sysnomen pretext="DEPOT MAINTENANCE WORK REQUIREMENT">
        <name>INTERROGATOR SETS
      </name>
      <modelno>AN/TPX-46 (V) 1
    </modelno>
    <nsn>
      <fsc>5895
    </fsc>
    <niin>00-423-1693
    </niin>
    </nsn>
    <modelno>AN/TPX-46 (V) 2
    </modelno>
    <nsn>
      <fsc>5895
    </fsc>
    <niin>00-423-1694
    </niin>
    </nsn>
    <modelno>AN/TPX-46 (V) 3
    </modelno>
    <nsn>
      <fsc>5895
    </fsc>
    <niin>00-423-1696
    </niin>
    </nsn>
  </sysnomen>
</prtitle>
</tmtitle>
<notices>
  <avail>
    <title>AVAILABILITY STATEMENT. -
  </title>
  <text>This publication is not available through the APD distribution center. This
  publication is available through
  </text>
  <proponent>
    <name>US Army Communications-Electronics Command,
  </name>
    <address>
      <city>Fort Monmouth
    </city>
    <state>NJ
  </state>

```

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<zip>07703-5007
</zip>
</address>
</proponent>
<text>.
</text>
</avail>
<dist>
<d.statement>
<crittech/>
<reasondate>20 May 1998
</reasondate>
<releaseagent>AMSELL-LC-LM-LT, Fort Monmouth, NJ 07702-5007
</releaseagent>
</d.statement>
</dist>
<destr>
<para>Destroy by any method that will prevent disclosure of contents or reconstruction of the document.
</para>
</destr>
</notices>
<servnomen>US ARMY COMMUNICATIONS-ELECTRONICS COMMAND, FORT MONMOUTH, NJ
</servnomen>
<date>30 JUNE 1998
</date>
</frntcover>

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6. Example of the stylesheet output for DMWR front cover <frntcover>.

TM 3-6665-339-10

TECHNICAL MANUAL

**OPERATOR'S MANUAL
FOR
NUCLEAR-BIOLOGICAL-CHEMICAL
RECONNAISSANCE SYSTEM (NBCRS)
FOX M93A1
(NSN 6665-01-372-1303)**

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FIGURE 60. Example of a DMWR front cover <frntcover>.

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7. Example of an XML document instance fragment for National Maintenance Work Requirement (NMWR) front cover **<frntcover>**.

```

<frntcover>
  <tmtitle>
    <tminfono>
      <servbranch service="army"/>
      <tmno>NMWR X-XXXX-XXX
    </tmno>
    </tminfono>
    <prtitle>
      <sysnomen>
        <name>NATIONAL MAINTENANCE WORK REQUIREMENT CONTAINING NATIONAL MAINTENANCE
        REPAIR STANDARDS
      </name>
      </sysnomen>
      <sysnomen pretext="FOR">
        <name>INTERROGATOR SETS
      </name>
      <modelno>AN/TPX-46 (V) 1
    </modelno>
    <nsn>
      <fsc>5895
    </fsc>
    <niin>00-423-1693
    </niin>
    </nsn>
    <modelno>AN/TPX-46 (V) 2
    </modelno>
    <nsn>
      <fsc>5895
    </fsc>
    <niin>00-423-1694
    </niin>
    </nsn>
    </sysnomen>
  </prtitle>
</tmtitle>
<notices>
  <avail>
    <title>AVAILABILITY STATEMENT. -
  </title>
  <text>This publication is not available through the APD distribution center. This
  publication is available through
  </text>
  <proponent>
    <name>US Army Communications-Electronics Command,
  </name>
    <address>
      <city>Fort Monmouth
    </city>
    <state>NJ
  </state>
    <zip>07703-5007
  </proponent>
  </notices>
</avail>
</frntcover>

```


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</zip>
</address>
</proponent>
<text>.
</text>
</avail>
<dist>
<d.statement>
<crittech/>
<reasondate>20 May 1998.
</reasondate>
<releaseagent>AMSELL-LC-LM-LT, Fort Monmouth, NJ 07702-5007
</releaseagent>
</d.statement>
</dist>
<destr>
<para>Destroy by any method that will prevent disclosure of contents or reconstruction of the document.
</para>
</destr>
</notices>
<servnomen>US ARMY COMMUNICATIONS-ELECTRONICS COMMAND, FORT MONMOUTH, NJ
</servnomen>
<date>30 JUNE 1998
</date>
</frntcover>

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8. Example of the stylesheet output for NMWR front cover <frntcover>.

TM 3-6665-339-10

TECHNICAL MANUAL

**OPERATOR'S MANUAL
FOR
NUCLEAR-BIOLOGICAL-CHEMICAL
RECONNAISSANCE SYSTEM (NBCRS)
FOX M93A1
(NSN 6665-01-372-1303)**

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1 JUNE 1996

FIGURE 61. Example of a NMWR front cover <frntcover>.

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15.5.1.2 Warning summary <warnsum>.

The element **<warnsum>** provides the warning summary for the TM that contains warnings. The warning summary appears on the first right-hand page immediately after the front cover. The warning summary includes first aid data **<first_aid>**, explanations of all general safety warning icons **<safety>** and hazardous materials icons **<haz-icons>** used in the manual. It also includes descriptions of the general safety warnings **<warninfo>** and hazardous materials warnings **<hazard>** that have major impact throughout the manual.

1. The components of **<warnsum>** are:

- a.** Work package metadata **<wp.metadata>** (optional) (see Section 16.4.1).
- b.** First aid data **<first_aid>**(required). Element provides the data for first aid for the TM (see Section 15.5.1.2.1).
- c.** Warning icons **<safety>** (optional). Element provides the explanation of the safety warning icons in the TM. (see Section 15.5.1.2.2).
- d.** Warning description **<warninfo>** (required). Element provides the description of the general warnings that are included in the TM. (see Section 15.5.1.2.3).
- e.** Hazardous materials icons **<haz-icons>** (optional). Provides the hazard icons used in the warning summary (see Section 15.5.1.2.4.1).
- f.** Hazardous materials descriptions **<hazard>**. Element provides the hazardous material warnings appearing in the warning summary (see Section 15.5.1.2.4.3).

2. The DTD fragment for **<warnsum>** is:

```
<!ELEMENT warnsum (wp.metadata?, para, first_aid, safety?, warninfo,
hazmat?)>
<!ATTLIST warnsum
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  chngno              (0-9)          "0"
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)          "0"
  security             (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk            CDATA           #IMPLIED
  tocentry            (0 | 1 | 2 | 3 | 4 | 5)  "1">
```

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3. The DTD fragment **<warnsum>** is graphically depicted.

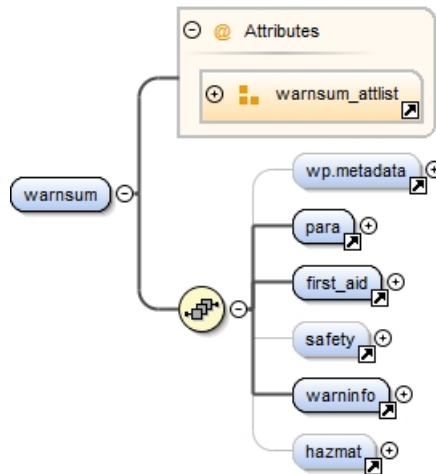


FIGURE 62. Warning summary **<warnsum>** DTD hierarchy.

4. Common attributes for **<warnsum>** are:
- applicable** – Points or links to the master effective list to determine the specific configuration (see Section 16.4.1.4).
 - assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - chnгно** – Change number (optional) (see Section 36.3.12).
 - comment** – Change information (optional) (see Section 36.3.12).
 - delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - id** – Unique identifier (optional) (see Section 36.3.7).
 - idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - security** – Security classification (optional) (see Section 36.3.14).
 - skilltrk** – Skill level (optional) (see Section 36.3.3).
5. Attributes for **tocentry** – Defines the indenture level in the TOC.

15.5.1.2.1 First aid **<first_aid>**.

The element **<first_aid>** provides first aid data in the warning summary. The first paragraph references FM 4-25.11, First Aid. Any additional first aid data not described in FM 4-25.11 is described in this section.

1. The components of **<first_aid>** are:
- Title **<title>** (required) (see Section 36.1.1.4).
 - Illustration **<figure>** (see Section 31.1.1) and/or conditional illustration **<figure-alt>** (see Section 35.2.1) (optional – zero or more).
 - Select one of the following information types:
 - Narrative paragraphs with descriptive or narrative titled text:

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- I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
 - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
 - III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
 - ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).
2. The DTD fragment for **<first_aid>** is:

```

<!ELEMENT first_aid (%titledtext;)>
<!ATTLIST first_aid
assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
delchlvl          (0-99)          "0"
id                ID              #IMPLIED
idref             IDREFS          #IMPLIED
inschlvl          (0-99)          "0"
security           (uc | fouo | c | s | ts) #IMPLIED
skilltrk          CDATA           #IMPLIED>

```

3. The DTD fragment **<first_aid>** is graphically depicted.

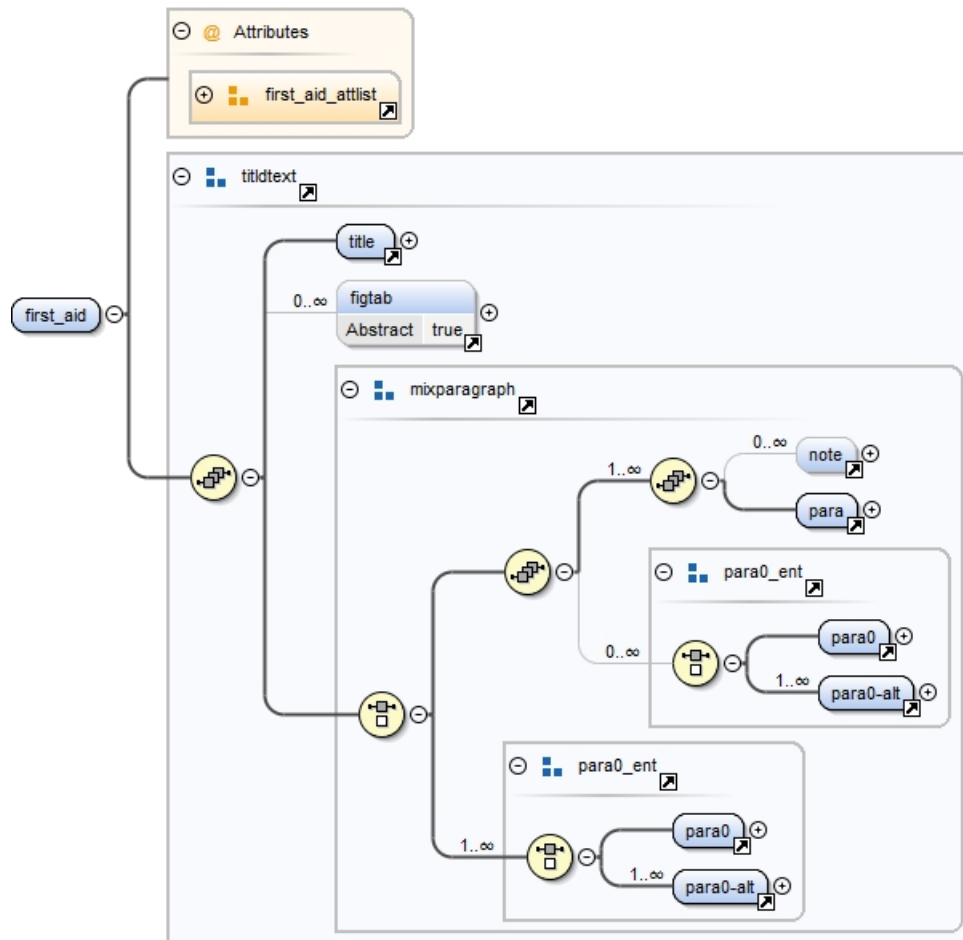


FIGURE 63. First aid **<first_aid>** DTD hierarchy.

4. Common attributes **<first_aid>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref**– Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** - Unique identifier (optional) (see 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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5. Example of an XML fragment using “First Aid” in the Warning Summary.

```

<first_aid>
<title>First Aid
</title>
<para>First aid can be defined as “urgent and immediate lifesaving and other
measures, which can be performed for casualties by nonmedical personnel when
medical personnel are not immediately available.” Refer to
<extref docno=“FM 4-25.11” pretext=“FIRST AID”> for first aid data.
</para>
</first_aid>

```

15.5.1.2.2 Warning icons <safety>.

The element <safety> provides explanations of all general safety warning icons.

1. The components of <safety> are:
 - a. Title <title> (required). Title for the Safety section (see Section 36.1.1.4).
 - b. Safety icons <sfty-icons> (required – one or more). Provides the safety icon description for safety (see Section 15.5.1.2.2.1).
2. The DTD fragment for <safety> is:

```

<!ELEMENT safety (title, sfty-icons+)>
<ATTLIST safety
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>

```

3. The DTD fragment <safety> is graphically depicted.

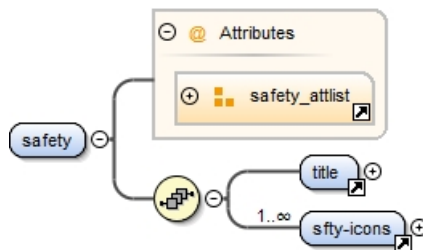


FIGURE 64. Safety <safety> DTD hierarchy.

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4. Attributes for **<safety>**:
 - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – Unique identifier (optional) (see Section 36.3.7).
 - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - h. **security** – Security classification (optional) (see Section 36.3.14).
 - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).
5. Example of an XML fragment using “First Aid” in the Warning Summary.

```

<safety>
<title>EXPLANATION OF SAFETY WARNING ICONS
</title>
<sfty-icons>
<symbol boardno="heavyobject_icon"/>
<sftydesc>
<title>HEAVY OBJECT
</title>
<text>- human figure stooping over heavy object shows physical injury potential
from improper lifting technique.
</text>
</sftydesc>
</sfty-icons>
</safety>

```

15.5.1.2.2.1 Safety icon section **<sfty-icons>**.

The element **<sfty-icons>** provides the symbol and the safety description of the symbol.

1. The components of **<sfty-icons>** are:
 - a. Symbol **<symbol>** (required). Provides the symbol for the safety icon in the safety description (see Section 31.3.1).
 - b. Safety description **<sftydesc>** (required). Provides the description of the safety icon in the safety description (see Section 15.5.1.2.2.2).
2. The DTD fragment for **<sfty-icons>** is:

```

<!ELEMENT sfty-icons (symbol, sftydesc)>
<ATTLIST sfty-icons
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  idref             IDREFS          #IMPLIED

```


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inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

3. The DTD fragment **<sfty-icons>** is graphically depicted.

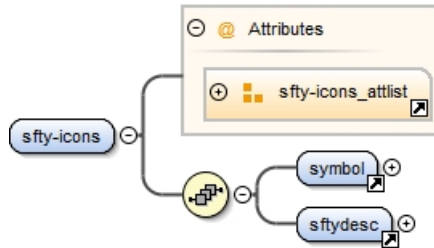


FIGURE 65. Safety icons **<sfty-icons>** DTD hierarchy.

4. Attributes for **<sfty-icons>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

15.5.1.2.2.2 Safety description **<sftydesc>**.

The element **<sftydesc>** provides a description of the hazardous condition associated with a safety icon.

1. The components of **<sftydesc>** are:

- a. Title **<title>** (required). Title for the Safety icon (see Section 36.1.1.4).
- b. Text **<text>** (required). Provides the description of the hazardous condition associated with of the safety icon (see Section 36.1.1.19).

2. The DTD fragment for **<sftydesc>** is:

```
<!ELEMENT sftydesc (title, text)>
<!ATTLIST sftydesc
  assocfig      IDREFS      #IMPLIED
  changeref     IDREFS      #IMPLIED
  comment       CDATA       #IMPLIED
  delchlvl      (0-99)      "0"
  id            ID          #IMPLIED
```

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

3. Attributes for **<sftydesc>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

15.5.1.2.3 General warning information **<warninfo>**.

The element **<warninfo>** is that portion of the warning summary that describes the general safety warnings. General warning information may contain a title, followed by at least one warning.

1. The components of **<warninfo>** are:
 - a. Title **<title>** (optional). Title for the general warning information section (see Section 36.1.1.4).
 - b. General paragraph(s) **<para>** (required – one or more) icon. Provides the description of warning material symbol (see Section 36.1.1.6).
 - c. Warning(s) **<warning>** (required – one or more). A warning should be used to identify a clear danger for injury or death to the person doing that procedure (see Section 28.1.1).
2. The DTD fragment **<warninfo>** is graphically depicted.

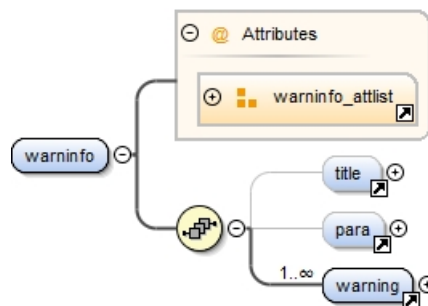


FIGURE 66. General warning information **<warninfo>** DTD hierarchy.

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3. The DTD fragment for **<warninfo>** is:

```

<!ELEMENT warninfo (title?, para?, warning+)>
<!--
  <!--
    !ATTLIST warninfo
      assocfig          IDREFS          #IMPLIED
      changeref         IDREFS          #IMPLIED
      comment           CDATA           #IMPLIED
      delchlvl          (0-99)         "0"
      id                ID              #IMPLIED
      idref             IDREFS          #IMPLIED
      inschlvl          (0-99)         "0"
      security          (uc | fouo | c | s | ts) #IMPLIED
      skilltrk          CDATA           #IMPLIED
  -->

```

4. Attributes for **<warninfo>**.

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

5. Example of an XML fragment using “General Warning Information” in the Warning Summary:

```

<warninfo>
  <title>GENERAL SAFETY WARNINGS DESCRIPTION
</title>
  <warning>
    <warning.group>
      <icon-set boardno="electrical"/>
      <trim. para>Whenever possible shut off system power before beginning work on
equipment.
      </trim. para>
    </warning.group>
  </warning>
</warninfo>

```

15.5.1.2.4 Hazard icons and hazardous materials <hazmat>.

The element <hazmat> provides explanations of any hazard icons in the TM and/or descriptions of hazardous materials used in performing procedures in the TM.

1. The components of <hazmat> are:
 - a. Title <title> (required). Titles for the "Explanation Of Hazardous Materials Icons" section and for the "Hazardous Materials Description" in Warning Summary (see Section 36.1.1.4).
 - b. Hazard icon section(s) <haz-icon> (required – one or more). Provides the hazard icons used in the warning summary (see Section 15.5.1.2.4.1).
 - c. Hazardous material(s) <hazard> (required – one or more) (see Section 15.5.1.2.4.3).
2. The DTD fragment <hazmat> is graphically depicted.

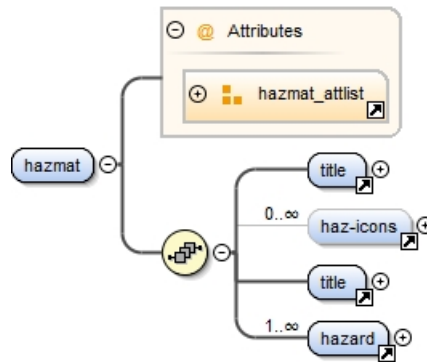


FIGURE 67. Hazard icons and hazardous materials <hazmat> DTD hierarchy.

3. The DTD fragment for <hazmat> is:

```
<!ELEMENT hazmat (title, haz-icons+, title, hazard+)>
<!ATTLIST hazmat
assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
delchlvl          (0-99)          "0"
id                ID              #IMPLIED
idref             IDREFS          #IMPLIED
inschlvl          (0-99)          "0"
security          (uc | fouo | c | s | ts) #IMPLIED
skilltrk          CDATA           #IMPLIED>
```

4. Common attributes <hazmat>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).

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- e. **id** – Unique identifier (optional) (see Section 36.3.7).
 - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - h. **security** – Security classification (optional) (see Section 36.3.14).
 - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).
5. Example of an XML fragment using “Hazard Icons And Hazardous Materials ” in the Warning Summary.

```

<hazmat>
<title>EXPLANATION OF HAZARDOUS MATERIALS ICONS
</title>
<haz-icons>
<symbol boardno="chemical_icon"/>
<hazdesc>
<title>CHEMICAL
</title>
<text> -drops of liquid on hand shows that the material will cause burns or
irritation to human skin or tissue
</text>
</hazdesc>
</haz-icons>
<title>HAZARDOUS MATERIALS DESCRIPTION
</title>
<hazard>
<hazid>DRY CLEANING SOLVENT P-D-680
</hazid>
<symbol boardno="chemical_icon"/>
<symbol boardno="vapor"/>
<para>P-D-680 solvent vapors are toxic. Avoid prolonged or repeated breathing of
vapors or solvent contact with skin. Use only with adequate ventilation. Solvent
is flammable and should not be used near open flame. Fire extinguishers should be
readily available when solvent is used.
</para>
</hazard>
</hazmat>

```

15.5.1.2.4.1 Hazardous material icons <haz-icons>.

The element <haz-icons> provides those hazard icons used in the TM which are defined in the warning summary.

1. The components of <haz-icons> are:
 - a. Symbol <symbol> (required) (see Section 31.3.1). It provides for the hazard icon.
 - b. Hazard description <hazdesc> (required). It provides for the description of the hazard icon (see Section 15.5.1.2.4.2).

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2. The DTD fragment **<haz-icons>** is graphically depicted.

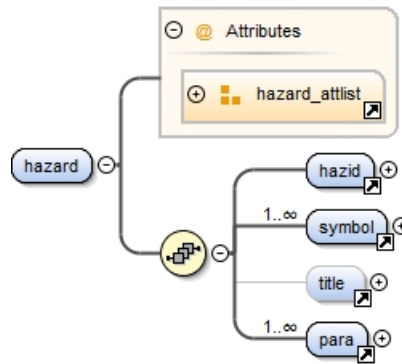


FIGURE 68. Hazard icon section **<haz-icons>** DTD hierarchy.

3. The DTD fragment for **<haz-icons>**:

```
<!ELEMENT haz-icons (symbol, hazdesc)>
<!ATTLIST haz-icons
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

4. Attributes for **<haz-icons>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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15.5.1.2.4.2 Hazard icon description <hazdesc>.

The element **<hazdesc>** provides a description of the hazardous condition associated with a hazard icon.

1. The components of **<hazdesc>** are:
 - a. Title **<title>** (required). Title for the Safety icon (see Section 36.1.1.4).
 - b. Text **<text>** (required). Provides the description of the hazardous condition associated with of the hazard icon (see Section 36.1.1.19).
2. The DTD fragment for **<hazdesc>** is:

```
<!ELEMENT hazdesc (title, text)>
<!ATTLIST hazdesc
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)         "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)         "0"
  security           (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

3. Attributes for **<hazdesc>**:
 - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.7).
 - e. **id** – Unique identifier (optional) (see Section 36.3.7).
 - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - h. **security** – Security classification (optional) (see Section 36.3.14).
 - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

15.5.1.2.4.3 Hazard materials descriptions <hazard>.

The element **<hazard>** provides the hazardous material warnings appearing in the warning summary. It consists of the name or identification of the material, the associated hazard icons (usually multiple), and a description.

1. The components of **<hazard>** are:
 - a. Title **<title>** (optional). Title for the Safety icon (see Section 36.1.1.4).
 - b. Identifying name of the hazardous material **<hazid>** (required). Provides the name of the hazard symbol (see Section 15.5.1.2.4.4).
 - c. Symbol **<symbol>** (required – one or more) (see Section 31.3.1). Provides the hazard icon.

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- d. General paragraph(s) **<para>** (required – one or more). Provides the description of hazardous material symbol (see Section 36.1.1.6).
2. The DTD fragment **<hazard>** is graphically depicted.

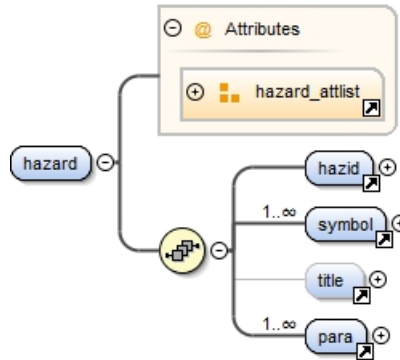


FIGURE 69. Hazard section **<hazard>** DTD hierarchy.

3. The DTD fragment for **<hazard>** is :

```
<!ELEMENT hazard (hazid, symbol+, title?, para+)>
<!ATTLIST hazard
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)         "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)         "0"
  security          (uc | fouo | c | s | ts) #IMPLIED
  skilltrk         CDATA           #IMPLIED>
```

4. Attributes for **<hazard>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7)
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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15.5.1.2.4.4 Identifying name of the hazardous material <hazid>.

The element **<hazid>** provides the name or other identification of a hazardous material.

1. Components for **<hazid>** are:
 - a. Parsable characters or type text. – #PCDATA (see Section 6.2.2.1).
 - b. Format text – **<emphasis>** (see Section 36.1.3.1).
 - c. Subscript – **<subscript>** (see Section 36.1.3.4).
 - d. Superscript – **<supscrpt>** (see Section 36.1.3.5).
 - e. Cross reference – **<xref>** (see Section 33.2.2).
 - f. External reference – **<extref>** (see Section 33.2.1).
 - g. Enhanced linking – **<link>** (see Section 33.2.3).
 - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
 - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
 - j. Term – **<term>** (see Section 36.1.2.4.2).
 - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
 - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
 - m. Footnote – **<ftnote>** (see Section 32.1.1).
 - n. Footnote Reference – **<ftnref>** (see Section 32.1.1.2).
 - o. Graphic – **<graphic>** (see Section 31.2).
 - p. Miscellaneous – **<misc>** (see 36.2.1).
 - q. Changed text marker – **<change>** (see Section 36.1.3.7).

2. The DTD fragment **<hazid>** is graphically depicted.

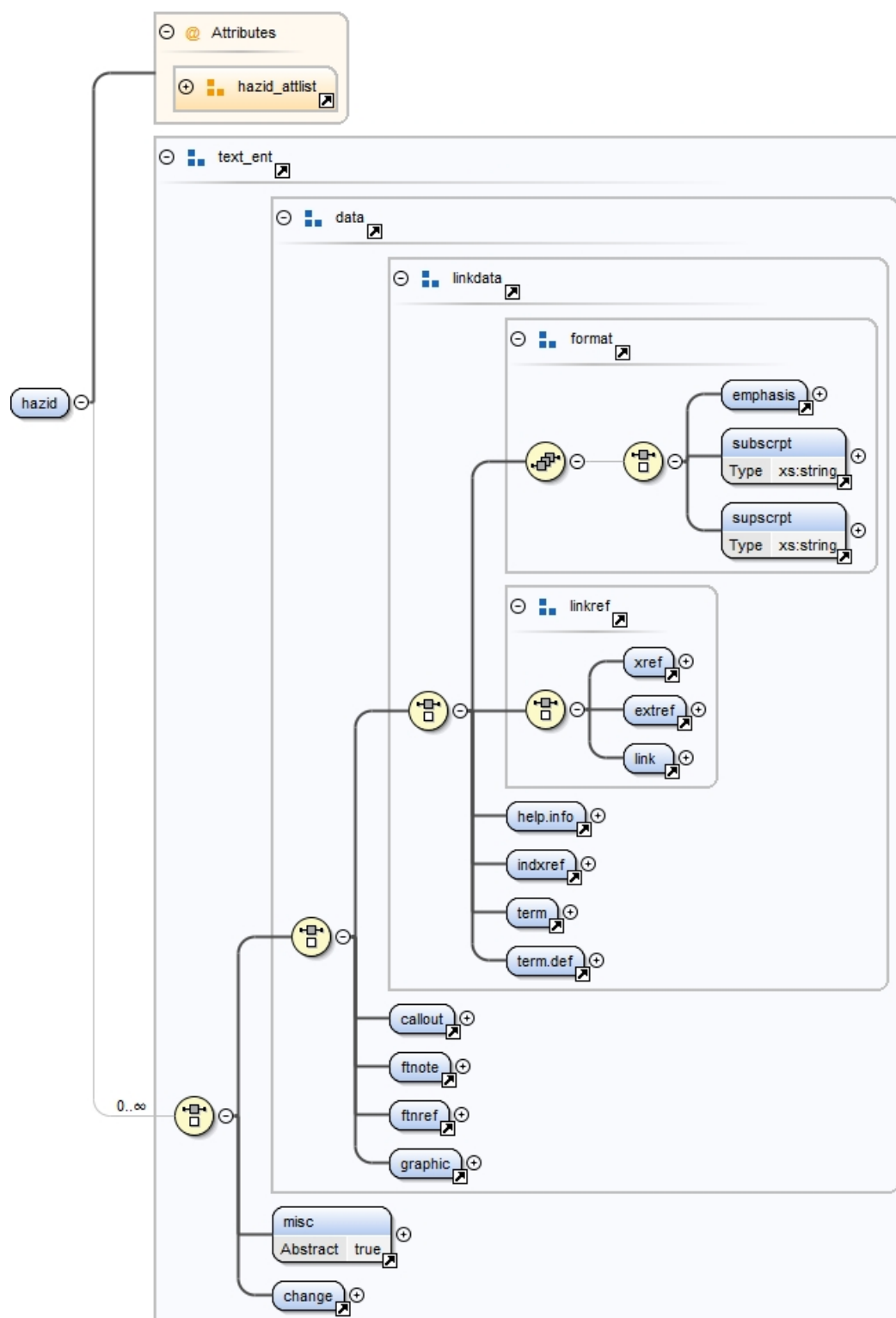


FIGURE 70. Hazardous material *<hazid>* DTD hierarchy.

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3. The DTD fragment for **<hazid>** is:

```

<!ELEMENT hazid (%text_ent;)*>

<!ATTLIST hazid
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>

```

4. Attributes **<hazid>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

15.5.1.2.5 Example of a **<warnsum>**.

The following is an example of a warning summary XML instance and the formatted display of the warning summary.

1. Example of an XML document instance fragment for **<warnsum>** are:

```

<warnsum>
  <para>This warning summary contains general safety warnings and hazardous
  materials warnings that must be understood and applied during operation and
  maintenance of this equipment. Failure to observe these precautions could
  result in serious injury or death to personnel. Also included are explanations
  of safety and hazardous materials icons used within the technical manual.
  </para>
  <first_aid>
    <title>FIRST AID
    </title>
    <para>First aid can be defined as "urgent and immediate lifesaving and other
    measures, which can be performed for casualties by nonmedical personnel when

```

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medical personnel are not immediately available." Refer to *<extref docno="FM 4-25.11" posttext="" pretext="FIRST AID, " security="uc"/>* for first aid data.

</para>

<safety>

*<title>*EXPLANATION OF SAFETY WARNING ICONS

</title>

<sfty-icons>

<symbol boardno="heavyobject_icon"/>

<sftydesc>

*<title>*HEAVY OBJECT

</title>

<text> – human figure stooping over heavy object shows physical injury potential from improper lifting technique.

</text>

</sftydesc>

</sfty-icons>

</safety>

<warninfo>

*<title>*GENERAL WARNING DESCRIPTION

<title>

<warning>

<warning.group>

<icon-set boardno="electricalhand_icon"/>

*<trim. para>*Whenever possible shut off system power before beginning work on equipment.

</trim. para>

*<trim. para>*Do not come in contact with electrical connectors.

</trim. para>

*<trim. para>*Don't be misled by low voltage. Low potentials can be dangerous.

</trim. para>

*<trim. para>*Do not work on electrical equipment alone. Be sure another person is nearby who can give first aid.

</warning.group>

</warning>

</warninfo>

<hazmat>

*<title>*EXPLANATION OF HAZARDOUS MATERIALS ICONS

</title>

<haz-icons>

<symbol boardno="chemical_icon"/>

<hazdesc>

*<title>*CHEMICAL

</title>

<text> – drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.

</text>

</hazdesc>

</haz-icons>

*<title>*HAZARDOUS MATERIALS DESCRIPTION

</title>

<hazard>

*<hazid>*DRY CLEANING SOLVENT P-D-680

</hazid>

<symbol boardno="chemical_icon"/>

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<symbol boardno="vapor"/>

<symbol boardno="fire"/>

<symbol boardno="eyeprotection_icon"/>

<para>P-D-680 solvent vapors are toxic. Avoid prolonged or repeated breathing of vapors or solvent contact with skin. Use only with adequate ventilation. Solvent is flammable and should not be used near open flame. Fire extinguishers should be readily available when solvent is used.

</para>

</hazard>

</hazmat>

</warnsum>

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2. Example of an formatted display of an XML document instance fragment for **<warnsum>**:


WARNING SUMMARY

This warning summary contains general safety warnings and hazardous materials warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel. Also included are explanations of safety and hazardous materials icons used within the technical manual.

FIRST AID

First aid can be defined as “urgent and immediate lifesaving and other measures, which can be performed for casualties by nonmedical personnel when medical personnel are not immediately available”. Refer to FIRST AID, FM 4-25.11 for first aid data.


EXPLANATION OF SAFETY WARNING ICONS



HEAVY OBJECT – human figure stooping over heavy object shows physical injury potential from improper lifting technique.


GENERAL WARNING DESCRIPTION

WARNING



Whenever possible shut off system power before beginning work on equipment.
 Do not come in contact with electrical connectors.
 Don't be misled by low voltage. Low potentials can be dangerous.
 Do not work on electrical equipment alone. Be sure another person is nearby who can give first aid.

EXPLANATION OF HAZARDOUS MATERIALS ICONS



CHEMICAL – drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.

a

FIGURE 71. Example of a warning summary.

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15.5.1.3 Change sheet <chgsheet>.

The element **<chgsheet>** change sheet, also known as a change transmittal page, is required in a changed document. The purpose of the change sheet is to list all pages/work packages that have been changed, added, deleted, or superseded. Change sheet is used in the elements front matter for a page-base **<paper.frnt>** TM and front matter for a phased maintenance inspections/preventive maintenance services **<pm.frnt>** TM. The change sheet comes after the warning summary and it does not contain a page number.

1. Components for <chgsheet> are:

- a.** Change number **<chgno>** (required). The element provides the current document number of the change sheet and title block page. The content model is #PCDATA.
- b.** A required repeatable group consisting of the following:
 - i.** Title **<title>** (optional). Title for the Change number (see Section 36.1.1.4).
 - ii.** Service Nomenclature **<servnomen>** (required) (see Section 15.4.2.6.28).
- c.** City **<city>** (required). The element provides the city used in the address block of the service nomenclature (see Section 36.1.4.1.2).
- d.** State **<state>** (required). The element provides the state used in the address block of the service nomenclature (see Section 36.1.4.1.3).
- e.** Change Date **<chgdate>** (required). The element provides the publication effective change date (see Section 15.5.1.3.1).
- f.** Primary title **<prtitle>** (required). The element provides the technical manual primary title and specific information identifying the system nomenclature (see Section 15.4.2.5.5).
- g.** An optional grouping containing the following:
 - i.** Subtitle **<stitle>** (required). The element specifies the title of the component for the change sheet (see Section 36.1.1.3).
 - ii.** Weapons System Title **<weapons_system>** (optional). The element specifies the title of the weapons system component (see Section 15.4.2.5.8). The element **<weapons_system>** cannot be used without the element **<stitle>**.
- h.** Official notices **<notices>** (required). The element specifies the distribution statement notice pertaining to the TM. (see Section 15.4.2.6).
- i.** Reduced paragraph **<trim.para>** (required). The element provides text specifying the TM and the date of the TM that is being updated. (see Section 36.1.1.8).
- j.** Change list **<chglst>** (required – one or more). The element provides a list of the work packages and change pages of the modified TM (see Section 15.5.1.3.2).
- k.** Authentication page **<authent>** (required). The element provides the TM authentication page graphic (see Section 15.5.2.4).

2. The DTD fragment **<chgsheet>** is graphically depicted.

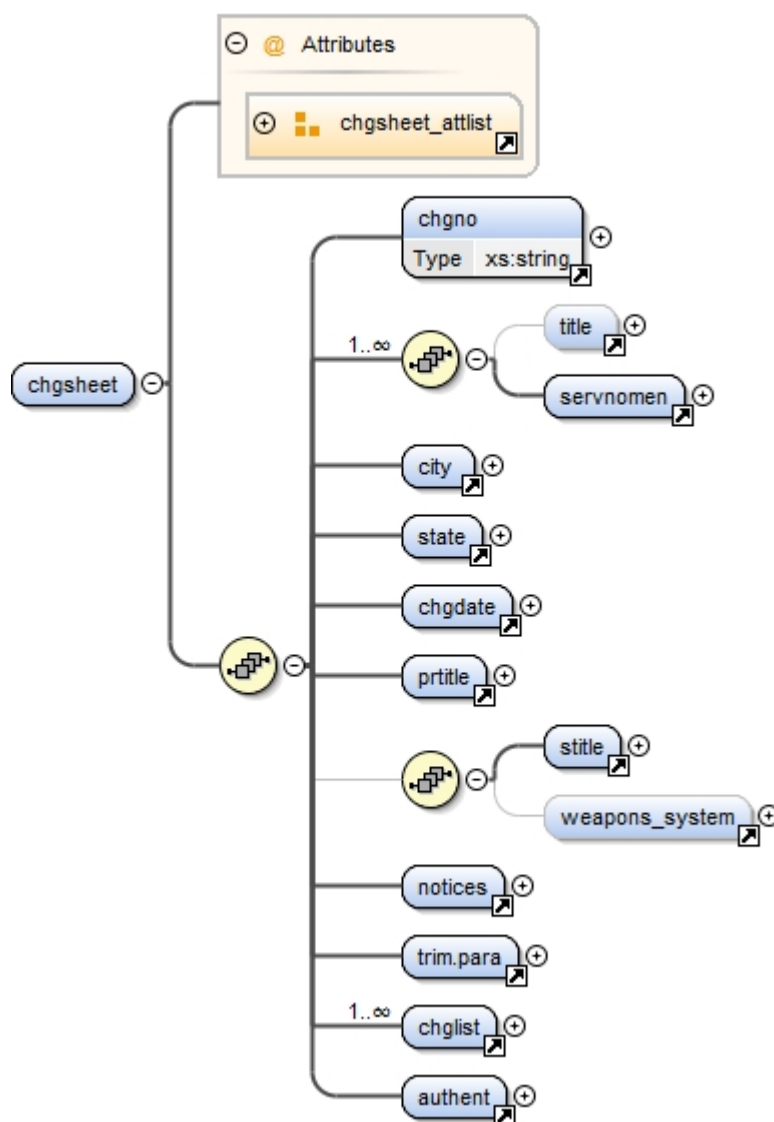


FIGURE 72. Hazardous material **<chgsheet>** DTD hierarchy.

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3. The DTD fragment for **<chgsheet>** is:

```

<!ELEMENT chgsheet (chgno, (title?, servnomen)+, city, state,
chgdate, prtitle, (stitle, weapons_system?)?, notices, trim.para,
chglst+, authent)>

<!ATTLIST chgsheet

assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
date              CDATA           #IMPLIED
delchlvl          (0-99)          "0"
id                ID              #IMPLIED
idref             IDREFS          #IMPLIED
inschlvl          (0-99)          "0"
security           (uc | fouo | c | s | ts)  #IMPLIED
skilltrk          CDATA           #IMPLIED>

```

4. Attributes for **<chgsheet>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

5. Attributes for:

- a. **date** – Effective date of the change sheet (optional).

15.5.1.3.1 Change date **<chgdate>**.

The element **<chgdate>** specifies the publication effective change date on a change sheet **<chgsheet>** and on the list of effective WP and pages **<loepwp>**.

1. Components for **<chgdate>** are:

Parsable data (#PCDATA) (required). The element provides the text of the effective date (see Section 6.2.2.1).

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2. The DTD fragment for **<chgdate>** is :

```
<!ELEMENT chgdate (#PCDATA)>
<!ATTLIST chgdate>
julian          CDATA          #IMPLIED>
```

3. Unique attributes **julian** (optional) – Specify the date in the following format yyyymmdd.

15.5.1.3.2 Change list **<chglist>**.

The element **<chglist>** specifies the pages to be removed and the current pages to be inserted. Also, change list includes the revision number of any work packages that have been deleted and if any have been added.

1. Components are for **<chglist>** are:
 - a. Reduced paragraph **<trim para>** (required). The element provides the statement for inserting and removing pages or work packages (see Section 36.1.1.8).
 - b. An optional group consisting of one of the following:
 - i. Page change list **<chgpagelist>** (optional). The element provides a list of the TM changed pages (see Section 15.5.1.3.2.1).
 - ii. Page change list **<chgwplist>** (optional). The element provides a list of the TM changed work packages (see Section 15.5.1.3.2.5).
2. The DTD fragment for **<chglist>** is:

```
<!ELEMENT chglist (trim para, (chgpagelist | chgwplist)>
<!ATTLIST chglist>
label          CDATA          #IMPLIED>
```

3. Unique attributes:
 - a. **label** – (optional) Output a prefix to the paragraph.

15.5.1.3.2.1 Page change list **<chgpagelist>**.

The element **<chgpagelist>** provides a list containing the TM changed pages.

1. Components for **<chgpagelist>** are:
 - a. Title **<title>** (required). The element is required twice to provide the titles for removing pages and inserting pages for a page change list (see Section 36.1.1.4).
 - b. Page changes **<chgpage>** (required – one or more). The element provides the removed and inserted page numbers (see Section 15.5.1.3.2.2).
2. The DTD fragment for **<chgpagelist>** is:

```
<!ELEMENT chgpagelist (title, title, chgpage+)>
```

3. No attributes.

15.5.1.3.2.2 Page changes **<chgpage>**.

The element **<chgpage>** specifies the removed and inserted page numbers in a change list.

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1. Components for **<chgpage>** are:
 - a. Remove page **<removepg>** (required). The element provides the identification of the removed page (see Section 15.5.1.3.2.3).
 - b. Inserted page **<insertpg>** (required). The element identifies the inserted page numbers (see Section 15.5.1.3.2.4).
2. The DTD fragment for **<chgpage>** is:


```
<!ELEMENT chgpage (removepg, insertpg)>
```
3. No attributes.

15.5.1.3.2.3 Remove page **<removepg>**.

The element **<removepg>** identifies the page number of a page to be removed from the previous change front or rear matter.

1. Components for **<removepg>** are:
 - a. Parsable data (#PCDATA) (required) (see Section 6.2.2.1).
2. The DTD fragment for **<removepg>** is:


```
<!ELEMENT removepg (#PCDATA)>
```
3. No attributes.

15.5.1.3.2.4 Insert page **<insertpg>**.

The element **<insertpg>** identifies the page number of the page to be inserted as part of a current change in the front or rear matter. It forms a column in the change list that appears on the change sheet.

1. Components for **<insertpg>** are:
 - a. Parsable data (#PCDATA) (required) (see Section 6.2.2.1).
2. The DTD fragment for **<insertpg>** is:


```
<!ELEMENT insertpg (#PCDATA)>
```
3. No attributes.

15.5.1.3.2.5 WP change list **<chgwpplist>**.

The element **<chgwpplist>** identifies the changed work packages in the TM.

1. Components for **<chgwpplist>** are:
 - a. Title **<title>** (required). The element provides the title for the list of the changed work packages (see Section 36.1.1.4).
 - b. Work package number **<wpno>** (required – one or more). The element provides the work package sequence numbers for the work package change list (see Section 33.2.4.1.3).
2. The DTD fragment for **<chgwpplist>** is:


```
<!ELEMENT chgwpplist (#PCDATA (title , wpno+))>
```
3. No attributes.

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15.5.1.3.3 Example of a <chgsheet>.

The following is an example of a change sheet XML instance and the formatted display of the change sheet.

1. Example of an XML document instance fragment for <chgsheet>:

```

<chgsheet>
  <chgno>CHANGE No. 1
</chgno>
  <servnomen>HEADQUARTERS, DEPARTMENT OF THE ARMY
</servnomen>
  <city>WASHINGTON,
</city>
  <state>D.C.
</state>
  <chgdate julian="19930831">31 AUGUST 1993
</chgdate>
  <prtitle>
  <sysnomen>
  <name>OPERATORS MANUAL
</name>
  <modelno>TEST SET RADAR AN.TON-22
</modelno>
  <nsn>
  <fsc>4931 -
</fsc>
  <niin>00-707-1229
</niin>
  </nsn>
  <eic>d42
</eic>
</sysnomen>
</prtitle>
  <notices>
  <dist>
  <a.statement>
  </dist>
</notices>
  <trim.para>TM X-XXX-XXXX-XX, 5 June 1987, is updated as follows:
</trim.para>
  <chglist>
  <trim.para>File this sheet in front of the manual for reference.
</trim.para>
  </chglist>
  <chglist>
  <trim. para>This change is a result of new preventive maintenance checks and
services procedures and new expendable/durable supplies and materials.
</trim.para>
  </chglist>
  <chglist>
  <trim. para>Added illustrations are indicated by a vertical bar adjacent to the
figure number. Changed illustrations are indicated by a miniature pointing hand
adjacent to the updated area and a vertical bar adjacent to the figure number.
</trim.para>
</chglist>

```

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```

<chglist>
<trim.para>Remove old pages and insert new pages as indicated below.
</trim.para>
<chgpagelist>
<title>Remove Pages
</title>
<title>Insert Pages
</title>
<chgpage>
<removepg>a through d
</removepg>
<insertpg>a through d
</insertpg>
</chgpage>
<chgpage>
<removepg>None
</removepg>
<insertpg>e through g / (h blank)
</insertpg>
</chgpage>
</chgpagelist>
</chglist>
<chglist>
<trim.para>Remove old pages and insert new pages as indicated below.
</trim.para>
<chgwplist>
<title>Work package number
</title>
<wpno wpref="G0003-X-XXX-XXXX"/>
<wpno wpref="O00014-X-XXX-XXXX"/>
</chgwplist>
</chglist>
<chglist>
<trim.para>Add the following new work packages.
</trim.para>
<chgwplist>
<title>Work package number
</title>
<wpno wpref="M1625.1-X-XXX-XXXX"/>
<wpno wpref="M1700.1-X-XXX-XXXX"/>
</chgwplist>
</chglist>
<authent boardno="xxxxxx" unitmeasure="in"/>
</chgsheet>

```

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2. Example of an formatted display of an XML document instance fragment for **<chgsheet>**:

TM X-XXXX-XXX	
CHANGE NO. CHANGE No. 1	HEADQUARTERS, DEPARTMENT OF THE ARMY WASHINGTON, , D.C., 31 AUGUST 1993 TECHNICAL MANUAL FOR OPERATORS MANUAL TEST SET RADAR AN.TON-22 NSN 4931-00-707-1229
TM X-XXX-XXXX-XX, 5 June 1987, is updated as follows:	
1. File this sheet in front of the manual for reference.	
2. This change is a result of new preventive maintenance checks and services procedures and new expendable/durable supplies and materials.	
3. Added illustrations are indicated by a vertical bar adjacent to the figure number. Changed illustrations are indicated by a miniature pointing hand adjacent to the updated area and a vertical bar adjacent to the figure number.	
4. Remove old pages and insert new pages as indicated below.	
<u>Remove Pages</u> a through d None	<u>Insert Pages</u> a through d e through g / (h blank)
5. Remove old pages and insert new pages as indicated below.	
<u>Work package number</u> WP WP	
6. Add the following new work packages.	
<u>Work package number</u> WP WP	

FIGURE 73. Example of a change sheet.

15.5.1.4 List of effective pages/work packages <loepwp>.

The list of effective pages/work packages <loepwp> lists all the pages (front and rear) and work packages in the TM. It includes all versions of the TM from the basic through each subsequent change. The location of the <loepwp> in the front matter may vary. The following <loepwp> list will be included in the TM:

1. The front cover.
2. The promulgation page.
3. The warning summary.
4. The change transmittal page.

15.5.1.4.1 Multi-volume differences in the List of Effective Pages (LOEP).

Each volume of a multi-volume TM is required to have a list of effective work packages <loepwp>. The <loepwp> in the second and subsequent volumes differs from the <loepwp> in the first volume. The first volume lists all pages and work packages contained in the entire TM. Second and subsequent list of effective work packages list only those pages and work packages in that volume.

15.5.1.4.2 List of effective work packages examples.

The examples shown in this section will depict a list of effective pages/work packages for a new publication, a changed publication, a revised publication, and a multi-volume, multi-service manual.

1. Components for <loepwp> are:
 - a. Work package metadata <wp.metadata> (optional) (see Section 16.4.1).
 - b. Reduced content paragraph – <trim para> (optional). The <trim para> element (see Section 36.1.1.8), when used in this context, provides the capability to display text before the title in the list of effective pages/work packages (see Section 15.5.1.4).
 - c. Title <title> (required). The <title> element (see Section 36.1.1.4), when used in this context, contains the title text that is displayed in the list of effective pages/work packages, (LIST OF EFFECTIVE PAGES/WORK PACKAGES) (see Section 15.5.1.4).
 - d. The Note <note> (optional). The <note> element (see Section 28.1.3) contains the text for notes that are commonly found in a list of effective pages/work packages (Zero in the "Change No." column indicates an original page or work package.).
 - e. Issued changes list <issuechg> (required) (see Section 15.5.1.4.3).
 - f. Total number of changes <totalnumberof> (required – one or more) (see Section 15.5.1.4.5).
 - g. Column list title <col . title> (required – two) (see Section 15.5.1.4.6).
 - h. A required group consisting of the following:
 - a. Change volume <chgvol> (optional) (see Section 15.5.1.4.7).
 - b. List of effective pages/work packages history <chghistory> (required – one or more) (see Section 15.5.1.4.8).

2. DTD graphically depicted **<loepwp>**:

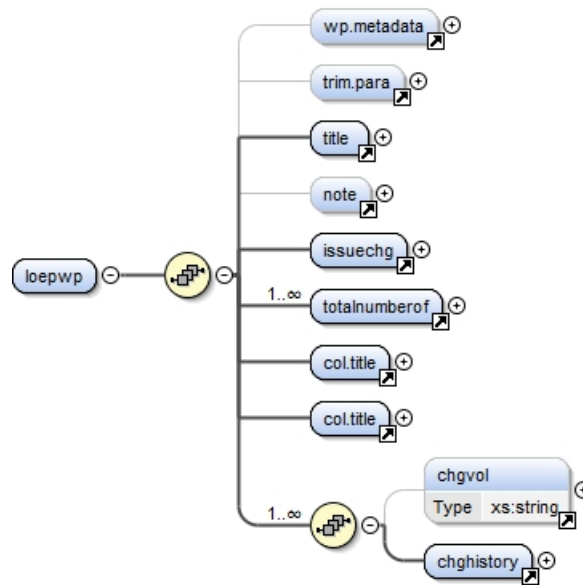


FIGURE 74. List of effective pages/work packages **<loepwp>** DTD hierarchy.

3. The DTD fragment for **<loepwp>** is:

```
<! ELEMENT loepwp (wp. metadata?, trim. para?, title, note?, issuechg,
totalnumberof+, col.title, col.title, (chgvol?, chghistory)+)>
```

4. No attributes.

15.5.1.4.3 Issued changes list **<issuechg>**.

The element **<issuechg>** is required and contains the listing of issued changes following the note in the list of effective pages/work packages. If there is no note **<note>** the issued changes list **<issuechg>** follows the title **<title>**.

1. Components for **<issuechg>** are:

- a. Reduced content paragraph – **<trim para>** (required). The element **<trim para>** (see Section 36.1.1.8) contains the statement text that appears at the beginning of the issued changes list.
- b. Issued changes list **<issued>** (required – one or more) (see Section 15.5.1.4.4).

2. DTD graphically depicted **<issuechg>**:

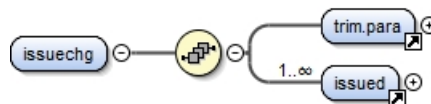


FIGURE 75. Issued changes list **<issuechg>** DTD hierarchy.

3. The DTD fragment for **<issuechg>** is:

```
<!ELEMENT issuechg (trim para, issued+)>
```

4. No attributes.

15.5.1.4.4 Issued changes <issued>.

The element <issued> provides the issue change number <chgno> and date <chgdate>. Both are required.

1. Components for <issued> are:
 - a. Change number <chgno> (required). The element <chgno> is the document change number of the issued change entry. The content model is #PCDATA (see Section 6.2.2.1).
 - b. Change date <chgdate> (required). The change date element <chgdate> (see Section 15.5.1.3.1) is the publication date for that change. Change date <chgdate> allows the julian date attribute. This date specifies using the julian format “yyyymmdd.” The content model is #PCDATA (see Section 6.2.2.1).
2. DTD graphically depicted <issued>:

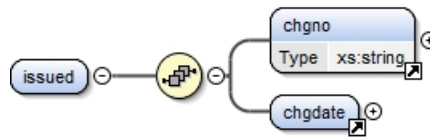


FIGURE 76. Issued changes <issued> DTD hierarchy.

3. The DTD fragment for <issued> is:


```
<!ELEMENT issued (chgno, chgdate)>
```
4. No attributes.

15.5.1.4.5 Total number of changes <totalnumberof>.

The element <totalnumberof> contains the total number of volumes, pages, figures and/or work packages in the list of effective pages/work packages <loepwp>. The element's content model starts with a required narrative <text> followed by one of the following two markups. The first markup permits the optional entry of the number of volumes <totnum.volumes>, the required total number of front and rear matter pages <totnum.frnt-rear-pages>, and total number of work packages <totnum.wps>. The second markup permits the entry of the required total number of pages <totnum.pages>, the required total number of figures <totnum.figures> and the required number of work packages <totnum.wps>. In both cases text fields are included in the content models to permit the entry of textual information that will appear on the LOEP/WP.

1. Components for <totalnumberof> are:
 - a. Narrative Text <text> (required). The <text> element provides for the entry of textual information that will appear in the narrative for the total number of volumes, pages, figures and/or work packages (see Section 15.5.1.4.5.1).
 - b. A choice of one of the following groups:
 - i. Components for <totalnumberof> are:
 - I. Display a LOEP for a TM containing work packages:
 - A. Total number of volumes <totnum.volumes> (optional) (see Section 15.5.1.4.5.2).
 - B. Total number of front and rear matter pages <totnum.frnt-rear-pages> (either this element or the total number of pages (along with the total number of figures) is required) (see Section 15.5.1.4.5.3).
 - C. Text <text> (optional – zero or one) (see Section 35.3.4.5.2).
 - D. Total number of work packages <totnum.wps> (required) (see Section 15.5.1.4.5).
 - II. Or for a TM that does not contain work packages (PMI):

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- A. Total number of pages **<totnum.pages>** (either this element (along with the total number of figures) or the total number of front and rear matter pages is required) (see Section 15.5.1.4.8.2).
- B. Total number of figures **<totnum.figures>** (either this element (along with the total number of pages) or the total number of front and rear matter pages is required) (see Section 15.5.1.4.5.4).
- C. Total number of work packages **<totnum.wps>** (required) The element **<totnum.wps>** specifies the total number of work packages in the TM as presented in the LOEP/WP introduction paragraph. The content model is #PCDATA.

2. DTD graphically depicted **<totalnumberof>**:

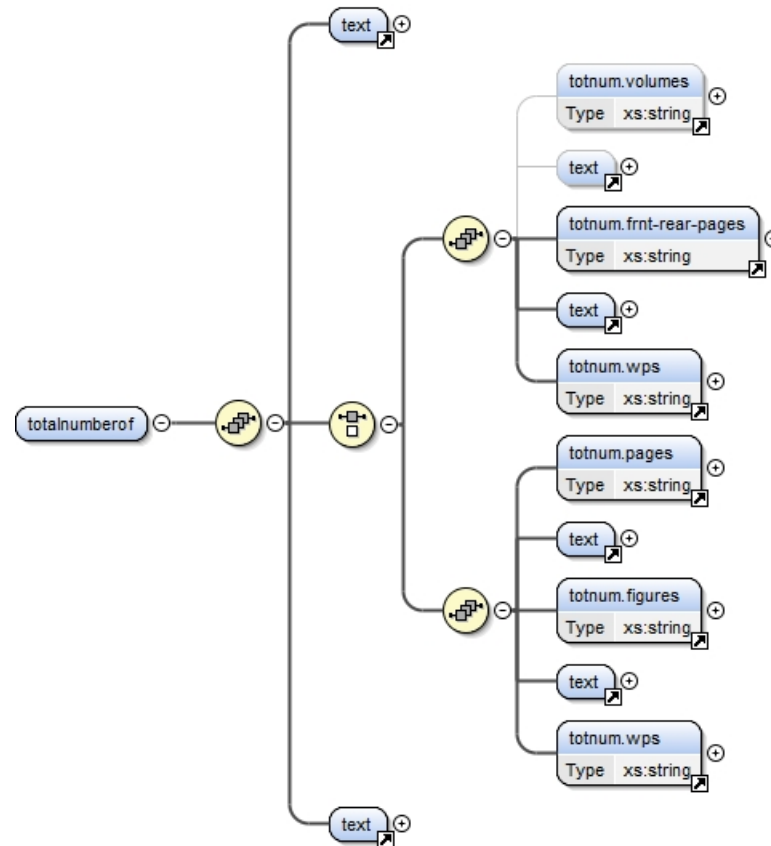


FIGURE 77. Total number of changes **<totalnumberof>** DTD hierarchy.

3. The DTD fragment for **<totalnumberof>** is:

```
<!ELEMENT totalnumberof (text, ((totnum.volumes?, text?, totnum.front-rear-
pages, text, totnum.wps) | (totnum.pages, text, totnum.figures, text, totnum.
wps)), text)>
```

4. No attributes.

15.5.1.4.5.1 Narrative text **<text>**.

The **<text>** element appears in several places in the **<totalnumberof>** element's content model to permit the entry of textual information that will appear on the LOEP/WP (see Section 36.1.1.19). These components are optional and may be entered multiple times in any order to provide formatted textual data.

15.5.1.4.5.2 Total number of volumes <totnum.volumes>.

The element **<totnum.volumes>** specifies the total number of volumes in the TM as presented in the LOEP/WP introduction paragraph. The content model is #PCDATA.

15.5.1.4.5.3 Total number of front and rear matter pages <totnum.frnt-rear-pages>.

The element **<totnum.frnt-rear-pages>** specifies the total number of front and rear matter pages in the TM as presented in the LOEP/WP introduction paragraph. The content model is #PCDATA.

15.5.1.4.5.4 Total number of figures <totnum.figures>.

The element **<totnum.figures>** specifies the total number of figures in the TM as presented in the LOEP/WP introduction paragraph. The content model is #PCDATA.

15.5.1.4.5.5 Total number of changes example.

This example shows the XML source fragment for making a total number of changes entry consisting of 23 pages of front and rear matter, and 27 work packages.

1. XML document instance fragment

```
<totalnumberof>
    <text>TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS</text>
    <totnum.frnt-rear-pages>23</totnum.frnt-rear-pages>
    <text>AND TOTAL NUMBER OF WORK PACKAGES IS</text>
    <totnum.wps>35</totnum.wps>
    <text>, CONSISTING OF THE FOLLOWING:</text>
</totalnumberof>
```

2. Stylesheet Output:

TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 23 AND TOTAL NUMBER OF
WORK PACKAGES IS 35, CONSISTING OF THE FOLLOWING:

15.5.1.4.6 Column list title <col.title>.

The element **<col.title>** specifies a list column title for the LOEP/WP. Two entries are required. The content model is #PCDATA.

15.5.1.4.7 Change volume <chgvol>.

Change volume is used as a volume separator in the list of effective pages/work packages. When the list of effective pages/work packages includes volumes, insert the change volume **<chgvol>** before the change history to add the volume number to the list. The content model is #PCDATA.

15.5.1.4.8 List of effective pages/work packages history <chghistory>.

All work packages and pages not included in work packages are listed in the list of effective pages/work packages except for the ones listed in MIL-STD-40051-1/-2 as being exempted pages, front and rear sections. For pages that are not included in work packages, list the page number <pageno> and its change number <chgno>. For each work package, list the work package sequence number followed with the total number of pages in the work package <wppages> and its change number <chgno>. The modified attribute indicates the change type.

1. Components for <chghistory> are:
 - a. Page number <pageno> (required for page entries– one or two) (see Section 15.5.1.4.8.1).
 - b. Title <title> (required for the warning summary entry) (see Section 36.1.1.4).
 - c. Total number of pages <totnum. pages> (required for the warning summary entry) (see Section 15.5.1.4.8.2).
 - d. Work package number <wpno> (required for work package entry) (see Section 15.5.1.4.8.3).
 - e. Number of work package pages <wppages> (required for work package entry) (see Section 15.5.1.4.8.4).
 - f. Change number <chgno> (required) (see Section 15.5.1.4.8.5).
2. DTD graphically depicted <chghistory>:

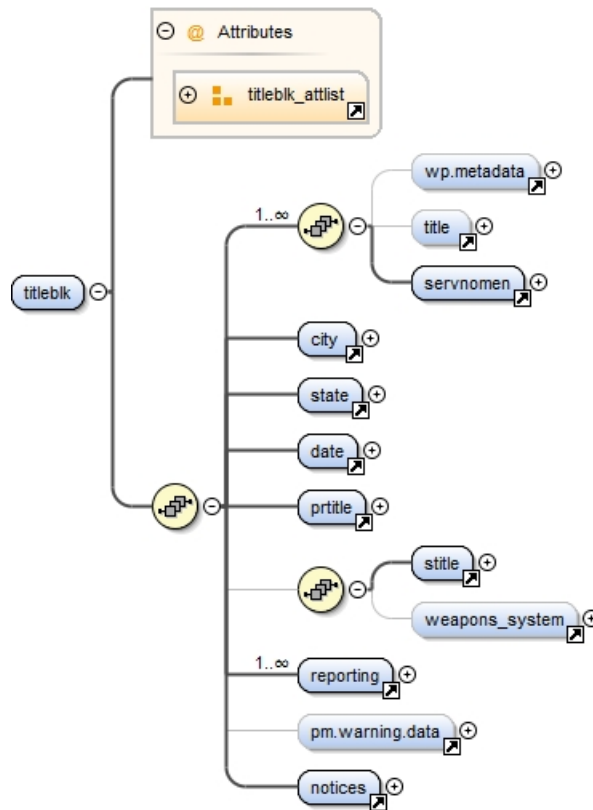


FIGURE 78. List of effective pages/work packages history <chghistory> DTD hierarchy.

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3. The DTD fragment for **<chghistory>** is:

```

<!ELEMENT chghistory (( (pageno, pageno? | (title, totnum.pages) |
  (wpno, wppages) ), chgno) >

<!ATTLIST chghistory
  modified          (added | deleted | blank | non |          "changed">
                    changed)

```

4. Unique attributes:

- a. **Modified** – Indicates the change type as added, deleted, blank page, no reason, and changed. If the page/work package is new to this change, set the **modified** attribute to “added.” If the page/work package is deleted, set the **modified** attribute to “deleted.” If a page is blank, set the **modified** attribute to “blank.” Enter “none” in the **modified** attribute if there was no change to the page/work package for that period. Enter “changed” in the **modified** attribute for a page/work package that has been changed. The stylesheet will display the appropriate entry (“Added” for a page/work package that is new to this change, “Deleted” for a page/work package that is deleted, etc.).

15.5.1.4.8.1 Page number **<pageno>**.

The element **<pageno>** is used to enter a manual page number in the list of effective pages/work packages. The **<pageno>** element may be entered twice to indicate that several pages in sequence are at the same change level (i–iii). The **<pageno>** element may also contain text that identifies entries for the front cover and chapter title pages. The content model is #PCDATA.

15.5.1.4.8.2 Total number of pages **<totnum.pages>**.

The element **<totnum.pages>** contains the number of pages in warning summary entry. The content model is #PCDATA.

15.5.1.4.8.3 Work package number **<wpno>**.

The element **<wpno>** contains the work package identification number which is entered in the attribute **wpref**. The work package identification number, (see Section 33.2.4.1.3) will be used to retrieve the work package sequence number that is displayed in the list of effective pages/work packages (see Section 16.2.2).

15.5.1.4.8.4 Number of work package pages **<wppages>**.

The element **<wppages>** specifies the number of pages in the work package. The content model is #PCDATA.

15.5.1.4.8.5 Change number **<chgno>**.

The element **<chgno>** is the change level of the specified page(s)/work package(s). The content model is #PCDATA.

15.5.1.4.9 Example – List of effective pages/work packages for a new publication.

When the document is a new publication, the change number is always zero. The list of effective pages/work packages will display the change number as zero for all pages and work packages listed. Note that the work package

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identification number is entered in the **wpref** attribute in the **<wpno>** element. This work package identification number is used to retrieve the work package sequence number that is displayed in the output.

1. XML document instance fragment:

```

<loepwp>
<title>LIST OF EFFECTIVE PAGES/WORK PACKAGES
</title>
<note>
<trim.para>Zero in the "Change No." column indicates an original page or work
package
</trim.para>
</note>
<issuechg>
<trim.para>Date of issue for the original manual is:
</trim.para>
<issued>
<chgno>Original
</chgno>
<chgdate julian="19980713">13 July 1998
</chgdate>
</issued>
</issuechg>
<totalnumberof>
<text>TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS
</text>
<totnum.frnt-rear-pages>28
</totnum.frnt-rear-pages>
<text> AND TOTAL NUMBER OF WORK PACKAGES IS
</text>
<totnum.wps>35
</totnum.wps>
<text>, CONSISTING OF THE FOLLOWING:
</text>
</totalnumberof>
<col.title>Page / WP No.
</col.title>
<col.title>Change No.
</col.title>
<chghistory modified="none">
<pageno>Front cover
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<title>Warning Summary
</title>
<totnum.pages>4
</totnum.pages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>i

```

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```

</pageno>
<pageno>iii
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="blank">
<pageno>iv blank
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 1 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00001-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00002-X-XxXX-XXX"/>
<wppages>10 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00003-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00004-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 2 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="t00001-X-XxXX-XXX"/>

```

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```

<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="t00002-X-XxXX-XXX"/>
<wppages>8 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="t00003-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 3 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00001-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00003-X-XxXX-XXX"/>
<wppages>12 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00004-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00005-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">

```


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<pageno>Chp 4 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00002-X-XxXX-XXX"/>
<wppages>20 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00006-X-XxXX-XXX"/>
<wppages>30 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00007-X-XxXX-XXX"/>
<wppages>30 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00008-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00009-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00010-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00011-X-XxXX-XXX"/>
<wppages>8 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>

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```

<chghistory modified="none">
<wpno wpref="m00012-X-XxXX-XXX"/>
<wppages>12 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00013-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00014-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 5 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00001-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00002-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00003-X-XxXX-XXX"/>
<wppages>6 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00004-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>

```

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```
</chghistory>
<chghistory modified="none">
<wpno wpref="s00005-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00006-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00007-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00008-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00009-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00010-X-XxXX-XXX"/>
<wppages>6 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00011-X-XxXX-XXX"/>
<wppages>6 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00012-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
```

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```
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00013-X-XcXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00014-X-XcXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>INDEX-1
</pageno>
<pageno>INDEX-14
</pageno>
<chgno>0
</chgno>
</chghistory>
</loepwp>
```

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2. Example of a stylesheet output for a list of effective pages work package for a new publication:

TM X-XXXX-XXX	
CHANGE NO. CHANGE No. 1	HEADQUARTERS, DEPARTMENT OF THE ARMY WASHINGTON, , D.C., 31 AUGUST 1993 TECHNICAL MANUAL FOR OPERATORS MANUAL TEST SET RADAR AN.TON-22 NSN 4931-00-707-1229
TM X-XXX-XXXX-XX, 5 June 1987, is updated as follows:	
1. File this sheet in front of the manual for reference.	
2. This change is a result of new preventive maintenance checks and services procedures and new expendable/durable supplies and materials.	
3. Added illustrations are indicated by a vertical bar adjacent to the figure number. Changed illustrations are indicated by a miniature pointing hand adjacent to the updated area and a vertical bar adjacent to the figure number.	
4. Remove old pages and insert new pages as indicated below.	
<u>Remove Pages</u> a through d None	<u>Insert Pages</u> a through d e through g / (h blank)
5. Remove old pages and insert new pages as indicated below.	
<u>Work package number</u> WP WP	
6. Add the following new work packages.	
<u>Work package number</u> WP WP	

FIGURE 79. Example of a stylesheet output for a list of effective pages/work packages for a new publication.

15.5.1.4.10 Example – List of effective pages/work packages for a changed publication.

A list of effective pages/work packages for a changed publication starts with a **<trim.para>** that contains the text “INSERT LATEST CHANGED PAGES/WORK PACKAGES. DESTROY SUPERSEDED DATA.” This text is

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displayed in the list of effective pages/work packages before the title. In the issued changes list **<issuechange>** the change publication number is listed with the date. Where applicable, the type of modification “added” or “deleted” of a page/work package is listed to the right of entries in the list of effective pages/work packages history. The change number is displayed on the right side of the bottom of the page. The value is taken from the **chnglevel** attribute in the **<production>** element (see Section 15.1).

1. XML document instance fragment:

```

<loepwp>
<trim.para>Insert latest changed pages/work packages. Destroy superseded data.
</trim.para>
<title>List of Effective Pages/Work Packages
</title>
<note>
<trim.para>The portion of text affected by the changes is indicated by a vertical
bar in the outer margins of the page. Changes to illustrations are indicated by a
vertical bar adjacent to the title. Zero in the “Change No.” column indicates an
original page or work package.
</trim.para>
</note>
<issuechg>
<trim.para>Date of issue for the original manual and changed pages/work packages
are:
</trim.para>
<issued>
<chgno>Original
</chgno>
<chgdate julian="19980713">13 July 1998
</chgdate>
</issued>
<issued>
<chgno>1
</chgno>
<chgdate julian="19981210">10 December 1998
</chgdate>
</issued>
<issued>
<chgno>2
</chgno>
<chgdate julian="19990302">2 March 1999
</chgdate>
</issued>
</issuechg>
<totalnumberof>
<text>TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS
</text>
<totnum.frnt-rear-pages>28
</totnum.frnt-rear-pages>
<text> AND TOTAL NUMBER OF WORK PACKAGES IS
</text>
<totnum.wps>35
</totnum.wps>
<text>, CONSISTING OF THE FOLLOWING:
</text>
</totalnumberof>

```

MIL-HDBK-2361D

```

<col.title>Page / WP No.
</col.title>
<col.title>Change No.
</col.title>
<chghistory modified="none">
<pageno>Front cover
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<title>Warning Summary
</title>
<totnum.pages>4
</totnum.pages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>i
</pageno>
<pageno>iii
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="blank">
<pageno>iv blank
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 1 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00001-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>1
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00002-X-XxXX-XXX"/>
<wppages>10 pgs
</wppages>
<chgno>1
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00003-X-XxXX-XXX"/>

```

MIL-HDBK-2361D

```

<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00004-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>2
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 2 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="t00001-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>1
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="t00002-X-XxXX-XXX"/>
<wppages>8 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="t00003-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 3 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00001-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00003-X-XxXX-XXX"/>

```


MIL-HDBK-2361D

```

<wppages>12 pgs
</wppages>
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</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00004-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00005-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>1
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 4 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00002-X-XxXX-XXX"/>
<wppages>20 pgs
</wppages>
<chgno>2
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00006-X-XxXX-XXX"/>
<wppages>30 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00007-X-XxXX-XXX"/>
<wppages>30 pgs
</wppages>
<chgno>2
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00008-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">

```

MIL-HDBK-2361D

```
<wpno wpref="m00009-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
<chghistory>
<chghistory modified="none">
<wpno wpref="m00010-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>1
</chgno>
<chghistory>
<chghistory modified="none">
<wpno wpref="m00011-X-XxXX-XXX"/>
<wppages>8 pgs
</wppages>
<chgno>1
</chgno>
<chghistory>
<chghistory modified="none">
<wpno wpref="m00012-X-XxXX-XXX"/>
<wppages>12 pgs
</wppages>
<chgno>1
</chgno>
<chghistory>
<chghistory modified="none">
<wpno wpref="m00013-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>2
</chgno>
<chghistory>
<chghistory modified="none">
<wpno wpref="m00014-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
<chghistory>
<chghistory modified="none">
<pageno>Chp 5 title page
</pageno>
<chgno>0
</chgno>
<chghistory>
<chghistory modified="none">
<wpno wpref="s00001-X-XXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
<chghistory>
```

MIL-HDBK-2361D

```
<chghistory modified="none">
<wpno wpref="s00002-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>2
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00003-X-XxXX-XXX"/>
<wppages>6 pgs
</wppages>
<chgno>1
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00004-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>1
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00005-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="deleted">
<wpno wpref="s00006-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>2
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00007-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00008-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00009-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>1
```

MIL-HDBK-2361D

```
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00010-X-XxXX-XXX"/>
<wppages>6 pgs
</wppages>
<chgno>2
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00011-X-XxXX-XXX"/>
<wppages>6 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00012-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>1
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00013-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="added">
<wpno wpref="s00015-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>2
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00014-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>2
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>INDEX-1
</pageno>
<pageno>INDEX-14
</pageno>
<chgno>0
</chgno>
</chghistory>
</loepwp>
```

MIL-HDBK-2361D

2. Example of a stylesheet output for a list of effective pages work package for a new publication:

TM X-XXXX-XXX	
CHANGE NO. CHANGE No. 1	HEADQUARTERS, DEPARTMENT OF THE ARMY WASHINGTON, , D.C., 31 AUGUST 1993
TECHNICAL MANUAL FOR OPERATORS MANUAL TEST SET RADAR AN.TON-22 NSN 4931-00-707-1229	
TM X-XXX-XXXX-XX, 5 June 1987, is updated as follows:	
1. File this sheet in front of the manual for reference.	
2. This change is a result of new preventive maintenance checks and services procedures and new expendable/durable supplies and materials.	
3. Added illustrations are indicated by a vertical bar adjacent to the figure number. Changed illustrations are indicated by a miniature pointing hand adjacent to the updated area and a vertical bar adjacent to the figure number.	
4. Remove old pages and insert new pages as indicated below.	
<u>Remove Pages</u> a through d None	<u>Insert Pages</u> a through d e through g / (h blank)
5. Remove old pages and insert new pages as indicated below.	
<u>Work package number</u> WP WP	
6. Add the following new work packages.	
<u>Work package number</u> WP WP	

FIGURE 80. Example of a stylesheet output for a list of effective pages/work packages for a manual with changes.

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15.5.1.4.11 Example – List of effective pages/work packages for a multi-volume, multi-service manual.

This example shows a list of effective pages/work packages for the first volume of a multi-service TM with the Air Force being the procuring activity. The list of effective pages/work packages for the first volume covers all of the volumes. Each volume number is listed followed by the pages in that volume. Each volume, except volume 1, includes a list of effective pages/work packages for that particular volume only. For multi-service manuals, the list of effective pages/work packages contains the abbreviation of the acquiring service (USA, USN, USMC, or USAF) which is displayed in the lower right-hand corner of the page. To display the Air Force as acquiring service, the attribute **service** in the element **<servbranch>** is set to “af” and the attribute **procuring** is set to “yes.” The element service branch **<servbranch>** is a child of TM information **<tminfono>** which is a child of TM title **<tmtitle>** which is a child of front cover **<frntcover>** (see Section 15.4.2.4).

1. XML document instance fragment:

```

<loepwp>
<title>List of Effective Pages/Work Packages
</title>
<note>
<trim para>Zero in the “Change No.” column indicates an original page or work
package.
</trim para>
</note>
<issuechg>
<trim para>Date of issue for the original is:
</trim para>
<issued>
<chgno>Original
</chgno>
<chgdate julian="19900424">24 April 1990
</chgdate>
</issued>
</issuechg>
<totalnumberof>
<text>Total number of Volumes is
</text>
<totnum.volumes>3
</totnum.volumes>
<text>, TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS
</text>
<totnum.frnt-rear-pages>30
</totnum.frnt-rear-pages>
<text> AND TOTAL NUMBER OF WORK PACKAGES IS
</text>
<totnum.wps>35
</totnum.wps>
<text>, CONSISTING OF THE FOLLOWING:
</text>
</totalnumberof>
<col.title>Page / WP No.
</col.title>
<col.title>Change No.
</col.title>
<chgvol>VOLUME 1
</chgvol>

```

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```

<chghistory modified="none">
<pageno>Front cover
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory>
<title>Warning Summary
</title>
<totnum.pages>4
</totnum.pages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>i
</pageno>
<pageno>iii
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>iv blank
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 1 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00001-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00002-X-XxXX-XXX"/>
<wppages>10 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="g00003-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>

```

MIL-HDBK-2361D

```

</chghistory>
<chghistory modified="none">
<wpno wpref="g00004-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 2 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="t00001-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="t00002-X-XxXX-XXX"/>
<wppages>8 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="t00003-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory>
<pageno>INDEX-1
</pageno>
<pageno>INDEX-2
</pageno>
<chgno>0
</chgno>
</chghistory>
<chgvol>VOLUME 2
</chgvol>
<chghistory modified="none">
<pageno>Front cover
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>i
</pageno>

```


MIL-HDBK-2361D

```

<pageno>ii
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 3 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00001-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00003-X-XxXX-XXX"/>
<wppages>12 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00004-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00005-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 4 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00002-X-XxXX-XXX"/>
<wppages>20 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00006-X-XxXX-XXX"/>

```

MIL-HDBK-2361D

```
<wppages>30 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00007-X-XxXX-XXX"/>
<wppages>30 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00008-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00009-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00010-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00011-X-XxXX-XXX"/>
<wppages>8 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00012-X-XxXX-XXX"/>
<wppages>12 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="m00013-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
```

MIL-HDBK-2361D

```

<chghistory modified="none">
<wpno wpref="m00014-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory>
<pageno>INDEX-1
</pageno>
<pageno>INDEX-4
</pageno>
<chgno>0
</chgno>
</chghistory>
<chgvol>VOLUME 3
</chgvol>
<chghistory modified="none">
<pageno>Front cover
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>i
</pageno>
<pageno>ii
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>Chp 5 title page
</pageno>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00001-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00002-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00003-X-XxXX-XXX"/>
<wppages>6 pgs

```

MIL-HDBK-2361D

```
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00004-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00005-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00006-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00007-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00008-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00009-X-XxXX-XXX"/>
<wppages>4 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00010-X-XxXX-XXX"/>
<wppages>6 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
```

MIL-HDBK-2361D

```
<wpno wpref="s00011-X-XxXX-XXX"/>
<wppages>6 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00012-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00013-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<wpno wpref="s00014-X-XxXX-XXX"/>
<wppages>2 pgs
</wppages>
<chgno>0
</chgno>
</chghistory>
<chghistory modified="none">
<pageno>INDEX-1
</pageno>
<pageno>INDEX-4
</pageno>
<chgno>0
</chgno>
</chghistory>
</loepwp>
```

MIL-HDBK-2361D

2. Example of a stylesheet output for a list of effective pages/work packages for a revised publication:

TM X-XXXX-XXX	
CHANGE NO. CHANGE No. 1	HEADQUARTERS, DEPARTMENT OF THE ARMY WASHINGTON, , D.C., 31 AUGUST 1993
TECHNICAL MANUAL FOR OPERATORS MANUAL TEST SET RADAR AN.TON-22 NSN 4931-00-707-1229	
TM X-XXX-XXXX-XX, 5 June 1987, is updated as follows:	
1. File this sheet in front of the manual for reference.	
2. This change is a result of new preventive maintenance checks and services procedures and new expendable/durable supplies and materials.	
3. Added illustrations are indicated by a vertical bar adjacent to the figure number. Changed illustrations are indicated by a miniature pointing hand adjacent to the updated area and a vertical bar adjacent to the figure number.	
4. Remove old pages and insert new pages as indicated below.	
<u>Remove Pages</u> a through d None	<u>Insert Pages</u> a through d e through g / (h blank)
5. Remove old pages and insert new pages as indicated below.	
<u>Work package number</u> WP WP	
6. Add the following new work packages.	
<u>Work package number</u> WP WP	

FIGURE 81. Example of a stylesheet output for a list of effective pages/work packages for a multi-volume manual.

The title block material in the TM's front matter repeats identifying information from the front cover, including the prime title; it also includes the Reporting Errors statement.

1. Components are for **<titleblk>** are:
 - a. Title **<title>** (required for the warning summary entry). The element provides the title for the title block page (see Section 36.1.1.4).
 - b. Service Nomenclature **<servnomen>** (required) (see Section 15.4.2.6.28).
 - c. City **<city>** (required) (see Section 36.1.4.1.2).
 - d. State **<state>** (required) (see Section 36.1.4.1.3).
 - e. Date **<date>** (required) The publishing date of the technical manual.
 - f. Primary Title **<prtitle>** (required) (see Section 15.4.2.5.5).
 - g. Manual Subtitle **<stitle>** (optional) (see Section 36.1.1.3).
 - h. Weapon System Title **<weapons_system>** (optional) (see Section 15.4.2.5.8).
 - i. Reporting Errors and Recommending Improvements **<reporting>** (required – one or more) (see Section 15.4.2.5).
 - j. Warning and Note Data **<pm.warning.data>** (optional) (see Section 15.5.1.5.1).
 - k. Official Notices **<notices>** (required) (see Section 15.4.2.6).
2. The DTD fragment for **<titleblk>** is graphically depicted:

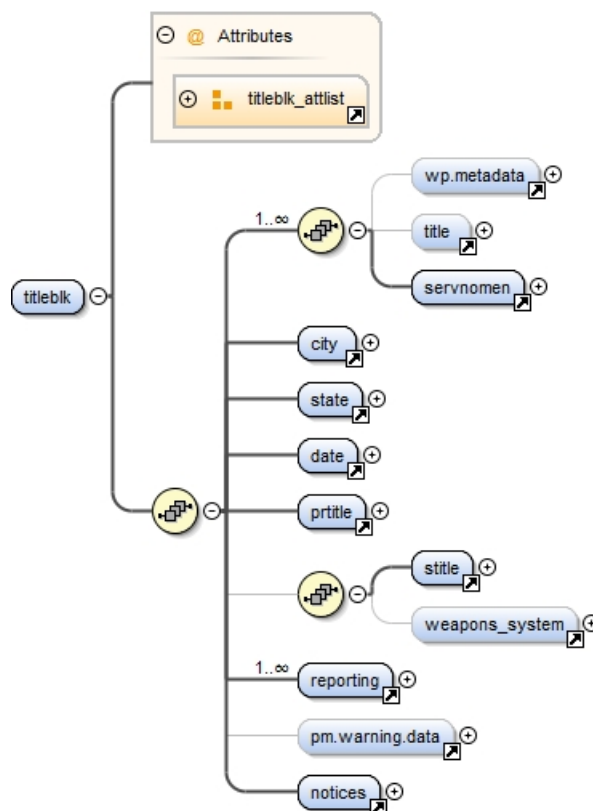


FIGURE 82. List of effective pages/work packages history <titleblk> DTD hierarchy.

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3. The DTD fragment for **<titleblk>** is:

```
<!ELEMENT titleblk (chgno?, (title?, servnomen)+, city, state, date,
prtitle, (stitle, weapons_system?)?, reporting+, pm.warning.data?,
notices)>
```

```
<!ATTLIST titleblk
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
chgno	(0-9)	"0"
comment	CDATA	#IMPLIED
currentasofdate	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Unique attributes:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
- c. **chgno** – Change number (optional) (see Section 36.3.12).
- d. **comment** – Reason for change information (optional) (see Section 36.3.12).
- e. **currentasofdate** – is used to add the date when the Repair Parts Special Tools List **<rpst1>** is complete and added to the Technical Manual.
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **id** – Unique identifier (optional) (see Section 36.3.7).
- h. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
- i. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
- j. **security** – Security classification (optional) (see Section 36.3.14).
- k. **skilltrk** – Training skill level (optional) (see Section 36.3.3).

15.5.1.5.1 Warning and note data.

The element **<pm.warning.data>** is used for the mandatory verbatim warning and note data contain in the phased maintenance technical manual title block.

1. Components for **<pm.warning.data>** are:

- a. The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
- b. Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
- c. Note **<note>** (optional – zero or more) (see Section 28.1.3).

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2. The DTD fragment for **<pm.warning.data>** is:

```
<!ELEMENT pm.warning.data (warning, note)>
```
3. **<pm.warning.data>** has no attributes.

15.5.2 Rear matter <rear>.

The element **<rear>** is found in a page-based TM following the last work package. The rear section requires at least one reporting errors and recommending improvements DA Forms 2028, an authentication page, and a back cover and as specified, a glossary, alphabetical index, and foldout section.

1. Components for **<rear>** are:
 - a. Glossary **<glossary>** (optional – zero or one). The element provides for a glossary (see Section 15.5.2.1).
 - b. Alphabetical index **<aindx>** (optional – zero or one). The element provides for an alphabetical index (see Section 15.5.2.2).
 - c. Reporting errors and recommending improvements DA Forms 2028 **<da2028>** (required – one or more). The element provides the DA Forms 2028 (see Section 15.5.2.3).
 - d. Authentication page **<authent>** (required). The element provides the authentication page (see Section 15.5.2.4).
 - e. Foldout section **<foldsect>** (optional – zero or one). The element provides the position for the foldout section (see Section 15.5.2.5).
 - f. Back cover **<back>** (required). The element provides the back cover with optional graphic (see Section 15.5.2.6).
2. DTD graphically depicted **<rear>**:

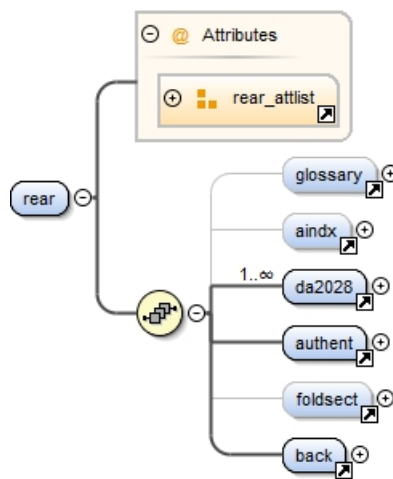


FIGURE 83. Rear matter <rear> DTD hierarchy.

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3. The DTD fragment for **<rear>** is:

```
<!ELEMENT rear (glossary?, aindx?, da2028+, authent, foldsect?,
back)>

<!ATTLIST rear
  assocfig          IDREFS          #IMPLIED
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED>
```

4. Attributes for **<rear>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **id** – Unique identifier (optional) (see Section 36.3.7).
- c. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).

15.5.2.1 Glossary **<glossary>**.

The element **<glossary>** is used for terms that are uncommon and are not adequately defined in the text or in the Army, DoD, or standard dictionary. The glossary should include a list of terms **<term>** followed by definitions **<def>**. The terms should be listed in alphabetical order. If a glossary is required, it should begin on a separate, right-hand page.

1. Components for **<glossary>** are:

- a. Title **<title>**: The element provides the title for the glossary (see Section 36.1.1.4).
- b. Definition list **<deflist>** (required). The element provides a list of terms and definitions used in the glossary (see Section 36.1.2.4).

2. The DTD for **<glossary>** graphically depicted:

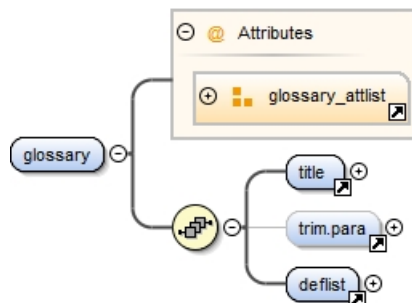


FIGURE 84. Glossary **<glossary>** DTD hierarchy.

3. The DTD fragment for **<glossary>** is:

```
<!ELEMENT glossary (title, trim para?, deflist)>
<!ATTLIST glossary
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED>
```

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delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(1 2 3 4)	"1">

4. Common attributes for <glossary>.

- a. **applicable** – Points or links to the master effective list to determine the specific configuration (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – Defines the indenture level in the TOC (see Section 16.3.6).

15.5.2.1.1 How to develop a glossary.

A glossary is developed by tagging uncommon words that need to be defined in the TM. Uncommon word(s), abbreviations, or terms are wrapped with the element <term>. The associated definitions or spelled out abbreviations are wrapped with <def> and <term> elements. Each <term> and <def> is wrapped with the element <term.def> with a required unique identifier attribute **id**. Uncommon words may be used only once or many times throughout the TM. When identifying the uncommon words in the TM that are to be tagged, also check for the suffix endings of a uncommon word like **s**, **ing**, **ed**, etc. An IETM does not contain a glossary but can contain uncommon words in the General Information Work Package (see Section 18.1.1). The unique **ID** in the <term.def> is used to link to the term when used in the TM for a hot reference (as a mouse-over to provide the definition). The uncommon word is linked to the glossary by the element <term> and the attribute **idref** to the unique identifier from <term.def>. An example of the mouse-over technique is by rolling over the word "Antenna Drive Unit" with the mouse. This would generate a popup text box displaying "Provides support and movement control to the antenna." See MIL-STD-40051-1 for more information on other methods using the mouse-over technique.

15.5.2.1.2 Example of a <glossary>.

The following examples show how an uncommon word is tagged in a TM and how it is connected to the glossary of the TM. Examples a and c are XML instance fragments. Example b. is a possible stylesheet output of a glossary in a TM.

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1. XML document instance fragment of <glossary>:

```

<glossary>
  <title>GLOSSARY
  </title>
  <trim para>The terms that are used in this TM that are uncommon are defined as
  follows:
  </trim para>
  <deflist>
    <title.term.def>
      <title>TERM
      </title>
      <title>DEFINITION
      </title>
      <title.term.def>
        <term.def id="a_d_u">
          <term>Antenna Drive Unit
          </term>
          <def>
            <para>Provides support and movement control to the antenna.
            </para>
          </def>
        </term.def>
        <term.def id="feedhorn">
          <term>Feedhorn
          </term>
          <def>
            <para>Conducts echoes of RF energy from the antenna reflectors to the receiver
            transmitter
            </para>
          </def>
        </term.def>
        <term.def id="h_t_u">
          <term>Handheld Terminal Unit, (HTU)
          </term>
          <def>
            <para>Handheld Terminal Unit used by the soldier in the field to control the radar
            set.
            </para>
          </def>
        </term.def>
        <term.def id="p_p_i">
          <term>Planned Position Indicator
          </term>
          <def>
            <para>Provides a graphic representation of the area of interest drawn to scale
            with azimuth, range and direction displayed on the Handheld Terminal Unit (HTU) .
            </para>
          </def>
        </term.def>
        <term.def id="range_cell">
          <term>Range Cell
          </term>
          <def>

```

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```

<para>Range window selected by user to pinpoint specific targets.
</para>
</def>
</term.def>
<term.def idref="remote_cable">
<term>Remote Cable
</term>
<def>
<para>The interface cable used to carry target and control data to and from the
control indicator.
</para>
</def>
</term.def>
</deflist>
</glossary>

```

2. Example of an formatted display of an XML document instance fragment for **<glossary>** :

GLOSSARY	
The terms that are used in this TM that are uncommon are defined as follows:	
TERM	DEFINITION
Antenna Drive Unit	Provides support and movement control to the antenna.
Feedhorn	Conducts echoes of RF energy from the antenna reflectors to the receiver transmitter
Handheld Terminal Unit, (HTU)	Handheld Terminal Unit used by the soldier in the field to control the radar set.
Planned Position Indicator	Provides a graphic representation of the area of interest drawn to scale with azimuth, range and direction displayed on the Handheld Terminal Unit (HTU).
Range Cell	Range window selected by user to pinpoint specific targets.
Remote Cable	The interface cable used to carry target and control data to and from the control indicator.

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FIGURE 85. Example of a glossary page.

3. Example of tagging an uncommon word **<term>** element in a TM XML document instance fragment with reference to definition in the glossary.

```

<locdesc>
<title>LOCATION AND DESCRIPTIONS OF MAJOR COMPONENTS
</title>
<comp-item>
<title>

```

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```
<term idref="a_d_u">ANTENNA DRIVE UNIT
```

```
</term>
```

```
</title>
```

```
<para>The
```

```
<term idref="a_d_u">Antenna Drive Unit
```

```
</term> contains an electric motor, gearing, absolute elevation encoder, optical azimuth encoder and a mounting and leveling assembly. Two side brackets on trunnions, one at each side of the
```

```
<term idref="a_d_u">Antenna Drive Unit
```

```
</term>, support the R-T assembly. An elevation adjustment wheel permits the R-T assembly to be tilted forward or backward to control the elevation of the radar beam. An elevation lock lever secures the R-T assembly at the tilt angle desired. An elevation stow lock holds the R-T upright (zero deviation). Locking protects the elevation mechanism during transport.
```

```
</para>
```

```
</comp-item>
```

```
</locdesc>
```

4. Example of an formatted display of an XML document instance fragment for uncommon word:

LOCATION AND DESCRIPTIONS OF MAJOR COMPONENTS

ANTENNA DRIVE UNIT

The Antenna Drive Unit contains an electric motor, gearing, absolute elevation encoder, optical azimuth encoder and a mounting and leveling assembly. Two side brackets on trunnions, one at each side of the Antenna Drive Unit, support the R-T assembly. An elevation adjustment wheel permits the R-T assembly to be tilted forward or backward to control the elevation of the radar beam. An elevation lock lever secures the R-T assembly at the tilt angle desired. An elevation stow lock holds the R-T upright (zero deviation). Locking protects the elevation mechanism during transport.

15.5.2.2 Alphabetical index <aindx>.

The element <aindx> is used for an alphabetical index of subjects that may be useful to the TM user. The index is automatically generated, pre-composition process populated, or manually entered. The alphabetical index is an optional task element because the composition system of applications varies on how it handles specific tasks. The automatically generated index uses an XML element marker <indxref> to determine the index subject and location. Some composition systems can generate the index with the assistance of a pre-composition process. The pre-composition process reads the completed TM XML instance and uses the index reference elements to populate the <aindx> XML instance. Other composition systems cannot handle an automated task or process such as an alphabetical index and has to be manually created. For additional information on the process of the alphabetical index and other optional methods in developing an alphabetical index see Section 15.5.2.2.4.

1. Components for <aindx> are:

- a. Title <title>: The element provides the title for the alphabetic index, usually the text "INDEX" is entered (see Section 36.1.1.4).
- b. Reduced paragraph – <trim.para> (optional – zero or one). The element allows for an introduction to the index. Sample text is "This index is organized alphabetically by topic and subtopic. Topics and subtopics are identified by page number" (see Section 36.1.1.8).
- c. Column list title <col.title> (required). The element provides the title for the subject (column title is "Subject") and, if applicable, the page number (column title is "WP Sequence No.–Page No.") columns in the Index list (see Section 15.5.1.4.6).
- d. An optional repeatable grouping consisting of the following:

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- i. Category heading **<alphaidx>** (optional – zero or one). The element provides a separator for each alphabetical category in an index (see Section 15.5.2.2.1).
- ii. Index entry – **<indexentry>** (required when used). Index entry is used to enter the subject and page number reference (when applicable). When subentries are needed, the element recursively references itself to enter the subordinate subjects and page number references (when applicable) (see Section 15.5.2.2.2).

2. The DTD fragment for **<aindx>** is graphically depicted:

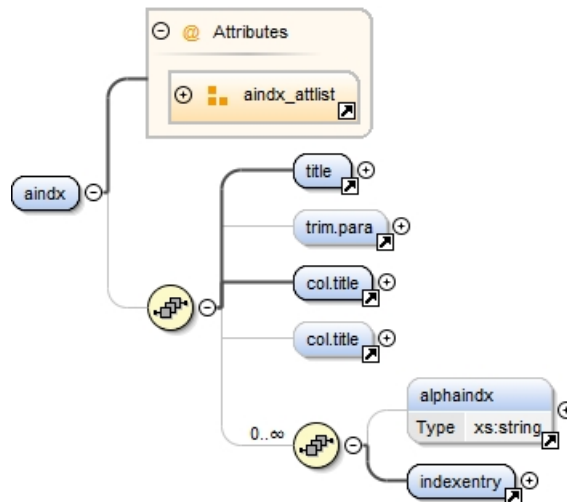


FIGURE 86. Alphabetical index **<aindx>** DTD hierarchy.

3. The DTD fragment for **<aindx>** is:

```
<!ELEMENT aindx (title, trim para?, col title, col title?, (alphaidx?, indexentry)*)?>
<!ATTLIST aindx
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref          IDREFS          #IMPLIED
  comment            CDATA           #IMPLIED
  delchlvl           (0-99)          "0"
  id                 ID              #IMPLIED
  idref              IDREFS          #IMPLIED
  inschlvl           (0-99)          "0"
  security            (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk           CDATA           #IMPLIED
  tocentry           (1 | 2 | 3 | 4)  "1">
```

4. Common attributes for **<aindx>**.

- a. **applicable** – Points or links to the master effective list to determine the specific configuration (see Section 16.4.1.4).

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- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- j. **tocentry** – Defines the indenture level in the TOC (see Section 16.3.6).

15.5.2.2.1 Category heading <alphaindx>.

The element <alphaindx> is used for the heading of an alphabetical category in an alphabetical index. Using the category heading can make it easier to identify an index group because the heading is formatted differently than the index entries.

1. The component <alphaindx> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1). The element provides the alphabetical heading (“A”).
2. The DTD Fragment for <alphaindx> is:

```
<!ELEMENT alphaindx (#PCDATA)>
```
3. No attributes.

15.5.2.2.2 Index entry <indexentry>.

The element <indexentry> contains the necessary data to create an index manually or through a pre-composition process. This element is recursive to allow the required index levels for the manual. The element <indexentry> establishes a cross-reference to the index location in the document and the index subject text used within the alphabetical index.

1. The components for <indexentry> are:
 - a. Title <title> (required). The element provides the subject of the index entry (see Section 36.1.1.4).
 - b. Select the page number reference format (optional – zero or more) as:
 - i. Work package page number reference that requires both a work package number reference <wpno> (see Section 33.2.4.1.3) and the associated page number <pageno>. The element provides a cross-reference to the work package identification number, which the stylesheet uses to generate the work package sequence number. A reference is used because the work package sequence can be changed due to a revision or change, but the work package identification number does not change. The page number is either a manually entered number or a cross-reference in the document to subject area. Note the stylesheet determines the page number during composition.
 - ii. Front or rear page number <pageno>. The element is used to enter the front or rear matter page number, since neither section has a work package sequence number that may change. Note the stylesheet determines the page number during composition. The content model is #PCDATA (see 6.2.2.1).
 - iii. Index entry <indexentry> (optional – zero or more) (see Section 15.5.2.2.2). When subordinate index entry subject(s) apply, the element is recursively referenced to enter each subordinate index entry information.

2. The DTD fragment for **<indexentry>** is graphically depicted.

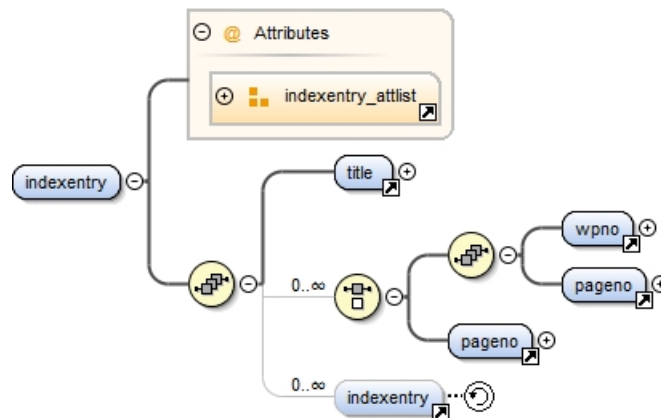


FIGURE 87. Index entry **<indexentry>** DTD hierarchy.

3. The DTD fragment for **<indexentry>** is:

```
<!ELEMENT indexentry (title, ((wpno, pageno) * | pageno), indexen-
try*)>
<!ATTLIST indexentry
  assocfig          IDREFS          #IMPLIED
  id                ID              #IMPLIED
  idref             IDREFS         #IMPLIED
  security          (uc | fouo | c | s | ts) #IMPLIED>
```

4. Attributes for **<indexentry>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **id** – Unique identifier. (optional) (see Section 36.3.7).
- c. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- d. **security** – Security classification (optional) (see Section 36.3.14).

15.5.2.2.3 Index reference marker **<indxref>**.

The element **<indxref>** establishes a document target (used by composition systems to determine the page number) and the index subject text to be used within the alphabetical index. The **<indxref>** element can store up to four subject level titles to be listed under the index entry. Note that if “**refl**” has different tense on the word, the subject information will not be grouped together, but as separate entries.

1. The element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<indxref>** is:

```
<!ELEMENT indxref EMPTY>
<!ATTLIST indxref
  id                ID              #IMPLIED
  indxref           IDREF          #IMPLIED>
```

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ref1	CDATA	#IMPLIED
ref2	CDATA	#IMPLIED
ref3	CDATA	#IMPLIED
ref4	CDATA	#IMPLIED>

3. Attributes for<indxref>:

- a. **id** – Unique identifier (optional) (see Section 36.3.7). The identifier can be used, during either manually or pre-composition processing to indicate the page number to be displayed in the index.
- b. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7). The cross reference can be used by the frame-based TM or IETM to provide bidirectional hot references to the index and to the index entry source (see Section 15.5.2.2.4).

4. Attributes for <indxref>:

- a. **ref1** – Reference level 1 (optional). Index subject text to be referenced as level one.
- b. **ref2** – Reference level 2 (optional). Index subject text to be referenced as level two.
- c. **ref3** – Reference level 3 (optional). Index subject text to be referenced as level three.
- d. **ref4** – Reference level 4 (optional). Index subject text to be referenced as level four.

15.5.2.2.4 How to develop an alphabetical index.

An alphabetic index can be developed by using index reference marker <indxref> element (see Section 15.5.2.2.3). This establishes a document location, index subject, and subordinate subjects text to be referenced within the <aindx> element. A composition system may be able to generate the index entry subject and page number with no additional external applications (see Section 15.5.2.2.4.1). While another application may need an additional pre-composition application to generate this information (see Section 15.5.2.2.4.3), another composition can use manual entered data to generate page number (see Section 15.5.2.2.4.6). Other composition systems requires all data inserted manually (see Section 15.5.2.2.4.9). These four (4) authoring methods are provided for generating index reference and index by the use of the index reference <indxref> element. Methods (1) and (2) require an application to generate necessary ID and IDREF automatically. Methods (3) and (4) are manually inputted by the author. Using methods (1), (2), or (3) will provide the necessary information for any composition system to publish an index and furnish a mechanism to hyperlink between the index and the index reference. Method (4) does not provide any linking mechanism, because the <indxref> element is not used.

1. Method 1 – Index reference defines the index level titles.
2. Method 2 – Reference the index level title generated in the index.
3. Method 3 – Index reference ID and index entries point to the index reference identifier.
4. Method 4 – Index subject and page number entered manually.

15.5.2.2.4.1 Method 1 – Index reference defines the index level subjects.

In Method 1, the author specifies each index reference entry to the specific index level title(s). MIL-STD-2361 provides a tool for the soldier to find the indexed material, when the information is used electronically. To improve the index authoring methodology, an application is required to perform the following tasks:

1. Read the document instance to obtain the index level topic and subtopics.
2. Assign an automatic generated ID to the index reference.

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3. Sort the index level topics and subtopics.
4. Generate the index using the XML elements with the associated generated index reference IDs.

The application is necessary for the composition system to generate the alphabetically sorted index, page number, and work package number for the index reference. The author's responsibility is to enter the index level topics for each XML element. The index reference IDs, IDREFs and index entries will be generated after completing the index reference XML elements. The application will be applied to the document instance to prepare the document for publication.

15.5.2.2.4.2 Method 1 – Application development process.

Using Method 1, the following steps can be used in developing an application. The steps provide methodology and not precise coding.

1. The process would review the XML instance and search for the **<indxref>** element.
2. The process would search for each **<indxref>** element marked in the TM.
3. When the **<indxref>** element is found:
 - a. A “unique” identifier would be added to the **<indxref>** element (for page number reference).
 - b. Attributes **ref1** through **ref4** would be collected and stored.
 - c. The **<indexentry>** element is stored for the lowest entered subject attribute entry including the index reference subject (use the attribute value), the work package identification number (if applicable), and the “unique” identifier for the page number reference. The text below is an example of the **<indxref>** element and the information to store in the **<indxref>**.
 - i. Work package identification number is “M00154–X–XXX–XXX”
 - ii. The **<indxref>** element is **<indxref ref1="radio" ref2="SINGGARS"/>**
 - iii. The process stores the **ref1** and **ref2** attributes for sorting.
 - iv. The **<indxref>** element is changed to **<indxref id="M00154–X–XXX–XXX-index1" ref1="Radio" ref2="SINGGARS"/>**
 - v. The stored **<indexentry>** element would store the **ref2** value only as shown below:


```
<indexentry>
<title>SINGGARS
</title>
<wpno wpref="M00154–X–XXX–XXX"/>
<pageno idref="M00154–X–XXX–XXX-index1">
</pageno>
</indexentry>
```
 - d. After locating all the **<indxref>** elements in the XML instance, the stored attributes, **ref1** through **ref4**, are alphabetically sorted by each reference attribute level. Therefore, all **ref1** attribute values are sorted, then the **ref2** attribute values are sorted within the same **ref1** subject text, and so further for the four reference subject levels.
 - e. After the sorting is completed, each entry in the sorted list will use the stored **<indexentry>** data to generate the alphabetical index. If the previous subject level text (attribute **ref1**) does not have an **<indexentry>** element created, an **<indexentry>** element is created for the stored **ref1** value with no page number data.
 - f. Example XML instance and stages in the pre-composition process:
 - i. Initial XML instance prior to pre-composition process.

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```

<indxref ref1="radio" ref2="SINGARS"/>SINGARS . . .
<indxref ref1="radio" ref2="MX-6707" ref3="AT-1095/VRC Antenna"/>
<indxref ref1="antenna" ref2="AT-1095/VRC Antenna"/>AT-1095/VRC Upper 66" Antenna
Element . . .
<indxref ref1="radio" ref2="MX-6707"/>MX-6707 . . .
<indxref ref1="radio" ref2="MX-6707" ref3="AS-1729/VRC Antenna"/>
<indxref ref1="antenna" ref2="AS-1729/VRC Antenna"/>AS-1729/VRC Antenna

```

- ii. XML instance after pre-composition process has inserted the unique identifiers.

```

<indxref id="M00154-X-XXX-XXX-index1" ref1="radio" ref2="SINGARS"/> SINGARS...
<indxref id="M00154-X-XXX-XXX-index2" ref1="radio" ref2="MX-6707" ref3="AT-1095/VRC
Antenna"/>
<indxref id="M00154-X-XXX-XXX-index3" ref1="antenna" ref2="AT-1095/VRC Antenna"/>
AT-1095/VRC Upper 66" Antenna Element . . .
<indxref id="M00154-X-XXX-XXX-index4" ref1="radio" ref2="MX-6707"/> MX-6707 . . .
<indxref id="M00154-X-XXX-XXX-index5" ref1="radio" ref2="MX-6707" ref3="AS-1729/VRC
Antenna"/>
<indxref id="M00154-X-XXX-XXX-index6" ref1="antenna" ref2="AS-1729/VRC Antenna"/>
AS-1729/VRC Antenna

```

- iii. The collected **<indxref>** data could be stored in a list (see TABLE V.).

TABLE V. Stored **<indxref>** for pre-composition process.

Ref1	Ref2	Ref3	Index Entry
Radio	SINGARS		<indexentry><title> SINGARS </title><wpno wpref="M00154-X-XXX-XXX"/><pageno idref="M00154-X-XXX-XXX-index1"></pageno></indexentry>
Radio	MX-6707	AT-1095/ VRC Antenna	<indexentry><title> AT-1095/ VRC Antenna </title><wpno wpref="M00154-X-XXX-XXX"/><pageno idref="M00154-X-XXX-XXX-index2"></pageno></indexentry>
antenna	AT-1095/ VRC Antenna		<indexentry><title> AT-1095/ VRC Antenna </title><wpno wpref="M00154-X-XXX-XXX"/><pageno idref="M00154-X-XXX-XXX-index3"></pageno></indexentry>
Radio	MX-6707		<indexentry> <title> MX-6707 </title><wpno wpref="M00154-X-XXX-XXX"/><pageno idref="M00154-X-XXX-XXX-index4"></pageno> <indexentry>

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TABLE V. Stored <indxref> for pre-composition process. (continued)

Ref1	Ref2	Ref3	Index Entry
Radio	MX-6707	AS-1729/ VRC Antenna	<indexentry> <title>AS-1729/VRC Antenna</title> <wpno wpref="M00154-X-XXX-XXX"/> <pageno idref="M00154-X-XXX-XXX-index5"></pageno> </indexentry>
antenna	AS-1729/ VRC Antenna		<indexentry> <title>AS-1729/VRC Antenna</title> <wpno wpref="M00154-X-XXX-XXX"/> <pageno idref="M00154-X-XXX-XXX-index6"></pageno> </indexentry>

- iv. After collecting all the <indxref> data, the list would be sorted in relationship to each column (see TABLE VI.).

TABLE VI. Sorted for pre-composition process.

Ref1	Ref2	Ref3	Index Entry
antenna	AS-1729/ VRC Antenna		<indexentry> <title>AS-1729/VRC Antenna</title> <wpno wpref="M00154-X-XXX-XXX"/> <pageno idref="M00154-X-XXX-XXX-index6"></pageno> </indexentry>
antenna	AT-1095/ VRC Antenna		<indexentry><title>AT-1095/VRC Antenna</title><wpno wpref="M00154-X-XXX-XXX"/><pageno idref="M00154-X-XXX-XXX-index3"></pageno></indexentry>
Radio	MX-6707		<indexentry> <title>MX-6707</title> <wpno wpref="M00154-X-XXX-XXX"/> <pageno idref="M00154-X-XXX-XXX-index4"></pageno> </indexentry>
Radio	MX-6707	AS-1729/ VRC Antenna	<indexentry> <title>AS-1729/VRC Antenna</title> <wpno wpref="M00154-X-XXX-XXX"/> <pageno idref="M00154-X-XXX-XXX-index5"></pageno> </indexentry>
Radio	MX-6707	AT-1095/ VRC Antenna	<indexentry><title> AT-1095/VRC Antenna</title><wpno wpref="M00154-X-XXX-XXX"/><pageno idref="M00154-X-XXX-XXX-index2"></pageno></indexentry>
Radio	SINCGARS		<indexentry><title>SINCGARS</title><wpno wpref="M00154-X-XXX-XXX"/><pageno idref="M00154-X-XXX-XXX-index1"></pageno></indexentry>

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- v. After sorting the list, the pre-composition process would generate the **<aindx>** XML instance. All **ref1** with the same data will be grouped together. Any **ref2** with the same data will be grouped together when under the same **ref1** group. The following example is the XML instance from previous index data.

```

<aindx>
<title>INDEX
</title>
<col.title>Subject
<col.title>
<col.title>WP Sequence No. &ndash; Page No.
<col.title>
<alphaindex>A
</alphaindex>
<indexentry>
<title>antenna
</title>
<indexentry>
<title>AS-1729/VRC Antenna
</title>
<wpno wpref="M00154-X-XXX-XXX"/>
<pageno idref="M00154-X-XXX-XXX-index4">
</pageno>
</indexentry>
<indexentry>
<title>AT-1095/VRC Antenna
</title>
<wpno wpref="M00154-X-XXX-XXX"/>
<pageno idref="M00154-X-XXX-XXX-index2">
</pageno>
</indexentry>
<indexentry>
<alphaindex>R
</alphaindex>
<indexentry>
<title>radio
</title>
<indexentry>
<title>MX-6707
</title>
<wpno wpref="M00154-X-XXX-XXX"/>
<pageno idref="M00154-X-XXX-XXX-index3">
</pageno>
<indexentry>
<title>AS-1729/VRC Antenna
</title>
<wpno wpref="M00154-X-XXX-XXX"/>
<pageno idref="M00154-X-XXX-XXX-index4">
</pageno>
</indexentry>
<indexentry>
<title>AT-1095/VRC Antenna
</title>
<wpno wpref="M00154-X-XXX-XXX"/>

```

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```

<pageno idref="M00154-X-XXX-XXX-index2">
</pageno>
</indexentry>
</indexentry>
<indexentry>
<title>SINGARS
</title>
<wpno wpref="M00154-X-XXX-XXX"/>
<pageno idref="M00154-X-XXX-XXX-index1">
</pageno>
</indexentry>
</indexentry>
</aindx>

```

vi. The composed instance would display the information as follows:

INDEX		
Subject		WP Sequence No.—Page No.
	—A—	
antenna		
AS-1729/ VRC Antenna		0023—5
AT-1095/ VRC Antenna		0023—4
	—R—	
Radio		
MX-6707		0023—4
AS-1729/VRC Antenna		0023—5
AT-1095/VRC Antenna		0023—4
SINGARS		0023—3

FIGURE 88. Sorted for pre-composition process.

15.5.2.2.4.3 Method 2 – Reference the index level title generated in the index.

In Method 2, the author creates the index entries and associates a unique identifier to each index level entry. The writer authors the document instance and applies the XML element for index reference with the attribute IDREF pointing to the index entry ID location. The method provides a consistent list of possible entries and will reduce spelling errors. The disadvantage is recalling or looking up the associated index entry ID. Again as with Method 1, an application is required to provide a better tool for the soldier to find the indexed material.

15.5.2.2.4.4 Application requirements for Method 2.

The application will perform the following tasks:

1. Read the document instance to obtain the index entry reference identifier.
2. Assign an automatic generated ID to the index reference.
3. Assign to the associated index entry the index reference generated ID.

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15.5.2.2.4.5 Further Method 2 application functionality.

The application is necessary for the composition system to generate the page number and the work package number for the index reference. It is the author's responsibility to:

1. Enter the sorted index entries with associated unique identifiers.
2. Enter the XML element index reference with associated attribute index entry IDREF.

15.5.2.2.4.6 Method 3 – Index reference ID and index entries point to the index reference identifier.

Method 3 does not require a separate application applied to the document instance.

15.5.2.2.4.7 Method 3 author requirements.

The author will manually perform the following tasks to permit index generation:

1. Generate the sorted index entries.
2. Create the index reference with a unique identifier.
3. Associate the index reference index to the index entry.
4. Generate new index entries, when required.

15.5.2.2.4.8 Additional Method 3 requirements.

An application is not required to be applied to the document instance and the author will make the association when creating the index reference entry. However, the author should have a valid list of available IDs and the same index entry document instance needs to be shared or merged with other authors. It is the author's responsibility to:

1. Enter the sorted index entries.
2. Enter the index reference with an unique identifier for each XML element.
3. Associate the ID to the index entry IDREF.

15.5.2.2.4.9 Method 4 – Index subject and page number entered manually.

Method 4 does not require a separate application applied to the document instance.

15.5.2.2.4.10 Method 4 author requirements.

The author will manually perform the following tasks to permit index generation.

1. Generate the index entries.
2. Each index entry create the cross reference to the work package identification number (optional).
3. Each index entry enter the page number (if the work package identification number is not referenced the work package sequence number is entered).
4. Sort the index entries.
5. Generate new index entries, when required.
6. Review and update the page numbers when information is changed.

15.5.2.2.4.11 Method 4 additional requirements.

An application is not required to be applied to the document instance and the author will make the association when creating the index reference entry. However, the author is not required to identifiers for each index entry. It is the author's responsibility to:

1. Enter the sorted index entries.
2. Identifying and maintaining the page number(s) for the indexed subject.

15.5.2.2.4.12 Method 4 – <aindx> markup.

The following is an example of an XML instance and the formatted display of the alphabetical index using Method 4.

1. Example of an XML document instance fragment for alphabetical index <aindx>:

```

<aindx>
<title>INDEX
</title>
<col.title>Subject
</col.title>
<col.title>WP Sequence No. &ndash; Page No.
</col.title>
<alphaindx>A
</alphaindx>
<indexentry>
<title>Accessory Section
</title>
<indexentry>
<title>Description
</title>
<wpno wpref="G0002-X-XXX-XXXX"/>
<pageno>9
</pageno>
</indexentry>
<indexentry>
<title>Inspection
</title>
<wpno wpref="G0002-X-XXX-XXXX"/>
<pageno>3
</pageno>
</indexentry>
<indexentry>
<title>Installation
</title>
<wpno wpref="G0002-X-XXX-XXXX"/>
<pageno>10
</pageno>
</indexentry>
</indexentry>
<alphaindx>B
</alphaindx>
<indexentry>
<title>Baffle and Spacer

```

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```

</title>
<wpno wpref="O0045-X-XXX-XXXX"/>
<pageno>7
</pageno>
<indexentry>
<title>Installation
</title>
<wpno wpref="O0045-X-XXX-XXXX"/>
<pageno>9
</pageno>
</indexentry>
</indexentry>
<indexentry>
<title>Bearings, Anti-friction
</title>
<indexentry>
<title>Balance
</title>
<wpno wpref="O0041-X-XXX-XXXX"/>
<pageno>3
</pageno>
</indexentry>
<indexentry>
<title>Cleaning
</title>
<wpno wpref="O0041-X-XXX-XXXX"/>
<pageno>1
</pageno>
</indexentry>
</indexentry>
<alphaindx>C
</alphaindx>
<indexentry>
<title>Carbon Seals
</title>
<indexentry>
<title>Cleaning
</title>
<wpno wpref="G0008-X-XXX-XXXX"/>
<pageno>2
</pageno>
</indexentry>
<indexentry>
<title> Inspection
</title>
<wpno wpref="G0008-X-XXX-XXXX"/>
<pageno>1
</pageno>
</indexentry>
<indexentry>
<title>Replacement
</title>
<wpno wpref="G0008-X-XXX-XXXX"/>
<pageno>1

```

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</pageno>
 </indexentry>
 </indexentry>
 </aindx>

2. Example of a formatted display of an XML document instance fragment for **<aindx>**:

Sorted for pre-composition process.

INDEX

<u>Subject</u>	<u>WP Sequence No.–Page No.</u>
—A—	
Accessory Section	
Description	0002–9
Inspection	0002–3
Installation	0002–10
—B—	
Baffle and Spacer	0059–7
Installation	0059–9
Bearings, Anti-friction	
Balance	0052–3
Cleaning	0052–1
—C—	
Carbon Seals	0059–7
Cleaning	0008–2
Inspection	0008–1
Replacement	0008–1

15.5.2.3 Reporting errors and recommending improvements DA Forms 2028 <da2028>.

The element **<da2028>** provides the form, Reporting Errors and Recommending Improvements. The DA Form 2028 is found in the page-based TM rear matter. One filled-out sample copy of DA Form 2028, is provided by the acquiring activity. A minimum of three blank DA Forms 2028 with the TM number, date, and title should be included and should precede the authentication page of every unclassified TM, as applicable. In a frame-based TM or IETM, information is generally accessed by an electronic form. Depending on the IETM viewer, many fields can be automatically filled in with known information (TM number, WP identification, user name, etc.). The electronic form may have a direct connection to the proponent network site or stored internally to be transmitted or printed after completing the maintenance action.

1. The components for **<da2028>**:
 - a. Electronic form application that is comprised of:
 - i. Launch the electronic form **<link>** (required) through a reference to website or executes an application (see Section 33.2.3).

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- ii. TM proponent **<proponent>** (required) identifies the proponent name and address where to send the DA Form 2028-2 (see Section 36.1.4.23).
 - b. Printed DA Form 2028 comprised of the element **<graphic>** (required) that provides the paper form (see Section 31.2).
2. The DTD fragment for **<da2028>** is:
- ```
<!ELEMENT da2028 ((link, proponent) | graphic)>
<!--ATTLIST da2028 application (frame | page | both) "both"-->
```
3. The DTD fragment for **<da2028>** is graphically depicted.

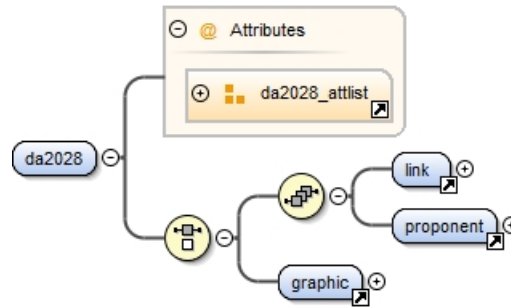


FIGURE 89. Reporting errors and recommending improvements DA Forms 2028 **<da2028>** DTD hierarchy.

4. Attributes for **<da2028>**:
- a. **application** – The attribute indicates if the element has application for page-based only, frame-based only, or both (default value is **both**).

### 15.5.2.3.1 Example of a **<da2028>**.

The following are examples of an XML instance and the formatted display of the Reporting Errors and Recommending Improvements form.

1. Example of an XML document instance fragment for obtaining a page-based Reporting Errors and Recommending Improvements form **<da2028>**:
 

```
<da2028 application="page">
 <graphic boardno="da2028form">
 </da2028>
```
2. Example of an XML document instance fragment for obtaining a Reporting Errors and Recommending Improvements form **<da2028>** for both an IETM or page-based (depending on the output media):
 

```
<da2028 application="frame">
 <link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href="http://www.usapa.army.mil/da2028/daform2028.asp" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
 </link>
 <proponent>
 <name>Commander,
 <brk/>US Army Communications-Electronics Command and Fort Monmouth,
 <brk/>ATTN: AMSELLC-LEO-D-CS-CFO
 </name>
 <address>
```

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```

<city>Fort Monmouth
</city>
<state>New Jersey
</state>
<zip>07703-5000
</zip>
</address>
</proponent>
</da2028>
<da2028 application="page">
<graphic boardno="da2028formexample">
</da2028>
<da2028 application="page">
<graphic boardno="da2028form">
</da2028>
<da2028 application="page">
<graphic boardno="da2028form">
</da2028>
<da2028 application="page">
<graphic boardno="da2028form">
</da2028>

```

#### 15.5.2.4 Authentication page <authent>.

The element **<authent>** is used for positioning the authentication graphic. The authentication page specifies the document is approved for use by the U.S. Army. The external graphic is referenced from the attribute **boardno** (see Section 31.1).

1. The element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<authent>** is:

```

<!ELEMENT authent EMPTY>
<!ATTLIST authent
 alt CDATA #IMPLIED
 boardno ENTITY #REQUIRED
 hscale CDATA #IMPLIED
 reprodep CDATA #IMPLIED
 reprowid CDATA #IMPLIED
 scalefit CDATA #IMPLIED
 unitmeasure (mm | cm | px | in | pt | pi) "in"
 vscale CDATA #IMPLIED>

```

3. Attributes for **<authent>**:

- a. **alt** – Additional text to assist in identifying the graphic (optional) (see Section 34.3.1).
- b. **boardno** – The attribute specifies the entity name that points to the external graphic file. For how to define the graphic entity name (see Section 31.2.1).

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- c. **hscale** – The attribute specifies the horizontal scaling factor for scaling a graphic, expressed in the form of percentages. Exclude the percent sign (%) when entering an **hscale** attribute value (attribute value of 10 is 10%). On further information and consideration concerning scaling (see Section 31.2.3).
- d. **reprodep** – The attribute specifies the reproduction area depth of the graphic. Enter a numeric value for the fixed depth, excluding the unit of measure. On further information and consideration concerning scaling (see Section 31.2.3).
- e. **reprowid** – The attribute specifies the reproduction area width of the graphic. Enter a numeric value for the fixed width, excluding the unit of measure. On further information and consideration concerning scaling (see Section 31.2.3).
- f. **scalefit** – The attribute specifies if the graphic will be scaled to fit the size of the reproduction area. Declared values are “yes” or “no.” The graphic reproduction area or size is determined by the two attributes **reprowid** and **reprodep**. On further information and consideration concerning scaling (see Section 31.2.3).
- g. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.
- h. **vscale** – The attribute specifies the vertical scaling factor for scaling a graphic, expressed in the form of percentages. Exclude the percent sign (%) when entering a **vscale** attribute value (attribute value of 10 is 10%). On further information and consideration concerning scaling (see Section 31.2.3).

#### 15.5.2.4.1 Example of an <authent>.

The following is an example of an authentication page XML instance and the formatted display.

1. Example of an XML document instance fragment for <authent>:

```
<authent boardno = "authent_TM_X-XXX-XXXX-XX">
```

2. Example of a formatted display of an XML document instance fragment for <authent>:

By Order of the Secretary of the Army:

Official:



GERALD B. O'KEEFE  
Administrative Assistant to the  
Secretary of the Army

12456789

1425104

RAYMOND T. ODIERNO  
General, United States Army  
Chief of Staff

**Distribution:**

Initially published in electronic media only. When funds become available, this publication will be distributed in accordance with the initial distribution number (IDN) 258057, requirements for TM 43-6625-749-10.

**FIGURE 90. Example of an authentication page <authent>.**

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**15.5.2.5 Foldout section <foldsect>.**

The element **<foldsect>** is used for collecting the TM's foldout (oversize) illustrations for page-based TM only. Figures that appear in this section have been extracted from the work package, (not printed with the work package), when the XML source data contains the element *<figure figtype="fo-rear">*. The element **<foldsect>** designates in the TM XML instance where the foldout sheets will be placed, (in the sequence order of the TM work packages). The stylesheet stores the figures, which have identified the attribute **figtype**, and publish them in the foldout section.

1. The element **<foldsect>** content is EMPTY. This is a place holder and all action is taken by the stylesheet based on the presence of the element.
2. The DTD fragment for **<foldsect>** is:

```

<!ELEMENT foldsect EMPTY>
<!ATTLIST foldsect
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 tocentry (1 | 2 | 3 | 4) "1">

```

3. Common attributes for **<foldsect>**:
  - a. **applicable** – Points or links to the master effective list to determine the specific configuration (see Section 16.4.1.4).
  - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - d. **comment** – Change information (optional) (see Section 36.3.12).
  - e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - h. **security** – Security classification (optional) (see Section 36.3.14).
  - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).
  - j. **tocentry** – Defines the indenture level in the TOC (see Section 16.3.6).

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**15.5.2.6 Back cover <back>.**

The element **<back>** is used for the back cover for page-based TM only. The back cover generally contains a metric conversion chart, which is contained as a external graphic. The external graphic is referenced from the attribute **boardno** (see Section 31.1).

1. The element **<back>** content is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<back>** is:

```
<!ELEMENT back EMPTY>
<!ATTLIST back
 alt CDATA #IMPLIED
 boardno ENTITY #REQUIRED
 hscale CDATA #IMPLIED
 reprodep CDATA #IMPLIED
 reprowid CDATA #IMPLIED
 scalefit (yes | no) #IMPLIED
 unitmeasure (mm | cm | px | in | pt | pi) "in"
 vscale CDATA #IMPLIED>
```

3. Attributes for **<back>**:

- a. **alt** – The attribute contains a description or additional information to be displayed when a mouse-over in frame-based/IETM application is used (see Section 34.3.1).
- b. **boardno** – The attribute specifies the entity name that points to the external graphic file. For how to define the graphic entity name (see Section 31.2.1).
- c. **hscale** – The attribute specifies the horizontal scaling factor for scaling a graphic, expressed in the form of percentages. Exclude the percent sign (%) when entering an **hscale** attribute value (attribute value of 10 is 10%). On further information and consideration concerning scaling (see Section 31.2.3).
- d. **reprodep** – The attribute specifies the reproduction area depth of the graphic. Enter a numeric value for the fixed depth, excluding the unit of measure. On further information and consideration concerning scaling (see Section 31.2.3).
- e. **reprowid** – The attribute specifies the reproduction area width of the graphic. Enter a numeric value for the fixed width, excluding the unit of measure. On further information and consideration concerning scaling (see Section 31.2.3).
- f. **scalefit** – The attribute specifies if the graphic will be scaled to fit the size of the reproduction area. Declared values are “yes” or “no.” The graphic reproduction area or size is determined by the two attributes **reprowid** and **reprodep**. On further information and consideration concerning scaling (see Section 31.2.3).
- g. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.
- h. **vscale** – The attribute specifies the vertical scaling factor for scaling a graphic, expressed in the form of percentages. Exclude the percent sign (%) when entering a **vscale** attribute value (attribute value of 10 is 10%). On further information and consideration concerning scaling (see Section 31.2.3).



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**15.6 Conventional and chemical ammunition <ammo>.**

The element <ammo> begins the requirements for conventional and chemical ammunition manuals. This manual describes the handling, shipping, and marking for ammunition. The front matter <volume> and back matter of volume <vol-rear> is optional for a Conventional and Chemical Ammunition Manual.

1. The components <ammo> are:
  - a. Paper Front <paper.frnt> (required) (see Section 15.5.1).
  - b. General Information Chapter <gim> (required) (see Chapter 18).
  - c. Volume <volume> (optional) (see Section 15.16).
  - d. Back Matter of Volume <vol-rear> (optional) (see Section 15.16.1).
  - e. Operating Instructions <opim> (option – zero or more) (see Chapter 19).
  - f. Effectivity Type Set <mim> (required – one or more) (see Chapter 23).
  - g. Destruction Information Chapter <dim> (required) (see Chapter 25).
  - h. Supporting Information Chapter <sim> (required) (see Chapter 27).
  - i. Rear matter <rear> (required) (see Section 15.5.2).
  - j. Framed front matter <framed.frnt> (see Section 15.2.1.1).
  - k. Reporting Errors and Recommending Improvements <da2028> (required – one or more) (see Section 15.5.2.3).
  - l. A required authentication page <authent> (see Section 15.5.2.4).

2. The DTD fragment for **<ammo>** is graphically depicted.

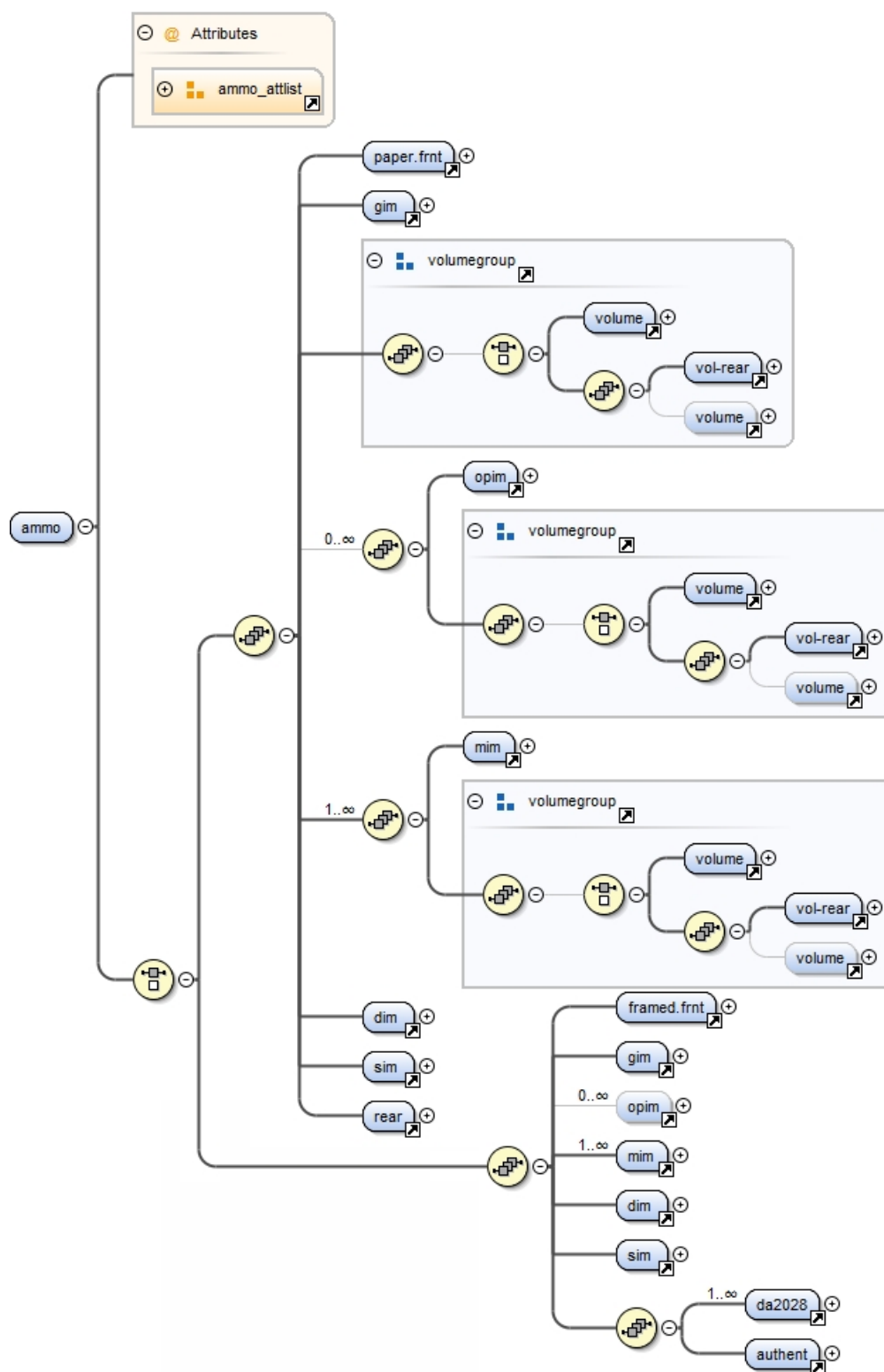


FIGURE 91. Conventional and chemical ammunition **<ammo>** DTD hierarchy.

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3. The DTD fragment for **<ammo>** is:

```

<!ELEMENT ammo (paper.frnt, gim, (volume | (vol-rear, volume?)),
opim, (volume | (vol-rear, volume?)), mim, (volume | (vol-rear, vol-
ume?)), dim, sim, rear) | (framed.frnt, gim, opim*, mim+, dim, sim,
da2028+, authent)>

<!ATTLIST ammo
maintitl CDATA #REQUIRED
maintlvls (10 | 13 | 14 | 23 | 24 | 40) #required
multivolume (yes | no) "no"
pubno CDATA #IMPLIED
revno CDATA #REQUIRED
rpstl (yes | no | only) "no">

```

## 4. Unique attributes:

- a. **maintitl** – Maintenance Title supplies a literal version of the title for the maintenance-level (required).
- b. **maintlvls** – Maintenance Level identifies the lowest maintenance level/class authorized to use the manual. This attribute value is used in the stylesheet to supply the literal expression of the TM's maintenance level (required).
- c. **multivolume** – Is the manual broken into volumes? The default value is **no**. This attribute is used by the stylesheet to provide volume numbers when needed.
- d. **pubno** – The publication number attribute supplies the publication number for the Conventional and Chemical Ammunition Manual.
- e. **revno** – The overall revision number for the manual (required).
- f. **rpstl** – Specifies whether or not the manual includes a RPSTL among its chapters or if it is a stand alone parts manual. The default value is **no**.

## 15.7 Phased maintenance inspections technical manual **<pmi>**.

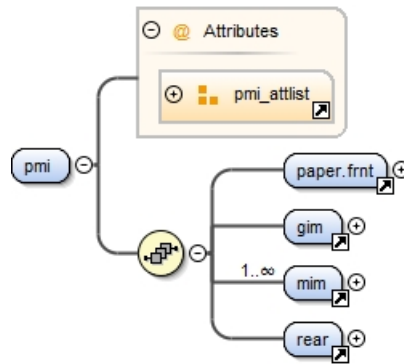
The element **<pmi>** contains the aviation Phased Maintenance Inspections (PMI) manual content. It consists of front matter, Preventive Maintenance (PM) Checklist Introductory work package, the maintenance information chapter using the aviation maintenance category, and rear matter.

1. The components **<pmi>** are:

- a. Phased Maintenance Inspections/Preventive Maintenance Services Front Cover **<paper.frnt>** (required) (see Section 15.5.1).
- b. General Information Chapter **<gim>** (required) (see Chapter 18).
- c. Maintenance Instructions **<mim>** (required – one or more) (see Chapter 23).
- d. Rear matter **<rear>** (required) (see Section 15.5.2).

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2. The DTD fragment for **<pmi>** is graphically depicted.



**FIGURE 92. Phased maintenance inspections technical manual <pmi> DTD hierarchy.**

3. The DTD fragment for **<pmi>** is:

```
<!ELEMENT pmi (paper.frnt, gim, mim+, rear)>
<!ATTLIST pmi
 fit.paper.size pocket | logbook | standard | double "STANDARD"
 maintitl CDATA #REQUIRED
 maintlvls (10 | 13 | 14 | 23 | 24 | 40) #REQUIRED
 pubno CDATA #IMPLIED
 revno CDATA #REQUIRED
 security (uc | fouo | c | s | ts) #IMPLIED>
```

4. Attributes for **<pmi>**:

- a. **fit.paper.size** – Fit paper size by selecting an attribute value from the list. The default value is **standard**.
- b. **maintitl** – Maintenance Title supplies a literal version of the title for the maintenance-level (required).
- c. **maintlvls** – Maintenance Level identifies the lowest maintenance level/class authorized to use the manual; this attribute value is used in the stylesheet to supply the literal expression of the TM's maintenance level (required).
- d. **pubno** – Publication number attribute specifies the technical manual publication number (optional).
- e. **revno** – The overall revision number for the manual (required).
- f. **security** – Security classification (optional) (see Section 36.3.14).

## 15.8 Preventative maintenance services <pms>.

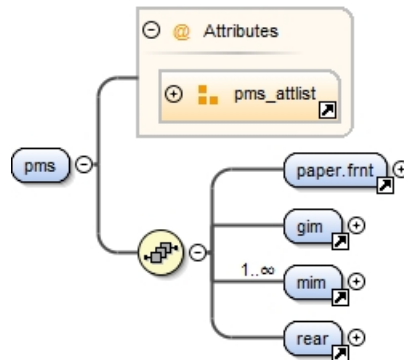
The element **<pms>** contains the aviation Preventative Maintenance Services (PMS) manual content. It consists of front matter, PMS general information **<gim>**, maintenance information chapter using PMS maintenance category, and rear matter.

1. The components **<pms>** are:

- a. Phased Maintenance Inspections/Preventive Maintenance Services Front Cover **<paper.frnt>** (required) (see Section 15.5.1).
- b. General Information Chapter **<gim>** (required) (see Chapter 18).

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- c. Maintenance Instructions **<mim>** (required – one or more) (see Chapter 23).
  - d. Rear matter **<rear>** (required) (see Section 15.5.2).
2. The DTD fragment for **<pms>** is graphically depicted.



**FIGURE 93. Phased maintenance inspections technical manual **<pms>** DTD hierarchy.**

3. The DTD fragment for **<pms>** is:

```
<!ELEMENT pms (paper.frnt, gim, mim+, rear)>
<!ATTLIST pms
 fit.paper.size (pocket | logbook | standard |
 double) "standard"
 maintitl CDATA #REQUIRED
 maintlvls (10 | 13 | 14 | 23 | 24 | 40) #REQUIRED
 pubno CDATA #IMPLIED
 revno CDATA #REQUIRED
 security (uc | fouo | c | s | ts) #IMPLIED>
```

4. Attributes for **<pms>**:

- a. **fit.paper.size** – Fit paper size by selecting an attribute value from the list. The default value is **standard**.
- b. **maintitl** – Maintenance Title supplies a literal version of the title for the maintenance-level (required).
- c. **maintlvls** – Maintenance Level identifies the lowest maintenance level/class authorized to use the manual. This attribute value is used in the stylesheet to supply the literal expression of the TM's maintenance level (required).
- d. **pubno** – Publication number specifies the technical manual publication number.
- e. **revno** – The overall revision number for the manual (required).
- f. **security** – Security classification (optional) (see Section 36.3.14).

## 15.9 System-wide troubleshooting aviation – Aircraft system trouble shooting **<sys-ts>**.

The element **<sys-ts>** contains the contents of an aviation system-wide troubleshooting manual. It consists of paged-based front matter, troubleshooting information chapter using troubleshooting aviation category, and rear matter.

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1. The components **<sys-ts>** are:
  - a. Paper Front **<paper.frnt>** (required) (see Section 15.5.1).
  - b. Troubleshooting Instructions **<tim>** (required) (see Chapter 22).
  - c. Rear matter **<rear>** (required) (see Section 15.5.2).
2. The DTD fragment for **<sys-ts>** is graphically depicted.

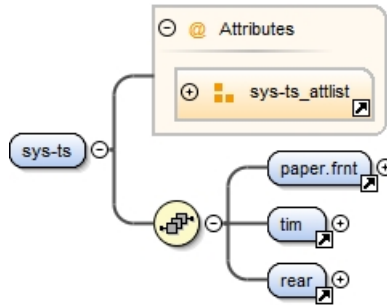


FIGURE 94. System-wide troubleshooting aviation – technical manual **<sys-ts>** DTD hierarchy.

3. The DTD fragment for **<sys-ts>** is:

```

<!ELEMENT sys-ts (paper.frnt, tim, rear)>
<!ATTLIST sys-ts
 multivolume (yes | no) "no"
 pubno CDATA #IMPLIED
 revno CDATA #REQUIRED
 security (uc | fouo | c | s | ts) #IMPLIED>

```

4. Attributes for **<sys-ts>**:
  - a. **multivolume** – Multiple volumes. The manual broken into volumes (required).
  - b. **pubno** – Publication number attribute specifies the technical manual publication number.
  - c. **revno** – The overall revision number for the manual (required).
  - d. **security** – Security classification (optional) (see Section 36.3.14).

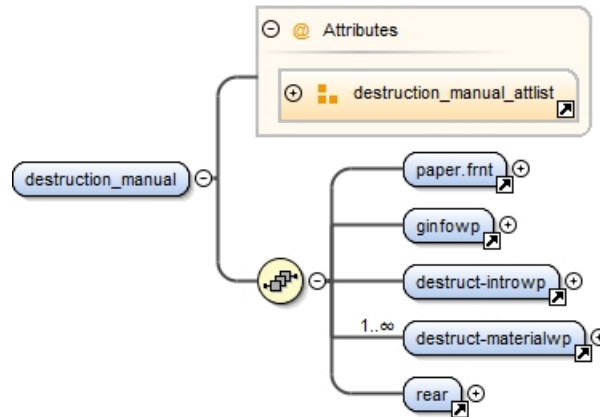
### 15.10 Destruction manual **<destruction\_manual>**.

A stand alone destruction manual **<destruction\_manual>** may be prepared when directed by an Army Materiel Command supply class custodian or manager. The destruction manual is a page based only manual.

1. The components **<destruction\_manual>** are:
  - a. Front matter **<paper.frnt>** (required).
  - b. General information work package **<ginfowp>** (required). This element provides the general information required for a stand alone destruction manual specified in MIL-STD-40051-1/-2 (see Section 18.1.1).
  - c. Destruction manual specific introductory or general information work package **<destruct-introwp>** (required) (see Section 15.10.2).

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- d. Destruction of material work package **<destruct-materialwp>** (required – one or more). This work package provides detailed destruction procedures to the soldier (see Section 25.1.2).
  - e. Rear matter **<rear>** (required) (see Section 15.5.2).
2. The DTD fragment for **<destruction\_manual>** is graphically depicted:



**FIGURE 95. Destruction manual <destruction\_manual> DTD hierarchy.**

3. The DTD fragment for **<destruction\_manual>** is:

```

<!ELEMENT destruction_manual ((paper.fnt, ginfowp, destruct-in-
 trowp, destruct-materialwp+, rear)>

<!ATTLIST destruction_manual
 pubno CDATA #IMPLIED
 revno CDATA #REQUIRED
 security (uc | fouo | c | s | ts) #IMPLIED>

```

4. Attributes for **<destruction\_manual>**:

- a. **pubno** – Publication number specifies the technical manual publication number.
- b. **revno** – The overall revision number for the manual (required).
- c. **security** – Security classification (optional) (see Section 36.3.14).

### 15.10.1 Destruction manual front matter.

The following paragraphs describe the allowable front matter. Format style and requirements are prepared for a standard page-oriented presentation. Full details are contained in Section 15.5.1.

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1. The DTD fragment for **<paper.frnt>** is graphically depicted.

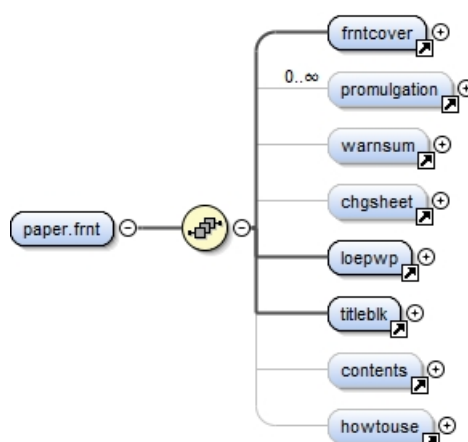


FIGURE 96. Destruction manual front matter **<paper.frnt>** DTD hierarchy.

2. The DTD fragment for **<paper.frnt>** is:

```
<!ELEMENT paper.frnt (frntcover, promulgation*, warnsum?, chgsheet?, loepwp, titleblk, contents?, howtouse?)>
```

3. No attributes for **<paper.frnt>**.

### 15.10.2 Destruction manual introduction work package **<destruct-introwp>**.

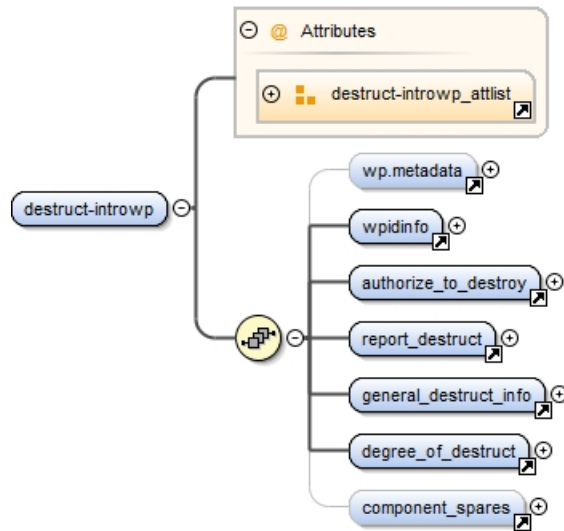
The destruction general information work package contains those elements that present required and optional general information for a destruction manual.

1. The components **<destruct-introwp>** are:
  - a. Metadata **<wp.metadata>** (optional). The element provides information about the work package data and usually not used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information **<wpidinfo>** (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work package initial setup **<initial\_setup>** (required) (see Section 16.6).
  - d. Authorize to destroy **<authorize\_to\_destroy>** (required) (see Section 15.10.2.1).
  - e. Reporting destruction **<report\_destruct>** (required) (see Section 15.10.2.2).
  - f. General destruction information **<general\_destruct\_info>** (required) (see Section 15.10.2.3).
  - g. Degree of destruction information **<degree\_of\_destruct>** (required) (see Section 15.10.2.4).
  - h. Destruction of component spares **<component\_spares>** (optional) (see Section 15.10.2.5).



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2. The DTD fragment for **<destruct-introwp>** is graphically depicted.



**FIGURE 97. Destruction introduction work package <destruct-introwp> DTD hierarchy.**

3. The DTD fragment for **<destruct-introwp>** is:

```
<!ELEMENT destruct-introwp (wp.metadata?, wpidinfo, authorize_to_
destroy, report_destruct, general_destruct_info, degree_of_de-
struct, component_spares?)>
```

```
<!ATTLIST destruct-introwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED

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marines	(yes   no)	#IMPLIED
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<destruct-introwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since the last TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).

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- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see MIL-STD-40051-1/-2 specifies manually assigned four digit sequential number of the work package for the TM and Section 16.2.2).

### 15.10.2.1 Authorize to destroy <authorize\_to\_destroy>.

The <authorize\_to\_destroy> provides a statement as to who may provide the authorization to destroy equipment. This is a boilerplate statement contained in <extref docno='MIL-STD-40051-1/-2'>. The authority to order destruction is set at division level or higher. These commanders may delegate to lower levels.

1. The components <authorize\_to\_destroy> are:
  - a. Title <title> (required) (see Section 36.1.1.4).
  - b. Narrative paragraph <para> (required – one or more) (see Section 36.1.1.6).
2. The DTD fragment for <authorize\_to\_destroy> is graphically depicted.

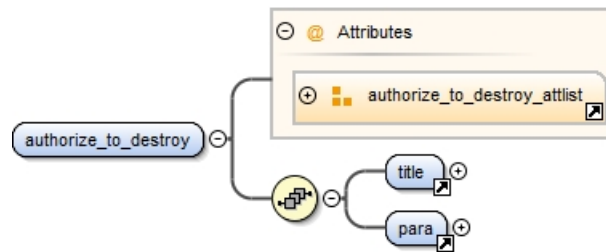


FIGURE 98. Authorize to destroy <authorize\_to\_destroy> DTD hierarchy

3. The DTD fragment for <authorize\_to\_destroy> is:

```
<!ELEMENT authorize_to_destroy (title, para)>
<!ATTLIST authorize_to_destroy
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Attributes for <authorize\_to\_destroy>:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 15.10.2.2 Reporting destruction <report\_destruct>.

The <report\_destruct> provides the instructions for units who have to destroy equipment and need to notify upper level command.

1. The components <report\_destruct> are:
  - a. Title <title> (required) (see Section 36.1.1.4).
  - b. Narrative paragraph <para> (required – one or more) (see Section 36.1.1.6).
2. The DTD fragment for <report\_destruct> is graphically depicted.

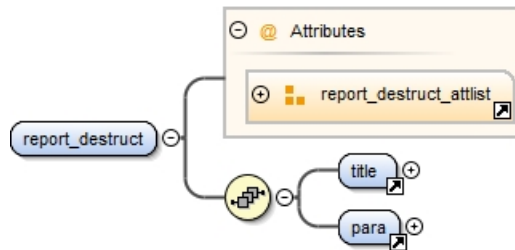


FIGURE 99. Reporting destruction <report\_destruct> DTD hierarchy

3. The DTD fragment for <report\_destruct> is:

```
<!ELEMENT report_destruct (title, para)>
<!ATTLIST report_destruct
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>
```

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4. Attributes for **<report\_destruct>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see 36.3.3).

15.10.2.3 General destruction information **<general\_destruct\_info>**.

The **<general\_destruct\_info>** provides generic destruction information such as:

1. Types of destructive processes such as burning, use of explosives, burying, or self destruction devices/techniques. This explanation includes the advantages and disadvantages of each process.
  2. For complex weapons systems, the reason to perform any subordinate destruction procedures in conjunction with those for the weapons system.
  3. Any considerations relative to physical location or weather related (wind, rain, temperature) that users should consider when destroying material.
  4. Explanations on the priority for materiel destruction.
1. The components **<general\_destruct\_info>** are:
    - a. Primary Level Titled Paragraph(s) **<para0>** (see Section 36.1.1.9) or one or more Primary Level Conditional Titled Paragraphs **<para0-alt>** (required – one or more) (see Section 36.1.1.10).
  2. The DTD fragment for **<general\_destruct\_info>** is graphically depicted.

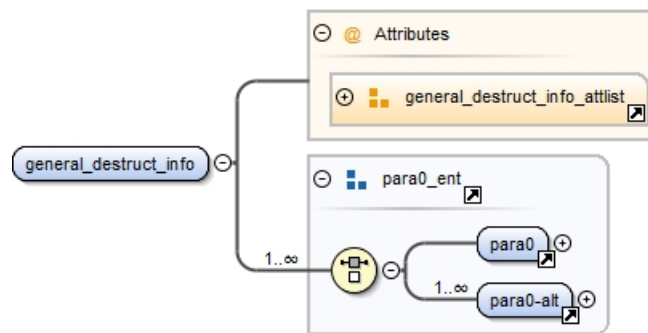


FIGURE 100. General destruction information **<general\_destruct\_info>** DTD hierarchy.

3. The DTD fragment for **<general\_destruct\_info>** is:

```
<!ELEMENT general_destruct_info (%para0_ent)+>
```

```
<!ATTLIST general_destruct_info
```

```
assocfig
```

```
IDREFS
```

```
#IMPLIED
```

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changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	“0”
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	“0”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<general\_destruct\_info>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 15.10.2.4 Degree of destruction instruction<degree\_of\_destruct>

Verbatim included in the degree of destruction instruction.

- 1. The components **<degree\_of\_destruct>** are:
  - a. Title **<title>** (required) (see Section 36.1.1.4).
  - b. Narrative paragraph **<para>** (required — one or more) (see Section 36.1.1.6).

2. The DTD fragment for **<degree\_of\_destruct>** is graphically depicted.

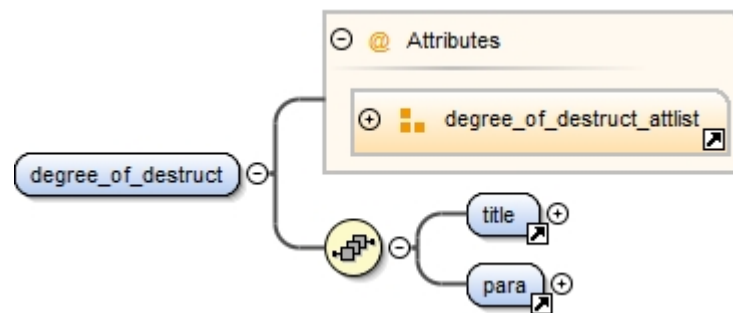


FIGURE 101. Degree of destruction **<degree\_of\_destruct>** DTD hierarchy.

3. The DTD fragment for **<degree\_of\_destruct>** is:

```
<!!ELEMENT degree_of_destruct (title, para)>
<!ATTLIST degree_of_destruct
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99 "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99 "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>
```

4. Attributes for **<degree\_of\_destruct>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 15.10.2.5 Destruction of component spares **<component\_spares>**.

The **<component\_spares>** provides information on destruction of components not installed on the weapons system. These include supply spares or parts in the repair cycle that may be subject to capture. This section provides

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a list of spare parts to be destroyed and the order they are to be destroyed. A key precept is to ensure that if a component is destroyed on the equipment, that all similar components are destroyed to keep the enemy from rebuilding a weapon using captured spare parts.

1. The components **<component\_spare>** are:
  - a. Primary Level Titled Paragraph(s) **<para0>** (see Section 36.1.1.9) or one or more Primary Level Conditional Titled Paragraph(s) **<para0-alt>** (required – one or more) (see Section 36.1.1.10).
2. The DTD fragment for **<component\_spare>** is graphically depicted.

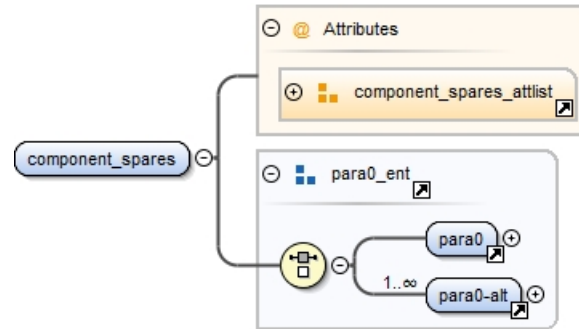


FIGURE 102. Destruction of component spares **<component\_spare>** DTD hierarchy.

3. The DTD fragment for **<component\_spare>** is:

```
<!ELEMENT component_spare (%para0_ent;)>
<!ATTLIST component_spare
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Attributes for **<component\_spare>**:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** - Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
  - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - h. **security** – Security classification (optional) (see Section 36.3.14).



- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 15.10.2.6 Destruction procedures work package <destruct-materialwp>.

The <destruct-materialwp> provides the specific information and procedures to destroy components or weapons system assets covered by the destruction manual or chapter.

1. The components <destruct-materialwp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data and usually not used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial\_setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Destruction of essential spares <essential\_spares> (optional) (see Section 15.10.2.7).
  - e. Detailed destruction procedures <proc> (required – one or more) (see Section 15.10.2.8).
2. The DTD fragment for <destruct-materialwp> is graphically depicted.

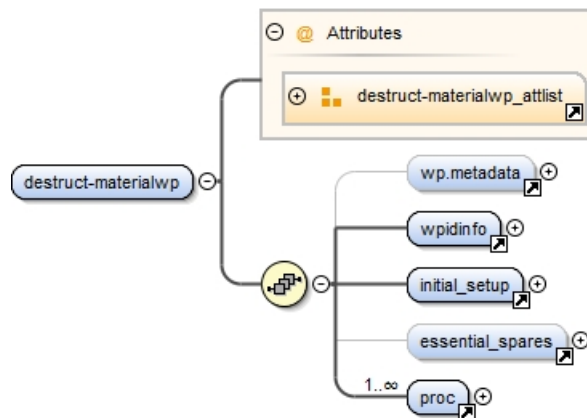


FIGURE 103. Destruction procedures <destruct-materialwp> DTD hierarchy.

3. The DTD fragment for <destruct-materialwp> is:

```
<!ELEMENT destruct-materialwp (wp.metadata?, wpidinfo, initial_
setup, essential_spares?, proc+)>

<!ATTLIST destruct-materialwp
airforce (yes | no) "no"
army (yes | no) "no"
assocfig IDREFS #IMPLIED
changelvl (0-9) "0"
changeref IDREFS #IMPLIED
chnгно (0-99) "0"
comment CDATA #IMPLIED
```

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crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Attributes for <destruct-materialwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).

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- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies new work package change sequence number (point work package) since the last TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see MIL-STD-40051-1/-2 specifies manually assigned four digit sequential number of the work package for the TM and Section 16.2.2).

### 15.10.2.7 Destruction of essential spares <essential\_spares>.

The <essential\_spares> provides a listing of specific spare parts that are essential or critical to the weapons system that should be destroyed along with the weapons system. The <essential\_spares> differs from the <components\_spares> in the general information. The <essential\_spares> provides a specific listing of the spares that are to be destroyed for the weapons system.

1. The components <essential\_spares> are:
  - a. Primary Level Titled Paragraph(s) <para0> (see Section 36.1.1.9) or one or more Primary Level Conditional Titled Paragraph(s) <para0-alt> (required – one or more) (see Section 36.1.1.10).

- 
- ```

classDiagram
    class essential_sparcs {
        +essential_sparcs_attrlist
        +para0_ent
    }
    class essential_sparcs_attrlist {
        +Attributes
    }
    class para0_ent {
        +para0
        +para0-alt
    }
    essential_sparcs --> essential_sparcs_attrlist
    essential_sparcs --> para0_ent
    para0_ent --> para0
    para0_ent --> para0-alt
  
```

```
<!ELEMENT essential_spares (%para0_ent;)>
<!ATTLIST essential_spares
assocfig          IDREFS                      #IMPLIED
changeref         IDREFS                      #IMPLIED
comment           CDATA                      #IMPLIED
delchlvl          (0-99)                     "0"
id                ID                          #IMPLIED
idref             IDREFS                     #IMPLIED
inschlvl          (0-99)                     "0"
security           (uc | fouo | c | s | ts)    #IMPLIED
skilltrk          CDATA                      #IMPLIED>
```

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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15.10.2.8 Detailed destruction procedures <proc>.

Detailed destruction procedures are broken down into **<proc>** (see Section 17.2) for each individual procedure or item. There is one procedure per destruction work package. If there is a sequence to ensure the proper destruction, this sequence will be provided. Alternative procedures may be provided.

1. The DTD fragment for **<proc>** is:

```
<!ELEMENT proc (title?, %alert;, geninfo?, (para | %step;, (%step;)+)
>
<!ATTLIST proc
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  crewmember          CDATA           #IMPLIED
  date-time-stamp     (date | time | date-time) #IMPLIED
  delchlvl            (0-99)          "0"
  esd                 (yes | no)       "no"
  frame               (yes | no)       "yes"
  hcp                 (yes | no)       "no"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)          "0"
  qa                 (yes | no)       "no"
  security            (uc | fouo | c | s | ts) #IMPLIED
  skilltrk            CDATA           #IMPLIED
  tocentry            (0 | 1 | 2 | 33) "0">
```

2. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
3. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
4. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
5. **comment** – Change information (optional) (see Section 36.3.12).
6. **crewmember** -Crewmember (optional). This attribute allows the author to identify specific functions of a task or procedure that are accomplished by different members of a crew. An example might be a gunner and loader in a gun crew (see Section 16.3.1).
7. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
8. **delchlvl** – Deletion change level (optional) (see 36.3.12).
9. **esd** – Electrostatic discharge requirement (default value is **no**) (see 36.3.6).
10. **frame** – Frame (optional). A toggle of **yes** or **no** that indicates if the **<step1>** is to be displayed in its own frame.

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- 11. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- 12. **id** - Unique identifier (optional) (see Section 36.3.7).
- 13. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- 14. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- 15. **qa** – Quality assurance check (optional). A choice of **yes** or **no** used to indicate whether the step requires a quality assurance inspection prior to advancing further into the procedure.
- 16. **security** – Security classification (optional) (see Section 36.3.14).
- 17. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- 18. **tocentry** - Table of contents level entry (default value is **2**) (see Section 16.3.6).

15.11 Software users manual <sum>.

The technical content requirements for the preparation of Software Users Manuals <sum> may be prepared when directed by the acquiring activity. The software users manual is an ETM or IETM manual.

- 1. The components of <sum> are:
 - a. Dependent on if it is an ETM or IETM manual, <paper.frnt> or framed Front <frame.frnt> will be used (required) (see Section 15.5.1).
 - b. Select either a General Information group or a Parts Information Chapter for stand alone manual. At least one is required.
 - i. General information chapter <gim> (required). This element provides the general information required for battle damage information as specified in MIL-STD-40051-1/-2 (see Chapter 18).
 - ii. Software description and data chapter <softdescddata> (required) (see Chapter 21).
 - iii. Software Operating Instructions <sopim> (optional – zero or more) (see Chapter 20).
 - iv. Troubleshooting Information Chapter <tim> (optional – One or more) (see Chapter 22).
 - v. Maintenance Information Chapter <mim> (optional – One or more) (see Chapter 23).
 - vi. Supporting Information Chapter <sim> (required) (see Chapter 27).
 - vii. Rear matter <rear> (required) (see Section 15.5.2).

The diagram illustrates a hierarchical tree structure, likely representing a data model or a computational graph. The root node is labeled "sum". It branches into several main categories:

- Attributes**: A group containing a single node labeled "sum_attlist".
- Volume Groups**: Multiple instances of a "volumegroup" container, each containing a hierarchy of nodes:
 - paper.fmt**, **framed.fmt**, **gim**
 - softdescdata**
 - sopim**
 - tim**
 - mim**
 - sim**
 - rear**

Each "volumegroup" contains a series of interconnected nodes, including "volume", "vol-rear", and "volume", suggesting a recursive or iterative process. The connections are represented by lines and small circular icons, indicating relationships between the different levels of the hierarchy.

Source: <http://assist.dla.mil> Downloaded: 2019 03 19T20:32Z
Check the source to verify that this is the current version before use.

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3. The DTD fragment for **<sum>** is:

```

<!ELEMENT sum (((paper.frnt | framed.frnt), (gim, %volumegroup;),
(softdesccdata, %volumegroup;), (sopim, %volumegroup;)*, (tim, %vol-
umegroup;)?, (mim, %volumegroup;)?, (sim, %volumegroup;), rear)>

<!ATTLIST sum
dmwr-inclus      (parts | parts-tools)          #IMPLIED
fit.paper.size   (pocket | logbook | standard | double "standard"
)
maintitl         CDATA                          #REQUIRED
maintlvls        (10 | 13 | 14 | 23 | 24 | 40 | dmwr |
dmwr-nmwr | nmwr | NA)                        #REQUIRED
multivolume      CDATA                          IMPLIED
pubno            CDATA                          #IMPLIED
revno            CDATA                          #REQUIRED
security         (uc | fouo | c | s | ts )      #IMPLIED>

```

4. Attributes for **<sum>**:

- a. **dmwr-inclus** – Specifies whether a DMWR/NMWR includes parts only or parts and tools.
- b. **fit.paper.size** – Fit paper size by selecting an attribute value from the list. The default value is **standard**.
- c. **maintitl** – Maintenance Title supplies a literal version of the title for the maintenance-level (required).
- d. **maintlvls** – Maintenance Level identifies the lowest maintenance level/class authorized to use the manual; this attribute value is used in the stylesheet to supply the literal expression of the TM's maintenance level (required).
- e. **multivolume** – Is the manual broken into volumes. The default value is **no**. This attribute is used by the stylesheet to provide volume numbers when needed.
- f. **pubno** – Publication number attribute specifies the technical manual publication number.
- g. **revno** – The overall revision number for the manual (required).
- h. **security** – Security classification (optional) (see Section 36.3.14).

15.11.1 Software users manual front matter.

The following paragraphs describe the allowable front matter. Format style and requirements are prepared for a standard page-oriented presentation. Full details are contained in Section 15.5.1.

1. The DTD fragment for **<sum>** is graphically depicted.

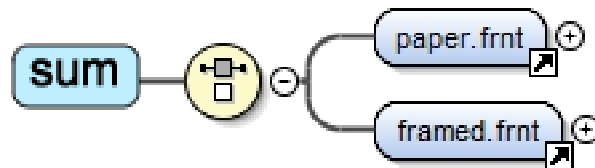


FIGURE 106. Sum front matter **<sum>** DTD hierarchy.

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2. The DTD fragment for **<paper.frnt>** or **<framed.frnt>** is:

```
<!ELEMENT paper.frnt (frntcover, promulgation*, warnsum?, chgsheet?, loepwp,
titleblk, contents?, howtouse?)
```

```
<! ELEMENT framed.frnt ((revisionsummary | revisionsummary-alt +)?, data_
install, disc_content?, (frntcover | frntcover-alt +), (promulgation |
promulgation-alt+) *, (warnsum | warnsum-alt+)?, (contents | contents-alt+),
(howtouse | howtouse-alt+))>
```

3. No attributes for **<paper.frnt>** or **<framed.frnt>**.

15.12 Software administrators manual <sam>.

The technical content requirements for the preparation of Software Administrators Manuals **<sam>** may be prepared when directed by the acquiring activity. The software users manual is an ETM or IETM manual.

1. The components of **<sam>** are:
 - a. Dependent on if it is an ETM or IETM manual, **<paper.frnt>** or framed Front **<frame.frnt>** will be used (required) (see Section 15.5.1).
 - b. Select either a General Information group or a Parts Information Chapter for stand alone manual. At least one is required.
 - i. General information chapter **<gim>** (required). This element provides the general information required for battle damage information as specified in MIL-STD-40051-1/-2 (see Chapter 18).
 - ii. Software description and data chapter **<softdescdata>** (required) (see Chapter 21).
 - iii. Software Operating Instructions **<sopim>** (optional – zero or more) (see Chapter 20).
 - iv. Troubleshooting Information Chapter **<tim>** (optional – One or more) (see Chapter 22).
 - v. Maintenance Information Chapter **<mim>** (optional – One or more) (see Chapter 23).
 - vi. Supporting Information Chapter **<sim>** (required) (see Chapter 27).
 - vii. Rear matter **<rear>** (required) (see Section 15.5.2).

2. The DTD fragment for **<sam>** is graphically depicted.

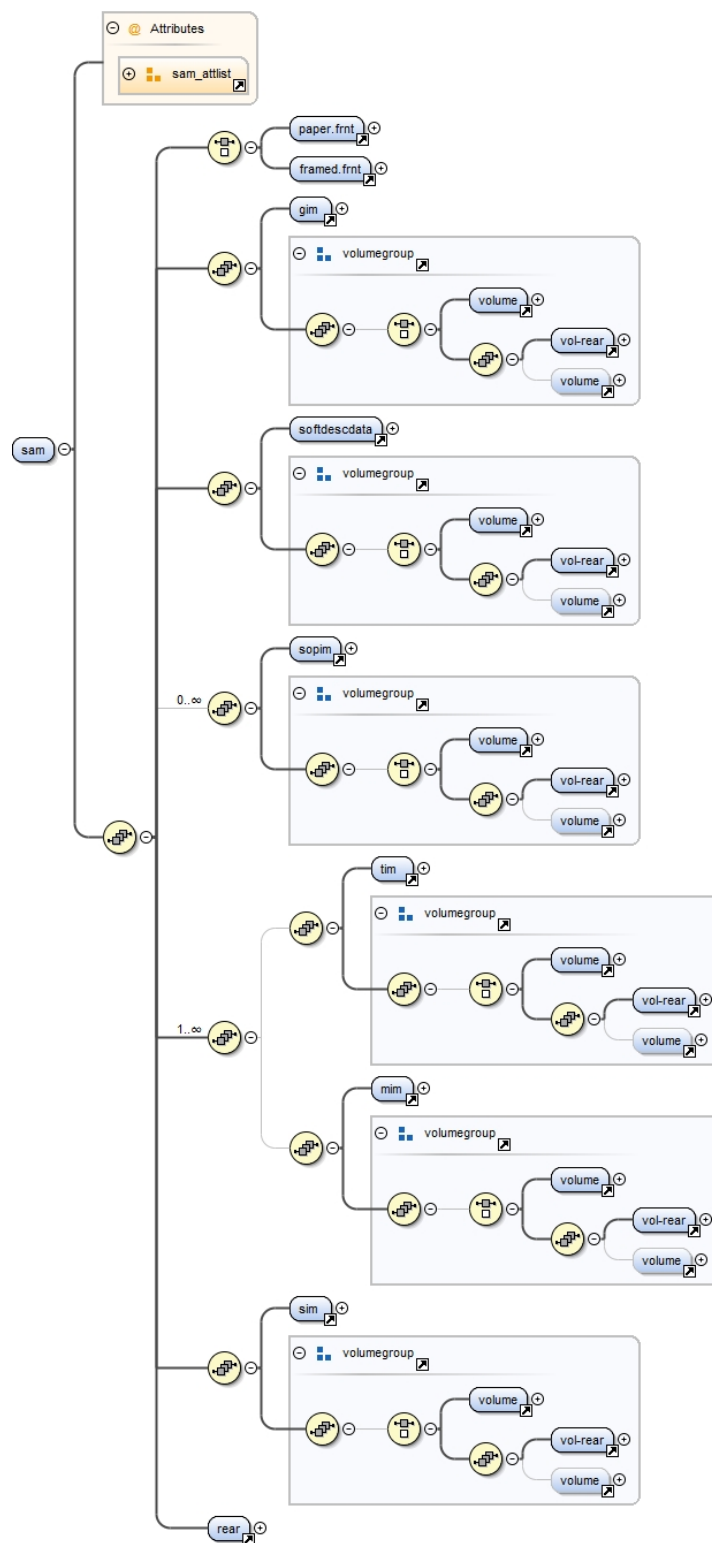


FIGURE 107. Software administrators manual **<sam>** DTD hierarchy.

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3. The DTD fragment for **<sam>** is:

```

<!ELEMENT sam (((paper.frnt | framed.frnt), (gim, %volume;),
(softdescdata, %volume;), (sopim, %volume;)*, (tim, %vol-
umegroup;)?, (mim, %volume;)?, (sim, %volume;), rear)>

<!ATTLIST sum
dmwr-inclus      (parts | parts-tools)          #IMPLIED
fit.paper.size   (pocket | logbook | standard | double "standard"
)
maintitl         CDATA                          #REQUIRED
maintlvls        (10 | 13 | 14 | 23 | 24 | 40 | dmwr |
dmwr-nmwr | nmwr | NA)                        #REQUIRED
multivolume      CDATA                          IMPLIED
pubno            CDATA                          #IMPLIED
revno            CDATA                          #REQUIRED
security         (uc | fouo | c | s | ts )      #IMPLIED>

```

4. Attributes for **<sam>**:

- a. **dmwr-inclus** – Specifies whether a DMWR/NMWR includes parts only or parts and tools.
- b. **fit.paper.size** – Fit paper size by selecting an attribute value from the list. The default value is **standard**.
- c. **maintitl** – Maintenance Title supplies a literal version of the title for the maintenance-level (required).
- d. **maintlvls** – Maintenance Level identifies the lowest maintenance level/class authorized to use the manual; this attribute value is used in the stylesheet to supply the literal expression of the TM's maintenance level (required).
- e. **multivolume** – Is the manual broken into volumes. The default value is **no**. This attribute is used by the stylesheet to provide volume numbers when needed.
- f. **pubno** – Publication number attribute specifies the technical manual publication number.
- g. **revno** – The overall revision number for the manual (required).
- h. **security** – Security classification (optional) (see Section 36.3.14).

15.12.1 Software administrators manual front matter.

The following paragraphs describe the allowable front matter. Format style and requirements are prepared for a standard page-oriented presentation. Full details are contained in Section 15.5.1.

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1. The DTD fragment for **<sum>** is graphically depicted.

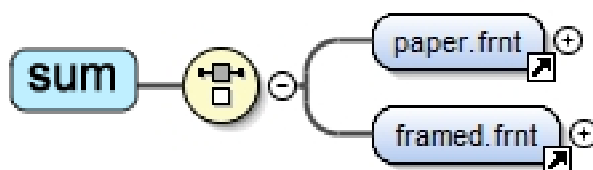


FIGURE 108. Sum front matter **<sum>** DTD hierarchy.

2. The DTD fragment for **<paper.frnt>** or **<framed.frnt>** is:

```
<!ELEMENT paper.frnt (frntcover, promulgation*, warnsum?, chgsheet?, loepwp,
titleblk, contents?, howtouse?)
```

```
<!ELEMENT framed.frnt ((revisionsummary | revisionsummary-alt+)?, data_
install, disc_content?, (frntcover | frntcover-alt+), (promulgation |
promulgation-alt+)*, (warnsum | warnsum-alt+)?, (contents | contents-alt+),
(howtouse | howtouse-alt+))>
```

3. No attributes for **<paper.frnt>** or **<framed.frnt>**.

15.13 Battle damage assessment and repair manual **<bdar>**.

A stand alone battle damage assessment and repair manual **<bdar>** may be prepared in page based form when directed by the procuring activity. For ETMs and IETMs, the BDAR information is included in the **<framed.manual>** and not as a standalone.

1. The components **<bdar>** are:
 - a. Paper front matter **<paper.frnt>** (see Section 15.5.1) or;
 - b. Framed front matter **<framed.frnt>** (see Section 15.2.1.1).
 - c. General information chapter **<gim>** (required). This element provides the general information required for battle damage information as specified in MIL-STD-40051-1/-2 (see Chapter 18).
 - d. A battle damage assessment chapter **<baim>** (required) (see Chapter 15.13.2).
 - e. One or more battle damage repair chapters **<brim>** (required – one or more) (see Section 15.13.3).
 - f. A supporting information chapter **<sim>** (required) (see Chapter 27).
 - g. Rear matter **<rear>** (required) (see Section 15.5.2).

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2. The DTD fragment for **<bdar>** is graphically depicted.

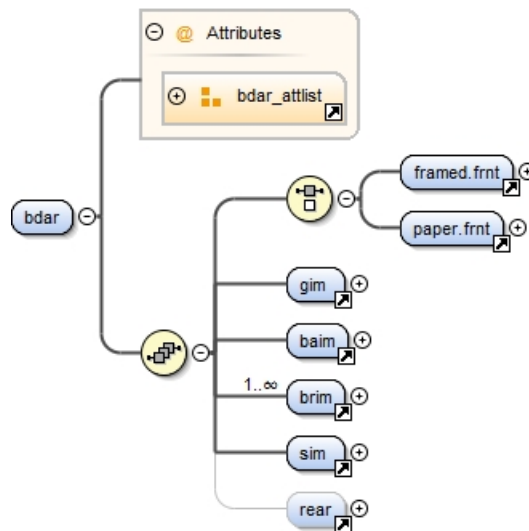


FIGURE 109. Battle damage assessment and repair manual **<bdar>** DTD hierarchy.

3. The DTD fragment for **<bdar>** is:

```
<!ELEMENT bdar ((framed.frt | paper.frt), gim, baim, brim+, sim,
rear?)>
<!ATTLIST bdar
fit.paper.size    (pocket | logbook | standard |
double)          "standard"
maintitl         CDATA          #REQUIRED
pubno            CDATA          #IMPLIED
revno            CDATA          #REQUIRED
security         (uc | fouo | c | s | ts ) #IMPLIED>
```

4. Attributes for **<bdar>**:

- a. **fit.paper.size** – Fit paper size by selecting an attribute value from the list. The default value is **standard**.
- b. **maintitl** – Maintenance title supplies a literal version of the title for the maintenance level (required).
- c. **pubno** – Publication number (optional). This allows the entry of the publication number for the TM.
- d. **revno** – Revision number (required). This contains the current revision number of the TM.
- e. **security** – Security classification (optional) (see Section 36.3.14).

15.13.1 Battle damage front matter.

The type of front matter for battle damage information will depend on whether the battle damage information is present in page based or electronic (ETM/IETM). Page based BDAR manuals will use the paper front **<paper.frt>** (see Section 15.5.1). ETMs and IETMs will use the framed front **<framed.manual>** element (see Section 15.2).

15.13.2 Battle damage assessment chapter <baim>.

The battle damage assessment chapter <baim> contains instructions and other pertinent information on assessing damage on the equipment and identifying the applicable BDAR repair work package.

1. The components for <baim> are:
 - a. Paper front matter <titlepg> (required) (see Section 36.1.1.1) or
 - b. Framed front matter <damage-assesswp> (see Section 15.13.2.2).
2. The DTD fragment for <baim> is graphically depicted.

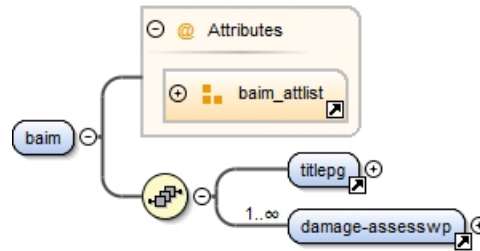


FIGURE 110. Battle damage assessment chapter <baim> DTD hierarchy

3. The DTD fragment for <baim> is:

```
<!ELEMENT baim (titlepg, damage-assesswp+)>
<!ATTLIST baim
  chap-toc          (yes | no)          "yes"
  chngno            (0-99)              "0"
  frame             (yes | no)          "yes"
  revno             CDATA               #REQUIRED
  tocentry          (0 | 1 | 2 | 3) (0 | 1 | 2 | 3) "1">
```

4. Attributes for <baim> are:
 - a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
 - b. **chngno** – Change number (required) (see Section 36.3.12).
 - c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
 - d. **revno** – Revision number (required) (see Section 36.3.12).
 - e. **tocentry** – In the TM table of contents, the attribute indicates the indenture level. The possible selections are **0** (do not include), **1** (the highest level or 1st indenture level), or **2** (the second indenture level) (default value is **1**).

15.13.2.1 Chapter title page <titlepg>.

The <baim> requires a chapter title page be included (see 36.1.1.1).

15.13.2.2 Damage assessment work package <damage-assesswp>.

The damage assessment work package <damage-assesswp> contains an introduction <intro> and damage assessment tables. The work packages are broken down by system or equipment as specified by the acquiring activity.

1. The components of <damage-assesswp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Introduction <intro> (required) (see Section 36.1.4.14).
 - d. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - e. A required/repeatable group consisting of one or more of the following:
 - i. A Figure <figure> – Allows the insertion of an illustration or other material (see Section 31.1.1).
 - ii. An assessment table <table> that contain logical and expedient methods used to locate trouble and aid in analyzing/assessing damage.
2. The DTD fragment for <damage-assesswp> is graphically depicted.

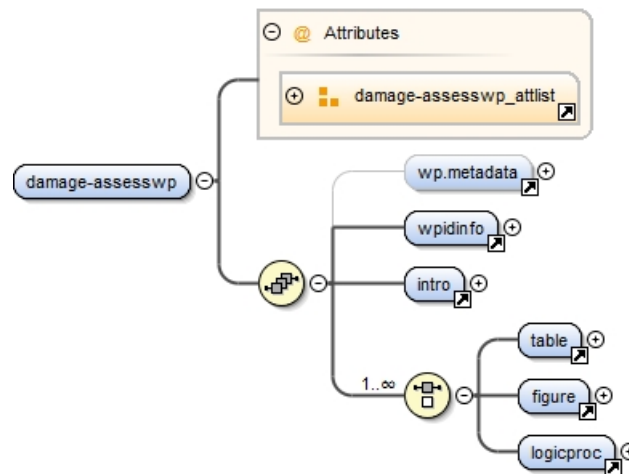


FIGURE 111. Damage assessment work package <damage-assesswp> DTD hierarchy.

3. The DTD fragment for <damage-assesswp> is:

```
<!ELEMENT damage-assesswp (wp.metadata?, wpidinfo, intro, (table | figure | logicproc)+>
```

```
<!ATTLIST damage-assesswp
```

| | | |
|-----------|------------|----------|
| airforce | (yes no) | "no" |
| army | (yes no) | "no" |
| assocfig | IDREFS | #IMPLIED |
| changelvl | (0-9) | "0" |
| changeref | IDREFS | #IMPLIED |
| chnгно | (0-99) | "0" |

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| | | |
|-----------------|---------------------------|-----------|
| comment | CDATA | #IMPLIED |
| crewmember | CDATA | #IMPLIED |
| date-time-stamp | (date time date-time) | #IMPLIED |
| delchlvl | (0-99) | "0" |
| deletewp | CDATA | #IMPLIED |
| fgc | CDATA | #IMPLIED |
| frame | (yes no) | "yes" |
| idref | IDREFS | #IMPLIED |
| inschlvl | (0-99) | "0" |
| insertwp | CDATA | #IMPLIED |
| lsa-id | CDATA | #IMPLIED |
| marines | (yes no) | "no" |
| navy | (yes no) | "no" |
| security | (uc fouo c s ts) | #IMPLIED |
| skilltrk | CDATA | #IMPLIED |
| tocentry | (2 3 4 5) | "2" |
| wpno | ID | #REQUIRED |
| wpseq | CDATA | #IMPLIED> |

4. Attributes for <damage-assesswp>:

- a. **airforce** – Indicates work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).

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- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since the last TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see MIL-STD-40051-1/-2 specifies manually assigned four digit sequential number of the work package for the TM and Section 16.2.2).

15.13.3 Battle damage repair chapter <brim>.

Each BDAR manual is required to have one or more battle damage repair chapters. Each chapter contains a title page <titlepg> and one or more battle damage repair chapters <genrepairwp>.

1. The components of <brim> are:
 - a. Consists of a title page <titlepg> (required) (see Section 36.1.1.1).
 - b. One or more repair work packages <genrepairwp> (see Section 15.13.3.2).
2. The DTD fragment for <brim> is graphically depicted.

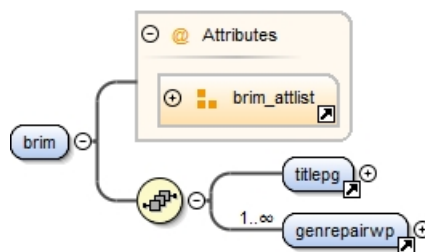


FIGURE 112. Battle damage repair chapter <brim> DTD hierarchy

3. The DTD fragment for <brim> is:

```

<!ELEMENT brim (titlepg, genrepairwp+)
<!-- brim
chap-toc      (yes | no)          "yes"
revno        CDATA                #REQUIRED
  
```

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frame	(yes no)	"yes"
chngno	(0-99)	"0"
tocentry	(0 1 2)	"1">

4. Attributes for **<brim>**:

- a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **revno** – Revision number (required) (see Section 36.3.12).
- c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- d. **chngno** – Change number (required) (see Section 36.3.12).
- e. **tocentry** – In the TM table of contents, the attribute indicates the indenture level. The possible selections are **0** (do not include), **1** (the highest level or 1st indenture level), or **2** (the second indenture level) default value is **1**.

15.13.3.1 Chapter title page **<titlepg>**.

The battle damage repair chapter **<brim>** requires a chapter title page be included (see Section 36.1.1.1).

15.13.3.2 Battle damage repair work package **<genrepairwp>**.

The battle damage repair work package **<genrepairwp>** contain procedures to repair various types of battle damage using limited resources.

1. The components **<genrepairwp>** are:

- a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
- b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
- c. Initial Setup **<initial_setup>** (required) (see Section 16.6).
- d. Battle Damage Assessment Repair (BDAR) Repair **<bdar-repair>**

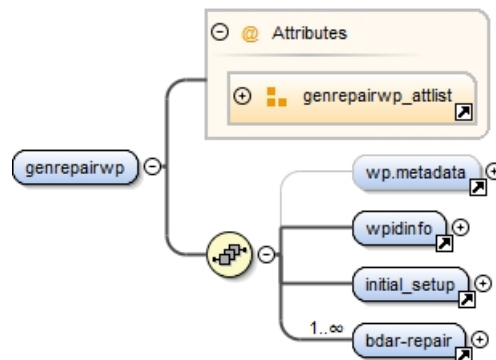
2. The DTD fragment for **<genrepairwp>** is graphically depicted.

FIGURE 113. Damage assessment work package **<genrepairwp>** DTD hierarchy.

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3. The DTD fragment for **<genrepairwp>** is:

```

<!ELEMENT genrepairwp (wp.metadata?, wpidinfo, initial_setup, bdar-
repair+)>

<!ATTLIST genrepairwp
    airforce          (yes | no)          "no"
    army              (yes | no)          "no"
    assocfig          IDREFS              #IMPLIED
    changelvl         (0-9)              "0"
    changeref         IDREFS              #IMPLIED
    chngno            (0-99)             "0"
    comment           CDATA               #IMPLIED
    crewmember        CDATA               #IMPLIED
    date-time-stamp   (date | time | date-time) #IMPLIED
    delchlvl          (0-99)             "0"
    deletewp          CDATA               #IMPLIED
    fgc               CDATA               #IMPLIED
    frame             (yes | no)          'yes'
    idref             IDREFS              #IMPLIED
    inschlvl          (0-99)             "0"
    insertwp          CDATA               #IMPLIED
    lsa-id            CDATA               #IMPLIED
    marines           (yes | no)          "no"
    navy              (yes | no)          "no"
    security          (uc | fouo | c | s | ts) #IMPLIED
    skilltrk          CDATA               #IMPLIED
    tocentry          (2 | 3 | 4 | 5)     "2"
    wpno              ID                  #REQUIRED
    wpseq             CDATA               #IMPLIED>

```

4. Attributes for **<genrepairwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).

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- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since the last TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see MIL-STD-40051-1/-2 specifies manually assigned four digit sequential number of the work package for the TM and Section 16.2.2).

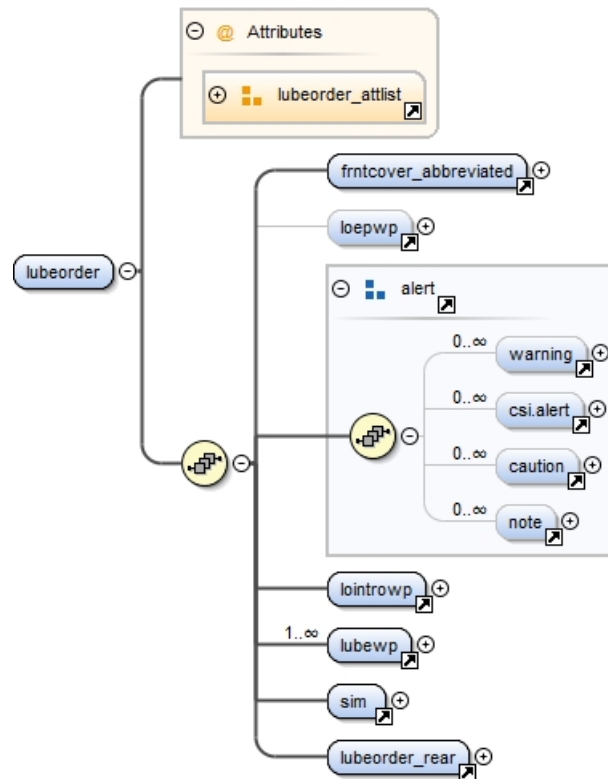
15.14 Lubrication order <lubeorder>.

A stand alone lubrication order may be prepared when specified by the acquiring activity. The lubrication order provides procedures to lubricate the equipment. The lubrication order is used solely with ground based equipment. The lubrication order information may also be included in the equipment PMCS (see Section 23.6) though this duplication is discouraged.

1. The components of <lubeorder> are:
 - a. An abbreviated front cover <frntcover_abbreviated> (required) (see Section 15.14.1).
 - b. A list of effective work packages <loepwp> (optional) (see Section 15.5.1.4).
 - c. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
 - d. A required introduction <intro> (see Section 36.1.4.14).
 - e. One or more lubrication work packages <lubewp> (required – one or more) (see Section 23.9).

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- f. A required lubrication order specific rear matter **<lubeorder_rear>** (required) (see Section 15.14.1.1).
2. The DTD fragment for **<lubeorder>** is graphically depicted.

FIGURE 114. Lubrication order **<lubeorder>** DTD hierarchy.

3. The DTD fragment for **<lubeorder>** is:

```

<!ELEMENT lubeorder (frntcover_abbreviated, loepwp?, %alert;, lointrowp, lubewp+, sim, lubeorder_rear)>

<!ATTLIST lubeorder
  chnglevel          (0-9)                "0"
  chngdate           CDATA                 #IMPLIED>

```

4. Attributes for **<lubeorder>**:

- a. **chnglevel** (optional) – Change Level identifies the level the TM was changed to.
- b. **chngdate** (optional) – Change Date identifies the date the TM was changed to.

15.14.1 Abbreviated front cover **<frntcover_abbreviated>**.

The lubrication order requires a cover page. This cover page contains slightly different information and is in a smaller area than the regular front cover.

1. The abbreviated front cover **<frntcover_abbreviated>** consists of:
 - a. The technical manual title and publication number information **<tmtitle>** (required) (see Section 15.4.2.5.1).

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- b. An optional lubrication references statement **<lube-refs>** (this is required for the lubrication order, but optional for the PMC (see Section 15.15).
 - c. A reporting of errors statement **<reporting>** (required) (see Section 15.4.2.5).
 - d. Any required TM notices **<notices>** (required) (see Section 15.4.2.6).
 - e. Service nomenclature **<servnomen>** (required) (see Section 15.4.2.6.28).
 - f. The TM date **<date>** (required) provides the date of the publication for the TM.
 - g. Note **<note>** provides highlights to essential procedures, conditions, or statements or conveys important instructional data to the user (optional – zero or more) (see Section 28.1.3).
 - h. Publication Control Number **<pcn>** for Marine Corps only manuals and for joint service manuals involving the Marine Corps.
2. The DTD fragment for **<frntcover_abbreviated>** is graphically depicted.

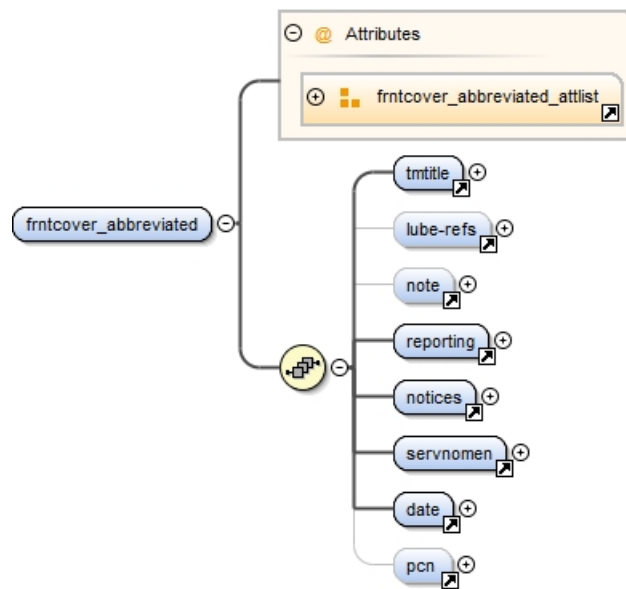


FIGURE 115. Abbreviated front cover **<frntcover_abbreviated>** DTD hierarchy.

3. The DTD fragment for **<frntcover_abbreviated>** is:

```
<!ELEMENT frntcover_abbreviated (tmtitle, lube_refs?, note?, re-
porting, notices, servnomen, date, pcn?)>
<!ATTLIST frntcover_abbreviated
applicable          IDREFS          #IMPLIED
changeref           IDREFS          #IMPLIED
comment             CDATA           #IMPLIED
delchlvl            (0-99)          "0"
inschlvl            (0-99)          "0"
security             (uc | fouo | c | s | ts)      #IMPLIED>
```

4. Attributes for **<frntcover_abbreviated>**:

- a. **applicable** – IDREFS for applicability within the system (see Section 16.4.1.4).

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- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- f. **security** – Security classification (optional) (see Section 36.3.14).

15.14.1.1 Lubrication order rear matter <lubeorder_rear>.

1. The lubrication order rear matter consists of:
 - a. A required authentication page <authent> (see Section 15.5.2.4).
 - b. A required rear cover page <back> (see Section 15.5.2.6).
 - c. Reporting Errors and Recommending Improvements <da2028> (required – one or more). (see Section 15.5.2.3).
2. The DTD fragment for <lubeorder_rear> is graphically depicted.

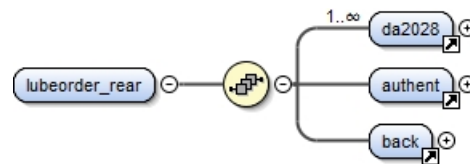


FIGURE 116. Damage assessment work package <lubeorder_rear> DTD hierarchy.

3. The DTD fragment for <lubeorder_rear> is:


```
<!ELEMENT lubeorder_rear (da2028+, authent, back)>
```
4. No attributes for <lubeorder_rear>.

15.15 Preventive maintenance checklist <pmc>.

The preventive maintenance checklist is a reduced version of the PMCS inspection. The PMC contains the exact inspection item and any failure criteria, (equipment not available in the PMCS), for the item contained in the PMCS. The PMC may be tailored to present only specific inspection types (25 hour or daily inspections).

1. The preventive maintenance checklist <pmc> components are:
 - a. An abbreviated front cover <frntcover_abbreviated> (required) (see Section 15.14.1).
 - b. A preventive maintenance checks and services table <pmcstable> (required) (see Section 23.6.1 and Section 15.15.1).
2. The DTD fragment for <pmc> is graphically depicted:

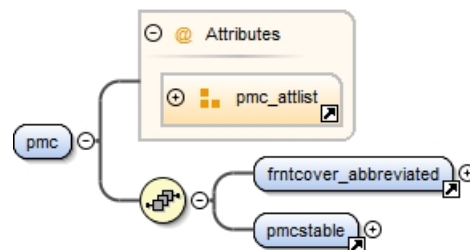


FIGURE 117. Preventive maintenance checklist <pmc> DTD hierarchy.

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3. The DTD fragment for **<pmc>** is:

```

<!ELEMENT pmc (frntcover_abbreviated, pmcsintrowp, pmcswp+, rear)>

<!--ATTLIST pmc
    fit.paper.size      (pocket | logbook | standard |
                        double)
    maintitl           CDATA
    maintlvls          PMC
    pubno              CDATA
    revno              CDATA
    security            (uc | fouo | c | s | ts)
-->

```

4. Attributes for **<pmc>**:

- a. **fit.paper.size** – Fit paper size by selecting an attribute value from the list. The default value is **standard**.
- b. **maintitl** – Maintenance title supplies a literal version of the title for the maintenance-level (required).
- c. **maintlvls** – Specifies the maintenance level(s) authorized to use this manual. This attribute value is used in the stylesheet to apply the literal expression of the TM's maintenance level. There is one value available for the **<pmc>** and that is **pmc** (required).
- d. **pubno** – Specifies publication number for the technical manual (optional).
- e. **revno** – Specifies revision number of the overall manual (required).
- f. **security** – Security classification (optional) (see Section 36.3.14).

15.15.1 Preventive maintenance checklist table <pmcstable>.

The inspection table contained in the PMC is the same table structure as used in the Preventive Maintenance Checks and Services (PMCS) work package (see Section 23.6). The stylesheet will remove any entries that are not required in the checklist itself. The use of the PMCS table allows the author to copy and paste either the entire table or just those portions required for the checklist (see Section 23.6.1). Additional information on the PMCS table may also be found in MIL-STD-40051-1/-2.

15.16 Page-based volume <volume>.

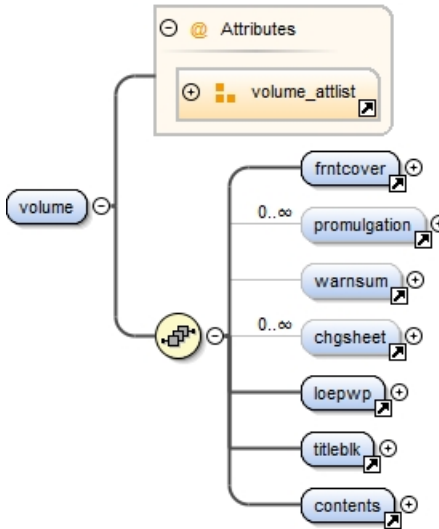
The volume element denotes where a new volume would start in a multi-volume TM. The **<volume>** is not a wrapper tag and does not contain TM chapters or work packages.

1. Components for **<volume>** are:

- a. Front cover **<frntcover>** (required) (see Section 15.4.2.4).
- b. Promulgation page **<promulgation>** (Marine Corps only) (optional – zero or more) (see Section 15.4.2.7).
- c. Warning summary **<warnsum>** (optional) (see Section 15.5.1.2).
- d. Change transmittal page **<chgsheet>** (optional) (required for all changes to the volume) (see Section 15.5.1.3).
- e. List of effective work packages **<loepwp>** (required). The volume lists only work packages included in that volume. (See MIL-STD-40051-2 and Section 15.5.1.4).
- f. Title block page **<titleblk>** (required) (see Section 15.5.1.5).

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- g. Table of contents **<contents>** (required) (see Section 15.4.2.9) and MIL-STD-40051-2.
2. The DTD fragment for **<volume>** is graphically depicted.

FIGURE 118. Volume **<volume>** DTD hierarchy.

3. The DTD fragment for **<volume>** is:

```
<!ELEMENT volume (frntcover, promulgation*, warnsum?, chgsheet*,
label, loepwp, titleblk, contents>

<!ATTLIST volume
id ID #IMPLIED
label CDATA #IMPLIED
tocentry (0 | 1 | 2 | 3 | 4 | 5) "1">
```

4. Attributes for **<volume>**:

- a. **id** – Identifier of the element which is assigned at origination (optional). It will remain unchanged as document is revised or updated, (including automatically assigned enumeration or manually-assigned labels change. If no ID is given, 'none' will be maintained.
- b. **label** – Label provides volume number for composition systems that cannot auto-generate (optional).
- c. **tocentry** – Table of Contents Entry for the Volume defines the indenture level in the TOC. When the level is zero, no entry in the TOC is used. The default is 1.

15.16.1 Back matter of volume **<vol-rear>**.

The element **<vol-rear>** is used for rear or back matter of a volume. This element is used to insert rear matter only and not indicate a containment relationship relative to the surrounding TM body matter.

1. The components for **<vol-rear>** are **<rear>** (required) (see Section 15.16.1).
2. The DTD fragment for **<vol-rear>** is graphically depicted:

FIGURE 119. Volume rear **<vol-rear>** DTD hierarchy.

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3. The DTD fragment for **<vol-rear>** is:

```
<!ELEMENT vol-rear (rear)>
```

4. No attributes for **<vol-rear>**.

15.17 General maintenance Manual **<genmaintman>**.

The **<genmaintman>** element is used for a general maintenance manual. Content should be limited to information/procedures related to general maintenance. A general maintenance manual consist of front matter, **<gim>**, **<mim>** (one or more), **<sim>**, and rear matter.

1. The components of **<genmaintman>** are:
 - a. Paper Front **<paper.frnt>** or Framed Front **<frame.frnt>** depending on which type of manual ETM or IETM (required) (see 15.5.1).
 - b. Select either a General Information group or a Parts Information Chapter for a standalone parts manual. At least one is required.
 - i. General Information Chapter **<gim>** (required) (see Section 18.1).
 - ii. Volume **<volume>** (optional) (see Section 15.16).
 - iii. Maintenance Information Chapter **<mim>** (optional – one or more) (see Section 23.1).
 - iv. Supporting Information Chapter **<sim>** (required) (see Section 27.1).
 - v. Back Matter of Volume **<vol-rear>** (optional) (see Section 15.16.1).

- c. The DTD fragment for **<genmaintman>** is graphically depicted:

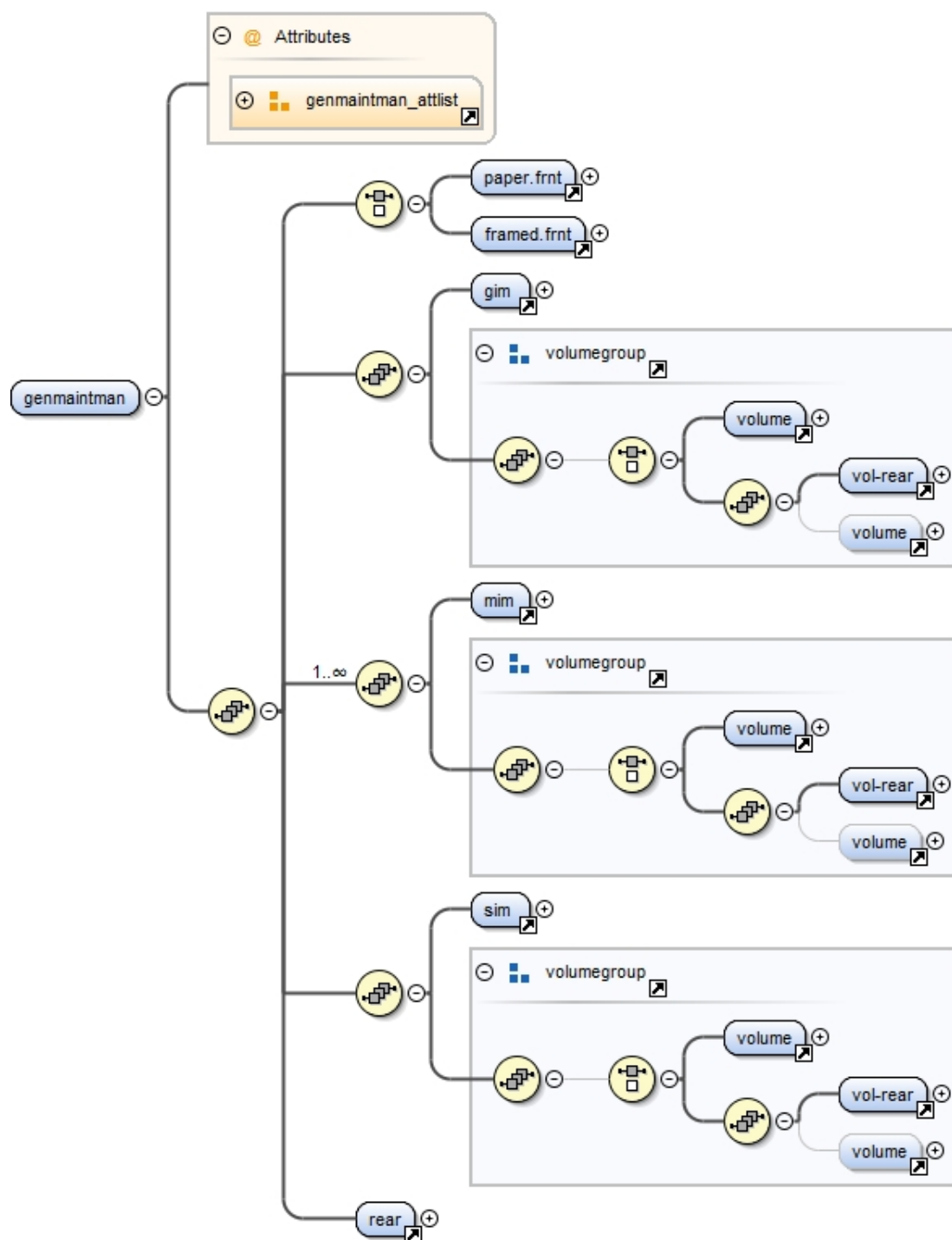


FIGURE 120. General Maintenance Manual **<genmaintman>** DTD hierarchy.

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2. The DTD fragment for **<paper.frnt>** or **<framed.frnt>** is:

```

<!ELEMENT paper.frnt (gim , (volume | (vol-rear , volume?)) , mim ,
(volume | (vol-rear , volume?)) , sim , (volume | (vol-rear , volume?))
, rear))>

<!ELEMENT framed.frnt (gim, mim, paper.frnt, rear, sim, vol-rear,
volume)>

<!ATTLIST genmaintman
  dmwr-inclus      (parts | parts-tools)          #IMPLIED
  fit.paper.size   (pocket | logbook | standard | double 'standard'
                    )
  maintitl         CDATA                          REQUIRED
  maintlvls        (10 | 13 | 14 | 23 | 24 | 40 | dmwr |
                    dmwr-nmwr | nmwr | NA)         #REQUIRED
  multivolume      yes|no                         "no"
  pubno            CDATA                          #IMPLIED
  revno            CDATA                          #REQUIRED
  security         (uc | fouo | c | s | ts )       #IMPLIED>

```

3. Common attributes for **<genmaintman>** are:

- a. **dmwr-inclus** – Specifies whether a DMWR/NMWR includes parts only or parts and tools.
- b. **fit.paper.size** – Fit paper size by selecting an attribute value from the list. The default value is **standard**.
- c. **maintitl** – Maintenance Title supplies a literal version of the title for the maintenance-level (required).
- d. **maintlvls** – Maintenance Level identifies the lowest maintenance level/class authorized to use the manual; this attribute value is used in the stylesheet to supply the literal expression of the TM's maintenance level (required).
- e. **multivolume** – Is the manual broken into volumes. The default value is **no**. This attribute is used by the stylesheet to provide volume numbers when needed.
- f. **pubno** – Publication number attribute specifies the technical manual publication number.
- g. **revno** – The overall revision number for the manual (required).
- h. **security** – Security classification (optional) (see Section 36.3.14).

16 WORK PACKAGE BASICS

16.1 Work package introduction.

16.1.1 Work package types.

Work packages are used to logically divide TM data into functional, descriptive, or task-oriented information work packages contain general information, description, theory, operating, maintenance, troubleshooting, parts, destruction of material, battle damage assessment, and supporting information units containing all information required for directing task performance. Work packages are stand alone and may contain one or more tasks. A work package should contain all information and references required to support the work package type. Refer to MIL-HDBK-1222 for additional guidance on work package development.

16.1.2 Work package general description.

This section will describe the elements and attributes that provide work package metadata, identification and setup information. Metadata identifies administrative and retrieval data for each work package. Identification information is required in every work package. It specifies who can perform the procedure, the lowest maintenance level, work package title, and more. Setup information lists the information required by the technician to identify and obtain tools, special tools, test equipment, source references, parts, and other items needed to complete the task.

16.1.3 Work package organization and size.

16.1.3.1 Overview.

16.1.3.1.1 Work package size.

A concern of many authors and acquiring activities is the size and information needed in a work package. MIL-STD-40051-1 and MIL-STD-40051-2 provide details on what can and cannot appear with the work package. To facilitate the change/revision process, all work packages including the RPSTL work packages should be kept smaller (less than 50 pages). Refer to MIL-HDBK-1222 for further guidance on work package size.

16.1.3.1.2 Work package defined.

By definition in MIL-STD-40051-1 and MIL-STD-40051-2, a work package is the presentation of information functionally divided into tasks in the logical order of work sequence. The work packages are stand-alone and may contain one or more tasks.

16.1.3.1.3 Large vs Small work package size discussion.

There are varying reasons for having a large or small work package. Reasons for larger work packages (see Section 16.1.3.2) include:

- Paper based manuals desire to reduce print costs by producing fewer pages (see Section 16.1.3.2.2).
- Placing a large complex task into a single work package (see Section 16.1.3.2.1).
- Less errors in initial setup and follow-on requirements (see Section 16.1.3.3.3).

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Some reasons for smaller work packages (see Section 16.1.3.3) include:

- Improved accessibility for IETM support.
- Less error prone in providing initial setup and follow on requirements (see Section 16.1.3.3.3).

16.1.3.2 Larger work packages.

16.1.3.2.1 Complexity of tasks.

Larger work packages are usually found in a page based manual and is acceptable for tasks that cannot be easily broken down into smaller individual tasks. For work packages that support long tasks and used in both page and electronic presentation, potential breaks in the work package should be considered. If a task cannot be split, it should be a single work package. The author should not attempt to split the task solely to support the 50 page limit.

16.1.3.2.2 Cost considerations.

In an effort to reduce page count and printing cost, the Army no longer distributes or stocks paper manuals. All page based manuals are prepared in Adobe Acrobat's © PDF Format and distributed on a CD-ROM. If a hard copy is needed, it may be printed locally.

16.1.3.3 Smaller work packages.

16.1.3.3.1 Local printing.

Smaller work packages, especially with IETM's, have several advantages, printing costs and resources are reduced and page counts are eliminated.

16.1.3.3.2 Ease of filtering.

Smaller work packages allow easier filtering or building work packages that support a single configuration.

16.1.3.3.3 Setup requirements.

Delineation of initial setup is easier with smaller work packages; however with larger work packages, particularly those prepared for page based delivery, dissimilar tasks have been included in a single work package. Providing and identifying the appropriate initial setup in larger work packages can be difficult.

16.1.3.3.4 Migration to S1000D.

Implementing smaller work packages will be easier to adopt to the DOD S1000D Data Module standard.

16.1.3.4 Future concepts.

As IETMs gain acceptance, initiatives are being put forth to manage data at levels lower than a work package. Discussions are taking place on how to control and identify data not only through a filtering function but for reuse across multiple work packages, TMs or training material.

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16.1.4 Type of work package numbers.

There are two types of work package numbers; the work package identification number and the work package sequence number. These numbers are quite different in format and they serve different purposes. For example, “0027” would be a work package sequence number and “M00432-9-1425-646” would be a work package identification number.

1. The work package identification number is an assigned identifier used for database retrieval purposes. The IETM number is used only to provide uniqueness and avoid duplication of a work package identification number. When reusing a work package, the work package identification number should remain the same throughout the life of the work package and should not be changed in the event the work package is reused in another manual. For more information on work package identification number structure, refer to MIL-STD-40051-1/-2 and Section 16.2.1.1.
2. The work package sequence number is used in all TMs to maintain sequential ordering. As specified by the acquiring activity, each work package sequence numbers will be assigned a four digit number beginning with the number 0001. For more information on work package identification number structure, refer to MIL-STD-40051-1/-2.

16.2 Work Package Identification.

16.2.1 Work package ID.

The work package identification number is a unique internal number not seen by the IETM user. It is applicable to both IETMs (refer to MIL-STD-40051-1) and page based TMs (refer to MIL-STD-40051-2). It is assigned when preparing the document in accordance with the DTD and does not change throughout the life of the work package. The IETM number is used for database retrieval purposes, to provide uniqueness, avoid duplication of a work package identification number and linking (see Section 33).

16.2.1.1 Assigning the work package identification number.

The work package identification number consists of an alpha designation for the type of information contained in the work package, a five digit block number assigned by the acquiring activity, and the TM number less the maintenance level dash numbers. An example of how work package identification number “M00432-9-1425-646” was derived is as follows:

1. M – Identifies a WP containing maintenance instructions.
2. 00432 – Identifies the 432nd work package containing specific maintenance instructions for the M270 Armored Vehicle Mounted Rocket Launcher.
3. 9-1425-646 – Identifies the M270 Armored Vehicle Mounted Rocket Launcher TM. This is the TM under which this work package was initially developed.

This work package could have been developed for a TM such as TM 9-1425-646-20. “Maintenance Instructions Organizational for Launcher, Rocket, Armored Vehicle Mtd, M270.” If this work package were to be reused in TM 9-2320-279-20-1, “Maintenance Instructions for Organizational Maintenance M977 Series, 8 x 8 Heavy Expanded-Mobility Tactical Trucks (HEMTT),” the work package identification number of “M00432-9-1425-646” would not change. Using the same WP identification number from TM to TM, ensures that every work package in the Army will have a single, unique work package identification number.

16.2.1.2 Identification of work package components.

Components within a work package can be referenced and linked by using a unique identifier that is based upon the work package identification number. Making an ID unique is accomplished by using the work package identification

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number as a prefix to each ID. For example, if the work package identification number is “M00134-9-999-9999,” the target link ID is “M00134-9-999-9999-00001.” The work package identification number is not changed during the life-cycle of the work package. Managing target link IDs would require only managing each individual work package IDs. Caution should be used when determining a unique ID scheme after work package identification number prefix. For example, using the step number as part of the identifier could cause problems when adding or deleting steps from a procedure. Using the sequencing numbering system starting from the first target ID would avoid such problems. Any new data would be resumed from the last ID number count in the work package. For example, if the last target link ID is “M00134-9-999-9999-00152,” the next new target link would be “M00134-9-999-9999-00153” (no matter where it is located in the work package).

16.2.1.3 Work package identification number <wpno> attribute example.

The content model for each work package has an attribute **wpno** that contains the work package identification number. This attribute has a type of ID which permits it to serve as the target of a link (see Section 33). The XML source depicting the use of the **wpno** attribute in both a diagnostic work package and a maintenance work package is shown below.

1. XML document instance fragment:

```
<diagnosticwp deletewp="no" frame="yes" tocentry="2" wpno="T00100-X-XXX-XXXX"></diagnosticwp>
...
<maintwp deletewp="no" frame="yes" tocentry="2" wpno="M00432-X-XXX-XXXX">
...
</maintwp>
```

16.2.2 Work package sequence number.

The work package sequence number is used to identify the sequential ordering of work packages within the TM. As specified in MIL-STD-40051-1/-2, each work package is initially assigned a four digit number beginning with the number 0001. The work package sequence numbers run consecutively throughout the TM. For example, the first work package in Chapter 2 will be assigned the number immediately following the last work package number in Chapter 1 (if 0010 is the last work package in Chapter 1, 0011 will be the first work package in Chapter 2). Point numbers are assigned to work packages inserted between two work packages as a result of a change. For example, if 0098 is the number of the last work package in the TM, 0099 should be the number of the new work package. A new work package that is inserted between two work packages will use a point numbering scheme. Point numbers are assigned to create a new sequence number that logically fits between two existing work package numbers. Point numbers should start with "1" and continue in numerical sequence as needed. If the work packages already have point sequence numbers, an additional point level will be added to create a new sequence number that follows the same criteria. For example the numbers 0010.1, 0010.2, and 0010.3 will be used between WPs 0010 and 0011. When an IETM containing work package sequence numbers is revised, the work package sequence numbers will be updated to reflect added or deleted work packages. No point numbers should be used to insert new work packages in an IETM. The work package sequence number is best assigned automatically through the stylesheet. If the project desires to manually assign sequence numbers, then the **wpseq** attribute is used to contain the work package sequence number. The attribute type is CDATA.

16.2.2.1 Work package sequence number example.

The XML source depicting the **wpseq** attribute in the markup for a Theory of Operations Work Package <**thrywp**> element is shown below. The work package sequence number indicates that this is the 6th work package in the TM. Note the work package number (see 16.2.2).

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16.3 Work package attributes.

Each work package has optional attributes. These attributes help define the work package.

16.3.1 Crew member (“crewmember”).

The attribute is used to filter work packages that have specific crew member usages. If no crew member attribute is specified, the work package has no specific crew requirements.

16.3.2 Functional Group Code (FGC) (“fgc”).

The functional group code is a numeric or alphanumeric code assigned to identify major components, assemblies, and subassemblies to a functional system. The code can assist when changes occur to higher or lower level FGCs, thus alerting the author or information custodian of possible effects.

16.3.3 Logistic Support Analysis (LSA) identifier (“lsa-id”).

Specifies the subject of the element in regards to the equipment covered in the TM. Providing this information allows traceability to the logistic report, where the information originated and an alert when information has been updated in the logistic analysis.

16.3.4 Skill level (“skilltrk”).

The skill level designation by the user or document at which the current element of information is aimed. A particular set of values common to all documents has not been created. Currently, the relevant values are set by contract.

16.3.5 Service specific (“army,” “airforce,” “navy,” “marines”).

The attributes **army**, **airforce**, **navy**, and **marines**, identifies the work package as applicable only for the identified service(s). The attributes are used to filter information not needed for all users.

16.3.6 Table of contents entry (“tocentry”).

The **tocentry** attribute is used to identify if the given element title will appear in the table of contents. For multiple level TOCs, the attribute value will indicate the level the element will be placed in the TOC. The values are listed from **0** to **5**. A **0** indicates no TOC entry and a **5** indicates a fifth level of TOC indenture. The **tocentry** value is often defaulted based on the element using the attribute.

16.4 Metadata.

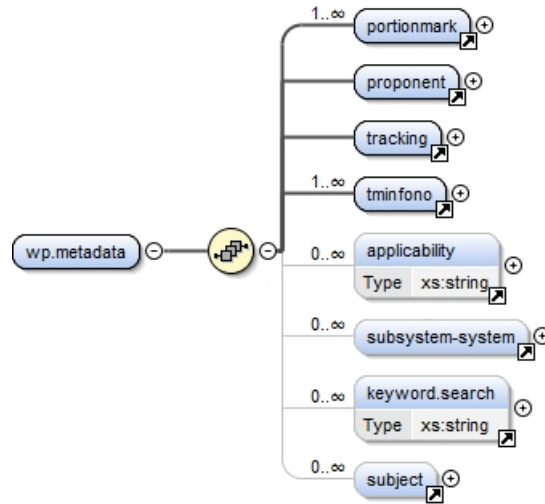
Metadata identifies the administrative and retrieval data for each work package. This data is usually not used or seen by the end user. MIL-STD-2361 identifies the XML elements and attributes that provide the metadata for each work package. These attributes and elements are described in the following sub-paragraphs.

16.4.1 Work package metadata <wp.metadata>.

Work package metadata identifies information about the work package including its security classification, proponent, change history, TM usage, applicability, system/subsystem identification, keyword search list, and subject. Providing this type of information positions the Army for work packages to be a standalone document.

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1. The components are:
 - a. Security portion markings **<portionmark>** (required –one or more). Identifies the security level of the work package (see Section 16.4.1.1).
 - b. Proponent **<proponent>** (required). Identifies proponent name and address for the work package (see Section 36.1.4.23).
 - c. Tracking Change history **<tracking>** (required). Tracks changes to the work package (see Section 16.4.1.2).
 - d. Technical Manual Number and Service Branch **<tminfono>** (required – one or more). Identifies the TMs using the work package (see Section 15.4.2.5.2).
 - e. Applicability **<applicability>** (optional – zero or more). The system effectivity item (see Section 16.4.1.4).
 - f. System/Subsystem definition **<subsystem-system>** (optional – zero or more). Provides a method to identify the subsystem/system hierarchy structure (see Section 16.4.1.5).
 - g. Keyword search list **<keyword.search>** (optional – zero or more). Identifies keywords used for searches (see Section 16.4.1.6).
 - h. Subject **<subject>** (optional – zero or more). Contains additional qualifier information about the work package (see Section 16.4.1.7).
2. The DTD fragment for **<wp.metadata>** is graphically depicted.

FIGURE 121. Work package metadata **<wp.metadata>** DTD hierarchy.

3. The DTD fragment for **<wp.metadata>** is:


```
<!ELEMENT wp.metadata (portionmark+, proponent, tracking, tminfono+,
applicability*, subsystem-system*, keyword.search*, subject*)>
```
4. The element **<wp.metadata>** has no attributes.

16.4.1.1 Security portion markings **<portionmark>**.

Security portion marking identifies the security level of the work package. This security level is for the work package only and represents its highest security level. The security level of the TM(s) that contains this work package may be higher or the same. The content model for the **<portionmark>** element consists of the attribute

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country which identifies the security marking country of origin. The attribute **security** identifies the associated security classification.

1. The DTD fragment for **<portionmark>** is:

```
<!ELEMENT portionmark EMPTY>
<!ATTLIST portionmark
    country          CDATA          "US"
    security          (uc | fouo | c | s | ts)  #IMPLIED>
```

2. Unique attributes:

- a. **Country** – country origin for security marking (default value is **US**). Identifies the security marking country code (derived from ISO-3166-1) of origin.

3. Common attributes:

- a. **Security** – security classification (optional) (see Section 36.3.14).

16.4.1.2 Tracking change history <tracking>.

This element maintains the work package history by identifying each modification to the work package.

1. The components are:
 - a. Change history record **<change.history>** (required – one or more). The **<change.history>** element documents each change to the work package (see Section 16.4.1.2.1).
2. The DTD fragment for **<tracking>** is graphically depicted.

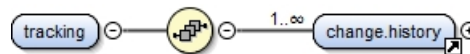


FIGURE 122. Tracking change history <tracking> DTD hierarchy.

3. The DTD fragment for **<tracking>** is:


```
<!ELEMENT tracking (change.history+)>
```

16.4.1.2.1 Change history record <change.history>.

Provides a record of each change made to the work package. This information includes the author, date of change, work package status and reason for change. All changed paragraphs, steps, and text within the work package have a reference to a change history record entry (the **id** attribute in the change history record serves as the target to be linked to from the changes in the work package).

1. The components are:
 - a. Author **<author>** (required). Identifies the author of the change (see Section 16.4.1.2.1.1).
 - b. Date **<date>** (required) identifies the change date.
 - c. Work package status **<wp.status>** (required). Identifies the work package status (new, changed, etc) (see Section 16.4.1.2.1.2).
 - d. Reason **<reason>** (required). Identifies the reason that the change was made. This could be through an Engineering Change Proposal (ECP), a request for change form, safety issue, etc. Multiple changes at the same change level and for the same reason will reference the same change history entry. Changes made

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for different reasons, even if they are at the same change level, they would have different change history records (see Section 36.1.4.10).

- e. Quality assurance **<qainfo>** (optional). Specifies whether or not the step in the procedure has a major quality assurance effect; a non-zero value indicates that it does (see Section 18.1.1.13).
2. The DTD fragment for **<change.history>** is graphically depicted.

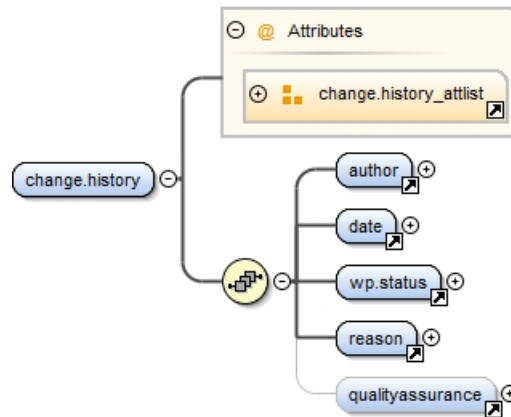


FIGURE 123. Change history record **<change.history>** DTD hierarchy.

3. The DTD fragment for **<change.history>** is:

```
<!ELEMENT change.history (author, date, wp.status, reason, qualityassurance?)>
<!ATTLIST change.history
    id                ID                #IMPLIED>
```

4. Attributes:

- a. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

16.4.1.2.1.1 Author **<author>**.

Identifies the change author and company/organization responsible for performing the change.

1. The components are:
 - a. Name **<name>** (required). Identifies the change author's name (see Section 36.1.4.18).
 - b. Proponent **<proponent>** (required). The **<proponent>** element, when used in this context, identifies the name and address of the organization performing the change. This can be a contractor. For more information on content model, (see Section 36.1.4.23).
2. The DTD fragment for **<author>** is graphically depicted:

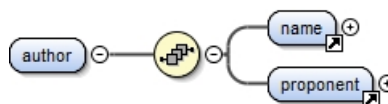


FIGURE 124. Author **<author>** DTD hierarchy

3. The DTD fragment for **<author>** is:

```
<!ELEMENT author (name, proponent)>
```

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16.4.1.2.1.2 Work package status <wp.status>.

Specifies the change history status. This determines the work package's current usage state (Draft).

1. The DTD fragment for **<wp.status>** is:

```
<!ELEMENT wp.status EMPTY>

<!ATTLIST wp.status
  type                (new | changed | draft | deleted |      #REQUIRED>
                        reinstated)
```

2. Unique attribute is **type** – Work package status type (required) that is identified by one of the following five (5) types.
 - a. **new** – New work package that is approved by the acquiring activity. Creation of a work package requires an entry into the change history log. Work package status prior to the proponent approval, is set to **draft** and after the proponent approval, it is set to **new**.
 - b. **changed** – Any text that has been inserted, deleted, or modified and is approved by the acquiring activity.
 - c. **deleted** – The entire work package has been removed or superseded. The information is not physically removed, but the status is set to **deleted**.
 - d. **reinstated** – A work package previously marked as **deleted** that has been reinstated as an active work package.
 - e. **draft** – Work package has not been approved by the acquiring activity and is considered work in progress. Changes made to the work package, while in draft, are not approved for release without approval from the acquiring activity. Changes are initially marked as **draft**.

16.4.1.2.2 Tracking change history example.

The following example shows the XML source fragments for making a change history entry **<change.history>** and linking the actual change information to that change history entry. All changed paragraphs, steps, and text within the work package have a reference in the change history log that records the author and change information. In this example, only the most current change history entry is shown (4 January 2004). Also shown is the XML source for the date of issue list **<issuechg>** in a TM that contains this work package. The **<issued>** element in the **<issuechg>** element content model provides the issue change number and date. The date of issue list contains the dates for the original TM (31 May 2000) and three changes (changes 1–3 made on 12 June 2003, 23 February 2004, and 12 March 2005 respectively). The change level for the TM and the change level for the work package, in most instances, are not the same because work packages can be reused from manual to manual. The work package change level determination, when used in this TM, is identified from the date of issue list. The change number for the work package will be the TM at the first issue date after the most current work package change date. In this example, the work package would be at change number 2.

1. The XML document instance fragment containing the dates of issue list.

```
<issuechg>
  <trim.para>Dates of issue of original and changed pages/work packages are:
</trim.para>
  <issued>
    <chgno>0
  </chgno>
    <chgdate julian="20000531">31 May 2000
  </chgdate>
</issued>
```

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```

<issued>
<chgno>1
</chgno>
<chgdate julian="20030612">12 June 2003
</chgdate>
</issued>
<issued>
<chgno>2
</chgno>
<chgdate julian="20040223">23 February 2004
</chgdate>
</issued>
<issued>
<chgno>3
</chgno>
<chgdate julian="20050312">12 March 2005
</chgdate>
</issued>
</issuechg>

```

2. The XML document instance fragment containing the most current change history entry.

```

<change.history id="M0003-X-XXX-XXX-change3">
<author>
<name>John Doe
</name>
<proponent>
<name>Acme Inc.
</name>
<address>
<city>Anytown
</city>
<state>Anystate
</state>
</address>
</proponent>
</author>
<date julian="20040104">4 January 2004
</date>
<wp.status type="changed"/>
<reason>ECP 2034
</reason>
</change.history>

```

3. The XML document instance fragment containing linking from a changed paragraph to the change history entry.

```

<para changeref="M00003-X-XXX-XXX">...
</para>

```

16.4.1.3 Technical manual numbering information <tminfono>.

The <tminfono> is a required element that provides publication number for joint services. The TM number may differ from the TM number used in the work package identification number. This would occur if the work package is used in more than one TM. The <tminfono> is tagged identically to the tag in the front matter (see 15.5.1).

16.4.1.4 Applicability <applicability>.

The element <applicability> is used when a work package has variations in the narrative, illustration or changes applicable for the entire work package. The content model for <applicability> is #PCDATA.

16.4.1.5 System/subsystem definition <subsystem-system>.

The system/subsystem definition identifies the system breakdown. The system breakdown is depicted in the XML source as parent-child relationships. The current system/subsystem being referenced in the work package is the first level. Each subsequent referenced system/subsystem is at the next higher level. The top system nomenclature is not always the entire weapon, but a major subsystem (engine, transmission, landing gear, etc.). The system breakdown by major subsystems allows the entire subsystem to be reused in other systems without being concerned about the other system's hierarchy (LCN).

1. The components are:
 - a. Nomenclature <systemnomen> (required). This element identifies the system/subsystem nomenclature and any identification numbers. The breakdown is by nomenclature and optional identification information (NSN, CAGEC/part number, and model number) (see Section 15.4.3.2.1).
 - b. System/Subsystem definition <subsystem-system> (optional – zero or more). The inclusion of the element <subsystem-system> in its own content model provides for a recursion capability that permits the breakdown of the system into multiple levels.
2. The DTD fragment for <subsystem-system> is graphically depicted.

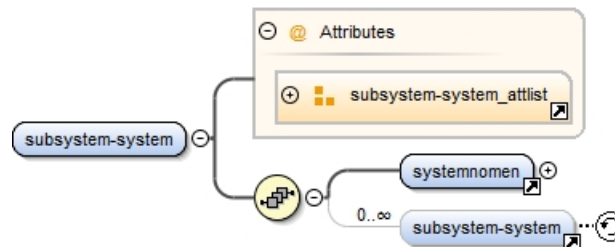


FIGURE 125. System/subsystem <subsystem-system> DTD hierarchy.

3. The DTD fragment for <subsystem-system> is:

```
<!ELEMENT subsystem-system (systemnomen, subsystem-system*)>
<!ATTLIST subsystem-system
  applicable      IDREF          #IMPLIED
  assocfig        IDREF          #IMPLIED
  changeref       IDREF          #IMPLIED
  comment         CDATA          #IMPLIED
  delchlvl        (0-99)         "0"
  id              ID             #IMPLIED
  idref           IDREF          #IMPLIED
  inschlvl        (0-99)         "0"
  security        (uc | fouo | c | s | ts) #IMPLIED
  skilltrk        CDATA          #IMPLIED>
```

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4. Attributes for **<subsystem-system>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** - Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

16.4.1.5.1 System nomenclature **<systemnomen>**.

The element describes nomenclature and information to uniquely identify the system. See Section 15.4.3.2.1 for element break down.

16.4.1.5.2 System/subsystem example.

An example is “External Lines & Hoses Engine, Turbine Power Plant.” The XML source would be the following:

```

<subsystem-system>
<systemnomen>
<name>External Lines & Hoses
</name>
</systemnomen>
<subsystem-system>
<systemnomen>
<name>Engine, Turbine
</name>
</systemnomen>
<subsystem-system>
<systemnomen>
<name>Power Plant
</name>
</systemnomen>
</subsystem-system>
</subsystem-system>
</subsystem-system>

```

16.4.1.6 Keyword search **<keyword.search>**.

The IETM functionality matrix (see MIL-STD-40051-1) has an option to provide a keyword search capability for each work package. The element **<keyword.search>** permits the author to enter any number of keywords for a user to locate a certain work package. The element contains parsable character data (**%pcdata**; see Section 6.2.2.1). Generally, the narrative is entered using #PCDATA.

16.4.1.7 Subject <subject>.

This element, when used in this context, contains additional qualifier information about the work package. This includes providing major subjects and/or actions that are related to the work package, similar to a keyword search.

16.4.1.8 Work package metadata <wp.metadata> example.

This example shows the XML source for making a <wp.metadata> entry. The sample data in this example has the following metadata:

1. Developed in U.S.A. and is unclassified.
2. Government proponent is "TACOM - PM Fighting Vehicle."
3. Work package was developed by Acme, Inc. on September 19, 2002.
4. Revised on October 19, 2003 due to ECP 3454.
5. Used in TM 9-123-123 and TM 9-321-123.
6. System hierarchy is "Machine Gun – Turret."
7. Search by keywords of "replace" or "machine gun."

```
<wp.metadata>
<portionmark country="US" security="uc"/>
<proponent>
<name>TACOM - PM Fighting Vehicles
</name>
<address>
<city>Warren
</city>
<state>MI
</state>
<zip>99999
</zip>
</address>
</proponent>
<tracking>
<change.history id="M0001-9-123-123-org">
<author>
<name>John Doe
</name>
<proponent>
<name>Acme Inc
</name>
<address>
<city>Anytown
</city>
<state>NJ
</state>
<zip>00000
</zip>
</address>
</proponent>
</author>
<date julian="20020919">19 September 2002
```

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```

</date>
<wp.status type="new"/>
<reason>New work package
</reason>
</change.history>
<change.history id="M0001-9-123-123-chg1">
<author>
<name>Bruce Schanck
</name>
<proponent>
<name>Computer Sciences Corporation
</name>
<address>
<city>Eatontown
</city>
<state>NJ
</state>
<zip>07724
</zip>
</address>
</proponent>
</author>
<date julian="20031019">19 October 2003
</date>
<wp.status type="changed"/>
<reason>ECP 3454
</reason>
</change.history>
</tracking>
<tminfono inschlvl="1">
<servbranch procuring="yes" service="army"/>
<tmno>TM 9-123-123
</tmno>
</tminfono>
<tminfono inschlvl="1">
<servbranch procuring="yes" service="army"/>
<tmno>TM 9-321-123
</tmno>
</tminfono>
<subsystem-system>
<systemnomen>
<name>Machine Gun
</name>
</systemnomen>
<subsystem-system>
<systemnomen>
<name>Turret
</name>
</systemnomen>
</subsystem-system>
</subsystem-system>
<keyword.search>replace
</keyword.search>
<keyword.search>machine gun

```

</keyword.search>
</wp.metadata>

16.5 Work package identification information <wpidinfo>.

The element <wpidinfo> lists the identification information required for a work package. Work package identification information is required for every work package. The <wpinfo> element specifies who can perform the procedure. It indicates the lowest maintenance level/class <maintlvl>, the work page title <title>, and an optional listing of differences between configurations <config>.

1. The components are:
 - a. Maintenance Level <maintlvl> (required) (see Section 16.5.2).
 - b. Title <title> (required) (see Section 16.5.3).
 - c. Work Package Configuration Effectivity List <config> (optional) (see Section 16.5.4).
2. The DTD for <wpidinfo> is graphically depicted:

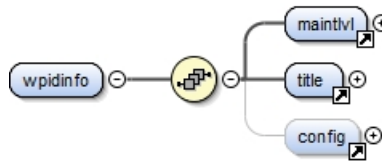


FIGURE 126. Work package identification information <wpidinfo>.

3. The DTD fragment for <wpidinfo> is:


```
<!ELEMENT wpidinfo (maintlvl, title, config?)>
```
4. No attributes.

16.5.1 How work package identification information supports a work package.

Work package identification information provides support to the work package for reuse of data and sharing by specifying the lowest maintenance level of the work package. It also supplies the work package title, and lists differences between configurations if applicable.

16.5.2 Maintenance level <maintlvl>.

The element <maintlvl> provides the work package maintenance level or maintenance class (see Section 14.1). This is the lowest maintenance level/class allowed to perform the work specified in the work package (Depot). The element is EMPTY and the level/class of maintenance is entered using its attribute **level**. The maintenance level/class is displayed above the title of the work package. See FIGURE 128. for an example of how the maintenance level is displayed in the work package identification information.

1. The components are:
 - a. The element is EMPTY and all pertinent information is entered through its attributes.
2. The attribute **level** contains a value that provides the choice of maintenance levels:
 - a. depot – Depot
 - b. crew – Operator
 - c. maintainer – Field level non-operator maintenance.

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- d. asb – Aviation support battalion
- e. amc – Aviation maintenance company
- f. tasmg – Theater aviation sustainment maintenance group

16.5.3 Title of the work package <title>.

The element <title> lists the title of the work package. Even if the work package is reused the title is not allowed to be changed. For additional information on title (see Section 36.1.1.4).

16.5.4 Work package configuration effectivity list <config>.

Lists the equipment specific configurations that apply to the work package. If there are no differences between configurations, the element is not used. If certain configurations require different tasks/procedures, separate work packages are prepared.

1. The components are:
 - a. Reduced Paragraph <trim para> (optional). (see Section 36.1.1.8).
 - b. Work Package Configuration Effectivity List Item <config-setup-item> (required – one or more) (see Section 16.5.4.1).
2. The DTD for <config> is graphically depicted:

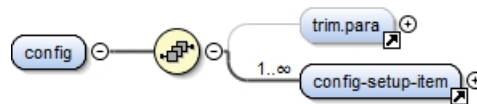


FIGURE 127. Work package configuration effectivity list <config> DTD hierarchy.

3. The DTD fragment for <config> is:


```
<!ELEMENT config (trim para?, config-setup-item+)>
```
4. No attributes.

16.5.4.1 Work package configuration effectivity list item <config-setup-item>.

The element <config-setup-item> provides the equipment specific configuration for the work package.

1. Components are:
 - a. Name <name> (required) (see Section 36.1.4.18).
2. The DTD fragment for <config-setup-item> is:


```
<!ELEMENT config-setup-item (name)>
```
3. Unique attributes:
 - a. **applicable** – Points or links to the master effective list to determine the specific configuration (see Section 16.4.1.4).

16.5.5 Examples of work package identification.

Stylesheet output and XML examples are provided to show the tagging for work package identification. There is one (1) page base format example and two (2) frame-based output examples. One frame-based example is a context non-

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filtering/login frame-based work package. The other frame-based example is a filtering/login frame-based work package. Stylesheet output and XML examples are provided to show the tagging for work package identification. There is one (1) page base format example and two (2) frame-based output examples. One frame-based example is a context non-filtering/login frame-based work package. The other frame-based example is a filtering/login frame-based work package.

16.5.5.1 Example of a page-based work package identification.

The XML instance example shows the tagging for a work package identification in a work package and the stylesheet output shows the XML example in a page-based format.

1. Example of an XML document instance fragment for **<wpidinfo>**:

```
<wpidinfo>
<maintlvl level="crew"/>
<title>ADDITIONAL AUTHORIZATION TITLE (AAL) WORK PACKAGE
</title>
<config>
<config-setup-item applicable="xxxx">
<name>Serial Numbers 12345 through 12399
</name>
</config-setup-item>
</config>
<wpsupersede supersede.wpseq="0006" supersede.dated="January 1, 1999" supersede.secur="yes" from.
tmno="TM X-XXX-XXXX-24&P">
</wpidinfo>
```

2. Example of the display for **<wpidinfo>** in a page-based work package.

0041

SUSTAINMENT MAINTENANCE
 ADDITIONAL AUTHORIZATION TITLE (AAL) WORK PACKAGE (ARMY ONLY)
 Serial Number 12345 through 12399
 This WP supersedes 0006, dated January 1, 1999, contained in TM X-XXX-XXXX-XX
 Which should be destroyed in accordance with applicable security requirements

FIGURE 128. Example of the display for **<wpidinfo>** in a page-based work package.

16.5.5.2 Examples of frame-based work package identification.

The XML instance example shows the tagging for a work package identification in a work package. Two frame-based output examples are also provided. One is a context non-filtering/login frame-based work package and the other is a filtering/login frame-based work package.

1. Example of a Legacy XML document instance fragment for **<wpidinfo>**:

```
<wpidinfo>
<maintlvl level="maintainer"/>
<title>Maintenance Work Package
</title>
```

```

<config>
<config-setup-item applicable="xxxx">
<name>Serial Numbers 12345 through 12399
</name>
</config-setup-item>
</config>
<wpsupersede supersede.wpsseq="0006" supersede.date="January 1, 1999">
</wpidinfo>

```

2. An example displayed for **<wpidinfo>** in a context non-filtering/login frame-based work package. The title of the work package is displayed in the title bar of the outer shell. The maintenance level, list of configurations in the work package, and the work package supersedure notice is displayed in the inner shell.

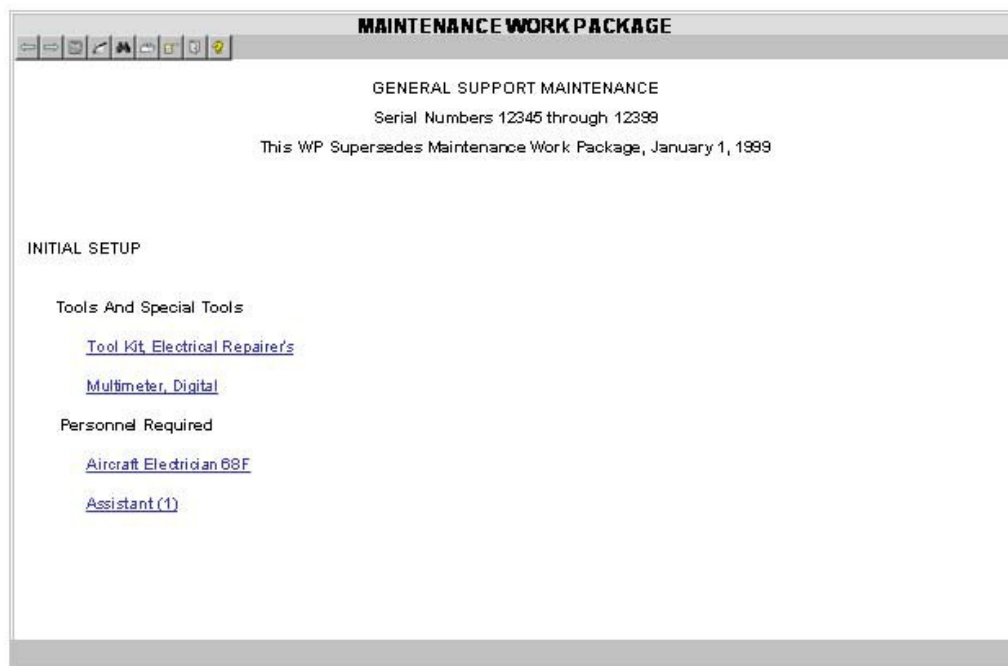


FIGURE 129. Example of the display for **<wpidinfo>** in a context non-filtering/login frame-based work package.

3. An example displayed for **<wpinfo>** in filtering/login frame-based work package. The title of the work package is displayed in the title bar of the outer shell. The maintenance level, list of configurations in the work package, and the work package supersedure notice is not displayed in the inner shell but in the source data.

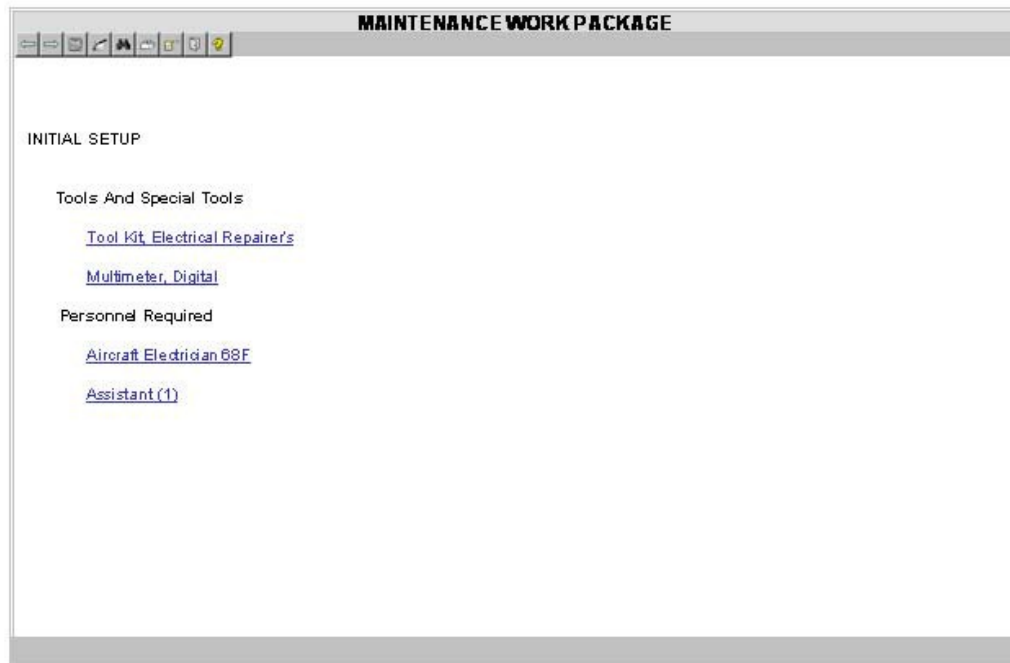


FIGURE 130. Example of the display for <wpidinfo> in a filtering/login frame-based work package.

16.6 Work package setup information <initial_setup>.

The element <initial_setup> lists all of the information required by the technician to complete the tasks including the tools, special tools, test equipment, source references, parts, and other items. The work package setup information content model requires at least one setup category is used. When no setup information is required <null> is used to generate a “Not Applicable” or similar terminology. This indicates to the maintainer no work package setup information is required.

1. The components are:
 - a. Test equipment list <testeqp> (optional) (see Section 16.6.2).
 - b. Tools and special tools list <tools> (optional) (see Section 24.4.6).
 - c. Expendable materials and parts required list <mrtpart> (optional) (see Section 16.6.4).
 - d. Mandatory replacement parts list <mrpl> (optional) (see 27.10.1).
 - e. Special tools <spectools> (optional).
 - f. Title <title> (optional) (see Section 36.1.1.4).
 - g. Personnel required list <persnreq> (optional) (see Section 16.6.5).
 - h. Source reference list <ref> (optional) (see Section 16.6.7).
 - i. Equipment condition list <eqpconds> (optional) (see Section 16.6.8).
 - j. Special environmental condition list <specenv> (optional) (see Section 16.6.9).

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- k. Drawing required list **<dwgreg>** (optional) (see Section 16.6.10).
 - l. Estimated time to complete the task **<time.to.comp>** (optional) (see Section 16.6.11).
 - m. Not applicable **<null>** (optional) (see Section 16.6.12).
2. The DTD for **<initial_setup>** is graphically depicted.

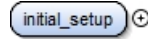


FIGURE 131. Work package configuration effectivity list **<initial_setup>** DTD hierarchy.

3. The DTD fragment for **<initial_setup>** is:

```
<!ELEMENT initial_setup ((testeqp, %opttesteqp;) | (tools, %opt-
tools;) | (mtrlpart, %optmtrlpart;) | (persnreq, %optpersnreq;) |
(ref, %optref;) | (eqpconds, %opteqpconds;) | (specenv, %optspe-
cenv;) | (dwgreg, %optdwgreg;) | time.to.comp+ | (title?, null))
((testeqp, %opttesteqp;) | (tools, %opttools;) | (mtrlpart, %
optmtrlpart;) | (persnreq, %optpersnreq;) | (ref, %optref;) | (eqp-
conds, %opteqpconds;) | (specenv, %optspecenv;) | (dwgreg, %optdw-
greg;) | time.to.comp+ | (title?, null))>

<!ATTLIST initial_setup
  applicable          IDREF          #IMPLIED
  assocfig            IDREFS         #IMPLIED
  changeref           IDREFS         #IMPLIED
  comment             CDATA          #IMPLIED
  delchlvl            (0-99)         "0"
  id                  ID             #IMPLIED
  idref               IDREFS         #IMPLIED
  inschlvl            (0-99)         "0"
  security            (uc | fouo | c | s | ts) #IMPLIED
  skilltrk           CDATA          #IMPLIED>
```

4. Attributes for **<initial_setup>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** - Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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16.6.1 Reference and hyperlink setup item.

Initial setup identifies the required items, by name and location, to perform the work package. With the exception of parts work packages, MIL-STD-40551-1/2 does not authorize NSN, part number and CAGE codes to appear in work package. These codes can change which would require a change packet for each work package. The page-based manual has a prescribed layout for referencing the item by work package number and item number. The referenced item in a frame-based manual is presented by nomenclature/condition, hotspot link, button link, work package, item number and hotspot link. This is similar to the page-base look. The markup method can be accomplished by various methods and somewhat dependent on the IETM viewer and/or stylesheet. When necessary, other work packages, TMs, foldouts, and other sources (**<link>**/**<extref>**/**<xref>**) that are needed to complete the task should be listed. Only references not listed in equipment conditions should be listed (see Section 16.6.1.2). The dedicated element **<itemref>** requires a reference to the dedicated setup item (see Section 16.6.1.1). For example, a tool setup item is where the maintainer requires a “Handle, socket wrench, ratchet, 1/2 inch drive.” The maintainer is referenced to the tools identification work package and the specific tool item information. The following paragraphs discuss the various approaches to referencing setup items.

16.6.1.1 Dedicated setup item referencing **<itemref>**.

A common setup item element is **<itemref>**. This element links the maintainer to the detailed information about the setup item. It also contains a cross reference within the work package/document **<xref>**, a cross reference external to the document **<extref>**, and either internal or external to the work package/document **<link>** (see Section 33).

1. The components are:
 - a. Internal reference **<xref>** (see Section 33.2.2).
 - b. External reference **<extref>** (see Section 33.2.1).
 - c. Link **<link>** (see Section 33).
2. DTD graphically depicted for **<itemref>**:

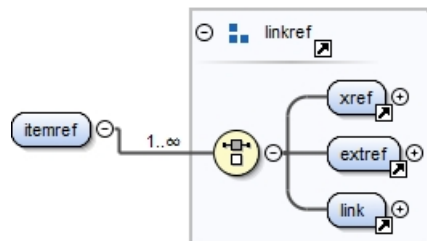


FIGURE 132. Setup item reference **<itemref>** DTD hierarchy.

3. The DTD fragment for **<itemref>** is:


```
<!ELEMENT itemref (%linkref;)+>
```
4. No attributes.

16.6.1.1.1 Legacy internal referencing method **<xref>**.

The legacy referencing method uses a simple linking model of cross reference. The cross reference element **<xref>** points from the attribute **wpid** to the tools identification work package unique identifier. It also points from the attribute **itemid** to the item number unique identifier in the tool identification list.

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1. The XML source code example is:

```

<tools-setup-item>
  <name>Handle, socket wrench, ratchet, 1/2 inch drive
</name>
  <itemref>
    <xref wpid="s00001-9-2350-294" itemid="s00001-9-2350-294-item3"/>
  </itemref>
</tools-setup-item>

```

2. Assuming the tools identification work package is sequence number 0212 and the item number is “3,” a page-based example would produce “Handle, socket wrench, ratchet, 1/2 inch drive (WP 0212, Item 3).” The maintainer would turn to work package 0212 and lookup the item number 3 specific information (NSN, part number).
3. In a frame-based manual, when the maintainer clicks on the hotspot reference, the viewer presents the detailed tool information in a popup window, a separate pane, or by replacing the current pane. The frame-based example can produce one of the following methods below, as determined by the stylesheet. Some stylesheet presentation approaches are simpler to develop than other methods. The following examples show from simple to complex methods.
 - a. Textual hotspot reference after the nomenclature: “Handle, socket wrench, ratchet, 1/2 inch drive, [See reference.](#)”
 - b. Button is the hotspot reference after the nomenclature: “Handle, socket wrench, ratchet, 1/2 inch drive.

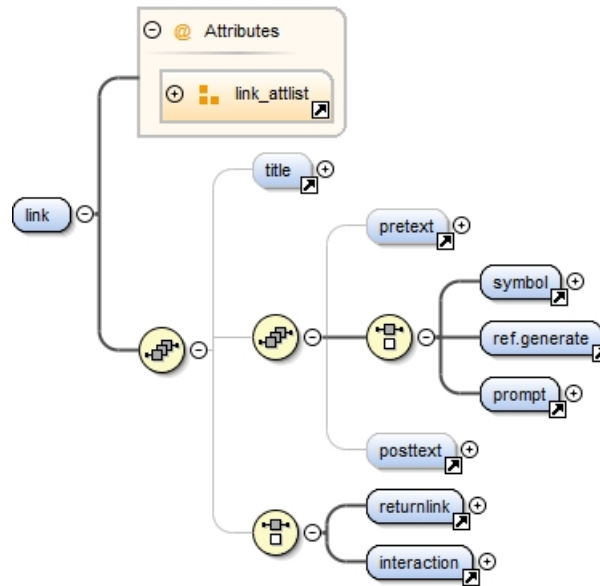


FIGURE 133. Example of the display for <link>.

- c. Work package name and item number is the hotspot reference: “Handle, socket wrench, ratchet, 1/2 inch drive ([Tools Identification List, Item 3](#)).”
- d. Nomenclature is the hotspot reference “Handle, socket wrench, ratchet, 1/2 inch drive.”

16.6.1.1.2 Enhanced referencing method <link>.

The enhanced referencing method provides greater linking functionality, more options, and defines the view for frame-based viewers (see Section 33), from attribute **xlink:href**. The enhanced linking element **<link>** points () to

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the item number unique identifier in the tool identification list. The stylesheet dissects the attribute **xlink:href**, therefore the attribute information before the “#” is the work package unique identifier and information following the “#” is the tool item unique identifier.

1. The XML source code for the sample has a page-based and a framed-based presentation is:

```
<tools-setup-item>
<name>Handle, socket wrench, ratchet, 1/2 inch drive
</name>
<itemref>
<link xlink:href="s00001-9-2350-294#s00001-9-2350-294-item3" application="page" xreftype="part"
xmlns:xlink="http://www.w3.org/1999/xlink" xlink:type="simple" linkaction="prompt" linktype=
"return" popup="no">
<pretext>
(</pretext>
<posttext>)
</posttext>
</link>
<link xlink:href="s00001-9-2350-294#s00001-9-2350-294-item3" application="frame" xreftype="part"
xmlns:xlink="http://www.w3.org/1999/xlink" xlink:type="simple" linkaction="prompt" linktype=
"return" popup="no">
<prompt>See reference
</prompt>
</link>
</itemref>
</tools-setup-item>
```

2. A page-based example (assuming the tools identification work package is sequence number 0212 and the item number is “3”) would produce: “Handle, socket wrench, ratchet, 1/2 inch drive (WP 0212, Item 3).” The maintainer would turn to work package 0212 and lookup the tool's specific information (NSN, part number).
3. A frame-based example would hotspot the item name: “Handle, socket wrench, ratchet, 1/2 inch drive [See reference.](#)”

16.6.1.2 Nomenclature/condition contains the setup item reference.

Referencing the setup item information within a nomenclature/condition is generally used by frame-based systems. The approach is to make the setup reference the nomenclature/condition text. Considerations has to be reviewed if the setup reference needs both page-based and frame-based presentations. The best and most flexible approach is using the enhanced referencing element **<link>**. Providing for both page-based and frame-based presentation requires the need for two **<link>** elements. One **<link>** element provides the page-based presentation view and the other **<link>** element provides the nomenclature/condition as the hotspot reference. The page-based markup includes the nomenclature/condition in the element **<pretext>** and the work package. Item reference information is generated by the stylesheet as indicated by the element **<ref.generate>**. The frame-based markup includes the nomenclature/condition in the element **<prompt>** thus making the nomenclature/condition text as the hotspot reference.

1. The XML source code for the sample has a page-based and a framed-based presentation is:

```
<tools-setup-item>
<name>
<link xlink:href="s00001-9-2350-294#s00001-9-2350-294-item3" application="page" xreftype="part"
xmlns:xlink="http://www.w3.org/1999/xlink" xlink:type="simple" linkaction="prompt" linktype=
"return" popup="no">
<pretext>Handle, socket wrench, ratchet, 1/2 inch drive
(</pretext> <ref.generate/> <posttext>)
```

```

</posttext>
</link>
<link xlink:href="s00001-9-2350-294#s00001-9-2350-294-item3" application="frame" xreftype="part"
xmlns:xlink="http://www.w3.org/1999/xlink" xlink:type="simple" linkaction="prompt" linktype=
"return" popup="no">
<prompt>Handle, socket wrench, ratchet, 1/2 inch drive
</prompt>
</link>
</name>
</tools-setup-item>

```

2. A page-based example (assuming the tools identification work package is sequence number 0212 and the item number is "3") would produce: "Handle, socket wrench, ratchet, 1/2 inch drive (WP 0212, Item 3)."
3. A frame-based example would hotspot the item name: "Handle, socket wrench, ratchet, 1/2 inch drive."

16.6.2 Test equipment list <testeqp>.

The element <testeqp> is the list of test equipment required to perform the tasks and procedures in the work package. Each listed test equipment items are grouped using the element <testeqp-setup-item> (required – one or more). The element <testeqp-setup-item> contains a test equipment nomenclature <name> (required) (see Section 36.1.4.18) and where to locate the test equipment information details (see Section 16.6.1).

1. The components are:
 - a. Test equipment list setup <testeqp-setup-item> (required – one or more).
 - b. Equipment nomenclature <name> (required) (see Section 36.1.4.18).
 - c. Reference item <itemref> (optional) (see Section 16.6.1.1).
2. The DTD fragment for <testeqp> is graphically depicted.

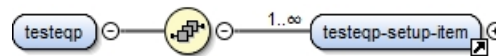


FIGURE 134. Test equipment list <testeqp> DTD hierarchy.

3. The DTD fragment for <testeqp> is:

```

<!ELEMENT testeqp (testeqp-setup-item+)>
<!ATTLIST testeqp-setup-item (name, itemref?)>
<!ATTLIST testeqp-setup-item
  applicable IDREFS #IMPLIED
  changeref IDREFS #IMPLIED
  comment CDATA #IMPLIED
  delchlvl (0-99) "0"
  id ID #IMPLIED
  inschlvl (0-99) "0">

```

4. Attributes for <testeqp-setup-item> are:
 - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

16.6.3 Tools and special tools list <tools>.

The element **<tools>** is the list of tools and/or special tools required to perform the tasks and procedures in the work package. Each listed tool and/or special tool is grouped using the element **<tools-setup-item>** (required – one or more). The element **<tools-setup-item>** contains a tool or special tool nomenclature **<name>** (required) (see Section 36.1.4.18) and where to locate the tool or special tool information details (see Section 24.4.6).

1. The components are:
 - a. Tools and special tools list **<tools-setup-item>** (required – one or more).
 - b. Equipment nomenclature **<name>** (required) (see Section 36.1.4.18).
 - c. Reference item **<itemref>** (optional) (see Section 16.6.1.1).
2. The DTD fragment for **<tools>** is graphically depicted.

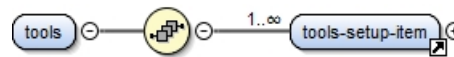


FIGURE 135. Tools and special tools list <tools> DTD hierarchy.

3. The DTD fragment for **<tools>** is:

```
<!ELEMENT tools (tools-setup-item+)>
<!ATTLIST tools-setup-item (name, itemref?)>
<!ATTLIST tools-setup-item
  applicable          IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  inschlvl            (0-99)          "0">
```

4. Attributes for **<testeqp-setup-item>** are:
 - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
 - f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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16.6.4 Materials/parts list <mtrlpart>.

The element <mtrlpart> is the list of expendable materials and parts required to perform the tasks and procedures in the work package. Each listed material/parts item is grouped using the element <mtrlpart-setup-item> (required – one or more). The element <mtrlpart-setup-item> contains a part nomenclature <name> (required) (see Section 36.1.4.18), quantity (if more than one material/part is required) <qty>, and where to locate the tool or special tool information details (see 24.4.6).

1. The components are:
 - a. Materials/parts list setup <mtrlpart-setup-item> (required – one or more).
 - b. Equipment nomenclature <name> (required) (see Section 36.1.4.18).
 - c. Quantity <qty> (optional) (see Section 36.1.4.8).
 - d. Reference item <itemref> (optional) (see Section 16.6.1.1).
2. DTD fragment for <mtrlpart> is graphically depicted.

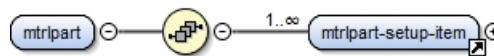


FIGURE 136. Materials/parts list <mtrlpart> DTD hierarchy.

3. The DTD fragment for <mtrlpart> is:

```
<!ELEMENT mtrlpart (mtrlpart-setup-item+)>
<!ELEMENT mtrlpart-setup-item (name, qty?, itemref?)>
<!ATTLIST mtrlpart-setup-item
  applicable          IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  inschlvl            (0-99)          "0">
```

4. Attributes for <mtrlpart-setup-item> are:
 - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
 - f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

16.6.5 Personnel required <persnreq>.

The element <persnreq> is the list of the type and quantity of personnel required to perform the tasks and procedures in the work package. Each personnel type is contained in the element <persnreq-setup-item> (required – one or more) that contains the type of person needed <name> (required) (see Section 36.1.4.18), MOS

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position (if known or necessary) **<mos>** (optional), and quantity **<qty>** (if more than one person is required) (optional) (see Section 36.1.4.8).

1. The components are:
 - a. Personnel required setup item **<persnreq-setup-item>** (required – one or more).
 - b. Equipment nomenclature **<name>** (required) (see Section 36.1.4.18).
 - c. Quantity **<qty>** (optional) (see Section 36.1.4.8).
 - d. Military occupation specialty **<mos>** (optional) (see Section 16.6.6).
2. DTD fragment for **<persnreq>** is graphically depicted.

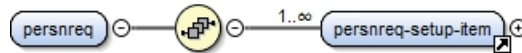


FIGURE 137. Materials/parts list **<persnreq>** DTD hierarchy.

3. The DTD fragment for **<persnreq>** is:

```
<!ELEMENT persnreq (persnreq-setup-item+)>
<!ELEMENT persnreq-setup-item (name, mos?, qty?)>
<!ATTLIST persnreq-setup-item
  applicable          IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  inschlvl            (0-99)          "0">
```

4. Attributes for **<persnreq>** are:
 - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
 - f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

16.6.6 Military occupation specialty **<mos>**.

The element **<mos>** identifies the Military Occupation Specialty (MOS) code required for the task. If more than one MOS is required, use additional **<persnreq-setup-item>** elements.

1. The components for **<mos>** are:
 - a. The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1) (required).

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2. The DTD fragment for **<mos>** is:

```

<!ELEMENT mos (#PCDATA) >
<!ATTLIST mos
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)         "0"
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)         "0"
  security          (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>

```

3. Attributes for **<mos>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

16.6.7 Source reference list **<ref>**.

The element **<ref>** is a list of all work packages, TMs, foldouts, and other documents referenced in the work package. Referenced work packages and documents contained in the equipment condition list will not be listed. Each reference is contained in the element **<ref-setup-item>**. When the reference is a work package, the element **<link>** (see Section 33.2.3) or **<xref>** (see Section 33.2.2) is used. When the reference is an external publication, the element **<link>** (see Section 33.2.3) or **<extref>** (see Section 33.2.1) is used.

1. The components for **<ref>** are:

- a. Source reference list setup item **<ref-setup-item>** (required – one or more).
- b. Internal reference **<xref>** (see Section 33.2.2).
- c. External reference **<extref>** (see Section 33.2.1).
- d. link **<link>** (see Section 33.2.3).

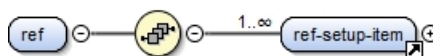
2. The DTD fragment for **<ref>** is graphically depicted.

FIGURE 138. Source reference list **<ref>** DTD hierarchy.

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3. The DTD fragment for **<ref>** is:

```

<!ELEMENT ref (ref-setup-item+)>
<!ELEMENT ref-setup-item (xref | extref | link)>
<!ATTLIST ref-setup-item
  applicable          IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  inschlvl            (0-99)          "0">

```

4. Attributes for **<ref>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

16.6.8 Equipment condition list **<eqpconds>**.

The element **<eqpconds>** lists in the work package any special equipment conditions required before the task can be started.. Each listed equipment condition is grouped using the element **<eqpconds-setup-item>** (required – one or more). The element **<eqpconds-setup-item>** contains the equipment condition **<condition>** (required) (see Section 36.1.4.13) and where to locate the instructions for putting the equipment in the prescribed condition (see Section 16.6.1).

1. The components are:

- a. Equipment condition setup item **<eqpconds-setup-item>** or Conditional Equipment Conditions Setup Item **<eqpconds-setup-item-alt>** (required – one or more).
- b. Precondition **<precond>** (optional) (see Section 29.1.1.1).
- c. System condition statement **<condition>** (required) (see Section 36.1.4.13).
- d. Item reference information **<itemref>** (optional) (see Section 16.6.1.1).

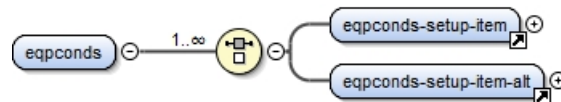
2. The DTD fragment for **<eqpconds>** is graphically depicted.

FIGURE 139. Source reference list **<eqpconds>** DTD hierarchy.

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3. The DTD fragment for **<eqpconds>** is:

```

<!ELEMENT eqpconds (eqpconds-setup-item | eqpconds-setup-item-alt)
+>

<!ELEMENT eqpconds-setup-item (precond?, condition, itemref?)>

<!ATTLIST eqpconds-setup-item
    applicable          IDREFS          #IMPLIED
    changeref           IDREFS          #IMPLIED
    comment             CDATA           #IMPLIED
    delchlvl            (0-99)          "0"
    id                  ID              #IMPLIED
    inschlvl            (0-99)          "0">

```

4. Attributes for **<eqpconds-setup-item>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

16.6.8.1 Filtering equipment condition.

Filtering or preconditions **<eqpconds-setup-item-alt>** on the equipment condition is permitted when using a frame-based viewer that filters information. (For information about using alternative or precondition requirements see Section 34.3). The condition is displayed when the element **<eqpconds-setup-item-alt>** is used and when the precondition **<precond>** is valid. When the precondition is invalid, the equipment condition is not displayed to the maintainer (see Section 29.1.1.1). Preconditions are used primarily for environmental conditions (arctic, desert, marsh, etc. conditions), known completed equipment condition task, equipment model being maintained, etc. This precondition filtering is accomplished through setting state table variable(s) during log in, information gathered from the maintainer through user interaction, and/or set state table variable during completion of a previous task.

16.6.9 Special environmental condition <specenv>.

The element **<specenv>** identifies any special environmental condition, (such as ventilation, lighting, or temperature), required to perform the procedures contained in the work package. Each special environmental condition is contained in the element **<specenv-setup-item>** (required – one or more). This contains the condition **<condition>** (required) (see Section 36.1.4.13) and the reason it is required **<reason>** (required) (see Section 36.1.4.10).

1. The components are:

- a. Special environmental condition setup item **<specenv-setup-item>** (required – one or more).
- b. System condition statement **<condition>** (required) (see Section 36.1.4.13).
- c. Reason for action **<reason>** (required) (see Section 36.1.4.10).

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2. The DTD fragment for **<specenv>** is graphically depicted.

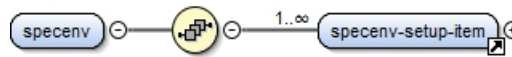


FIGURE 140. Source reference list **<specenv>** DTD hierarchy.

3. The DTD fragment for **<specenv>** is:

```
<!ELEMENT specenv (specenv-setup-item+)>
<!ELEMENT specenv-setup-item (condition, reason)>
<!ATTLIST specenv-setup-item
  applicable          IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  inschlvl            (0-99)          "0">
```

4. Attributes for **<specenv-setup-item>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

16.6.10 Drawing requirements list **<dwgreg>**.

The element **<dwgreg>** are the drawings, diagrams, and/or schematics required to perform the tasks and procedures in the work package, but are not included (foldouts). Each listed drawing item is grouped using the element **<dwgreg-setup-item>** (required – one or more). The element **<dwgreg-setup-item>** contains a drawing title or name **<dwgname>** (required) (see Section 36.1.4.5) and the drawing number to assist in locating the information **<dwgno>** (required) (see Section 36.1.4.6).

1. The components are:
 - a. Drawing requirements list setup item **<dwgreg-setup-item>** (required – one or more).
 - b. Drawing name **<dwgname>** (required) (see Section 36.1.4.5).
 - c. Drawing number **<dwgno>** (required) (see Section 36.1.4.6).
2. The DTD fragment for **<dwgreg>** is graphically depicted.

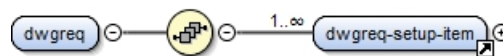


FIGURE 141. Drawing requirement list **<dwgreg>** DTD hierarchy.

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3. The DTD fragment for **<dwgreq>** is:

```

<!ELEMENT dwgreq (dwgreq-setup-item+)>
<!ELEMENT dwgreq-setup-item (dwgname, dwgno)>
<!ATTLIST dwgreq-setup-item
  applicable          IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  inschlvl            (0-99)          "0">

```

4. Attributes for **<dwgreq-setup-item>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

16.6.11 Estimated time to complete the task **<time.to.comp>**.

The element **<time.to.comp>** is the estimated time to complete the task. The information for the time is entered using the attribute **hrs** and is required when the element is used.

1. The components are:

- a. The element is EMPTY and all pertinent information is entered through its attributes.

2. The DTD fragment for **<time.to.comp>** is:

```

<!ELEMENT time.to.comp EMPTY>
<!ATTLIST time.to.comp
  applicable          IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            CDATA           #IMPLIED
  hrs                 CDATA           #REQUIRED
  id                  ID              #IMPLIED
  inschlvl            CDATA           #IMPLIED>

```

3. Attributes for **<time.to.comp>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- c. **comment** - Change information (optional) (see Section 36.3.12).
- d. **delchlvl** - Deletion change level (optional) (see Section 36.3.12).
- e. **hrs** - The estimated amount of hours to complete the operating task.
- f. **id** - specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **inschlvl** - Insert change level (optional) (see Section 36.3.12).

16.6.12 Setup not applicable <null>.

The elements <title> (optional) and <null> (required) are used to indicate that no initial setup instructions are required. The optional element <title> may contain text to indicate to the maintainer that no setup is required. If <title> is not used, then the stylesheet will generate text stating the setup is not required.

16.6.13 Sample work package initial setup instance.

Several initial setup XML markup samples are provided below.

1. Initial setup using <xref> and <extref>.

```

<initial_setup>
<persnreq>
<persnreq-setup-item>
<name>Soldier
</name>
</persnreq-setup-item>
</persnreq>
<ref>
<ref-setup-item>
<extref docno="TM 9-2350-294-10-2"/>
</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item name_cond_hotspot="yes">
<condition>Engine stopped
</condition>
<itemref>
<xref wpid="O00017-9-2350-294" pretext="(" posttext=")"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item name_cond_hotspot="no">
<condition>Commander's hatch cover closed
</condition>
<itemref>
<extref docno="TM 9-2350-294-10-2" pretext="(" posttext=")"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item name_cond_hotspot="no">
<condition>Gunner's hatch cover closed
</condition>
<itemref>
<extref docno="TM 9-2350-294-10-2" pretext="(" posttext=")"/>
</itemref>
</eqpconds-setup-item>

```

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```

<eqpconds-setup-item name_cond_hotspot="no">
<condition>Turret in any position except 6400 mils
</condition>
<itemref>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>

```

2. Initial setup using **<link>**. The equipment condition item "Engine stopped" has two **<link>** elements page-based and frame-based.

```

<initial_setup>
<persnreq>
<persnreq-setup-item>
<name>Soldier
</name>
</persnreq-setup-item>
</persnreq>
<ref>
<ref-setup-item>
<link xmlns:xlink="http://www.w3.org/1999/xlink" application="both" xlink:href="TM_9-2350-294-10-2.xml" xlink:type="simple" xref-type="document" linktype="return" linkaction="prompt" popup="no">
<prompt>TM 9-2350-294-10-2
</prompt>
</link>
</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item>
<condition>
<link xmlns:xlink="http://www.w3.org/1999/xlink" application="page" xlink:href="O00017-9-2350-294" xlink:type="simple" xref-type="wp" linktype="return" linkaction="prompt" popup="no">
<pretext>Engine stopped (
</pretext>
<ref.generate/>
<posttext> )
</posttext>
</link> <link xmlns:xlink="http://www.w3.org/1999/xlink" application="frame" xlink:href="O00017-9-2350-294" xlink:type="simple" xref-type="wp" linktype="return" linkaction="prompt" popup="no">
<prompt>Engine stopped
</prompt>
</link>
</condition>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Commander's hatch cover closed
</condition>
<itemref>
<link xmlns:xlink="http://www.w3.org/1999/xlink" application="both" xlink:href="TM_9-2350-294-10-2.xml" xlink:type="simple" xref-type="document" linktype="return" linkaction="prompt" popup="no">
<prompt>TM 9-2350-294-10-2
</prompt>
</link>
</itemref>

```

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```

</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Gunner's hatch cover closed
</condition>
<itemref>
<link xmlns:xlink="http://www.w3.org/1999/xlink" application="both" xlink:href="TM_9-2350-294-10-2.
xml" xlink:type="simple" xref="document" linktype="return" linkaction="prompt" popup="no">
<prompt>TM 9-2350-294-10-2
</prompt>
</link>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Turret in any position except 6400 mils
</condition>
<itemref>
<link xmlns:xlink="http://www.w3.org/1999/xlink" application="both" xlink:href="TM_9-2350-294-10-
2.xml" xlink:type="simple" xref="document" linktype="return" linkaction="prompt" popup="no">
<prompt>TM 9-2350-294-10-2
</prompt>
</link>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>

```

3. Frame-based initial setup formatted.

INITIAL SETUP:**Personal Required**

Soldier

References

TM 9-2350-10-2

Equipment Condition

Engine stopped

Commander's hatch cover closed (TM 9-2350-10-2)

Gunner's hatch cover closed (TM 9-2350-10-2)

4. Page-based initial setup formatted.

INITIAL SETUP:**Personal Required**

Soldier

References

TM 9-2350-10-2

Equipment Condition

Engine stopped (WP 0035)

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Commander's hatch cover closed (TM 9-2350-10-2)

Gunner's hatch cover closed (TM 9-2350-10-2)

5. Initial setup not applicable.

<initial_setup>

<null insert="none"/>

</initial_setup>

6. Initial setup not formatted:

INITIAL SETUP: Not Applicable

17 TASKS, PROCEDURES, AND STEPS

17.1 Tasks.

17.1.1 Task explanation.

As presented in the DTD, a task in both a page based and electronic TM is a single procedure **<proc>** that present a complete action. A task may be as simple as checking the tire pressure on a vehicle or as complex as overhauling a turbine engine. Not all tasks are related to maintenance or support. Operating procedures are also written as tasks. All maintenance and operating tasks are written using the procedure **<proc>** element (see Section 17.2)

17.1.2 Task as a work package.

Each task is its own work package and will have both work package identification information **<wpidinfo>** and initial setup **<initial_setup>** requirements specific to the task.

17.2 Procedures.

A procedure is a collection of individual steps and sub-steps that comprise an entire task or a subset of a task. The examples below show the difference between a task and a procedure tagging.

17.2.1 Procedure using **<proc>** example.

```
<flyable><proc><title></title>
<step1></step1></proc><proc>...</proc></flyable>
```

17.2.2 Procedure <proc> content model information.

1. The DTD fragment for <proc> is graphically depicted.

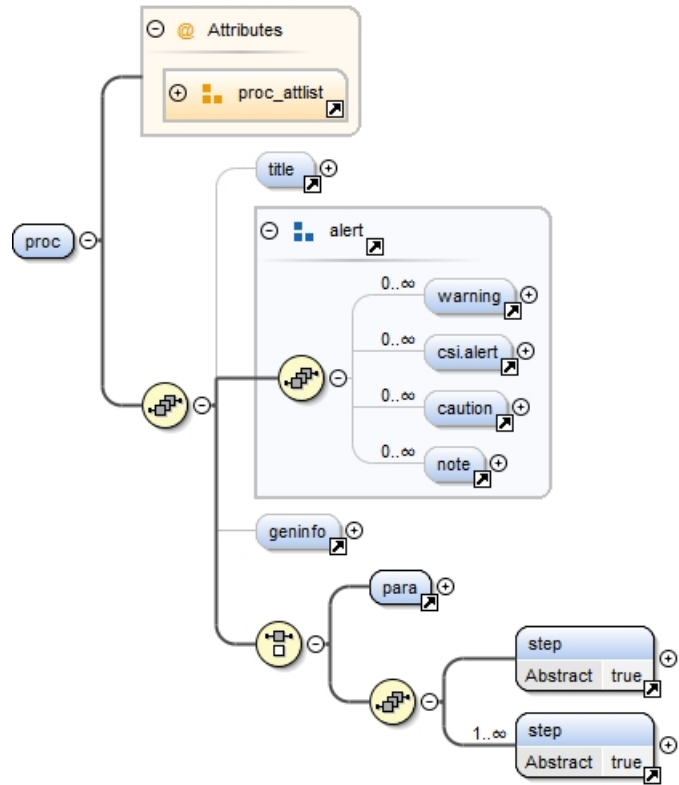


FIGURE 142. Procedure <proc> DTD hierarchy.

2. The DTD fragment for <proc> is:

```
<!ELEMENT proc (title?, %alert;, geninfo?, (para | (%step;, (%step;)+))>
<!ATTLIST proc
applicable IDREFS #IMPLIED
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
crewmember CDATA #IMPLIED
date-time-stamp (date | time | date-time) #IMPLIED
delchlvl (0-99) "0"
esd (yes | no) "no"
frame (yes | no) "yes"
hcp (yes | no) "no"
id ID #IMPLIED
```

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
qa	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(0 3 4 5)	"0">

3. Unique attributes for **<proc>** are:

- a. **crewmember** – Crewmember (optional). This attribute allows the author to identify specific functions of a task or procedure that are accomplished by different members of a crew. An example might be a gunner and loader in a gun crew.
- b. **tocentry** – Table of contents entry (optional). This is a list of values between zero (0) and a number between one (1) and five (5) that indicates:
 - i. If the current element is to appear in the table of contents, a **0** indicates that the information will not be included in the TOC.
 - ii. The level the current element will appear in an indented TOC, usually a TOC prepared for an IETM.
In a typical task, these values are **0**, **3**, **4**, and **5**. TOC levels **1** and **2** are used for chapters and work packages.
- c. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- d. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).

4. Common attributes for **<proc>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- g. **hnp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- h. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- i. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- j. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- k. **qa** – Quality assurance check (optional). A choice of **yes** or **no** used to indicate whether the step requires a quality assurance inspection prior to advancing further into the procedure.
- l. **security** – Security classification (optional) (see Section 36.3.14).
- m. **skilltrk** – Skill level (optional) (see Section 36.3.3).

17.3 Steps.

Steps are the key element to a procedure. They present the individual pieces of the procedure. The **<step1>** element is also used in other content models that are not typically considered a procedure. Exact usage of the **<step1>** model in this case is dependent on the element being used.

1. The DTD fragment for **<step1>** is graphically depicted.

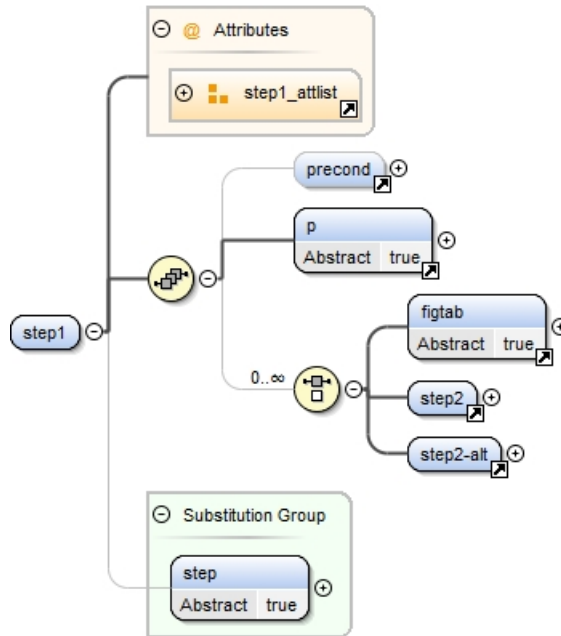


FIGURE 143. Step1 **<step1>** DTD hierarchy.

2. The DTD fragment for **<step1>** is:

```
<!ELEMENT step1 (precond?, (%p;), (%figtab; | step2 | step2-alt)*)>
<!ATTLIST step1
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  cautionref          IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  crewmember          CDATA           #IMPLIED
  date-time-stamp     (date | time | date-time) #IMPLIED
  delchlvl            (0-99)          "0"
  esd                 (yes | no)       "no"
  frame               (yes | no)       "yes"
  hcp                 (yes | no)       "no"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
```

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inschlvl	(0-99)	"0"
label	CDATA	#IMPLIED
noteref	IDREFS	#IMPLIED
qa	(yes no)	"no"
safeflight	(yes no)	#IMPLIED
security	(uc fouo c s ts)	#IMPLIED
skilllevel	(novice_expert)	"novice_ expert"
skilltrk	CDATA	#IMPLIED
warningref	IDREFS	#IMPLIED>

3. Common attributes for **<step1>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **cautionref** – Warning reference (optional). One or more IDREF attributes that will allow the author to link the **<step1>** to a group of common or consolidated TM cautions
- d. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- e. **comment** – Change information (optional) (see Section 36.3.12).
- f. **crewmember** – Crewmember (optional). This attribute allows the author to identify specific functions of a task or procedure that are accomplished by different members of a crew. An example might be a gunner and loader in a gun crew.
- g. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- h. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- i. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- j. **frame** – Frame (optional). A toggle of yes or no that indicates if the **<step1>** is to be displayed in its own frame.
- k. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- l. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- m. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- n. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- o. **label** – Label. A CDATA attribute that allows the author or system to enter various information about the **<step1>**.
- p. **noteref** – Warning reference (optional). One or more IDREF attributes that will allow the author to link the **<step1>** to a group of common or consolidated TM notes.
- q. **qa** – Quality assurance check (optional). A choice of **yes** or **no** used to indicate whether the step requires a quality assurance inspection prior to advancing further into the procedure.
- r. **safeflight** – Safety of flight (optional). A toggle of yes or no that indicates if the **<step1>** is a flight safety critical step.

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- s. **security** – Security classification (optional) (see Section 36.3.14).
- t. **skilllevel** – User skill level. This is currently a single value **novice_expert**. The intent of this attribute is to in the future allow information to be presented based on a users skill level. If the user is proficient, then an abbreviated set of steps could be presented. A novice would see all the steps.
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **warningref** – Warning reference (optional). One or more IDREF attributes that will allow the author to link the **<step1>** to a group of common or consolidated TM warnings.

17.3.1 Elements used in **<step1>**.

The following elements are used in **<step1>**. They are discussed fully in their referenced paragraphs.

1. **<precond>** – This element is normally optional except when the **<step1>** is used inside a **<step1-alt>** (see Section 29.1.1.1).
2. **<para>** – Basic paragraph of text (see Section 36.1.1.6).
3. **<figure>** – Allows the insertion of an illustration or other material (see Section 31.1.1).
4. **step2** - The step tag **<step2>** and **<step2-alt>** refers to first-level substep, not to step number 2 (see Section 17.3.2).

17.3.2 Step subordination/indenture.

There are six levels of step elements going from **<step1>** through **<step6>**. A common concern for first time users when they see a **<step2>** or a **<step6>** element is to think that a procedure is limited to two steps or to six steps. This is not the case. The **<step2>** through **<step6>** elements are not a sequence, but an indenture to support subordinate steps.

```

<step1>
<para>For configuration A, do the following:
</para>
<step2>
<para>Start of configuration A steps.
</para>
</step2>
</step1>
<step1>
<para>For configuration B, do the following:
</para>
<step2>
<para>Start of configuration B steps.
</para>
</step2>
</step1>

```

17.3.3 Subordinate step content.

The content models for **<step2>** through **<step6>** are identical to **<step 1>** except for the following (see Section 17.3):

1. **<step2>** through **<step5>** will have the next step indenture (**<step2>** will have **<step3>** or **<step3-alt>** as the last option).

- ### 17.3.4 Alternate steps.

```
<step1><precond><expression><string>configuration
</string><ne/><string>a</string></expression></precond>
<para>Start of configuration B steps.</para></step1>
<step1><precond><expression><string>configuration
</string><ne/><string>a</string></expression></precond>
<para>More of configuration B steps.</para></step1></step1-alt>
```

-
- The diagram illustrates a step definition in a modeling tool. It features a central node labeled 'step1-alt' with a cardinality of 1..∞. This node is connected to two other nodes: 'step1-alt_attlist' (under the 'Attributes' group) and 'step' (under the 'Substitution Group' group). The 'step' node has a cardinality of 1. The 'step1-alt' node is also connected to a 'step1' node, which has a cardinality of 1.

FIGURE 144. Content model <step1-alt> DTD hierarchy.

- ```
<!ELEMENT step1-alt (step1+)>
<!ATTLIST step1-alt id ID #IMPLIED>

 <!ELEMENT step1-alt (step1+)>
 <!ATTLIST step1-alt
 id ID #IMPLIED>
```

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### 3. Attribute for **<step1-alt>**:

- a. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).



# 18 GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF OPERATION CHAPTER.

## 18.1 General information, description information and theory of operation <gim>.

General information, equipment description information and theory of operation chapter is prepared and subdivided into individual work packages. The work packages provide the user with information with general requirements for the technical manual, descriptive data about the weapon system or equipment. Weapon system and equipment description, and theory of operation data should be developed in narrative or tabular form, or by whatever method is most simple or effective for conveying the specific TM application. The chapter may include a theory of operation of how the weapon system or equipment works and their related systems, subsystems, equipment, weapons replacement assemblies, and shop replacement assemblies.

### 1. Components of <gim> are:

- a. Chapter Title Page <titlepg> (required). The element provides the title page preceding an information chapter (see Section 36.1.1.1).
- b. General Information Work Package <ginfowp> (required). The element provides general information, reference statements and standard statements that apply to the entire TM (see Section 18.1.1).
- c. A choice of:
  - i. A battle damage general information work package <bdar-geninfowp> (optional). This provides BDAR specific general information, (see Section 18.1.2).
  - ii. The equipment description work package and theory of operation work package.
    - I. Equipment Description and Data Work Package <descwp> (required – one or more). The element provides descriptive data information for the entire system (see Section 18.1.3).
    - II. Theory of Operation Work Package <thrywp> (optional – zero or more). The element provides a functional description on how the equipment and its components function and interface (see Section 18.1.4).
  - iii. A Software Users Manual general information work packages <softginfowp>, <softsumwp>, <softeffectwp>\*, <softdiffversionwp>.
  - iv. A General Maintenance general information work packages consisting of: <genmaint\_ginfowp>, <descwp>.
  - v. A Phased Maintenance general information work package: <pm-ginfowp>.
  - vi. A Preventative Maintenance schedule general information work package: <pms-ginfowp>.

### 2. The DTD fragment for <gim> is graphically depicted.

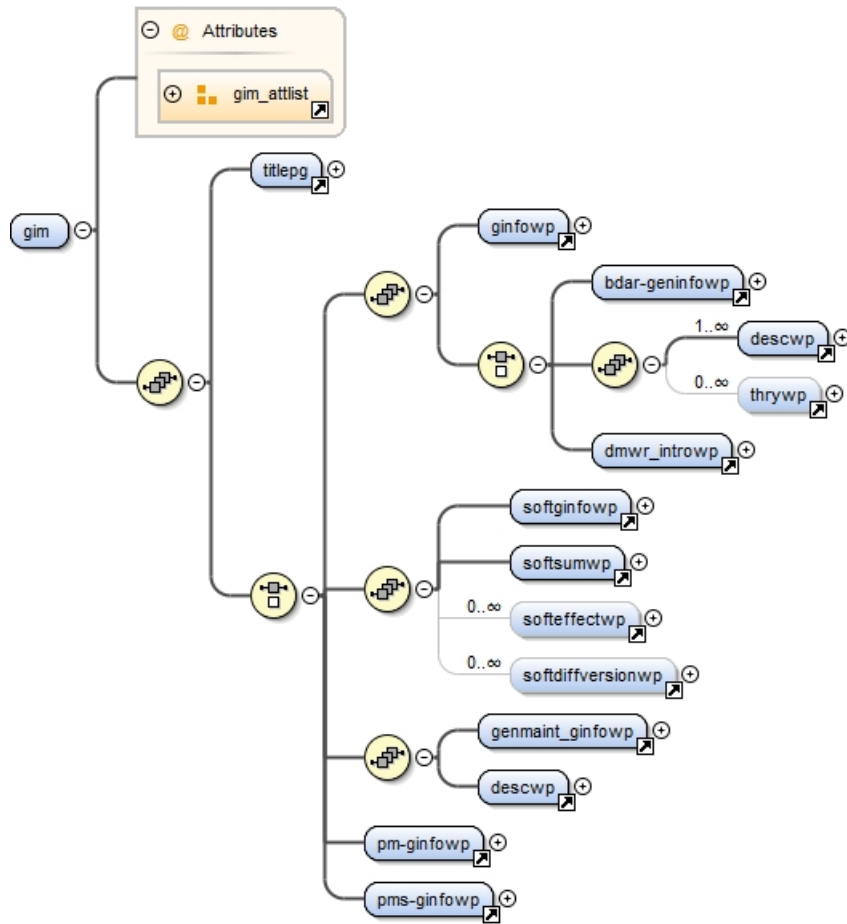


FIGURE 145. General information chapter &lt;gim&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;gim&gt; is:

```
<!ELEMENT gim (titlepg, ((ginfowp, (bdar-geninfowp | (descwp+,
thrywp*) | dmwr_introwp)) | (softginfowp, softsumwp, softeffectwp*,
softdiffversionwp*) | (genmaint_ginfowp, descwp)>
```

```
<!ATTLIST gim
```

|          |                 |           |
|----------|-----------------|-----------|
| chap-toc | (yes   no)      | "yes"     |
| chnгно   | CDATA           | #REQUIRED |
| frame    | (yes   no)      | "yes"     |
| revno    | CDATA           | #REQUIRED |
| tocentry | (0   1   2   3) | "1">      |

## 4. Attributes for &lt;gim&gt; are:

- a. **chnгно** - Change number (required) (see Section 36.3.12).
- b. **chap-toc** - Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- c. **frame** - In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).

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- d. **revno** – Revision number (required) (see Section 36.3.12).
- e. **tocentry** – In the TM table of contents, the attribute indicates the indenture level. The possible selections are **0** (do not include), **1** (the highest level or 1st indenture level), or **2** (the second indenture level) (default value is **1**).

### 18.1.1 General information work package <ginfowp>.

All general information, reference statements and standard statements are contained within this work package. Only one general information work package is allowed. The general information work package contains requirements that are common to all TM types developed by MIL-STD-40051-1/-2. For manual types (destruction or BDAR) that have manual specific 'general information,' a separate manual unique work package is provided.

1. The <ginfowp> components are:

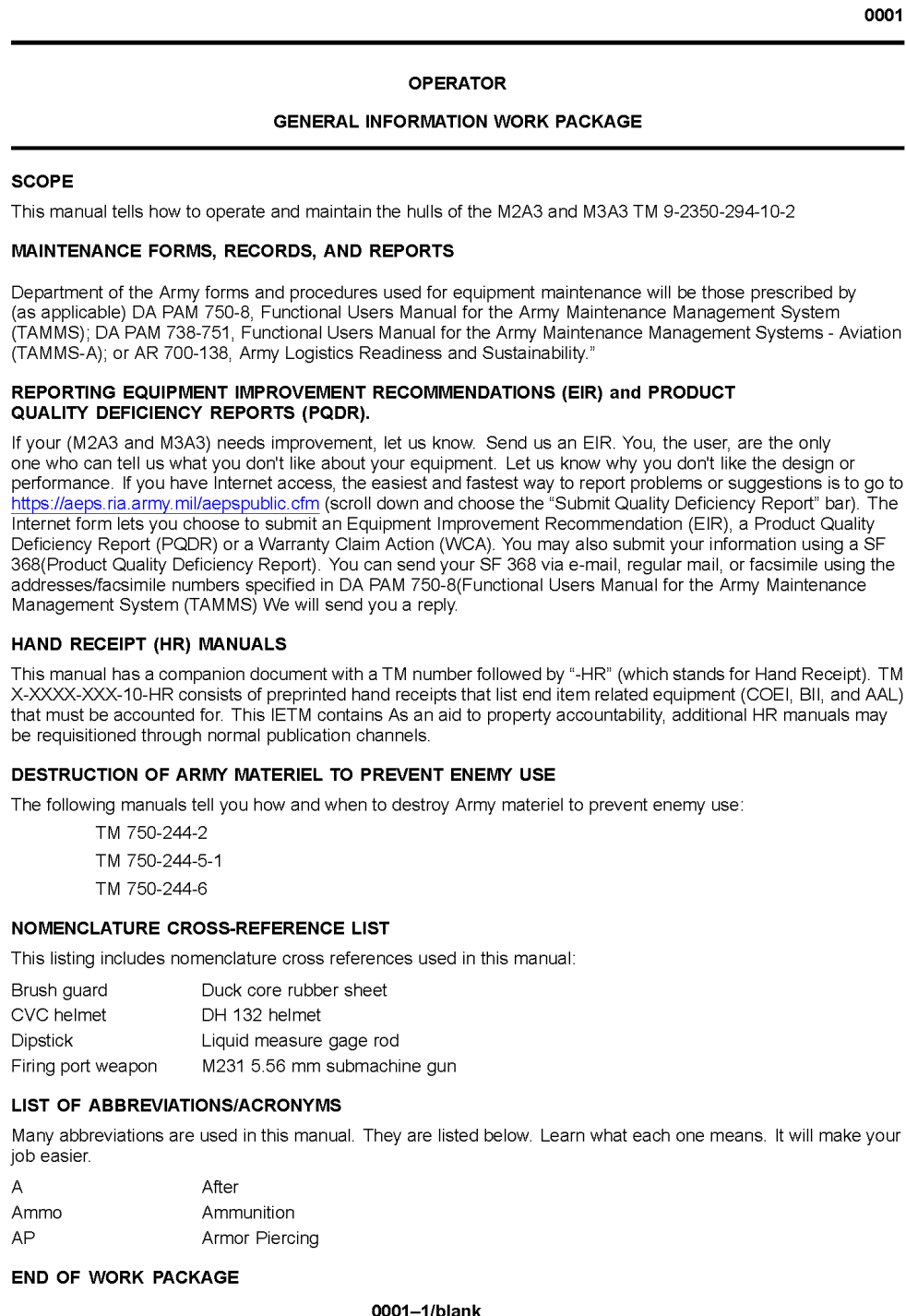
- a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
- b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
- c. Work package initial setup <initial\_setup> (required) (see Section 16.6).
- d. Scope <scope> (required). The element provides a brief statement of what is covered in the technical manual and also includes the following as applicable:
  - i. Type of manual.
  - ii. Model number(s) and equipment name(s).
  - iii. Purpose of equipment.
  - iv. Special inclusions in the manual, such as drill procedures or on-vehicle loading plans. (see Section 36.1.4.24).
- e. Maintenance Forms, Records, And Report <mfr> (optional) (see Section 18.1.1.1).
- f. Reporting Equipment Improvement Recommendations <eir> (required) (optional) (see Section 18.1.1.3).
- g. Hand Receipt (HR) Manuals Statement <handreceipt> (optional) (see Section 18.1.1.4).
- h. Corrosion Prevention And Control Data <cpdata> (optional) (see Section 18.1.1.5).
- i. Ozone Depleting Substances <oddata> (optional) (see Section 18.1.1.6).
- j. Destruction Of Army Materiel To Prevent Enemy Use <destructmat> (optional) (see Section 18.1.1.7).
- k. Preparation For Storage Or Shipment References <pssref> (optional) (see Section 18.1.1.8).
- l. Warranty Reference <wrntyref> (optional) (see Section 18.1.1.10).
- m. Transportability <transportability> (optional) (see Section 18.1.1.9).
- n. Nomenclature Cross-Reference List <nomenreflist> (optional) (see Section 18.1.1.11).
- o. List Of Abbreviation/Acronyms <loa> (optional) (see Section 18.1.1.12).
- p. Quality Assurance Information <qainfo> (optional) (see Section 18.1.1.13).
- q. Quality Of Material <qual.mat.info> (optional) (see Section 18.1.1.14).
- r. Safety, Care, And Handling <sftyinfo> (optional) (see Section 18.1.1.15).
- s. Nuclear Hardness <hcp> (optional) (see Section 18.1.1.16).

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- t.** Calibration Reference **<calref>** (optional) (see Section 18.1.1.17).
- u.** Engineering Change Proposal **<ecp>** (optional) (see Section 18.1.1.18).
- v.** Modification Work Order Statement **<modification>** (optional) (see Section 18.1.1.19).
- w.** Deviations And Exceptions **<deviation>** (optional) (see Section 18.1.1.20).
- x.** Mobilization Requirements **<mobreq>** (optional) (see Section 18.1.1.21).
- y.** Critical Aircraft Parts Requirement Statement **<csireq>** (optional) (see Section 18.1.1.22).
- z.** Cost Considerations Statement **<cost>** (optional) (see Section 18.1.1.23).
- aa.** Supporting Information For Repair Parts, Special Tools, And Support Equipment **<supdata>** (optional) (see Section 18.1.1.24).
- ab.** Copyright Information **<copyrt>** (optional) (see Section 18.1.1.25).
- ac.** Item unique identification **<iuid>** (optional) This element allows markings such as data plates, decals, or etchings.

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2. The DTD fragment for <ginfowp> is graphically depicted.



**FIGURE 146. Standard general information work package <ginfowp> DTD hierarchy.**

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3. The DTD fragment for **<ginfowp>** is:

```
<!ELEMENT ginfowp (wp.metadata?, wpidinfo, scope, mfrr?, eir?, han-
dreceipt?, cpcdata?, odsdata?, destructmat?, pssref?, transport-
ability?, wrntyref?, nomenreflist?, loa?, qainfo?, qual.mat.info?,
sftyinfo?, hcp?, calref?, iuid?, ecp?, modification?, deviation?,
mobreq?, csireq?, cost?, supdata?, copyrt?)>
```

```
<!ATTLIST ginfowp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<ginfowp>** are:

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- e. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
  - f. **chnгно** – Change number (required) (see Section 36.3.12).
  - g. **comment** – Change information (optional) (see Section 36.3.12).
  - h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
  - i. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
  - j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
  - l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
  - m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
  - n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - p. **insertwp** – Specifies the new work package change sequence number, (point work package), since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
  - q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
  - r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
  - s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
  - t. **security** – Security classification (optional) (see Section 36.3.14).
  - u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
  - v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
  - w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
  - x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-2 requires a manually assigned sequential number of the work package for the TM.
5. DMWR/NMWR specific tags are used only in a DMWR/NMWR General Information Work Package: quality assurance **<qainfo>**, engineering change proposal **<ecp>**, deviations and exceptions **<deviation>**, modification list **<modification>**, mobilization requirements statement **<mobreq>**, and cost considerations **<cost>**.
  6. Aviation specific tags are: quality assurance **<qainfo>**, quality of material **<qaul.mat.info>**, and critical safety items **<csireq>**.

### 18.1.1.1 Maintenance forms, records, and report statement **<mfr>**.

A general information package requires a **<mfr>** statement. There are specific maintenance forms, records, and report statements for an Army only TM, Marines only TM, multi-service TM, and an Army ammunition TM.

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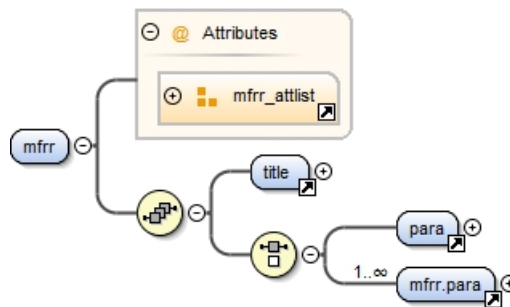
Boilerplate text that is accessible through the DTD per MIL-STD-40051-1/-2 can be referenced using one of the applicable general entities below (see Chapter 37 for further information on boilerplates).

- Army - Maintenance Forms, Records and Reports (MFRR) statement (*&ginfowp.mfrr-army;*).
- USMC - Maintenance Forms, Records and Reports (MFRR) statement (*&ginfowp.mfrr-usmc;*).
- Multi-Service Maintenance Forms, Records and Reports (MFRR) statement (*&ginfowp.mfrr-multiservice;*).
- Single-Service Maintenance Forms, Records and Reports (MFRR) statement (*&ginfowp.mfrr-oneservice;*).

1. Components are:

- Title **<title>** (required). The element enables the title “MAINTENANCE FORMS, RECORDS, AND REPORTS” to be displayed for the **<mfrr>** statement (see Section 36.1.1.4).
- General Information Work Package **<ginfowp>** (required). The element provides general information, reference statements and standard statements that apply to the entire TM (see Section 18.1.1).

2. The DTD fragment for **<mfrr>** is graphically depicted.



**FIGURE 147. Maintenance forms, records, and report statement <mfrr> DTD hierarchy.**

3. The DTD fragment for **<mfrr>** is:

```

<!ELEMENT mfrr (title, (para | mfrr.para+)>
<!ATTLIST mfrr
 assocfig IDREF #IMPLIED
 frame (yes | no) "yes"
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Attributes for **<mfrr>** are:

- assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- comment** – Change information (optional) (see Section 36.3.12).



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- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- f. **id** – Unique identifier. (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 18.1.1.2 MFRR service specific paragraphs **<mfrr.para>**.

The element **<mfrr.para>** allows for service specific maintenance forms, records, and reports to be inserted. The required attribute **service** provides the correct data through the selected value of **service**. The selected value enables the correct boilerplate to be inserted if the user is using the boilerplate application (see Chapter 37 for further information on boilerplates).

1. Components for **<mfrr>** are:

- a. Parsable characters or type text. – **#PCDATA**
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).
- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic – **<graphic>** (see Section 31.2).
- p. Miscellaneous – **<misc>** (see 36.2.1).
- q. Control/Indicator – **<ctrlind>** (see Section 19.1.1.1.3).
- r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
- s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
- t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
- u. Graphic symbol – **<symbol>** (see Section 31.3.1).
- v. Torque value – **<torque>** (see Section 36.1.4.25).

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- w. Voltage value – **<voltage>** (see Section 36.1.4.26).
  - x. Null text – **<null>** (see Section 36.1.3.2).
  - y. Changed text marker – **<change>** (see Section 36.1.3.7).
  - z. Internet address (e-mail or homepage) – **<internet>** (see Section 36.1.4.1.7).
  - aa. Proponent or organization address – **<proponent>** (see Section 36.1.4.23).
  - ab. Telephone number – **<phone>** (see Section 36.1.4.1.6).
  - ac. Instruction data plate **<instructplt>** (see Section 19.1.4.1.9).
2. The DTD fragment for **<mfrfrr.para>** is graphically depicted.

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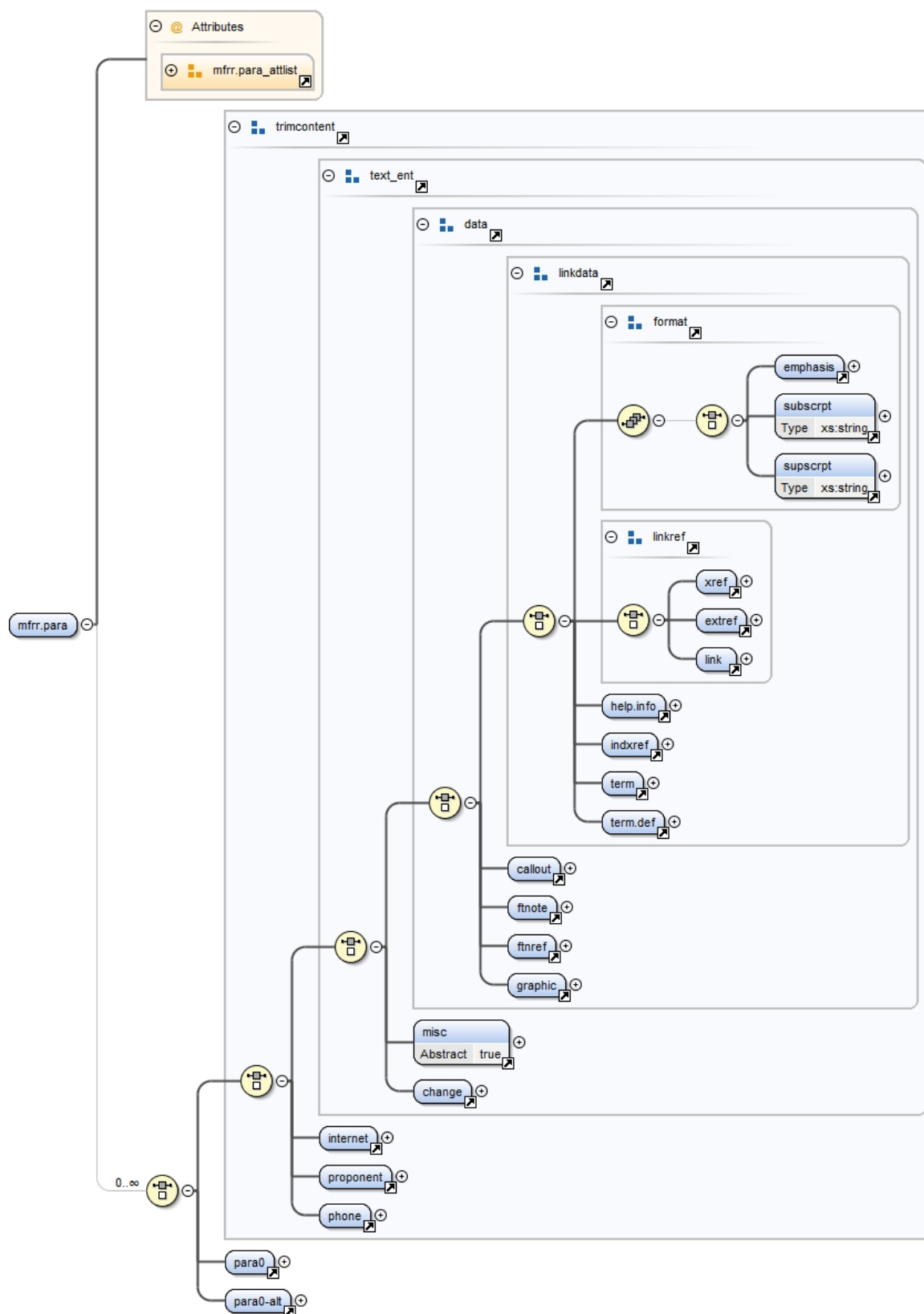


FIGURE 148. MFRR service specific &lt;mfr.par&gt; DTD hierarchy.

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3. The DTD fragment for **<mfrr.para>** is:

```

<!ELEMENT mfrr.para (%trimcontent; | para0 | para0-alt) *>
<!--ATTLIST mfrr.para
 service (army | af | navy | marines) #REQUIRED
 applicable IDREF #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED-->

```

4. Unique attributes for **<mfrr>**:

- a. **service** – Identifies the unique branch of service information.

5. Attributes for **<mfrr>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier. (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **service** – Identifies the unique branch of service information.
- k. **skilltrk** – Skill level (optional) (see Section 36.3.3).

18.1.1.3 Reporting Equipment Improvement Recommendations (EIR) **<eir>**.

The element **<eir>** provides a statement on how to report an equipment improvement recommendation. The selected value of the required attribute **service** provides the type of service branch for the TM. The selected value enables the correct boilerplate to be inserted if the user is using the boilerplate application (see Chapter 37 for further information on boilerplates).

## 1. Components are:

- a. Title **<title>** (required) (see Section 36.1.1.4).
- b. Illustration **<figure>** (see Section 31.1.1) and/or conditional illustration **<figure-alt>** (see Section 35.2.1) (optional – zero or more).

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- c. Table **<table>** (see Chapter 29) and/or conditional table **<table-alt>** (see Section 35.2.1) (optional – zero or more).
  - d. Select one of the following information types:
    - i. Narrative paragraphs with descriptive or narrative titled text
      - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
      - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
      - III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
    - ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).
2. The DTD fragment for **<eir>** is graphically depicted.

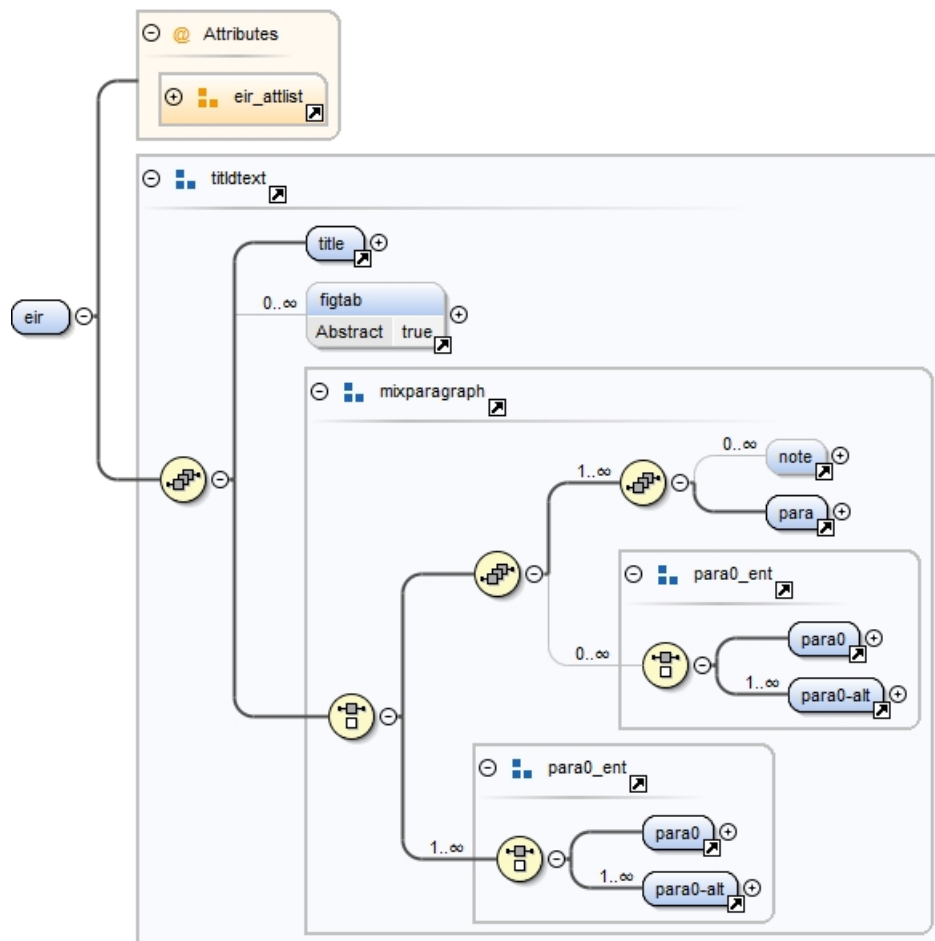


FIGURE 149. Reporting equipment improvement recommendations **<eir>** DTD hierarchy.

3. The DTD fragment for **<eir>** is:

```
<!ELEMENT eir (%titldtext;)>
<!ATTLIST eir
service (army | af | navy | marines) #REQUIRED
```

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assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Unique attributes for **<eir>** are:

- a. **service** – Identifies the unique branch of service information.

5. Common attributes for **<eir>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 18.1.1.4 Hand Receipt (HR) manuals statement **<handreceipt>**.

The element **<handreceipt>** identifies that a hand receipt manual has been prepared in support of the current TM. This is a boilerplate statement and can be referenced using the general entity *&ginfowp.handreceipt;*.

1. Components for **<handreceipt>** are:

- a. Title **<title>** (required). (see Section 36.1.1.4).
- b. Illustration **<figure>** (required) (see Section 31.1.1) and/or conditional illustration **<figure-alt>** (see 35.2.1).
- c. Table **<table>** (see Chapter 29) and/or conditional table **<table-alt>** (optional – zero or more) (see 35.2.1).
- d. Select one of the following information types:
  - i. Narrative paragraphs with descriptive or narrative titled text.
    - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
    - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).

- III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
- ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).
2. The DTD fragment for **<handreceipt>** is graphically depicted.

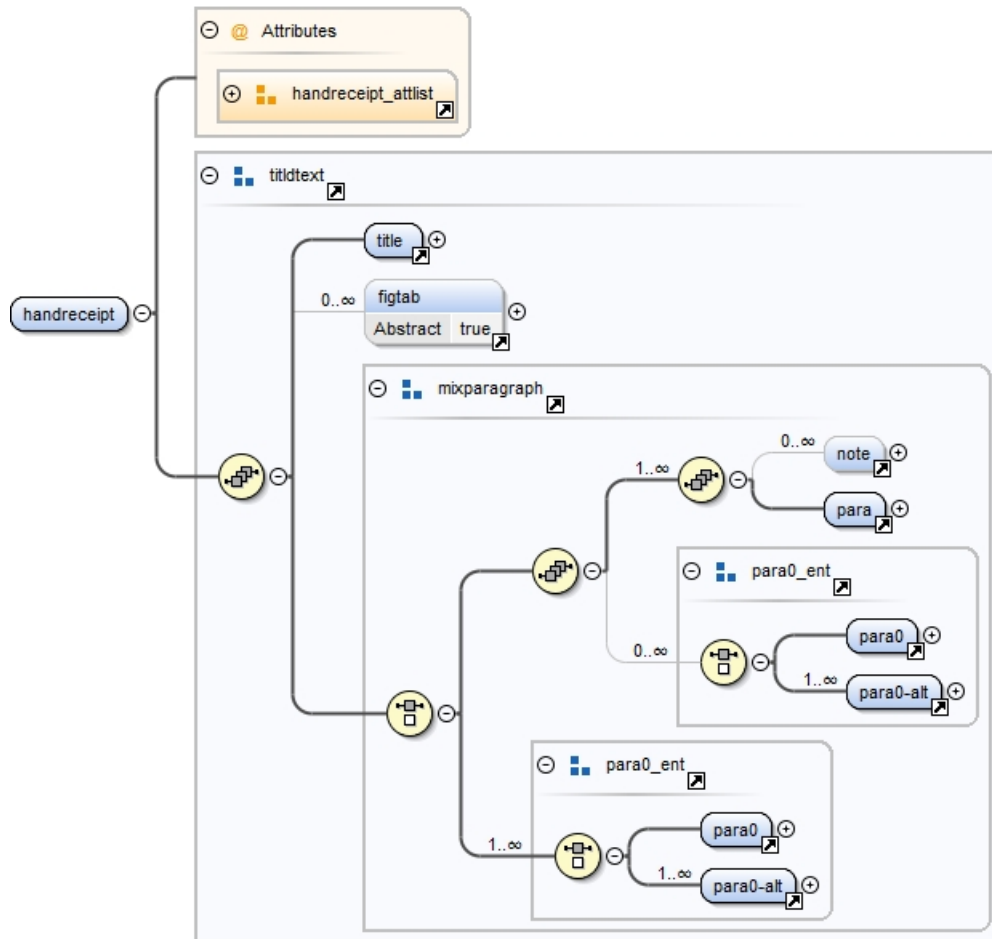


FIGURE 150. Hand Receipt DTD Hierarchy **<handreceipt>**.

3. The DTD fragment for **<handreceipt>** is:

```
<!ELEMENT handreceipt (%titldtext;)>
<!ATTLIST handreceipt
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
```

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<handreceipt>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 18.1.1.5 Corrosion prevention and control data **<cpdata>**.

The element **<cpdata>** provides a manner in which a corrosion problem is to be reported is specified. This is a boilerplate statement and can be referenced using the general entity *&ginfowp.cpdata*; (see Chapter 37 for further information on boilerplates).

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.6 Ozone depleting substances statement **<odsdata>**.

The element **<odsdata>** provides a listing of any prohibited ozone depleting substances that are used in the TM.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.7 Destruction of materiel statement **<destructmat>**.

The element **<destructmat>** provides a standard paragraph that references the appropriate TM(s) or work package(s) that provide instructions on destroying materiel to prevent enemy use.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.8 Preparation for storage or shipment **<pssref>**.

The element **<pssref>** provides references to the preparation for storage or shipment procedures, including packaging and administrative storage work packages that are included.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.9 Transportability **<transportability>**.

The element **<transportability>** provides references made to the transportability guidance work packages in the manual and/or to applicable U.S. Army authenticated publications containing this guidance. Reference should not



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be made to any Surface Deployment and Distribution Center/Transportation Engineering Agency (SDDC/TEA) (formerly Military Traffic Management Command Transportation Engineering Agency (MTMC/TEA publications.

#### 18.1.1.10 Warranty reference statement **<wrntyref>**.

The element **<wrntyref>** provides when the TM covers equipment that is under warranty and a Warranty Technical Bulletin (WTB) is published, it is referenced. Otherwise a paragraph about the warranty is included. This is a boilerplate statement and can be referenced using the general entity **&ginfowp.wrntyref**; (see Chapter 37 for further information on boilerplates).

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.11 Nomenclature cross-reference list **<nomenreflist>**.

The element **<nomenreflist>** provides any unofficial nomenclature approved by the contracting activity.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.12 List of abbreviation/acronyms **<loa>**.

The element **<loa>** provides a list of all abbreviations, acronyms, signs, or symbols used in the TM.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.13 Quality assurance information statement **<qainfo>**.

The element **<qainfo>** provides either a reference to QA TMs or the appropriate general QA information. This applies to DMWR/NMWR and aviation only.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.14 Quality of material statement **<qual.mat.info>**.

The element **<qual.mat.info>** provides statement defining the material quality requirements that are used. This is a boilerplate statement and can be referenced using the general entity **&ginfowp.qual.mat.info**; (see Chapter 37 for further information on boilerplates). (Used Field/Aviation and above only.).

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.15 Safety, care, and handling information statement **<sftyinfo>**.

The element **<sftyinfo>** provides general precautions and safety regulations for ammunitions TMs, equipment with radioactive parts or components, and electrical/electronic parts.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

#### 18.1.1.16 Nuclear hardness statement **<hcp>**

The element **<hcp>** covers equipment or any component has nuclear hardness survivability requirements which are to be identified. This is a boilerplate statement and can be referenced using the general entity **&ginfowp.hcp**; See Chapter 37 for further information on boilerplates.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

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**18.1.1.17 Calibration reference statement <calref>.**

The element **<calref>** identifies any equipment requiring calibration to be listed with a reference to the publication containing the applicable calibration procedure.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

**18.1.1.18 Engineering change proposals statement <ecp>.**

The element **<ecp>** provides instructions on how to submit an 'engineering change proposal.' This is a boilerplate statement and can be referenced using the general entity **&ginfowp.ecp;** (see Chapter 37 for further information on boilerplates). The attribute **MWO** containing the value **yes** or **no** is provided to identify if the Modification Work Order is incorporated into the work required for the DMWR/NMWR. (Applies to NMWR/NMWR only).

1. See the components of **<ecp>**.
2. The DTD fragment for **<ecp>** is:

```
<!ELEMENT ecp (%titldtext;)>
<!ATTLIST ecp
 mwo (yes | no) #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

3. Unique attributes for **<ecp>**:
  - a. **mwo** – Identifies if Modification Work Order (MWO) are incorporated into the work required for the DMWR/NMWR.
4. Common attributes for **<ecp>**:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
  - c. **comment** – Reason for change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** – Unique identifier (optional) (see Section 36.3.7).
  - f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
  - h. **skilltrk** – Training skill level (optional) (see Section 36.3.3).
  - i. **security** – Security classification (optional) (see Section 36.3.14).

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**18.1.1.19 Modification work order statement <modification>.**

The element **<modification>** identifies modifications on all MWOs and ECPS which have been incorporated into the work required by the DMWR/NMWR. Alternatively, a statement is made stating that the modifications must be applied during the overhaul of the item. This applies to DMWR/NMWR only.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

**18.1.1.20 Deviations and exceptions statement <deviation>.**

The element **<deviation>** provides the method for requesting any deviations and/or exceptions to a DMWR/NMWR that is entered. This is a boilerplate statement and can be referenced using the general entity **&ginfowp.deviation;** (see Chapter 37 for further information on boilerplates). (Applies to DMWR/NMWR only.)

**18.1.1.21 Mobilization requirements statement <mobreq>.**

The element **<mobreq>** provides a standard statement regarding DMWR/NMWR mobilization requirements. This is a boilerplate statement and can be referenced using the general entity **&ginfowp.mobreq;** (see Chapter 37 for further information on boilerplates). (Applies to DMWR/NMWR only.)

1. See the components, DTD fragment and attributes of **<handreceipt>**.

**18.1.1.22 Critical Safety Items (CSI) Flight Safety Critical Aircraft Parts statement <csireq>.**

The element **<csireq>** provides a standard statement that is included when defining critical safety item parts. This is a boilerplate statement and can be referenced using the general entity **&ginfowp.fscapreq;** (see Chapter 37 for further information on boilerplates). (Used for Aircraft only.)

1. See the components, DTD fragment and attributes of **<handreceipt>**.

**18.1.1.23 Cost considerations statement <cost>.**

The element **<cost>** provides a standard statement that is included when defining cost considerations. This is a boilerplate statement and can be referenced using the general entity **&ginfowp.cost;** (see Chapter 37 for further information on boilerplates). (Applies to DMWR/NMWR only.)

1. See the components, DTD fragment and attributes of **<handreceipt>**.

**18.1.1.24 Supporting information for repair parts <supdata>.**

The element **<supdata>** provides a reference to the common tools and equipment; special tools, Test Measurement & Diagnostic Equipment (TMDE), support equipment; and their repair parts. This is a boilerplate statement and can be referenced using the general entity **&ginfowp.supdata-tools;** (see Chapter 37 for further information on boilerplates).

1. See the components, DTD fragment and attributes of **<handreceipt>**.

**18.1.1.25 Copyright statement <copyrt>.**

The element **<copyrt>** is included when there is copyrighted material in the TM and a credit line is required in the general information work package. TMs should not contain copyrighted material except as specified in the Federal Acquisition Regulations and Defense Federal Acquisition Regulation Supplement. If more than one copyrighted

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document is used, a statement is required for each document. The copy right credit line may be omitted if the copyright owner has allowed, in writing, the use of the copyrighted material without the statement.

1. See the components, DTD fragment and attributes of **<handreceipt>**.

### 18.1.1.26 Boilerplates.

MIL-STD-40051-1/-2 contains standard statements that may occur throughout a TM and should appear in the same wording each time it is used. The MIL-STD-2361 DTD provides boilerplate text that are replacement text for these standard statements. Boilerplates are defined in the general entities contained in the work package or document source. By using boilerplates, authors can reduce text entry time and errors. Certain entities for **<ginfowp>** are either page-based only, frame-based only or could be used in either one. For a list of general entities used in the general information work package, refer to TABLE VII.

**TABLE VII. General information list.**

Description	Boilerplate Entity	Selectable Entity to Set	Selectable Entity to Edit
Army - Maintenance Forms, Records and Reports (MFRR) statement	<i>&amp;ginfowp.mfrr-army;</i>		Not Applicable
Frame-based		<!ENTITY % frame-base "INCLUDE"> <!ENTITY % page-base "IGNORE">	
Page-based		<!ENTITY % frame-base "IGNORE"> <!ENTITY % page-base "INCLUDE">	
Ammunition TM		<!ENTITY % ammo-tm "IGNORE">	
Non- Ammunition TM		<!ENTITY % ammo-tm "IGNORE">	
Multiple Service TM		<!ENTITY % multi-tm "INCLUDE"> <!ENTITY % single-tm "IGNORE">	
Single Service TM		<!ENTITY % multi-tm "IGNORE"> <!ENTITY % single-tm "INCLUDE">	
USMC - Maintenance Forms, Records and Reports (MFRR) statement	<i>&amp;ginfowp.mfrr-usmc;</i>	<!ENTITY % usmc-tm "INCLUDE">	
Multi-Service Maintenance Forms, Records and Reports (MFRR) statement	<i>&amp;ginfowp.mfrr-multiservice;</i>		
ARMY		<!ENTITY % army-tm "INCLUDE">	

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TABLE VII. General information list. (continued)

Description	Boilerplate Entity	Selectable Entity to Set	Selectable Entity to Edit
Non ARMY		<!ENTITY % army-tm "IGNORE">	
U.S. Navy		<!ENTITY % usn-tm "INCLUDE">	
Non US Navy		<!ENTITY % usn-tm "IGNORE"	
U.S. Airforce		<!ENTITY % usaf-tm "IGNORE">	
Non U.S. Air Force		<!ENTITY % usaf-tm "IGNORE">	
U. S. Marines		<!ENTITY % usmc-tm "INCLUDE">	
Non U.S. Marines		<!ENTITY % usmc-tm "IGNORE">	
Single-Service Maintenance Forms, Records and Reports (MFRR) statement	<i>&amp;ginfowp.mfrr-oneservice;</i>	Select the settings for either Army or Marines. See above examples.	Not Applicable
Reporting Equipment Improvement Recommendations (EIR) statement	<i>&amp;ginfowp.eir;</i>	Select the settings for either Marines or non Marines. See above example.	Not Applicable
Hand Receipt (HR) manual statement	<i>&amp;ginfowp.handreceipt;</i>	Select the settings for either Page-based or Frame-based. See above example.	Not Applicable
Corrosion Prevention and Control (CPC) statement	<i>&amp;ginfowp.cpcdata;</i>	Not Applicable	Not Applicable
Warranty information reference statement	<i>&amp;ginfowp.arntyref;</i>	Select the settings for either Page-based or Frame-based. See above example.	<!ENTITY ginfowp.wrntyref.time 'INSERT THE WARRANTY PERIOD MILEAGE OR TIME FRAME' >
		Not Applicable	<!ENTITY short.end.item.name "INSERT THE SHORT END ITEM NAME">
Quality of material information statement	<i>&amp;ginfowp.qual.mat.info;</i>	Not Applicable	<!ENTITY gin-fowp.qual.mat.info-tm '<extref docno="INSERT THE TM OR IETM NUMBER"/>' >
Nuclear Hardness statement	<i>&amp;ginfowp.hcp;</i>	Not Applicable	Not Applicable

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TABLE VII. General information list. (continued)

Description	Boilerplate Entity	Selectable Entity to Set	Selectable Entity to Edit
Engineering Change Proposals (ECP) statement	<i>&amp;ginfowp.ecp;</i>	Select the settings for either Page-based or Frame-based. See above example.	<!ENTITY ginfowp.ecp-address '<proponent><name>RESPONSIBLE COMMAND OR ACTIVITY PROPONENT NAME</name><address><servnomen>OPTIONAL SERVICE NOMENCLATURE</servnomen><street>0 OR MORE STREET INFORMATION</street><city>REQUIRED CITY</city><state>REQUIRED STATE</state><zip>OPTIONAL ZIP CODE</zip><country>OPTIONAL COUNTRY</country></address></proponent>
Modification list statement	<i>&amp;ginfowp.modification;</i>	Select the settings for either DMWR or NMWR. See below for example.	
Non Depot		<!ENTITY % dmwr "IGNORE"> <!ENTITY % nmwr "IGNORE">	
Depot		<!ENTITY % dmwr "INCLUDE"> <!ENTITY % nmwr "INCLUDE">	
NMWR		<!ENTITY % dmwr "IGNORE"> <!ENTITY % nmwr "INCLUDE">	
Deviations and Exceptions statement	<i>&amp;ginfowp.deviation;</i>	Select the settings for either DMWR or NMWR. See above for example.	
Mobilization Requirements statement	<i>&amp;ginfowp.mobreq;</i>	Select the settings for either DMWR or NMWR. See above for example.	<!ENTITY ginfowp.mobreq-wp '<xref wpid="INSERT_THE_APPROPRIATE_WORK_PACKAGE_ID"/>'> <!ENTITY short.end.item.name "INSERT THE SHORT END ITEM NAME">

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TABLE VII. General information list. (continued)

Description	Boilerplate Entity	Selectable Entity to Set	Selectable Entity to Edit
Flight Safety Critical Aircraft Parts Statement	<i>&amp;ginfowp.csi.fscap;</i>	If frame-based, select frame-based turn on. See example above.	
Cost Considerations Statement	<i>&amp;ginfowp.cost;</i>	Select the settings for either DMWR or NMWR. See above for example.	Not Applicable
Common Tools And Equipment Statement	<i>&amp;ginfowp.supdata-tools;</i>		
Parts Information Work Package Reference	<i>&amp;ginfowp.supdata-partlist.wp;</i>	Select the settings for either Page-based or Frame-based. See above example.	<!ENTITY ginfowp.supdata-partlist.wpref '<sref wpid="INSTERT_THE_PART_LIST_WORK_PACKAGE_ID"/>'>
Parts Information TM (Page ONLY)	<i>&amp;ginfowp.supdata-partlist.tm;</i>		<!ENTITY ginfowp.supdata-partlist.tmref '<extref docno="REPLACE WITH RPSTL TM NUMBER">'>

## 18.1.1.27 XML document instance fragment and output for &lt;ginfowp&gt;.

The XML instance and its stylesheet output for a General Information Work Package is provided below:

1. Example of an XML document instance fragment for selectable entity to generate the correct text in the sample output.

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % ammo-tm "IGNORE">
<!ENTITY % usmc-tm "IGNORE">
<!ENTITY % multi-tm "IGNORE">
<!ENTITY % single-tm "INCLUDE">
<!ENTITY % army-tm "INCLUDE">
<!ENTITY % usn-tm "IGNORE">
<!ENTITY % usaf-tm "IGNORE">
<!ENTITY % usmc-tm "IGNORE">
<!ENTITY % non-usmc-tm "IGNORE">
<!ENTITY % class-tm "IGNORE">
<!ENTITY % unclass-tm "INCLUDE">
```

2. Example of an XML document instance fragment using boilerplate entities for Maintenance Forms, Records, and Reports <mfr>, Reporting Equipment Improvement Recommendations (EIR) <eir>, and Hand Receipt (HR) Manuals <handreceipt> in the XML instance for <ginfowp>.

```
<ginfowp wpno="gXXXXX-11-XXXX-XXX" tocentry="2" frame="no" "army="yes" airforce="no"
navy="no" marines="no" wpseq="0001" deletewp="no">
<wpidinfo>
<maintlvl level="operator"/>
<title>GENERAL INFORMATION WORK PACKAGE
</title>
```

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```

</wpidinfo>
<scope inschlvl="0" frame="no">
<title>SCOPE
</title>
<para>This manual tells how to operate and maintain the hulls of the M2A3 and
M3A3. <extref docno="TM 9-2350-294-10-2"> tells how to operate and maintain the
turret.
</para>
</scope>
<mfr frame="no">
<mfr.para service="army"> &ginfowp.mfr.army;
</mfr.para>
</mfr>
<eir service="army">&ginfowp.eir;
</eir>
<handreceipt>&ginfowp.handreceipt;
</handreceipt>
<destructmat>
<title>DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE
</title>
<para>The following manuals tell you how and when to destroy Army materiel
to prevent enemy use:
<randlist bullet="no">
<item>
<extref docno="TM 750-244-2"/>
</item>
<item>
<extref docno="TM 750-244-5-1"/>
</item>
<item>
<extref docno="TM 750-244-6"/>
</item>
</randlist>
</para>
</destructmat>
<nomenreflist>
<title>Nomenclature cross-reference list
</title>
<para>This listing includes nomenclature cross references used in this manual:
<deflist>
<term.def>
<term>Brush guard
</term>
<def>
<para>Duck core rubber sheet
</para>
</def>
</term.def>
<term.def>
<term>CVC helmet
</term>
<def>
<para>DH 132 helmet
</para>
</def>

```



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```

</def>
</term.def>
<term.def>
<term>Dipstick
</term>
<def>
<para>Liquid measure gage rod
</para>
</def>
</term.def>
<term.def>
<term>Firing port weapon
</term>
<def>
<para>M231 5.56mm sub machine gun
</para>
</def>
</term.def>
</deflist>
</para>
</nomenreflist>
<loa>
<title>List of abbreviations/acronyms
</title>
<para>Many abbreviations are used in this manual. They are listed below. Learn
what each one means. It will make your job easier.
</deflist>
<term.def>
<term>A
</term>
<def>
<para>After
</para>
</def>
</term.def>
<term.def>
<term>Ammo
</term>
<def>
<para>Ammunition
</para>
</def>
</term.def>
<term.def>
<term>AP
</term>
<def>
<para>Armor Piercing
</para>
</def>
</term.def>
</deflist>
</para>
</loa>

```

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</ginfowp>

3. Example of an XML document instance fragment for a General Information Work Package providing the text for the Maintenance Forms, Records, and Reports Statement <mfrr>, Reporting Equipment Improvement Recommendations (EIR) Statement <eir>, and Hand Receipt (HR) Manuals Statement <handreceipt> in the XML instance for <ginfowp>.

```
<ginfowp="gXXX3-11-XXXX-XXX" tocentry="2" frame="no" "army="no" airforce="no" navy="no"
"marines="no" wpseq="0001" deletewp="no">
```

```
<wpidinfo>
```

```
<maintlvl level="operator"/>
```

```
<title>GENERAL INFORMATION WORK PACKAGE
```

```
</title>
```

```
</wpidinfo>
```

```
<scope inschlvl="TM 750-244-6" frame="no">
```

```
<title>SCOPE
```

```
</title>
```

```
<para>This manual tells how to operate and maintain the hulls of the M2A3 and M3A3
<extref docno="TM 9-2350-294-10-2"> tells how to operate and maintain the
turret.
```

```
</para>
```

```
</scope>
```

```
<mfrr frame="no">
```

```
<mfrr. para service="army">Department of the Army forms and procedures used for
equipment maintenance will be those prescribed by (as applicable)
```

```
<extref docno="DA PAM 750-8"/>, Functional Users Manual for the Army Maintenance
Management System (TAMMS); <extref docno="DA PAM 738-751"/>, Functional Users
Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A); or
<extref docno="AR 700-138"/>, Army Logistics Readiness and Sustainability."
```

```
</mfrr.para>
```

```
</mfrr>
```

```
<eir service="army">
```

```
<title>REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)
```

```
</title>
```

```
<para>If your (M2A3 and M3A3) needs improvement, let us know. Send us an EIR. You,
the user, are the only one who can tell us what you don't like about your
equipment. Let us know why you don't like the design or performance. If you have
Internet access, the easiest and fastest way to report problems or suggestions
is to go to
```

```
<internet show.address="yes">
```

```
<homepage protocol="https" uri="aeprs.ria.army.mil/aeprspublic.cfm"/>
```

```
</internet> (scroll down and choose the "Submit Quality Deficiency Report" bar).
The Internet form lets you choose to submit an Equipment Improvement
Recommendation (EIR), a Product Quality Deficiency Report (PQDR) or a Warranty
Claim Action (WCA). You may also submit your information using a <extref docno="SF
368" posttext="(Product Quality Deficiency Report)"/>. You can send your SF 368 via e-mail,
regular mail, or facsimile using the addresses/facsimile numbers specified in
<extref docno="DA PAM 750-8" posttext="(Functional Users Manual for the Army Maintenance
Management System (TAMMS)"/> We will send you a reply.
```

```
</para>
```

```
</eir>
```

```
<handreceipt>
```

```
<title> HAND RECEIPT (HR) MANUALS
```

```
</title>
```

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**<para>** This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). TM X-XXXX-XXX-10-HR consists of preprinted hand receipts that list end item related equipment (COEI, BII, and AAL) that must be accounted for. This IETM contains As an aid to property accountability, additional HR manuals may be requisitioned through normal publication channels.

**</para>**

**</handreceipt>**

**<destructmat>**

**<title>**DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

**</title>**

**<para>**The following manuals tell you how and when to destroy Army materiel to prevent enemy use:

**<randlist bullet="no">**

**<item>**

**<extref docno="TM 750-244-2"/>**

**</item>**

**<item>**

**<extref docno="TM 750-244-5-1"/>**

**</item>**

**<item>**

**<extref docno="TM 750-244-6"/>**

**</item>**

**</randlist>**

**</para>**

**</destructmat>**

**<nomenreflist>**

**<title>**Nomenclature cross-reference list

**</title>**

**<para>**This listing includes nomenclature cross references used in this manual:

**<deflist>**

**<term.def>**

**<term>**Brush guard

**</term>**

**<def>**

**<para>**Duck core rubber sheet

**</para>**

**</def>**

**</term.def>**

**<term.def>**

**<term>**CVC helmet

**</term>**

**<def>**

**<para>**DH 132 helmet

**</para>**

**</def>**

**</term.def>**

**<term.def>**

**<term>**Dipstick

**</term>**

**<def>**

**<para>**Liquid measure gage rod

**</para>**

**</def>**

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</term.def>  
 <term.def>  
 <term>Firing port weapon  
 </term>  
 <def>  
 <para>M231 5.56 mm submachine gun  
 </para>  
 </def>  
 </term.def>  
 </deflist>  
 </para>  
 </nomenreflist>  
 <loa>  
 <title>List of abbreviations/acronyms  
 </title>  
 <para>Many abbreviations are used in this manual. They are listed below. Learn what each one means. It will make your job easier.  
 </deflist>  
 <term.def>  
 <term>A  
 </term>  
 <def>  
 <para>After  
 </para>  
 </def>  
 </term.def>  
 <term.def>  
 <term>Ammo  
 </term>  
 <def>  
 <para>Ammunition  
 </para>  
 </def>  
 </term.def>  
 <term.def>  
 <term>AP  
 </term>  
 <def>  
 <para>Armor Piercing  
 </para>  
 </def>  
 </term.def>  
 </deflist>  
 </para>  
 </loa>  
 </ginfowp>

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## 4. Example of a stylesheet output for &lt;ginfowp&gt;:

0001

---

**OPERATOR**  
**GENERAL INFORMATION WORK PACKAGE**

---

**SCOPE**

This manual tells how to operate and maintain the hulls of the M2A3 and M3A3 TM 9-2350-294-10-2

**MAINTENANCE FORMS, RECORDS, AND REPORTS**

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) DA PAM 750-8, Functional Users Manual for the Army Maintenance Management System (TAMMS); DA PAM 738-751, Functional Users Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A); or AR 700-138, Army Logistics Readiness and Sustainability."

**REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR) and PRODUCT QUALITY DEFICIENCY REPORTS (PQDR).**

If your (M2A3 and M3A3) needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. If you have Internet access, the easiest and fastest way to report problems or suggestions is to go to <https://aeps.ria.army.mil/aepspublic.cfm> (scroll down and choose the "Submit Quality Deficiency Report" bar). The Internet form lets you choose to submit an Equipment Improvement Recommendation (EIR), a Product Quality Deficiency Report (PQDR) or a Warranty Claim Action (WCA). You may also submit your information using a SF 368(Product Quality Deficiency Report). You can send your SF 368 via e-mail, regular mail, or facsimile using the addresses/facsimile numbers specified in DA PAM 750-8(Functional Users Manual for the Army Maintenance Management System (TAMMS) We will send you a reply.

**HAND RECEIPT (HR) MANUALS**

This manual has a companion document with a TM number followed by "-HR" (which stands for Hand Receipt). TM X-XXXX-XXX-10-HR consists of preprinted hand receipts that list end item related equipment (COEI, BII, and AAL) that must be accounted for. This IETM contains As an aid to property accountability, additional HR manuals may be requisitioned through normal publication channels.

**DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE**

The following manuals tell you how and when to destroy Army materiel to prevent enemy use:

TM 750-244-2  
TM 750-244-5-1  
TM 750-244-6

**NOMENCLATURE CROSS-REFERENCE LIST**

This listing includes nomenclature cross references used in this manual:

Brush guard	Duck core rubber sheet
CVC helmet	DH 132 helmet
Dipstick	Liquid measure gage rod
Firing port weapon	M231 5.56 mm submachine gun

**LIST OF ABBREVIATIONS/ACRONYMS**

Many abbreviations are used in this manual. They are listed below. Learn what each one means. It will make your job easier.

A	After
Ammo	Ammunition
AP	Armor Piercing

**END OF WORK PACKAGE**

0001-1/blank

FIGURE 151. Example of a stylesheet output for a general information work package &lt;ginfowp&gt;.

### 18.1.2 Battle damage general information <bdar-geninfowp>.

This element, battle damage assessment and repair work package, work contain information that is general in nature, but unique to a BDAR manual. It should inform the user/reader of the purpose of the BDAR information and its relationship to user personnel, other publications, and the end item/system it supports. It should also contain the BDAR fixes statement.

1. The components of <bdar-geninfowp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data and usually is not used or seen by the end use (see Section 16.4.1).
  - b. Work package identification information <wpidinfo>. Work package identification information is required for this work package (see Section 16.5).
  - c. Standards and practices <bdar-std-practices>. This paragraph should contain information pertaining to standards and practices peculiar to combat conditions.
  - d. Tasks and responsibilities <bdar-task-resp>. This paragraph should consist of tasks that may be required as a result of battlefield damage.
  - e. Combat threats <bdar-combat-threat> (Aviation only). This paragraph should consist of the description of damage from threats confronting aircraft while on combat missions from armor-piercing, armor piercing incendiary projectiles, and high-explosive incendiary projectiles.
2. The DTD fragment for <bdar-geninfowp> is graphically depicted.

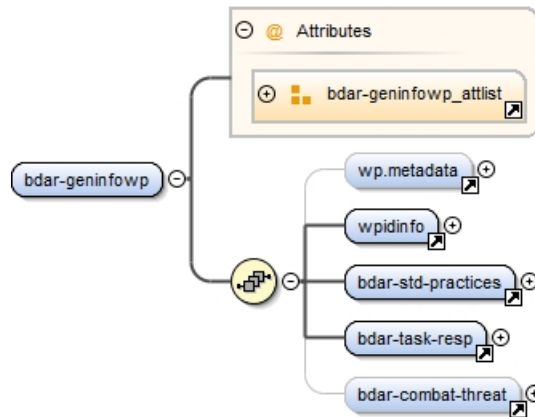


FIGURE 152. Battle damage general information <bdar-geninfowp> DTD fragment.

3. The DTD fragment for <bdar-geninfowp> is:

```
<!ELEMENT bdar-geninfowp (wp.metadata?, wpidinfo, bdar-std-practices, bdar-task-resp, bdar-combat-threat?)>
```

```
<!ATTLIST bdar-geninfowp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
chnгно	(0-99)	"0"
changeref	IDREFS	#IMPLIED

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comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<bdar-geninfowp>** are:

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).

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- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 18.1.3 Equipment description and data work package <descwp>.

The element equipment description and data work package contains the descriptive data requirements. There may be more than one equipment description and data work package in the General Information Chapter <gim>.

1. The components of <descwp> are:
  - a. Metadata <wp.metadata>** (optional). The element provides information about the work package data and usually is not used or seen by the end use (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo>** (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Equipment Characteristics, Capabilities, and Features <eqpinfo>** (required – one or more). The element provides the descriptive data that contains the overall equipment description (see Section 18.1.3.1).
  - d. Location And Description Of Major Components <locdesc>** (optional – zero or more). The element provides the descriptive data on the location and description of major components of the equipment (see Section 18.1.3.2).
  - e. Differences Between Models <eqpdiff>** (optional) (see Section 18.1.3.3).
  - f. Equipment Data <eqpdata>** (required). The element provides descriptive data of the equipment (see Section 18.1.3.4).



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2. The DTD fragment for **<descwp>** is graphically depicted.

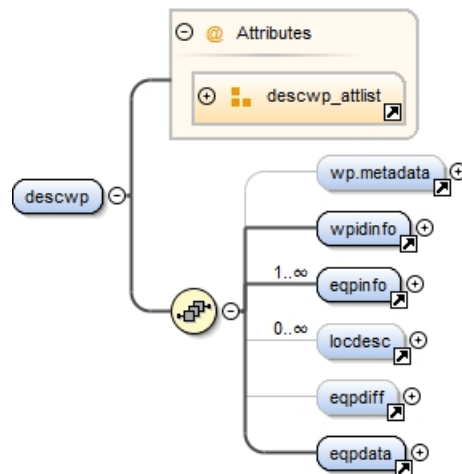


FIGURE 153. Equipment description and data work package **<descwp>** DTD hierarchy.

3. The DTD fragment for **<descwp>** is:

```
<!ELEMENT descwp (wp.metadata?, wpidinfo, eqpinfo+, locdesc*, eqp-
diff?, eqpdata>
```

```
<!ATTLIST descwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
chngno	(0-99)	"0"
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

## 4. Attributes for &lt;descwp&gt; are:

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

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- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 18.1.3.1 Equipment characteristics, capabilities and features <eqpinfo>.

The element defines the overall equipment description which will be helpful in the operation and maintenance of the equipment.

1. The components are:
  - a. Title <**title**> (required). The element provides the title for the equipment description (see Section 36.1.1.4).
  - b. Equipment Description <**eqpdesc**> (required – one or more) (see Section 18.1.3.1.1).
2. The DTD fragment for <**eqpinfo**> is graphically depicted:

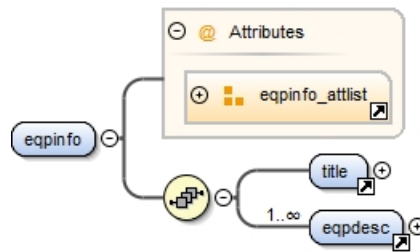


FIGURE 154. Equipment characteristics, capabilities, and features <eqpinfo> DTD hierarchy.

3. The DTD fragment for <**eqpinfo**> is:

```
<!ELEMENT eqpinfo (title, eqpdesc+)>
<!ATTLIST eqpinfo
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Attributes for <**eqpinfo**> are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).

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- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

**18.1.3.1.1 Equipment description <eqpdesc>.**

The element **<eqpdesc>** contains the general capabilities and special unique features, as well as other similar information, that will be helpful in the operation and maintenance of equipment.

1. The components are:
  - a. Title **<title>** (optional) (see Section 36.1.1.4).
  - b. Illustration **<figure>** (optional – zero or more) (see Section 24.4.2.1.1)
  - c. Select one of the following information types:
    - i. Narrative paragraphs:
      - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
      - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
    - ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – one or more).
  - d. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).

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2. The DTD fragment for **<eqpdesc>** is graphically depicted:

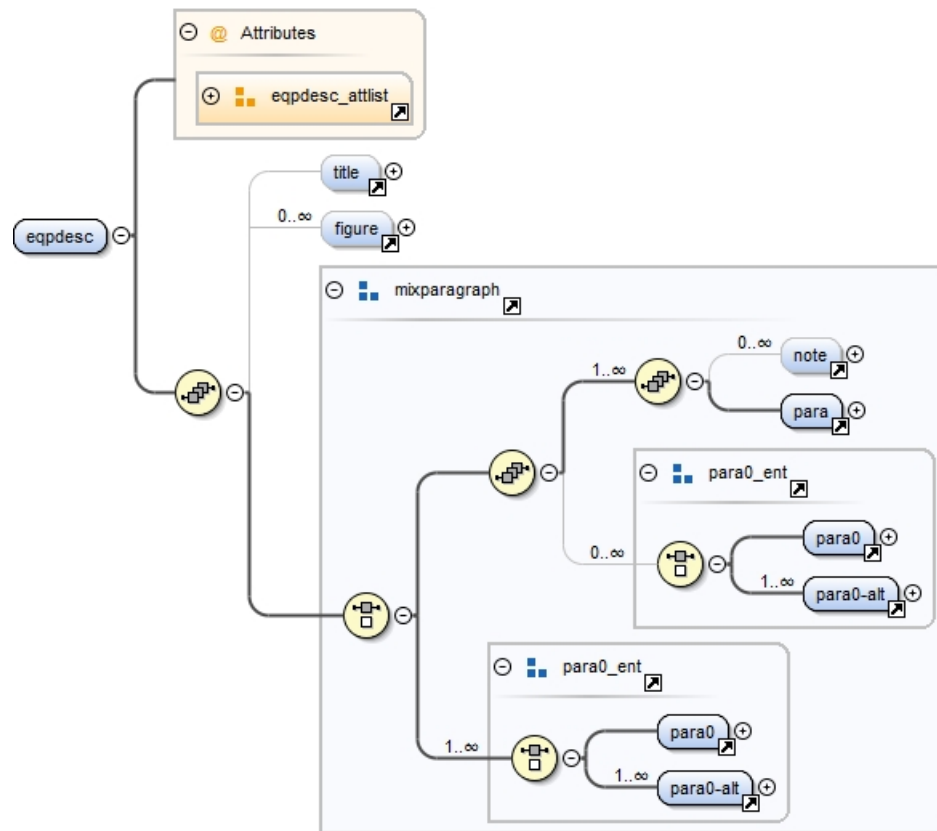


FIGURE 155. Equipment description **<eqpdesc>** DTD hierarchy.

3. The DTD fragment for **<eqpdesc>** is:

```
<!ELEMENT eqpdesc (title?, figure*, %mixparagraph;)>
<!ATTLIST eqpdesc
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Attributes for **<eqpdesc>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).

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- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 18.1.3.2 Location and description of major components <locdesc>.

Descriptive data on the location and description of major components of the equipment.

1. The components are:
  - a. Title <**title**> (required). IAW MIL-STD-40051-1/-2, enables the title, “Location and Description of Major Components,” to be displayed for the major components (see Section 36.1.1.4).
  - b. Select one of the following information types:
    - i. Narrative paragraphs:
      - I. Note <**note**> (optional – zero or more) (see Section 28.1.3).
      - II. Narrative paragraph <**para**> (required – one or more) (see Section 36.1.1.6).
    - ii. Descriptive or narrative titled text <**para0**> (see Section 36.1.1.9) and/or conditional narrative titled text first level <**para0-alt**> (see Section 35.2.1) (optional – one or more).
  - c. Descriptive or narrative titled text <**para0**> (see Section 36.1.1.9) and/or conditional narrative titled text first level <**para0-alt**> (see Section 35.2.1) (required – one or more).
  - d. Component item <**comp-item**> (required – one or more) (see Section 18.1.3.2.1).

2. The DTD fragment for **<locdesc>** is graphically depicted.

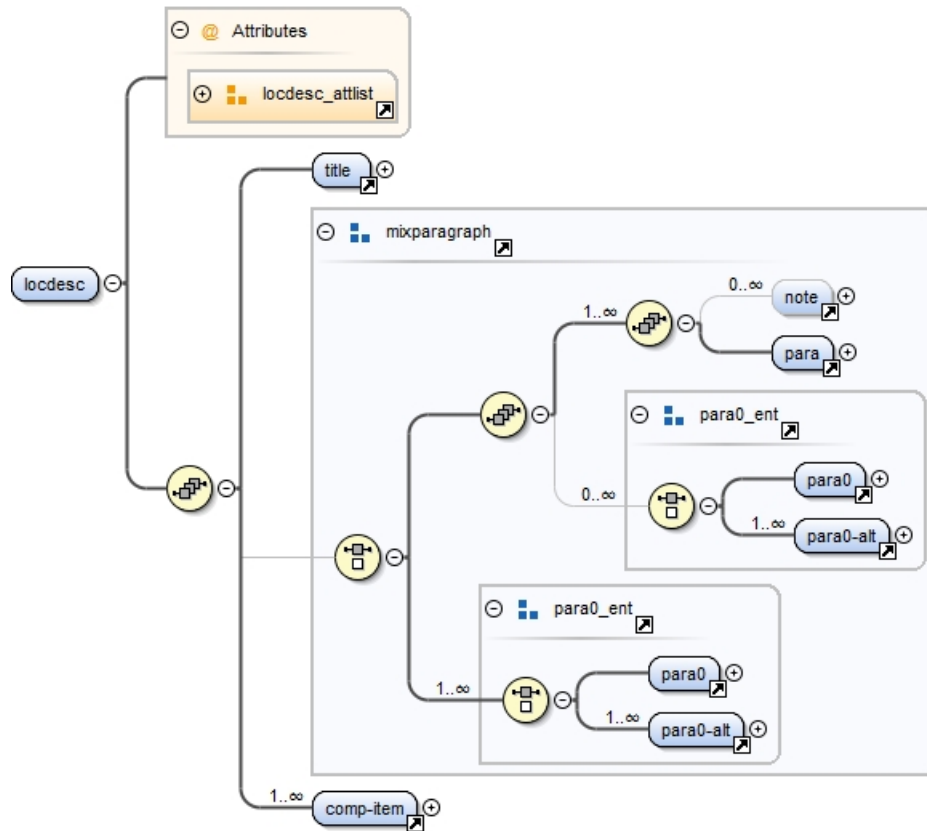


FIGURE 156. Location and description of major components **<locdesc>** DTD hierarchy.

3. The DTD fragment for **<locdesc>** is:

```
<!ELEMENT locdesc (title, (%mixparagraph;)?, comp-item+)>
<!ATTLIST locdesc
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Attributes for **<locdesc>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).

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- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 18.1.3.2.1 Component item <comp-item>.

Component item identifies a major component of the equipment, which is covered in the location and description of equipment components.

1. The components are:

- a. Title <**title**> (optional) (see Section 36.1.1.4).
- b. Illustration <**figure**> (optional – zero or more) (see Section 31.1.1)
- c. Select one of the following information types:
  - i. Narrative paragraphs:
    - I. Note <**note**> (optional – zero or more) (see Section 28.1.3).
    - II. Narrative paragraph <**para**> (required – one or more) (see Section 36.1.1.6).
  - ii. Descriptive or narrative titled text <**para0**> (see Section 36.1.1.9) and/or conditional narrative titled text first level <**para0-alt**> (see Section 35.2.1) (optional – one or more).
- d. Descriptive or narrative titled text <**para0**> (see Section 36.1.1.9) and/or conditional narrative titled text first level <**para0-alt**> (see Section 35.2.1) (required – one or more).

2. The DTD fragment for <comp-item> is:

```
<!ELEMENT comp-item (title?, figure*, %mixparagraph;)>
<!ATTLIST comp-item
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

3. Attributes for <comp-item> are:

- a. **applicable** - Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).



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- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier. (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 18.1.3.3 Differences between models **<eqpdiff>**.

Descriptive data containing the significant differences between models or components. A title “Differences Between Models” is required. IAW MIL-STD-40051-1/-2, the descriptive data is provided by paragraphs of text, that may be grouped into systems, subsystems, or other functional or logical method of presentation.

1. The components are:
  - a. Title **<title>** (optional) (see Section 36.1.1.4).
  - b. Illustration **<figtab>** and/or conditional illustration **<figure-alt>** (see Section 35.2.1).
  - c. Select one of the following information types:
    - i. Narrative paragraphs with descriptive or narrative titled text.
      - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
      - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
    - ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – one or more).
  - d. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).

2. The DTD fragment for **<eqpdiff>** is graphically depicted.

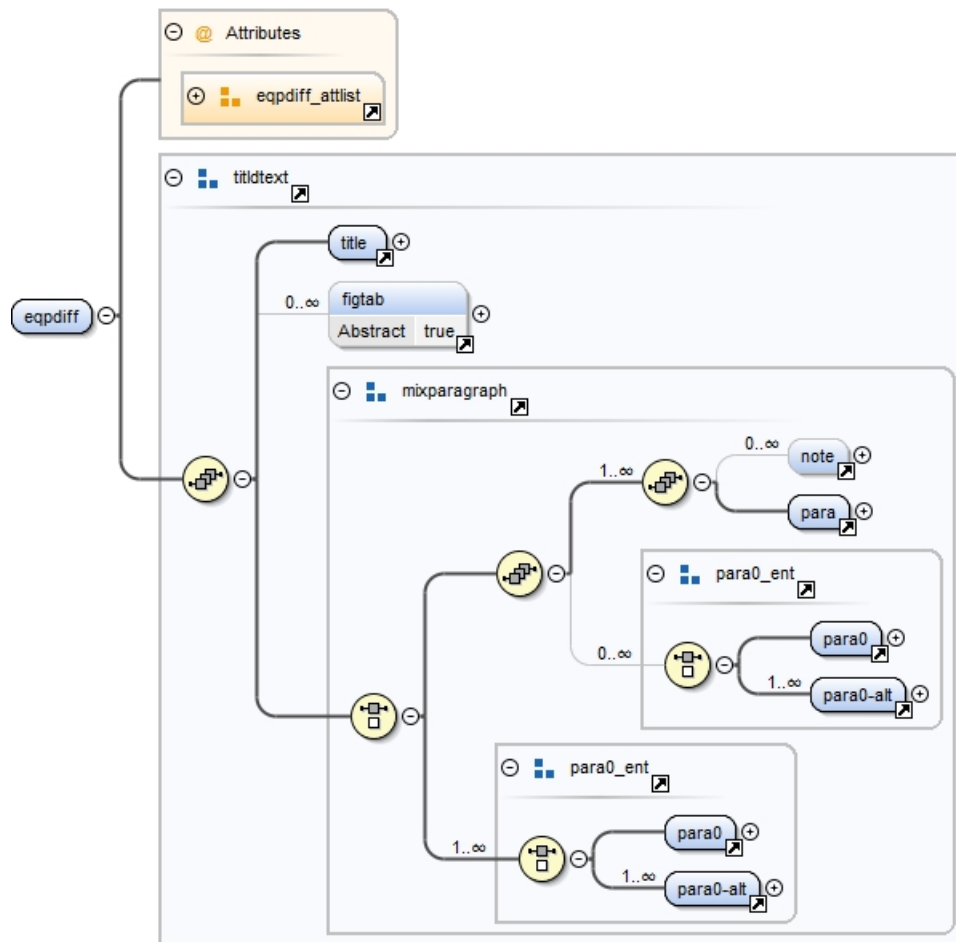


FIGURE 157. Differences between models **<eqpdiff>** DTD hierarchy.

3. The DTD fragment for **<eqpdiff>** is:

```
<!ELEMENT eqpdiff (%titldtext;)>
<!ATTLIST eqpdiff
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>
```

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4. Attributes for **<eqpdiff>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

**18.1.3.4 Equipment data <eqpdata>.**

Descriptive data, which contains a listing of the major characteristics, dimensions, capabilities and limitations, and other critical data of the equipment that is defined for the equipment user.

## 1. The components are:

- a. Title **<title>** (required). IAW MIL-STD-40051-1/-2, enables the title “Equipment Data,” to be displayed for the section (see Section 36.1.1.4).
- b. Illustration **<figure>** (optional – zero or more) (see Section 31.1.1).
- c. Select one of the following information types:
  - i. Narrative paragraphs.
    - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
    - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
  - ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – one or more).
- d. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).

2. The DTD fragment for **<eqpdata>** is:

```
<!ELEMENT eqpdata (title?, figure*, ((note*, para, (para0 | para0-alt
+)) | para0 | para0-alt+)>
<!ATTLIST eqpdata
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
```

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

### 3. Attributes for **<eqpdata>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 18.1.3.5 XML document instance fragments.

The XML source and its stylesheet output for an Equipment Description and Data Work Package is provided below:

#### 1. Example of an XML Document Instance Fragment for **<descwp>**:

```
<descwp wpno="gxxxx3-11-XXXX-XXX" tocentry="2" frame="no" "army="no" "airforce="no" "navy="no" "marines="no" wpseq="0002" deletewp="no">
 <wpidinfo>
 <maintlvl level="field"/>
 <title>EQUIPMENT DESCRIPTION AND DATA WORK PACKAGE
 </title>
</wpidinfo>
<eqpinfo>
 <title>EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES
</title>
<eqpdesc>
 <para> The radar system is a Moving Target Indicator (MTI) radar, using pulsed Doppler techniques to detect and locate moving targets, or to perform friendly fire correction/Fall-of-Shot (FOS). Accuracy of target location depends on the method of surveying the radar position. Built-in-test (BIT) features enable the operator to locate faults in the Transmitter-Receiver unit and the Antenna Drive enclosure.
</para>
 <para>The radar equipment presents targets as symbols on a Planned Position Indicator (PPI) display and as audio tones in a headset. The radar equipment can be set up or taken down under blackout conditions in approximately ten minutes by two persons. Three persons can carry its components (69 pounds) with backpack.
</para>
</eqpdesc>
<eqpdesc>
 <title>Searchlighting
</title>
```

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The antenna can be set to searchlight (move to either the right or the left), in response to a control actuated by the operator, and to stop moving when the control is released.

LOCATION AND DESCRIPTIONS OF MAJOR COMPONENTS

TRIPOD MOUNTED COMPONENTS

TRIPOD MOUNTED COMPONENTS

The tripod-mounted components include most of the radar set components. The tripod and the Waveguide Feedhorn

Antenna Reflector

Telescope

Receiver-Transmitter

Antenna Drive Assembly

Column assembly

Tripod

and the Mounting and Leveling assembly

EQUIPMENT DATA

Table 1. General provides information pertaining to the electrical, operational, and environmental characteristics of the radar set.

General

ITEM

VALUE

Electrical Characteristics

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</entry>  
<entry morerows="0" align="center">  
</entry>  
</row>  
<row>  
<entry morerows="0" align="center">Power input  
</entry>  
<entry morerows="0" align="center">  
</entry>  
</row>  
<row>  
<entry morerows="0" align="center">Radar Set AN/PPS-5XX  
</entry>  
<entry morerows="0" align="center">(18-36 volt, direct current (dc) source): 41 watts  
</entry>  
</row>  
<row>  
<entry morerows="0" align="center">Operational Characteristics  
</entry>  
<entry morerows="0" align="center">  
</entry>  
</row>  
</para>  
</eqpdata>  
</descwp>

## MIL-HDBK-2361D

## 2. Example of a stylesheet output for &lt;descwp&gt;:

0002

## OPERATOR

## EQUIPMENT DESCRIPTION AND DATA WORK PACKAGE

## EQUIPMENT CHARACTERISTICS, CAPABILITIES AND FEATURES

The radar system is a Moving Target Indicator (MTI) radar, using pulsed Doppler techniques to detect and locate moving targets, or to perform friendly fire correction/Fall-of- Shot (FOS). Accuracy of target location depends on the method of surveying the radar position. Built-in-test (BIT) features enable the operator to locate faults in the Transmitter-Receiver unit and the Antenna Drive enclosure.

The radar equipment presents targets as symbols on a Planned Position Indicator (PPI) display and as audio tones in a headset. The radar equipment can be set up or taken down under blackout conditions in approximately ten minutes by two persons. Three persons can carry its components (69 pounds) with backpack.

## SEARCHLIGHTING

The antenna can be set to searchlight (move to either the right or the left), in response to a control actuated by the operator, and to stop moving when the control is released.

## LOCATION AND DESCRIPTIONS OF MAJOR COMPONENTS

## TRIPOD MOUNTED COMPONENTS

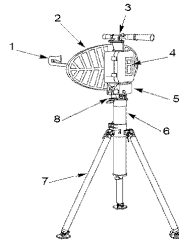


Figure 1. TRIPOD MOUNTED COMPONENTS.

The tripod-mounted components include most of the radar set components. The tripod and the Waveguide Feedhorn(Figure , Item figure 1, item 1), Antenna Reflector(Figure , Item figure 1, item 2), Telescope(Figure , Item figure 1, item 3), Receiver-Transmitter(Figure , Item figure 1, item 4), Antenna Drive Assembly (Figure , Item figure 1, item 5), Column assembly(Figure , Item figure 1, item 6), Tripod (Figure , Item figure 1, item 7), and the Mounting and Leveling assembly(Figure , Item figure 1, item 8).

## EQUIPMENT DATA

Table 1. General provides information pertaining to the electrical, operational, and environmental characteristics of the radar set.

Table 1. General.

ITEM	VALUE
Electrical Characteristics	
Power input	
Radar Set AN/PPS-5XX	(18-36 volt, direct current (dc) source): 41 watts
Operational Characteristics	

END OF WORK PACKAGE

0002-1/blank

**FIGURE 158. Example of a stylesheet output for an equipment description and data work package <descwp>.**

### 18.1.4 Theory of operation work package <thrywp>.

The element provides the maintenance technician with adequate background information to support and perform maintenance tasks and troubleshooting on the weapon system, equipment, or components. The Logistics Product Data (LPD) maintenance concept and the approved MAC determines the amount of detail and complexity of the theory of operation presentation.

A simple system or equipment/component can be explained in the <thrywp> using a system theory <systhry>.

For more complex systems, multiple <systhry> work packages may be used.

After presenting the end item as a unit, then present the theory of its major system, subsystems, and components, in a series of work packages. The work package may contain the functional operation for the system <systhry>, its subsystems <ssysthry> and its components (line replaceable units (LRUs) <lruthry> and shop replaceable units (SRUs) <sruthry>). For clarity or usability, subsystem and component theory of operation may be provided in separate work packages.

1. The components of <thrywp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data and is usually not used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.5).
  - c. Work package initial setup <initial\_setup> (required) (see 16.6).
  - d. Introduction <intro> (optional). The element provides the introductory section contained in the work package (see Section 36.1.4.14).
  - e. System Theory <systhry> (required – one or more). The element identifies a system's theory of operation (see Section 18.1.4.1).
2. The DTD fragment for <thrywp> is graphically depicted.

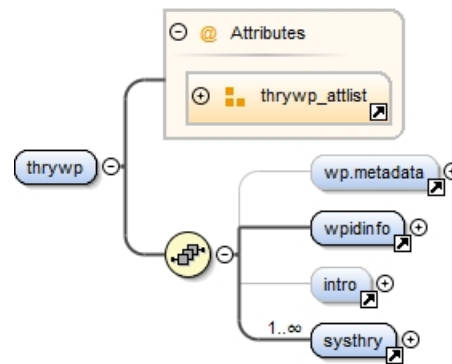


FIGURE 159. Theory of operation work package <thrywp> DTD hierarchy.

3. The DTD fragment for <thrywp> is:

```
<!ELEMENT thrywp (wp.metadata?, wpidinfo, intro?, systhry+)>
<!ATTLIST thrywp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
```



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changelvl	(0-9)	"0"
chgno	(0-99)	"0"
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
Marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<thrywp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chgno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).

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- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

#### 18.1.4.1 System theory <systry>.

The systems theory element <systry> is used to identify a system's theory of operation <thrywp>. Theory of operation explains how the end item and its major systems work and interface in addition to the functional effect of switches, controls, and other devices. Subordinate sections <systry> on subsystem theory may be included. A simple system may only have one theory of operation work package whereas a large or complex system may contain system theory, subsystem theory, and component theory (LRU and/or SRU).

1. The components are:
  - a. Title <title> (required) (see Section 36.1.1.4).
  - b. Illustration <figtab> (see Section 31.1.1) and/or conditional illustration <figure-alt> (see Section 35.2.1) (optional – zero or more).
  - c. Select one of the following information types:
    - i. Narrative paragraphs with descriptive or narrative titled text:
      - I. Note <note> (optional – zero or more) (see Section 28.1.3).
      - II. Narrative paragraph <para> (required – one or more) (see Section 36.1.1.6).
      - III. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1) (optional – zero or more).
    - ii. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1) (required – one or more).

- d. Line Replaceable Unit(s) **<lruthry>** (optional – zero or more). The element identifies the line replaceable units in theory of operation (see Section 18.1.4.1.1.1).
  - e. Shop Replaceable Unit(s) **<sruthry>** (optional — zero or more). The element identifies the shop replaceable units in theory of operation (see Section 18.1.4.1.1.2).
  - f. Subsystem **<ssysthry>** (optional – zero or more) (see Section 18.1.4.1.1).
2. The DTD fragment for **<systhry>** is graphically depicted.

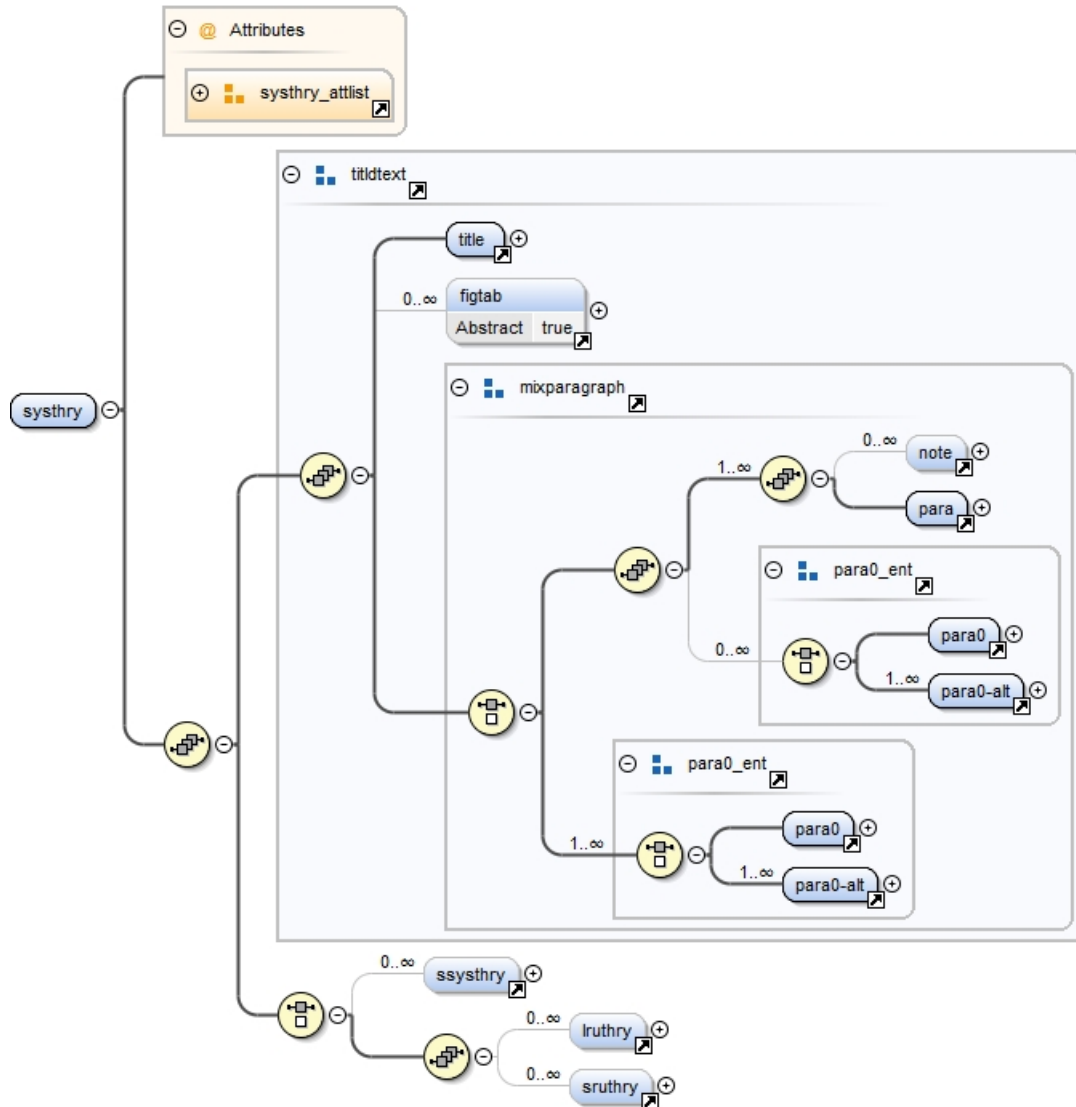


FIGURE 160. System theory **<systhry>** DTD hierarchy.

3. The DTD fragment for **<systhry>** is:

```
<!ELEMENT systhry (title, figtab*, ((note*, para, (para0 | para0-alt
+)) | para0 | para0-alt+), (ssysthry* | (lruthry*, sruthry*))>
```

```
<!ATTLIST systhry
```

```
assocfig
```

```
IDREFS
```

```
#IMPLIED
```

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changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
frame	(yes   no)	"yes"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

## 4. Common attributes:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **frame** – Indicates to the IETM system the authors intended frame break. Default is **yes**.
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

## 18.1.4.1.1 Subsystem theory &lt;ssysthry&gt;.

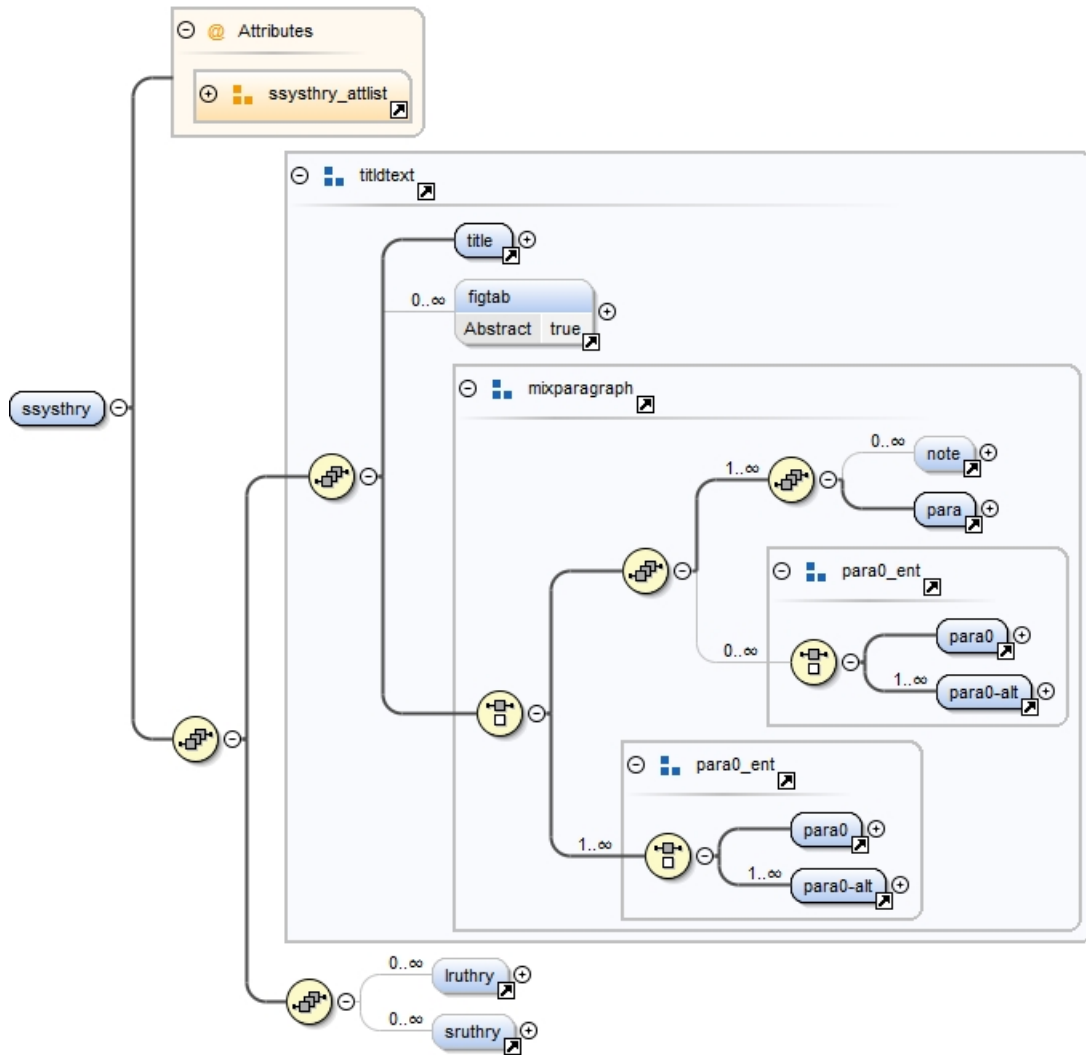
The element <ssysthry> is used for a complex system or multi-system equipment that may divide the theory of operation by using subsystem breakdown. This element includes theory of operation of a specific subsystem.

## 1. The components are:

- a. Title <title> (required) (see Section 36.1.1.4).
- b. Illustration <figtab> (see Section 31.1.1).
- c. Select one of the following information types:
  - i. Narrative paragraphs with descriptive or narrative titled text:
    - I. Note <note> (optional – zero or more) (see Section 28.1.3).
    - II. Narrative paragraph <para> (required – one or more) (see Section 36.1.1.6).
    - III. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1) (optional – zero or more).
  - ii. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1) (required – one or more).

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- d. Line Replaceable Unit(s) **<lruthry>** (optional – zero or more). The element identifies the line replaceable units in theory of operation (see Section 18.1.4.1.1.1).
- e. Shop Replaceable Unit(s) **<sruthry>** (optional — zero or more). The element identifies the shop replaceable units in theory of operation (see Section 18.1.4.1.1.2).
2. The DTD fragment for **<ssysthry>** is graphically depicted:

FIGURE 161. Subsystem **<ssysthry>** DTD hierarchy.

3. The DTD fragment for **<ssysthry>** is :

```
<!ELEMENT ssysthry (title, figtab*, ((note*, para, (para0 | para0-alt
+)) | para0 | para0-alt+), lruthry*, sruthry*)>
```

```
<!ATTLIST ssysthry
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"

## MIL-HDBK-2361D

frame	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
nomen	CDATA	#IMPLIED
nsn	CDATA	#IMPLIED
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<systry>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **frame** – Indicates to the IETM system the authors intended frame break. Default is **yes**.
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **nomen** – System nomenclature (optional) (see Section 16.4.1.5.1).
- j. **nsn** – National stock number (optional) (see Section 24.4.2.1.7.3).
- k. **security** – Security classification (optional) (see Section 36.3.14).
- l. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 18.1.4.1.1.1 Line replaceable unit **<lruthry>**.

The element **<lruthry>** identifies line replaceable units in theory of operation. A LRU is a component or unit removed at the Unit or Organizational level.

1. The components are:

- a. Title **<title>** (required) (see Section 36.1.1.4).
- b. Illustration **<figtab>** (see Section 31.1.1).
- c. Select one of the following information types:
  - i. Narrative paragraphs with descriptive or narrative titled text:
    - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
    - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
    - III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
  - ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).

2. The DTD fragment for **<lruthry>** is graphically depicted.

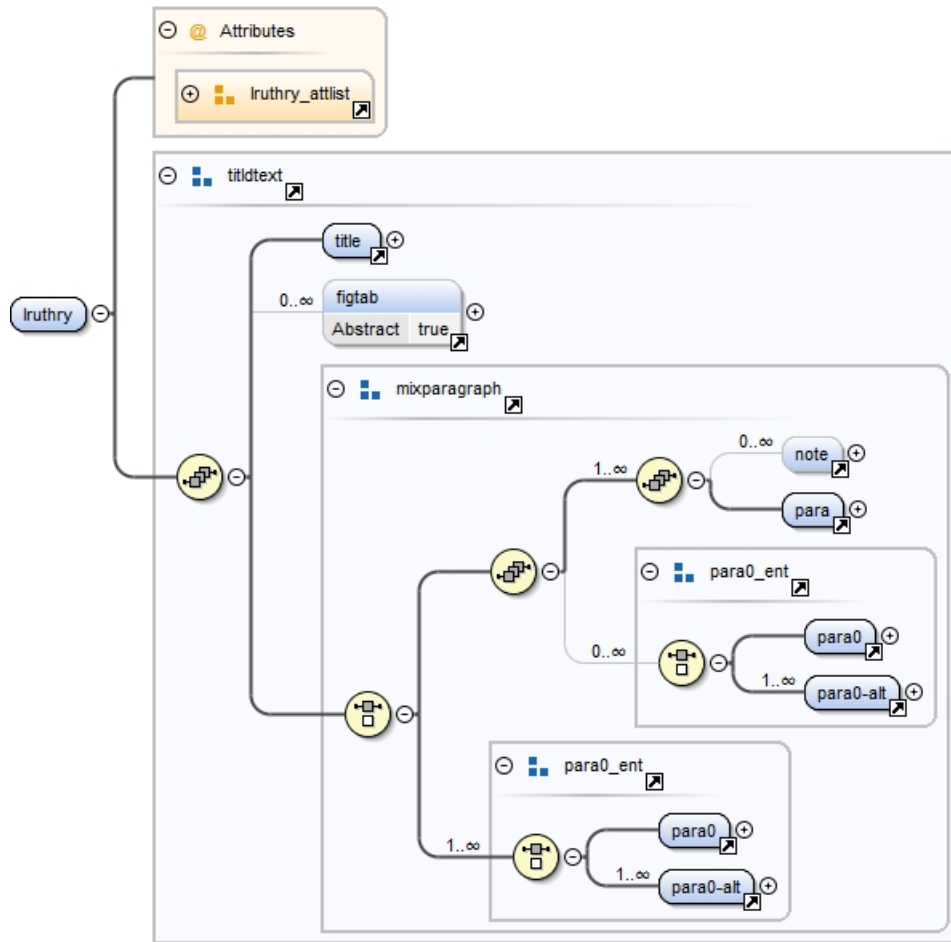


FIGURE 162. Line replaceable unit **<lruthry>** DTD hierarchy.

3. The DTD fragment for **<lruthry>** is:

```
<!ELEMENT lruthry (title, figtab*, ((note*, para, (para0 | para0-alt
+)) | para0 | para0-alt+)>
```

```
<!ATTLIST lruthry
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
frame	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
nomen	CDATA	#IMPLIED
nsn	CDATA	#IMPLIED

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<lruthry>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **frame** – Indicates to the IETM system the authors intended frame break. Default is **yes**.
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **nomen** – System nomenclature (optional) (see Section 16.4.1.5.1).
- j. **nsn** – National stock number (optional) (see Section 24.4.2.1.7.3).
- k. **security** – Security classification (optional) (see Section 36.3.14).
- l. **skilltrk** – Skill level (optional) (see Section 36.3.3).

18.1.4.1.1.2 Shop replaceable unit **<sruthry>**.

The element **<sruthry>** identifies the shop replaceable units in theory of operation. A SRU is a component or unit that is authorized to be removed only at a repair shop.

## 1. The components are:

- a. Title **<title>** (required) (see Section 36.1.1.4).
- b. Illustration **<figtab>** (see Section 31.1.1).
- c. Select one of the following information types:
  - i. Narrative paragraphs with descriptive or narrative titled text:
    - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
    - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
    - III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9). and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
  - ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).

2. The DTD fragment for **<sruthry>** is:

```
<!ELEMENT sruthry (title, figtab*, ((note*, para, (para0 | para0-alt
+)) | para0 | para0-alt+)>
<!ATTLIST sruthry
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
```



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comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
frame	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
nomen	CDATA	#IMPLIED
nsn	CDATA	#IMPLIED
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

3. Attributes for **<sruthry>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **frame** – Indicates to the IETM system the authors intended frame break. Default is **yes**.
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **nomen** – System nomenclature (optional) (see Section 16.4.1.5.1).
- j. **nsn** – National stock number (optional) (see Section 24.4.2.1.7.3).
- k. **security** – Security classification (optional) (see Section 36.3.14).
- l. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 18.1.4.2 XML document instance fragments.

The XML source and its stylesheet output for a Theory of Operation Work Package **<thrywp>** is provided below:

1. Example of an XML Document Instance Fragment for **<thrywp>** containing one major system theory **<systhry>** that contains multiple occurrences of shop replaceable unit **<sruthry>**.

```
<thrywp wpno="GXXXXX-X-XXXX-XXX" wpseq= 0015 summary-detail="0">
<wpidinfo>
<maintlvl level="operator"/>
<title> THEORY OF OPERATION
</title>
</wpidinfo>
<systhry>
<title>POWER ENTRY HOUSING AND SECONDARY INPUT POWER FILTER
</title>
```

```
<para>Three phase input power from an external source, diesel powered generator
or facility power, is cabled to the power entry housing and connected to the
```

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power input connector. Inside the housing, each phase line and the neutral line are wired to four independent surge arresters and the primary input power fitter. The surge arresters protect the circuits within the shelter from transients caused by lightning, induction, switching surges and Electro Magnetic Pulse (EMP). When a surge voltage exceeds the spark over voltage of the arrester, the arrester becomes a short circuit and remains so until the transient has been by-passed and the line automatically returns to normal. The primary input power filter suppresses condition of noise caused by Electro Magnetic Interference (EMI), into and out of the shelter over the input power lines. A secondary input power filter is connected in series with the primary input power fitter to ensure protection of shelter circuits from transient voltages below the spark over voltage of the EMP protectors coming in through the power lines.

&lt;/para&gt;

&lt;/sruthry&gt;

&lt;title&gt;POWER DISTRIBUTION ASSEMBLY (PDA)

&lt;/title&gt;

<para>The PDA consists of a bass assembly which houses the circuit protection and the power distribution panel which contains circuit breakers and indicators. The circuit protection devices consist of an over/under voltage-relay, a phase sequence relay and an over current relay. If a condition exists in a circuit that does not meet the parameters of any one of these devices, that fault will cause the MAIN POWER circuit breaker to reset to the OFF position, thereby removing power to the internal circuits of the shelter and causes the AC POWER FAULT light to come on. When set to ON, the MAIN POWER circuit breaker applies power to the inputs of the other breakers and three green power indicators showing power applied for each phase will come on. As each of the remaining circuit breakers are set to ON, the corresponding indicators will come on providing a visual indication of power applied to each circuit.

&lt;/para&gt;

&lt;/sruthry&gt;

&lt;sruthry&gt;

&lt;title&gt;ENVIRONMENTAL CONTROL UNIT (ECU)

&lt;/title&gt;

<para> (Horizontal ECU is used only on the AN/TSM-191 (V) 3 model of the shelter. Vertical ECU is used only on the AN/ TSM-191 (V) 2 and AN/TSM-191 (V) 4 models of the shelter.) Once started, the air conditioner operates automatically due to the relationship of the components, controls and instruments. With the model selector switch in the OFF position, all electrical components are isolated from electrical power except for the crankcase heater. This device must be energized for 30 minutes prior to operation in the cool mode. The following operating modes of the ECU are controlled by the mode selector switch.

&lt;/para&gt;

&lt;/sruthry&gt;

&lt;sruthry&gt;

&lt;title&gt;Ventilation

&lt;/title&gt;

<para> Ventilation is provided in the VENT position by energizing the fan motor which forces air out of the evaporator discharge louver. The amount of outdoor air used for ventilation is determined by the position of the fresh air damper.

&lt;/para&gt;

&lt;/sruthry&gt;

&lt;/systry&gt;

&lt;/thrywp&gt;

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## 2. Example of a stylesheet output for &lt;thrywp&gt;:

0015

**OPERATOR****THEORY OF OPERATION****POWER ENTRY HOUSING AND SECONDARY INPUT POWER FILTER**

Three phase input power from an external source, diesel powered generator or facility power, is cabled to the power entry housing and connected to the power input connector. Inside the housing, each phase line and the neutral line are wired to four independent surge arresters and the primary input power filter. The surge arresters protect the circuits within the shelter from transients caused by lightning, induction, switching surges and Electro Magnetic Pulse (EMP). When a surge voltage exceeds the spark over voltage of the arrester, the arrester becomes a short circuit and remains so until the transient has been by-passed and the line automatically returns to normal. The primary input power filter suppresses condition of noise caused by Electro Magnetic Interference (EMI), into and out of the shelter over the input power lines. A secondary input power filter is connected in series with the primary input power filter to ensure protection of shelter circuits from transient voltages below the spark over voltage of the EMP protectors coming in through the power lines.

**POWER DISTRIBUTION ASSEMBLY (PDA)**

The PDA consists of a base assembly which houses the circuit protection and the power distribution panel which contains circuit breakers and indicators. The circuit protection devices consist of an over/under voltage-relay, a phase sequence relay and an over current relay. If a condition exists in a circuit that does not meet the parameters of any one of these devices, that fault will cause the MAIN POWER circuit breaker to reset to the OFF position, thereby removing power to the internal circuits of the shelter and causes the AC POWER FAULT light to come on. When set to ON, the MAIN POWER circuit breaker applies power to the inputs of the other breakers and three green power indicators showing power applied for each phase will come on. As each of the remaining circuit breakers are set to ON, the corresponding indicators will come on providing a visual indication of power applied to each circuit.

**ENVIRONMENTAL CONTROL UNIT (ECU)**

(Horizontal ECU is used only on the AN/TSM-191 (V)3 model of the shelter. Vertical ECU is used only on the AN/TSM-191(V)2 and AN/TSM-191(V)4 models of the shelter.) Once started, the air conditioner operates automatically due to the relationship of the components, controls and instruments. With the model selector switch in the OFF position, all electrical components are isolated from electrical power except for the crankcase heater. This device must be energized for 30 minutes prior to operation in the cool mode. The following operating modes of the ECU are controlled by the mode selector switch.

**VENTILATION**

Ventilation is provided in the VENT position by energizing the fan motor which forces air out of the evaporator discharge louver. The amount of outdoor air used for ventilation is determined by the position of the fresh air damper.

**END OF WORK PACKAGE**

0015-1/blank

**FIGURE 163. Example of a stylesheet output for a theory of operation work package <thrywp> containing one major system theory <systry>.**

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3. Example of an XML Document Instance Fragment for **<thrywp>** containing multiple occurrences system theory **<systhry>**. The system theory contains multiple subsystem theory **<ssysthry>** that contains one or more line replaceable units' theory of operation **<lruthry>**.

```

<thrywp wpno="gxxx3-11-XXXX-XXX" tocentry="2" frame="no" "army="no "airforce="no "navy="
"no "marines="no" wpseq="0003">
 <wpidinfo>
 <maintlvl level="field"/>
 <title>THEORY OF OPERATION
 </title>
</wpidinfo>
<intro frame="no">
 <para0>
 <title>GENERAL
 </title>
 <para>The AN/PPS-5XX radar is a state-of-the art Pulse Doppler radar. It is a
monostatic system in that it both transmits and receives pulses using the same
antenna. In its most basic mode of operation, the radar transmits 512 Linear FM
pulses in each 72 ms dwell. The radar scans one antenna beam width or 1.1 degrees
in azimuth, during each dwell. After each pulse is transmitted, data is received
and collected for one Pulse Repetition Interval (PRI) or 141 us, before the next
pulse is transmitted. In this toggling manner one dwell of 512 pulses is
transmitted, and the return echoes received, from targets that may have
intercepted the transmitted pulses.
 </para>
 <para>Upon receiving the returned echoes, they are down converted in frequency
on the RF Assembly and IF Converter circuit card. They are then sampled with A/D
converters at 910KHz. The digital samples from the IF Converter are sent to the
DSP/Control circuit card to a SHARC Digital Signal Processor (DSP). There Pulse
Compression (Correlation), Doppler Weighting, Doppler Filtering and Detection
Processing algorithms are performed. The DSP is pipe lined and works on a single
dwell of data at a time. A new dwell of data, however, is being collected at the
same time the previous dwell is being processed. After all DSP processing is
finished, the Data Processor circuit card is triggered to read out all
detections which have passed a user defined threshold in the detection
processor. The Data Processor sends the detections out over the R-T to HTU cable
RS-232 interface for display on the HTU's PPI.
 </para>
 <para>All radar control is performed from either the remote (HTU) or the
alphanumeric Keypad/Display panel mounted on the R-T Electronics Assembly
cover. The Keypad/Display, however, has no detection display capabilities.
 </para>
 <para>An audio detection capability exists in which detections can be heard on a
COTS headset. This mode is available when using either the HTU or the Keypad/
Display. It is intended, however, for use when only the Keypad/ Display is being
used.
 </para>
</para0>
</intro>
<systhry frame="no">
 <title>RF SYSTEM
</title>
 <para>The RF system consists of a waveguide feed and antenna, coax to waveguide
transition, preselector filter and circulator. The preselector filter

```

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attenuates any out-of-band signals such as images and interference during receive, and attenuates harmonics and image signals during transmission. The circulator provides isolation between the transmitter and receiver to protect the sensitive receiver during the high energy transmit pulse. The coax to waveguide transition provides the interface between the preselector coaxial connection and the waveguide feed for the antenna. The waveguide feed collects/transmits energy as it is received/transmitted from the antenna. The antenna is a lightweight fiberglass elliptical reflector with a parabolic contour.

</para>

<ssysthry nomen="Nxxx" nsn="xxxx-xx-xxx-xxxx" frame="no">

<title>Antenna Positioning System

</title>

<para>The antenna drive utilizes a brush type DC servomotor that is driven by a Pulse Width Modulated (PWM) servo amplifier. An optical encoder is used to provide position feedback to the servo controller for closed loop servo control of the motor. The antenna elevation position is controlled manually by the user. An absolute encoder provides elevation position information on the PPI. A Motion Control circuit card is located in the antenna drive enclosure. It is used as the interface between control circuitry on the DSP/Control circuit card and the motion control logic in the drive box. Using the interface, the motor can be commanded to move to any position.

</para>

</ssysthry>

<ssysthry nomen="Nxxx" nsn="xxxx-xx-xxx-xxxx" frame="no">

<title>CABLE ASSEMBLIES

</title>

<para>Cable Assembly, Special Purpose, Electrical, XX-XXXXXX/PPS-5XX R-T to HTU (Figure 3. Cable Assembly (Receiver-Transmitter to Handheld Terminal Unit)) is required to connect the HTU or equivalent to the Receiver Transmitter. The cable carries target and control data over a standard RS-232 interface to and from the HTU or equivalent and the Receiver-Transmitter. It is 75 feet in length and can be disconnected at both ends, coiled, and stowed for transport. The HTU and the Receiver-Transmitter may be separated an additional 75 feet, to 150 feet, using the optional Cable Assembly, Special Purpose, Electrical, XX-XXXXXX/PPS-5XX extension cable.

<figure application="both" figtype="normal-page" tocentry="1" pane="no">

<title>Cable Assembly (Receiver-Transmitter to Handheld Terminal Unit)

</title>

<graphic boardno="Scroll.gif" unitmeasure="in">

</graphic>

</figure>

</ssysthry>

</systhry>

<systhry frame="no">

<title>THEORY OF OPERATION FOR THE HTU

</title>

<para0>

<title>Operator Control Parameters For The Handheld Terminal Unit

</title>

<para>The following control parameters are available to the operator from the HTU displays:

</para>

</para0>

<ssysthry nomen="Nxxx" nsn="xxxx-xx-xxx-xxxx" frame="no">

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```

<title>BIT DISPLAY (Figure 48)
</title>
<para>
<figure application="both" figtype="normal-page" tocentry="1" pane="no">
<title>HTU Bit Display (BIT Tests)
</title>
<graphic boardno="Builtintest.gif" unitmeasure="in">
</graphic>
</figure>
</para>
</ssysthry>
</systhry>
</thrywp>

```

4. Example of a stylesheet output for a theory of operation work package **<thrywp>** containing multiple occurrences system theory. The output is only of the first page.

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0003

## USER

## THEORY OF OPERATION

## GENERAL

The AN/PPS-5XX radar is a state-of-the art Pulse Doppler radar. It is a monostatic system in that it both transmits and receives pulses using the same antenna. In its most basic mode of operation, the radar transmits 512 Linear FM pulses in each 72 ms dwell. The radar scans one antenna beam width or 1.1 degrees in azimuth, during each dwell. After each pulse is transmitted, data is received and collected for one Pulse Repetition Interval (PRI) or 141 us, before the next pulse is transmitted. In this toggling manner one dwell of 512 pulses is transmitted, and the return echoes received, from targets that may have intercepted the transmitted pulses.

Upon receiving the returned echoes, they are down converted in frequency on the RF Assembly and IF Converter circuit card. They are then sampled with A/D converters at 910KHz. The digital samples from the IF Converter are sent to the DSP/Control circuit card to a SHARC Digital Signal Processor (DSP). There Pulse Compression (Correlation), Doppler Weighting, Doppler Filtering and Detection Processing algorithms are performed. The DSP is pipe lined and works on a single dwell of data at a time. A new dwell of data, however, is being collected at the same time the previous dwell is being processed. After all DSP processing is finished, the Data Processor circuit card is triggered to read out all detections which have passed a user defined threshold in the detection processor. The Data Processor sends the detections out over the R-T to HTU cable RS-232 interface for display on the HTU's PPI.

All radar control is performed from either the remote (HTU) or the alphanumeric Keypad/Display panel mounted on the R-T Electronics Assembly cover. The Keypad/Display, however, has no detection display capabilities.

An audio detection capability exists in which detections can be heard on a COTS headset. This mode is available when using either the HTU or the Keypad/Display. It is intended, however, for use when only the Keypad/ Display is being used.

## RF SYSTEM

The RF system consists of a waveguide feed and antenna, coax to waveguide transition, preselector filter and circulator. The preselector filter attenuates any out-of-band signals such as images and interference during receive, and attenuates harmonics and image signals during transmission. The circulator provides isolation between the transmitter and receiver to protect the sensitive receiver during the high energy transmit pulse. The coax to waveguide transition provides the interface between the preselector coaxial connection and the waveguide feed for the antenna. The waveguide feed collects/transmits energy as it is received/transmitted from the antenna. The antenna is a lightweight fiberglass elliptical reflector with a parabolic contour.

## ANTENNA POSITIONING SYSTEM

The antenna drive utilizes a brush type DC servomotor that is driven by a Pulse Width Modulated (PWM) servo amplifier. An optical encoder is used to provide position feedback to the servo controller for closed loop servo control of the motor. The antenna elevation position is controlled manually by the user. An absolute encoder provides elevation position information on the PPI. A Motion Control circuit card is located in the antenna drive enclosure. It is used as the interface between control circuitry on the DSP/Control circuit card and the motion control logic in the drive box. Using the interface, the motor can be commanded to move to any position.

## CABLE ASSEMBLIES

Cable Assembly, Special Purpose, Electrical, XX-XXXXX/PPS-5XX R-T to HTU (Figure 3. Cable Assembly (Receiver-Transmitter to Handheld Terminal Unit)) is required to connect the HTU or equivalent to the Receiver Transmitter. The cable carries target and control data over a standard RS-232 interface to and from the HTU or equivalent and the Receiver-Transmitter. It is 75 feet in length and can be disconnected at both ends, coiled, and stowed for transport. The HTU and the Receiver-Transmitter may be separated an additional 75 feet, to 150 feet, using the optional Cable Assembly, Special Purpose, Electrical, XX-XXXXX/PPS-5XX extension cable.

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**FIGURE 164. Example of a stylesheet output for a theory of operation work package <thrywp> containing multiple occurrences system theory. The output is only of the first page.**

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**18.1.5 General information chapter <gim> for software users manual.**

A software general information chapter contains a <softginfowp> that is the introductory work package and is similar to the <ginfowp>. A Software summary work package <softsumwp> is also required. It also contains the work packages <softeffectwp>, and the <softdiffversionwp> which are used in revisions only.

1. Software general information chapter components are <gim>:
  - a. Chapter Title Page <titlepg> (required). The element provides the title page preceding an information chapter (see Section 36.1.1.1).
  - b. General Information Work Package <ginfowp> (required). The element provides general information, reference statements and standard statements that apply to the entire TM (see Section 18.1.1).
  - c. A battle damage general information work package <bdar-geninfowp> (optional). This provides BDAR specific general information, (see Section 18.1.2).
  - d. Software General Information Work Package <softginfowp> (required). The element provides general information, reference statements and standard statements that apply to the entire TM (see Section 18.1.5.1).
  - e. Software summary work package <softsumwp> (required) (see Section 18.1.5.2) that contains information and overview of the software and the environment it is used in.
  - f. Software effectivity work package <softeffectwp> should contain information about what systems each version of the software pertains to when more than one version of the software must be covered (optional) (see Section 18.1.5.3).
  - g. Differences between software versions work package <softdiffversionwp> (optional) (see Section 18.1.5.4).
  - h. General information work package (Aircraft Phased Maintenance Inspection Checklist Manual Only) <pm-ginfowp> (optional) (see Section 18.2.1).
  - i. Aircraft Preventive Maintenance Services Manual or Preventive Maintenance Daily Manual Only <pms-ginfowp> (optional) (see Section 18.2.2).



2. The DTD fragment for **<gim>** is graphically depicted.

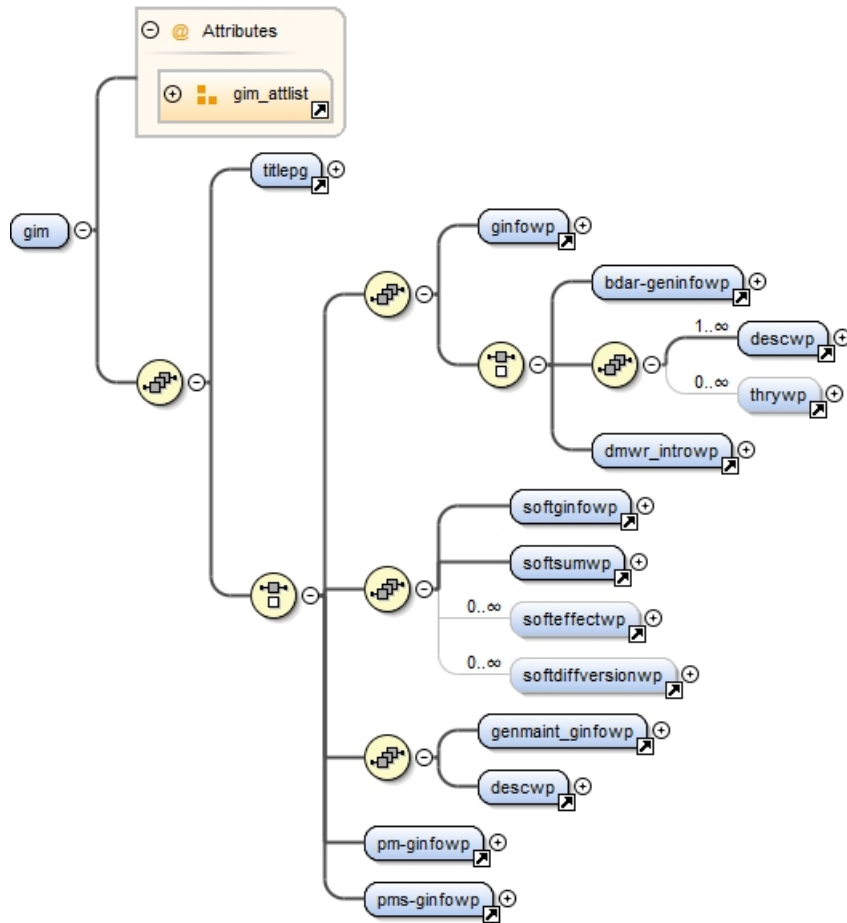


FIGURE 165. General information chapter **<gim>** for software users manual DTD hierarchy.

3. The DTD fragment for **<gim>** is:

```
<!ELEMENT gim (titlepg, ((ginfowp, (bdar-geninfowp | (descwp+,
thrywp*) | dmwr_introwp)) | (softginfowp, softsumwp, softeffectwp*,
softdiffversionwp*) | (genmaint_ginfowp, descwp) | pm-ginfowp | pms-
ginfowp)>
```

```
<!ATTLIST gim
```

chap-toc	(yes   no )	"yes"
chnгно	(0-99)	"0"
frame	(yes   no )	"yes"
revno	CDATA	#REQUIRED
tocentry	(0   1   2)	"1">

4. Attributes for **<gim>** are:

- a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **chnгно** - Change number (required) (see Section 36.3.12).

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- c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- d. **revno** – Revision number (required) (see Section 36.3.12).
- e. **tocentry** – In the TM table of contents, the attribute indicates the indenture level. The possible selections are **0** (do not include), **1** (the highest level or 1st indenture level), or **2** (the second indenture level) (default value is **1**).

### 18.1.5.1 General information software work package <softginfowp>.

General information software work package <softginfowp> is the introductory work package and is similar to the <ginfowp> except it contains a system overview <softsysover> and a document overview <softdocover> which are required. It also contains the work packages <softsumwp>, <softeffectwp> and the <softdiffversionwp>.

1. The components <softginfowp> are:

- a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
- b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
- c. Work package initial setup <initial\_setup> (optional) (see Section 16.6).
- d. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
  - i. Warning <warning> (optional - zero or more) (see Section 28.1.1).
  - ii. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
  - iii. Caution <caution> (optional - zero or more) (see Section 28.1.2).
  - iv. Note <note> (optional - zero or more) (see Section 28.1.3).
- e. Scope <scope> (required). The element provides a brief statement of what is covered in the technical manual and also includes the following as applicable:
  - i. Type of manual.
  - ii. Model number(s) and equipment name(s).
  - iii. Purpose of equipment.
  - iv. Special inclusions in the manual.
- f. Maintenance Forms, Records, And Report <mfrr> (required) (see Section 18.1.1.1).
- g. Reporting Equipment Improvement Recommendations <eir> (required) (optional) (see Section 18.1.1.3).
- h. System overview <softsysover> (required). This element contains a brief description of the software, its purpose and use, etc. General descriptions of the software capabilities may also be provided.
- i. Document overview <softdocover> (required). This element contains a brief description of this manual and any other documentation available for the software.
- j. Destruction of Army Materiel To Prevent Enemy Use <destructmat> (optional) (see Section 18.1.1.7).
- k. Warranty Reference <wrntyref> (optional) (see Section 18.1.1.10).
- l. Nomenclature Cross-Reference List <nomenreflist> (optional) (see Section 18.1.1.11).

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- m. List Of Abbreviation/Acronyms <loa> (required) (see Section 18.1.1.12).
2. The DTD fragment for <softginfowp> is graphically depicted.

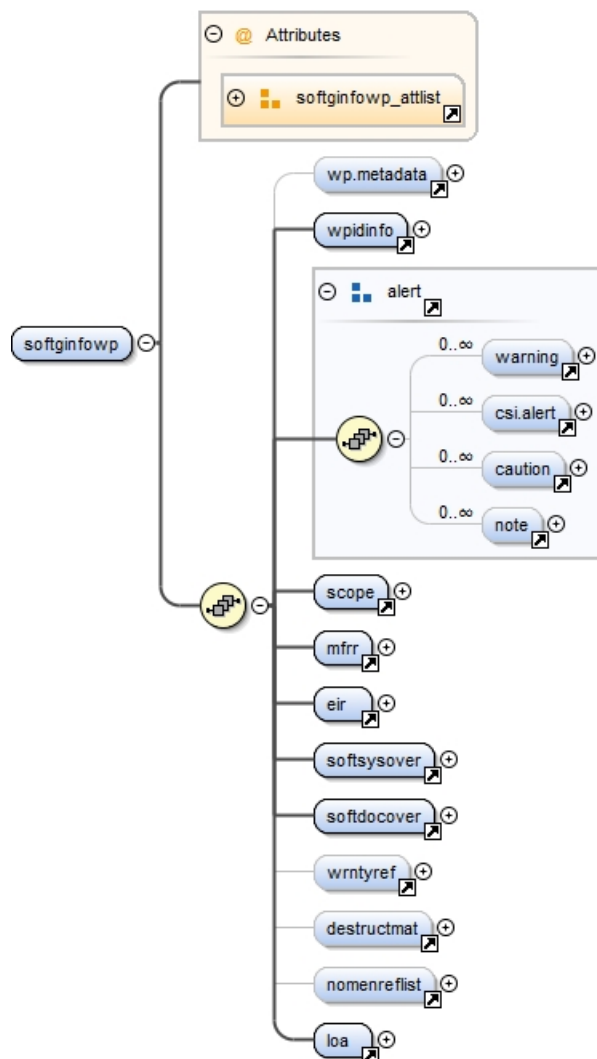


FIGURE 166. General information software work package <softginfowp> DTD hierarchy.

3. The DTD fragment for <softginfowp> is:

```
<!ELEMENT softginfowp (wp.metadata?, wpidinfo, %alert;, scope, mfr,
eir, softsysover, softdocover, wrntyref?, destructmat?, nomenref-
list?, loa)>
```

```
<!ATTLIST softginfowp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED

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chngno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   datetime)	#IMPLIED
delchlvl	CDATA	#IMPLIED
deletewp	(yes   no)	"no"
	CDATA	#IMPLIED
frame	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<softginfowp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2)

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- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3)
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 18.1.5.2 Software summary work package <softsumwp>.

General information software work package <softsumwp> is the introductory work package and is similar to the <ginfowp> except it contains a system overview <softsysover> and a Document overview <softdocover> which are required.

1. The components <softsumwp> are:

- a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
- b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
- c. An optional group of any warnings (alerts) <warning>, Critical Safety <csi.alert>, cautions <caution>, or notes <notes>, in that order.
- d. Software application <soft\_app> (required). The element provides a brief description of how the software applies at various levels of command and at different organizations/activities.
- e. Software inventory <soft\_inventory> (required). The element contains a list/description of the software components provided.
- f. Software environment <soft\_environment> (required). The element contains information and requirements about the environment in which the software must run. The environment for the software could include the operating system, the database system, specific developmental tools, or compiler.
- g. Security and privacy <soft\_secpriv> (optional). This element contains a brief description of the security and privacy measures provided with the software. Detailed procedures should be provided in the operating procedures.

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- h. Supervisory controls **<soft\_superctrls>** (optional) The element contains a brief description of any supervisory controls provided with the software. Detailed procedures for using these controls should be provided in the operating procedures.
  - i. Assistance and problem reporting **<soft\_assistreport>** (required). The element contains information on how to obtain assistance with the software and how/where to report problems with the software.
2. The DTD fragment **<softsumwp>** is graphically depicted.

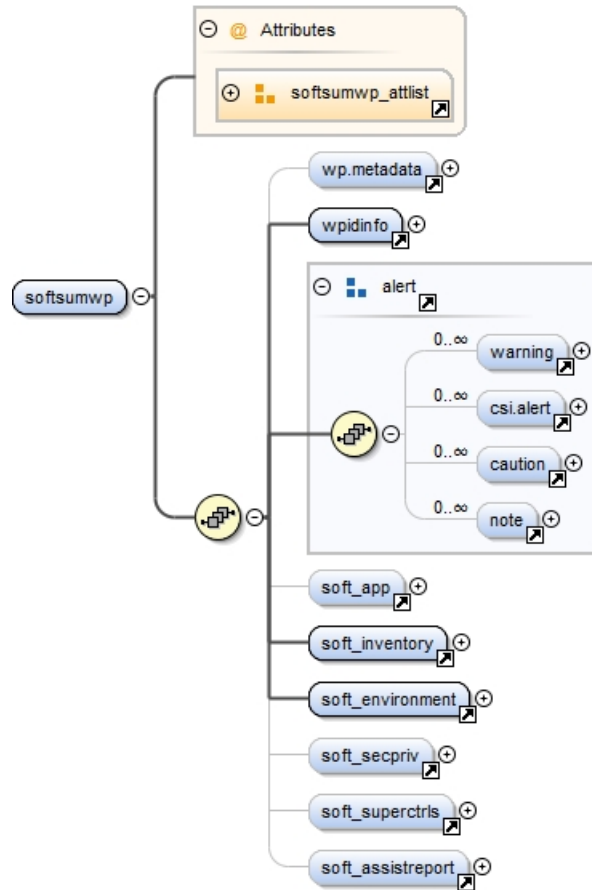


FIGURE 167. Software summary work package **<softsumwp>** DTD hierarchy.

3. The DTD fragment for **<softsumwp>** is:

```
<!ELEMENT softsumwp (wp.metadata?, wpidinfo, %alert;, soft_app?,
soft_inventory, soft_environment, soft_secpriv?, soft_superctrls?,
soft_assistreport?)>
```

```
<!ATTLIST softsumwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED

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chngno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   datetime)	#IMPLIED
delchlvl	CDATA	#IMPLIED
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	CDATA	#IMPLIED
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Attributes for <softsumwp> are:

Attributes for <softsumwp> are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).

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- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 18.1.5.3 Software effectivity work package <softeffectwp>.

Software effectivity work package <softeffectwp> contains information about what systems each version of the software pertains to when more than one version of the software must be covered in the SUM or SAM.

1. The components <softeffectwp> are:
  - a. Metadata <wp.metadata>** (optional). The element provides information about the work package data not generally used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo>** (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Software effectivity information <geninfo>** (required). The element provides what systems each version of the software pertains to when more than one version of the software must be covered in the SUM or SAM.



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2. The DTD fragment **<softeffectwp>** is graphically depicted.

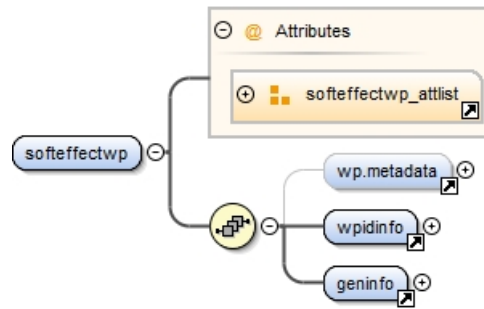


FIGURE 168. Software summary work package **<softeffectwp>** DTD hierarchy.

3. The DTD fragment for **<softeffectwp>** is:

```

<!ELEMENT softeffectwp (wp.metadata?, wpidinfo, geninfo)>
<!ATTLIST softeffectwp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changelvl (0-9) "0"
 chgno (0-99) "0"
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 crewmember CDATA #IMPLIED
 date-time-stamp (date | time | date-time) #IMPLIED
 delchlvl (0-99) "0"
 deletewp (yes | no) "no"
 fgc CDATA #IMPLIED
 frame (yes | no) "yes"
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 insertwp CDATA #IMPLIED
 lsa-id CDATA #IMPLIED
 Marines (yes | no) "no"
 navy (yes | no) "no"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 tocentry (2 | 3 | 4 | 5) "2"
 wpno ID #REQUIRED
 wpseq CDATA #IMPLIED>

```

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4. Attributes for **<softeffectwp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **id** – Unique identifier (optional) (see Section 36.3.7).
- o. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- p. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- q. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- r. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- s. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- t. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see 16.3.5).
- u. **security** – Security classification (optional) (see Section 36.3.14).
- v. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- w. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- x. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- y. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

#### 18.1.5.4 Software differences versions work package <softdiffversionwp>.

Differences between software versions work package <softdiffversionwp> is used when a manual is revised to describe the difference in versions of the software.

1. The components <softdiffversionwp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work package initial setup <initial\_setup> (optional) (see Section 16.6).
  - d. Differences between software versions information <eqpdiff> (required). The element provides detailed information about the differences between versions of the software when more than one version of the software must be covered in a SUM or SAM.
2. The DTD fragment <softdiffversionwp> is graphically depicted.

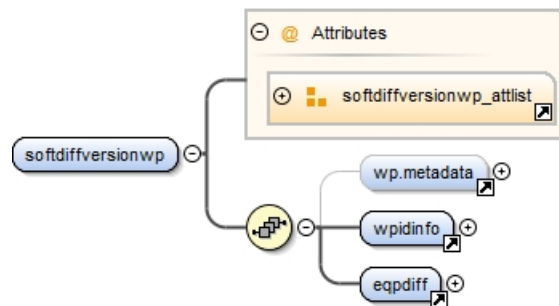


FIGURE 169. Software summary work package <softdiffversionwp> DTD hierarchy.

3. The DTD fragment for <softdiffversionwp> is:

```
<!ELEMENT softdiffversionwp (wp.metadata?, wpidinfo, eqpdiff)>
<!ATTLIST softdiffversionwp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changelvl (0-9) "0"
 chgno (0-99) "0"
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 crewmember CDATA #IMPLIED
 date-time-stamp (date | time | date-time) #IMPLIED
 delchlvl (0-99) "0"
 deletewp (yes | no) "no"
 fgc CDATA #IMPLIED
 frame (yes | no) "yes"
```

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
Marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<softdiffversionwp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnyno** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **id** – Unique identifier (optional) (see Section 36.3.7).
- o. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- p. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- q. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- r. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).

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- s. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- t. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- u. **security** – Security classification (optional) (see Section 36.3.14).
- v. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- w. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- x. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- y. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

## 18.2 Specialized general information work packages.

The following paragraphs discuss general information work packages for manual types such as the phased maintenance inspection and preventive maintenance manuals.

### 18.2.1 General information work package (Aircraft Phased Maintenance Inspection checklist manual only) **<pm-ginfowp>**.

The element **<pm-ginfowp>** provides the introductory material for phased maintenance in a Phased Maintenance Inspection Checklist Manual.

1. Metadata **<wp.metadata>** (optional). The element provides information about the work package data and generally not used or seen by the end user (see Section 16.4.1).
2. Work Package Identification Information **<wpidinfo>** (required). The element provides the identification information required for a work package (see Section 16.1).
3. Work package initial setup **<initial\_setup>** (optional) (see Section 16.6).
4. Item unique identification **<iuid>** (optional) (see 18.1.1). This element allows markings such as data plates, decals, or etchings.
5. General Information **<geninfo>** (required). The element provides general information, reference statements and standard statements that apply to the entire TM. (see Section 36.1.4.11).
6. The DTD fragment for **<pm-ginfowp>** is:

```
<!ELEMENT pm-ginfowp (wp.metadata?, wpidinfo, geninfo)>
<!ATTLIST pm-ginfowp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changelvl (0-9) "0"
 changeref IDREFS #IMPLIED
 chngno (0-99) "0"
 comment CDATA #IMPLIED
 crewmember CDATA #IMPLIED
```

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date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

## 7. Common attributes:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 18.2.1.1 Example of an XML document instance fragment and output for **<pm-ginfowp>**.

The XML instance and its stylesheet output for a General Information Work Package is provided below:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % ammo-tm "IGNORE">
<!ENTITY % usmc-tm "IGNORE">
```

2. Example of an XML document instance fragment using boilerplate entities for XML instance for General information work package (Phased Maintenance Checklist Manual Only) **<pm-ginfowp>**. The boilerplates **&pm-ginfowp.geninfo-phased;** and **&pm-ginfowp.geninfo-additional;** contain verbatim text to develop this work package. The general entities contain nested entities that are editable to insert the required data for the work package. See Chapter 37 for further information on boilerplates.

```
<pm-ginfowp airforce="no" army="no" deletewp="no" frame="no"marines="no" navy="no" tocentry=
"2" wpno="GXXXXX-X-XXXX-XXX"wpseq="0001">
 <wpidinfo>
 <maintlvl level="maintainer"/>
 </wpidinfo>
 <geninfo>&pm-ginfowp.geninfo-phased;&pm-ginfowp.geninfo-additional;
 <para0 esd="no" hcp="no">&pms_or_pmi.eir;
 </para0>
 <para0 esd="no" hcp="no">&pms_or_pmi.eir;
 </para0>
</geninfo>
</pm-ginfowp>
```

3. Example of a stylesheet output for **<pm-ginfowp>**. The example consists of only the first page of the work package.

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0001

**MAINTAINER****PHASED MAINTENANCE INSPECTION MANUAL ONLY****PHASED SCHEDULE**

The phased maintenance inspection checklist contains requirements for inspection of the INSERT WITH AIRCRAFT MODEL aircraft on a phased schedule having a INSERT WITH FLIGHT HOUR CYCLE hour (flight hours) cycle with INSERT WITH PHASE HOURS hour phases. Each requirement included herein is designated for accomplishment at least once, but not more than INSERT WITH NUMBER OF PHASES times during the INSERT WITH FLIGHT HOUR CYCLE hour cycle.

**EXCEEDING THE PHASED SCHEDULE**

The phased maintenance inspection intervals designated are the maximum and shall not be exceeded except in actual operational emergencies as explained herein. It is the Commander's responsibility to determine (on an individual aircraft basis) when inspection intervals may be exceeded. For this purpose, operational emergencies are conditions of combat, or conditions of disaster which necessitate flight to evacuate aircraft or personnel. When aircraft are operated beyond the normal inspection due time because of such emergency situations, a circled red X status symbol and an appropriate statement (to include authority) must be entered on the appropriate aircraft form as specified in DA PAM 738-751 until such time as the inspection is complete. When inspections are delayed to meet emergency requirements, Commanders will assure that the aircraft status symbol reverts to a red X and that delayed inspections are accomplished immediately upon termination of the actual emergency. When unusual local conditions (utilization, type of mission, personnel, periods of inactivity, environmental conditions, etc.) dictate, it is the prerogative and responsibility of the Maintenance Officer to increase the scope and/or frequency of maintenance or inspection as necessary to ensure safe operation (TM 1-1500-328-23).

**MAINTENANCE ACTIVITIES**

The inspections prescribed by this checklist will be accomplished at specified phases by Aviation Maintenance Company (AMC) activities with assistance of Aviation Support Battalion (ASB) and Depot Maintenance activities when required. The inspection of the part/component is visual unless stated otherwise.

**LIMITATIONS**

The checklist does not contain instructions for repair, adjustment or other means of rectifying conditions. Neither does it contain special tolerances, limits or instructions for special troubleshooting to find causes for malfunctions. Such data will be obtained from the latest issue of the aircraft INSERT WITH AIRCRAFT MAINTENANCE TM NUMBER series Maintenance Manuals.

**CHANGEOVER TO THE PHASED MAINTENANCE SYSTEM**

Changeover shall be accomplished in accordance with instructions provided in INSERT WITH AIRCRAFT CHANGEOVER TM/TB NUMBER entitled, "INSERT TM/TB TITLE". The requirements of this TM/TB must be accomplished prior to implementation of Phase 1 inspection requirements specified in this checklist.

**PRE-INSPECTION MAINTENANCE TEST FLIGHT (MTF)**

A pre-inspection MTF to duplicate non-hazardous equipment problems, determine unsatisfactory conditions, determine equipment operation problems, etc., is recommended prior to start of aircraft disassembly for phased maintenance inspection. The decision to perform the pre-inspection MTF, however, shall be the responsibility of the unit Maintenance Officer.

**SPECIAL INSPECTIONS, CALENDAR INSPECTIONS AND LUBRICATION REQUIREMENTS**

Special inspections, calendar inspections and lubrication requirements contained in INSERT WITH AIRCRAFT MAINTENANCE TM NUMBER and those listed on the aircraft's DA Form 2408-18 shall be reviewed and accomplished in accordance with the "inspection due" requirements specified in those documents.

**TIME BETWEEN OVERHAUL (TBO) AND RETIREMENT LIFE ITEMS CHECK**

Prior to start of the applicable phased maintenance inspection, a check will be made of components and their remaining operating hours prior to removal. The latest issue of the aircraft's INSERT WITH AIRCRAFT

0001-1

**FIGURE 170. Example of a stylesheet output for a General Information work package (phased maintenance checklist manual only) <pm-ginfowp>.**



## 18.2.2 Aircraft Preventive Maintenance Services Manual or Preventive Maintenance Daily Manual only <pms-ginfowp>.

The element <pms-ginfowp> identifies a Preventive Maintenance Services TM's general information work package.

1. The components are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data and usually not used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work package initial setup <initial\_setup> (optional) (see Section 16.6).
  - d. Scope <scope> (required). The element provides a brief statement of what is covered in the technical manual and includes verbatim text that is available through boilerplate entities (see Section 36.1.4.24). Appropriate information needs to be inserted through editable entities contained in the boilerplates (see Chapter 37 for further information on boilerplates).
  - e. Aircraft Preventive Maintenance Services Manual or Preventive Maintenance Daily Manual only <pms-geninfo> (required). The element provides required verbatim data for the general information for the preventive maintenance services inspection general information work package (see Section 18.2.2.1).
2. The DTD fragment for <pms-ginfowp> is graphically depicted.

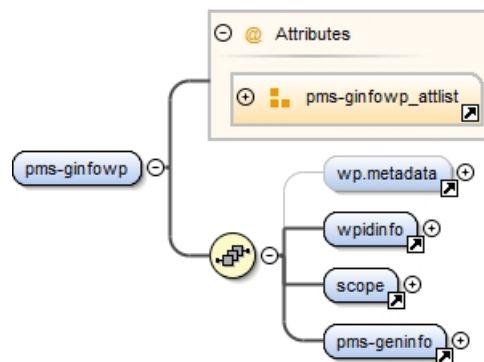


FIGURE 171. Preventive maintenance services inspection general information work package <pms-ginfowp> DTD hierarchy.

3. The DTD fragment for <pms-ginfowp> is:

```
<!ELEMENT pms-ginfowp (wp.metadata?, wpidinfo, scope, pms-geninfo)>
```

```
<!ATTLIST pms-ginfowp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED

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crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<pms-ginfowp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change lvl (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

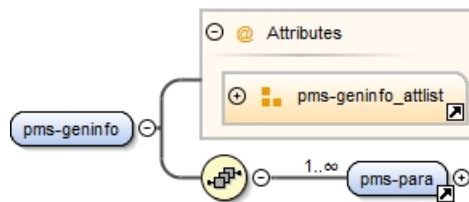
## MIL-HDBK-2361D

- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 18.2.2.1 Preventive maintenance services inspection general information <pms-geninfo>.

The element **<pms-geninfo>** identifies a Preventive Maintenance Services TM's general information work package. The general information is verbatim and some text must be edited with the appropriate information. The verbatim text is available through boilerplate entities. Also the appropriate information needs to be inserted through editable entities contained in the boilerplates (see Chapter 37 for further information on boilerplates).

1. The components are:
  - a.** Preventive Maintenance Services Inspection Paragraph **<pms-para>** (required – one ore more) (see Section 18.2.2.1.1).
  - b.** The DTD fragment for **<pms-geninfo>** is graphically depicted.



**FIGURE 172. Preventive maintenance service inspection general information <pms-geninfo> DTD hierarchy.**

- c.** The DTD fragment for **<pms-geninfo>** is:

```

<!ELEMENT pms-geninfo (pms-para+)>
<!ATTLIST pms-geninfo
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED

```

## MIL-HDBK-2361D

comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
frame	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

d. Attributes for **<pms-geninfowp>** are:

- i. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- ii. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- iii. **comment** – Change information (optional) (see Section 36.3.12).
- iv. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- v. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- vi. **id** – Unique identifier (optional) (see Section 36.3.7).
- vii. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- viii. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- ix. **security** – Security classification (optional) (see Section 36.3.14).
- x. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 18.2.2.1.1 Preventive maintenance services inspection paragraph **<pms-para>**.

The element **<pms-para>** provides the narrative text required for the verbatim general information.

1. The components are:

- a. Preventive Maintenance Services Inspection Paragraph **<pms-para>** (required - one or more) (see Section 18.2.2.1.1).
- b. Title **<title>** (required). The element provides the title for the work package (see Section 36.1.1.4).
- c. Warnings **<warning>**. The element provides an operation, procedure, or statement that if not performed properly may result in personal injury or death (see Section 28.1.1).
- d. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).

2. The DTD fragment for **<pms-para>** is graphically depicted:

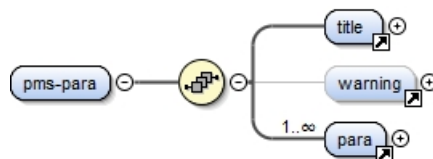


FIGURE 173. Preventive maintenance services paragraph **<pms-para>** DTD hierarchy.

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3. The DTD fragment for **<pms-para>** is:

```
<!ELEMENT pms-para (title, warning?, para+)>
```

4. No attributes.

### 18.2.2.2 Example of an XML document instance fragment and output for **<pm-ginfowp>**.

The XML instance and its stylesheet output for a General Information Work Package is provided below.

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % ammo-tm "IGNORE">
<!ENTITY % usmc-tm "IGNORE">
```

2. Example of an XML document instance fragment using boilerplate entities in the XML instance for Preventive Maintenance Services Inspection Checklist work package **<pms-ginfowp>**. The boilerplate **&pms-ginfowp;** contain verbatim text to develop this work package. The general entity contains nested entities that contain editable text so the required data can be inserted for the work package. The formatted example located after the XML instance displays what information should be inserted in the nested entities and provides the nested entity name in the editable boilerplate file. A list of the nested entities that are contained in the main boilerplate entity for **&pms-ginfowp;** are below. These entities are located in the editboil.ent file of the boilerplate files (see Chapter 37 for further information on boilerplates).

```
<!ENTITY pms-ginfowp.aircraft "INSERT THE AIRCRAFT MODEL">
<!ENTITY pms-ginfowp.inspect-interval "INSERT THE INSPECTION INTERVAL">
<!ENTITY pms-ginfowp.inspect-hrs "INSERT THE AIRCRAFT HOURS">
<!ENTITY pms-ginfowp.inspect-days "INSERT THE CALENDAR DAYS">
<!ENTITY pms-ginfowp.inspect-weeks "INSERT THE NUMBER OF WEEKS">
<!ENTITY pms-ginfowp.inspect-dayofweek "INSERT THE DAY OF THE WEEK">
<!ENTITY pms-ginfowp.warning-equip "INSERT AIRCRAFT EQUIPMENT (S) ">
<!ENTITY pms-ginfowp.warning-tm-maint '<extref docno="INSERT THE MAINTENANCE
TM NUMBER"/>'>
<! ENTITY pms-ginfowp.warning-tm-arm ' and all armament must be safetied,
deactivated, and cleared<extref docno="INSERT THE ARMAMENT TM NUMBER"/>'>
<!ENTITY pms-ginfowp.manhours "INSERT THE TOTAL NUMBER OF MAN-HOURS">
<!ENTITY pms-ginfowp.odc "INSERT THE ODC STATEMENT">
<!ENTITY pms-ginfowp.hazmat "INSERT THE HAZMAT STATEMENT">
<!ENTITY pms_or_pmi.eir.address "INSERT PROPONENT MAILING ADDRESS">
<! ENTITY pms_or_pmi.eir.fax '<phone type="dsn" receive="fax"/> INSERT
PROPONENT DSN FAX NUMBER or <phone type="coml" receive="fax"/>INSERT PROPONENT
COMMERCIAL FAX NUMBER'>
<! ENTITY pms_or_pmi.eir.email '<internet show.address="yes"/> <email
address="INSERT PROPONENT E-MAIL ADDRESS"/>'>
<pms-ginfowp airforce="no"army="no" deletewp="no" frame="no" marines="no" navy="no"
tocentry="2"wpno="GXXXXX-X-XXXX-XXX" wpseq="0001">
```

```

<wpidinfo>
<maintlvl level="maintainer"/>
<title>Preventive Maintenance Services Inspection Checklist
</title>
</wpidinfo>&pms-ginfowp;
</pms-ginfowp>

```

- Example of a stylesheet output for **<pms-ginfowp>**. This formatted example of the Preventive Maintenance Services Inspection Checklist work package contains the name of the nested entity and what kind of information is required to edit the nested entity. The example consist of only the first page of the work package.

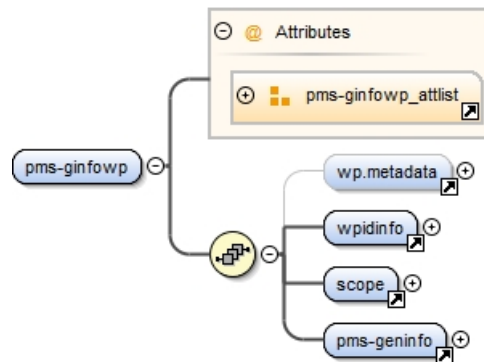


FIGURE 174. Preventive maintenance services inspection checklist work package **<pms-ginfowp>**.

## 19 OPERATOR INSTRUCTIONS CHAPTER

### 19.1 Operator instructions <opim>.

Operator instructions chapter is to be prepared and subdivided into individual work packages that provide the operator of the weapon system/equipment with description and use of controls and indicators, operation of the weapon system/equipment under usual, unusual and emergency conditions, stowage and decal/plate guide instructions, and on-vehicle equipment loading instructions.

1. The components for <opim> are:
  - a. Chapter Title Page <titlepg> (required). The element provides the title page preceding an information chapter (see Section 36.1.1.1).
  - b. Description and Use of Controls and Indicators Work Package <ctrlindwp> (required – one or more). The element provides the description and use of all system and equipment controls and indicators (see Section 19.1.1).
  - c. Operation Under Usual Conditions Work Package <opusualwp> (required – one or more). The element provides the instructions to operate the weapon system/equipment and auxiliary equipment in all modes of operation (see Section 19.1.4).
  - d. Operation Under Unusual Conditions Work Package <opunuwp> (required – one or more). The element provides instructions for operation of the equipment and auxiliary equipment under unusual conditions including identifying preventive or protective measures to be taken beyond the operator capabilities (see Section 19.1.5).
  - e. Emergency Conditions Work Package <emergencywp> (optional – zero or more). The element provides instructions for operating and shutting down equipment during emergency conditions (see Section 19.1.6).
  - f. Stowage and Decal/Data Plate Guide Work Package <stowagewp> (optional – zero or more). The element provides lists and illustrates the location of all applicable COEI, BII, AAL items, decals and data plates (see Section 19.1.7).
  - g. On-Vehicle Equipment Loading Plan Work Package <eqploadwp> (optional – zero or more). The element provides a loading plan that is prepared by the acquiring activity (see Section 19.1.8).
  - h. Depot Maintenance Work Requirements Work Package <dmwr\_operationalreqwp> (optional – zero or more). The element provides a operational requirements plan that is prepared by the depot activity.
2. The DTD fragment for <opim> is graphically depicted.

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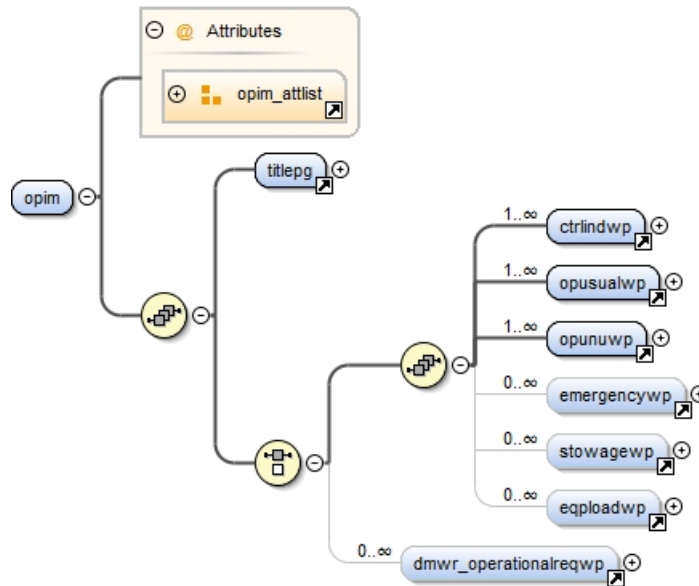


FIGURE 175. Software summary work package &lt;opim&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;opim&gt; is:

```
<!ELEMENT opim (titlepg, ((ctrlindwp+, opusualwp+, opunuwp+, emer-
gencywp*, stowagewp*, eqploadwp*) | dmwr_operationalreqwp*))>
<!ATTLIST opim
chap-toc (yes | no) "yes"
chngno (0-99) "0"
frame (yes | no) "yes"
revno CDATA #REQUIRED
tocentry (0 | 1 | 2) "1">
```

## 4. Attributes for &lt;opim&gt; are:

- a. **chap-toc** – Creates a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **chngno** - Change number (required) (see Section 36.3.12).
- c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- d. **revno** – Revision number (required) (see Section 36.3.12).
- e. **tocentry** – In the TM table of contents, the attribute indicates the indenture level. The possible selections are **0** (do not include), **1** (the highest level or 1st indenture level), or **2** (the second indenture level) (default value is **1**).

## 19.1.1 Description and use of controls and indicators work package &lt;ctrlindwp&gt;.

The description and use of controls and indicators work package provides the description and use of all system or equipment controls and indicators. This work package is prepared for each equipment, assembly or control panel



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having a control or indicator. The controls and indicators are described using either a tabular option (see 19.1.1.1) or a narrative option (see 19.1.1.2).

1. The components **<ctrlindwp>** are:

- a. Metadata **<wp.metadata>** (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
- b. Work Package Identification Information **<wpidinfo>** (required). The element provides the identification information required for a work package (see Section 16.2).
- c. Work package initial setup **<initial\_setup>** (optional) (see Section 16.6).
- d. Grouped alerts (optional – zero or more).
  - i. Warnings **<warning>**. The element provides an operation, procedure, or statement that if not performed properly may result in personal injury or death (see Section 28.1.1).
  - ii. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
  - iii. Cautions **<caution>**. The element provides information that identifies risk of damage to the equipment (see Section 28.1.2).
  - iv. Notes **<note>**. The element provides highlights to essential procedures, conditions, or statements or conveys important instructional data to the user (see Section 28.1.3).
- e. General or Introductory Information **<geninfo>** (optional). The element provides titled and subtitled paragraphs giving general or introductory information (see Section 36.1.4.11).
- f. Description and use of controls and indicators work package requires either a tabular form using an **<intro>** that identifies the basic system, area, or other breakdown followed by controls and indicators tables **<ctrlindtab>** or an associated illustration **<figure>** and **<ctrlinddesc>** describing each control or indicator shown in the figure.
  - i.
    - I. Introduction **<intro>** (required). The element provides an introductory section for the Description of Controls and Indicators Tabular Form when it is used in a description and use of controls and indicators work package (see Section 36.1.4.14).
    - II. Description of Controls and Indicators Tabular Form **<ctrlindtab>** (required – one or more). The element provides a description of each control and indicator in a tabular form (see Section 19.1.1.1).
    - III. Alternate Description of Controls and Indicators table **<ctrlindtab-alt>** (optional).
  - ii.
    - I. Illustration **<figure>** (required – one or more). The element provides the associated figure for each control and indicator contained in the description of controls and indicators narrative description (see Section 31.1.1).
    - II. Description of Controls and Indicators narrative form **<ctrlinddesc>** (required – one or more). The element provides paragraphs describing each control or indicator shown in the figure.

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2. The DTD fragment for **<ctrlindwp>** is graphically depicted.

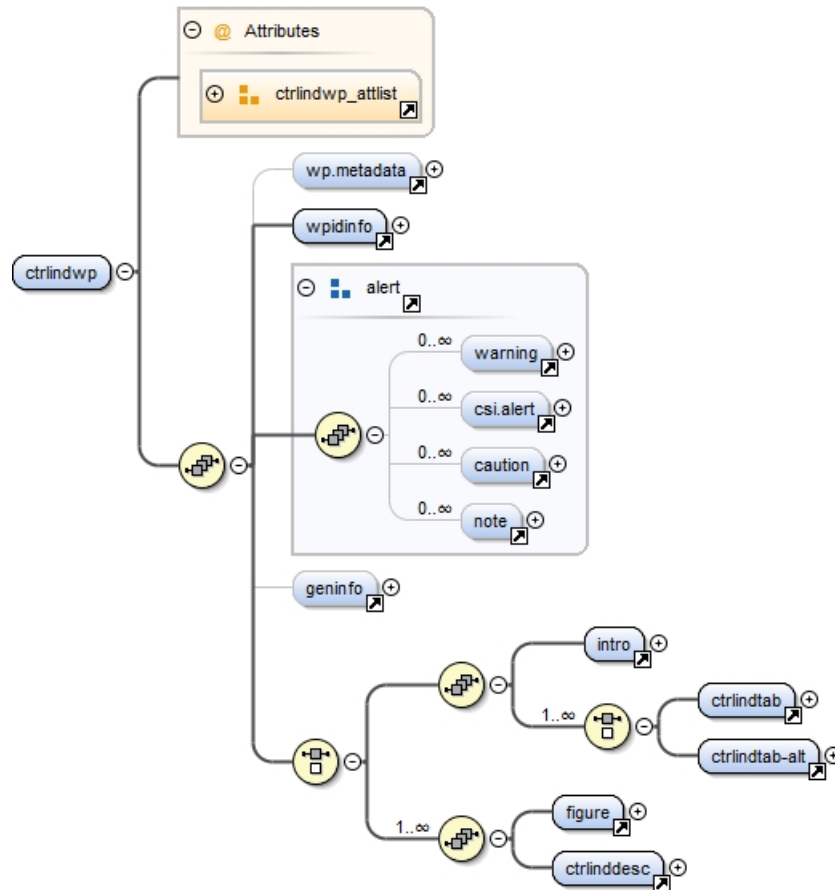


FIGURE 176. Features and capabilities **<ctrlindwp>** DTD hierarchy.

3. The DTD fragment for **<ctrlindwp>** is:

```
<!ELEMENT ctrlindwp (wp.metadata?, wpidinfo, %alert;, geninfo?,
((intro, (ctrlindtab | ctrlindtab-alt)+) | (figure, ctrlinddesc)+))>
```

```
<!ATTLIST ctrlindwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"

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deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<ctrlindwp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

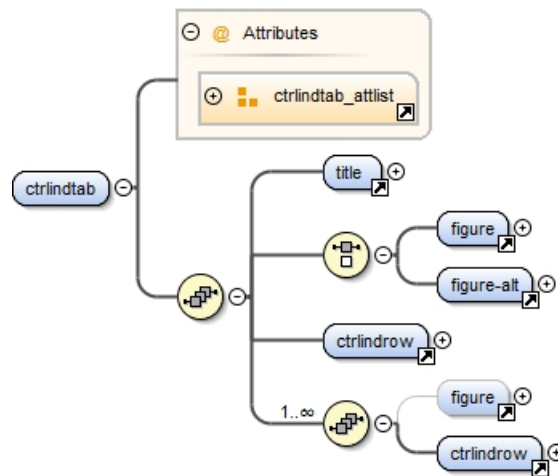
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- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 19.1.1.1 Description of controls and indicators tabular form <ctrlindtab>.

This work package option describes each control and indicator in a tabular format, starting with a brief introduction <intro> that identifies the basic system, area, or other breakdown, followed by one or more controls and indicators tables <ctrlindtab>. The number of controls and indicators tables <ctrlindtab> required is dependent on several factors, including but not limited, to system complexity, different users (crew members/stations) or configuration differences. (see Section 19.1.1.1).

1. The components <ctrlindtab> are:
  - a. Title <title>** (required). The element provides the title for the work package (see Section 36.1.1.4).
  - b. Illustration <figure>** (required). The element provides a graphic of the control or indicator that is being described (see Section 31.1.1) and/or conditional illustration <figure-alt> (see Section 35.2.1). A second figure is optional in the table but only after the element <ctrlindrow>. If a second <figure> is used, it is followed by at least one <ctrlindrow>.
  - c. Controls and Indicators Group <ctrlindrow>** (required). The element provides a table row for detailed information (see Section 19.1.1.1.1).
2. The DTD fragment for <ctrlindtab> is graphically depicted.



3. The DTD fragment for `<ctrlindtab>` is:

```
<!ELEMENT ctrlindtab (title, (figure | figure-alt), ctrlindrow,
 (figure?, ctrlindrow)+)>

<!ATTLIST ctrlindtab
applicable IDREFS #IMPLIED
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED
tocentry (0 | 1 | 2 | 3 | 4 | 5) "1">
```

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **id** – Unique identifier (optional) (see Section 36.3.7).
- h. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

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- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

#### 19.1.1.1.1 Controls and indicators group <ctrlindrow>.

Controls and indicators group provides detailed information. The element is similar to a **row** in a structural table.

1. The components <ctrlindrow> are:
  - a. Key <key> (required). The element provides the identification of a key or callout that locates a control or indicator shown on the related figure (see Section 19.1.1.1.2).
  - b. Controls and Indicators Entry <ctrlind> (required). The element provides the name of the control or indicator (see Section 36.1.4.2).
  - c. Function <function> (required) (see Section 19.1.1.1.4). The element provides a description of the controls or indicator function.
  - d. Note <note> (optional – zero or more). A note should be used to highlight essential information, conditions or statements or convey important instructional data to the user. Notes should not contain procedural steps(s) and should not be used to insert steps to avoid renumbering. Notes should not be used for filtering. Notes should not contain references to figures. Notes should not contain references to steps except to indicate the steps that the note applies to when it applies to multiple steps (see Section 28.1.3).
2. The DTD fragment for <ctrlindrow> is graphically depicted.

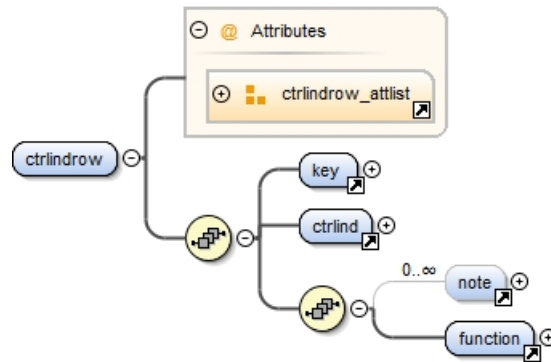


FIGURE 178. Controls and indicators group <ctrlindrow> DTD hierarchy.

3. The DTD fragment for <ctrlindrow> is:

```
<!ELEMENT ctrlindrow (key, ctrlind, (note*, function))>
```

```
<!ATTLIST ctrlindrow
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED

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inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<ctrlindtab>** are:

- a. **applicable** Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref**– Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 19.1.1.1.2 Key <key>.

Key provides the identification of a key or callout that locates a control or indicator shown on the related figure. The element is similar to a **cell** in a structural table and is entered in column one (1) in the controls and indicators table.

1. The components for **<key>** are:

- a. Parsable data (#PCDATA) (required). The element provides the text for the TM number (see Section 6.2.2.1)

2. The DTD fragment for **<key>** is:

```
<!ELEMENT key (#PCDATA) >
<!ATTLIST ctrlindrow
 assocfig IDREFS #IMPLIED
 idref IDREFS #IMPLIED>
```

3. Attributes for **<key>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **idref**– Reference identifier(s) (optional) (see Section 36.3.7).

### 19.1.1.1.3 Controls and indicators entry <ctrlind>.

Controls and indicators entry provides the name of the control or indicator the markup is discussed in Section 36.1.4.2.

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**19.1.1.1.4 Function <function>.**

Function provides a description of the function of the control or indicator. The element is similar to a **cell** in a structural table and is entered in column three (3) in the controls and indicators table.

1. The components **<function>** are:

- a. Parsable data (**#PCDATA**) (optional – zero or more). The element provides the text for the TM number (see Section 6.2.2.1).
- b. Emphasis **<emphasis>** (optional – zero or more). The element is used to emphasize the text of the entry (see Section 36.1.3.1).
- c. Subscript **<subscript>** (optional – zero or more). The element is used to format the text as subscript (see Section 36.1.3.4).
- d. Superscript **<supscript>** (optional – zero or more). The element is used to format the text as superscript (see Section 36.1.3.5).
- e. Cross reference **<xref>** (optional – zero or more). The element is used to reference the work package sequence number, figure, table, step(s), etc. (see Section 33.2.2).
- f. External reference **<extref>** (optional – zero or more). The element is used to reference to external document information (see Section 33.2.1).
- g. Enhanced Linking **<link>** (optional – zero or more). The element provides a capability to reference internal or external targets (see Section 33.2.3).
- h. Content Sensitive Help **<help.info>** (optional – zero or more). The element is used for “help information” about the technical data used in frame-based manuals (see Section 35.3.3.7).
- i. Index reference **<indxref>** (optional – zero or more). The element establishes a document location and index text to be referenced within the alphabetical index.(see Section 15.5.2.2.3).
- j. Term **<term>** (optional – zero or more). The element provides a word, phrase, acronym, symbol, or abbreviation in a definition and legend list (see Section 36.1.2.4.2).
- k. Term definition **<term.def>** (optional – zero or more). The element provides a wrapper for a term and corresponding definition (see Section 36.1.2.4.1).
- l. Figure callout **<callout>** (optional – zero or more). The element is used for a figure reference and callout reference, number, letter, or symbol appearing in the figure (see Section 33.2.4.1).
- m. Footnote **<fnote>** (optional – zero or more) The element contains the footnote information which is referenced in the document (see Section 32.1.1).
- n. Footnote reference **<fnref>** (optional – zero or more). The element is the reference in the text to the footnote (see Section 32.1.1.2).
- o. Graphic **<graphic>** (optional - zero or more). The element provides a graphic, which is contained in an external entity (see Section 31.2).
- p. Miscellaneous – **<misc>** (see 36.2.1).
- q. Control/Indicator Entry **<ctrlind>** (optional – zero or more). The element provides the name of the control or indicator (see Section 36.1.4.2).
- r. Control/Indicator value **<ctrlind-val>** (optional – zero or more). The element provides a reading from a control or indicator (see Section 36.1.4.3).
- s. DoD ammunition code **<dodac>** (optional – zero or more). The element provides identification of an ammunition type (see Section 36.1.4.4).



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- t. Lubricant **<lubricant>** (optional – zero or more). The element provides identification of a lubricant (see Section 36.1.4.15).
- u. Graphic symbol **<symbol>** (optional – zero or more). The element provides a graphic symbol not found in standard ISO character sets that is inserted as a graphic in text (see Section 31.3.1).
- v. Torque value or limit **<torque>** (optional – zero or more). The element provides a torque value or limit embedded in the text or table entry (see Section 36.1.4.25).
- w. Voltage value **<voltage>** (optional – zero or more). The element provides the identification of a critical voltage measurement (see Section 36.1.4.26).
- x. Null **<null>** (optional – zero or more). The element specifies that it contains no content and marking is identified by its attribute (see Section 36.1.3.2).
- y. List **<list>** (optional – zero or more) – The elements are usually contained within paragraphs. The list tag will identify the type of list being tagged. There are three types of XML lists: random, sequential, and definition lists (see 7.2.1.3.8).
- z. Changed text marker **<change>** (optional – zero or more). The elements are usually contained within paragraphs. The list tag will identify the type of list being tagged. There are three types of XML lists: random, sequential, and definition (see Section 36.1.3.7).

2. The DTD fragment for **<function>** is graphically depicted.

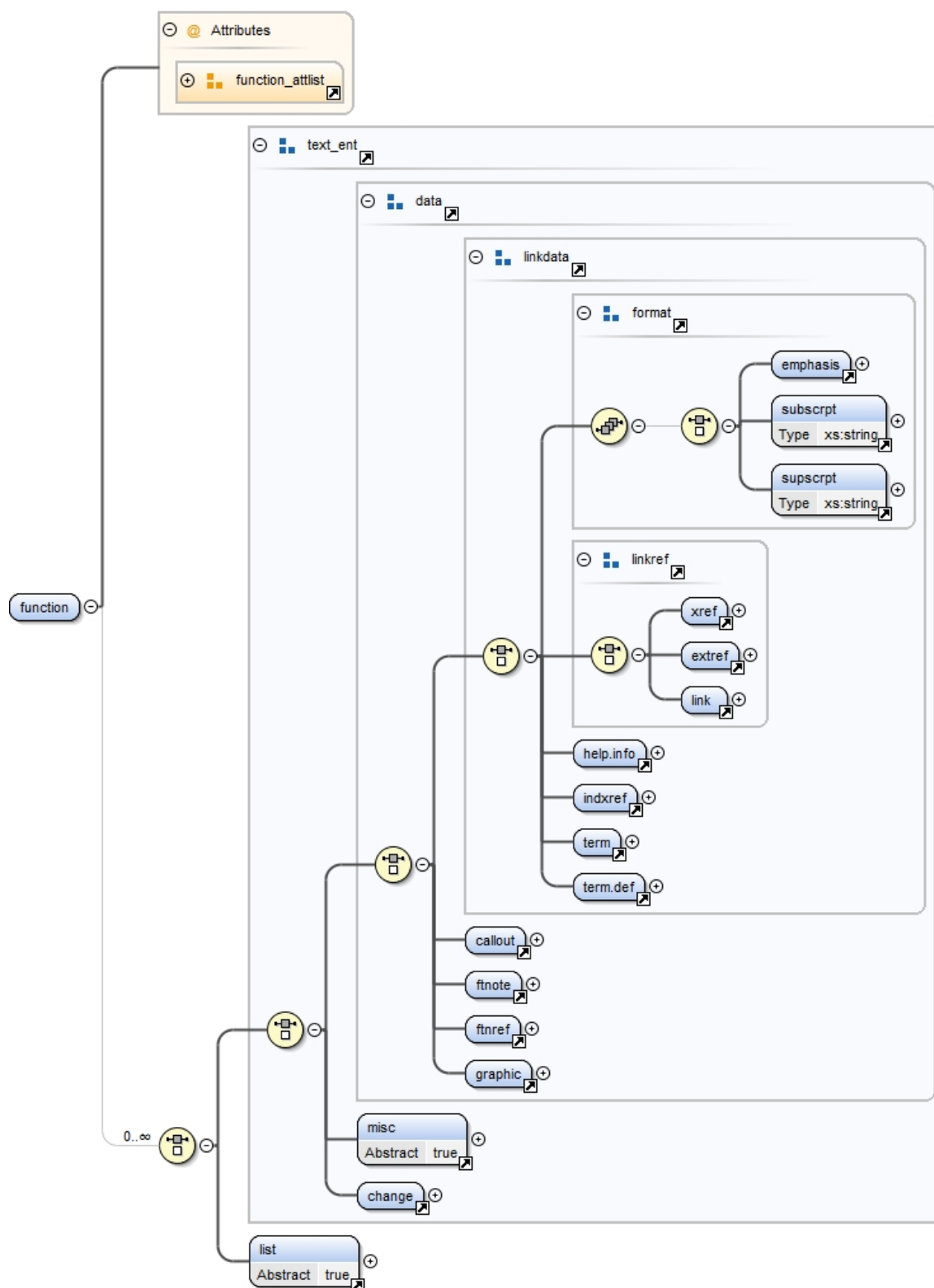


FIGURE 179. Function **<function>** DTD hierarchy.

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3. The DTD fragment for **<function>** is:

```
<!ELEMENT function (#PCDATA (emphasis | subscript | supscript) xref | extref |
link | help.info | indxref | term | term.def | callout | ftnote | ftnref |
graphic | misc | list) *>
```

```
<!ATTLIST function
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<function>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

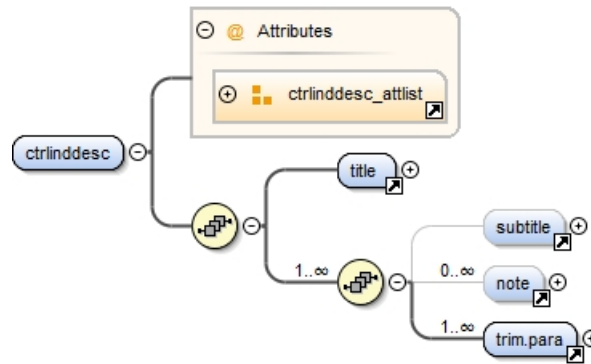
19.1.1.2 Description of controls and indicators narrative form option **<ctrlinddesc>**.

This work package option provides a narrative approach to describe each control and indicator, starting with a figure **<figure>** illustrating the control or indicator being described, and followed by one or more paragraphs **<ctrlinddesc>** describing each control/indicator shown in the figure. The narrative option for controls and indicators must contain an index number **<key>**. It is used to locate and identify the control or indicator on the illustration. The name (nomenclature) **<ctrlind>** of the control or indicator as it appears on the equipment, and a description of the function of the control or indicator **<function>** must be provided. More than one **<figure>** and **<ctrlinddesc>** grouping may be used to improve user understanding.

1. The components **<ctrlinddesc>** are:

- a. Title **<title>** (optional – zero or more). The element provides the title of the control or indicator that is being described (see Section 36.1.1.4).
- b. Subtitle **<stitle>** (optional – zero or more). The element provides a subordinate title to the paragraph description (see Section 36.1.1.5).
- c. Note **<note>** (optional – zero or more). The element provides a procedure, condition, or statement that is important enough to highlight as a note (see Section 28.1.3).
- d. Reduced Paragraph **<trim.para>** (required – one or more). The element provides the same usage as a paragraph element, but contains reduce content (see Section 36.1.1.8).

2. The DTD fragment for **<ctrlinddesc>** is graphically depicted.



**FIGURE 180. Description of controls and indicators narrative form option <ctrlinddesc> DTD hierarchy.**

3. The DTD fragment for **<ctrlinddesc>** is:

```
<!ELEMENT ctrlinddesc (title, (subtitle?, note*, trim para+))>
<!ATTLIST ctrlinddesc
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Attributes for **<ctrlinddesc>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 19.1.2 XML document instance fragment and output for <ctrlindwp> using the tabular option.

The XML instance and its stylesheet output for <ctrlindwp> using the tabular option is provided below:

1. An example of an XML instance and its stylesheet output for a <ctrlindwp> using the tabular option:

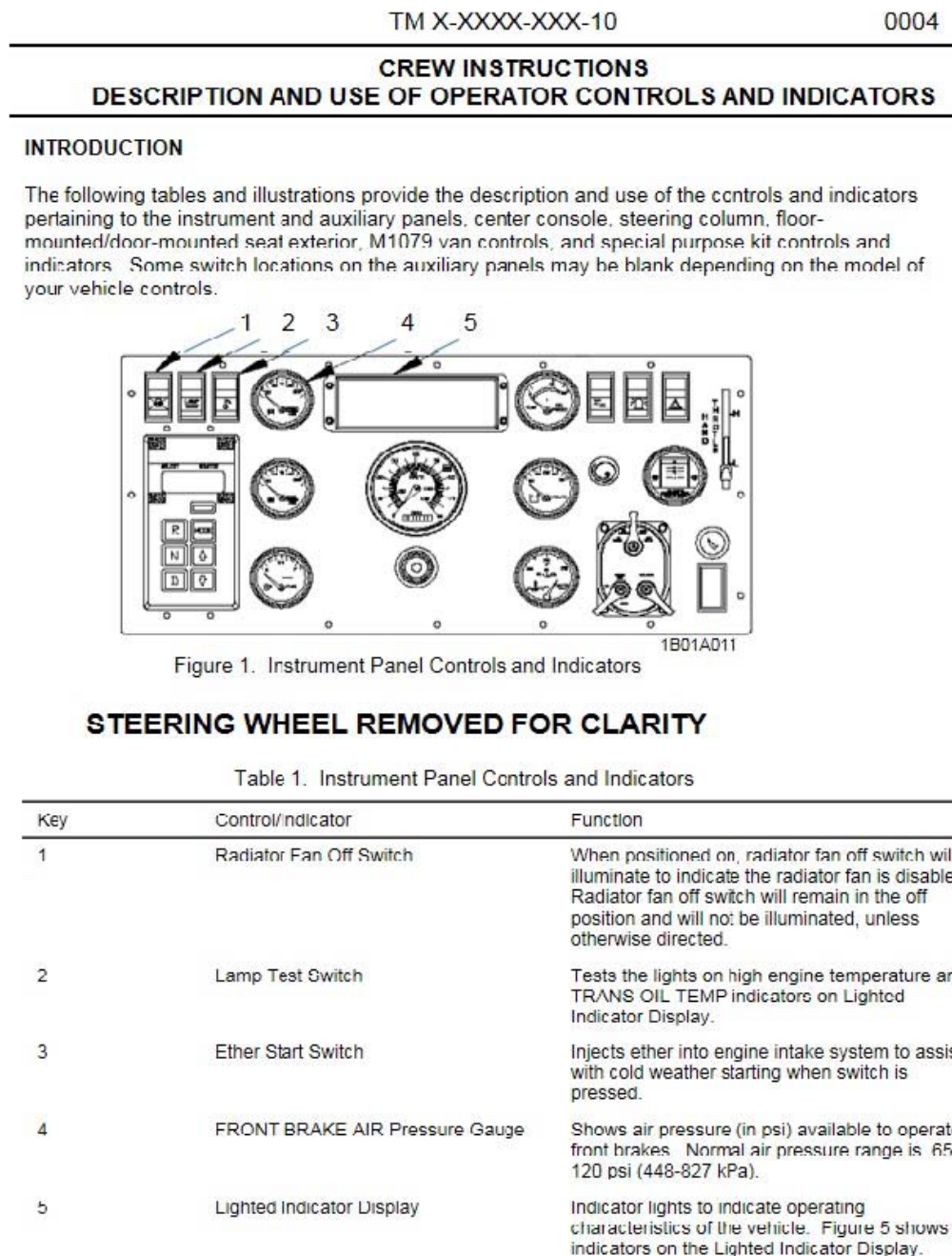
```
<ctrlindwp wpno="o00001-9-2320-365">
 <wpidinfo>
 <maintlvl level="user"/>
 <title>Description and Use of Operator's Controls and Indicators
 </title>
</wpidinfo>
<intro>
<para0>
 <title>Introduction
</title>
<para> The following tables and illustrations provide the description and use of
the controls and indicators pertaining to the instrument and auxiliary panels,
center console, steering column, floor-mounted, door-mounted, seat, exterior,
and M1079 van controls, and special purpose kit controls and indicators. Some
switch locations on the auxiliary panel may be blank depending on the model of
your vehicle controls.
</para>
</para0>
</intro>
<ctrlindtab>
 <title>Instrument Panel Controls and Indicators
</title>
<figure application="both" figtype="normal-page" id="o00001-9-2320-365-1" >
 <title>Instrument Panel Controls and Indicators
</title>
<graphic boardno="o00001-9-2320-365_1>
</graphic>
</figure>
<ctrlindrow>
 <key> 1 .
</key>
<ctrlind>Radiator Fan Off Switch.
</ctrlind>
<function>When positioned to on, radiator fan off switch will illuminate to
indicate the radiator fan is disabled. Radiator fan off switch will remain in the
off position and not illuminated, unless otherwise directed.
</function>
</ctrlindrow>
<ctrlindrow>
 <key>2 .
</key>
<ctrlind>Lamp Test Switch.
</ctrlind>
<function>Tests the lights on high engine temperature and TRANS OIL TEMP
indicators on Lighted Indicator Display.
</function>
</ctrlindrow>
<ctrlindrow>
```

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<key>3.  
 </key>  
 <ctrlind>Ether Start Switch.  
 </ctrlind>  
 <function>Injects ether into engine intake system to assist with cold weather starting when switch is pressed.  
 </function>  
 </ctrlindrow>  
 <ctrlindrow>  
 <key>4.  
 </key>  
 <ctrlind>FRONT BRAKE AIR Pressure Gage.  
 </ctrlind>  
 <function>Shows air pressure (in psi) available to operate front brakes. Normal air pressure range is 65-120 psi (448-827 kPa).  
 </function>  
 </ctrlindrow>  
 <ctrlindrow>  
 <key>5.  
 </key>  
 <ctrlind>Lighted Indicator Display.  
 </ctrlind>  
 <function>Indicator lights to indicate operating characteristics of the vehicle  
 <xref figid="o00001-9-2320-365-5"> shows all indicators on the Lighted Indicator Display.  
 </function>  
 </ctrlindrow>  
 <key>  
 </key>  
 <ctrlind>Oil Press Gage.  
 </ctrlind>  
 <ctrlindrow>  
 <function>  
 <xref figid="o00001-9-2320-365-5"/> Gage shows engine oil pressure (in psi. Normal oil pressure range is 15-80 psi (103-552 kPa) .  
 </function>  
 </ctrlindrow>  
 </ctrlindtab>  
 </ctrlindwp>

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2. Page-based TM stylesheet output example for <ctrlindwp> using the tabular option:



**FIGURE 181. Example of a page-based TM stylesheet output for <ctrlindwp> using the tabular option.**

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### 19.1.3 XML document instance fragment and output for <ctrlindwp> using the narrative option.

The XML instance and its stylesheet output for a <ctrlindwp> using the narrative option is provided below:

1. An example of an XML instance and its stylesheet output for a <ctrlindwp> using the narrative option:

```
<ctrlindwp wpno="o00001-9-2320-365">
 <wpidinfo>
 <maintlvl level="field"/>
 <title>Description and Use of Operator's Controls and Indicators
 </title>
 </wpidinfo>
 <figure id="o00001-9-2320-365-1">
 <title>Instrument Panel Controls and Indicators
 </title>
 <graphic boardno="o00001-9-2320-365_1">
 </graphic>
 </figure>
 <ctrlinddesc>
 <title>Instrument Panel Controls and Indicators
 </title>
 <trim.para>When positioned to on, the RADIATOR FAN OFF SWITCH
 <callout assocfig="o00001-9-2320-365-1" label="1"/> will illuminate to indicate the
 radiator fan is disabled. The radiator fan off switch will remain in the off
 position and not illuminated, unless otherwise directed.
 </trim.para>
 <trim.para>LAMP TEST SWITCH
 <callout assocfig="o00001-9-2320-365-1" label="2"/> tests the lights on high engine
 temperature and TRANS OIL TEMP indicators on Lighted Indicator Display.
 </trim.para>
 <trim.para>ETHER START SWITCH
 <callout assocfig="o00001-9-2320-365-1" label="3"/> injects ether into engine intake
 system to assist with cold weather starting when switch is pressed.
 </trim.para>
 <trim.para>FRONT BRAKE AIR PRESSURE GAGE
 <callout assocfig="o00001-9-2320-365-1" label="4"/> shows air pressure (in psi) available
 to operate front brakes. Normal air pressure range is 65-120 psi (448-827 kPa).
 </trim.para>
 <trim.para>LIGHTED INDICATOR DISPLAY
 <callout assocfig="o00001-9-2320-365-1" label="5"/> lights to indicate operating
 characteristics of the vehicle.
 </trim.para>
 <trim.para>OIL PRESS GAGE
 <callout assocfig="o00001-9-2320-365-1" label="6"/> shows engine oil pressure (in psi).
 Normal oil pressure range is 15-80 psi (103-552 kPa).
 </trim.para>
 </ctrlinddesc>
</ctrlindwp>
```



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2. Page-based TM stylesheet output example for <ctrlindwp> using the narrative option.

TM X-XXXX-XXX-10

0004

## CREW INSTRUCTIONS

### DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS

#### INTRODUCTION

The following tables and illustrations provide the description and use of the controls and indicators pertaining to the instrument and auxiliary panels, center console, steering column, floor-mounted/door-mounted seat exterior, M1079 van controls, and special purpose kit controls and indicators. Some switch locations on the auxiliary panels may be blank depending on the model of your vehicle controls.

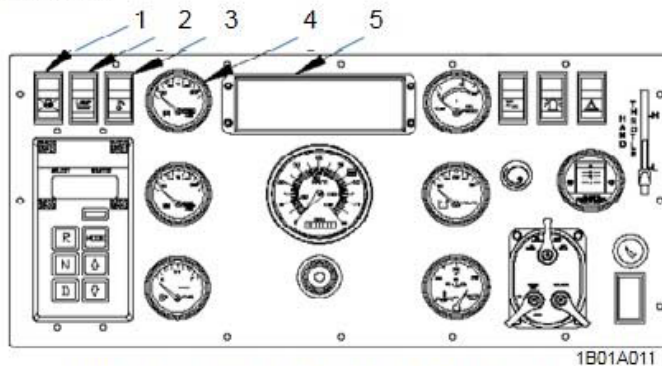


Figure 1. Instrument Panel Controls and Indicators

#### STEERING WHEEL REMOVED FOR CLARITY

Table 1. Instrument Panel Controls and Indicators

Key	Control/indicator	Function
1	Radiator Fan Off Switch	When positioned on, radiator fan off switch will illuminate to indicate the radiator fan is disabled. Radiator fan off switch will remain in the off position and will not be illuminated, unless otherwise directed.
2	Lamp Test Switch	Tests the lights on high engine temperature and TRANS OIL TEMP indicators on Lighted Indicator Display.
3	Ether Start Switch	Injects ether into engine intake system to assist with cold weather starting when switch is pressed.
4	FRONT BRAKE AIR Pressure Gauge	Shows air pressure (in psi) available to operate front brakes. Normal air pressure range is 65-120 psi (448-827 kPa).
5	Lighted Indicator Display	Indicator lights to indicate operating characteristics of the vehicle. Figure 5 shows all indicators on the Lighted Indicator Display.

FIGURE 182. Graphic example of a page-based TM stylesheet output for <ctrlindwp> using the narrative option.

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**19.1.4 Operation under usual conditions work package <opusualwp>.**

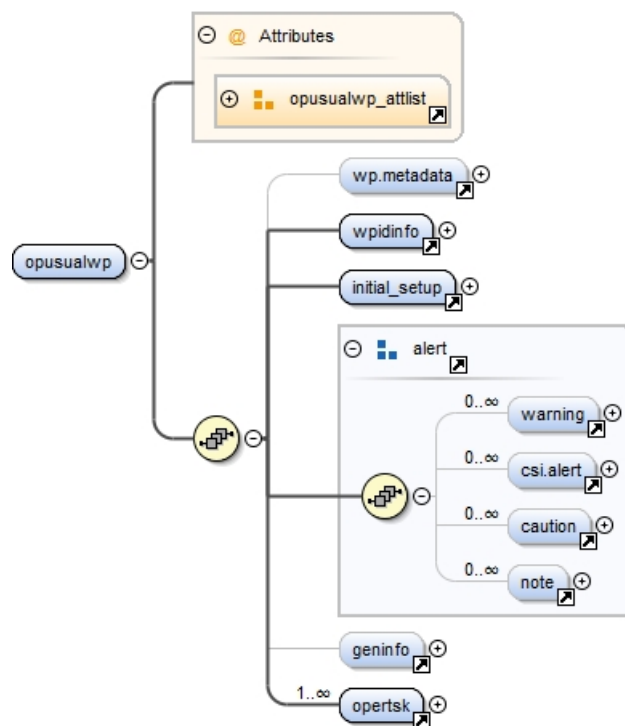
The operation under usual conditions work package provides instructions to operate the weapon system/equipment and auxiliary equipment in all modes of operation, including instructions to ensure proper grounding of the equipment. Any combination of control settings that will create a hazard to personnel or cause damage to equipment are preceded by a warning or caution.

1. The components <opusualwp> are:

- a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
- b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
- c. Work Package Initial Setup <initial.setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
- d. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
  - i. Warning <warning> (optional - zero or more) (see Section 28.1.1).
  - ii. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
  - iii. Caution <caution> (optional - zero or more) (see Section 28.1.2).
  - iv. Note <note> (optional - zero or more) (see Section 28.1.3).
- e. General or Introductory Information <geninfo> (optional). The element provides titled and subtitled paragraphs giving general or introductory information (see Section 36.1.4.11).
- f. Operational Tasks <opertsk> (required – one or more). The element provides operational tasks required in the operations under usual conditions work package (see Section 19.1.4.1).

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2. The DTD fragment **<opusualwp>** is graphically depicted.



**FIGURE 183. Operation under usual conditions work package <opusualwp> DTD hierarchy.**

3. The DTD fragment for **<opusualwp>** is:

```
<!ELEMENT opusualwp (wp.metadata?, wpidinfo, initial_setup, %alert;, gen-
info?, opertsk+)>
```

```
<!ATTLIST opusualwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date- time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"

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idref	IDREFS	#IMPLIED
inschlvl	CDATA	#IMPLIED
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<opusualwp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chno** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).

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- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

#### 19.1.4.1 Operational task under usual conditions <opertsk>.

The operational task under usual conditions <opertsk> element contains operator procedures on “how to” use the equipment, such as start, operate, place in standby, or shutdown procedures. Each operation, under usual condition task, has only one specific task identified. If the work package requires multiple tasks, insert another <opertsk>. Each operational task <opertsk> requires one of the following specific operational tasks, as defined in MIL-STD-40051-1/-2. Each specific tag has similar markup requirements for tasks (see Section 17.1 for details on tagging.).

1. The components <opertsk> are:

a. One of the following tasks is used:

- i. Initial Adjustments, Before Use And Self-Test <initial>. The element provides an operational task that the operator performs before putting equipment in operation (see Section 19.1.4.1.1).
- ii. Operating Procedures <oper>. The element provides an operational task containing procedures to start the equipment, operate the equipment, place the equipment in standby, or shutdown the equipment (see Section 19.1.4.1.2).
- iii. Operating Auxiliary Equipment Procedures <operaux>. The element provides an operational task containing procedures to start, operate, place in standby, or shutdown any auxiliary equipment (see Section 19.1.4.1.3).
- iv. Assembly And Preparation For Use <prepforuse>. The element provides a task for items that need to be unpacked, assembled or installed (see Section 19.1.4.1.4).
- v. Preparation For Movement <prepmove>. The element provides an operational task containing procedures for preparing the equipment to be moved (see Section 19.1.4.1.5).
- vi. Security Measures For Electronic Data <secref>. The element provides information regarding loading, purging, overwriting, or unloading classified electronic data (see Section 19.1.4.1.6).
- vii. Siting Requirements <site>. The element provides an operational task for site requirements that need to be considered prior to setting up the equipment (see Section 19.1.4.1.8).
- viii. Shelter Requirements <shelter>. The element provides an operational task containing the shelter requirements for equipment normally housed in a permanent or semi-permanent shelter (see Section 19.1.4.1.7).

- b. If required, information on decals and operating instruction plates on equipment <instructplt> (optional – zero or more) may be included (see Section 36.1.4.12).

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2. The DTD fragment for **<opertsk>** is graphically depicted.

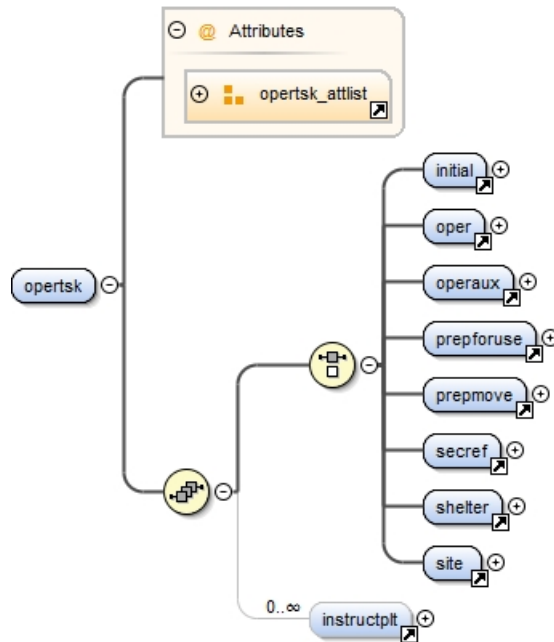


FIGURE 184. Operational task under usual conditions **<opertsk>** DTD hierarchy.

3. The DTD fragment for **<opertsk>** is:

```
<!ELEMENT opertsk ((initial | oper | operaux | prepforuse | prepmove | secref
| shelter | site), instructplt*)>
```

```
<!ATTLIST opertsk
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<opertsk>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).

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- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref**– Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

**19.1.4.1.1 Initial adjustments, before use, and self-test <initial>.**

Required routine checks, self-test, or adjustments that the operator performs before putting equipment in operation. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.4.1.2 Operating procedures <oper>.**

Operating procedures is an operational task containing procedures to start, operate, place in standby, or shutdown the equipment. The element also includes the operating procedures on how to operate the equipment in conjunction with auxiliary or other equipment. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.4.1.3 Operating auxiliary equipment <operaux>.**

Operating auxiliary equipment is an operational task containing procedures to start the auxiliary equipment, operate it, place it in standby or shutdown. If procedures are in another TM, this paragraph may make reference to that TM for operating procedures. The elements external reference **<extref>** (see Section 33.2.1) and link **<link>** (see Section 33.2.3) are used for external reference. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.4.1.4 Preparation for use <prepforuse>.**

Preparation for use is a task used for items that are unpacked, disassembled or removed from an assembly, subassembly or component prior to being placed into service. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.4.1.5 Preparation for movement <prepmove>.**

Preparation for movement is an operational task containing procedures for preparing the equipment to be moved if it can be done by the operator. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.4.1.6 Security measures for electronic data <secref>.**

Security Measures for Electronic Data is an operational task. The task consists of instructions for handling, loading, scrubbing, overwriting, or unloading classified electronic data under usual or unusual conditions. The components are one or more procedures **<proc>** (see Section 17.1 for details on tagging).

**19.1.4.1.7 Shelter requirements <shelter>.**

Shelter requirements is an operational task containing the requirements for equipment normally housed in a permanent or semi-permanent shelter. The element includes requirements for dimensions, floor loading, layout,

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power or environmental conditions and other similar considerations. Shelter requirements does not apply to trucks, vans or transportable shelters. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

#### 19.1.4.1.8 Siting requirements **<site>**.

Siting requirements is an operational task that provide requirements to properly setup equipment. Includes overall site location, power sources, terrain requirements, and other similar considerations. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

#### 19.1.4.1.9 Instruction plates and decals **<instructplt>**.

When required, any instruction plates or decals used in the operation of the equipment are included (see Section 36.1.4.12).

#### 19.1.4.2 XML document instance fragment and output for **<opusualwp>**.

The XML instance and its stylesheet output for a **<opusualwp>** is provided below:

1. Example of an XML document instance fragment for **<opusualwp>**:

```
<opusualwp wpno="o00019-9-2320-365" chngno="0">
 <wpidinfo>
 <maintlvl level="maintainer"/>
 <title>M1079 Van Preparation For Movement
 </title>
</wpidinfo>
<initial_setup>
 <null insert="none"/>
</initial_setup>
<opertsk id="o00019-9-2320-365-3">
 <prepmove id="o00019-9-2320-365-4">
 <proc id="o00019-9-2320-365-6">
 <title>M1079 Weight Distribution
 </title>
 <warning>
 <warning.group>
 <trim.para>Heavy objects/loads, such as tool boxes and heavy parts, must always be
 carried on the floor with the weight distributed as equally as possible between
 left and ride sides of M1079 van. Failure to comply decreases the stability of
 the M1079 van and will increase the likelihood of a rollover.
 </trim.para>
 <trim.para> Heavy cabinets must always be mounted as low as possible with the
 weight distributed as equally as possible between left and right sides of M1079
 van. Remember to consider the weight of the items that will be stored in the
 cabinets. Failure to comply decreases the stability of the M1079 van and will
 increase the likelihood of a rollover.
 </trim.para>
 <trim.para> Always keep in mind, when placing items inside the M1079 van, that
 heavier items must always be positioned as low as possible and the weight
 distributed as equally as possible between left and right sides of M1079 van.
 Failure to comply decreases the stability of the M1079 van and will increase the
 likelihood of a rollover.
```



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```

</trim.para>
</warning.group>
</warning>
<step1 id="o00019-9-2320-365-1">
<para>All objects that can shift during movement will be secured by using a
bracing, cushioning, or tie-down method. The method used will be performed in a
manner that will not cause damage to the walls or equipment.
</para>
</step1>
<step1 id="o00019-9-2320-365-2">
<para>Verify that all workbenches, lockers, cabinets, and shelves are securely
attached to walls and floor. 410 MIL-HDBK-2361D DRAFT DATED 5 July 2011
</para>
</step1>
<step1 id="o00019-9-2320-365-3">
<para>Close van windows.
<xref taskid="o00019-9-2320-365-3" wpid="o00014-9-2320-365"/>
</para>
</step1>
<step1 id="o00019-9-2320-365-4">
<para>Disconnect van 12/24 vdc power.
<xref taskid="o00019-9-2320-365-4" wpid="o00014-9-2320-365"/>.
</para>
</step1>
<step1 id="o00019-9-2320-365-5">
<para>Disconnect van AC power
<xref taskid="o00019-9-2320-365-5" wpid="o00014-9-2320-365"/>.
</para>
</step1>
<step1 id="o00019-9-2320-365-6">
<para>Close van doors
<xref taskid="o00019-9-2320-365-6" wpid="o00014-9-2320-365"/> or
<xref taskid="o00019-9-2320-368-6" wpid="o00014-9-2320-368"/>.
</para>
</step1>
<step1 id="o00019-9-2320-365-7">
<para>Stow van ladder
<xref taskid="o00019-9-2320-365-7" wpid="o00014-9-2320-365"/>.
</para>
</step1>
</proc>
</prepmove>
</opertsk>
</opusualwp>

```

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## 2. Page-based TM stylesheet output example for &lt;opusualwp&gt;

0001	
<b>MAINTAINER</b>	
<b>M1079 VAN PREPARATION FOR MOVEMENT</b>	
<b>INITIAL SETUP:</b>	
NOT APPLICABLE	
<b>PREPARATION FOR MOVEMENT</b>	
<b>M1079 Weight Distribution</b>	
<b>WARNING</b>	
<p>Heavy objects/loads, such as tool boxes and heavy parts, must always be carried on the floor with the weight distributed as equally as possible between left and ride sides of M1079 van. Failure to comply decreases the stability of the M1079 van and will increase the likelihood of a rollover.</p> <p>Heavy cabinets must always be mounted as low as possible with the weight distributed as equally as possible between left and right sides of M1079 van. Remember to consider the weight of the items that will be stored in the cabinets. Failure to comply decreases the stability of the M1079 van and will increase the likelihood of a rollover.</p> <p>Always keep in mind, when placing items inside the M1079 van, that heavier items must always be positioned as low as possible and the weight distributed as equally as possible between left and right sides of M1079 van. Failure to comply decreases the stability of the M1079 van and will increase the likelihood of a rollover.</p>	
<ol style="list-style-type: none"> <li>1. All objects that can shift during movement will be secured by using a bracing, cushioning, or tie-down method. The method used will be performed in a manner that will not cause damage to the walls or equipment.</li> <li>2. Verify that all workbenches, lockers, cabinets, and shelves are securely attached to walls and floor. 410 MIL-HDBK-2361D DRAFT DATED 5 July 2011</li> <li>3. Close van windows, , NOT FOUND (TASKID=o00019-9-2320-365-3)</li> <li>4. Disconnect van 12/24 vdc power, , NOT FOUND (TASKID=o00019-9-2320-365-4)</li> <li>5. Disconnect van AC power, NOT FOUND (TASKID=o00019-9-2320-365-5)</li> <li>6. Close van doors, M1079 Weight Distribution or , .</li> <li>7. Stow van ladder , NOT FOUND (TASKID=o00019-9-2320-365-7)</li> </ol>	
<b>END OF TASK</b>	
<b>END OF WORK PACKAGE</b>	

0001-1/blank

FIGURE 185. Example of a page-based TM stylesheet output for &lt;opusualwp&gt; with one task.

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**19.1.5 Operation under unusual conditions work package <opunuwp>.**

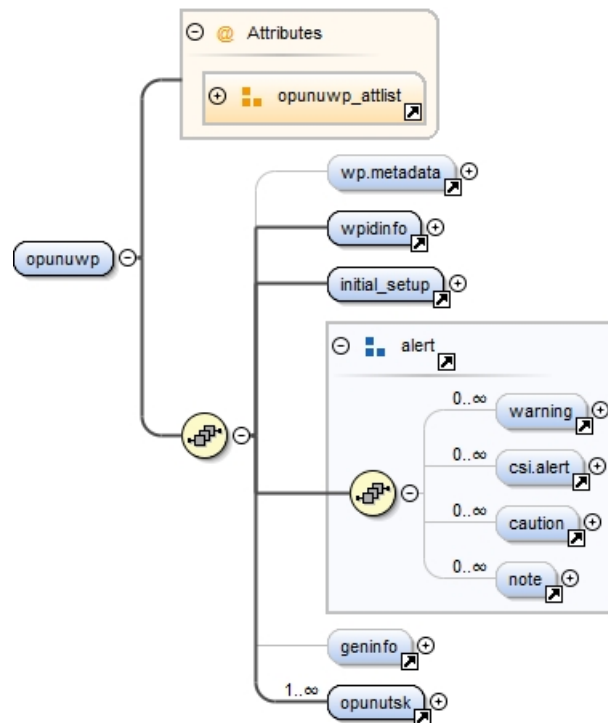
The operation under unusual conditions work package <opunuwp> provides instructions to ensure proper grounding of equipment and preventive or protective measures to be taken beyond the operator capabilities. Any combination of control settings that will create a hazard to personnel or cause damage to equipment is preceded by a warning or caution.

1. The components of <opunuwp> are:

- a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
- b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
- c. Work Package Initial Setup <initial.setup> (required). The element provides lists of information required by the technician so tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
- d. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
  - i. Warning <warning> (optional - zero or more) (see Section 28.1.1).
  - ii. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
  - iii. Caution <caution> (optional - zero or more) (see Section 28.1.2).
  - iv. Note <note> (optional - zero or more) (see Section 28.1.3).
- e. General or Introductory Information <geninfo> (optional). The element provides titled and subtitled paragraphs giving general or introductory information (see Section 36.1.4.11).
- f. Under Unusual Conditions Operational Tasks <opunutsk> (required – one or more). The element provides operational tasks required in the operations under unusual conditions work package (see Section 19.1.5.1).

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2. The DTD fragment for **<opunuwp>** is graphically depicted.



**FIGURE 186. Operation under unusual conditions work package <opunuwp> DTD hierarchy.**

3. The DTD fragment for **<opunuwp>** is:

```
<!ELEMENT opunuwp (wp.metadata?, wpidinfo, initial_setup, %alert;, geninfo?, opunutsk+)>
```

```
<!ATTLIST opunuwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <opunuwp> are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).

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- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 19.1.5.1 Operational task under unusual conditions <opunutsk>.

Operational tasks under unusual conditions contains all operational tasks required to operate the equipment under unusual conditions. Preventive or protective measures to be taken beyond the operator's capabilities are identified, instructions to ensure proper grounding of equipment are included as necessary. For security measures for electronic data, instructions are prepared for handling, loading, purging, overwriting, or unloading classified electronic data under unusual conditions. Any instruction plates or decals required to operate the equipment are illustrated and described. Each operational task under unusual conditions <opunutsk> requires one of the following specific operational tasks, as defined in MIL-STD-40051-1/-2. Each specific tag has similar markup requirements (see Section 17.1).

1. The components <opunutsk> are:

- a. One of the following tasks is used:
  - i. Security Measures For Electronic Data <secref> provides information regarding working with and operating classified equipment (see Section 19.1.4.1.6).
  - ii. Unusual Environment/Weather <unusualenv> The element provides tasks required to operate the equipment in unusual or adverse weather conditions (see Section 19.1.5.1.1).
  - iii. Fording and Swimming the Equipment <fording>. The element provides an operational task containing the procedures required before, during and after fording or swimming the equipment (see Section 19.1.5.1.2).
  - iv. Interim Chemical, Biological, Radiological, and Nuclear and Explosives (CBRNE) Decontamination <decon>. The element provides procedures to allow the operator to decontaminate the equipment if it has been exposed to a nuclear, chemical or biological contaminate (see Section 19.1.5.1.3).
  - v. Jamming and Electronic Countermeasure Procedures <ecm>. The element provides the operator with procedures to operate equipment that may block hostile systems or provide some form of countermeasure against such systems (see Section 19.1.5.1.4).
  - vi. Degraded operation procedures <degraded>. The element provides the operator with procedures on how to operate the equipment that is in less than a fully capable condition (see Section 19.1.5.1.5).
- b. If required, information on decals and instruction plates <instructplt> (optional – zero or more) may be included (see Section 36.1.4.12).

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2. The DTD fragment for **<opunutsk>** is graphically depicted.

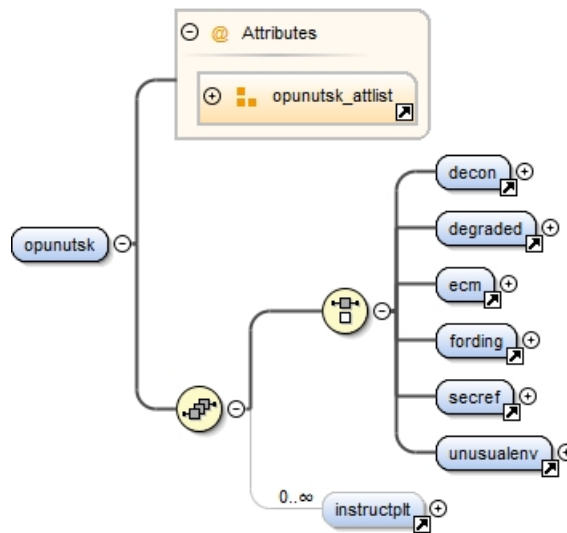


FIGURE 187. Operational task under unusual conditions **<opunutsk>** DTD hierarchy.

3. The DTD fragment for **<opunutsk>** is:

```
<!ELEMENT opunutsk((decon | degraded | ecm | fording | secref | unusualenv),
instructplt*)>
```

```
<!ATTLIST opunutsk
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<opunutsk>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **id** – Unique identifier (optional) (see Section 36.3.7).

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- h. idref**– Reference identifier(s) (optional) (see Section 36.3.7).
- i. security** – Security classification (optional) (see Section 36.3.14).
- j. skilltrk** – Skill level (optional) (see Section 36.3.3).

**19.1.5.1.1 Unusual environment/weather <unusualenv>.**

Unusual environment/weather is an unusual conditions operational task containing procedures for operating the equipment in unusual environment/weather conditions such as extreme heat or cold, sea spray, dust storm, snow, mud, or similar conditions. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.5.1.2 Fording and swimming <fording>.**

Fording and swimming is an unusual conditions operational task containing the procedures required to be performed before, during and after fording and swimming the equipment. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.5.1.3 Interim Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) decontamination <decon>.**

Procedures for chemical, biological, radiological, nuclear and explosives decontamination in unusual conditions for decontamination of equipment when a normal decontamination facility is not available. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.5.1.4 Jamming and Electronic Countermeasure (ECM) <ecm>.**

Jamming and electronic countermeasure is an unusual conditions operational task containing countermeasure procedures for operation of equipment in an ECM environment through transmitted and reflected deception signals and jamming. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.5.1.5 Degraded condition <degraded>.**

Degraded condition is a task for temporarily adapting the equipment to meet the reduction of power, partial failure, failure of a portion of the equipment when a condition exists and continued operation of the equipment is required. The components are one or more procedures **<proc>** (see Section 17.2 for details on tagging).

**19.1.5.1.6 Instruction plates and decals <instructplt>.**

When required, any instruction plates or decals used in the operation of the equipment are included (see Section 36.1.4.12).

**19.1.5.2 XML document instance fragment and output for <opunuwp>.**

The XML instance and its stylesheet output for a **<opunuwp>** is provided below:

1. Example of an XML document instance fragment for **<opunuwp>**:

```
<opunuwp wpno="o00024-9-2320-365">
 <wpidinfo>
 <maintlvl level="field"/>
 </wpidinfo>
</opunuwp>
```



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<title>Desert Environment  
 </title>  
 </wpidinfo>  
 <initial\_setup>  
 <ref>  
 <ref-setup-item>  
 <extref docno="FM 21-10"/>  
 </ref-setup-item>  
 <ref-setup-item>  
 <extref docno="FM 21-11"/>  
 </ref-setup-item>  
 </ref>  
 </initial\_setup>  
 <opunutsk id="o00024-9-2320-365-8">  
 <unusualenv id="o00024-9-2320-365-9">  
 <proc id="o00024-9-2320-365-14">  
 <title>Operation In Extreme Heat  
 </title>  
 <warning>  
 <trim. para>When required to remain inside the vehicle during extreme heat, occupants should follow the water intake, work/rest cycle, and other heat stress preventive medicine measures contained in  
 <extref docno="FM 21-10"/> Field Hygiene and Sanitation, and  
 <extref docno="FM 21-11"/> First Aid for Soldiers. Failure to comply may result in serious injury or death to personnel.  
 </trim. para>  
 </warning>  
 <caution>  
 <trim. para>When operating in temperatures above 100° F (38° C) , extra care must be taken to prevent overheating the engine. Watch WATER TEMP gage, STOP indicator, and engine coolant temperature indicator closely. Failure to comply may result in damage to equipment.  
 </trim. para>  
 <trim. para>Check oil levels often and keep operating strain as low as possible. Vehicle cooling and lubrication systems support each other. Failure of one system will rapidly cause failure of the other system. Failure to comply may result in damage to equipment.  
 </trim. para>  
 </caution>  
 <geninfo>  
 <title> General Information  
 </title>  
 <para> This section provides instructions to operate the LMTV and its auxiliary equipment under extreme and unusual conditions. Special operating instructions are provided for these conditions.  
 </para>  
 </geninfo>  
 <step1>  
 <para>Push N (Neutral) select button  
 <callout assocfig="o00024-9-2320-365-1" label="1"/> on WTEC II TEPSS  
 <callout assocfig="o00024-9-2320-365-1" label="2"/> or WTEC III TPSS  
 <callout assocfig="o00024-9-2320-365-1" label="2"/> while engine is running. Idle engine for approximately two minutes before engine shutdown.  
 </figure id="o00024-9-2320-365-1">

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```

<title>
</title>
<graphic boardno="o00024-9-2320-365_1" unitmeasure="in" hscale="65">
</graphic>
</figure>
</para>
</step1>
<step1 id="o00024-9-2320-365-21">
<para> Check that radiator fan off switch
<callout assocfig="o00024-9-2320-365-1" label="3"/> is in the off position and
the fan off indicator
<callout assocfig="o00024-9-2320-365-1" label="4"/> is not illuminated.
</para>
</step1>
<step1 id="o00024-9-2320-365-22">
<specpara>
<caution>
<trim. para>Never operate engine for more than 30 seconds at full throttle while
vehicle is not moving. Transmission oil temperature will become too hot. Failure
to comply may result in damage to equipment.
</trim. para>
</caution>
<para>If the TRANS OIL TEMP indicator
<callout assocfig="o00024-9-2320-365-2" label="5"/> illuminates and WATER TEMP gage
<callout assocfig="o00024-9-2320-365-2" label="6"/> reads near 230° F (110° C),
transmission oil is overheating:
</figure id="o00024-9-2320-365-2">
<title>
</title>
<graphic boardno="o00024-9-2320-365_2">
</graphic>
</figure>
</para>
</specpara>
<step2 id="o00024-9-2320-365-43">
<para>Stop vehicle.
</para>
</step2>
<step2 id="o00024-9-2320-365-44">
<para>Press the N (Neutral) select button
<callout assocfig="o00024-9-2320-365-1" label="1"/> on WTEC II TEPSS
<callout assocfig="o00024-9-2320-365-1" label="2"/> or WTEC III TPSS
<callout assocfig="o00024-9-2320-365-1" label="2"/>.
</para>
</step2>
<step2 id="o00024-9-2320-365-45">
<para>Allow engine to operate at approximately 750 rpm for three minutes.
</para>
</step2>
<step2 id="o00024-9-2320-365-46">
<para>Continue normal vehicle operation when TRANS OIL TEMP indicator
<callout assocfig="o00024-9-2320-365-2" label="5"/> goes out.
</para>
</step2>

```

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```

<step2 id="o00024-9-2320-365-47">
<para>Shut down engine (
<xref taskid="o00003-9-2320-365-42" wpid="o00003-9-2320-365"/>) and notify Unit
Maintenance if TRANS OIL TEMP indicator
<callout assocfig="o00024-9-2320-365-2" label="5"/> does not go out.
</para>
</step2>
</step1>
<step1 id="o00024-9-2320-365-23">
<para>Check cooling system often for the following conditions:
</para>
<step2 id="o00024-9-2320-365-48">
<para>Low coolant level in radiator overflow tank (
<xref wpid="m00033-9-2320-365" itemid="m00033-9-2320-365-117"/>) .
</para>
</step2>
<step2 id="o00024-9-2320-365-49">
<para>Cracked or leaking radiator hoses (
<xref wpid="m00033-9-2320-365" itemid="m00033-9-2320-365-178"/>) .
</para>
</step2>
<step2 id="o00024-9-2320-365-50">
<para>Radiator fins clogged with dust, leaves, or insects.
</para>
</step2>
</step1>
</proc>
</unusualenv>
</opunutsk>
</opunuwp>

```

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## 2. Page-based TM stylesheet output example for &lt;opunuwp&gt;:

0001

## OPERATOR

## DESERT ENVIRONMENT

## INITIAL SETUP:

**References**  
FM 21-10

FM 21-11

## UNUSUAL ENVIRONMENT/WEATHER

## Operation In Extreme Heat

**WARNING**

When required to remain inside the vehicle during extreme heat, occupants should follow the water intake, work/rest cycle, and other heat stress preventive medicine measures contained in FM 21-10 Field Hygiene and Sanitation, and FM 21-11 First Aid for Soldiers. Failure to comply may result in serious injury or death to personnel.

**CAUTION**

When operating in temperatures above 100° F (38° C), extra care must be taken to prevent overheating the engine. Watch WATER TEMP gage, STOP indicator, and engine coolant temperature indicator closely. Failure to comply may result in damage to equipment.

Check oil levels often and keep operating strain as low as possible. Vehicle cooling and lubrication systems support each other. Failure of one system will rapidly cause failure of the other system. Failure to comply may result in damage to equipment.

**GENERAL INFORMATION**

This section provides instructions to operate the LMTV and its auxiliary equipment under extreme and unusual conditions. Special operating instructions are provided for these conditions.

1. Push N (Neutral) select button (Figure 1, Item 1) on WTEC II TEPSS (Figure 1, Item 2) or WTEC III TPSS (Figure 1, Item 2) while engine is running. Idle engine for approximately two minutes before engine shutdown.

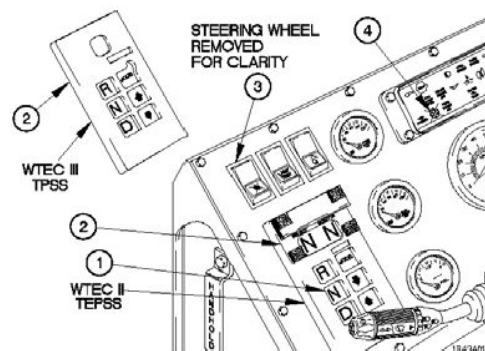


Figure 1. Console.

2. Check that radiator fan off switch (Figure 1, Item 3) is in the off position and the fan off indicator (Figure 1, Item 4) is not illuminated.

0001-1

FIGURE 188. Example of a page-based TM stylesheet output for &lt;opunuwp&gt; with one task.

### 19.1.6 Emergency conditions work package <emergencywp>.

The emergency conditions work package provides instructions not limited to, operating and shutting down equipment during emergency conditions.

1. The components <emergencywp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial\_setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Emergency Operator Task <emergency> (required). The element provides a task for operating during emergency conditions (see Section 19.1.6.1).
2. The DTD fragment for <emergencywp> is graphically depicted.

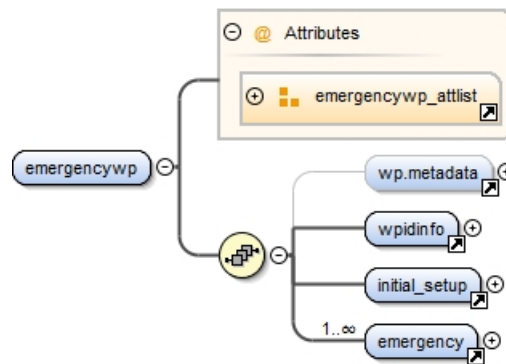


FIGURE 189. Emergency conditions work package <emergencywp> DTD hierarchy.

3. The DTD fragment for <emergencywp> is:

```
<!ELEMENT emergencywp (wp.metadata?, wpidinfo, initial_setup, emergency+)
>
```

```
<!ATTLIST emergencywp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"

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deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<emergencywp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 19.1.6.1 Emergency operator task <emergency>.

Emergency operator task provide procedural instructions for operation of the equipment during emergency conditions (control failure, air failure, lube oil failure, loss of cooling water, etc.). It includes shutdown procedures to turn the equipment off during an emergency (fire, water, smoke, hazard to personnel, loss of coolant, normal power, etc.). Warning(s) or caution(s) are to be included to return the equipment to proper operation when the emergency is over. The components are one or more procedures <proc> (see Section 17.2 for details on tagging).

### 19.1.6.2 XML document instance fragment and output for <emergencywp>.

The XML instance and its stylesheet output for a <emergencywp> is provided below.

1. Example of an XML document instance fragment for <emergencywp>:

```
<emergencywp wpno="o00099-123">
 <wpidinfo>
 <maintlvl level="operator"/>
 <title>Highway Emergency Marker Kit Setup
 </title>
</wpidinfo>
<emergency>
 <proc id="o00026-9-2320-365-11">
 <title>Preparing Markers For Use
 </title>
 <step1 id="o00026-9-2320-365-17">
 <para>Position master power switch
 <callout assocfig="o00026-9-2320-365-1" label="1"/> to on.
 </figure id="o00026-9-2320-365-1">
 <title>Preparing Markers
 </title>
 <graphic boardno="o00026-9-2320-365_1">
 </graphic>
</figure>
```

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```

</para>
</step1>
<step1 id="o00026-9-2320-365-18">
<para> Position hazard lights switch
<callout assocfig="o00026-9-2320-365-1" label="2"/> to on.
</para>
</step1>
<step1 id="o00026-9-2320-365-19">
<para> Remove emergency marker kit
<callout assocfig="o00026-9-2320-365-2" label="3"/> from TOOL KIT. | <figure id="o00026-9-
2320-365-2">

<title>Preparing Markers (Cont)
</title>
<graphic boardno="o00026-9-2320-365_2">
</graphic>
</figure>
</para>
</step1>
<step1 id="o00026-9-2320-365-20">
<para> Remove three markers
<callout assocfig="o00026-9-2320-365-2" label="4"/> from emergency marker kit
<callout assocfig="o00026-9-2320-365-2" label="3"/> .
</para>
</step1>
<step1 id="o00026-9-2320-365-21">
<para> Attach two ends of marker arms
<callout assocfig="o00026-9-2320-365-2" label="5"/> with pin
<callout assocfig="o00026-9-2320-365-2" label="6"/> .
</para>
</step1>
<step1 id="o00026-9-2320-365-22">
<para> Rotate marker
<callout assocfig="o00026-9-2320-365-2" label="5"/> approximately 1/4 turn on base
<callout assocfig="o00026-9-2320-365-2" label="7"/> .
</para>
</step1>
<step1 id="o00026-9-2320-365-23">
<para> Perform
<xref stepstart="o00026-9-2320-365-20" stepend="o00026-9-2320-365-22"/> for second and third
markers.
</para>
</step1>
</proc>
</emergency>
</emergencywp>

```

2. Page-based TM stylesheet output example for **<emergencywp>**:



0001

## OPERATOR

## HIGHWAY EMERGENCY MARKER KIT SETUP

## INITIAL SETUP:

## Preparing Markers For Use

1. Position master power switch(Figure 1, Item 1) to on

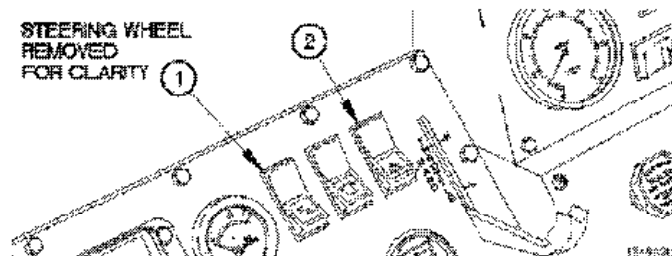


Figure 1. Preparing Markers.

2. Position hazard lights switch(Figure 1, Item 2) to on.
3. Remove emergency marker kit(Figure 2, Item 3) from TOOL KIT. |

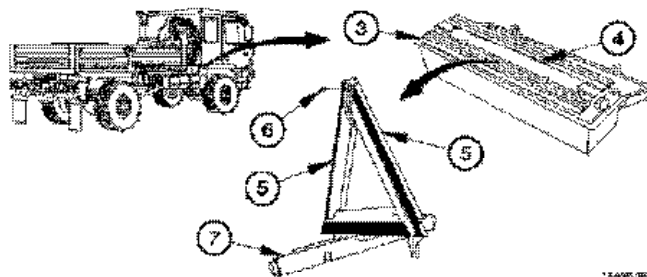


Figure 2. Preparing Markers (Cont).

4. Remove three markers(Figure 2, Item 4)from emergency marker kit(Figure 2, Item 3).
5. Attach two ends of marker arms(Figure 2, Item 5) with pin(Figure 2, Item 6).
6. Rotate marker(Figure 2, Item 5) approximately 1/4 turn on base(Figure 2, Item 7).
7. Perform Steps 4-6 for second and third markers.

## END OF WORK PACKAGE

0001-1

FIGURE 190. Example of a page-based TM stylesheet output for &lt;emergencywp&gt; with one task.

### 19.1.7 Stowage and decal/data plate guide work package <stowagewp>.

The stowage and decal/data plate guide work package lists and illustrates the location of all applicable COEI, BII, AAL items, decals and data plates as directed by the acquiring activity.

1. The components of <stowagewp> are:

- a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
- b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
- c. Work package initial setup <initial\_setup> (required) (see Section 16.6).
- d. Introduction <intro> (required). An introductory section explaining the purpose of the work package (see Section 36.1.4.14).
- e. Aircraft Stowage Information <stowinfo> (required – one or more). The element contains the data on the location of applicable COEIs, BII, AAL items and illustrations (see Section 19.1.7.1).
- f. Decal information <decalinfo> (optional – zero or more). The element provides information of decals and data plates concerning the equipment (see Section 19.1.7.2).

2. The DTD fragment for <stowagewp> is graphically depicted.

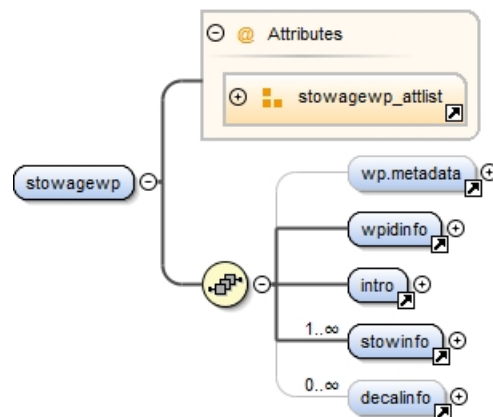


FIGURE 191. Stowage and decal/data plate guide work package <stowagewp> DTD hierarchy.

3. The DTD fragment for <stowagewp> is:

```
<!ELEMENT stowagewp (wp.metadata?, wpidinfo, intro, stowinfo+, decalin-fo*)>
```

```
<!ATTLIST stowagewp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chgno	(0-99)	"0"
comment	CDATA	#IMPLIED

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crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<stowagewp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).

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- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 19.1.7.1 Stowage information <stowinfo>.

The stowage information <stowinfo> element contains data on the location of applicable COEI, BII and AAL items. An illustration is to be included to facilitate the location of the items.

1. The components of <stowinfo> are:
  - a. Introduction <intro> (required). An introductory section explaining the purpose of the work package (see Section 36.1.4.14).
  - b. Figure <figure> (required – one or more) (see Section 24.4.2.1.1). The element provides a graphic displaying the locations where items can be stored.
2. The DTD fragment <stowinfo> is graphically depicted.

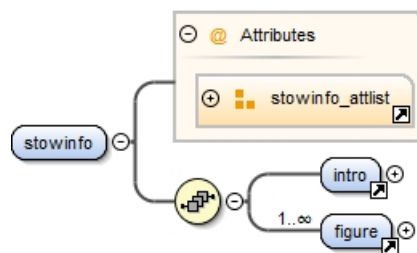


FIGURE 192. Stowage information <stowinfo> DTD hierarchy.

3. The DTD fragment for <stowinfo> is:

```
<!ELEMENT stowinfo (intro, figure+)>
```

```
<!ATTLIST stowinfo
```

```
applicable
```

```
IDREFS
```

```
IMPLIED
```

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assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

#### 4. Common attributes for <stowinfo>:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **id** – Unique identifier (optional) (see Section 36.3.7).
- h. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 19.1.7.2 Decal information <decalinfo>.

The decal information element contains data on the location of all decals and data plates in and on the equipment. Illustrations detailing the locations of the decals and data plates are to be included.

#### 1. The components of <decalinfo> are:

- a. Title <title> (required). The element provides the title for the section on the decal information (see Section 36.1.1.4).
- b. Select one of the following information types:
  - i. Narrative paragraphs:
    - I. Note <note> (optional – zero or more) (see Section 28.1.3).
    - II. Narrative paragraph <para> (required – one or more) (see Section 36.1.1.6).
  - ii. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1) (optional – zero or more).
- c. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1) (required – one or more).
- d. Item unique identification <iuid> (optional) (see 18.1.1). This element allows markings such as data plates, decals, or etchings.

- e. Figure <figure> (required - one or more) (see Section 24.4.2.1.1). The element provides a graphic displaying the locations where items can be stored.
2. The DTD fragment for <decalinfo> is graphically depicted.

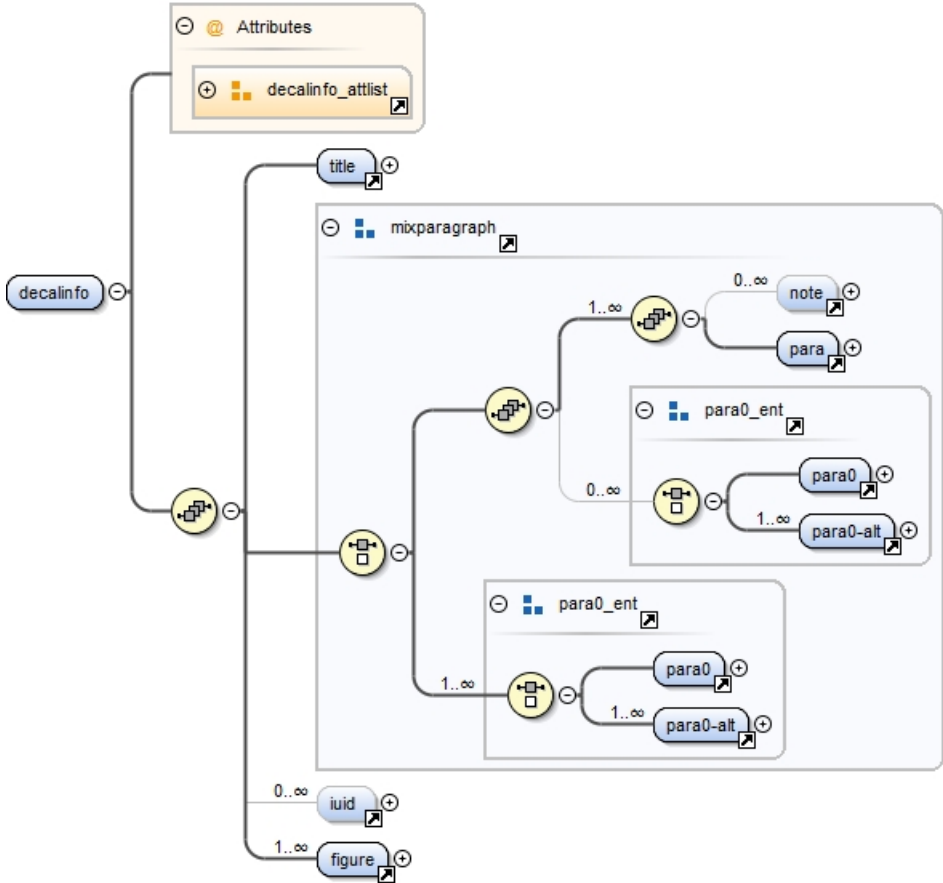


FIGURE 193. Decal information <decalinfo> DTD hierarchy.

3. The DTD fragment for <decalinfo> is:

```
<!ELEMENT decalinfo (title, %mixparagraph; iuid, figure+)>
<!ATTLIST decalinfo
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

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4. Attributes for **<decainfo>** are:
- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - d. **comment** – Change information (optional) (see Section 36.3.12).
  - e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - g. **id** – Unique identifier (optional) (see Section 36.3.7).
  - h. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - i. **security** – Security classification (optional) (see Section 36.3.14).
  - j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 19.1.7.3 XML document instance fragment and output for **<stowagewp>**.

The XML instance and its stylesheet output for a **<stowagewp>** is provided below:

1. Example of an XML document instance fragment for **<stowagewp>**.

```
<stowagewp wpno="o00034-9-2320-365" >
 <wpidinfo>
 <maintlvl level="operator"/>
 <title>STOWAGE LOCATION/DECAL/STENCIL GUIDE
 </title>
</wpidinfo>
<intro>
 <para0>
 <title>Introduction
 </title>
 <para>This work package shows the location for stowage of equipment and material
 required to be carried on M1078 series vehicles and location for data plates,
 decals, and stencils that are required to be placed on the vehicle.
 </para>
</para0>
</intro>
<stowinfo>
 <intro>
 <para0>
 <title>Stowage Locations
 </title>
 <para>The equipment stowage locator is designed to help inventory items required
 for safe and efficient operation. The equipment locator is representative of BII
 and applicable AAL stowage on all M1078 series vehicles.
 </para>
 </para0>
</intro>
 <figure id="o00034-9-2320-365-1">
 <title>Stowage Locations, All Vehicles.
 </title>
 <graphic boardno="o00034-9-2320-365_1" hscale="80">
```

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```

</graphic>
</figure>
</stowinfo>
<decalinfo>
<title>SIGN GUIDE
</title>
<para>The equipment sign guide details the locations of all decals and data
plates on all M1078 series vehicles.
</para>
<figure id="o00034-9-2320-365-2">
<title>Decals/Stencils, All Vehicles
</title>
<subfig totalsheets="7">
<graphic boardno="o00034-9-2320-365_2" hscale="75">
</graphic>
</subfig> <subfig totalsheets="7">
<graphic boardno="o00034-9-2320-365_3" hscale="80">
</graphic>
</subfig>
<subfig totalsheets="7">
<graphic boardno="o00034-9-2320-365_4" hscale="80">
</graphic>
</subfig>
<subfig totalsheets="7">
<graphic boardno="o00034-9-2320-365_5">
</graphic>
</subfig>
<subfig totalsheets="7">
<graphic boardno="o00034-9-2320-365_6">
</graphic>
</subfig>
<subfig totalsheets="7">
<graphic boardno="o00034-9-2320-365_7">
</graphic>
</subfig>
<subfig totalsheets="7">
<graphic boardno="o00034-9-2320-365_8">
</graphic>
</subfig>
</figure>
<figure id="o00034-9-2320-365-3">
<title>Decal/Data Plate Guide, Vehicles with 11K Self-Recovery (SRW)
</title>
<graphic boardno="o00034-9-2320-365_9">
</graphic>
</figure>
<figure id="o00034-9-2320-365-4">
<title>Decal/Data Plate Guide, Vehicles with Light Material Handling Crane (LMHC)
</title>
<graphic boardno="o00034-9-2320-365_10">
</graphic>
</figure>
</decalinfo>
</stowagewp>

```



2. Page-based TM stylesheet output example for **<stowagewp>**.

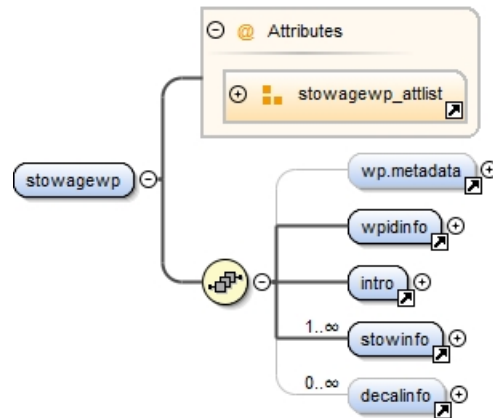


FIGURE 194. Example of a page-based TM stylesheet output example for **<stowagewp>** with one task.

### 19.1.8 On-vehicle equipment loading plan work package **<eqploadwp>**.

The on-vehicle equipment loading plan work package is prepared when applicable to the equipment. The loading plan includes information provided by the acquiring activity.

1. The components **<eqploadwp>** are:
  - a. Metadata **<wp.metadata>** (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information **<wpidinfo>** (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work package initial setup **<initial\_setup>** (optional) (see Section 16.6).
  - d. Introduction **<intro>** (required). An introductory section explaining the purpose of the work package (see Section 36.1.4.14).
  - e. Loading Description **<loaddesc>** (required – one or more). The element provides a description of equipment loading (see Section 19.1.8.2).
2. The DTD fragment for **<eqploadwp>** is graphically depicted.

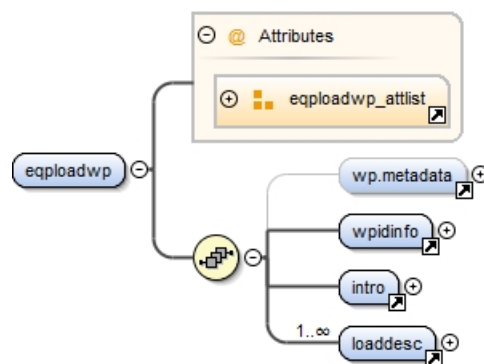


FIGURE 195. On-vehicle equipment loading plan work package **<eqploadwp>** DTD hierarchy.

3. The DTD fragment for **<eqploadwp>** is:

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```

<!ELEMENT eqploadwp (wp.metadata?, wpidinfo, intro, loaddesc+)>
<!ATTLIST eqploadwp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changelvl (0-9) "0"
 changeref IDREFS #IMPLIED
 chngno (0-99) "0"
 comment CDATA #IMPLIED
 crewmember CDATA #IMPLIED
 date-time-stamp (date | time | date-
 time) #IMPLIED
 delchlvl (0-99) "0"
 deletewp (yes | no) "no"
 fgc CDATA #IMPLIED
 frame (yes | no) "yes"
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 insertwp CDATA #IMPLIED
 lsa-id CDATA #IMPLIED
 marines (yes | no) "no"
 navy (yes | no) "no"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 tocentry (2 | 3 | 4 | 5) "2"
 wpno ID #REQUIRED
 wpseq CDATA #IMPLIED>

```

4. Attributes for **<eqploadwp>** are:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** - Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).

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- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is “**yes**”).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 19.1.8.1 Equipment loading work package introduction <intro>.

A brief scope statement explaining the purpose of the loading plan and identifying the equipment covered by the on-vehicle equipment loading plan work package. Each equipment work package is required to contain an introduction (see Section 36.1.4.14 for information on tagging and content).

### 19.1.8.2 Illustrated loading plan description <loaddesc>.

The illustrated loading plan description identifies a description of equipment loading, including illustrations of the end item with equipment locations and a standard load list table. External and internal views are to be used, if necessary. As applicable, both tactical and non-tactical situation loading configurations are to be shown. Each illustration in <loaddesc> is followed with a loading list table <loadlist>.

1. The components of <loaddesc> are:

- a. Title <title>** (required). The element provides the title for the loading plan description (see Section 36.1.1.4).

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- b. Figure **<figure>** (required – one or more) (see Section 24.4.2.1.1). The element provides a graphic displaying the locations where items can be stored.
  - c. One of the following elements is required by the DTD.
    - i. A generic table **<table>** (see Chapter 29).
    - ii. Loading List **<loadlist>** element provides a standard information loading list in tabular form (see Section 19.1.8.3).
2. The DTD fragment for **<loaddesc>** is graphically depicted.

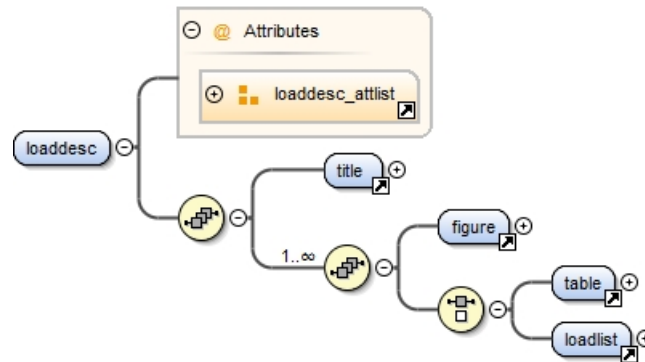


FIGURE 196. Illustrated loading plan description **<loaddesc>** DTD hierarchy.

3. The DTD fragment for **<loaddesc>** is:

```

<!ELEMENT loaddesc (title, (figure, (table | loadlist))+)>
<!ATTLIST loaddesc
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 type (tac | notac) #REQUIRED>

```

4. Unique attributes:
- a. **type** – Type specifies the type of loading plan. Possible values include tac (tactical) and notac (non-tactical) (required).
5. Common attributes for **<loaddesc>** are:
- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).

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- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **id** – Unique identifier (optional) (see Section 36.3.7).
- h. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 19.1.8.3 Loading list <loadlist>.

Loading list contains standard information that lists all applicable equipment by illustration identification number and item name. The list is on the same page or adjacent to the illustration. The element is similar to a **row** in a structural table.

1. The components of <loadlist> are:
  - a. Call out <callout>. The element provides a figure reference or a callout reference, number, letter, or symbol appearing in the figure. The element is similar to a “cell” in a structural table and is entered in column (see Section 33.2.4.1).
  - b. Item <item>. The element provides each item in the loading list. The element is similar to a “cell” in a structural table and is entered in column (see Section 36.1.2.2).
2. The DTD fragment for <loadlist> is graphically depicted.

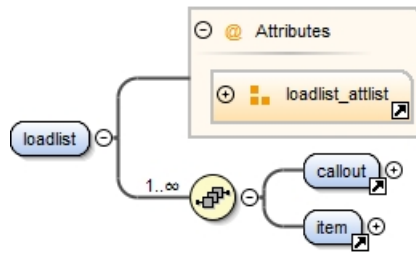


FIGURE 197. Loading list <loadlist> DTD hierarchy.

3. The DTD fragment for <loadlist> is:

```
<!ELEMENT loadlist (callout, item)>
<!ATTLIST loadlist
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED>
```

4. Common attributes for <loadlist>:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- e. **security** – Security classification (optional) (see Section 36.3.14).

#### 19.1.8.4 XML document instance fragment and output for <eqploadwp>.

The XML instance and its stylesheet output for a <eqploadwp> is provided below.

1. Example of an XML document instance fragment for <eqploadwp>:

```
<eqploadwp wpno="000008-9-2320-280">
 <wpidinfo>
 <maintlvl level="operator"/>
 <title>ON-VEHICLE EQUIPMENT LOADING PLANS
 </title>
</wpidinfo>
<intro>
<para0>
 <title>Introduction
</title>
<para>This work package shows the on-vehicle equipment loading plan for TOW
carrier (M966, M966A1, M1036, M1045, M1045A1, M1045A2, M1046, M1046A1, and
M1121) .
</para>
<subpara1>
 <title> TOW CARRIER LOAD PLAN
</title>
<para> This is a standard load plan for the TOW carrier (M966, M966A1, M1036,
M1045, M1045A1, M1045A2, M1046, M1046A1, and M1121). It is designed to
supplement the stowage and sign guide contained in
<xref wpid="o00034-9-2320-365" posttext=" STOWAGE AND SIGN GUIDE"/> . It includes
selected items of personnel and unit equipment issued to most units within the
Army or Marine Corps equipped with this vehicle. Vehicles and equipment not
shown in either this document or
<xref wpid="o00034-9-2320-365" posttext=" STOWAGE AND SIGN GUIDE"/> may be loaded in
accordance with local command policy. Fuel cans cannot be carried in an enclosed
vehicle.
<proponent>
 <name>Commandant
</name>
 <address>
 <street>US Army Infantry School
 </street>
 <city>Fort Benning
 </city>
 <state>GA
 </state>
 <zip>31905
 </zip>
 </address>
</proponent>
</para>
```

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```

</subpara1>
</intro>
<loaddesc id="O00008-9-2320-280-00001">
<title>TOW CARRIER STOWAGE PLAN
</title>
<figure id="O00008-9-2320-280-00002">
<title>Tow Carrier Stowage Plan
</title>
<graphic boardno="o0000213.png" hscale="50">
</graphic>
</figure>
<loadlist>
<callout assocfig="O00008-9-2320-280-00002" label="1"/>
<item>Missile Guidance Set (MGS)
</item>
<callout assocfig="O00008-9-2320-280-00002" label="2"/>
<item>M16A1/M203 Rifle
</item>
<callout assocfig="O00008-9-2320-280-00002" label="3"/>
<item>Flashlight
</item>
<callout assocfig="O00008-9-2320-280-00002" label="4"/>
<item>Binoculars
</item>
<callout assocfig="O00008-9-2320-280-00002" label="5"/>
<item>AN/GRC-160 Radio
</item>
<callout assocfig="O00008-9-2320-280-00002" label="6"/>
<item>TSEC/KY-57
</item>
<callout assocfig="O00008-9-2320-280-00002" label="7"/>
<item>Gasoline Cook Stove (strapped to airlift bracket)
</item>
<callout assocfig="O00008-9-2320-280-00002" label="7.1"/>
<item>Jack, Scissors (A2 only)
</item>
<callout assocfig="O00008-9-2320-280-00002" label="8"/>
<item>M16A1/M203 Rifle
</item>
<callout assocfig="O00008-9-2320-280-00002" label="9"/>
<item>Night Sight Vehicle Power Conditioner
</item>
<callout assocfig="O00008-9-2320-280-00002" label="10"/>
<item>Adjustable Gunner's Platform
</item>
<callout assocfig="O00008-9-2320-280-00002" label="11"/>
<item>Traversing Unit
</item>
<callout assocfig="O00008-9-2320-280-00002" label="12"/>
<item>Radiac Meter
</item>
<callout assocfig="O00008-9-2320-280-00002" label="13"/>
<item>Night Vision Goggles (2)
</item>

```

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<callout assocfig="O00008-9-2320-280-00002" label="14"/>  
 <item>CBRN Footwear  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="15"/>  
 <item>Battery Pack, Night Sight  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="16"/>  
 <item>CBRN Overgarments (strapped to body)  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="17"/>  
 <item>Boresight Collimator  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="18"/>  
 <item>Night Vision Sight Case  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="19"/>  
 <item>Coolant Cartridge Cases  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="20"/>  
 <item>Radio Antenna (on cargo shell)  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="21"/>  
 <item>Combat Rations  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="22"/>  
 <item>Optical Sight W/Cover  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="23"/>  
 <item>Night Sight Battery (under tanker roll)  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="24"/>  
 <item>Camouflage Screen and Support System  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="25"/>  
 <item>Tanker Rolls  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="26"/>  
 <item>Tripod  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="27"/>  
 <item>Telephone  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="28"/>  
 <item>DR8 Cable Reel  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="29"/>  
 <item>Combat Rations  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="30"/>  
 <item>M13 Decon Kit  
 </item>  
 <callout assocfig="O00008-9-2320-280-00002" label="31"/>  
 <item>Ammunition (M16A1)  
 </item>



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```

<callout assocfig="O00008-9-2320-280-00002" label="32"/>
<item>Water Can
</item>
<callout assocfig="O00008-9-2320-280-00002" label="33"/>
<item>CBRN Overgarments (strapped to body)
</item>
<callout assocfig="O00008-9-2320-280-00002" label="34"/>
<item>MGS Battery Assemblies (2)
</item>
<callout assocfig="O00008-9-2320-280-00002" label="35"/>
<item>CBRN Footwear (2)
</item>
<callout assocfig="O00008-9-2320-280-00002" label="36"/>
<item>Missiles (6)
</item>
<callout assocfig="O00008-9-2320-280-00002" label="37"/>
<item>Tanker Roll (strapped to roof)
</item>
<callout assocfig="O00008-9-2320-280-00002" label="38"/>
<item>CBRN Hood Masks (4)
</item>
<callout assocfig="O00008-9-2320-280-00002" label="39"/>
<item>Launch Tube (strapped to door)
</item>
</loadlist>
</loaddesc>
</eqploadwp>

```

2. Page-based TM stylesheet output example for **<eqploadwp>**:

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TM X-XXXX-XXX-10

0013

# **OPERATOR MAINTENANCE** **ON-VEHICLE EQUIPMENT LOADING PLANS**

**INTRODUCTION**

This work package shows the on-vehicle equipment loading plan for TOW carrier (M966, M966A1, M1036, M1045, M1045A1, M1045A2, M1046, M1046A1, and M1121).

**TOW CARRIER LOAD PLAN**

This is a standard load plan for the TOW carrier (M966, M966A1, M1036, M1045, M1045A1, M1045A2, M1046, M1046A1, and M1121). It is designed to supplement the stowage and sign guide contained in WP 0012 STOWAGE AND SIGN GUIDE. It includes selected items of personnel and unit equipment issued to most units within the Army or Marine Corps equipped with this vehicle. Vehicles and equipment not shown in either this document or WP 0012 STOWAGE AND SIGN GUIDE may be loaded in accordance with local command policy. Fuel cans cannot be carried in an enclosed vehicle.

PROPONENT: Commandant, US Army Infantry School, Fort Benning, GA, 31905

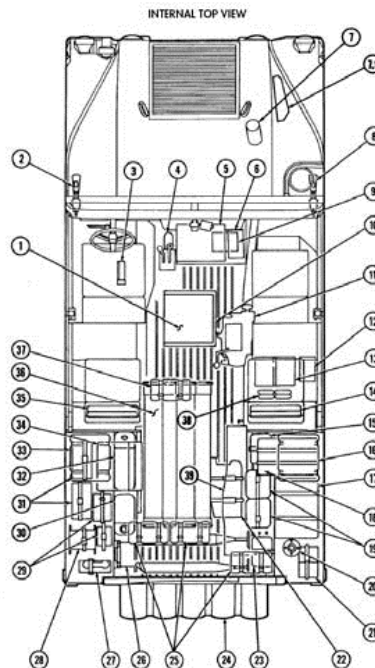
**TOW CARRIER STOWAGE PLAN**

Figure 1. Tow Carrier Stowage Plan

LOAD PLAN	
ITEM NO.	ITEM DESCRIPTION
1	Missile Guidance Set (MGS)
2	M16A1/M203 Rifle

0013-1

FIGURE 198. Example of a page-based TM stylesheet output for <eqploadwp> with one task.

## 20 SOFTWARE OPERATOR INSTRUCTIONS

### 20.1 Software operator instructions <sopim>.

Software operator instructions chapter is to be prepared and subdivided into individual work packages that provide the supervisory controls, key commands, user interface, accessing/exiting software, powerup/startup and power down/shutdown procedures. Weapon system and equipment operator data is developed in narrative or tabular form, or by whatever method is most simple or effective to convey the specific TM application.

1. The components for <sopim> are:
  - a. Chapter Title Page <titlepg> (required). The element provides the title page preceding an information chapter (see Section 36.1.1.1).
  - b. Security and privacy procedures work package <softsecprivwp> (required). The element provides security and privacy features of the software. Security and privacy procedures include such things as setting passwords, changing passwords, setting file access restrictions, and account management (see Section 20.1.1).
  - c. Supervisory controls work package <softsuperctrlswp> (Required for SAM only). The element provides information and descriptions of the supervisory controls available within the software (see Section 20.1.2).
  - d. Powerup/startup procedures work package <softpowerupwp> (required one or more). The element provides procedures for powering up/starting up the workstation/viewing equipment to enable access to the software. (see Section 20.1.3).
  - e. Power down/shutdown procedures work package <softpowerdownwp> (required one or more). The element provides procedures for powering down/shutting down the workstation/viewing equipment for the software (see Section 20.1.4).
  - f. Accessing/exiting software work package <softaccesswp> (required one or more). The element provides procedures for accessing/logging onto the software and exiting/logging off the software (see Section 20.1.5).
  - g. Key commands work package <softkeycmdswp> (optional – zero or more). The element provides the key commands contained in the software and should contain procedures for how to use these key commands (see Section 20.1.6).
  - h. Processes and commands work package <softproccmdwp> (optional – zero or more). The element provides processes and commands, identification information, and initial setup requirements (see Section 20.1.7).
  - i. User interface work package <softguiwp> (optional – zero or more). The element provides interface information that are part of the software and should provide instructions for how to use these interfaces (see Section 20.1.8).
  - j. Software operating conventions work package <softopconventionswp> (optional – zero or more). The element provides any operating conventions that are unique to the software and should provide instructions to operate the weapon system/equipment and auxiliary equipment software in all modes of operation. (see Section 20.1.9).
  - k. Additional software operation work package <softgenwp> (optional – zero or more). The element provides general information not covered in the other work packages (see Section 20.1.10).
2. The DTD fragment for <sopim> is graphically depicted.

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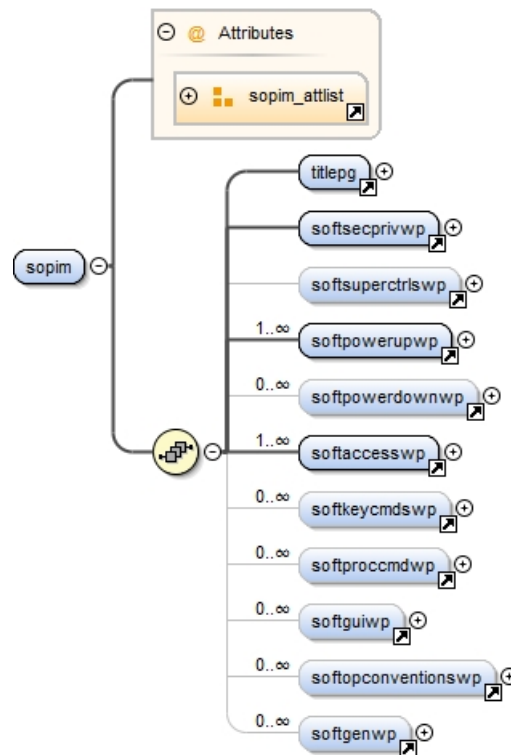


FIGURE 199. Software operating instructions chapter &lt;sopim&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;sopim&gt; is:

```
<!ELEMENT sopim (titlepg, softsecprivwp, softsuperctrlswp?, softpowerupwp
+, softpowerdownwp*, softaccesswp+, softkeycmdswp*, softproccmdwp*, soft-
guiwp*, softopconventionswp*, softgenwp*)>
```

```
<!ATTLIST sopim
```

chap-toc	(yes   no )	"yes"
chnгно	(0-99)	"0"
frame	(yes   no )	"yes"
revno	CDATA	#REQUIRED
tocentry	(0   1   2)	"1">

## 4. Common attributes for &lt;sopim&gt;:

- a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **chnгно** – Change number (required) (see Section 36.3.12).
- c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- d. **revno** – Revision number (required) (see Section 36.3.12).
- e. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

### 20.1.1 Security and privacy procedures work package <softsecprivwp>.

The work package provides security and privacy features of the software. Security and privacy procedures include such things as setting passwords, changing passwords, setting file access restrictions, and account management.

1. The components <softsecprivwp> are:

- a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
- b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
- c. Work Package Initial Setup <initial\_setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
- d. Procedures <proc> (required – one or more). The element provides paragraphs or steps to detail security and privacy procedures including such things as setting passwords, changing passwords, setting file access restrictions, account management (setting up new ones, removing accounts, etc.) (see Section 17.2).

2. The DTD fragment for <softsecprivwp> is graphically depicted.

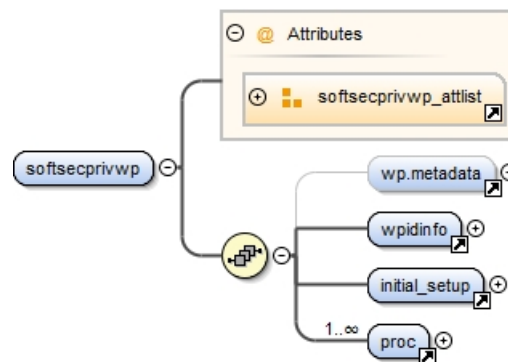


FIGURE 200. Security and privacy procedures work package <softsecprivwp> DTD hierarchy.

3. The DTD fragment for <softsecprivwp> is:

```
<!ELEMENT softsecprivwp (wp.metadata?, wpidinfo, initial_setup, proc+)>
```

```
<!ATTLIST softsecprivwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chngno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED

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delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <softsecprivwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3)
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

#### 20.1.1.1 XML document instance fragment and output for <softsecprivwp>.

The XML instance and its stylesheet output for a <softsecprivwp> is provided below:

1. Example of an XML document instance fragment for <softsecprivwp>:

```
<softsecprivwp chngno="0" wpno="SOPIM01-SECPRIV001">
 <wpidinfo>
 <maintlvl level="operator"/>
 <title>Security and Privacy Procedures
 </title>
</wpidinfo>
<initial_setup>
 <ref>
 <ref-setup-item>
 <xref wpid="SOPIM01-SECPRIV001"/>
 </ref-setup-item>
 </ref>
</initial_setup>
<proc>
 <geninfo>
 <title>SECURITY AND PRIVACY GENERAL INFORMATION
 </title>
 <para>
 <emphasis emph="bold">Information Assurance (IA) .
 </emphasis>The NMP is a DoD Mission Assurance Category (MAC) I system, which
 requires the most stringent protection measures. MAC I systems handle
 information vital to the operational readiness or effectiveness of deployed or
 contingency forces. As such, the Army requires that the NMP have a specific
 baseline operating system (OS) configuration and particular software
 applications installed:
 <randlist bullet="yes">
 <item>
```

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**<emphasis emph="bold">Army Golden Master.**

**</emphasis>** The Army has established the Army Golden Master (AGM) as the standard source for common operating system configurations in the sensitive but unclassified (SBU) environment. The AGM is not required in the classified environment. The AGM is purposely restrictive when specifying what can be loaded on the computer, what ports are enabled, etc. The Army purchased licenses from Microsoft Corporation to use their operating system (currently Windows 7), but delivered with specific configurations and other protocols specified in the AGM.

**</item>**

**<item>**

**<emphasis emph="bold">Host Based Security System.**

**</emphasis>** The Host Based Security System (HBSS) is the official name given to the Department of Defense (DoD) commercial-off-the-shelf (COTS) suite of software applications used within the DoD to monitor, detect, and counter attacks against the DoD computer networks and systems. HBSS establishes user privileges based on the user-level login. HBSS is required by US Strategic Command (USSTRATCOM) Army Cyber Command (ARCCYBER) for any system connected to the SIPR/NIPR network. Data loss prevention (DLP) policies were implemented to restrict all external storage devices (USB flash drive, etc.) except for those devices delivered with the system (USB Power Stick, SD card, CD/DVD, and external hard drive).

**</item>**

**<item>**

**<emphasis emph="bold">McAfee Virus Protection.**

**</emphasis>** The NMP includes the McAfee VirusScan Enterprise application, which is an anti-virus program for detecting and removing viruses and other security threats on Windows.

**</item>**

**</randlist>**

**</para>**

**<para>**

**<emphasis emph="bold">NW System Requirements.**

**</emphasis>** In addition to managing and assembling mission data for eventual use on the Nett Warrior system, the NMP should fulfill the Nett Warrior system requirement for data security and user authentication:

**<randlist bullet="yes">**

**<item>**

**<emphasis emph="bold">Data Security:**

**</emphasis>** The NMP verifies that all data on files is virus free and secure, mitigating data security issues on the Nett Warrior system itself. The NMP verifies that an application is an Android Application Package (APK) and that the name and version do not already exist on the NW EUD. To comply with the EUD security measures, each APK is verified for its signature (with the EUD's Package Manager utility) before being installed on the EUD.

**</item>**

**<item>**

**<emphasis emph="bold">User Authentication:**

**</emphasis>** The NMP supports the principle of least privilege in enabling services and functions to only those user roles that require them and during periods in which they are required. Four separate user groups (with a total of five default user accounts), each with its own privileges, are provided to support this principle. A user account's password will disable after three failed login attempts.

**</item>**



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**</randlist>**  
**</para>**  
**</geninfo>**  
**</proc>**  
**<proc>**  
**<title>**Security and Privacy Procedures  
**</title>**  
**<para>**Refer to  
**<xref wpid="SOPIM01-SECPRIV001"/>** for procedures for managing user accounts,  
including creating new accounts and setting passwords.  
**</para>**  
**</proc>**  
**</softsecprivwp>**

2. Page-based TM stylesheet output example for **<softsecprivwp>**

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0001

## OPERATOR

## SECURITY AND PRIVACY PROCEDURES

## INITIAL SETUP:

**References**  
WP 0001

## SECURITY AND PRIVACY GENERAL INFORMATION

**Information Assurance (IA).** The NMP is a DoD Mission Assurance Category (MAC) I system, which requires the most stringent protection measures. MAC I systems handle information vital to the operational readiness or effectiveness of deployed or contingency forces. As such, the Army requires that the NMP have a specific baseline operating system (OS) configuration and particular software applications installed:

- **Army Golden Master.** The Army has established the Army Golden Master (AGM) as the standard source for common operating system configurations in the Sensitive But Unclassified (SBU) environment. The AGM is not required in the classified environment. The AGM is purposely restrictive when specifying what can be loaded on the computer, what ports are enabled, etc. The Army purchased licenses from Microsoft Corporation to use their operating system (currently Windows 7), but delivered with specific configurations and other protocols specified in the AGM.
- **Host Based Security System.** The Host Based Security System (HBSS) is the official name given to the Department of Defense (DoD) commercial-off-the-shelf (COTS) suite of software applications used within the DoD to monitor, detect, and counter attacks against the DoD computer networks and systems. HBSS establishes user privileges based on the user-level login. HBSS is required by US Strategic Command (USSTRATCOM) Army Cyber Command (ARCCYBER) for any system connected to the SIPR/NIPR network. Data Loss Prevention (DLP) policies were implemented to restrict all external storage devices (USB flash drive, etc.) except for those devices delivered with the system (USB Power Stick, SD card, CD/DVD, and external hard drive).
- **McAfee Virus Protection.** The NMP includes the McAfee VirusScan Enterprise application, which is an anti-virus program for detecting and removing viruses and other security threats on Windows.

**NW System Requirements.** In addition to managing and assembling mission data for eventual use on the Nett Warrior system, the NMP shall fulfill the Nett Warrior system requirement for data security and user authentication:

- **Data Security:** The NMP verifies that all data on files is virus free and secure, mitigating data security issues on the Nett Warrior system itself. The NMP verifies that an application is an Android Application Package (APK) and that the name and version do not already exist on the NW EUD. To comply with the EUD security measures, each APK is verified for its signature (with the EUDs Package Manager utility) before being installed on the EUD.
- **User Authentication:** The NMP supports the principle of least privilege in enabling services and functions to only those user roles that require them and during periods in which they are required. Four separate user groups (with a total of five default user accounts), each with its own privileges, are provided to support this principle. A user account's password will disable after three failed login attempts.

## END OF TASK

## Security and Privacy Procedures

Refer to WP 0001 for procedures for managing user accounts, including creating new accounts and setting passwords.

## END OF TASK

## END OF WORK PACKAGE

0001-1/blank

**FIGURE 201. Example of a page-based TM stylesheet output for <softsecprivwp> with one task.**

### 20.1.2 Supervisory controls work package <softsuperctrlswp>.

This work package <softsuperctrlswp> should contain information about and descriptions of the supervisory controls available within the software.

1. The components <softsuperctrlswp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial\_setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Procedures <proc> (required – one or more). The element provides paragraphs or steps to detail security and privacy procedures including such things as setting passwords, changing passwords, setting file access restrictions, account management (setting up new ones, removing accounts, etc.) (see Section 17.2).
2. The DTD fragment for <softsuperctrlswp> is graphically depicted.

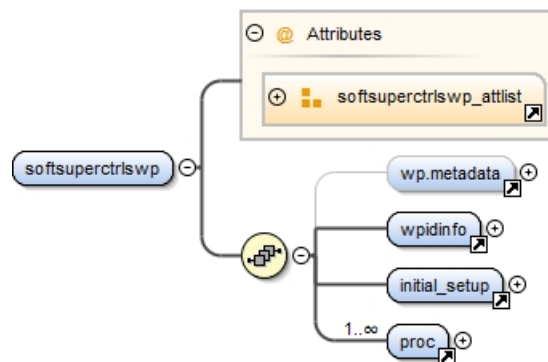


FIGURE 202. Security and privacy procedures work package <softsuperctrlswp> DTD hierarchy.

3. The DTD fragment for <softsuperctrlswp> is:

```

<!ELEMENT softsuperctrlswp (wp.metadata?, wpidinfo, initial_setup, proc+)
>
<!ATTLIST softsuperctrlswp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changelvl (0-9) "0"
 changeref IDREFS #IMPLIED
 chngno (0-99) "0"
 comment CDATA #IMPLIED
 crewmember CDATA #IMPLIED
 date-time-stamp (date | time | date-
 time) #IMPLIED

```

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delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <softsuperctrlswp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnyno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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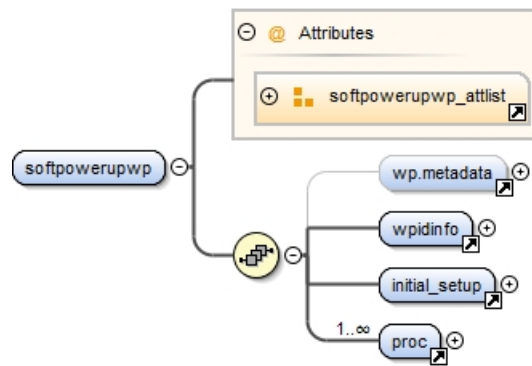
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 20.1.3 Powerup/startup procedures work package <softpowerupwp>.

This work package <softpowerupwp> should contain procedures for powering up/starting up the workstation/viewing equipment to enable access to the software.

1. The components <softpowerupwp> are:
  - a. Metadata <wp.metadata>** (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo>** (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial.setup>** (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Procedures <proc>** (required – one or more). The element provides paragraphs or steps to detail security and privacy procedures including such things as setting passwords, changing passwords, setting file access restrictions, account management (setting up new ones, removing accounts, etc.) (see Section 17.2).
2. The DTD fragment for <softpowerupwp> is graphically depicted.

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**FIGURE 203. Powerup/startup procedures work package <softpowerupwp> DTD hierarchy.**

**3. The DTD fragment for <softpowerupwp> is:**

```
<!ELEMENT softpowerupwp (wp.metadata?, wpidinfo, initial_setup, proc+)>
```

```
<!ATTLIST softpowerupwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"

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wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

## 4. Common attributes for &lt;softpowerupwp&gt;:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

20.1.4 Power down/shut down procedures work package <softpowerdownwp>.

This work package <softpowerdownwp> should contain procedures for powering down/shutting down the workstation/viewing equipment for the software.

- 1. The components <softpowerdownwp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial\_setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Procedures <proc> (required – one or more). The element provides paragraphs or steps to detail security and privacy procedures including such things as setting passwords, changing passwords, setting file access restrictions, account management (setting up new ones, removing accounts, etc.) (see Section 17.2).
- 2. The DTD fragment for <softpowerdownwp> is graphically depicted.

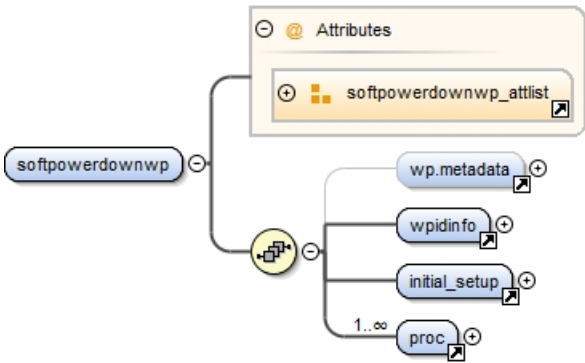


FIGURE 204. Powerup/startup procedures work package <softpowerdownwp> DTD hierarchy.

- 3. The DTD fragment for <softpowerdownwp> is:

```
<!ELEMENT softpowerdownwp (wp.metadata?, wpidinfo, initial_setup, proc+)>
<!ATTLIST softpowerdownwp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changelvl (0-9) "0"
 changeref IDREFS #IMPLIED
 chngno (0-99) "0"
 comment CDATA #IMPLIED
 crewmember CDATA #IMPLIED
 date-time-stamp (date | time | date-time) #IMPLIED
```



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delchlvl	(0–99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <softpowerdownwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 20.1.5 Accessing/exiting software work package <softaccesswp>.

This work package <softaccesswp> should contain procedures for accessing/exiting the software.

1. The components <softaccesswp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial.setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Procedures <proc> (required – one or more) (see Section 17.2). The element provides paragraphs or steps to detail powering down/shutting down the workstation/viewing equipment for the software.

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2. The DTD fragment for **<softaccesswp>** is graphically depicted.

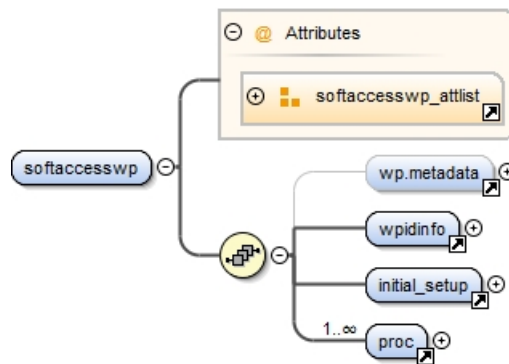


FIGURE 205. Accessing/exiting software work package **<softaccesswp>** DTD hierarchy.

3. The DTD fragment for **<softaccesswp>** is:

```
<!ELEMENT softaccesswp (wp.metadata?, wpidinfo, initial_setup, proc+)>
```

```
<!ATTLIST softaccesswp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnngno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"

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wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

## 4. Common attributes for &lt;softaccesswp&gt;:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 20.1.6 Key commands work package <softkeycmdswp>.

This work package <softkeycmdswp> should contain descriptions for the key commands contained in the software and should contain procedures for how to use these key commands.

1. The components <softkeycmdswp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial\_setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Procedures <proc> (required – one or more). The element provides paragraphs or steps to detail the key commands contained in the software (see Section 17.2).
2. The DTD fragment for <softkeycmdswp> is graphically depicted.

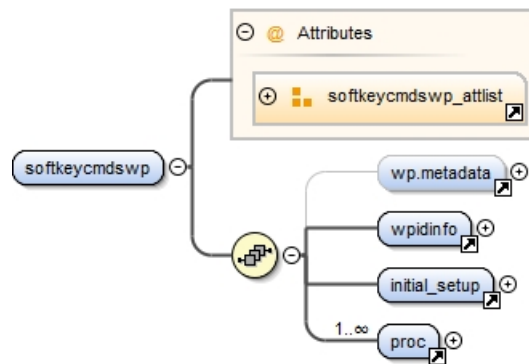


FIGURE 206. Key commands work package <softkeycmdswp> DTD hierarchy.

3. The DTD fragment for <softkeycmdswp> is:

```
<!ELEMENT softkeycmdswp (wp.metadata?, wpidinfo, initial_setup, proc+)>
```

```
<!ATTLIST softkeycmdswp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0–9)	"0"
changeref	IDREFS	#IMPLIED
chngno	(0–99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0–99)	"0"

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deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <softkeycmdswp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnyno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 20.1.7 Processes and commands work package <softproccmdwp>.

This work package <softproccmdwp> should contain processes and command procedure in the software.

1. The components <softproccmdwp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial\_setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Procedures <proc> (required – one or more). The element provides paragraphs or steps to detail should contain procedures for running any processes and/or executing any commands contained in the software (see Section 17.2).
2. The DTD fragment for <softproccmdwp> is graphically depicted.

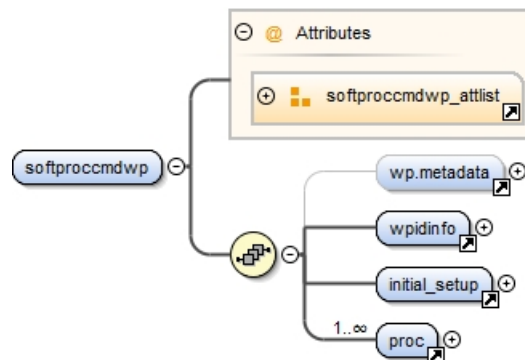


FIGURE 207. Processes and commands work package <softproccmdwp> DTD hierarchy.

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3. The DTD fragment for **<softproccmdwp>** is:

```

<!ELEMENT softproccmdwp (wp.metadata?, wpidinfo, initial_setup, proc+)>
<!ATTLIST softproccmdwp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changelvl (0-9) "0"
 changeref IDREFS #IMPLIED
 chngno (0-99) "0"
 comment CDATA #IMPLIED
 crewmember CDATA #IMPLIED
 date-time-stamp (date | time | date-
 time) #IMPLIED
 delchlvl (0-99) "0"
 deletewp (yes | no) "no"
 fgc CDATA #IMPLIED
 frame (yes | no) "yes"
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 insertwp CDATA #IMPLIED
 lsa-id CDATA #IMPLIED
 marines (yes | no) "no"
 navy (yes | no) "no"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 tocentry (2 | 3 | 4 | 5) "2"
 wpno ID #REQUIRED
 wpseq CDATA #IMPLIED>

```

4. Common attributes for **<softproccmdwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).



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- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 20.1.8 User interface work package <softguiwp>.

This work package <softguiwp> should describe any interfaces that are part of the software and should provide instructions on how to use these interfaces.

1. The components <softguiwp> are:
  - a. Metadata <wp.metadata>** (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo>** (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial.setup>** (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).

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- d. Procedures **<proc>** (required – one or more). The element provides paragraphs or steps to describe any interfaces that are part of the software and should provide instructions for how to use these interfaces (see Section 17.2).
2. The DTD fragment for **<softguiwp>** is graphically depicted.

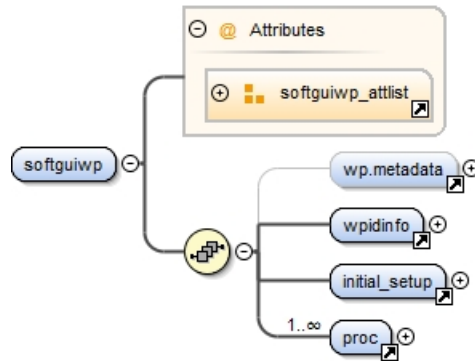


FIGURE 208. User interface work package **<softguiwp>** DTD hierarchy.

3. The DTD fragment for **<softguiwp>** is:

```
<!ELEMENT softguiwp (wp.metadata?, wpidinfo, initial_setup, proc+)>
```

```
<!ATTLIST softguiwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0–9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0–99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0–99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <softguiwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

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- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 20.1.9 Software operating conventions <softopconventionswp>.

This work package <softopconventionswp> should describe operating conventions that are unique to the software and should provide instructions on how to operate the weapon system/equipment and auxiliary equipment software in all modes of operation.

1. The components <softopconventionswp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial\_setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Procedures <proc> (required – one or more). The element provides paragraphs or steps to describe any operating conventions that are unique to the software and should provide instructions to operate the weapon system/equipment and auxiliary equipment software in all modes of operation. Any combination or control settings that will create a hazard to personnel or cause damage to equipment should be preceded by a warning or caution. (see Section 17.2).
2. The DTD fragment for <softopconventionswp> is graphically depicted.

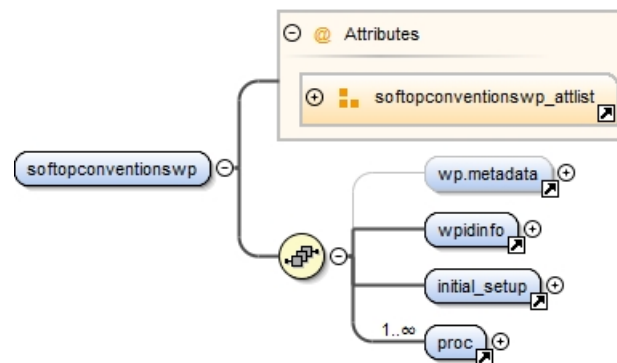


FIGURE 209. Software operating conventions work package <softopconventionswp> DTD hierarchy.

3. The DTD fragment for <softopconventionswp> is:

```
<!ELEMENT softopconventionswp (wp.metadata?, wpidinfo, initial_setup,
proc+)>
```

```
<!ATTLIST softopconventionswp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED

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changelvl	(0–9)	“0”
changeref	IDREFS	#IMPLIED
chnгно	(0–99)	“0”
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0–99)	“0”
deletewp	(yes   no)	“no”
fgc	CDATA	#IMPLIED
frame	(yes   no)	“yes”
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	“0”
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	“no”
navy	(yes   no)	“no”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	“2”
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <softtopconventionswp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).

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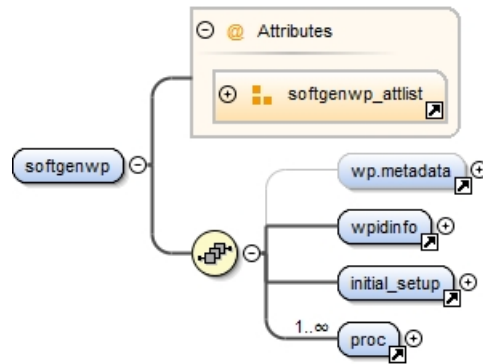
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 20.1.10 Additional software operation work package conventions <softgenwp>.

This work package <softgenwp> should describe used for any software operating procedures which are not covered in the other work packages.

1. The components <softgenwp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work Package Initial Setup <initial.setup> (required). The element provides lists of information required by the technician so the tools, test equipment, references, parts, and other items needed to complete the tasks can be obtained (see Section 16.6).
  - d. Procedures <proc> (required – one or more). The element provides paragraphs or steps to describe any operating conventions that are unique to the software and don't fit in the other work packages (see Section 17.2).
2. The DTD fragment for <softgenwp> is graphically depicted.

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**FIGURE 210. Software general information work package <softgenwp> DTD hierarchy.**

**3. The DTD fragment for <softgenwp> is:**

```
<!ELEMENT softgenwp (wp.metadata?, wpidinfo, initial_setup, proc+)>
```

```
<!ATTLIST softgenwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"

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wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

## 4. Common attributes for &lt;softgenwp&gt;:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.



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## 20.1.10.1 XML document instance fragment and output for &lt;softgenwp&gt;.

The XML instance and its stylesheet output for a <softgenwp> is provided below.

1. Example of an XML document instance fragment for <softgenwp>:

```
<softgenwp chngno="0" wpno="SOPIM01-SECPRIV001">
 <wpidinfo>
 <maintlvl level="operator"/>
 <title>Security and Privacy Procedures
 </title>
 </wpidinfo>
 <initial_setup>
 <ref>
 <ref-setup-item>
 <xref wpid="SOPIM01-SECPRIV001"/>
 </ref-setup-item>
 </ref>
 </initial_setup>
 <proc>
 <geninfo>
 <title>SECURITY AND PRIVACY GENERAL INFORMATION
 </title>
 <para>
 <emphasis emph="bold">Information Assurance (IA).
 </emphasis>The NMP is a DoD Mission Assurance Category (MAC) I system, which
 requires the most stringent protection measures. MAC I systems handle
 information vital to the operational readiness or effectiveness of deployed or
 contingency forces. As such, the Army requires that the NMP have a specific
 baseline operating system (OS) configuration and particular software
 applications installed:
 <randlist bullet="yes">
 <item>
 <emphasis emph="bold">Army Golden Master.
 </emphasis>The Army has established the Army Golden Master (AGM) as the standard
 source for common operating system configurations in the Sensitive But
 Unclassified (SBU) environment. The AGM is not required in the classified
 environment. The AGM is purposely restrictive when specifying what can be loaded
 on the computer, what ports are enabled, etc. The Army purchased licenses from
 Microsoft Corporation to use their operating system (currently Windows 7), but
 delivered with specific configurations and other protocols specified in the
 AGM.
 </item>
 <item>
 <emphasis emph="bold">Host Based Security System.
 </emphasis>The Host Based Security System (HBSS) is the official name given to the
 Department of Defense (DoD) commercial-off-the-shelf (COTS) suite of software
 applications used within the DoD to monitor, detect, and counter attacks against
 the DoD computer networks and systems. HBSS establishes user privileges based on
 the user-level login. HBSS is required by US Strategic Command (USSTRATCOM) Army
 Cyber Command (ARCCYBER) for any system connected to the SIPR/NIPR network. Data
 Loss Prevention (DLP) policies were implemented to restrict all external
 storage devices (USB flash drive, etc.) except for those devices delivered with
 the system (USB Power Stick, SD card, CD/DVD, and external hard drive).
 </item>
```

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```

<item>
<emphasis emph="bold">McAfee Virus Protection.
</emphasis>The NMP includes the McAfee VirusScan Enterprise application, which is
an anti-virus program for detecting and removing viruses and other security
threats on Windows.
</item>
</randlist>
</para>
<para>
<emphasis emph="bold">NW System Requirements.
</emphasis>In addition to managing and assembling mission data for eventual use on
the Nett Warrior system, the NMP should fulfill the Nett Warrior system
requirement for data security and user authentication:
<randlist bullet="yes">
<item>
<emphasis emph="bold">Data Security:
</emphasis>The NMP verifies that all data on files is virus free and secure,
mitigating data security issues on the Nett Warrior system itself. The NMP
verifies that an application is an Android Application Package (APK) and that
the name and version do not already exist on the NW EUD. To comply with the EUD
security measures, each APK is verified for its signature (with the EUD's
Package Manager utility) before being installed on the EUD.
</item>
<item>
<emphasis emph="bold">User Authentication:
</emphasis>The NMP supports the principle of least privilege in enabling services
and functions to only those user roles that require them and during periods in
which they are required. Four separate user groups (with a total of five default
user accounts), each with its own privileges, are provided to support this
principle. A user account's password will disable after three failed login
attempts.
</item>
</randlist>
</para>
</geninfo>
</proc>
<proc>
<title>Security and Privacy Procedures
</title>
<para>Refer to
<xref wpid="SOPIM01-SECPRIV001"/> for procedures for managing user accounts,
including creating new accounts and setting passwords.
</para>
</proc>
</softgenwp>

```

2. Page-based TM stylesheet output example for <softgenwp>.

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0001

## OPERATOR

## SECURITY AND PRIVACY PROCEDURES

## INITIAL SETUP:

References  
WP 0001

## SECURITY AND PRIVACY GENERAL INFORMATION

**Information Assurance (IA).** The NMP is a DoD Mission Assurance Category (MAC) I system, which requires the most stringent protection measures. MAC I systems handle information vital to the operational readiness or effectiveness of deployed or contingency forces. As such, the Army requires that the NMP have a specific baseline operating system (OS) configuration and particular software applications installed:

- **Army Golden Master.** The Army has established the Army Golden Master (AGM) as the standard source for common operating system configurations in the Sensitive But Unclassified (SBU) environment. The AGM is not required in the classified environment. The AGM is purposely restrictive when specifying what can be loaded on the computer, what ports are enabled, etc. The Army purchased licenses from Microsoft Corporation to use their operating system (currently Windows 7), but delivered with specific configurations and other protocols specified in the AGM.
- **Host Based Security System.** The Host Based Security System (HBSS) is the official name given to the Department of Defense (DoD) commercial-off-the-shelf (COTS) suite of software applications used within the DoD to monitor, detect, and counter attacks against the DoD computer networks and systems. HBSS establishes user privileges based on the user-level login. HBSS is required by US Strategic Command (USSTRATCOM) Army Cyber Command (ARCCYBER) for any system connected to the SIPR/NIPR network. Data Loss Prevention (DLP) policies were implemented to restrict all external storage devices (USB flash drive, etc.) except for those devices delivered with the system (USB Power Stick, SD card, CD/DVD, and external hard drive).
- **McAfee Virus Protection.** The NMP includes the McAfee VirusScan Enterprise application, which is an anti-virus program for detecting and removing viruses and other security threats on Windows.

**NW System Requirements.** In addition to managing and assembling mission data for eventual use on the Nett Warrior system, the NMP shall fulfill the Nett Warrior system requirement for data security and user authentication:

- **Data Security:** The NMP verifies that all data on files is virus free and secure, mitigating data security issues on the Nett Warrior system itself. The NMP verifies that an application is an Android Application Package (APK) and that the name and version do not already exist on the NW EUD. To comply with the EUD security measures, each APK is verified for its signature (with the EUDs Package Manager utility) before being installed on the EUD.
- **User Authentication:** The NMP supports the principle of least privilege in enabling services and functions to only those user roles that require them and during periods in which they are required. Four separate user groups (with a total of five default user accounts), each with its own privileges, are provided to support this principle. A user account's password will disable after three failed login attempts.

## END OF TASK

## Security and Privacy Procedures

Refer to WP 0001 for procedures for managing user accounts, including creating new accounts and setting passwords.

## END OF TASK

## END OF WORK PACKAGE

0001-1/blank

FIGURE 211. Example of a page-based TM stylesheet output for <softgenwp> with one procedure.

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## 21 SOFTWARE DESCRIPTION AND DATA CHAPTER <softdescdata>.

### 21.1 Software description and data chapter <softdescdata>.

The software description and data chapter will contain a features and capabilities work package <softfeaturescapwp>, a screen displays work package <softscreendisplaywp>, menus and directories work package <softmenuwp>, and a tools and buttons work package <softtoolswp> describing how the software works.

- 1. The components <softdescdata> are:
  - a. Chapter Title Page <titlepg> (required). The element provides the title page preceding an information chapter (see Section 36.1.1.1).
  - b. Features and capabilities work package <softfeaturescapwp> (optional) (see Section 21.1.1).
  - c. Screen displays work package <softscreendisplaywp> (optional) (see Section 21.1.2).
  - d. Menus and directories work package <softmenuwp> (required) (see Section 21.1.3).
  - e. Tools and buttons work package <softtoolswp> (required) (see Section 21.1.4).
- 2. The DTD fragment for <softdescdata> is graphically depicted.

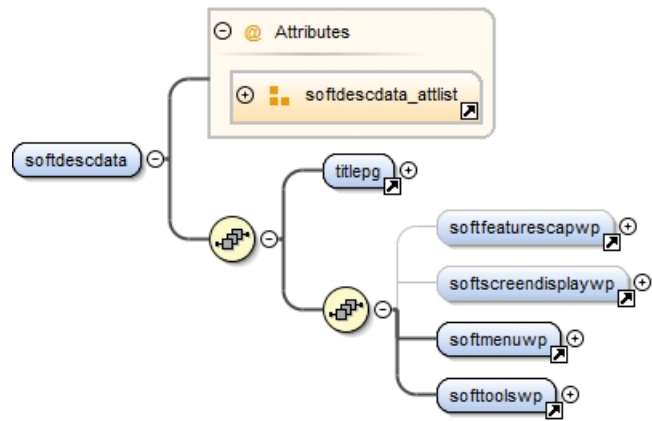


FIGURE 212. Software description and data <softdescdata> DTD Hierarchy.

- 3. The DTD fragment for <softdescdata> is:

```
<!ELEMENT softdescdata (titlepg, softfeaturescapwp?, softscreendis-
playwp?, softmenuwp, softtoolswp)>
<!ATTLIST softdescdata
chap-toc (yes | no) "yes"
chngno (0-99) "0"
frame (yes | no) "yes"
revno CDATA #REQUIRED
tocentry (2 | 3 | 4 | 5) "1">
```

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4. Common attributes for **<softdescdata>**:

- a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **chngno** – Change number (required) (see Section 36.3.12).
- c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- d. **revno** – Revision number contains the current revision number of the TM (required).
- e. **tocentry** – Table of contents level entry (default value is **1**) (see Section 16.3.6).

21.1.1 Features and capabilities work package **<softfeaturescapwp>**.

The element **<softfeaturescapwp>** is used for descriptions of the features and capabilities of the software and the instructions for how to use these features and/or capabilities.

1. The components **<softfeaturescapwp>** are:

- a. Metadata **<wp.metadata>** (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
- b. Work Package Identification Information **<wpidinfo>** (required). The element provides the identification information required for a work package (see Section 16.2).
- c. Work package initial setup **<initial\_setup>** (required) (see Section 16.6).
- d. Capabilities and features procedures **<proc>** (required) (see Section 17.2).

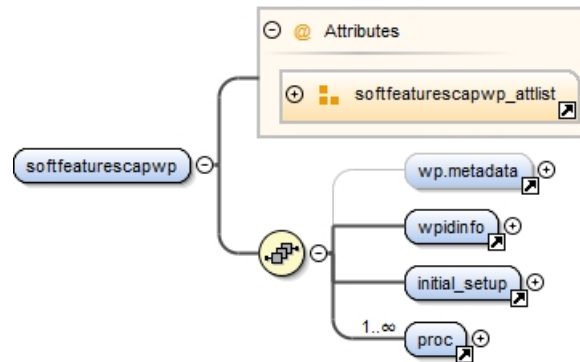
2. The DTD fragment for **<softfeaturescapwp>** is graphically depicted.

FIGURE 213. Features and capabilities work package **<softfeaturescapwp>** DTD hierarchy.

3. The DTD fragment for **<softfeaturescapwp>** is:

```
<!ELEMENT softfeaturescapwp (wp.metadata?, wpidinfo, initial_setup, proc
+)>
```

```
<!-- ATTLIST softfeaturescapwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"

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changeref	IDREFS	#IMPLIED
chnгно	(0–99)	“0”
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0–99)	“0”
deletewp	(yes   no)	“no”
fgc	CDATA	#IMPLIED
frame	(yes   no)	“yes”
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	“0”
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	“no”
navy	(yes   no)	“no”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	“2”
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <softfeaturescapwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).

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- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 21.1.2 Screens display work package <softscreendisplaywp>.

The element <softscreendisplaywp> contain information about and descriptions of the screens that display to the user/administrator while using the software.

1. The components <softscreendisplaywp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see 16.2).
  - c. Work package initial setup <initial\_setup> (required) (see 16.6).
  - d. Descriptions of the screens that display to the user/administrator while using the software procedures <proc> (required) (see Section 17.2) one or more.
2. The DTD fragment for <softscreendisplaywp> is graphically depicted.



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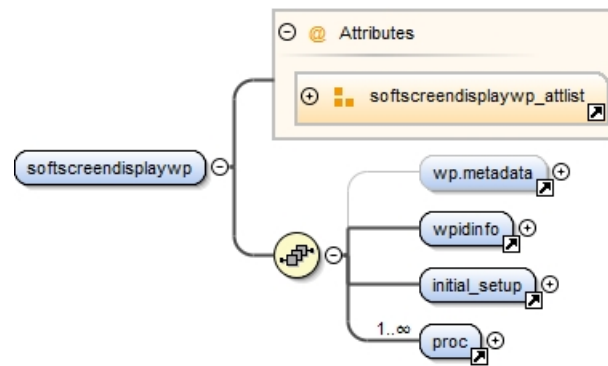


FIGURE 214. Descriptions of the screens work package <softscreendisplaywp> DTD hierarchy.

3. The DTD fragment for <softscreendisplaywp> is:

```
<!ELEMENT softscreendisplaywp (wp.metadata?, wpidinfo, initial_setup,
proc+)>
```

```
<!--ATTLIST softscreendisplaywp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"

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wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Common attributes for **<softscreendisplaywp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 21.1.3 Menus and directories work package <softmenuwp>.

The element <softmenuwp> will contain descriptions of the menus and directory structure for the software. Work package may also contain procedures for how to use other part of the software including, but not limited to; menus/submenus, file structure, file management tools, etc.

1. The components <softmenuwp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work package initial setup <initial\_setup> (required) (see Section 16.6).
  - d. Descriptions of the menus and directory structure for the software procedures <proc> (required) (see Section 17.2) one or more.
2. The DTD fragment for <softmenuwp> is graphically depicted.

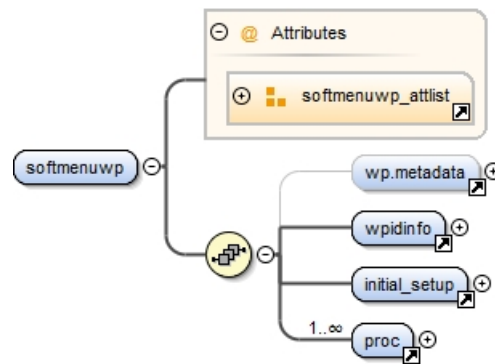


FIGURE 215. Menus and directories work package <softmenuwp> DTD hierarchy.

3. The DTD fragment for <softmenuwp> is:

```
<!ELEMENT softmenuwp (wp.metadata?, wpidinfo, initial_setup, proc+)>
```

```
<!ATTLIST softmenuwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chngno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"

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fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <softmenuwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time. or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).

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- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

#### 21.1.4 Tools and buttons work package <softtoolswp>.

The element <softtoolswp> describes all the buttons, tools, and/or toolbars provided by the software. As applicable, this work package should also contain procedures, information and instructions for using buttons, and tools/toolbars, hardware buttons and controls of the software. As applicable, this work package may also contain information/instructions for hardware buttons/controls that are used in the operation of the software.

1. The components <softtoolswp> are:
  - a. Metadata <wp.metadata> (optional). The element provides information about the work package data not usually used or seen by the end user (see Section 16.4.1).
  - b. Work Package Identification Information <wpidinfo> (required). The element provides the identification information required for a work package (see Section 16.2).
  - c. Work package initial setup <initial\_setup> (required) (see Section 16.6).
  - d. Controls and Indicators Tabular Form <ctrlindtab> (required – one or more) (see Section 19.1.1.1).

2. The DTD fragment for **<softtoolswp>** is graphically depicted.

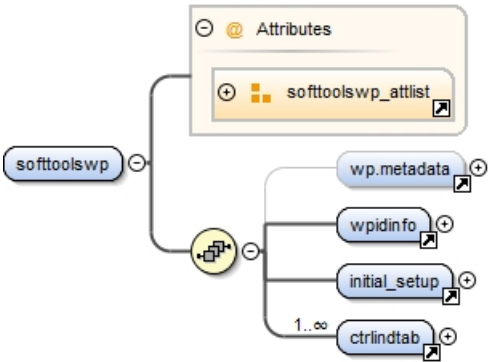


FIGURE 216. Tools and buttons work package <softtoolswp> DTD hierarchy.

3. The DTD fragment for **<softtoolswp>** is:

```
<!ELEMENT softtoolswp (wp.metadata?, wpidinfo, initial_setup, ctrlindtab
+)>
<!ATTLIST softtoolswp
airforce (yes | no) "no"
army (yes | no) "no"
assocfig IDREFS #IMPLIED
changelvl (0 – 9) "0"
changeref IDREFS #IMPLIED
chnngno (0–99) "0"
comment CDATA #IMPLIED
crewmember CDATA #IMPLIED
date-time-stamp (date | time | date- #IMPLIED
 time)
delchlvl (0–99) "0"
deletewp (yes | no) "no"
fgc CDATA #IMPLIED
frame (yes | no) "yes"
idref IDREFS #IMPLIED
inschlvl (0–99) "0"
insertwp CDATA #IMPLIED
lsa-id CDATA #IMPLIED
marines (yes | no) "no"
navy (yes | no) "no"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED
```

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tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Common attributes for **<softtoolswp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either yes or no (default value is yes).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).

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- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.



## 22 TROUBLESHOOTING CHAPTER

### 22.1 Scope.

The following paragraphs give a description and use of the elements used in tagging troubleshooting information with the MIL-STD-40051-1/-2 DTD.

### 22.2 What is troubleshooting?

Troubleshooting procedures isolate faults to the part(s) authorized by the RPSTL or MAC for repair or replacement at the maintenance level addressed. Troubleshooting procedures begin with testing observed problems, a fault symptom or a malfunction and result in a diagnosis to a single fault/failure. Troubleshooting refers to the specific maintenance or repair tasks to correct the fault. Troubleshooting data is test and fault isolation oriented. Troubleshooting instructions include detailed inspection and troubleshooting information. Instructions include or reference functional descriptions of subsystems being diagnosed to aid the operator/technician. The method used for identifying system equipment test points, including the requirements and methods of determining defects through visual inspection is explained.

### 22.3 Troubleshooting chapter components and categories <tim>.

The troubleshooting chapter has a title page <titlepage> (in frame-based this information is ignored) followed by a troubleshooting category. The troubleshooting category to be used is determined from the content matrix requirements in MIL-STD-40051-1/-2.

1. The components are:
  - a. Title page <titlepg> (required) (see Section 36.1.1.1).
  - b. One of the following maintenance categories, in accordance with MIL-STD-40051-1/-2 is required:
    - i. Troubleshooting master index category (Page-based only) <masterindexcategory> (see Section 22.4.1).
    - ii. Standard troubleshooting category <troublecategory> (see Section 22.4.2).
    - iii. DMWR/NMWR troubleshooting category <troubledmwrnmwrcategory> (see Section 22.4.3).
    - iv. Aviation troubleshooting manual category <troubleaviationcategory> (see Section 22.4.4).
    - v. Software troubleshooting category <troublesoftcategory> (see Section 22.4.5).
2. The DTD fragment for <tim> is graphically depicted:

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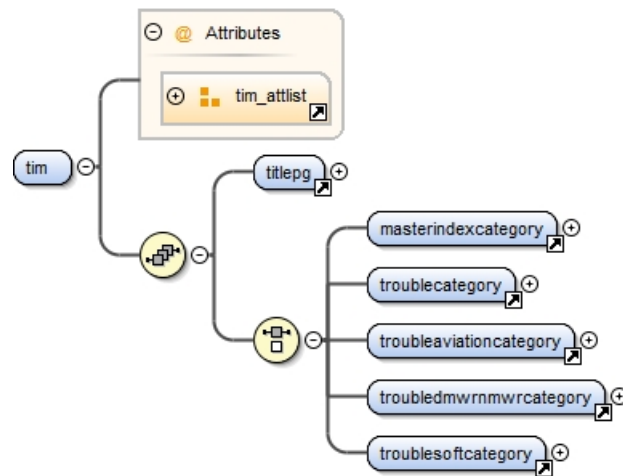


FIGURE 217. Troubleshooting instructions chapter DTD hierarchy &lt;tim&gt;.

## 3. The DTD fragment for &lt;tim&gt; is:

```

<!ELEMENT tim (titlepg, (masterindexcategory | troublecategory | troublea-
viationcategory | troubledmwrnmwrcategory | troublesoftcategory))
<!ATTLIST tim
chap-toc (yes | no) "yes"
chngno (0-99) "0"
frame (yes | no) "yes"
revno (0-99) "0"
tocentry (2 | 3 | 4 | 5) "1">

```

## 4. Common attributes for &lt;tim&gt;.

- a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **chngno** – Change number (required) (see Section 36.3.12).
- c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- d. **revno** – Revision number (required) (see Section 36.3.12).
- e. **tocentry** – Table of contents level entry (default value is **1**) (see Section 16.3.6).

## 22.4 Troubleshooting categories.

Depending on the type and complexity of the weapon system/equipment, the IETM or TM will contain one or more of the following troubleshooting category chapters and work packages (within the selected categories). In accordance with MIL-STD-40051-1/-2, the content matrices prescribe the optional and/or required troubleshooting categories and work packages for each technical manual type. The acquiring activity has the responsibility in selecting the troubleshooting category and the work packages within each category.

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### 22.4.1 Master malfunction/symptom troubleshooting index category (page-based only) <masterindexcategory>.

As specified in MIL-STD-40051-2, one troubleshooting malfunction/symptom index work package is prepared to index all the troubleshooting work packages by malfunction and/or symptom for the system/equipment. Other troubleshooting information chapters are needed to provide the details for the operational checkout and/or troubleshooting procedures. Therefore, generally no other troubleshooting indices are needed, but are not excluded from additional troubleshooting chapters.

1. The work package for <masterindexcategory> is troubleshooting index work package <tsindxwp> (required) (see Section 22.5).
2. The DTD fragment for <masterindexcategory> is graphically depicted.

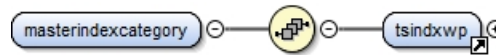


FIGURE 218. Master malfunction/symptom troubleshooting index category DTD hierarchy  
<masterindexcategory>.

3. The DTD fragment for <masterindexcategory> is:

```
<!ELEMENT masterindexcategory (tsindxwp)>
```

### 22.4.2 Standard troubleshooting category <troublecategory>.

This category is generally used for most Technical Manuals. A critical consideration for ETM/IETM development is the requirement or need for maintaining system state information (see 35.1). If state information is needed, then the <diagnosticwp> in the <troublecategory> is required to be used by MIL-STD 40051-1.

1. The work packages for <troublecategory> are:
  - a. A troubleshooting introduction work package <tsintrowp> (optional) (see Section 22.13.1).
  - b. Troubleshooting index work package <tsindxwp> (optional – zero or more) (see Section 22.5).
  - c. The troubleshooting method for the entire chapter using either:
    - i. Interactive and intrusive diagnostic work packages (frame-based only) <diagnosticwp> (required – one or more) (see Section 22.10).
    - ii. Standard troubleshooting work package <tswp> (see Section 22.8).

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2. The DTD fragment for **<troublecategory>** is graphically depicted:

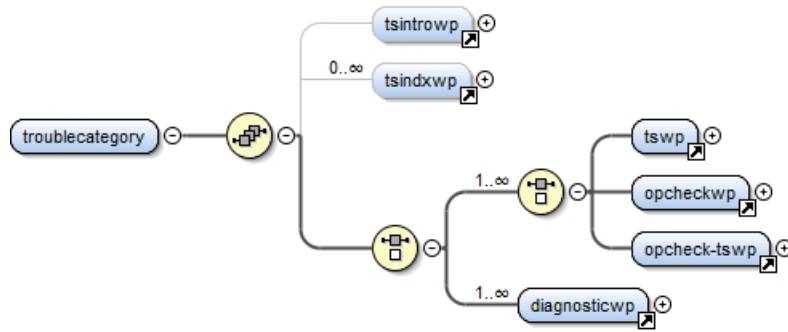


FIGURE 219. Standard troubleshooting category DTD hierarchy **<troublecategory>**.

3. The DTD fragment for **<troublecategory>** is:

```
<! ELEMENT troublecategory (tsintrowp?, tsindxwp*, ((tswp | opcheckwp |
opcheck-tswp)+ | diagnosticwp+))>
```

4. The **<troublecategory>** element has no attributes.

### 22.4.3 DMWR/NMWR troubleshooting category **<troubledmwrnmwrcategory>**.

This category is only applicable for a DMWR or NMWR that is indicated in the manual number prefix with either DMWR or NMWR. The category clearly identifies to the developer the specific work packages needed for DMWRs or NMWRs. This category includes the same work packages in the standard troubleshooting category (refer to Section 22.4.2) (these work packages are only developed as specified by the acquiring activity), but has additional work packages in the preshop analysis work package and component checklist work packages. When the DMWR or NMWR does not have a requirement in the troubleshooting chapter to use the preshop analysis work package, the developer will use the standard troubleshooting category.

1. The work packages for **<troubledmwrnmwrcategory>** are:
  - a. A troubleshooting introduction work package **<tsintrowp>** (optional) (see Section 22.13.1).
  - b. Troubleshooting index work package **<tsindxwp>** (optional – zero or more) (see Section 22.5).
  - c. Preshop analysis work package **<pshopanalwp>** (required) (see Section 22.11).
  - d. Component checklist work package **<compchklistwp>** (optional) (see Section 22.12.1).
  - e. The troubleshooting method for the entire chapter using either:
    - i. Interactive and intrusive diagnostic work packages (frame-based only) **<diagnosticwp>** (optional –zero or more) (see Section 22.10).
    - ii. Standard troubleshooting work package **<tswp>** (see Section 22.8).
    - iii. Operational checkout work package **<opcheckwp>** (see Section 22.7).
    - iv. Operational checkout and troubleshooting work package **<opcheck-tswp>** (see Section 22.9).
2. The DTD fragment for **<troubledmwrnmwrcategory>** is graphically depicted:

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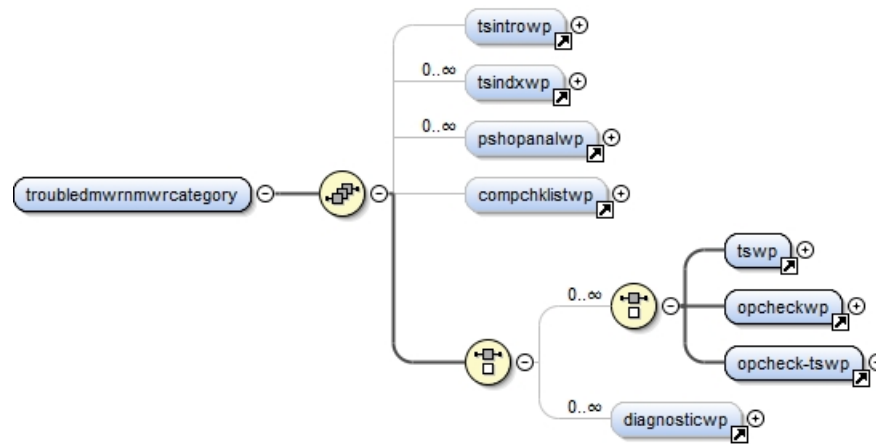


FIGURE 220. DMWR/NMWR Troubleshooting Category DTD hierarchy  
<troubledmwrnmwrcategory>.

3. The DTD fragment for <troubledmwrnmwrcategory> is:

```
<! ELEMENT troubledmwrnmwrcategory (tsintrowp?, tsindxwp*, pshopanalwp*,
compchklistwp?, ((tswp* | opcheckwp | opcheck-tswp* | diagnosticwp*))>
```

4. The <troubledmwrnmwrcategory> element has no attributes.

#### 22.4.4 Aviation manual troubleshooting category <troubleaviationcategory>.

This category is similar to the standard troubleshooting category, but allows the Aviation Troubleshooting Technical Manuals to include requirements for a system information work package (equipment description, theory of operation, and/or controls/indicators).

1. The work packages for <troubleaviationcategory> are:
  - a. A troubleshooting introduction work package <tsintrowp> (optional) (see Section 22.13.1).
  - b. Aviation troubleshooting technical description work package <techdescwp> (optional – zero or more) (see Section 22.13.2).
  - c. Troubleshooting index work package <tsindxwp> (optional – zero or more) (see Section 22.5).
  - d. The troubleshooting method for the entire chapter using either:
    - i. Interactive and intrusive diagnostic work packages (frame-based only) <diagnosticwp> (required – one or more) (see Section 22.10).
    - ii. Standard troubleshooting work package <tswp> (see Section 22.8).
    - iii. Operational checkout work package <opcheckwp> (see Section 22.7).
    - iv. Operational checkout and troubleshooting work package <opcheck-tswp> (see Section 22.9).
2. The DTD fragment for <troubleaviationcategory> is graphically depicted:

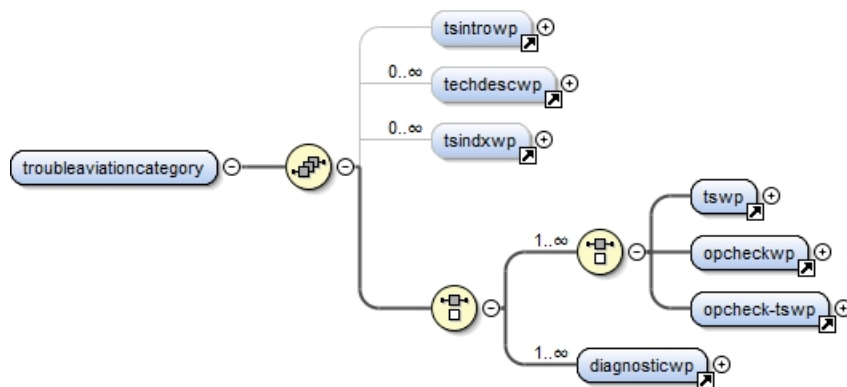


FIGURE 221. Aviation troubleshooting category DTD hierarchy <troubleaviationcategory>.

3. The DTD fragment for <troubleaviationcategory> is:

```
<! ELEMENT troubleaviationcategory (tsintrowp?, techdescwp*, tsindxwp*,
((tswp | opcheckwp | opcheck-tswp)+ | diagnosticwp+))>
```

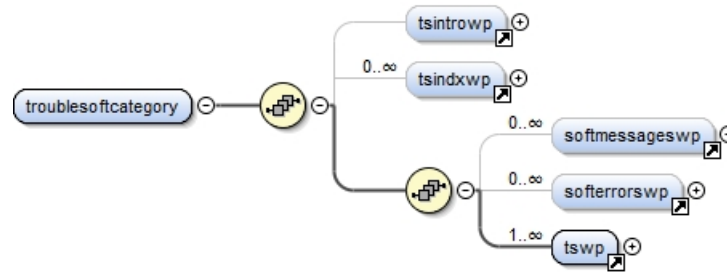
4. The <troubleaviationcategory> element has no attributes.

#### 22.4.5 Software administrators manual troubleshooting category <troublesoftcategory>.

This category is similar to the standard troubleshooting category, but allows the use of Software User and Software Administration Troubleshooting Technical Manuals to include requirements for work packages that contain information and or procedures needed to cover interfaces between software and hardware troubleshooting.

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1. The work packages for **<troublesoftcategory>** are:
  - a. A troubleshooting introduction work package **<tsintrowp>** (optional) (see Section 22.13.1).
  - b. Troubleshooting index work package **<tsindxwp>** (optional – zero or more) (see Section 22.5).
  - c. Messages work package **<softmessageswp>** This work package shall describe all possible error messages the user might see. The description shall include the wording for the error messages and explanation of what the error message means.
  - d. This work package shall provide procedures for recovering from errors, correcting malfunctions, and handling emergencies. **<softerrorswp>**.
  - e. Troubleshooting work package **<tswp>** (see Section 22.8).
2. The DTD fragment for **<troublesoftcategory>** is graphically depicted:



**FIGURE 222. Software administrators manual troubleshooting category DTD hierarchy **<troublesoftcategory>**.**

3. The DTD fragment for **<troublesoftcategory>** is:
 

```
<! ELEMENT troublesoftcategory (tsintrowp?, tsindxwp*, (softmessageswp*, softerrorswp*, tswp+))>
```
4. The **<troublesoftcategory>** element has no attributes.

## 22.5 Troubleshooting index work package **<tsindxwp>**.

The troubleshooting index provides a list of system components, associated possible symptoms/malfunctions or fault codes/message words and the reference to the test or corrective action for the fault. The index is most commonly used in paper to determine the test or corrective action to next perform. The same index file can be used by IETM viewers to automatically determine the next test or corrective action by using the intrusive test equipment results (if connected to the test equipment) or user dialog interface. Generally, in the IETM or paper, this is where fault isolation starts. Sometimes the results from the diagnostic testing produces multiple fault codes, which certain combinations of the test results may indicate a different test or corrective action to perform then each result separately. The index allows for an index entry to have multiple fault codes/message words or symptoms/malfunctions grouped together to provide these differences.

1. The components of the troubleshooting index work package **<tsindxwp>** are:
  - a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
  - b. Work package identification information **<wpidinfo>** (required) (see Section 16.5).
  - c. General information **<geninfo>** (optional) (see Section 36.1.4.11).
  - d. Troubleshooting index (required) is prepared by using one of the following methods:
    - i. System/subsystem **<tsindx.system>** (see Section 22.5.1).
    - ii. Symptom/malfunction **<tsindx.symptom>** (see Section 22.5.2).

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iii. Fault code/message word **<tsindx.messageword>** (see Section 22.5.4).

2. The DTD fragment for **<tsindxwp>** is graphically depicted.

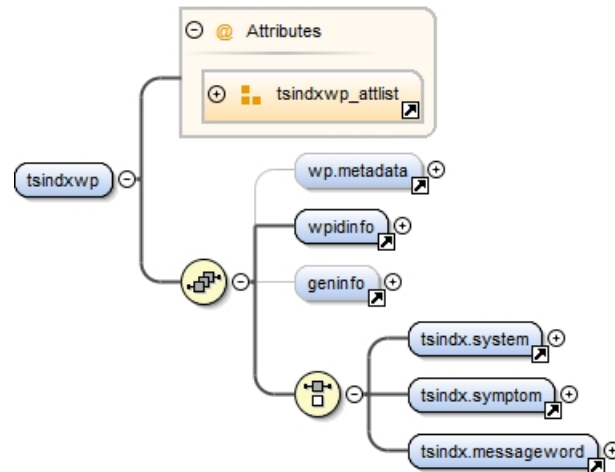


FIGURE 223. Troubleshooting index work package DTD hierarchy **<tsindxwp>**.

3. The DTD fragment for **<tsindxwp>** is:

```
<!ELEMENT tsindxwp (wp.metadata?, wpidinfo, geninfo? (tsindx.system |
tsindx.symptom | tsindx.messageword))>
```

```
<!ATTLIST tsindxwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnngno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"



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navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<tsindxwp>** are:

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **chnglvl** – Indicates the change level for metadata on a changed work package (optional) (see Section 36.3.12).
- e. **changeref** – Allows insertion of references to change history (metadata) (optional) (see Section 36.3.12).
- f. **chngno** – Change history or remarks reference (optional) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).

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- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 22.5.1 Troubleshooting system/subsystem index <tsindx.system>.

The index may group subsystems into categories as defined by the author. The index entries have the system name followed by either a reference to the testing/maintenance work package or a corrective action statement (if the action is relatively short).

1. The components of troubleshooting system/subsystem index <tsindx.system> are:
    - a. Index table title <title> (required) (see Section 36.1.1.4).
    - b. The system/subsystem is organized either by:
      - i. System/subsystem categories <tsindx.system-category> (required – one or more). The components are:
        - I. System/subsystem title <title> (required) (see Section 36.1.1.4).
        - II. A choice of one of the following:
          - A. A group consisting of the following. This group is allowed one time, but may be nested through the <tsindx.system-category>.
            - System/subsystem troubleshooting index entry <tsindx.system-entry> (required – one or more).
            - Further breakdown system/subsystem category <tsindx.system-category> (optional – zero or more). This is a recursive element that allows the necessary system/subsystem levels to be included.
          - B. One or more <tsindx.system-category> (required – one or more) elements. Care should be taken when using this approach to ensure that at some point a troubleshooting index entry <tsindx.system-entry> is provided.
    - c. System/subsystem troubleshooting index entry <tsindx.system-entry> (required – one or more). The element is similar to a **row** in a structural table. The components are:
      - i. System nomenclature <name> (required) (see Section 36.1.4.18). The element is similar to a **cell** in a structural table and is entered in column one.
      - ii. The corrective action is either brief steps providing the corrective action, or reference to the appropriate repair work package. The element is similar to a **cell** in a structural table and is entered in column two.
        - I. Corrective action step(s) <action> (required) (see Section 22.5.1.1), generally states two or three steps or “Call maintenance supervisor.”
        - II. Reference to the troubleshooting work package to fault isolation or the maintenance work package for corrective action <link>/<xref><extref> (required) (see Section 33).
2. The DTD fragment for <tsindx.system>, <tsindx.symptom-category> and <tsindx.symptom-entry> is graphically depicted.

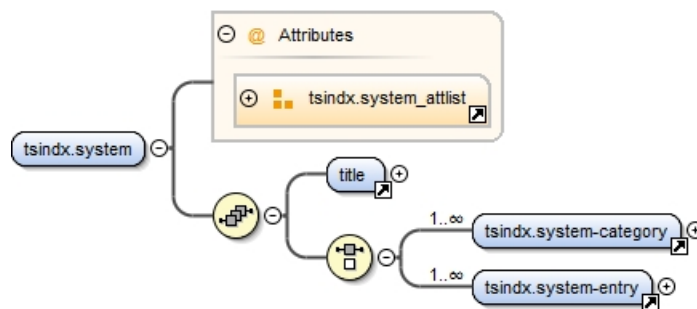


FIGURE 224. Troubleshooting system/subsystem index DTD hierarchy &lt;tsindx.system&gt; and children.

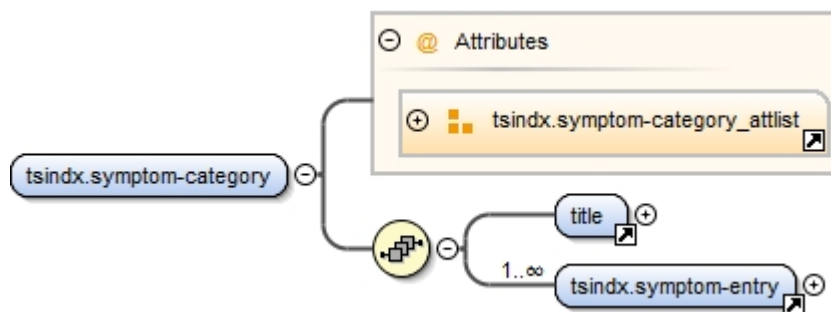


FIGURE 225.

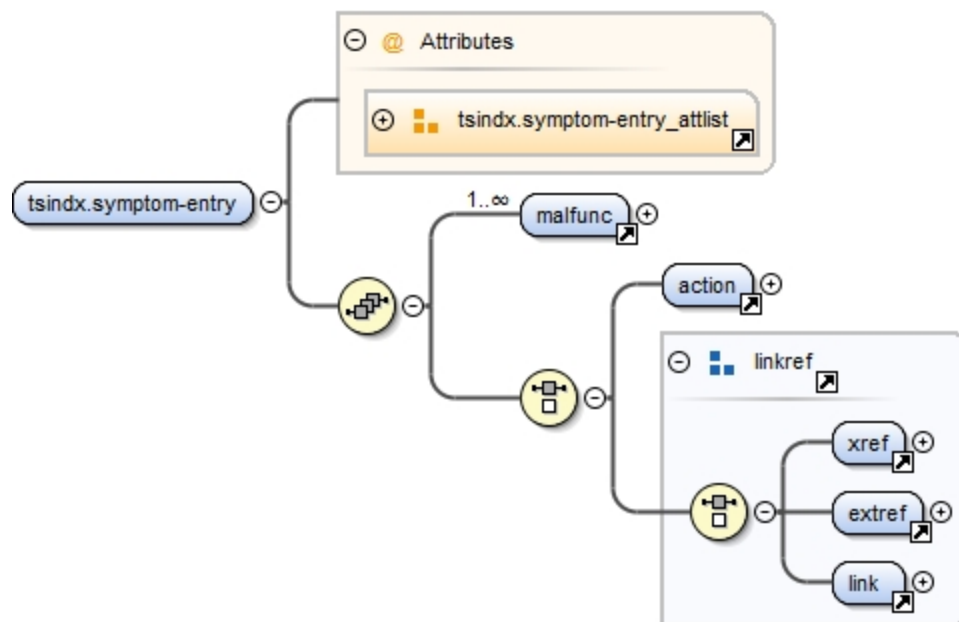


FIGURE 226.

3. The DTD fragment for <tsindx.system>, <tsindx.system-category>, and <tsindx.system-entry> is.

```
<!ELEMENT tsindx.system (title, (tsindx.system-category+ | tsindx.system-
entry+))>
```

```
<!ATTLIST tsindx.system
```

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applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(1   2   3   4   5)	"1">

```
<!ELEMENT tsindx.system-category (title, ((tsindx.system-entry+, tsindx.
system-category*) | tsindx.system-category+))>
```

```
<!ATTLIST tsindx.system-category
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

```
<!ELEMENT tsindx.system-entry (name, (action | %linkref;))>
```

```
<!ATTLIST tsindx.system-entry
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

### 22.5.1.1 Corrective action <action>.

The element **<action>** provides the corrective action steps or reference to fix an error, problem, defect, or symptom.

1. The components are:
  - a. Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
  - b. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
  - c. Caution **<caution>** (optional – zero or more) (see Section 28.1.2).
  - d. Note **<note>** (optional – zero or more) (see Section 28.1.3).
  - e. Procedural step **<step>** (see Section 17.3) (optional — one or more).
  - f. Paragraph **<para>** (see Section 36.1.1.6) (optional).
  - g. At least of the following is required:
    - i.
2. The DTD fragment for **<action>** is graphically depicted.

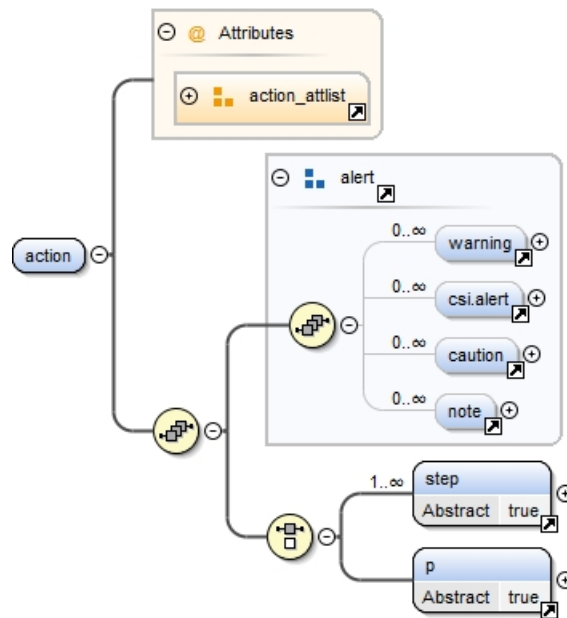


FIGURE 227. Corrective action <action>.

3. The DTD fragment for **<action>** is:

```
<!ELEMENT action (%alert;, ((%step;)+ | %p; ((%step;)+ | %p;))>
<!ATTLIST action
assocfig IDREFS #IMPLIED
```

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changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0–99)	“0”
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	“0”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

## 4. Common Attributes:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

## 22.5.2 Troubleshooting symptom/malfunction index &lt;tsindx.symptom&gt;.

This index may group symptoms into categories as defined by the author. The index entries have a symptom or multiple symptoms (if the symptoms together determines the next action) followed by either a reference to the testing/maintenance work package or a corrective action statement (if the action is relatively short).

## 1. The components of troubleshooting symptom/malfunction index &lt;tsindx.symptom&gt; are:

- a. Index table title <title> (required) (see Section 36.1.1.4).
- b. The symptoms/malfunctions are organized either by:
  - i. Symptom/malfunction category <tsindx.symptom-category> (required – one or more). The components are:
    - I. Symptom/malfunction category title <title> (required) (see Section 36.1.1.4).
    - II. Symptom/malfunction troubleshooting index entry <tsindx.symptom-entry> (optional – zero or more).
  - ii. Symptom/malfunction troubleshooting index entry <tsindx.symptom-entry> (required – one or more). The element is similar to a **row** in a structural table. The components are:
    - I. Symptom/malfunction <malfunc> (required) (see Section 22.5.3). The <malfunc> identifies a specific symptom or malfunction that requires correction. The element is similar to a “cell” in a structural table and is entered in column one.

- II. The corrective action as either a series of brief step(s) providing a corrective action or a reference to the appropriate repair work package. The element is similar to a “cell” in a structural table and is entered in column two.
- A. Corrective action step(s) **<action>** (required) (see Section 22.5.1.1), generally states two or three steps or “Call maintenance supervisor.”
- B. Reference to the troubleshooting work package to fault isolation or the maintenance work package for corrective action **<link>/<xref><extref>** (required) (see 33).

2. DTD fragment for **<tsindx.symptom>** is graphically depicted for:

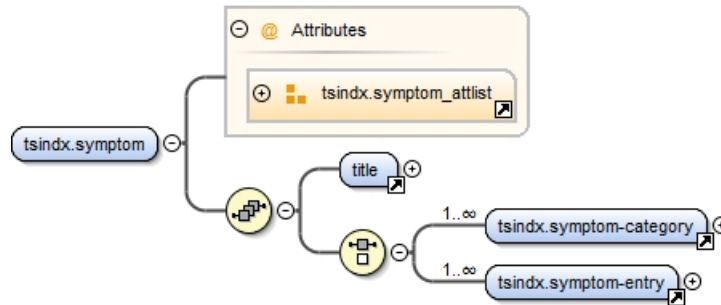


FIGURE 228. Troubleshooting symptom/malfunction index DTD hierarchy **<tsindx.symptom>** and children.

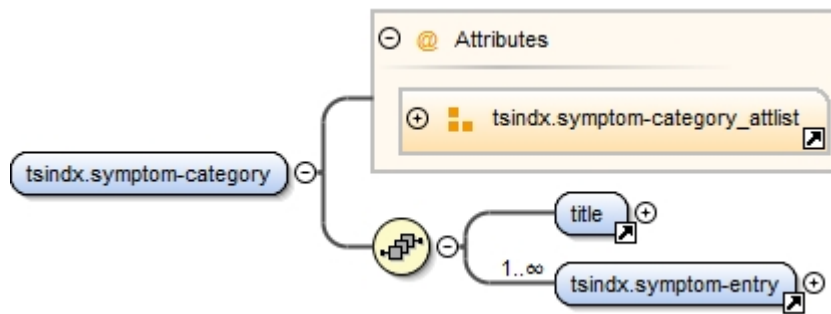


FIGURE 229.

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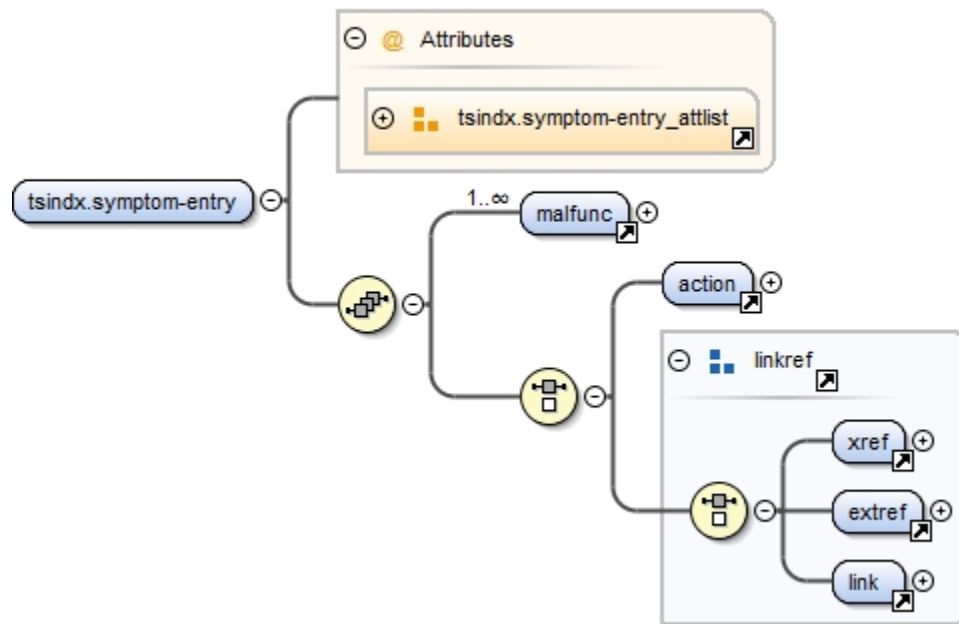


FIGURE 230.

3. The DTD fragments for **<tsindx.symptom>**, and **<tsindx.symptom-entry>** are.

```
<!ELEMENT tsindx.symptom (title, (tsindx.symptom-category+ | tsindx.symptom-entry+))>
```

```
<!ATTLIST tsindx.symptom
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(1   2   3   4   5)	"1">

```
<!ELEMENT tsindx.symptom-category (title, tsindx.symptom-entry+)>
```

```
<!ATTLIST tsindx.symptom-category
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED



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delchlvl	(0–99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>
<!ELEMENT tsindx.symptom-entry (malfunc+, (action   %linkref;))>		
<!ATTLIST tsindx.symptom-entry		
applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0–99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. DTD attributes for **<tsindx.symptom>**, **<tsindx.symptom-category>**, and **<tsindx.symptom-entry>** are:
- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - d. **comment** – Change information (optional) (see Section 36.3.12).
  - e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
  - g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - i. **security** – Security classification (optional) (see Section 36.3.14).
  - j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
  - k. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **1**) (see Section 16.3.6).
5. DTD attributes for **<tsindx.symptom-category>** and **<tsindx.symptom-entry>** are:
- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.5.3 Symptom/malfunction **<malfunc>**.

The element specifies the probable malfunction or symptom.

1. The components of **<malfunc>** are:
  - a. Parsable characters or type text – #PCDATA.
  - b. Format text – **<emphasis>** (see Section 36.1.3.1).
  - c. Subscript – **<subscript>** (see Section 36.1.3.4).
  - d. Superscript – **<supscript>** (see Section 36.1.3.5).
  - e. Cross reference – **<xref>** (see Section 33.2.2).
  - f. External reference – **<extref>** (see Section 33.2.1).
  - g. Enhanced linking – **<link>** (see Section 33.2.3).
  - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
  - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
  - j. Term – **<term>** (see Section 36.1.2.4.2).
  - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
  - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
  - m. Footnote – **<ftnote>** (see Section 32.1.1).
  - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
  - o. Graphic – **<graphic>** (see Section 31.2).
  - p. Miscellaneous – **<misc>** (see Section 36.1.3.2).
  - q. Changed text marker – **<change>** (see Section 36.1.3.7).

2. The DTD fragment for **<malfunc>** is graphically depicted.

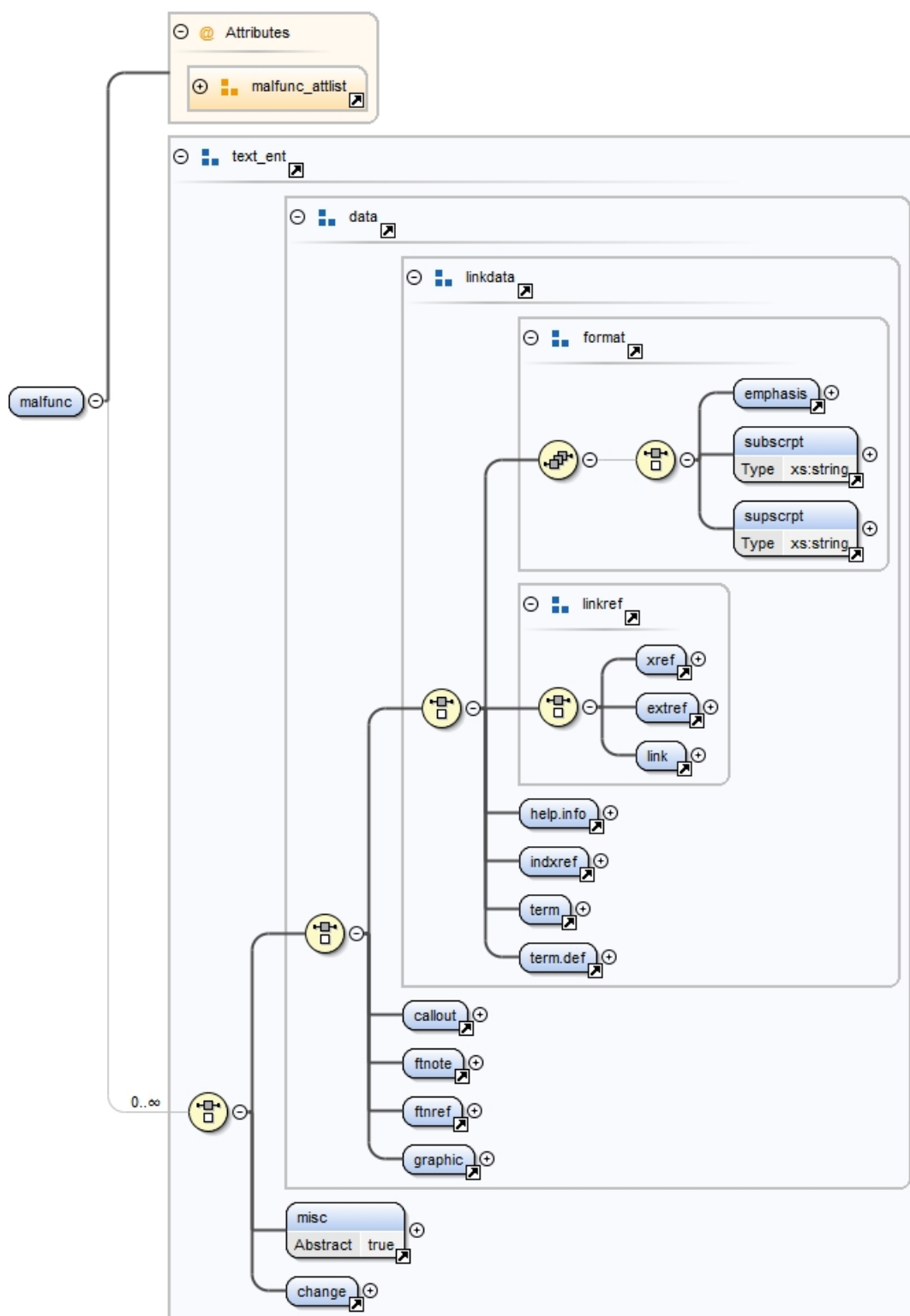


FIGURE 231. Malfunction DTD hierarchy **<malfunc>**.

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3. The DTD fragment for **<malfunc>** is:

```

<!ELEMENT malfunc (%text_ent;)*>

<!ATTLIST malfunc
 label (symptom | malfunction) #REQUIRED
 applicable IDREFS #IMPLIED
 faultcode CDATA #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Attributes for **<malfunc>** are:

## a. Unique attributes:

- i. **label** – Specifies the column heading if the presentation format is tabular (required).
- ii. **fault code** – Specifies the fault code associated with the malfunction (optional).

## b. Common attributes:

- i. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- ii. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- iii. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- iv. **comment** – Change information (optional) (see Section 36.3.12).
- v. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- vi. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- vii. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- viii. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- ix. **security** – Security classification (optional) (see Section 36.3.14).
- x. **skilltrk** – Skill level (optional) (see Section 36.3.3).

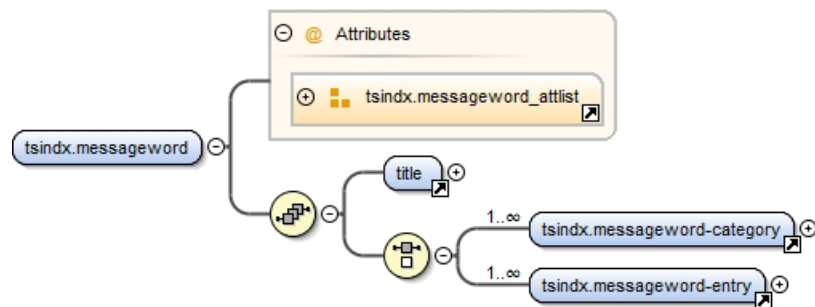
22.5.4 Troubleshooting fault code/message word index **<tsindx.messageword>**.

The index may group fault codes/message words into categories as defined by the author. The index entries have the fault code/message word or multiple fault codes/message words (if the fault codes/message words together determine the next action) followed by either a reference to the testing/maintenance work package or a corrective action statement (if the action is relatively short).

1. The components of troubleshooting fault code/message word index **<tsindx.messageword>** are:

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- a. Index table title **<title>** (required) (see Section 36.1.1.4).
  - b. The symptoms/malfunctions are organized either by:
    - i. Fault code/message word category **<tsindx.messageword-category>** (required – one or more) and the components are:
      - I. Fault code/message word category title **<title>** (required) (see Section 36.1.1.4).
      - II. Fault code/message word troubleshooting index entry **<tsindx.messageword-entry>** (optional – zero or more).
    - ii. Fault code/message word troubleshooting index entry **<tsindx.messageword-entry>** (required - one or more). The element is similar to a “row” in a structural table. The components are:
      - I. Fault code/message word **<messageword>** (required) (see Section 22.5.5). The element is similar to a “cell” in a structural table and is entered in column one.
      - II. The corrective action is either brief step(s) or references. The element is similar to a “cell” in a structural table is entered in column two.
        - A. The element **<action>** provides the corrective action steps or reference to fix an error, problem, defect, or symptom.
        - B. Reference to the troubleshooting work package to fault isolation or the maintenance work package for corrective action **<link>/<xref><extref>** (required) (see Section 33).
2. The DTD fragment for **<tsindx.messageword>** is graphically depicted.



**FIGURE 232. Troubleshooting fault code/message word index DTD hierarchy <tsindx messageword> and children.**

3. The DTD fragments for **<tsindx.messageword-category>** and **<tsindx.messageword-entry>** are:

```
<!ELEMENT tsindx.messageword (title, (tsindx.messageword-category+ |
tsindx.messageword-entry+))>
```

```
<!ATTLIST tsindx.messageword
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0–99)	“0”
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED

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inschlvl	(0–99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
	(1   2   3   4   5)	"1">

<!ELEMENT tsindx.messageword-category (title, tsindx.messageword-entry+)  
>

<!ATTLIST tsindx.messageword-category

|            |                          |           |
|------------|--------------------------|-----------|
| applicable | IDREFS                   | #IMPLIED  |
| assocfig   | IDREFS                   | #IMPLIED  |
| changeref  | IDREFS                   | #IMPLIED  |
| comment    | CDATA                    | #IMPLIED  |
| delchlvl   | (0–99)                   | "0"       |
| id         | ID                       | #IMPLIED  |
| idref      | IDREFS                   | #IMPLIED  |
| inschlvl   | (0–99)                   | "0"       |
| security   | (uc   fouo   c   s   ts) | #IMPLIED  |
| skilltrk   | CDATA                    | #IMPLIED> |

<!ELEMENT tsindx.messageword-entry (messageword+, (action | %linkref;))>

<!ATTLIST tsindx.messageword-entry

|            |                          |           |
|------------|--------------------------|-----------|
| applicable | IDREFS                   | #IMPLIED  |
| assocfig   | IDREFS                   | #IMPLIED  |
| changeref  | IDREFS                   | #IMPLIED  |
| comment    | CDATA                    | #IMPLIED  |
| delchlvl   | (0–99)                   | "0"       |
| id         | ID                       | #IMPLIED  |
| idref      | IDREFS                   | #IMPLIED  |
| inschlvl   | (0–99)                   | "0"       |
| security   | (uc   fouo   c   s   ts) | #IMPLIED  |
| skilltrk   | CDATA                    | #IMPLIED> |

#### 4. DTD attributes for <tsindx.messageword>.

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).

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- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
  - g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - i. **security** – Security classification (optional) (see Section 36.3.14).
  - j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
5. DTD attributes for **<tsindx.messageword-category>** and **<tsindx.messageword-entry>**.
- a. **applicable** – Applicability reference (optional) (see 16.4.1.4).
  - b. **assocfig** – Associate one or more figures (optional) (see 36.3.7).
  - c. **changeref** – Change history or remarks reference (optional) (see 36.3.12).
  - d. **comment** – Change information (optional) (see 36.3.12).
  - e. **delchlvl** – Deletion change level (optional) (see 36.3.12).
  - f. **id** – Specifies unique identifier (target) to reference (optional) (see 36.3.7).
  - g. **idref** – Reference identifier(s) (optional) (see 36.3.7).
  - h. **inschlvl** – Insert change level (optional) (see 36.3.12).
  - i. **security** – Security classification (optional) (see 36.3.14).
  - j. **skilltrk** – Skill level (optional) (see 36.3.3).

### 22.5.5 Message word <messageword>.

The message word **<messageword>** provides an identifiable word or phrase to the user that aids them in identifying a fault or aids in establishing another path to take in the troubleshooting.

### 22.5.6 XML document instance fragment and output for <tsindxwp>.

The XML instance and its stylesheet output for a **<tsindxwp>** is provided below:

1. Sample XML instance.

```
<tsindxwp wpno="T10002-X-XXXX-XXX" tocentry="2" frame="yes" army="no" airforce="no" navy="no" marines="no" wpseq="0231" deletewp="no">
 <wpidinfo>
 <maintlvl level="operator"/>
 <title>Troubleshooting Symptom Index
 </title>
</wpidinfo>
<geninfo frame="no">
 <title>General
</title>
<para0>
 <title>Troubleshooting Symptom Index
</title>
 <para>The Troubleshooting Symptom Index lists common malfunctions found during operation or crew servicing of the M2A3 and M3A3. The Troubleshooting Symptom Index is divided into sections. Each section covers malfunctions common to the different systems of the vehicle (engine, transmission, suspension).
</para>
```

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&lt;/para0&gt;

&lt;para0&gt;

&lt;title&gt;Troubleshooting Table

&lt;/title&gt;

<para> The TROUBLESHOOTING TABLE has three divisions: MALFUNCTION, TEST OR INSPECTION, and CORRECTIVE ACTION. The MALFUNCTIONS, or systems, are numbered in sequence through the TROUBLESHOOTING TABLE. The MALFUNCTION is what will bring you to the TROUBLESHOOTING TABLE. The MALFUNCTION is what will bring you to the TROUBLESHOOTING TABLE.

&lt;/para&gt;

<para>TEST OR INSPECTION is a step you take to isolate the MALFUNCTION. Each TEST OR INSPECTION has a CORRECTIVE ACTION. These are "if" statements which tell you what to do when the MALFUNCTION is not fixed.

&lt;/para&gt;

<para>After you have identified the malfunction describing your problem (symptom) from the symptom index, turn to the appropriate troubleshooting table. Follow each step through the tests or inspections until a fault is identified. Perform the corrective action listed to correct the fault. If the fault cannot be identified or corrected, notify unit maintenance by writing a

<extref docno="DA Form 2404"/>describing the symptom.

&lt;/para&gt;

<para>The operator's manual cannot list all possible malfunctions, nor all the tests and inspections required for corrective actions. If a malfunction is not listed, or is not corrected by the listed corrective action, notify your supervisor.

&lt;/para&gt;

&lt;/para0&gt;

&lt;/geninfo&gt;

&lt;tsindx.symptom tocentry="1"&gt;

&lt;title&gt;Troubleshooting Symptom Index

&lt;/title&gt;

&lt;tsindx.symptom-category&gt;

&lt;title&gt;ENGINE

&lt;/title&gt;

&lt;tsindx.symptom-entry&gt;

&lt;malfunc label="symptom"&gt;

&lt;ctrlind&gt;ENGINE OIL PRESS

&lt;/ctrlind&gt; gauge is in red zone

&lt;/malfunc&gt;

&lt;xref wpid="T00003-X-XXXX-XXX"/&gt;

&lt;/tsindx.symptom-entry&gt;

&lt;tsindx.symptom-entry&gt;

&lt;malfunc label="symptom"&gt;

&lt;ctrlind&gt;ENGINE COOLANT TEMP

&lt;/ctrlind&gt; gauge is in red zone

&lt;/malfunc&gt;

&lt;xref wpid="T00004-X-XXXX-XXX"/&gt;

&lt;/tsindx.symptom-entry&gt;

&lt;tsindx.symptom-entry&gt;

&lt;malfunc label="symptom"&gt;

&lt;ctrlind&gt;COOLANT HI TEMP

&lt;/ctrlind&gt; indicator light flashes

&lt;/malfunc&gt;



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```

<xref wpid="T00005-X-XXXX-XXX"/>
</tsindx.symptom-entry>
<tsindx.symptom-entry>
<malfunc label="symptom">
<ctrlind>AIR CLEANER CLOGGED
</ctrlind>indicator light flashes
</malfunc>
<xref wpid="T00006-X-XXXX-XXX"/>
</tsindx.symptom-entry>
<tsindx.symptom-entry>
<malfunc label="symptom">
<ctrlind>FUEL FILTER CLOGGED
</ctrlind> indicator light flashes
</malfunc>
<xref wpid="T00007-X-XXXX-XXX"/>
</tsindx.symptom-entry>
<tsindx.symptom-entry>
<malfunc label="symptom">Excessive smoke, loss of power
</malfunc>
<xref wpid="T00008-X-XXXX-XXX"/>
</tsindx.symptom-entry>
</tsindx.symptom-category>
<tsindx.symptom-category>
<title>TRANSMISSION
</title>
<tsindx.symptom-entry>
<malfunc label="symptom">
<ctrlind>TRANS OIL PRESS
</ctrlind> indicator light flashes
</malfunc>
<xref wpid="T00009-X-XXXX-XXX"/>
</tsindx.symptom-entry>
<tsindx.symptom-entry>
<malfunc label="symptom">
<ctrlind> TRANS OIL TEMP
</ctrlind> indicator light flashes
</malfunc>
<xref wpid="T00010-X-XXXX-XXX"/>
</tsindx.symptom-entry>
</tsindx.symptom-category>
<tsindx.symptom-category>
<title>BILGE PUMPS
</title>
<tsindx.symptom-entry>
<malfunc label="symptom">Bilge pumps discharge little or no water.
</malfunc>
<xref wpid="T00011-X-XXXX-XXX"/>
</tsindx.symptom-entry>
</tsindx.symptom-category>
<tsindx.symptom-category>
<title>SUSPENSION
</title>
<tsindx.symptom-entry>
<malfunc label="symptom">Vehicle pulls to one side on level ground

```

```

</malfunc>
</tsindx.symptom-entry>
<tsindx.symptom-entry>
<malfunc label="symptom">Track thumps while driving
</malfunc>
<xref wpid="T00013-X-XXXX-XXX"/>
</tsindx.symptom-entry>
</tsindx.symptom-category>
<tsindx.symptom-category>
<title>RAMP
</title>
<tsindx.symptom-entry>
<malfunc label="symptom">Ramp will not lower
</malfunc>
<xref wpid="T00014-X-XXXX-XXX"/>
</tsindx.symptom-entry>
</tsindx.symptom-category>
</tsindx.symptom>
</tsindxwp>

```

## 2. XML sample page-layout.

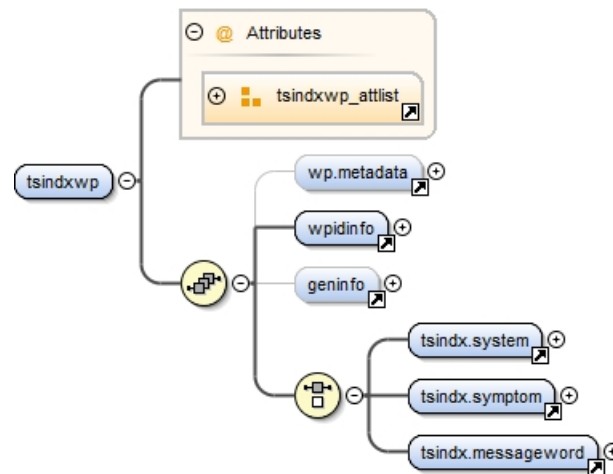


FIGURE 233. Troubleshooting index work package <tsindxwp> page-layout.

## 22.6 Troubleshooting system description and support information.

The elements listed in this section contain system description and support information used throughout the testing in the troubleshooting, operational checkout, and combined troubleshooting/operational checkout work packages. The system description information is used throughout all troubleshooting work packages to describe the system requiring testing in the troubleshooting. The support information is generally referenced throughout the operational checkout and troubleshooting work packages. The use of ID/IDREF provides a mechanism to link the support information with the fault isolation steps.

### 22.6.1 Troubleshooting system description <sysdesc>.

The element is used to describe any system/subsystem under test provided as a description of or supporting technical information; contained either as optional introductory section of a troubleshooting work package.

#### 1. The components are:

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- a. Title **<title>** (required) (see 36.1.1.4).
- b. Illustration **<figtab>** (see 31.1.1) and/or conditional illustration **<figure-alt>** (see 35.2.1) (optional – zero or more).
- c. Select one of the following information types:
  - i. Narrative paragraphs with descriptive or narrative titled text:
    - I. Note **<note>** (optional – zero or more) (see 28.1.3).
    - II. Narrative paragraph **<para>** (required – one or more) (see 36.1.1.6).
    - III. Descriptive or narrative titled text **<para0>** (see 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see 34.3.1) (optional – zero or more).
  - ii. Descriptive or narrative titled text **<para0>** (see 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see 35.2.1) (required – one or more).

2. The DTD fragment for **<sysdesc>** is graphically depicted.

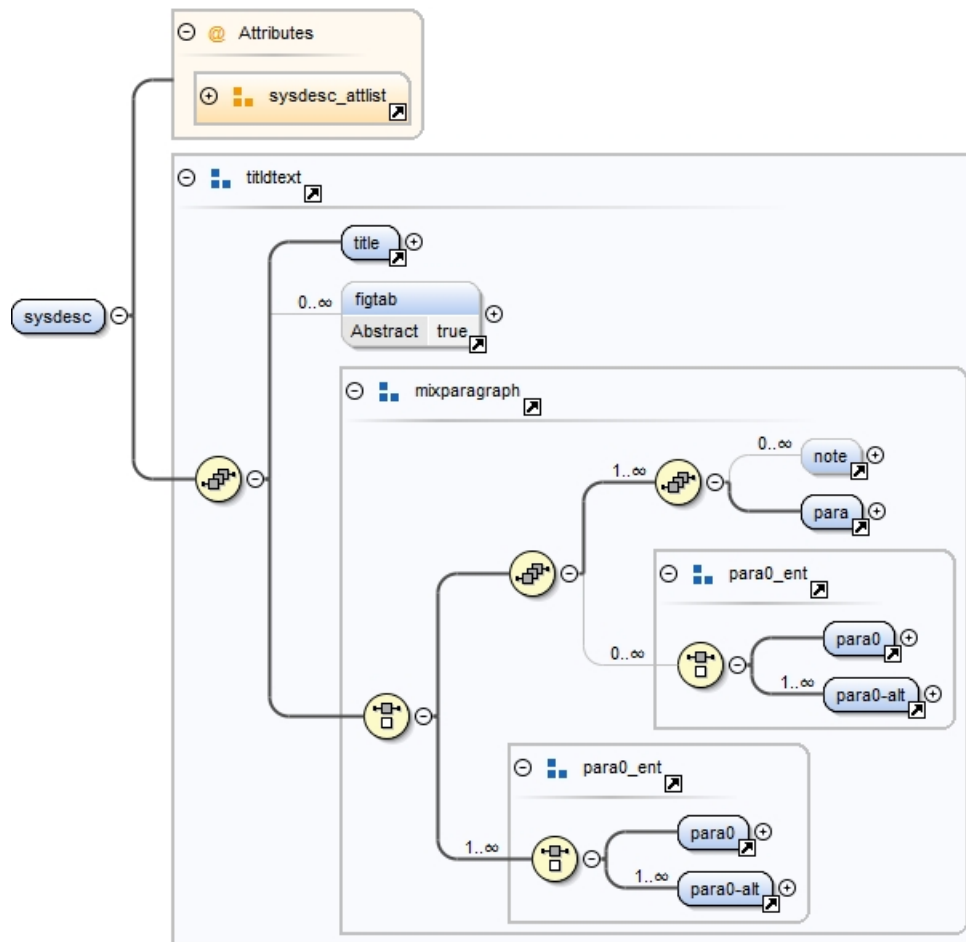


FIGURE 234. Troubleshooting system description DTD hierarchy.

3. The DTD fragment for **<sysdesc>** is:

```
<!ELEMENT sysdesc (%titldtxt;)>
<!ATTLIST tsindx.messageword-entry
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>
```

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4. DTD attributes for **<sysdesc>** are:

- a. **assocfig** – Associate one or more figures. (optional) (See 36.3.7).
- b. **changeref** – Reference one or more change summary entries. (optional) (See 36.3.12).
- c. **comment** – Reason for change information. (optional) (See 36.3.12).
- d. **delchlvl** – Deletion change level. (optional) (See 36.3.12).
- e. **id** – Unique identifier. (optional) (See 36.3.7).
- f. **idref** – Reference one or more identifiers. (optional) (See 36.3.7).
- g. **inschlvl** – Insertion change level. (optional) (See 36.3.12).
- h. **skilltrk** – Training skill level. (optional) (See 36.3.3).
- i. **security** – Security classification. (optional) (See 36.3.14).

**22.6.2 Troubleshooting supporting information.**

These additional support information elements are located after the **<initial\_setup>** in these (**<tswp>**, **<tsindxwp>**, **<opcheckwp>**, **<opcheck-tswp>**, and **<diagnosticwp>**) troubleshooting work packages. Any of the following elements may be used to further augment the troubleshooting information.

**22.6.2.1 Interconnection <interconnect>.**

The element contains diagrams or other means of presenting the electrical and electronic connections between components of the system under test.

**22.6.2.2 Test flow <testflow>.**

The element describes the troubleshooting testing flow.

**22.6.2.3 Functional dependencies <funcdepend>.**

The element describes the functional dependencies of components that make up the system under test.

**22.6.2.4 Schematic drawings <schematic>.**

The element is used for schematic drawings included as supporting technical information for a troubleshooting procedure.

**22.6.2.5 Component locator <comp-locator>.**

The element contains a figure to assist in the components under test location.

**22.6.2.6 Harness index <harness-indx>.**

The element is a special index of electrical wiring harnesses needed due to the extensive interrelated circuitry.

### 22.6.3 Disconnection procedures <disconnect>.

The element <disconnect> is used for any test set disconnection procedure.

1. The components are:
  - a. Precondition check <precond> (optional) (see 29.1.1.1).
  - b. Paragraph <para> (see 36.1.1.6).
2. The DTD fragment for <testwithoutstate> is graphically depicted:

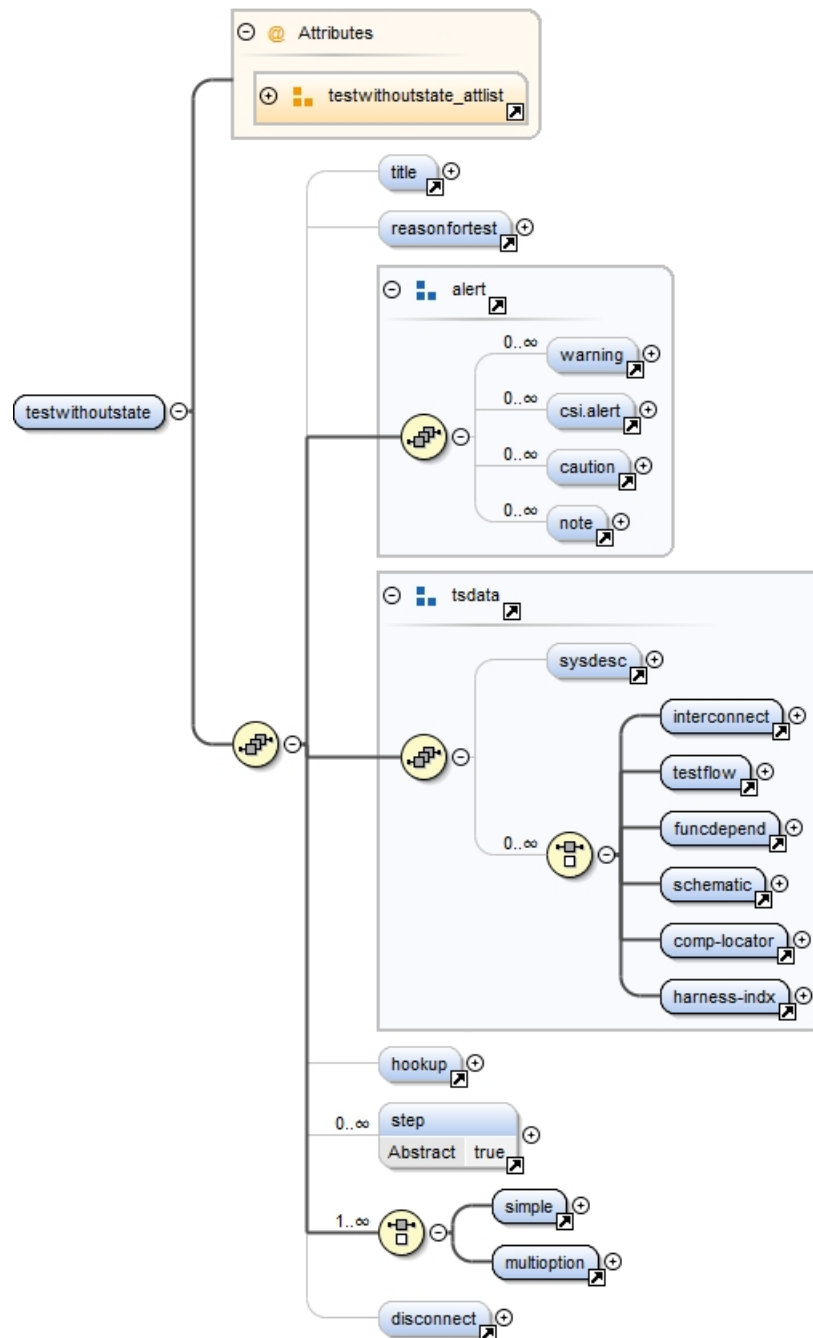


FIGURE 235. Testing (without state variables) DTD hierarchy <testwithoutstate>.

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3. The DTD fragment for **<disconnect>** is:

```

<!ELEMENT disconnect (precond?, proc+)>
<!--ATTLIST disconnect
applicable IDREFS #IMPLIED
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
date-time-stamp (date | time | date-time) #IMPLIED
delchlvl (0 - 99) "0"
esd (yes | no) "no"
frame (yes | no) "no"
hcp (yes | no) "no"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0 - 99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED
tocentry (0 | 3 | 4 | 5) "0">

```

4. Common attributes for **<disconnect>** are:

- a. **applicable** – Applicability reference (optional) (see 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see 36.3.12).
- d. **comment** – Change information (optional) (see 36.3.12).
- e. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- f. **delchlvl** – Deletion change level (optional) (see 36.3.12).
- g. **esd** – Electrostatic discharge requirement (default value is **no**) (see 36.3.6).
- h. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- i. **hcp** – Nuclear hardness requirement (default value is **no**) (see 36.3.6).
- j. **id** – Specifies unique identifier (target) to reference (optional) (see 36.3.7).
- k. **idref** – Reference identifier(s) (optional) (see 36.3.7).
- l. **inschlvl** – Insert change level (optional) (see 36.3.12).
- m. **security** – Security classification (optional) (see 36.3.14).
- n. **skilltrk** – Skill level (optional) (see 36.3.3).
- o. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **0**) (see Section 16.3.6).

### 22.6.4 Hookup <hookup>

The element is used to connect and test in a how to develop a task. If test set hookup is used test set disconnection is required.

### 22.6.5 Troubleshooting fault isolation procedure <tsproc>

The troubleshooting fault isolation is the element that contains the three types of fault symptom diagnosing methods; <logicproc>, <faultproc> and <muxproc> (and only one is used per work package).

The <tsproc> element is used as a child element in the <tswp> and <opcheck-tswp> work packages.

1. The DTD fragment for <tsproc> is graphically depicted as:

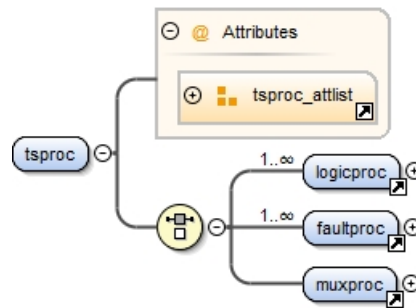


FIGURE 236. Troubleshooting system description DTD hierarchy.

2. Common attributes for <tsproc> are:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
  - c. **comment** – Reason for change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** – Unique identifier (optional) (see Section 36.3.7).
  - f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
  - h. **skilltrk** – Training skill level (optional) (see Section 36.3.3).
  - i. **security** – Security classification (optional) (see Section 36.3.14).

### 22.7 Operational checkout work package <opcheckwp> .

Operational checkout procedures subjects the equipment to prescribed conditions to determine if it will function with the predetermined test parameters. The operational checkout procedure <opcheckproc> includes one of the following:

1. an index of test set message words, description, and reference to corrective action or further diagnosis (generated from a test set or BIT/BITE readings) (see Section 22.7.4).
2. a reference index of test set or BIT/BITE fault codes and related follow-on actions (generated from a test set or BIT/BITE readings) (see Section 22.7.5).
3. or an operational testing procedure that include test steps, indication and correct actions (either fix fault or additional testing procedures) (see Section 22.7.1).



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The work package is used either after a maintenance task is completed and is used to determine if the system is operating correctly and all faults have been identified or assist in the fault detection through operational checkout steps. When trying to identify a malfunction, the first work package to reference is the troubleshooting index, used to direct the user to the most likely task to determine and correct the fault.

1. The components of operational checkout work package **<opcheckwp>** are:
  - a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see 16.4.1).
  - b. Work package identification information **<wpidinfo>** (required) (see Section 16.5).
  - c. Work package initial setup **<initial\_setup>** (required) (see Section 16.6).
  - d. Introduction **<intro>** (optional) (see Section 36.1.4.14) explains how the operational checkout procedures are to be used to perform testing and how they relate to the associated troubleshooting work packages.
  - e. System description and support information **<sysdesc>** (optional) (see Section 22.6.1).
    - i. Contains diagrams or other means of presenting the electrical and electronic connections between components of the system under test. **<interconnect>** (optional) (see 22.6.2.1).
    - ii. Describes the troubleshooting testing flow. **<testflow>** (optional) (see Section 22.6.2.2).
    - iii. Functional dependencies describes components that make up the system under test **<funcdepend>** (optional) (see Section 22.6.2.3).
    - iv. Used for schematic drawings included as supporting technical information for a troubleshooting procedure **<schematic>** (optional) (see Section 22.6.2.4).
    - v. Figure(s) to assist in the components under test location. **<comp-locator>** (optional) (see Section 22.6.2.5).
    - vi. Lists a special index of electrical wiring harnesses needed due to the extensive interrelated circuitry. **<harness-indx>** (optional) (see Section 22.6.2.6).
  - f. General procedure **<proc>** (optional — zero or more) (see Section 17.2).
  - g. Test set hookup **<hookup>** (optional) (see Section 22.6.4). If test set hookup is used, test set disconnection is required.
  - h. Operational checkout procedure **<opcheckproc>** (required) uses one of the following methods per work package.
    - i. Operational checkout steps **<opcheck>** (required) (see Section 22.7.1).
    - ii. Message word reference index **<messageindx>** (required) (see Section 22.7.4).
    - iii. Fault code reference report **<faultreports>** (required) (see Section 22.7.5).
  - i. Test set disconnection **<disconnect>** (optional) (see Section 22.6.3). If test set hookup is used, test set disconnection is required.
  - j. Follow on maintenance task **<followon.maintsk>** (optional) — provides references to any tasks required to put the system back into operational configuration. Ideally the follow on tasks should be the reverse of those tasks required during setup (see Section 23.7.1).
2. The DTD fragment for **<opcheckwp>** is graphically depicted.

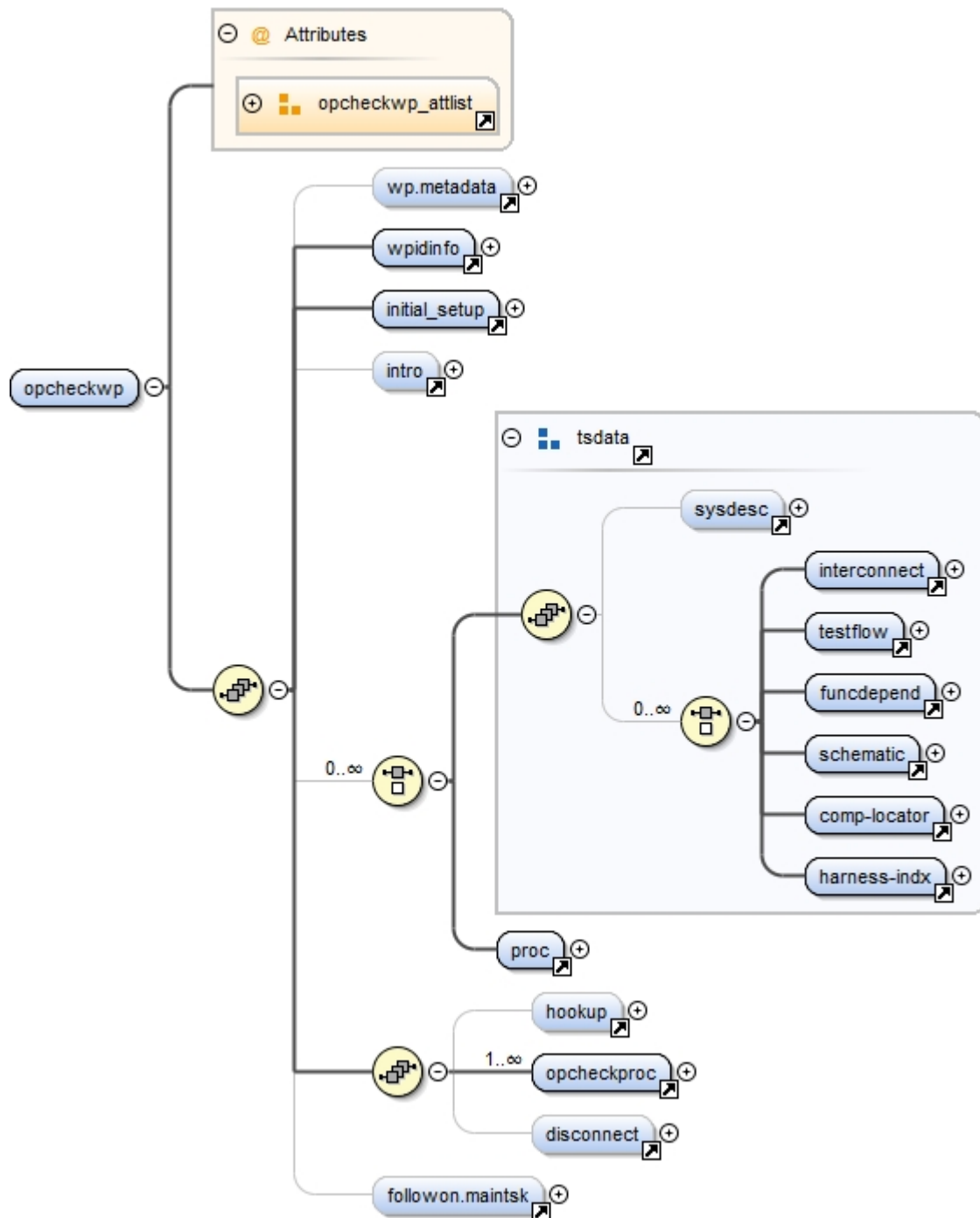


FIGURE 237. Operational Checkout Work Package DTD hierarchy <opcheckwp>.

3. The DTD fragment for <opcheckwp> is:

```
<!ELEMENT opcheckwp ((wp.metadata?, wpidinfo, initial_setup, intro?, (%
tsdata; | proc)*, (hookup?, opcheckproc+, disconnect?), followon.maintsk?)
>
<!ATTLIST opcheckwp
```

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airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"no"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

&lt;!ATTLIST opcheckproc

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	CDATA	"#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

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4. Common attributes for **<opcheckwp>** :

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- e. **comment** – Change information (optional) (see Section 36.3.12).
- f. **chnlvl** – Indicates the change level for metadata on a changed work package (optional) (see Section 36.3.12).
- g. **chno** – Change history or remarks reference (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is resequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies manually assigned four digit sequential number of the work package for the TM.

1. Attributes for **<opcheckproc>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).

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- b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
- c. **comment** – Reason for change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
- g. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
- h. **skilltrk** – Training skill level (optional) (see Section 36.3.3).
- i. **security** – Security classification (optional) (see Section 36.3.14).

### 22.7.1 Operational checkout testing <opcheck>.

The element contains an ordered set of operational checkout test procedures to obtain results that will determine if system is in either operational condition or requires corrective action. Each operational test procedure contains checkout instructions to perform that lead to an indication/condition. When a normal indication/conditional is obtained, the next operational checkout step is performed. When an abnormal condition/indication is observed then corrective action (or reference to detailed troubleshooting or maintenance work packages) is performed. The operational checkout test table can be represented in a narrative format or as tabular. When shown in tabular format, the element is similar to a "row" in a structural table.

In a frame-based viewer, the information can be presented similar to page-based or have an interactive capability. FIGURE 242., FIGURE 243. and FIGURE 244. show sample interactive frames how the operational checkout procedure could be presented and processed. The operational checkout instructions and indication/condition is presented to the maintainer (see FIGURE 242.). If the indication/condition is abnormal (selected the "NO" button), then the corrective action is presented (see FIGURE 243.). If the indication/condition is normal (selected the "YES" button), then the next checkout test is shown (see FIGURE 244.). The frame format and interaction can vary dependent on the software and stylesheet, this is only a possible method.

1. The components of operational checkout <opcheck> are:
  - a. Overall title <title> (optional) (see Section 36.1.1.4) for the checkout procedures.
  - b. Warning <warning> (optional – zero or more) (see Section 28.1.1).
  - c. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
  - d. Caution <caution> (optional – zero or more) (see Section 28.1.2).
  - e. Note <note> (optional – zero or more) (see Section 28.1.3).
  - f. Operation checkout procedure <testproc>(required) that contains:
    - i. Operation checkout step <checkstep> (required) (see 22.7.1.1).
2. The DTD fragment for <opcheck> is graphically depicted:

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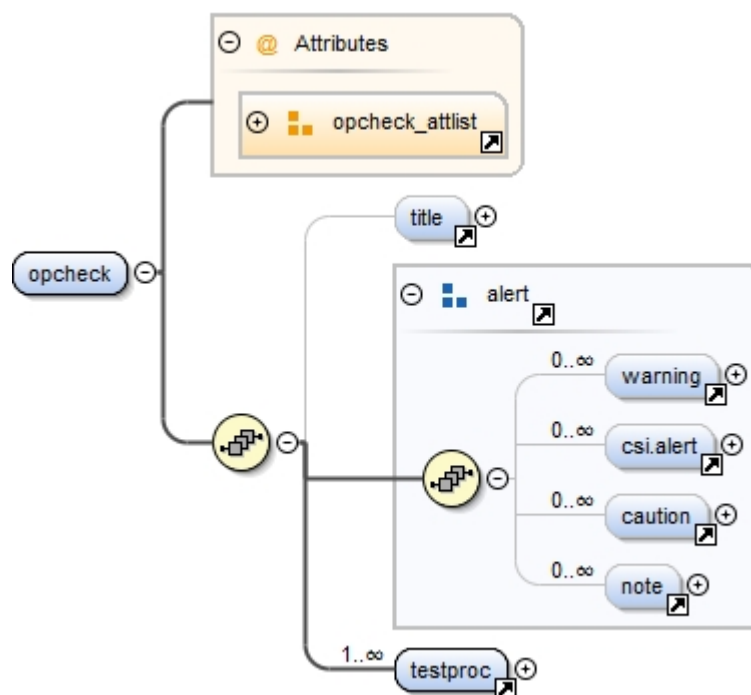


FIGURE 238. Operational check testing DTD hierarchy &lt;opcheck&gt;.

## 3. The DTD fragment for &lt;opcheck&gt; is:

```

<!ELEMENT opcheck (title?, %alert; testproc)+>
<!ATTLIST opcheckproc
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id CDATA #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>

<!ELEMENT testproc (checkstep+)>
<!ATTLIST testproc
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id CDATA #IMPLIED

```

## MIL-HDBK-2361D

idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<opcheck>** and **<testproc>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
- c. **comment** – Reason for change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
- g. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
- h. **skilltrk** – Training skill level (optional) (see Section 36.3.3).
- i. **security** – Security classification (optional) (see Section 36.3.14).

### 22.7.1.1 Operational Checkout Step **<checkstep>**.

The element contains a series of steps and substeps that leads to an indication or condition which concludes with a corrective action or reference to a detailed troubleshooting or maintenance work package. When a normal indication is obtained, the next operational checkout step is performed until either all checkout steps are completed or an abnormal condition or indication is observed. When the test procedure results in an abnormal indication or condition, a symptom or malfunction or a series of symptoms/malfunctions is provided with associated possible corrective action. The element is similar to a "row" in a structural table when shown tabular in page-based.

1. The components of operational checkout step **<checkstep>** are:

- a. Checkout step **<step>** (see Section 17.3) (required – one or more).
- b. Indication or condition **<indication>** (required) (see Section 22.7.1.2).
- c. When abnormal indication or condition exists then user is directed to:
  - i. An indicated malfunction **<malfunc>** (see Section 22.5.3) having either an associated corrective action **<action>** (see Section 22.5.1.1) or work package reference **<xref>** (see Section 33.2.2) for detailed instructions.
  - ii. Or a choice of corrective action **<action>** (see Section 22.5.1.1) or a work package reference **<xref>** (see Section 33.2.2) for detailed corrective action.

1. The DTD fragment for **<checkstep>** is graphically depicted.

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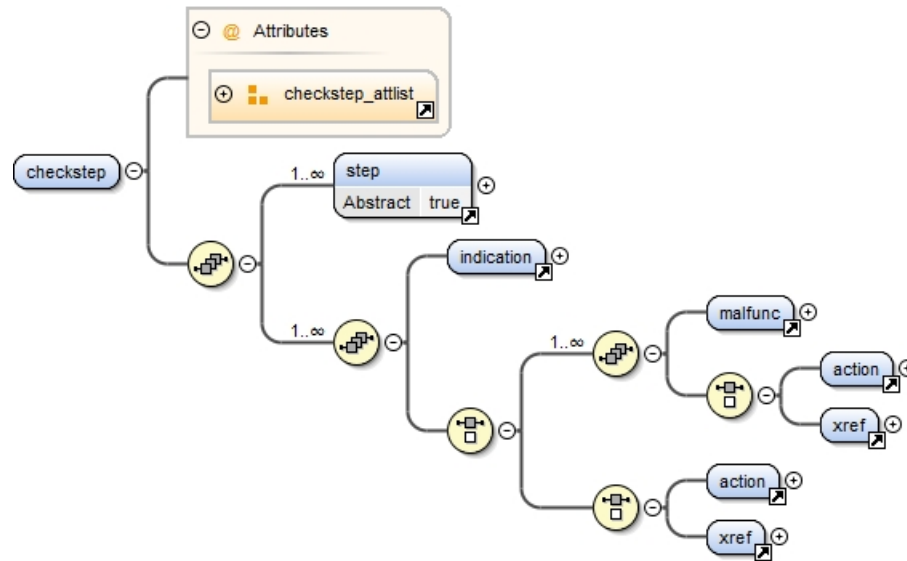


FIGURE 239. Operational checkout step DTD hierarchy &lt;checkstep&gt;.

## 2. The DTD fragment for &lt;checkstep&gt; is:

```
<!ELEMENT checkstep ((%step;)+, (indication, ((malfunc, (action | xref))+ | (action | xref)))+)>
```

```
<!ATTLIST checkstep
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	CDATA	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

## 3. Common attributes for &lt;checkstep&gt; are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
- c. **comment** – Reason for change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
- g. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
- h. **skilltrk** – Training skill level (optional) (see Section 36.3.3).
- i. **security** – Security classification (optional) (see Section 36.3.14).



### 22.7.1.2 Indication or condition <indication>.

The element contains an indication or condition (usually stated in the form of a question) that would be queried after the test.

1. The components of <indication>, which contains a choice of one of the following information types are:
2. Narrative text describing the indication or condition.
  - a. Title <title> (optional) (see Section 36.1.1.4).
  - b. Paragraph <para> (required) (see Section 36.1.1.6).
3. One of the following type lists as applicable.
  - a. Definition list <deflist> (required) (see Section 36.1.2.4).
  - b. Random list <randlist> (required) (see Section 36.1.2.3).
  - c. Sequence list <seqlist> (required) (see Section 36.1.2.1).
4. The DTD fragment for <indication> is graphically depicted:

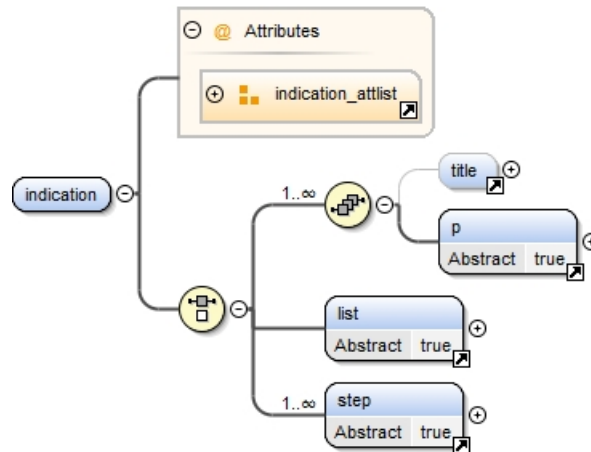


FIGURE 240. Test indication or condition DTD hierarchy <indication>.

5. The DTD fragment for <indication> is:

```
<!ELEMENT indication (((title?, (%p;))+) | %list; | (%step;)+)>
```

```
<!ATTLIST indication
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	CDATA	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
status	(normal   abnormal)	#IMPLIED

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

6. Unique attributes for **<indication>** is **status** (optional) – Specifies whether the current indication element is a **normal** or **abnormal** (out-of- range) indication.
7. Common attributes for **<indication>** are:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
  - c. **comment** – Reason for change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** – Unique identifier (optional) (see Section 36.3.7).
  - f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
  - h. **skilltrk** – Training skill level (optional) (see Section 36.3.3).
  - i. **security** – Security classification (optional) (see Section 36.3.14).

### 22.7.1.3 XML document instance fragment and output for **<opcheckwp>/<opcheck>**.

The XML instance and its stylesheet output for a **<opcheck>** is provided below.

1. Sample XML instance.

```

<opcheckwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry=
"2" wpno="t00003-X-XXX-XXX">
 <wpidinfo>
 <maintlvl level="maintainer"/>
 <title>ARRESTING GEAR SYSTEM OPERATIONAL CHECKOUT
 </title>
 </wpidinfo>
 <initial_setup>
 <persnreq>
 <persnreq-setup-item>
 <name>Maintainer
 </name>
 <qty>2
 </qty>
 </persnreq-setup-item>
 </persnreq>
 <ref>
 <ref-setup-item>
 <xref wpid="o00050-X-XXX-XXX"/>
 </ref-setup-item>
 <ref-setup-item>
 <xref wpid="t00010-X-XXX-XXX"/>
 </ref-setup-item>
 <ref-setup-item>
 <xref wpid="t00001-X-XXX-XXX"/>
 </ref-setup-item>
 </ref>
 </initial_setup>
</opcheckwp>

```

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```

</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item>
<condition>Door 103 is Installed
</condition>
<itemref>
<xref wpid="o00061-X-XXX-XXX"/>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<opcheckproc>
<opcheck>
<testproc>
<checkstep>
</checkstep>
<checkstep>
<figure>
</figure>
<step1>
<para>Make sure door 103 is installed
<xref posttext=")" pretext="(" wpid="o00061-X-XXXXXX"/>
</para>
</step1>
<figure>
<title>
</title>
</figure>
<step1>
<para>Make sure arresting
<ctrlind idref="o00042-X-XXX-XXXhook">HOOK
</ctrlind> manual control lever is set to
<ctrlind-val>up
</ctrlind-val> .
</para>
</step1>
<figure>
<title>
</title>
</figure>
<step1>
<para>Read, record and reset nose wheelwell DDI
<xref posttext=")" pretext="(" wpid="o00050-X-XXX-XXX"/>
</para>
</step1>
<indication>
<para>No maintenance code exists.
</para>
</indication>
<action>
<para>Perform troubleshooting
<xref posttext=")" pretext="(" taskid="t00010-X-XXXXXXmc916"/>.
</para>

```

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```

</action>
</checkstep>
<checkstep>
<figure>
</figure>
<step1>
<para>If arresting hook is not up, manually raise and latch arrestinghook.
</para>
</step1>
<indication>
<para> Arresting hook latches in up position.
</para>
</indication>
<action>
<para>Do arresting hook push-pull control assembly rigging or replacepush-pull
control assembly
<xref posttext="0218)" pretext="("wpid="t00001-X-XXX-XXX"/>.
</para>
</action>
</checkstep>
</testproc>
</opcheck>
</opcheckproc>
</opcheckwp>

```

## 2. XML sample page-layout.

## MIL-HDBK-2361D

0001

## MAINTAINER

## ARRESTING GEAR SYSTEM OPERATIONAL CHECKOUT

## INITIAL SETUP:

## Personnel Required

Maintainer - 2

## Equipment Condition

Door 103 is Installed ()

## References

## OPCHECK PROCEDURE 1.

## OPCHECK 1.

## OPERATIONAL CHECKOUT TEST PROCEDURE 1.

## TESTING - BRANCH 1.

## TESTING - BRANCH 2.

1. Make sure door 103 is installed ()
2. Make sure arresting HOOK manual control lever is set to **up**.
3. Read, record and reset nose wheelwell DDI ()

**CONDITION/INDICATION**

No maintenance code exists.

**CORRECTIVE ACTION**

Perform troubleshooting ().

## TESTING - BRANCH 3.

4. If arresting hook is not up, manually raise and latch arresting hook.

**CONDITION/INDICATION**

Arresting hook latches in up position.

**CORRECTIVE ACTION**

Do arresting hook push-pull control assembly rigging or replace push-pull control assembly (0218).

## END OF WORK PACKAGE

0001-1/blank

**FIGURE 241. Operational Check Work Package Operational Check Testing <opcheckwp> <opcheck>  
Page-layout.**

## 3. XML sample frame-layout.

ARRESTING GEAR SYSTEM OPERATIONAL CHECKOUT

**CHECKOUT**

1. Make sure door 103 is installed ([Securing Door 103 Operations Under Usual Conditions](#))
2. Make sure arresting [HOOK](#) manual control lever is set to **up**.
3. Read, record and reset nose wheelwell DDI ([Wheelwell DDI Operations Under Usual Conditions](#)).

**INDICATION/CONDITION**

No maintenance code exists.

**YES** **NO**

FIGURE 242. Operational Check Work Package Operational Check Testing <opcheckwp> <opcheck> Frame-layout.

ARRESTING GEAR SYSTEM OPERATIONAL CHECKOUT				
<b>CHECKOUT</b> 1. Make sure door 103 is installed ( <a href="#">Securing Door 103 Operations Under Usual Conditions</a> ) 2. Make sure arresting <b>HOOK</b> manual control lever is set to <b>up</b> . 3. Read, record and reset nose wheelwell DDI ( <a href="#">Wheelwell DDI Operations Under Usual Conditions</a> ).				
<table border="1"> <thead> <tr> <th>INDICATION/CONDITION</th> </tr> </thead> <tbody> <tr> <td>No maintenance code exists.</td> </tr> <tr> <td> <input type="button" value="YES"/> <input type="button" value="NO"/> </td> </tr> </tbody> </table>		INDICATION/CONDITION	No maintenance code exists.	<input type="button" value="YES"/> <input type="button" value="NO"/>
INDICATION/CONDITION				
No maintenance code exists.				
<input type="button" value="YES"/> <input type="button" value="NO"/>				
<table border="1"> <thead> <tr> <th>CORRECTIVE ACTION</th> </tr> </thead> <tbody> <tr> <td>Perform troubleshooting (<a href="#">Wheelwell DDI Troubleshooting</a>).</td> </tr> </tbody> </table>		CORRECTIVE ACTION	Perform troubleshooting ( <a href="#">Wheelwell DDI Troubleshooting</a> ).	
CORRECTIVE ACTION				
Perform troubleshooting ( <a href="#">Wheelwell DDI Troubleshooting</a> ).				

FIGURE 243. Operational Check Work Package Operational Check Testing <opcheckwp> <opcheck> Frame-layout – Abnormal Condition.

**ARRESTING GEAR SYSTEM OPERATIONAL CHECKOUT**

**CHECKOUT**

1. Make sure door 103 is installed ([Securing Door 103 Operations Under Usual Conditions](#))
2. Make sure arresting **HOOK** manual control lever is set to **up**.
3. Read, record and reset nose wheelwell DDI ([Wheelwell DDI Operations Under Usual Conditions](#)).

**INDICATION/CONDITION**

No maintenance code exists.

**YES** **NO**

---

**ARRESTING GEAR SYSTEM OPERATIONAL CHECKOUT**

**CHECKOUT**

1. If arresting hook is not up, manually raise and latch arresting hook.

**INDICATION/CONDITION**

Arresting hook latches in up position.

**YES** **NO**

FIGURE 244. Operational Check Work Package Operational Check Testing <opcheckwp> <opcheck> Frame-layout – Normal Condition.



## 22.7.2 Disconnection procedures <disconnect>.

The element <disconnect> is used for any test set disconnection procedure.

1. The components are:
  - a. Precondition check <precond> (optional) (see Section 29.1.1.1).
  - b. Procedure <proc> (see Section 17.2).
2. The DTD fragment for <disconnect> is graphically depicted.

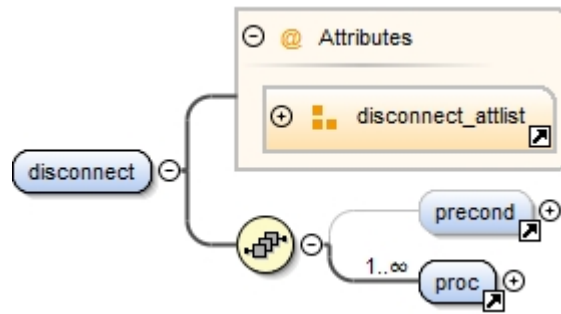


FIGURE 245. Test indication or condition DTD hierarchy <disconnect>.

3. The DTD fragment for <disconnect> is:

```
<!ELEMENT disconnect (precond?, proc+)>
<!ATTLIST disconnect
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 date-time-stamp (date | time | date-time) #IMPLIED
 delchlvl (0-99) "0"
 esd (yes | no) "no"
 frame (yes | no) "no"
 hcp (yes | no) "no"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 tocentry (2 | 3 | 4 | 5) "2">
```

4. Unique attributes for <disconnect> is **status** (optional) – Specifies whether the current indication element is a **normal** or **abnormal** (out-of- range) indication.
5. Common attributes for <indication> are:

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- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
- d. **comment** – Reason for change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
- h. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
- i. **skilltrk** – Training skill level (optional) (see Section 36.3.3).
- j. **security** – Security classification (optional) (see Section 36.3.14).
- k. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **0**) (see Section 16.3.6).

### 22.7.3 XML document instance fragment and output for <opcheckwp>/<messageindx>.

The XML instance and its stylesheet output for a <messageindex> is provided below.

#### 1. Sample XML instance.

```
<opcheckwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2" wpno="t00008-X-XXX-XXX" wpseq="0132">
 <wpidinfo>
 <maintlvl level="maintainer"/>
 <title>MESSAGE WORD INDEX
 </title>
</wpidinfo>
<initial_setup>
 <title>NOT APPLICABLE
</title>
<null/>
</initial_setup>
<opcheckproc>
 <messageindx>
 <title>Message Word Index
 </title>
 <messageitem>
 <messageword>001
 </messageword>
 <para>Relay Assembly 2A27 (RY A)
 </para>
 <xref wpid="m0201-X-XXXX-XXX"/>
 </messageitem>
 <messageitem>
 <messageword id="m0201-X-XXXX-XXX-m-003">003
 </messageword>
 <para>– 13 & deg; Elevation Switch 2A30 (TRL)
 </para>
 <xref wpid="m0202-X-XXXX-XXX"/>
 </messageitem>
</messageindx>
</opcheckproc>
</initial_setup>
</title>
</messageitem>
</wpidinfo>
</opcheckwp>
```

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```

</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-005">005
</messageword>
<para>AP Low Ammo Sensor 2A21 (APL)
</para>
<xref wpid="m0203-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-006">006
</messageword>
<para>– 3& deg;Elevation Switch 2A29 (GRL)
</para>
<xref wpid="m0204-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-007">007
</messageword>
<para>Gunner's Position Indicator 2A9 (GPI)
</para>
<xref wpid="m0205-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-009">009
</messageword>
<para>EP Weapon 2A 15 (GUN)
</para>
<xref wpid="m0206-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-010">010
</messageword>
<para>Weapon Control Box 2A4 (WCB)
</para>
<xref wpid="m0207-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-011">011
</messageword>
<para>Slip Ring Assembly 2A7 (SLR)
</para>
<xref wpid="m0208-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-012">012
</messageword>
<para>Azimuth Encoder 2A2 (AZE)
</para>
<xref wpid="m0209-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-013">013
</messageword>
<para>Turret Control Box 2A3 (TCS)

```

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```

</para>
<xref wpid="m0210-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-014">014
</messageword>
<para>7.62 Firing Solenoid 2A14 (MGS)
</para>
<xref wpid="m0212-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-015">015
</messageword>
<para>HE LO Ammo Sensor 2A22 (HEL)
</para>
<xref wpid="m0213-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-018">018
</messageword>
<para>7.62 LO Ammo Sensor.2A20 (MGL)
</para>
<xref wpid="m0214-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-019">019
</messageword>
<para>Turret Distribution Box 2A 1 (TDB)
</para>
<xref wpid="m0215-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-020">020
</messageword>
<para>Turret Batteries 2A36/2A37 (TRB)
</para>
<xref wpid="m0216-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-022">022
</messageword>
<para>Turret Rotor Fan 2A 10 (TRF)
</para>
<xref wpid="m0217-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-029">029
</messageword>
<para>Traverse Drive Assembly 2A201 (TDA)
</para>
<xref wpid="m0218-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-030">030

```

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```

</messageword>
<para>Gun Elevation Drive Assembly 2A202 (GED)
</para>
<xref wpid="m0219-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-031">031
</messageword>
<para>TOW Elevation Drive Assembly 2A203 (TED)
</para>
<xref wpid="m0220-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-032">032
</messageword>
<para>TOW Lift Actuator Assembly 2A204 (TLM)
</para>
<xref wpid="m0221-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-033">033
</messageword>
<para>Electronic Control Assembly 2A200 (ECA)
</para>
<xref wpid="m0222-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-034">034
</messageword>
<para>Electronic Control Assembly 2A200 (ECA)
</para>
<xref wpid="m0223-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-035">035
</messageword>
<para>Electronic Control Assembly 2A200 (ECA)
</para>
<xref wpid="m0224-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-040">040
</messageword>
<para>Defogger Fan 2A38 (FND)
</para>
<xref wpid="m0225-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-041">041
</messageword>
<para>Defogger Switch 2A40 (DFS)
</para>
<xref wpid="m0226-X-XXXX-XXX"/>
</messageitem>

```

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```

<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-046">046
</messageword>
<para>CIB Connection and Disconnection
</para>
<xref wpid="m0227-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-047">047
</messageword>
<para>CIB Connection in Turret
</para>
<xref wpid="m0211-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-048">048
</messageword>
<para>Driver Hatch Open Switch 1S7 (DOS)
</para>
<xref wpid="m0228-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-049">049
</messageword>
<para>Driver Hatch Popped Switch 1 S9 (DPS)
</para>
<xref wpid="m0229-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-052">052
</messageword>
<para>Vehicle Distribution Box 1 A 1 (VDB)
</para>
<xref wpid="m0230-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-053">053
</messageword>
<para>Missile Test Container (MTC)
</para>
<xref wpid="m0231-X-XXXX-XXX"/>
</messageitem>
<messageitem>
<messageword id="m0201-X-XXXX-XXX-m-054">054
</messageword>
<para>Cable to Cable 2W10P3/2W12J1
</para>
<xref wpid="m0232-X-XXXX-XXX"/>
</messageitem>
</messageindx>
</opcheckproc>
</opcheckwp>

```

2. XML sample page-layout.

## MIL-HDBK-2361D

0001

## MAINTAINER

## ARRESTING GEAR SYSTEM OPERATIONAL CHECKOUT

## INITIAL SETUP:

## Personnel Required

Maintainer - 2

## Equipment Condition

Door 103 is Installed ()

## References

## OPCHECK PROCEDURE 1.

## OPCHECK 1.

## OPERATIONAL CHECKOUT TEST PROCEDURE 1.

## TESTING - BRANCH 1.

## TESTING - BRANCH 2.

1. Make sure door 103 is installed ()
2. Make sure arresting HOOK manual control lever is set to **up**.
3. Read, record and reset nose wheelwell DDI ()

## CONDITION/INDICATION

No maintenance code exists.

## CORRECTIVE ACTION

Perform troubleshooting ().

## TESTING - BRANCH 3.

4. If arresting hook is not up, manually raise and latch arresting hook.

## CONDITION/INDICATION

Arresting hook latches in up position.

## CORRECTIVE ACTION

Do arresting hook push-pull control assembly rigging or replace push-pull control assembly (0218).

## END OF WORK PACKAGE

0001-1/blank

**FIGURE 246. Operational Check Work Package Message Index <opcheckwp>/<messageindx> Page-layout.**

## 22.7.4 Test set message word index <messageindx>.

The element is an index of automated/semi-automated test set messages or bit-code words with message word description. When used in an IETM, the index can be used to automatically lookup, in the XML source code, the generated test set message or bit-code word and display the associated corrective action, if the IETM is integrated or connected to the test set equipment or sensors. The test set message word index can be represented in a narrative format or as tabular. When in tabular layout the element is similar to a "table" in a structural table.

1. The components of test set message word index <messageindx> are:
  - a. Index title <title> (required) (see Section 36.1.1.4).
  - b. General information <geninfo> (optional) (see Section 36.1.4.11).
  - c. Warning <warning> (optional – zero or more) (see Section 28.1.1).
  - d. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
  - e. Caution <caution> (optional – zero or more) (see Section 28.1.2).
  - f. Note <note> (optional – zero or more) (see Section 28.1.3).
  - g. The index is shown either as a Table <table> (required) (see Chapter 29) or a Test set message word index (content specific) and test set message word entry <messageitem> (required – one or more) (see 22.7.4).
2. The DTD fragment for <messageindx> is graphically depicted:

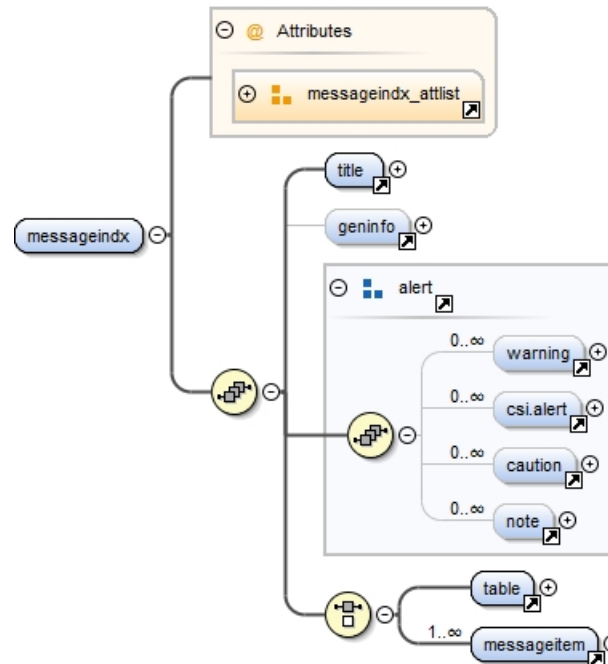


FIGURE 247. Test set message word index DTD <messageindx>

3. The DTD fragment for <messageindx> is:

```
<!ELEMENT messageindx (title, geninfo?, %alert;, (table | message+))>
<!ATTLIST messageindx
 assocfig IDREFS #IMPLIED
```



## MIL-HDBK-2361D

changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0–99)	“0”
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	“0”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<messageindx>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
- c. **comment** – Reason for change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
- g. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Training skill level (optional) (see Section 36.3.3).

### 22.7.5 Fault code reference index **<faultreports>**.

The element is used for a troubleshooting reference table contained in an operational checkout work package. These fault code reference indexes are generated by automated and/or built-in diagnostics. When used in an IETM, the index can be used to automatically lookup, in the XML source code, the generated test set message or bit-code word and display the associated corrective action, if the IETM is integrated or connected to the test set equipment or sensors. The test set message word index can be represented in a narrative format or as tabular. When in tabular layout the element is similar to a "table" in a structural table.

1. The components of fault code reference index **<faultreports>** are:

- a. Index title **<title>** (optional) (see Section 36.1.1.4).
- b. General information **<geninfo>** (optional) (see Section 36.1.4.11).
- c. Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
- d. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
- e. Caution **<caution>** (optional – zero or more) (see Section 28.1.2).
- f. Note **<note>** (optional – zero or more) (see Section 28.1.3).
- g. Index is tagged as one of the following:
  - i. Table **<table>** (required) (see Chapter 29).
  - ii. Fault code reference entry **<faultcode>** (required – one or more) (see Section 22.7.5.1).

2. The DTD fragment for **<faultreports>** is graphically depicted:

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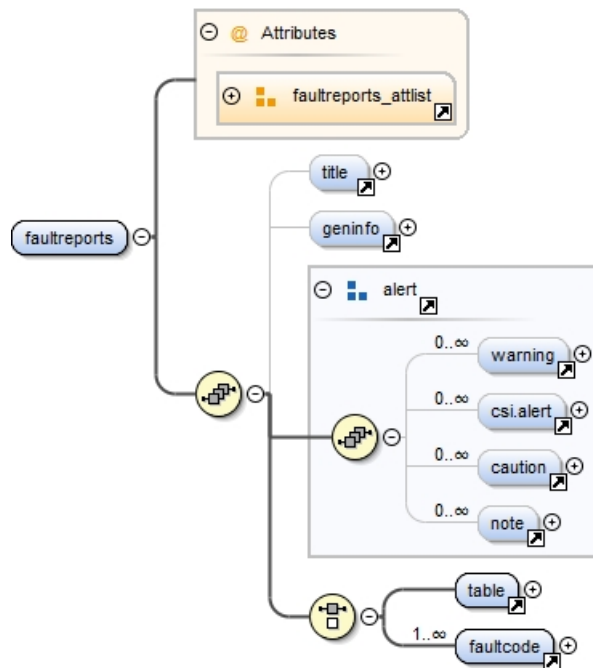


FIGURE 248. Fault code reference index DTD hierarchy &lt;faultreports&gt;.

## 3. The DTD fragment for &lt;faultreports&gt; is:

```
<!ELEMENT faultreports (title?, geninfo?, %alert;, (table | faultcode+)>
<!ATTLIST faultreports
```

indxcols	(2   3)	#REQUIRED
reftype	(wp   page   tsloc)	"wp"
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

## 4. Unique attributes for &lt;faultreports&gt; are:

- a. **indxcols** - Specifies number of columns in the index; when follow-on procedures are used the attribute value is **3**, otherwise the attribute value is **2**. Generally when use as an index of message words will have three columns, an index of fault reports from built-in diagnostics may have only two.
- b. **reftype** - Specifies reference type format to be used in the tables third column for the composition system. If no value is entered for the attribute the default is **WP**.

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- i. “wp” - Defines to use the work package sequence number to indicate where the corrective action is located.
- ii. “page” - Defines to use page number to indicate where the corrective action is located.
- iii. “tsloc” - Defines to use both the work package sequence number and page number to indicate where the corrective action is located.

5. Common attributes for **<faultreports>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
- c. **comment** – Reason for change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).
- g. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Training skill level (optional) (see Section 36.3.3).

### 22.7.5.1 Fault code reference entry **<faultcode>**.

The element identifies a fault code set that includes the fault code with appropriate corrective action (either as steps or reference to detail instructions) and, when required, follow-on testing after corrective actions. The element represents the row in a page-based or group in a frame-based in the fault code reference index.

1. The components of fault code reference entry **<faultcode>** are:

- a. Fault code **<messageword>** (required). The element is similar to a **cell** in a structural table and is entered in column one (see Section 22.5.5).
- b. When a fault code reference exists, then the user is directed to the corrective action. The element used is similar to a **cell** in a structural table and is entered in column two.
  - i. Brief corrective action **<action>** (see Section 22.5.1.1).
  - ii. Work package reference **<xref>** (see Section 33.2.2), **<link>** (see Section 33.2.3) for detailed corrective action.
- c. Follow-on procedure **<follow-on>** (optional) (see Section 22.7.5.2).

2. The DTD fragment for **<faultcode>** is graphically depicted.

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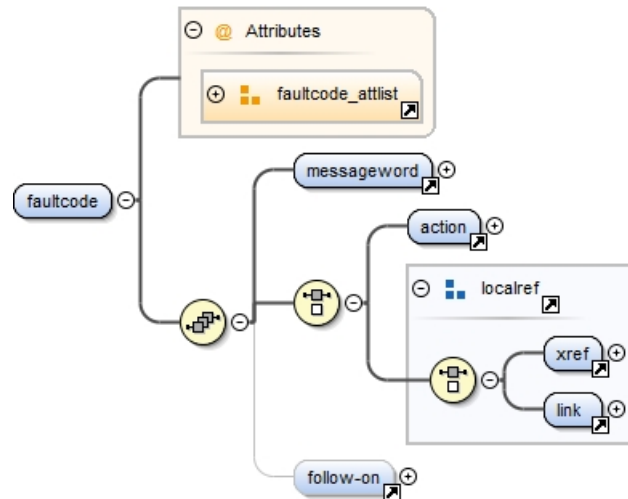


FIGURE 249. Fault code reference DTD hierarchy &lt;faultcode&gt;

## 3. The DTD fragment for &lt;faultcode&gt; is:

```
<!ELEMENT faultcode (messageword, (action | %localref;), follow-on?)>
```

```
<!ATTLIST faultcode>
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

```
<!ELEMENT faultcode (messageword, (action | xref | link), follow-on?)>
```

```
<!ATTLIST messageword>
```

id	ID	#IMPLIED
security	(uc   fouo   c   s   ts)	#IMPLIED>

## 4. Common attributes for &lt;faultcode&gt;are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Reference one or more change summary entries (optional) (see Section 36.3.12).
- c. **comment** – Reason for change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference one or more identifiers (optional) (see Section 36.3.7).

- g. **inschlvl** – Insertion change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Training skill level (optional) (see Section 36.3.3).

### 22.7.5.2 Follow-on procedure <follow-on>.

The element specifies any additional follow-on operational testing procedures to be performed after the corrective action has be completed.

1. The components of follow-on procedure <follow-on> consists of one of the following:
  - a. Single follow-on step <para> (required) (see Section 36.1.1.6).
  - b. Follow-on step (required – one or more) and the components are:
    - i. Procedural step <step> (see Section 17.3) and/or conditional procedural step level 1 <step1> (see Section 35.2.1) (required).
  - c. Reference to detail follow-on work package <link> (see Section 33.2.3), <xref> (see Section 33.2.2) (required).
2. The DTD fragment for <follow-on> is graphically depicted:

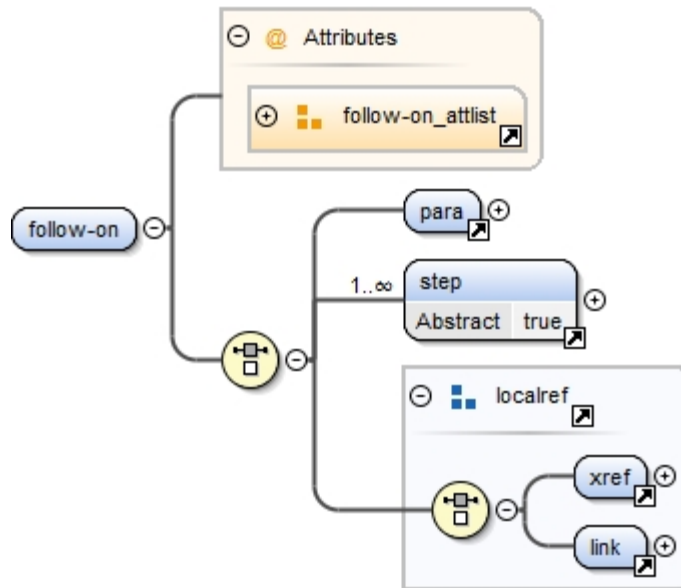


FIGURE 250. Follow-on procedure DTD hierarchy <follow-on>.

3. The DTD fragment for <follow-on> is:

```
<!ELEMENT follow-on (para | (%step;)+ | %localref;)>
<!ATTLIST follow-on
 id ID #IMPLIED
 security (uc | fouo | c | s | ts) #IMPLIED>
```

4. Common attributes for <follow-on> are:

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- a. **id** – Specifies unique identifier (target) to reference (required) (see Section 36.3.7).
- b. **security** – Security classification (optional) (see Section 36.3.14).

### 22.7.5.3 XML document instance fragment and output for <opcheckwp>/<faultreports>.

The XML instance and its stylesheet output for a <faultreports> is provided below.

1. Sample XML instance.

```
<opcheckwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2" wpno="t00029-X-XXX-XXX" wpseq="0120">
 <wpidinfo>
 <maintlvl level="Maintainer"/>
 <title>Fault Message Index
 </title>
</wpidinfo>
<initial_setup>
 <title>NOT APPLICABLE
</title>
<null/>
</initial_setup>
<opcheckproc>
 <faultreports indxcols="2">
 <title>Fault Message Index
 </title>
 <faultcode>
 <messageword id="t0029-X-XXXX-XXX-f-ABS">FAULTY ABS
 </messageword>
 <xref taskid="m00312-X-XXXX-XXX-task1" wpid="m00312-X-XXXX-XXX"/>
 </faultcode>
 <faultcode>
 <messageword id="t0029-X-XXXX-XXX-f-ANP">FAULTY ANP
 </messageword>
 <xref taskid="m00336-X-XXXX-XXX-task1" wpid="m00336-X-XXXX-XXX"/>
 </faultcode>
 <faultcode>
 <messageword id="t0029-X-XXXX-XXX-f-APL">FAULTY APL
 </messageword>
 <xref taskid="m00333-X-XXXX-XXX-task1" wpid="m00333-X-XXXX-XXX"/>
 </faultcode>
 <faultcode>
 <messageword id="t0029-X-XXXX-XXX-f-AZE">FAULTY AZE
 </messageword>
 <xref taskid="m00337-X-XXXX-XXX-task1" wpid="m00337-X-XXXX-XXX"/>
 </faultcode>
 <faultcode>
 <messageword id="t0029-X-XXXX-XXX-f-BATTERY-CHARGE">FAULTY BATTERY CHARGE
 </messageword>
 <xref wpid="m00211-X-XXXX-XXX"/>
 </faultcode>
 <faultcode>
 <messageword id="t0029-X-XXXX-XXX-f-BATTERY-CHARGING-SYS">FAULTY BATTERY/
 CHARGING SYS
 </messageword>

```

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```

</messageword>
<action>
<para>Notify hull maintenance of Faulty Batteries or Charging System.
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-BATTERY-CHG-SYS-SHORT">FAULTY BATTERY / CHG
SYS SHORT
</messageword>
<action>
<para>Notify hull maintenance of short in Batteries or Charging System.
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CA1201">FAULTY CA1201
</messageword>
<action>
<para>See <extref docno="TM X-XXXX-YYY-14&P"/>
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CA1202">FAULTY CA1202
</messageword>
<action>
<para>See <extref docno="TM X-XXXX-YYY-14&P"/>
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CARGO-HATCH-SYSTEM">FAULTY CARGO HATCH
SYSTEM
</messageword>
<xref wpid="m00213-X-XXXX-XXX"/>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CDL">FAULTY CDL
</messageword>
<xref taskid="m00341-X-XXXX-XXX-task1" wpid="m00341-X-XXXX-XXX"/>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CEL">FAULTY CEL
</messageword>
<xref taskid="m00342-X-XXXX-XXX-task1" wpid="m00342-X-XXXX-XXX"/>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CFOS">FAULTY CFOS
</messageword>
<action>
<para>Notify hull maintenance of Faulty/Misadjusted Cargo Hatch Full Open
Switch.
</para>

```

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```

</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CHARGE-SYS-OVERVOLTAGE">FAULTY CHARGE SYS
OVER-VOLTAGE
</messageword>
<action>
<para>Notify hull maintenance of Charging System Overcharging.
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CHS">FAULTY CHS
</messageword>
<xref taskid="m00347-X-XXXX-XXX-task1" wpid="m00347-X-XXXX-XXX"/>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-COS">FAULTY COS
</messageword>
<action>
<para>Notify hull maintenance of Faulty/Misadjusted Cargo Hatch Open Switch.
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CPI">FAULTY CPI
</messageword>
<xref taskid="m00348-X-XXXX-XXX-task1" wpid="m00348-X-XXXX-XXX"/>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CPS">FAULTY CPS
</messageword>
<action>
<para>Notify hull maintenance of Faulty/Misadjusted Cargo Hatch Popped Switch.
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-CX-1201">FAULTY CX 1201
</messageword>
<action>
<para>See <extref docno="TM X-XXXX-YYY-14&P"/>
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-DCGE-Q1-THRU-99">FAULTY DCGE-01 THRU 99
</messageword>
<action>
<para>Record fault message and notify supervisor for T2SS-SE testing of Faulty
DCGE.
</para>
</action>
</faultcode>

```



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```

<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-DOS">FAULTY DOS
</messageword>
<action>
<para>Notify hull maintenance of Faulty/Misadjusted Driver's Hatch Open Switch.
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-DPS">FAULTY DPS
</messageword>
<action>
<para>Notify hull maintenance of Faulty/Misadjusted Driver's Hatch Popped
Switch.
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-DRIVE-PWR-DISTR">FAULTY DRIVE PWR DISTR
</messageword>
<xref wpid="m00217-X-XXXX-XXX"/>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-DRIVER-HATCH-SYSTEM">FAULTY DRIVER HATCH
SYSTEM
</messageword>
<xref wpid="m00219-X-XXXX-XXX"/>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-ECA">FAULTY ECA
</messageword>
<xref taskid="m00401-X-XXXX-XXX-task1" wpid="m00401-X-XXXX-XXX"/>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-ECA-AND-2W305">FAULTY ECA AND 2W305
</messageword>
<action>
<para>
<xref taskid="m00401-X-XXXX-XXX-task1" wpid="m00401-X-XXXX-XXX"/>and
<xref taskid="m00309-X-XXXX-XXX-task1" wpid="m00309-X-XXXX-XXX"/>.
</para>
</action>
</faultcode>
<faultcode>
<messageword id="t0029-X-XXXX-XXX-f-ECA-AND-GEDGBX">FAULTY ECA AND GED GBX
</messageword>
<action>
<para>
<xref taskid="m00401-X-XXXX-XXX-task1" wpid="m00401-X-XXXX-XXX"/>and
<xref taskid="m00389-X-XXXX-XXX-task1" wpid="m00389-X-XXXX-XXX"/>.
</para>
</action>
</faultcode>
</faultcode>

```

```

<messageword id="t0029-X-XXXX-XXX-f-ECA-AND-GED-MOTOR">FAULTY ECA AND GED MOTOR
</messageword>
<action>
<para>
<xref taskid="m00401-X-XXXX-XXX-task1" wpid="m00401-X-XXXX-XXX"/>and
<xref taskid="m00387-X-XXXX-XXX-task1" wpid="m00387-X-XXXX-XXX"/>.
</para>
</action>
</faultcode>
</faultreports>
</opcheckproc>
</opcheckwp>

```

2. XML sample page-layout.

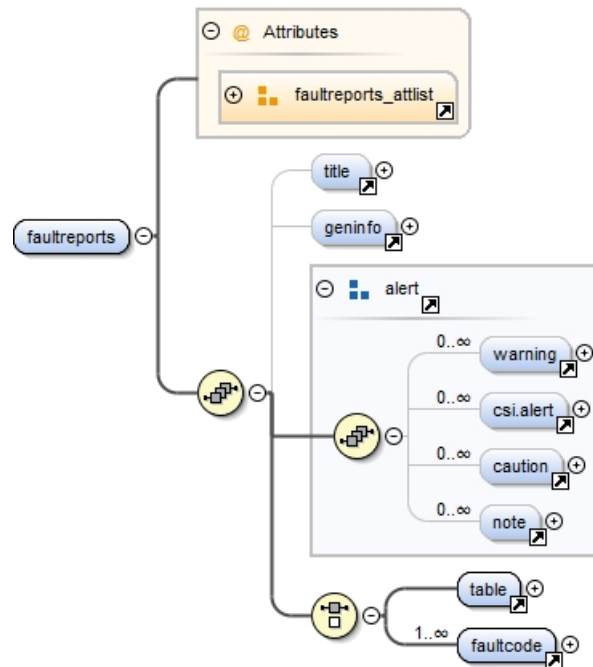


FIGURE 251. Operational Check Work Package Fault Reports <opcheckwp>/<faultreports> Page-layout.

## 22.8 Troubleshooting work package <tswp>.

The element contains start-to-finish troubleshooting procedures, which result in fault isolation and rectification and ultimately either a return to readiness status or referral to a higher maintenance level. Troubleshooting procedures can be presented in tabular or narrative format; or in diagrammatic flow tree. In electronic presentations a <tswp> may be made up of simple sequential nodes or be traversed as filtered nodes. The work package contains six troubleshooting procedure methods for diagnosing the fault symptom through logic (tree) (see Section 22.8.1), fault (see Section 22.8.2), or multiplex read code data (see Section 22.8.3).

1. The components of <tswp> are:

- a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
- b. Work package identification information <wpidinfo> (required) (see Section 16.2).
- c. Work package initial setup <initial\_setup> (required) (see Section 16.6).

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- d. Introduction **<intro>** (optional) (see Section 36.1.4.14) explaining how the troubleshooting procedures are to be used to perform testing and how they relate to the associated troubleshooting work packages.
  - e. System description **<sysdesc>** (optional) (see Section 22.6.1) description of the system/subsystem under test provided as supporting technical information; contained either as optional introductory section of a troubleshooting work package.
  - f. Interconnection **<interconnect>** (optional) (see Section 22.6.2.1) contains diagrams or other means of presenting the electrical and electronic connections between components of the system under test.
  - g. Test flow **<testflow>** (optional) (see Section 22.6.2.2) describes the troubleshooting testing flow.
  - h. Functional dependencies **<funcdepend>** (optional) (see Section 22.6.2.3) describes the functional dependencies of components that make up the system under test.
  - i. Schematic drawing **<schematic>** (optional) (see Section 22.6.2.4) used for schematic drawings included as supporting technical information during a troubleshooting procedure.
  - j. Component locator **<comp-locator>** (optional) (see Section 22.6.2.5) contains a figure to assist in the components under test location.
  - k. Harness index **<harness-idx>** (optional) (see Section 22.6.2.6) is a special index of electrical wiring harnesses, needed due to the extensive interrelated circuitry.
  - l. Procedure **<proc>** (optional) (see Section 17.2) is used as a common structure tag that may contain a paragraph or a set of steps that comprise all or part of a task.
  - m. Test set hookup **<hookup>** (optional) (see Section 22.6.4). If test set hookup is used test set disconnection is required.
  - n. Troubleshooting fault isolation procedure **<tsproc>** (required) uses only one of the following fault symptom diagnosing methods per work packages.
    - i. Logic procedure **<logicproc>** (required – one or more) (see Section 22.8.1).
    - ii. Fault procedure **<faultproc>** (required – one or more) (see Section 22.8.2).
    - iii. Multiplex read code data **<muxproc>** (required) (see Section 22.8.3).
    - iv. Operation checkout and testing procedure **<opcheck>** (required – one or more) that contains: an Operation checkout step (required – one or more) (see Section 22.7.1).
    - v. Message word reference index **<messageidx>** (required – one or more) (see Section 22.7.4).
    - vi. Fault code reference report **<faultreports>** (required – one or more) (see Section 22.7.5).
  - o. Test set disconnection **<disconnect>** (optional) (see Section 22.6.3). If test set hookup is used test set disconnection is required.
  - p. Introduction **<followon.maintsk>** (optional) (see Section 23.7.1) are the instructions for a maintenance condition which is accomplished sometime following the completion of a specific task to clean up or undo actions performed during the task.
2. The DTD fragment for **<tswp>** is graphically depicted:

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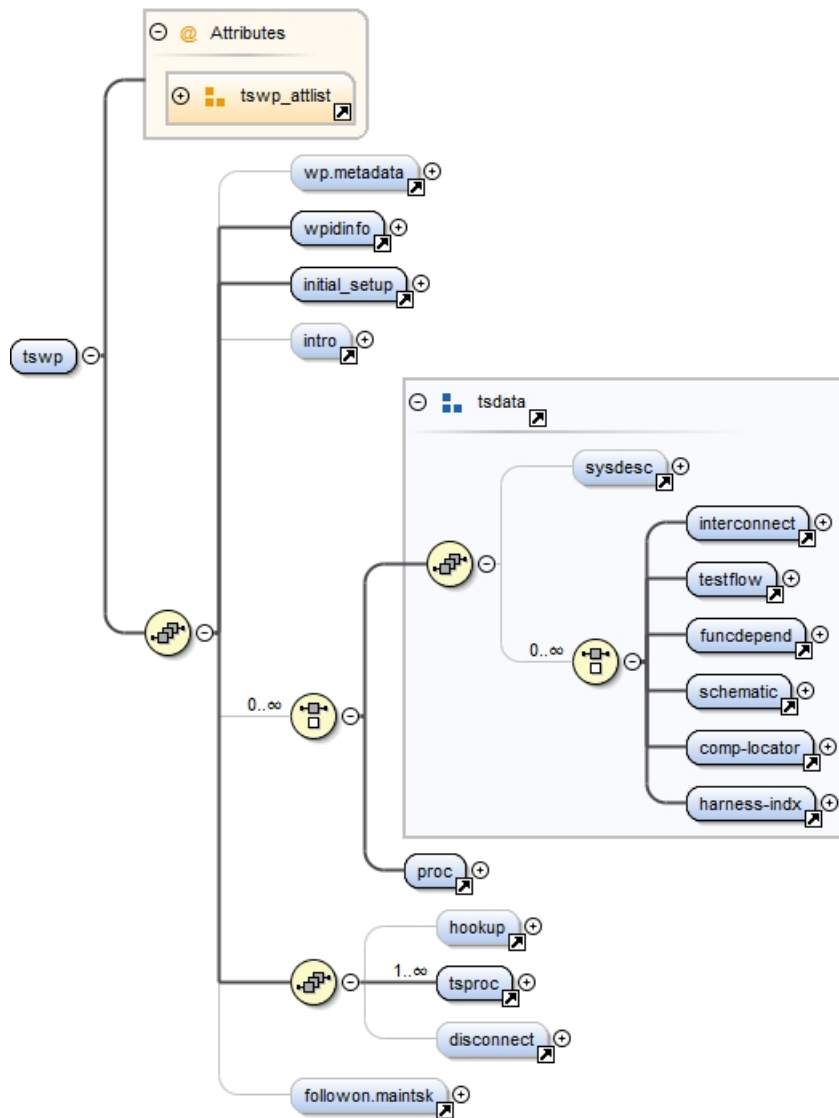


FIGURE 252. Troubleshooting work package DTD hierarchy &lt;tswp&gt;.

## 3. The DTD fragment for &lt;tswp&gt; and &lt;tsproc&gt; are:

```
<!ELEMENT tswp (wp.metadata?, wpidinfo, initial_setup, intro?, (%tsdata; |
proc)*, (hookup?, tsproc+, disconnect?), followon.maintsk?)>
```

```
<!ATTLIST tswp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnngno	(0-99)	"0"
comment	CDATA	#IMPLIED

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crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

<!ELEMENT tsproc (logicproc+ | faultproc+ | muxproc)>

<!ATTLIST tsproc

|           |                          |           |
|-----------|--------------------------|-----------|
| assocfig  | IDREFS                   | #IMPLIED  |
| changeref | IDREFS                   | #IMPLIED  |
| comment   | CDATA                    | #IMPLIED  |
| delchlvl  | (0-99)                   | #IMPLIED  |
| id        | ID                       | #IMPLIED  |
| idref     | IDREFS                   | #IMPLIED  |
| security  | (uc   fouo   c   s   ts) | #IMPLIED  |
| skilltrk  | CDATA                    | #IMPLIED> |

#### 4. Common attributes are:

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Indicates the change level for metadata on a changed work package (optional) (see Section 36.3.12).

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- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change history or remarks reference (optional) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.
- y. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

### 22.8.1 Logic procedure <logicproc>.

The element is used to isolate a fault through a series of tests. Each test has an indication or condition (results observed during the testing) and the maintainer selects the corresponding observed answer to determine the next action to isolate the fault. Generally, this method is referenced as a logic tree. The logic tree has various path (branches) which the maintainer will traverse to determine or isolate the fault, see FIGURE 253. Each path or branch has a test, a question (what did the maintainer observe) and corresponding answers to the question. Each answer leads the maintainer to the next test or the fault was isolated. FIGURE 254. is a generic graphical example showing the logic procedure. FIGURE 265. is the sample XML markup showing the logical flow in frame-based output (see Section 22.8.1.1.7).

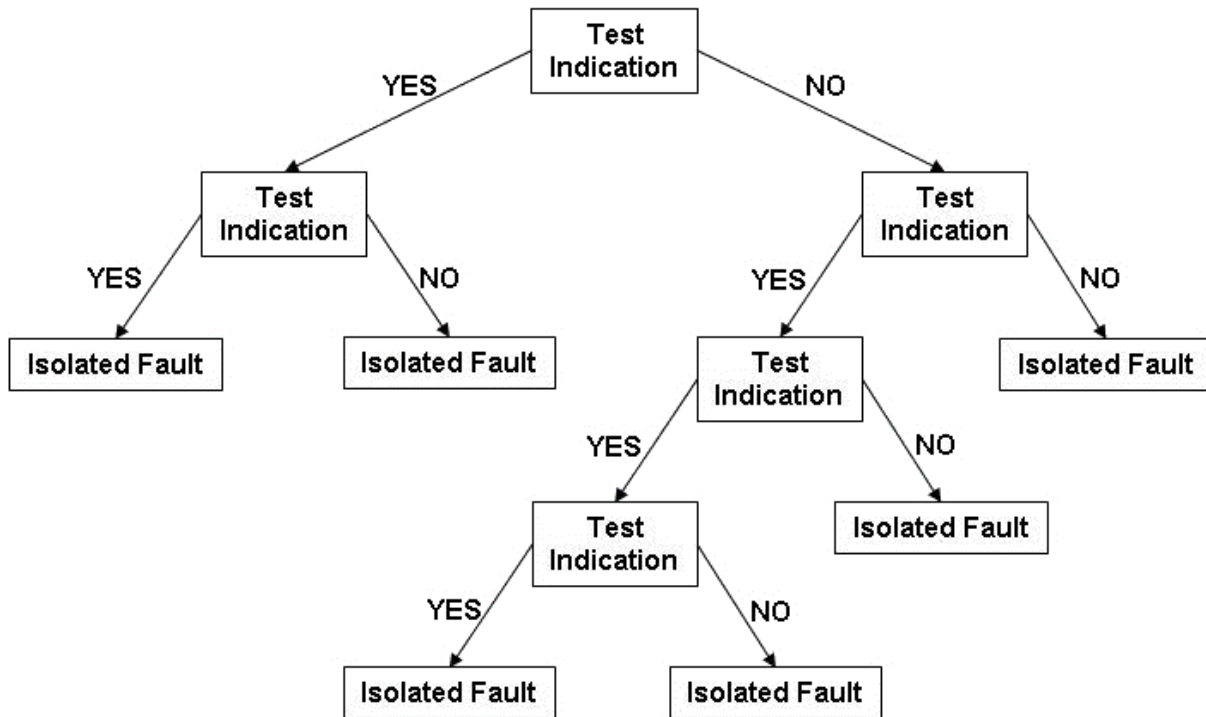


FIGURE 253. Example logic tree.

1. The components of **<logicproc>** are:
  - a. Procedure title **<title>** (required) (see Section 36.1.1.4).
  - b. Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
  - c. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
  - d. Caution **<caution>** (optional – zero or more) (see Section 28.1.2).
  - e. Note **<note>** (optional – zero or more) (see Section 28.1.3).
  - f. Test block origin **<origin>** (required) (see Section 22.8.1.1).
  - g. Further testing includes one or more of the following types:
    - i. Test block **<testblock>** (see Section 22.8.1.1).
    - ii. End block **<endblock>** (see Section 22.8.1.1.5).
    - iii. Test/end block reference **<branchref>** (see Section 22.8.1.1.6).
2. The DTD fragment for **<logicproc>** is graphically depicted:

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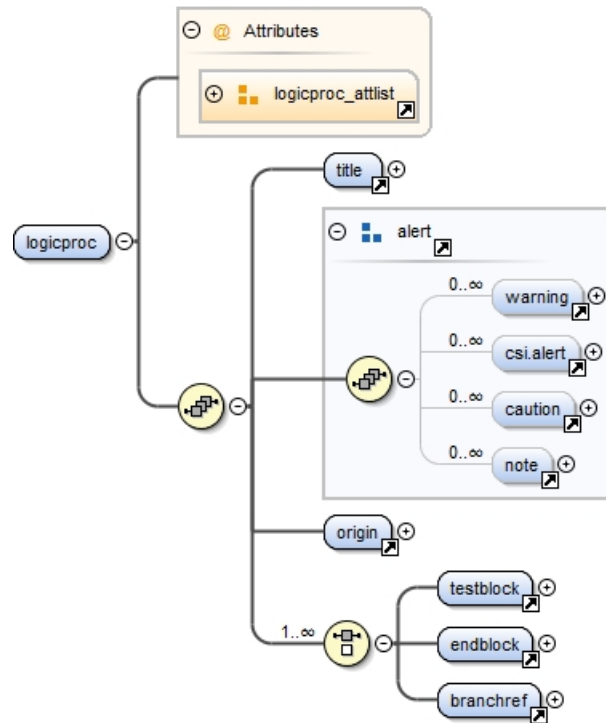


FIGURE 254. Logic procedure DTD hierarchy &lt;logicproc&gt;.

## 3. The DTD fragment for &lt;logicproc&gt; is:

```
<!ELEMENT logicproc (title, &alert;, origin, (testblock | endblock |
branchref)+)>
```

```
<!ATTLIST logicproc
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

## 4. Common attributes are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).



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- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.8.1.1 Logic procedure origin <origin> and test block <testblock> models.

The elements <origin> and <testblock> have identical content models. The test block contains the prescribed test(s) <test> followed by indication or condition (usually in the form of question) <indication>, and possible answers <answer>.

1. The components of <origin>/<testblock> are:
  - a. Warning <warning> (optional – zero or more) (see Section 28.1.1).
  - b. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
  - c. Caution <caution> (optional – zero or more) (see Section 28.1.2).
  - d. Note <note> (optional – zero or more) (see Section 28.1.3).
  - e. Test procedure <test> (required – one or more) (see Section 22.8.1.1.2).
  - f. Indication or condition <indication> (required) (see Section 22.7.1.2).
  - g. Response answer to indication or condition <answer> (required – two or more) (see Section 22.8.1.1.4).
2. The DTD fragment for <origin>/<testblock> is graphically depicted:

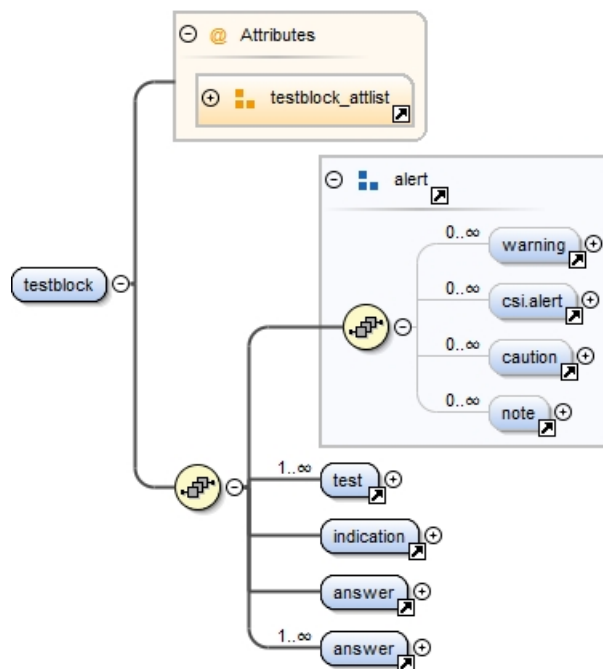


FIGURE 255. DTD hierarchy <origin>/<testblock>.

3. The DTD fragments for <origin>/<testblock> are:

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```
<!ELEMENT origin (%alert;, test+, indication, answer, answer+)>
```

```
<!ATTLIST origin
```

branchto	IDREFS	#IMPLIED
branchlabel	CDATA	#IMPLIED
origin	ID	#REQUIRED
type	(yes   no   pass   fail   true   nottrue   value   unantic)	#IMPLIED
value	CDATA	#IMPLIED
valueloc	NMTOKENS	#IMPLIED
valuetype	(boolean   string   se- quence   set   real   in- teger   float   nil   input   outcome)	#IMPLIED>

```
<!ELEMENT testblock (%alert;, test+, indication, answer, answer+)>
```

```
<!ATTLIST testblock
```

branch	ID	#REQUIRED
branchfrom	IDREFS	#IMPLIED
branchlabel	CDATA	#IMPLIED
branchto	IDREFS	#IMPLIED
type	(yes   no   pass   fail   true   nottrue   value   unantic)	#REQUIRED
value	CDATA	#IMPLIED
valueloc	NMTOKENS	#IMPLIED
valuetype	(boolean   string   se- quence   set   real   in- teger   float   nil   input   outcome)	#IMPLIED>

#### 4. Unique attributes for **<origin>**:

- a. **branchlabel** (optional) – Supplies an explicit reference to this branch and is used in the test block presentation.
- b. **branchto** (required) – References test/end block(s) (branches) to the next test or actions after test results.
- c. **origin** (required) – Specifies the test block unique identifier.
- d. **type** (optional) - Specifies the type of branch logic current element. This value may be displayed in either paper or electronic display.
  - i. "yes" – Applies to a positive answer and composition system will display "YES."
  - ii. "no" – Applies to a negative answer and composition system will display "NO."
  - iii. "pass" – Applies to a positive answer and composition system will display "PASS."

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- iv. "fail" – Applies to a negative answer and composition system will display "FAIL."
  - v. "true" – Applies to a positive answer and composition system will display "TRUE."
  - vi. "nottrue" – Applies to a negative answer and composition system will display "NOT TRUE."
  - vii. "value" – Applies to a response value from **valueloc** attribute and the composition system will display the from the **valuetype** attribute.
  - viii. "unantic" – Applies to a unanticipated result.
- e. **value** (optional) – Supplies an alphanumeric or numeric value if attribute **type** is **value**.
  - f. **valueloc** (optional) – Supplies location of value if contained in another element, such as **<input>**.
  - g. **valuetype** (optional) – Specifies the type of value if attribute **type** is **value**.
    - i. "boolean" – Applies to a boolean value from **valueloc** and the composition system will display either "true" or "false."
    - ii. "string" – Applies to a character string from **valueloc** and the composition system will display the string.
    - iii. "sequence" – Applies to an ordered sequence values from **valueloc** and the composition system will display the sequence value.
    - iv. "set" – Applies to an unordered sequence value from **valueloc** and the composition system will display the set values.
    - v. "real" – Applies to a real number from **valueloc** and the composition system will display the number.
    - vi. "integer" – Applies to an integer number from **valueloc** and the composition system will display the number.
    - vii. "float" - Applies to a floating point number from **valueloc** and the composition system will display the number.
    - viii. "nil" - Applies to null value from **valueloc** and the composition system will display the "nil."
    - ix. "input" – Applies to a inserted query value from **valueloc** and the composition system will display the inputted value.
    - x. "outcome" – Applies to a query outcome from a test from **valueloc** and the composition system will display the value.
5. Unique attributes for **<testblock>**:
- a. **branch** (required) – Specifies the test block unique identifier.
  - b. **branchfrom** (required) – References the test block(s) (branches), which are from results from parent test blocks.
  - c. **branchlabel** (optional) – Supplies an explicit reference to this branch and used in the test block presentation.
  - d. **branchto** (required) – References test/end block(s) (branches) to the next test or actions after test results.
  - e. **type** (required) – Specifies the type of branch logic current element. This value may be displayed in either paper or electronic display.
    - i. "yes" – Applies to a positive answer and composition system will display "YES."
    - ii. "no" – Applies to a negative answer and composition system will display "NO."
    - iii. "pass" – Applies to a positive answer and composition system will display "PASS."
    - iv. "fail" – Applies to a negative answer and composition system will display "FAIL."

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- v. "true" – Applies to a positive answer and composition system will display "TRUE."
- vi. "nottrue" – Applies to a negative answer and composition system will display "NOT TRUE."
- vii. "value" – Applies to a response value from **valueloc** attribute and the composition system will display the from the **valuetype** attribute.
- viii. "unantic" – Applies to a unanticipated result.
- f. **value** (optional) – Supplies an alphanumeric or numeric value if attribute **type** is "value."
- 6. **valueloc** (optional) – Supplies location of value if contained in another element, such as **<input>**.
- 7. **valuetype** (optional) – Specifies the type of value if attribute **type** is "value."
  - a. "boolean" – Applies to a boolean value from **valueloc** and the composition system will display either "true" or "false."
  - b. "string" – Applies to a character string from **valueloc** and the composition system will display the string.
  - c. "sequence" – Applies to an ordered sequence value from **valueloc** and the composition system will display the sequence value.
  - d. "set" – Applies to an unordered sequence value from **valueloc** and the composition system will display the set values.
  - e. "real" – Applies to a real number from **valueloc** and the composition system will display the number.
  - f. "integer" – Applies to an integer number from **valueloc** and the composition system will display the number.
  - g. "float" – Applies to a floating point number from **valueloc** and the composition system will display the number.
  - h. "nil" – Applies to null value from **valueloc** and the composition system will display the "nil."
  - i. "input" – Applies to a inserted query value from **valueloc** and the composition system will display the inputted value.
  - j. "outcome" – Applies to a query outcome from a test from **valueloc** and the composition system will display the value.

#### 22.8.1.1.1 Additional branch attribute information.

The attribute **branchfrom** is used to manage where the test or end block was derived from through ID references to the block ID attribute (**branch** or **origin**). The attribute **branchto** is used to manage the possible test or end block(s) that can be called from the current block through ID references to the block ID attribute (**branch** or **origin**). The capability may be used by a viewer to traverse the logic tree in reverse or knowing the next possible test or end blocks.

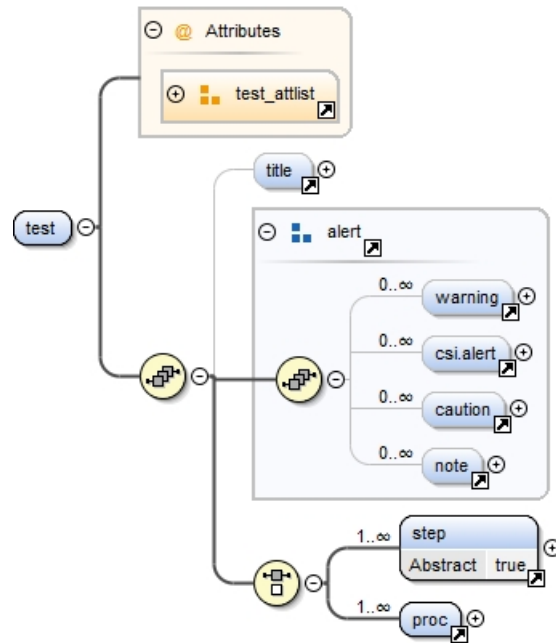
#### 22.8.1.1.2 Test **<test>**.

The element describes the testing steps that leads to an indication or condition to assist in determining the actual fault or next symptom to check.

1. The components of **<test>** are the following elements.
  - a. Procedure title **<title>** (required) (see Section 36.1.1.4).
  - b. Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
  - c. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).

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- d. Caution **<caution>** (optional – zero or more) (see Section 28.1.2).
  - e. Note **<note>** (optional – zero or more) (see Section 28.1.3).
  - f. Procedural step **<step>** (see Section 17.3) and/or conditional procedural step level 1 **<step1>** (see Section 17.3.4) (required).
  - g. Procedure **<proc>** (optional) (see Section 17.2) is used as a common structure tag that may contain a paragraph or a set of steps that comprise all or part of a task.
2. The DTD fragment for **<test>** is graphically depicted:

FIGURE 256. Test DTD hierarchy **<test>**.

3. The DTD fragment for **<test>** is:

```

<!ELEMENT test (title? %alert; , ((%step;)+ | (proc+)))>
<!ATTLIST test
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 date-time-stamp (date | time | date-time) #IMPLIED
 delchlvl (0-99) "0"
 esd (yes | no) "no"
 frame (yes | no) "yes"
 hcp (yes | no) "no"
 id ID #IMPLIED

```

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idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(0   1   2   3   4)	"0">

4. Common attributes for **<test>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- h. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- i. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- j. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- k. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- l. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- m. **security** – Security classification (optional) (see Section 36.3.14).
- n. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- o. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **0**) (see Section 16.3.6).

### 22.8.1.1.3 Test indicated value **<indication>**.

Each test **<test>** is followed by an indicated value or posed question for the user to respond to (see 22.8.1.1.2).

### 22.8.1.1.4 Answer **<answer>**.

The element specifies explicit actions, keyed to values such as **yes**, **nottrue** or **value** contained in the **answerval**. The answer provides (from the indication or condition) the resulting value that leads to another fault isolation test block **<testblock>** or a malfunction/correct action block **<endblock>**. The content contains information about the type of result (i.e., YES) and has a reference to the next test block step, next troubleshooting work package, or the determined malfunction (usually through **<xref>** or **<link>** elements). At least two **<answer>** elements are required to be provided.

1. The components of **<answer>** are:
  - a. Parsable characters or type text – #PCDATA.
  - b. Format text – **<emphasis>** (see Section 36.1.3.1).

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- c. Subscript – **<subscript>** (see Section 36.1.3.4).
  - d. Superscript – **<supscript>** (see Section 36.1.3.5).
  - e. Cross reference – **<xref>** (see Section 33.2.2).
  - f. External reference – **<extref>** (see Section 33.2.1).
  - g. Enhanced linking – **<link>** (see Section 33.2.3).
  - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
  - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
  - j. Term – **<term>** (see Section 36.1.2.4.2).
  - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
  - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
  - m. Footnote – **<ftnote>** (see Section 32.1.1).
  - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
  - o. Graphic – **<graphic>** (see Section 31.2).
  - p. Miscellaneous – **<misc>** (see 36.2.1).
  - q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
  - r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
  - s. DoD ammunition code – **<dodac>** (see 36.1.4.4).
  - t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
  - u. Null text – **<null>** (see Section 36.1.3.2).
  - v. Graphic symbol – **<symbol>** (see Section 31.3.1).
  - w. Torque value – **<torque>** (see Section 36.1.4.25).
  - x. Voltage value – **<voltage>** (see Section 36.1.4.26).
  - y. Changed text marker – **<change>** (see Section 36.1.3.7).
  - z. Single follow-on step **<para>** (required) (see Section 36.1.1.6).
2. The DTD fragment for **<answer>** is graphically depicted:

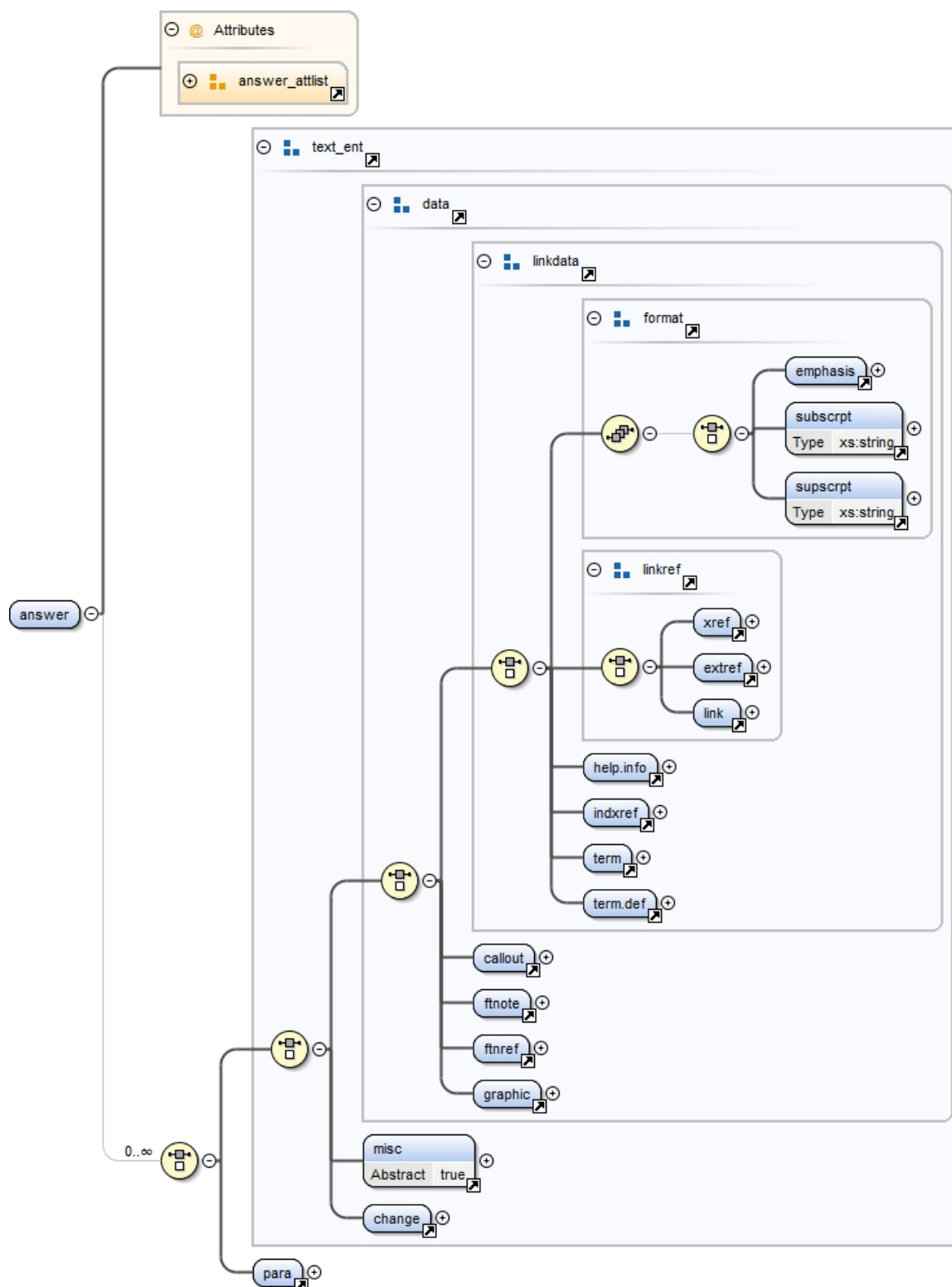


FIGURE 257. Test answer DTD hierarchy &lt;answer&gt;.



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3. The DTD fragment for **<answer>** is:

```

<!ELEMENT answer (%text_ent; | para) *>

<!--ATTLIST answer
 answerval (yes | no | pass | fail | true | nottrue | value |
 unantic) #REQUIRED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 value CDATA #IMPLIED-->

```

4. Unique attributes for **<answer>**:

- a. **answerval** – Specifies the logical value associated with the current element. This value may be displayed in either paper or electronic display.
  - i. "yes" – Applies to a positive answer and composition system will display "YES."
  - ii. "no" – Applies to a negative answer and composition system will display "NO."
  - iii. "pass" – Applies to a positive answer and composition system will display "PASS."
  - iv. "fail" – Applies to a negative answer and composition system will display "FAIL."
  - v. "true" – Applies to a positive answer and composition system will display "TRUE."
  - vi. "nottrue" – Applies to a negative answer and composition system will display "NOT TRUE."
  - vii. "value" – Applies to a response value from **value** attribute.
  - viii. "unantic" – Applies to an unanticipated response.

- b. **value** – Supplies an alphanumeric or numeric value if attribute **answerval** is set to "value."

5. Common attributes for **<answer>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).

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- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.8.1.1.5 End block <endblock>.

The element concludes a logic path or branch in a logical procedure. Based on the indicators or conditions from the previous test block procedure, the malfunction is identified and a corrective action is presented. The corrective action may contain brief instructions to correct the action, a reference to a detailed maintenance work package, or a reference for further fault isolation.

1. The components of <endblock> are:
  - a. Identified malfunction <malfunc> (required) (see Section 22.5.3).
  - b. Corrective action <action> (required) (see Section 22.5.1.1).
2. The DTD fragment for <endblock> is graphically depicted.

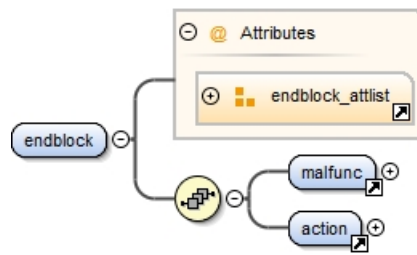


FIGURE 258. End block DTD hierarchy <endblock>.

3. The DTD fragment for <endblock> is:

```

<!ELEMENT endblock (malfunc, action)>
<!ATTLIST endblock
 type (yes | no | pass | fail | #REQUIRED
 true | nottrue)
 branch ID #REQUIRED
 branchlabel CDATA #IMPLIED
 branchfrom IDREFS #IMPLIED>

```

4. Unique Attributes for <endblock> are:

- a. **branch** (required) – Specifies the test block unique identifier.
- b. **branchfrom** (required) – References the test block(s) (branches), which are from results from parent test blocks.
- c. **branchlabel** (optional) – Supplies an explicit reference to this branch and used in the test block presentation.
- d. **type** (required) – Specifies the type of branch logic current element. This value may be displayed in either paper or electronic display.
  - i. "yes" – Applies to a positive answer and composition system will display "YES."
  - ii. "no" – Applies to a negative answer and composition system will display "NO."
  - iii. "pass" – Applies to a positive answer and composition system will display "PASS."
  - iv. "fail" – Applies to a negative answer and composition system will display "FAIL."

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- v. "true" – Applies to a positive answer and composition system will display "TRUE."
  - vi. "nottrue" – Applies to a negative answer and composition system will display "NOT TRUE."
5. **value** (optional) – Supplies an alphanumeric or numeric value if attribute **type** is "value."

#### 22.8.1.1.6 Test/end block reference <branchref>.

The element is used primarily with page-based manuals to provide a block or page reference to next corresponding test/end block. Presenting the logic procedure in narrative form on single page is not feasible, the reference provides a method to point to the next logical block of information. A good practice is to always use the same YES/NO branch for the reference. Using the same branch answer the user will have a consistent method to know when to branch and assists in developing the stylesheet with graphical YES/NO symbols. In frame-based manuals the display of the element is not shown, but the link references are still used to traverse the logic flow tree. The element is EMPTY and all pertinent information is entered through its attributes.

1. The DTD fragment for <branchref> is:

```
<!ELEMENT branchref EMPTY>
<!--ATTLIST branchref
branch ID #REQUIRED
branchfrom IDREFS #IMPLIED
branchlabel CDATA #REQUIRED
branchto IDREFS #REQUIRED
textblockid IDREF #REQUIRED-->
```

2. Unique attributes for <branchref> are:

- a. **branch** (required) – Specifies the unique identifier.
- b. **branchfrom** (required) – References the test block(s) (branches), which are from results from parent test blocks.
- c. **branchlabel** (optional) – Supplies an explicit reference to this branch and used in the reference block presentation.
- d. **branchto** (required) – References the test/end block (branch) to the next test or action.
- e. **textblockid** (required) – References the test/end block (branch) identifier on another page.

#### 22.8.1.1.7 XML document instance fragment and output for <logicproc>.

The XML instance and its stylesheet output for a <logicproc> is provided below:

1. Sample XML instance.

```
<tswp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2"
wpno="T0012-X-XXXX-XXX" wpseq="0151">
<wpidinfo>
<maintlvl level="User">
<title>Front Turn Light (s) Do Not Work
</title>
</wpidinfo>
<initial_setup>
<tools>
```

## MIL-HDBK-2361D

```

<tools-setup-item>
<name>General mechanic's tool kit: automotive
</name>
<itemref>
<xref itemid="s0004-X-XXXX-XXX-47" wpid="s0004-X-XXXX-XXX"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Multimeter
</name>
<itemref>
<xref itemid="s0004-X-XXXX-XXX-77" wpid="s0004-X-XXXX-XXX"/>
</itemref>
</tools-setup-item>
</tools>
<persnreq>
<persnreq-setup-item>
<name>ITV/IFV/CFV Sys Mech
</name>
<mos>63T10
</mos>
</persnreq-setup-item>
<persnreq-setup-item>
<name>Helper
</name>
<mos>H
</mos>
</persnreq-setup-item>
</persnreq>
<ref>
<ref-setup-item>
<extref docno="TM X-XXXX-XXX-10-1"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="T0013-X-XXXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="M0013-X-XXXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="M0025-X-XXXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="M0035-X-XXXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="M0049-X-XXXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="M0183-X-XXXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="M0229-X-XXXX-XXX"/>
</ref-setup-item>

```

## MIL-HDBK-2361D

```

<ref-setup-item>
<xref wpid="M0032-X-XXXX-XXX"/>
</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item>
<condition>Engine stopped
</condition>
<itemref>
<xref wpid="O0032-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>FIRE SUPPRESSION switch in MANUAL
</condition>
<itemref>
<xref wpid="O0034-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<tsproc>
<logicproc>
<title>Troubleshooting Procedure
</title>
<note>
<trim.para>Left and right light circuits are identical. Designators for left side
are given with designators for right side in parenthesis, when appropriate.
</trim.para>
</note>
<origin branchto="T0012-X-XXXX-XXX-block2 T0012-X-XXXX-XXX-block11" origin="T0012-X-
XXXX-XXX-block1">
<test>
<figure id="T0012-X-XXXX-XXX-fig1">
<title>Front composite light
</title>
<graphic boardno="T0012-X-XXXX-XXX-fig1">
</graphic>
</figure>
<step1 id="T0012-X-XXXX-XXX-block1-step">
<para>Remove appropriate front composite light lens
<xref posttext=")" pretext="(" wpid="M0032-X-XXXX-XXX"/>.
</para>
</step1>
<step1>
<para>Remove turn signal lamp
<callout assocfig="T0012-X-XXXX-XXX-fig1" label="1"/>from
<callout assocfig="T0012-X-XXXX-XXX-fig1" label="2"/>.
</para>
</step1>
<step1 crewmember="H">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to

```

## MIL-HDBK-2361D

```

<ctrlind-val>ON
</ctrlind-val>
</para>
</step1>
<step1 crewmember="H">
<para>Move turn signal switch to appropriate position.
</para>
</step1>
<step1>
<para>Measure voltage between socket
<callout assocfig="T0012-X-XXXX-XXX-fig1" label="2"/>and ground.
</para>
</step1>
</test>
<indication>
<para>Does multimeter read less than 17 volts?
</para>
</indication>
<answer answerval="no">
<xref stepstart="T0012-X-XXXX-XXX-block11-step"/>
</answer>
<answer answerval="yes">
<xref stepstart="T0012-X-XXXX-XXX-block2-step"/>
</answer>
</origin>
<testblock branch="T0012-X-XXXX-XXX-block2" branchfrom="T0012-X-XXXX-XXX-block1"
branchto="T0012-X-XXXX-XXX-block4" type="yes">
<test>
<proc>
<step1 id="T0012-X-XXXX-XXX-block2-step">
<para>Check rear lights
</para>
</step1>
</proc>
</test>
<indication>
<para>Do rear stop/turn lights work?
</para>
</indication>
<answer answerval="no">Go to: Service stop light(s) malfunction
<xref wpid="M0013-X-XXXX-XXX"/>.
</answer>
<answer answerval="yes">
<xref stepstart="T0012-X-XXXX-XXX-block3-step"/>
</answer>
</testblock>
<testblock branch="T0012-X-XXXX-XXX-block4" branchfrom="T0012-X-XXXX-XXX-block2"
branchto="T0012-X-XXXX-XXX-block5 T0012-X-XXXX-XXX-block6" type="yes">
<test>
<proc>
<figure id="T0012-X-XXXX-XXX-fig2">
<title>Plug 1W13P7.
</title>
<graphic boardno="T0012-X-XXXX-XXX-fig2">

```

## MIL-HDBK-2361D

```

</graphic>
</figure>
<step1 crewmember="H" id="T0012-X-XXXX-XXX-block3-step">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to
<ctrlind-val>OFF
</ctrlind-val>.
</para>
</step1>
<step1>
<para>Remove plug 1W13P7 (1W13P12)
<callout assocfig="T0012-X-XXXX-XXX-fig2" label="1"/>from turn signal plug P3
<callout assocfig="T0012-X-XXXX-XXX-fig2" label="2"/>.
</para>
</step1>
<step1 crewmember="H">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to
<ctrlind-val>ON
</ctrlind-val>.
</para>
</step1>
<step1 crewmember="H">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-turn_indicator">TURN INDICATOR
</ctrlind>switch to appropriate position.
</para>
</step1>
</proc>
</test>
<indication>
<para>Does multimeter read less than 17 volts?
</para>
</indication>
<answer answerval="no">
<xref stepstart="T0012-X-XXXX-XXX-block5-malfunc"/>
</answer>
<answer answerval="yes">
<xref stepstart="T0012-X-XXXX-XXX-block6-step"/>
</answer>
</testblock>
<endblock branch="T0012-X-XXXX-XXX-block5" branchfrom="T0012-X-XXXX-XXX-block4" type=
"no">
<malfunc id="T0012-X-XXXX-XXX-block5-malfunc" label="symptom">Faulty front composite
light assembly.
</malfunc>
<action>
<step1 crewmember="H">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-turn_indicator">TURN INDICATOR
</ctrlind>switch to center position.
</para>

```

## MIL-HDBK-2361D

```

</step1>
<step1 crewmember="H">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to
<ctrlind-val>OFF
</ctrlind-val>.
</para>
</step1>
<step1>
<para>Replace front composite light assembly
<xref wpid="M0035-X-XXXX-XXX"/>.
</para>
</step1>
<step1>
<para>Verify no faults found.
</para>
</step1>
</action>
</endblock>
<testblock branch="T0012-X-XXXX-XXX-block6" branchfrom="T0012-X-XXXX-XXX-block4"
branchto="T0012-X-XXXX-XXX-block7 T0012-X-XXXX-XXX-block8" type="yes">
<test>
<proc>
<figure id="T0012-X-XXXX-XXX-fig3">
<title>Jack 1A1J9.
</title>
<graphic boardno="T0012-X-XXXX-XXX-fig3">
</graphic>
</figure>
<step1 crewmember="H" id="T0012-X-XXXX-XXX-block6-step">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to
<ctrlind-val>OFF
</ctrlind-val>.
</para>
</step1>
<step1>
<para>Install front composite light door
<xref wpid="M0035-X-XXXX-XXX"/>.
</para>
</step1>
<step1>
<para>Install plug 1W13P7 (1W1P12) on turn signal on plug P3.
</para>
</step1>
<step1>
<para>Remove plug 1W13P1
<callout assocfig="T0012-X-XXXX-XXX-fig3" label="1"/>from jack 1A1J9
<callout assocfig="T0012-X-XXXX-XXX-fig3" label="2"/>.
</para>
</step1>
<step1 crewmember="H">

```



## MIL-HDBK-2361D

```

<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to
<ctrlind-val>ON
</ctrlind-val>.
</para>
</step1>
<step1 crewmember="H">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-turn_indicator">TURN INDICATOR
</ctrlind>switch to appropriate position.
</para>
</step1>
<step1>
<para>Measure voltage at jack 1A1J9
<callout assocfig="T0012-X-XXXX-XXX-fig3" label="2"/>between pin A (left)
<callout assocfig="T0012-X-XXXX-XXX-fig3" label="3"/>and ground and between pin B
(right)
<callout assocfig="T0012-X-XXXX-XXX-fig3" label="4"/>and ground.
</para>
</step1>
</proc>
</test>
<indication>
<para>Does multimeter read less than 17 volts?
</para>
</indication>
<answer answerval="no">
<xref stepstart="T0012-X-XXXX-XXX-block7-malfunc"/>
</answer>
<answer answerval="yes">
<xref stepstart="T0012-X-XXXX-XXX-block8-step"/>
</answer>
</testblock>
<endblock branch="T0012-X-XXXX-XXX-block7" branchfrom="T0012-X-XXXX-XXX-block6" type=
"no">
<malfunc id="T0012-X-XXXX-XXX-block7-malfunc" label="symptom">Faulty front composite
light assembly.
</malfunc>
<action>
<step1 crewmember="H">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-turn_indicator">TURN INDICATOR
</ctrlind>switch to center position.
</para>
</step1>
<step1 crewmember="H">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to
<ctrlind-val>OFF
</ctrlind-val>.
</para>
</step1>

```

## MIL-HDBK-2361D

```

<step1>
<para>Replace/replace wiring harness 1W13
<xref wpid="M0049-X-XXXX-XXX"/>.
</para>
</step1>
<step1>
<para>Verify no faults found.
</para>
</step1>
</action>
</endblock>
<testblock branch="T0012-X-XXXX-XXX-block8" branchfrom="T0012-X-XXXX-XXX-block6"
branchto="T0012-X-XXXX-XXX-block9 T0012-X-XXXX-XXX-block10" type="yes">
<test>
<proc>
<figure id="T0012-X-XXXX-XXX-fig4">
<title>Plugs 1W10P1 and 1W10P2.
</title>
<graphic boardno="T0012-X-XXXX-XXX-fig4">
</graphic>
</figure>
<step1 id="T0012-X-XXXX-XXX-block8-step">
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to
<ctrlind-val>OFF
</ctrlind-val>.
</para>
</step1>
<step1>
<para>Install plug 1W13P1 on jack 1A1J9.
</para>
</step1>
<step1>
<para>Remove plug 1W10P1
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="1"/>from jack 1A1J8
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="2"/>.
</para>
</step1>
<step1>
<para>Remove plug 1W10P2
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="3"/>from turn signal switch 1A4S13
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="4"/>.
</para>
</step1>
<step1>
<para>Measure resistance at plug 1W10P1
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="1"/>between pin AS
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="5"/>and pin J
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="6"/>and at plug 1W10P2
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="3"/>between pin A
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="7"/>and pin B
<callout assocfig="T0012-X-XXXX-XXX-fig4" label="8"/>.
</para>

```

## MIL-HDBK-2361D

```

</step1>
</proc>
</test>
<indication>
<para>Does multimeter read 0 ohms?
</para>
</indication>
<answer answerval="no">
<xref stepstart="T0012-X-XXXX-XXX-block9-malfunc"/>
</answer>
<answer answerval="yes">
<xref stepstart="T0012-X-XXXX-XXX-block10-malfunc"/>
</answer>
</testblock>
<endblock branch="T0012-X-XXXX-XXX-block9" branchfrom="T0012-X-XXXX-XXX-block8" type=
"no">
<malfunc id="T0012-X-XXXX-XXX-block9-malfunc" label="malfunction">Faulty wiring
harness.
</malfunc>
<action>
<step1>
<para>Repair/replace wiring harness 1W10
<xref wpid="M0025-X-XXXX-XXX"/>.
</para>
</step1>
<step1>
<para>Verify no faults found.
</para>
</step1>
</action>
</endblock>
<endblock branch="T0012-X-XXXX-XXX-block10" branchfrom="T0012-X-XXXX-XXX-block8" type=
"yes">
<malfunc id="T0012-X-XXXX-XXX-block10-malfunc" label="malfunction">Faulty vehicle
electrical distribution box.
</malfunc>
<action>
<step1>
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to
<ctrlind-val>OFF
</ctrlind-val>.
</para>
</step1>
<step1>
<para>Replace vehicle electrical distribution box
<xref wpid="M0013-X-XXXX-XXX"/>.
</para>
</step1>
<step1>
<para>Verify no faults found.
</para>
</step1>

```

## MIL-HDBK-2361D

```

</action>
</endblock>
<testblock branch="T0012-X-XXXX-XXX-block11" branchfrom="T0012-X-XXXX-XXX-block1"
branchto="T0012-X-XXXX-XXX-block12" type="no">
<test>
<proc>
<figure id="T0012-X-XXXX-XXX-fig5">
<title>Composite light assembly.
</title>
<graphic boardno="T0012-X-XXXX-XXX-fig5">
</graphic>
</figure>
<step1 crewmember="H" id="T0012-X-XXXX-XXX-block11-step">
<para>Move turn signal switch to OFF.
</para>
</step1>
<step1>
<para>Move
<ctrlind idref="O0003-X-XXXX-XXX-master_power">MASTER POWER
</ctrlind>to
<ctrlind-val>OFF
</ctrlind-val>.
</para>
</step1>
<step1>
<para>Measure resistance between socket body
<callout assocfig="T0012-X-XXXX-XXX-fig5" label="1"/>and ground.
</para>
</step1>
</proc>
</test>
<indication>
<para>Does multimeter read 0 ohms?
</para>
</indication>
<answer answerval="no">
<xref stepstart="T0012-X-XXXX-XXX-block12-malfunc"/>
</answer>
<answer answerval="yes">
<xref stepstart="T0012-X-XXXX-XXX-block13-malfunc"/>
</answer>
</testblock>
<endblock branch="T0012-X-XXXX-XXX-block12" branchfrom="T0012-X-XXXX-XXX-block11" type=
"no">
<malfunc id="T0012-X-XXXX-XXX-block12-malfunc" label="malfunction">Faulty wiring
harness 1W52.
</malfunc>
<action>
<step1>
<para>Repair/replace wiring harness 1W52
<xref wpid="M0183-X-XXXX-XXX"/>.
</para>
</step1>
</action>

```

## MIL-HDBK-2361D

```

</endblock>
<endblock branch="T0012-X-XXXX-XXX-block13" branchfrom="T0012-X-XXXX-XXX-block11" type=
"yes">
<malfunc id="T0012-X-XXXX-XXX-block13-malfunc" label="malfunction">Faulty front
composite light assembly lamp.
</malfunc>
<action>
<step1>
<para>Repair/replace front composite light assembly lamp
<xref wpid="M0229-X-XXXX-XXX"/>.
</para>
</step1>
</action>
</endblock>
</logicproc>
</tsproc>
</tswp>

```

## 2. XML sample page-layout.

## MIL-HDBK-2361D

0151

**USER****FRONT TURN LIGHT(S) DO NOT WORK****INITIAL SETUP:****Tools**

General mechanic's tool kit: automotive (, )  
Multimeter (, )

**References**

TM X-XXXX-XXX-10-1

**Personnel Required**

ITV/IFV/CFV Sys Mech 63T10  
Helper H

**Equipment Condition**

Engine stopped ( )  
FIRE SUPPRESSION switch in MANUAL ( )

**TROUBLESHOOTING PROCEDURE****Troubleshooting Procedure****NOTE**

Left and right light circuits are identical. Designators for left side are given with designators for right side in parenthesis, when appropriate.

**TESTING - BRANCH 1.****Figure 1. Front composite light .**

1. Remove appropriate front composite light lens ( ).
2. Remove turn signal lamp (Figure 1, Item 1) from (Figure 1, Item 2).
3. Move MASTER POWER to **ON**
4. Move turn signal switch to appropriate position.
5. Measure voltage between socket (Figure 1, Item 2) and ground.

**CONDITION/INDICATION**

Does multimeter read less than 17 volts?

**DECISION**

NO Step 36  
YES Step 6

**TESTING - BRANCH 2.**

6. Check rear lights

**CONDITION/INDICATION**

Do rear stop/turn lights work?

**DECISION**

NO Go to: Service stop light(s) malfunction .  
YES Step 7

**TESTING - BRANCH 3.****Figure 2. Plug 1W13P7. .**

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**FIGURE 259. Troubleshooting work package logic procedure <logicproc> page-layout (Page 1 of 4).**

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- 
7. Move MASTER POWER to **OFF** .
  8. Remove plug 1W13P7 (1W13P12) (Figure 2, Item 1)from turn signal plug P3 (Figure 2, Item 2).
  9. Move MASTER POWER to **ON** .
  10. Move TURN INDICATOR switch to appropriate position.

**CONDITION/INDICATION**

Does multimeter read less than 17 volts?

**DECISION**

NO Step 10  
YES Step 15

---

**MALFUNCTION - BRANCH 4.**

**SYMPTOM** - Faulty front composite light assembly.

**ACTION**

11. Move TURN INDICATOR switch to center position.
12. Move MASTER POWER to **OFF** .
13. Replace front composite light assembly .
14. Verify no faults found.

**END OF TASK****TESTING - BRANCH 5.**

**Figure 3. Jack 1A1J9. .**

15. Move MASTER POWER to **OFF** .
16. Install front composite light door .
17. Install plug 1W13P7 (1W13P12) on turn signal on plug P3.
18. Remove plug 1W13P1 (Figure 3, Item 1)from jack 1A1J9 (Figure 3, Item 2).
19. Move MASTER POWER to **ON** .
20. Move TURN INDICATOR switch to appropriate position.
21. Measure voltage at jack 1A1J9 (Figure 3, Item 2)between pin A (left) (Figure 3, Item 3)and ground and between pin B (right) (Figure 3, Item 4)and ground.

**CONDITION/INDICATION**

Does multimeter read less than 17 volts?

**DECISION**

NO Step 21  
YES Step 26

---

**MALFUNCTION - BRANCH 6.**

**SYMPTOM** - Faulty front composite light assembly.

**ACTION**

22. Move TURN INDICATOR switch to center position.
23. Move MASTER POWER to **OFF** .
24. Replace/replace wiring harness 1W13 .

0151-2

**FIGURE 260. Troubleshooting work package logic procedure <logicproc> page-layout (Page 2of 4).**

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0151

---

25. Verify no faults found.

**END OF TASK****TESTING - BRANCH 7.****Figure 4. Plugs 1W10P1 and 1W10P2. .**

26. Move MASTER POWER to **OFF** .  
 27. Install plug 1W13P1 on jack 1A1J9.  
 28. Remove plug 1W10P1 (Figure 4, Item 1) from jack 1A1J8 (Figure 4, Item 2).  
 29. Remove plug 1W10P2 (Figure 4, Item 3) from turn signal switch 1A4S13 (Figure 4, Item 4).  
 30. Measure resistance at plug 1W10P1 (Figure 4, Item 1) between pin AS (Figure 4, Item 5) and pin J (Figure 4, Item 6) and at plug 1W10P2 (Figure 4, Item 3) between pin A (Figure 4, Item 7) and pin B (Figure 4, Item 8).

**CONDITION/INDICATION**

Does multimeter read 0 ohms?

**DECISION**

NO Step 30  
 YES Step 32

---

**MALFUNCTION - BRANCH 8.**

**MALFUNCTION** - Faulty wiring harness.

**ACTION**

31. Repair/replace wiring harness 1W10 .  
 32. Verify no faults found.

**END OF TASK****MALFUNCTION - BRANCH 9.**

**MALFUNCTION** - Faulty vehicle electrical distribution box.

**ACTION**

33. Move MASTER POWER to **OFF** .  
 34. Replace vehicle electrical distribution box .  
 35. Verify no faults found.

**END OF TASK****TESTING - BRANCH 10.****Figure 5. Composite light assembly. .**

36. Move turn signal switch to OFF.  
 37. Move MASTER POWER to **OFF** .  
 38. Measure resistance between socket body (Figure 5, Item 1) and ground.

**CONDITION/INDICATION**

Does multimeter read 0 ohms?

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**FIGURE 261. Troubleshooting work package logic procedure <logicproc> page-layout (Page 3 of 4).**



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---

**DECISION**

NO Step 38  
YES Step 39

---

**MALFUNCTION - BRANCH 11.**

**MALFUNCTION** - Faulty wiring harness 1W52.

**ACTION**

39. Repair/replace wiring harness 1W52 .

**END OF TASK**

---

**MALFUNCTION - BRANCH 12.**

**MALFUNCTION** - Faulty front composite light assembly lamp.

**ACTION**

40. Repair/replace front composite light assembly lamp .

**END OF TASK**

---

**END OF WORK PACKAGE**

0151-4

**FIGURE 262. Troubleshooting work package logic procedure <logicproc> page-layout (Page 4 of 4).**

3. XML sample frame-layout.

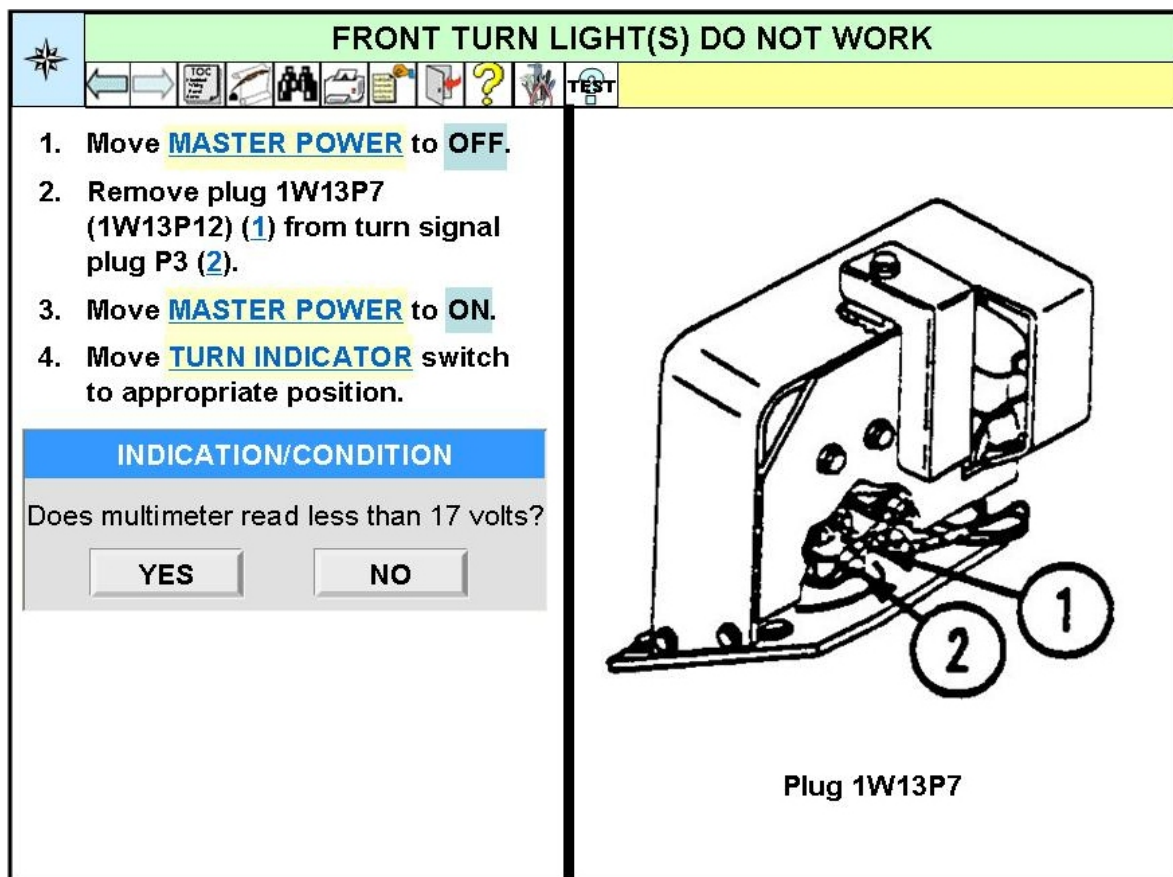


FIGURE 263. Troubleshooting work package logic procedure &lt;logicproc&gt; frame-layout.

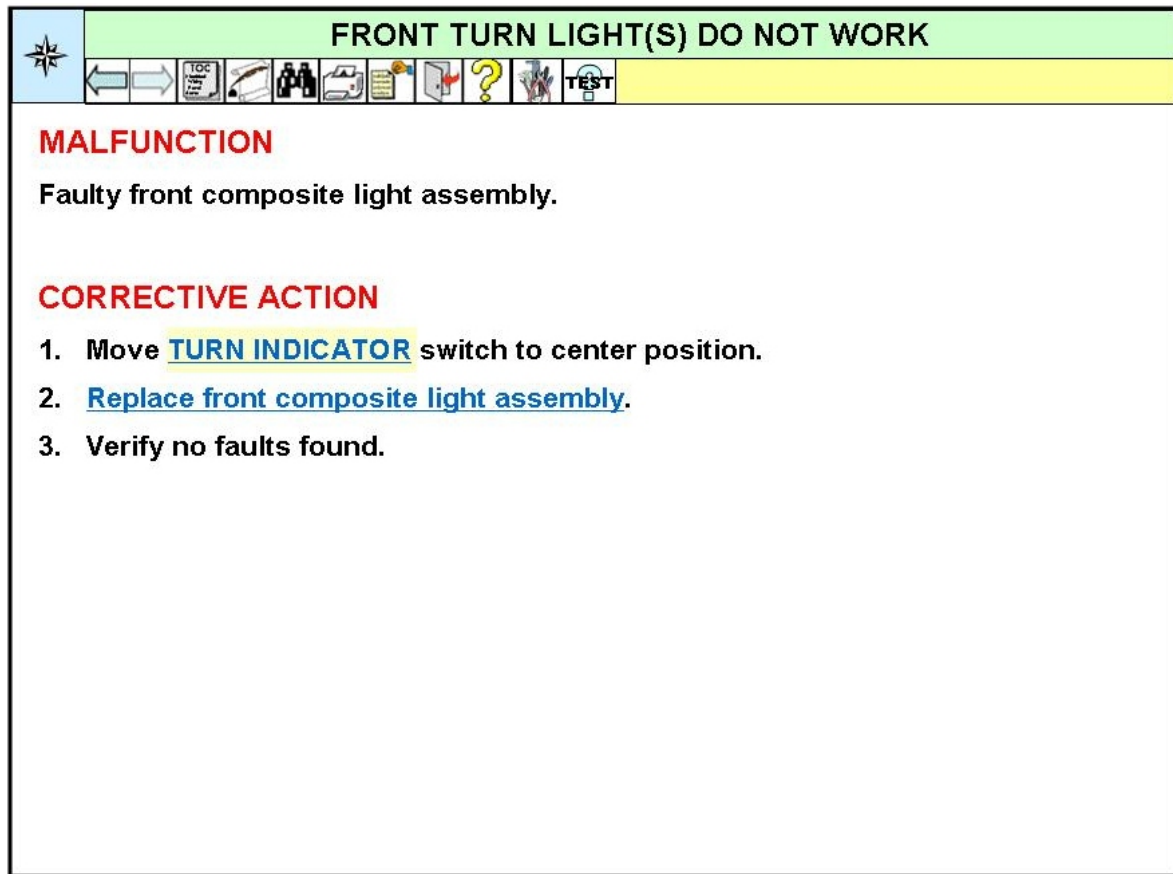


FIGURE 264.

4. XML sample logic flow in frame-layout.

## MIL-HDBK-2361D

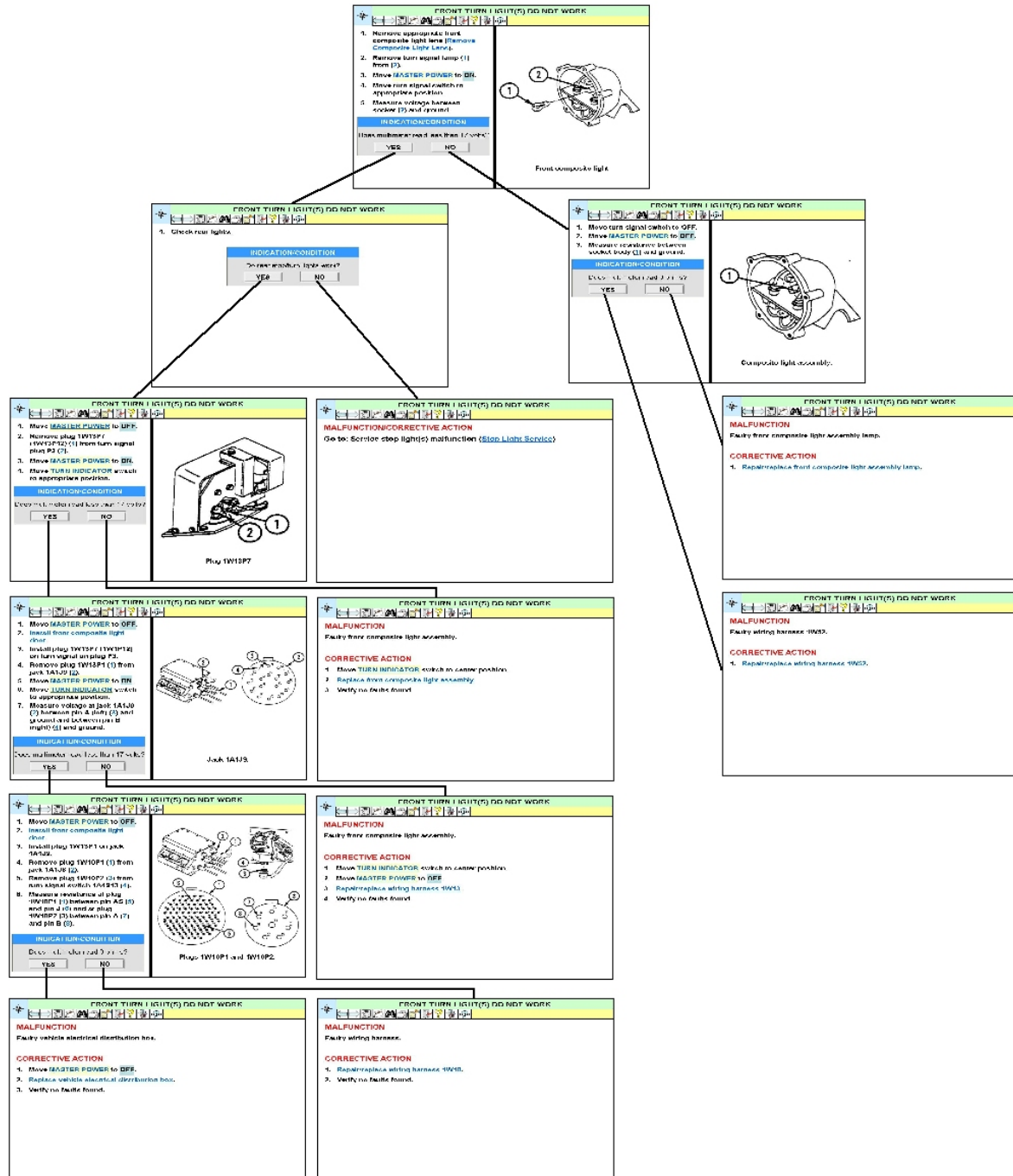


FIGURE 265. Troubleshooting logic functional flow – frame-layout.

## 22.8.2 Fault procedure &lt;faultproc&gt;.

The element is used for troubleshooting procedures consisting of an all inclusive series of specific fault symptoms for the system/equipment being troubleshot. When in a frame-based viewer, the content specific elements identify the information and allows some information to be contracted or expanded depending on the symptom and malfunctions identified. FIGURE 269. provides an example where the known symptom is engine oil pressure is in

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the red zone and the malfunctions checked has led to the coolant temperature gauge is in the red zone. Knowing the malfunction, showing the corrective action for engine oil pressure is low is not necessary.

1. The components of **<faultproc>** are:

- a. Procedure title **<title>** (required) (see Section 36.1.1.4).
- b. Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
- c. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
- d. Caution **<caution>** (optional – zero or more) (see Section 28.1.2).
- e. Note **<note>** (optional – zero or more) (see Section 28.1.3).
- f. Each fault symptom (required – one or more) has the following components:
  - i. Symptom description **<symptom>** (see Section 22.8.2.1).
  - ii. Malfunctions **<malfunc>** (required – one or more) (see Section 22.5.3).
  - iii. Each malfunction has associated corrective action (required) as either steps **<action>** (see Section 22.5.1.1) or reference to maintenance work package/further detail troubleshooting work package **<xref>** (see Section 33.2.2), **<link>** (see Section 33.2.3).

2. The DTD fragment for **<faultproc>** is graphically depicted.

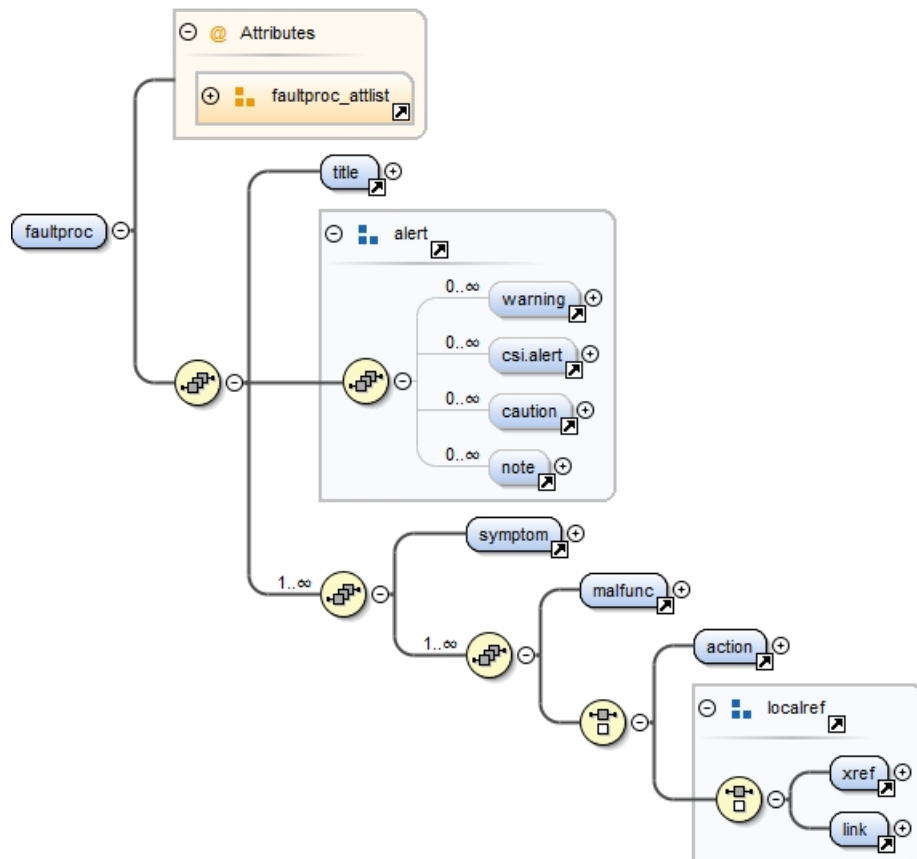


FIGURE 266. Fault procedure DTD hierarchy **<faultproc>**.

3. The DTD fragment for **<faultproc>** is:

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```
<!ELEMENT faultproc (title, %alert;, (symptom, (malfunc, (action | %local-
ref;))+)>>
```

```
<!ATTLIST faultproc
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<faultproc>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.8.2.1 Symptom **<symptom>**.

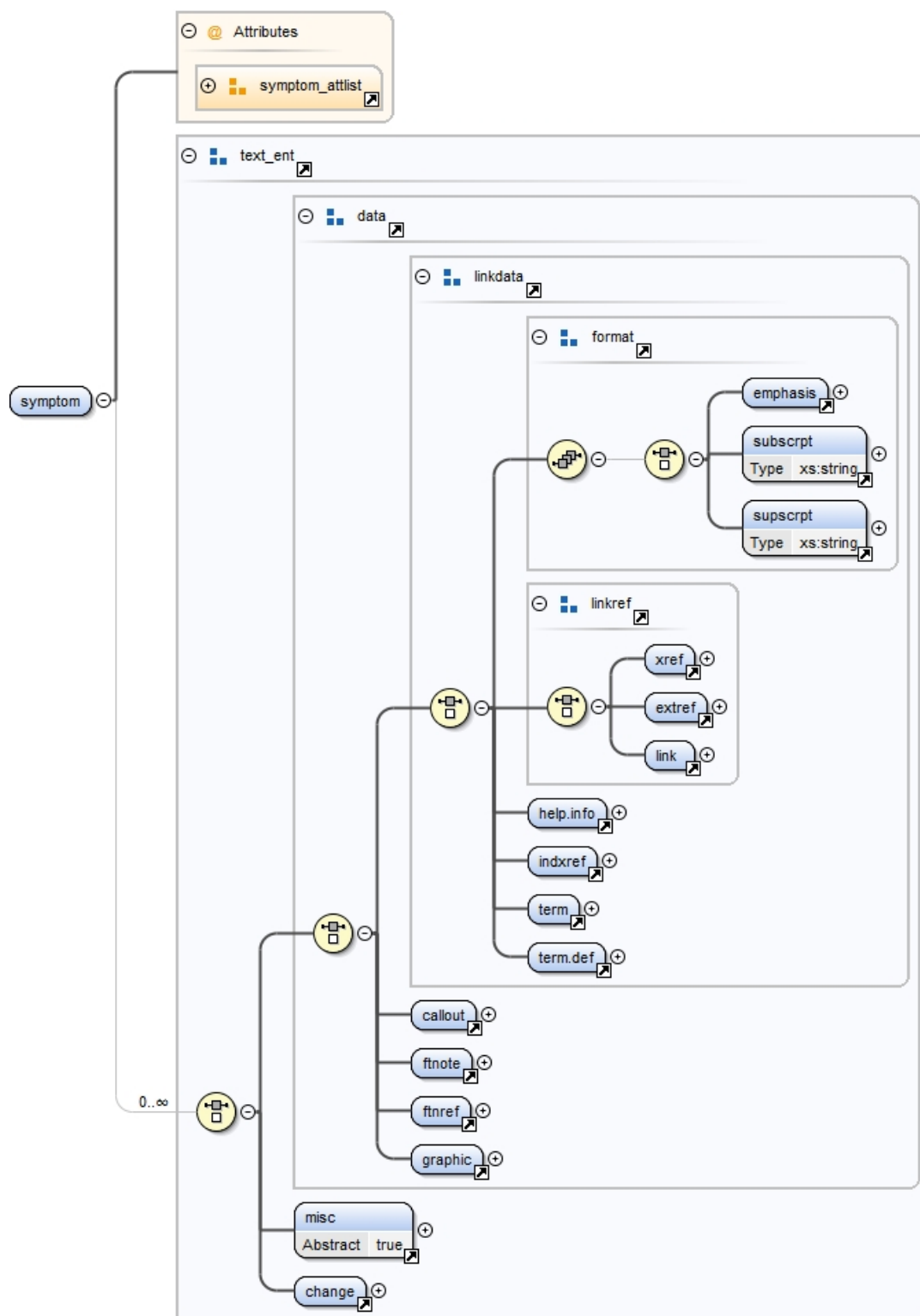
The element specifies a fault symptom for the system/equipment being diagnosed.

1. The components of **<symptom>** are:

- a. Parsable characters or type text – #PCDATA.
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).

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- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
  - j. Term – **<term>** (see Section 36.1.2.4.2).
  - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
  - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
  - m. Footnote – **<ftnote>** (see Section 32.1.1).
  - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
  - o. Graphic – **<graphic>** (see Section 31.2).
  - p. Miscellaneous – **<misc>** (see 36.2.1).
  - q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
  - r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
  - s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
  - t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
  - u. Null text – **<null>** (see Section 36.1.3.2).
  - v. Graphic symbol – **<symbol>** (see Section 31.3.1).
  - w. Torque value – **<torque>** (see Section 36.1.4.25).
  - x. Voltage value – **<voltage>** (see Section 36.1.4.26).
2. The DTD fragment for **<symptom>** is graphically depicted:

FIGURE 267. Symptom description DTD hierarchy `<symptom>`.

- The DTD fragment for `<symptom>` is:



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```

<!ELEMENT symptom (%text_ent;)*>

<!ATTLIST symptom
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Attributes for **<symptom>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.8.2.2 XML document instance fragment and output for **<tswp>/<faultproc>**.

The XML instance and its stylesheet output for a **<faultproc>** is provided below:

1. Sample XML instance.

```

<tswp airforce="no" army="no" deletewp="no" frame="yes" insertwp="" marines="no" navy="no"
tocentry="2" wpno="T00003-X-XXXX-XXX" wpseq="0251">
 <wpidinfo>
 <maintlvl level="operator"/>
 <title>Engine Troubleshooting Procedures
 </title>
</wpidinfo>
<initial_setup>
 <persnreq>
 <persnreq-setup-item>
 <name>Mechanic
 </name>
 <qty>3
 </qty>
 </persnreq-setup-item>
 </persnreq>

```

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```

<ref>
<ref-setup-item>
<xref wpid="o00039-X-XXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="o00040-X-XXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="o00041-X-XXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="o00047-X-XXX-XXX"/>
</ref-setup-item>
</ref>
</initial_setup>
<tsproc>
<faultproc>
<title>Engine oil pressure
</title>
<symptom>Engine oil press gauge is in red zone.
</symptom>
<malfunc id="T00004-X-XXXX-XXX-01-01" label="symptom">
<ctrlind idref="o00042-X-XXXX-XXXengine_oil_low_press">ENGINE OIL LOW PRESS
</ctrlind> indicator light is flashing.
</malfunc>
<action>
<step1 qa="no">
<para>If indicator light is flashing, stop engine immediately
<xref posttext=")" pretext="(" wpid="o00039-X-XXX-XXX"/>.
</para>
</step1>
<step1 qa="no">
<specpara>
<warning haz-abbrev="no">
<trim.para>Hot power unit can burn you. Use care when working near power unit.
</trim.para>
</warning>
<para>Check engine oil level
<xref posttext=")" pretext="(" wpid="o00047-X-XXX-XXX"/>.
</para>
</specpara>
</step1>
<step1 qa="no">
<para>Check bilge for oil.
</para>
<step2 qa="no">
<para>If oil is present, check engine hoses, clamps, and fittings for leaks.
</para>
</step2>
</step1>
<step1 qa="no">
<para>Start engine
<xref posttext=")" pretext="(" wpid="o00039-X-XXX-XXX"/>.
</para>

```

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```

</step1>
<step1 qa="no">
<para>
<ctrlind idref="o00042-X-XXXX-XXXengine_oil_press">ENGINE OIL PRESS
</ctrlind> gauge is still in the red zone.
</para>
<step2 qa="no">
<para>Stop engine immediately
<xref posttext=")" pretext="(" wpid="o00039-X-XXX-XXX"/>. Notify unit maintenance.
</para>
</step2>
</step1>
</action>
<malfunc id="T00004-X-XXXX-XXX-01-02" label="symptom">ENGINE COOLANT TEMPERATURE
GAUGE IS IN RED ZONE.
</malfunc>
<action>
<step1 qa="no">
<para>Check if
<ctrlind idref="o00042-X-XXXX-XXXcoolant_low_level">COOLANT LOW LEVEL
</ctrlind> indicator light is flashing.
</para>
<step2 qa="no">
<para>If
<ctrlind idref="o00042-X-XXXX-XXXcoolant_low_level">COOLANT LOW LEVEL
</ctrlind> indicator light is off.
</para>
</step2>
<step2 qa="no">
<para>Press
<ctrlind idref="o00042-X-XXXX-XXXtest_sensor_button">TEST SENSOR BUTTON
</ctrlind>.
</para>
<step3 qa="no">
<para>If
<ctrlind idref="o00042-X-XXXX-XXXcoolant_low_level">COOLANT LOW LEVEL
</ctrlind>indicator does not flash, notify unit maintenance.
</para>
</step3>
<step3 qa="no">
<para>If
<ctrlind idref="o00042-X-XXXX-XXXcoolant_low_level">COOLANT LOW LEVEL
</ctrlind>indicator light is flashing,
</para>
<step4 qa="no">
<para>Stop engine immediately
<xref posttext=")" pretext="(" wpid="o00039-X-XXX-XXX"/>.
</para>
</step4>
<step4 qa="no">
<specpara>
<warning haz-abbrev="no">

```

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*<trim. para>*Hot coolant can burn you. Do not remove radiator cap until coolant temperature gauge reads in bottom one-quarter of green zone. Turn cap slowly to release pressure.

*</trim. para>*

*</warning>*

*<para >*Check coolant level

*<xref posttext=")" pretext="(" wpid="o00040-X-XXX-XXX"/>.*

*</para>*

*</specpara>*

*</step4>*

*</step3>*

*</step2>*

*</step1>*

*<step1 qa="no">*

*<para>*Open power unit access door

*<xref posttext=")" pretext="(" wpid="o00041-X-XXX-XXX"/>.*

*</para>*

*</step1>*

*<step1 qa="no">*

*<para>*Check bilge for coolant.

*</para>*

*<step2 qa="no">*

*<para>*If coolant is found, check hoses, clamps, and fittings for coolant leaks.

*</para>*

*</step2>*

*<step2 qa="no" >*

*<para>*If leaks are found, notify unit maintenance.

*</para>*

*</step2>*

*</step1>*

*<step1 qa="no">*

*<para>*Check coolant system for malfunction.

*</para>*

*</step1>*

*</action>*

*</faultproc>*

*</tsproc>*

*</tswp>*

## 2. XML sample page-layout.

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0251

OPERATOR	
ENGINE TROUBLESHOOTING PROCEDURES	
<b>INITIAL SETUP:</b>	
<b>Personnel Required</b> Mechanic - 3	<b>References</b>
<b>TROUBLESHOOTING PROCEDURE</b>	
<b>ENGINE OIL PRESSURE</b>	
<b>SYMPTOM</b>	
Engine oil press gauge is in red zone.	
<b>MALFUNCTION</b>	
ENGINE OIL LOW PRESS indicator light is flashing.	
<b>CORRECTIVE ACTION</b>	
STEP 1. If indicator light is flashing, stop engine immediately().	
<b>WARNING</b>	
Hot power unit can burn you. Use care when working near power unit.	
STEP 2. Check engine oil level().	
STEP 3. Check bilge for oil.	
a. If oil is present, check engine hoses, clamps, and fittings for leaks.	
STEP 4. Start engine().	
STEP 5. ENGINE OIL PRESS gauge is still in the red zone.	
a. Stop engine immediately(). Notify unit maintenance.	
<b>MALFUNCTION</b>	
ENGINE COOLANT TEMPERATURE GAUGE IS IN RED ZONE.	
<b>CORRECTIVE ACTION</b>	
STEP 1. Check if COOLANT LOW LEVEL indicator light is flashing.	
a. If COOLANT LOW LEVEL indicator light is off.	
b. Press TEST SENSOR BUTTON.	
(1) If COOLANT LOW LEVEL indicator does not flash, notify unit maintenance.	
(2) If COOLANT LOW LEVEL indicator light is flashing,	
(a) Stop engine immediately ().	
<b>WARNING</b>	
Hot coolant can burn you. Do not remove radiator cap until coolant temperature gauge reads in bottom one-quarter of green zone. Turn cap slowly to release pressure.	
(b) Check coolant level ().	
STEP 2. Open power unit access door ().	
STEP 3. Check bilge for coolant.	
a. If coolant is found, check hoses, clamps, and fittings for coolant leaks.	
b. If leaks are found, notify unit maintenance.	
STEP 4. Check coolant system for malfunction.	
<b>END OF WORK PACKAGE</b>	

0251-1/blank

FIGURE 268. Troubleshooting work package fault procedure &lt;faultproc&gt; page-layout.

## 3. XML sample frame-layout

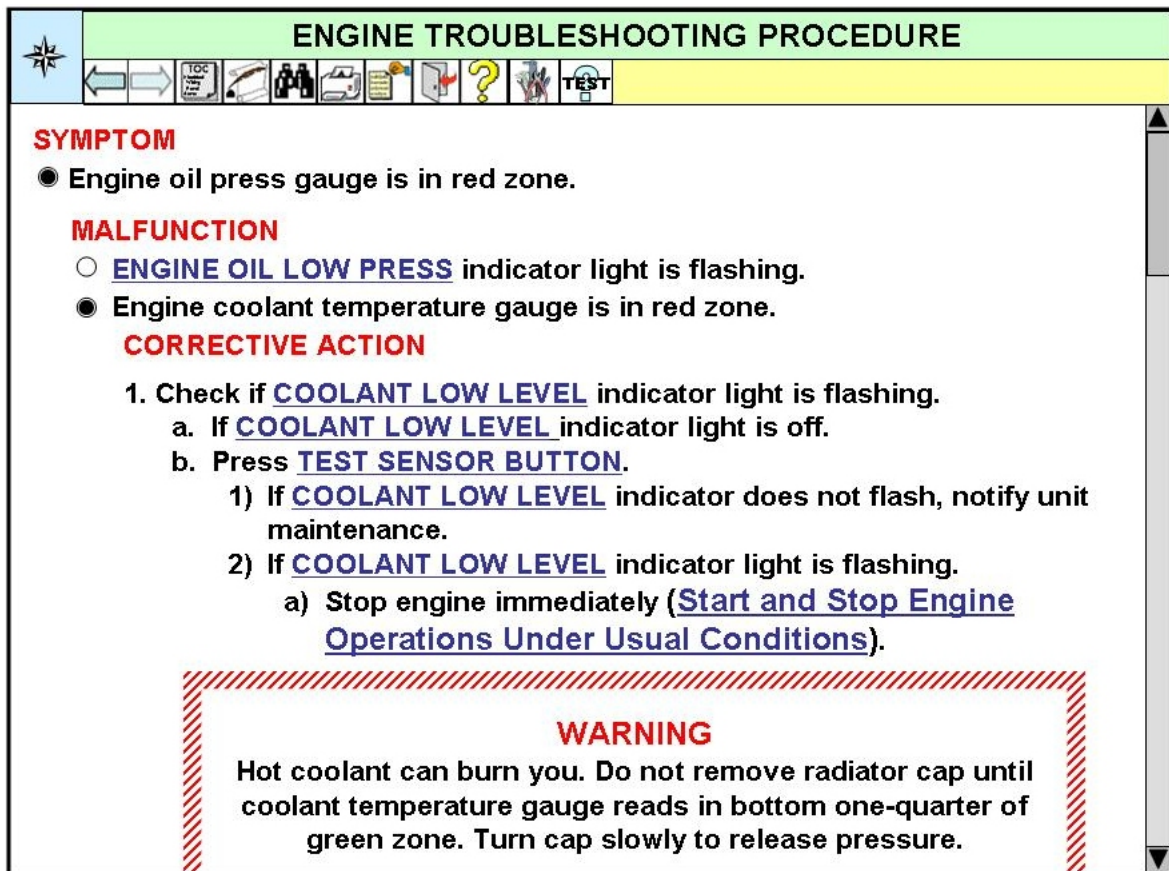


FIGURE 269. Troubleshooting work package fault procedure <faultproc> Frame-layout.

### 22.8.3 Multiplex read code <muxproc>.

The element displays computer generated Multiplex (MUX) read code data which are listed in troubleshooting sequence order by signal name <signame>. The method can be presented either tabular or narrative format.

1. The components <muxproc> are:
  - a. Warning <warning> (optional – zero or more) (see Section 28.1.1).
  - b. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
  - c. Caution <caution> (optional – zero or more) (see Section 28.1.2).
  - d. Note <note> (optional – zero or more) (see Section 28.1.3).
  - e. The MUX read codes are either by
    - i. Symptom/malfunction <symptom> (optional) (see Section 22.8.2.1) with associated signal name MUX read codes <signal-item> (see Section 22.8.3.1).
    - ii. Signal name MUX read codes <signal-item> (required – one or more) (see Section 22.8.3.1).
2. The DTD fragment for <muxproc> is graphically depicted:

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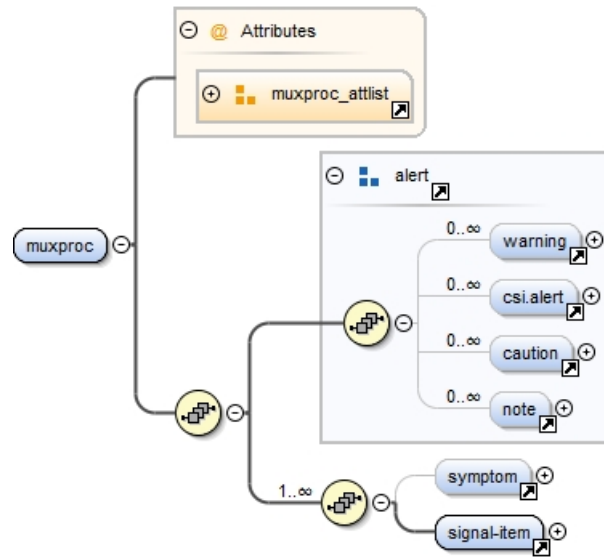


FIGURE 270. Multiplex read code procedure DTD hierarchy &lt;muxproc&gt;.

## 3. The DTD fragment for &lt;muxproc&gt; is:

```

<!ELEMENT muxproc (%alert;, (symptom?, signal-item)+)>
<!ATTLIST muxproc
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

## 4. Common attributes for &lt;muxproc&gt; are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.8.3.1 Signal item <signal-item>.

The element contains all information required to test a particular signal, component part, process, or data item during pass/fail fault isolation. The element contains a signal name <signame>, data items <dataitem>, pass/fail check remarks <ckremarks>, a pass/fail criteria <criteria> followed by a second pass/fail criteria.

1. The components of <signal-item> are:

- a. Signal name <signame> (required) is the name of the signal item being analyzed.
- b. MUX read code <dataitem> (required) components are:
  - i. Memory location address <memloc> (required).
  - ii. Memory data bit(s) <memdata> (required).
  - iii. Conditions <condition> (required), when no conditions exist enter “none.”
  - iv. Signal function description <sigfunc> (required).
- c. Remarks <ckremarks> (required) concerning about the signal item or MUX read code. May be used to describe where signal is derived from.
- d. Pass criteria <criteria> (required) (see Section 22.8.3.2).
- e. Fail criteria <criteria> (required) (see Section 22.8.3.2).

2. The DTD fragment for <signal-item> is graphically depicted:

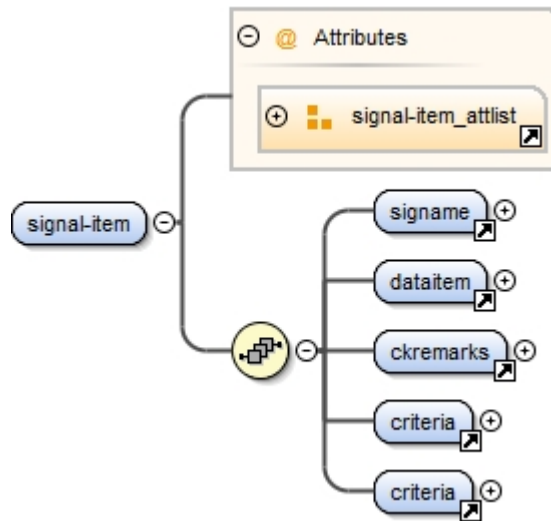


FIGURE 271. Multiplex read code procedure DTD hierarchy <signal-item>.

3. The DTD fragment for <signal-item> is:

```

<!ELEMENT signal-item (signame, dataitem, ckremarks, criteria, criteria)>
<!ATTLIST signal-item
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"

```



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id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	“0”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
type	(part   signal   process   other)	#IMPLIED>

4. Unique attributes for **<signal-item>** is:
  - a. **type** (optional) – Defines the type of signal being analyzed.
  - b. **“part”** – Test applies to a component part.
  - c. **“signal”** – Test applies to a particular signal.
  - d. **“process”** – Test applies to a process.
  - e. **“other”** – Test applies to a data item.
5. Common attributes for **<signal-item>** and **<dataitem>** are:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
  - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - h. **security** – Security classification (optional) (see Section 36.3.14).
  - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.8.3.2 Pass/fail criteria **<criteria>**.

The element specifies the criteria for a functioning signal item with the next step in diagnosing the problem or signal item failed and the corrective action. When a pass criteria is being described a reference is made to the next signal item to check for a fault.

1. The components of **<criteria>** are:
  - a. Format text – **<emphasis>** (see Section 36.1.3.1).
  - b. Subscript – **<subscript>** (see Section 36.1.3.4).
  - c. Superscript – **<supscript>** (see Section 36.1.3.5).
  - d. Cross reference – **<xref>** (see Section 33.2.2).
  - e. External reference – **<extref>** (see Section 33.2.1).
  - f. Enhanced linking – **<link>** (see Section 33.2.3).
  - g. IETM help information – **<help.info>** (see Section 35.3.3.7).

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- h. Index reference – **<indxref>** (see Section 15.5.2.2.3).
  - i. Term – **<term>** (see Section 36.1.2.4.2).
  - j. Term definition – **<term.def>** (see Section 36.1.2.4.1).
  - k. Figure callout reference – **<callout>** (see Section 33.2.4.1).
  - l. Footnote – **<ftnote>** (see Section 32.1.1).
  - m. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
  - n. Graphic – **<graphic>** (see Section 31.2).
  - o. Miscellaneous – **<misc>** (see 36.2.1).
  - p. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
  - q. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
  - r. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
  - s. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
  - t. Null text – **<null>** (see Section 36.1.3.2).
  - u. Graphic symbol – **<symbol>** (see Section 31.3.1).
  - v. Torque value – **<torque>** (see Section 36.1.4.25).
  - w. Voltage value – **<voltage>** (see Section 36.1.4.26).
  - x. Changed text marker – **<change>** (see Section 36.1.3.7).
2. The DTD fragment for **<criteria>** is graphically depicted:

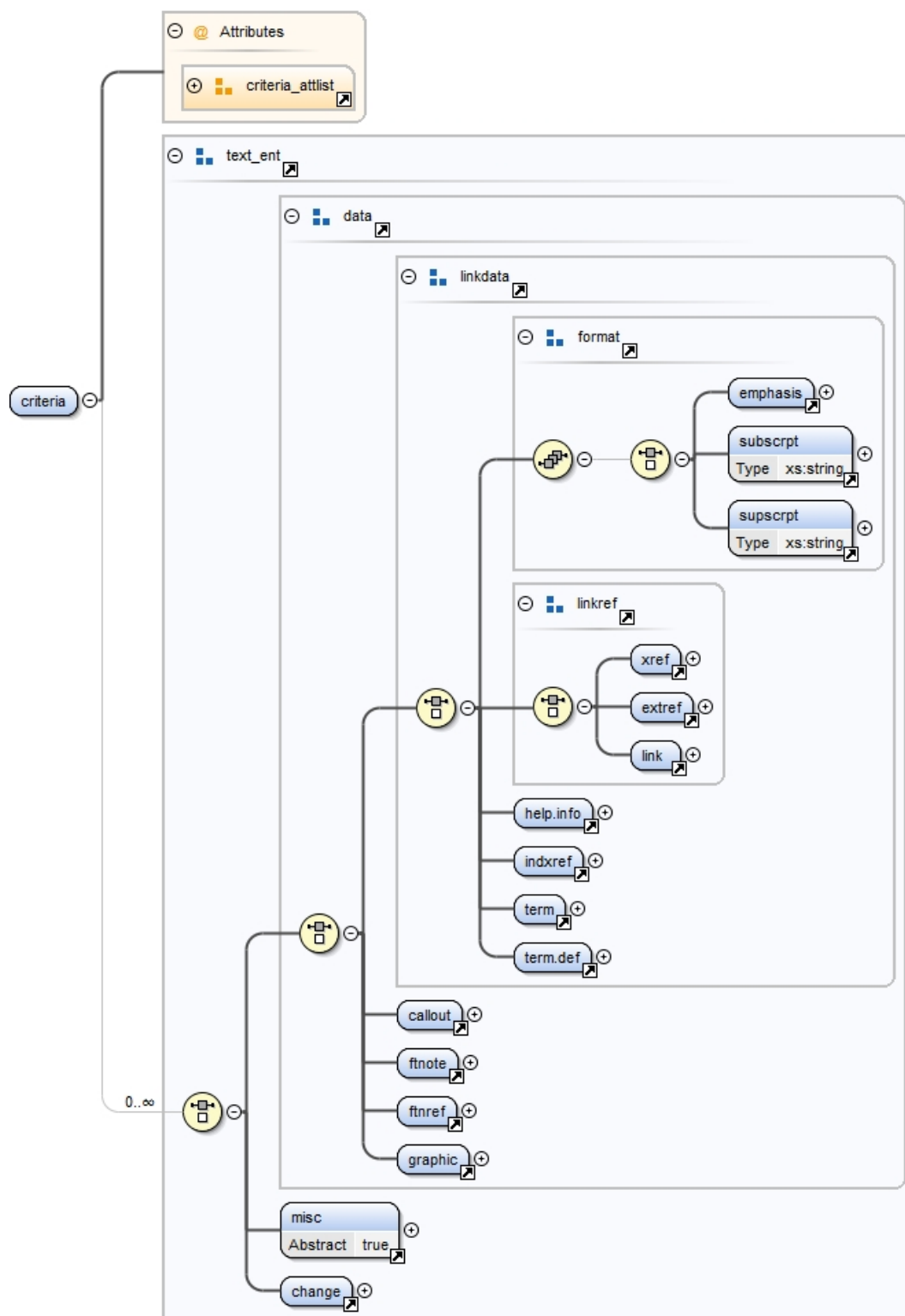


FIGURE 272. Multiplex read code pass/fail criteria DTD hierarchy &lt;criteria&gt;.

```
<!ELEMENT criteria (%text_ent;)*>

<!ATTLIST criteria

assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) `0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) `0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED
type (part | signal | process | other) #IMPLIED>
```

- a. **type** – Specifies the type of action resulting from this criteria element.
- b. **“pass”** – The identifies the content as a pass criteria.
- c. **“fail”** – The identifies the content as a fail criteria.

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

```
<tswp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2"
wpno="t00006-X-XXX-XXX" wpseq="0327">
<wpidinfo>
<maintlvl level="Maintainer"/>
<title>Multiplexor signal Testing
</title>
```

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```

</wpidinfo>
<initial_setup>
<title>NOT APPLICABLE
</title>
<null insert="none"/>
</initial_setup>
<tsproc>
<muxproc>
<signal-item id="t00006-X-XXX-XXXstep23">
<signame>DASEC STATUS WORD DC ANALOG OUTPUT BIT
</signame>
<dataitem>
<memloc>002150
</memloc>
<memdata>15 (BINARY)
</memdata>
<condition> (None)
</condition>
<sigfunc>Indicates status of DC analog circuits.
</sigfunc>
</dataitem>
<ckremarks>From DASEC to FCC.
</ckremarks>
<criteria type="pass">If second digit displayed on HOD is 3 or 7
<xref pretext=", go to " stepstart="t00006-X-XXX-XXXstep24"/>.
</criteria>
<criteria type="fail">Location of fault: replace DASEC
<extref docno="TM 1-1520-238-23" posttext=" Series)" pretext="("/>.
</criteria>
</signal-item>
<signal-item id="t00006-X-XXX-XXXstep24">
<signame>DASEC STATUS WORD AD/DA BIT
</signame>
<dataitem>
<memloc>002150
</memloc>
<memdata>13 (BINARY)
</memdata>
<condition> (None)
</condition>
<sigfunc>Indicates status of analog-to-digital and digital- to-analog circuits.
</sigfunc>
</dataitem>
<ckremarks>From DASEC to FCC.
</ckremarks>
<criteria type="pass">If third digit displayed on HOD is 1, 3, 5, or 7
<xref pretext=", go to " stepstart="t00006-X-XXX-XXXstep25"/>.
</criteria>
<criteria type="fail">Location of fault: replace DASEC
<extref docno="TM 1-1520-238-23" posttext=" Series)" pretext="("/>.
</criteria>
</signal-item>
<signal-item id="t00006-X-XXX-XXXstep25">
<signame>DASEC STATUS WORD FD/LS TEST

```

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```

</signame>
<dataitem>
<memloc>002150
</memloc>
<memdata>12 (BINARY)
</memdata>
<condition>(None)
</condition>
<sigfunc>Indicates FD/LS ground test is being run.
</sigfunc>
</dataitem>
<ckremarks>From DASEC to FCC.
</ckremarks>
<criteria type="pass">If third digit displayed on HOD is 1 or 5
<xref pretext=", go to " stepstart="t00006-X-XXX-XXXstep26"/>.
</criteria>
<criteria type="fail">Location of fault: replace DASEC
<extref docno="TM 1-1520-238-23" posttext=" Series)" pretext="("/>.
</criteria>
</signal-item>
<signal-item id="t00006-X-XXX-XXXstep26">
<signame>DASEC STATUS WORD ASE BIT
</signame>
<dataitem>
<memloc>002150
</memloc>
<memdata>11 (BINARY)
</memdata>
<condition>(None)
</condition>
<sigfunc>Indicates last FD/LS test ASE bit status.
</sigfunc>
</dataitem>
<ckremarks>DASEC to FCC.
</ckremarks>
<criteria type="pass">If third digit displayed on HOD is 1
<xref pretext=", go to " stepstart="t00006-X-XXX-XXXstep27"/>.
</criteria>
<criteria type="fail">Location of fault: replace DASEC
<extref docno="TM 1-1520-238-23" posttext=" Series)" pretext="("/>.
</criteria>
</signal-item>
<signal-item id="t00006-X-XXX-XXXstep27">
<signame>DASEC STATUS WORD VD TEST
</signame>
<dataitem>
<memloc>002150
</memloc>
<memdata>10 (BINARY)
</memdata>
<condition>(None)
</condition>
<sigfunc>Indicates last FD/LS test VD bit status.
</sigfunc>

```

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```

</dataitem>
<ckremarks>DASEC to FCC.
</ckremarks>
<criteria type="pass">If third digit displayed on HOD is 3 or 4
<xref pretext=", go to " stepstart="t00006-X-XXX-XXXstep28"/>.
</criteria>
<criteria type="fail">Location of fault: replace DASEC
<extref docno="TM 1-1520-238-23" posttext=" Series)" pretext="("/>.
</criteria>
</signal-item>
</muxproc>
</tsproc>
</tswp>

```

2. Page-based TM stylesheet output example for **<tswp>/<muxproc>**:

## MIL-HDBK-2361D

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## MAINTAINER

## MULTIPLEXOR SIGNAL TESTING

## INITIAL SETUP:

## NOT APPLICABLE

NOT APPLICABLE

1. SIGNAL NAME: DASEC STATUS WORD DC ANALOG OUTPUT BIT  
 MEMORY LOCATION: 002150  
 MEMORY DATA BIT(S): 15 (BINARY)  
 CONDITION: (None)  
 SIGNAL FUNCTION: Indicates status of DC analog circuits.  
 REMARKS: From DASEC to FCC.  
 PASS: If second digit displayed on HOD is 3 or 7, go to Step .  
 FAIL: Location of fault: replace DASEC(TM 1-1520-238-23 Series).
2. SIGNAL NAME: DASEC STATUS WORD AD/DA BIT  
 MEMORY LOCATION: 002150  
 MEMORY DATA BIT(S): 13 (BINARY)  
 CONDITION: (None)  
 SIGNAL FUNCTION: Indicates status of analog-to-digital and digital- to-analog circuits.  
 REMARKS: From DASEC to FCC.  
 PASS: If third digit displayed on HOD is 1, 3, 5, or 7, go to Step .  
 FAIL: Location of fault: replace DASEC(TM 1-1520-238-23 Series).
3. SIGNAL NAME: DASEC STATUS WORD FD/LS TEST  
 MEMORY LOCATION: 002150  
 MEMORY DATA BIT(S): 12 (BINARY)  
 CONDITION: (None)  
 SIGNAL FUNCTION: Indicates FD/LS ground test is being run.  
 REMARKS: From DASEC to FCC.  
 PASS: If third digit displayed on HOD is 1 or 5, go to Step .  
 FAIL: Location of fault: replace DASEC(TM 1-1520-238-23 Series).
4. SIGNAL NAME: DASEC STATUS WORD ASE BIT  
 MEMORY LOCATION: 002150  
 MEMORY DATA BIT(S): 11 (BINARY)  
 CONDITION: (None)  
 SIGNAL FUNCTION: Indicates last FD/LS test ASE bit status.  
 REMARKS: DASEC to FCC.  
 PASS: If third digit displayed on HOD is 1, go to Step .  
 FAIL: Location of fault: replace DASEC(TM 1-1520-238-23 Series).
5. SIGNAL NAME: DASEC STATUS WORD VD TEST  
 MEMORY LOCATION: 002150  
 MEMORY DATA BIT(S): 10 (BINARY)  
 CONDITION: (None)  
 SIGNAL FUNCTION: Indicates last FD/LS test VD bit status.

0327-1

FIGURE 273. Example of a page-based TM stylesheet output for &lt;tswp&gt;/&lt;muxproc&gt; (Page 1 of 2).



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---

REMARKS: DASEC to FCC.  
PASS: If third digit displayed on HOD is 3 or 4, go to Step .  
FAIL: Location of fault: replace DASEC(TM 1-1520-238-23 Series).

**END OF WORK PACKAGE**

0327-2

**FIGURE 274. Example of a page-based TM stylesheet output for <tswp>/<muxproc> (Page 2 of 2).**

## 22.9 Operational checkout and troubleshooting work package <opcheck-tswp> .

The element is used to combine both operational checkout with troubleshooting procedures. Generally the author develops operational checkout steps and when a criteria fails the user then performs the fault isolation for the faulty component.

1. The components of operational checkout and troubleshooting work package <opcheck-tswp> are:
  - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.5).
  - c. Work package initial setup <initial\_setup> (required) (see Section 16.6).
  - d. Introduction <intro> (optional) (see Section 36.1.4.14) explaining how the operational checkout procedures are to be used to perform testing and how they relate to the associated troubleshooting work packages.
  - e. A choice of:
    - i. System description and support information (optional) (see Section 22.6).
      - I. Test flow <testflow> (optional) (see Section 22.6.2.2) describes the troubleshooting testing flow.
      - II. Functional dependencies <funcdepend> (optional) (see Section 22.6.2.3) describes the functional dependencies of components that make up the system under test.
      - III. Schematic drawing <schematic> (optional) (see Section 22.6.2.4) used for schematic drawings included as supporting technical information during a troubleshooting procedure.
      - IV. Component locator <comp-locator> (optional) (see Section 22.6.2.5) contains a figure to assist in the components under test location.
      - V. Harness index <harness-indx> (optional) (see Section 22.6.2.6) is a special index of electrical wiring harnesses, needed due to the extensive interrelated circuitry.
    - ii. A procedure to test or troubleshoot further that may contain specific directions or links to supporting work packages (see Section 17.2).
  - f. Test set hookup <hookup> (optional) (see Section 22.6.4 how to develop a task). If test set hookup is used test set disconnection <disconnect> (required).
  - g. Select a method for the work package.
    - i. Operational checkout procedure <opcheckproc> (required) followed by troubleshooting procedure <tsproc> (required) (see 22.6.5).
    - ii. Combined operational checkout and troubleshooting procedure <opcheck-tsproc> (required). The mark up for the operating checkout/troubleshooting procedure is similar to that of the operational checkout (see Section 22.7.1).
  - h. Test set disconnection <disconnect> (optional) (see Section 22.6.3). If test set hookup is used test set disconnection is required.
2. The DTD fragment for <opcheck-tswp> is graphically depicted:

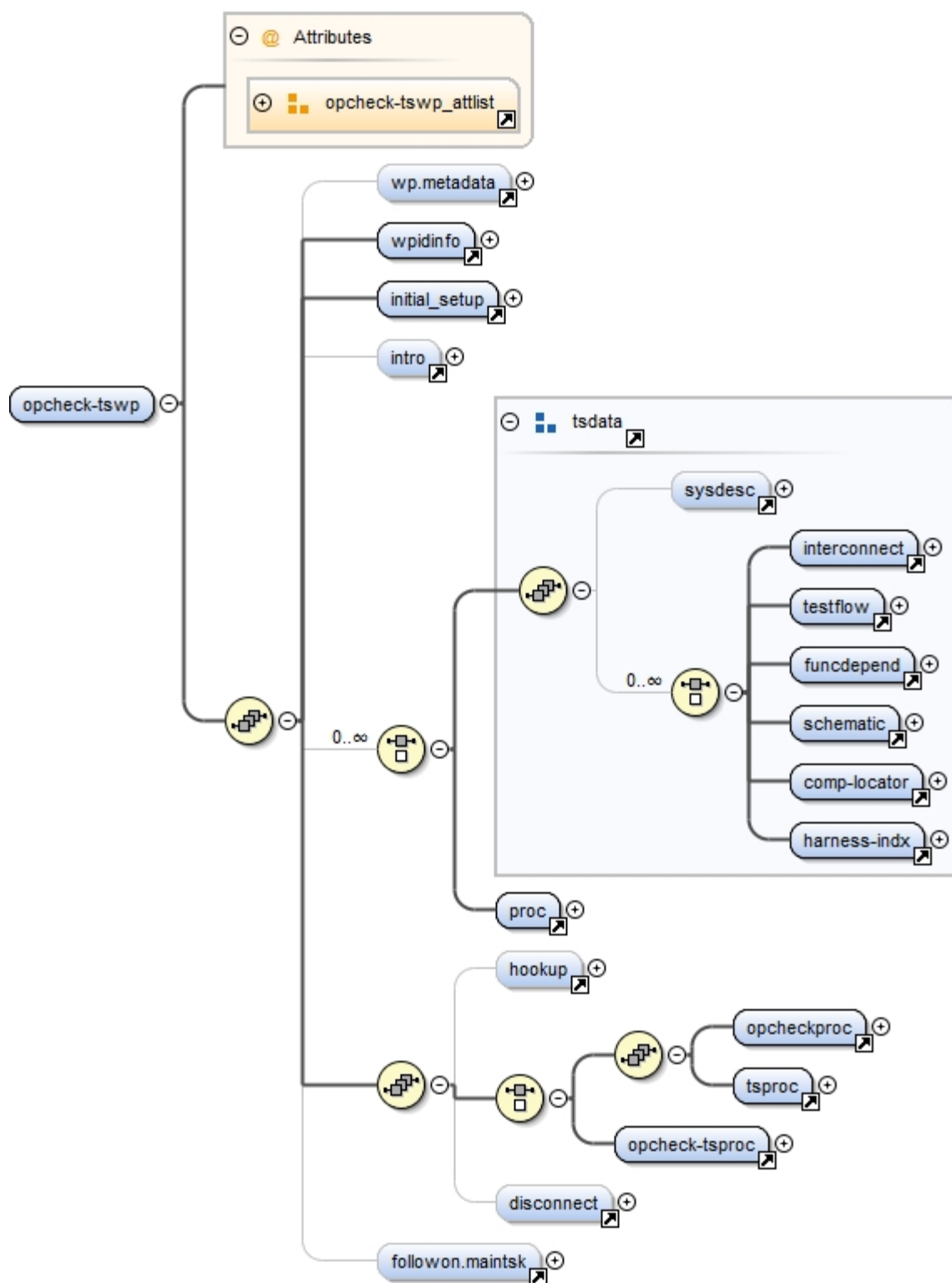


FIGURE 275. Operational Checkout and Troubleshooting Work Package DTD hierarchy <opcheck-tswp>.

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3. The DTD fragment for **<opcheck-tswp>** is:

```
<!ELEMENT opcheck-tswp (wp.metadata?, wpidinfo, initial_setup, intro?, (%
tsdata; |proc)*, (hookup?, ((opcheckproc, tsproc) | opcheck-tsproc), dis-
connect?), followon.maintsk)>
```

```
<!ATTLIST opcheck-tswp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date- time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"no"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

```
<!ELEMENT opcheck-tsproc (title?, warning*, csi.alert*, caution*, note*,
testproc)>
```

```
<!ATTLIST opcheck-tsproc
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"

## MIL-HDBK-2361D

id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	“0”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<opcheck-tswp>** and **<opcheck-tsproc>** are:

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is resequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

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- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies manually assigned four digit sequential number of the work package for the TM.

### 22.9.1 XML document instance fragment and output for <opcheck-tswp>.

The XML instance and its stylesheet output for a <opcheck-tswp> is provided below.

1. Example of an XML document instance fragment for <opcheck-tswp>:

```
<opcheck-tswp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no"
tocentry="2" wpno="t00008-X-XXX-XXX" wpseq="0481">
 <wpidinfo>
 <maintlvl level="Maintainer"/>
 <title>Computer Processor <brk/>Operational Checkout And Troubleshooting
 </title>
</wpidinfo>
<initial_setup>
<testeqp>
<testeqp-setup-item>
 <name>Test set
</name>
<itemref>
<link alt="Test set information" application="frame" linkaction="prompt" linktype="return" local=
"s00654-XX-XXX-XXXitem4" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/
xlink" xrefstype="part">
</link>
<link application="page" linkaction="prompt" linktype="undefined" local="s00654-XX-XXX-
XXXitem4" popup="no" xmlns:xlink="http://www.w3.org/1999/xlink" xrefstype="part">
<ref.generate/>
</link>
</itemref>
</testeqp-setup-item>
</testeqp>
<ref>
<ref-setup-item>
<link application="both" linkaction="prompt" linktype="return" local="m00005-XX-XXX-XXX"
popup="no" xmlns:xlink="http://www.w3.org/1999/xlink" xrefstype="part">
<ref.generate/>
</link>
</ref-setup-item>
</ref>
</initial_setup>
<opcheck-tswp>
<title>Computer Processor & ndash; Test Procedure
</title>
<testproc>
<checkstep>
<step1 qa="no">
<para >Remove computer processor top cover
```

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```

<link application="both" linkaction="prompt" linktype="return" local="m00005-XX-XXX-XXX"
popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink" xreftype="part">
<pretext> (</pretext>
<ref.generate/>
<posttext> </posttext>
</link>.
</para>
</step1>
<step1 qa="no" >
<para>Apply power to test set and place test set
<ctrlind idref="o00042-X-XXX-XXXpower">POWER
</ctrlind>switch to
<ctrlind-val>ON </ctrlind-val>position.
</para>
</step1>
<indication>
<para >Test set power indicator is illuminated.
</para>
</indication>
<malfunc label="malfunction">If power indicator does not light.
</malfunc>
<action>
<para >Check power source for 28 VDC.
</para>
</action>
</checkstep>
<checkstep>
<step1 qa="no">
<para>Place
<ctrlind idref="o00042-X-XXX-XXXuut_power">UUT POWER
</ctrlind> switch in
<ctrlind-val>CP
</ctrlind-val> position.
</para>
</step1>
<indication>
<para>
<ctrlind idref="o00042-X-XXX-XXXcp_leds">CP LEDS
</ctrlind>momentarily flash.
</para>
</indication>
<malfunc label="malfunction">If LEDS do not flash briefly.
</malfunc>
<action>
<para>Check test set wiring.
</para>
</action>
</checkstep>
<checkstep>
<step1 qa="no">
<para >Place Test Set
<ctrlind idref="o00042-X-XXX-XXXuut_power">UUT POWER
</ctrlind> switch in
<ctrlind-val>CP

```

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</ctrlind-val> position. Quickly press and release the  
 <ctrlind idref="o00042-X-XXX-XXXcp\_bit">CP BIT  
 </ctrlind> button on the system interface card. Observe the 10 LEDs on the system I/  
 F CCA.  
 </para>  
 </step1>  
 <indication>  
 <para>BIT test routine runs for 30 seconds. During the first 15 seconds the CP  
 LEDs (DS1- DS10) will flash. The second 15 second period is the status reporting  
 period. All LEDs are  
 <ctrlind-val>OFF  
 </ctrlind-val>during the second 15 second period. After the BIT routine is complete,  
 all LEDs will return to the original  
 <ctrlind-val>OFF  
 </ctrlind-val> state.  
 </para>  
 </indication>  
 <malfunc label="malfunction"> If  
 <ctrlind idref="o00042-X-XXX-XXXds1">DS1  
 </ctrlind> is illuminated.  
 </malfunc>  
 <action>  
 <para> Perform  
 <ctrlind idref="o00042-X-XXX-XXXds1">DS1  
 </ctrlind> testing.  
 <xref posttext="." pretext="Refer to " tableid="t00008-X-XXX-XXXtable2"/>  
 </para>  
 </action>  
 <malfunc label="malfunction"> If  
 <ctrlind idref="o00042-X-XXX-XXXds2">DS2  
 </ctrlind> is illuminated.  
 </malfunc>  
 <action>  
 <para> Perform  
 <ctrlind idref="o00042-X-XXX-XXXds2">DS2  
 </ctrlind> testing.  
 <xref posttext="." pretext="Refer to " tableid="t00008-X-XXX-XXXtable3"/>  
 </para>  
 </action>  
 </checkstep> . . .  
 </testproc>  
 </opcheck-tsproc>  
 </opcheck-tswp>

2. Page-based TM stylesheet output example for <opcheck-tswp> :



## MIL-HDBK-2361D

0001

## MAINTAINER

## ARRESTING GEAR SYSTEM OPERATIONAL CHECKOUT

## INITIAL SETUP:

## Personnel Required

Maintainer - 2

## Equipment Condition

Door 103 is Installed ()

## References

## OPCHECK PROCEDURE 1.

## OPCHECK 1.

## OPERATIONAL CHECKOUT TEST PROCEDURE 1.

## TESTING - BRANCH 1.

## TESTING - BRANCH 2.

1. Make sure door 103 is installed ()
2. Make sure arresting HOOK manual control lever is set to **up**.
3. Read, record and reset nose wheelwell DDI ()

**CONDITION/INDICATION**

No maintenance code exists.

**CORRECTIVE ACTION**

Perform troubleshooting ().

## TESTING - BRANCH 3.

4. If arresting hook is not up, manually raise and latch arresting hook.

**CONDITION/INDICATION**

Arresting hook latches in up position.

**CORRECTIVE ACTION**

Do arresting hook push-pull control assembly rigging or replace push-pull control assembly (0218).

## END OF WORK PACKAGE

0001-1/blank

FIGURE 276. Example of a page-based TM stylesheet output for &lt;opcheck-tswp&gt;.

## 22.10 Diagnostic work package <diagnosticwp>.

The diagnostic work package is used for frame-based presentation only. The work package is used to interactively diagnosis the fault or symptom and direct the maintainer to the corrective action(s). The work package is broken down into six (6) areas initial setup, introductory information, test procedure, obtaining test results, evaluating test results, and link to next action (either corrective or next test). The major work package concepts are discussed in diagnostic with state variables (see Section 22.10.3) and without state variables (see Section 22.10.1).

1. The components of intrusive diagnostic work package <diagnosticwp> are:
  - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - c. Work package initial setup <initial\_setup> (required) (see Section 16.6).
  - d. Warning <warning> (optional – zero or more) (see Section 28.1.1).
  - e. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
  - f. Caution <caution> (optional – zero or more) (see Section 28.1.2).
  - g. Note <note> (optional – zero or more) (see Section 28.1.3).
  - h. General information <geninfo> (optional) (see Section 36.1.4.11).
  - i. System description <sysdesc> and support information (optional) (see Section 22.6).
    - i. Interconnection <interconnect> (optional) (see Section 22.6.2.1) contains diagrams or other means of presenting the electrical and electronic connections between components of the system under test.
    - ii. Test flow <testflow> (optional) (see Section 22.6.2.2) describes the troubleshooting testing flow.
    - iii. Functional dependencies <funcdepend> (optional) (see Section 22.6.2.3) describes the functional dependencies of components that make up the system under test.
    - iv. Schematic drawing <schematic> (optional) (see Section 22.6.2.4) used for schematic drawings included as supporting technical information during a troubleshooting procedure.
    - v. Component locator <comp-locator> (optional) (see Section 22.6.2.5) contains a figure to assist in the components under test location.
    - vi. Harness index <harness-indx> (optional) (see Section 22.6.2.6) is a special index of electrical wiring harnesses, needed due to the extensive interrelated circuitry.
  - j. A choice of testing with or without the use of state variables.
    - i. Diagnostic testing with state variables and components are:
      - I. Initializing state variable <statemanipulation>/<statemanipulation\_alt> (optional – zero or more) (see Section 35.2.3).
      - II. Diagnostic testing with state variables <testwithstate>/<testwithstate-alt> (required – one or more) (see Section 22.10.3).
    - ii. Diagnostic testing (without state variables) <testwithoutstate> (required – one or more) (see Section 22.10.1).
2. The DTD fragment for <diagnosticwp> is graphically depicted:

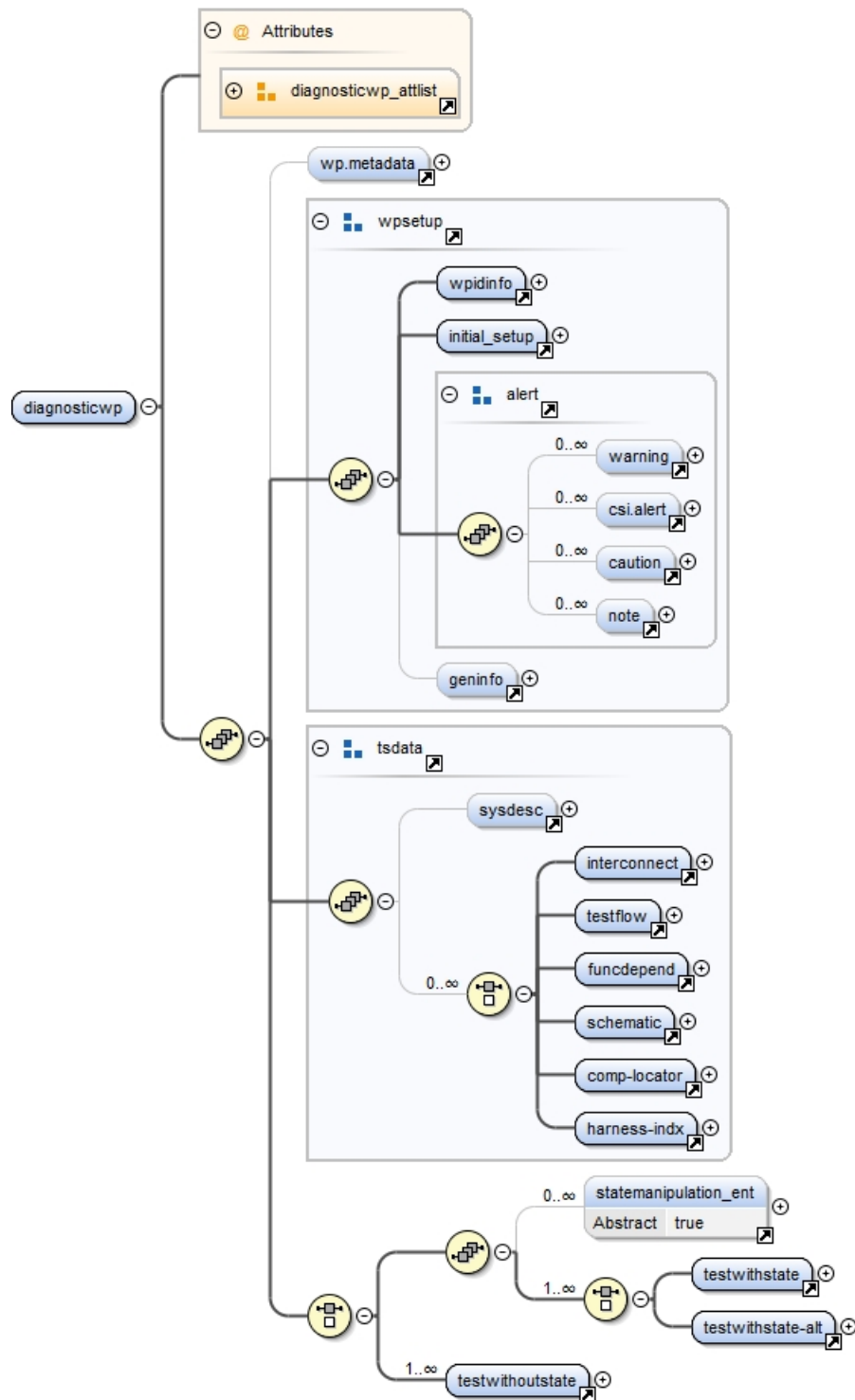


FIGURE 277. Intrusive diagnostic work package DTD hierarchy <diagnosticwp>.

3. The DTD fragment for <diagnosticwp> is:

## MIL-HDBK-2361D

```
<!ELEMENT diagnosticwp (wp.metadata?, %wpsetup;, %tsdata;, (((%statemanipulation_ent;)*, (testwithstate | testwithstate-alt)+ testwithoutstate+))>
```

```
<!ATTLIST diagnosticwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Common attributes for **<diagnosticwp>** are:

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).

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- g. comment** – Change information (optional) (see Section 36.3.12).
- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see 16.3.5).
- s. navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 22.10.1 Diagnostic testing (without state variables) <testwithoutstate>.

System testing (without state variables) is used for frame-based viewers that do not use a logic engine (see Section 35.2). The test is broken into five (5) areas: introductory information (reason for test, necessary schematics, component locator, etc.), test set hookup, test procedure, observed test results, and test result with the next action (identified fault(s), short narrative actions, completed testing, and/or link to corrective action or next test). The only method the maintainer's observed result can be processed (link to the corrective action, brief corrective action instructions, or link to next test or observed test result) by the viewer is through a dialog box. The dialog box will have predefined options, which when the option is selected, links the viewer to the next test or a corrective action. Examples of predefined responses are Yes/No; or Pressure is: <15, 15–50, or >50.

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**22.10.2 Test without state general information.**

Generally, the information layout is the test title, reason for test, introductory information, testing steps, and concluding with an observed test result entered through a dialog box with the selected menu item indicating the next action to perform. Each test can have multiple observed test results. When multiple observed test results are implemented the first observed test result is presented. After the first observed test result is entered, the remaining observed test results (in this test) requires a reference to the next observed test result menu dialog box. An example is an observed test result dialog box is prompted either YES or NO. If the maintainer selects the menu option “YES”, the associated resulting action is a reference to the next observed test result dialog box for “YES”. If the maintainer selects the menu option “NO,” the associated resulting action is a reference to the next observed test result dialog box for “NO.” Thus using multiple observed test results is similar to a logic tree.

1. The components of diagnostic testing (without state variables) **<testwithoutstate>** are:
  - a. Test title **<title>** (optional) (see Section 36.1.1.4).
  - b. Reason for test **<reasonfortest>** (optional) (see Section 22.10.2.1).
  - c. Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
  - d. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
  - e. Caution **<caution>** (optional – zero or more) (see Section 28.1.2).
  - f. Note **<note>** (optional – zero or more) (see Section 28.1.3).
  - g. System description **<sysdesc>** and support information (optional) (see Section 22.6).
  - h. Test set hookup **<hookup>** (optional – zero or more) (see Section 22.6.4). If test set hookup is used test set disconnection is required.
  - i. Test setup steps (optional) and components are either:
    - i. Procedural step **<step1>** (see Section 17.3), **<step1-alt>** (see Section 35.2.1) (required – one or more) with associated figure **<figure>/<figure-alt>** (optional – zero or more) (see Section 31.1.1) and/or associated table **<table>/<table-alt>** (optional – zero or more) (see Chapter 29).
    - j. Observed test results (required – one or more) and components are:
      - i. Binary option dialog box **<simple>** (required) (see Section 22.10.2.3).
      - ii. Multiple option (user defined) dialog box **<multioption>** (required) (see Section 22.10.2.4).
    - k. Test set disconnection **<disconnect>** (optional) (see Section 22.6.3). If test set hookup is used test set disconnection is required.
2. The DTD fragment for **<testwithoutstate>** is graphically depicted:

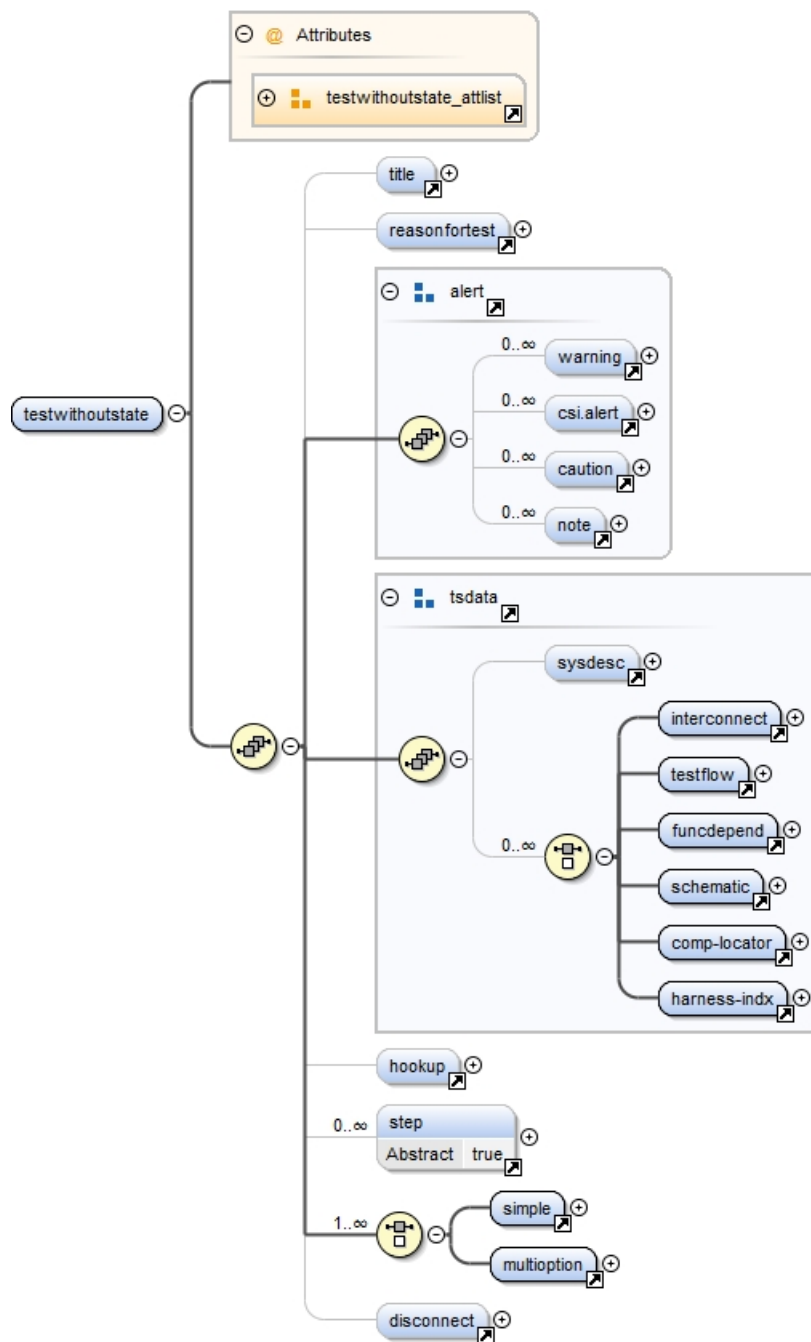


FIGURE 278. Testing (without state variables) DTD hierarchy <testwithoutstate>.

3. The DTD fragment for <testwithoutstate> is:

```
<!ELEMENT testwithoutstate (title?, reasonfortest?, %alert;; %tsdata;;
hookup*, (%step;)*, (simple | multioption)+, disconnect?>
```

```
<!ATTLIST testwithoutstate
```

```
applicable IDREFS #IMPLIED
```

```
assocfig IDREFS #IMPLIED
```

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changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0–99)	“0”
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	“0”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<testwithoutstate>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.10.2.1 Reason for testing **<reasonfortest>**.

The element provides a brief explanation for the testing purpose.

1. The components of reason for testing **<reasonfortest>** are:

- a. Title **<title>** (required) (see Section 36.1.1.4).
- b. Figure table is a group element **<figtab>** (optional) (see Section 36.2.2) and it contains the following components:
  - i. Illustration **<figure>** (see Section 31.1.1) and/or conditional illustration **<figure-alt>** (see Section 35.2.1) (optional – zero or more).
  - ii. Table **<table>** (see Chapter 29) and/or conditional table **<table-alt>** (see Section 35.2.1) (optional – zero or more).
  - iii. Lubrication table **<lubetab>** (see Chapter 29) (optional – zero or more).
- c. Select one of the following information types:
  - i. Narrative paragraphs with descriptive or narrative titled text:
    - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
    - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).



III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).

ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).

2. The DTD fragment for **<reasonfortest>** is graphically depicted:

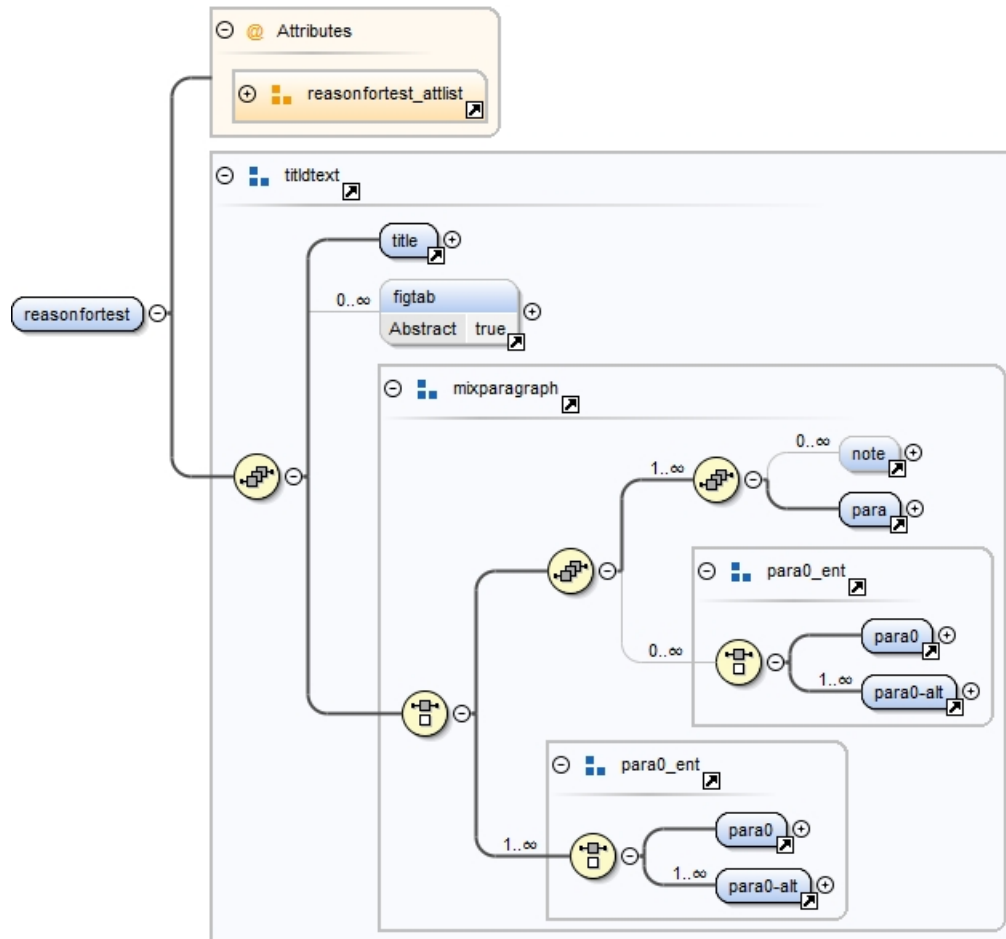


FIGURE 279. Reason for testing DTD hierarchy **<reasonfortest>**.

3. The DTD fragment for **<reasonfortest>** is:

```
<!ELEMENT reasonfortest (%titldtext;)>
<!ATTLIST reasonfortest
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
```

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<reasonfortest>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.10.2.2 Common markup in **<testwithoutstate>**.

Following the **<reasonfortest>**, the element **<testwithoutstate>** allows for the following common markup:

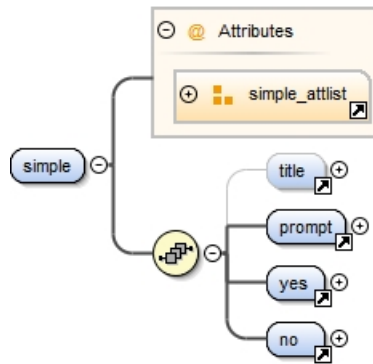
- 1. Alerts in the form of warnings, critical safety items (aircraft only), cautions, and notes. See Section 28.1.1 through Section 28.1.3.
- 2. Systems description and supporting information (see Section 22.6).
- 3. Test equipment hookup steps (see Section 22.6.4).
- 4. Optional figures, tables and procedural steps that provide a test to be performed.

### 22.10.2.3 Observed test result with binary options **<simple>**.

The observed test result with binary options (presented as a dialog box with menu options) provides a simple YES/NO menu option to the prompt, which when selected, provides the next action. The dialog box generally contains a question/prompt with only two menu option responses as positive and negative. The menu option label is determined by the **<answer>** attribute value.

- 1. The components of observed test result with binary options **<simple>** are:
  - a. Dialog title **<title>** (optional) (see Section 36.1.1.4).
  - b. Question/prompt **<prompt>** (required) (see Section 35.3.3.2).
  - c. Yes (positive) response **<yes>** (required). When selected the prescribed action **<resultwithoutstate>** (required) (see Section 22.10.2.5) is performed.
  - d. No (negative) response **<no>** (required). When selected the prescribed action **<resultwithoutstate>** (required) (see Section 22.10.2.5) is performed.
- 2. The DTD fragment for **<simple>** is graphically depicted:

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**FIGURE 280. Observed test result with binary options DTD hierarchy <simple>.**

3. The DTD fragment for **<simple>** is:

```
<!ELEMENT simple (title?, prompt, yes, no)>
<!ATTLIST simple
 id ID #IMPLIED
 answer (yesno | truefalse | passfail) "yesno">

<!ELEMENT yes (resultwithoutstate)>

<!ELEMENT no (resultwithoutstate)>
```

4. Unique attribute for **<simple>** is **answer** – Specifies the binary buttons labels (optional). The possible values are **yesno** for YES and NO buttons; **truefalse** for TRUE and FALSE buttons; and **passfail** for PASS and FAIL buttons. The default value is **yesno**.
5. Common attribute for **<simple>** is **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

#### 22.10.2.4 Observed test result with predefined options <multioption>.

The observed test result with predefined options (presented as a dialog box with menu options) provides an author specified menu option label, which when selected provides the next action. The dialog box generally contains a question/prompt with two or more predefined (by the author) response options.

1. The components of observed test result with predefined options **<multioption>** are:
  - a. Dialog title **<title>** (optional) (see Section 36.1.1.4).
  - b. Question/prompt **<prompt>** (required) (see Section 35.3.3.2).
  - c. Predefined menu option response **<option>** (required – two or more). The **<option>** contains either:
    - i. A short textual **<text>** explanation of the option (see Section 36.1.1.19) or:
    - ii. When selected the prescribed action **<resultwithoutstate>** (required) (see Section 22.10.2.5) is performed.
2. The DTD fragment for **<multioption>** is graphically depicted:

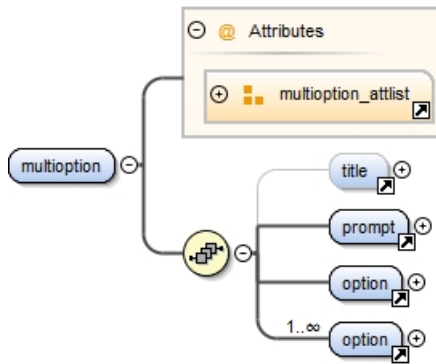


FIGURE 281. Observed test result with predefined options DTD hierarchy <multioption>.

3. The DTD fragment for <multioption> is:

```

<!ELEMENT multioption (title?, prompt, option, option+)>
<!ATTLIST multioption
 id ID #IMPLIED>

```

4. Common attributes:

- a. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

#### 22.10.2.5 Test results (without state variables) <resultwithoutstate>.

The element contains the next action resulting from the response from the observed test (either a dialog box option as binary or predefined). When the resulting action specifies further testing a link is provided to another diagnostic work package <diagnosticwp>, another test (without state variable) <testwithoutstate> (within the same work package), or observed test (either binary or predefined option). The link generally does not require a prompt (unless specified), but seamlessly presents the next testing component. The author does not infer the following test is processed, but always provides a link. Using a link provides a consistent method for identifying the next test.

#### 22.10.2.6 Tagging corrective actions.

##### 22.10.2.6.1 Simple corrective action.

When the resulting action specifies a corrective action either a narrative or link is provided. If the corrective action is short and simple the step(s) (<step1> or <para>) are developed. An example is “Call maintenance supervisor.”

##### 22.10.2.6.2 Complex corrective actions.

When the corrective action has different initial setup requirements and/or is complex, a separate and referenced <link> maintenance work package is developed. In either situation, the author needs to define the identified fault code(s) <fault> and indicate that testing is completed <completed\_test>.

#### 22.10.2.7 Result without state structure.

1. The components of test results (without state variables) <resultwithoutstate> are:

- a. Fault code <fault> (optional – zero or more) (see Section 35.1.1.7.5).

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- b. Disconnect test set **<disconnect>/<disconnect-alt>** (optional – zero or more) (see Section 22.6.3).
  - c. Action (required) component is either:
    - i. Link for further testing **<link>** (required) (see Section 33.2.3) or,
    - ii. Isolated the fault **<para>** (required) (see Section 36.1.1.6) which is optionally followed by either
      - I. Link to the corrective action maintenance work package **<link>** (optional) (see Section 33.2.3).
      - II. Test completion action **<completed\_test>** (optional) (see Section 22.10.2.8).
2. The DTD fragment for **<resultwithoutstate>** is graphically depicted:

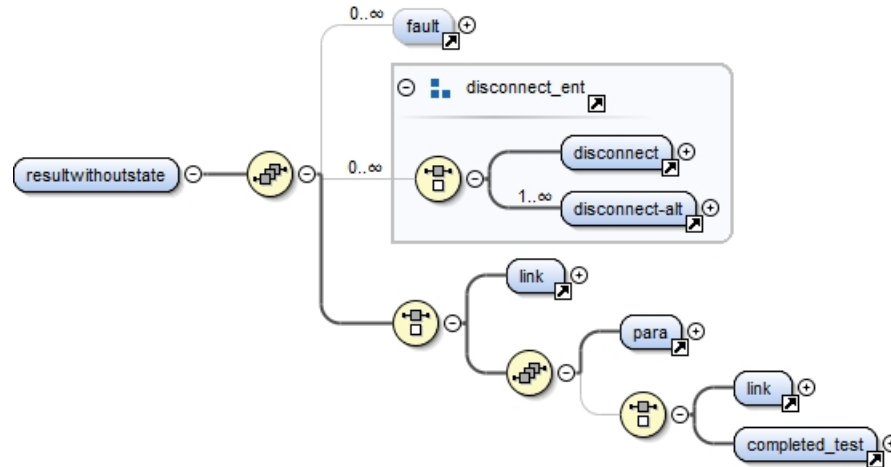


FIGURE 282. Test result (without state variables) DTD hierarchy **<resultwithoutstate>**.

3. The DTD fragment for **<resultwithoutstate>** is:

```
<!ELEMENT resultwithoutstate (fault*, (%disconnect_ent;)*, (link | (para,
(link | completed_test)?))>
```

### 22.10.2.8 Completed test **<completed\_test>**.

Indicates the test is completed and provides, if applicable, correct actions or statement to notify the supervisor.

1. The components of completed test **<completed\_test>** are procedural step **<step1>** (see Section 17.3), **<step1-alt>** (see Section 35.2.1) (optional – zero or more) with associated figure **<figure>/<figure-alt>** (optional – zero or more) (see Section 31.1.1) and/or associated table **<table>/<table-alt>** (optional – zero or more) (see Chapter 29).
2. The DTD fragment for **<completed\_test>** is graphically depicted.

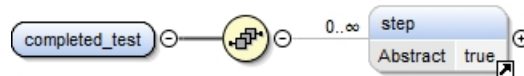


FIGURE 283. Completed test DTD hierarchy **<completed\_test>**.

3. The DTD fragment for **<completed\_test>** is:

```
<!ELEMENT completed_test (%step;)*>
```

### 22.10.2.9 XML document instance fragment and output for <testwithoutstate>.

The XML instance and its stylesheet output for a <testwithoutstate> is provided below.

1. Example of an XML document instance fragment for <testwithoutstate>:

```
<diagnosticwp airforce="no" army="no" deletewp="no" frame="yes" insertwp="no" marines="no"
navy="no" tocentry="2" wpno="T00001-XX-XXXX-XXX">
 <wpidinfo>
 <maintlvl level="field"/>
 <title>ENGINE CRANKS SLOWLY
 </title>
</wpidinfo>
<initial_setup>
 <testeqp>
 <testeqp-setup-item>
 <name>1553B Test Equipment
 </name>
 <itemref>
 <link application="frame" linkaction="prompt" linktype="goto" popup="no" xlink:href="S00032-XX-
XXXX-XXX#testset1553b" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
 </itemref>
 </testeqp-setup-item>
</testeqp>
<ref>
 <ref-setup-item>
 <extref docno="TM 55-1520-240-23"/>
 </ref-setup-item>
</ref>
</initial_setup>
<testwithoutstate id="T00001-XX-XXXX-XXX-test1">
 <step1>
 <para>Have pilot perform ground run at 225 RPM, flat pitch.
 </para>
 </step1>
 <step1>
 <para>Measure ground track on both rotors
 <extref docno="TM 55-1520-240-23" pretext="(" posttext=")"/> .
 </para>
 </step1>
 <simple answer="yesno">
 <prompt>Were blades within $\frac{3}{8}$ inch of each other?
 </prompt>
 <yes>
 <resultwithoutstate>
 <link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test2" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
 </resultwithoutstate>
 </yes>
 <no>
 <resultwithoutstate>
 <link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test7" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink" xrefstype="test"/>
 </resultwithoutstate>
 </no>
```

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```

</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test2">
<step1>
<para>Have pilot establish stable hover tune VIBREX to 225 RPM.
</para>
</step1>
<step1>
<para>Record forward rotor vertical and lateral and AFT rotor vertical and
lateral vibrations in IPS and clock angles.
</para>
</step1>
<step1>
<para>Record hover track on both rotors.
</para>
</step1>
<simple answer="yesno">
<prompt>Were all measured vibration level within ranges of table 2-1.3?
</prompt>
<yes>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test9" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test3" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink" xrefype="test"/>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test3">
<step1>
<para>Land helicopter.
</para>
</step1>
<step1>
<para>Shut down engines check recorded hover blade track.
</para>
</step1>
<simple answer="yesno" id="T00001-XX-XXXX-XXX-test3">
<prompt>Were blades within $\frac{1}{2}$ inch of each other?
</prompt>
<yes>
<resultwithoutstate>
<para>Use pitch link adjustment = 0 marks for input to PC Pitch Link-Lateral
Program.
</para>
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-XX-XXXX-XXX-test4"
popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Continue
</prompt>

```

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```

</link>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>
<para>Calculate pitch link adjustment to bring blades within $\frac{1}{2}$ inch of each
other. Use calculated adjustment as input to PC Pitch Link-Lateral Program.
</para>
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-XX-XXXX-XXX-test4"
popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Continue
</prompt>
</link>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test4">
<step1>
<para>Using PC Pitch Link-Lateral Program, determine VIBEX tip weight
correction to compensate for any pitch link adjustment.
</para>
</step1>
<step1>
<para>Adjust tip weights as necessary
<extref docno="TM 55-1520-240-23" pretext="(" posttext=")"/>.
</para>
</step1>
<step1>
<para>Have pilot establish stable hover.
</para>
</step1>
<step1>
<para>Measure forward and AFT rotor vibrations.
</para>
</step1>
<simple answer="yesno">
<prompt>Are all vibration levels within ranges of table 2-1.3?
</prompt>
<yes>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test9" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test5" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test5">

```



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```

<simple answer="yesno">
<prompt>Are recorded vertical vibration levels within ranges of table 2-1.3?
</prompt>
<yes>
<resultwithoutstate>
<para>Adjust VIBEX blade tip weights
<extref docno="TM 55-1520-240-23" pretext="(" posttext=")"/> to correct lateral vibration
using latest hover input data in PC Pitch Link-Lateral Program. Make necessary
adjustments.
</para>
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-XX-XXXX-XXX-test2"
popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Perform this task again beginning with stable hover.
</prompt>
</link>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test6" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test6">
<step1>
<para>Check pitch link bearings.
</para>
</step1>
<simple answer="yesno">
<prompt>Are any pitch link bearings worn?
</prompt>
<yes>
<resultwithoutstate>
<para>Replace pitch links found to have worn bearings.
</para>
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-XX-XXXX-XXX-test2"
popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Perform this task again from the beginning.
</prompt>
</link>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>
<para>Inspect rotor head assy.
<link application="frame" linkaction="prompt" linktype="goto" popup="no" xlink:href="TM 55-1520-
240-23" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<pretext>Reference
</pretext>
<prompt>TM 55-1520-240-23
</prompt>
</link>

```

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```

</para>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test7">
<step1>
<para>Shut down engines.
</para>
</step1>
<step1>
<para>Adjust pitch links to bring blades within $\frac{3}{8}$ inch of each other.
</para>
</step1>
<step1>
<para>Perform ground run again.
</para>
</step1>
<step1>
<para>Check ground track.
</para>
</step1>
<simple answer="yesno">
<prompt>Are blades within $\frac{3}{8}$ inch of each other?
</prompt>
<yes>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test2" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test6" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
<completed_test/>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test9">
<step1>
<para>Have pilot established 130 knot cruise profile.
</para>
</step1>
<step1>
<para>Record FWD vertical and lateral and AFT vertical and lateral vibrations in
IPS and clock angle record in-flight track on both rotors.
</para>
</step1>
<simple answer="yesno">
<prompt>Are vibration levels with ranges of Table 2-1.3?
</prompt>
<yes>

```

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```

<resultwithoutstate>
<para>1/Rev vibration levels are satisfactory.
</para>
<completed_test/>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test10" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test10">
<step1>
<para>Land helicopter shut down engines.
</para>
</step1>
<step1>
<para>Check 130 knot blade track.
</para>
</step1>
<simple answer="yesno">
<prompt>Were blades within $\frac{1}{2}$ inch of each other?
</prompt>
<yes>
<resultwithoutstate>
<para>Use "0" marks pitch link adjustment as input to Pitch Link-Lateral
Program.
</para>
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-XX-XXXX-XXX-test11"
popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Continue
</prompt>
</link>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>
<para>Calculate pitch link adjustment to bring blades within $\frac{1}{2}$ inch of each
other at 130 knots. Use calculated adjustment as input to PC Link-Lateral
Program.
</para>
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-XX-XXXX-XXX-test11"
popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Continue
</prompt>
</link>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test11">

```

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```

<step1>
<para>Using the pitch link-lateral program.
</para>
</step1>
<step1>
<para>Determine VIBEX tip weight correction to compensate for any pitch link
adjustment and the recorded lateral imbalance at 130 knots adjust VIBEX tip
weights
<extref docno="TM 55-1520-240-23" pretext="(" posttext=")"/>.
</para>
</step1>
<step1>
<para>Have pilot establish 130 knot cruise profile record blade track and
measure vibration.
</para>
</step1>
<simple answer="yesno">
<prompt>Are vertical and lateral vibrations within range of table 2-1.3?
</prompt>
<yes>
<resultwithoutstate>
<para>1/Rev vibration levels are satisfactory.
</para>
<completed_test/>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test12" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test12">
<simple answer="yesno">
<prompt>Are recorded vertical vibration levels within range of table 2-1.3?
</prompt>
<yes>
<resultwithoutstate>
<para>Adjust VIBEX blade tip weights (TM 55-1520-240-23) to correct lateral
vibration. Using latest 130 knot VIB input data in PC Pitch Link-Lateral
Program. Make necessary adjustments.
</para>
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-XX-XXXX-XXX-test9"
popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink" xref-type="test">
<prompt>Perform this task again beginning at 130 knot cruise.
</prompt>
</link>
</resultwithoutstate>
</yes>
<no>
<resultwithoutstate>

```

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```

<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test13" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink" xrefype="test"/>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test13">
<step1>
<para>Land helicopter and shut down engines.
</para>
</step1>
<step1>
<para>Observe recorded blade track at 130 knots.
</para>
</step1>
<simple answer="yesno">
<prompt>Did any blade climb or dive?
</prompt>
<yes>
<resultwithoutstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test14" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</resultwithoutstate>
</yes>
</no>
<resultwithoutstate>
<para>Inspect rotor head assy.
<link application="frame" linkaction="prompt" linktype="goto" popup="no" xlink:href="TM 55-152-
240-23" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink" xrefype="document">
<pretext>Reference
</pretext>
<prompt>TM 55-152-240-23
</prompt>
</link>.
</para>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
<testwithoutstate id="T00001-XX-XXXX-XXX-test14">
<simple answer="yesno">
<prompt>Is trim tab set correctly as stenciled?
</prompt>
<yes>
<resultwithoutstate>
<para>
<link linkaction="prompt" linktype="goto" local="M00032-XX-XXXX-XXX" popup="no" xlink:type=
"simple" xrefype="wp">
<prompt>Replace blade
</prompt>
</link>
</para>
<completed_test/>
</resultwithoutstate>

```

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```

</yes>
<no>
<resultwithoutstate>
<para>Reset trim tab with tab bending tool.
</para>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-XX-XXXX-XXX-
test9" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink" xref="test">
<prompt>Perform this task again beginning at 130 knot cruise.
</prompt>
</link>
</resultwithoutstate>
</no>
</simple>
</testwithoutstate>
</diagnosticwp>

```

2. Frame-based TM stylesheet output example for `<testwithoutstate>`:

ENGINE CRANKS SLOWLY

1. Have pilot perform ground run at 225 RPM, flat pitch.  
 2. Measure ground track on both rotors ([TM 55-1520-240-23](#)).

Were blades within  $\frac{3}{8}$  inch of each other?

YES NO

FIGURE 284. XML sample simple dialog frame-layout.

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**ENGINE CRANKS SLOWLY**

1. Land helicopter.  
2. Shut down engines check recorded hover blade track.

Were blades within ½ inch of each other?

**YES** **NO**

Use pitch link adjustment = 0 marks for input to PC Pitch Link-Lateral Program.

[Continue](#)

FIGURE 285. XML sample simple dialog with link prompt frame-layout.

ENGINE CRANKS SLOWLY

1. Check pitch link bearings.

Are any pitch link bearings worn?

YES NO

Inspect rotor head assy. [TM 55-1520-240-23.](#)

**TEST COMPLETED**

FIGURE 286. XML sample simple dialog with test completed frame-layout.

3. FIGURE 287. illustrates the XML fragment diagnostic flow. The figure shows how diagnostic prompts can be reused and how each diagnostic prompt is linked to the next diagnostic prompt (determined from answer selected [YES or NO]) until diagnostics testing is completed.



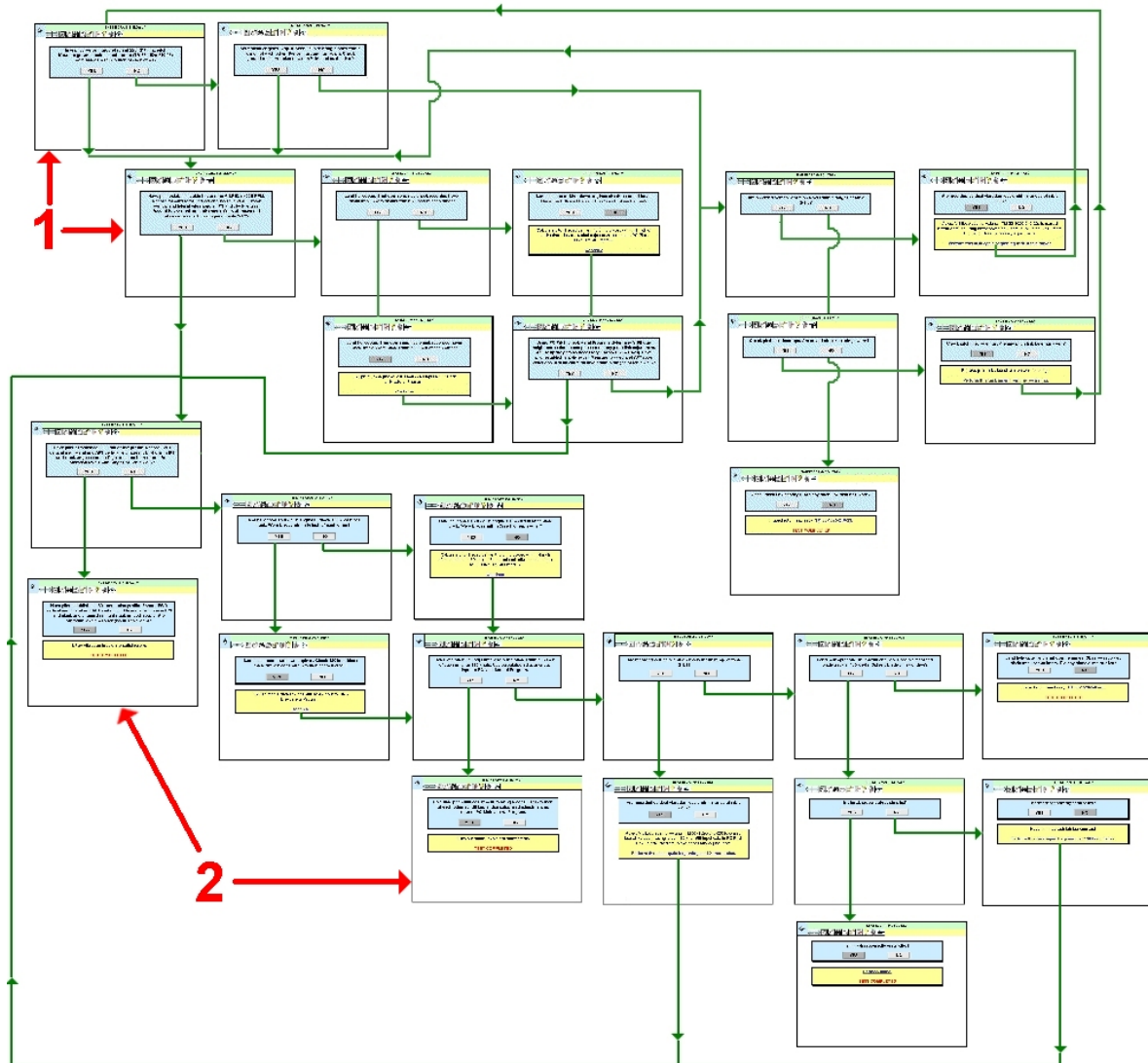


FIGURE 287. Example XML fragment diagnostic flow.

### 22.10.3 Diagnostic testing with state variables <testwithstate>.

The testing (with state variables) is used for frame-based viewers that require a logic engine (see Section 35.2). The test is broken into six (6) areas: introductory information (reason for test, necessary schematics, component locator, etc.), test set hookup, test procedure, observed test or BIT/BITE/Automated Test Equipment (ATE) output results, test results evaluation leading to next action (identified fault(s), short narrative actions, completed testing, and/or link to corrective action or next test), and any follow-on maintenance task. A key concept in the diagnostic work package is after each evaluated test result, the next action (either another test or corrective action) is through a link. The assumption should never be the next action following the evaluation is performed, but a link to that action needs to occur (even if the next test does follow the test).

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**22.10.3.1 Setting of variables.**

Depending on the diagnostic testing capabilities either ATE can be connected to the IETM and/or observed results are used to set the state table variables, which are then evaluated for the next action. When obtaining information from the user, this method has more robust dialog boxes (i.e., fill-in dialog and variable within dialog prompts) available to obtain the test result information. The dialog box may have predefined options or defined depending on the situation (variable usage), which when the option is selected, links the viewer to the next test or a corrective action. When obtaining information from ATE, the diagnostic resulting information is rendered to the IETM with little or no maintainer intervention. Generally, the information layout is the test title, reason for test, introductory information, testing steps, result from observed or ATE responses, evaluating results, and linking to the next action.

**22.10.3.2 Test with state <testwithstate> structure.**

1. The components of diagnostic testing (with state variables) <testwithstate> are:
  - a. Precondition check <precond> (optional) (see Section 29.1.1.1).
  - b. Test title <title> (optional) (see Section 36.1.1.4).
  - c. Reason for test <reasonfortest> (optional) (see Section 22.10.2.1).
  - d. Setting (manipulating) state table variables <statemanipulation>/<statemanipulation-alt> (optional – zero or more) (see Section 35.2.3).
  - e. Warning <warning> (optional – zero or more) (see Section 28.1.1).
  - f. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
  - g. Caution <caution> (optional – zero or more) (see Section 28.1.2).
  - h. Note <note> (optional – zero or more) (see Section 28.1.3).
  - i. Test set hookup <hookup>/<hookup-alt> (optional – zero or more) (see Section 22.6.4 how to develop a task). If test set hookup is used test set disconnection is required.
  - j. Conduct diagnostic testing including one or more of the following components:
    - i. Interaction with user to obtain diagnostic testing information <interaction> (see Section 36.1.4.9).
    - ii. Assistance in finding a components location <comp-locator> (see Section 22.6.2.5).
    - iii. Initializing the BIT/BITE or integrated test equipment <diagnostic\_initial>/<diagnostic\_initial-alt>.
    - iv. Perform BIT/BITE or integrated test equipment diagnostic testing(s) <diagnostic\_group> (see Section 22.10.3.2.3).
    - v. Evaluate diagnostic test result <evaluate> (see Section 22.10.3.2.5) to determine next action.
  - k. Procedural step <step> (see Section 17.3) (optional — one or more).
  - l. Evaluate diagnostic test result <evaluate> (see Section 22.10.3.2.5) to determine next action.
  - m. Follow-on maintenance task <followon.maintsk> (optional) are the instructions for a maintenance condition which is accomplished sometime following the completion of a specific task to clean up or undo actions performed during the task (see 23.7.1).
  - n. The element <disconnect> is used for any test set disconnection procedure.
    - i. The components for <disconnect> are:
      - I. Precondition check <precond> (optional) (see Section 29.1.1.1).

II. Paragraph **<para>** (see Section 36.1.1.6).

2. The DTD fragment for **<testwithstate>** is graphically depicted:

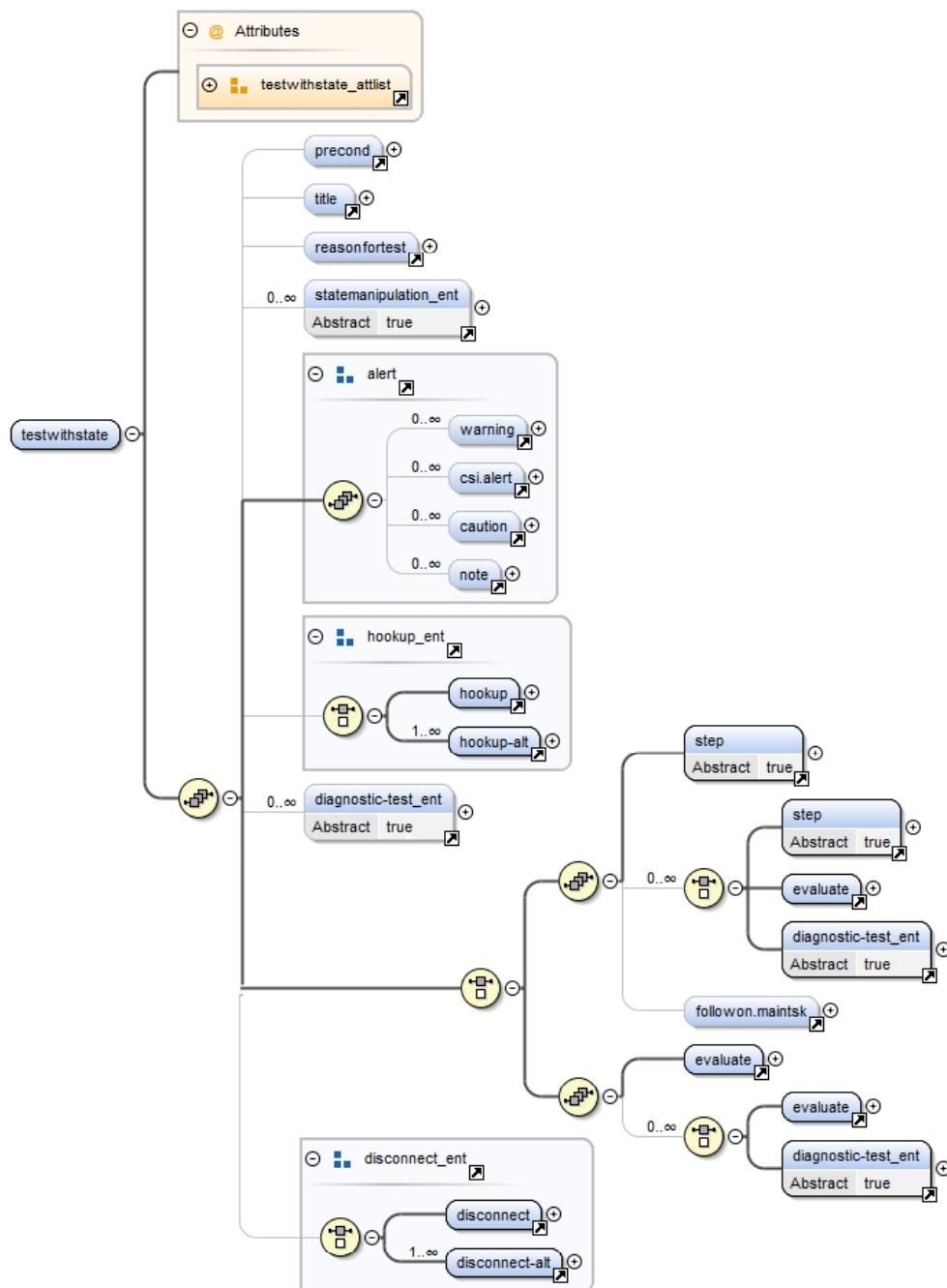


FIGURE 288. Testing (with state variables) DTD hierarchy **<testwithstate>**.

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3. The DTD fragment for **<testwithstate>** is:

```

<!ELEMENT testwithstate (precond?, title?, reasonfortest?, %statemanipulation_ent;*), %alert;, (%hookup_ent;)?, (%diagnostic-test_ent;)*, ((%step;, (%step; | evaluate | %diagnostic-test_ent;)*, followon.maintsk?) | (evaluate, (evaluate | %diagnostic-test_ent;)*)), (%disconnect_ent; %disconnect_ent;)?>

<!ATTLIST testwithstate
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Common attributes for **<testwithstate>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

22.10.3.2.1 Automatic Test Equipment (ATE) Input Parameters **<sendparameter>**

The element provides a method to pass a parameter value to the ATE or external software. Each parameter value requires a separate **<sendparameter>**. The input value can be either static (fixed valued) (**<string>**) or dynamic (state variable) (**<variableref>**). The information can be input by referenced order or name pair (thus order may not be important). The name pair requires each send parameter to use the external software parameter name (**<name>**) and value (either **<variableref>** or **<string>**). An example using a name pair is an ATE needing the number of cylinders (parameter name is “CYL” and value is 12) the XML markup is:

```

<sendparameter>
<name>CYL
</name>
<string>12

```

`</string>`  
`</sendparameter>`.

The format of the information is dependent on the interface between the IETM viewer and the ATE (commonly referred as middle-ware).

1. The components of ATE input parameters `<sendparameter>` are:
  - a. Parameter name `<name>` (optional) (see Section 36.1.4.18).
  - b. ATE input value is either:
    - i. Dynamic value (state variable) `<variableref>` (required) (see Section 35.1.1.5).
    - ii. Static value `<string>` (required) (see Section 35.1.1.7.2).
2. The DTD fragment for `<sendparameter>` is graphically depicted:

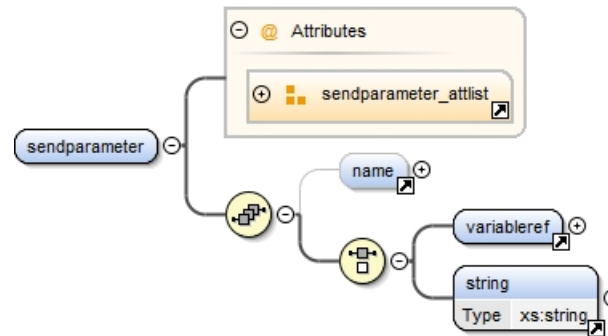


FIGURE 289. ATE input parameters DTD hierarchy `<sendparameter>`.

3. The DTD fragment for `<sendparameter>` is:

```
<!ELEMENT sendparameter (name?, (variableref | string))>
<!ATTLIST sendparameter
 mode CDATA #IMPLIED>
```

### 22.10.3.2.2 Automatic Test Equipment (ATE) Output Parameter `<receiveparameter>`.

The element provides a method to receive a parameter value back from the ATE or external software. Each receiving parameter value requires a separate `<receiveparameter>`. The referenced state variable name will store the received values (within the logic engine) in the order provided. The ATE test results value is generally used to determine the next action to perform during diagnostics (determined using the `<evaluate>` element).

1. The component of ATE output parameter `<receiveparameter>` is the state variable reference `<variableref>` (required) (see 22.10.3.2.2) to store the returned value.
2. The DTD fragment for `<receiveparameter>` is graphically depicted:

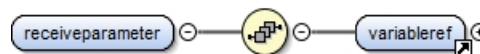


FIGURE 290. ATE output parameters DTD hierarchy `<receiveparameter>`.

3. The DTD fragment for `<receiveparameter>` is:
 

```
<!ELEMENT receiveparameter (variableref)>
```

### 22.10.3.2.3 Grouped Automatic Test Equipment (ATE) Testing <diagnostic\_group>.

The element provides the information to execute one or more external software ATE application(s). The external application generally returns diagnostic test results <receiveparameter> to state variables, which are used to evaluate the weapon system condition. If some maintainer intervention is required before executing the external software ATE application, then the IETM will prompt (using <message>) the maintainer on the required actions (i.e., turn power on, connect cable, etc.). The <diagnostic\_group> allows multiple external diagnostic tests <diagnostic> to be performed (i.e., each cylinder) and defines common input parameters that are set and reused for each diagnostic test within the group.

1. The components of grouped ATE testing <diagnostic\_group> are:
  - a. Preparatory user message <message> (optional) (see Section 35.3.7.19).
  - b. Common input parameter(s) to ATE <sendparameter> (optional – zero or more) (see Section 22.10.3.2.1).
  - c. Execute ATE diagnostic(s) <diagnostic> (required – one or more) (see Section 22.10.3.2.4).
2. The DTD fragment for <diagnostic\_group> is graphically depicted.

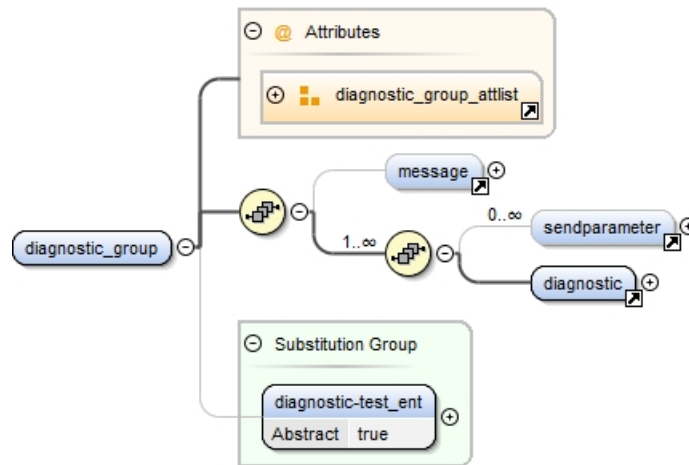


FIGURE 291. Grouped ATE testing DTD hierarchy <diagnostic\_group>.

3. The DTD fragment for <diagnostic\_group> is:

```
<!ELEMENT diagnostic_group (message?, (sendparameter*, diagnostic)+)>

<!ATTLIST sendparameter
 action (prompt | immediate) #REQUIRED>
```

4. Below is an example of setting common input parameters for engine cylinder testing. Each engine cylinder needs to be checked to determine if the correct compression ratio is being maintained. The common input parameters are set with the minimum and maximum compression ratio for each engine cylinder. The unique information is the engine cylinder to be tested and the storage of each cylinder test result.

```
<!-- ENTITY CylinderRatio PUBLIC "-//Engine Company//ENTITY Cylinder Compression Ration
Diagnostic Test Build 4712//EN" "cylratio.exe">...
<diagnostic-group action="immediate">
<sendparameter>
<name>minratio
</name>
<string>10.0
```

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```

</string>
</sendparameter>
<sendparameter>
<name>maxratio
</name>
<string>16.0
</string>
</sendparameter>
<diagnostic testname="Cylinder_Compression_Ratio" application="CylinderRatio">
<desc>Check a single engine cylinder for compression ration
</desc>
<sendparameter>
<name>CYL
</name>
<string>1
</string>
</sendparameter>
<receiveparameter>
<variableref name="Check Cylinder 1" >
</receiveparameter>
</diagnostic> . . .
<diagnostic testname="Cylinder_Compression_Ratio" application="CylinderRatio">
<desc>Check a single engine xylinder for compression ratio
</desc>
<sendparameter>
<name>CYL
</name>
<string>16
</string>
</sendparameter>
</receiveparameter>
</diannostic>
</diagnostic-group>

```

#### 22.10.3.2.4 Automatic Test Equipment (ATE) Testing <diagnostic>

The element is used to execute ATE software and receive test results to be evaluated for next action. Each test has a brief description of the test to be performed and is used for documentation and/or shown to the maintainer for information. The testing requires an interface (middle-ware) between the IETM viewer and the ATE. Any additional parameter(s) may be sent to the testing equipment (these are in addition to the parameters defined in **<diagnostic\_group>** to state variable(s) (in sequential order received) for evaluation. The external software application for testing is defined using the attributes **testname**, **application**, **protocol**, **mfr**, and **model** (see attribute definition for usage). The only required information is the test name that can be used by the middle-ware to determine how to execute the diagnostic test and information that is returned to the IETM logic engine.

1. The components of ATE testing **<diagnostic>** are:
  - a. ATE diagnostic test description for documentation **<desc>** (optional) (see Section 36.1.4.16).
  - b. Input parameter(s) to ATE **<sendparameter>** (optional – zero or more) (see Section 22.10.3.2.1).
  - c. Output result parameters **<receiveparameter>** (required – one or more) (see Section 22.10.3.2.2).
2. The DTD fragment for **<diagnostic>** is graphically depicted.

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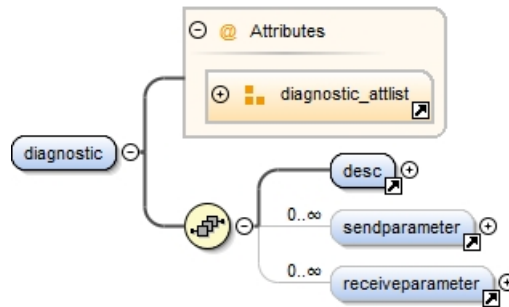


FIGURE 292. ATE testing DTD hierarchy &lt;diagnostic&gt;.

## 3. The DTD fragment for &lt;diagnostic&gt; is:

```
<!ELEMENT diagnostic (desc, sendparameter*, receiveparameter*)>
```

```
<!ATTLIST diagnostic
```

applicable	IDREFS	#IMPLIED
application	ENTITY	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
mfr	CDATA	#IMPLIED
model	CDATA	#IMPLIED
protocol	CDATA	#IMPLIED
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
testname	CDATA	#REQUIRED>

## 4. Unique attributes for &lt;diagnostic&gt; is:

- a. **application** (optional) – References to the external software application (using the reference to the ENTITY definition) to interface the IETM with the ATE (optional).
- b. **mfr** (optional) – The ATE manufacturer name or code (optional).
- c. **model** (optional) – The ATE model number (optional).
- d. **protocol** (optional) – The interface or protocol to communicate with the ATE (optional).
- e. **testname** (required) – The ATE test name that can be used for identification only or by the IETM middle-ware to determine the test execute.

## 5. Common attributes for &lt;diagnostic&gt; are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).



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- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.10.3.2.5 Evaluate Test Result State Variable(s) <evaluate>.

The element provides the capability to evaluate the system condition through user interaction or returned test conditions from an ATE, which ultimately determines the next test or maintenance action that is performed (accomplished through a link reference). The evaluation has three methods, IF-THEN-ELSE, loop FOR-NEXT, and loop WHILE. The evaluation or testing to be performed will determine the method. The first method is IF-THEN-ELSE, which is when a state variable(s) has been assigned a value and is evaluated against the predefined expression. If the expression returns TRUE the prescribed action is performed, otherwise the ELSE action is performed. The second method is loop FOR-NEXT, which is when a number of iterations are performed on a set of actions or tests. The final method is loop WHILE, which is when the a set of actions or tests are continuously performed while an expression evaluates to TRUE and will only exit when the expression returns FALSE. The author should take care when using the loop WHILE to ensure that the test does not enter an endless loop.

1. The components of evaluating test result state variables <evaluate> are (one is required):
  - a. Evaluate state variable information to determine the next action <if> (see Section 22.10.3.2.6).
  - b. Execute a loop action(s) a specified number of iterations <loopfor> (see Section 22.10.3.3).
  - c. Execute a loop action(s) while evaluated expression is true <loop> (see Section 22.10.3.3.6).
2. The DTD fragment for <evaluate> is graphically depicted.

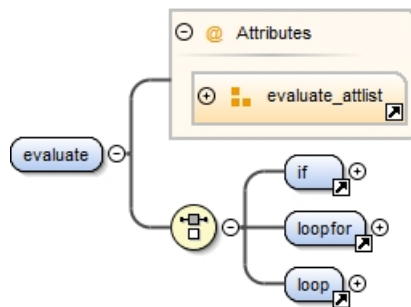


FIGURE 293. Evaluate test result state variables DTD hierarchy <evaluate>.

3. The DTD fragment for <evaluate> is:

```
<!ELEMENT evaluate (if | loopfor | loop)>
```

```
<!ATTLIST evaluate>
```

```
applicable
```

```
IDREFS
```

```
#IMPLIED
```

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assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0–99)	“0”
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	“0”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<evaluate>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 22.10.3.2.6 Evaluate IF Condition <if>.

The IF condition evaluates the user dialog response or ATE test result state variables in a predefined expression using the logic engine. When an expression evaluates to TRUE, the THEN action is performed. When an expression evaluates to FALSE, each ELSE-IF (if applicable) is evaluated until a TRUE condition is located or, when all ELSE-IF evaluated expressions are FALSE, the ELSE action is performed. When no ELSE action is specified (not recommended), the IETM viewer executes next command after the IF condition. The usage of ELSE-IF is similar to a CASE statement in a programming language.

1. The components of evaluate IF condition **<if>** are:

- a. Conditional expression that is evaluated as TRUE or FALSE to determine next action **<expression>** (required) (see Section 35.2.1.2).
- b. Actions after a conditional expression is TRUE **<then>** (required) (see Section 22.10.3.2.7).
- c. Nested IF condition when previous conditional expression(s) is FALSE **<elseif>** (optional – zero or more) (see Section 22.10.3.2.7.5).
- d. Actions after all conditional expressions are FALSE **<else>** (optional) (see Section 22.10.3.2.8).

2. The DTD fragment for **<if>** is graphically depicted.

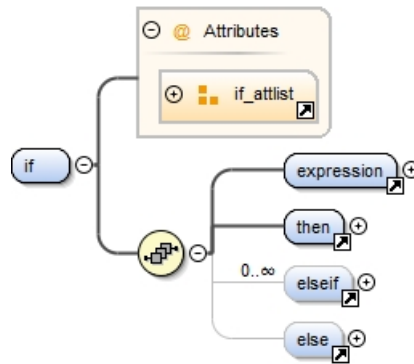


FIGURE 294. Evaluate IF condition DTD hierarchy &lt;if&gt;.

3. The DTD fragment for <if> is:

```
<!ELEMENT if (expression, then, elseif*, else?)>
 <!ATTLIST if
 id ID #IMPLIED>
```

4. Common attributes for <if> is:

- a. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

An XML markup (with comments) example using the IF condition is shown below.

```
<!-- EXECUTES THE ATE TEST FOR Cylinder Compression Ratio FOR AN ENGINE AND CAPTURES
THE RESULTS IN THE STATE VARIABLE Test Result. -->
<diagnostic-group action="immediate">
 <diagnostic testname="Cylinder_Compression_Ratio">
 <desc>Check a single engine cylinder for compression ratio
 </desc>
 <receiveparameter>
 <variableref name="Test Result"/>
 </receiveparameter>
 </diagnostic>
</diagnostic-group>
<if>
 <!-- CHECKS IF THE ATE TEST RESULT RETURNS ENGINE CYLINDER COMPRESSION RATIO
 IS OK. -->
 <expression>
 <variableref name="Test Result"/>
 <eq>
 <string>OK
 </string>
 </expression>
 <!-- ENGINE CYLINDER COMPRESSION RATIO IS OK, THEN LINK TO TEST NODE WITH ID
 test0043 FOR NEXT POSSIBLE FAULT. -->
 <then>
 <resultwithstate>
 <link application="frame" linkaction="immediate" linktype="goto" popup="no" xlink:href="test0043"
 xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
 </resultwithstate>
 </then>
```

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```

<elseif>
<!-- CHECKS IF THE ATE TEST RESULT RETURNS ENGINE CYLINDER COMPRESSION RATIO
IS POSSIBLE ERROR. -->
<expression>
<variableref name="Test Result">
<eq>
<string>POSSIBLE
</string>
</expression>
<!-- ENGINE CYLINDER COMPRESSION RATIO IS POSSIBLE ERROR, THEN LINK TO TEST
NODE WITH ID test0024 FOR MORE DETAILED CYLINDER TESTING. -->
<then>
<resultwithstate>
<link application="frame" linkaction="immediate" linktype="goto" popup="no" xlink:href="test0024"
xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</resultwithstate>
</then>
</elseif>
<!-- CHECKS IF THE ATE TEST RESULT RETURNS ENGINE CYLINDER COMPRESSION RATIO
IS BAD. -->
<elseif>
<expression>
<variableref name="Test Result">
<eq>
<string>BAD
</string>
</expression>
<!-- ENGINE CYLINDER COMPRESSION RATIO IS BAD, THEN LINK TO MAINTENANCE WORK
PACKAGE M00187-XX-XXXX-XXX TO CORRECT CYLINDER COMPRESSION FAULT AND THEN
RETEST THE CYLINDER COMPRESSION RATIO. -->
<then>
<resultwithstate>
<link application="frame" linkaction="immediate" linktype="return" popup="no" xlink:href="M00187-
XX-XXXX-XXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<returnlink>
<link application="frame" linkaction="immediate" linktype="goto" popup="no" xlink:href="test0040"
xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"/>
</returnlink>
</link>
</resultwithstate>
</then>
</elseif>
<!-- UNEXPECTED ATE TEST RESULT RETURNS ENGINE CYLINDER COMPRESSION RATIO,
THEN NOTIFY SUPERVISOR OF PROBLEM. -->
<else>
<resultwithstate>
<interaction>
<message popup="yes" button_title="OK">
<messageline>Report to supervisor invalid engine cylinder compression ratio ATE
test result of
<variableref name="Test Result"/>.
</messageline>
</message>
</interaction>

```

```

<completed_test/>
</resultwithstate>
</else>
</if>

```

### 22.10.3.2.7 Evaluated THEN Condition <then>.

The element contains the actions to be performed after an evaluation has satisfied a condition (either the IF or ELSE-IF evaluated to "TRUE" or a loop meets the terminating condition). Generally the action contains the possible fault information, any applicable disconnection procedures, reference to another test node, reference to the corrective action and/or interact with the user to obtain additional information. Additional evaluation can be done to either reduce the expression complexity or after obtaining additional test result information (from the <resultwithstate>) continue with further nested evaluations.

1. The components of evaluated THEN condition <then> are either:
  - a. Action to perform after IF evaluation <resultwithstate> (required) (see Section 22.10.3.2.7.4). Following the action, an additional evaluation test result state variables <evaluate> (optional) (see Section 22.10.3.2.5).
  - b. Additional evaluation test results state variables <evaluate> (required) (see Section 22.10.3.2.5).
2. The DTD fragment for <then> is graphically depicted.

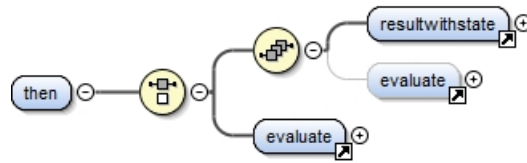


FIGURE 295. Evaluated THEN condition DTD hierarchy <then>.

3. The DTD fragment for <then> is:

```
<!ELEMENT then (resultwithstate, evaluate?) | evaluate>
```

#### 22.10.3.2.7.1 Test results (with state variables) <resultwithstate>.

The element contains the next actions resulting from the evaluated test response. When the resulting action specifies further testing, a link is provided to another diagnostic work package <diagnosticwp>, another test (with state variable) <testwithstate> within the same work package, or conduct another test (either observed or from ATE). The link generally does not require a prompt (unless specified), but seamlessly presents the next testing component. The author does not infer the next test following is processed, but always provides a link. Using a link provides a consistent method for identifying the next action since the testing is dynamic.

#### 22.10.3.2.7.2 Simple corrective action.

When the resulting action specifies a corrective action either a narrative or link is provided. If the corrective action is short and simple the step(s) (<step1> or <para>) are developed. An example is "Call maintenance supervisor."

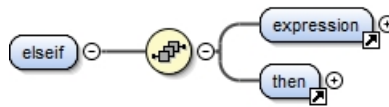
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**22.10.3.2.7.3 Complex corrective actions.**

When the corrective action has different initial setup requirements and/or is complex, a separate and referenced (<link>) maintenance work package is developed. In either situation, the author needs to define the identified fault code(s) (<fault>) and indicate that testing is completed (<completed\_test>).

**22.10.3.2.7.4 Test result with state <resultwithstate> structure.**

1. The components of test results (with state variables) <resultwithstate> are:
  - a. Fault code<fault> (optional – zero or more) (see Section 35.1.1.7.5).
  - b. Disconnect test set <disconnect>/<disconnect-alt> (optional – zero or more) (see Section 22.7.2).
  - c. Action (required) component is either:
    - i. Setting (manipulating) state table variables <statemanipulation>/<statemanipulation-alt> (see Section 35.2.3).
    - ii. Interaction with user to obtain diagnostic testing information <interaction> (see Section 36.1.4.9).
    - iii. Link for further testing or corrective action maintenance work package <link> (see Section 33.2.3).
    - iv. Test result information<para> (see Section 36.1.1.6).
  - d. Test completion action <completed\_test> (optional) (see Section 22.10.2.8).
2. The DTD fragment for <resultwithstate> is graphically depicted.



**FIGURE 296. Test Results (with state variables DTD hierarchy <resultwithstate>.**

3. The DTD fragment for <resultwithstate> is:

```
<! ELEMENT resultwithstate (fault*, (% disconnect_ent;) *, (%
statemanipulation_ent; | interaction | link | para)+, completed_test?)>
```

**22.10.3.2.7.5 Evaluated ELSE-IF Condition <elseif>**

If the THEN or a previous ELSE-IF statement have been evaluated and failed, then the next succeeding ELSE-IF is processed. If the ELSE-IF condition returns a TRUE result, the THEN condition is performed, otherwise the next ELSE-IF or ELSE is processed. The ELSE-IF is used when multiple conditions are possible for a state variable (error code).

1. The components of evaluated ELSE-IF condition <elseif> are:
  - a. Conditional expression that is evaluated as TRUE or FALSE to determine next action <expression> (required) (see Section 35.2.1.2).
  - b. Actions after a conditional expression is TRUE <then> (required) (see Section 22.10.3.2.7).
2. The DTD fragment for <elseif> is graphically depicted:

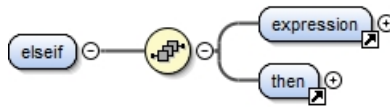


FIGURE 297. Evaluated ELSE—IF condition DTD hierarchy <elseif>.

3. The DTD fragment for <elseif> is:

```
<!ELEMENT elseif (expression, then)>
```

An example XML markup is shown below in using the ELSE-IF element.

```
<if>
<expression>
<variableref name="Error Code"/>
<eq>
<string>0001
</string>
</expression>
<then>
<resultwithstate> . . .
</resultwithstate>
</then>
<elseif>
<expression>
<variableref name="Error Code"/>
<eq>
<string>0002
</string>
</expression>
<then>
<resultwithstate> . . .
</resultwithstate>
</then>
</elseif> . . .
<elseif>
<expression>
<variableref name="Error Code"/>|
<eq>
<string>0870
</string>
</expression>
<then>
<resultwithstate> . . .
</resultwithstate>
</then>
</elseif>
<else>|
<resultwithstate> . . .
</resultwithstate>
</else>
</if>
```

### 22.10.3.2.8 Evaluated ELSE Condition **<else>**

When all IF and ELSE-IF condition evaluations return FALSE, then the ELSE action is performed. The content model is same as **<then>** (see 22.10.3.2.7).

### 22.10.3.3 Evaluate loop FOR-NEXT condition **<loopfor>**.

The loop FOR-NEXT provide a method to run diagnostic tests for specified number of iterations. The author specifies the number of iterations by setting the start counter **<initialcount>**, setting the counter incremental expression **<increment>**, and setting the counter ending condition or expression **<endcondition>**. The actions to be performed during the looping is defined in **<loopaction>**. After the looping has terminated, the concluding action **<then>** is performed, which specifies the next action(s) to perform (generally linking the next testing or evaluation to perform).

#### 22.10.3.3.1 Counter values.

The start, increment, and end counter generally are preset (fixed) values, but these values can be set dynamically with state variables. These dynamic values can be entered by the user through a dialog box or dependent on applicable equipment configuration (using **<statemanipulation-alt>**).

#### 22.10.3.3.2 Loop for **<loopfor>** structure.

1. The components of evaluate Loop FOR NEXT condition **<loopfor>** are:
  - a. Setting (manipulating) state table variables **<statemanipulation>/<statemanipulation-alt>** (optional – zero or more) (see Section 35.2.3).
  - b. Initializing the FOR-NEXT state table variable counter **<initialcount>** (required). Sets the FOR-NEXT counter using **<statemanipulation>/<statemanipulation-alt>** (required) (see Section 35.2.3).
  - c. The FOR-NEXT counter incremental expression **<increment>** (required). The incremental amount is defined through **<expression>** (required) (see Section 35.2.1.2).
  - d. The FOR-NEXT counter termination expression **<endcondition>** (required) (see Section 22.10.3.3.4).
  - e. Actions to perform within the loop **<loopaction>** (required) (see Section 22.10.3.3.5).
  - f. Follow-on action after FOR-NEXT loop completion **<then>** (required) (see Section 22.10.3.2.7).
2. The DTD fragment for **<loopfor>** is graphically depicted.



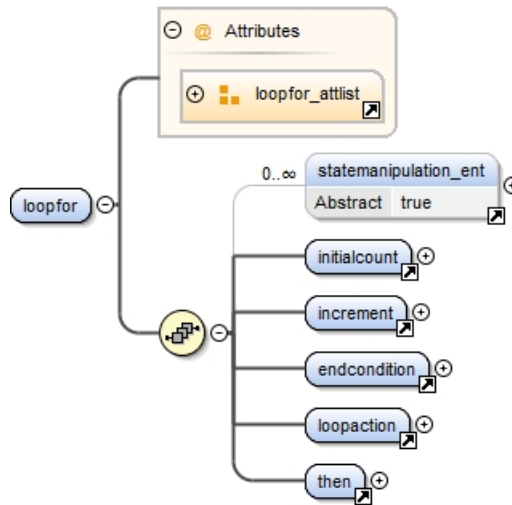


FIGURE 298. Evaluate loop FOR-NEXT condition hierarchy <loopfor>.

3. The DTD fragment for <loopfor> is:

```
<!ELEMENT loopfor ((%statemanipulation_ent;)*, initial count, increment,
endcondition, loopaction, then)>
```

```
<!ATTLIST loopfor
```

```
id ID #IMPLIED>
```

```
<!ELEMENT initialcount (statemanipulation_ent)>
```

```
<!ELEMENT increment (expression)>
```

4. Common attribute for <loopfor> is **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

### 22.10.3.3.3 Loop for examples.

#### 22.10.3.3.3.1 Loop for example fixed start and end value.

The example below shows a FOR-NEXT loop starting at 2, ending at 8, and increments by 2. In a programming language it may be expressed as FOR ctr = 2 TO 8 Step 2... Next ctr.

```
<loopfor>
<initialcount>
<statemanipulation>
<variable config="no" description="Loop Counter" name="ctr" value-type="integer">
<initialize>
<expression>
<integer>2
</integer>
</expression>
</initialize>
</variable>
</statemanipulation>
</initialcount>
```

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```

<increment>
<expression>
<variableref name="ctr"/>
<plus/>
<integer>2
</integer>
</expression>
</increment>
<endcondition>
<expression>
<variableref name="ctr"/>
<le/>
<integer>8
</integer>
</expression>
</endcondition>
<loopaction> . . .
</loopaction>
<then> . . .
</then>
</loopfor>

```

### 22.10.3.3.2 Loop for example fixed start selectable end value.

The example below shows a FOR-NEXT loop starting at 2, ending at 6 (Model A) or 8 (Model B) depending on applicable equipment configuration, and increments by 2. In a programming language it may be expressed as For ctr = 2 TO MaxCtr Step 2... Next ctr.

```

<loopfor>
<statemanipulation-alt>
<statemanipulation applicable="model-a">
<variableref name="MaxCtr"/>
<expression>
<integer>6
</integer>
</expression>
</statemanipulation>
<statemanipulation applicable="model-b">
<variableref name="MaxCtr"/>
<expression>
<integer>8
</integer>
</expression>
</statemanipulation>
</statemanipulation-alt>
<statemanipulation-alt>
<variableref name="MaxCtr"/>
<initialize>
<expression>
<integer>2
</integer>
</expression>
</initialize>
</variable>

```

```

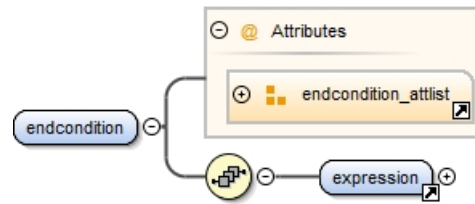
</statemanipulation>
<initialcount>
<statemanipulation>
<variable config="no" description="Loop Counter" name="ctr" value-type="integer">
<initialize>
<expression>
<integer>2
</integer>
</expression>
</initialize>
</variable>
</statemanipulation>
</initialcount>
<increment>
<expression>
<variableref name="ctr"/>
<plus/>
<integer>2
</integer>
</expression>
</increment>
<endcondition>
<expression>
<variableref name="ctr"/>
<le/>
<variableref name="MaxCtr"/>
</expression>
</endcondition>
<loopaction> . . .
</loopaction>
<then> . . .
</then>
</loopfor>

```

#### 22.10.3.3.4 Loop termination condition **<endcondition>**.

The element provides the termination condition for the loops (FOR-NEXT and WHILE). The looping action continues as long as the evaluated termination condition is TRUE. Generally, the FOR-NEXT loop termination condition is expressed as a state variable that is less than or equal ( $\leq$ ) to the maximum counter amount. Generally, the WHILE loop termination condition is dependent on the information obtained during the looping action (i.e., adjusting the tire pressure while not within normal range).

1. The components of Loop termination condition **<endcondition>** is defined through an evaluated **<expression>** (required) (see Section 35.2.1.2).
2. The DTD fragment for **<endcondition>** is graphically depicted.



**FIGURE 299. Loop termination condition DTD hierarchy <endcondition>.**

3. The DTD fragment for **<endcondition>** is:

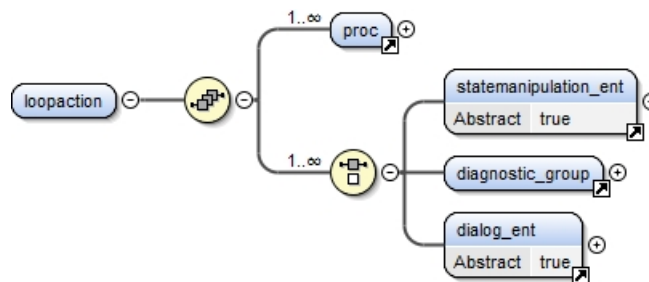
```
<|ELEMENT endcondition (expression)>
<|ATTLIST endcondition
id ID #IMPLIED>
```

4. The single attribute for **<endcondition>** is an **ID** (see Section 36.3.7)

### 22.10.3.3.5 Actions to perform during looping <loopaction>.

The element defines what actions occur while within a loop. The actions can be procedural step(s) to performed followed by ATE testing or user dialog box.

1. The components of actions to perform during looping **<loopaction>** are:
  - a. Procedure **<proc>** (required) (see Section 17.2).
  - b. State variable manipulation (required – one or more) includes the following:
    - i. Setting (manipulating) state table variables **<statemanipulation>/<statemanipulation-alt>** (see Section 35.2.3).
    - ii. Perform BIT/BITE or integrated test equipment diagnostic testing(s) **<diagnostic\_group>** (see Section 22.10.3.2.3).
    - iii. Dialog box to obtain user input **<dialog>/<dialog-alt>** (see Section 35.3.3.3).
2. The DTD fragment for **<loopaction>** is graphically depicted.



**FIGURE 300. Actions to perform during looping DTD hierarchy <loopaction>.**

3. The DTD fragment for **<loopaction>** is:

```
<!ELEMENT loopaction (proc+, (%statemanipulation_ent; | diagnostic_group | %
dialog_ent;)+) (proc+, (%statemanipulation_ent; | diagnostic_group | %dialog_
ent;)+)>
```

4. The element `<loopaction>` has no attributes.

The element is used to perform the actions while the evaluated loop termination expression is TRUE. The looping is used when adjustments or calibration readings are being performed on the equipment and are within range before continuing. An example is tire pressure or compression ratio that falls within a specified range. The ATE test result state variables or user dialog box responses are evaluated for the termination condition. Some caution needs to be taken to avoid an infinite looping. A good practice is to have maximum number of iterations or a dialog box option with an exit the loop condition even if the conditions are not achieved.

- 
- ```

graph LR
    loop((loop)) --> attr[Attributes]
    loop --> join1(( ))
    join1 --> statemanipulation_ent[statemanipulation_ent  
0..∞  
Abstract true]
    join1 --> then[then]
    statemanipulation_ent --> join2(( ))
    join2 --> loopaction1[loopaction]
    join2 --> loopaction2[loopaction]
    loopaction1 --> endcondition1[endcondition]
    loopaction2 --> endcondition2[endcondition]
  
```

3. The DTD fragment for `<loop>` is:

<!ATTLIST loop

4. Common attribute for **<loop>** is **id** – Specifies unique identifier (target) to reference (optional) (see 36.3.7).
5. The first example shows a loop for checking tire pressure with a dialog box option to terminate the loop without achieving proper air pressure.

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```

<loop>
<loopaction>
<dialog cancel_button="no" reset_button="no">
<menu flow="list" mandatory="yes" select="single" type="radio">
<prompt>Tire air pressure is between:
</prompt>
<choice>
<text>0 &ndash; 40psi
</text>
<statemanipulation>
<variableref name="Tire Pressure"/>
<expression>
<string>Low
</string>
</expression>
</statemanipulation>
</choice>
<choice>
<text>40 &ndash; 60 psi
</text>
<statemanipulation>
<variableref name="Tire Pressure"/>
<expression>
<string>OK
</string>
</expression>
</statemanipulation>
</choice>
<choice>
<text>60+psi
</text>
<statemanipulation>
<variableref name="Tire Pressure"/>
<expression>
<string>High
</string>
</expression>
</statemanipulation>
</choice>
<choice>
<text>No tire gauge
</text>
<statemanipulation>
<variableref name="Tire Pressure"/>
<expression>
<string>NoGauge
</string>
</expression>
</statemanipulation>
</choice>
</menu>
</dialog>
</loopaction>
<endcondition>

```

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```

<expression>
<expression>
<variableref name="Tire Pressure"/>
<eq/>
<string>OK
</string>
</expression>
<or/>
<expression>
<variableref name="Tire Pressure"/>
<eq/>
<string>NoGauge
</string>
</expression>
</expression>
</endcondition>
<then>
<evaluate>
<if>
<expression>
<variableref name="Tire Pressure"/>
<eq/>
<string>OK
</string>
</expression>
<then>
<resultwithstate>
<link application="frame" linkaction="prompt" linktype="goto" xreftype="test" local="T00343-X-XXX-
XXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<title>Tire pressure is correct
</title>
<prompt>Check wheel alignment.
</prompt>
</link>
</resultwithstate>
</then>
<else>
<resultwithstate>
<interaction>
<message button_title="OK">
<title>Problem
</title>
<messageline>Please obtain tire gauge from supervisor.
</messageline>
<messageline>Restart testing.
</messageline>
</message>
</interaction>
<completed_test/>
</resultwithstate>
</else>
</if>
</evaluate>
</then>

```

</loop>

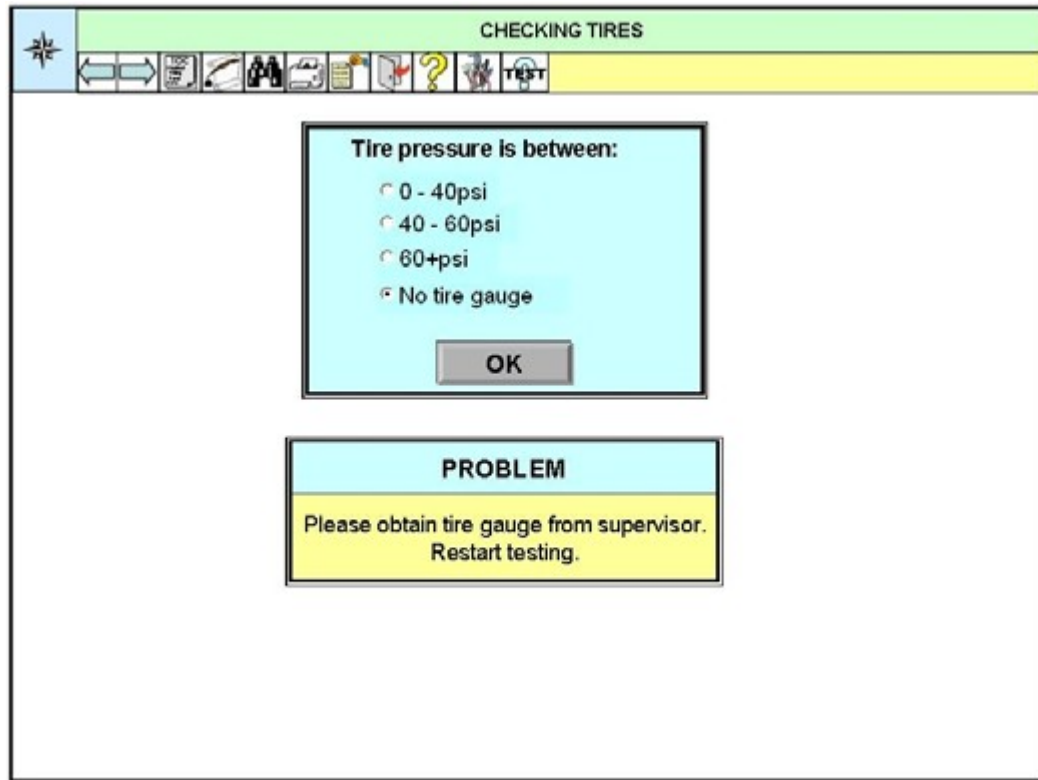


FIGURE 302. Sample loop with dialog box exit.

6. The second example shows a loop for check compression ration (through ATE). The maximum number of iterations are set to ten, after which the loop will be terminated without the correct compression ration.

```
<loop>
<statemanipulation>
<variableref name="Counter"/>
<expression>
<integer>1
</integer>
</expression>
</statemanipulation>
<statemanipulation>
<variableref name="Max_Iteration"/>
<expression>
<integer>10
</integer>
</expression>
</statemanipulation>
<loopaction>
<statemanipulation>
<variableref name="Counter"/>
<expression>
<variableref name="Counter"/>
<plus/>
<integer>1
```


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```

</integer>
</expression>
</statemanipulation>
<diagnostic_group action="immediate">
<diagnostic application="CompressionRatio" testname="Cylinder Compression Ratio">
<desc>Check the cylinder compression ratio and automatically adjusts during each
test.
</desc>
<receiveparameter>
<variableref name="Test_Result"/>
</receiveparameter>
</diagnostic>
</diagnostic_group>
</loopaction>
<endcondition>
<expression>
<expression>
<variableref name="Test_Result"/>
<ne/>
<string>PASS
</string>
</expression>
<and/>
<expression>
<variableref name="Counter"/>
<le/>
<variableref name="Max Iteration"/>
</expression>
</expression>
</endcondition>
<then>
<evaluate>
<if>
<expression>
<variableref name="Test_Result"/>
<eq/>
<string>PASS
</string>
</expression>
<then>
<resultwithstate>
<link application="frame" linkaction="prompt" linktype="goto" xreftype="test" local="T00543-X-XXX-
XXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<title>Cylinder Compression Ratio is Correct
</title>
<prompt>Check fuel filter.
</prompt>
</link>
</resultwithstate>
</then>
<else>
<resultwithstate>
<interaction>
<message button_title="OK">

```

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```

<title>Problem
</title>
<messageline>Please contact supervisor.
</messageline>
</message>
</interaction>
<completed_test/>
</resultwithstate>
</else>
</if>
</evaluate>
</then>
</loop>

```

7. The sample XML markup shown in a programming language.

```

Counter = 1 Max_Iteration = 10 DO Counter = Counter + 1 Test_Result = Cylinder_
Compression_Ratio_Test() LOOP WHILE Test_Result <> "PASS" AND Counter <= Max_
Iteration IF Test_Result = "PASS" THEN MSGBOX TEXT:="Check fuel filter.",
TITLE:="Cylinder Compression Ratio is Correct" GOTO T00543-X-XXX-XXX ELSE
MSGBOX TEXT:="Please contact supervisor.", TITLE:="Problem" EXIT ENDIF

```

22.10.4 XML document instance fragment and output for <diagnosticwp>.

The XML instance and its stylesheet output for a <diagnosticwp> is provided below.

1. Example of an XML document fragment for <diagnosticwp>:

- a. Example XML markup in relationship to FIGURE 303.

```

<diagnosticwp airforce="no" army="no" deletewp="no" frame="yes" insertwp="no" marines="no"
navy="no" tocentry="2" wpno="T00001-X-XXX-XXXX">
<wpidinfo>
<maintlvl level="field"/>
<title>ENGINE COMPARTMENT FAN WILL NOT OPERATE WHEN AUXILIARY POWER UNIT IS
OPERATING
</title>
</wpidinfo>
<initial_setup>
<tools>
<tools-setup-item>
<name>General Mechanic's Tool Kit: Automotive
</name>
<itemref>
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href="S00034-
X-XXX-XXXX#LTL-001-ICV-B00-5B2" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/
xlink" xref-type="part">
</link>
</itemref>
</tools-setup-item>
</tools>
<ref>
<ref-setup-item>
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink: href=
"M00854-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
</link>

```

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```

</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item>
<condition>Wheels Chocked
</condition>
<itemref>
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href=
"O00451-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
</link>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<harness-indx id="T00001-X-XXX-XXXX-GM39151-S">
<title>Wiring Harness W420
</title>
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>W420 Wiring Harness
</title>
<graphic boardno="obj.3" unitmeasure="in">
</graphic>
</figure>
<para>
</para>
</harness-indx>
<testwithstate id="T00001-X-XXX-XXXX-AT02A0011">
<reasonfortest>
<title>Reason for Test
</title>
<para>To verify that original symptom still exists.
</para>
</reasonfortest>
<statemanipulation>
<variable description="Engine Compartment Fault" name="AT02A001-F1" scope="global" value-
type="fault">
<initialize>
<fault fault-code="AT02A001-F1" fault-state="possible">
<oktext>Engine compartment blower motor OK.
</oktext>
<badtext>Engine compartment blower motor faulty.
</badtext>
<possibletext>Open circuit in engine compartment blower motor.
</possibletext>
</fault>
</initialize>
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Wiring Harness W420" name="AT02A001-F2" scope="global" value-type=
"fault">
<initialize>
<fault fault-code="AT02A001-F2" fault-state="possible">
<oktext>Engine compartment blower motor OK.

```

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```

</oktext>
<badtext>Engine compartment blower motor faulty.
</badtext>
<possibletext>Wiring harness W420 faulty.
</possibletext>
</fault>
</initialize>
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Question Answers" name="answer" scope="global" value-type="boolean">
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Evaluation Result" name="AT02A00114-EV-182" scope="global" value-
type="integer">
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Evaluation Result" name="AT02A00114-EV-184" scope="global" value-
type="integer">
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Evaluation Result" name="AT02A00114-EV-186" scope="global" value-
type="integer">
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Evaluation Result" name="AT02A00114-EV-188" scope="global" value-
type="integer">
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Evaluation Result" name="AT02A00114-EV-190" scope="global" value-
type="integer">
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Evaluation Result" name="AT02A00114-EV-192" scope="global" value-
type="integer">
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Evaluation Result" name="AT02A00114-EV-194" scope="global" value-
type="integer">
</variable>
</statemanipulation>
<statemanipulation>
<variable description="Evaluation Result" name="AT02A00114-EV-196" scope="global" value-
type="integer">
</variable>
</statemanipulation>
<step1 frame="no" qa="no">

```

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```

<para esd="no" hcp="no">
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href=
"000354-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Perform Auxiliary Power Unit (APU) start-up.
</prompt>
</link>
</para>
</step1>
<step1 assocfig="T00001-X-XXX-XXXX-AT02A0011-fig1" frame="no" qa="no">
<para>Check operation of engine compartment fan.
<figure application="both" figtype="normal-page" pane="no" tocentry="1" id="T00001-X-XXX-
XXXX-AT02A0011-fig1">
<title>Engine Compartment Fan
</title>
<graphic boardno="obj.1" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href="000354-
X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Perform APU shutdown.
</prompt>
</link>
</para>
</step1>
<interaction>
<dialog popup="no">
<binarymenu answer="yesno">
<prompt>Does engine compartment fan operate when APU is running?
</prompt>
<yesstate>
<statemanipulation>
<variableref name="answer"/>
<expression>
<boolean>
<true/>
</boolean>
</expression>
</statemanipulation>
</yesstate>
<nostate>
<statemanipulation>
<variableref name="answer"/>
<expression>
<boolean>
<false/>
</boolean>
</expression>
</statemanipulation>
</nostate>
</binarymenu>

```

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```
</dialog>
</interaction>
```

- b. Example XML markup in relationship to FIGURE 304.

```
<evaluate>
<if>
<expression>
<variableref name="answer"/>
</expression>
<then>
<resultwithstate>
<interaction>
<message button_title="OK" popup="no">
<messageline>Remove wheel chocks.
</messageline>
<aftermessage>
<link application="frame" linkaction="immediate" linktype="return" popup="no" xlink:href=
"O00455-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
</link>
</aftermessage>
</message>
</interaction>
<completed_test>
</completed_test>
</resultwithstate>
</then>
<else>
<resultwithstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-
AT02A0012" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"
xreftype="test">
</link>
</resultwithstate>
</else>
</if>
</evaluate>
</testwithstate>
```

- c. Example XML markup in relationship to FIGURE 305.

```
<testwithstate id="T00001-X-XXX-XXXX-AT02A0012">
<reasonfortest>
<title>Reason for Test
</title>
<para>If waveform type and signal characteristics do not match, there is an
APU failure.
</para>
</reasonfortest>
<step1 assocfig="T00001-X-XXX-XXXX-fig1" frame="no" qa="no">
<para>Disconnect P2 connector
<callout assocfig="T00001-X-XXX-XXXX-fig1" label="1" numref="T00001-X-XXX-XXXX-fig1-
ref1"/>of wiring harness W420 from J2 connector
<callout assocfig="T00001-X-XXX-XXXX-fig1" label="2" numref="T00001-X-XXX-XXXX-fig1-
ref2"/>on engine compartment fan
```

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```

<callout assocfig="T00001-X-XXX-XXXX-fig1" label="3" numref="T00001-X-XXX-XXXX-fig1-
ref3"/>.
<figure application="both" figtype="normal-page" pane="no" tocentry="1" id="T00001-X-XXX-
XXXX-fig1">
<title>Engine Compartment Fan Connections
</title>
<graphic boardno="obj.2" reprodep="4" reprowid="3" unitmeasure="in">
<mapref id="T00001-X-XXX-XXXX-fig1-ref1" label="1" refdes="P2">
<map.circle radius="0.25" unitmeasure="in">
<map.coord unitmeasure="in" x="1" y="1"/>
</map.circle>
</mapref>
<mapref id="T00001-X-XXX-XXXX-fig1-ref2" label="2" refdes="J2">
<map.circle radius="0.25" unitmeasure="in">
<map.coord unitmeasure="in" x="2" y="0.25"/>
</map.circle>
</mapref>
<mapref id="T00001-X-XXX-XXXX-fig1-ref3" label="3">
<map.circle radius="0.25" unitmeasure="in">
<map.coord unitmeasure="in" x="1.5" y="4"/>
</map.circle>
</mapref>
</graphic>
</figure>
</para>
</step1>

```

d. Example XML markup in relationship to FIGURE 306.

```

<step1 frame="yes" qa="no">
<para esd="no" hcp="no">
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href="T00021-
X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Connect test probes to test equipment.
</prompt>
</link>
</para>
</step1>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href="T00022-
X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Connect oscilloscope/spectrum analyzer to test equipment.
</prompt>
</link>
</para>
</step1>
<step1 assocfig="T00001-X-XXX-XXXX-fig1" frame="no" qa="no">
<para>Connect oscilloscope/spectrum analyzer signal reference wire to pin A
and test probe to pin B on P2 connector of wiring harness W420
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-X-XXX-XXXX-
GM39151-S" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"
xref-type="figure">
<pretext>refer to
</pretext>

```

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```

<prompt>schematic
</prompt>
</link> .
</para>
</step1>

```

- e. Example XML markup in relationship to FIGURE 307.

```

<step1 frame="yes" qa="no">
<para esd="no" hcp="no">
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href=
"O00354-X-XXX-XXXX-" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Perform APU start-up.
</prompt>
</link>
</para>
</step1>
<diagnostic_group action="prompt">
<message_button_title="OK">
<title>Perform Test
</title>
<messageline>Ready to Perform Oscilloscope Test.
</messageline>
<messageline>Configure oscilloscope if required and take readings.
</messageline>
</message>
<diagnostic_application="PSW32.EXE" testname="PICO">
<desc>Oscilloscope Test
</desc>
</diagnostic>
</diagnostic_group>
<interaction>
<dialog popup="no">
<binarymenu answer="yesno">
<prompt>Is waveform a square wave with an average value of 28 V peak, cycle
period length of 55 milliseconds (ms) and frequency of 1.8 kHz?
</prompt>
<yesstate>
<statemanipulation>
<variableref name="answer"/>
<expression>
<boolean>
<true/>
</boolean>
</expression>
</statemanipulation>
</yesstate>
<nostate>
<statemanipulation>
<variableref name="answer"/>
<expression>
<boolean>
<false/>
</boolean>
</expression>

```


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```

</statemanipulation>
</nostate>
</binarymenu>
</dialog>
</interaction>
<evaluate>
<if>
<expression>
<variableref name="answer"/>
</expression>
<then>
<resultwithstate>
<statemanipulation>
<variableref name="AT02A001-F1"/>
<fault fault-code="AT020A001-F1" fault-state="ok">
</fault>
</statemanipulation>
<statemanipulation>
<variableref name="AT02A001-F2"/>
<fault fault-code="AT02A001-F2" fault-state="ok">
</fault>
</statemanipulation>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-AT02A0014" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink" xref-type="test">
</link>
</resultwithstate>
</then>

```

- f. Example XML markup in relationship to FIGURE 308.

```

<testwithstate id="T00001-X-XXX-XXXX-AT02A0014">
<reasonfortest>
<title>Reason for Test
</title>
<para>An open circuit on wires 166, 167 or 168 in wiring harness W420 could
cause circuit failure.
</para>
</reasonfortest>
<statemanipulation>
<variable name="AT02A0014-EV-182" scope="global" value-type="integer">
</variable>
</statemanipulation>
<step1 assocfig="T00001-X-XXX-XXXX-AT02A0014-fig1" frame="no" qa="no">
<para>Disconnect P2 connector
<callout assocfig="T00001-X-XXX-XXXX-AT02A0014-fig1" label="4" numref="T00001-X-XXX-XXXX-fig1-ref4"/>of wiring harness W420 from J3 connector
<callout assocfig="T00001-X-XXX-XXXX-AT02A0014-fig1" label="4" numref="T00001-X-XXX-XXXX-fig1-ref4"/>on APU control panel
<callout assocfig="T00001-X-XXX-XXXX-AT02A0014-fig1" label="6" numref="T00001-X-XXX-XXXX-fig1-ref6"/>.
<figure application="both" figtype="normal-page" pane="no" tocentry="1" id="T00001-X-XXX-XXXX-AT02A0014-fig1">
<title>APU Control Panel Connections
</title>

```

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```

<graphic boardno="obj.8" unitmeasure="in">
<mapref id="T00001-X-XXX-XXXX-AT02A0014-fig1-ref4" label="4" refdes="P2">
<map.circle radius="0.25" unitmeasure="in">
<map.coord unitmeasure="in" x="1" y="1"/>
</map.circle>
</mapref>
<mapref id="T00001-X-XXX-XXXX-AT02A0014-fig1-ref5" label="5" refdes="J2">
<map.circle radius="0.25" unitmeasure="in">
<map.coord unitmeasure="in" x="2" y="0.25"/>
</map.circle>
</mapref>
<mapref id="T00001-X-XXX-XXXX-AT02A0014-fig1-ref6" label="6">
<map.circle radius="0.25" unitmeasure="in">
<map.coord unitmeasure="in" x="1.5" y="4"/>
</map.circle>
</mapref>
</graphic>
</figure>
</para>
</step1>

```

g. Example XML markup in relationship to FIGURE 309.

```

<else>
<resultwithstate>
<fault fault-code="AT02A001-F1" fault-state="bad">
</fault>
<interaction>
<message button_title="OK" popup="no">
<title>FAULT - AT02A001-F1
</title>
<messageline>Replace blower motor.
</messageline>
<aftermessage>
<link application="frame" linkaction="immediate" linktype="return" popup="no" xlink:href=
"M00121-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
</link>
</aftermessage>
</message>
</interaction>
<statemanipulation>
<variableref name="AT02A001-F1"/>
<fault fault-code="AT02A001-F" fault-state="bad">
</fault>
</statemanipulation>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-
AT02A00121" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"
xreftype="test">
</link>
</resultwithstate>
</else>
</if>
</evaluate>
</testwithstate>

```

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- h. The remaining example XML markup.

```

<step1 frame="yes" qa="no">
  <para>Connect red and black test probes together and hold.
  <figure application="both" figtype="normal-page" pane="no" tocentry="1" id="T00001-X-XXX-
  XXXX-AT02A0014-fig2">
    <title>Connect Red and Black Test Probes
    </title>
    <graphic boardno="obj.9" unitmeasure="in">
    </graphic>
    </figure>
  </para>
</step1>
<diagnostic_group action="prompt">
  <message button_title="OK">
    <messageline>Ready to Perform Offset
    </messageline>
    <messageline>AND
    </messageline>
    <messageline>Release test probes
    </messageline>
  </message>
  <diagnostic_protocol="DODACOFFSET" testname="91">
    <desc>Offset
    </desc>
    <sendparameter>
      <string>J4
      </string>
    </sendparameter>
    <sendparameter>
      <name>REPEAT
      </name>
      <string>SINGLE
      </string>
    </sendparameter>
    <receiveparameter>
      <variableref name="AT02A00140EV0182"/>
    </receiveparameter>
  </diagnostic>
</diagnostic_group>
<evaluate>
  <if>
    <expression>
      <expression>
        <integer>-255
        </integer>
      </expression>
      <variableref name="AT02A0014-EV-182"/>
    </expression>
    <and/>
    <expression>
      <variableref name="AT02A0014-EV-182"/>
    </expression>
    <ge/>
    <integer>255
  </if>

```

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```

</integer>
</expression>
</expression>
<then>
<resultwithstate>
<statemanipulation>
<variableref name="AT02A001-F1"/>
<fault fault-code="AT02A001-F11" fault-state="ok">
</fault>
</statemanipulation>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-
AT02A0016" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink"
xrefype="test">
</link>
</resultwithstate>
</then>
<else>
<resultwithstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-
AT02A0017" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink"
xrefype="test">
</link>
</resultwithstate>
</else>
</if>
</evaluate>
</testwithstate>
<testwithstate id="T00001-X-XXX-XXXX-AT02A0016">
<reasonfortest>
<title>Reason for Test
</title>
<para esd="no" hcp="no">An open circuit on wire 166 in wiring harness W420 could
cause engine compartment fan failure.
</para>
</reasonfortest>
<statemanipulation>
<variable name="AT02A0016-EV-184" scope="global" value-type="integer">
</variable>
</statemanipulation>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Connect red test probe to pin A at P2 connector of
wiring harness W420 and connect black test probe to pin A at P1
connector of wiring harness W420
<link application="frame" linkaction="prompt" linktype="undefined" local="T00001-X-XXX-
XXXX-GM39151-S" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink"
xrefype="figure">
<pretext>refer to
</pretext>
<prompt>schematic
</prompt>
</link>.
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>

```

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```

<graphic boardno="obj.10" unitmeasure="in">
</graphic>
</figure>
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>
<graphic boardno="obj.11" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<diagnostic_group action="prompt">
<message button_title="OK">
<messageline>Ready to Perform Test #91
</messageline>
</message>
<diagnostic_protocol="DODACTEST" testname="91">
<desc>Test #91
</desc>
<sendparameter>
<string>J4
</string>
</sendparameter>
<sendparameter>
<name>REPEAT
</name>
<string>LOOP
</string>
</sendparameter>
<receiveparameter>
<variableref name="AT02A0016-EV-184"/>=
</receiveparameter>
</diagnostic>
</diagnostic_group>
<evaluate>
<if>
<expression>
<variableref name="AT02A0016-EV-184"/>
<lt>
<integer>5
</integer>
</expression>
<then>
<resultwithstate>
<statemanipulation>
<variableref name="AT02A001-F1"/>
<fault fault-code="AT02A001-F1" fault-state="bad">
</fault>
</statemanipulation>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-
AT02A0018" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink"
xreftype="test">
</link>
</resultwithstate>

```

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```

</then>
<else>
<resultwithstate>
<interaction>
<message button_title="OK" popup="no">
<messageline>Replace wiring harness W420.
</messageline>
<aftermessage>
<link application="frame" linkaction="immediate" linktype="return" popup="no" xlink:href=
"M00131-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
</link>
</aftermessage>
</message>
</interaction>
<statemanipulation>
<variableref name="AT02A001-F2"/>
<fault fault-code="ATO2A001-F2" fault-state="bad">
</fault>
</statemanipulation>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-
AT02A0018" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"
xref-type="test">
</link>
</resultwithstate>
</else>
</if>
</evaluate>
</testwithstate>
<testwithstate id="T00001-X-XXX-XXXX-AT02A0017">
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Click on Reset button to return to main menu.
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>
<graphic boardno="obj.12" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<interaction>
<message button_title="RESET" popup="no">
<messageline>Test equipment has failed offset test. Problem could be a faulty
test probe or internal test box failure.
</messageline>
<messageline>Notify your supervisor.
</messageline>
</message>
</interaction>
<completed_test>
</completed_test>
</testwithstate>
<testwithstate id="T00001-X-XXX-XXXX-AT02A0018">
<reasonfortest>
<title>REASON FOR TEST

```

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```

</title>
<para esd="no" hcp="no">An open circuit on wire 167 in wiring harness W420 could
cause engine compartment fan failure.
</para>
</reasonfortest>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Connect red test probe to pin B at P2 connector of wiring
harness W420 and connect black test probe to pin B at P1 connector of wiring
harness W420
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-X-XXX-XXXX-
GM39151-S" popup="no" xlink: type="simple"xmlns: xlink="http://www. w3. org/1999/xlink"
xrefstype="figure">
<pretext>refer to
</pretext>
<prompt>schematic
</prompt>
</link> .
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>
<graphic boardno="obj.13" unitmeasure="in">
</graphic>
</figure>
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>
<graphic boardno="obj.14" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Click on Perform Test # 91 button.
</para>
</step1>
<diagnostic_group action="prompt">
<message_button_title="OK">
<messageline>Ready to Perform Test #91
</messageline>
</message>
<diagnostic_protocol="DODACTEST" testname="91">
<desc>DODACTEST
</desc>
<sendparameter>
<name>INPUT
</name>
<string>J4
</string>
</sendparameter>
<sendparameter>
<name>REPEAT
</name>
<string>LOOP
</string>

```

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```

</sendparameter>
<receiveparameter>
<variableref name="AT02A0018-AV-186"/>
</receiveparameter>
</diagnostic>
</diagnostic_group>
<evaluate>
<if>
<expression>
<variableref name="AT002A0018-EV-186"/>
</if>
<integer>5
</integer>
</expression>
<then>
<resultwithstate>
<statemanipulation>
<variableref name="AT02A001-F1"/>
<fault fault-code="AT02A001-F1" fault-state="bad">
</fault>
</statemanipulation>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-AT02A00110" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink" xref type="test">
</link>
</resultwithstate>
</then>
<else>
<resultwithstate>
<interaction>
<message button_title="OK" popup="no">
<messageline>Replace wiring harness W420.
</messageline>
<aftermessage>
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink: href="M00131-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
</returnlink>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-AT02A00121" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink" xref type="test">
</link>
</returnlink>
</link>
</aftermessage>
</message>
</interaction>
</resultwithstate>
</else>
</if>
</evaluate>
</testwithstate>
<testwithstate id="T00001-X-XXX-XXXX-AT02A00110">
<reasonfortest>
<title>REASON FOR TEST

```


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```

</title>
<para esd="no" hcp="no">An open circuit on wire 168 in wiring harness W420 could
cause engine compartment fan failure.
</para>
</reasonfortest>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Connect red test probe to pin C at P2 connector of wiring
harness W420 and connect black test probe to pin C at P1 connector of wiring
harness W420
<link application="frame" linkaction="prompt" linktype="goto" local="T00001-X-XXX-XXXX-
GM39151-S" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink"
xrefype="figure">
<pretext>refer to
</pretext>
<prompt>schematic
</prompt>
</link>
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>
<graphic boardno="obj.15" unitmeasure="in">
</graphic>
</figure>
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>
<graphic boardno="obj.16" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Click on Perform Test # 91 button
</para>
</step1>
<diagnostic_group action="prompt">
<message_button_title="OK">
<messageline>Ready to Perform Test #91
</messageline>
</message>
<diagnostic_protocol="DODACTEST" testname="91">
<desc>DODACTEST
</desc>
<sendparameter>
<name>INPUT
</name>
<string>J4
</string>
</sendparameter>
<sendparameter>
<name>REPEAT
</name>
<string>LOOP
</string>

```

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```

</sendparameter>
<receiveparameter>
<variableref name="AT02A0018-AV-188"/>
</receiveparameter>
</diagnostic>
</diagnostic_group>
<evaluate>
<if>
<expression>
<variableref name="AT02A0018-AV-188"/>
<lt>
<integer>5
</integer>
</expression>
<then>
<resultwithstate>
<statemanipulation>
<variableref name="AT02A001-F2"/>
<fault fault-code="AT02A001-F2" fault-state="ok">
</fault>
</statemanipulation>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-AT02A00112" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink" xref-type="test">
</link>
</resultwithstate>
</then>
<else>
<resultwithstate>
<interaction>
<message button_title="OK" popup="no">
<messageline>Replace wiring harness W420.
</messageline>
<aftermessage>
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink: href="M00131-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<returnlink>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-AT02A00121" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink" xref-type="test">
</link>
</returnlink>
</link>
</aftermessage>
</message>
</interaction>
</resultwithstate>
</else>
</if>
</evaluate>
</testwithstate>
<testwithstate id="T00001-X-XXX-XXXX-AT02A00112">
<reasonfortest>
<title>REASON FOR TEST

```

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```

</title>
<para esd="no" hcp="no">A short circuit on wire 166 in wiring harness W420 could
cause engine compartment fan failure.
</para>
</reasonfortest>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Connect red and black test probes together and hold.
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>
<graphic boardno="obj.17" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Click on Perform Offset button and release test probes.
</para>
</step1>
<diagnostic_group action="prompt">
<message_button_title="TEST">
<messageline>Ready to Perform Offset
</messageline>
</message>
<diagnostic_protocol="DODACOFFSET" testname="91">
<desc>Perform Offset
</desc>
<sendparameter>
<name>INPUT
</name>
<string>J4
</string>
</sendparameter>
<sendparameter>
<name>REPEAT
</name>
<string>SINGLE
</string>
</sendparameter>
<receiveparameter>
<variableref name="AT02A00112-EV-190"/>
</receiveparameter>
</diagnostic>
</diagnostic_group>
<evaluate>
<if>
<expression>
<expression>
<integer>-255
</integer>
<lt/>
<variableref name="AT02A00112-EV-190"/>
</expression>
<and/>

```

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```

<expression>
<variableref name="AT02A00112-EV-190"/>
<gt/>
<integer>255
</integer>
</expression>
</expression>
<then>
<resultwithstate>
<interaction>
<message button_title="OK" popup="no">
<messageline>Fault Corrected
</messageline>
</message>
</interaction>
<completed_test>
</completed_test>
</resultwithstate>
</then>
<else>
<resultwithstate>
<statemanipulation>
<variableref name="AT02A001-F2"/>
<fault fault-code="AT02A001-F2" fault-state="bad">
</fault>
</statemanipulation>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-
AT02A00115" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink"
xreftype="test">
</link>
</resultwithstate>
</else>
</if>
</evaluate>
</testwithstate>
<testwithstate id="T00001-X-XXX-XXXX-AT02A00115">
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Click on Reset button to return to main menu.
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>
<graphic boardno="obj.19" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<interaction>
<message button_title="RESET" popup="no">
<messageline>Test equipment has failed offset test. Problem could be a faulty
test probe or internal test box failure. Notify your supervisor.
</messageline>
<aftermessage>

```

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```

<link application="frame" linkaction="immediate" linktype="goto" popup="no" xlink:href="X-
XXX-XXXX#COVER" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink" xreftype=
"document">
</link>
</aftermessage>
</message>
</interaction>
</testwithstate>
<testwithstate id="T00001-X-XXX-XXXX-AT02A00121">
<reasonfortest>
<title>REASON FOR TEST
</title>
<para esd="no" hcp="no">To verify that original problem is solved.
</para>
</reasonfortest>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href=
"M00354-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Perform APU start-up.
</prompt>
</link>
</para>
</step1>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Check operation of engine compartment fan.
<figure application="both" figtype="normal-page" pane="no" tocentry="1">
<title>
</title>
<graphic boardno="obj.22" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<step1 frame="no" qa="no">
<para esd="no" hcp="no">
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href=
"M00355-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
<prompt>Perform APU shutdown.
</prompt>
</link>
</para>
</step1>
<interaction>
<dialog popup="no">
<binarymenu answer="yesno">
<prompt>Is original problem solved?
</prompt>
<yesstate>
<statemanipulation>
<variableref name="answer"/>
<expression>
<boolean>
<true/>

```

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```

</boolean>
</expression>
</statemanipulation>
</yesstate>
</nostate>
<statemanipulation>
<variableref name="answer"/>
<expression>
<boolean>
<false/>
</boolean>
</expression>
</statemanipulation>
</nostate>
</binarymenu>
</dialog>
</interaction>
<evaluate>
<if>
<expression>
<variableref name="answer"/>
</expression>
<then>
<resultwithstate>
<interaction>
<message button_title="OK" popup="no">
<messageline>Remove wheel chocks.
</messageline>
<aftermessage>
<link application="frame" linkaction="prompt" linktype="return" popup="no" xlink:href=
"O00131-X-XXX-XXXX" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink">
</link>
</aftermessage>
</message>
</interaction>
<completed_test>
</completed_test>
</resultwithstate>
</then>
<else>
<resultwithstate>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-
AT02A00123" popup="no" xlink:type="simple" xmlns:xlink="http://www.w3.org/1999/xlink"
xref="test">
</link>
</resultwithstate>
</else>
</if>
</evaluate>
</testwithstate>
<testwithstate id="T00001-X-XXX-XXXX-AT02A00123">
<step1 frame="no" qa="no">
<para esd="no" hcp="no">Click on Restart button to troubleshoot symptom.
<figure application="both" figtype="normal-page" pane="no" tocentry="1">

```

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```

<title>
</title>
<graphic boardno="obj.24" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<interaction>
<message button_title="RESTART" popup="no">
<messageline>Failure condition has not been fixed.
</messageline>
<messageline>Troubleshoot symptom until failure is fixed.
</messageline>
<messageline>If problem persists, notify your supervisor.
</messageline>
<aftermessage>
<link application="frame" linkaction="immediate" linktype="goto" local="T00001-X-XXX-XXXX-
AT02A0011" popup="no" xlink: type="simple" xmlns: xlink="http://www. w3. org/1999/xlink"
xref type="test">
</link>
</aftermessage>631
</message>
</interaction>
</testwithstate>
</diagnosticwp>

```

2. Frame-based TM stylesheet output example for <diagnosticwp>:

ENGINE COMPARTMENT FAN WILL NOT OPERATE WHEN AUXILIARY POWER UNIT IS OPERATING

1. [Perform Auxiliary Power Unit \(APU\) start-up.](#)

2. Check operation of engine compartment fan.

3. [Perform APU shutdown.](#)

Does engine compartment fan operate when APU is running?

☐ YES

☐ NO

Engine Compartment Fan

FIGURE 303. Diagnostic work package frame-based – initial frame.

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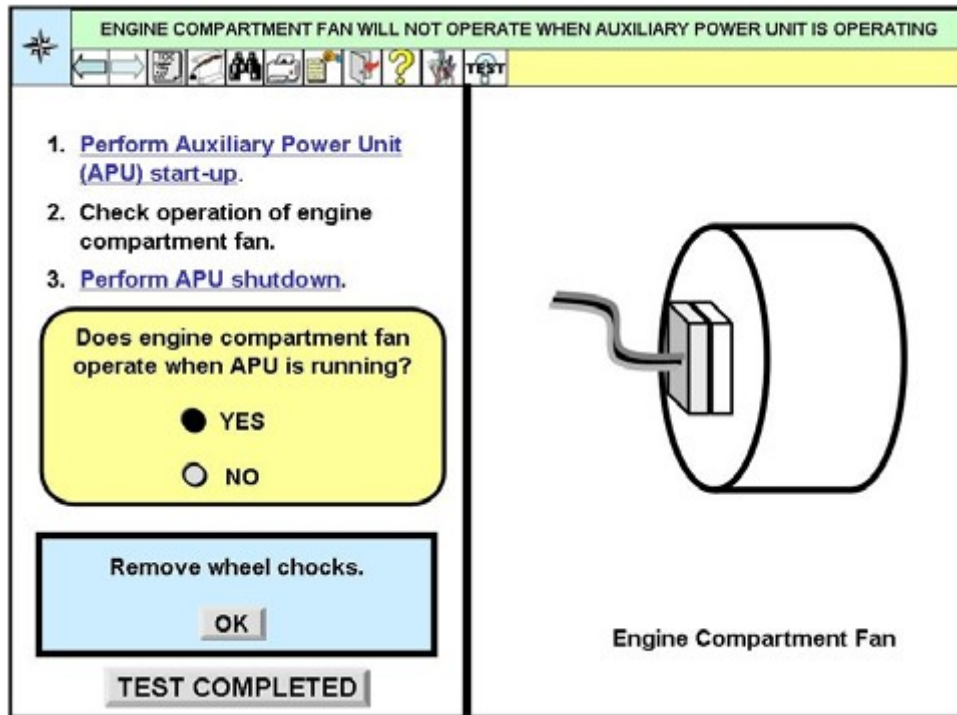


FIGURE 304. Diagnostic work package frame-based – YES response.

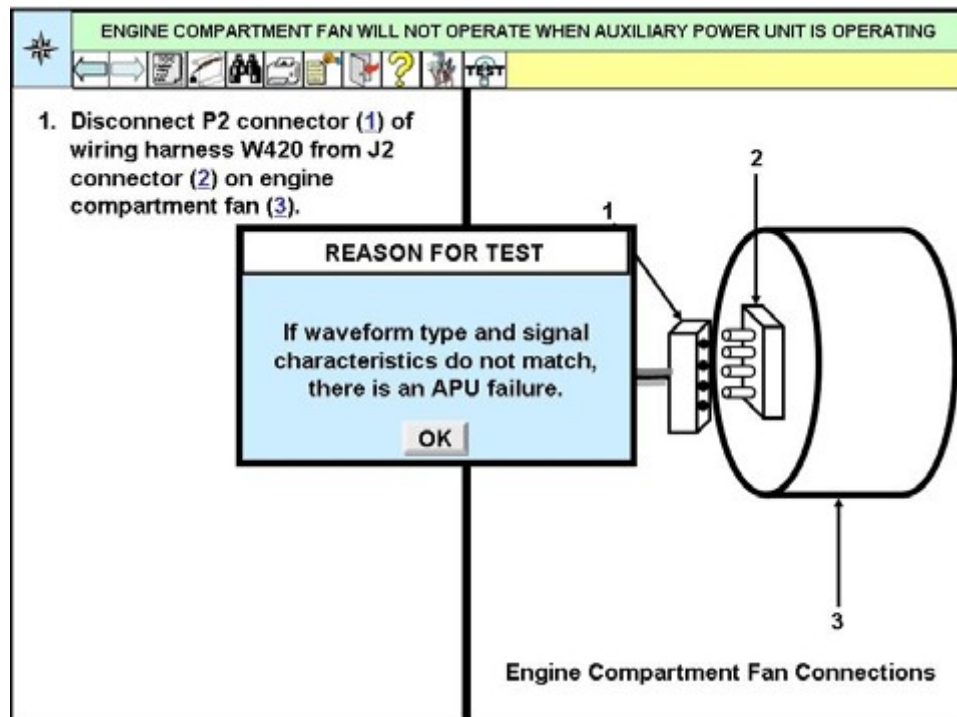


FIGURE 305. Diagnostic work package frame-based – NO response.

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	ENGINE COMPARTMENT FAN WILL NOT OPERATE WHEN AUXILIARY POWER UNIT IS OPERATING									
										
<p>2. <u>Connect test probes to test equipment.</u></p> <p>3. <u>Connect oscilloscope/spectrum analyzer to test equipment.</u></p> <p>4. <u>Connect oscilloscope/spectrum analyzer signal reference wire to pin A and test probe to pin B on P2 connector of wiring harness W420 refer to <u>schematic.</u></u></p>										

FIGURE 306. Diagnostic work package frame-based – NO response next frame.


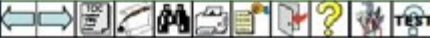
	ENGINE COMPARTMENT FAN WILL NOT OPERATE WHEN AUXILIARY POWER UNIT IS OPERATING									
										
<p>5. <u>Perform APU start-up.</u></p>										
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;">PERFORM TEST</p> <p style="text-align: center;">Ready to Perform Oscilloscope Test. Configure oscilloscope if required and take readings</p> <p style="text-align: center;"><input type="button" value="OK"/></p> </div> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px auto; width: 80%; background-color: #ffffcc;"> <p style="text-align: center;">Is waveform a square wave with an average value of 28 V peak, cycle period length of 55 milliseconds (ms) and frequency of 1.8 kHz?</p> <p style="text-align: center;"> <input type="radio"/> YES <input type="radio"/> NO </p> </div>										

FIGURE 307. Diagnostic work package frame-based – external test

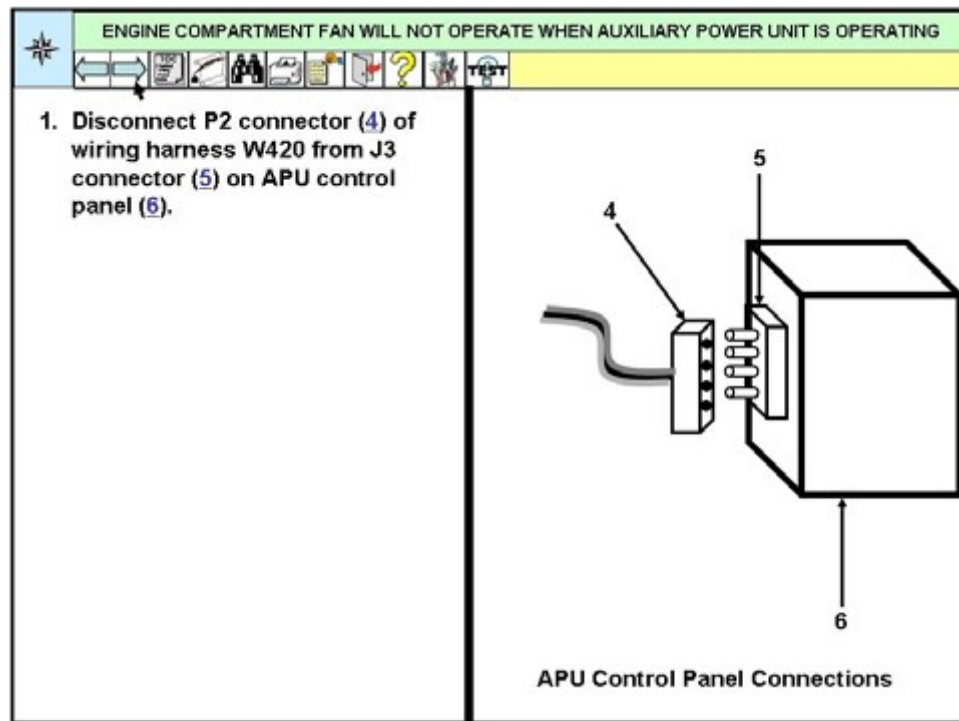


FIGURE 308. Diagnostic work package frame-based – YES response.

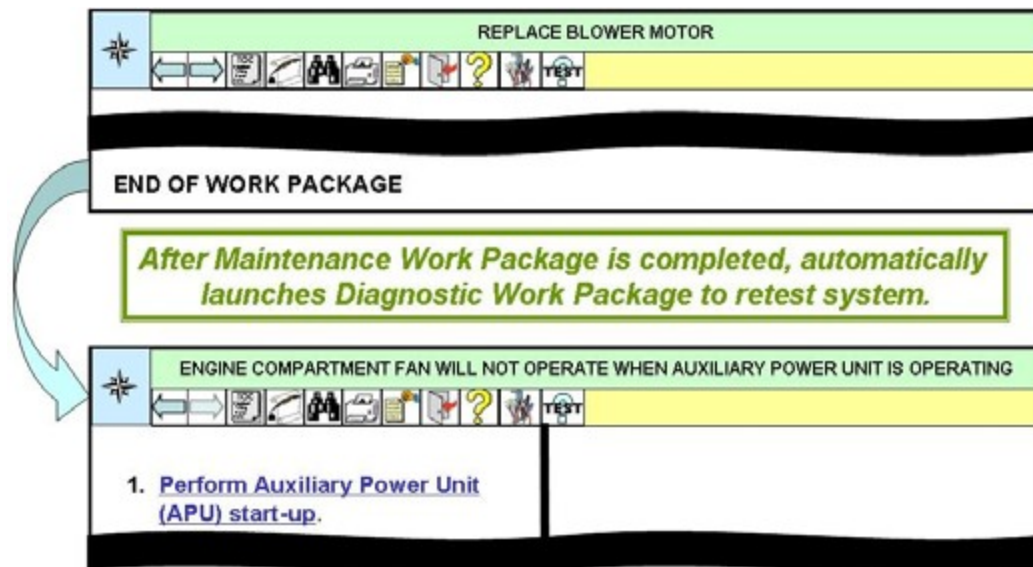


FIGURE 309. Diagnostic work package frame-based – NO response.

22.11 Preshop analysis work package <pshopanalwp>.

The preshop analysis work package is a depot only work package and is prepared when inspection or testing is more effective in determining useful life of a system, subsystem, or component than disassembly.

1. The components of <pshopanalwp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).

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- b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
 - c. Work package initial setup **<initial_setup>** (required) (see Section 16.6).
 - d. Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
 - e. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
 - f. Caution **<caution>** (optional – zero or more) (see Section 28.1.2).
 - g. Note **<note>** (optional – zero or more) (see Section 28.1.3).
 - h. Scope **<scope>** (required) is the purpose and coverage of the preshop analysis (see Section 36.1.4.24).
 - i. Procedure **<proc>** (required) a paragraph or a set of steps that comprise all or part of a task (see Section 17.2).
 - j. Preshop analysis procedures **<pshopanal>** (required) contains how to perform the analysis as either:
 - i. Narrative procedure **<proc>** (required) (see Section 17.2).
 - ii. Checklist **<chklist>** (required) that contains:
 - I. A blank cover sheet **<coverpage>** (required) to detail information about the equipment and identify the person performing the checklist.
 - II. Introduction information **<intro>** (optional) (see Section 36.1.4.14) to provide a brief explanation of its use.
 - III. Table of test and inspection **<pshopchk.tab>** (required) (see Chapter 29) contains as a minimum an entry for each test and inspection procedure with inspection point (the item or area to be inspected), condition, action, remarks, and identification of the personnel performing the inspection. Each component in the table would be a column in the table.
2. The DTD fragment for **<pshopanalwp>** is graphically depicted:

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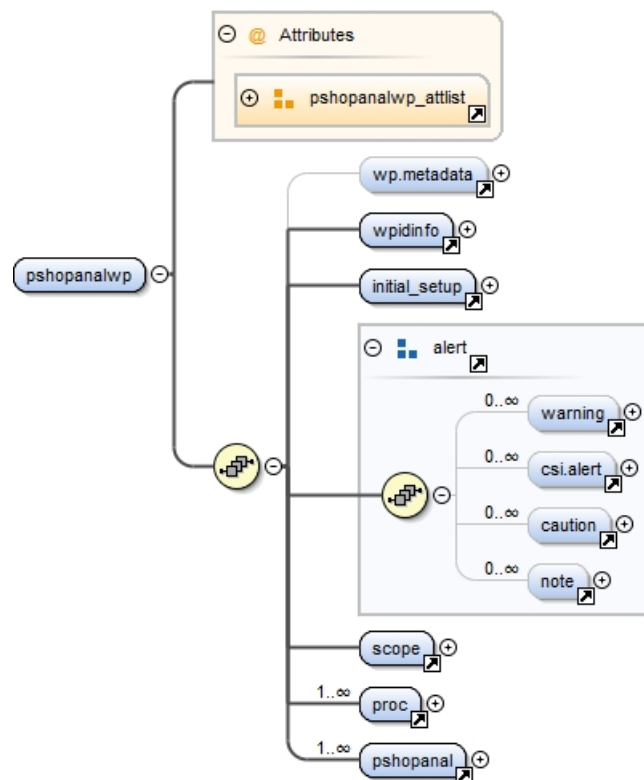


FIGURE 310. Preshop analysis work package DTD hierarchy <pshopanalwp>.

3. The DTD fragment for <pshopanalwp> is:

```
<!ELEMENT pshopanalwp (wp.metadata?, wpidinfo, initial_setup, %alert;,
scope, proc+, pshopanal+)>
```

```
<!ATTLIST pshopanalwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
Navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

<!ELEMENT pshopanal (proc+ | chklist)>

<!ATTLIST pshopanal

| | | |
|-----------|--------------------------|-----------|
| assocfig | IDREFS | #IMPLIED |
| changeref | IDREFS | #IMPLIED |
| comment | CDATA | #IMPLIED |
| delchlvl | (0-99) | "0" |
| id | ID | #IMPLIED |
| idref | IDREFS | #IMPLIED |
| inschlvl | (0-99) | "0" |
| security | (uc fouo c s ts) | #IMPLIED |
| skilltrk | CDATA | #IMPLIED> |

<!ELEMENT chklist (coverpage, intro?, pshopchk.tab)>

<!ATTLIST chklist

| | | |
|-----------|--------------------------|-----------|
| assocfig | IDREFS | #IMPLIED |
| changeref | IDREFS | #IMPLIED |
| comment | CDATA | #IMPLIED |
| delchlvl | (0-99) | "0" |
| id | ID | #IMPLIED |
| idref | IDREFS | #IMPLIED |
| inschlvl | (0-99) | "0" |
| security | (uc fouo c s ts) | #IMPLIED |
| skilltrk | CDATA | #IMPLIED> |

<!ELEMENT pshopchk.tab (table)>

4. Common attributes for <pshopanalwp> are:

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- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Indicates the change level for metadata on a changed work package (optional) (see Section 36.3.7).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngho** – Change history or remarks reference (optional) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

22.11.1 XML document instance fragment and output for <pshopanalwp>.

The XML instance and its stylesheet output for a <pshopanalwp> is provided below:

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1. Example of an XML document instance fragment for **<pshopanalwp>**:

```

<pshopanalwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no"
tocentry="2" wpno="M0003-X-XXXX-XXX" wpseq="0003">
  <wpidinfo>
    <maintlvl level="depot"/>
    <title>Preshop Analysis Procedures
  </title>
  </wpidinfo>
  <initial_setup>
    <title>Not Applicable
  </title>
  <null insert="none"/>
  </initial_setup>
  <scope>
    <title>Scope
  </title>
  <para>The purpose of the preshop analysis operations is to determine, at the
highest assembly level possible, the work required to return the Electrical
Equipment RL/RIU Rack to a condition specified under the Scope of this DMWR found
in
  <xref posttext=", General Information" wpid="G0001-X-XXXX-XXX"/>. If inspection at the
highest assembly level is precluded by missing, damaged, or defective
components, inspection will proceed at the next lower level. The preshop
analysis checklist will be used to record the results of the analysis and any
required maintenance. The preshop analysis checklists are to be reproduced
locally, as required, for recording preshop analysis checks.
  </para>
  <para0>
    <title>Unpacking and Special Handling
  </title>
  <para>Remove the end item, assembly, subassembly, or component from the
container, using care not to damage or change the configuration of the item. The
control measures are those defined in
  <xref posttext=", General Information" wpid="G0001-X-XXXX-XXX"/>.
  </para>
  </para0>
  <para0>
    <title>Checking Attached Documents
  </title>
  <para>Check all tags and forms attached to the item to determine reason for
removal from service or other discrepancies. Do not remove tags until pertinent
information has been placed on appropriate work documents.
  </para>
  </para0>
  <para0>
    <title>External Inspection
  </title>
  <para>Make an external inspection to determine the completeness of the item,
noting any damaged or missing parts. Record the results of the external
inspection, using the preshop analysis checklist outlined in this WP.
  </para>
  </para0>
  <para0>

```

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<title>Cleaning and Preservation

</title>

<para>If cleaning is required to perform the preshop analysis, clean only as necessary to make the analysis. Cleaning will be performed in accordance with

<xref wpid="M0005-X-XXXX-XXX"/>and

<xref wpid="M0007-X-XXXX-XXX"/>.

</para>

</para0>

<para0>

<title>Preshop Analysis Test

</title>

<para>The test that may be required to perform preshop analysis is listed in

<xref tableid="M0003-X-XXXX-XXX-TABLE1"/>.

</para>

</para0>

</scope>

<proc>

</proc>

<pshopanal>

<chklist>

<coverpage>

<partno>

</partno>

<serialno>

</serialno>

<nsn>

</fsc>

</fsc>

<niin>

</niin>

</nsn>

<modreq>

</modreq>

<reason>

</reason>

<secitem>

</secitem>

<revtag>

</revtag>

<revform>

</revform>

<name>

</name>

<sig>

</sig>

<date>

</date>

</coverpage>

<intro>

<para0>

<title>Preshop Analysis Checklist

</title>

<para>The purpose of each column in the preshop analysis checklist is as follows:

<randlist bullet="yes">

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<item>Inspection Point. Indicates the inspection and test necessary to determine required overhaul maintenance tasks.

</item>

<item>Reference. Indicates the paragraph within the body of this DMWR or the document where the inspection/test is located.

</item>

<item>Condition. Provides space for maintenance personnel to list the results of the inspections/tests.

</item>

<item>Action. Provides space for maintenance personnel to list the maintenance tasks required for overhaul.

</item>

<item>Person Performing Analysis (Sign and Date). Provides space for maintenance personnel to sign and date upon completion of each inspection/test.

</item>

</randlist>

</para>

</para0>

</intro>

<pshopchk.tab>

<table id="M0003-X-XXXX-XXX-TABLE1">

<title>Test and Inspection - Electrical Equipment RL/RIU Rack 11465907 or 11478033

</title>

<tgroup cols="5">

<colspec colname="col1" colwidth="1*"/>

<colspec colname="col2" colwidth="0.66*"/>

<colspec colname="col3" colwidth="1.33*"/>

<colspec colname="col4" colwidth="1.33*"/>

<colspec colname="col5" colwidth="1*"/>

<thead>

<row>

<entry align="center" valign="bottom">INSPECTION AREA

</entry>

<entry align="center" valign="bottom">REFERENCE

</entry>

<entry align="center" valign="bottom">CONDITION

</entry>

<entry align="center" valign="bottom">ACTION

</entry>

<entry align="center" valign="bottom">PERSON PERFORMING ANALYSIS (SIGN AND DATE)

</entry>

</row>

</thead>

<tbody>

<row>

<entry>Modifications

</entry>

<entry>

<xref wpid="M00015-X-XXXX-XXX"/>

</entry>

<entry>

</entry>

<entry>

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```

</entry>
<entry>
</entry>
</row>
<row>
<entry>Review of Records and Data
</entry>
<entry>
<xref wpid="M0003-X-XXXX-XXX"/>
<brk/>
<xref wpid="M0005-X-XXXX-XXX"/>
<brk/>
<xref wpid="M0007-X-XXXX-XXX"/>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
</row>
<row>
<entry>Corrosion
</entry>
<entry>
<xref wpid="M0003-X-XXXX-XXX"/>
<brk/>
<xref wpid="M0005-X-XXXX-XXX"/>
<brk/>
<xref wpid="M0007-X-XXXX-XXX"/>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
</row>
<row>
<entry>Damaged Connector
</entry>
<entry>
<xref wpid="M0003-X-XXXX-XXX"/>
<brk />
<xref wpid="M0005-X-XXXX-XXX"/>
<brk/>
<xref wpid="M0007-X-XXXX-XXX" />
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>

```

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```
<entry>
</entry>
</row>
<row>
<entry>Damaged or Missing Hardware
</entry>
<entry>
<xref wpid="M0003-X-XXXX-XXX"/>
<brk/>
<xref wpid="M0005-X-XXXX-XXX" />
<brk/>
<xref wpid="M0007-X-XXXX-XXX"/>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
</row>
<row>
<entry>Damaged Wiring
</entry>
<entry>
<xref wpid="M0003-X-XXXX-XXX"/>
<brk/>
<xref wpid="M0005-X-XXXX-XXX"/>
<brk/>
<xref wpid="M0007-X-XXXX-XXX"/>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
</row>
<row>
<entry>Testing/Performance Check
</entry>
<entry>
<xref wpid="M0003-X-XXXX-XXX" />
<brk/>
<xref wpid="M0005-X-XXXX-XXX"/>
<brk/>
<xref wpid="M0007-X-XXXX-XXX"/>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
<entry>
</entry>
</row>
```

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```
</tbody>  
</tgroup>  
</table>  
</pshopchk.tab>  
</chklist>  
</pshopanal>  
</pshopanalwp>
```

2. Page-based TM stylesheet output example for **<pshopanalwp>**:

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0003

DEPOT**PRESHOP ANALYSIS PROCEDURES**

INITIAL SETUP:**NOT APPLICABLE**NOT APPLICABLE

SCOPE

The purpose of the preshop analysis operations is to determine, at the highest assembly level possible, the work required to return the Electrical Equipment RL/RIU Rack to a condition specified under the Scope of this DMVVR found in, General Information. If inspection at the highest assembly level is precluded by missing, damaged, or defective components, inspection will proceed at the next lower level. The preshop analysis checklist will be used to record the results of the analysis and any required maintenance. The preshop analysis checklists are to be reproduced locally, as required, for recording preshop analysis checks.

UNPACKING AND SPECIAL HANDLING

Remove the end item, assembly, subassembly, or component from the container, using care not to damage or change the configuration of the item. The control measures are those defined in , General Information.

CHECKING ATTACHED DOCUMENTS

Check all tags and forms attached to the item to determine reason for removal from service or other discrepancies. Do not remove tags until pertinent information has been placed on appropriate work documents.

EXTERNAL INSPECTION

Make an external inspection to determine the completeness of the item, noting any damaged or missing parts. Record the results of the external inspection, using the preshop analysis checklist outlined in this WP.

CLEANING AND PRESERVATION

If cleaning is required to perform the preshop analysis, clean only as necessary to make the analysis. Cleaning will be performed in accordance with and .

PRESHOP ANALYSIS TEST

The test that may be required to perform preshop analysis is listed in Table 2.

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FIGURE 311. Example of a page-based TM stylesheet output for <pshopanalwp> (Page 1 of 3).

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0003

**PRESHOP ANALYSIS
FOR****P/N** _____**Serial No.** _____**NSN** _____**MWOs Required** _____**Reason(s) for Overhaul/Repair** _____

Unpacking Secondary Items Required? _____

Reviewed Tags? _____

Reviewed Forms? _____

Name (please print) _____

Signature _____ Date _____

0003-2

FIGURE 312. Example of a page-based TM stylesheet output for <pshopanalwp> (Page 2 of 3).

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0003

PRESHOP ANALYSIS CHECKLIST

The purpose of each column in the preshop analysis checklist is as follows:

- Inspection Point. Indicates the inspection and test necessary to determine required overhaul maintenance tasks.
- Reference. Indicates the paragraph within the body of this DMWR or the document where the inspection/test is located.
- Condition. Provides space for maintenance personnel to list the results of the inspections/tests.
- Action. Provides space for maintenance personnel to list the maintenance tasks required for overhaul.
- Person Performing Analysis (Sign and Date). Provides space for maintenance personnel to sign and date upon completion of each inspection/test.

Table 1. Test and Inspection - Electrical Equipment RL/RIU Rack 11465907 or 11478033.

INSPECTION AREA	REFER- ENCE	CONDITION	ACTION	PERSON PERFORMING ANALYSIS (SIGN AND DATE)
Modifications				
Review of Records and Data	WP 0003			
Corrosion	WP 0003			
Damaged Connector	WP 0003			
Damaged or Missing Hardware	WP 0003			
Damaged Wiring	WP 0003			
Testing/ Performance Check	WP 0003			

END OF WORK PACKAGE

0003—3/blank

FIGURE 313. Example of a page-based TM stylesheet output for <pshopanalwp> (Page 3 of 3).

22.12 Depot maintenance troubleshooting work packages.

22.12.1 Component checklist work package <compchklistwp>.

The element is used in support of preshop analysis procedures. Generally the element <compchklist> contains no data, but prescribes the fields the stylesheet generates.

1. The components of <compchklistwp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. Introduction information <intro> (required) (see Section 36.1.4.14) to provide a brief explanation of its use.
 - e. Component checklist <compchklist> (required) contains the depot level checklist for a component.
2. The DTD fragment for <compchklistwp> is graphically depicted:

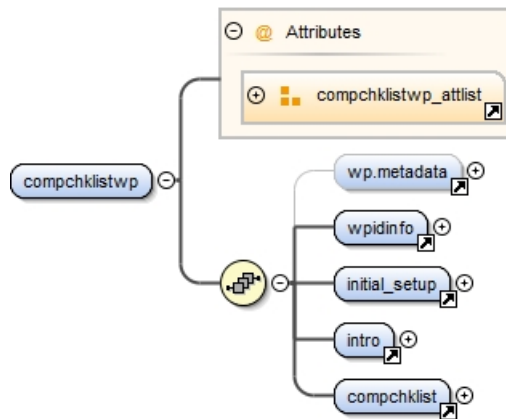


FIGURE 314. Component checklist work package DTD hierarchy <compchklistwp>.

3. The DTD fragments for <compchklistwp> and <compchklist> are:

```
<!ELEMENT compchklistwp (wp.metadata?, wpidinfo, initial_setup, intro, compchklist)>
```

```
<!ATTLIST compchklistwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED

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date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0–99)	“0”
deletewp	(yes no)	“no”
fgc	CDATA	#IMPLIED
frame	(yes no)	“yes”
idref	IDREFS	#IMPLIED
inschlvl	CDATA	#IMPLIED
insertwp	(0–99)	“0”
lsa-id	CDATA	#IMPLIED
marines	(yes no)	“no”
navy	(yes no)	“no”
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	“2”
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

<!ELEMENT compchklist (name, serialno?, daterec?, recfrom?, compname?, nsn?, partno, cageno, qty?, qtyrec?, damage?)>

<!ATTLIST compchklist

| | | |
|-----------|--------------------------|-----------|
| assocfig | IDREFS | #IMPLIED |
| changeref | IDREFS | #IMPLIED |
| comment | CDATA | #IMPLIED |
| delchlvl | (0–99) | “0” |
| id | ID | #IMPLIED |
| idref | IDREFS | #IMPLIED |
| inschlvl | (0–99) | “0” |
| security | (uc fouo c s ts) | #IMPLIED |
| skilltrk | CDATA | #IMPLIED> |

4. Common attributes for <compchklistwp> are:

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Indicates the change level for metadata on a changed work package (optional) (see Section 36.3.12).

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- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change history or remarks reference (optional) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

22.12.1.1 XML document instance fragment and output for <compchklistwp>.

The XML instance and its stylesheet output for a <compchklistwp> is provided below.

1. Example of an XML document instance fragment for <compchklistwp>:

```
<compchklistwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no"
tocentry="2" wpno="t00002-X-XXXX-XXX" wpseq="0080">
  <wpidinfo>
    <maintlvl level="depot"/>
    <title>Component Checklist
  </title>
</wpidinfo>
```

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```

<initial_setup>
<title>Not Applicable
</title>
<null insert="none"/>
</initial_setup>
<intro frame="no">
<para0>
<title>Scope
</title>
<para >This work package includes a list which is to be copied for each item
received for a preshop analysis. After copying one list for each item, the
information required must be completed on the checklist prior to the preshop
analysis.
</para>
</para0>
</intro>
<compchklist>
<name>
</name>
<serialno>
</serialno>
<daterec>
</daterec>
<recfrom>
</recfrom>
<compname>
</compname>
<nsn>
</fsc>
</fsc>
<niin>
</niin>
</nsn>
<qty>
</qty>
<qtyrec>
</qtyrec>
<damage>
</damage>
</compchklist>
</compchklistwp>

```

2. Page-based TM stylesheet output example for **<compchklistwp>**:

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0080

DEPOT**COMPONENT CHECKLIST**

INITIAL SETUP:**NOT APPLICABLE**NOT APPLICABLE

SCOPE

This work package includes a list which is to be copied for each item received for a preshop analysis. After copying one list for each item, the information required must be completed on the checklist prior to the preshop analysis.

COMPONENT CHECKLIST

Name/nomenclature of the equipment/item _____

Serial Number _____

Date received _____

Received from (identify unit) _____

Component name _____

NSN _____

Quantity received _____

Visual damage found _____

END OF WORK PACKAGE

0080-1/blank

FIGURE 315. Example of a page-based stylesheet output for <compchklistwp>.

22.13 Aviation troubleshooting unique work packages.

22.13.1 Aviation troubleshooting introduction work package <tsintrowp>.

The work package describes the “How to Use” this manual for Aviation Troubleshooting TM (-T). The work package describes the testing and troubleshooting processes, general methods used to perform testing and troubleshooting, general flow of troubleshooting processes, and any peculiar electrical subsystems and electronic equipment troubleshooting information. When a troubleshooting index (refer to Section 22.5) is used, a description and explanation of the index is included.

1. The components of <tsintrowp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. General information <geninfo> (optional) (see Section 36.1.4.11).
 - d. Describe the “How to Use” this manual for Aviation Troubleshooting TM, select a method:
 - i. Titled paragraph <para0>/<para0-alt> (required – one or more) (see Section 36.1.1.9).
 - ii. Paragraph <para> (required) (see Section 36.1.1.6).
 - iii. How to Use <howtouse> (required) (see Section 15.4.2).
 - e. The DTD fragment for <tsintrowp> is graphically depicted:

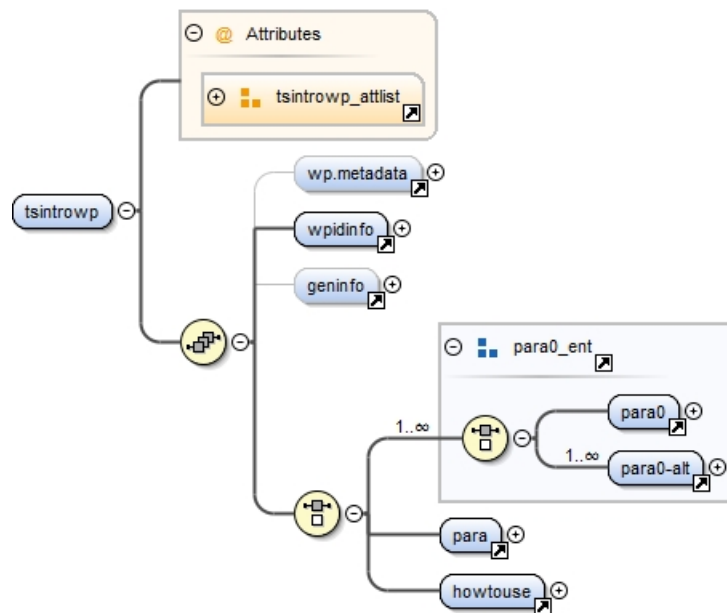


FIGURE 316. Aviation troubleshooting introduction work package DTD hierarchy <tsintrowp>.

- f. The DTD fragments for <tsintrowp> is:

```
<!ELEMENT tsintrowp (wp.metadata?, wpidinfo, geninfo?, ((%para0_ent;)+ |
para | howtouse))>
<!ATTLIST tsintrowp
airforce                (yes | no )                "no"
```

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army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0–9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0–99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0–99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

g. Common attributes for **<tsintrowp>** are:

- i. airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- ii. army** – Indicates that the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- iii. assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- iv. changelvl** – Indicates the change level for metadata on a changed work package (optional) (see Section 36.3.12).
- v. changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- vi. chngno** – Change history or remarks reference (optional) (see Section 36.3.12).
- vii. comment** – Change information (optional) (see Section 36.3.12).
- viii. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).

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- ix. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- x. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- xi. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- xii. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- xiii. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- xiv. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- xv. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- xvi. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- xvii. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- xviii. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- xix. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- xx. **security** – Security classification (optional) (see Section 36.3.14).
- xxi. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- xxii. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- xxiii. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- xxiv. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

22.13.2 Aviation troubleshooting technical description work package <techdescwp>.

The troubleshooting technical description work package is used only for Aviation Troubleshooting TM (-T). The work package provides for three components that are derived from equipment description work package (see Section 18.1.3), control/indicators work packages (see Section 19.1.1), and theory of operation work package (see Section 18.1.4).

1. The components of <techdescwp> are:

- a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
- b. Work package identification information <wpidinfo> (required) (see Section 16.2).
- c. Work package initial setup <initial_setup> (required) (see Section 16.6).
- d. Warning <warning> (optional – zero or more) (see Section 28.1.1).
- e. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
- f. Caution <caution> (optional – zero or more) (see Section 28.1.2).

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- g. Note **<note>** (optional – zero or more) (see Section 28.1.3).
 - h. General information **<geninfo>** (optional) (see Section 36.1.4.11).
 - i. At least one of the technical description procedures (equipment description **<descproc>**, control/indicators **<ctrlindproc>**, and/or theory of operation **<thryproc>**) is needed.
2. The DTD fragment for **<techdescwp>** is graphically depicted.

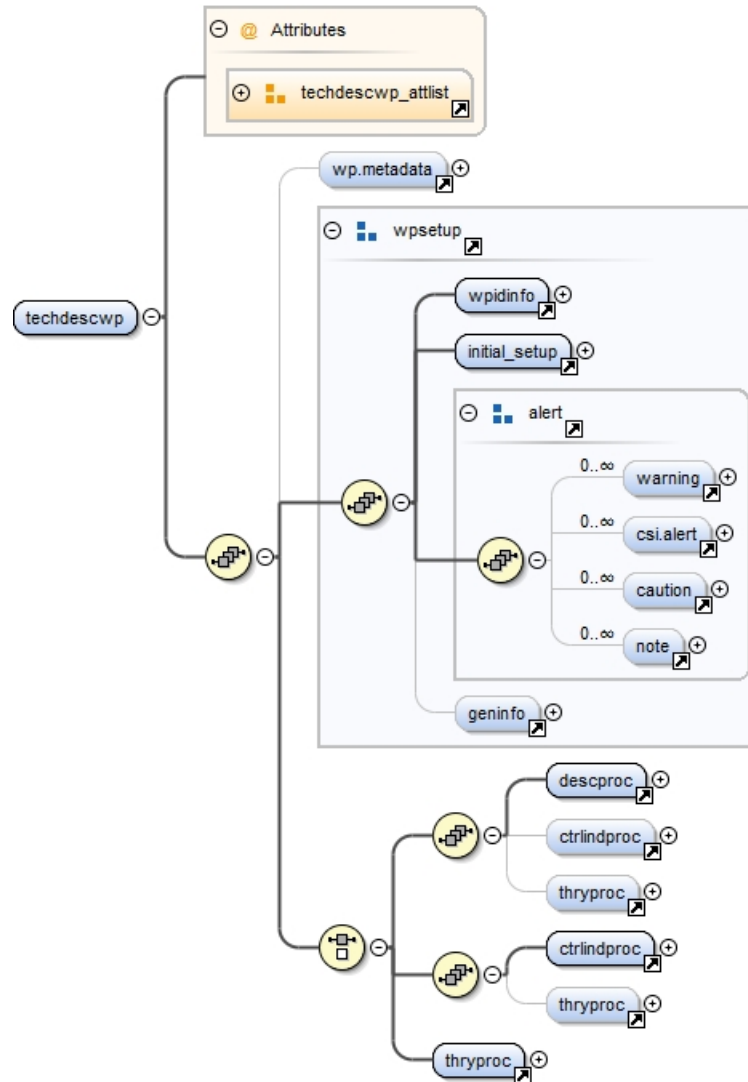


FIGURE 317. Aviation troubleshooting description work package DTD hierarchy **<techdescwp>**.

3. The DTD fragment for **<techdescwp>** is:

```

<!ELEMENT techdescwp (wp.metadata?, %wpsetup;, ((descproc, ctrlindproc?,
thryproc?) | (ctrlindproc, thryproc?) | thryproc)) (wp.metadata?, %wpset-
up;, ((descproc, ctrlindproc?, thryproc?) | (ctrlindproc, thryproc?) |
thryproc))>

```

```

<!ATTLIST techdescwp

```

```

  airforce

```

```

    (yes | no )

```

```

    "no"

```


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army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0–9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0–99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0–99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0–99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Common attributes for **<techdescwp>** are:

- a. **airforce** – Indicates that the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates that the work package pertains only to the U.S. Army (default value is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Indicates the change level for metadata on a changed work package (optional) (see Section 36.3.7).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change history or remarks reference (optional) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).

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- i. **date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM. (optional) (see Section 16.3.3).
- r. **marines** – Indicates that the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates that the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23 MAINTENANCE INSTRUCTIONS CHAPTER

23.1 Maintenance instructions <mim>.

Maintenance instruction chapters are prepared and subdivided into individual work packages that enable a technician to perform maintenance on the weapons system/equipment and associated assemblies, components, SRUs, and LRUs. The maintenance instruction chapter has category types that each category provides the precise structural functionality that is defined in MIL-STD-40051-1/-2. Multiple chapters can be assigned to a maintenance category depending on the type and complexity of the weapon system/equipment. An individual chapter, however, can only be assigned to one maintenance instruction category. The XML elements designate the components to be presented within the individual category, chapter, or work package. Some elements within a chapter or work package are unique to the respective chapter or work package while other elements are common to one or more categories. Each chapter and work package is better defined and identified by the addition of element attributes which are contained in the DTD fragment.

1. The components of a maintenance instruction chapter <mim> are:
 - a. Title page <titlepg> (required) (see Section 36.1.1.1).
 - b. One of the following maintenance categories, in accordance with MIL-STD-40051-1/-2, is required:
 - i. Preventive maintenance checks and services (PMCS) category <pmcscategory> (see Section 23.2.1).
 - ii. General maintenance with PMCS category <maintenancepmcscategory> (see Section 23.2.2).
 - iii. General maintenance category <maintenancecategory> (see Section 23.2.3).
 - iv. Depot maintenance category <depotcategory> (see Section 23.2.4).
 - v. Aircraft maintenance category <aviationcategory> (see Section 23.2.6).
 - vi. Ammunition maintenance category <ammunitioncategory> (see Section 23.2.9).
 - vii. Auxiliary equipment maintenance category <auxiliarycategory> (see Section 23.2.5).
 - viii. Preventive maintenance services (PMS) category <pmscategory> (see Section 23.2.7).
 - ix. Phased maintenance inspections (PMI) category <checklistcategory> (see Section 23.2.8).
 - x. Test and inspection category <testinspectioncategory> (see Section 23.2.10).
 - xi. Ammunition marking maintenance <ammomarkingcategory> (see Section 23.2.11).
 - xii. Shipment/movement and storage maintenance <shipmentmovementstoragecategory> (see Section 23.2.12).
 - xiii. Software maintenance category <softmaintcategory> (see Section 23.2.13).
 - xiv. General maintenance category <genmaintcategory> (see 23.2.14).
 - xv. Depot maintenance work requirements quality acceptance requirements category <dmwrqarcategory> (see 23.2.15).
2. The DTD fragment for <mim> is graphically depicted.

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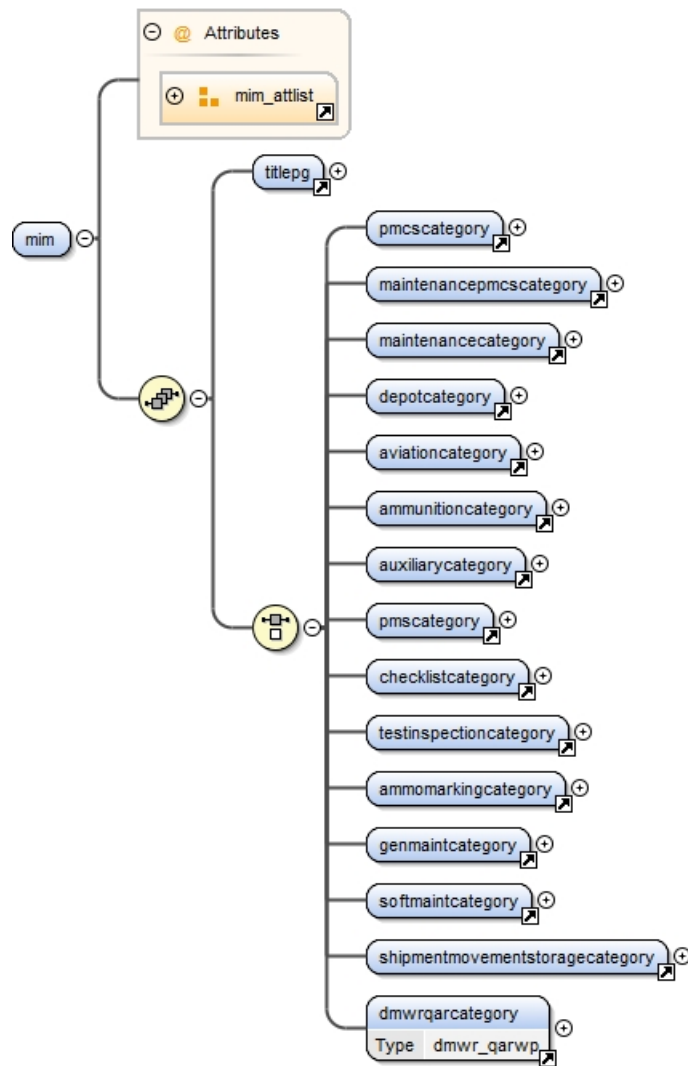


FIGURE 318. Maintenance instructions chapter DTD hierarchy <mim>.

3. The DTD fragment for <mim> is:

```
<!ELEMENT mim (titlepg, (pmcategory | maintenancepmcategory | maintenancecategory | depotcategory | aviationcategory | ammunitioncategory | auxiliarycategory | pmcategory | checklistcategory | testinspectioncategory | ammomarkingcategory | genmaintcategory | softmaintcategory | shipmentmovementstoragecategory | dmwrqarcategory))>
```

```
<!ATTLIST mim
```

chap-toc	(yes no)	"yes"
chnгно	(0-99)	"0"
frame	(yes no)	"yes"
tocentry	(2 3 4 5)	"1"
revno	CDATA	#IMPLIED>

4. Common attributes for <mim> are:

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- a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **chnгно** – Change number (required) (see Section 36.3.12).
- c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- d. **revno** – Revision number (required) (see Section 36.3.12).
- e. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

23.2 Maintenance categories.

Depending on the type and complexity of the weapon system/equipment, the IETM or TM contains one or more of the following maintenance category chapters and work packages (within the selected categories). In accordance with MIL-STD-40051-1/-2, the content matrices describe the optional and/or required maintenance categories and work packages for each technical manual type. The acquiring activity has the responsibility in selecting the maintenance category and the work packages within each category.

23.2.1 Preventive Maintenance Checks and Services (PMCS) category <pmcscategory>.

PMCS is based upon the principles of Reliability Centered Maintenance logic. PMCS includes the necessary periodic lubrication instructions, and applicable scheduled corrosion inspections required to maintain operational equipment in good operating order. The PMCS category applies only to weapon systems, equipment, and applicable components. It does not apply to aircraft TMs, DMWRs, and NMWRs. If the complexity of the weapon system/equipment is extensive, multiple PMCS categories can be developed for each maintenance level(s). Additionally with a PMCS category, multiple PMCS can be developed for various conditions (before use, after use, after specific miles or hours, etc.).

1. The work packages for <pmcscategory> are:
 - a. PMCS introduction work package <pmcsintrowp> (required) (see Section 23.5).
 - b. PMCS work package <pmcswp> (required – one or more) (see Section 23.6).
2. The DTD fragment for <pmcscategory> is graphically depicted.

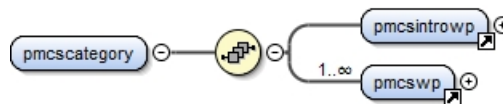


FIGURE 319. PMCS category DTD hierarchy <pmcscategory>.

3. The DTD fragment for <pmcscategory> is:


```
<!ELEMENT pmcscategory (pmcsintrowp, pmcswp+)>
```
4. The <pmcscategory> has no attributes.

23.2.2 General maintenance with PMCS category <maintenancepmcscategory>.

The general maintenance with PMCS category contains the necessary work packages with servicing, PMCS, and assembly instructions required to place a piece of equipment or weapon system into service. This category applies only to weapon systems, equipment, and applicable components. It does not apply to aircraft TMs, DMWRs, and NMWRs. Depending on the complexity of the system, multiple general maintenance categories may be developed to separate information into major end items and/or maintenance levels.

1. The work packages for <maintenancepmcscategory> are:

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- a. Service upon receipt work package **<surwp>** (optional – zero or more) (see Section 23.3).
 - b. Equipment/user fitting instruction work package **<perseqpwp>** (optional – zero or more) (see Section 23.4).
 - c. PMCS introduction work package **<pmcsintrowp>** (required) (see Section 23.5).
 - d. PMCS work package(s) **<pmcswp>** (required – one ore more) (see Section 23.6).
 - i. The following work packages occur in no specific order and require at least one to be developed:
 - I. General maintenance work package **<gen.maintwp>** (see Section 23.8).
 - II. Maintenance work package **<maintwp>** (see Section 23.7).
 - III. Lubrication instructions work package **<lubewp>** (see Section 23.9).
 - e. If any locally manufactured items (see Section 23.11), are required, the following two work packages are included:
 - i. Manufactured items introduction work package **<manu_item_introwp>** (required) (see Section 23.11.1).
 - ii. Illustrated list of manufactured items work package **<manuwp>** (optional) (see Section 23.11.2).
 - f. Torque limits work package **<torquewp>** (optional) (see Section 23.12).
 - g. Wiring diagrams work package **<wiringwp>** (optional – zero or more) (see Section 23.13).
2. The DTD fragment for **<maintenancepmcscategory>** is graphically depicted:

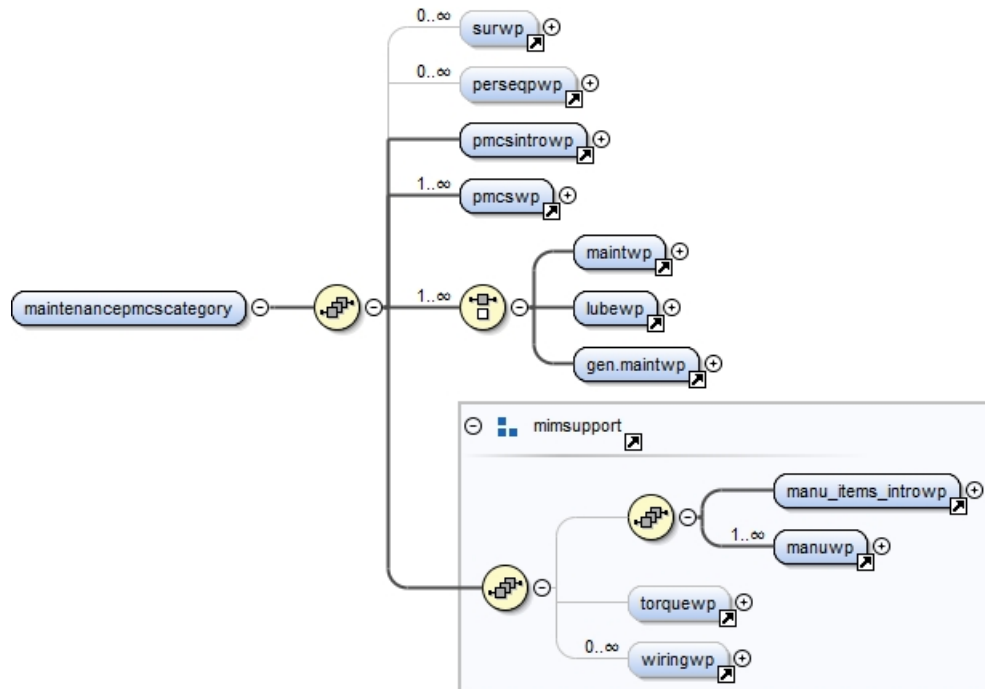


FIGURE 320. Maintenance with PMCS category DTD hierarchy **<maintenancepmcscategory>**.

3. The DTD fragment for **<maintenancepmcscategory>** is:

```
<!ELEMENT maintenancepmcscategory (surwp*, perseqpwp*, pmcsintrowp, pmcswp+,
(maintwp | lubewp | gen.maintwp)+, %mimsupport;)>
```

4. The **<maintenancepmcscategory>** has no attributes.

23.2.3 General maintenance category <maintenancecategory>.

The general maintenance category contains weapon system/equipment maintenance repair task work packages sufficient to ensure repair of the weapon system/equipment, which do not contain PMS. Maintenance repair tasks are identified in the applicable MAC. The developer ensures either the PMCS category or general maintenance with PMCS category is developed in accordance with MIL-STD-40051-1/-2. This category applies only to weapon systems, equipment, and applicable components. It does not apply to aircraft TMs, DMWRs, and NMWRs. Depending on the complexity of the system multiple general maintenance categories may be developed to separate information into major end items and/or maintenance levels.

1. The work packages for <maintenancecategory>:
 - a. Service upon receipt work package <surwp> (optional – zero or more) (see Section 23.3).
 - b. Equipment/user fitting instruction work package <perseqpwp> (optional – zero or more) (see Section 23.4).
 - c. The following work packages occur in no specific order and require at least one to be developed:
 - i. General maintenance work package <gen.maintwp> (see Section 23.8).
 - ii. Specific maintenance work package <maintwp> (see Section 23.7).
 - iii. Lubrication instructions work package <lubewp> (see Section 23.9).
 - d. If any locally manufactured items (see Section 23.11) are required, the following two work packages are included:
 - i. Manufactured items introduction work package <manu_item_introwp> (see Section 23.11.1).
 - ii. Illustrated list of manufactured items work package <manuwp> (see Section 23.11.2).
 - e. Torque limits work package <torquewp> (optional) (see Section 23.12).
 - f. Wiring diagrams work package <wiringwp> (optional – zero or more) (see Section 23.13).
2. The DTD fragment for <maintenancecategory> is graphically depicted:

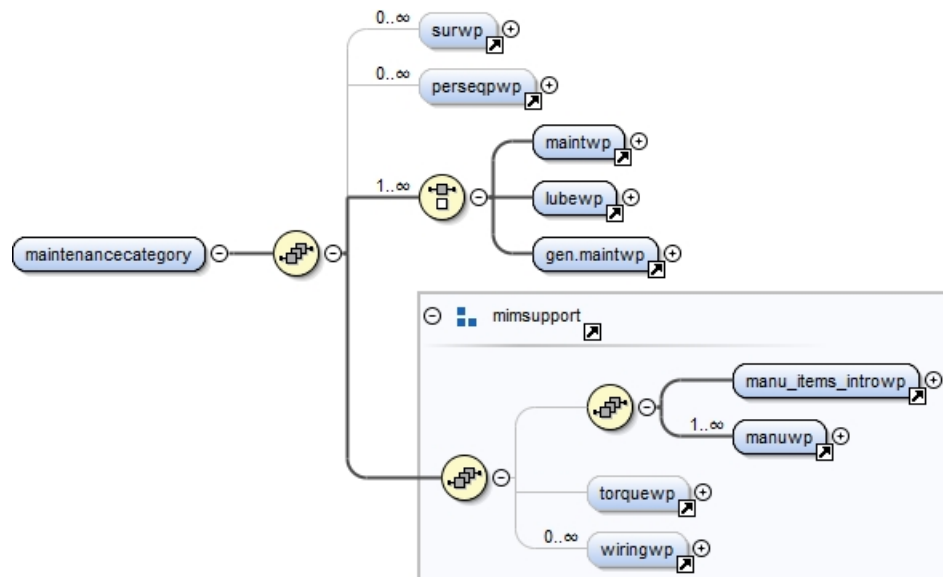


FIGURE 321. Maintenance category DTD hierarchy <maintenancecategory>.

3. The DTD fragment for <maintenancecategory> is:

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```
<! ELEMENT maintenancecategory (surwp*, perseqwp*, (maintwp | lubewp | gen.maintwp)+, %mimsupport;%mimsupport;)>
```

4. The **<maintenancecategory>** has no attributes.

23.2.4 Depot maintenance category **<depotcategory>**.

The depot maintenance category contains weapon system/equipment maintenance repair task work packages sufficient to ensure complete repair of the weapon system/equipment. Depot maintenance repair tasks are identified in the applicable MAC. Depending on the complexity of the system multiple general maintenance categories may be developed to separate information into major end items and/or maintenance levels.

1. The work packages for **<depotcategory>** are:
 - a. The following work packages occur in no specific order and require at least one to be developed:
 - i. General maintenance work package **<gen.maintwp>** (see Section 23.8).
 - ii. Specific maintenance work package **<maintwp>** (see Section 23.7).
 - iii. Lubrication instruction work package **<lubewp>** (see Section 23.9).
 - iv. Preservation, packaging, and marking general information work package **<ppmgeninfowp>**. This work package shall be prepared and shall be the first work package in the first maintenance chapter.
 - v. Equipment/User Fitting Instruction work package **<perseqwp>** (optional - zero or more) (see Section 23.4).
 - b. Facilities work package **<facilwp>** (optional) (see Section 23.10.1).
 - c. Overhaul Inspection Procedures (OIP) work package **<oipwp>** (optional – zero or more) (see Section 23.10.3).
 - d. Depot mobilization requirements work package **<mobilwp>** (optional) (see Section 23.10.4).
 - e. Quality Assurance (QA) requirements work package **<qawp>** (required) (see Section 23.10.4.5).
 - f. If any locally manufactured items (see Section 23.11) are required, the following two work packages are included:
 - i. Manufactured items introduction work package **<manu_item_introwp>** (see Section 23.11.1).
 - ii. Illustrated list of manufactured items work package **<manuwp>** (see Section 23.11.2).
 - g. Torque limits work package **<torquewp>** (optional) (see Section 23.12).
 - h. When aircraft depot specific work packages are developed, the following work packages are available (optional).
 - i. Aircraft inventory master guide work package **<inventorywp>** (optional) (see Section 23.14.3).
 - ii. Storage of aircraft work package **<storagewp>** (optional – zero or more) (see Section 23.14.4).
 - iii. Weighing and loading work package **<wtloadwp>** (required) (see Section 23.14.5).
 - i. Wiring diagrams work package **<wiringwp>** (optional – zero or more) (see Section 23.13).
 - j. Depot Maintenance Work Requirements Work Package **<dmwr_operationalreqwp>** (optional – zero or more). The element provides a operational requirements plan that is prepared by the depot activity.
2. The DTD fragment for **<depotcategory>** is graphically depicted.

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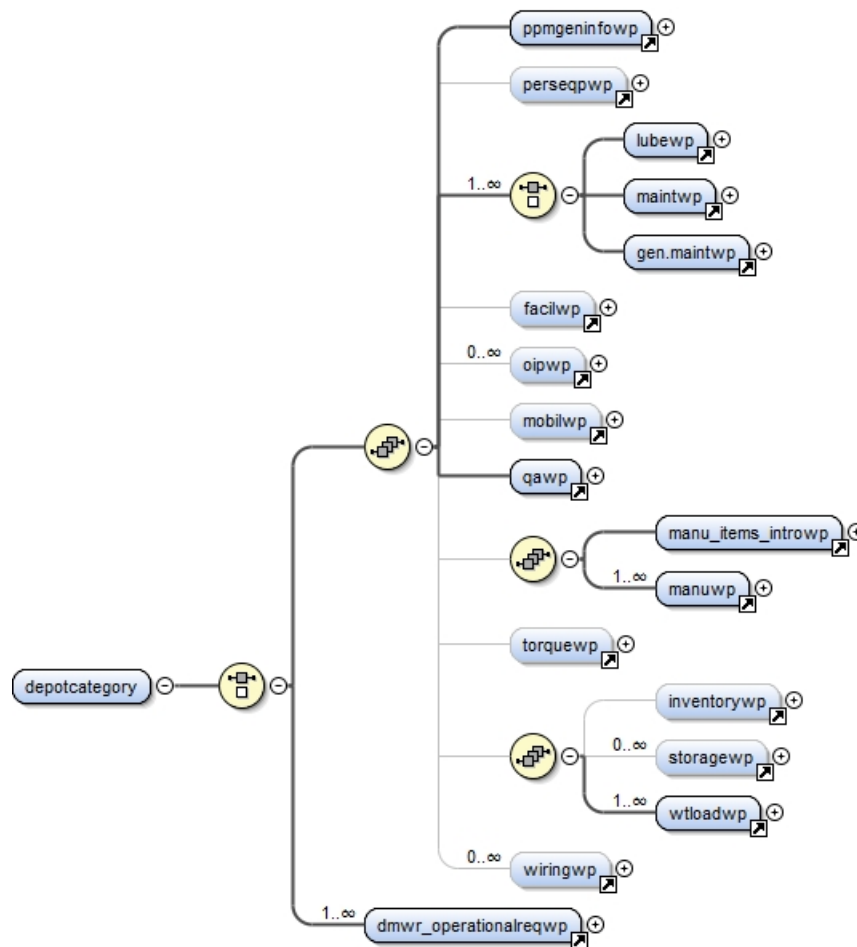


FIGURE 322. Depot maintenance category DTD hierarchy <depotcategory>.

3. The DTD fragment for <depotcategory> is:

```
<! ELEMENT depotcategory (ppmgeninfowp, perseqpwp?, (lubewp | maintwp | gen.maintwp)+, facilwp?, oipwp*, mobilwp?, qawp, (manu_items_introwp, manuwp+), torquewp?, (inventorywp?, storagewp*, wtloadwp +)?, wiringwp*) | (dmwr_operationalreqwp+))>
```

4. The <depotcategory> has no attributes.

23.2.5 Auxiliary equipment maintenance category <auxiliarycategory>.

The auxiliary equipment maintenance category is used to prepare maintenance instructions when auxiliary equipment maintenance TMs or maintenance requirement cards have not been procured.

1. The work packages for <auxiliarycategory>:

- a. Auxiliary equipment maintenance work package(s) <auxeqpwp> (required – one or more) (see Section 23.15).
- b. If any locally manufactured items (see Section 23.11) are required, the following two work packages are included:
 - i. Manufactured items introduction work package <manu_item_introwp> (see Section 23.11.1).

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- ii. Illustrated list of manufactured items work package **<manuwp>** (see Section 23.11.2).
 - c. Torque limits work package **<torquewp>** (optional) (see Section 23.12).
 - d. Wiring diagrams work package **<wiringwp>** (optional – zero or more) (see Section 23.13).
2. The DTD fragment for **<auxiliarycategory>** is graphically depicted:

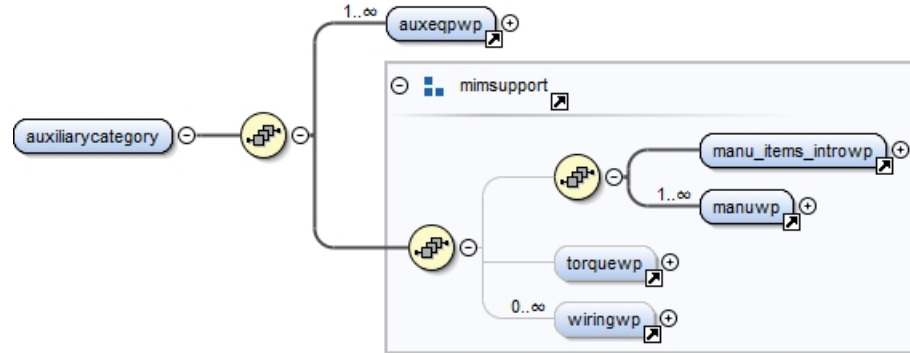


FIGURE 323. Auxiliary equipment maintenance category DTD hierarchy <auxiliarycategory>.

3. The DTD fragment for **<auxiliarycategory>** is:
- ```
<!ELEMENT auxiliarycategory (auxeqpwp+, %mimsupport;)>
```
4. The **<auxiliarycategory>** has no attributes.

### 23.2.6 Aircraft maintenance category <aviationcategory>.

The aircraft maintenance category contains aircraft weapon system/equipment maintenance repair task work packages sufficient to ensure repair of the aircraft weapon system/equipment and return the aircraft to an operational status. Aviation maintenance repair tasks are identified in the applicable aircraft Maintenance Allocation Chart (MAC).

1. The work packages for **<aviationcategory>**:
- a. Service upon receipt work package **<surwp>** (optional – zero or more) (see Section 23.3).
  - b. Equipment/user fitting instruction work package **<perseqpwp>** (optional – zero or more) (see Section 23.4).
  - c. The following work packages occur in no specific order and require at least one to be developed:
    - i. Preventive maintenance inspections work package **<pmiwp>** (see Section 23.14.1).
    - ii. Lubrication instructions work package **<lubewp>** (see Section 23.9).
    - iii. Specific maintenance work package **<maintwp>** (see Section 23.7).
    - iv. General maintenance work package **<gen.maintwp>** (see Section 23.8).
  - d. An overhaul and retirement schedule work package **<orschwp>** (required) (see Section 23.14.2).
  - e. Aircraft inventory master guide work package **<inventorywp>** (optional) (see Section 23.14.3).
  - f. If any locally manufactured items (see Section 23.11) are required, the following two work packages are included:
    - i. Manufactured items introduction work package **<manu\_item\_introwp>** (see Section 23.11.1).
    - ii. Illustrated list of manufactured items work package **<manuwp>** (see Section 23.11.2).

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- g. Torque limits work package <torquewp> (optional) (see Section 23.12).
  - h. Aircraft inventory master guide work package <inventorywp> (optional) (see Section 23.14.3).
  - i. Storage of aircraft work package <storagewp> (optional – zero or more) (see Section 23.14.4).
  - j. Weighing and loading work package <wtloadwp> (required) (see Section 23.14.5).
  - k. Wiring diagrams work package <wiringwp> (optional – zero or more) (see Section 23.13).
2. The DTD fragment for <aviationcategory> is graphically depicted.

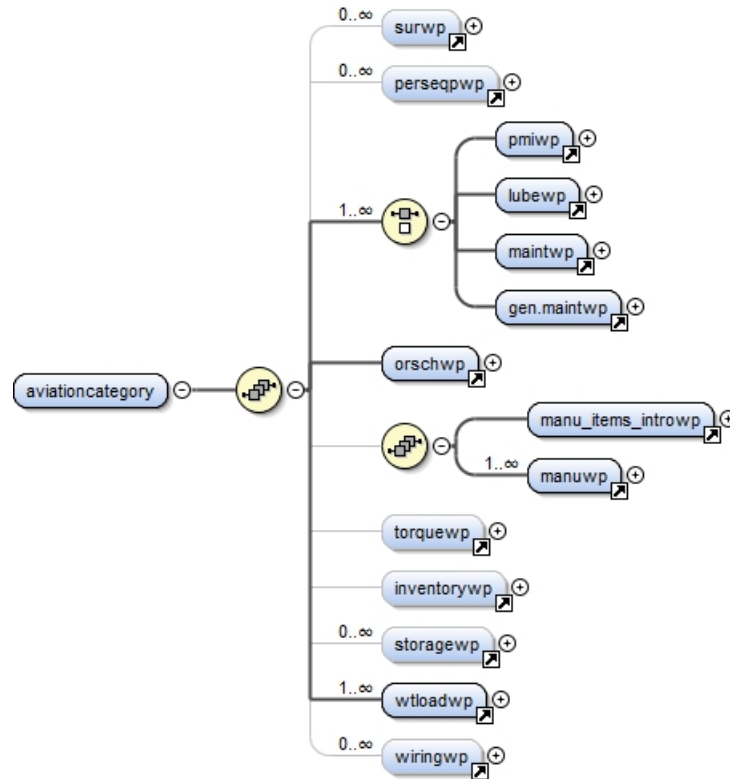


FIGURE 324. Aircraft maintenance category <aviationcategory> DTD hierarchy.

3. The DTD fragment for <aviationcategory> is:

```
<!ELEMENT aviationcategory (surwp*, perseqpwp*, (pmiwp | lubewp | maintwp |
gen. maintwp) +, orschwp, (manu_items_introwp, manuwp +)?, torquewp?,
inventorywp?, storagewp*, wtloadwp+, wiringwp*)>
```

4. The <aviationcategory> element has no attributes.

### 23.2.7 Preventive Maintenance Service (PMS) (Aircraft preventive maintenance services only) <pmscategory>.

The category contains the following: This maintenance category contains the Preventive Maintenance Services Inspection work packages <pms-inspecwp>.

- 1. The content for <pmscategory> is the PMS/PMD inspection work package <pms-inspectwp> (required – one or more) (see Section 23.14.6.1).
- 2. The DTD fragment for <pmscategory> is graphically depicted.

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FIGURE 325. PMS/PMD category DTD hierarchy &lt;pmcategory&gt;.

3. The DTD fragment for <pmcategory> is:

```
<!ELEMENT pmcategory (pms-inspecwp+)>
```

4. The <pmcategory> element has no attributes

### 23.2.8 Phased Maintenance Inspections (PMI) checklist category <checklistcategory>.

The PMI category is used to develop an aircraft phased maintenance inspection TM. Each work package ensures each aircraft components/sections are inspected on a specific (hourly/time) schedule. When a phased inspection cycle is complete, the cycle starts again thereby ensuring the aircraft is maintained in optimum flying condition.

1. The content for <checklistcategory> is the phased maintenance inspection work package <pmi-cklistwp> (required – one or more) (see Section 23.14.6.4).
2. The DTD fragment for <checklistcategory> is graphically depicted.



FIGURE 326. PMI category DTD hierarchy &lt;checklistcategory&gt;.

3. The DTD fragment for <checklistcategory> is:

```
<!ELEMENT checklistcategory (pmi-cklistwp+)>
```

4. The <checklistcategory> element has no attributes.

### 23.2.9 Ammunition maintenance category <ammunitioncategory>.

The ammunition maintenance category contains work packages sufficient to ensure proper ammunition care and marking. Additionally, any foreign ammunition identification and description is provided.

1. The work packages for <ammunitioncategory> are (required – one or more):
  - a. Service upon receipt work package <surpwp> (optional - zero or more) (see Section 23.3).
  - b. Ammunition maintenance work package <ammowp> (see Section 23.16.1).
  - c. Ammunition marking information work package <ammo.markingwp> (see Section 23.16.2).
  - d. Foreign ammunition (NATO) work package <natowp> (see Section 23.16.3).
  - e. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - f. Work package initial setup <initial\_setup> (required) (see Section 16.6).
2. The DTD fragment for <ammunitioncategory> is graphically depicted.

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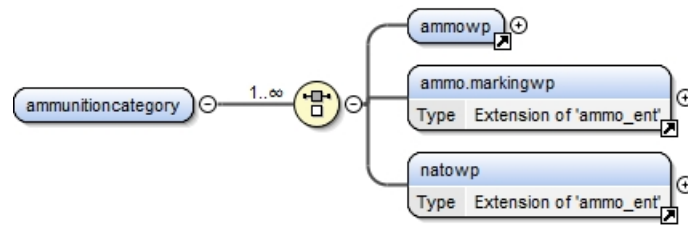


FIGURE 327. Ammunition maintenance category DTD hierarchy <ammunitioncategory>.

3. The DTD fragment for <ammunitioncategory> is:

```
<!ELEMENT ammunitioncategory (ammowp | ammo.markingwp | natowp)+>
```

4. The <ammunitioncategory> element has no attributes.

### 23.2.10 Test and inspection maintenance category <testinspectioncategory>.

The test and inspection maintenance category is applicable to conventional and chemical ammunition TMs only and contains the requirements for ammunition testing and inspection within maintenance task <maintwp>.

1. The content for the <testinspectioncategory> is a maintenance work package <maintwp> (required – one or more) (see Section 23.7).
2. The DTD fragment for <testinspectioncategory> is graphically depicted:



FIGURE 328. Test and inspection maintenance category <testinspectioncategory>.

3. The DTD fragment for <testinspectioncategory> is:

```
<!ELEMENT testinspectioncategory (maintwp+)>
```

4. The <testinspectioncategory> element has no attributes.

### 23.2.11 Ammunition marking maintenance category <ammomarkingcategory>.

The ammunition marking maintenance category is applicable to conventional and chemical ammunition TMs only and contains the requirements for ammunition identifying, marking, and handling.

1. The work package for <ammomarkingcategory> is ammunition marking information work package <ammo.markingwp> (required – one or more) (see Section 23.16.2).
2. The DTD fragment for <ammomarkingcategory> is graphically depicted:

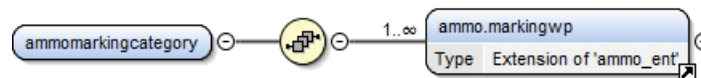


FIGURE 329. Ammunition marking maintenance category DTD hierarchy <ammomarkingcategory>.

3. The DTD fragment for <ammomarkingcategory> is:

```
<!ELEMENT ammomarkingcategory (ammo.markingwp+)>
```

4. The <ammomarkingcategory> element has no attributes.

### 23.2.12 Shipment, movement, and storage maintenance category <shipmentmovementstoragecategory>.

The shipment, movement, and storage maintenance category is applicable to conventional and chemical ammunition TMs only and contains the requirements for shipping, moving and the storage of ammunition. The category is intended for use only in the preparation for storage or shipment <pss> maintenance tasks within <maintwp>. Using any other maintenance task would be a misuse of the category.

1. The content for the <shipmentmovementstoragecategory> is maintenance work package <maintwp> (required – one or more) (see Section 23.7).
2. The DTD fragment for <shipmentmovementstoragecategory> is graphically depicted:

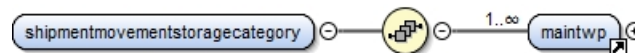


FIGURE 330. Shipment, movement, and storage maintenance category DTD Hierarchy <shipmentmovementstoragecategory>.

3. The DTD fragment for <shipmentmovementstoragecategory> is:  

```
<!ELEMENT shipmentmovementstoragecategory (maintwp+)>
```
4. The <shipmentmovementstoragecategory> element has no attributes.

### 23.2.13 Software maintenance category <softmaintcategory>.

The software maintenance category is applicable to conventional and SUM/SAM TMs only and contains the requirements for conducting software maintenance. For software maintenance work packages, maintenance class should either be user maintenance or administrator maintenance.

1. The content for the <softmaintcategory> is the maintenance work package <maintwp>.
2. The DTD fragment for <softmaintcategory> is graphically depicted.

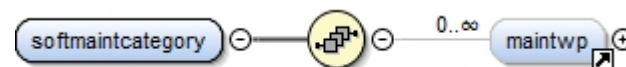


FIGURE 331. Software maintenance category DTD hierarchy <softmaintcategory>.

3. The DTD fragment for <softmaintcategory> is:  

```
<!ELEMENT softmaintcategory (maintwp+)>
```

### 23.2.14 General maintenance category <genmaintcategory>.

The general maintenance category is applicable to all TMs and contains the requirements for conducting regular and general maintenance.

1. The content for the <genmaintcategory> is maintenance work package <maintwp> and <gen.maintwp>.
2. The DTD fragment for <softmaintcategory> is graphically depicted.

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FIGURE 332. General maintenance category DTD hierarchy &lt;genmaintcategory&gt;.

3. The DTD fragment for <genmaintcategory> is:  
 <!ELEMENT genmaintcategory (maintwp\*, gen.maintwp\*)>

### 23.2.15 Depot maintenance work requirements quality acceptance requirements <dmwrqarcategory>.

The Depot Maintenance Work Requirements Quality Acceptance Requirements category is applicable to ammunition DMWRs only and contain quality acceptance requirements for ammunition subject to demilitarization.

1. The content for the <dmwrqarcategory> is the quality acceptance work package <dmwrqarwp>.
2. The DTD fragment for <dmwrqarcategory> is graphically depicted.

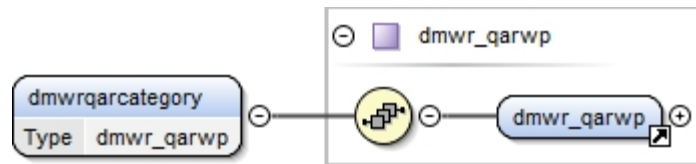


FIGURE 333. Depot maintenance work requirements category DTD hierarchy &lt;dmwrqarcategory&gt;.

3. The DTD fragment for <dmwrqarcategory> is:  
 <!ELEMENT dmwrqarcategory (dmwrqarwp)>

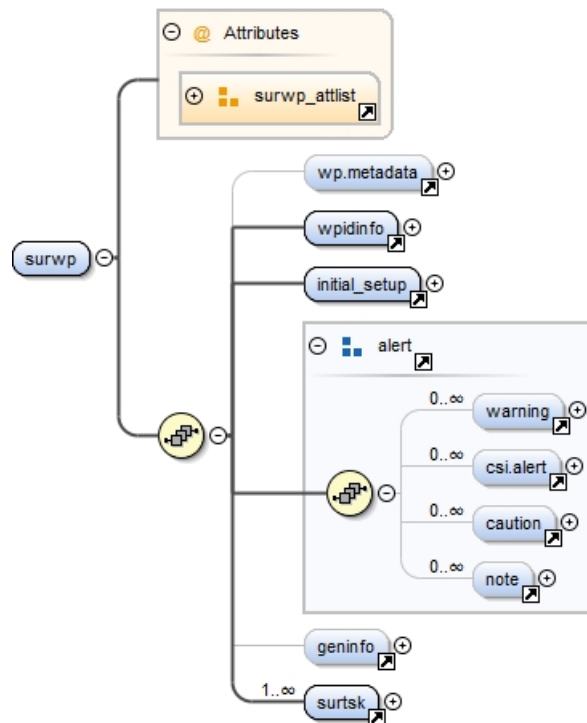
### 23.3 Service upon receipt task <surwp>.

The Service Upon Receipt work package contains information to ensure the equipment is adequately inspected, serviced and operationally tested before it is placed into service. Depending upon the complexity of the equipment being placed into service, more than one <surwp> may be required to be developed. Each <surwp> is allowed a single service upon receipt task <surtask>.

1. The components of <surwp> are:
  - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - c. Work package initial setup <initial\_setup> (required) (see Section 16.6).
  - d. General information <geninfo> (optional) (see Section 36.1.4.11).
  - e. Service upon receipt task <surtask> (required) (see 23.3.1).
  - f. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
    - i. Warning <warning> (optional - zero or more) (see Section 28.1.1).
    - ii. Critical Safety Item <csi.alert> (optional - zero or more) (see Section 28.1.1.4).
    - iii. Caution <caution> (optional - zero or more) (see Section 28.1.2).
    - iv. Note <note> (optional - zero or more) (see Section 28.1.3).

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2. The DTD fragment for **<surwp>** is graphically depicted.



**FIGURE 334. Service upon receipt work package DTD hierarchy <surwp>.**

3. The DTD fragment for **<surwp>** is:

```
<!ELEMENT surwp (wp.metadata?, wpidinfo, initial_setup, %alert;, geninfo?,
surtsk+)>
```

```
<!ATTLIST surwp
```

|                 |                           |          |
|-----------------|---------------------------|----------|
| airforce        | (yes   no)                | "no"     |
| army            | (yes   no)                | "no"     |
| assocfig        | IDREFS                    | #IMPLIED |
| changelvl       | (0-9)                     | "0"      |
| changeref       | IDREFS                    | #IMPLIED |
| chnгно          | (0-99)                    | "0"      |
| comment         | CDATA                     | #IMPLIED |
| crewmember      | CDATA                     | #IMPLIED |
| date-time-stamp | (date   time   date-time) | #IMPLIED |
| delchlvl        | (0-99)                    | "0"      |
| deletewp        | (yes   no)                | "no"     |
| fgc             | CDATA                     | #IMPLIED |
| frame           | (yes   no)                | "yes"    |



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|          |                          |           |
|----------|--------------------------|-----------|
| idref    | IDREFS                   | #IMPLIED  |
| inschlvl | (0-99)                   | "0"       |
| insertwp | CDATA                    | #IMPLIED  |
| lsa-id   | CDATA                    | #IMPLIED  |
| marines  | (yes   no)               | "no"      |
| navy     | (yes   no)               | "no"      |
| security | (uc   fouo   c   s   ts) | #IMPLIED  |
| skilltrk | CDATA                    | #IMPLIED  |
| tocentry | (2   3   4   5)          | "2"       |
| wpno     | ID                       | #REQUIRED |
| wpseq    | CDATA                    | #IMPLIED> |

#### 4. Common attributes for <surwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).

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- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 23.3.1 Service upon receipt task <surtsk>.

This element is for equipment that requires extensive service upon receipt and contain information required for the user to ensure that the equipment will be adequately inspected, serviced, and operationally tested before it is subjected to use.

1. The components for <surtsk> are:

- a. One of the following service upon receipt task is required:
  - i. Siting <siting> are the instructions when equipment is being placed into service requires that a site be prepared (see Section 17.1).
  - ii. Shelter requirements <shltr> are the instructions when equipment requires a permanent or semi-permanent housing (see Section 17.1).
  - iii. Service upon receipt of material <surmat> (see Section 23.3.1.1).
  - iv. Installation <install> are the instructions for properly installing the equipment, including the use of tools, making the necessary connections, lubricating, calibrating, and adjustment to the equipment (see Section 17.1).
  - v. Preliminary checks and adjustment of equipment <prechkadj> are the instructions for all checks and adjustments to be made on newly installed equipment (see Section 17.1).
  - vi. Preliminary calibration of equipment <precals> are the instructions for all calibration to be made on newly installed equipment (see Section 17.1).
  - vii. Preliminary servicing of equipment <preserv>. Instructions should be prepared for all preliminary services required on newly installed equipment. This should include but not be limited to the following: lubrication, wiring, fueling, etc.
  - viii. Circuit alignment <calign> (see Section 23.3.1.2.6).
  - ix. Ammunition marking <mark> are the instructions for marking ammunition and ammunition containers (see Section 17.1).
  - x. Classification of ammunition defects <ammo.defect> are the instruction for performing visual inspection of ammunition/containers (pallets, boxes, etc.) including the classification and disposition of defective ammunition/containers (see Section 17.1).
  - xi. Ammunition handling <ammo.handling> (see Section 23.16.1.1).
  - xii. Activate ammunition <arm> are the instructions for the ammunition activation for preparatory to detonation (see Section 17.1).

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xiii. Other service upon receipt **<other.surtsk>** is for task instructions not covered by previously service upon receipt task types (see Section 17.1).

- b. Follow-on maintenance **<followon.maint>** (optional) are instructions that are accomplished following the completion of a service upon receipt task to clean up or undo actions performed during the task (see Section 17.1).

2. The DTD fragment for **<surtsk>** is graphically depicted.

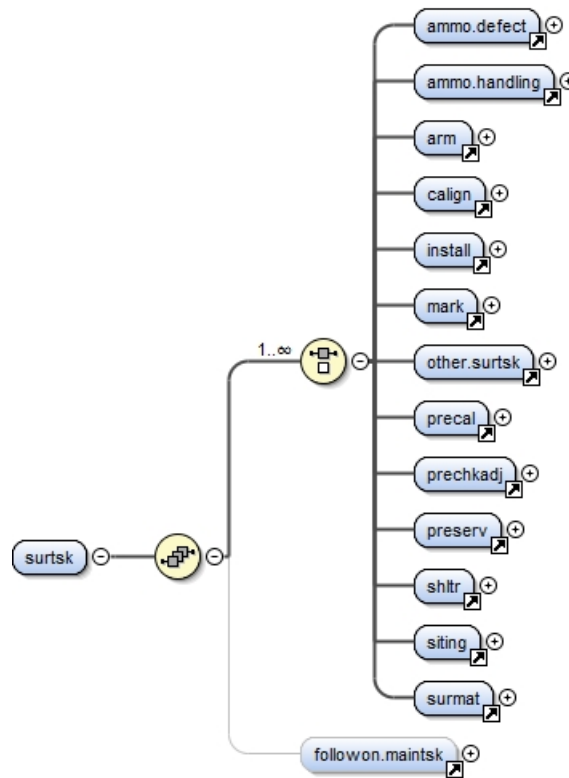


FIGURE 335. Service upon receipt task **<surtsk>** DTD hierarchy **<surtsk>**.

3. The DTD fragment for **<surtsk>** is:

```
<!ELEMENT surtsk ((ammo.defect| ammo.handling| arm | calign | install | mark |
other.surtsk | precal | prechkadj | preserv | shltr | siting | surmat) + ,
followon.maintsk?)>
```

4. The element **<surtsk>** has no attributes

### 23.3.1.1 Service upon receipt of material task **<surmat>**.

The service upon receipt of material task contains three sub-tasks: unpacking, checking unpacked, and processing unpacked equipment. Each sub-task is a complete task package and can be used independently.

1. Components for **<surmat>**:

- a. At least one of the following sub-tasks is required:

- i. Unpacking equipment **<unpack>** are instructions for unpacking materiel or equipment from shipping containers (see Section 17.1).

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- ii. Checking unpacked equipment **<chkeqp>** provides instructions to inspect the condition of the equipment once unpacked (see Section 23.3.1.2).
  - iii. Processing unpacked equipment **<processeqp>** are instructions for processing the unpacked equipment (removing excess lubricant from a new rifle) (see Section 17.1).
2. The DTD fragment for **<surmat>** is graphically depicted:

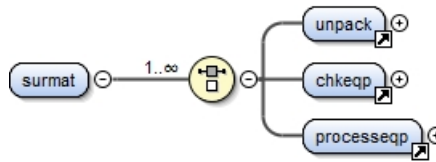


FIGURE 336. Service upon receipt of material task **<surmat>** DTD hierarchy.

3. The DTD fragment for **<surmat>**:

```
<!ELEMENT surmat (unpack | chkeqp | processeqp)+>
```

4. There are no attributes for **<surmat>**.

### 23.3.1.2 Checking unpacked equipment **<chkeqp>**.

The checking unpacked equipment task contains instructions for checking the conditions of the shipment (including pallets, containers, boxes, and legibility of markings). Two standard information tables are available to ensure packing materials were sufficient to protect the equipment during shipment and the equipment was received in good mechanical condition (see 23.3.1.2.1 and 23.3.1.2.5).

1. Components for **<chkeqp>**:
  - a. Task title **<title>** (required) (see Section 36.1.1.4).
  - b. An optional group of any warnings **<warning>**, cautions **<caution>**, or notes **<notes>** in that order.
    - i. Warning **<warning>** (optional - zero or more) (see Section 28.1.1).
    - ii. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
    - iii. Caution **<caution>** (optional - zero or more) (see Section 28.1.2).
    - iv. Note **<note>** (optional - zero or more) (see Section 28.1.3).
  - c. General information **<geninfo>** (optional) (see Section 36.1.4.11).
  - d. Illustration(s) **<figure>** (optional – zero or more) are included to ensure understanding of the task (see Section 31.1.1).
  - e. Two (2) methods are provided for developing the checking unpacked equipment task. Select one of the following methods:
    - i. Method one (1) has additional paragraph information (with any necessary alerts) followed by instructions or descriptive titled paragraphs. The components of the method are:
      - I. Paragraph **<para>** (see Section 36.1.1.6) and/or paragraph with alerts **<specpara>** (see Section 36.1.1.7) (required – one or more).
      - II. Select either instructions (optional – zero or more) (see (b) for method 2) **or** descriptive paragraphs (optional – zero or more).
    - ii. Method two (2) has instructions. The components of the method (required – one or more) are:
      - I. Instructions **<proc>** (required) (see Section 17.2).

- II. Packaging Material Inspection Criteria standard information **<crit.insp.tab>** (optional – zero or more) (see Section 23.3.1.2.1).
  - III. Equipment Components Inspection standard information **<pecul.insp.tab>** (optional – zero or more) (see Section 23.3.1.2.5).
2. The DTD fragment for **<chkeqp>** is graphically depicted:

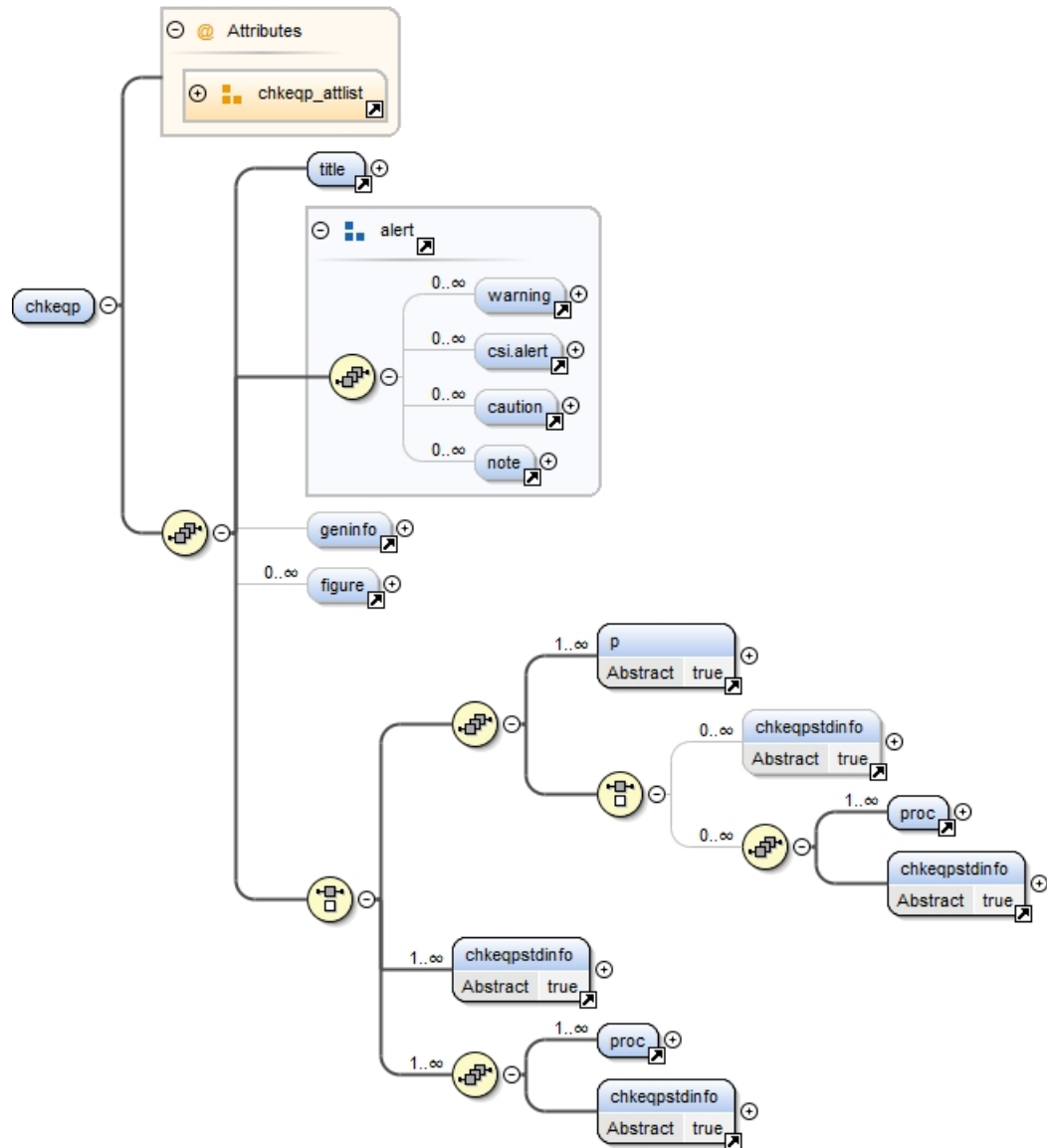


FIGURE 337. Checking unpacked equipment task DTD hierarchy **<chkeqp>**.

3. The DTD fragment for **<chkeqp>** is:

```
<!ELEMENT chkeqp (title, %alert;, geninfo?, figure*, (((%p;)+, ((%
chkeqpstdinfo;)* | (proc+, %chkeqpstdinfo;)*)) | (%chkeqpstdinfo;)+ |
(proc+, %chkeqpstdinfo;)+)) (title, %alert;, geninfo?, figure*, (((%p;)+,
((%chkeqpstdinfo;)* | (proc+, %chkeqpstdinfo;)*)) | (%chkeqpstdinfo;)+ |
(proc+, %chkeqpstdinfo;)+))>
```

```
<!ATTLIST chkeqp
```

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applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
esd	(yes   no)	"no"
frame	(yes   no)	"yes"
hcp	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2">

#### 4. Common attributes for <chkeqp>:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- h. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- i. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- j. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- k. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- l. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- m. **security** – Security classification (optional) (see Section 36.3.14).
- n. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- o. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

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### 23.3.1.2.1 Packaging material inspection criteria standard information <crit.insp.tab>.

The <crit.insp.tab>, a standard information table, element provides the location of the packaging material item to be inspected prior to unpacking the equipment and establishes acceptable, repairable, and non-repairable standards for each item inspected. The element is similar to a "table" in a structural table.

1. Components for <crit.insp.tab>:

- a. Standard information title <title> (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number (this is generated by the stylesheet).
- b. Item <crit.insp.group> (required – one or more) (see Section 23.3.1.2.2).
- c. Packaging material item <eqpitem> (required) (see Section 23.3.1.2.3).
  - i. Acceptable criterion <accept> (required), requirements that determine if the equipment is acceptable for use (see Section 23.3.1.2.4.1).
  - ii. Repairable criterion <repairable> (required), inspection requirements which if not met will allow the equipment to be repaired and placed back into service (see Section 23.3.1.2.4.2).
  - iii. Non-repairable criterion <nonrepairable> (required), inspection requirements that if not met determine the equipment is not able to be repaired and the item is to be either condemned or returned to a higher level of maintenance (see Section 23.3.1.2.4.3).

2. The DTD fragment for <crit.insp.tab> is graphically depicted:

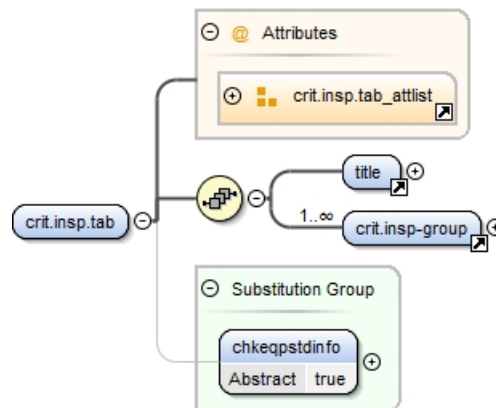


FIGURE 338. Packaging material inspection criteria standard information DTD hierarchy <crit.insp.tab>.

3. The DTD fragment for <crit.insp.tab> is:

```
<!ELEMENT crit.insp.tab (title, crit.insp-group+)>
<!ATTLIST crit.insp.tab
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
```

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"1">

4. Common attributes for **<crit.insp.tab>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – Table of contents level entry (default value is **1**) (see Section 16.3.6).

### 23.3.1.2.2 Packaging material criteria inspection grouping **<crit.insp-group>**.

The element groups the major packaging material item, which divides into the individual packaging material items with the associated inspection criteria.

1. The components for **<crit.insp-group>** are:

- a. Packaging material item **<eqpitem>** (required) (see Section 23.3.1.2.3). The element is similar to a **row** in a structural table. Additionally, the element is similar to a “cell” in a structural table that spans across all columns.
- b. Packaging material component and criteria inspection entry **<compnt-assem-entry>** (required – one or more) (see Section 23.3.1.2.4). The element is similar to a **row** in a structural table.

2. The DTD fragment for **<crit.insp-group>** is:

```
<!ELEMENT crit.insp-group (eqpitem, compnt-assem-entry+)>
<!ATTLIST crit.insp-group
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
```



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<code>idref</code>	IDREFS	#IMPLIED
<code>inschlvl</code>	(0-99)	"0"
<code>security</code>	(uc   fouo   c   s   ts)	#IMPLIED
<code>skilltrk</code>	CDATA	#IMPLIED>

### 3. Common attributes for **<crit.insp-group>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 23.3.1.2.3 Packaging material item or component **<eqpitem>**.

The element is used for both the packaging material item name and the packaging material component name. The item name is a major packaging material item, in which each major item has components with associated inspection criteria.

#### 1. Components for **<eqpitem>**:

- a. Parsable characters or type text. – #PCDATA
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced Linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).
- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic - **<graphic>** (see Section 31.2).

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2. The DTD fragment for **<eqpitem>** is:

```

<!ELEMENT eqpitem (%data;)*>
<!--
 <!--
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 -->

```

3. Common attributes for **<eqpitem>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 23.3.1.2.4 Packaging material component and inspection criteria entry **<compnt-assem-entry>**.

The element defines for each component the item name and inspection criteria for acceptable, repairable, and non-repairable.

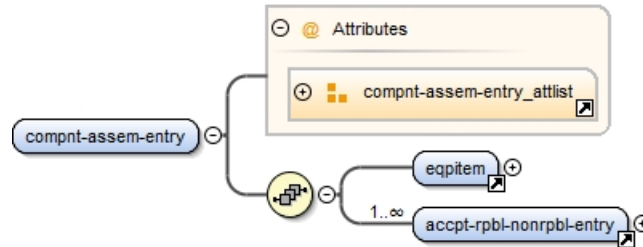
1. Components for **<compnt-assem-entry>**:

- a. Equipment item **<eqpitem>** (required) (see Section 23.3.1.2.3).
- b. Inspection criteria entry **<accept-rpbl-nonrpbl-entry>** (required – one or more). When multiple inspection criteria entries are used, beyond the first occurrence the element is similar to a **row** in a structural table and the first cell is left blank. The criteria provided are:
  - i. Acceptable criterion **<accept>** (required), requirements that determine if the equipment is acceptable for use (see Section 23.3.1.2.4.1). The element is similar to a **cell** in a structural table and is entered in column two.
  - ii. Repairable criterion **<repairable>** (required), inspection requirements which if not met will allow the equipment to be repaired and placed back into service (see Section 23.3.1.2.4.2). The element is similar to a **cell** in a structural table and is entered in column three.

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- iii. Non-repairable criterion **<nonrepairable>** (required), inspection requirements that if not met determine the equipment is not able to be repaired and the item is to be either condemned or returned to a higher level of maintenance (see Section 23.3.1.2.4.3). The element is similar to a **cell** in a structural table and is entered in column four.

2. The DTD fragment for **<compnt-assem-entry>** is graphically depicted:



**FIGURE 339. Packaging material inspection criteria component/assemble entry DTD hierarchy <compnt-assem-entry>.**

3. The DTD fragment for **<compnt-assem-entry>** is:

```

<!ELEMENT compnt-assembly-entry (eqpitem, accpt-rpbl-nonrpbl-entry+)>
<!ATTLIST compnt-assembly-entry
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

<!ELEMENT accpt-rpbl-nonrpbl-entry (accept, repairable, nonrepairable)>
<!ATTLIST accpt-rpbl-nonrpbl-entry
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"

```

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<compnt-assem-entry>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 23.3.1.2.4.1 Acceptable criterion **<accept>** structure.

1. Components for **<accept>**:

- a. Parsable characters or type text. – #PCDATA
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced Linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).
- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic – **<graphic>** (see Section 31.2).

2. The DTD fragment for **<accept>** is:

```
<!ELEMENT accept (%data;)*>
<!ATTLIST accept
```

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assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

### 3. Common attributes for <accept>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 23.3.1.2.4.2 Repairable criterion <repairable> structure.

#### 1. Components for <repairable>:

- a. Parsable characters or type text. – #PCDATA
- b. Format text – <emphasis> (see Section 36.1.3.1).
- c. Subscript – <subscript> (see Section 36.1.3.4).
- d. Superscript – <supscript> (see Section 36.1.3.5).
- e. Cross reference – <xref> (see Section 33.2.2).
- f. External reference – <extref> (see Section 33.2.1).
- g. Enhanced Linking – <link> (see Section 33.2.3).
- h. IETM help information – <help.info> (see Section 35.3.3.7).
- i. Index reference – <indxref> (see Section 15.5.2.2.3).
- j. Term – <term> (see Section 36.1.2.4.2).
- k. Term definition – <term.def> (see Section 36.1.2.4.1).
- l. Figure callout reference – <callout> (see Section 33.2.4.1).
- m. Footnote – <ftnote> (see Section 32.1.1).

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- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
  - o. Graphic – **<graphic>** (see Section 31.2).
  - p. Miscellaneous – **<misc>** (see 36.2.1).
  - q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
  - r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
  - s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
  - t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
  - u. Graphic symbol – **<symbol>** (see Section 31.3.1).
  - v. Torque value – **<torque>** (see Section 36.1.4.25).
  - w. Voltage value – **<voltage>** (see Section 36.1.4.26).
  - x. Null text – **<null>** (see Section 36.1.3.2).
  - y. Changed text marker – **<change>** (see Section 36.1.3.7).
2. The DTD fragment for **<repairable>** is:
- ```
<!ELEMENT repairable (%text_ent;)*>
<!ATTLIST repairable
    changeref          IDREFS          #IMPLIED
    comment            CDATA           #IMPLIED
    delchlvl           (0-99)          "0"
    inschlvl           (0-99)          "0">
```
3. Common attributes for **<repairable>**:
- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - b. **comment** – Change information (optional) (see Section 36.3.12).
 - c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

23.3.1.2.4.3 Non-repairable criterion **<nonrepairable>** structure.

1. Components for **<nonrepairable>**:
- a. Parsable characters or type text. – #PCDATA
 - b. Format text – **<emphasis>** (see Section 36.1.3.1).
 - c. Subscript – **<subscript>** (see Section 36.1.3.4).
 - d. Superscript – **<supscript>** (see Section 36.1.3.5).
 - e. Cross reference – **<xref>** (see Section 33.2.2).
 - f. External reference – **<extref>** (see Section 33.2.1).
 - g. Enhanced Linking – **<link>** (see Section 33.2.3).
 - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
 - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).

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- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic – **<graphic>** (see Section 31.2).
- p. Miscellaneous – **<misc>** (see 36.2.1).
- q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
- r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
- s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
- t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
- u. Graphic symbol – **<symbol>** (see Section 31.3.1).
- v. Torque value – **<torque>** (see Section 36.1.4.25).
- w. Voltage value – **<voltage>** (see Section 36.1.4.26).
- x. Null text – **<null>** (see Section 36.1.3.2).
- y. Changed text marker – **<change>** (see Section 36.1.3.7).

2. The DTD fragment for **<nonrepairable>** is:

```
<!ELEMENT nonrepairable (%text_ent;)*>
<!ATTLIST nonrepairable
    changeref          IDREFS          #IMPLIED
    comment             CDATA          #IMPLIED
    delchlvl            (0-99)         "0"
    inschlvl            (0-99)         "0">
```

3. Common attributes for **<nonrepairable>** are:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

23.3.1.2.5 Equipment components **<pecul.insp.tab>**.

The **<pecul.insp.tab>** provides inspection criteria for each item of equipment and the material the equipment is packed in. The element is broken into inspection groups **<pecul.insp-group>** that identify each component **<compassem>** and steps **<step1>** to perform the inspection. The grouping concludes with a remarks block **<remarks>** that provide information on what to do if the inspected item fails. When needed, a reference may be made to a specific work package. Each component item may need multiple steps and subordinate steps to describe the inspection requirements.

1. The components for **<pecul.insp.tab>** are:

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- a. Standard information title **<title>** (required) (see Section 36.1.1.4).
 - b. Equipment component information **<pecul.insp-group>** (required – one or more). The element is similar to a **row** in a structural table. The components for **<pecul.insp-group>** are:
 - i. Item is located in equipment component name **<compassem>** (required) (see Section 27.4.1.1.2). The element is similar to a **cell** in a structural table and is entered in column one.
 - ii. Equipment component item inspection entry **<pecul.insp-entry>** (required – one or more) (see Section 23.3.1.2.5.1). The element is similar to a **row** in a structural table.
2. The DTD fragment for **<pecul.insp.tab>** is graphically depicted:

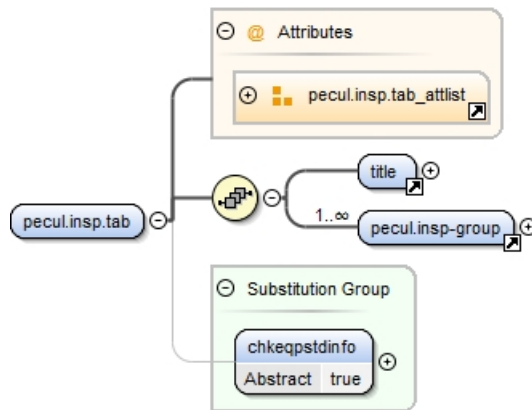


FIGURE 340. Equipment components inspection a standard information DTD hierarchy <pecul.insp.tab>.

3. The DTD fragment for **<pecul.insp.tab>** is:

```
<!ELEMENT peculi.insp.tab (title, peculi.insp-group+)>
<!ATTLIST peculi.insp.tab
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)          "0"
  security            (uc | fouo | c | s | ts) #IMPLIED
  skilltrk            CDATA           #IMPLIED
  tocentry            (0 | 1 | 2 | 3 | 4 | 5) "1">

<!ELEMENT peculi.insp-group (compassem, peculi.insp-entry+)>
<!ATTLIST peculi.insp-group
  applicable          IDREFS          #IMPLIED
```


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| | | |
|-----------|--------------------------|-----------|
| assocfig | IDREFS | #IMPLIED |
| changeref | IDREFS | #IMPLIED |
| comment | CDATA | #IMPLIED |
| delchlvl | (0-99) | "0" |
| id | ID | #IMPLIED |
| idref | IDREFS | #IMPLIED |
| inschlvl | (0-99) | "0" |
| security | (uc fouo c s ts) | #IMPLIED |
| skilltrk | CDATA | #IMPLIED> |

4. Common attributes for **<pecul.insp.tab>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – Table of contents level entry (default value is 2) (see Section 16.3.6).

5. Common attributes for **<pecul.insp-group>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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23.3.1.2.5.1 Equipment component item inspection entry <pecul.insp-entry>.

The element contains the component item and inspection action requirements located for the specified equipment component.

1. Components for <pecul.insp-entry>:

- a. Equipment component item name <eqpitem> (required) (see Section 23.3.1.2.3). The element is similar to a “cell” in a structural table and is entered in column two.
- b. Inspection action <pecul.step-entry> (required – one or more) is comprised of:
 - i. Illustration <figure> (see Section 31.1.1) and/or conditional illustration <figure-alt> (see Section 35.2.1) (optional – zero or more).
 - ii. Table <table> (see Section 29) and/or conditional table <table-alt> (see Section 35.2.1) (optional – zero or more).
 - iii. Inspection step level 1 <step1> (see Section 17.3) and/or conditional inspection step level 1 <step1-alt> (see Section 35.2.1) (required).
 - iv. Remarks <remarks> (required) (see Section 23.3.1.2.5.2). The element is similar to a **cell** in a structural table and is entered in column four.

2. The DTD fragment for <pecul.insp-entry> is graphically depicted.

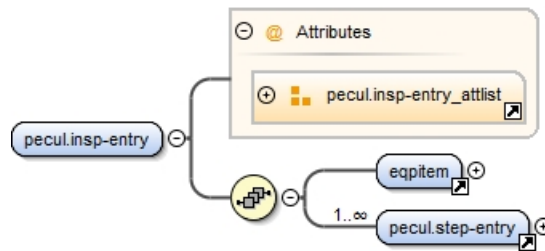


FIGURE 341. Equipment component item inspection entry DTD hierarchy <pecul.insp-entry>.

3. The DTD fragment for <pecul.insp-entry> is:

```

<!ELEMENT peculi.insp-entry (eqpitem, peculi.step-entry+)>
<!ATTLIST peculi.insp-entry
    applicable IDREFS #IMPLIED
    assocfig IDREFS #IMPLIED
    changeref IDREFS #IMPLIED
    comment CDATA #IMPLIED
    delchlvl (0-99) "0"
    id ID #IMPLIED
    idref IDREFS #IMPLIED
    inschlvl (0-99) "0"
    security (uc | fouo | c | s | ts) #IMPLIED
    skilltrk CDATA #IMPLIED>
  
```

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```

<!ELEMENT pecul.step-entry (%step; , remarks)>
<!ATTLIST pecul.step-entry
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>

```

4. Common attributes for **<pecul.insp-entry>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.3.1.2.5.2 Remarks **<remarks>**.

The element contains remarks information pertinent to the inspection action step. This usually is a reference to further detail instructions on the inspection. When no additional instructions are needed for the inspection use the `<null insert="dash"/>` indicating no further work packages are needed for the step.

1. Components for Remarks **<remarks>**:

- a. Parsable characters or type text. – #PCDATA
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced Linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).

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- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic – **<graphic>** (see Section 31.2).
- p. Miscellaneous – **<misc>** (see 36.2.1).
- q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
- r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
- s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
- t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
- u. Graphic symbol – **<symbol>** (see Section 31.3.1).
- v. Torque value – **<torque>** (see Section 36.1.4.25).
- w. Voltage value – **<voltage>** (see Section 36.1.4.26).
- x. Null text – **<null>** (see Section 36.1.3.2).
- y. Changed text marker – **<change>** (see Section 36.1.3.7).

2. The DTD fragment for **<remarks>** is:

```
<!ELEMENT remarks (%text_ent;)*>

<!ATTLIST remarks
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

3. Common attributes for **<remarks>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

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- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.3.1.2.6 Circuit alignment <calign>.

The element **<calign>** is the instructions for circuit alignment procedures. The circuit alignment task contains: external connections; switch settings, patch panel connections, internal control settings, and alignment. Each sub-task is a complete task package and can be used independently.

1. Components for **<calign>**:
 - a. Task Title **<title>** (required) (see Section 36.1.1.4).
 - b. The circuit alignment task requires one of the following tasks to be used:
 - i. External connections **<extconn>** are the instructions required for each installation option and conform to the requirements for installing wiring and cabling interconnections (see Section 17.1).
 - ii. Switch settings, patch panel connections, and internal control settings **<setconn>** are the instructions required for each installation option and mode of operation (see Section 17.1).
 - iii. Alignment procedure **<alignproc>** are the instructions including any variations required for different installation options and modes of operation (see Section 17.1).
2. The DTD fragment for **<calign>** is graphically depicted.

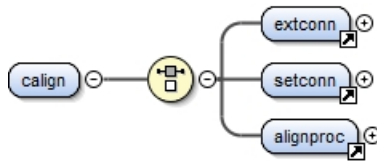


FIGURE 342. Circuit alignment task DTD hierarchy <calign>.

3. The DTD fragment for **<calign>** is:


```
<!ELEMENT calign (extconn | setconn | alignproc)>
```
4. The **<calign>** has no attributes.

23.3.2 Service upon receipt work package general entity boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities (see Chapter 37) that are a type of replacement text for these standard statements. Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, refer to Section 37.5 and for specific boilerplate usages refer to TABLE VIII.).

TABLE VIII. Boilerplate entities for **<chkeqp>**.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Service upon receipt checking unpacked equipment mandatory steps	<i>&surwp.surmat.chkeqp.inspect;</i>	Not applicable

23.3.3 XML document instance fragment and output for <surwp>.

An XML instance and its stylesheet output example for a <surwp> is provided below.

1. Example of an XML document instance fragment for <surwp>:

```
<surwp chngno="" airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no"
tocentry="2" wpno="M00001-X-XXX-XXX" wpseq="0109">
  <wpidinfo>
    <maintlvl level="maintainer"/>
    <title>Service Upon Receipt
  </title>
</wpidinfo>
<initial_setup>
  <tools>
    <tools-setup-item>
      <name>Measuring Tape
    </name>
    <itemref>
      <xrefwpid="M00001-X-XXX-XXX" itemid="item3"/>
    </itemref>
    </tools-setup-item>
  </tools>
  <ref>
    <ref-setup-item>
      <xref wpid="M00125-X-XXX-XX"/>
    </ref-setup-item>
    <ref-setup-item>
      <xref wpid="M00128-X-XXX-XX"/>
    </ref-setup-item>
    <ref-setup-item>
      <extref docno="SF 361" posttext=", Transportation Discrepancy Report"/>
    </ref-setup-item>
  </ref>
</initial_setup>
<surtask>
<surmat >
<chkeqp>
  <title>Checking Unpacked Equipment
</title>
  <proc>
    <title/>
    <step1>
      <para hcp="no" esd="no">Inspect the equipment for damage incurred during
shipment. If the equipment has been damaged, report the damage on
      <extref docno="DD Form 361" posttext=", Transportation Discrepancy Report"/>.
    </para>
    </step1>
    <step1>
      <para hcp="no" esd="no">Check the equipment against the packing slip to see if the
shipment is complete. Report all discrepancies in accordance with
      <extref docno="DTR 4500.9-R, Part II"/> .
    </para>
    </step1>
  </step1>
</step1>
```

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```

<para hcp="no" esd="no">Check to see whether the equipment has been modified.
</para>
</step1>
<!--%surwp.surmat.chkqeq.inspect;-->
</proc>
<crit.insp.tab tocentry="1">
<title>Inspection Criteria for Packaging.
</title>
<crit.insp-group>
<eqpitem>Wooden Boxes and Crates
</eqpitem>
<compnt-assem-entry>
<eqpitem>Hardware
</eqpitem>
<accpt-rpbl-nonrpbl-entry>
<accept>Operative and tight.
</accept>
<repairable>Inoperative or loose.
</repairable>
<nonrepairable>None.
</nonrepairable>
</accpt-rpbl-nonrpbl-entry>
<accpt-rpbl-nonrpbl-entry>
<accept>Nails, screws, and fasteners
</accept>
<repairable>Nails, screws, and fasteners.
</repairable>
<nonrepairable>None.
</nonrepairable>
</accpt-rpbl-nonrpbl-entry>
</compnt-assem-entry>
<compnt-assem-entry>
<eqpitem>Ends
</eqpitem>
<accpt-rpbl-nonrpbl-entry>
<accept>Free from damage.
</accept>
<repairable>Broken or missing cleats and handles.
</repairable>
<nonrepairable>Damage that requires disassembly of box.
</nonrepairable>
</accpt-rpbl-nonrpbl-entry>
</compnt-assem-entry>
<compnt-assem-entry>
<eqpitem>Wood
</eqpitem>
<accpt-rpbl-nonrpbl-entry>
<accept>Splits less than 3 inches long, no closer than 1 inch to edge of board or
adjoining split. The board must be secured by at least one nail on each side of
the split when it extends to the end of the board.
</accept>
<repairable>Splits more than 3 inches but no closer than 1 inch to edge of board or
adjoining split, or  $\frac{1}{2}$ -inch wide. That can be repaired by use of corrugated
fasteners.

```

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</repairable>
 <nonrepairable>Splits closer than 1 inch to edge of board or adjoining split or over $\frac{1}{2}$ inch wide.
 </nonrepairable>
 </accept-rpbl-nonrpbl-entry>
 </compnt-assem-entry>
 </crit.insp-group>
 <crit.insp-group>
 <eqpitem>Fiber Containers
 </eqpitem>
 <compnt-assem-entry>
 <eqpitem>Metal Ends
 </eqpitem>
 <accept-rpbl-nonrpbl-entry>
 <accept>Minor rust, cracks, indentations, or splits that would not impair water proofing or serviceability of container.
 </accept>
 <repairable>None.
 </repairable>
 <nonrepairable>Perforations, excessive rust, or ends which are crushed or not securely crimped to body.
 </nonrepairable>
 </accept-rpbl-nonrpbl-entry>
 </compnt-assem-entry>
 <compnt-assem-entry>
 <eqpitem>Body and Cap
 </eqpitem>
 <accept-rpbl-nonrpbl-entry>
 <accept>No leaks, cuts, or gouges.
 </accept>
 <repairable>Cuts, tears, or gouges not closer than 1 inch to closure, less than $\frac{1}{2}$ square inch in area, and unpenetrated layers that can be spot painted.
 </repairable>
 <nonrepairable>Cuts, tears, or gouges closer than 1 inch to closure, more than $\frac{1}{2}$ square inch in area, or through all impregnated layers
 </nonrepairable>
 </accept-rpbl-nonrpbl-entry>
 </compnt-assem-entry>
 </crit.insp-group>
 </crit.insp.tab>
 <proc>
 <para>
 </para>
 </proc>
 <pecul.insp.tab tocentry="1">
 <title>M29 and M30 Control Surfaces and Containers.
 </title>
 <pecul.insp-group>
 <compassem>
 <name>Container
 </name>
 </compassem>
 <pecul.insp-entry>
 <eqpitem>Components

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```

</eqpitem>
<pecul.step-entry>
<step1 qa="no">
<para>Inspect for rust, fungus, paint damage, and deformation.
</para>
</step1>
<remarks>
<xref wpid="M00125-X-XXX-XX"/>
</remarks>
</pecul.step-entry>
<pecul.step-entry>
<step1 qa="no">
<para>Reject container if damage prevents it from functioning properly.
</para>
</step1>
<remarks>
<null insert="dash"/>
</remarks>
</pecul.step-entry>
</pecul.insp-entry>
</pecul.insp-group>
<pecul.insp-group>
<compassem>
<name>M29
</name>
</compassem>
<pecul.insp-entry>
<eqpitem>Control Surfaces
</eqpitem>
<pecul.step-entry>
<step1 qa="no">
<para>Inspect for dents and scratches on post, trailing edge phenolic, skin, and
closure plate.
</para>
</step1>
<remarks>
<xref wpid="M00128-X-XXX-XX"/>
</remarks>
</pecul.step-entry>
<pecul.step-entry>
<step1 qa="no">
<para>Reject control surface:
</para>
<step2 qa="no">
<para>If post dents or scratches exceed 0.002 in. (0.051 mm) .
</para>
</step2>
<step2 qa="no">
<para>If trailing edge phenolic dents exceed 0.040 in. (10.160 mm) .
</para>
</step2>
<step2 qa="no">
<para>If skin dents exceed 0.030 in. (7.620 mm) within 2 in. (50.800 mm) of post.
</para>

```

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```

</step2>
<step2 qa="no">
<para>If closure plate dents exceed 0.030 in. (7.620 mm) within 2 in. (50.800 mm)
of post.
</para>
</step2>
</step1>
<remarks>
<null insert="dash"/>
</remarks>
</pecul.step-entry>
</pecul.insp-entry>
</pecul.insp-group>
<pecul.insp-group>
<compassem>
<name>M30
</name>
</compassem>
<pecul.insp-entry>
<eqpitem>Control Surfaces
</eqpitem>
<pecul.step-entry>
<step1 qa="no">
<para>Inspect for dents and scratches on post and skin.
</para>
</step1>
<remarks>
<null insert="dash"/>
</remarks>
</pecul.step-entry>
<pecul.step-entry>
<step1 qa="no">
<para>Skin dents or scratches up to 0.050 in. (12.700 mm) are allowable, but
should be blended.
</para>
</step1>
<remarks>
<null insert="dash"/>
</remarks>
</pecul.step-entry>
<pecul.step-entry>
<step1>
<para>Reject control surface if post dents or scratches exceed 0.002 in. (0.051
mm) .
</para>
</step1>
<remarks>
<null insert="dash"/>
</remarks>
</pecul.step-entry>
</pecul.insp-entry>
</pecul.insp-group>
</pecul.insp.tab>
</chkeqp>

```

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</surmat>

</surtsk>

</surwp>

2. Page-based TM stylesheet output example for **<surwp>**.

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0109

MAINTAINER MAINTENANCE

SERVICE UPON RECEIPT

INITIAL SETUP:

Tools

Measuring Tape (WP 0209, Item 3.)

References

SF 361, Transportation Discrepancy Report

CHECKING UNPACKED EQUIPMENT

1. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on DD Form 361, Transportation Discrepancy Report.
2. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with DTR 4500.9-R, Part II).
3. Check to see whether the equipment has been modified.

Table 1. Inspection Criteria For Packaging.

COMPONENT	ACCEPTABLE	REPAIRABLE	NONREPAIRABLE
Wooden Boxes and Crates			
Hardware	Operative and tight.	Inoperative or loose.	None.
	Nails, screws, and fasteners	Nails, screws, and fasteners.	None.
Ends	Free from damage.	Broken or missing cleats and handles.	Damage that requires disassembly of box.
Wood	Splits less than 3 inches long, no closer than 1 inch to edge of board or adjoining split. The board must be secured by at least one nail on each side of the split when it extends to the end of the board.	Splits more than 3 inches but no closer than 1 inch to edge of board or adjoining split, or $\frac{1}{2}$ -inch wide. That can be repaired by use of corrugated fasteners.	Splits closer than 1 inch to edge of board or adjoining split or over $\frac{1}{2}$ -inch wide.
Fiber Containers			
Metal Ends	Minor rust, cracks, indentations, or splits that would not impair water proofing or serviceability of container.	None.	Perforations, excessive rust, or ends which are crushed or not securely crimped to body.
Body and Cap	No leaks, cuts, or gouges.	Cuts, tears, or gouges not closer than 1 inch to closure, less than $\frac{1}{2}$ square inch in area, and unpenetrated layers that can be spot painted.	Cuts, tears, or gouges closer than 1 inch to closure, more than $\frac{1}{2}$ square inch in area, or through all impregnated layers

Table 2. M29 And M30 Control Surfaces And Containers.

LOCATION	ITEM	ACTION	REMARKS
Container	Components	1. Inspect for rust, fungus, paint damage, and deformation. 2. Reject container if damage prevents it from functioning properly.	
M29	Control Surfaces	1. Inspect for dents and scratches on post, trailing edge phenolic, skin, and closure plate. 2. Reject control surface: a. If post dents or scratches exceed 0.002 in. (0.051 mm).	

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FIGURE 343. Example of a page-based TM stylesheet output for <surwp>.

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LOCATION	ITEM	ACTION	REMARKS
		b. If trailing edge phenolic dents exceed 0.040 in. (10.160 mm). c. If skin dents exceed 0.030 in. (7.620 mm) within 2 in. (50.800 mm) of post. d. If closure plate dents exceed 0.030 in. (7.620 mm) within 2 in. (50.800 mm) of post.	
M30	Control Surfaces	1. Inspect for dents and scratches on post and skin. 2. Skin dents or scratches up to 0.050 in. (12.700 mm) are allowable, but should be blended. 3. Reject control surface if post dents or scratches exceed 0.002 in. (0.051 mm).	

END OF TASK

END OF WORK PACKAGE

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FIGURE 344.

23.4 Equipment/user fitting instructions work package <perseqpwp>.

Equipment/user fitting instructions work package contains instructions for personal use equipment. The information is entered as descriptive text or as procedural steps.

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1. Components for **<perseqpwp>**:
 - a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
 - b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
 - c. Work package initial setup **<initial_setup>** (required) (see Section 16.6).
 - d. A single procedure **<proc>** (see Section 17.2).
2. The DTD fragment for **<perseqpwp>** is graphically depicted.

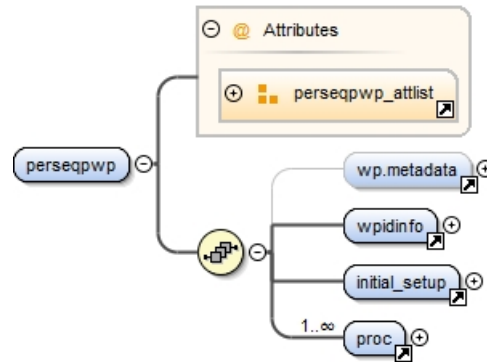


FIGURE 345. Equipment/user fitting instructions work package DTD hierarchy <perseqpwp>.

3. The DTD fragment for **<perseqpwp>** is:

```
<!ELEMENT perseqpwp (wp.metadata?, wpidinfo, initial_setup, proc+)>
```

```
<!ATTLIST perseqpwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED

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lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<perseqwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).

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- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.4.1 XML document instance fragment and output for <perseqpwp>.

The XML instance and its stylesheet output for a <perseqpwp> is provided below.

1. Example of an XML document instance fragment for <perseqpwp>:

```
<perseqpwp chngno="" airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2" wpno="M00890-X-XXXX-XXX" wpseq="1324">
  <wpidinfo>
    <maintlvl level="maintainer"/>
    <title>DONNING AND FITTING THE SRU-37/P
  </title>
</wpidinfo>
<initial_setup>
  <title>N/A
</title>
<null insert="none"/>
</initial_setup>
<proc frame="yes" tocentry="0">
  <title>CHEST MOUNTING OPTION
</title>
  <geninfo>
    <title>GENERAL
  </title>
  <para>The container assembly is designed to be worn on the user's chest, upper back, or lower back. If the SARVIP is to be worn, it should be donned first. The SRU-37/P should then be donned over the SARVIP.
  </para>
</geninfo>
  <step1 qa="no">
    <specpara>
      <warning>
        <trim. para>When the SRU-37/P is worn on the chest, certain size individuals in certain helicopters may experience aft cyclic control restriction.
      </trim. para>
      </warning>
      <para>Position the SRU-37/P across the chest and place both shoulder straps over the shoulders and back. The right shoulder strap with male buckle should be passed under the left armpit and securely inserted into the female buckle of the left cross strap. The left shoulder strap with male buckle should be passed under the right armpit and securely inserted into the female buckle of the right cross strap. Ensure that both buckle assemblies are securely fastened. This is essential for the prevention of inadvertent release while performing air crew duties or during emergencies.
```


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</para>
</specpara>
</step1>
<step1 qa="no">
<para>Adjust the straps, taking up the slack until snug against the body. Be sure to allow for unobstructed access to the beaded inflation handle.
</para>
</step1>
</proc>
</perseqpwp>

2. Page-based TM stylesheet output example for **<perseqpwp>**:

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MAINTAINER MAINTENANCE**DONNING AND FITTING THE SRU-37/P**

INITIAL SETUP:**N/A**NOT APPLICABLE

CHEST MOUNTING OPTION**GENERAL**

The container assembly is designed to be worn on the user's chest, upper back, or lower back. If the SARVIP is to be worn, it shall be donned first. The SRU-37/P shall then be donned over the SARVIP.

WARNING

When the SRU-37/P is worn on the chest, certain size individuals in certain helicopters may experience aft cyclic control restriction.

1. Position the SRU-37/P across the chest and place both shoulder straps over the shoulders and back. The right shoulder strap with male buckle shall be passed under the left armpit and securely inserted into the female buckle of the left cross strap. The left shoulder strap with male buckle shall be passed under the right armpit and securely inserted into the female buckle of the right cross strap. Ensure that both buckle assemblies are securely fastened. This is essential for the prevention of inadvertent release while performing air crew duties or during emergencies.
2. Adjust the straps, taking up the slack until snug against the body. Be sure to allow for unobstructed access to the beaded inflation handle.

END OF WORK PACKAGE

1324-1/blank

FIGURE 346. Example of a page-based TM stylesheet output for <perseqpwp>.

23.5 Preventive Maintenance Checks and Services (PMCS) introduction work package <pmcsintrowp>.

The function of the PMCS introduction work package is to explain the purpose and use of the PMCS data such as a description and explanation of each PMCS table column or entry. It explains how to document PMCS deficiencies and shortcomings using DA Form 2404, and a statement concerning Corrosion Prevention and Control (CPC) with references to the applicable CPC instructions and indicating adherence to the CPC instructions. It identifies an identification of the lubricants used in the PMCS, the standard military symbols for the lubricants, and the interval identifiers and interval definitions (D: daily, W: weekly, MI: miles operated). It details the oil filter standard statement, Army Oil Analysis Program (AOAP) sampling interval statement, and an AOAP not available/non-enrolled standard statement, when an applicable component is not enrolled in the AOAP, or oil analysis support is not available; including a warranty hard time standard statement, if the equipment is under warranty and is not enrolled in the AOAP, and/or Leakage criteria when the equipment contains fluids such as lubrication oil or hydraulic fluid. Many of these subjects may have standard statements in boilerplate entries (see Section 23.5.2).

1. Components for <pmcsintrowp>:

- a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
- b. Work package identification information <wpidinfo> (required) (see Section 16.2).
- c. Introduction <intro> (required) (see Section 36.1.4.14).
- d. Descriptive introduction titled paragraphs (required – one or more).
 - i. Titled first level paragraph <para0> (see Section 36.1.1.9).
 - ii. Conditional titled first level paragraph <para0-alt> (see Section 35.2.1).
- e. Fluid leakage statement <fluid.leakage> (optional) (see Section 23.5.1).

2. The DTD fragment for <pmcsintrowp> is graphically depicted.

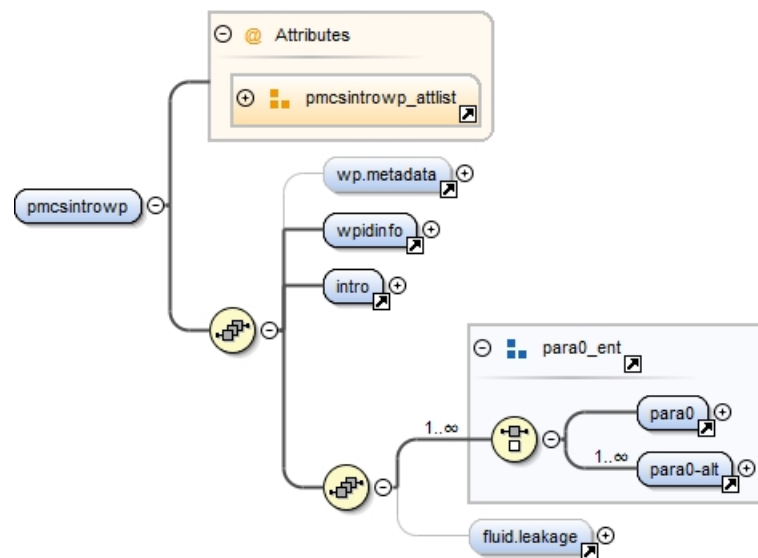


FIGURE 347. PMCS introduction work package DTD hierarchy <pmcsintrowp>.

3. The DTD fragment for <pmcsintrowp> is:

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```
<!ELEMENT pmcsintrowp (wp.metadata?, wpidinfo, intro, ((%para0_ent;)+,
fluid.leakage?))>
```

```
<!ATTLIST pmcsintrowp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Common attributes for <pmcsintrowp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).

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- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.5.1 Fluid leakage statement <fluid.leakage>.

The DTD includes the <fluid.leakage> element to handle this standard statement which is contained in the boilerplate entities (see Section 23.5.2).

1. Components for <fluid.leakage>:
 - a. Task title <title> (required) (see Section 36.1.1.4).
2. The DTD fragment for <fluid.leakage> is graphically depicted.

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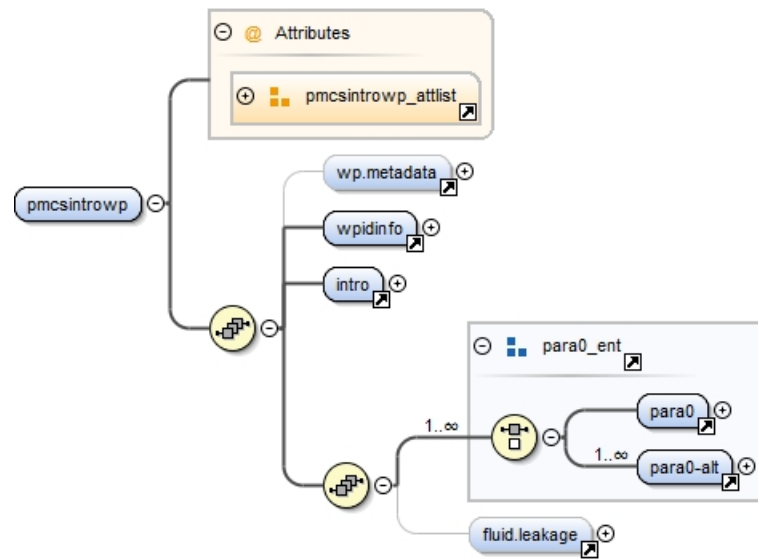


FIGURE 348. PMCS introduction work package DTD hierarchy <pmcsintrowp>.

3. The DTD fragment for <fluid.leakage> is:

```

<!ELEMENT fluid.leakage (title, (%p;)+)>
<!ATTLIST fluid.leakage
assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
delchlvl          (0-99)          "0"
id                ID              #IMPLIED
idref             IDREFS          #IMPLIED
inschlvl          (0-99)          "0"
security          (uc | fouo | c | s | ts) #IMPLIED
skilltrk          CDATA           #IMPLIED>

```

4. Common attributes for <fluid.leakage>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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23.5.2 PMCS introduction standard statement boilerplate entries.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-40051 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, refer to Section 37.5 and how specific boilerplate usages are listed refer to TABLE IX.

TABLE IX. Boilerplate entities for <pmcsintrowp>.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
AOAP Sampling Interval Statement	<i>&pmcsintrowp.intro.aoap;</i>	Not applicable
• Frame-based		<code><![ENTITY % frame-base "INCLUDE"><![ENTITY % page-base "IGNORE"></code>
• Page-based		<code><![ENTITY % frame-base "IGNORE"><![ENTITY % page-base "INCLUDE"></code>
• AOAP Timeframe – Page-base TMs Only		<code><![%page-base;[<![ENTITY pmcsintrowp.intro.aoap.time-frame "REPLACE WITH APPLICABLE HOUR/MILEAGE TIMEFRAME"]]]></code>
• AOAP Reference – Page-base TMs Only • DA PAM 738-751 • Replace IGNORE to INCLUDE • Replace INCLUDE to IGNORE • DA PAM 738-8 • No change is required		<code><![%page-base;[<![ENTITY pmcsintrowp.intro.aoap.prescribed '<![IGNORE[<extref docno="DA PAM 738-751" posttext="', Functional Users Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A)"/>]]<![INCLUDE [<extref docno="DA PAM 738-8" posttext="', The Army Maintenance Management System (TAMMS) Users Manual)"/>]]']]]></code>
AOAP Not Available/Non- Enrolled Statement	<i>&pmcsintrowp.intro.aoap-na;</i>	
• Component or Equipment Name		<code><![ENTITY pmcsintrowp.intro.componentequipment "REPLACE WITH NAME OF COMPONENT/EQUIPMENT"></code>
Fluid Leakage Statement	<i>&pmcsintrowp.intro.fluidleakage;</i>	
• Component or Equipment Name		<code><![ENTITY pmcsintrowp.intro.componentequipment "REPLACE WITH NAME OF COMPONENT/EQUIPMENT"></code>

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TABLE IX. Boilerplate entities for <pmcsintrowp>. (continued)

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Conditions to Change Oil Filter Statement	<i>&pmcsintrowp.intro.oilfilter;</i>	Not Applicable
Warranty Statement	<i>&pmcsintrowp.intro.warranty;</i>	Not Applicable

23.5.3 XML document instance fragment and output for <pmcsintrowp>.

The XML instance and its stylesheet output for <pmcsintrowp> is provided below:

1. Example of an XML document instance fragment for <pmcsintrowp>:

```
<pmcsintrowp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no"
tocentry="2" wpno="M00062-X-XXX-XXX" wpseq="0062">
  <wpidinfo>
    <maintlvl level="operator"/>
    <title>NBCRS FOX M93A1 PMCS PROCEDURES INTRODUCTION
  </title>
</wpidinfo>
<intro frame="no">
  <para0>
    <title>INTRODUCTION
  </title>
  <para>Preventive Maintenance Checks and Services (PMCS) are performed to keep
the vehicle in operating condition. The checks are used to find, correct, or
report problems. Crew members are to do the PMCS jobs as shown in the PMCS table.
PMCS are done every day the vehicle is operated, using the PMCS table. Pay
attention to WARNING and CAUTION statements. A WARNING means someone could be
hurt. A CAUTION means equipment could be damaged.
  <randlist bullet="yes">
    <item>Before you begin operating vehicle equipment, do Before PMCS.
  </item>
    <item>During operation, do During PMCS.
  </item>
    <item>After operation, do After PMCS.
  </item>
    <item>Once a week do Weekly PMCS. If vehicle has not been operated in a week, also
do Before PMCS at the same time.
  </item>
    <item>Do Monthly PMCS once a month. If vehicle has not been operated in a month,
also do After PMCS at the same time.
  </item>
    <item>If you are operating the vehicle for the first time, do your Weekly and
Monthly PMCS the first time you do your Before PCMS.
  </item>
    <item>If you find something wrong when performing PMCS, fix it if you can, using
troubleshooting procedures and/or maintenance procedures.
  </item>
    <item>The right-hand column of the PMCS table lists conditions that make the
vehicle not fully mission capable. Write up items not-fixed on
```


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<extref docno="DA Form 2404"/> for unit maintenance. For further information on how to use this form

<extref pretext=", see " docno="DA PAM 738-750"/>.

</item>

<item>If tools required to perform PMCS are not listed in

<xref wpid="M00361-X-XXX-XXX"/>, notify unit maintenance.

</item>

</randlist>

</para>

</para0>

</intro>

<para0>

<title>INSPECTION

</title>

<para>Look for signs of a problem or trouble. Senses help here. You can feel, smell, hear, or see many problems. Be alert when on the vehicle.

</para>

<para>Inspect to see if items are in good condition. Are they correctly assembled, stowed, secured, excessively worn, leaking, corroded, or properly lubricated? Correct any problems found or notify unit maintenance.

</para>

<para>There are some common items to check all over the vehicle. These include the following:

<seqlist>

<item>Bolts, clamps, nuts, and screws: Continuously check for looseness. Look for chipped paint, bear metal, rust, or corrosion around bolt and screw heads and nuts. Tighten them when you find them loose. If tools are not available, notify unit maintenance.

</item>

<item>Welds: Many items on the vehicle are welded. To check these welds, look for chipped paint, rust, corrosion, or gaps. When these conditions exist, notify unit maintenance on

<extref docno="DA Form 2404"/>.

</item>

<item>Electrical wires, connectors, and harnesses: Tighten loose connectors. Look for cracked or broken insulation, bare wires, and broken connectors. If any are found, notify unit maintenance.

</item>

<item>Hoses and fluid lines: Look for wear, damage and leaks, and make sure clamps and fittings are tight. Wet spots mean a leak. A stain by a fitting or connector can also mean a leak. When you find a leak, notify unit maintenance.

</item>

</seqlist>

</para>

</para0>

<para0>

<title>LUBRICATION SERVICE INTERVALS - NORMAL CONDITIONS

</title>

<para>For safer, more trouble free operations, make sure that your vehicle is serviced when it needs it. For the proper lubrication and service intervals

<extref docno="LO 9-6665-376-12" pretext=", see "/>.

</para>

</para0>

<para0 >

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<title>LUBRICATION SERVICE INTERVALS - UNUSUAL CONDITIONS

</title>

<para>Your vehicle will require extra service and care when you operate under unusual conditions. High or low temperatures, long periods of hard use, or continued use in sand, water, mud, or snow will break down the lubricant, requiring you to add or change lubricant more often.

</para>

</para0>

<para0>

<title>CLEANING AND LUBRICATION

</title>

<para>Proper cleaning and lubrication can aid in avoiding possible problems or trouble, so make it a habit to do the following:

</para>

<para>*&pmcsintrowp.intro.fluid.leakage;*

</para>

</para0>

</pmcsintrowp>

2. Page-based TM stylesheet output example for **<pmcsintrowp>**:

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0001

CREW MAINTENANCE**PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION****GENERAL**

Preventive Maintenance Checks and Services (PMCS) means systematic caring, inspecting, and servicing of equipment to keep it in good condition and to prevent breakdowns. Always perform the PMCS in the same order, so it gets to be a habit. Once you've had some practice, you'll quickly spot anything wrong. Perform the PMCS as follows:

1. BEFORE PMCS - just before you operate the HSTRU. Pay attention to warnings, cautions, and notes.
2. DURING PMCS - while you operate the HSTRU. During operation means to monitor the HSTRU and its related components while it is actually being operated. Pay attention to warnings, cautions, and notes.
3. AFTER PMCS - right after operating the HSTRU. Pay attention to warnings, cautions, and notes.
4. MONTHLY - once a month.
5. QUARTERLY - once every 3 months.
6. SEMIANNUAL - once every 6 months.

Use DA Form 2404 (Equipment Inspection and Maintenance Worksheet) to record any faults that you discover before, during, or after operation, unless you can fix them. You DO NOT need to record faults that you fix.

PMCS PROCEDURES

The PMCS table in the following work package lists the inspections and care required to keep the HSTRU in good operating condition. It (GENERAL) is set up so you can perform BEFORE Operation checks as you walk around the HSTRU. The PMCS table includes the following columns:

1. The ITEM NO. column indicates the number assigned to each PMCS procedure. The procedures are numbered in logical sequence of performance.
2. The INTERVAL column indicates when to perform a certain check or service.
3. The MANHOUR column indicates how long it should take to perform a check or service procedure.
4. The PROCEDURE column states how to do the required checks and services. Carefully follow these instructions. If you do not have tools, or if the procedure tells you to, notify your supervisor.
5. The EQUIPMENT NOT READY/AVAILABLE IF column indicates when the HSTRU is non-mission capable and why the equipment cannot be used.

If the HSTRU does not perform as required, refer to Chapter 3, Troubleshooting. If anything looks wrong and you can't fix it, complete a DA Form 2404. IMMEDIATELY report the problem to your supervisor.

NOTE

Only use those authorized cleaning solvents or agents listed in the Expendable/Durables work package in this manual.

1. Keep It Clean. Dirt, grease, oil, and debris may cover up a serious problem. Clean as you work and as needed. Use dry cleaning solvent (, Item 7) on all metal surfaces. Use soap and water when you clean rubber or plastic material. Upholstery can be cleaned with soap and water and a clean, damp cloth.
2. Rust and Corrosion. Check HSTRU body and frame for rust and corrosion. If any bare metal or corrosion exists, clean, and apply a thin coat of lubricating oil (, Item 7). Report it to your supervisor.
3. Bolts, Nuts, and Screws. Check for obvious looseness and missing, bent, or broken condition. You can't try them all with a tool, but look for chipped paint, bare metal, or rust around bolt heads. If you find a bolt, nut, or screw you think is loose; tighten it or report it to your supervisor.
4. Welds. Look for loose or chipped paint, rust, or gaps where parts are welded together. If you find a bad weld, report it to your supervisor.

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FIGURE 349. Example of a page-based TM stylesheet output for <pmcsintrowp>.

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5. Electric Wires and Connectors. Look for cracked, frayed, or broken insulation; bare wires; and loose or broken connectors. Tighten loose connectors. Report any damaged wires to your supervisor.
6. Hoses and Fluid Lines. Look for wear, damage, and leaks, and make sure clamps and fittings are tight. Wet spots indicate leaks, but a stain around a fitting or connector can also mean a leak. If a leak comes from a loose fitting or connector, tighten it. If something is broken or worn out, report it to your supervisor.

When you check for operating condition, look at the component to see if it's serviceable.

When cleaning grease buildup or rust, use a cleaning solvent. Then apply a thin coat of light oil to affected area.

Fluid Leakage It is necessary for you to know how fluid leakage affects the status of the HSTRU. Following are types/classes of leakage you need to know to be able to determine the status of the HSTRU. Learn these leakage definitions and remember - when in doubt, notify your supervisor. Equipment operation is allowed with minor leakage (Class I or II). Consideration must be given to fluid capacity in the item/system being checked/inspected. When in doubt, notify your supervisor.

When operating with Class I or II leaks, continue to check fluid levels as required in the PMCS.

Class III leaks should be reported immediately to your supervisor.

1. CLASS I - Seepage of fluid (as indicated by wetness or discoloration) not great enough to form drops.
2. CLASS II - Leakage of fluid great enough to form drops but not enough to cause drops to drip from item being checked/inspected.
3. CLASS III - Leakage of fluid great enough to form drops that fall from item being checked/inspected.

END OF WORK PACKAGE

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FIGURE 350.

23.6 Preventive Maintenance Checks and Services (PMCS) work package <pmcswp>.

The PMCS work package contains the data required to perform PMCS on equipment. The PMCS work package includes periodic lubrication instructions, applicable scheduled corrosion inspections, and equipment checks to

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ensure the equipment is maintained in good working order. Extensive lubrication instructions for a repair action are included in a separate lubrication work package **<lubewp>** (see 23.9).

1. Components for **<pmcswp>**:

- a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
- b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
- c. Work package initial setup **<initial_setup>** (required) (see Section 16.6).
- d. PMCS standard information **<pmcstable>** (required – one or more) (see Section 23.6.1).
- e. Mandatory replacement parts **<mrplpart>** (required) (see Section 23.6.2).

2. The DTD fragment for **<pmcswp>** is graphically depicted.

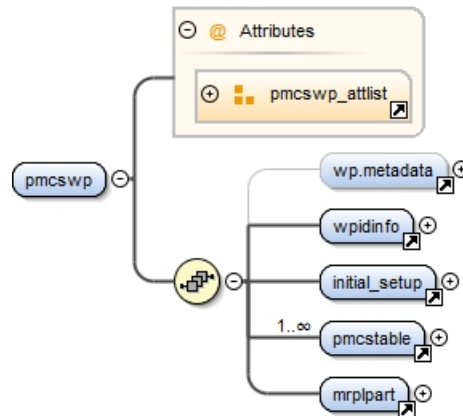


FIGURE 351. PMCS work package DTD hierarchy **<pmcswp>**.

3. The DTD fragment for **<pmcswp>** is:

```
<!ELEMENT pmcswp (wp.metadata?, wpidinfo, initial_setup, pmcstable+,
mrplpart)>
```

```
<!ATTLIST pmcswp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"

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fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <pmcswp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).

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- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.6.1 PMCS standard information <pmcstable>.

The PMCS table is standard information that identifies the detailed requirements and intervals for conducting preventive maintenance checks and services.

1. Components for <pmcstable>:
 - a. Standard information title <title> (required) (see Section 36.1.1.4). The title generally contains the equipment and/or interval to be inspected.
 - b. PMCS intervals <pmcs-intervals> (optional) (see Section 23.6.1.1).
 - c. Warning <warning> (optional – zero or more) (see Section 28.1.1).
 - d. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
 - e. Caution <caution> (optional – zero or more) (see Section 28.1.2).
 - f. Note <note> (optional – zero or more) (see Section 28.1.3).
 - g. PMCS entry <pmcs-entry> (required – one or more) (see Section 23.6.1.2).
2. The DTD fragment for <pmcstable> is graphically depicted.

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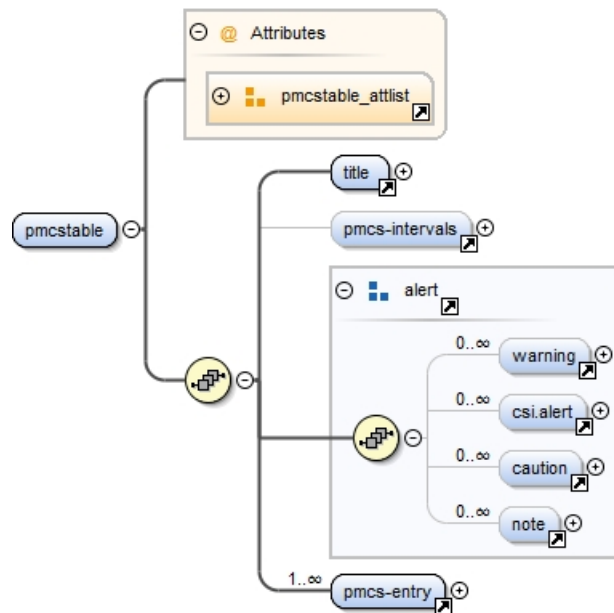


FIGURE 352. PMCS work package DTD hierarchy <pmcstable>.

3. The DTD fragment for <pmcstable> is:

```
<!ELEMENT pmcstable (title, pmcs-intervals?, %alert;, pmcs-entry+)>
```

```
<!ATTLIST pmcstable=""
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"1"
use-manhours	yes no	"no">

4. Unique attribute for <pmcstable> is **use-manhours** – This attribute is a ‘yes/no’ toggle to determine if a man-hours entry is used. The default value is set to “no.” This attribute is primarily used for lubrication procedures to display the number of hours normally required to perform the lubrication.
5. Common attributes for <pmcstable>:
 - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
 - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – Table of contents level entry (default value is **1**) (see Section 16.3.6).
- l. **Man-hours** – Identifies the man-hours required to perform the lubrication and is located under the **MAN-HOUR** heading (optional).

23.6.1.1 PMCS interval definition <pmcs-intervals>.

The <pmcs-intervals> is used to define the various PMCS intervals used for the inspections. Defining the intervals provides the information for possible filtering the checks or services for only the requested PMCS intervals to be performed. Each interval used in the PMCS is defined in the element <interval> and should match the <interval> defined in the element <pmcs-entry>.

23.6.1.2 PMCS entry <pmcs-entry>.

The element contains the information to conduct the check or service for an inspection item. The element is similar to a **row** in a structural table.

1. The components for <pmcs-entry> are:
 - a. Item number <itemno> (required) – Identifies the number assigned to the item to be checked or serviced and is located under the **ITEM NO.** heading. The element is similar to a **cell** in a structural table and is entered in column one.
 - b. Inspection intervals <interval> (required – one or more) – Identifies when each check is to be performed (“before,” “during,” “after,” “weekly”), and is located under the **INTERVAL** heading. The element is similar to a **cell** in a structural table and is entered in column two. If filtering the intervals, the interval data should exactly match the interval data within the element <pmcs-intervals> (see Section 23.6.1.1).
 - c. Man-hours <manhours> (optional) – Identifies the man-hours required to perform the lubrication and is located under the **MAN-HOUR** heading. The element is similar to a **cell** in a structural table and is entered in column three.
 - d. Item to be checked or serviced <checked> (required) – Identifies the item to be checked or serviced, and is located under the **ITEM TO BE CHECKED OR SERVICED** heading. The element is similar to a **cell** in a structural table and is entered in column three (or four if man-hours is a requirement).
 - e. PMCS procedure <pmcsproc> (optional – zero or more) (see Section 23.6.1.3).
 - f. Equipment not ready/available if criteria <eqpnotavail> (optional) (see Section 23.6.1.4).
2. The DTD fragment for <pmcs-entry> is graphically depicted.

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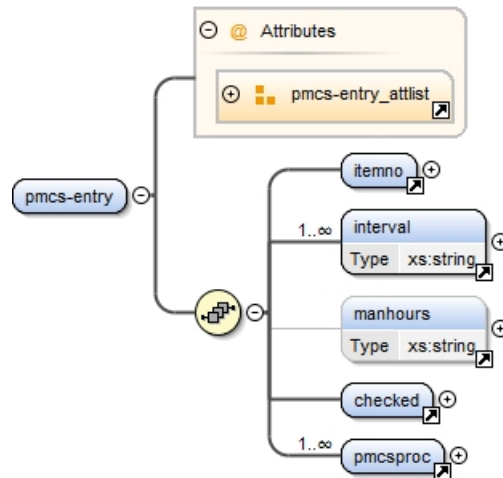


FIGURE 353. PMCS entry DTD hierarchy <pmcs-entry>.

3. The DTD fragment for <pmcs-entry> is:

```
<!ELEMENT pmcs-entry (itemno, interval+, manhours?, checked, pmcsproc+)>
<!ATTLIST pmcs-entry
    applicable          IDREFS          #IMPLIED
    assocfig            IDREFS          #IMPLIED
    changeref           IDREFS          #IMPLIED
    comment             CDATA           #IMPLIED
    delchlvl            (0-99)         "0"
    id                  ID              #IMPLIED
    idref               IDREFS          #IMPLIED
    inschlvl            (0-99)         "0"
    security             (uc | fouo | c | s | ts)  #IMPLIED
    skilltrk            CDATA           #IMPLIED>
```

4. Common attributes for <pmcs-entry>:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.6.1.3 PMCS procedure and equipment not available <pmcsproc>.

The element contains each check or service step (located under the **PROCEDURE** heading) with the associated equipment not available criteria (if any) (located under the **EQUIPMENT NOT READY/AVAILABLE IF**). The PMCS step contains a brief step-by-step description of each check or service to be performed. Included within the steps is any information required to accomplish the checks or services, including lubrication, tolerances, adjustment limits, instrument gage readings and any illustration(s) necessary to identify the step location. Refer to MIL-STD-40051-1/-2, for a list of procedures when the equipment being serviced has a scheduled periodic/scheduled lubrication requirement. Reference, as applicable, the standard statement for lubrication authorization. Use boilerplate entities *&pmcswp.pmcstable.pmcspc.arctic-oper.auth*; or *&pmcswp.pmcstable.pmcspc.arctic-oper.not-auth*; (see Section 23.6.3). If a PMCS step has a criteria that renders the equipment not ready and/or available, the equipment condition (out-of-limits, malfunctions, etc.) is identified with the procedural step using the **<eqpnotavail>** element (see Section 23.6.1.4).

1. Components for <pmcsproc>:

- a. Procedure title <title> (optional) (see Section 36.1.1.4).
- b. PMCS procedural step(s) requires either a:
 - i. Single unnumbered step <pmcspara> (required) (see 23.6.1.4).
 - ii. Numbered steps (multiple) <pmcsstep1> (required – one or more) (see Section 23.6.1.4) or <pmcsstep1-alt> (see Section 35.2.1).

2. The DTD fragment for <pmcsproc> is graphically depicted:

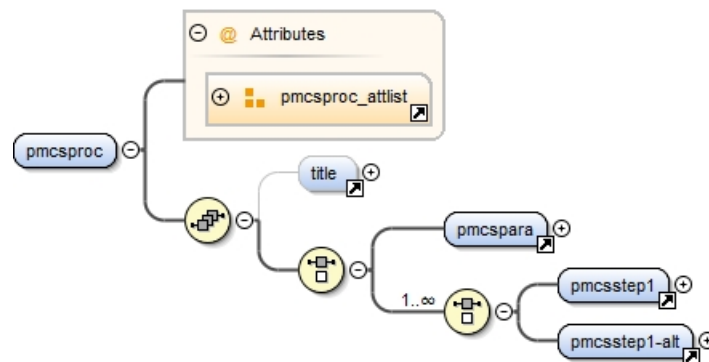


FIGURE 354. PMCS procedure DTD hierarchy <pmcsproc>.

3. The DTD fragment for <pmcsproc> is:

```

<!ELEMENT pmcsproc(title?, (pmcspara | (pmcsstep1 | pmcsstep1-alt)+))>
<!ATTLIST pmcsproc
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  crewmember          CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  esd                 (yes | no)      "no"
  hcp                 (yes | no)      "no"

```

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id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Unique attribute for **<pmcsproc>** is **crewmember**(optional) – Crewmember(s) only (optional). Identifies the crewmember(s) that performs the check or service procedural steps. The information displayed before the first step with similar formatting as a PMCS procedural title (see Section 16.3.1).
5. Common attributes for **<pmcsproc>** are:
 - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
 - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - d. **comment** – Change information (optional) (see Section 36.3.12).
 - e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - f. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
 - g. **hnp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
 - h. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
 - i. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - j. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - k. **security** – Security classification (optional) (see Section 36.3.14).
 - l. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.6.1.4 PMCS procedural step **<pmcsstep1>** or **<pmcspara>** with associated equipment not available/ready criteria.

Each PMCS procedural step provides the check or service action to perform and if the action has a condition when the equipment would not be available or ready it is stated with the step. The PMCS procedural step is located under the **PROCEDURE** heading and the equipment not ready/available criteria is located under the **EQUIPMENT NOT READY/AVAILABLE IF** heading and aligned with the associated step. In a stylesheet, each **<pmcsstep1>** (after the initial step) is considered a new row with empty cells for previous columns. Creating a new row has two purposes, first it allows the necessary page breaks for long procedures and the second is it maintains the step to equipment not ready/available criteria association. If steps are not needed the **<pmcspara>** is used.

1. The components for **<pmcspara>** are:
 - a. Requires either a:
 - i. PMCS procedural step narrative with alerts **<specpara>** (required) – (see Section 36.1.1.7). The element is similar to a **cell** in a structural table and is entered in column four or five (if Man-hours is a requirement).
 - ii. PMCS procedural step narrative **<para>** (required) (see Section 36.1.1.6). The element is similar to a **cell** in a structural table and is entered in column four or five (if Man-hours is a requirement).

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```

<!ELEMENT pmcsstep4 ((%p;), eqpnotavail?)>
<!ATTLIST pmcsstep1, pmcsstep2, pmcsstep3, and pmcsstep4 >
applicable          IDREFS          #IMPLIED
assocfig            IDREFS          #IMPLIED
changeref          IDREFS          #IMPLIED
comment            CDATA           #IMPLIED
crewmember          CDATA           #IMPLIED
delchlvl            (0-99)          "0"
esd                 (yes | no)       "no"
hcp                 (yes | no)       "no"
id                  ID              #IMPLIED
idref               IDREFS          #IMPLIED
inschlvl            (0-99)          "0"
qa                  (yes | no)       "no"
security            (uc | fouo | c | s | ts) #IMPLIED
skilltrk            CDATA           #IMPLIED>

```

5. Unique attributes for **<pmcsstep1>**, **<pmcsstep2>**, **<pmcsstep3>**, and **<pmcsstep4>** are:

- a. **crewmember** – Crew member(s) only (optional). Identifies the crew member(s) that performs the check or service with the procedural step. The information displayed after the step number and before the step narrative. Generally, the information is formatted in bold.
- b. **qa** – Quality assurance (default value is **no**) (see Section 36.3.13).

6. Common attributes for **<pmcsproc>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- h. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- i. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- j. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- k. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- l. **security** – Security classification (optional) (see Section 36.3.14).
- m. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.6.2 Mandatory replacement parts <mrplpart>.

The mandatory replacement parts <mrplpart> list contains all items that are required to be replaced during a PMCS whether they have failed or not will be identified in the initial setup of the PMCS work package and referenced to the mandatory replacement parts list in the supporting information. When no mandatory replace parts exists this is stated as a standard statement from MIL-STD-40051-1/-2 (use *&pmcswp.pmcstable.mrplpart.no-mrp;*).

1. The components for <mrplpart> are:
 - a. Mandatory replacement parts list <mrpl> (optional) (see Section 27.10.1).
2. The DTD fragment for <mrplpart> is graphically depicted:

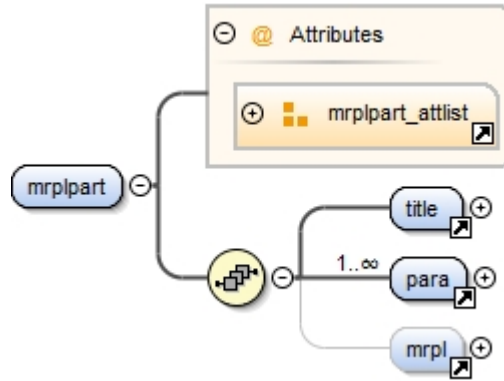


FIGURE 356. Mandatory replacement part list DTD hierarchy <mrplpart>.

3. The DTD fragment for <mrplpart> is:

```

<!ELEMENT mrplpart (title, para+, mrpl?)>
<!ATTLIST mrplpart
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>
  
```

4. Common attributes for <mrplpart> are:
 - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
 - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

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- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.6.3 PMCS work package standard statement boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities (see Chapter 37) that are a type of replacement text for these standard statements. Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, refer to Section 37.5 and for specific boilerplate usages are listed in TABLE X.

TABLE X. Boilerplate entities for **<pmcswp>**.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
PMCS lubricant is authorized in arctic operation note	<i>&pmcswp.pmcstable.pmcspc. arctic- oper.auth;</i>	Not applicable
PMCS lubrication is not authorized in arctic operation note	<i>&pmcswp.pmcstable.pmcspc. arctic- oper.not-auth;</i>	Not applicable
PMCS with no mandatory replacement parts statement.	<i>&pmcswp.pmcstable.mrplpart. nomrp;</i>	Not applicable

23.6.4 XML document instance fragment and output for **<pmcswp>**.

The XML instance and its stylesheet output for an example **<pmcswp>** is provided below.

- Example of an XML document instance fragment for **<pmcswp>**:

```
<pmcswp wpno="M0689-X-XXXX-XXX" tocentry="2" frame="yes" army="no" airforce="no" navy="no" marines="no" wpseq="0063" deletewp="no">
  <wpidinfo>
    <maintlvl level="operator"/>
    <title>NBCRS FOX M93A1
    <brk/>Preventive Maintenance checks and Services
    </title>
  </wpidinfo>
  <initial_setup>
    <null/>
  </initial_setup>
  <pmcstable tocentry="1" use-manhours="no">
    <title>Preventive Maintenance checks and Services for NBCRS FOX M93A1.
    </title>
    <note acknowledge="no">
      <trim.para>Driver, commander and crew will inspect for damaged or missing items while performing checks in walk around sequence.
    </trim.para>
    </note>
  </pmcstable>
</pmcswp>
```


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```

</itemno>
<interval>Before
</interval>
<checked>Vehicle Exterior
</checked>
<pmcsproc crewmember="COMMANDER">
<pmcsstep1 qa="no">
<para>Check for damaged and missing items. Check lighting fixtures. Make sure
all stowed items (pioneer equipment, etc.) are secured to vehicle for travel.
</para>
</pmcsstep1>
<pmcsstep1 qa="no">
<para>Secure stowed items. Replace missing items. Report major damage of
lighting fixtures. Report minor damage after operations.
</para>
<eqpnotavail>
<trim.para>Any damage or missing items that will prevent operation.
</trim.para>
</eqpnotavail>
</pmcsstep1>
</pmcsproc>
</pmcs-entry>
<pmcs-entry>
<itemno>2
</itemno>
<interval>Before
</interval>
<checked>Left Side Exercise
</checked>
<pmcsproc crewmember="DRIVER">
<pmcspara>
<specpara>
<note acknowledge="no">
<trim.para>If leakage is detected, further investigation is needed to determine
the location and cause of the leak.
</trim.para>
</note>
<para>Check underneath vehicle for evidence of fuel, or coolant.
</para>
</specpara>
<eqpnotavail>
<trim.para>Any class III leak of oil, fuel leakage.
</trim.para>
</eqpnotavail>
</pmcspara>
</pmcsproc>
</pmcs-entry>
<pmcs-entry>
<itemno>3
</itemno>
<interval>Before
</interval>
<checked>Left Side Tires
</checked>

```

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```

<pmcsproc crewmember="DRIVER">
<pmcspara>
<specpara>
<warning haz-abbrev="no">
<trim. para>Operating a vehicle with an improperly inflated tire or with a
questionable defect may lead to premature tire failure and cause equipment
damage, injury, or death to personnel.
</trim. para>
</warning>
<para>Check for missing or damaged tires and wheels. Visually check for proper
tire inflation.
</para>
</specpara>
<eqpnotavail>
<trim. para>Missing or damaged tires or wheels. Flat or deflated tires.
</trim. para>
</eqpnotavail>
</pmcspara>
</pmcsproc>
</pmcs-entry>
<pmcs-entry>
<itemno>7
</itemno>
<interval>Before
</interval>
<checked>Reciprocator
</checked>
<pmcsproc crewmember="CREW MEMBER 1">
<pmcsstep1 qa="no">
<specpara>
<warning haz-abbrev="no">
<trim. para>Do not remove cap
<callout label="37" assocfig="M0689-X-XXXX-XXX-fig3"/>when engine is hot.
</trim. para>
</warning>
<note acknowledge="no">
<trim. para>The reciprocator is charged with a pressure of 550 psi (38.5 kg/cm2) in
the M109 and M109A1. With temperature of 100&deg;F or over, 600 psi (42.0 kg/cm2)
in the M109A1 is 2 recommended.
</trim. para>
</note>
<para>Check pins
<callout label="35" assocfig="M0689-X-XXXX-XXX-fig3"/>before firing. Pins must not
extend over 3/4 inch (19.1mm) ; 1/8 inch (3.2mm) is correct. If pins
<callout assocfig="M0689-X-XXXX-XXX-fig3" label="35"/>do extend beyond 3/4 inch, remove
cap
<callout assocfig="M0689-X-XXXX-XXX-fig3" label="37"/>from valve
<callout assocfig="M0689-X-XXXX-XXX-fig3" label="36"/>and hydraulic fluid
<xref wpid="M0746-X-XXXX-XXX" itemno="5" pretext="(" posttext=")"/>until pins extend 1/8
inch.
<figure application="both" figtype="normal-page" tocentry="1" pane="no" id="M0689-X-XXXX-XXX-
fig3">
<title>Reciprocator
</title>

```

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```

<graphic boardno="PMCSRECIPROCATOR" unitmeasure="in" hscale="50">
</graphic>
</figure>
</para>
</specpara>
<eqpnotavail>
<trim.para>Pins
<callout label="35" assocfig="M0689-X-XXXX-XXX-fig3"/>extended over 3/4 inch
</trim.para>
</eqpnotavail>
</pmcsstep1>
</pmcsproc>
</pmcs-entry> . . .
</pmcstable>
<mrplpart>
<title>MANDATORY REPLACEMENT PARTS
</title>&pmcswp.pmcstable.mrplpart.no-mrp;
</mrplpart>
</pmcswp>

```

2. Page-based TM stylesheet output example for **<pmcswp>**:

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0001

CREW MAINTENANCE

PMCS FOR HSTRU

INITIAL SETUP:

References

TM 9-2330-202-14&P
SC 4940-95-B07

Time to Complete

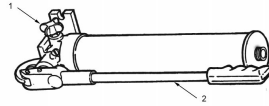
2.0 hours

Equipment Condition

HSTRU set up (WP 0001)

Table 1. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	NOT MISSION CAPABLE (NMC) IF:
1	Before	Circuit Breaker	<p>Gunner</p> <p>Refer to TM 9-2330-392-14&P for any Before PMCS checks and services. Need more text here to fill out the area for the next entry. This will push the next page down and maybe the formatting will work correctly. It is only incorrect on the second entry. Everything else works fine.</p>	Circuit breaker panel does not switch to the OFF position or will not stay in the ON position.



1

2

HSTR0208

LEGEND:

Figure 1. Circuit Breaker Panel.

0001-1

FIGURE 357. Example of a page-based TM stylesheet output for <pmcswp>.

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LOCATION	ITEM	ACTION	REMARKS
		b. If trailing edge phenolic dents exceed 0.040 in. (10.160 mm). c. If skin dents exceed 0.030 in. (7.620 mm) within 2 in. (50.800 mm) of post. d. If closure plate dents exceed 0.030 in. (7.620 mm) within 2 in. (50.800 mm) of post.	
M30	Control Surfaces	1. Inspect for dents and scratches on post and skin. 2. Skin dents or scratches up to 0.050 in. (12.700 mm) are allowable, but should be blended. 3. Reject control surface if post dents or scratches exceed 0.002 in. (0.051 mm).	

END OF TASK

END OF WORK PACKAGE

0109-2

FIGURE 358.

23.7 Maintenance work packages <maintwp>.

Maintenance work packages contain the maintenance tasks required to maintain or repair the equipment. Maintenance information is divided by functionality into individual maintenance work packages <maintwp>. Maintenance work packages are not required for aircraft PM and PMS manuals.

1. The components for <maintwp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. General information <geninfo> (optional) used if only general information is needed for this work package. (optional) (see Section 36.1.4.11).
 - e. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
 - i. Warning <warning> (optional - zero or more) (see Section 28.1.1).
 - ii. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
 - iii. Caution <caution> (optional - zero or more) (see Section 28.1.2).
 - iv. Note <note> (optional - zero or more) (see Section 28.1.3).
 - f. Maintenance task <maintsk> (required) (see Section 23.7.1).
 - g. Followon procedure <followon.maintsk> (optional) (see 23.7.1).
2. The DTD fragment for <maintwp> is graphically depicted:

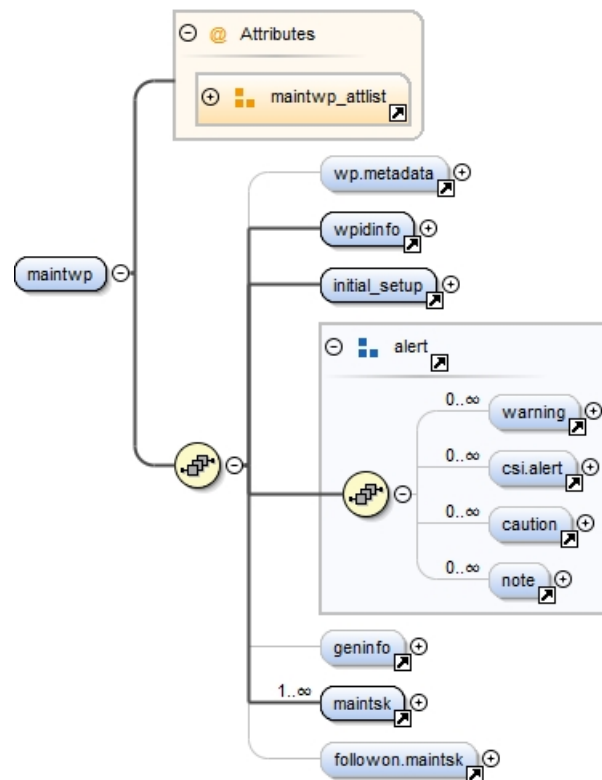


FIGURE 359. Maintenance work packages DTD hierarchy <maintwp>.

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3. The DTD fragment for **<maintwp>** is:

```
<!ELEMENT maintwp (wp.metadata?, wpidinfo, initial_setup, %alert;, geninfo?, maintsk+, followon.maintsk?)>
```

```
<!ATTLIST maintwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<maintwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).

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- g. comment** – Change information (optional) (see Section 36.3.12).
- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.7.1 Maintenance task <maintsk>.

The maintenance task element consists of start-to-finish maintenance procedural steps for a specific task, presented in a logical sequence of occurrence. Each maintenance task <maintsk> defines a specific task function, followed by an optional follow-on or close-up maintenance action <followon.maintsk>. Each task, except <inspect>, consists of one or more procedure <proc>. The use of the procedure is explained in 17.1.

1. The components for <maintsk> are:

- a.** Requires one of the following specific task types:
 - i.** Adjustment task <adjust> are the adjustment instructions that may be required before operating the part, system, or end item (see Section 17.1).
 - ii.** Alignment task <align> are the instructions to adjust specified variable elements of an item to bring about optimum or desired performance (see Section 17.1).

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- iii. Ammunition activation task **<arm>** are the instructions for arming/activation of ammunition, mines, etc. prior to use (see Section 17.1).
- iv. Assembly task **<assem>** are the instructions for assembling items disassembled or removed that make up the components, assemblies, or subassemblies (see Section 17.1).
- v. Calibration task **<calibration>** are the instructions to determine and cause corrections to be made on instruments of test, measuring and diagnostic equipment in precision measurement (see Section 17.1).
- vi. Cleaning task **<clean>** are the step by step instructions on how to remove dirt, corrosion or other contaminants from equipment (see Section 17.1).
- vii. Configure **<configure>** Instructions for configuring the software for different uses/purposes and/or different users should be prepared (see Section 17.1).
- viii. Covering task **<cover>** are instructions on how to properly place protective wrappings over a vehicle or hide it as camouflage (see Section 17.1).
- ix. Debug **<debug>** are the instructions for locating software bugs and removing those bugs/correcting errors should be prepared (see Section 17.1).
- x. Disassembly task **<disassem>** are the instructions for disassembly of components, assemblies, or subassemblies to the extent specified by the MAC and SMR coded items (see Section 17.1).
- xi. External power task **<extpwr>** are instructions on how to apply electrical power from authorized power sources (see Section 17.1).
- xii. Hoisting task **<hoist>** are instructions on how to properly raise vehicles by cables or ropes through attaching points (see Section 17.1).
- xiii. Inspect task **<inspect>** provides instructions for the user detailing inspections to determine the serviceability of an item through examination (see Section 17.1 and Section 23.7.1.1).
- xiv. Installation task **<install>** are the instructions for properly placing, positioning, or locating a component to make it part of a higher level end item (see Section 17.1).
- xv. Install peripheral device **<installperdev>** are the instructions for installing peripheral devices such as printers, scanner, modems, etc. (see Section 17.1).
- xvi. Jacking task **<jack>** are instructions on how to properly raise a vehicle or aircraft using a jack stand or other supporting devices (see Section 17.1).
- xvii. Loading procedures **<load>** can be used in one of two areas:
 - I. Transportation, the act of placing equipment onto a transportation medium.
 - II. S Munitions, the act of placing munitions on a vehicle or aircraft.
- xviii. Lubrication task **<lube>** are the lubrication instructions, CPC procedures, and general lubrication instructions not specified elsewhere in the manual (see Section 17.1).
- xix. Marking tasks **<mark>** are the instructions for applying the proper markings on ammunition, ammunition containers, or other equipment as required (see Section 17.1).
- xx. Mooring task **<moor>** are instructions on how to properly secure equipment using ropes, chains or other securing devices (see Section 17.1).
- xxi. Nondestructive Inspection (NDI) **<ndi>** are the step-by-step instructions on preparation of inspections or tests which do not destroy or damage the item or equipment (see Section 17.1).
- xxii. Addition maintenance task **<other.maintsk>** are the instructions for specific maintenance tasks not previously covered in above types (see Section 17.1).

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- xxiii.** Overhaul procedures **<overhaul>** are instructions prepared to restore an item to a completely serviceable/operational condition (see Section 17.1).
- xxiv.** Packing **<pack>** are instructions detailing how to place an item into a container for either storage or shipment after service and other maintenance operations have been completed (see Section 17.1).
- xxv.** Painting task **<paint>** are the instructions for required painting, refinishing, and marking of assembled components, assemblies, subassemblies, or end item (see Section 17.1).
- xxvi.** Parking task **<park>** instructions on how to safely place a vehicle in a lot, ramp area, or other location (see Section 17.1).
- xxvii.** Placing in service task **<pis>** are the instructions for actions not previously noted that may be required for an assembly, component, or end item, such as removal of an item from storage, preparation for installation on an end item, final servicing checks, calibration, leak checks, charging, pressurizing, and operational checks (see Section 17.1).
- xxviii.** Assembly and preparation for use task **<prepforuse>** are the instructions for unpacking, assembly, and installation after it is unpacked (see Section 17.1).
- xxix.** Preservation of equipment **<preservation>** are the instructions to treat equipment to keep them in satisfactory condition (see Section 17.1).
- xxx.** Preparation for storage task **<prepstore>** are the instructions for security procedures, special preservation, corrosion-prevention and other on short-term and long-term storage (see Section 17.1).
- xxxi.** Preparation for shipment **<prepship>** are the instructions for security, special transportation, packing, marking, special identifying, shipping and cautionary markings to shipping containers. These should include security classification, special temperature requirements, and shelf life.(see Section 17.1).
- xxxii.** Rebuild task **<rebuild>** are instructions, prepared for the restoration of unserviceable equipment into a 'like new' condition (see Section 17.1).
- xxxiii.** Removal task **<remove>** are instructions to remove a component off an asset (see Section 17.1).
- xxxiv.** Repair task **<repair>** provides instructions to place an unserviceable item back into a serviceable condition. This may be accomplished by replacing component parts, adjusting, or other maintenance tasks (see Section 17.1).
- xxxv.** Replace task **<replace>** provides instruction to remove an unserviceable component and put a serviceable component in its place (see Section 17.1).
- xxxvi.** Radio Interference Suppression (RIS) task **<ris>** are the instructions for configuring and testing components to ensure they are not interfered with by nearby radio energy (see Section 17.1).
- xxxvii.** Servicing task **<service>** are the instructions for replenishment of fuel; oil; hydraulic or other fluids; oxygen, nitrogen, other gases; and tire pressure, plus any other such items and materials (except for lubricants) required for complete servicing of the equipment (see Section 17.1).
- xxxviii.** Sling loading task **<sling>** are instructions to allow proper lifting of equipment or material using a sling (see Section 17.1).
- xxxix.** Software maintenance task **<softwaremaint>** provides instructions for the installation of new or upgraded software.
- xl.** Testing task **<test>** provide instructions for ensuring items to be installed or used in a maintenance task meet established criteria (a line for a pressurized system will work at the established system pressure) (see Section 17.1).
- xli.** Towing task **<tow>** are instructions to ensure proper connection and any other functions required to properly and safely move one vehicle with another (see Section 17.1).

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- xlii.** Transport **<transport>** provide instructions for transporting the equipment via air, sea, land, rail, dimensions, weights, and types of transport requirements. Instructions on loading and unloading the equipment and procedures on the proper handling, blocking, and bracing of basic load ammunition when being transported (see Section 17.1).
 - xliii.** Uninstall peripheral device **<uninstallperdev>** are instructions for uninstalling peripheral devices such as printers, scanner, modems, etc.
 - xliv.** Upgrade/patch **<upgrade>** are instructions performing software upgrades and/or installing software patches.
 - xliv.** Unloading procedures **<unload>** can be used in one of two areas:
 - I.** Transportation, removing asset from a pallet, truck, or container.
 - II.** Munitions, the act of removing munitions from a vehicle or aircraft (see Section 17.1).
 - xlvi.** Unpacking **<unpack>** are instructions on how to properly remove an item from a storage or shipping container prior to service or other maintenance operations. A reference should be included on how to report damage incurred during storage/shipment. (see Section 17.1).
 - b.** Follow-on maintenance **<followon.maint>** (optional) are the instructions for any follow-on maintenance required which must be accomplished following the completion of a task to clean up or undo actions performed during the task (see Section 17.1).
- 2.** The DTD fragment for **<maintsk>** is graphically depicted.

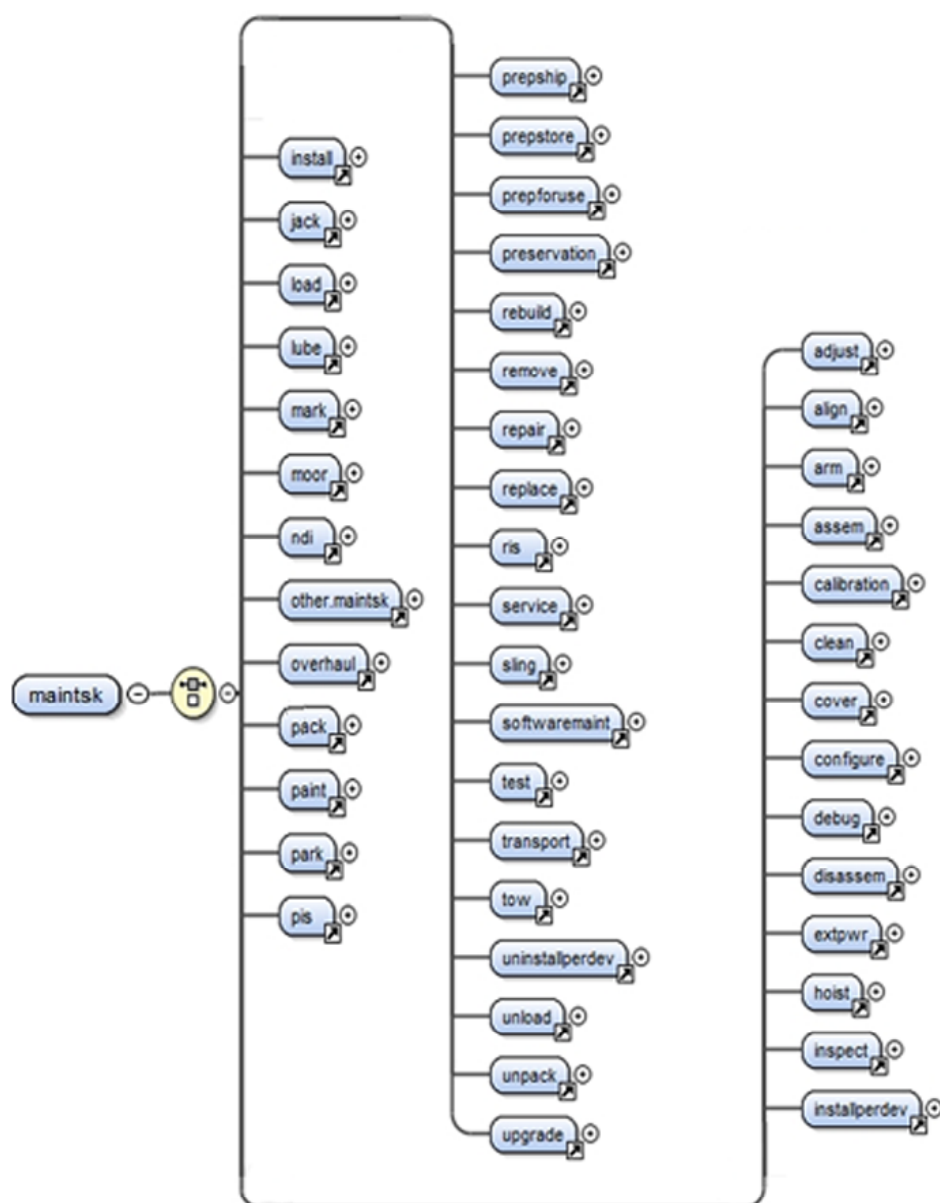


FIGURE 360. Maintenance work packages DTD hierarchy <maintsk>.

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3. The DTD fragment for **<maintsk>** is:

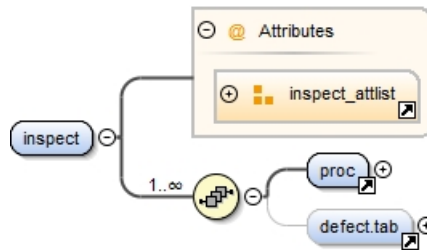
```
<!ELEMENT maintsk (adjust | align | arm | assem | calibration | clean | cover |
configure | debug | disassem | extpwr | hoist | inspect | installperdev | install
| jack | load | lube | mark | moor | ndi | other.maintsk | overhaul | pack | paint |
park | pis | prepship | prepstore | prepforuse | preservation | rebuild | remove |
repair | replace | ris | service | sling | softwaremaint | test | transport | tow |
uninstallperdev | unload | unpack | upgrade)>
```

4. The **<maintsk>** has no attributes.23.7.1.1 Inspection task **<inspect>**.

The element provides the instructions for inspections performed during or after assembly to ensure proper assembly of the item.

1. The components for **<inspect>**:

- a. Procedural steps **<proc>** (required) (see Section 17.2).
- b. Classification of material defects standard information **<defect.tab>** (optional) (see Section 23.7.1.1.1).

2. The DTD fragment for **<inspect>** is graphically depicted.FIGURE 361. Inspection task DTD hierarchy **<inspect>**.3. The DTD fragment for **<inspect>** is:

```
<!ELEMENT inspect (proc, defect.tab?)+>
<!ATTLIST inspect
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref          IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  date-time-stamp     date | time | datetime #IMPLIED
  delchlvl            (0-99)         "0"
  esd                 (yes | no)      "no"
  frame              (yes | no)      "yes"
  hcp                 (yes | no)      "no"
  id                  ID              #IMPLIED
  idref               IDREFS         #IMPLIED
```

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<code>inschlvl</code>	(0-99)	"0"
<code>security</code>	(uc fouo c s ts)	#IMPLIED
<code>skilltrk</code>	CDATA	#IMPLIED
<code>tocentry</code>	(0 3 4 5)	"0">

4. Attributes for **<inspect>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- h. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- i. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- j. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- k. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- l. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- m. **security** – Security classification (optional) (see Section 36.3.14).
- n. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- o. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

23.7.1.1.1 Classification of material defects standard information **<defect.tab>**.

The classification of material defects table contains instructions for inspection methods or techniques used to detect defective components or end items being processed.

1. The components for **<defect.tab>** are:

- a. Standard information title **<title>** (required) (see Section 36.1.1.4).
- b. Classification of material defects row **<defect-row>**. The element is similar to a **row** in a structural table. The components of **<defect-row>** are:
 - i. Defect category type **<defecttype>** (required) is either minor, major, or critical, which is selected by the attribute type. The element is similar to a **"row"** in a structural table. The attribute value is similar to a **"cell"** in a structural table and is entered in column one.
 - ii. Defective material grouping **<defect-group>** (required – one or more). The element is similar to a **"row"** in a structural table. The element components are:
 - I. Defect attributable for each component **<condition>** (required) (see Section 36.1.4.13). The element is similar to a **"cell"** in a structural table and is entered in column one.

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- II. Corrective action is either work package reference **<link>** (see Section 33.2.3), **<xref>** (see Section 33.2.2) (required), or single instruction **<actionreq>** (required). Generally this is referenced to another maintenance or operations checkout work package. The element is similar to a “cell” in a structural table and is entered in column two.
 - III. Inspection method after corrective action **<insp-method>** (required). The inspection method is a narrative text such as “Visual.” The element is similar to a “cell” in a structural table and is entered in column three.
 - IV. Acceptable quality level **<acceptqual>** required. Provides a short formatted text statement to determine if the defect has been fixed to an acceptable level. The element is similar to a cell in a structural table and is entered in column four.
2. The DTD fragment for **<defect.tab>** is graphically depicted.

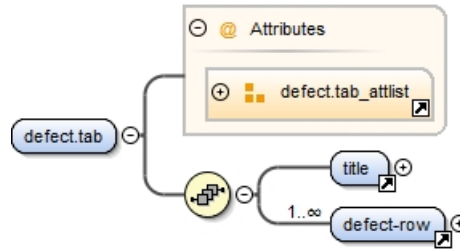


FIGURE 362. Classification of material defects standard information DTD hierarchy **<defect.tab>**.

3. The DTD fragment for **<defect.tab>** is:

```

<!ELEMENT defect.tab (title, defect-row+)
<!ATTLIST defect.tab
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)         "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)         "0"
  security            (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk            CDATA           #IMPLIED
  tocentry            (0 | 1 | 2 | 3 | 4 | 5)  "1">

<!ELEMENT defect-row (defecttype, defect-group+)>
<!ATTLIST defect-row
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED

```

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delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

<!ELEMENT defecttype EMPTY>

<!ATTLIST defecttype

| | | |
|------|----------------------------|------------|
| type | (minor major critical) | #REQUIRED> |
|------|----------------------------|------------|

<!ELEMENT defect-group (condition, (%localref; | actionreq), insp-method, acceptqual)>

<!ATTLIST defect-group

| | | |
|------------|--------------------------|-----------|
| applicable | IDREFS | #IMPLIED |
| assocfig | IDREFS | #IMPLIED |
| changeref | IDREFS | #IMPLIED |
| comment | CDATA | #IMPLIED |
| delchlvl | (0-99) | "0" |
| id | ID | #IMPLIED |
| idref | IDREFS | #IMPLIED |
| inschlvl | (0-99) | "0" |
| security | (uc fouo c s ts) | #IMPLIED |
| skilltrk | CDATA | #IMPLIED> |

<!ELEMENT insp-method (#PCDATA)>

<!ELEMENT acceptqual (#PCDATA (emphasis | subscript | superscript) | xref | extref | link | help.info | indxref | term | term.def | callout | ftnote | ftnref | graphic | misc | change)>

4. Unique attribute for **<defecttype>** is **type** – Defect category type (required) and select one of the following from the list **minor**, **major**, or **critical**.
5. Common attributes for **<defect.tab>** are:
 - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
 - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - d. **comment** – Change information (optional) (see Section 36.3.12).
 - e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).

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- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **1**) (see Section 16.3.6).
- l. Common attributes for **<defect-row>** and **<defect-group>** are:
 - i. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
 - ii. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - iii. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - iv. **comment** – Change information (optional) (see Section 36.3.12).
 - v. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - vi. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
 - vii. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - viii. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - ix. **security** – Security classification (optional) (see Section 36.3.14).
 - x. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.7.2 Maintenance work packages general entity boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities (see Chapter 37) that are a type of replacement text for these standard statements. Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors, and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages refer to Section 37.5 and see TABLE XI.

TABLE XI. Boilerplate entities for **<maintwp>**.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Additional information on-data plate statement	&maintwp.test-pass.data-plate;	Not applicable
Packaging information for preservation, packaging and marking (PPM) statement	&maintwp.ppm.packaging;	Not applicable
Inspection and test of conventional and chemical ammunition or components containing radioactive materials statements	&maintwp.test-inspect.disposition-1;	Not applicable
	&maintwp.test-inspect.disposition-2;	
	&maintwp.test-inspect.disposition-3;	

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23.7.3 XML document instance fragment and output for <maintwp>.

The maintenance list work package XML markup is shown below and the sample stylesheet output is shown MIL-STD-40051-1/-2:

```
<maintwp wpno="M03451-X-XXXX-XXX" tocentry="2" frame="yes" army="no" airforce="no" navy="no"
marines="no" wpseq="0029" deletewp="no" security="uc">
<wpidinfo>
<maintlvl level="sustain"/>
<title>24-VOLT CONNECTOR RECEPTACLE REPAIR
<brk/>ASSEMBLY, REPAIR, REASSEMBLY
</title>
</wpidinfo>
<initial_setup>
<tools>
<tools-setup-item>
<name>Pliers, diagonal cutting
</name>
<itemref>
<xref wpid="S1904-X-XXXX-XXX" itemno="3" pretext="(" posttext=")"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Screwdrive, flat-tip 3/16-inch
</name>
<itemref>
<xref wpid="S1904-X-XXXX-XXX" itemno="43" pretext="(" posttext=")"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Soldering iron, gun type
</name>
<itemref>
<xref wpid="S1904-X-XXXX-XXX" itemno="48" pretext="(" posttext=")"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Stripper, wire, hand
</name>
<itemref>
<xref wpid="S1905-X-XXXX-XXX" itemno="55" pretext="(" posttext=")"/>
</itemref>
</tools-setup-item>
</tools>
<mtrlpart>
<mtrlpart-setup-item>
<name>Alcohol, denatured
</name>
<itemref>
<xref wpid="S1903-X-XXXX-XXX" itemno="2" pretext="(" posttext=")"/>
</itemref>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Cotton, acid swabbing
</name>
```

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```

<itemref>
<xref wpid="S1903-X-XXXX-XXX" itemno="4" pretext=" (" posttext=")"/>
</itemref>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Flux, rosin
</name>
<itemref>
<xref wpid="S1903-X-XXXX-XXX" itemno="8" pretext=" (" posttext=")"/>
</itemref>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Solder, non-acid
</name>
<itemref>
<xref wpid="S1903-X-XXXX-XXX" itemno="17" pretext=" (" posttext=")"/>
</itemref>
</mtrlpart-setup-item>
</mtrlpart>
<persnreq>
<persnreq-setup-item>
<name>One
</name>
</persnreq-setup-item>
</persnreq>
<ref>
<ref-setup-item>
<xref wpid="M0382-X-XXXX-XXX"/>
</ref-setup-item>
<ref-setup-item>
<xref wpid="M0379-X-XXXX-XXX"/>
</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item>
<condition>24-volt connector receptacle removed
</condition>
<itemref>
<xref wpid="M0213-X-XXXX-XXX" pretext=" (" posttext=")"/>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<maintsk>
<disassem frame="yes" tocentry="0">
<proc>
<title>Disassembly
</title>
<note acknowledge="no">
<trim.para>Tag wires to aid in installation
<xref wpid="M0382-X-XXXX-XXX" pretext=" (" posttext=")"/>. If circuit marker bands are missing
or not readable, replace
<xref wpid="M0213-X-XXXX-XXX" pretext=" (" posttext=")"/>.
</trim.para>

```

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```

</note>
<step1 qa="no">
<para>Unscrew and pull back bushing retaining nut
<callout assocfig="m00001-fig1" label="1"/>from shell
<callout assocfig="m00001-fig1" label="4"/>.
</para>
</step1>
<step1 qa="no">
<para>Using screwdriver, pry off shell
<callout assocfig="m00001-fig1" label="4"/>from busing
<callout assocfig="m00001-fig1" label="2"/>.
</para>
</step1>
<step1 qa="no">
<para>Using pliers, pull out 12 inserts
<callout assocfig="m00001-fig1" label="3"/>from bushing
<callout assocfig="m00001-fig1" label="2"/>
<figure application="both" figtype="normal-page" tocentry="0" pane="no" id="m00001-fig1">
<title>24-Volt Connector Receptacle
</title>
<graphic boardno="FrontCover" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
</proc>
</disassem>
</maintsk>
</maintwp>

```

23.8 General maintenance work packages <gen.maintwp>.

This work package contains common, general, or standard maintenance procedures (specific torque wrench usage, lockwire procedures, “O” ring seal installation, external power connections, etc.) applicable to other maintenance work packages contained within the TM that require these general maintenance procedures to complete the tasks.

1. Components for <gen.maintwp>:

- a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
- b. Work package identification information <wpidinfo> (required) (see Section 16.2).
- c. Work package initial setup <initial_setup> (required) (see Section 16.6).
- d. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
 - i. Warning <warning> (optional - zero or more) (see Section 28.1.1).
 - ii. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
 - iii. Caution <caution> (optional - zero or more) (see Section 28.1.2).
 - iv. Note <note> (optional - zero or more) (see Section 28.1.3).
- e. General Information <geninfo> (optional) (see Section 36.1.4.11) used if only general information is needed for this work package.
- f. Procedure <proc> (required) or a paragraph. Development of tasks/procedures (see Section 17.2).

- g. Lubrication instructions work package <lubewp> (see Section 23.9).
 - h. Paragraph <para> (required) (see Section 36.1.1.6) if not a procedure.
2. The DTD fragment for <gen.maintwp> is graphically depicted.

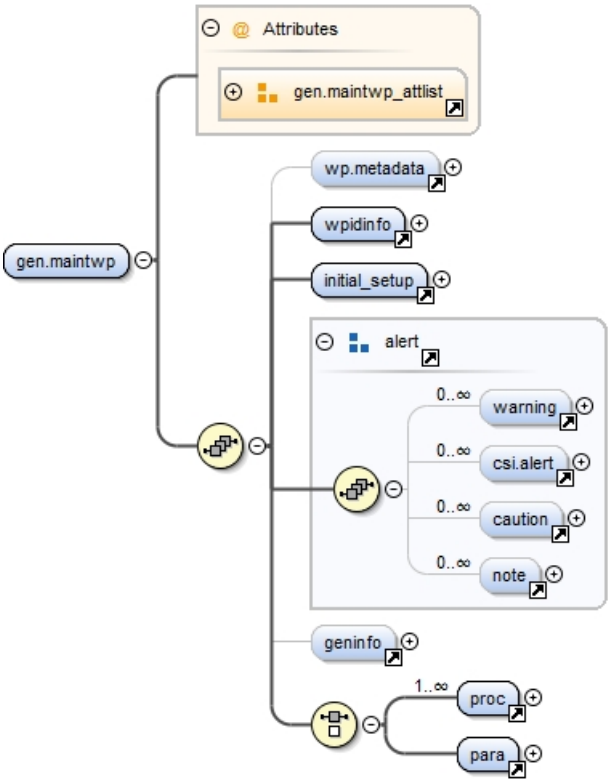


FIGURE 363. General maintenance work packages DTD hierarchy <gen.maintwp>.

3. The DTD fragment for <gen.maintwp> is:

```
<!ELEMENT gen.maintwp (wp.metadata?, wpidinfo, initial_setup, %alert;,
geninfo?, (proc+ | para))>
<!ATTLIST gen.maintwp
airforce          (yes | no)          "no"
army              (yes | no)          "no"
assocfig          IDREFS              #IMPLIED
changelvl        (0-9)                "0"
changeref         IDREFS              #IMPLIED
chnngno          (0-99)               "0"
comment          CDATA                #IMPLIED
crewmember       CDATA                #IMPLIED
date-time-stamp  (date | time | date-
time)                                #IMPLIED
delchlvl         (0-99)               "0"
```

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deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <gen.maintwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnyno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.9 Lubrication instructions work package <lubewp>.

The lubrication instructions work package consists of lubrication schedules and lubrication charts. Lubrication schedules provide all applications and procedures, lubricants, and lubrication points to completely lubricate the equipment. Lubrication charts consist of a main drawing prepared as a three-dimensional diagram, and enlarged/detailed views that are necessary to identify items which otherwise would be obscured. Lubrication charts contain the lubrication requirements for all parts of the equipment requiring periodic lubrication (other than those lubricated by the main engine oil system, indicating type of lubricant) method of application, and frequency.

1. The components for <lubewp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. Procedure <proc> (required). Development of tasks/procedures is discussed in Section 17.2.
2. The DTD fragment for <lubewp> is graphically depicted.

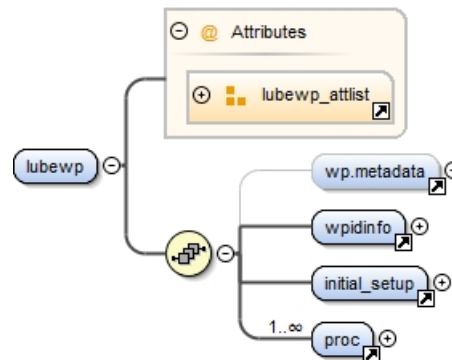


FIGURE 364. Lubrication instructions work package DTD hierarchy <lubewp>.

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3. The DTD fragment for **<1ubewp>** is:

```

<!ELEMENT lubewp (wp.metadata?, wpidinfo, initial_setup, proc+)>
<!ATTLIST lubewp
    airforce          (yes | no)          "no"
    army              (yes | no)          "no"
    assocfig          IDREFS              #IMPLIED
    changelvl         (0-9)              "0"
    changeref         IDREFS              #IMPLIED
    chngno            (0-99)             "0"
    comment           CDATA               #IMPLIED
    crewmember        CDATA               #IMPLIED
    date-time-stamp   (date | time | date-
                    time)                 #IMPLIED
    delchlvl          (0-99)             "0"
    deletewp          (yes | no)          "no"
    fgc               CDATA               #IMPLIED
    frame             (yes | no)          "yes"
    idref             IDREFS              #IMPLIED
    inschlvl          (0-99)             "0"
    insertwp          CDATA               #IMPLIED
    lsa-id            CDATA               #IMPLIED
    marines           (yes | no)          "no"
    navy              (yes | no)          "no"
    security           (uc | fouo | c | s | ts) #IMPLIED
    skilltrk          CDATA               #IMPLIED
    tocentry          (2 | 3 | 4 | 5)     "2"
    wpno              ID                  #REQUIRED
    wpseq             CDATA               #IMPLIED>

```

4. Attributes for **<1ubewp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).

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- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see 36.3.12).
- k. deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.9.1 XML document instance fragment and output for <1ubewp>.

XML instance and its stylesheet output for a <1ubewp> is provided below.

1. Example of an XML document instance fragment for <1ubewp>:

```
<1ubewp chngno="" wpno="M00213-9-1015-252">
  <wpidinfo>
    <maintlvl level="crew"/>
    <title>Gun Support Cradle
  </title>
</wpidinfo>
<initial_setup>
  <tools>
    <tools-setup-item>
      <name>Tool Set, Team Repairman Aircraft Armament
    </name>
```

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```

</tools-setup-item>
<tools-setup-item>
<name>Cartridge, 30mm Dummy (3)
</name>
</tools-setup-item>
<tools-setup-item>
<name>Tool Tension, Relief (3) 7-362300025 (WP 0027), Figure 1
</name>
</tools-setup-item>
<tools-setup-item>
<name>Respirator, Air Filtering, Adjustable
</name>
</tools-setup-item>
</tools>
<mtrlpart>
<mtrlpart-setup-item>
<name>Cloth, Clean (WP 0229, Item C1)
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Lockwire (WP 0229, Item C6)
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Grease (WP 0229, Item C20)
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Apron, Utility (WP 0229, Item C50)
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Mat, Abrasive (WP 0229, Item C52)
</name>
</mtrlpart-setup-item>
</mtrlpart>
<persnreq>
<persnreq-setup-item>
<name>Armament/Electrical Systems Repairer 15X
</name>
</persnreq-setup-item>
</persnreq>
<ref>
<ref-setup-item>
<extref docno="TM 1-1520-238-13&P"/>
</ref-setup-item>
<ref-setup-item>
<extref docno="TM 9-1090-208-23-2"/>
</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item>
<condition>Doors L90 and R90 opened
<extref docno="TM 1-1520-238-13&P"/>

```

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```

</condition>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>30mm automatic gun cleared WP 0052
</condition>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<proc>
<title>LUBRICATION
</title>
<step1>
<para>The following table lists the lubrication schedule for the gun support
cradle.
</para>
</step1>
<table>
<title>LUBRICATION INTERVALS
</title>
<tgroup cols="5">
<colspec colname="col1" colwidth="0.35*"/>
<colspec colname="col2" colwidth="0.35*"/>
<colspec colname="col3" colwidth="0.40*"/>
<colspec colname="col4" colwidth="1.90*"/>
<colspec colname="col5" colwidth="1.90*"/>
<thead>
<row>
<entry colsep="0" nameend="col3" namest="col1">Q &ndash; Quarterly
</entry>
<entry nameend="col5" namest="col4">A &ndash; Annually
</entry>
</row>
<row>
<entry align="center" morerows="1" valign="bottom">ITEM NO.
</entry>
<entry align="center" nameend="col3" namest="col2" valign="bottom">INTERVALS
</entry>
<entry align="center" morerows="1" valign="bottom">ITEM TO BE SERVICED
</entry>
<entry align="center" morerows="1" valign="bottom">PROCEDURE
</entry>
</row>
<row>
<entry align="center">Q
</entry>
<entry align="center">A
</entry>
</row>
</thead>
<tbody>
<row>
<entry morerows="2" rowsep="0">1
</entry>
<entry rowsep="0"/>

```

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```

<entry rowsep="0"/>
<entry rowsep="0">HINGE . STEP
</entry>
<entry morerows="2" rowsep="0">
<step1 id="M00452-X-XXX-X-XXX-step1">
<para>Remove all foreign matter from joints or surfaces immediately before
applying lubricant.
</para>
</step1>
<step1 id="M00452-X-XXX-X-XXX-step2">
<para>Apply air-drying film lubricant
<extref docno="MIL-L-23398"/>, sparingly to prevent contaminant accumulation.
</para>
</step1>
</entry>
</row>
<row>
<entry rowsep="0">&bull;
</entry>
<entry rowsep="0"/>
<entry rowsep="0">&emsp;Deployed
</entry>
</row>
<row>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0">&bull;
</entry>
<entry rowsep="0">&emsp;Stored
</entry>
</row>
<row>
<entry morerows="2" rowsep="0">2
</entry>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0"/>
<entry rowsep="0">HINGE , HANDHOLD
</entry>
<entry morerows="2" rowsep="0">Same as
<xref stepend="M00452-X-XXX-X-XXX-step2" stepstart="M00452-X-XXX-X-XXX-step1"/>
</entry>
</row>
<row>
<entry align="center" rowsep="0">&bull;
</entry>
<entry align="center" rowsep="0"/>
<entry rowsep="0">&emsp;Deployed
</entry>
</row>
<row>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0">&bull;
</entry>
<entry rowsep="0">&emsp;Stored
</entry>

```

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```

</row>
<row>
<entry morerows="2" rowsep="0">3
</entry>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0"/>
<entry rowsep="0">HINGE, DOOR
</entry>
<entry morerows="2" rowsep="0">Same as
<xref stepend="M00452-X-XXX-X-XXX-step2" stepstart="M00452-X-XXX-X-XXX-step1"/>
</entry>
</row>
<row>
<entry align="center" rowsep="0">&bull;
</entry>
<entry align="center" rowsep="0"/>
<entry rowsep="0">&emsp;Deployed
</entry>
</row>
<row>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0">&bull;
</entry>
<entry rowsep="0">&emsp;Stored
</entry>
</row>
<row>
<entry morerows="2" rowsep="0">4
</entry>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0"/>
<entry rowsep="0">HANDLE, DOOR
</entry>
<entry morerows="2" rowsep="0">Same as
<xref stepend="M00452-X-XXX-X-XXX-step2" stepstart="M00452-X-XXX-X-XXX-step1"/>
</entry>
</row>
<row>
<entry align="center" rowsep="0">&bull;
</entry>
<entry align="center" rowsep="0"/>
<entry rowsep="0">&emsp;Deployed
</entry>
</row>
<row>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0">&bull;
</entry>
<entry rowsep="0">&emsp;Stored
</entry>
</row>
<row>
<entry morerows="2" rowsep="0">5
</entry>

```

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```

<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0"/>
<entry rowsep="0">RETAINING DEVICE, DOOR
</entry>
<entry morerows="2" rowsep="0">Same as
<xref stepend="M00452-X-XXX-X-XXX-step2" stepstart="M00452-X-XXX-X-XXX-step1"/>
</entry>
</row>
<row>
<entry align="center" rowsep="0">&bull;
</entry>
<entry align="center" rowsep="0"/>
<entry rowsep="0">&emsp;Deployed
</entry>
</row>
<row>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0">&bull;</entry>
<entry rowsep="0">&emsp;Stored
</entry>
</row>
<row>
<entry morerows="2" rowsep="1">6
</entry>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0"/>
<entry rowsep="0">TRAY ASSEMBLY, CABINET
</entry>
<entry morerows="2" rowsep="1">Same as
<xref stepend="M00452-X-XXX-X-XXX-step2" stepstart="M00452-X-XXX-X-XXX-step1"/>
</entry>
</row>
<row>
<entry align="center" rowsep="0">&bull;
</entry>
<entry align="center" rowsep="0"/>
<entry rowsep="0">&emsp;Deployed
</entry>
</row>
<row>
<entry align="center" rowsep="0"/>
<entry align="center" rowsep="0">&bull;
</entry>
<entry rowsep="0">&emsp;Stored
</entry>
</row>
</tbody>
</tgroup>
</table>
</proc>
</lubewp>

```

2. Page-based TM stylesheet output example for <lubewp>.

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0001

CREW MAINTENANCE**GUN SUPPORT CRADLE****INITIAL SETUP:****Tools**

Tool Set, Team Repairman Aircraft Armament
 Cartridge, 30mm Dummy (3)
 Tool Tension, Relief (3) 7-362300025 (WP 0027),
 Figure 1
 Respirator, Air Filtering, Adjustable

Mat, Abrasive (WP 0229, Item C52)

Personnel Required

Armament/Electrical Systems Repairer 15X

References

TM 1-1520-238-13&P
 TM 9-1090-208-23-2

Materials

Cloth, Clean (WP 0229, Item C1)
 Lockwire (WP 0229, Item C6)
 Grease (WP 0229, Item C20)
 Apron, Utility (WP 0229, Item C50)

Equipment Condition

Doors L90 and R90 opened TM 1-1520-238-13&P
 30mm automatic gun cleared WP 0052

LUBRICATION

1. The following table lists the lubrication schedule for the gun support cradle.

Table 1. LUBRICATION INTERVALS.

Q – Quarterly		A – Annually		ITEM TO BE SERVICED	PROCEDURE
ITEM NO.	INTERVALS	Q	A		
1	•		•	HINGE, STEP Deployed Stored	1. Remove all foreign matter from joints or surfaces immediately before applying lubricant. 2. Apply air-drying film lubricant MIL-L-23398, sparingly to prevent contaminant accumulation. Same as Steps 1–2
2	•		•	HINGE, HANDHOLD Deployed Stored	Same as Steps 1–2
3	•		•	HINGE, DOOR Deployed Stored	Same as Steps 1–2
4	•		•	HANDLE, DOOR Deployed Stored	Same as Steps 1–2
5	•		•	RETAINING DEVICE, DOOR Deployed Stored	Same as Steps 1–2
6	•		•	TRAY ASSEMBLY, CABINET Deployed Stored	Same as Steps 1–2

END OF WORK PACKAGE

0001–1/blank

FIGURE 365. Example of a page-based TM stylesheet output for <lubewp>.

23.10 DMWR/NMWR specific maintenance work packages.

23.10.1 Facilities work package <facilwp>.

The element contains a description of all facilities, such as test stands, test tracks, clean rooms, shielded rooms, or other facilities that are required to do the maintenance work.

1. The components of <facilwp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. Main level paragraph <para0> (see Section 36.1.1.9) or <para0-alt> (see Section 35.2.1) (required – one or more).
2. The DTD fragment for <facilwp> is graphically depicted:

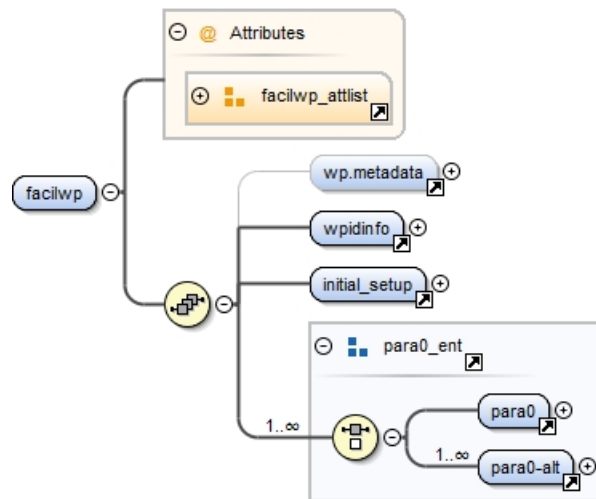


FIGURE 366. Facilities work package DTD hierarchy <facilwp>.

3. The DTD fragment for <facilwp> is:

```
<!ELEMENT facilwp (wp.metadata?, wpidinfo, initial_setup, (%para0_ent;)+)
>
```

```
<!ATTLIST facilwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED

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date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <facilwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

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- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.10.2 XML document instance fragment and output for <facilwp>.

XML instance and its stylesheet output for a <facilwp> is provided below:

1. Example of an XML document instance fragment for <facilwp>

```
<facilwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2"
wpno="M03450-9-3425-14" wpseq="0025" chngno="">
  <wpidinfo>
    <maintlvl level="depot"/>
    <title>FACILITIES
  </title>
</wpidinfo>
<initial_setup>
  <null insert="none"/>
</initial_setup>
<para0>
  <title>FACILITIES
</title>
  <para>The Main Fuel Control (MFC) must be overhauled or maintained in an enclosed
and controlled area. The following items are required and should be installed in
the area for safety and the most expeditious execution of overhaul and
maintenance procedures.
  <seqlist>
    <item>Facilities to perform parts cleaning and protective finishes application
are required as follows:
  <seqlist>
    <item>Well-ventilated areas for adequate protection when toxic chemical and
flammable vapors are emitted during cleaning and repair operations.
  </item>
```

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<item>Emergency washing facilities for personnel who may accidentally become contaminated or endangered by contact with toxic or otherwise injurious materials.

</item>

<item>Sinks, containers, spray booths, and manipulating fixtures to facilities dip, spray, flushing, and air-dry methods of cleaning and application using: hydrocarbon solvents; corrosion preventative fingerprint remover (water displacing bath); chemical conversion materials for aluminum.

</item>

<item>A cold chest with a temperature range of 0**°** to -90**°**F (-17.8 **°** to -67.71**°** C) is required for installation of interference fit parts.

</item>

<item>Oil flushing station capable of driving MFC pump to 1500 RPM and supplying flushing oil pressure to 25 psig (172.38 kPa). This station to include a gage capable of monitoring an MFC P1 pressure of 0-100 psi (0-689.50 kPa).

</item>

</seqlist>

</item>

<item>Hazardous area, for test and calibration operations, including adequate ventilation and fire protection.

</item>

<item>Clean, dry, dust-free area for parts storage between overhaul/maintenance operations.

</item>

</seqlist>

</para>

</para0>

</facilwp>

2. Page-based TM stylesheet output example for **<facilwp>**:

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0025

DEPOT MAINTENANCE

FACILITIES

INITIAL SETUP:

NOT APPLICABLE

FACILITIES

The Main Fuel Control (MFC) must be overhauled or maintained in an enclosed and controlled area. The following items are required and should be installed in the area for safety and the most expeditious execution of overhaul and maintenance procedures.

1. Facilities to perform parts cleaning and protective finishes application are required as follows:
 - a. Well-ventilated areas for adequate protection when toxic chemical and flammable vapors are emitted during cleaning and repair operations.
 - b. Emergency washing facilities for personnel who may accidentally become contaminated or endangered by contact with toxic or otherwise injurious materials.
 - c. Sinks, containers, spray booths, and manipulating fixtures to facilities dip, spray, flushing, and air-dry methods of cleaning and application using: hydrocarbon solvents; corrosion preventative fingerprint remover (water displacing bath); chemical conversion materials for aluminum.
 - d. A cold chest with a temperature range of 0° to -90°F (-17.8 ° to -67.71° C) is required for installation of interference fit parts.
 - e. Oil flushing station capable of driving MFC pump to 1500 RPM and supplying flushing oil pressure to 25 psig (172.38 kPa). This station to include a gage capable of monitoring an MFC P1 pressure of 0–100 psi (0–689.50 kPa).
2. Hazardous area, for test and calibration operations, including adequate ventilation and fire protection.
3. Clean, dry, dust-free area for parts storage between overhaul/maintenance operations.

END OF WORK PACKAGE

0025–1/blank

FIGURE 367. Example of a page-based TM stylesheet output for <facilwp>.

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23.10.3 Overhaul Inspection Procedure (OIP) <oipwp>.

The element lists items that have parts with specific characteristics, wear limits, specified performance requirements, or fatigue characteristics or tolerances.

1. Components for <oipwp>:

- a.** Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
- b.** Work package identification information **<wpidinfo>** (required) (see Section 16.2).
- c.** Work package initial setup **<initial_setup>** (required) (see Section 16.6).
- d.** Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
- e.** Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
- f.** Caution **<caution>** (optional – zero or more) (see Section 28.1.2).
- g.** Note **<note>** (optional – zero or more) (see Section 28.1.3).
- h.** Each part has the following components:
 - i.** General information **<geninfo>** (optional) used if only general information is needed for this work package. (optional) (see Section 36.1.4.11).
 - ii.** Overhaul inspection procedures table as either defined content specific table **<oiptab>** (required) (see Section 23.10.3.1) or a standard table **<table>** (required) (see Chapter 29).
 - iii.** Associated part illustration **<figure>** (optional – zero or more) (see Section 31.1.1).

2. The DTD fragment for <oipwp> is graphically depicted.

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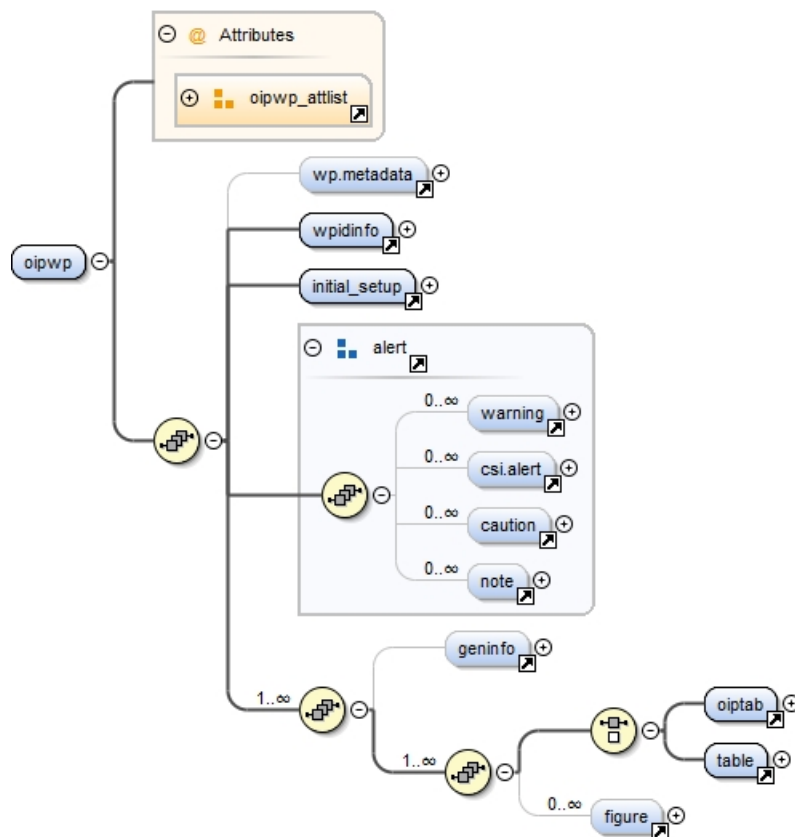


FIGURE 368. Overhaul Inspection Procedures (OIP) work package DTD hierarchy <oipwp>.

3. The DTD fragment for <oipwp> is:

```
<!ELEMENT oipwp (wp.metadata?, wpidinfo, initial_setup, %alert;, (geninfo?, ((oiptab | table), figure*)+)+)>
```

```
<!ATTLIST oipwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED

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frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <oiwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).

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- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.10.3.1 Overhaul inspection procedures table <oiptab>.

The overhaul inspection procedures table is prepared for each part of the item that requires a critical inspection.

1. Components for <oiptab>:

- a. Table title <title> (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number (this is generated by the stylesheet).
- b. Warning <warning> (optional – zero or more) (see Section 28.1.1).
- c. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
- d. Caution <caution> (optional – zero or more) (see Section 28.1.2).
- e. Note <note> (optional – zero or more) (see Section 28.1.3).
- f. Inspection item <oiptem> (required) identifies the detailed requirements. The element is similar to a **row** in a structural table. The components of <oiptem> are:
 - i. Item Number <itemno> (required) identifies the item number assigned to the procedure (see Section 36.1.4.7). The element is similar to a **cell** in a structural table and is entered in column two.
 - ii. Reference letter <callout> (optional) identifies the parts on any supporting illustrations (see Section 33.2.4.1). The element is similar to a **cell** in a structural table and is entered in column three.
 - iii. Characteristics description <desc> (required) identifies the characteristics being inspected (see Section 36.1.4.16). The element is similar to a **cell** in a structural table and is entered in column four.
 - iv. Inspection method <insp-method> (required) identifies the inspection method used. The element is similar to a **cell** in a structural table and is entered in column five.
 - v. Corrective action <actionreq> (required) required action to be performed to correct the defect. The element is similar to a **cell** in a structural table and is entered in column six.

2. The DTD fragment for <oiptab> graphically depicted.

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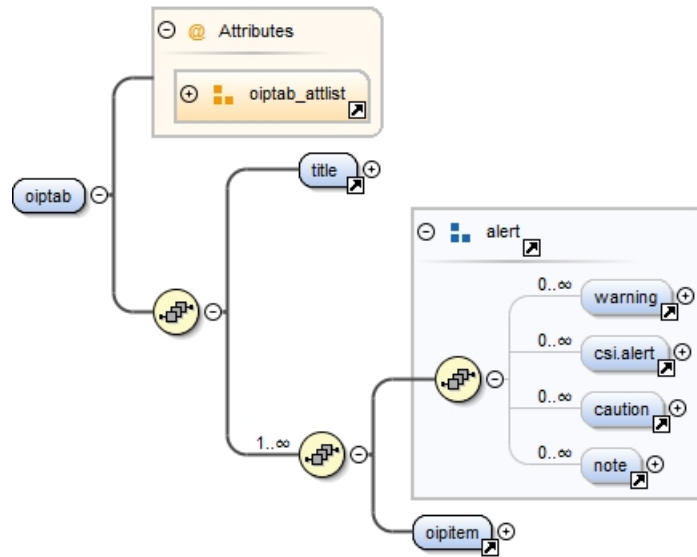


FIGURE 369. Overhaul instructions table <oiptab>.

3. The DTD fragment for <oiptab> is:

```

<!ELEMENT oiptab (title, %alert;, oiptem)+>
<!ATTLIST oiptab
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changelvl           (0-9)           "0"
  changeref           IDREFS          #IMPLIED
  chngno              (0-99)          "0"
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)          "0"
  security             (uc | fouo | c | s | ts) #IMPLIED
  skilltrk            CDATA           #IMPLIED
  tocentry            (0 | 1 | 2 | 3 | 4 | 5) "1">

```

4. Attributes for <oiptab>:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).

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- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection of **0** do no include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **1**) (see Section 16.3.6).

23.10.3.2 XML document instance fragment and output for <oipwp>.

XML instance and its stylesheet output for a <oipwp> is provided below.

1. Example of an XML document instance fragment for <oipwp>:

```
<oipwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2"
wpno="M00189-X-XXX-XX" wpseq="0280" chngno="">
  <wpidinfo>
    <maintlvl level="depot"/>
    <title>Spur Gear for
    <brk/>Overhaul Inspection Procedures
    </title>
  </wpidinfo>
  <initial_setup>
    <ref>
      <ref-setup-item>
        <xref wpid="M00342-X-XXX-XX"/>
      </ref-setup-item>
    </ref>
  </initial_setup>
  <oipwab tocentry="1">
    <title>Overhaul Inspection Procedures for Spur Gear (Item 5, fig 4) .
    </title>
    <oipitem qa="no">
      <itemno>1
      </itemno>
      <desc>Serviceability
      </desc>
      <insp-method>Visual/measure
      </insp-method>
      <actionreq>Examine for nicks, gouges, burrs, and corrosion, identified below
      repair damaged areas, 0.020 inch (0.508mm) or less deep, by blending.
      </actionreq>
    </oipitem>
    <oipitem qa="yes">
      <itemno>2
      </itemno>
      <desc>Metal fatigue
      </desc>
      <insp-method>Magnetic particle inspection
      </insp-method>
      <actionreq>No fractures or cracks.
      </actionreq>
```

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```

</oipitem>
<oipitem qa="yes">
<itemno>3
</itemno>
<callout assocfig="M00189-X-XXX-XX-fig1" label="A"/>
<desc>Tooth wear
</desc>
<insp-method>Visual
</insp-method>
<actionreq>No pitting, scuffing, scoring, metal flow, or wear steps allowed.
</actionreq>
</oipitem>
<oipitem qa="yes">
<itemno>4
</itemno>
<callout assocfig="M00189-X-XXX-XX-fig1" label="B"/>
<desc>Journal wear
</desc>
<insp-method>Measure
</insp-method>
<actionreq>Minimum diameter, 0.9841 inch (24.99mm) . Repair (
<xref wpid="M00342-X-XXX-XX"/> ) .
</actionreq>
</oipitem>
</oiptab>
</oipwp>

```

2. Page-based TM stylesheet output example for **<oipwp>**:

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0280

DEPOT MAINTENANCE
SPUR GEAR FOR
OVERHAUL INSPECTION PROCEDURES

INITIAL SETUP:**References**

Table 1. Overhaul Inspection Procedures for Spur Gear (Item 5, fig 4).

QA REQ	NO.	REF LTR	CHARACTERISTIC	INSPECTION METHOD	REQUISITE
	1		Serviceability	Visual/measure	Examine for nicks, gouges, burns, and corrosion, identified below repair damaged areas, 0.020 inch (0.508mm) or less deep, by blending.
Yes	2		Metal fatigue	Magnetic particle inspection	No fractures or cracks.
Yes	3	A	Tooth wear	Visual	No pitting, scuffing, scoring, metal flow, or wear steps allowed.
Yes	4	B	Journal wear	Measure	Minimum diameter, 0.9841 inch (24.99mm). Repair ().

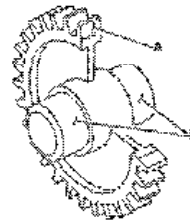


Figure 1. Spur Gear.

END OF WORK PACKAGE

0280-1/blank

FIGURE 370. Example of a page-based TM stylesheet output for <oipwp>.

23.10.4 Depot mobilization requirements work package <mobilwp>.

The element contains the requirements to modify, delete, or add data to the preshop analysis or overhaul procedures during mobilization.

1. The components for <mobilwp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. Warning <warning> (optional – zero or more) (see Section 28.1.1).
 - e. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
 - f. Caution <caution> (optional – zero or more) (see Section 28.1.2).
 - g. Note <note> (optional – zero or more) (see Section 28.1.3).
 - h. Introduction <intro> (required) includes scope and explanation of mobilization requirements. These statements are specified in MIL-STD-40051-1/-2 and use the boilerplate entity <mobilwp.intro>; (see Section 36.1.4.14).
 - i. Mobilization requirements <mobilreq> (see Section 23.10.4.1).
2. The DTD fragment for <mobilwp> is graphically depicted:

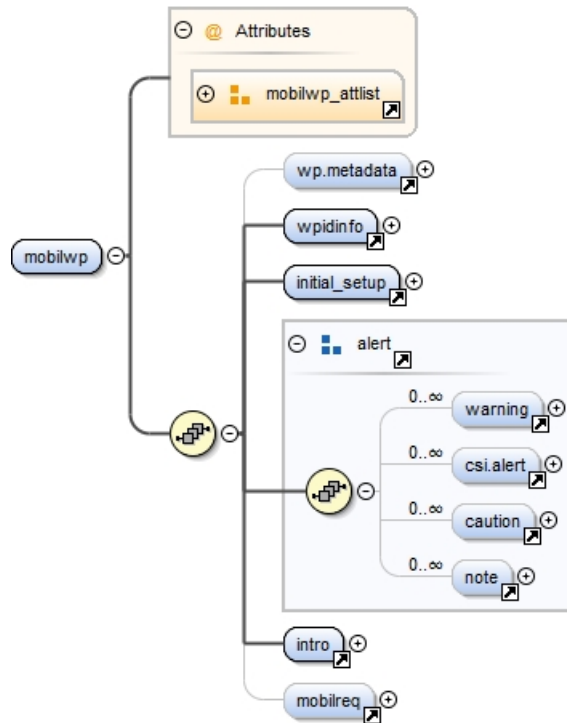


FIGURE 371. Depot mobilization requirements work package DTD hierarchy <mobilwp>.

3. The DTD fragment for <mobilwp> is:

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```
<!ELEMENT mobilwp (wp.metadata?, wpidinfo, initial_setup, %alert;, intro, mobilreq?)>
```

```
<!ATTLIST mobilwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <mobilwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).

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- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order. (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.10.4.1 Depot mobilization requirements <mobilreq>.

The element contains a list of actions that are in effect during the depot mobilization and associate the related work packages that are modified. The author either lists the mobilization requirements in tabular list (MIL-STD-40051-1/-2 prescribes the use as standard information <mobiltab>) or in a paragraph references the work package(s) that lists and describes the mobilization requirements.

1. The components for <mobilreq> are:
 - a. Title <title> (required) (see Section 36.1.1.4).
 - b. Paragraph <para> (required) (see Section 36.1.1.6).
 - c. Mobilization requirements standard information <mobiltab> (optional) (see Section 23.10.4.2).
2. The DTD fragment for <mobilreq> is graphically depicted.

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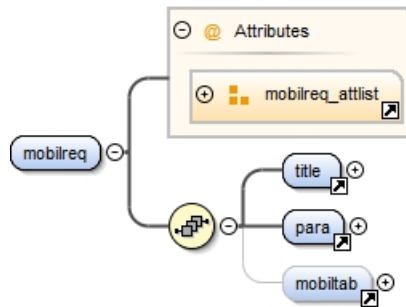


FIGURE 372. Depot mobilization requirements DTD hierarchy <mobilreq>.

3. The DTD fragment for<mobilreq> is:

```

<!ELEMENT mobilreq (title, para, mobiltab?)>
<!ATTLIST mobilreq
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)          "0"
  security            (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk           CDATA           #IMPLIED>

```

4. Attributes for <mobilreq>:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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23.10.4.2 Depot mobilization requirements standard information <mobiltab>.

Depot mobilization requirements standard information contains the requirements for all analysis and procedures that are modified during mobilization. When multiple mobilization actions occur for the same work package a separate mobilization requirement entry <mobilenry> is used.

1. The components for <mobiltab> are:

- a. Standard information title <title> (required). When standard information is represented in tabular format, do not include the table number (this is generated by the stylesheet). (see Section 36.1.1.4).
- b. Mobilization requirement entry <mobilenry> (required – one or more). The element is similar to a **row** in a structural table. The components of <mobilenry> are:
 - i. Work package cross-reference <link> (see Section 33.2.3) or <xref> (see Section 33.2.2) (required). The element is similar to a **cell** in a structural table and is entered a column.
 - ii. Action requirement <actionreq> (required) contains the required action to be performed when mobilization occurs. The element is similar to a **cell** in a structural table and is entered a column.

2. The DTD fragment for <mobiltab> is:

```
<!ELEMENT mobiltab (title, mobilenry+)>
<!ATTLIST mobiltab
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)          "0"
  security            (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk            CDATA           #IMPLIED
  tocentry            (0 | 1 | 3 | 4)  "1">
```

3. Common attributes for <mobiltab> are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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k. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

23.10.4.3 Depot mobilization requirements work package general entity boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities (see Chapter 37) that are a type of replacement text for these standard statements. Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, refer to Section 37.5 and for specific boilerplate usages refer to TABLE XII.

TABLE XII. Boilerplate entities for <mobilwp>.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Depot mobilization requirements work package scope and mobilization requirements.	<i>&mobilwp.intro;</i>	Not applicable

23.10.4.4 XML document instance fragment and output for <mobilwp>.

XML instance and its stylesheet output for a <mobilwp> is provided below:

1. Example of an XML document instance fragment for <mobilwp>

```
<mobilwp chngno="0" wpno="S00022-1-2915-361">
  <wpidinfo>
    <maintlvl level="depot"/>
    <title>DEPOT MOBILIZATION REQUIREMENTS WORK PACKAGE
  </title>
</wpidinfo>
<initial_setup>
  <null/>
</initial_setup>
<intro>
  <para0>
    <title>Scope
  </title>
  <para>The purpose of this work package is to streamline and accelerate the
  overhaul process during the mobilization of the depot.
  </para>
  <para>The mobilization requirements include a list of instructions for
  modifying preshop analysis and/or overhaul procedures. The pertinent
  procedures to be modified are referred to by page and work package number,
  followed by the action to be taken.
  </para>
  </para0>
</intro>
<mobilreq>
  <title>MOBILIZATION REQUIREMENTS
</title>
```

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<para>All requirements of this DMWR will be exempted or revised in the event of mobilization. Only those procedures necessary to return the CHMU to a serviceable condition will be performed.

</para>

<mobiltab tocentry="1">

<title>Mobilization Requirements

</title>

<mobil-entry>

<xref wpid="S00022-1-2915-361"/>

<actionreq>Step 1. Add “ Depending on the urgency of requirements, availability of materials, and fabrication lead time, provisions of this work package may be relaxed. When that occurs, any practical method may be used to inscribe or attach the data to the equipment, decals.”

</actionreq>

</mobil-entry>

<mobil-entry>

<xref wpid="S00022-1-2915-361"/>

<actionreq>Step 2. Add “Clean only to the extent necessary to perform preshop analysis.”

</actionreq>

</mobil-entry>

<mobil-entry>

<xref wpid="S00022-1-2915-361"/>

<actionreq>Step 3. Add “Clean only to the extent necessary to inspect components.”

</actionreq>

</mobil-entry>

<mobil-entry>

<xref wpid="S00022-1-2915-361"/>

<actionreq>Step 4. Add “Painted surfaces will be treated for corrosion and scratches that expose bare metal. Touch-up painting need not correlate in hue and gloss.”

</actionreq>

</mobil-entry>

<mobil-entry>

<xref wpid="S00022-1-2915-361"/>

<actionreq>Delete

</actionreq>

</mobil-entry>

</mobiltab>

</mobilreq>

</mobilwp>

2. Page-based TM stylesheet output example for <mobilwp>:

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0001

DEPOT MAINTENANCE**DEPOT MOBILIZATION REQUIREMENTS WORK PACKAGE****INITIAL SETUP:**

NOT APPLICABLE

SCOPE

The purpose of this work package is to streamline and accelerate the overhaul process during the mobilization of the depot.

The mobilization requirements include a list of instructions for modifying preshop analysis and/or overhaul procedures. The pertinent procedures to be modified are referred to by page and work package number, followed by the action to be taken.

MOBILIZATION REQUIREMENTS

All requirements of this DMWR will be exempted or revised in the event of mobilization. Only those procedures necessary to return the CHMU to a serviceable condition will be performed.

Table 1. Mobilization Requirements.

WORK PACKAGE	ACTION
WP 0001	Step 1. Add "Depending on the urgency of requirements, availability of materials, and fabrication lead time, provisions of this work package may be relaxed. When that occurs, any practical method may be used to inscribe or attach the data to the equipment, i.e., decals."
WP 0001	Step 2. Add "Clean only to the extent necessary to perform preshop analysis."
WP 0001	Step 3. Add "Clean only to the extent necessary to inspect components."
WP 0001	Step 4. Add "Painted surfaces will be treated for corrosion and scratches that expose bare metal. Touch-up painting need not correlate in hue and gloss."
WP 0001	Delete

END OF WORK PACKAGE

0001-1/blank

FIGURE 373. Example of a page-based TM stylesheet output for <mobilwp>.**23.10.4.5 Quality assurance requirements work package <qawp>.**

The element contains the requirements to prepare a quality assurance program for depot.

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1. The components for **<qawp>** are:
 - a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
 - b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
 - c. Work package initial setup **<initial_setup>** (required) (see Section 16.6).
 - d. Statement of responsibility **<responsibility>** (required) (see Section 23.10.4.5.1).
 - e. Definitions **<definitions>** (required) (see Section 23.10.4.5.2).
 - f. Special requirements for inspection tools and equipment **<specialreq>** (optional) (see Section 23.10.4.5.3).
 - g. Certification requirements **<certreq>** (optional) (see Section 23.10.4.5.4).
 - h. Quality program **<quality_program>** (optional) (see Section 23.10.4.5.5).
 - i. In-process inspections **<inprocess>** (required) (see Section 23.10.4.5.6).
 - j. Acceptance inspections **<acceptance>** (required) (see Section 23.10.4.5.7).
 - k. First article inspection **<first>** (optional) (see Section 23.10.4.5.8).
2. The DTD fragment for **<qawp>** is graphically depicted.

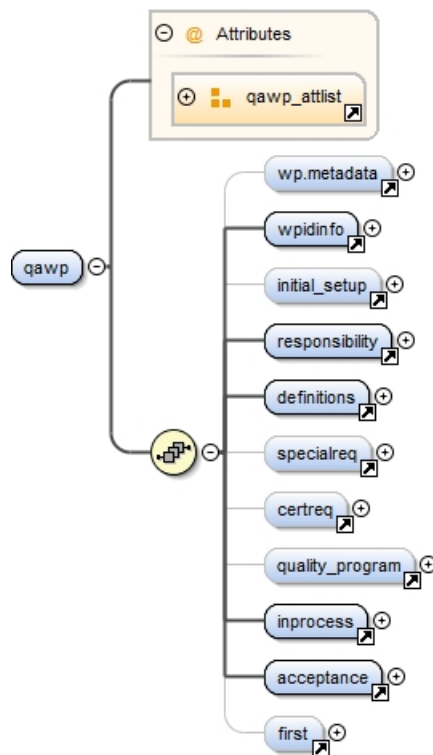


FIGURE 374. Quality assurance requirements work package DTD hierarchy <qawp>.

3. The DTD fragment for **<qawp>** is:

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```
<!ELEMENT qawp (wp.metadata?, wpidinfo, initial_setup?, responsibility,
definitions, specialreq?, certreq?, quality_program?, inprocess, accept-
ance, first?)>
```

```
<!ATTLIST qawp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date- time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <qawp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).

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- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.10.4.5.1 Statement of responsibility <responsibility>.

The element contains the responsibilities of the depot/contractor. Generally only the standard statement is included from MIL-STD-40051-1/-2 and uses the boilerplate entity *&qawp.responsibility*; (see Section 23.10.4.5.9).

1. The components for <responsibility> are:
 - a. Title <title> (required) (see Section 36.1.1.4).
 - b. Figtable <figtab> (optional – zero or more) (see 36.2.2).
 - c. Select one of the following information types:
 - i. Narrative paragraphs with descriptive or narrative titled text:
 - I. Note <note> (optional – zero or more) (see Section 28.1.3).
 - II. Narrative paragraph <para> (required – one or more) (see Section 36.1.1.6).

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- III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
- ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).
2. The DTD fragment for **<responsibility>** is graphically depicted.

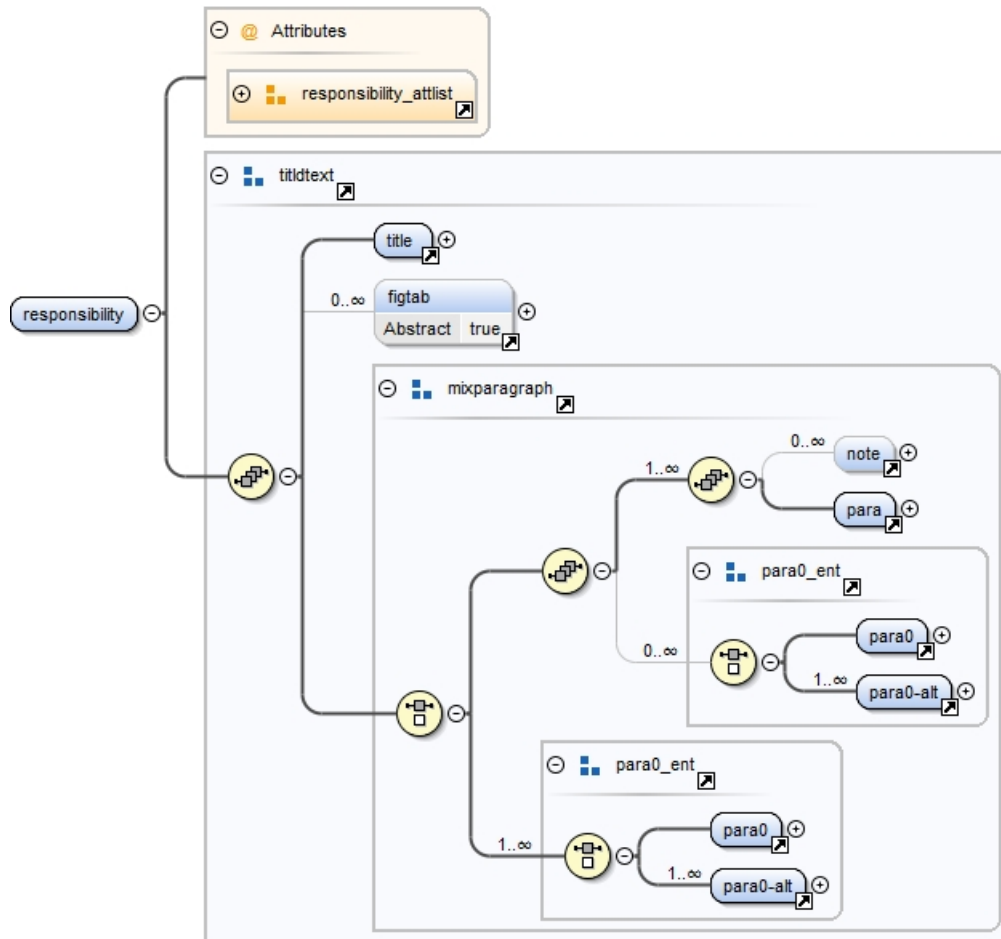


FIGURE 375. Quality assurance requirements work package DTD hierarchy **<responsibility>**.

3. The DTD fragment for **<responsibility>** is:

```
<!ELEMENT responsibility (%titldtext;)>
```

```
<!ATTLIST responsibility
```

changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
inschlvl	(0-99)	"0">

4. Attributes for **<responsibility>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).

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- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

23.10.4.5.2 Definitions <definitions>.

The element contains quality assurance terms and definitions that are extensively used in the DMWR/NMWR. If the definitions are listed in another publication, the referenced publications are listed. The definitions may be authored as paragraphs or term/definition listing. Paragraphs may be used to provide an introduction or general information about the definition or specify the referenced documents for the terms used in the publication. If a simple term definition listing is needed, use the <term.def> element.

1. The components for <definitions>:
 - a. Definition title <title> (required) (see Section 36.1.1.4).
 - b. Select a method to author the definitions either by:
 - i. Paragraph <para> (required – one or more) (see Section 36.1.1.6).
 - ii. Term definition <term.def> (required – one or more) (see Section 36.1.2.4.1).
2. The DTD fragment for <definitions> is graphically depicted:

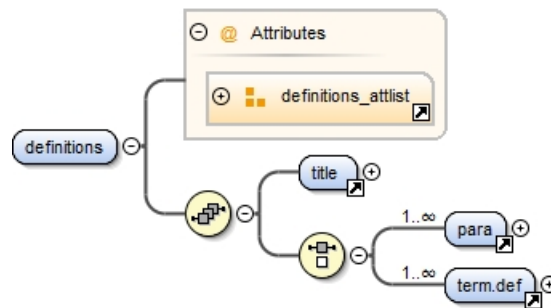


FIGURE 376. Definitions DTD hierarchy <definitions>.

3. The DTD fragment for <definitions> is:

```

<!ELEMENT definitions (title, (para+ | term.def+))>
<!ATTLIST definitions
  changeref          IDREFS          #IMPLIED
  comment            CDATA           #IMPLIED
  delchlvl           (0-99)          "0"
  inschlvl           (0-99)          "0">
  
```

4. Attributes for <definitions>:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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23.10.4.5.3 Special requirements for inspection tools and equipment <specialreq>.

The element contains the special requirements for the maintenance and calibration of tools and test equipment used for quality assurance inspections. The components for <specialreq> are the same as <responsibility> (see Section 23.10.4.5.1).

23.10.4.5.4 Certification requirements <certreq>.

The element contains any certification or licensing requirements for processes, procedures, materials, equipment or personal skills used. When listing the certification or licensing include the appropriate standards, specifications, regulations, or laws that apply. Additionally, reference the text in the DMWR/NMWR where a soldering, welding, magnetic particle inspection certification radioactive substance, or test driver licenses are required. The components for <certreq> are the same as <responsibility> (see Section 23.10.4.5.1).

23.10.4.5.5 Quality program <quality_program>.

The element contains any additional requirements for a quality program. The components for <quality_program> are the same as <responsibility> (see Section 23.10.4.5.1).

23.10.4.5.6 In-process inspections <inprocess>.

The element contains the method used to identify QA inspections. Generally only the standard statement is included from MIL-STD-40051-1/-2 and uses the boilerplate entity *&qawp.inprocess*; (see Section 23.10.4.5.9). The components for <inprocess> are the same as <responsibility> (see Section 23.10.4.5.1).

23.10.4.5.7 Acceptance inspections <acceptance>.

The element contains the method used for acceptance inspection. Generally, only the standard statement is included from MIL-STD-40051-1/-2 and uses the boilerplate entity *&qawp.acceptance*; (see Section 23.10.4.5.9). The components for <acceptance> are the same as <responsibility> (see Section 23.10.4.5.1).

23.10.4.5.8 First article inspection <first>.

The element contains a statement that defines the first article inspection/test and is in accordance with ISO 9000 Series standards or equivalent. The components for <first> are the same as <responsibility> (see Section 23.10.4.5.1).

23.10.4.5.9 Quality assurance requirements work package requirements work package general entity boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages refer to Section 37.5 (see TABLE XIII.).

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TABLE XIII. Boilerplate entities for <qawp>.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Responsibilities of the depot/contractor statement	<i>&qawp.responsibility;</i>	Not applicable
Method used to identify QA inspections statement	<i>&qawp.inprocess;</i>	Not applicable
Method used for acceptance inspection statement	<i>&qawp.acceptance;</i>	Not applicable

23.10.4.5.10 XML document instance fragment and output for <qawp>.

The XML instance and its stylesheet output for a <qawp> is provided below.

1. Example of an XML document instance fragment for <qawp>:

```

<qawp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2"
wpno="m0567-xx-xxxx-xx" wpseq="0163">
  <wpidinfo>
    <maintlvl level="depot"/>
    <title>QUALITY ASSURANCE REQUIREMENTS
  </title>
  </wpidinfo>
  <initial_setup>
    <ref>
      <ref-setup-item>
        <extref docno="AR 750-43"/>
      </ref-setup-item>
      <ref-setup-item>
        <extref docno="DESCOM-R 702-1"/>
      </ref-setup-item>
      <ref-setup-item>
        <extref docno="MIL-I-45607B"/>
      </ref-setup-item>
      <ref-setup-item>
        <extref docno="MIL-STD-410"/>
      </ref-setup-item>
    </ref>
  </initial_setup>
  <responsibility>&qawp.responsibility;
</responsibility>
  <definitions>
    <title>DEFINITIONS
  </title>
  <para>For quality assurance terms and definitions, refer to the glossary in this
DMWR.
  </para>
</definitions>
  <specialreq>
    <title>SPECIAL REQUIREMENTS FOR INSPECTION TOOLS AND EQUIPMENT
  </title>

```

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<para>The overhaul facility is responsible for acquisitions, maintenance, calibration, and disposition of all inspection and test equipment. Test equipment to be used by AMC (Army) elements will be acquired in accordance with <extref docno="AR 750-43"/>. All instrumentation and inspection equipment used in compliance with this DMWR should be calibrated and controlled in accordance with <extref docno="MIL-I-45607B"/> or

<extref docno="DESCOM-R-702-1" posttext=", Depot Quality System (Army facility)"/>, with all standards traceable to the National Bureau of Standards. Descriptions of inspecting and measuring equipment are left to the discretion of the overhauling facility to be considered as good shop practice.

</para>

</specialreq>

<certreq>

<title>CERTIFICATION REQUIREMENTS

</title>

<para>The contractor/depot QA activity should be responsible for ascertaining and certifying personnel skills, equipment, and materiel meet the requirements of the work to be accomplished, unless otherwise specified in the contract or by PA/CM representative, the contractor/depot QA activity should provide the PA/CM with statements or other evidence that specifications for such special processes as welding, nondestructive testing, plating, etc., have been complied with. Personnel performing magnetic particle and penetrant tests should be certified in accordance with

<extref docno="MIL-STD-410"/>.

</para>

</certreq>

<inprocess>&qawp.inprocess;

</inprocess>

<acceptance>&qawp.acceptance;

</acceptance>

<first>

<title>FIRST ARTICLE INSPECTION

</title>

<para>The contractor/depot quality assurance activity should perform a first article inspection on each of the first overhauled assemblies produced in accordance with the DMWR. After contractor/depot acceptance, the procuring agency's quality assurance representative may perform a separate first overhauled article inspection. The first article inspection should be conducted as follows: (1) Component Inspection (Chapter 3), (2) Final Inspection (Chapter 4), and (3) Processing for Storage and Shipment (Chapter 6).

</para>

<para0>

<title>Submission of Product

</title>

<para>The inspection of lot size, lot formation, and presentation of lots should be as specified by the contracting activity.

</para>

</para0>

<para0>

<title>Quality Assurance Component Inspection

</title>

<para>The component inspection should be conducted by the procuring activity's quality assurance representative during production of first overhauled item to

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evaluate conformance of materials and workmanship to drawings and overhaul technical data package.

</para>

</para0>

<para0>

<title>Final Acceptance

</title>

<para>The contractor's/depot's quality assurance activity, along with the procuring activity's quality assurance representative, should conduct the final acceptance inspection in accordance with the requirements specified herein. During this time, the contractor/depot quality assurance activity should have available the written inspection system plan, procedures, inspection records, and components.

</para>

</para0>

<para0>

<title>Processing for Storage and Shipment

</title>

<para>Inspection of processing for storage and shipment should be conducted in accordance with applicable specifications on the first overhauled item and on one of the next ten processed items under the procedure established during the first overhauled item.

</para>

</para0>

</first>

</qawp>

2. Page-based TM stylesheet output example for <qawp>:

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0001

DEPOT MAINTENANCE

QUALITY ASSURANCE REQUIREMENTS WORK PACKAGE

INITIAL SETUP:

NOT APPLICABLE

RESPONSIBILITY

The depot/contractor is responsible for complying with the quality assurance requirements contained in this work package and in accordance with ISO 9000 Series standards or equivalent. The commodity manager reserves the right to perform inspections or make changes that ensure the depot work being done meets the quality standards of the DMWR and preserves the inherent reliability of the item.

DEFINITIONS

For quality assurance terms and definitions refer to MIL-STD-109 and Inspection Definitions table.

Table 1. Inspection Definitions.

Term	Definition	Probable Cause
Abrasion	Roughened surface, varying from light to severe	Foreign material present between moving parts.
Bend	Any change in the intended configuration	Application of severe or excessive force.
Break	Separation of part	Severe force, pressure, or overload.
Brinnelling (False)	Surface marks or blemishes on balls, rollers, and raceways that normally have a polished or satin finish appearance. These marks will appear as lines at each position for roller bearings, and as points (or ellipses) at each ball position on ball bearings	Vibration or low-radial angle oscillation, or to both, while not rotating.
Brinnelling (True)	Shallow, smooth indentations on balls, rollers, or raceways that have the original surface finish lines at the bottom on the depressions. The contour of the indentation in the raceway is the same as the ball or roller radius	Impact timing mounting, or stationary overload.
Burn	Loss of metal	Excessive heat.
Burnishing	The smoothing of a metal surface by mechanical action, but without loss of material. Generally found on plain bearing surfaces. Surface discoloration is sometimes present around outer edges of burnished area NOTE: Normal burnishing from operational service is not detrimental if coverage approximates the carrying load and there is no evidence of burns.	Excessive heat.
Burr	A rough edge or sharp projection	Impact from foreign object, or poor machining.
Chipping	Breaking away of small metallic particles	Heavy impact of foreign object.

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FIGURE 377. Example of a page-based TM stylesheet output for <qawp> (Page 1 of 3).

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0001

Term	Definition	Probable Cause
Corrosion	Surface chemical action that results in surface discoloration, a layer of oxide, rust, and removal of surface metal	Improper corrosion preventive procedures and excessive moisture.
Crack	A break in the material	Severe stress from overloading or shock; possibly an extension of a scratch.
Dent	A small smoothly rounded depression	A sharp blow or excessive pressure.
Distortion	A change from original shape	Application of severe heat or irregular forces.
Erosion	Wearing away of metal	Hot gases, corrosive liquids, or grit.
Fatigue or Failure	Sharp indentations, cracks, tool marks and inclusions that result in progressive yielding of one or more local areas	Cyclic stress. As stress is repeated, cracks develop, then spread, usually from surfaces (or near surface) of the particular section. Finally, so little sound material remains that normal stress on part exceeds strength of the remaining material. This type of failure is not caused by metal crystallization. This condition can easily be determined by visual inspection of part. Striations will be evidenced by several lines, more or less concentric. The center (or focus) of lines indicates origin of the failure.
Flaking	Loose particles of metal or evidence of surface covering removal	Imperfect bond or severe load.
Fracture	See break	
Gouging	Removal of surface metal. Typified by rough and deep depressions	Protruding objects, misalignment.
Heat oxidizing	Characterized by a discoloring film. Color varies from yellow to brown and blue to purple	High temperature operation.
Indenting	Cavities with smooth bottoms and sides. Occurs on rolling contact surfaces of bearing components	Loose or foreign particles rolling between rotating elements of a bearing.
Nick	A sharp-bottomed depression on that may have rough outer edges	Dropping, banging.
Off-square or misalignment of Anti-Friction Bearing	Indicated by retainer deterioration, retainer bore erosion, and gouged retainer rolling element pockets of the inner and outer race. Two distinct rolling paths may be seen on the race where off-square conditions exist	Caused by rolling element variation, which jams rolling elements into separator pockets.
Pitting	Small indentation on a surface	Chemical pitting: Oxidation of surface or electrolytic action. Mechanical pitting: Chipping of loaded surfaces caused by improper clearances and overloading, and by pressure of foreign material.
Scoring	Deep scratch following path of part travel	Result of localized lubrication breakdown between sliding surfaces.
Scraping	A furrow	Rubbing with any hard, or rough, pointed object.

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FIGURE 378. Example of a page-based TM stylesheet output for <qawp> (Page 2 of 3).

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0001

Term	Definition	Probable Cause
Scratch	A very shallow furrow or irregularity, usually longer than wide	Movement of a sharp object across the surface.
Seizure	Fusion or binding of two adjacent surfaces preventing continued movement	Improper lubrication or wear.
Stripped thread	Thread of a nut, stud, bolt, or screw damaged by tearing away part of the thread	Improper installation or thread pitch or size.
Tear	Parting of parent material	Excess tension caused by an external force.
Wear	Slow removal of parent material. Frequently, wear is not visible to the naked eye	Result of abrasive substances contacting rolling surface and acting as a lapping compound.

Special requirements for inspection tools and equipment

The overhaul facility is responsible for acquisition, maintenance, calibration, and disposition of all inspection and test equipment. Test equipment to be used by AMC (Army) elements will be acquired in accordance with AR 750-43 and AMC Supplement 1 to AR 750-43. All instrumentation and inspection equipment used in compliance with this DMWR shall be calibrated and controlled in accordance with MIL-I-45607C and ISO 10012 (commercial facility). Calibration documents for all TMDE shall be traceable to the National Institute of Standards and Technology (NIST).

Certification requirements

The contractor/depot QA activity shall be responsible for ascertaining and certifying personnel skills, equipment, and material meet the requirements of the work to be accomplished. Unless otherwise specified in the contract or by PA/CM representative, the contractor/depot QA activity shall provide the PA/CM with statements or other evidence that specifications for such special processes as welding, nondestructive testing, plating, and the like, have been complied with. Personnel performing magnetic particle and penetrant tests shall be certified in accordance with NAS-410. Personnel performing fluorescent penetrant inspection shall be certified in accordance with ASTM-E1417.

IN-PROCESS INSPECTIONS

In-process quality assurance inspections are contained throughout the overhaul procedures of this DMWR. These inspections are immediately preceded by a statement such as "QA check" to identify them, and they are the minimum inspections required. Additional quality assurance inspections may be established by the depot or the commodity manager.

ACCEPTANCE INSPECTIONS**ITEMS OVERHAULED IN ACCORDANCE WITH THIS DMWR WILL BE ACCEPTED BASED ON THE FOLLOWING CRITERIA:**

- Conformance to quality of material requirements.
- Conformance to all in-process quality assurance inspections.
- Conformance to all final assembly testing requirements.
- Conformance to the preservation, packaging, and marking requirements.

END OF WORK PACKAGE

0001—3/blank

FIGURE 379. Example of a page-based TM stylesheet output for <qawp> (Page 3 of 3).**23.11 Illustrated list of manufactured items.**

The illustrated list of manufactured items consists of two work packages: the illustrated list of manufactured items introduction work package see (Section 23.11.1) and the manufacturing procedure work page (see Section 23.11.2).

23.11.1 Manufactured items introduction work package <manu_items_introwp>.

The manufactured items introduction work package provides the user with a general introduction <intro> on locally manufactured items and an index <manuindx> listing each item allowed to be locally manufactured, referenced to the applicable manufactured items work package.

1. The components of <manu_items_introwp>:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. An introductory section <intro> (see Section 36.1.4.14) includes a scope and information on how to use the accompanying index.
 - d. An index <manuindx> (see Section 23.11.1.1) of those items authorized to be locally manufactured referenced by manufactured items work package.
2. The DTD fragment for <manu_items_introwp> is graphically depicted.

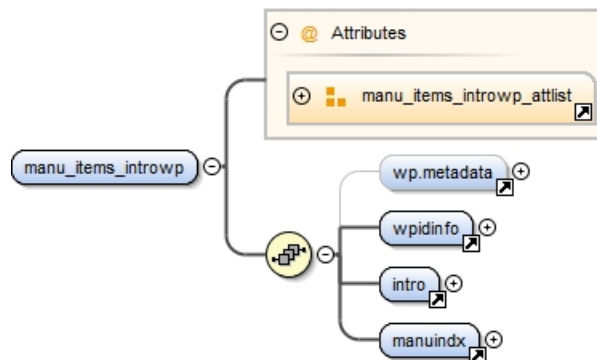


FIGURE 380. Manufactured items introduction work package <manu_items_introwp>.

3. The DTD fragment for <manu_items_introwp> is:

```
<!ELEMENT manu_items_introwp (wp.metadata?, wpidinfo, intro, manuindx)>
```

```
<!ATTLIST manu_items_introwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"

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fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <manu_items_introwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).

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- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.11.1.1 Manufactured items index <manuindx>.

The element lists each manufactured item illustrated. Each manufactured item describes <partdesc> the part number <partno>/CAGEC code <cagenc> and/or drawing number <dwgno> in alphabetical order, along with the nomenclature <name>, and an illustration figure number reference <figno> contains the manufacturing data.

1. The components of <manuindx> are:
 - a. Index title <title> (optional) (see Section 36.1.1.4).
 - b. Manufactured item (required – one or more) components are:
 - i. Manufactured item description <partdesc> (required) (see Section 23.11.1.1.1).
 - ii. manufactured item work package number reference <wpref> (optional). The element <wpref> appears in text to only reference a figure number. The element is EMPTY and all pertinent information is entered through its attribute **idref**. The figure reference presentation format is “Work package #” (see Section 33.2.4.1.2).
2. The DTD fragment for <manuindx> is graphically depicted.

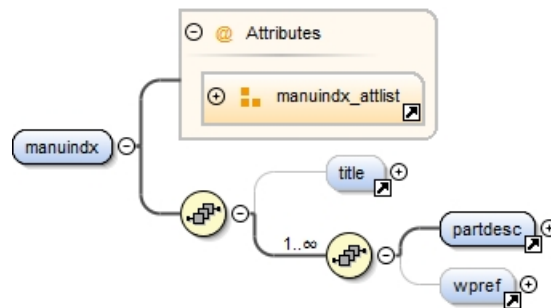


FIGURE 381. Manufactured items index DTD hierarchy <manuindx>.

3. The DTD fragment for <manuindx> is:

```
<!ELEMENT manuindx (title?, (partdesc, wpref?)+)>
```

```
<!ATTLIST manuindx
```

```
  applicable
```

```
  IDREFS
```

```
  #IMPLIED
```

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assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0–99	“0”
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0–99	“0”
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<manuindx>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.11.1.1.1 Manufactured part description **<partdesc>**.

The element contains a description of the item to be manufactured, including the part number (with CAGE code) and/or drawing number, along with the nomenclature.

1. The components of **<partdesc>** are:

- a. Part identification either by:
 - i. Part number **<partno>** (required) (see Section 36.1.4.22), CAGE code **<cageno>** (required) (see Section 36.1.4.1.8), and drawing number **<dwgno>** (optional) (see Section 36.1.4.6).
 - ii. Drawing number **<dwgno>** (optional) (see Section 36.1.4.6).
- b. Part nomenclature **<name>** (required) (see Section 36.1.4.18).

2. The DTD fragment for **<partdesc>** is graphically depicted.

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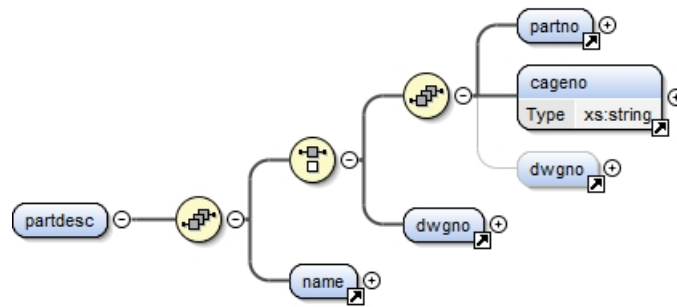


FIGURE 382. Manufactured part description DTD hierarchy <partdesc>.

3. The DTD fragment for <partdesc> is:

```
<!ELEMENT partdesc (( (partno, cageno, dwgno?) | dwgno ), name)>
```

4. The <partdesc> has no attributes.

23.11.2 Manufactured items work package <manuwp>.

The illustrated list of manufactured items work package is prepared to identify and include technical information for each item authorized to be manufactured or fabricated by field/AMC or above maintenance personnel (all “MO,” “MF,” “MH,” and “MD” source coded items). When applicable, an external reference may be made to fabrication instructions for tools and equipment.

1. The components of <manuwp> :

- a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
- b. Work package identification information <wpidinfo> (required) (see Section 16.2).
- c. Work package initial <initial_setup> (required) (see Section 16.6).
- d. Manufactured item <manuitem> (required) (see Section 23.11.2.1).

2. The DTD fragment for <manuwp> is graphically depicted:

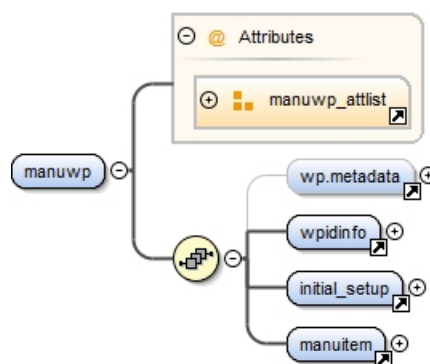


FIGURE 383. Illustrated list of manufactured items work package DTD hierarchy <manuwp>.

3. The DTD fragment for <manuwp> is:

```
<!ELEMENT manuwp (wp.metadata?, wpidinfo, initial_setup, manuitem+)>
```

```
<!ATTLIST manuwp
```

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airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <manuwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).

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- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.11.2.1 Manufactured items <manuitem>.

The element contains all the information required to manufacture a part that includes such information as the illustrated manufactured part, instructions, parts list, and/or manufactured part description.

1. The components of <manuitem> are the choice of (one of which is required to be used):
 - a. A single procedure <proc> (see Section 17.2).
 - b. A group consisting of:
 - i. A title <title> for the part being manufactured.
 - ii. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
 - I. Warning <warning> (optional – zero or more) (see Section 28.1.1).
 - II. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
 - III. Caution <caution> (optional – zero or more) (see Section 28.1.2).
 - IV. Note <note> (optional – zero or more) (see Section 28.1.3).
 - iii. Any of the following elements in any order:

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iv. Manufactured item **<manuitem>** (required) (see Section 23.11.2.1).

I. A list of material required in the manufacture **<material-list-category>** (see 23.11.2.1.2).

II. Procedure **<proc>** one or more (see Section 17.2).

2. The DTD fragment for **<manuitem>** is graphically depicted.

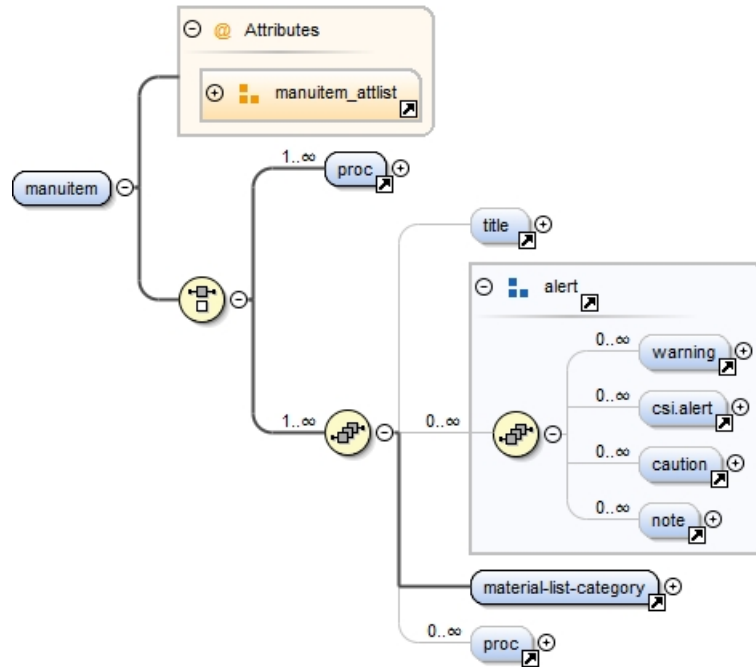


FIGURE 384. Manufactured items DTD hierarchy **<manuitem>**.

3. The DTD fragment for **<manuitem>** is:

```
<!ELEMENT manuitem (proc+ | (title?, %alert;, material-list-category,
proc*)+)>
```

```
<!ATTLIST manuitem
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<manuitem>**:

a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).

b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.11.2.1.1 Material list <material-list>.

The material list contains the bulk material needed to manufacture the item, and cites the technical characteristics (standards, specifications, conditions, dimensions, and any other pertinent data). When applicable, references are made to the associated parts information in the RPSTL, TM, or RPSTL work package (for combined TMs).

1. The components of <material-list>:

- a. Each material/part information includes the following components:
 - i. Material/part nomenclature <name> (required) (see 36.1.4.18).
 - ii. Material/part identification is one of following:
 - I. The part number <partno> (required) and CAGE code <cageno> (optional) NSN <nsn> (optional).
 - II. Specification or standard <extref> (required) (see Section 33.2.1).
 - III. Work package <link> (see Section 33.2.3).
 - iii. Quantity <qty> (optional) (see Section 36.1.4.8).
 - iv. Material/part information reference <itemref> (optional) (see Section 16.6.1.1).

2. The DTD fragment for <material-list> is graphically depicted:

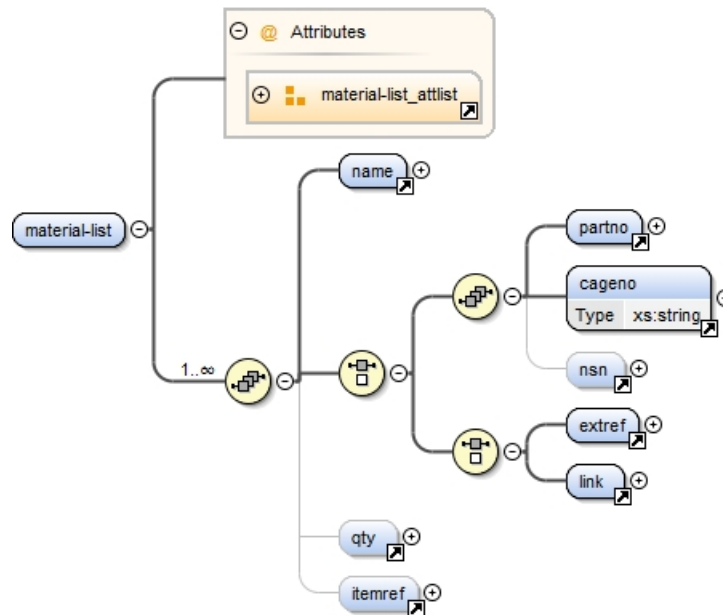


FIGURE 385. Material items list DTD hierarchy <material-list>.

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3. The DTD fragment for **<material-list>** is:

```

<!ELEMENT material-list (name, ((partno, cageno, nsn?) | extref | link),
qty?, itemref?)+>

<!ATTLIST material-list
assocfig                IDREFS                #IMPLIED
changeref              IDREFS                #IMPLIED
comment                CDATA                 #IMPLIED
delchlvl               (0-99)                "0"
id                     ID                    #IMPLIED
idref                  IDREFS                #IMPLIED
inschlvl               (0-99)                "0"
security               (uc | fouo | c | s | ts) #IMPLIED
skilltrk               CDATA                 #IMPLIED>

```

4. Common attributes for **<material-list>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.11.2.1.2 Material list category **<material-list-category>**.

If the standard information is subdivided into list of materials, for example by separate parts to manufacture, the category element is used to represent the lists. After the category name is entered, the specific material entries **<material-entry>** are entered for that category. Usually more than one category is entered in the standard information.

1. The components of **<material-list-category>** are:

- a. Category title **<title>** (required) (see 36.1.1.4).
- b. Material entry(s) **<material-entry>** (required – one or more).

2. The DTD fragment for **<material-list-category>** is:

```

<!ELEMENT material-list-category (title, (material-entry)+)>

<!ATTLIST material-list-category
assocfig                IDREFS                #IMPLIED
changeref              IDREFS                #IMPLIED

```

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comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
frame	(yes no)	#IMPLIED
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

3. Common attributes for **<material-list-category>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.11.3 Illustrated list of manufactured items work package general entity boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time, errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and (see TABLE XIV.).

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TABLE XIV. Boilerplate entities for **<manuwp>**.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Work package scope, how to use the index of manufactured items, and explanation of the illustrations of manufactured items statement.	<i>&manuwp.intro;</i>	Not applicable
• Enter the lowest maintenance level allowed to perform this task.	<i>&manuwp.intro.maint-level;</i>	<code><!ENTITY manuwp.intro.maint-level "REPLACE WITH MAINTENANCE LEVEL"></code>
• Enter where the RPSTL information is located either in a separate TM (<extref>) or within the TM in a parts work package (<xref>).	<i>&manuwp.intro.rpstyl;</i>	<code><!ENTITY manuwp.intro.rpstyl '<extref docno="REPLACE WITH (WHEN APPLICABLE) A REFERENCE TO THE ASSOCIATED RPSTL TM "/> OR <xref wpid="RPSTL_PART_LIST_WORK_PACKAGE"/>.></code>

23.12 Torque limits work package <torquewp>.

The element contains the applicable torque values, data as to bolt grade markings and their proper identification, and specific torque sequencing requirements. Specific instructions such as torque limits for dry and wet fasteners, fastener sizes, thread patterns, etc. is included.

1. The components of **<torquewp>** are:
 - a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
 - b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
 - c. Work package initial setup **<initial_setup>** (required) (see Section 16.6).
 - d. An optional group of any warnings **<warning>**, cautions **<caution>**, or notes **<notes>** in that order.
 - i. Warning **<warning>** (optional - zero or more) (see Section 28.1.1).
 - ii. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
 - iii. Caution **<caution>** (optional - zero or more) (see Section 28.1.2).
 - iv. Note **<note>** (optional - zero or more) (see Section 28.1.3).
 - e. Introduction **<intro>** (see Section 36.1.4.14) contains the scope or how to use the work package.
 - f. Torque limit values **<torqueval>** (required) (see Section 23.12.1).
2. The DTD fragment for **<torquewp>** is graphically depicted.

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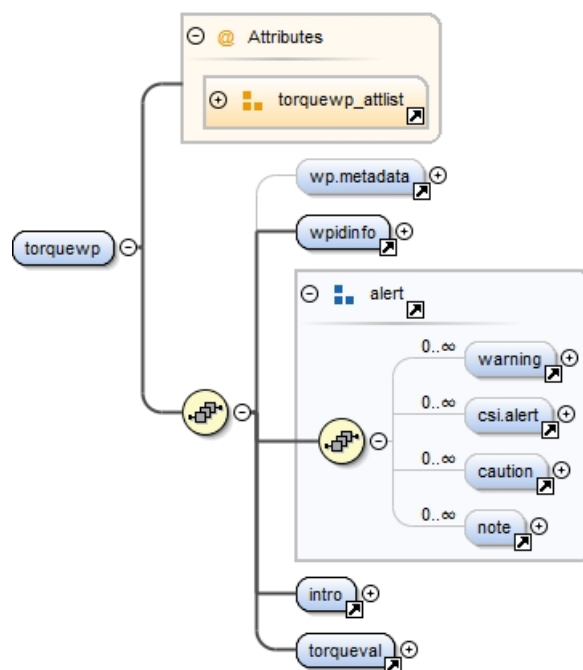


FIGURE 386. Torque limits work package DTD hierarchy <torquewp>.

3. The DTD fragment for <torquewp> is:

```
<!ELEMENT torquewp (wp.metadata?, wpidinfo, %alert;, intro, torqueval)>
```

```
<!ATTLIST torquewp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnngno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED

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lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <torquewp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).

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- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.12.1 Torque limit values <torqueval>.

The torque limits are generally displayed as tables. If multiple torque limits tables are used, the tables can be separated into multiple steps <step1> within the procedure <proc> or multiple tables with different table titles within the single paragraph <para> allowed by the <proc>. The groups can be separated by material type (with a table or description for each type) or by size ranges (with a table for common torque material sizes or dimensions). The XML markup example show the torque limits grouped by size range using the single paragraph approach.

1. The components of <torqueval> consists of a single <proc> procedure (see Section 17.2).
2. The DTD fragment for <torqueval> is graphically depicted.

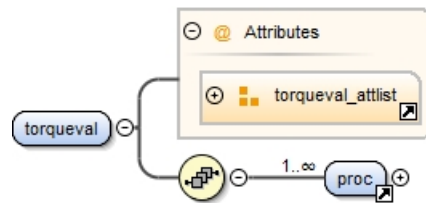


FIGURE 387. Torque limit values DTD hierarchy <torqueval>.

3. The DTD fragment for <torqueval> is:

```

<!ELEMENT torqueval (proc+)>
<!ATTLIST torqueval
    applicable          IDREFS          #IMPLIED
    assocfig            IDREFS          #IMPLIED
    changeref          IDREFS          #IMPLIED
    comment             CDATA          #IMPLIED
    delchlvl            (0-99)         "0"
    id                  ID              #IMPLIED
    idref               IDREFS         #IMPLIED
    inschlvl            (0-99)         "0"
    security             (uc | fouo | c | s | ts) #IMPLIED
    skilltrk            CDATA          #IMPLIED>
  
```

4. Attributes for <torqueval>:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).

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- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.12.2 XML document instance fragment and output for <torquewp>.

The XML instance and its stylesheet output for a <torquewp> is provided below:

1. Example of an XML document instance fragment for <torquewp>:

```
<torquewp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry=
"2" wpno="M1899-X-XXX-XX" wpseq="0321">
  <wpidinfo>
    <maintlvl level="sustain"/>
    <title>TORQUE LIMITS</title>
  </wpidinfo>
  <intro frame="no">
    <para0>
      <title>How To Use Torque Tables
    </title>
    <para>
      <seqlist>
        <item>Measure the diameter of the screw you are installing.
        <figure application="both" figtype="normal-page" pane="no" tocentry="1">
          <title>Measuring Screw.
        </title>
        <graphic boardno="measurescrew" unitmeasure="in">
        </graphic>
        </figure>
        </item>
        <item id="M1899-X-XXX-XX-intro2">Count the number of threads per inch or use a pitch
        grade.
        </item>
        <item>Under the heading SIZE, look down the left-hand column until you find the
        diameter of the screw you are installing. (There will usually be two lines
        beginning with the same size).
        </item>
        <item>In the second column under SIZE, find the numbers of threads per inch that
        matches the number of threads you counted in
        <xref itemid="M1899-X-XXX-XX-intro2"/>. (Not required for metric screws.)
        <figure application="both" figtype="normal-page" id="torque-fig2" pane="no" tocentry="1">
          <title>Capscrew Head Markings.
        </title>
        <graphic boardno="capscrew" unitmeasure="in">
        </graphic>
        </figure>
```


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<note acknowledge="no">

<trim para>Manufacture's mark may vary. Standard are all SAE Grade 5 (3-Line). Metric screws are of three grades: 8.8, 10.9, and 12.9 Grades and manufacturer's marks appear on the screw head.

</trim para>

</note>

</item>

<item>To Find the grade screw you are installing, match the markings on the head to the correct picture of Capscrew Head Markings in

<xref figid="torque-fig2"/>preceding the torque table.

</item>

</seqlist>

</para>

</para0>

</intro>

<torqueval>

<proc>

<title>Torque Limits

</title>

<para>

<table>

<title>Torque Limits for 7/8 to 3 in

</title>

<tgroup cols="18">

<colspec align="center" colname="col1" colwidth="1.25*"/>

<colspec align="center" colname="col2" colwidth="1.19*"/>

<colspec align="center" colname="col3" colwidth="1.45*"/>

<colspec align="center" colname="col4" colwidth="1.65*"/>

<colspec align="right" colname="col5" colwidth="0.79*"/>

<colspec align="right" colname="col6" colwidth="0.91*"/>

<colspec align="right" colname="col7" colwidth="0.86*"/>

<colspec align="right" colname="col8" colwidth="0.86*"/>

<colspec align="right" colname="col9" colwidth="0.91*"/>

<colspec align="right" colname="col10" colwidth="0.89*"/>

<colspec align="right" colname="col11" colwidth="0.84*"/>

<colspec align="right" colname="col12" colwidth="0.94*"/>

<colspec align="right" colname="col13" colwidth="0.89*"/>

<colspec align="right" colname="col14" colwidth="0.96*"/>

<colspec align="right" colname="col15" colwidth="0.91*"/>

<colspec align="right" colname="col16" colwidth="0.91*"/>

<colspec align="right" colname="col17" colwidth="0.94*"/>

<colspec align="right" colname="col18" colwidth="0.91*"/>

<thead>

<row>

<entry morerows="1" valign="middle">Fastener

</entry>

<entry morerows="1" valign="middle">Type

</entry>

<entry morerows="1" valign="middle">Min Tensile Strngn

</entry>

<entry morerows="1" valign="middle">Material

</entry>

<entry align="center" nameend="col18" name="col5" valign="middle">Body Size or Outside Diameter of Fastener

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```

</entry>
</row>
<row>
<entry align="center" valign="middle">&frac78;
</entry>
<entry align="center" valign="middle">1
</entry>
<entry align="center" valign="middle">1&frac18;
</entry>
<entry align="center" valign="middle">1&frac14;
</entry>
<entry align="center" valign="middle">1&frac38;
</entry>
<entry align="center" valign="middle">1&frac12;
</entry>
<entry align="center" valign="middle">1&frac58;
</entry>
<entry align="center" valign="middle">1&frac34;
</entry>
<entry align="center" valign="middle">1&frac78;
</entry>
<entry align="center" valign="middle">2
</entry>
<entry align="center" valign="middle">2&frac14;
</entry>
<entry align="center" valign="middle">2&frac12;
</entry>
<entry align="center" valign="middle">2&frac34;
</entry>
<entry align="center" valign="middle">3
</entry>
</row>
</thead>
<tbody>
<row>
<entry valign="middle">
<graphic boardno="sae0" hscale="75">
</graphic>
</entry>
<entry valign="middle">SAE 0&ndash;1&ndash; 2
</entry>
<entry valign="middle">74,000 PSI
</entry>
<entry valign="middle">Low Carbon Steel
</entry>
<entry valign="middle">206
</entry>
<entry valign="middle">310
</entry>
<entry valign="middle">450
</entry>
<entry valign="middle">675
</entry>
<entry valign="middle">900

```

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```

</entry>
<entry valign="middle">1100
</entry>
<entry valign="middle">1470
</entry>
<entry valign="middle">1900
</entry>
<entry valign="middle">2360
</entry>
<entry valign="middle">2750
</entry>
<entry valign="middle">3450
</entry>
<entry valign="middle">4400
</entry>
<entry valign="middle">7350
</entry>
<entry valign="middle">9500
</entry>
</row>
<row>
<entry valign="middle">
<graphic boardno="sae3" hscale="75">
</graphic>
</entry>
<entry valign="middle">SAE 3
</entry>
<entry valign="middle">100,000 PSI
</entry>
<entry valign="middle">Medium Carbon Steel
</entry>
<entry valign="middle">372
</entry>
<entry valign="middle">551
</entry>
<entry valign="middle">872
</entry>
<entry valign="middle">1211
</entry>
<entry valign="middle">1624
</entry>
<entry valign="middle">1943
</entry>
<entry valign="middle">2660
</entry>
<entry valign="middle">3463
</entry>
<entry valign="middle">4695
</entry>
<entry valign="middle">5427
</entry>
<entry valign="middle">7226
</entry>
<entry valign="middle">8049

```

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```
</entry>
<entry valign="middle">13450
</entry>
<entry valign="middle">17448
</entry>
</row> . . .
</tbody>
</tgroup>
</table>
</para>
</proc>
</torqueval>
</torquewp>
```

2. Page-based TM stylesheet output example for **<torquewp>**:

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0001

MAINTAINER MAINTENANCE

TORQUE LIMITS

HOW TO USE TORQUE TABLES

1. Measure the diameter of the bolt you are installing.

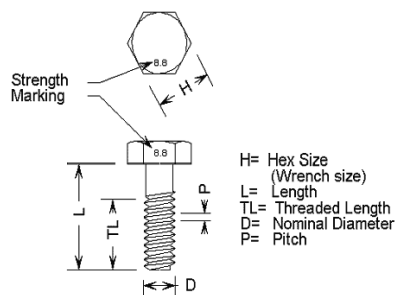


Figure 1. Measuring Bolt.

2. Count the number of threads per inch or use a pitch grade.
3. Under the heading SIZE, look down the left-hand column until you find the diameter of the bolt you are installing. (There will usually be two lines beginning with the same size).
4. In the second column under SIZE, find the numbers of threads per inch that matches the number of threads you counted in Item Count the number of threads per inch or use a pitch grade.. (Not required for metric bolts.)

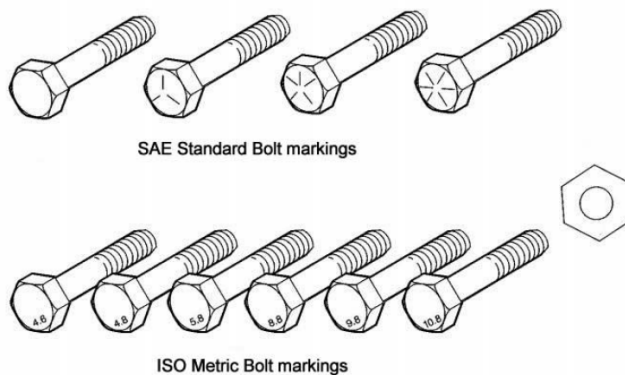


Figure 2. Bolt Head Markings.

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FIGURE 388. Example of a page-based TM stylesheet output for <torquewp> (Page 1 of 2).

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
0001

NOTE

Manufacture's mark may vary. Standard are all SAE Grade 5 (3-Line). Metric bolts are of three grades: 8.8, 10.9, and 12.9 Grades and manufacturer's marks appear on the bolt head.

5. To Find the grade bolt you are installing, match the markings on the head to the correct picture of Bolt Head Markings in Figure 2 preceding the torque table.

Torque**Table 1. Torque Limits for 7/8 to 3 in.**

Fastener	Type	Min Ten-sile Strngn	Material	Body Size or Outside Diameter of Fastener													
				7/8	1	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2	2 1/4	2 1/2	2 3/4	3
	SAE 5 0-1-2	74,000 PSI	Low Carbon Steel	206	310	450	675	900	1100	1470	1900	2360	2750	3450	4400	7350	9500
	SAE 8 3	100,000 PSI	Medium Carbon Steel	372	551	872	1211	1624	1943	2660	3463	4695	5427	7226	8049	13450	17448

1.

END OF WORK PACKAGE

0001-2

FIGURE 389. Example of a page-based TM stylesheet output for <torquewp> (Page 2 of 2).

23.13 Wiring diagrams work package <wiringwp>.

The element includes wiring and cable provisions contained in the equipment/end item, including all systems or equipment which can be installed or removed later. Applicable diagrams are explained in relation to the equipment configuration.

1. The components of <wiringwp>:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. Wiring diagram introduction <intro> (required) includes the work package scope and a statement(s) explaining wiring diagrams and essential wiring information for all electrical and electronic systems and circuits (see Section 36.1.4.14).
 - e. Wire identification <wireid> (required) (see Section 23.13.1).
 - f. Wiring abbreviations <abbrev> (required) (see Section 23.13.2).
 - g. Component descriptions with related schematic locations table <component_desc> (optional). A table may be prepared to assist user in finding components which contains component descriptions in alphabetical order, foldout sheet number, grid number, and official name which appears on the wiring diagram.
 - h. Wire color designations <wire_color> (required). As applicable, a table may be prepared which explains the color codes used on the wiring diagrams (see Section 23.13).
 - i. Wiring diagrams <wiringdiag> (required – one or more) (see Section 23.13.3).
2. The DTD fragment for <wiringwp> is graphically depicted:

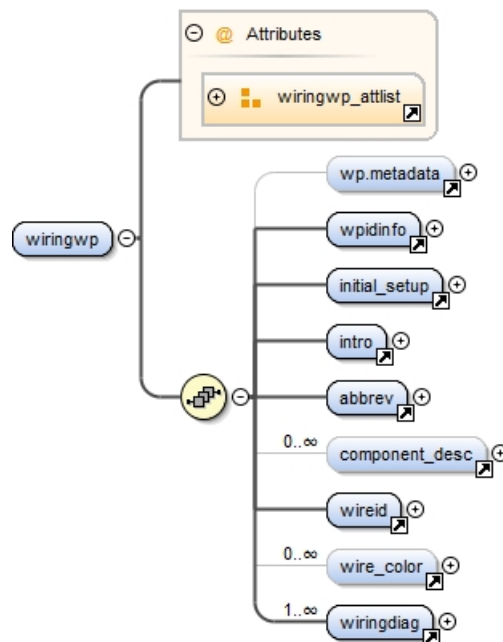


FIGURE 390. Wiring diagrams work package DTD hierarchy <wiringwp>.

3. The DTD fragment for <wiringwp> is:

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```
<!ELEMENT wiringwp (wp.metadata?, wpidinfo, initial_setup, intro, abbrev,
component_desc*, wireid, wire_color*, wiringdiag+)>
```

```
<!ATTLIST wiringwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <wiringwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).

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- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.13.1 Wire identification <wireid>.

The element includes the identification of wires by number, a list of circuit designators, and associated wire identification diagrams.

1. The components of <wireid> are:
 - a. Title <title> (required) (see Section 36.1.1.4).
 - b. Figtab <figtab> (optional – zero or more) (see 36.2.2).
 - c. Select one of the following information types:
 - i. Narrative paragraphs with descriptive or narrative titled text.
 - I. Note <note> (optional – zero or more) (see Section 28.1.3).
 - II. Narrative paragraph <para> (required – one or more) (see Section 36.1.1.6).

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III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).

d. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).

2. The DTD fragment for **<wireid>** is graphically depicted:

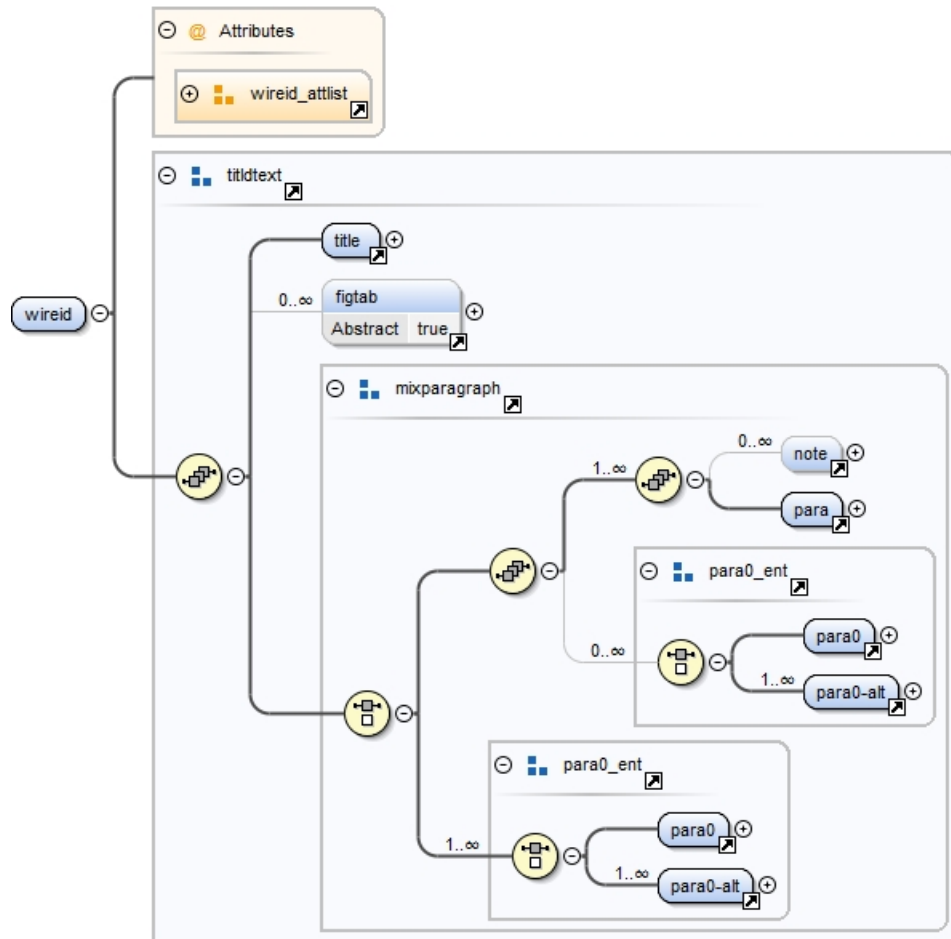


FIGURE 391. Wiring diagram identification DTD hierarchy **<wireid>**.

3. The DTD fragment for **<wireid>** is:

```
<!ELEMENT wireid (%titldtext;)>
<!ATTLIST wireid
assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
delchlvl          (0-99)         "0"
id                ID              #IMPLIED
idref             IDREFS          #IMPLIED
inschlvl          (0-99)         "0"
```

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security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<wireid>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.13.2 Abbreviations **<abbrev>**.

The element includes all abbreviations not contained in ASME Y14.38. Additionally, text is needed stating that abbreviations are in accordance with ASME Y14.38, except when the abbreviation stands for a marking actually found in the equipment.

1. The components of **<abbrev>** are:

- a. Title **<title>** (required) (see Section 36.1.1.4).
- b. Figtab **<figtab>** (optional – zero or more) (see 36.2.2).
- c. Select one of the following information types:
 - i. Narrative paragraphs with descriptive or narrative titled text:
 - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
 - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
 - III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
 - d. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).

2. The DTD fragment for **<abbrev>** is graphically depicted:

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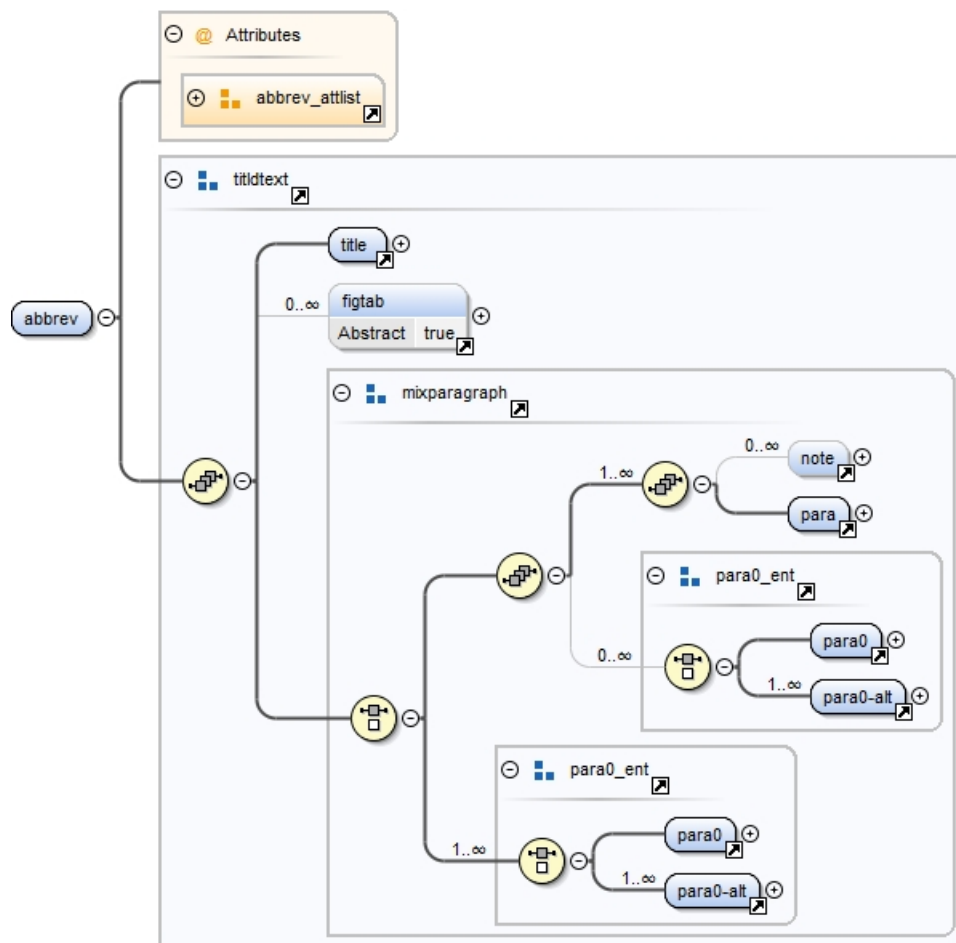


FIGURE 392. Wiring diagram abbreviations DTD hierarchy <abbrev>.

3. The DTD fragment for <abbrev> is:

```

<!ELEMENT abbrev (%titldtext;)>
<!ATTLIST abbrev
    assocfig          IDREFS          #IMPLIED
    changeref         IDREFS          #IMPLIED
    comment           CDATA           #IMPLIED
    delchlvl          (0-99)          "0"
    id                ID              #IMPLIED
    idref             IDREFS          #IMPLIED
    inschlvl          (0-99)          "0"
    security           (uc | fouo | c | s | ts)  #IMPLIED
    skilltrk          CDATA           #IMPLIED>

```

4. Attributes for <abbrev>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).

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- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.13.3 Wiring diagrams <wiringdiag>.

The element contains wiring diagrams for all electrical and electronic systems and circuits.

1. The components of <wiringdiag>:
 - a. Electrical or electronic system and circuit title <title> (required) (see Section 36.1.1.4).
 - b. Introduction Paragraph <trim para> (optional) (see Section 36.1.1.8).
 - c. Wiring diagram <figure> (required – one or more) (see Section 31.1.1).
2. The DTD fragment for <wiringdiag> is graphically depicted:

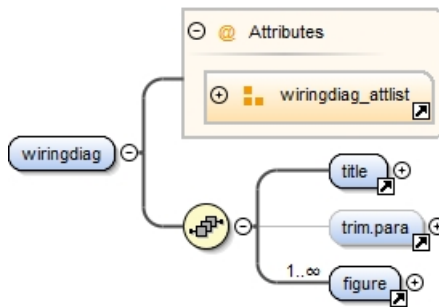


FIGURE 393. Wiring diagram DTD hierarchy <wiringdiag>.

3. The DTD fragment for <wiringdiag> is:

```
<!ELEMENT wiringdiag (title, trim para?, figure+)>
```

```
<!ATTLIST wiringdiag
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"

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security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<wiringdiag>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.13.4 XML document instance fragment and output for **<wiringwp>**.

The XML instance and its stylesheet output for a **<wiringwp>** is provided below:

1. Example of an XML document instance fragment for **<wiringwp>**:

```

<wiringwp chngno="" wpno="M00342">
  <wpidinfo>
    <maintlvl level="maintainer"/>
    <title>Cable Wiring
  </title>
</wpidinfo>
<initial_setup>
  <testeqp>
    <testeqp-setup-item>
      <name>7-pin Connector
    </name>
    </testeqp-setup-item>
  </testeqp>
  <ref>
    <ref-setup-item>
      <extref docno="ASME-Y14.38"/>
    </ref-setup-item>
  </ref>
</initial_setup>
<intro>
  <para0>
    <title>INTRODUCTION
  </title>
  <subpara1>
    <title>Scope
  </title>

```

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This work package describes the wiring provisions contained in the equipment, including all systems or equipment which can be installed or removed later (mission-related systems/equipment). Wiring diagrams and essential wiring information are provided for all electrical and electronic systems and circuits. All critical wire and cable data has been included.

Abbreviations

All abbreviations are in accordance

ASME-Y14.38, except when the abbreviation stands for a marking actually found in the aircraft.

Component Descriptions with Related Schematic Locations

The following Table will describe the location of each related component.

Component Descriptions with Related Schematic Locations

COMMON NAME

SHEET NO. / GRID REF

OFFICIAL NAME ON WIRING DIAGRAM

GND

1

Ground

Trailer Brakes

3

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```

</entry>
<entry>Trailer Brakes
</entry>
</row>
<row>
<entry>Tail Lights
</entry>
<entry>3
</entry>
<entry>Tail / Running Lights
</entry>
</row>
<row>
<entry>12V+
</entry>
<entry>4
</entry>
<entry>Aux 12+ Charging
</entry>
</row>
<row>
<entry>Left Turn Signal
</entry>
<entry>5
</entry>
<entry>L Turn / Stop Lights
</entry>
</row>
<row>
<entry>Right Turn Signal
</entry>
<entry>6
</entry>
<entry>
</entry>
</row>
<row>
<entry>Reverse
</entry>
<entry>7
</entry>
<entry>Backup Lights
</entry>
</row>
</tbody>
</tgroup>
</table>
</para>
</subpara1>
</para0>
</component_desc>
<wireid>
<title>Wiring Identification Process
</title>

```


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<para>All wires have been identified by number. A tabular list of circuit designators and wire identification diagrams are included.

</para>

</wireid>

<wiringdiag>

<title/>

<figure>

<title>Connector 7 Pin Wiring Diagram

</title>

<graphic boardno="FIG7-Plug-Wiring-Diagram-2" hscale="50"/>

</figure>

</wiringdiag>

</wiringwp>

2. Page-based TM stylesheet output example for **<wiringwp>**:

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0001

MAINTAINER MAINTENANCE

CABLE WIRING

INITIAL SETUP:

Test Equipment
7-pin Connector

References
ASME-Y14.38

INTRODUCTION

Scope

This work package describes the wiring provisions contained in the equipment, including all systems or equipment which can be installed or removed later (e.g., mission-related systems/equipment). Wiring diagrams and essential wiring information are provided for all electrical and electronic systems and circuits. All critical wire and cable data has been included.

Abbreviations

All abbreviations are in accordance ASME-Y14.38, except when the abbreviation stands for a marking actually found in the aircraft.

COMPONENT DESCRIPTIONS WITH RELATED SCHEMATIC LOCATIONS

The following Table will describe the location of each related component.

Table 1. Component Descriptions with Related Schematic Locations.

COMMON NAME	SHEET NO. / GRID REF	OFFICIAL NAME ON WIRING DIAGRAM
GND	1	Ground
Trailer Brakes	3	Trailer Brakes
Tail Lights	3	Tail / Running Lights
12V+	4	Aux 12+ Charging
Left Turn Signal	5	L Turn / Stop Lights
Right Turn Signal	6	R Turn / Stop Lights
Reverse	7	Backup Lights

All wires have been identified by number. A tabular list of circuit designators and wire identification diagrams are included.

WIRING DIAGRAMS

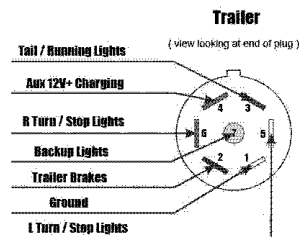


Figure 1. Connector 7 Pin Wiring Diagram.

END OF WORK PACKAGE

0001-1/blank

FIGURE 394. Example of a page-based TM stylesheet output for <wiringwp>.

23.14 Aviation unique work packages.

The following paragraphs detail aviation unique work packages.

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23.14.1 Preventive Maintenance Inspections (PMI) work package <pmiwp>.

The element includes the identification for special inspections and standards of serviceability applicable to the aircraft. The inspections described in the work package are performed at specified periods.

1. The components of <pmiwp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. Procedure <proc> one or more (see Section 17.2).
 - e. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
 - i. Warning <warning> (optional – zero or more) (see Section 28.1.1).
 - ii. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
 - iii. Caution <caution> (optional – zero or more) (see Section 28.1.2).
 - iv. Note <note> (optional – zero or more) (see Section 28.1.3).
 - f. General information <geninfo> (required) (see Section 36.1.4.11). Standard statements for general information are described in Section 23.14.1.2.
 - g. Preventive maintenance inspection peculiar inspection table <pmi.pecul.tab> (see Section 23.14.1.1) preceded with an illustration <figure> (see Section 31.1.1) showing the aircraft or accessory inspection sequence by area.
2. The DTD fragment for <pmiwp> is graphically depicted:

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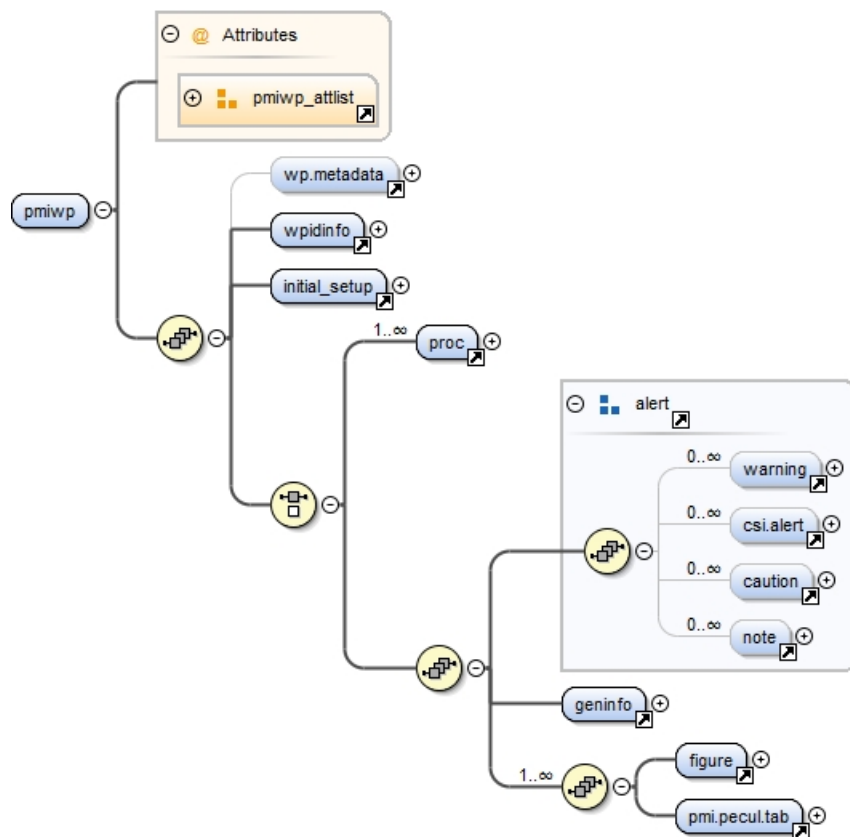


FIGURE 395. Preventive Maintenance Inspections (PMI) work package DTD hierarchy <pmiwp>.

3. The DTD fragment for <pmiwp> is:

```
<!ELEMENT pmiwp (wp.metadata?, wpidinfo, initial_setup, ((proc)+ | (%
alert; , geninfo, (figure, pmi.pecul.tab)+)))>
```

```
<!ATTLIST pmiwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED

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frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <pmiwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).

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- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.14.1.1 PMI inspection standard information <pmi.pecul.tab>.

The PMI standard information contains components and other items which qualify under the criteria for special inspections, , hard landings, sudden stoppage and over speed. The inspection data required is aircraft serial or tail number, inspection date, area number, inspection number, inspection interval, component name being inspected, and inspection procedure.

1. The components of <pmi.pecul.tab>:
 - a. Standard information title <title> (required) (see Section 36.1.1.4).
 - b. PMI row <pmi.pecul-row> (required – one or more) and has the following components:
 - i. Aircraft serial or tail number <serialno> (required) (see Section 34.2.1.3).
 - ii. Inspection date <date> (required).
 - iii. PMI inspection entry <pmi.pecul-entry> (required – one or more) and the components are:
 - I. Area number <areano> (required) (see Section 23.14.1.1.1).
 - II. Inspection item number <itemno> (required) (see Section 36.1.4.7).
 - III. Inspection interval <interval> (required) (see Section 23.6.1.1).
 - IV. Component name being inspected <compname> (required) (see Section 23.14.1.1.2).
 - V. One of the following is required:
 - A. Inspection procedure <proc> (required) (see Section 17.2).
 - B. Inspection steps <step1>/<step1-alt> (required – one or more) (see Section 17.3).
2. The DTD fragment for <pmi.pecul.tab> is graphically depicted:

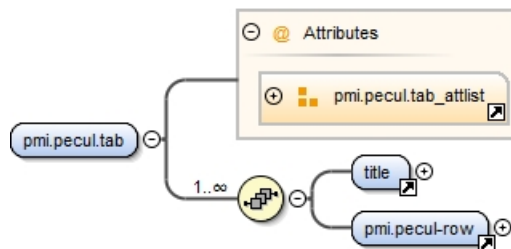


FIGURE 396. PMI inspection standard information DTD hierarchy <pmi.pecul.tab>.

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3. The DTD fragment for **<pmi.pecul.tab>** is:

```

<!ELEMENT pmi.pecul.tab (title, pmi.pecul-row)+>
<!ATTLIST pmi.pecul.tab
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)         "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)         "0"
  security            (uc | fouo | c | s | ts) #IMPLIED
  skilltrk            CDATA           #IMPLIED
  tocentry            (0 | 1 | 2 | 3 | 4 | 5) "1">

<!ELEMENT pmi.pecul-row (serialno, date, pmi.pecul-entry)+>
<!ATTLIST pmi.pecul-row
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)         "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)         "0"
  security            (uc | fouo | c | s | ts) #IMPLIED
  skilltrk            CDATA           #IMPLIED>

<!ELEMENT pmi.pecul-entry (areano, itemno, interval, compname, (proc | (%
step;)+))>
<!ATTLIST pmi.pecul-entry
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)         "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED

```

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inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<pmi.pecul.tab>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **1**) (see Section 16.3.6).

23.14.1.1.1 Area number **<areano>**.

The element **<areano>** is used to enter the aviation area number. In page-base, the element is equivalent to an **entry** element in a table and is inserted in the first column of the PMI inspection standard information table.

1. The components of **<areano>** are Parsable characters or type text. – #PCDATA
2. The DTD fragment for **<areano>** is:

```
<!ELEMENT areano (#PCDATA)>
```
3. There are no attributes for **<areano>**.

23.14.1.1.2 Component name **<compname>**.

The element **<compname>** is used to enter the name of component being inspected. In page-base, the element is equivalent to an **entry** element in the **<pmi.pecul.tab>**.

1. The components of **<compname>**:
 - a. Parsable characters or type text. – #PCDATA
 - b. Format text – **<emphasis>** (see Section 36.1.3.1).
 - c. Subscript – **<subscript>** (see Section 36.1.3.4).
 - d. Superscript – **<supscript>** (see Section 36.1.3.5).
 - e. Cross reference – **<xref>** (see Section 33.2.2).
 - f. External reference – **<extref>** (see Section 33.2.1).
 - g. External Linking – **<link>** (see Section 33.2.3).

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- h.** IETM help information – **<help.info>** (see Section 35.3.3.7).
 - i.** Index reference – **<indxref>** (see Section 15.5.2.2.3).
 - j.** Term – **<term>** (see Section 36.1.2.4.2).
 - k.** Term definition – **<term.def>** (see Section 36.1.2.4.1).
 - l.** Figure callout reference – **<callout>** (see Section 33.2.4.1).
 - m.** Footnote – **<ftnote>** (see Section 32.1.1).
 - n.** Footnote reference – **<ftnref>** (see Section 32.1.1.2).
 - o.** Graphic – **<graphic>** (see Section 31.2).
 - p.** Miscellaneous – **<misc>** (see 36.2.1).
 - q.** Changed text marker – **<change>** (see Section 36.1.3.7).
- 2.** The DTD fragment for **<compname>** is graphically depicted:

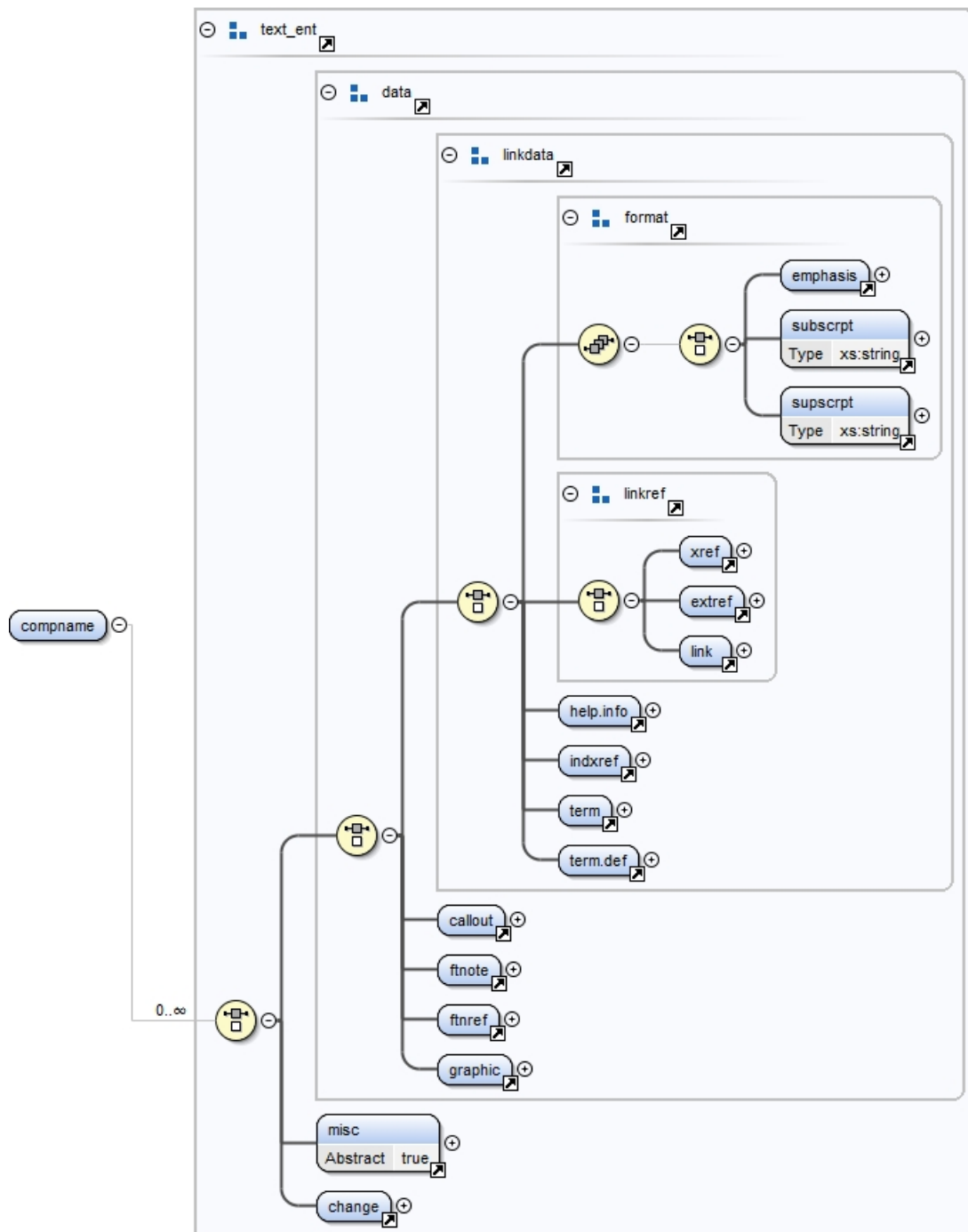


FIGURE 397. Component name DTD hierarchy <compname>.

3. The DTD fragment for <compname> is:
 <!ELEMENT compname (%text_ent;)*>
4. There are no attributes for <compname>.

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23.14.1.2 PMI work package general information standard statement general entity.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time, errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XV.

TABLE XV. Boilerplate entities for <pmiwp>.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
General information and introduction	<i>&pmiwp.geninfo;</i>	Not applicable
Avionic equipment TM number		<!ENTITY pmiwp.geninfo.aircraft "<extref doc-no='REPLACE WITH APPLICABLE AIRCRAFT INSPECTION CHECKLIST TM' />">
Standards of serviceability statement	<i>&manuwp.intro.maint-level;</i>	<!ENTITY manuwp.intro.maint-level "REPLACE WITH MAINTENANCE LEVEL">
Special inspection including definition and general information	<i>&pmiwp.def-geninfo;</i>	Not applicable

23.14.1.3 XML document instance fragment and output for <pmiwp>.

The XML instance and its stylesheet output for a <pmiwp> is provided below:

1. Example of an XML document instance fragment for <pmiwp>:

```
<pmiwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2"
wpno="m00524-55-1520-241" wpseq="0035" chngno="">
  <wpidinfo>
    <maintlvl level="amc"/>
    <title>Inspection Requirements
  </title>
</wpidinfo>
<initial_setup>
  <title>N/A
</title>
<null insert="none"/>
</initial_setup>
<geninfo frame="no">&pmiwp.geninfo;
<para>Special inspection frequencies that are based on flight hours may be
accomplished within a plus or minus ten percent tolerance from the nominal time
when such inspections would ordinarily be due.
</para>
```

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<para>Special inspections based on calendar times will have a tolerance of plus or minus ten percent not to exceed thirty days.

</para>

<para0>

<title>Standards of serviceability

</title>&pmiwp.stdserv;

</para0>

<para0>

<title>Special Inspection

</title>&pmiwp.def-geninfo;

</para0>

</geninfo>

<figure application="both" figtype="normal-page" pane="no" tocentry="1">

<title>Inspection Area Diagram

</title>

<graphic boardno="helicopter1" unitmeasure="in">

</graphic>

<legend>

<title>Area No.

</title>

<legend.item>

<term>1 Nose Area

</term>

<def>

<para>All surfaces and components in nose compartment and on exterior ahead of crew doors.

</para>

</def>

</legend.item>

<legend.item>

<term>2 Cabin and Landing Gear Area

</term>

<def>

<para>All surfaces, components, and equipment inside cabin, and on cabin exterior between forward side of crew doors and aft side of passenger door and cabin overhead. Includes complete landing gear, fuel cell sumps and filler.

</para>

</def>

</legend.item>

<legend.item>

<term>3 Transmission and Pylon Area

</term>

<def>

<para>All surfaces, components, and equipment of the main rotor pylon group, from top of mast to cabin roof. Includes main rotor, mast and rotating controls, transmission with accessorail and mounts, and main drive shaft.

</para>

</def>

</legend.item>

<legend.item>

<term>4 Engine Area

</term>

<def>

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<para>All surfaces, components, and equipment associated with engine installation, located above engine work deck and within engine cowling and tailpipe fairing.

</para>

</def>

</legend.item>

<legend.item>

<term>5 Avionics and Aft Fuselage Area

</term>

<def>

<para>All surfaces, components, and equipment in fuselage below engine deck level, between cabin area and tail boom attachment bulkhead.

</para>

</def>

</legend.item>

<legend.item>

<term>6 Tailbooms

</term>

<def>

<para>All surfaces, components, and equipment located in the tailboom and vertical fin structure. Includes tail rotor, elevator, and control linkages. Also all supports, bearing, and shafting mounted on tailboom.

</para>

</def>

</legend.item>

</legend>

</figure>

<pmi.pecul.tab tocentry="1">

<title>

</title>

<pmi.pecul-row>

<serialno>

</serialno>

<date>

</date>

<pmi.pecul-entry>

<areano>All

</areano>

<itemno>1

</itemno>

<interval>AFTER A HARD LANDING

</interval>

<compname>

</compname>

<proc frame="yes" tocentry="0">

<geninfo frame="no">

<para>Definition: Hard landing is defined as any accident or incident in which ground impact of the helicopter causes severe pitching of main rotor, allowing hard contact of hub with mast, or results in noticeable yielding or cracking of fuselage pylon support structure or landing gear. This definition is confined only to those accidents not involving sudden stoppage of main rotor or tail rotor.

</para>

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<para>Inspections: When a probable hard landing incident has occurred, proceed as follows:

</para>

</geninfo>

<step1 qa="no">

<para>Check all cowling and doors for proper fit and alignment. Misaligned cowling may indicate a distorted fuselage resulting in major stresses and damage. Remove centermost cover assembly and inspect cap angles for buckling and bending.

</para>

</step1>

<step1 qa="no">

<para>Remove all cowling as necessary to perform a complete visual inspection.

</para>

</step1>

<step1 qa="no">

<para>Inspect landing gear skid tubes and crosstubes for damage and deflection. Inspect crosstube attachment points for damage or distortion.

</para>

</step1>

<step1 qa="no">

<para>Inspect structure with a **10–** power magnifying glass around the transmission mounting points. Particular attention should be given to the isolation mount and pylon support mounts. Inspect the transmission support where the spike on the drag pin assembly fits into the stop. This area is directly under the transmission on the top of the cabin.

</para>

</step1>

<step1 qa="no">

<para>Inspect upper longerons and adjacent skin near the aft engine firewall (station 167) for loose rivets, cracks, or distortion.

</para>

</step1>

<step1 qa="no">

<para>Inspect tail skid tube and mounting for damage. Inspect tailboom internally and externally for cracks, distortion, and loose rivets. Inspect the tailboom attachment points for elongated bolt holes and damaged structure. Inspect external skin of tailboom for cracks in area of attachment of the horizontal stabilizer.

</para>

</step1>

<step1 qa="no">

<para>Completely inspect the flight control system from pilot controls to rotor head for bent or damaged tubes, bellcranks, and supports, and for damaged bearings. Particular attention should be given to the pitch links and collective sleeve assembly.

</para>

</step1>

<step1 qa="no">

<para>Check for leaks in the hydraulic system and interference or binding, and for satisfactory operation.

</para>

</step1>

<step1 qa="no">

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<para>Inspect the transmission and mast assembly for the following:

</para>

<step2 qa="no">

<para>Mast for indentation caused by hard contact with static stops.

</para>

</step2>

<step2 qa="no">

<para>Mast outside diameter (O.D.) for out-of-round condition as follows:

</para>

<step3 qa="no">

<specpara>

<note acknowledge="no">

<trim.para>Cadium plating on the outside diameter of mast is 0.0003 to 0.0004 inch.

</trim.para>

</note>

<para>Using a suitable micrometer, measure the mast O.D., at a minimum of six places for out-of-round condition; two opposing measurements under the collar set and above the swashplate, two opposing measurements midway between the collar set and the static stop contact area, two opposing measurements approximately 2.000 inches below the static stop contact area on the mast.

</para>

</specpara>

</step3>

<step3 qa="no">

<para>If any set of opposing measurements vary in excess of 0.002 inch, the mast is suspected of bending and a runout check must be performed.

</para>

</step3>

</step2>

<step2 qa="no">

<para>Structure supporting the transmission **—** mount points for cracks or deformation.

</para>

</step2>

<step2 qa="no">

<para>Transmission - drag pin - transmission mount support on cabin roof for deformation and/or loss of attachment bolt torque. Supporting structure for damage and loose or sheared rivets.

</para>

</step2>

</step1>

</proc>

</pmi.pecul-entry>

<pmi.pecul-entry>

<areano>1, 2, 3

</areano>

<itemno>2

</itemno>

<interval>AFTER WIRE STRIKE

</interval>

<compname>

</compname>

</proc>

<step1 qa="no">

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```

<para>Lower WSPS assembly.
</para>
<step2 qa="no">
<para>Inspect for obvious damage to WSPS.
</para>
</step2>
<step2 qa="no">
<para>Inspect attachment area for damage.
</para>
</step2>
</step1>
<step1 qa="no">
<para>Windshield deflector and upper WSPS assembly.
</para>
<step2 qa="no">
<para>Inspect for obvious damage to WSPS.
</para>
</step2>
<step2 qa="no">
<para>Inspect attachment area for damage.
</para>
</step2>
</step1>
</proc>
</pmi.pecul-entry>
<pmi.pecul-entry>
<areano>1
</areano>
<itemno>3
</itemno>
<interval>AFTER LOWER WSPS GROUND CONTACT
</interval>
<compname>
</compname>
<proc>
<step1 qa="no">
<para>Inspect for obvious damage.
</para>
</step1>
<step1 qa="no">
<para>Inspect attachment area for damage.
</para>
</step1>
<step1 qa="no">
<para>Remove panel and inspect structure and directional control tubes and
bellcranks for damage.
</para>
</step1>
</proc>
</pmi.pecul-entry>
</pmi.pecul-row>
</pmi.pecul.tab>
</pmiwp>

```


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2. Page-based TM stylesheet output example for <pmiwp>:

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AVIATION MAINTENANCE COMPANY MAINTENANCE

INSPECTION REQUIREMENTS

INITIAL SETUP:

N/A

NOT APPLICABLE

GENERAL INFORMATION

This work package contains complete requirements for special inspections, overhaul and retirement schedule, and standards of serviceability applicable to the aircraft. The inspections prescribed in this section shall be accomplished at specified periods by AVUM activities, with the assistance of AVIM activities when required. Complete Daily, Intermediate, Periodic, or Phased inspections are contained in the REPLACE WITH APPLICABLE AIRCRAFT INSPECTION CHECKLIST TM.

Special inspection frequencies that are based on flight hours may be accomplished within a plus or minus ten percent tolerance from the nominal time when such inspections would ordinarily be due.

Special inspections based on calendar times will have a tolerance of plus or minus ten percent not to exceed thirty days.

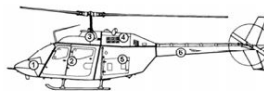
STANDARDS OF SERVICEABILITY

Standards of serviceability to be utilized in the day-to-day inspection and maintenance of the aircraft can be found as fits, tolerances, wear limits, and specifications in the aircraft maintenance manuals. Standards of serviceability for transfer to aircraft are contained in TM 1-1500-328-23.

SPECIAL INSPECTION

This information supplements scheduled inspections as outlined in the applicable aircraft inspection checklists. Inspection of items which are required to be inspected at intervals not compatible with airframe operating time or airframe inspection intervals is also included. Refer to DA PAM 738-751 (Functional Users Manual for the Army Maintenance Management System-Aviation (TAMMS-A)) for applicable forms, records, and worksheets required for these inspection intervals. Typical examples of this type of inspection are as follows:

1. Inspections which are solely contingent upon specific conditions or incidents that occur (e.g., hard landings, over speed, or sudden stoppage), wherein immediate inspection is required to ensure safe flight.
2. Inspection of components or airframe on a calendar basis: e.g., first aid kits, weight and balance check, aircraft inventory.



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FIGURE 398. Example of a page-based TM stylesheet output for <pmiwp> (Page 1 of 4).

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<u>Area No.</u>	
1 Nose Area	4 Engine Area
All surfaces and components in nose compartment and on exterior ahead of crew doors.	All surfaces, components, and equipment associated with engine installation, located above engine work deck and within engine cowlings and tailpipe fairing.
2 Cabin and Landing Gear Area	5 Avionics and Aft Fuselage Area
All surfaces, components, and equipment inside cabin, and on cabin exterior between forward side of crew doors and aft side of passenger door and cabin overhead. Includes complete landing gear, fuel cell sumps and filler.	All surfaces, components, and equipment in fuselage below engine deck level, between cabin area and tail boom attachment bulkhead.
3 Transmission and Pylon Area	6 Tailbooms
All surfaces, components, and equipment of the main rotor pylon group, from top of mast to cabin roof. Includes main rotor, mast and rotating controls, transmission with accessory and mounts, and main drive shaft.	All surfaces, components, and equipment located in the tailboom and vertical fin structure. Includes tail rotor, elevator, and control linkages. Also all supports, bearing, and shafting mounted on tailboom.

Figure 1. Inspection Area Diagram .

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FIGURE 399. Example of a page-based TM stylesheet output for <pmiwp> (Page 2 of 4).

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Table 1. Aircraft Inspection Checklist

AREA NO.	INSP NO.	INTERVAL	COMPONENT	PROCEDURE
SERIAL NUMBER:		INSPECTION DATE:		
All	1	AFTER A HARD LANDING		<p>Definition: Hard landing is defined as any accident or incident in which ground impact of the helicopter causes severe pitching of main rotor, allowing hard contact of hub with mast, or results in noticeable yielding or cracking of fuselage pylon support structure or landing gear. This definition is confined only to those accidents not involving sudden stoppage of main rotor or tail rotor.</p> <p>Inspections: When a probable hard landing incident has occurred, proceed as follows:</p> <ol style="list-style-type: none"> 1. Check all cowling and doors for proper fit and alignment. Misaligned cowling may indicate a distorted fuselage resulting in major stresses and damage. Remove centermost cover assembly and inspect cap angles for buckling and bending. 2. Remove all cowling as necessary to perform a complete visual inspection. 3. Inspect landing gear skid tubes and crosstubes for damage and deflection. Inspect crosstube attachment points for damage or distortion. 4. Inspect structure with a 10-power magnifying glass around the transmission mounting points. Particular attention should be given to the isolation mount and pylon support mounts. Inspect the transmission support where the spike on the drag pin assembly fits into the stop. This area is directly under the transmission on the top of the cabin. 5. Inspect upper longerons and adjacent skin near the aft engine firewall (station 167) for loose rivets, cracks, or distortion. 6. Inspect tail skid tube and mounting for damage. Inspect tailboom internally and externally for cracks, distortion, and loose rivets. Inspect the tailboom attachment points for elongated bolt holes and damaged structure. Inspect external skin of tailboom for cracks in area of attachment of the horizontal stabilizer. 7. Completely inspect the flight control system from pilot controls to rotor head for bent or damaged tubes, bellcranks, and supports, and for damaged bearings. Particular attention should be given to the pitch links and collective sleeve assembly. 8. Check for leaks in the hydraulic system and interference or binding, and for satisfactory operation. 9. Inspect the transmission and mast assembly for the following: <ol style="list-style-type: none"> a. Mast for indentation caused by hard contact with static stops. b. Mast outside diameter (O.D.) for out-of-round condition as follows:

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FIGURE 400. Example of a page-based TM stylesheet output for <pmiwp> (Page 3 of 4).

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AREA NO.	INSP NO.	INTERVAL	COMPONENT	PROCEDURE
				<p>NOTE</p> <p>Cadium plating on the outside diameter of mast is 0.0003 to 0.0004 inch.</p> <p>(1) Using a suitable micrometer, measure the mast O.D., at a minimum of six places for out-of-round condition; two opposing measurements under the collar set and above the swashplate, two opposing measurements midway between the collar set and the static stop contact area, two opposing measurements approximately 2.000 inches below the static stop contact area on the mast.</p> <p>(2) If any set of opposing measurements vary in excess of 0.002 inch, the mast is suspected of bending and a runout check must be performed.</p> <p>c. Structure supporting the transmission — mount points for cracks or deformation.</p> <p>d. Transmission - drag pin - transmission mount support on cabin roof for deformation and/or loss of attachment bolt torque. Supporting structure for damage and loose or sheared rivets.</p>
1, 2, 3	2	AFTER WIRE STRIKE		<p>1. Lower WSPS assembly.</p> <p>a. Inspect for obvious damage to WSPS.</p> <p>b. Inspect attachment area for damage.</p> <p>2. Windshield deflector and upper WSPS assembly.</p> <p>a. Inspect for obvious damage to WSPS.</p> <p>b. Inspect attachment area for damage.</p>
1	3	AFTER LOWER WSPS GROUND CONTACT		<p>1. Inspect for obvious damage.</p> <p>2. Inspect attachment area for damage.</p> <p>3. Remove panel and inspect structure and directional control tubes and bellcranks for damage.</p>

END OF WORK PACKAGE

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FIGURE 401. Example of a page-based TM stylesheet output for <pmiwp> (Page 4 of 4).

23.14.2 Overhaul and retirement schedule work package <orschwp>.

The overhaul and retirement schedule work package provides a tabular listing of specific aircraft parts that should be overhauled or retired after a specified period of operational hours.

- 1. The components of <orschwp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. A required overhaul and retirement schedule table <orsch> (see Section 23.14.2.1).

23.14.2.1 Overhaul and retirement schedule <orsch>.

The <orsch> element provides a tabular listing of critical items with the estimated hours for overhaul and retirement.

- 1. The components of <orsch>:
 - a. Task title <title> (required) (see Section 36.1.1.4).
 - b. Introduction <intro> (required) (see Section 36.1.4.14) and (Section 23.7.2).
 - c. Overhaul and retirement standard information <orsch.tab> (required) (see Section 23.14.2.1.1).
- 2. The DTD fragment for <orsch> is graphically depicted:

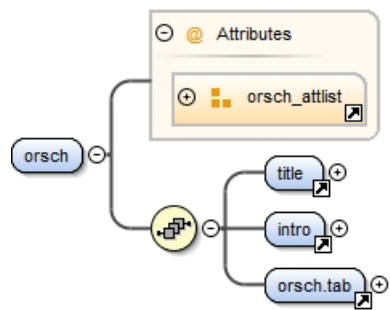


FIGURE 402. Overhaul and retirement schedule task DTD hierarchy <orsch>.

- 3. The DTD fragment for <orsch> is:

```
<!ELEMENT orsch (title, intro, orsch.tab)>
<!ATTLIST orsch
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  date-time-stamp     (date | time | date-time) #IMPLIED
  delchlvl            (0-99)          "0"
  esd                 (yes | no)      "no"
```

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frame	(yes no)	"yes"
hcp	(yes no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(0 1 2 3 4 5)	"0">

4. Attributes for **<orsch>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- h. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- i. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- j. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- k. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- l. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- m. **security** – Security classification (optional) (see Section 36.3.14).
- n. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- o. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **1**) (see Section 16.3.6).

23.14.2.1.1 Overhaul and retirement schedule table **<orsch.tab>**.

The overhaul and retirement schedule table identifies pieces of operating equipment that are to be overhauled or retired at specified periods.

1. The components of **<orsch.tab>**:

- a. Standard information title **<title>** (required) (see Section 36.1.1.4).
- b. Overhaul and retirement schedule entry **<orsch.entry>** (required – one or more) and the components are:
 - i. Part nomenclature **<name>** (required) (see Section 36.1.4.18).

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- ii. Part overhaul and retirement schedule interval entry **<orsch.interval.entry>** (see Section 23.14.2.1.2).

2. The DTD fragment for **<orsch.tab>** is graphically depicted:

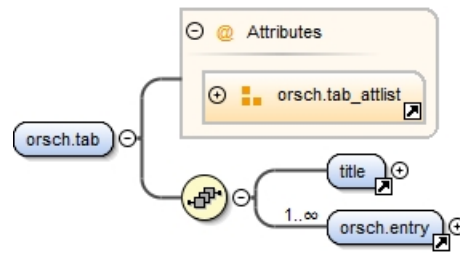


FIGURE 403. Overhaul and retirement schedule standard information DTD hierarchy <orsch.tab>.

3. The DTD fragment for **<orsch.tab>** and **<orsch.entry>** are:

```
<!ELEMENT orsch.tab (title, orsch.entry+)>
```

```
<!ATTLIST orsch.tab
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(0 1 2 3 4 5)	"1">

```
<!ELEMENT orsch.entry (name, orsch.interval.entry+)>
```

```
<!ATTLIST orsch.entry
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

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4. Attributes for **<orsch.tab>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **1**) (see Section 16.3.6).

5. The attributes for **<orsch.entry>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.14.2.1.2 Overhaul and retirement schedule interval entry **<orsch.interval.entry>**.

The element identifies the detailed overhaul and/or retirement hours and requirements for a specified part number.

1. The components of **<orsch.interval.entry>**:

- a. Part number **<partno>** (required) (see Section 36.1.4.22).
- b. Commercial and government entity code (CAGEC) **<cageno>** (required) (see Section 36.1.4.1.8).
- c. Overhaul interval **<overhaul.interval>** (optional) consisting of the following components:
 - i. Overhaul interval notes **<interval.notes>** (optional) contains any additional information required on the part's overhaul interval.
 - ii. Overhaul interval hours **<interval.hours>** (required) contains the maximum operating time allowed on the part before being overhauled.
- d. Retirement interval **<retirement.interval>** (optional) consisting of the following components:

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- i. Retirement interval hours **<interval.hours>** (required) contains the maximum operating time allowed on the part before being retired.
 - ii. Retirement interval notes **<interval.notes>** (optional) contains any additional information required on the part's retired interval.
2. The DTD fragment for **<orsch.interval.entry>** is graphically depicted:

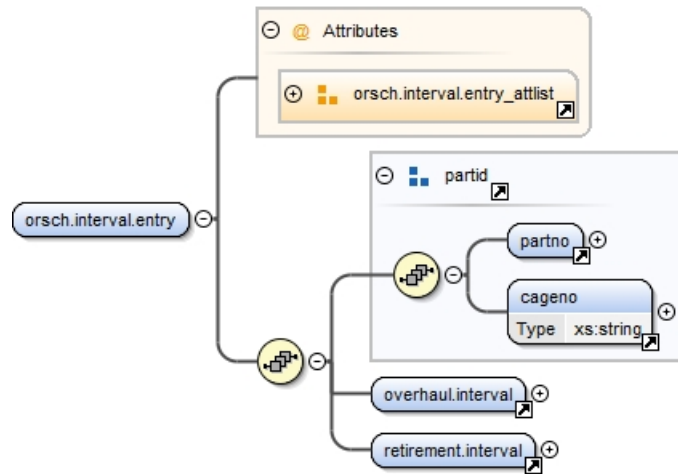


FIGURE 404. Part overhaul and retirement interval entry <orsch.interval.entry>

3. The DTD fragment for **<orsch.interval.entry>** is:

```
<!ELEMENT orsch.interval.entry (%partid;, overhaul.interval, retirement.interval)>
```

```
<!ATTLIST orsch.interval.entry
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

```
<!ELEMENT overhaul.interval (interval.hours, interval.notes?)>
```

```
<!ELEMENT retirement.interval (interval.hours, interval.notes?)>
```

4. Common attributes for **<orsch.interval.entry>** are:
- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
 - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).

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- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.14.2.2 Overhaul and retirement schedule boilerplate.

The overhaul and retirement schedule contains one boilerplate statement. This statement is available through the maintenance boilerplate file provided with the DTD.

TABLE XVI. Boilerplate entities for **<orsch>**.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Overhaul and retirement schedule statement	<i>&maintwp.orsch;</i>	Not applicable

23.14.3 Aircraft inventory master guide work package **<inventorywp>**.

The aircraft inventory master guide work package contains information on standard inventory procedures to allow determination of inventoriable items of installed and loose equipment that is authorized and required for an aircraft in performance of its mission.

1. The components of **<inventorywp>**:
 - a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
 - b. Work package identification information **<wpidinfo>** (required) (see 16.2).
 - c. Work package initial setup **<initial_setup>** (required) (see Section 16.6).
 - d. Introduction **<intro>** (required) contains a short explanation of the work package scope and purpose that includes information pertaining to necessary steps to ensure the list is accurate, exact, and complete and a reference to DA PAM 738-751 for applicable forms and records (see Section 36.1.4.14).
 - e. Security **<security>** (required) (see Section 23.14.3.1).
 - f. Inventoriable items **<inventoriable>** (required) (see Section 23.14.3.2).
 - g. Periods of inventory **<prdinvt>** (required) (see Section 23.14.3.3).
2. The DTD fragment for **<inventorywp>** is graphically depicted:

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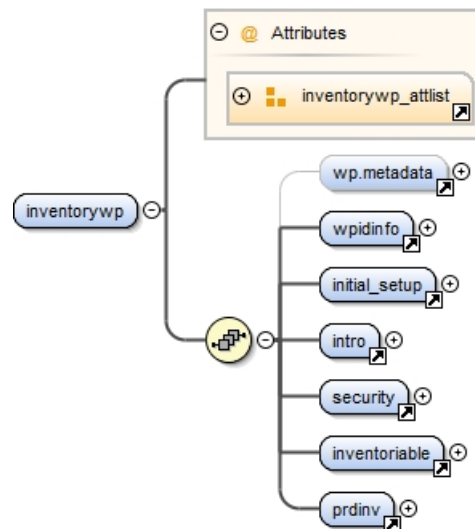


FIGURE 405. Aircraft inventory master guide work package DTD hierarchy <inventorywp> (Aircraft Only).

3. The DTD fragment for <inventorywp> is:

```
<!ELEMENT inventorywp (wp.metadata?, wpidinfo, initial_setup, intro, security, inventoriable, prdin)>
```

```
<!ATTLIST inventorywp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"

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navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <inventorywp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.14.3.1 Security <security>.

The element describes necessary procedures that aircraft inventory records should be unclassified, but, if necessary, any classification of the contents should be in accordance with the existing security regulations.

1. The components of **<security>**:
 - a. Title **<title>** (required) (see Section 36.1.1.4).
 - b. Figtab **<figtab>** (optional – zero or more) (see 36.2.2).
 - c. Select one of the following information types:
 - i. Narrative paragraphs with descriptive or narrative titled text:
 - I. Note **<note>** (optional – zero or more) (see Section 28.1.3).
 - II. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
 - III. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
 - ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).
2. The DTD fragment for **<security>** is graphically depicted:

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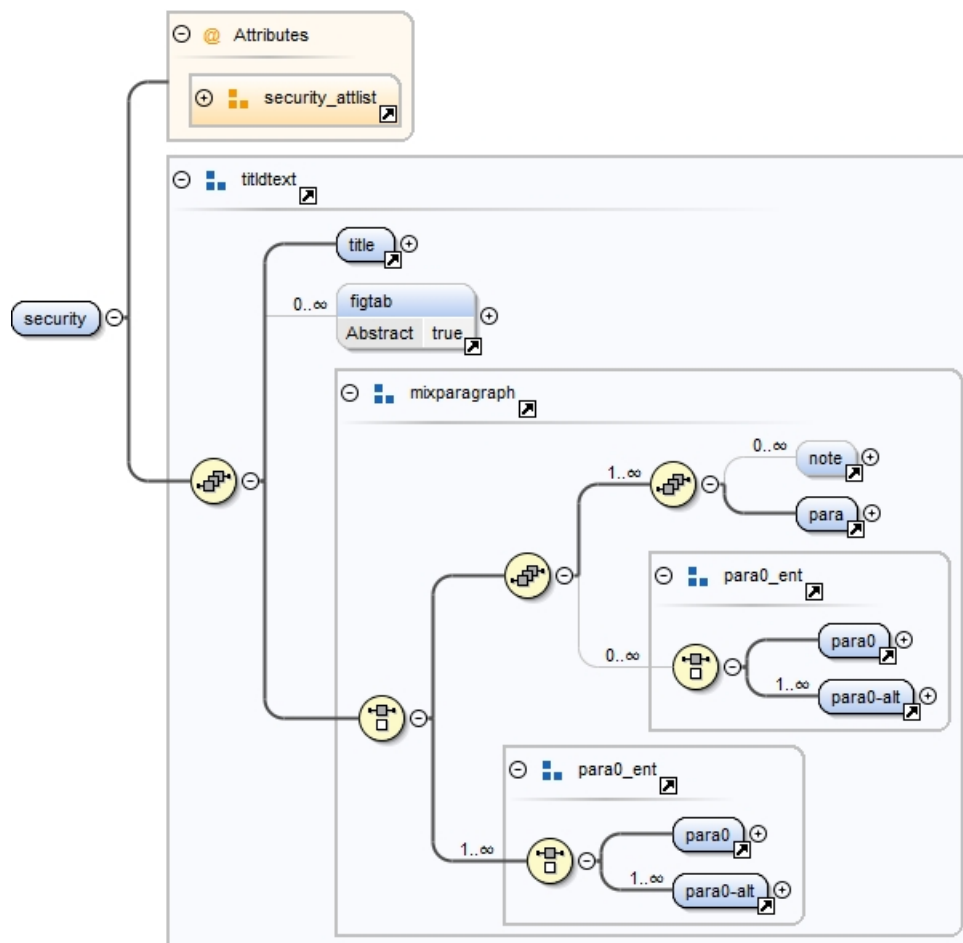


FIGURE 406. Aircraft inventory master guide security requirements DTD hierarchy <security>.

3. The DTD fragment for <security> is:

```
<!ELEMENT security (%titldtext;)>
<!ATTLIST security
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref          IDREFS          #IMPLIED
  comment            CDATA           #IMPLIED
  delchlvl           (0-99)          "0"
  id                 ID              #IMPLIED
  idref              IDREFS          #IMPLIED
  inschlvl           (0-99)          "0"
  security            (uc | fouo | c | s | ts) #IMPLIED
  skilltrk           CDATA           #IMPLIED>
```

4. Common attributes for <security>:

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- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.14.3.2 Inventoriable items <inventoriable>.

The element lists the inventoriable items selection without regard to the agency (governmental or contractual) furnishing the items. Inventoriable items information is also used as source data for DA Form 2408-17. The inventoriable items are generally presented as a table and if applicable an illustration showing a zone or items to be inventoried. The components for <inventoriable> are the same as <security> (see Section 23.14.3.1).

23.14.3.3 Periods of inventory <prdin>.

The element contains periods of inventory which are normally performed upon receipt, prior to transfer, upon placing in storage and removal from storage, or every twelve months. MIL-STD-40051-1/-2 provides a state statement for this information and is provided in the boilerplate entity *&inventorywp.prdin;*. The components for <prdin> are the same as <security> (see Section 23.14.3.1).

23.14.3.4 Aircraft inventory master guide work package standard statement entity boilerplate.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XVII.

TABLE XVII. Periods of inventory boilerplate entities.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Periods of inventory statement	<i>&inventorywp.prdin;</i>	Not applicable

23.14.3.5 XML document instance fragment and output for <inventorywp>.

The XML instance and its stylesheet output for a <inventorywp> is provided below:

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1. The XML instance and its stylesheet output for a **<inventorywp>**:

```

<inventorywp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no"
tocentry="2" wpno="M0347-X-XXXX-XXX" wpseq="0347">
  <wpidinfo>
    <maintlvl level="asb"/>
    <title>AIRCRAFT INVENTORY MASTER GUIDE
  </title>
</wpidinfo>
<initial_setup>
  <title>N/A
</title>
<null insert="none"/>
</initial_setup>
<intro frame="no">
  <para0>
    <title>INTRODUCTION
  </title>
  <subpara1>
    <title>Scope
  </title>
    <para>This work package includes a listing of all inventoriable items of
    installed and loose equipment authorized and required by the aircraft in
    performance of its mission. Refer to DA PAM 738-751 for applicable forms and
    records to use in performing the inventory.
  </para>
  </subpara1>
</para0>
  </intro>
  <security>
    <title>SECURITY
  </title>
    <para>Aircraft inventory records should be unclassified, but any classification
    of the contents, if necessary, should be in accordance with the existing
    security regulations.
  </para>
  </security>
  <inventoriable>
    <title>INVENTORIALABLE ITEMS
  </title>
    <para>Modification kits which are reissued or distributed to using
    organizations for installation, and which are not immediately placed in use,
    should be recorded on the aircraft's
    <extref docno="DA Form-2408-17" posttext="Aircraft Inventory Record"/>, and identified as
    loose equipment until modification is complete. Refer to
    <xref tableid="M0347-X-XXXX-XXX-tab1"/> for a list of inventoriable items for the
    aircraft.
  <figure application="both" figtype="normal-page" pane="no" tocentry="1">
    <title>Aircraft Inventory Section
  </title>
  <graphic boardno="figure23" unitmeasure="in">
  </graphic>
</figure>
  <table tocentry="1" id="M0347-X-XXXX-XXX-tab1">
    <title>Inventoriable Items.

```


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```

</title>
<tgroun align="left" char=" " charoff="50" cols="4">
<colspec colname="col1" colwidth="4.00*"/>
<colspec colname="col2" colwidth="3.00*"/>
<colspec colname="col3" colwidth="3.00*"/>
<colspec colname="col4" colwidth="1.00*"/>
<thead valign="bottom">
<row>
<entry>NOMENCLATURE
</entry>
<entry>PART NUMBER
</entry>
<entry>NSN
</entry>
<entry>QTY RQD
</entry>
</row>
</thead>
<tbody valign="top">
<row>
<entry nameend="col4" namest="col1">SECTION A - NOSE ELECTRONICS
</entry>
</row>
<row>
<entry>TADS Turret
</entry>
<entry>130760000
</entry>
<entry>1270-01-188-4138
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>PNVS Turret and Faring
</entry>
<entry>130900000
</entry>
<entry>1090-01-169-9415
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Multiplex Terminal - Type 3
</entry>
<entry>4032298-956
</entry>
<entry>7025-01-210-7768
</entry>
<entry align="center">1
</entry>
</row>
</tbody>

```

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```

<entry>Signal Data Converter - Eng.
</entry>
<entry>7-311C20019
</entry>
<entry>6629-01-160-3518
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Radar Jammer Transmit Antenna
</entry>
<entry>SM-A-919685-2
</entry>
<entry>
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Radar Warning Antenna
</entry>
<entry>AS2891/APR-39V
</entry>
<entry>1020-00-024-7608
</entry>
<entry align="center">2
</entry>
</row>
<row>
<entry>Power Transformer
</entry>
<entry>7-219510089
</entry>
<entry>5950-01-186-8032
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry nameend="col4" namest="col1">SECTION B - RIGHT FORWARD AVIONICS BAY
</entry>
</row>
<row>
<entry>Gun Control Box
</entry>
<entry>7-317222500-603
</entry>
<entry>1005-01-211-4165
</entry>
<entry align="center">1
</entry>
</row>
</row>

```

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```

<entry>Multiplex Terminal - Type 1
</entry>
<entry>4032297-955
</entry>
<entry>7025-01-211-0130
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Turret Control Box
</entry>
<entry>7-317222004
</entry>
<entry>5930-01-239-2391
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>PNVS Electronics Box
</entry>
<entry>13080274
</entry>
<entry>4931-01-169-9369
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Display Electronics - IHADSS
</entry>
<entry>7-319430041
</entry>
<entry>1270-01-183-0518
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Sight Electronic Unit - IHADSS
</entry>
<entry>7-319430031
</entry>
<entry>1270-01-183-0519
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Fire Control Computer
</entry>
<entry>7-31900001
</entry>

```

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```

<entry>1430-01-211-0023
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Remote Electronic Unit
</entry>
<entry>7-317141001
</entry>
<entry>1270-01-187-5778
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Portable Fire Bottle
</entry>
<entry>7-211180002-501
</entry>
<entry>4210-00-555-8837
</entry>
<entry align="center">1
</entry>
</row>
<row>
<entry>Electromagnet Relay
</entry>
<entry>7-211B12033
</entry>
<entry>5945-01-160-5639
</entry>
<entry align="center">1
</entry>
</row>
</tbody>
</tgroup>
</table>
</para>
</inventoriable>&inventorywp.prdinv;
</inventorywp>

```

2. Page-based TM stylesheet output example for `<inventorywp>`:

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0001

AVIATION SUPPORT BATTALION MAINTENANCE

AIRCRAFT INVENTORY MASTER GUIDE

INITIAL SETUP:**N/A**

NOT APPLICABLE

INTRODUCTION**Scope**

This work package includes a listing of all inventoriable items of installed and loose equipment authorized and required by the aircraft in performance of its mission. Refer to DA PAM 738-751 for applicable forms and records to use in performing the inventory.

SECURITY

Aircraft inventory records should be unclassified, but any classification of the contents, if necessary, should be in accordance with the existing security regulations.

INVENTORIABLE ITEMS

Modification kits which are reissued or distributed to using organizations for installation, and which are not immediately placed in use, shall be recorded on the aircraft's DA Form-2408-17 Aircraft Inventory Record, and identified as loose equipment until modification is complete. Refer to Table for a list of inventoriable items for the aircraft.

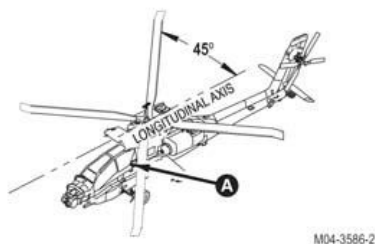


Figure 1. Aircraft Inventory Section .

Table 1. Inventoriable Items . .

NOMENCLATURE	PART NUMBER	NSN	QTY RQD
SECTION A - NOSE ELECTRONICS			
TADS Turret	130760000	1270-01-188-4138	1
PNVS Turret and Faring	130900000	1090-01-169-9415	1
Multiplex Terminal - Type 3	4032298-956	7025-01-210-7768	1
Signal Data Converter - Eng	7-311C20019	6629-01-160-3518	1
Radar Jammer Transmit Antenna	SM-A-919685-2		1
Radar Warning Antenna	AS2891/APR-39V	1020-00-024-7608	2
Power Transformer	7-219510089	5950-01-186-8032	1
SECTION B - RIGHT FORWARD AVIONICS BAY			
Gun Control Box	7-317222500-603	1005-01-211-4165	1
Multiplex Terminal - Type 1	4032297-955	7025-01-211-0130	1
Turret Control Box	7-317222004	5930-01-239-2391	1
PNVS Electronics Box	13080274	4931-01-169-9369	1

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FIGURE 407. Example of a page-based TM stylesheet output for <inventorywp> (Page 1 of 2).

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0001

NOMENCLATURE	PART NUMBER	NSN	QTY RQD
Display Electronics - IHADSS	7-319430041	1270-01-183-0518	1
Sight Electronic Unit - IHADSS	7-319430031	1270-01-183-0519	1
Fire Control Computer	7-31900001	1430-01-211-0023	1
Remote Electronic Unit	7-317141001	1270-01-187-5778	1
Portable Fire Bottle	7-211180002-501	4210-00-555-8837	1
Electromagnet Relay	7-211B12033	5945-01-160-5639	1

PERIODS OF INVENTORY

Inventoriable items shall be checked against the Aircraft Inventory Record, DA Form 2408-17, at the following periods

1. Upon receipt.
2. Prior to transfer of the aircraft to another organization.
3. Upon placing aircraft in storage and upon removal from storage. Aircraft need not be inventoried while in storage.
4. Twelve months after last inventory.

END OF WORK PACKAGE

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FIGURE 408. Example of a page-based TM stylesheet output for <inventorywp> (Page 1 of 2).

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23.14.4 Storage of aircraft work package <storagewp>.

The storage of aircraft work package is prepared for each aircraft storage category. The work package includes considerations for selection of the appropriate category and steps to be taken for care of the aircraft during exceptionally wet weather. All essential information for each aircraft storage category includes all procedures for preparing the aircraft for storage and removal from storage, however, it excludes information on when or why the aircraft is stored. Each aircraft storage category makes a reference to inspection documents and inspection procedures to be conducted before, during and after storage.

1. The components of <storagewp>:

- a.** Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
- b.** Work package identification information **<wpidinfo>** (required) (see Section 16.2).
- c.** Work package initial setup **<initial_setup>** (required) (see Section 16.6).
- d.** An optional group of any warnings **<warning>**, cautions **<caution>**, or notes **<notes>** in that order.
 - i.** Warning **<warning>** (optional - zero or more) (see Section 28.1.1).
 - ii.** Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
 - iii.** Caution **<caution>** (optional - zero or more) (see Section 28.1.2).
 - iv.** Note **<note>** (optional - zero or more) (see Section 28.1.3).
- e.** General Information **<geninfo>** (required). Used if only general information is needed for this work package (see Section 36.1.4.11).
- f.** One of the following storage tasks is required:
 - i.** Flyable storage requirements **<flyable>** (required) (see Section 23.14.4.1).
 - ii.** Short term storage requirements **<short>** (required) (see Section 23.14.4.2).
 - iii.** Intermediate storage requirements **<intermediate>** (required) (see Section 23.14.4.3).

2. The DTD fragment for <storagewp> is graphically depicted:

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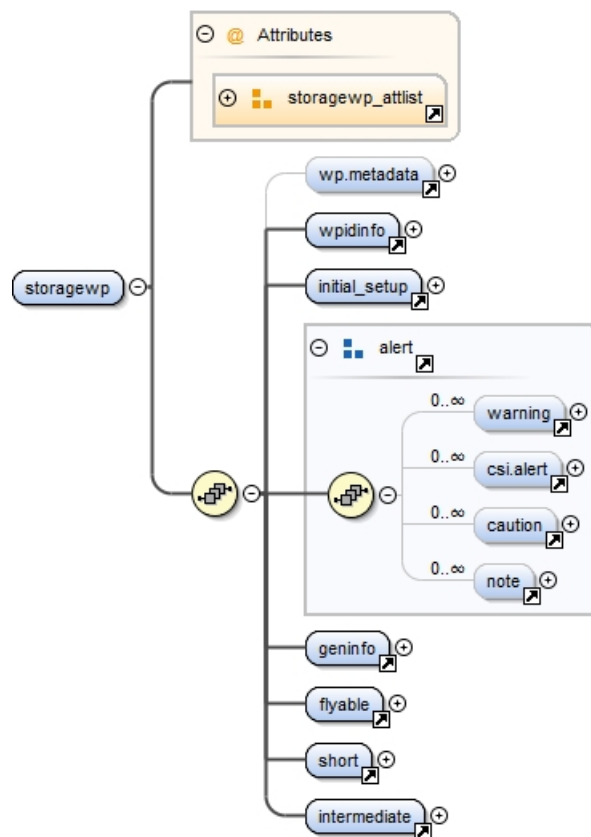


FIGURE 409. Storage of aircraft work package DTD hierarchy <storagewp>.

3. The DTD fragment for <storagewp> is:

```
<!ELEMENT storagewp (wp.metadata?, wpidinfo, initial_setup, %alert;, gen-
info, flyable, short, intermediate)>
```

```
<!ATTLIST inventorywp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date- time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED

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frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <storagewp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).

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- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.14.4.1 Flyable storage <flyable>.

The element contains the flyable storage and removal procedures for aircraft storage.

1. The components of <flyable>:
 - a. A block of general information <geninfo> (optional) (see Section 36.1.4.11).
 - b. One or more procedures <proc> (see Section 17.2).
2. The DTD fragment for <flyable> is graphically depicted:

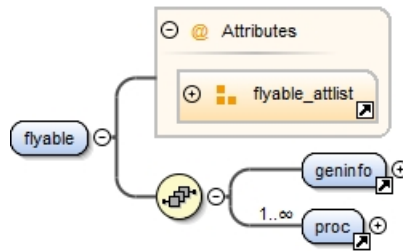


FIGURE 410. Flyable storage DTD hierarchy <flyable>.

3. The DTD fragment for <flyable> is:

```

<!ELEMENT flyable (geninfo, proc+)>
<!ATTLIST flyable
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)         "0"
  esd                 (yes | no)      "no"
  hcp                 (yes | no)      "no"
  id                  ID              #IMPLIED
  idref               IDREFS         #IMPLIED

```

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<code>inschlvl</code>	(0-99)	#IMPLIED
<code>security</code>	(uc fouo c s ts)	#IMPLIED
<code>skilltrk</code>	CDATA	#IMPLIED>

4. Common attributes for **<flyable>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- g. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- h. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- i. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- j. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- k. **security** – Security classification (optional) (see Section 36.3.14).
- l. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.14.4.2 Short term storage **<short>**.

The element contains the criteria for short length storage and removal from storage. The components for **<short>** are the same as **<flyable>** (see Section 23.14.4.1).

23.14.4.3 Intermediate term storage **<intermediate>**.

The element contains the criteria for intermediate length storage and removal from storage. The components for **<intermediate>** are the same as **<flyable>** (see Section 23.14.4.1).

23.14.4.4 Storage of aircraft work package standard statement boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XVIII.

TABLE XVIII. Boilerplate entities for **<orsch>**.

Description	Boilerplate Entity	Element used in
Storage of aircraft general information	<i>&storage.geninfo;</i>	<i><geninfo></i>

23.14.4.5 XML document instance fragment and output for <storagewp>.

The XML instance and its stylesheet output for a <storagewp> is provided below:

1. Example of an XML document instance fragment for <storagewp>:

```
<storagewp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry=
"2" wpno="M00345-X-XXX-XXXX">
  <wpidinfo>
    <maintlvl level="asb"/>
    <title>STORAGE OF AIRCRAFT
  </title>
</wpidinfo>
<initial_setup>
  <tools>
    <tools-setup-item>
      <name>Aircraft mechanic's kit
    </name>
    <itemref>
      <xref wpid="S00342-X-XXX-XXXX" itemid="S00342-X-XXX-XXXX-376"/>
    </itemref>
    </tools-setup-item>
    <tools-setup-item>
      <name>Adjustable air filtering respirator
    </name>
    <itemref>
      <xref wpid="S00342-X-XXX-XXXX" itemid="S00342-X-XXX-XXXX-262"/>
    </itemref>
    </tools-setup-item>
    <tools-setup-item>
      <name>Chemical protective gloves
    </name>
    <itemref>
      <xref wpid="S00342-X-XXX-XXXX" itemid="S00342-X-XXX-XXXX-154"/>
    </itemref>
    </tools-setup-item>
    <tools-setup-item>
      <name>Light duty laboratory apron
    </name>
    <itemref>
      <xref wpid="S00342-X-XXX-XXXX" itemid="S00342-X-XXX-XXXX-27"/>
    </itemref>
    </tools-setup-item>
  </tools>
  <mtrlpart>
    <mtrlpart-setup-item>
      <name>Barrier material
    </name>
    <itemref>
      <xref wpid="S00332-X-XXX-XXXX" itemid="S00332-X-XXX-XXXX-32"/>
    </itemref>
    </mtrlpart-setup-item>
    <mtrlpart-setup-item>
      <name>Cloth
    </name>
```

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```

<itemref>
<xref wpid="S00332-X-XXX-XXXX" itemid="S00332-X-XXX-XXXX-52"/>
</itemref>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Dry cleaning solvent
</name>
<itemref>
<xref wpid="S00332-X-XXX-XXXX" itemid="S00332-X-XXX-XXXX-74"/>
</itemref>
</mtrlpart-setup-item>
mtrlpart-setup-item>
<name>Lubricating oil
</name>
<itemref>
<xref wpid="S00332-X-XXX-XXXX" itemid="S00332-X-XXX-XXXX-117"/>
</itemref>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Tape
</name>
<itemref>
<xref wpid="S00332-X-XXX-XXXX" itemid="S00332-X-XXX-XXXX-207"/>
</itemref>
</mtrlpart-setup-item>
</mtrlpart>
<persnreq>
<persnreq-setup-item>
<name>Attack Helicopter Repairer
</name>
<mos>67R
</mos>
<qty>1
</qty>
</persnreq-setup-item>
<persnreq-setup-item>
<name>Attack Helicopter Repairer/Technical Inspector
</name>
<mos>67R3F
</mos>
<qty>1
</qty>
</persnreq-setup-item>
<persnreq-setup-item>
<name>Maintenance Test Pilot
</name>
<mos>152FG
</mos>
<qty>1
</qty>
</persnreq-setup-item>
</persnreq>
<ref>
<ref-setup-item>

```

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```

<extref docno="TM 1-1500-204-23"/>
</ref-setup-item>
<ref-setup-item>
<extref docno="TM 9-1090-208-23"/>
</ref-setup-item>
<ref-setup-item>
<extref docno="TM 11-6140-203-14-1"/>
</ref-setup-item>
<ref-setup-item>
<extref docno="TM 11-6140-203-14-2"/>
</ref-setup-item>
<ref-setup-item>
<extref docno="TM 55-1500-344-23"/>
</ref-setup-item>
<ref-setup-item>
<extref docno="TM 55-1520-238-10"/>
</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item>
<condition>Helicopter safed
</condition>
<itemref>
<xref wpid="M00651-X-XXX-XXXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Engine 10&ndash ; hour/14 day inspection performed
</condition>
<itemref>
<extref docno="TM 55-2840-248-23"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>10&ndash;hour/14 day inspection performed
</condition>
<itemref>
<extref docno="TM 1-1520-238-PMS"/>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<flyable>
<geninfo frame="no">
<para0 >
<title>GENERAL INFORMATION
</title>
<subpara1>
<title>Components Involved of Storage
</title>
<para>Any component removed for reason of accident should not be preserved, but
is shipped in the same condition it was in after the accident.
</para>
</subpara1>

```

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<subpara1>
 <title>Categories of Storage
 </title>
 <para>
 <seqlist>
 <item>Flyable storage — no time limit.
 </item>
 <item>Short term (administrative storage) — 1 to 45 days.
 </item>
 <item>Intermediate storage — 46 to 180 days.
 </item>
 </seqlist>
 </para>
 <note acknowledge="no">
 <trim.para>Refer to
 <extref docno="TM 1-1500-204-23"/>for general procedures for storage of aircraft.
 </trim.para>
 </note>
 <para>
 </para>
 </subpara1>
 </para0>
 </geninfo>
 <proc>
 <step1 qa="no">
 <para>Start and operate auxiliary power unit (APU)
 <xref wpid="M00981-X-XXX-XXXX" pretext="(" posttext=")"/>.
 </para>
 <step2 qa="no">
 <para>Allow APU to run for 10 to 15 minutes.
 </para>
 </step2>
 </step1>
 <step1 qa="no">
 <para>Perform engine ground run-up procedures
 <extref docno="TM 55-1520-238-10" pretext="(" posttext=")"/>.
 </para>
 <step2 qa="no">
 <para>Allow engines to run at idle for 5 minutes.
 </para>
 </step2>
 <step2 qa="no">
 <para>Shut engines down and allow to cool.
 </para>
 </step2>
 </step1>
 <step1 qa="no">
 <para>Services fuel system
 <xref wpid="M00351-X-XXX-XXXX" pretext="(" posttext=")"/>.
 </para>
 <step2 qa="no">
 <para>Drain residual water from fuel cells and service to full.
 </para>
 </step2>

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```

</step1>
<step1 qa="no">
<specpara>
<caution>
<trim para>If ambient temperature is below &ndash; 40& deg; F (-40&deg;C), remove
battery from helicopter
<xref wpid="M00871-X-XXX-XXXX" pretext="(" posttext=")"/>and store in heated building
<extref docno="TM 11-6140-203-14-1" pretext="(" posttext=" and "/>
<extref docno="TM 11-6140-203-14-2" posttext=")"/>.
</trim para>
</caution>
<para>Disconnect battery plug and battery sensor from battery.
</para>
</specpara>
<step2 qa="no">
<para>Connect sensor plug to stowage receptacle.
</para>
</step2>
</step1>
<step1 qa="no">
<para>Clean helicopter
<extref docno="TM 55-1500-344-23" pretext="(" posttext=")"/>.
</para>
</step1>
</proc>
</flyable> . . .
</storagewp>

```

2. Page-based TM stylesheet output example for <storagewp>

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0001

AVIATION SUPPORT BATTALION

STORAGE OF AIRCRAFT

INITIAL SETUP:

Tools

Aircraft mechanic's kit (,)
 Adjustable air filtering respirator (,)
 Chemical protective gloves (,)
 Light duty laboratory apron (,)

Materials

Barrier material (,)
 Cloth (,)
 Dry cleaning solvent (,)
 Lubricating oil (,)
 Tape (,)

Personnel Required

Attack Helicopter Repairer 67R - 1
 Attack Helicopter Repairer/Technical
 Inspector 67R3F - 1
 Maintenance Test Pilot 152FG - 1

References

TM 1-1500-204-23
 TM 9-1090-208-23
 TM 11-6140-203-14-1
 TM 11-6140-203-14-2
 TM 55-1500-344-23
 TM 55-1520-238-10

Equipment Condition

Helicopter safed ()
 Engine 10—; hour/14 day inspection performed TM
 55-2840-248-23
 10—hour/14 day inspection performed TM
 1-1520-238-PMS

FLYABLE STORAGE

GENERAL INFORMATION

Components Involved of Storage

Any component removed for reason of accident shall not be preserved, but is shipped in the same condition it was in after the accident.

Categories of Storage

1. Flyable storage — no time limit.
2. Short term (administrative storage) — 1 to 45 days.
3. Intermediate storage — 46 to 180 days.

NOTE

Refer to TM 1-1500-204-23 for general procedures for storage of aircraft.

END OF WORK PACKAGE

0001—1/blank

FIGURE 411. Example of a page-based TM stylesheet output for <storagewp>.

23.14.5 Weighing and loading work package <wtloadwp>.

The element contains description, information, and procedures for aircraft weighing, balancing and loading.

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1. The components of **<wtloadwp>** are:
 - a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
 - b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
 - c. Work package initial setup **<initial_setup>** (required) (see Section 16.6).
 - d. An optional group of any warnings **<warning>**, cautions **<caution>**, or notes **<notes>** in that order.
 - i. Warning **<warning>** (optional – zero or more) (see Section 28.1.1).
 - ii. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
 - iii. Caution **<caution>** (optional – zero or more) (see Section 28.1.2).
 - iv. Note **<note>** (optional – zero or more) (see Section 28.1.3).
 - e. Work package general information **<geninfo>** (required) containing the scope of the work package (see Section 36.1.4.11). The standard statement in accordance with MIL-STD-40051-1/-2 is **&wtloadwp.geninfo**; (see Section 23.14.5.3).
 - f. Weighing form chart **<formchart>** (required) (see Section 23.14.5.1).
 - g. Loading information **<weightinst>** (required) (see Section 23.14.5.2).
2. The DTD fragment for **<wtloadwp>** is graphically depicted:

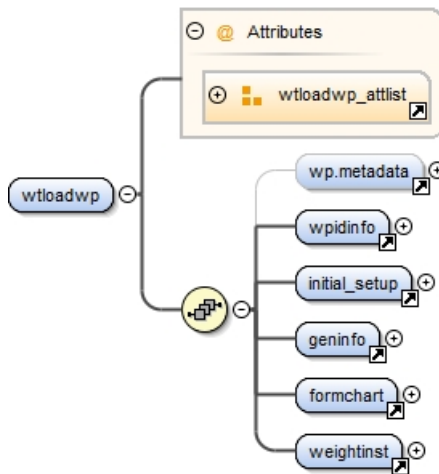


FIGURE 412. Aircraft weighing and loading work package DTD hierarchy <wtloadwp>

3. The DTD fragment for **<wtloadwp>** is:

```
<!ELEMENT wtloadwp (wp.metadata?, wpidinfo, initial_setup, geninfo, formchart, weightinst)>
```

```
<!ATTLIST wtloadwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED

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chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <wtloadwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – To indicate a date-time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).

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- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.14.5.1 Weighing form chart <formchart>.

The element contains information on the usage of forms and charts within the weighing and loading work package.

1. The components of <formchart> require at least one of the following:
 - a.** One or more procedures <proc> (see Section 17.2).
 - b.** One or more descriptive or narrative titled paragraphs <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1).
 - c.** One or more illustrations <figure> (see Section 31.1.1).
2. The DTD fragment for <formchart> is graphically depicted:

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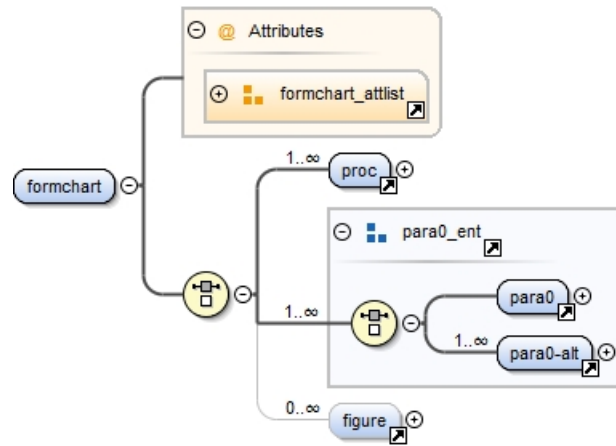


FIGURE 413. Weighing form chart DTD Hierarchy <formchart>.

3. The DTD fragment for <formchart> is:

```

<!ELEMENT formchart (proc+ | (%para0_ent;)+ | figure*)>
<!ATTLIST formchart
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)          "0"
  security            (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk           CDATA           #IMPLIED
  esd                 (yes | no)       "no"
  hcp                 (yes | no)       "no">

```

4. Common attributes for <formchart> :

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- g. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- h. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- i. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

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- j. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- k. **security** – Security classification (optional) (see Section 36.3.14).
- l. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.14.5.2 Loading information <weightinst>.

The element contains the descriptions and instructions for aircraft loading, and computing weight and balance information. Loading information includes weight and balance characteristics, center of gravity limits, weight/balance and loading, and weight and moment tables for load items such as crew, fuel, cargo, and armament.

1. The components of <weightinst>:
 - a. One or more procedures <proc> (see Section 17.2).
 - b. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1).
2. The DTD fragment for <weightinst> is graphically depicted:

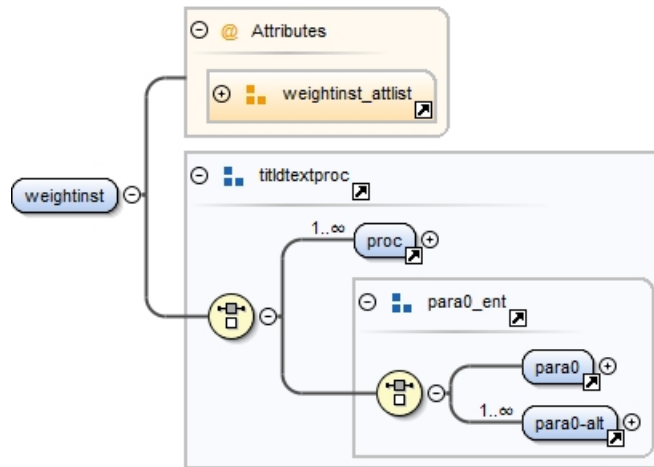


FIGURE 414. Loading information DTD hierarchy <weightinst>.

3. The DTD fragment for <weightinst> is:

```
<!ELEMENT weightinst (%titldtextproc;)>
<!ATTLIST weightinst
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)         "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)         "0"
  security           (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

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4. Common attributes for **<weightinst>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

23.14.5.3 Weighing and loading work package general entity boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XIX.

TABLE XIX. Boilerplate entities for **<wtloadwp>**.

Description	Boilerplate Entity	Element used in
Weighing and loading AVIM general information and scope statement	<i>&wtloadwp.geninfo;</i>	Not applicable

23.14.5.4 XML document instance fragment and output for **<wtloadwp>**.

The XML instance and its stylesheet output for a **<wtloadwp>** is provided below.

1. Example of an XML document instance fragment for **<wtloadwp>**.

```

<wtloadwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry=
"2" wpno="M00367-X-XXXX-XXX" wpseq="0367">
  <wpidinfo>
    <maintlvl level="" asb/>
    <title>HELICOPTER WEIGHING (AIRCRAFT ON JACKS)
  </title>
</wpidinfo>
<initial_setup>
  <tools>
    <tools-setup-item>
      <name>Aircraft mechanic's tool kit
    </name>
    <itemref>
      <xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item376"/>
    </itemref>
  </tools>
</initial_setup>
</wtloadwp>

```

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```

</tools-setup-item>
<tools-setup-item>
<name>Fuselage jack adapter (2)
</name>
<itemref>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item1"/>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item391" pretext="p/o"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>3-ton tripod hydraulic jack
</name>
<itemref>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item184"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>5-ton aircraft landing gear jack
</name>
<itemref>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item183"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Weighing kit
</name>
<itemref>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item196"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Strut locks (2)
</name>
<itemref>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item203"/>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item25" pretext="p/o"/>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item194" pretext="and "/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Aircraft maintenance kit (plumb bob leveling kit)
</name>
<itemref>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item207"/>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item25" pretext="p/o"/>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item194" pretext="and "/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Tripod aircraft tail stand (2) (extension legs removed)
</name>
<itemref>
<xref wpid="M00893-X-XXXX-XXX" itemid="M00893-X-XXXX-XXX-item344"/>
</itemref>

```


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```

</tools-setup-item>
</tools>
<mtrlpart>
<mtrlpart-setup-item>
<name>Woodblock, 2 in. x 6 in. x 12 in.
</name>
</mtrlpart-setup-item>
</mtrlpart>
<persnreq>
<persnreq-setup-item>
<name>Attack Helicopter Repairer/Technical Inspector
</name>
<mos>67R3F
</mos>
</persnreq-setup-item>
<persnreq-setup-item>
<name>Assistants
</name>
<qty>3
</qty>
</persnreq-setup-item>
</persnreq>
<eqpconds>
<eqpconds-setup-item>
<condition>Helicopter safed
</condition>
<itemref>
<xref wpid="M00057-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Helicopter defueled, SPA method
</condition>
<itemref>
<xref wpid="M00019-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Engine oil system serviced
</condition>
<itemref>
<xref wpid="M00024-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>APU oil system serviced
</condition>
<itemref>
<xref wpid="M00026-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Engine nose gearboxes serviced
</condition>

```

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```

<itemref>
<xref wpid="M00028-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Intermediate gearbox serviced
</condition>
<itemref>
<xref wpid="M00030-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Tail rotor gearbox serviced
</condition>
<itemref>
<xref wpid="M00031-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Main transmission serviced
</condition>
<itemref>
<xref wpid="M00032-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Hydraulic system serviced
</condition>
<itemref>
<xref wpid="M00034-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Access doors L135 and R135 opened
</condition>
<itemref>
<xref wpid="M00102-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Main landing gear shock struts collapsed
</condition>
<itemref>
<xref wpid="M00041-X-XXXX-XXX"/>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<geninfo frame="no">& wloadwp.geninfo;
</geninfo>
<formchart>
<proc frame="yes" tocentry="0">
<title>FORM CHART
</title>

```

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```

<warning haz-abbrev="no">
<warning.group haz-abbrev="no">
<trim.para>Helicopter is unstable on jacks. Jack helicopter evenly and carefully
on a firm, level, flat surface. Death or serious injury can result if helicopter
should fall off jacks.
</trim.para>
</warning.group>
<warning.group haz-abbrev="no">
<trim.para>When weighing helicopter, ensure that area is roped off and that
multiple warning signs that read "HELICOPTER ON JACKS" are prominently
displayed. Do not allow unauthorized persons in or around helicopter while it is
on jacks.
</trim.para>
</warning.group>
</warning>
<caution>
<trim.para>Weighing should be done inside a hangar with all doors closed. Weighing
the helicopter outdoors is not recommended as wind velocities may affect the
accuracy of scale readings.
</trim.para>
</caution>
<para>
<figure application="both" figtype="normal-page" pane="no" tocentry="1" id="M00367-X-XXXX-
XXX-fig1">
<title>Two view Chart E diagram.
</title>
<graphic boardno="weightwp" unitmeasure="in">
</graphic>
</figure>
</para>
</proc>
</formchart>
</wtloadwp>

```

2. Page-based TM stylesheet output example for <wtloadwp>:

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0001

AVIATION SUPPORT BATTALION MAINTENANCE

HELICOPTER WEIGHING

INITIAL SETUP:

Tools

Aircraft mechanic's tool kit (WP 0001)
Fuselage jack adapter (2) (WP 0001)
3-ton tripod hydraulic jack (WP 0001)
5-ton aircraft landing gear jack (WP 0001)
Weighing kit (WP 0001)
Strut locks (2) (WP 0001)
Aircraft maintenance kit(plumb bob leveling kit)
(WP 0001)
Tripod aircraft tail stand (2)(extension legs removed)
(WP 0001)

Materials

Wood block, 2 in. x 6 in. x 12 in.

Personnel Required

Attack Helicopter Repairer/Technical Inspector
67R3F
Assistants - 3

Equipment Condition

Helicopter safed (WP 0001)
Helicopter defueled, SPA method (WP 0001)
Engine oil system serviced (WP 0001)
APU oil system serviced (WP 0001)
Engine nose gearboxes serviced (WP 0001)
Intermediate gearbox serviced (WP 0001)
Tail rotor gearbox serviced (WP 0001)
Main transmission serviced (WP 0001)
Hydraulic system serviced (WP 0001)
Access doors L135 and R135 opened (WP 0001)
Main landing gear shock struts collapsed
(WP 0001)

0001-1

FIGURE 415. Example of a page-based TM stylesheet output for <wtloadwp> (Page 1 of 3).

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0001

FORM CHART

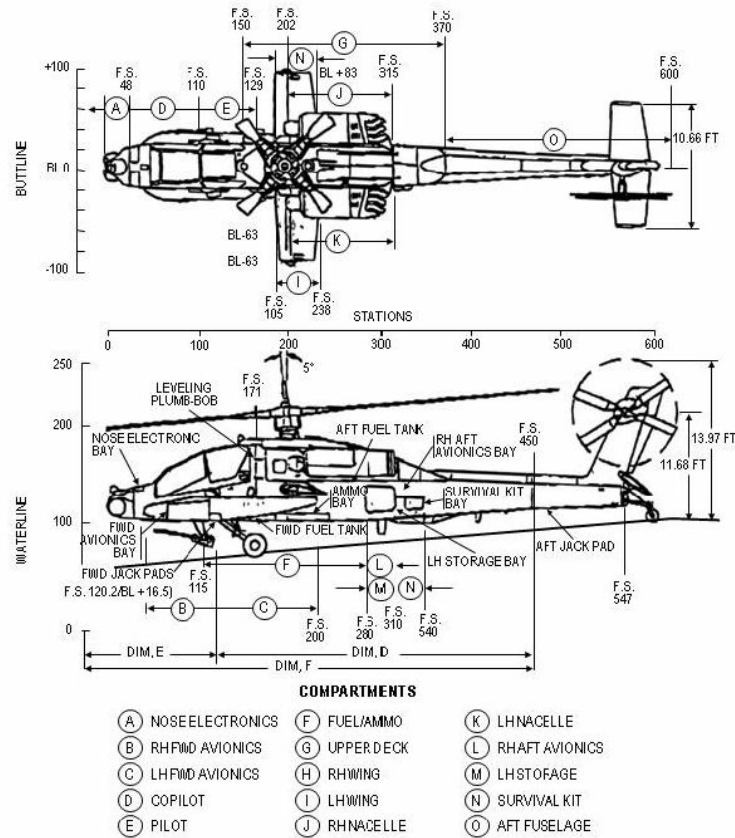


Figure 1. Two view Chart E diagram..

HELICOPTER WEIGHING PREPARATION

CAUTION

Ensure that there are no adverse air currents from fans, heater blowers, etc., which could affect the accuracy of scale readings.

1. Position helicopter in hangar.
 - a. Move helicopter to designated weighing area in hangar.
 - b. Close all hangar doors and rope off weighing area.

0001-2

FIGURE 416. Example of a page-based TM stylesheet output for <wtloadwp> (Page 2 of 3).

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0001

2. Position helicopter rotor blades.
 - a. Turn main rotor blades clockwise to a position of 45 degrees relative to helicopter's longitudinal axis.

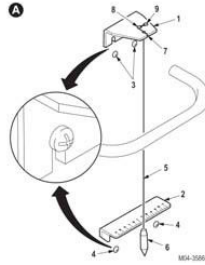


Figure 2. Helicopter longitude axis..

3. Assemble aircraft weighing kit.
 - a. Assemble weighing kit per manufacturer's instructions supplied with kit. Use weighing kit.

CAUTION

Plumb bob bracket and target installation screws are not removable. Damage to bracket and target will result if removal is attempted.

4. Install plumb bob bracket (Figure 3, Item 1) and target (Figure 3, Item 2) on helicopter left side at F.S. 171.0. Use aircraft maintenance kit.
 - a. Loosen two upper screws (Figure 3, Item 3).
 - b. Loosen two lower screws (Figure 3, Item 4).
 - c. Slide bracket (Figure 3, Item 1) down on screws (Figure 3, Item 3).
 - d. Slide target (Figure 3, Item 2) down on screws (Figure 3, Item 4).
 - e. Tighten screws (Figure 3, Item 3) and (Figure 3, Item 4).

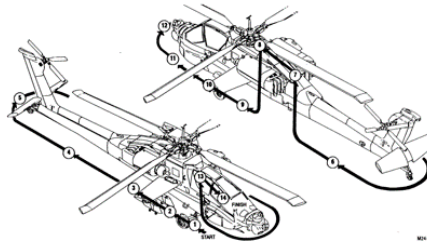


Figure 3. Install plumb bob bracket.

5. Install and secure plumb bob line (Figure 3, Item 5) with plumb bob (Figure 3, Item 6) in bracket (Figure 3, Item 1). Use aircraft maintenance kit.
 - a. Insert line (Figure 3, Item 5) in bracket slot (Figure 3, Item 7).
 - b. Lower plumb bob (Figure 3, Item 6) until just below edge of target (Figure 3, Item 2).
 - c. Secure line (Figure 3, Item 5) to bracket (Figure 3, Item 1) by wrapping line (Figure 3, Item 5) around rivets (Figure 3, Item 8) and (Figure 3, Item 9).

END OF WORK PACKAGE

0001-3/blank

FIGURE 417. Example of a page-based TM stylesheet output for <wtloadwp> (Page 3 of 3).

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23.14.6 Aircraft inspection work packages <pmscategory> and <checklistcategory>.

The following paragraphs describe aircraft unique inspection work packages contained in the <pmscategory> or <checklistcategory>.

23.14.6.1 Preventive Maintenance Services (PMS)/Preventive Maintenance Daily (PMD) inspection work package <pms-inspecwp>.

The element contains each specific inspection interval (daily, intermediate, periodic, 10 hour/14 day, 30 hour/42 day, etc.). Within the work package, an inspection checklist has been created for each area of the aircraft (nose, fuselage, tail, etc.) and is developed in a table. Generally an illustration(s) is associated with each inspection checklist showing the inspection locations. The “FOD REMINDER” statement is inserted by the stylesheet or preprinted pages.

1. The components of <pms-inspecwp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
 - i. Warning <warning> (optional – zero or more) (see Section 28.1.1).
 - ii. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
 - iii. Caution <caution> (optional – zero or more) (see Section 28.1.2).
 - iv. Note <note> (optional – zero or more) (see Section 28.1.3).
 - e. Inspection checklist (required – one or more) components are:
 - i. Illustration <figure> (optional) (see Section 31.1.1).
 - ii. Inspection checklist <table> (required) (see Chapter 29).
2. The DTD fragment for <pms-inspecwp> is graphically depicted:

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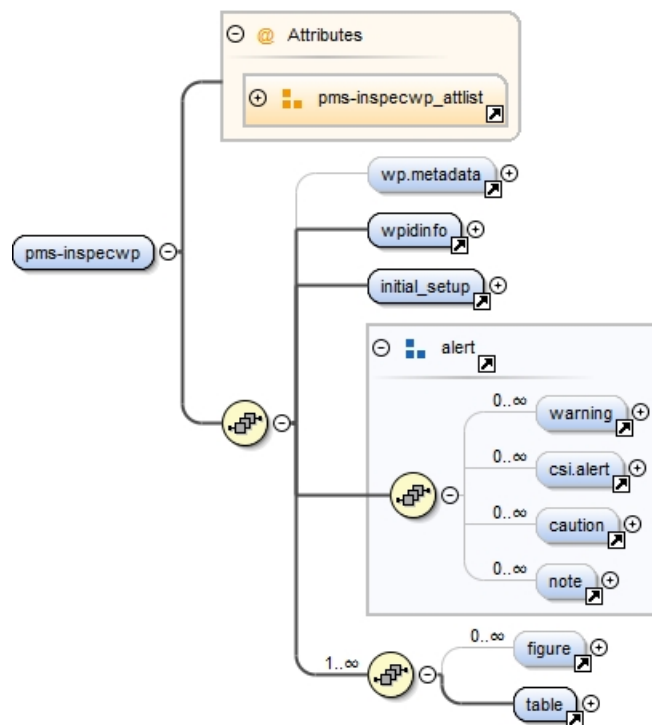


FIGURE 418. Preventive maintenance services inspection work package DTD hierarchy <pms-inspecwp>.

3. The DTD fragment for <pms-inspecwp> is:

```
<!ELEMENT pms-inspecwp (wp.metadata?, wpidinfo, initial_setup, %alert;,
 (figure*, table)+)>
```

```
<!ATTLIST pms-inspecwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED

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inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<pms-inspecwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).

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- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.14.6.2 Preventive maintenance services inspection work package general entity boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XX.

TABLE XX. Boilerplate entities for *<pms-inspecwp>*.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Avionics equipment inspections reference statement	<i>&pms-inspecwp.perform;</i>	Not applicable
Avionic equipment TM number		<code><!ENTITY pms-inspecwp. perform.tm "<extref docno='TM 11- (INSERT TM NUMBER) ' />" /></code>
Forms and records initial inspection statement	<i>&pms-inspecwp.checklist;</i>	Not applicable
Lubrication requirements statement	<i>%pms-inspecwp.lubrication;</i>	Not applicable
Lubrication TM number		<code><!ENTITY pms-inspecwp. lubrication.tm "<extref docno='TM 55- (INSERT TM NUMBER) ' />" /></code>
Forms and records completion statement	<i>&pms-inspecwp.last-item;</i>	Not applicable

23.14.6.3 XML document instance fragment and output for *<pms-inspecwp>*.

The XML instance and its stylesheet output for a *<pms-inspecwp>* is provided below.

- Example of an XML document instance fragment for *<pms-inspecwp>*:

```
<pms-inspecwp wpno="M00356" chngno="">
```

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```

<wpidinfo>
<maintlvl level="asb"/>
<title>AH-64A Helicopter 10 Hour/14 day Inspection Checklist
</title>
</wpidinfo>
<initial_setup>
<tools>
<tools-setup-item>
<name>Aircraft Mechanician's Tool Kit
</name>
<itemref>
<xref wpid="M00356"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Tire pressure gage
</name>
<itemref>
<xref wpid="M00356"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>Sample jar (2)
</name>
<itemref>
<xref wpid="M00356"/>
</itemref>
</tools-setup-item>
</tools>
<mtrlpart>
<mtrlpart-setup-item>
<name>Rags
</name>
<itemref>
<xref wpid="M00356"/>
</itemref>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Hydraulic fluid
</name>
<itemref>
<extref docno="MIL-H-5606"/>
</itemref>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Hydraulic fluid
</name>
<itemref>
<extref docno="MIL-H-83282"/>
</itemref>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Lubricating oil
</name>

```

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```

<itemref>
<extref docno="MIL-L-23699"/>
</itemref>
</mtrlpart-setup-item>
</mtrlpart>
<persnreq>
<persnreq-setup-item>
<name>Attack Helicopter Repairer
</name>
<mos>67R
</mos>
<qty>1
</qty>
</persnreq-setup-item>
<persnreq-setup-item>
<name>Assistant
</name>
<qty>1
</qty>
</persnreq-setup-item>
</persnreq>
<eqpconds>
<eqpconds-setup-item>
<condition>Helicopter safed
</condition>
<itemref>
<extref docno="TM 1-1520-238-10"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Weapons systems safed and cleared
</condition>
<itemref>
<extref docno="TM 1-1520-238-10"/>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Remove protective cover
</condition>
<itemref>
<extref docno="TM 1-1520-238-10"/>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<figure>
<title>Area Diagram
</title>
<graphic boardno="figure28">
</graphic>
</figure>
<table frame="none">
<title>Inspection Areas
</title>

```

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```

<igroup cols="3" colsep="0" rowsep="0">
<colspec colwidth="0.4*"/>
<colspec colwidth="0.9*"/>
<colspec colwidth="1.7*"/>
<tbody>
<row>
<entry>AREA NO. 1
</entry>
<entry>Fuselage &ndash; Right Side Forward
</entry>
<entry>All surfaces, components, and equipment in forward avionics bay. Include
landing gear and search light.
</entry>
</row>
<row>
<entry>AREA NO. 2
</entry>
<entry>Fuselage &ndash; Right Side Center
</entry>
<entry>All surfaces, components, and equipment aft of crew station to engine
nacelle. Includes transmission deck, right nose gearbox, engine installation
components, wing and stores.
</entry>
</row>
<row>
<entry>AREA NO. 3
</entry>
<entry>Engine Nacelle &ndash; Right
</entry>
<entry>All surfaces, components, and equipment aft of APU exhaust duct. Includes
lower nacelle, aft electronics compartment, and IR suppressor.
</entry>
</row>
<row>
<entry>AREA NO. 4
</entry>
<entry>Fuselage &ndash; Right Side Aft
</entry>
<entry>All surfaces, components, and equipment aft of APU exhaust duct and
forward of intermediate gearbox. Includes hydraulic ground service panel and
aft horizontal tail rotor drive shaft.
</entry>
</row>
<row>
<entry>AREA NO. 5
</entry>
<entry>Tail Section
</entry>
<entry>All surfaces, components, and equipment aft of tailboom area. Includes
horizontal stabilator, tail landing gear, intermediate and tail rotor gear
boxes, aft vertical tail rotor drive shaft.
</entry>
</row>
</tbody>

```

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<entry>AREA NO. 6

</entry>

<entry>Fuselage – Left Side Aft

</entry>

<entry>All surfaces, components, and equipment forward of intermediate gearbox and aft of ENCU exhaust duct.

</entry>

</row>

<row>

<entry>AREA NO. 7

</entry>

<entry>Catwalk

</entry>

<entry>All surfaces, components, and equipment in catwalk area. Includes shaft-driven compressor, forward tail rotor drive shaft, fire extinguisher containers, environmental control unit (ENCU), and APU.

</entry>

</row>

<row>

<entry>AREA NO. 8

</entry>

<entry>Main Rotor Mast

</entry>

<entry>All surfaces, components, and equipment in the mast area. Includes main rotor, air data sensor, and upper controls (mixer). 849 MIL-HDBK-2361D DRAFT DATED 5 July 2011

</entry>

</row>

<row>

<entry>AREA NO. 9

</entry>

<entry>Engine Nacelle – Left

</entry>

<entry>All surfaces, components, and equipment forward of ENCU exhaust duct and aft of left nose gearbox. Includes IR suppressor, aft avionics compartment, and lower nacelle.

</entry>

</row>

<row>

<entry>AREA NO. 10

</entry>

<entry>Fuselage – Left Side Center

</entry>

<entry>All surfaces, components, and equipment forward of engine nacelle and aft of left forward avionics bay. Includes left transmission deck, wing and stores, nose gearbox, and engine installation components.

</entry>

</row>

<row>

<entry>AREA NO. 11

</entry>

<entry>Fuselage – Left Side Forward

</entry>

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<entry>All surfaces, components, and equipment in forward avionics bay. Include landing gear.

</entry>

</row>

<row>

<entry>AREA NO. 12

</entry>

<entry>Nose Section

</entry>

<entry>All surfaces, components, and equipment on or under the helicopter nose. Includes TADS/PNVS turret and area weapon.

</entry>

</row>

<row>

<entry>AREA NO. 13

</entry>

<entry>Pilot Station

</entry>

<entry>All surfaces, components, and equipment in the pilot station. Includes windshields, landing gear brake control, canopy jettison system, lighting and indicator components, power and flight controls and instruments.

</entry>

</row>

<row>

<entry>AREA NO. 14

</entry>

<entry>CPG Station

</entry>

<entry>All surfaces, components, and equipment in the CPG station. Includes windshields, landing gear brake control, canopy jettison system, lighting and indicator components, power and flight controls and instruments.

</entry>

</row>

</tbody>

</tgroup>

</table>

<figure>

<title>Inspection Area No. 1

</title>

<graphic boardno="figure29">

</graphic>

</figure>

</table>

<title>FUSELAGE — RIGHT SIDE FORWARD — POWER OFF

</title>

<tgroup cols="3" rowsep="0" tgroupstyle="0">

<colspec colwidth="0.2*"/>

<colspec align="center" colwidth="0.35*"/>

<colspec colwidth="2.5*"/>

<thead>

<row>

<entry align="center" rowsep="1">Seq. No.

</entry>

<entry rowsep="1">Location

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```

</entry>
<entry align="center" rowsep="1">Item and Procedure
</entry>
</row>
</thead>
<tbody>
<row>
<entry>1.1
</entry>
<entry>&mdash; &mdash;
</entry>
<entry>&pms-inspecwp.checklist;
</entry>
</row>
<row>
<entry>1.2
</entry>
<entry>&mdash; &mdash;
</entry>
<entry>
<trim.para>Exterior surfaces
</trim.para>
<randlist>
<item>Skin areas for cracks and distortion 851 MIL-HDBK-2361D DRAFT DATED 5 July
2011
</item>
<item>Loose or missing hardware
</item>
<item>Access panels, doors, and fairings for mounting security
</item>
<item>Exposed hydraulic lines for leakage and chafing
</item>
<item>Hydraulic connectors for security
</item>
</randlist>
</entry>
</row>
<row>
<entry>1.3
</entry>
<entry>1
</entry>
<entry>
<trim.para>Radar Warning Antenna
</trim.para>
<randlist>
<item>Physical damage and mounting security
</item>
</randlist>
</entry>
</row>
<row>
<entry>1.4
</entry>

```


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```

<entry>2
</entry>
<entry>
<trim.para>Open Avionics Door R90
</trim.para>
<randlist>
<item>Internal panels for cracks and cleanliness
</item>
<item>Loose or missing hardware
</item>
<item>Interior components for physical damage and mounting security
</item>
<item>Electrical connectors for security
</item>
<item>Visible wiring for chafing or damaged insulation and connection security
</item>
<item>Ammo conveyor for damaged or cracked carriers and tracks
</item>
</randlist>
</entry>
</row>
<row>
<entry>1.5
</entry>
<entry>3
</entry>
<entry>
<trim.para>
<emphasis emph="bold">(CSI) STATIC PORT
</emphasis>
</trim.para>
<randlist>
<item>
<emphasis emph="bold">(CSI) OBSTRUCTIONS, CLEANLINESS, AND DAMAGE
</emphasis>
</item>
</randlist>
</entry>
</row>
</tbody>
</tgroup>
</table>
</pms-inspecwp>

```

2. Page-based TM stylesheet output example for `<pms-inspecwp>`:

MIL-HDBK-2361D

0001

AVIATION SUPPORT BATTALION MAINTENANCE
AH-64A HELICOPTER 10 HOUR/14 DAY INSPECTION CHECKLIST

INITIAL SETUP:**Tools**

Aircraft Mechanician's Tool Kit (WP 0001)
 Tire pressure gage (WP 0001)
 Sample jar (2) (WP 0001)

Materials

Rags (WP 0001)
 Hydraulic fluid MIL-H-5606
 Hydraulic fluid MIL-H-83282
 Lubricating oil MIL-L-23699

Personnel Required

Attack Helicopter Repairer 67R - 1
 Assistant - 1

Equipment Condition

Helicopter safed TM 1-1520-238-10
 Weapons systems safed and cleared TM
 1-1520-238-10
 Remove protective cover TM 1-1520-238-10

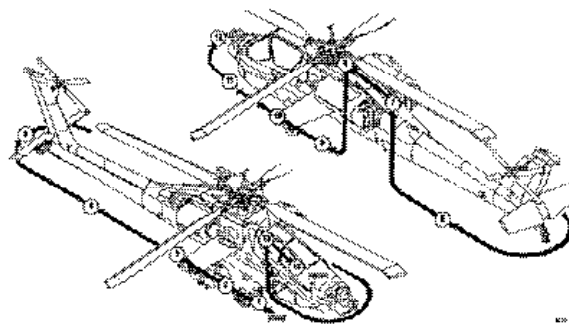


Figure 1. Area Diagram .

Table 1. Inspection Areas .

AREA NO. 1	Fuselage – Right Side Forward	All surfaces, components, and equipment in forward avionics bay. Include landing gear and search light.
AREA NO. 2	Fuselage – Right Side Center	All surfaces, components, and equipment aft of crew station to engine nacelle. Includes transmission deck, right nose gearbox, engine installation components, wing and stores.
AREA NO. 3	Engine Nacelle – Right	All surfaces, components, and equipment aft of APU exhaust duct. Includes lower nacelle, aft electronics compartment, and IR suppressor.
AREA NO. 4	Fuselage – Right Side Aft	All surfaces, components, and equipment aft of APU exhaust duct and forward of intermediate gearbox. Includes hydraulic ground service panel and aft horizontal tail rotor drive shaft.
AREA NO. 5	Tail Section	All surfaces, components, and equipment aft of tailboom area. Includes horizontal stabilator, tail landing gear, intermediate and tail rotor gear boxes, aft vertical tail rotor drive shaft.
AREA NO. 6	Fuselage – Left Side Aft	All surfaces, components, and equipment forward of intermediate gearbox and aft of ENCU exhaust duct.
AREA NO. 7	Catwalk	All surfaces, components, and equipment in catwalk area. Includes shaft-driven compressor, forward tail rotor drive shaft, fire extinguisher containers, environmental control unit (ENCU), and APU.
AREA NO. 8	Main Rotor Mast	All surfaces, components, and equipment in the mast area. Includes main rotor, air data sensor, and upper controls (mixer).

0001-1

FIGURE 419. Example of a page-based TM stylesheet output for <pms-inspecwp> (Page 1 of 3).

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0001

AREA NO. 9	Engine Nacelle – Left	All surfaces, components, and equipment forward of ENCU exhaust duct and aft of left nose gearbox. Includes IR suppressor, aft avionics compartment, and lower nacelle.
AREA NO. 10	Fuselage – Left Side Center	All surfaces, components, and equipment forward of engine nacelle and aft of left forward avionics bay. Includes left transmission deck, wing and stores, nose gearbox, and engine installation components.
AREA NO. 11	Fuselage – Left Side Forward	All surfaces, components, and equipment in forward avionics bay. Include landing gear.
AREA NO. 12	Nose Section	All surfaces, components, and equipment on or under the helicopter nose. Includes TADS/PNVS turret and area weapon.
AREA NO. 13	Pilot Station	All surfaces, components, and equipment in the pilot station. Includes windshields, landing gear brake control, canopy jettison system, lighting and indicator components, power and flight controls and instruments.
AREA NO. 14	CPG Station	All surfaces, components, and equipment in the CPG station. Includes windshields, landing gear brake control, canopy jettison system, lighting and indicator components, power and flight controls and instruments.

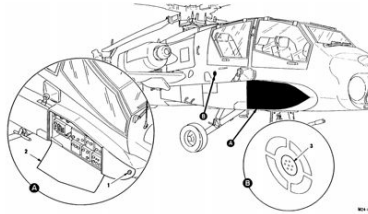


Figure 2. Inspection Area No. 1.

Table 2. FUSELAGE — RIGHT SIDE FORWARD — POWER OFF .

Seq. No.	Location	Item and Procedure
1.1	— —	Inspect aircraft forms and records for recorded discrepancies (DA PAM 738-751, Functional Users Manual for the Army Maintenance Management System Aviation (TAMMS-A)).
1.2	— —	Exterior surfaces Skin areas for cracks and distortion 851 MIL-HDBK-2361D DRAFT DATED 5 July 2011 Loose or missing hardware Access panels, doors, and fairings for mounting security Exposed hydraulic lines for leakage and chafing Hydraulic connectors for security
1.3	1	Radar Warning Antenna Physical damage and mounting security

0001-2

FIGURE 420. Example of a page-based TM stylesheet output for <pms-inspecwp> (Page 2 of 3).

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0001

Seq. No.	Location	Item and Procedure
1.4	2	Open Avionics Door R90 Internal panels for cracks and cleanliness Loose or missing hardware Interior components for physical damage and mounting security Electrical connectors for security Visible wiring for chafing or damaged insulation and connection security Ammo conveyor for damaged or cracked carriers and tracks
1.5	3	(CSI) STATIC PORT (CSI) OBSTRUCTIONS, CLEANLINESS, AND DAMAGE

END OF WORK PACKAGE

0001-3/blank

FIGURE 421. Example of a page-based TM stylesheet output for <pms-inspecwp> (Page 3 of 3).

23.14.6.4 Phased Maintenance Inspection (PMI) inspection checklist work package **<pmi-cklistwp>**.

The phased maintenance inspection checklist work package contains all of the data required to perform phased maintenance inspections on an aircraft.

1. The components of **<pmi-cklistwp>** are:
 - a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
 - b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
 - c. Work package initial setup **<initial_setup>** (required) (see Section 16.6).
 - d. An optional group of any warnings **<warning>**, cautions **<caution>**, or notes **<notes>** in that order.
 - i. Warning **<warning>** (optional - zero or more) (see Section 28.1.1).
 - ii. Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
 - iii. Caution **<caution>** (optional - zero or more) (see Section 28.1.2).
 - iv. Note **<note>** (optional - zero or more) (see Section 28.1.3).
 - e. Inspection area diagram **<figure>** (required – one or more) (see Section 31.1.1). The illustration is for locating the inspection areas and the access doors and panels which require removal at various phased maintenance inspections of the aircraft.
 - f. Note **<note>** (required) (see Section 28.1.3). The standard statement is contained in the entity boilerplate **&pmi.cklistwp;** (see Section 23.14.6.5).
 - g. The inspection type (optional – zero or more) components:
 - i. Illustration **<figure>** (see Section 31.1.1).
 - ii. Inspection checklist **<table>** (see Chapter 29).
2. The DTD fragment for **<pmi-cklistwp>** is graphically depicted:

MIL-HDBK-2361D

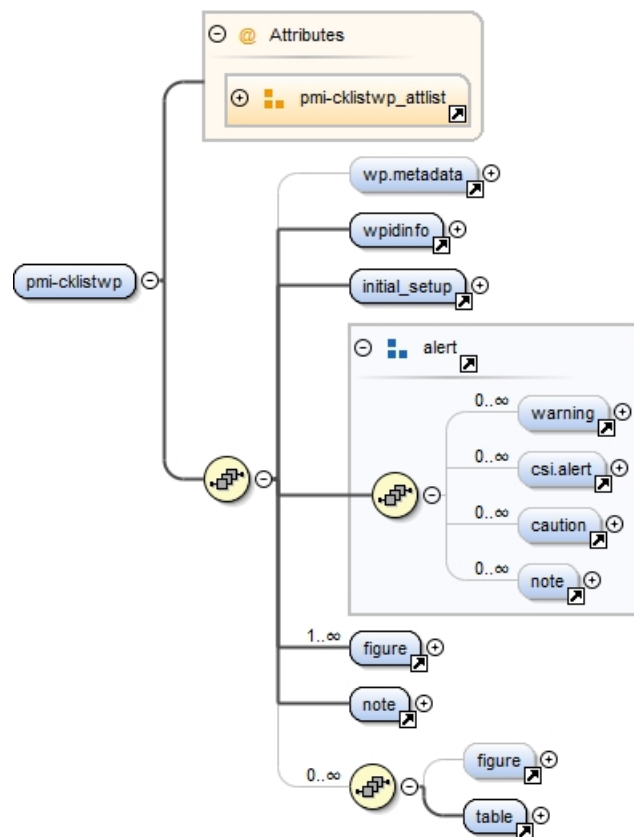


FIGURE 422. Phased Maintenance Inspections (PMI) checklist work package DTD hierarchy <pmi-cklistwp>.

3. The DTD fragment for <pmi-cklistwp> is:

```
<!ELEMENT pmi-cklistwp (wp.metadata?, wpidinfo, initial_setup, %alert;,
figure+, note, (figure?, table*))>
```

```
<!ATTLIST pmi-cklistwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"

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fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <pmi-cklistwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).

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- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.14.6.5 Phased maintenance inspection checklist work package general entity boilerplates.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XXI.

TABLE XXI. Boilerplate entities for <pmi-cklistwp>.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Phased maintenance inspection prior to start note	<pmi-cklistwp.note>	Not applicable

23.14.6.6 XML document instance fragment and output for <pmi-cklistwp>.

The XML instance and its stylesheet output for a <pmi-cklistwp> is provided below.

- Example of an XML document instance fragment for <pmi-cklistwp>:

```
<pmi-cklistwp wpno="m00200-9-1305-201" wpseq="0003">
  <wpidinfo>
    <maintlvl level="asb"/>
    <title>AH-64A Helicopter Phased Maintenance Inspection Checklist
  </title>
  </wpidinfo>
  <initial_setup>
    <title>N/A
  </title>
  <null/>
  </initial_setup>
</figure>
```


MIL-HDBK-2361D

```

<title>Inspection Area Diagram
</title>
<graphic boardno="pmi-cklistwp-fig1">
</graphic>
</figure>
</figure>
<title>Inspection Access Provisions
</title>
<subfig sheet="1" totalsheets="2">
<subtitle>
</subtitle>
<graphic boardno="pmi-cklistwp-fig2">
</graphic>
</subfig>
<subfig sheet="2" totalsheets="2">
<subtitle>
</subtitle>
<graphic boardno="pmi-cklistwp-fig3">
</graphic>
</subfig>
</figure>&pmi-cklistwp.note;
<table>
<tgroup cols="8">
<colspec colname="col1" colwidth="0.55*"/>
<colspec colname="col2" colwidth="0.15*"/>
<colspec colname="col3" colwidth="2.55*"/>
<colspec colname="col4" colwidth="0.45*"/>
<colspec colname="col5" colwidth="2.45*"/>
<colspec colname="col6" colwidth="0.95*"/>
<colspec colname="col7" colwidth="1.35*"/>
<colspec colname="col8" colwidth="0.55*"/>
<thead>
<row>
<entry colsep="0" nameend="col3" namest="col1" valign="bottom">PHASE NO. _____
</entry>
<entry colsep="1" nameend="col8" namest="col4" valign="bottom">PHASED MAINTENANCE
CHECKLIST
</entry>
</row>
<row>
<entry align="center" nameend="col3" namest="col1" rowsep="0" valign="bottom">Area Name and
No.
</entry>
<entry align="center" nameend="col5" namest="col4" rowsep="0" valign="bottom">Aircraft
Serial No.
</entry>
<entry align="center" rowsep="0" valign="bottom">Date
</entry>
<entry align="center" nameend="col8" namest="col7" rowsep="0" valign="bottom">Total Hrs.
This Area
</entry>
</row>
<row>
<entry align="center" nameend="col3" namest="col1" valign="bottom">General

```

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```

</entry>
<entry align="center" nameend="col5" namest="col4" valign="bottom">
</entry>
<entry align="center" valign="bottom">
</entry>
<entry align="center" nameend="col8" namest="col7" valign="bottom">
</entry>
</row>
<row>
<entry align="center" valign="bottom">Inspect Phase Nos.
</entry>
<entry align="center" colsep="1" nameend="col3" namest="col2" valign="bottom">Inspection
Requirements
</entry>
<entry align="center" valign="bottom">Status
</entry>
<entry align="center" valign="bottom">Fault and/or Remarks
</entry>
<entry align="center" nameend="col7" namest="col6" valign="bottom">Action Taken
</entry>
<entry align="center" valign="bottom">Initial
</entry>
</row>
</thead>
<tbody>
<row>
<entry align="center" morerows="7" rowsep="1">ALL
<brk/>
<emphasis emph="bold">C
</emphasis>
</entry>
<entry colsep="0" morerows="7" rowsep="1">1.
</entry>
<entry colsep="1" morerows="7" rowsep="1">Prior to inspection, check forms and
records for record deficiencies.
</entry>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>

```

Source: <http://assist.dla.mil> Downloaded: 2019 03 19T20:32Z
Check the source to verify that this is the current version before use.

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```

<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry align="center" morerows="7" rowsep="1">ALL
</entry>
<entry colsep="0" morerows="7" rowsep="1">3 .
</entry>
<entry colsep="1" morerows="7" rowsep="1">Clean helicopter per
<extref docno="TM 1-1520-238-23"/> .
</entry>
</entry>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry nameend="col7" namest="col6">
</entry>
</row>
<row>
<entry align="center" morerows="7" rowsep="1">ALL
<brk/>
<emphasis emph="bold">C
</emphasis>
</entry>
<entry colsep="0" morerows="7" rowsep="1">4 .
</entry>
<entry colsep="1" morerows="7" rowsep="1">
<emphasis emph="caps">

```

2. Page-based TM stylesheet output example for <pmi-cklistwp>:

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0001

AVIATION SUPPORT BATTALION MAINTENANCE

AH-64A HELICOPTER PHASED MAINTENANCE INSPECTION CHECKLIST

INITIAL SETUP:

N/A

NOT APPLICABLE

0001-1

FIGURE 423. Example of a page-based TM stylesheet output for <pmi-cklistwp> (Page 1 of 5).

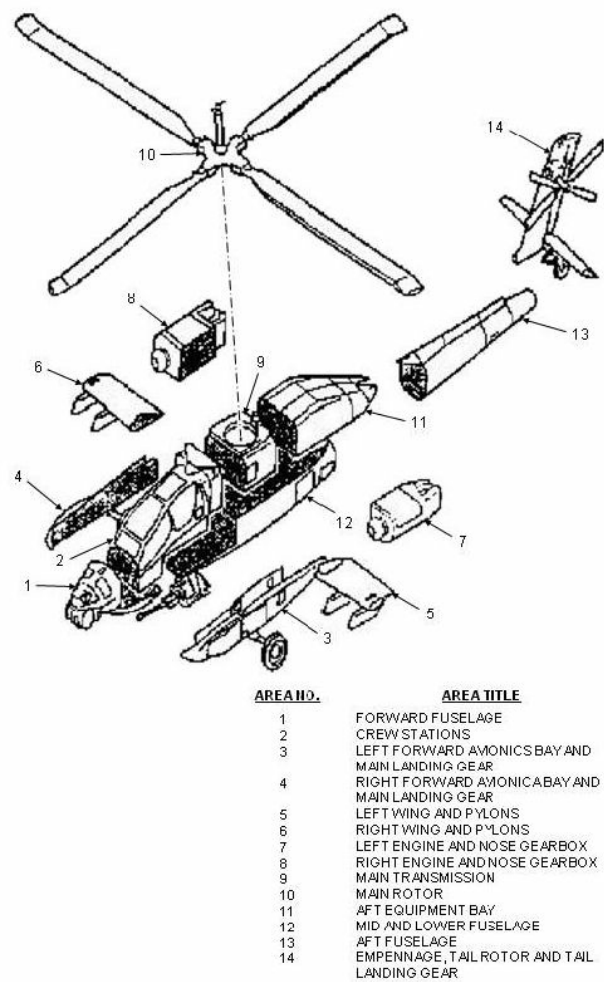


Figure 1. Inspection Area Diagram .

FIGURE 424. Example of a page-based TM stylesheet output for <pmi-cklistwp> (Page 2 of 5).

0001

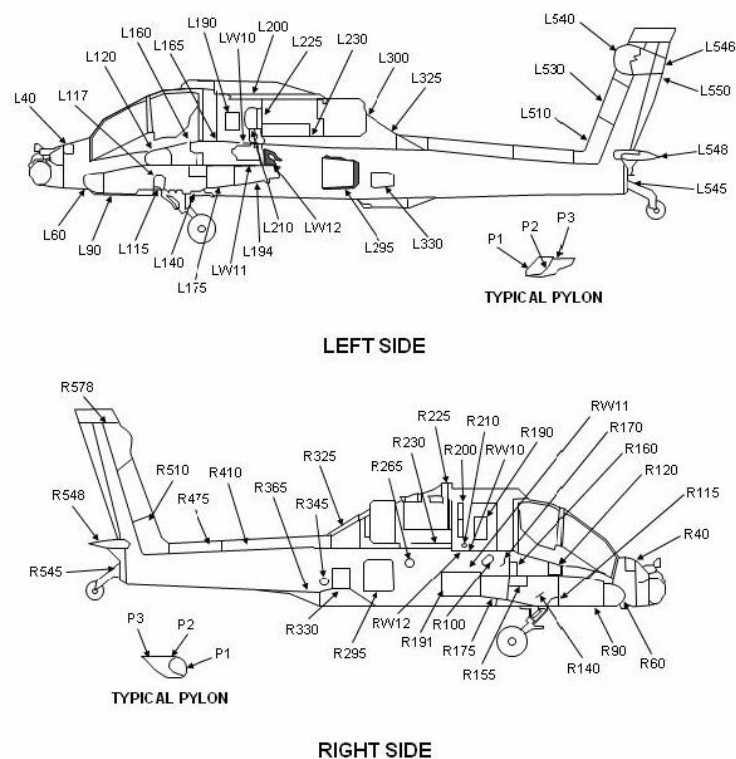


Figure 2. Inspection Access Provisions – (Sheet 1 of 2).

0001-3

FIGURE 425. Example of a page-based TM stylesheet output for <pmi-cklistwp> (Page 3 of 5).

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0001

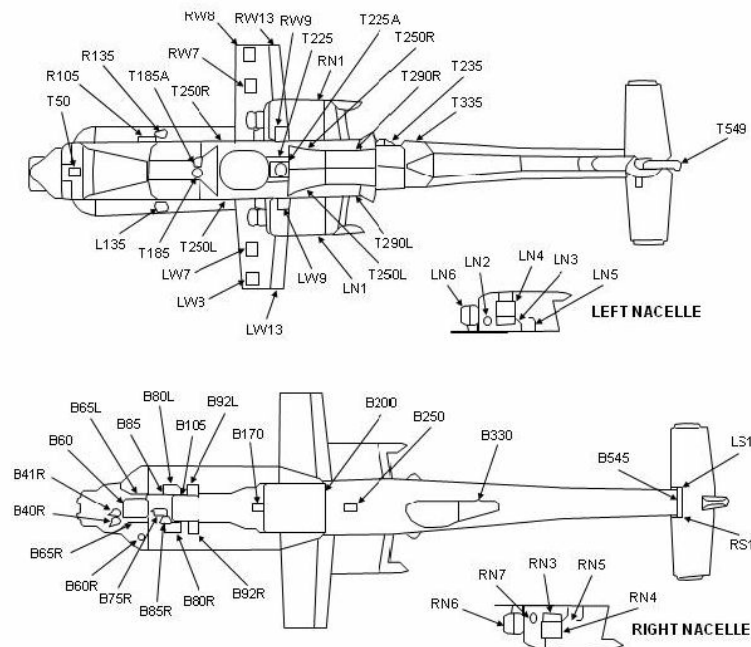


Figure 2. Inspection Access Provisions - (Sheet 2 of 2).

NOTE

Prior to start of the Phased Maintenance Inspection, it is recommended that a pre-inspection maintenance test flight (MTF) be conducted. Accomplishment of the MTF shall be determined by the field maintenance officer. The pre-inspection MTF should be conducted by a maintenance test pilot following a review of the aircraft forms and records and a briefing from the crew of the aircraft. The MTF is recommended to assess the aircraft performance and identify deficiencies that should be corrected while the aircraft is undergoing phased maintenance inspections.

0001-4

FIGURE 426. Example of a page-based TM stylesheet output for <pmi-cklistwp> (Page 4 of 5).

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0001

PHASE NO.		PHASED MAINTENANCE CHECKLIST			
Area Name and No. General		Aircraft Serial No.		Date	Total Hrs. This Area
Inspect Phase Nos.	Inspection Requirements	Status	Fault and/or Remarks	Action Taken	Initial
ALL C	1 Prior to inspection, check forms and records for record deficiencies.				
ALL C	2 Fuel tanks will be fully serviced prior to start of phased inspection. If maintenance is to be accomplished which requires defueling, this item may be deferred until after such maintenance is completed.				
ALL	3 Clean helicopter per TM 1-1520-238-23.				
ALL C	4 PERFORM ENGINE RUN-UP AND CHECK FOR PROPER ENGINE OPERATION PER TM 55-1520-238-MTF.				

END OF WORK PACKAGE

0001-5/blank

FIGURE 427. Example of a page-based TM stylesheet output for <pmi-cklistwp> (Page 5 of 5).

23.15 Auxiliary equipment maintenance work package <auxeqpwp>.

Auxiliary equipment maintenance instruction work package is prepared when auxiliary equipment (Modified Tables of Organization and Equipment (MTOE) items, etc.) maintenance TMs are not procured for peculiar equipment furnished by the contractor. When a maintenance task does not fit the information, use a generic procedure.

1. The components of <auxeqpwp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
 - i. Warning <warning> (optional - zero or more) (see Section 28.1.1).
 - ii. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
 - iii. Caution <caution> (optional - zero or more) (see Section 28.1.2).
 - iv. Note <note> (optional - zero or more) (see Section 28.1.3).
 - e. General Information <geninfo> (optional) (see Section 36.1.4.11).
 - f. Use either:
 - i. Maintenance task <maintsk> (required) (see Section 23.7.1).
 - ii. Procedure <proc> (required) (see Section 17.2).
2. The DTD fragment for <auxeqpwp> is graphically depicted:

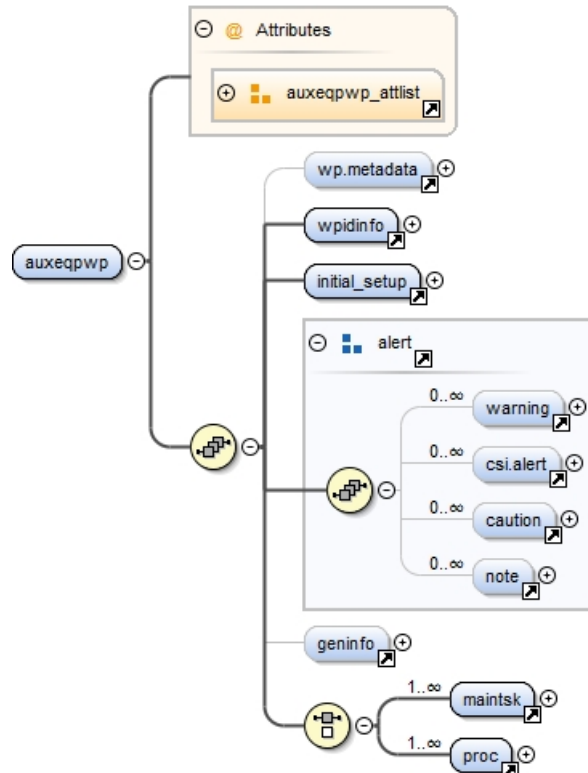


FIGURE 428. Auxiliary equipment maintenance work package DTD hierarchy <auxeqpwp>.

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3. The DTD fragment for **<auxeqpwp>** is:

```
<!ELEMENT auxeqpwp (wp.metadata?, wpidinfo, initial_setup, %alert; , gen-
info?, (maintsk+ | proc+))>
```

```
<!ATTLIST auxeqpwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date- time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<auxeqpwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).

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- g. comment** – Change information (optional) (see Section 36.3.12).
- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.15.1 XML document instance fragment and output for <auxeqpwp>.

The XML instance and its stylesheet output for <auxeqpwp> is provided below.

1. Example of an XML document instance fragment for <auxeqpwp>:

```
<auxeqpwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2" wpno="M3192-X-XXXX-XXX" wpseq="0062">
  <wpidinfo>
    <maintlvl level="field"/>
    <title>BLANK FIRING ATTACHMENT (M15A2) MAINTENANCE
  </title>
</wpidinfo>
<initial_setup>
<mtrlpart>
<mtrlpart-setup-item>
```

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```

<name>Cleaner, Lubricant, and Preservative (CLP)
</name>
<itemref>
<xref itemno="9" wpid="S0034-X-XXXX-XXX"/>
</itemref>
</mtrlpsetup-item>
<mtrlpsetup-item>
<name>Coating compound, enamel (RedM16A2)
</name>
<itemref>
<xref itemno="23" wpid="S0034-X-XXXX-XXX"/>
</itemref>
</mtrlpsetup-item>
</mtrlp>
</initial_setup>
<maintsk>
<remove frame="yes" tocentry="0">
<proc>
<title>REMOVAL
</title>
<warning haz-abbrev="no">
<warning.group haz-abbrev="no">
<trim.para>Do not keep live ammunition near the work area.
</trim.para>
</warning.group>
<warning.group haz-abbrev="no">
<trim.para>Only blank cartridge M200 is to be used when the blank firing attachment
is attached to the weapon.
</trim.para>
</warning.group>
</warning>
<caution>
<trim.para>Do not use tools to tighten the blank firing attachment.
<emphasis emph="bold">USE HANDS ONLY
</emphasis>.
</trim.para>
</caution>
<geninfo frame="no">
<title>GENERAL
</title>
<para>This work package contains information and instructions to keep auxiliary
equipment used with your weapon in good repair.
</para>
</geninfo>
<step1 qa="no">
<para>Unscrew slide
<callout assocfig="M3192-X-XXXX-XXX-fig1" label="1"/>to remove from compensator
<callout assocfig="M3192-X-XXXX-XXX-fig1" label="2"/>.
</para>
</step1>
<step1 qa="no">
<para>Unhook blank firing attachment
<callout assocfig="M3192-X-XXXX-XXX-fig1" label="3"/>from behind the first groove of
compensator

```

MIL-HDBK-2361D

```

<callout assocfig="M3192-X-XXXX-XXX-fig1" label="2"/>.
<figure application="both" figtype="normal-page" pane="no" id="M3192-X-XXXX-XXX-fig1"
tocentry="1">
<title>Unhook blank firing from compensator.
</title>
<graphic boardno="auxwp1" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
<step1 qa="no">
<para>Screw slide
<callout assocfig="M3192-X-XXXX-XXX-fig2" label="1"/>all the way in on blank firing
attachment
<callout assocfig="M3192-X-XXXX-XXX-fig2" label="3"/>.
<figure application="both" figtype="normal-page" pane="no" id="M3192-X-XXXX-XXX-fig2"
tocentry="1">
<title>Blank firing attachment.
</title>
<graphic boardno="auxwp2" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
</remove>
</maintsk>
<maintsk>
<clean frame="yes" tocentry="0">
<title>CLEANING
</title>
<para>Clean blank firing attachment with CLP. wipe dry. and coat with CLP.
</para>
</clean>
</maintsk>
<maintsk>
<paint frame="yes" tocentry="0">
<title>PAINTING
</title>
<para>Inspect blank firing attachment for cracks or distortion. Be sure the
parts in the slide are clear and clean. If blank firing attachment is cracked or
distorted, it is unserviceable.
</para>
</paint>
</maintsk>
<maintsk>
<repair-rplc frame="yes" tocentry="0">
<title>REPLACEMENT
</title>
<para>Replace blank firing attachment if unserviceable.
</para>
</repair-rplc>
</maintsk>
<maintsk>
<install frame="yes" tocentry="0">

```

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```

<title>INSTALLATION
</title>
<note acknowledge="no">
<trim.para>M23 blank firing attachment is stamped "M4 Carbine Only" painted yellow
and may be used on the M4 and M4A1 carbines. M15A2 BFA s painted red and is used on
the M16A2 rifle.
</trim.para>
</note>
<step1 qa="no">
<para>Unscrew and pull slide
<callout assocfig="M3192-X-XXXX-XXX-fig3" label="1"/>all the way out on blank firing
attachment
<callout assocfig="M3192-X-XXXX-XXX-fig3" label="2"/>.
</para>
</step1>
<step1 qa="no">
<para>Hook blank firing attachment
<callout assocfig="M3192-X-XXXX-XXX-fig3" label="2"/>behind the first groove of the
compensator
<callout assocfig="M3192-X-XXXX-XXX-fig3" label="3"/>.
<figure application="both" figtype="normal-page" pane="no" id="M3192-X-XXXX-XXX-fig3"
tocentry="1">
<title>Installation of compensator.
</title>
<graphic boardno="auxwp3" unitmeasure="in">
</graphic>
</figure>
</para>
</step1>
</install>
</maintsk>
</auxeqpwp>

```

2. Page-based TM stylesheet output example for **<auxeqpwp>**:

MIL-HDBK-2361D

0001

AVIATION SUPPORT BATTALION MAINTENANCE
BLANK FIRING ATTACHMENT (M15A2) MAINTENANCE

INITIAL SETUP:**Materials**

Cleaner, lubricant, and preservative (CLP)
 (WP 0001,)

Coating compound, enamel(RedM16A2)
 (WP 0001,)

REMOVAL**WARNING**

Do not keep live ammunition near the work area.

Only blank cartridge M200 is to be used when the blank firing attachment is attached to the weapon.

CAUTION

Do not use tools to tighten the blank firing attachment. **USE HANDS ONLY** .

GENERAL

This work package contains information and instructions to keep auxiliary equipment used with your weapon in good repair.

1. Unscrew slide (Figure 1, Item 1) to remove from compensator (Figure 1, Item 2).
2. Unhook blank firing attachment (Figure 1, Item 3) from behind the first groove of compensator (Figure 1, Item 2).

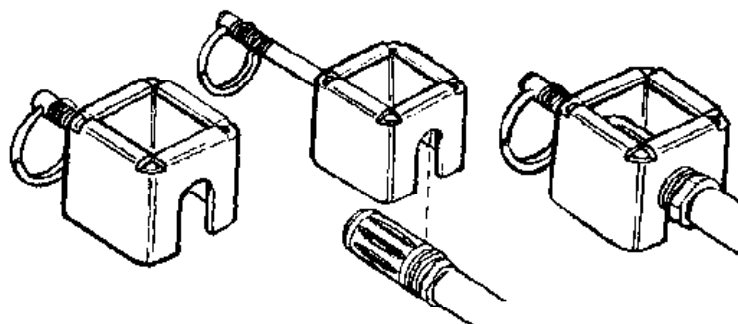


Figure 1. Unhook blank firing from compensator. .

3. Screw slide (Figure 2, Item 1) all the way in on blank firing attachment (Figure 2, Item 3).

0001-1

FIGURE 429. Example of a page-based TM stylesheet output for <auxeqpwp> (Page 1 of 3).



Figure 2. Blank firing attachment. .

END OF TASK

CLEANING

Clean blank firing attachment with CLP, wipe dry, and coat with CLP.

END OF TASK

PAINTING

Inspect blank firing attachment for cracks or distortion. Be sure the parts in the slide are clear and clean. If blank firing attachment is cracked or distorted, it is unserviceable.

END OF TASK

REPLACEMENT

Replace blank firing attachment if unserviceable.

END OF TASK

INSTALLATION

NOTE

M23 blank firing attachment is stamped "M4 Carbine Only" painted yellow and may be used on the M4 and M4A1 carbines. M15A2 BFA is painted red and is used on the M16A2 rifle.

1. Unscrew and pull slide (Figure 3, Item 1) all the way out on blank firing attachment (Figure 3, Item 2).
2. Hook blank firing attachment (Figure 3, Item 2) behind the first groove of the compensator (Figure 3, Item 3).

0001-2

FIGURE 430. Example of a page-based TM stylesheet output for <auxeqpwp> (Page 2 of 3).

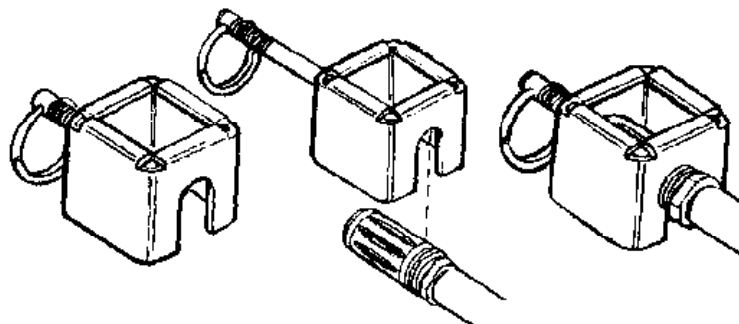


Figure 3. Installation of compensator. .

END OF TASK

END OF WORK PACKAGE

0001-3/blank

FIGURE 431. Example of a page-based TM stylesheet output for <auxeqpwp> (Page 3 of 3).

23.16 Munitions unique work packages <ammunitioncategory>.

The following paragraphs describe those work packages unique to dealing with various munitions.

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23.16.1 Ammunition maintenance work package <ammowp>.

The element contains all procedures required for the care and handling of ammunition, information for the disposition of defective ammunition, and the use of authorized cleaning materials and paint.

1. The components of <ammowp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. An optional group of any warnings <warning>, cautions <caution>, or notes <notes> in that order.
 - i. Warning <warning> (optional – zero or more) (see Section 28.1.1).
 - ii. Critical Safety Item <csi.alert> (optional – zero or more) (see Section 28.1.1.4).
 - iii. Caution <caution> (optional – zero or more) (see Section 28.1.2).
 - iv. Note <note> (optional – zero or more) (see Section 28.1.3).
 - e. General Information <geninfo> (optional) (see Section 36.1.4.11).
 - f. One of the following is required:
 - i. Ammunition markings <mark>, contains the procedure(s) for marking ammunition and ammunition containers (see Section 17.1).
 - ii. Ammunition defect <ammo.defect>, contains the procedure(s) for performing visual inspection of ammunition/containers and includes classification and disposition of defective ammunition/containers (see Section 17.1).
 - iii. Ammunition handling <ammo.handling> (see Section 23.16.1.1).
 - iv. Clean <clean> contains the procedure for use of cleaning materials authorized for use in the specified maintenance operations (see Section 17.1).
 - v. Paint <paint> contains the information needed to properly paint the munitions (see Section 17.1).
2. The DTD fragment for <ammowp> is graphically depicted:

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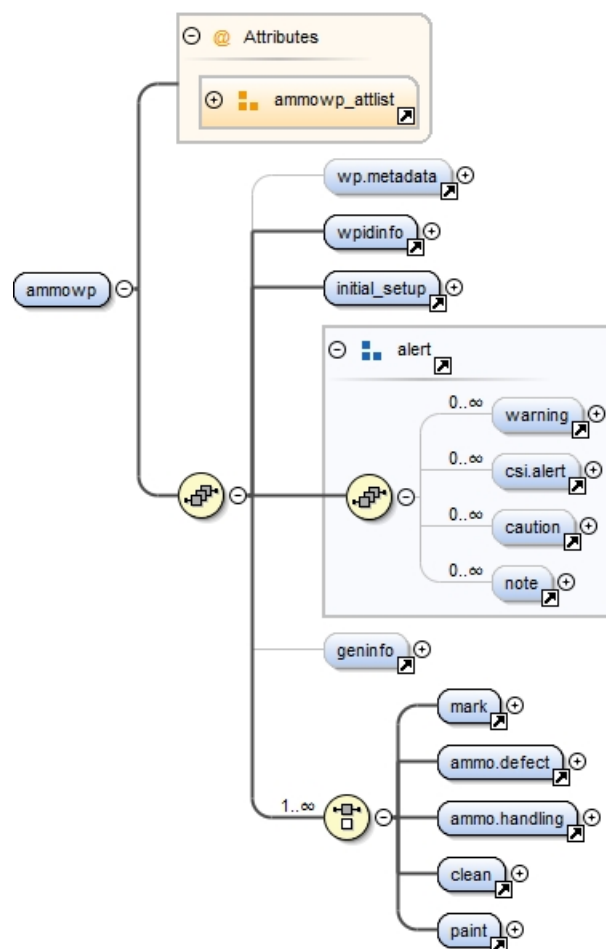


FIGURE 432. Ammunition maintenance work package DTD hierarchy <ammowp>.

3. The DTD fragment for <ammowp> is:

```
<!ELEMENT ammowp (wp.metadata?, wpidinfo, initial_setup, %alert;, geninfo?, (mark | ammo.defect | ammo.handling | clean | paint)+)>
```

```
<!ATTLIST ammowp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"

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deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <ammowp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnyno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.16.1.1 Ammunition handling <ammo.handling>.

Ammunition handling task contains all procedures required for care and handling of ammunition, including hazard distances, storage, special requirements, prevention of deterioration due to rough handling, exposure to adverse weather condition, or other hazards. Visual inspection criteria is prepared to determine item serviceability.

1. The components of <ammo.handling> are:
 - a. One of the following tasks is required:
 - i. Ammunition unpacking <unpack> contains information regarding the unpacking of ammunition, such as any special sequence of action necessary to protect the ammunition. If a special design reusable container is involved for either the end item or components which are authorized for replacement, instructions to report or reenter the empty container through supply channels, and man-hours/total man-hours required for unpacking the equipment (see Section 17.1).
 - ii. Ammunition packing <pack> contains information regarding the packing of ammunition, such as any special sequence of action necessary to protect the ammunition, instructions on how to package defective ammunition, and man-hour/total man-hours required for packing the ammunition (see Section 17.1).
2. The DTD fragment for <ammo.handling> is graphically depicted:

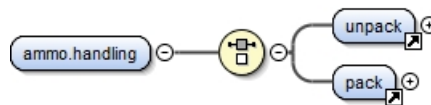


FIGURE 433. Ammunition handling task DTD hierarchy <ammo handling>.

3. The DTD fragment for <ammo.handling> is:


```
<!ELEMENT ammo.handling (unpack | pack)>
```
4. The element <ammo.handling> has no attributes.
5. The attributes for <unpack> and <pack> are:

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- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- h. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
hnp – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- i. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- j. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- k. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- l. **security** – Security classification (optional) (see Section 36.3.14).
- m. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- n. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **0**) (see Section 16.3.6).

23.16.1.2 XML document instance fragment and output for <ammowp>.

The XML instance and its stylesheet output for a <ammowp> is provided below.

1. Example of an XML document instance fragment for <ammowp>:

```
<ammowp wpno="M00341" chngno="">|
<wpidinfo>
<maintlvl level="maintainer"/>
<title>AMMUNITION
</title>
</wpidinfo>
<initial_setup>
<tools>
<tools-setup-item>
<name>Cutting Pliers
</name>
</tools-setup-item>
<tools-setup-item>
<name>Pliers
</name>
</tools-setup-item>
</tools>
<mtrlpart>
<mtrlpart-setup-item>
<name>Anti-pilferage seal
</name>
</mtrlpart-setup-item>
```


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```

<mtrlpart-setup-item>
<name>Gasket
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Foam end pad
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Bottom foam end pad
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Support cover
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Support cover
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Sleeve spacer
</name>
</mtrlpart-setup-item>
<mtrlpart-setup-item>
<name>Strap Assembly
</name>
</mtrlpart-setup-item>
</mtrlpart>
<persnreq>
<persnreq-setup-item>
<name>Person
</name>
<qty>2
</qty>
</persnreq-setup-item>
</persnreq>
</initial_setup>
<ammo.handling>
<unpack>
<proc>
<title>Unpacking Mine Canister Shipping Container
</title>
<warning>
<trim.para>Unloading and loading canisters requires two people. Failure to comply
may result in personal injury.
</trim.para>
</warning>
<note>
<trim.para>Canisters may be unloaded or loaded into free or stacked and
palletized shipping containers.
</trim.para>
</note>
<geninfo>

```

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<title>General

</title>

<para>This work package describes unpacking and packing procedures for mine canister, shipping and storage container. It also give instructions for replacement of anti-pilferage seal, the gasket, and the packaging materials of the shipping and storage containers.

</para>

</geninfo>

<step1>

<para>Using cutting pliers, cut anti-pilferage seal

<callout assocfig="M00341-X-XXX-XXX-fig1" label="1"/>.

</para>

</step1>

<step1>

<para>Remove shipping container cap

<callout assocfig="M00341-X-XXX-XXX-fig1" label="2"/>by lifting locking latch

<callout assocfig="M00341-X-XXX-XXX-fig1" label="3"/>and turning cap to left. Pull cap from container

<callout assocfig="M00341-X-XXX-XXX-fig1" label="4"/>and save for reuse.

</para>

</step1>

<step1>

<para>Remove foam end pad by pulling ends of straps

<callout assocfig="M00341-X-XXX-XXX-fig1" label="5"/>out of container

<callout assocfig="M00341-X-XXX-XXX-fig1" label="4"/>and lifting top foam end pad

<callout assocfig="M00341-X-XXX-XXX-fig1" label="6"/>from container. Save end pad for reuse.

</para>

</step1>

<step1>

<para>Remove rimmed canister support cover by pulling on straps

<callout assocfig="M00341-X-XXX-XXX-fig1" label="5"/>to lift cover

<callout assocfig="M00341-X-XXX-XXX-fig1" label="7"/>free from container

<callout assocfig="M00341-X-XXX-XXX-fig1" label="4"/>. Save cover for reuse.

</para>

</step1>

<step1>

<para>Remove first canister by pulling on straps

<callout assocfig="M00341-X-XXX-XXX-fig1" label="5"/>until canister breech

<callout assocfig="M00341-X-XXX-XXX-fig1" label="8"/> is exposed from container. Pull canister from container and set first canister aside.

</para>

</step1>

<step1>

<para>Continue pulling on straps

<callout assocfig="M00341-X-XXX-XXX-fig1" label="5"/>to lift foam bumper pad

<callout assocfig="M00341-X-XXX-XXX-fig1" label="9"/>from container. Save pad for reuse.

</para>

</step1>

<step1>

<para>Remove rimless canister support cover by pulling on straps

<callout assocfig="M00341-X-XXX-XXX-fig1" label="5"/>to lift cover

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<callout assocfig="M00341-X-XXX-XXX-fig1" label="10"/>free from container. Save cover for reuse.

</para>

</step1>

<step1>

<para>Remove second canister from container by pulling on straps

<callout assocfig="M00341-X-XXX-XXX-fig1" label="5"/>until canister breech

<callout assocfig="M00341-X-XXX-XXX-fig1" label="11"/> is exposed from container. Pull canister from container and set aside.

</para>

</step1>

<step1>

<para>Remove bottom foam end pad

<callout assocfig="M00341-X-XXX-XXX-fig1" label="12"/>, strap assembly

<callout assocfig="M00341-X-XXX-XXX-fig1" label="5"/>, and fireboard spacer

<callout assocfig="M00341-X-XXX-XXX-fig1" label="13"/>.

</para>

</step1>

<figure id="M00341-X-XXX-XXX-fig1">

<title>Mine Canister Shipping Container

</title>

<graphic boardno="figure33">

</graphic>

</figure>

</proc>

</unpack>

</ammo.handling>

</ammowp>

2. Page-based TM stylesheet output example for **<ammowp>**:

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0001

MAINTAINER MAINTENANCE**AMMUNITION****INITIAL SETUP:****Tools**Cutting Pliers
PliersBottom foam end pad
Support cover
Support cover
Sleeve spacer
Strap Assembly**Materials**Anti-pilferage seal
Gasket
Foam end pad**Personnel Required**

Person - 2

AMMUNITION HANDLING**Unpacking Mine Canister Shipping Container****WARNING**

Unloading and loading canisters requires two people. Failure to comply may result in personal injury.

NOTE

Canisters may be unloaded or loaded into free or stacked and palletized shipping containers.

GENERAL

This work package describes unpacking and packing procedures for mine canister, shipping and storage container. It also gives instructions for replacement of anti-pilferage seal, the gasket, and the packaging materials of the shipping and storage containers.

1. Using cutting pliers, cut anti-pilferage seal (Figure 1, Item 1).
2. Remove shipping container cap (Figure 1, Item 2) by lifting locking latch (Figure 1, Item 3) and turning cap to left. Pull cap from container (Figure 1, Item 4) and save for reuse.
3. Remove foam end pad by pulling ends of straps (Figure 1, Item 5) out of container (Figure 1, Item 4) and lifting top foam end pad (Figure 1, Item 6) from container. Save end pad for reuse.
4. Remove rimmed canister support cover by pulling on straps (Figure 1, Item 5) to lift cover (Figure 1, Item 7) free from container (Figure 1, Item 4). Save cover for reuse.
5. Remove first canister by pulling on straps (Figure 1, Item 5) until canister breech (Figure 1, Item 8) is exposed from container. Pull canister from container and set first canister aside.
6. Continue pulling on straps (Figure 1, Item 5) to lift foam bumper pad (Figure 1, Item 9) from container. Save pad for reuse.
7. Remove rimless canister support cover by pulling on straps (Figure 1, Item 5) to lift cover (Figure 1, Item 10) free from container. Save cover for reuse.
8. Remove second canister from container by pulling on straps (Figure 1, Item 5) until canister breech (Figure 1, Item 11) is exposed from container. Pull canister from container and set aside.
9. Remove bottom foam end pad (Figure 1, Item 12), strap assembly (Figure 1, Item 5), and fireboard spacer (Figure 1, Item 13).

0001-1

FIGURE 434. Example of a page-based TM stylesheet output for <ammowp> (Page 1 of 2).

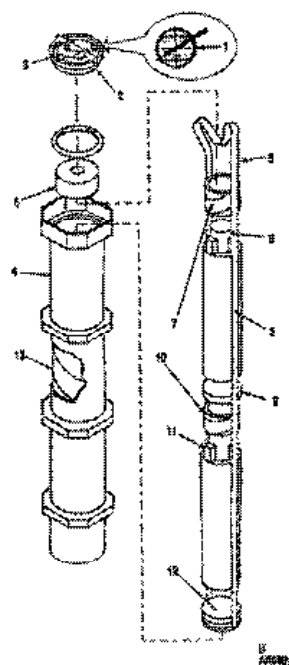


Figure 1. Mine Canister Shipping Container .

END OF WORK PACKAGE

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23.16.2 Ammunition marking information work package <ammo.markingwp>.

The ammunition marking information work package provides information on ammunition marking **<mark>**, classification, identification **<ammotype>**, care and handling **<ammo.handling>**, preservation, transportation, authorized rounds, preparation for firing, fuzes, and packing **<packing>**.

1. The components of **<ammo.markingwp>** are:

- a.** Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
- b.** Work package identification information **<wpidinfo>** (required) (see Section 16.2).
- c.** Work package initial setup **<initial_setup>** (required) (see Section 16.6).
- d.** An optional group of any warnings **<warning>**, cautions **<caution>**, or notes **<notes>** in that order.
 - i.** Warning **<warning>** (optional - zero or more) (see Section 28.1.1).
 - ii.** Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
 - iii.** Caution **<caution>** (optional - zero or more) (see Section 28.1.2).
 - iv.** Note **<note>** (optional - zero or more) (see Section 28.1.3).
- e.** General Information **<geninfo>** (optional) (see Section 36.1.4.11).
- f.** One or more of the following is required:
 - i.** Ammunition markings **<mark>**, contains the procedure(s) for marking ammunition and ammunition containers (see Section 17.1).
 - ii.** Ammunition type **<ammotype>** (see Section 23.16.2.1).
 - iii.** Ammunition handling **<ammo.handling>** (see Section 23.16.1.1).

2. The DTD fragment for **<ammo.markingwp>** is graphically depicted:

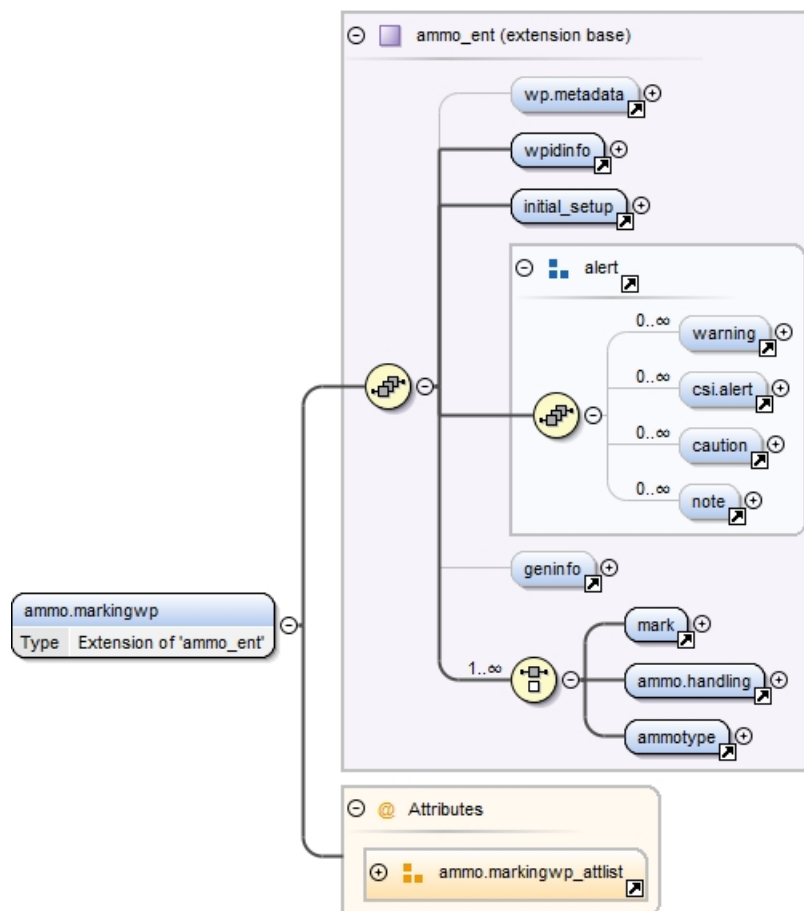


FIGURE 436. Ammunition maintenance work package DTD hierarchy <ammo.markingwp>.

3. The DTD fragment for <ammo.markingwp> is:

```

<!ELEMENT ammo.markingwp (%ammo_ent;)>
<!ATTLIST ammo.markingwp
    airforce          (yes | no)          "no"
    army              (yes | no)          "no"
    assocfig          IDREFS              #IMPLIED
    changelvl         (0-9)               "0"
    changeref         IDREFS              #IMPLIED
    chngno            (0-99)              "0"
    comment           CDATA               #IMPLIED
    crewmember        CDATA               #IMPLIED
    date-time-stamp   (date | time | date-
                      time)               #IMPLIED
    delchlvl          (0-99)              "0"
    deletewp          (yes | no)          "no"
  
```

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fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<ammo.markingwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).

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- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.16.2.1 Ammunition classification and/or identification <ammotype>.

The element is used for classifying and/or identifying ammunition in separate task or groups. The description can be implemented using a combination of narrative, tables and illustrations.

1. The components of <ammotype>:
 - a. Ammunition name <name> (required) (see Section 36.1.4.18)
 - b. Ammunition description <para> (see Section 36.1.1.6) <specpara> (see Section 36.1.1.7) (required – one or more).
2. The DTD fragment for <ammo . type> is graphically depicted:

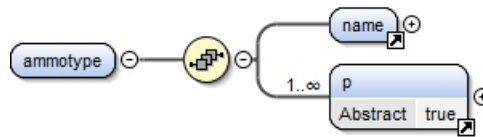


FIGURE 437. Ammunition classification and/or identification DTD hierarchy <ammotype>.

3. The DTD fragment for <ammotype> is:


```
<!ELEMENT ammotype (name, p+)>
```
4. The element <ammotype> has no attributes.

23.16.2.2 XML document instance fragment and output for <ammo . markingwp>.

The XML instance and its stylesheet output for a <ammo . markingwp> is provided below.

1. Example of an XML document instance fragment for <ammo . markingwp>:

```

<ammo . markingwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no"
tocentry="2" wpno="M00034-X-XXX-XX" wpseq="1839">
  <wpidinfo>
    <maintlvl level="field"/>
    <title>Ammunition Marking Information
  </title>
</wpidinfo>

```

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```

<initial_setup>
<ref-setup-item>
<xref wpid="M00134-X-XXX-XX"/>
</ref-setup-item>
<ref-setup-item>
<extref docno="TM 9-1300-251-20"/>
</ref-setup-item>
</initial_setup>
<mark frame="yes" tocentry="0">
<proc>
<title>GENERAL
</title>
<step1 qa="no">
<para>Ammunition for the M199 cannon is the separate loading type. The loading of
each complete round into the cannon requires three separate operations: loading
the fuzed projectile, the propelling charge, and the primer.
</para>
</step1>
<step1 qa="no">
<para>These components are shipped separately; therefore, the cannon crew must
know how to store, unpack, inspect, prepare, and load each complete round every
time the weapon is fired.
</para>
<step2 qa="no">
<para>The chief of section supervises the loading and the preparation duties
performed by cannoneers.
</para>
</step2>
<step2 qa="no">
<para>The chief of section must also see that the cannoneers and driver are cross-
trained in the specific duties of the care, handling, unpacking, inspection,
preparation, and loading of the ammunition components in order to sustain a 24-
hour operation or to operate with a reduced crew.
</para>
</step2>
</step1>
<step1 qa="no">
<para>It is planned that future ammo for all new 155mm weapons will be
interchangeable. This will enable projectiles and propelling charges of one
NATO nation to be fired from the 155mm weapons of all others. Current items of
interchangeability are contained in Chapter 5.
</para>
</step1>
<step1 qa="no">
<para>For maintenance of ammunition,
<extref docno="TM 9-1300-251-20" pretext="see "/>.
</para>
</step1>
<step1 qa="no">
<specpara>
<warning haz-abbrev="no">
<trim. para>Until safety and reliability testing is completed, the use of ammo
other than prescribed in this manual is prohibited.
</trim. para>

```

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</warning>
 <warning haz-abbrev="no">
 <trim para>
 <fnote id="note1" label="1" mark="ctr">
 <fnpara>Do not fire the M650 projectile if the obturating band is missing or broken. If the band is displaced and can be repositioned and remain in the groove, the projectile can be fired.
 </fnpara>
 <fnote>Do not fire the M650 projectile if the obturating band is missing or broken. If the band is displaced and can be repositioned and remain in the groove, the projectile can be fired.
 </fnpara>
 </trim para>
 </warning>
 <note acknowledge="no">
 <trim para>
 <fnote id="note2" label="2" mark="ctr">
 <fnpara>M728 and M732 fired only with "VX" projectile and only in combat emergency.
 </fnpara>
 <fnote>M728 and M732 fired only with "VX" projectile and only in combat emergency.
 </fnpara>
 </trim para>
 <trim para>
 <fnote id="note3" label="3" mark="ctr">
 <fnpara>Fuze, MTSQ, M564 is restricted from firing with zone 9 M188A1 propelling charge.
 </fnpara>
 <fnote>Fuze, MTSQ, M564 is restricted from firing with zone 9 M188A1 propelling charge.
 </fnpara>
 </trim para>
 <trim para>
 <fnote id="note4" label="4" mark="ctr">
 <fnpara>Authorized, requires removal of supplementary charge.
 </fnpara>
 <fnote>Authorized, requires removal of supplementary charge.
 </fnpara>
 </trim para>
 </note>
 <para>Refer to
 <xref wpid="M00134- X-XXX-XX"/>for information about the Loose Projectile Restraint System (LPRS). The LPRS is a divider rack for securing loose unfuzed projectiles for transportation in a field artillery companion vehicle.
 <table tocentry="1">
 <title>Authorized Projectile Fuze Combinations for 8-Inch Howitzer, M110A2 Cannon M201A1.
 </title>
 <tr group align="left" char=" " charoff="50" cols="12">
 <colspec colname="col1" colwidth="1.80*"/>
 <colspec colname="col2" colwidth="0.93*"/>
 <colspec colname="col3" colwidth="0.94*"/>
 <colspec colname="col4" colwidth="0.93*"/>
 <colspec colname="col5" colwidth="0.91*"/>
 <colspec colname="col6" colwidth="0.93*"/>
 <colspec colname="col7" colwidth="0.94*"/>
 <colspec colname="col8" colwidth="0.93*"/>
 <colspec colname="col9" colwidth="0.96*"/>

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```

<colspec colname="col10" colwidth="0.93*"/>
<colspec colname="col11" colwidth="0.94*"/>
<colspec colname="col12" colwidth="0.94*"/>
<thead valign="bottom">
<row>
<entry morerows="2" valign="top">TYPE AND MODEL NUMBER OF PROJECTILE
</entry>
<entry nameend="col12" namest="col2" valign="top">FUZE
</entry>
</row>
<row>
<entry nameend="col3" namest="col2" valign="top">PD
</entry>
<entry nameend="col5" namest="col4" valign="top">MT
</entry>
<entry nameend="col8" namest="col6" valign="top">MTSQ
</entry>
<entry nameend="col10" namest="col9" valign="top">PROX (VT)
</entry>
<entry nameend="col12" namest="col11" valign="top">ET
</entry>
</row>
<row>
<entry valign="middle">M739 SERIES
</entry>
<entry valign="middle">M1557
</entry>
<entry valign="middle">M572
</entry>
<entry valign="middle">M565
</entry>
<entry valign="middle">M564
</entry>
<entry valign="middle">M557 SERIES
</entry>
<entry valign="middle">M582 SERIES
</entry>
<entry valign="middle">M728
</entry>
<entry valign="middle">M732
</entry>
<entry valign="middle">M762
</entry>
<entry valign="middle">M767
</entry>
</row>
</thead>
<tbody valign="top">
<row>
<entry valign="top">Agent GB, VX, M426
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">X

```

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```

</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
<fnref xrefid="note2"/>
</entry>
<entry align="center" valign="middle">X
<fnref xrefid="note2"/>
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
</row>
<row>
<entry valign="top">HE, M106 (Shallow Cavity)
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
<fnref xrefid="note3"/>
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
</row>
<row>
<entry valign="top">HE, M106 (Deep Cavity)
</entry>
<entry align="center" valign="middle">X
</entry>

```

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```

<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
<fnref xrefid="note3"/>
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">X
<fnref xrefid="note4"/>
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
</row>
<row>
<entry valign="top">HE, M404 ICM
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
</row>
<row>
<entry valign="top">HE, M509A1 ICM
</entry>
<entry align="center" valign="middle">
</entry>

```

MIL-HDBK-2361D

```

<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
</row>
<row>
<entry valign="top">HERA, M650 (Rocket Only)
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
</row>
<row>
<entry valign="top">HERA, M650 (Rocket Only)
<ftnref xrefid="note1"/>
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">X

```

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```

</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
<fnref xrefid="note3"/>
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
<entry align="center" valign="middle">
</entry>
<entry align="center" valign="middle">X
</entry>
</row>
</tbody>
</tgroup>
</table>
</para>
</specpara>
</step1>
</proc>
</mark>
</ammo.markingwp>

```

2. Page-based TM stylesheet output example for `<ammo.markingwp>`:

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Table 1. Authorized Projectile Fuze Combinations for 8-Inch Howitzer, M110A2 Cannon M201A1. .

TYPE AND MODEL NUMBER OF PROJECTILE	FUZE										
	PD		MT		MTSQ			PROX(VT)		ET	
	M739 SE- RIES	M1557	M572	M565	M564	M557 SE- RIES	M582 SE- RIES	M728	M732	M762	M767
Agent GB, VX, M426	X	X	X					X	X		
HE, M106 (Shallow Cavity)	X	X	X		X		X		X		X
HE, M106 (Deep Cavity)	X	X	X		X		X	X	X		X
HE, M404 ICM 888 MIL-HDBK- 2361D DRAFT DATED 5 July 2011				X		X				X	
HE, M509A1 ICM						X				X	
HERA, M650 (Rocket Only)	X	X	X								X
HERA, M650 (Rocket Only)	X	X	X		X		X		X		X

END OF WORK PACKAGE

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FIGURE 438. Example of a page-based TM stylesheet output for <ammo markingwp>.

FIGURE 439.

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23.16.3 Foreign Ammunition (NATO) work package <natowp>.

The Foreign Ammunition (NATO) work package contains the special requirements for foreign ammunition marking, classification, identification, handling, transportation, preparation for firing, and other similar data when applicable.

1. The components of <natowp>:

- a.** Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
- b.** Work package identification information **<wpidinfo>** (required) (see Section 16.2).
- c.** Work package initial setup **<initial_setup>** (required) (see Section 16.6).
- d.** An optional group of any warnings **<warning>**, cautions **<caution>**, or notes **<notes>** in that order.
 - i.** Warning **<warning>** (optional - zero or more) (see Section 28.1.1).
 - ii.** Critical Safety Item **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
 - iii.** Caution **<caution>** (optional - zero or more) (see Section 28.1.2).
 - iv.** Note **<note>** (optional - zero or more) (see Section 28.1.3).
- e.** General Information **<geninfo>** (optional) (see 36.1.4.11).
- f.** One of the following is required:
 - i.** Ammunition markings **<mark>** (see Section 17.1), contains the procedure(s) for marking ammunition and ammunition containers (see 17.1).
 - ii.** Ammunition type **<ammotype>** (see Section 23.16.2.1), contains the procedure(s) for identification.
 - iii.** Ammunition handling **<ammo.handling>** (see Section 23.16.1.1).

2. The DTD fragment for <natowp> is graphically depicted:

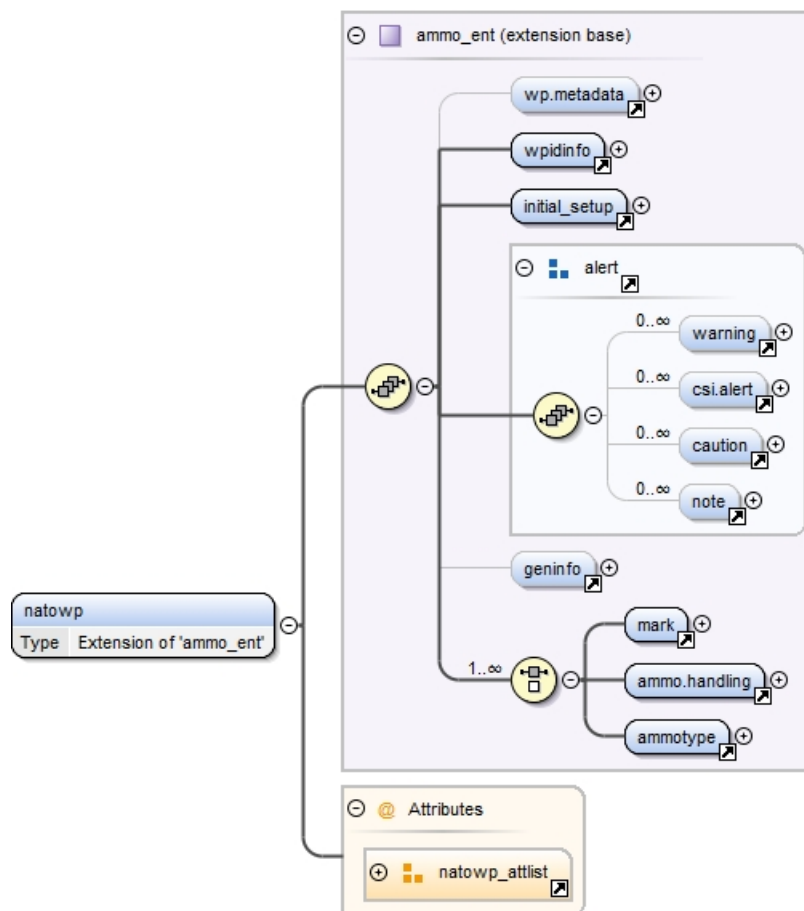


FIGURE 440. Foreign Ammunition (NATO) work package DTD hierarchy <natowp>.

3. The DTD fragment for <natowp> is:

```
<!ELEMENT natowp (%ammo_ent;)>
```

```
<!ATTLIST natowp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"

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fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <natowp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).

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- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

23.16.3.1 XML document instance fragment and output for <natowp>.

The XML instance and its stylesheet output for <natowp> is provided below.

1. Example of an XML document instance fragment for <natowp>:

```
<natowp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2"
wpno="M02543-X-XXXX-XXX" wpseq="0101" chngno="">
  <wpidinfo>
    <maintlvl level="field"/>
    <title>Foreign Ammunition (NATO)
  </title>
</wpidinfo>
<initial_setup>
  <title>N/A
</title>
<null insert="none"/>
</initial_setup>
<geninfo frame="no">
  <para0>
    <title>GENERAL
  </title>
  <para>Agreements between the United States and NATO allies have established the
interoperability of weapon systems and ammunition of the nations. The
agreements enable the safe and effective firing of major types of ammunition of
the same size from the same compatible size and type weapon of the NATO armies.
  </para>
  <para>The following pages cover only authorized German (GE), United Kingdom
(UK), Canadian (CA), Netherlands (NL), French (FR), Norwegian (NO), Italian
(IT), Danish (DA), Greek (GR), or Belgian (BE) 155mm components. If a munitions
item has not yet been authorized, it is because it has not yet been determined to
be safe to fire or it has been determined that the munitions item cannot be safely
fired from the US weapon system.
  </para>
</para0>
</geninfo>
<ammotype>
```

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<name>AUTHORIZED PROJECTILES – GE

</name>

<para>The following GE munitions are authorized for use in M198 howitzers:

<deflist>

<term.def>

<term>Projectile

</term>

<def>

<para>155mm, HE, M107 (TNT-loaded only)

</para>

</def>

</term.def>

<term.def>

<term>Charge, propelling

</term>

<def>

<para>Green bag, M3A1, zones 1-5

</para>

</def>

</term.def>

<term.def>

<term>Charge, propelling

</term>

<def>

<para>White bag, M4A2, zones 3-7

</para>

</def>

</term.def>

<term.def>

<term>Fuze

</term>

<def>

<para>Point-detonating, M557, L85A2

</para>

</def>

</term.def>

<term.def>

<term>Primer

</term>

<def>

<para>M82

</para>

</def>

</term.def>

</deflist>

</para>

</ammotype>

<ammotype>

<name>AUTHORIZED PROJECTILES – UK

</name>

<para>The following UK munitions are authorized for use in M198 howitzers:

<deflist>

<term.def>

<term>Projectile

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```

</term>
<def>
<para>155mm, HE, M107 (TNT-loaded only)
</para>
</def>
</term.def>
<term.def>
<term>Charge, propelling
</term>
<def>
<para>Green bag, M3A1, zones 1-5
</para>
</def>
</term.def>
<term.def>
<term>Charge, propelling
</term>
<def>
<para>White bag, M4A2, zones 3-7
</para>
</def>
</term.def>
<term.def>
<term>Fuze
</term>
<def>
<para>Point-detonating, M557, L85A2
</para>
</def>
</term.def>
<term.def>
<term>Primer
</term>
<def>
<para>M82
</para>
</def>
</term.def>
</deflist>
</para>
</ammotype>
<ammotype>
<name>AUTHORIZED PROJECTILES - CA
</name>
<specpara>
<note acknowledge="no">
<trim.para>M3 and M4A 1 propelling charges do not have flash reducers.
</trim.para>
</note>
<para>The following CA munitions are authorized for use in M198 howitzers:
<deflist>
<term.def>
<term>Projectile
</term>

```

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```

<def>
<para>155mm, HE, M107
</para>
</def>
</term.def>
<term.def>
<term>Charge, propelling
</term>
<def>
<para>M3, M3A1, M4A1, M4A2
</para>
</def>
</term.def>
<term.def>
<term>Fuze
</term>
<def>
<para>Point-detonating, M557, M564 proximity, M514A1
</para>
</def>
</term.def>
<term.def>
<term>Primer
</term>
<def>
<para>M82
</para>
</def>
</term.def>
</deflist>
</para>
</specpara>
</ammotype>
<ammotype>
<name>AUTHORIZED PROJECTILES - NL
</name>
<specpara>
<note acknowledge="no">
<trim.para>The M107C1 projectile, M3C1 and M4C3 propelling charges, M557C1 fuze,
and M82C1 primer are NL manufacture.
</trim.para>
</note>
<para>The following NL munitions are authorized for use in M198 howitzers:
<deflist>
<term.def>
<term>Projectile
</term>
<def>
<para>155mm, HE, M107, M107C1 (TNT-loaded only)
</para>
</def>
</term.def>
<term.def>
<term>Charge, propelling

```


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</term>
 <def>
 <para>M3C1, M4C3, M4A1
 </para>
 </def>
 </term.def>
 <term.def>
 <term>Fuze
 </term>
 <def>
 <para>Point-detonating, M557, M557C1
 </para>
 </def>
 </term.def>
 <term.def>
 <term>Primer
 </term>
 <def>
 <para>M82, M82C1
 </para>
 </def>
 </term.def>
 </deflist>
 </para>
 </specpara>
 </ammotype>
 <ammotype>
 <name>AUTHORIZED PROJECTILES — FR
 </name>
 <para>The following FR munitions are authorized for use in M198 howitzers:
 <deflist>
 <term.def>
 <term>Projectile
 </term>
 <def>
 <para>155mm, HE, M107
 </para>
 </def>
 </term.def>
 <term.def>
 <term>Charge, propelling
 </term>
 <def>
 <para>Green bag, M3, zones 1-5
 </para>
 </def>
 </term.def>
 <term.def>
 <term>Charge, propelling
 </term>
 <def>
 <para>White bag, M4A1, zones 5-7
 </para>
 </def>

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```
</term.def>
<term.def>
<term>Fuze
</term>
<def>
<para>Point-detonating, M557
</para>
</def>
</term.def>
<term.def>
<term>Primer
</term>
<def>
<para>Use US M82 only, not MK2A4.
</para>
</def>
</term.def>
</deflist>
</para>
</ammotype>
</natowp>
```

2. Page-based TM stylesheet output example for **<natowp>**:

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Table 1. Authorized Projectile Fuze Combinations for 8-Inch Howitzer, M110A2 Cannon M201A1. .

TYPE AND MODEL NUMBER OF PROJECTILE	FUZE										
	PD		MT		MTSQ			PROX(VT)		ET	
	M739 SE- RIES	M1557	M572	M565	M564	M557 SE- RIES	M582 SE- RIES	M728	M732	M762	M767
Agent GB, VX, M426	X	X	X					X	X		
HE, M106 (Shallow Cavity)	X	X	X		X		X		X		X
HE, M106 (Deep Cavity)	X	X	X		X		X	X	X		X
HE, M404 ICM 888 MIL-HDBK- 2361D DRAFT DATED 5 July 2011				X		X				X	
HE, M509A1 ICM						X				X	
HERA, M650 (Rocket Only)	X	X	X								X
HERA, M650 (Rocket Only)	X	X	X		X		X		X		X

END OF WORK PACKAGE

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FIGURE 441. Example of a page-based TM stylesheet output for <natowp> (Page 1 of 2).

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Projectile	155mm, HE, M107, M107C1 (TNT-loaded only)
Charge, propelling	M3C1, M4C3, M4A1
Fuze	Point-detonating, M557, M557C1
Primer	M82, M82C1

AUTHORIZED PROJECTILES — FR

The following FR munitions are authorized for use in M198 howitzers:

Projectile	155mm, HE, M107
Charge, propelling	Green bag, M3, zones 1-5
Charge, propelling	White bag, M4A1, zones 5-7
Fuze	Point-detonating, M557
Primer	Use US M82 only, not MK2A4.

END OF WORK PACKAGE

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FIGURE 442. Example of a page-based TM stylesheet output for <natowp> (Page 2 of 2).

24 PARTS INFORMATION (RPSTL)

24.1 Overview.

24.1.1 Parts information organization.

Parts information, commonly referred to as the RPSTL for Repair Parts and Special Tools List, is a collection of parts information related work packages.

24.1.2 Parts information manual.

A separate parts information manual may be prepared. Typically a separate parts manual is prepared:

1. For large or complex weapons systems.
2. When prescribed by the acquiring activity.

When a separate manual is prepared, it will normally be a combined maintenance manual and contains all parts for all levels of maintenance. Depot level repair parts may be included, however, depot parts are usually not included in non-depot manuals.

24.2 General tagging instructions.

Parts information may be tagged for display in either a page based TM or for an IETM.

24.3 RPSTL from a data base.

The RPSTL may be developed from information contained in a parts or provisioning data base. When a data base is used, all the requirements contained in MIL-STD-40051-1 and MIL-STD-40051-2 are to be met.

24.4 Parts information **<pim>** work packages.

The **<pim>** whether a separate manual or included in maintenance TM contains the following work packages.

1. The components are:
 - a. Title page **<titlepg>** (required). The element provides the title page preceding an information chapter (see Section 36.1.1.1).
 - b. Volume **<volume>** (optional) (see Section 15.16).
 - c. Introduction work package **<introwp>** (required) (see Section 24.4.1).
 - d. One or more parts list work packages **<plwp>** (required – one or more) (see Section 24.4.2).
 - e. An optional special tools repair parts work package **<stl-partswp>** (optional) (see Section 24.4.3).
 - f. Kit parts work package **<kitswp>** (optional – zero or more) (see Section 24.4.4).
 - g. Bulk items list work package **<bulk_itemswp>** (optional – zero or more) (see Section 24.4.5).
 - h. Special tools list work package(s) **<stlwp>** (optional – zero or more) (see Section 24.4.6).
 - i. National stock number index **<nsnindxwp>** (required) (see Section 24.4.7.1) and part number index **<pnindxwp>** (required) (see Section 24.4.7.2). The stock number and part number indexes must be used together. If one is used, the other is required by the standard.

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- j.** Reference designator index work package **<refdesindxwp>** (optional – zero or more) (see Section 24.4.7.3).
 - k.** Back Matter of Volume **<vol-rear>** (optional) (see Section 15.16.1).
- 2.** The DTD fragment for **<pim>** is graphically depicted.

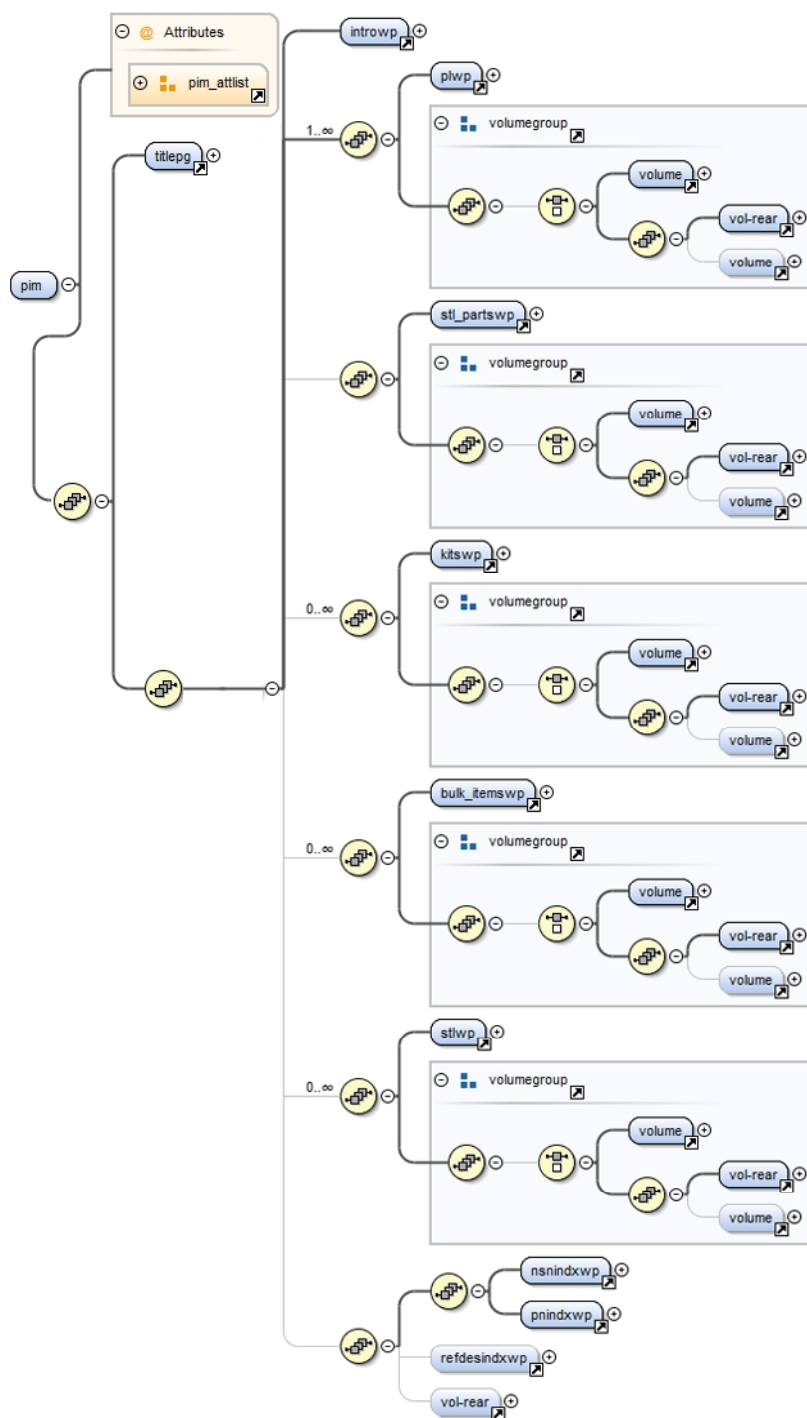


FIGURE 443. Parts information <pim> DTD hierarchy.

3. The DTD fragment for <pim> is:

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```

<!ELEMENT pim (titlepg, (introwp, (plwp, %volumegroup;)+, (stl_partswp, %
volumegroup;)?, (kitswp, %volumegroup;)*, (bulk_itemswp, %volumegroup;
*, (stlwp, %volumegroup;)*, ((nsnindxwp, pnindxwp), refdesindxwp?, vol-
rear?))) (titlepg, (introwp, (plwp, %volumegroup;)+, (stl_partswp, %volu-
megroup;)?, (kitswp, %volumegroup;)*, (bulk_itemswp, %volumegroup;)*,
(stlwp, %volumegroup;)*, ((nsnindxwp, pnindxwp), refdesindxwp?, vol-
rear?)))>

<!ATTLIST pim
chap-toc                (yes | no )           "yes"
chngno                  (0-99)                 "0"
dmwr-inclus             CDATA                  #REQUIRED
frame                   (yes | no )           "yes"
revno                   CDATA                  #REQUIRED
tocentry                (0 | 1 | 2)            "1">

```

4. Common attributes for **<pim>**:

- a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **chngno** – Change number (required) (see Section 36.3.12).
- c. **dmwr-inclus** – Specifies whether a DMWR/NMWR includes parts only or parts and tools.
- d. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional). Select either **yes** or **no** (default value is **yes**).
- e. **revno** – Revision number (required) (see Section 36.3.12).
- f. **tocentry** – In the TM table of contents, the attribute indicates the indenture level. The possible selections are **0** (do not include), **1** (the highest level or 1st indenture level), or **2** (the second indenture level) (default value is **1**).

24.4.1 Repair parts introduction work package **<introwp>**.

Both MIL-STD-40051-1 and MIL-STD-40051-2 require an introductory work package. The introduction work package **<introwp>** contains information common to all the parts list work packages. This information consists primarily of verbatim text that is provided in MIL-STD-40051-1 or MIL-STD-40051-2. The text to be used is based on the type of TM being acquired. All of the boilerplate text may be entered using text entities. These entities are contained in a series of entity files. The following subparagraphs explain and illustrate how to use these entity files to enter the boilerplate text into the data. Also, the following list is the type of data that is required in **<introwp>**:

1. A scope stating the maintenance level or levels and components the parts listings support.
2. A listing of the types of work packages included in the parts listing.
3. An explanation of the columns used in the **<plwp>** or **<stl_partswp>**, **<kitswp>**, **<bulk_itemswp>**, **<stlwp>**, if they are included. This explanation includes an explanation of the Source, Maintenance, and Recoverability (SMR) codes used in the parts lists.
4. An explanation of the columns used in the **<nsnindxwp>**, **<pnindxwp>**, **<refdesindxwp>** (when included).
5. Any special information that may be needed. This section includes:
 - a. Instructions on how to locate repair parts.

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- b. An optional listing of UOC or other methods to identify configuration applicability. This list will be included if there are multiple configurations listed in the parts lists that are identified by some form of identification code.
 - c. An optional list of related publications. This list will be included if the parts list is contained in a separate manual.
 - d. An optional list of abbreviations that contains abbreviations found only in the parts list.
6. Though the majority of the **<introwp>** is boilerplate text, the introduction may contain other information at the discretion of the acquiring activity. Other information commonly found in the **<introwp>** include a listing of CAGE codes with their associated name and address or an overview graphic showing how the parts listings are broken down.
1. The components of the **<introwp>** are:
- a. Work package metadata element **<wp.metadata>** (optional) (see Section 16.4.1).
 - b. Work package identification element **<wpidinfo>** (required) (see Section 16.2).
 - c. Index Marker Reference **<indxref>** (optional – zero or more) (see Section 15.5.2.2.3).
 - d. The following models may be used as needed:
 - i. A grouping of textual paragraphs:
 - I. Title **<title>** (required) (see Section 36.1.1.4).
 - II. Figtab **<figtab>** (optional – zero or more) (see 36.2.2).
 - III. Select one of the following information types:
 - A. Narrative paragraphs with descriptive or narrative titled text:
 - A. Note **<note>** (optional – zero or more) (see Section 28.1.3).
 - A. Narrative paragraph **<para>** (required – one or more) (see Section 36.1.1.6).
 - A. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
 - B. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).
 - ii. A how to use element **<howtouse>** (see Section 15.4.2).
 - e. An optional figure **<figure>** (optional – zero or more) used to show a general layout of the system as defined in the parts listings.
2. The DTD fragment for **<introwp>** is graphically depicted:

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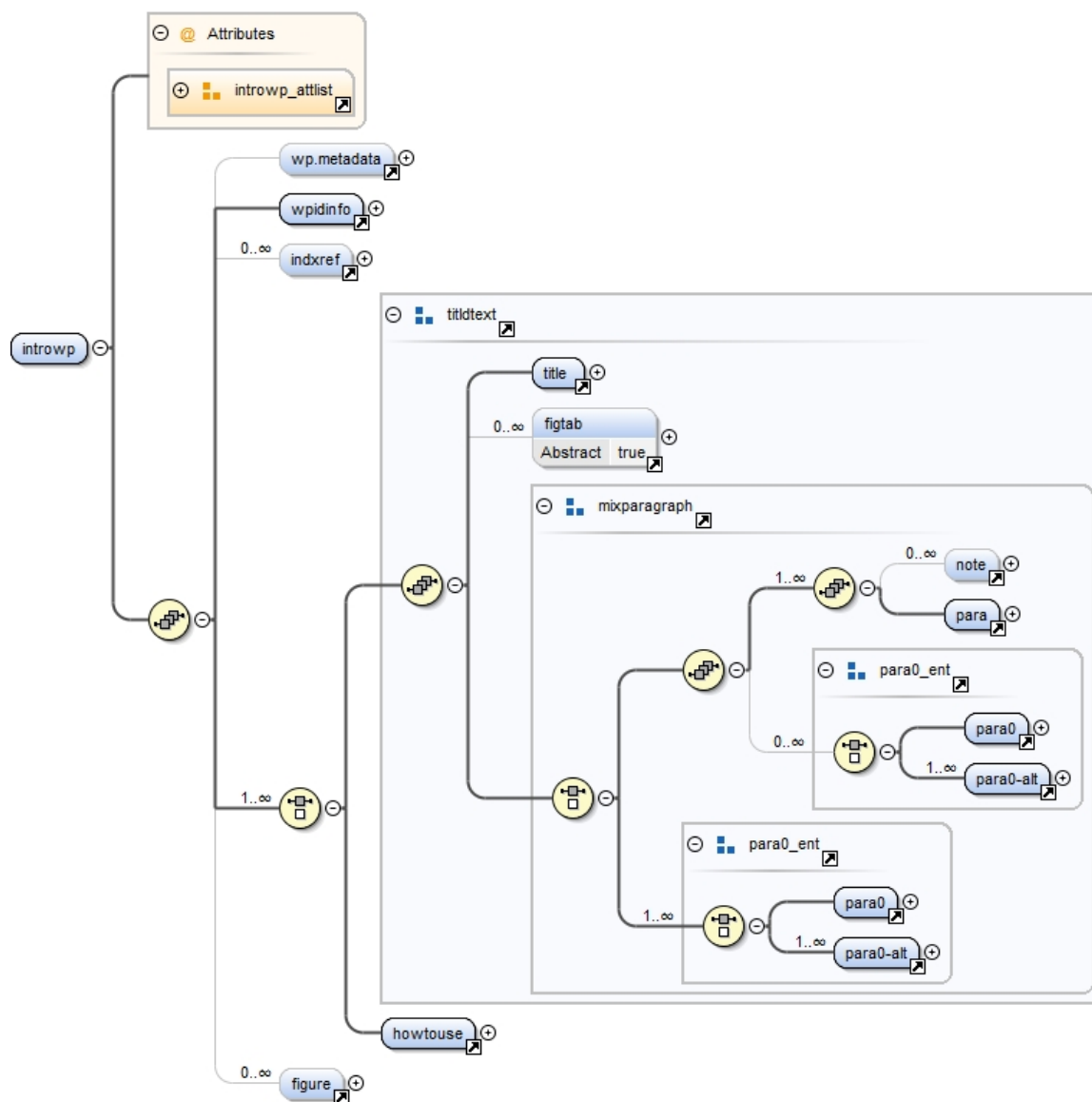


FIGURE 444. Repair parts introduction <introwp> DTD hierarchy.

3. The DTD fragment for <introwp> is:

```
<!ELEMENT introwp (wp.metadata?, wpidinfo, indxref*, (%titldtext; | how-
touse)+, figure*)>
```

```
<!ATTLIST introwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chngno	(0-99)	"0"

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comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <introwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).

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- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

24.4.1.1 Example tagging of an <introwp>.

24.4.1.2 Tagged with entities.

The preferred method of tagging the boilerplate text required by the standard is with general entities available in the entity files described in Section 37.6.1. The following is an example of an <introwp> tagged using the boilerplate entity.

```
<introwp wpno="0">&introwp.intro;
</introwp>
```

The first paragraph of the <introwp> would be resolved to resemble the following:

```
<title>INTRODUCTION
</title>
<para0>
<title>SCOPE
</title>
<para>This RPSTL lists and authorizes spares and repair parts; special tools; special
test, measurement, and diagnostic equipment (TMDE); and other special support
equipment required for performance of &introwp.intro.lowest-maint; maintenance of the
&introwp.intro.item;. It authorizes the requisitioning, issue, and disposition of spares,
repair parts, and special tools as indicated by the source, maintenance, and
recoverability (SMR) codes.
</para>
</para0>
```

Note that within the `<para0>` there are two other entities. The *&introwp.intro.lowest-maint;* in this example resolves to the term:

MAINTAINER

and the *&introwp.intro.item;* would be set to the name of the item or system the RPSTL is dealing with.

24.4.1.3 Tagging `<introwp>` without entities.

Though it is strongly discouraged to tag the `<introwp>` without using the available entities, there are cases where the entities may not provide all the information required. In these cases, the boilerplate entities should be used to the maximum extent possible and any additional information should be added after the entities. The following example uses the basic `<introwp>` entity shown in Section 24.4.1.2, an example list of CAGE codes, and an overview figure:

```
<introwp wpno="0">&introwp.intro;
<para0>
<title>Contractor and government entity codes
</title>
<para>The following is a list of the Contractor and Government Entity (CAGE) Codes
used in this parts list.
<deflist>
<term.def>
<term>96412
</term>
<def>
<para>
<proponent>
<name>Department of Defense
<address>
<city>Washington
<state>DC
<zip>20301
<figure id="g00432-1-1111-111-1">
<title>Example system overview
<graphic boardno="overview-ex" hscale="80" vscale="80"/>
</para>
</def>
</deflist>
</para>
```

24.4.2 Parts list work package `<p1wp>`.

The parts list work package(s) `<p1wp>` identifies all parts that may be replaced or repaired at the maintenance level (s) of the TM. At least one `<p1wp>` must be provided. Depending on the complexity of the system, all parts may be listed in a single `<p1wp>` or the system may be broken down by functional group codes into multiple `<p1wp>`s. Care should be taken when planning parts list layout. Though the `<p1wp>` may contain an entire weapons systems parts list, for more complex systems, use of multiple `<p1wp>`s is highly recommended. Section 16.1.3 provides additional information on determining when to prepare a single large or several smaller work packages. An example of a `<p1wp>` and all its child elements is provided in Section 24.4.2.2.

1. Components `<p1wp>`:

- a. Work package metadata element `<wp.metadata>` (optional) (see Section 16.4.1).
- b. Work package identification element `<wp.idinfo>` (required) (see Section 16.2).

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- c. Parts item category element **<pi.category>** (required – one or more) (see Section 24.4.2.1).
2. The DTD fragment for **<plwp>** is graphically depicted:

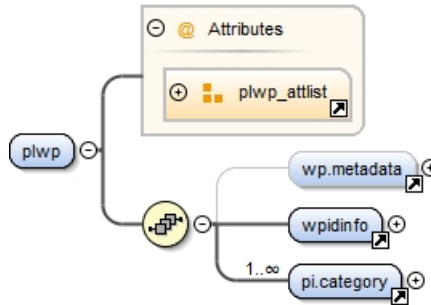


FIGURE 445. Parts list work package **<plwp>** DTD hierarchy.

3. The DTD fragment for **<plwp>** is:

```
<!ELEMENT plwp (wp.metadata?, wpidinfo, pi.category+)>
```

```
<!ATTLIST plwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"

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wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <p1wp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

24.4.2.1 Parts information category <pi.category>.

The <pi.category> is the mechanism that allows the <plwp> to list anything from a single functional grouping of parts to the entire system. Normally each <pi.category> will contain a single functional group (see GEIA-STD-0007). A <pi.category> is also an option in the <pi.item> content model to allow for sub-functional groups (see Section 24.4.2.1.6).

1. Components of <pi.category>:
 - a. An illustration <figure> (required) of the component being listed (see Section 31.1.1).
 - b. Functional group code <fncgrp> (required) (see Section 24.4.2.1.2).
 - c. One or more individual parts items <pi.item> (required – one or more) listing the components contained on the associated illustration (see Section 24.4.2.1.6).
2. The DTD fragment for <pi.category> is graphically depicted:

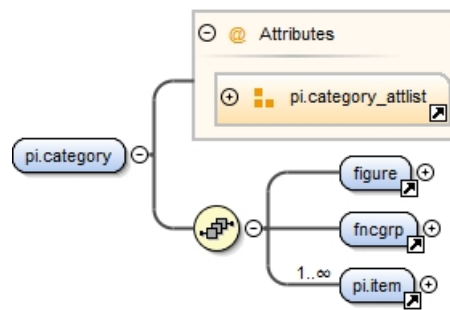


FIGURE 446. Parts information category <pi.category> DTD hierarchy.

3. The DTD fragment for <pi.category> is:

```

<!ELEMENT pi.category (figure, fncgrp, pi.item+)>
<!ATTLIST pi.category
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA          #IMPLIED
  delchlvl            (0-99)         "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)         "0"
  security             (uc | fouo | c | s | ts) #IMPLIED
  skilltrk            CDATA          #IMPLIED>
  
```

4. Attributes for <pi.category>:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier. (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.1 Figure <figure>.

The figure is used to provide a visual depiction of the part or parts of the component. The figure is prepared as prescribed in MIL-STD-40051-1 or MIL-STD-40051-2 (see Section 31.1.1).

24.4.2.1.2 Functional group <fncgrp>.

The functional group code identifies systems or subsystems by a uniquely assigned alphanumeric code. The functional group code is a required entry for each <pi.category>.

1. The components of the <fncgrp> are:
 - a. Function code <fnccode> (required) (see Section 24.4.2.1.3).
 - b. Function title <fnctitle> (required) (see Section 24.4.2.1.4).
 - c. A group consisting of zero or more of the following:
 - i. One required part number <partno> element (see Section 24.4.2.1.7.1).
 - ii. Zero or one useable on code <uoc> element (see Section 24.4.2.1.6.4).
 - iii. Zero or more source, maintainability and recoverability code <smr> elements (see Section 24.4.2.1.7.7).
2. The DTD fragment for <fncgrp> is graphically depicted:

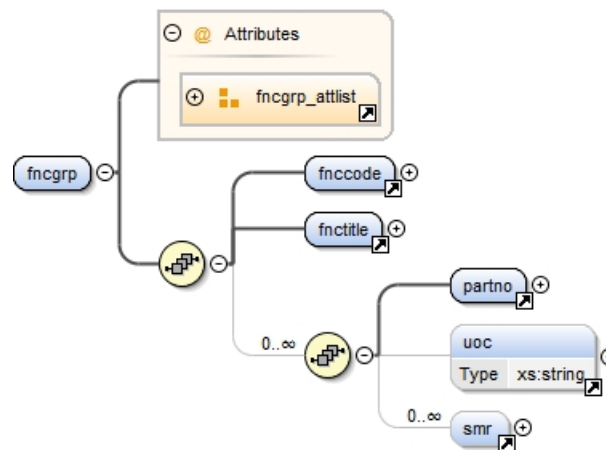


FIGURE 447. Functional group <fncgrp> DTD hierarchy.

3. The DTD fragment for <fncgrp> is:

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```

<!ELEMENT fncgrp (fnccode, fnctitle, (partno, uoc?, smr*) *)>
<!ATTLIST fncgrp
    assocfig          IDREFS          #IMPLIED
    changeref         IDREFS          #IMPLIED
    comment           CDATA           #IMPLIED
    delchlvl          (0-99)          "0"
    id                ID              #IMPLIED
    idref             IDREFS          #IMPLIED
    inschlvl          (0-99)          "0"
    security           (uc | fouo | c | s | ts)  #IMPLIED
    skilltrk          CDATA           #IMPLIED>

```

4. Common attributes for **<fncgrp>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.3 Functional code **<fnccode>** element.

The **<fnccode>** element is a character data element that is used to enter the applicable functional code. The author needs to be aware of how the stylesheet for their particular system functions. Some stylesheets can generate the text of the word “GROUP.” Other systems will require the author to enter this text manually. If the data is entered directly and the stylesheet can support the generation, then the word “GROUP” will appear twice.

1. The components of the **<fnccode>** is parsable character data (#PCDATA).
2. The DTD fragment for **<fnccode>** is graphically depicted:



FIGURE 448. Function code **<fnccode>** DTD hierarchy.

3. The DTD fragment for **<fnccode>** is:

```

<!ELEMENT fnccode (#PCDATA)>
<!ATTLIST fnccode

```

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assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<fnccode>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.4 Functional title **<fnctitle>**.

The **<fnctitle>** element is an element that allows character data and certain minor elements such as **<subscript>** or **<xref>**. The functional title should be taken from the list of functional codes provided or approved by the acquiring activity.

1. The components of the **<fnctitle>** are:

- a. Parsable characters or type text. – #PCDATA
- b. Format text - **<emphasis>** (see Section 36.1.3.1).
- c. Subscript - **<subscript>** (see Section 36.1.3.4).
- d. Superscript - **<supscript>** (see Section 36.1.3.5).
- e. Cross reference - **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced Linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).
- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).

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- l.** Figure callout reference – **<callout>** (see Section 33.2.4.1).
 - m.** Footnote – **<ftnote>** (see Section 32.1.1).
 - n.** Footnote reference – **<ftnref>** (see Section 32.1.1.2).
 - o.** Graphic – **<graphic>** (see Section 31.2).
 - p.** Miscellaneous – **<misc>** (see 36.2.1).
 - q.** Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
 - r.** Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
 - s.** DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
 - t.** Lubricant value – **<lubricant>** (see Section 36.1.4.15).
 - u.** Graphic symbol – **<symbol>** (see Section 31.3.1).
 - v.** Torque value – **<torque>** (see Section 36.1.4.25).
 - w.** Voltage value – **<voltage>** (see Section 36.1.4.26).
 - x.** Null text – **<null>** (see Section 36.1.3.2).
 - y.** Changed text marker – **<change>** (see Section 36.1.3.7).
- 2.** The DTD fragment for **<fnctitle>** is graphically depicted:

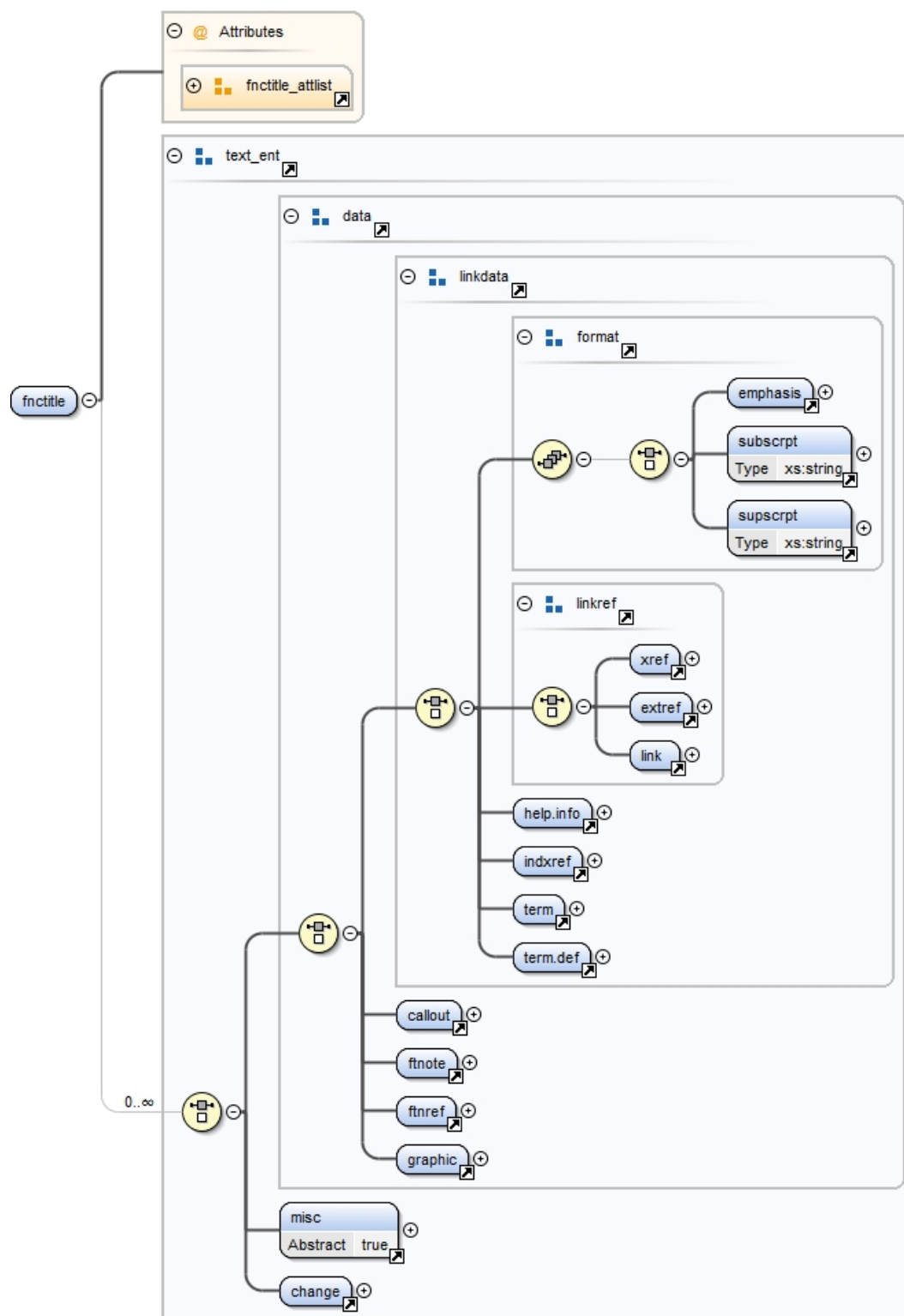


FIGURE 449. Functional group title <fnctitle> DTD hierarchy.

3. The DTD fragment for <fnctitle> is:

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<!ELEMENT fnctitle (%text_ent;)*>		
<!ATTLIST fnctitle		
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for <fnctitle>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.5 Optional parts information group.

The <fncgrp> may contain an optional and repeatable group consisting of the elements <partno>, <uoc>, and <smr>. This information is not normally displayed in a page based TM, but may be used for filtering or display in an IETM. The usage of each element is described below:

1. There is a single <partno> required each time the group is used (see Section 24.4.2.1.7.1).
2. Zero or one usable on code <uoc> (see Section 24.4.2.1.6.4).
3. Zero or more source, maintainability and recoverability <smr> code elements. The multiple SMR codes may be used to for multi service or multiple command differences in provisioning and repairing the identified part. The multiple SMR codes are primarily for differences in service maintenance and provisioning (see Section 24.4.2.1.7.7).

24.4.2.1.6 Parts information <pi.item>.

The parts information <pi.item> element is the heart of the parts list work package <plwp>. This element contains all the pertinent information for each part. The <pi.item> allows for significant tagging options to support the fairly limited page based display or a robust IETM.

1. The components of the <pi.item> are:

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- a. Next higher assembly **<nha_item>** (optional).
 - b. Call out – **<callout>** (optional).
 - c. Usable on-code – **<uoc>** (optional).
 - d. Basis of issue – **<boi>** (optional).
 - e. Usable effective serial number – **<usbefserno>** (optional).
 - f. Quantity – **<qty>** (required).
 - g. Select elements from either Group A or Group B (one selection is required):
 - i. Group A
 - I. Source, maintenance, and recoverability code **<smr>** (optional).
 - II. National Stock Number – **<nsn>** (optional).
 - III. Part Number **<partno>** – (required) (see Section 24.4.2.1.7.1).
 - IV. Commercial and Government Entity Code – **<cageno>** (optional).
 - V. Name – **<name>** (optional).
 - VI. Item description – **<desc>** (optional).
 - VII. Total quantity required – **<qty_per_end_item>**.
 - VIII. Unit of issue **<ui>**.
 - IX. External reference – **<extref>**.
 - X. Link – **<link>**.
 - XI. Reference designator – **<refdes>**.
 - XII. Maintenance – **<maintenance>**.
 - i. Group B
 - I. Common part information reference – **<common_part_ref>**.
 - h. Part item – **<pi.item>** (optional).
 - i. Kit item – **<kit.item>** (optional).
 - j. Part category – **<pi.category>** (optional).
 - k. Next lower functional group reference – **<part.breakdown.ref>** (optional).
2. The DTD fragment for **<pi.item>** is graphically depicted:

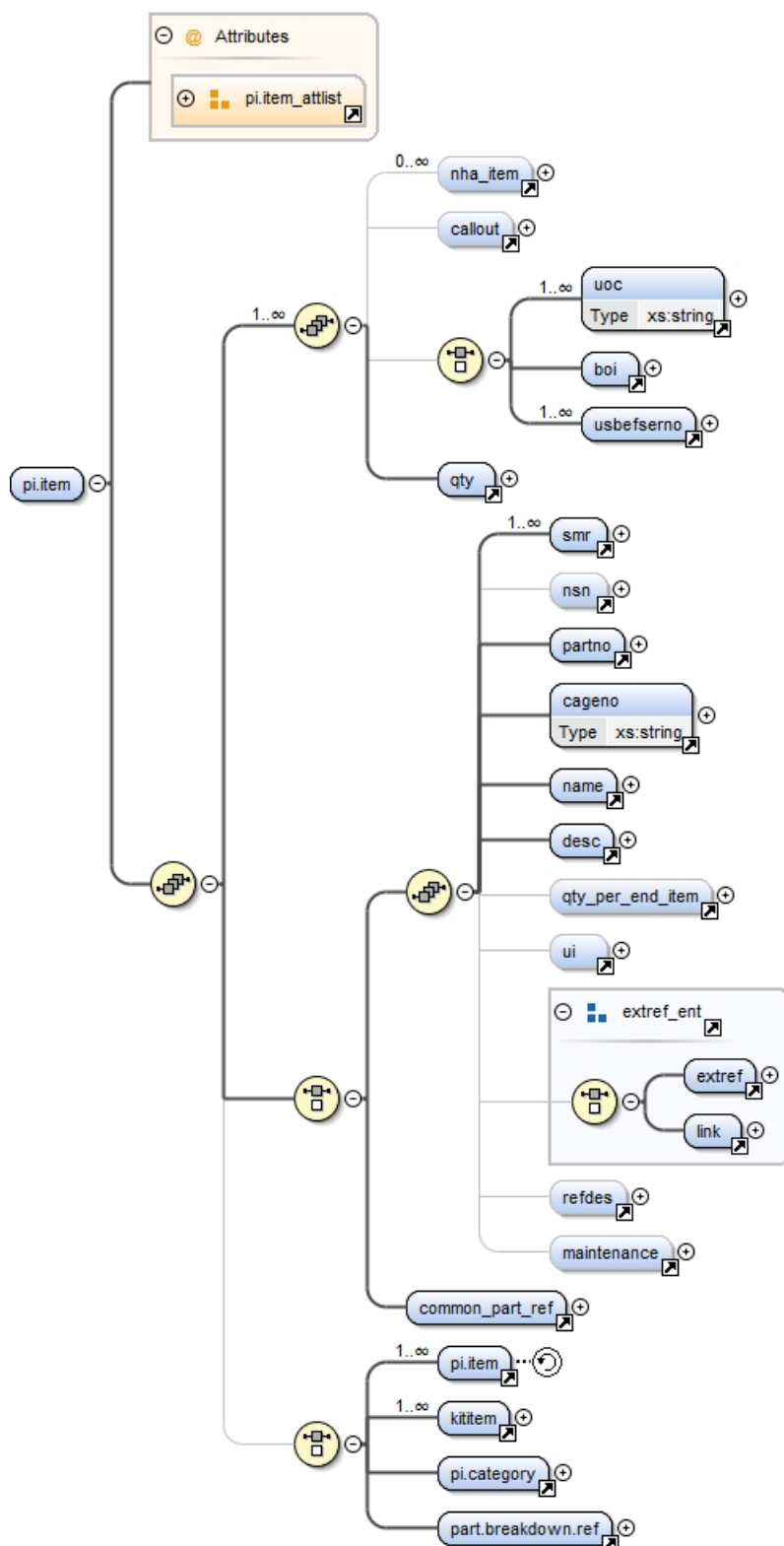


FIGURE 450. Parts item <pi item> DTD hierarchy.

3. The DTD fragment for <pi.item> is:

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```
<!ELEMENT pi.item ((nha_item*, callout?, (uoc+ | boi | usbefserno+)?, qty)
+, ((smr+, nsn?, partno, cageno, name, desc, qty_per_end_item?, ui?, (%ex-
tref_ent;)?, refdes?, maintenance?) | common_part_ref), (pi.item+ | kiti-
tem+ | pi.category | part.breakdown.ref)?)>
```

```
<!ATTLIST pi.item
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
csi	(yes no)	"no"
delchlvl	(0-99)	"0"
esd	(yes no)	"no"
hci	(yes no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
indent	CDATA	"0"
inschlvl	(0-99)	"0"
mrp	(yes no)	"no"
security	uc fouo c s ts	#IMPLIED
skilltrk	CDATA	#IMPLIED
tereq	(yes no)	"no"
type	(part exp coei bii aal tool special. tool)	"part">

4. Common attributes for **<pi.item>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **csi** – Attribute is a toggle, on or off, with a default of **off** used to identify critical safety items. Critical safety items are listed in the initial setup of the work package where they are used and in the **<csi>** part of the **<csi.wp>** (see Section 27.11).
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- h. **hci** – Hardness critical item **hci** attribute is a toggle, yes or no (default value is **no**), used to identify any components falling under the hardness critical item requirements.
- i. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- j. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

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- k. **indent** – (optional) when with the **<pi.item>** shows breakdown levels through a series of dots. The value of the **indent** should correspond to the desired level of indenture of the part. For page based parts lists, the indent dot appears at the start of the description **<desc>**. The value of the **indent** attribute should be a number between **0** and **5**. The value of **5** is the historical limit for indenture. Stylesheets should be developed that account for at least five dots. Values above **5** may not display properly on all systems. The default value is **0** which provides no dot.
- l. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- m. **mrp** – Mandatory replacement part (default value is **off**). The **mrp** attribute is a toggle, on or off, used to identify parts that must be replaced during the maintenance action or inspection. Mandatory replacement parts are listed in the initial setup for the task where they are replaced and in the **<mrplwp>** (see Section 27.10).
- n. **security** – Security classification (optional) (see Section 36.3.14).
- o. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- p. **tereq** – Test equipment required (default value is **off**). The **tereq** attribute is a toggle, on or off, used to identify a part as required test equipment. Required test equipment is listed in the **<tereqtat>** in the **<mac>** (see 27.4.3).

24.4.2.1.6.1 Unique part information.

The following paragraphs provide details on part information that makes the part unique for that usage. Information such as next higher assemblies, index numbers and quantities required.

24.4.2.1.6.2 Next higher assembly **<nha_item>**.

The next higher assembly **<nha_item>** identifies the next upper level in the current parts hierarchy. The **<nha_item>** is an EMPTY element with a single attribute **nha.ref** that is an IDREF. The **nha.ref** points to the ID of the **<pi.item>** for the next higher assembly. **<nha_item nha.ref="a1234"/>**

1. The components are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<nha_item>** is:

```
<!ELEMENT nha_item EMPTY>
<!ATTLIST nha_item nha.ref IDREF #REQUIRED>
```
3. The single unique attribute for **<nha_item>** is **nha.ref** – next higher assembly reference. This is an IDREF.

24.4.2.1.6.3 Item callout **<callout>**.

The **<callout>** is the second unique part elements. The **<callout>** is an optional element that may be used to provide the index number relating the current part to the illustration. The **<callout>** would be used if there is no automatic integrated method of displaying the item number on a figure in the flowing text.

1. The **<callout>** components are none as the element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<callout>** is graphically depicted:

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FIGURE 451. Callout <callout> DTD hierarchy.

3. The DTD fragment for **<callout>** is:

```

<!ELEMENT callout EMPTY>
<!ATTLIST callout
  applicable          IDREFS          #IMPLIED
  id                  ID              #IMPLIED
  numref              IDREF           #IMPLIED
  partref             IDREF           #IMPLIED
  assocfig            IDREF           #REQUIRED
  label               CDATA           #IMPLIED>
  
```

4. Attributes for **<callout>**:

1. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
2. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
3. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
4. **label** – Label A CDATA attribute that allows the author or system to enter various information about the **<callout>**.
5. **numref** – Figure numerical reference, IDREF. References the numeric identifier of the callout.
6. **partref** – Part number reference, IDREF. References the part identifier to which the callout is being associated.

24.4.2.1.6.4 Usable on code <uoc>.

The **<uoc>** element is part of the group that aids in identifying the configuration usage of the part. The other elements that may be used are the **<boi>** (see Section 24.4.2.1.6.5) or the **<usbefserno>** (see Section 24.4.2.1.6.6). Typically only one of these elements is used, but all may be.

1. The components of **<uoc>**:

a. The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).

2. The DTD fragment for **<uoc>** is:

```
<!ELEMENT uoc (#PCDATA)>
```

3. The element **<uoc>** contains no attributes.

24.4.2.1.6.5 Basis of issue <boi>.

The **<boi>** is the quantity of an item (special tool) authorized for the end item density spread or for the unit level specified.

1. The components of **<boi>** are:

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- a. Parsable characters or type text. – #PCDATA
 - b. Format text – **<emphasis>** (see Section 36.1.3.1).
 - c. Subscript – **<subscript>** (see Section 36.1.3.4).
 - d. Superscript – **<supscript>** (see Section 36.1.3.5).
 - e. Cross reference – **<xref>** (see Section 33.2.2).
 - f. External reference – **<extref>** (see Section 33.2.1).
 - g. Enhanced Linking – **<link>** (see Section 33.2.3).
 - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
 - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
 - j. Term – **<term>** (see Section 36.1.2.4.2).
 - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
 - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
 - m. Footnote – **<ftnote>** (see Section 32.1.1).
 - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
 - o. Graphic – **<graphic>** (see Section 31.2).
 - p. Miscellaneous – **<misc>** (see 36.2.1).
 - q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
 - r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
 - s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
 - t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
 - u. Graphic symbol – **<symbol>** (see Section 31.3.1).
 - v. Torque value – **<torque>** (see Section 36.1.4.25).
 - w. Voltage value – **<voltage>** (see Section 36.1.4.26).
 - x. Null text – **<null>** (see Section 36.1.3.2).
 - y. Changed text marker – **<change>** (see Section 36.1.3.7).
2. The DTD fragment for **<boi>** is graphically depicted.

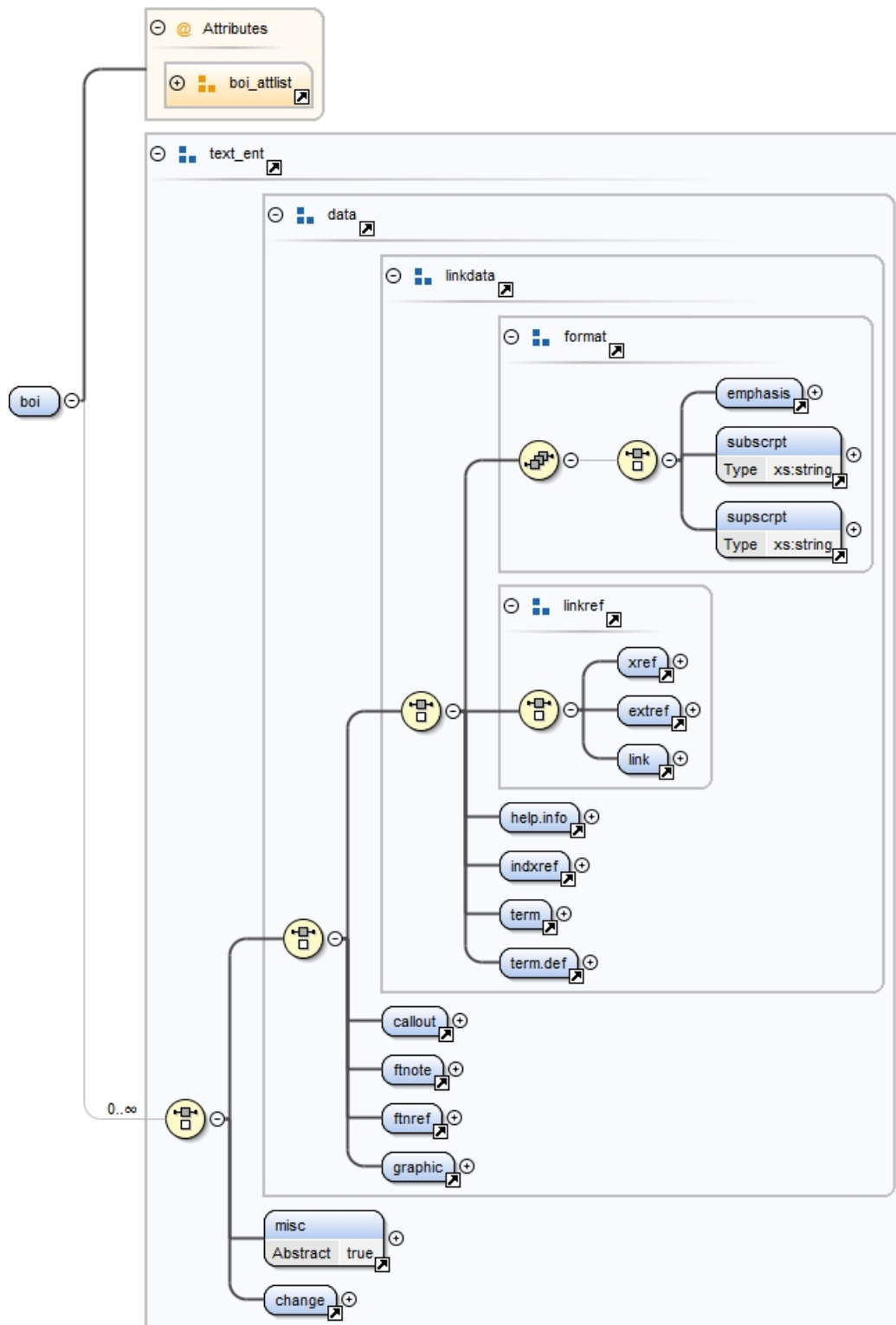


FIGURE 452. Basis of issue <boi> DTD hierarchy.

- The DTD fragment for <boi> is:

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```

<!ELEMENT boi (%text_ent;)*>

<!ATTLIST boi
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          CDATA           #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          CDATA           #IMPLIED
  security           uc | fouo | c | s | ts  #IMPLIED
  skilltrk          CDATA           #IMPLIED>

```

4. The attributes for **<callout>**:

5. Common attributes:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.6.6 Usable effective serial number **<usbefserno>**.

The element **<usbefserno>** contains the information needed to identify a range of effective serial numbers when part numbers of spare/repair parts are not the same for all serial numbered equipment of the same model. The starting serial number is entered using the attribute 'beginserno' and the ending serial number is entered using the attribute 'endserno.'

1. The element **<usbefserno>** is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<usbefserno>** is graphically depicted.

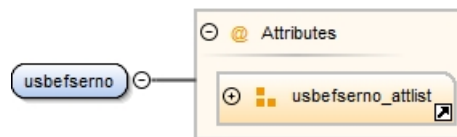


FIGURE 453. Usable effective serial number **<usbefserno>** DTD hierarchy.

3. The DTD fragment for **<usbefserno>** is:

```

<!ELEMENT usbefserno EMPTY>
<!ATTLIST usbefserno

```

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beginserno	CDATA	#REQUIRED
endserno	CDATA	#IMPLIED>

4. Attributes for **<usbefserno>**:

- a. **beginserno** – Single or beginning serial number (required). This attribute is used to show either a single serial number break in sequence, such as “before serial number 100” or it may be used as the start of a serial number sequence when used with the 'endserno' attribute. E.g., “use with serial numbers 100–110.” This attribute is REQUIRED.
- b. **endserno** – Ending serial number (optional). This attribute works with the 'beginserno' value to establish a range of allowable serial (or other identifiable sequential listings such as tail number or vehicle ID) numbers.

24.4.2.1.6.7 Quantity required **<qty>**.

The last unique element is the quantity required/used **<qty>**. This is not a total quantity of the part for the entire system, but the number required for the item being shown. Total quantity is provided as a Marine Corps requirement and is covered in (see Section 24.4.2.1.7.9).

1. The component of **<qty>** is Parsable characters or type text. – #PCDATA
2. The DTD fragment for **<qty>** is graphically depicted.

FIGURE 454. Quantity required **<qty>** DTD hierarchy.3. The DTD fragment for **<qty>** is:

```

<!ELEMENT qty (#PCDATA)>
<!ATTLIST qty
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)         "0"
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)         "0"
  security          (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>
  
```

4. Common attributes for **<qty>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).

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- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.7 Common part information.

Common parts information is information that is used consistently with a specific part, regardless of where or how it is used. Common part information includes such things as nomenclature, part number, or description. These common parts elements are described in the following paragraphs:

24.4.2.1.7.1 Part number <partno>.

The part number <partno> is one of four elements that are required for the common parts information. The <partno> identifies the manufacturers identifying number for the part. When the <partno> is used in conjunction with the <cageno> (see Section 24.4.2.1.7.2), a unique identifier for a part is obtained.

1. The components of <partno> is Parsable characters or type text. – #PCDATA.
2. The DTD fragment for <partno> is graphically depicted.



FIGURE 455. Part number <partno> DTD hierarchy.

3. The DTD fragment for <partno> is:

```

<!ELEMENT partno (#PCDATA)>
<!ATTLIST partno
    idref                IDREFS                #IMPLIED
    assocfig             IDREFS                #IMPLIED>
  
```

4. Attributes for <partno>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

24.4.2.1.7.2 Commercial and government entity code <cageno>.

The commercial and government entity code <cageno> is the second of the four required entries for the common part information. The <cageno> is a government provided (from the H4/H8) five character entry that provides information on the part's manufacturer, such as name and address.

1. The DTD representation of the <cageno> content model is shown below:

```
<!ELEMENT cageno (#PCDATA)>
```

2. There are no attributes for the <cageno> element.

24.4.2.1.7.3 National stock number <nsn>.

The National Stock Number <nsn> is an optional element in the parts list. When available, the <nsn> should be entered. The <nsn> is broken into two sub elements, the federal stock class <fsc> and the national item identification number <niin>. The <fsc> is the first four digits of the <nsn>. The <niin> comprises the last nine characters, of the <nsn>. When displayed, the <nsn> is normally separated by dashes. Depending on the stylesheet and where the <nsn> is used, the dashes may be entered by the author, or they may be generated by the stylesheet. Authors should verify how the stock number will be displayed and if the acquiring activity desires the use of dashes.

1. The components of <nsn>:
 - a. Federal stock class <fsc> (required) (see Section 24.4.2.1.7.4).
 - b. National item identification number <niin> (required) (see Section 24.4.2.1.7.5).
2. The DTD fragment for <nsn> is graphically depicted.

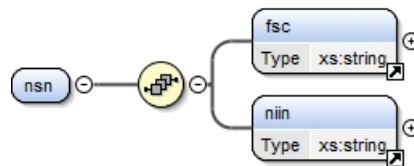


FIGURE 456. National Stock Number <nsn> DTD hierarchy.

3. The DTD fragment for <nsn> is:


```
<!ELEMENT nsn (fsc, niin)>
```
4. The element <nsn> contains no attributes.

24.4.2.1.7.4 Federal stock class <fsc>.

The <fsc> element is used in the <nsn> to identify the first four digits of the stock number.

1. The component of <fsc> is Parsable characters or type text. – #PCDATA.
2. The DTD fragment for <fsc> is:


```
<!ELEMENT fsc (#PCDATA)>
```
3. The element <fsc> contains no attributes.

24.4.2.1.7.5 National item identification number <niin>.

The <niin> consists of the remaining digits of the <nsn>. The <niin> are the numbers used to search and sort stock number assets.

1. The components of <niin> is Parsable characters or type text. – #PCDATA.
2. The DTD fragment for <niin> is:


```
<!ELEMENT niin (#PCDATA)>
```
3. The element <niin> contains no attributes.

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24.4.2.1.7.6 Item nomenclature <name>.

The item nomenclature **<name>** is the formal designator for the part. A part may have an informal name. The informal name is normally not found in the parts information list.

1. The components of **<name>** are:
 - a. Parsable characters or type text. – #PCDATA
 - b. Format text – **<emphasis>** (see Section 36.1.3.1).
 - c. Subscript – **<subscript>** (see Section 36.1.3.4).
 - d. Superscript – **<supscript>** (see Section 36.1.3.5).
 - e. Cross reference – **<xref>** (see Section 33.2.2).
 - f. External reference – **<extref>** (see Section 33.2.1).
 - g. Enhanced Linking – **<link>** (see Section 33.2.3).
 - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
 - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
 - j. Term – **<term>** (see Section 36.1.2.4.2).
 - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
 - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
 - m. Footnote – **<ftnote>** (see Section 32.1.1).
 - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
 - o. Graphic – **<graphic>** (see Section 31.2).
2. The DTD fragment for **<name>** is graphically depicted.

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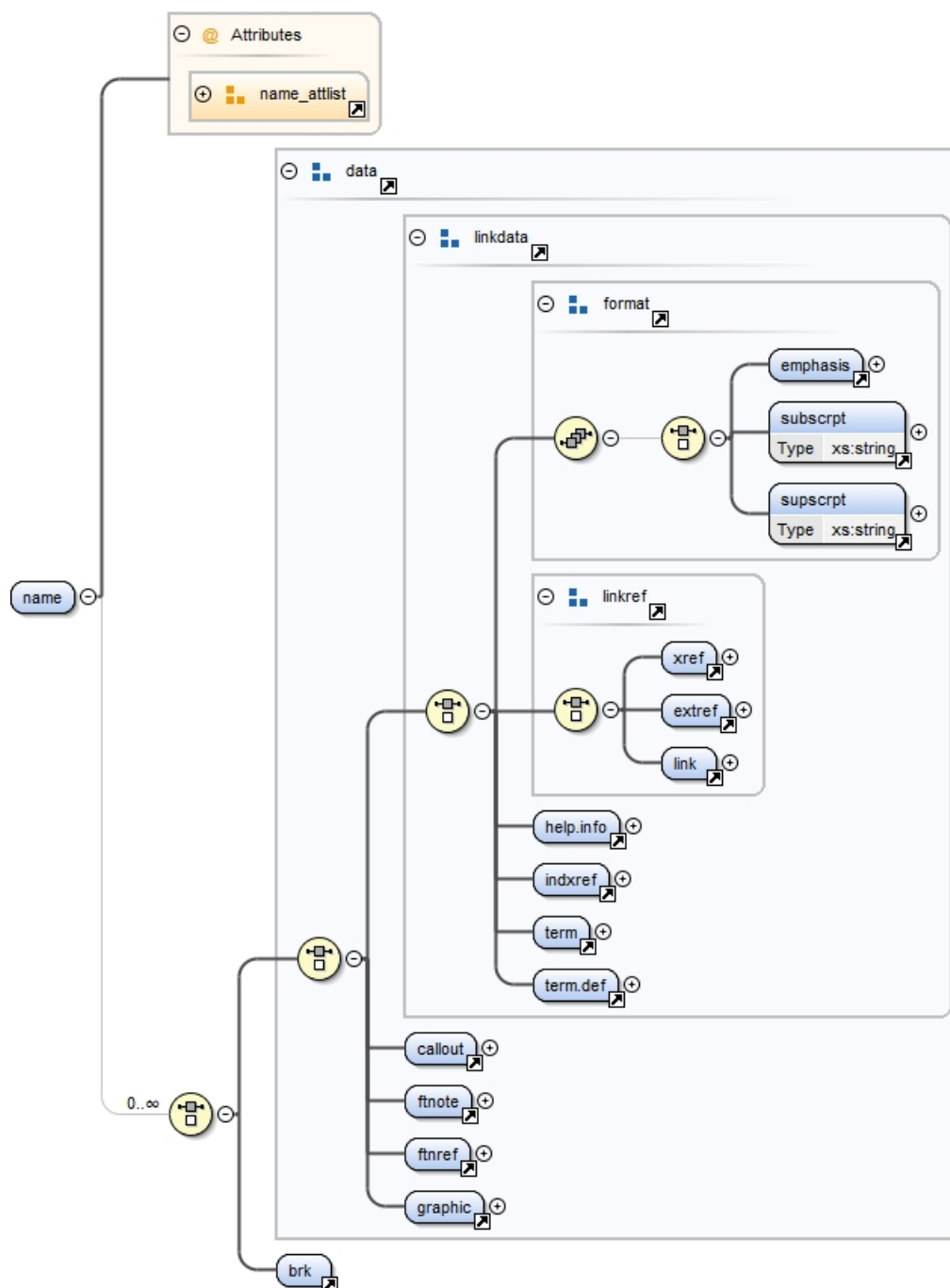


FIGURE 457. Item nomenclature <name> DTD hierarchy.

3. The DTD fragment for <name> is:

```
<!ELEMENT name (%data; | brk) *>
```

```
<!ATTLIST name
```

```
assocfig          IDREFS          #IMPLIED
```

```
changeref         IDREFS          #IMPLIED
```

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comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<name>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.7.7 Source, maintenance, and recoverability code **<smr>**.

The **<smr>** code will include SMR codes assigned to the applicable items. For multiple service TMs, the SMR code entry will be divided into subentries, one for each service involved. Each service should identify the appropriate SMR code subentry. When services share the same SMR code for an item, the SMR code should be listed for each service. The **<smr>** is normally a five character code that indicates the supply source, allowable maintenance level and authorized disposal maintenance level. For the Marine Corps, an optional sixth character may be used. The allowable values for each segment of the SMR code may be found in AR 700-82 which is a joint service regulation. For the marine Corps, this is MCO 4400.120. The common parts information allows for multiple entries of the **<smr>** code. This allows for different support capability on a single part based on service, Army or Marine Corps, or different major command maintenance concepts. When multiple SMR codes are listed, the description **<desc>** should indicate who is authorized to use each code.

1. The components are:
 - a. The element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<smr>** is graphically depicted.



FIGURE 458. Source, maintenance, and recoverability code **<smr>** DTD hierarchy.

3. The DTD fragment for **<smr>** is:

```

<!ELEMENT smr EMPTY>
<!ATTLIST smr

```

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assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
demil	CDATA	#IMPLIED
eic	IDREFS	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
maintcode	CDATA	#REQUIRED
recovercode	CDATA	#REQUIRED
security	uc fouo c s ts	#IMPLIED
service	(army navy AF marine CG	"army"
skilltrk	CDATA	#IMPLIED
sourcecode	CDATA	#REQUIRED>

4. Unique attributes for the **<smr>**:

- a. **service** – A list of the military services with a default value of **army**.
- b. **sourcecode** – (required). The sourcecode is a two character value that identifies the source of supply where the part may be procured. These are the first two characters in the SMR code.
- c. **maintcode** – (required) character code that identifies the maintenance level that is allowed to perform maintenance on the identified part. These are the third and fourth characters in the SMR code.
- d. **recovercode** – Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code.
- e. **eic** – This element contains the assigned end-item code, a three-position alphanumeric code, of the equipment covered by the TM. When used, it appears as part of the prime title on the front cover and title block page.
- f. **demil** – (optional) sixth character. This attribute may be used by the Army when directed by the acquiring activity to identify demilitarization information. An explanation of these codes is contained in AR 700-82. The sixth character may also be used by the Marine Corps. Specific codes for the Marine Corps will be provided by the acquiring activity.

5. Common attributes for **<smr>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **label** – (optional) A CDATA attribute that allows the author or system to enter various information about the **<smr>**.

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- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.7.8 Item description <desc>.

The **<desc>** is a block of text that provides some textual representation of the current part. Any special material, markings, dimensions, handling, or other relevant information may be included in the description. While there is no set limit for the description length, descriptions taken from data base systems may have a field length limit imposed through the data base structure.

1. The components of **<desc>**:
 - a. Parsable characters or type text. – **#PCDATA**
 - b. Format text – **<emphasis>** (see Section 36.1.3.1).
 - c. Subscript – **<subscript>** (see Section 36.1.3.4).
 - d. Superscript – **<supscript>** (see Section 36.1.3.5).
 - e. Cross reference – **<xref>** (see Section 33.2.2).
 - f. External reference – **<extref>** (see Section 33.2.1).
 - g. Enhanced Linking – **<link>** (see Section 33.2.3).
 - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
 - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
 - j. Term – **<term>** (see Section 36.1.2.4.2).
 - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
 - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
 - m. Footnote – **<ftnote>** (see Section 32.1.1).
 - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
 - o. Graphic – **<graphic>** (see Section 31.2).
 - p. Miscellaneous – **<misc>** (see 36.2.1).
 - q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
 - r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
 - s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
 - t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
 - u. Graphic symbol – **<symbol>** (see Section 31.3.1).
 - v. Torque value – **<torque>** (see Section 36.1.4.25).
 - w. Voltage value – **<voltage>** (see Section 36.1.4.26).
 - x. Null text – **<null>** (see Section 36.1.3.2).
 - y. Changed text marker – **<change>** (see Section 36.1.3.7).
2. The DTD fragment for **<desc>** is graphically depicted.

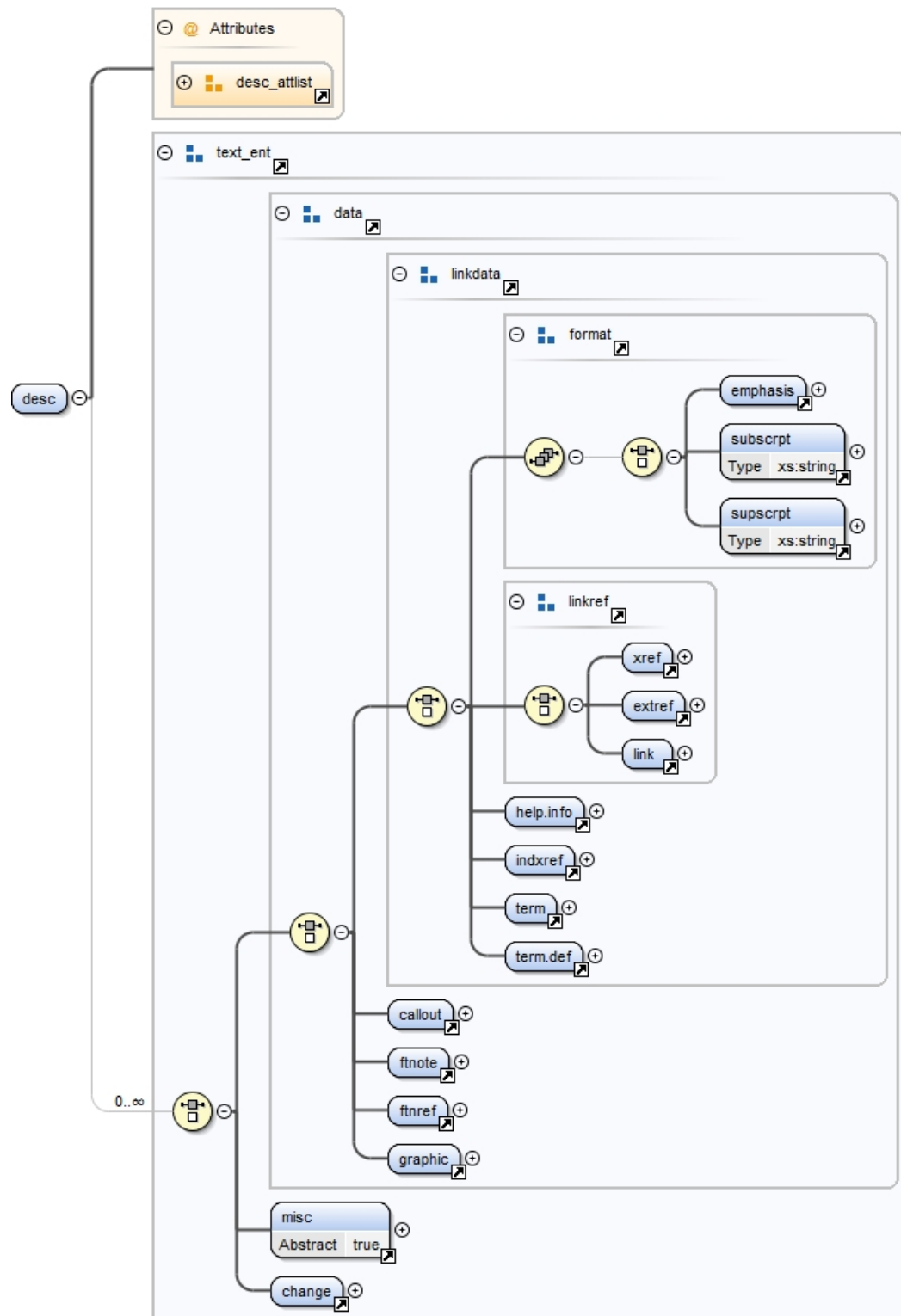


FIGURE 459. Item description <desc> DTD hierarchy.

3. The DTD fragment for <desc> is:

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```

<!ELEMENT desc (%text_ent;)*>

<!ATTLIST desc
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                IDREF           #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>

```

4. Attributes for **<desc>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.7.9 Total quantity required **<qty_per_end_item>**.

The **<qty_per_end_item>** is a Marine Corps requirement that adds an extra column to the parts list. This column indicates the total quantity for all the occurrences of that part in all the repair parts lists. This column is included in multiservice manuals involving the Marine Corps. The **<qty_per_end_item>** is a character only element. It may be populated by direct entry by the author, or by the system if the system can perform simple arithmetic.

1. The content of **<qty_per_end_item>** is Parsable characters or type text – #PCDATA.
2. The DTD fragment for **<qty_per_end_item>** is graphically depicted:



FIGURE 460. Total quantity required **<qty_per_end_item>** DTD hierarchy.

3. The DTD fragment for **<qty_per_end_item>** is:

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```

<!ELEMENT qty_per_end_item (#PCDATA)>

<!ATTLIST qty_per_end_item
assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
delchlvl          (0-99)          "0"
idref             IDREFS          #IMPLIED
inschlvl          (0-99)          "0"
security          (uc | fouo | c | s | ts) #IMPLIED
skilltrk          CDATA           #IMPLIED>

```

4. Common attributes for **<qty_per_end_item>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.7.10 Unit of Issue (UI) **<ui>**.

The unit of issue **<ui>** is a character field that identifies the normal quantity an item is issued. The unit of issue is defined in DoD 4100.39-M, Vol 12.

- 1. The component of **<ui>** is Parsable characters or type text. – #PCDATA.
- 2. The DTD fragment for **<ui>** is:

```

<!ELEMENT ui (#PCDATA)>
<!ATTLIST ui um CDATA #IMPLIED>

```

3. Unique attributes for **<ui>**:

- a. **um** – Unit of measure (optional). The difference between a unit of issue and unit of measure tends to be semantic in many respects. The unit of issue tends to be a specific unit such as 'each,' 'box,' or 'gallon' while a unit of measure is a value required from an abstract unit of issue. For example a unit of issue of a Roll (RL) may contain 100 feet of the material. The unit of measure would be 100 feet. Or a unit of measure may specify the type of roll to be ordered if there are rolls of various lengths (100 and 500 foot). A more precise explanation of units of issue and units of measure may be found in DOD 4100.39M, Federal Logistics System Information.

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24.4.2.1.7.11 Linking elements <extref> or <link>.

The **<pi.item>** allows for two methods of identifying links to other documents or references outside the current document.

1. Link **<link>** (optional – zero or more) (see Section 35.3.6.4).
2. External reference **<extref>** (optional – zero or more) (see Section 33.2.1).

24.4.2.1.7.12 Reference designator <refdes>.

The reference designator **<refdes>** is an optional element, used primarily with electronic components. The **<refdes>** is an alpha-numeric code that, when used, provides a top down breakdown of the major component. Development of reference designators is based on the requirements in ANSI Y 32.16. Additional information on reference designators may also be found in AMC-P 700-25 available through the LOGSA web site

1. The components of **<refdes>**:
 - a. Parsable data (**#PCDATA**) (optional – zero or more). The element provides the text for the data (see Section 6.2.2.1).
 - b. Emphasis – **<emphasis>** (optional – zero or more). The element is used to emphasize the text of the entry (see Section 36.1.3.1).
 - c. Subscript – **<subscript>** (optional – zero or more). The element is used to format the text as subscript (see Section 36.1.3.4).
 - d. Superscript – **<supscript>** (optional – zero or more). The element is used to format the text as superscript (see Section 36.1.3.5).
 - e. Cross reference – **<xref>** (optional – zero or more). The element is used to reference the work package sequence number, figure, table, step(s), etc. (see Section 33.2.2).
 - f. External reference – **<extref>** (optional – zero or more). The element is used to reference to external document information (see Section 33.2.1).
 - g. Linking – **<link>** (optional – zero or more). The element provides a capability to reference internal or external targets (see Section 33.2.3).
2. The DTD fragment for **<refdes>** is graphically depicted.

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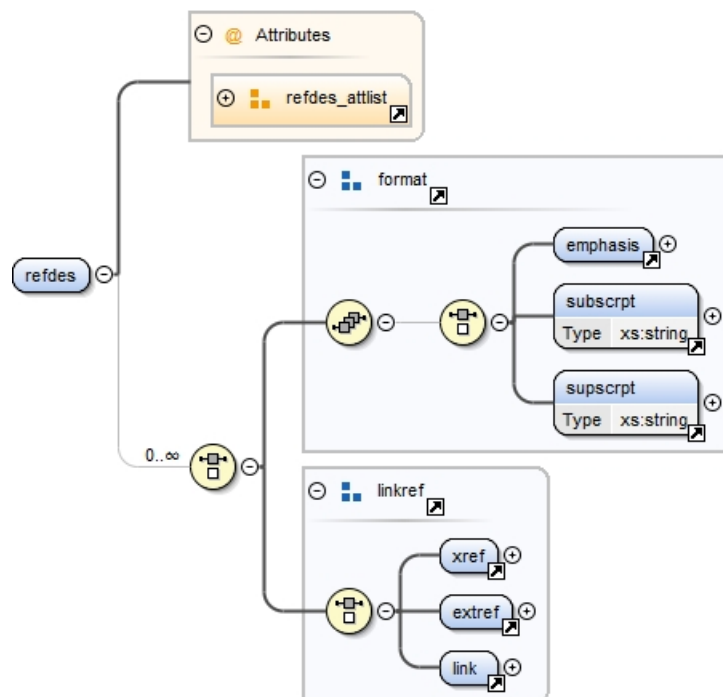


FIGURE 461. Reference designator <refdes> DTD hierarchy.

3. The DTD fragment for <refdes> is:

```

<!ELEMENT refdes (%format | %linref;)*>
<!ATTLIST refdes
    nsn          CDATA          #IMPLIED
    eic          CDATA          #IMPLIED
    assocfig     IDREFS         #IMPLIED
    changeref    IDREFS         #IMPLIED
    comment      CDATA          #IMPLIED
    delchlvl     (0-99)         "0"
    id           ID             #IMPLIED
    idref        IDREFS         #IMPLIED
    inschlvl     (0-99)         "0"
    security     (uc | fouo | c | s | ts) #IMPLIED
    skilltrk     CDATA          #IMPLIED>

```

4. Unique attributes for <refdes> are:

- a. **nsn** – National stock number (optional). This allows any NSN's associated with the reference designator to be included.
- b. **eic** – End item code (optional). This allows the entry of a specific end item code with the reference designator.

5. Common attributes for <refdes>:

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- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.1.7.13 Common part information reference <common_part_ref>.

The <common_part_ref> is an optional element that allows the author to reference parts information that is common between two or more <pi.item> elements. An example would be a screw that is used in several locations. Each time the screw is used, it may have a separate index number if used in the current <pi.category> or a separate figure and index number if used in another <pi.category>. By using the <common_part_ref> **idref** attribute with the **id** of the initial use of the screw, the complete part information may be entered once and reused without reentry elsewhere.

1. The components are:
 - a. The element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for <common_part_ref> is:


```
<!ELEMENT common_part_ref EMPTY>
<!ATTLIST common_part_ref idref IDREF #REQUIRED >
```
3. Unique attribute for <common_part_ref> contains a single unique attribute of **idref** – Reference identifier(s) (required) (see Section 36.3.7).
4. An example of how this would be tagged is shown below. The first tag example is the initial use of the part with a complete <pi.item>. The second example is the second use of the common part, where the <smr>, <nsn>, <partno>, <cageno>, <name> and <desc> information would be displayed using the initially entered data. Initial parts information entry:

```
<pi.item>
<callout assocfig="a1234567" label="3"/>
<qty>5
</qty>
<smr maintcode="oo" recovercode="d" sourcecode="pa"/>
<nsn>
<fsc>6610
</fsc>
<niin>010001234
</niin>
<nsn>
<partno>a1234567
</partno>
<cageno>11111
</cageno>
<name>repair kit
```

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```

</name>
<desc>The description, useable on, or other special information about the part
and the quantity required for this usage.
</desc>
</pi.item>Second use of part:
<pi.item>
<callout assocfig="a1234567" label="4"/>
<qty>6
</qty>
<common_part_ref idref="a1234567-3"/>
</pi.item>

```

5. When produced and formatted, the above examples would appear as shown in FIGURE 462.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE(UOC)	(7) QTY
GROUP 0001						
FIGURE 1 FIGURE 1 TITLE						
3	00	6610010001234	11111	A1234567	REPAIR KIT5 The description, useable on, or other special information about the part and the quantity required for this usage.	
4	00	6610010001234	11111	a1234567	REPAIR KIT6 The description, useable on, or other special information about the part and the quantity required for this usage.	
END OF FIGURE						

FIGURE 462. Formatted common parts reference example.

24.4.2.2 Tagging the <plwp>.

The following subparagraphs provide examples on how to tag a <plwp> for both page based and framed based TMs. The examples for frame based present only one possible approach to tagging. The page based example, which has a more fixed presentation, should be followed. The examples are for a basic parts list item. More complex tagging for parts with kit parts, indents or common information is described and illustrated in Section 24.4.2.3.

24.4.2.2.1 Page based tagging.

As stated in Section 24.4.2.1.6, the order parts information is entered does not follow the page based presentation order.

```

<plwp wpno="P-00025-9-2350-361" chngno="0">
<wpidinfo>
<maintlvl level="dirsup"/>
<title>plwp title
</title>
</wpidinfo>
<pi.category>
<figure id="a1234567">
<title>fig title

```

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```

</title>
<graphic boardno="plwp1" hscale="60" vscale="60"/>
</graphic>
</figure>
<fngrp>
<fnccode>0100
</fnccode>
<fnctitle>engine assembly
</fnctitle>
</fngrp>
<pi item>
<callout assocfig="a1234567" label="1"/>
<uoc>all
</uoc>
<qty>1
</qty>
<smr maintcode="oo" recovercode="d" sourcecode="pa"/>
<nsn>
<fsc>6610
</fsc>
<niin>010001234
</niin>
<nsn>
<partno>a1234567
</partno>
<cageno>11111
</cageno>
<name>Item name
</name>
<desc>Description of the item that is named.
</desc>
</pi.item>
<pi.item>
<callout assocfig="a1234567" label="2"/>
<uoc>some
</uoc>
<qty>10
</qty>
<smr maintcode="oo" recovercode="d" sourcecode="pa"/>
<nsn>
<fsc>6610
</fsc>
<niin>010001234
</niin>
<nsn>
<partno>a1234567
</partno>
<cageno>11111
</cageno>
<name>another part
</name>
<desc>The description, useable on, or other special information about the part and the
quantity required for this useage.
</desc>

```

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```

</pi.item>
<pi.item>
<callout assocfig="a1234567" label="3"/>
<qty>5
</qty>
<smr maintcode="oo" recovercode="d" sourcecode="pa"/>
<nsn>
<fsc>6610
</fsc>
<niin>010001234
</niin>
<nsn>
<partno>a1234567
</partno>
<cageno>11111
</cageno>
<name>another part
</name>
<desc>The description, useable on, or other special information about the part and the
quantity required for this useage.
</desc>
</pi.item>
</pi.category>
</plwp>

```

FIGURE 463. illustrates the formatted output.

DIRECT SUPPORT MAINTENANCE
PLWP TITLEINTRODUCTION

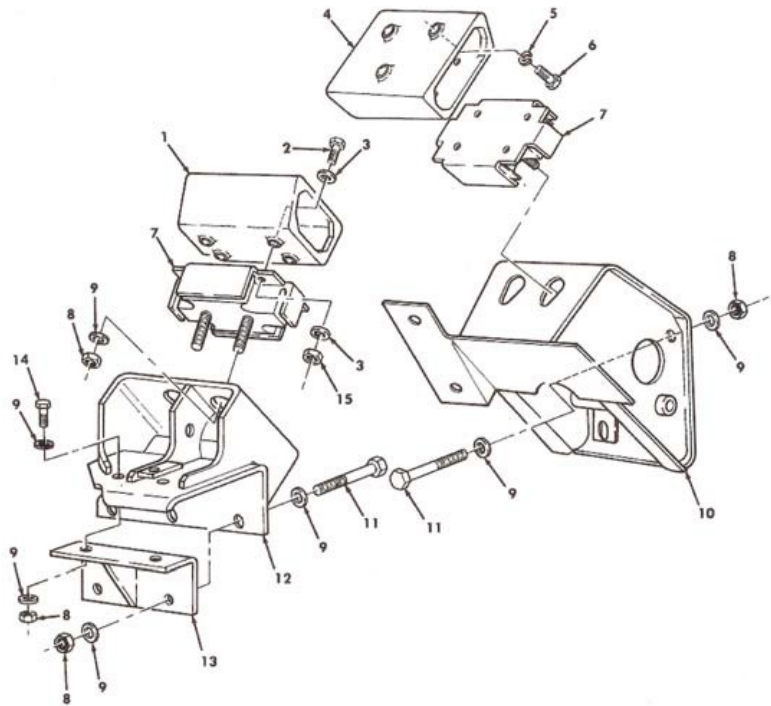


Figure 2 fig title

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE(UOC)	(7) QTY
GROUP 0100 ENGINE ASSEMBLY						
FIGURE 2 FIG TITLE						
1	PAOOE	6610010001234	11111	A1234567	ITEM NAME.....1 Description of the item that is named. UOC: ALL	

0000 00-8

FIGURE 463. Example of a page-based TM stylesheet output for <plwp>.

24.4.2.3 Parts items **<pi.item>** with kit parts, indents, or part reference info.

The **<pi.item>** allows for more complex support of parts information including, a single **<pi.category>**, parts that are included in a repair kit **<kititem>**, or a reference to another part. Each option is discussed in the following sub paragraphs.

24.4.2.3.1 Nested parts items.

A parts list may contain subordinate parts that are tagged with their own **<pi.item>**. The nested **<pi.item>** may include items such as attaching parts or sub components. For items that may have complex component breakdowns, the nested **<pi.category>** should be used IAW Section 24.4.2.3.2. Each additional **<pi.item>** is tagged as described in Section 24.4.2.1.6.

24.4.2.3.2 Nested parts category.

Normally a parts category would be used independently. It is recommended that the independent approach be used. If it is necessary to list a series of higher level parts together on one illustration/list, the **<pi.item>** for the each upper level part may contain a **<pi.category>** containing the breakdown for the higher level component. This nesting that allows a complete repair parts list to be contained in a single **<plwp>**. When a **<pi.category>** is included in a **<pi.item>**, it will be tagged as described in Section 24.4.2.1.

24.4.2.3.3 Kit parts with part items.

Both MIL-STD-40051-1 and MIL-STD-40051-2 provide two methods of entering parts information for parts contained in repair kits.

1. The first method is to include the kit parts **<kititem>** with the repair parts listing. The **<pi.item>** is described in Section 24.4.2.3.3.1.
2. The second method is to enter all kit parts in their own work package. The second method is described in Section 24.4.4.

24.4.2.3.3.1 Kit items **<kititem>**.

The **<kititem>** element is used to identify kit parts when they are listed in the **<pi.item>**. When used, the first **<kititem>** will appear after the last repair part **<pi.item>** in the category **<pi.category>**.

1. The components of **<kititem>** are:
 - a. Item nomenclature **<name>** (see Section 24.4.2.1.7.6).
 - b. Quantity required **<qty>** (see Section 24.4.2.1.6.7).
 - c. Item callout **<callout>** (see Section 24.4.2.1.6.3).
2. The DTD fragment of **<kititem>** is graphically depicted.

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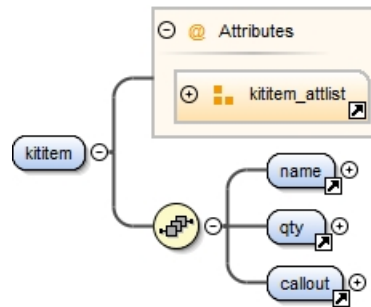


FIGURE 464. Kit items <kititem> DTD hierarchy.

3. The DTD fragment for <kititem> is:

```

<!ELEMENT kititem (name, qty, callout)>
<!ATTLIST kititem
    assocfig          IDREFS          #IMPLIED
    changeref         IDREFS          #IMPLIED
    comment           CDATA           #IMPLIED
    delchlvl          (0-99)          "0"
    id                ID              #IMPLIED
    idref             IDREFS          #IMPLIED
    inschlvl          (0-99)          "0"
    security           (uc | fouo | c | s | ts)  #IMPLIED
    skilltrk          CDATA           #IMPLIED>
  
```

4. Common attributes for <kititem>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.2.3.3.2 Tagging the <kititem>.

The <kititem> is tagged as part of a parent <pi.item> and identifies the kit by its part number and the kit items using the <tagname> tag.

```

<pi.item>
  <qty>V
</qty>
  
```

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```

<smr maintcode="oz" recovercode="z" sourcecode="PA"/>
<partno>k-123456
</partno>
<cageno>11111
<cageno>
<name>repair kit example
</name>
<desc>
</desc>
<kititem>
<name>first repair kit part
</name>
<qty>1
</qty>
<callout assocfig="a1234567" label="5" partref="part-ex-5"/>
</kititem>
<kititem>
<name>second repair kit part
</name>
<qty>1
</qty>
<callout assocfig="a1234567" label="5" partref="part-ex-5"/>
</kititem>
<kititem>
<name>third repair kit part
</name>
<qty>1
</qty>
<callout assocfig="a1234567" label="5" partref="part-ex-5"/>
</kititem>
</pi.item>

```

For a page based TM, the above tagging would appear as shown in FIGURE 465.

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(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE(UOC)	(7) QTY
4	PAOOD	6610010001234	11111	A1234567	ANOTHER PART 10 The description, useable on, or other special information about the part and the quantity required for this usage. UOC: SOME	
5	PAOOD	6610010001234	11111	A1234567	REPAIR KIT 5 The description, useable on, or other special information about the part and the quantity required for this usage.	
	PAOZZ		11111	K-123456	REPAIR KIT EXAMPLE V FIRST REPAIR KIT PART (1) 2-5 SECOND REPAIR KIT PART (1) 2-5 THIRD REPAIR KIT PART (1) 2-5	
END OF FIGURE						

FIGURE 465. Example of a page-based TM stylesheet output for <kititem>.

24.4.2.3.3 Reference to other parts lists <part.breakdown.ref>.

The last element that may be used in the <pi item> is the <part.breakdown.ref>. The <part.breakdown.ref> may be used to point to another <plwp>, <pi.category> or <pi.item>.

1. The components of <part.breakdown.ref>:
 - a. The element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for <part.breakdown.ref> is:


```
<!ELEMENT part.breakdown.ref EMPTY>
<!ATTLIST part.breakdown.ref idref IDREF #REQUIRED>
```
3. The <part.breakdown.ref> contains a single attribute of **idref** – Reference identifier(s) (required) (see Section 36.3.7).

24.4.3 Special tools repair parts <stl_partswp>.

The special tools repair parts work package is an optional work package. The purpose of the <stl_partswp> is to provide a listing of any repair parts needed for special tools listed in the special tools work package (see Section 24.4.6). There are three criteria in MIL-STD-40051-1 and MIL-STD-40051-2 that must be met in order for a <stl_partswp> to be prepared. These criteria are:

1. The RPSTL identifies the special tools in a special tools list work package (see Section 24.4.6).
2. The special tool has repair parts that may be replaced at any maintenance level covered in the TM.
3. The special tool does not have repair instructions and/or parts listed in a technical manual for the special tool.

If a <stl_partswp> is prepared, it is done in the same manner as a <plwp> (see Section 24.4.2 and subordinate paragraphs) except the functional group code is “SPECIAL TOOLS (REPAIR PARTS).”

1. The components for <stl_partswp>:

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- a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
 - b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
 - c. Parts information category **<pi.category>** (required – one or more) (see Section 24.4.2.1).
2. The DTD fragment for **<stl-partswp>** is graphically depicted.

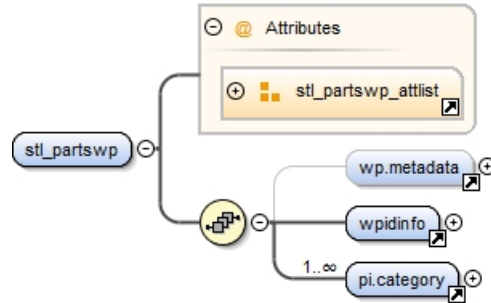


FIGURE 466. Special tools repair parts **<stl-partswp>** DTD hierarchy.

3. The DTD fragment for **<stl_partswp>** is:

```
<!ELEMENT stl_partswp (wp.metadata?, wpidinfo, pi.category+)>
```

```
<!ATTLIST stl_partswp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnngno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"

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security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <stl-partswp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

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- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

24.4.4 Kit parts list work package <kitswp>.

As stated in Section 24.4.2.3.3, there are two methods to enter repair parts. The following paragraphs describe using separate kits parts work package as detailed in MIL-STD-40051-1 and MIL-STD-40051-2. When the <kitswp> is used, all parts contained in kits will be listed in the work package. Mixing of Option 1 and Option 2 is not allowed by the standard.

1. The components for <kitswp>:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Parts information category <pi.category> (required – one or more) (see Section 24.4.2.1).
 - d. Work package initial setup <initial_setup> (optional) (see Section 16.6).
2. The DTD fragment for <kitswp> is graphically depicted.

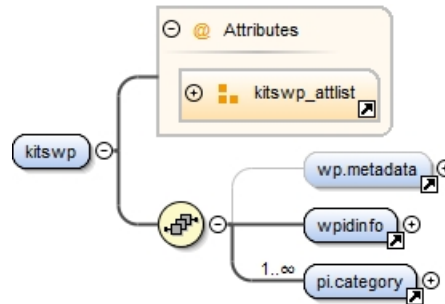


FIGURE 467. Repair parts kits work package <kitswp> DTD hierarchy.

3. The DTD fragment for <kitswp> is:

```
<!ELEMENT kitswp (wp.metadata?, wpidinfo, pi.category+)>
```

```
<!ATTLIST kitswp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnyno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED

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delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <kitwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnyno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

24.4.4.1 Tagging the <kitswp>.

The following example markup illustrates the recommended method to tag a <kitswp>:

```
<kitswp>
<kitswp>
<wpidinfo>
<maintlvl level="field"/>
<title>separate kits work package
</title>
</wpidinfo>
<pi.category>
<figure id="kitswpf-1">
<title>Kits
</title>
</figure>
<fncgrp>
<fnccode>94
</fnccode>
<fnctitle>Repair kits
</fnctitle>
</fncgrp>
<pi.item>
<uoc>all
</uoc>
<qty>1
</qty>
<smr maintcode="z" recovercode="dd" sourcecode="pa"/>
<partno>b1234
</partno>
<cageno>11111
</cageno>
<name>repair kit for xyz
```

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```

</name>
<desc>
</desc>
<kititem>
<name>first kit part
</name>
<qty>2
</qty>
<callout assocfig="kitswpf-1" label="1"/>
</kititem>
<kititem>
<name>second kit part
</name>
<qty>5
</qty>
<callout assocfig="kitswpf-1" label="2"/>
</kititem>
<kititem>
<name>third kit part
</name>
<qty>5
</qty>
<callout assocfig="kitswpf-1" label="3"/>
</kititem>
</pi.item>
<pi.item id="kit-ex-123">
<uoc>all
</uoc>
<qty>1
</qty>
<smr maintcode="oo" recovercode="z" sourcecode="pa"/>
<nsn>
<fsc>4920
</fsc>
<niin>019897654
</niin>
<nsn>
<partno>C1234
</partno>
<cageno>11111
</cageno>
<name>repair kit for abc
</name>
<desc>
</desc>
<kititem>
<name>first kit part for abc
</name>
<qty>2
</qty>
<callout assocfig="a1234567" label="4"/>
</kititem>
<kititem>
<name>second kit part for abc

```

```

</name>
<qty>5
</qty>
<callout assocfig="kitswpf-1" label="5"/>
</kititem>
<kititem>
<name>third kit part for abc
</name>
<qty>5
</qty>
<callout assocfig="kitswpf-1" label="6"/>
</kititem>
</pi.item>
</pi.category>
</kitswp>

```

24.4.5 Bulk items work package <bulk_itemswp>.

The bulk items work package <bulk_itemswp> is an optional component of the overall parts list. Both MIL-STD-40051-1 and MIL-STD-40051-2 state this work package is required if there are bulk items listed in any of the other parts lists such as a <plwp>, <stlwp> or <kitswp>. The <bulk_itemswp> content model differs slightly from the other parts listing work packages. The bulk items work package is a single functional group and does not use a figure to illustrate any of the bulk items listed.

1. The components for <bulk_itemswp>:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (optional) (see Section 16.6).
 - d. Functional group <fncgrp> (required) (see Section 24.4.2.1.2).
 - e. Parts information category <pi.item> (required – one or more) (see Section 24.4.2.1.6).
2. The DTD fragment for <bulk_itemswp> is graphically depicted.

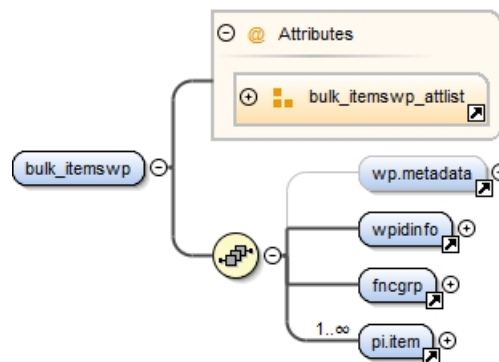


FIGURE 468. Bulk items work package <bulk_itemswp> DTD hierarchy.

3. The DTD fragment for <bulk_itemswp> is:

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```

<!ELEMENT bulk_itemswp (wp.metadata?, wpidinfo, fncgrp, pi.item+)>

<!ATTLIST bulk_itemswp
    airforce          (yes | no)          "no"
    army              (yes | no)          "no"
    assocfig          IDREFS              #IMPLIED
    changelvl         (0-9)              "0"
    chngno            (0-99)             "0"
    changeref         IDREFS              #IMPLIED
    comment           CDATA               #IMPLIED
    crewmember        CDATA               #IMPLIED
    date-time-stamp   (date | time | date-
                      time)              #IMPLIED
    delchlvl          (0-99)             "0"
    deletewp          (yes | no)          "no"
    fgc               CDATA               #IMPLIED
    frame             (yes | no)          "yes"
    idref             IDREFS              #IMPLIED
    inschlvl          (0-99)             "0"
    insertwp          CDATA               #IMPLIED
    lsa-id            CDATA               #IMPLIED
    marines           (yes | no)          "no"
    navy              (yes | no)          "no"
    security           (uc | fouo | c | s | ts) #IMPLIED
    skilltrk          CDATA               #IMPLIED
    tocentry          (2 | 3 | 4 | 5)     "2"
    wpno              ID                  #REQUIRED
    wpseq             CDATA               #IMPLIED>

```

4. Attributes for **<bulk_itemswp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).

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- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – To indicate a date–time stamp for the task when completed. The author indicates date only, time only or date and time or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

24.4.5.1 Tagging exceptions for the bulk items work package <bulk_itemswp>.

When tagging the <bulk_itemswp> using the <pi.item>, the user should not use the following tags:

1. <pi.category> – There are no sub categories for the bulk items and it is not needed.
2. <kititem> – Though a kit may include a requirement to use a bulk item and may include some quantity of the item in the kit, the <bulk_itemswp> does not list kits or their items.
3. A nested <pi.item> – There is no need to list any bulk item breakdowns.

24.4.5.2 Tagging instructions for the bulk items work package <bulk_itemswp>.

When tagging <bulk_itemswp> the <fngrp>, should be tagged using the following: The <fncode> should be “BULK MATERIAL” and the <fnctitle> should indicate “FIG BULK” (see MIL-STD-40051-1 or MIL-STD-40051-2).

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24.4.6 Special tools work package <stlwp>.

The special tools work package <stlwp> is the last of the parts listing work packages. It is optional and required by MIL-STD-40051-1 or MIL-STD-40051-2 when there are “special tools, special TMDE, and other special support equipment” required to support maintenance of the system.

1. The components for <stlwp>:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (optional) (see Section 16.6).
 - d. Parts information category <pi.category> (required – one or more) (see Section 24.4.2.1).
2. The DTD fragment for <stlwp> is graphically depicted.

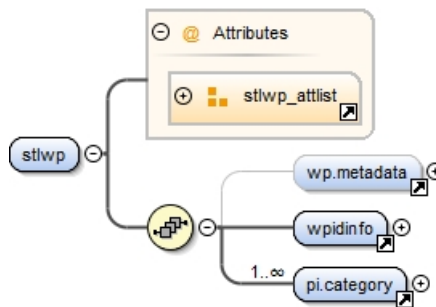


FIGURE 469. Special tools work package <stlwp> DTD hierarchy.

3. The DTD fragment for <stlwp> is:

```
<!ELEMENT stlwp (wp.metadata?, wpidinfo, pi.category+)>
```

```
<!ATTLIST stlwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <stlwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).

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- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

24.4.6.1 Tagging exceptions for special tools work package <stlwp>.

The <stlwp> is tagged in the same manner as the <plwp>, with the following exceptions (see Section 24.4.2):

1. The <fnccode> is “SPECIAL TOOLS.”
2. There should not be any sub categories so the <pi.category> within a <pi.item> is not needed.

24.4.7 Parts index work packages.

There are three index work packages allowed in a parts manual:

1. The National Stock Number Index (see Section 24.4.7.1) (required).
2. The Part Number Index (see Section 24.4.7.2) (required).
3. The Reference Designator Index (see Section 24.4.7.3) (optional).

Tagging of these indexes are the same and will only show for the <nsnindxwp>.

24.4.7.1 National stock number index work package <nsnindxwp>.

The National Stock Number index <nsnindx> is a required part of the parts listing data. The <nsnindxwp> list each stock number in each <plwp>, <stl_partswp>, <kitswp>, <bulk_itemswp>, or <stlwp>. The list is in stock number sequence, sorted by the NIIN. Each stock number needs to be shown once except as stated for page based TMs. The exception for page based TMs is the entire stock number will be shown after any page break. The National Stock Number index work package does not require any initial setup <initial_setup>.

1. The components for <nsnindxwp>:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. National Stock Number index <nsnindx> (required) (see Section 24.4.7.1.1).
2. The DTD fragment for <nsnindxwp> is graphically depicted.

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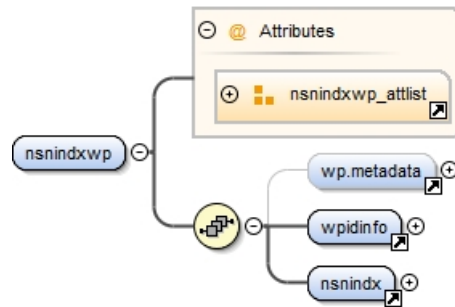


FIGURE 470. National stock number index work package <nsnindxwp> DTD hierarchy.

3. The DTD fragment for <nsnindxwp> is:

```

<!ELEMENT nsnindxwp (wp.metadata?, wpidinfo, nsnindx)>
<!ATTLIST nsnindxwp
    airforce          (yes | no)          "no"
    army              (yes | no)          "no"
    assocfig          IDREFS               #IMPLIED
    changelvl         (0-9)                "0"
    changeref         IDREFS               #IMPLIED
    chngno             (0-99)              "0"
    comment            CDATA                #IMPLIED
    crewmember         CDATA                #IMPLIED
    date-time-stamp    (date | time | date-
                        time)                #IMPLIED
    delchlvl          (0-99)                "0"
    deletewp          (yes | no)           "no"
    fgc               CDATA                #IMPLIED
    frame             (yes | no)           "yes"
    idref             IDREFS               #IMPLIED
    inschlvl          (0-99)                "0"
    insertwp          CDATA                #IMPLIED
    lsa-id            CDATA                #IMPLIED
    marines           (yes | no)           "no"
    navy              (yes | no)           "no"
    security           (uc | fouo | c | s | ts) #IMPLIED
    skilltrk          CDATA                #IMPLIED
    tocentry          (2 | 3 | 4 | 5)       "2"
    wpno              ID                   #REQUIRED
    wpseq             CDATA                #IMPLIED>
  
```

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4. Attributes for **<nsnindxwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngeo** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

24.4.7.1.1 National stock number index <nsnindx>.

The <nsnindx> is actual content tag for the <nsnindxwp>. Each index contains one or more <nsnindxrow> elements.

1. The components for <nsnindx> are National Stock Number index row <nsnindxrow> (required – one or more) (see Section 24.4.7.1.1.1).
2. The DTD fragment for <nsnindx> is graphically depicted.

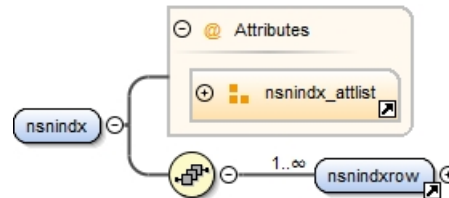


FIGURE 471. National stock number index <nsnindx> DTD hierarchy.

3. The DTD fragment for <nsnindx> is:

```

<!ELEMENT nsnindx (nsnindxrow+)>
<!ATTLIST nsnindx
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)         "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)         "0"
  security           (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>
  
```

4. Attributes for <nsnindx>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.7.1.1.1 National stock number index row <nsnindxrow>.

The <nsnindxrow> allows the entry of each <nsn> and its associated <callout> information. The <nsn> only needs to be entered once. A <callout> is required for each figure and index reference to the stock number.

1. The components for <nsnindxrow>:
 - a. National Stock Number <nsn> (required – one or more) (see Section 24.4.2.1.7.3).
 - b. Callout <callout> (required – one or more) (see Section 33.2.4.1).
2. The DTD fragment for <nsnindxrow> is graphically depicted.

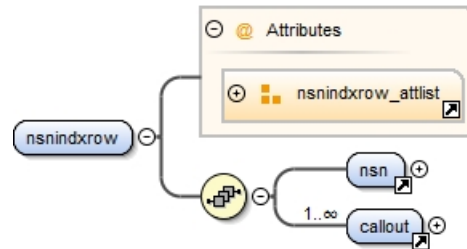


FIGURE 472. National stock number index row <nsnindxrow> DTD hierarchy.

3. The DTD fragment for <nsnindxrow> is:

```
<!ELEMENT nsnindxrow (nsn, callout+)>
<!ATTLIST nsnindxrow
assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
delchlvl          (0-99)          "0"
id                ID              #IMPLIED
idref             IDREFS          #IMPLIED
inschlvl          (0-99)          "0"
security          (uc | fouo | c | s | ts) #IMPLIED
skilltrk          CDATA           #IMPLIED>
```

4. Attributes for <nsnindxrow>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.7.1.2 Tagging the <nsnindxwp>.

The <nsnindxwp> is made up of one or more <nsnindxrow> elements. Each row contains a single <nsn> and one or more <callout> elements. The <callout> is used to provide the reference or link to the figure and index where the NSN is listed. Partial tagging for the example in the Figure 435 is shown below:

```
<nsnindxwp wpno="WP0023" wpseq="0023 00">
<wpidinfo>
<maintlvl level="field">
<title>
<indxref ref1="National Stock Number Index">
</title>
</wpidinfo>
<nsnindx>
<nsnindxrow>
<nsn>
<fsc>7025
</fsc>
<niin>-01-474-3789
</niin>
</nsn>
<callout assocfig="D-1" id="n2a">
</nsnindxrow>
<nsnindxrow>
<nsn>
<fsc>7025
</fsc>
<niin>-01-474-3791
</niin>
</nsn>
<callout assocfig="D-1" id="n4">
</nsnindxrow>
<nsnindxrow>
<nsn>
<fsc>7025
</fsc>
<niin>-01-474-3792
</niin>
</nsn>
<callout assocfig="D-1" id="n4a">
<callout assocfig="D-2" id="n5a1">
<callout assocfig="D-4" id="a21">
</nsnindxrow>
<nsnindxrow>
<nsn>
<fsc>7021
</fsc>
<niin>-01-474-3793
</niin>
</nsn>
<callout assocfig="D-1" id="n1a">
</nsnindxrow>
<nsnindxrow>
<nsn>
```

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<fsc>7025
</fsc>
<niin>-01-474-5753
</niin>
</nsn>
<callout assocfig="D-1" id="n2">
</nsnindxrow>
<nsnindxrow>
<nsn>
<fsc>7021
</fsc>
<niin>-01-475-0217
</niin>
</nsn>
<callout assocfig="D-1" id="n1">
</nsnindxrow>
<nsnindxrow>
<nsn>
<fsc>7025
</fsc>
<niin>-01-475-0229
</niin>
</nsn>
<callout assocfig="D-1" id="n3">
</nsnindxrow>
<nsnindxrow>
<nsn>
<fsc>7025
</fsc>
<niin>-01-475-0280
</niin>
</nsn>
<callout assocfig="D-1" id="n3b">
</nsnindxrow>
<nsnindxrow>
<nsn>
<fsc>7025
</fsc>
<niin>-01-475-0282
</niin>
</nsn>
<callout assocfig="D-1" id="n3a">
</nsnindxrow>
<nsnindxrow>
<nsn>
<fsc>7520
</fsc>
<niin>-01-484-1219
</niin>
</nsn>
<callout assocfig="D-1" id="n5">
</nsnindxrow>
<nsnindx>
</nsnindxwp>

24.4.7.2 Part number index work package <pnindxwp>.

The part number index, like the NSN index, is a required segment of the part listing as specified by the acquiring activity. The <pnindxwp> lists each individual part contained in each <plwp>, <stl-partswp>, <kitswp>, <bulk_itemswp> or <stlwp>. The <pnindxwp> is sorted in part number sequence and provides the same sequence of information as found in the National Stock Number index (see Section 24.4.7.2).

1. The components for <pnindxwp>:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (optional) (see Section 16.6).
 - d. Part number index <pnindx> (required) (see Section 24.4.7.1.1).
2. The DTD fragment for <pnindxwp> is graphically depicted.

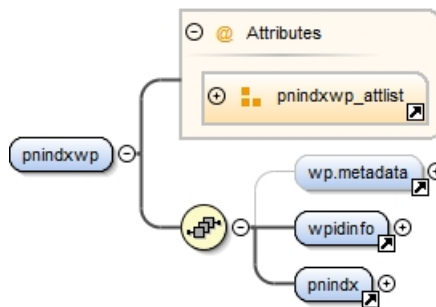


FIGURE 473. Part number index work package <pnindxwp> DTD hierarchy.

3. The DTD fragment for <pnindxwp> is :

```
<!ELEMENT pnindxwp (wp.metadata?, wpidinfo, pnindx)>
```

```
<!ATTLIST pnindxwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<pnindxwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnyno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted. (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).

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- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

24.4.7.2.1 Part number index <pnindx>.

The <pnindx> is actual content tag for the <pnindxwp>. Each index contains one or more <pnindxrow> elements (see Section 24.4.7.2.1.1).

1. The components:
 - a. Parts index row <pnindxrow> (required – one or more) (see Section 24.4.7.2.1.1).
2. The DTD fragment for <pnindx> is graphically depicted.

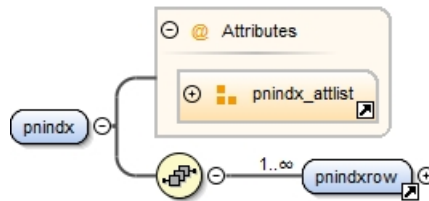


FIGURE 474. Part number index <pnindx> DTD hierarchy.

3. The DTD fragment for <pnindx> is:

```

<!ELEMENT pnindx (pnindxrow+)>
<!ATTLIST pnindx
    assocfig          IDREFS          #IMPLIED
    changeref         IDREFS          #IMPLIED
    comment           CDATA           #IMPLIED
    delchlvl          (0-99)         "0"
    id                ID              #IMPLIED
    idref             IDREFS         #IMPLIED
    inschlvl          (0-99)         "0"
    security           (uc | fouo | c | s | ts) #IMPLIED
    skilltrk          CDATA          #IMPLIED>
  
```

4. Common attributes for <pnindx>:

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- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.7.2.1.1 Part number index row <pnindxrow> content model.

The <pnindxrow> allows the entry of each <partno> and its associated <callout> information. The <partno> only needs to be entered once. A <callout> is required for each figure and index reference to the stock number.

1. The components for <pnindxrow> are:
 - a. Part number <partno> (required) (see Section 24.4.2.1.7.1).
 - b. Commercial and government entity code <cageno> (required) (see Section 24.4.2.1.7.2)
 - c. Callout <callout> (required – one or more) (see Section 33.2.4.1).
2. The DTD fragment for <pnindxrow> is graphically depicted.

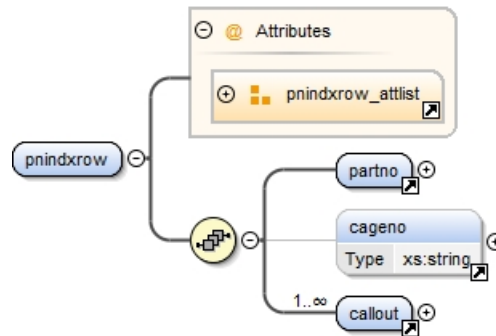


FIGURE 475. Part number index <pnindxrow> DTD hierarchy.

3. The DTD fragment for <pnindxrow> is:

```
<!ELEMENT pnindxrow (partno, cageno, callout+)>
```

```
<!ATTLIST pnindxrow
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<pnindxrow>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.7.2.2 Part number index work package **<pnindxwp>** tagging.

The **<pnindxwp>** is tagged in the same manner as the **<nsnindxrow>**.

```

<pnindxwp wpno="WP0024" wpseq="0024 00">
  <wpidinfo>
    <maintlvl level="field">
      <title>
        <indxref ref1="Part Number Index">
          </title>
        </wpidinfo>
      <pnindx>
        <pnindxrow>
          <partno>0410-06558-0000
        </partno>
        <callout assocfig="D-2" id="p6a">
          </pnindxrow>
        <pnindxrow>
          <partno>59755-1
        </partno>
        <callout assocfig="D-2" id="p6">
          </pnindxrow>
        <pnindxrow>
          <partno>598-48-1
        </partno>
        <callout assocfig="D-1" id="p5">
          </pnindxrow>
        <pnindxrow>
          <partno>881291-1, -3
        </partno>
        <callout assocfig="D-1" id="p1">

```

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```

</pnindxrow>
<pnindxrow>
<partno>881292-1, -2
</partno>
<callout assocfig="D-1" id="p1a">
</pnindxrow>
<pnindxrow>
<partno>881293-1, -2
</partno>
<callout assocfig="D-1" id="p3">
<callout assocfig="D-1" id="p10">
<callout assocfig="D-3" id="5">
<callout assocfig="D-6" id="3">
</pnindxrow>
<pnindxrow>
<partno>881294-1, -2
</partno>
<callout assocfig="D-1" id="p3a">
</pnindxrow>
<pnindxrow>
<partno>881295-1, -2, -3
</partno>
<callout assocfig="D-1" id="p4">
</pnindxrow>
<pnindxrow>
<partno>881296-1
</partno>
<callout assocfig="D-1" id="p2">
</pnindxrow>
<pnindxrow>
<partno>881297-1, -2
</partno>
<callout assocfig="D-1" id="p2a">
</pnindxrow>
<pnindxrow>
<partno>881298-1
</partno>
<callout assocfig="D-1" id="p4a">
</pnindxrow>
<pnindxrow>
<partno>881299-1, -2
</partno>
<callout assocfig="D-1" id="p3b">
</pnindxrow>
</pnindx>
</pnindxwp>

```

24.4.7.3 Reference designator index work package <refdesindxwp>.

The reference designator index is an optional segment of the part listing. A reference designator is typically used with electrical or electronic systems or components. The reference designator provides a unique identifier and a hierarchical top to bottom breakdown for the system or component. As such, a reference designator will reference a single item in the parts listing. If the same part is used multiple times on different components of the system, each

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individual use will have its own reference designator. The **<refdesindxwp>** lists each individual reference designator contained in each **<plwp>**, **<stl-partswp>**, **<kitswp>**, **<bulk_itemswp>** or **<stlwp>**. The **<refdesindxwp>** is sorted in alpha-numeric sequence and contains the same information as found in the National Stock Number index (see Section 24.4.7.1).

1. The components for **<refdesindxwp>**:

- a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
- b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
- c. Work package initial setup **<initial_setup>** (optional) (see Section 16.6).
- d. Index reference marker **<indxref>** (optional – zero or more) (see Section 15.5.2.2.3)
- e. Reference designator index **<refdesindx>** (see Section 24.4.7.3.1).

2. The DTD fragment for **<refdesindxwp>** is graphically depicted.

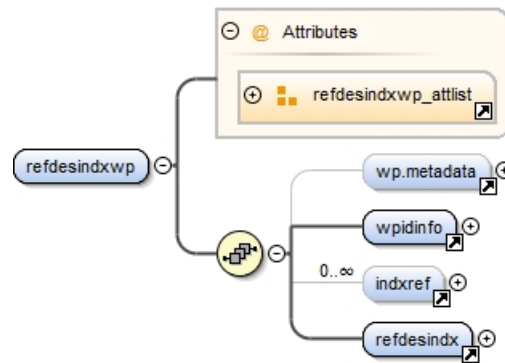


FIGURE 476. Reference designator index work package **<refdesindxwp>** DTD hierarchy.

3. The DTD fragment for **<refdesindxwp>** is:

```
<!ELEMENT refdesindxwp(wp.metadata?, wpidinfo, indxref*, refdesindx)>
```

```
<!ATTLIST refdesindxwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED

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frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <refdesindxwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).

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- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

24.4.7.3.1 Reference designator index <refdesindx>.

The <refdesindx> is the wrapper element for the listing of all reference designators used in the parts list.

1. The components for <refdesindx> are Reference designator index row <refdesindxrow> (required – one or more) (see Section 24.4.7.3.1.1).
2. The DTD fragment for <refdesindx> is graphically depicted.

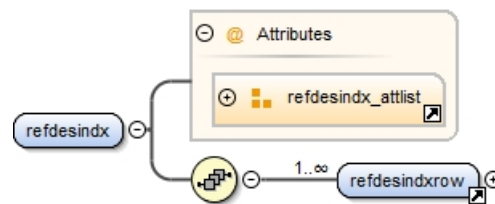


FIGURE 477. Reference designator index <refdesindx> DTD hierarchy.

3. The DTD fragment for <refdesindx> is:

```
<!ELEMENT refdesindx (refdesindxrow+)>
<!ATTLIST refdesindx
    assocfig          IDREFS          #IMPLIED
    changeref         IDREFS          #IMPLIED
    comment           CDATA           #IMPLIED
    delchlvl          (0-99)          "0"
    id                ID              #IMPLIED
    idref             IDREFS          #IMPLIED
    inschlvl          (0-99)          "0"
    security           (uc | fouo | c | s | ts) #IMPLIED
    skilltrk          CDATA           #IMPLIED>
```

4. Common attributes for <refdesindx>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).

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- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.7.3.1.1 Reference designator index row <refdesindxrow>.

The <refdesindxrow> is similar in nature to the <nsnindxrow> or <pnindxrow> with one major exception. In the NSN or Part Number indexes, there may be multiple uses of an NSN or Part Number. In the reference designator, each <refdes> is unique and will only be listed once.

1. The components for <refdesindxrow>:
 - a. Reference designator <refdes> (required) (see Section 24.4.2.1.7.12).
 - b. Callout <callout> (required – one or more) (see Section 33.2.4.1).
2. The DTD fragment for <refdesindxrow> is graphically depicted.

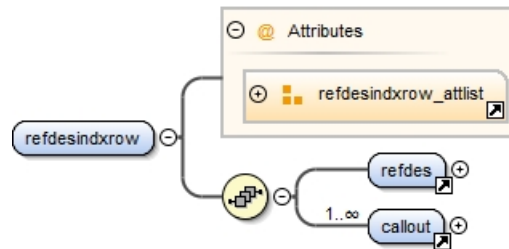


FIGURE 478. Reference designator index row <refdesindxrow> DTD hierarchy.

3. The DTD fragment for <refdesindxrow> is:

```
<!ELEMENT refdesindxrow (refdes, callout+)>
<!ATTLIST refdesindxrow
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```


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4. Common attributes for **<refdesindxrow>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

24.4.7.3.2 Example of a reference designator index work package **<refdesindxwp>**.

An example of a page based **<refdesindxwp>** is contained in MIL-STD-40051-2. Programs may develop their own display of the **<refdesindxwp>** for IETMs.

```

<refdesindxwp wpno="WP0026" wpseq="0026 00">
  <wpidinfo>
    <maintlvl level="field"/>
    <title>
      <indxref ref1="Reference Designator Index">
        </title>
      </wpidinfo>
    <refdesindx>
      <refdesindxrow>
        <refdes>S1
      </refdes>
      <callout assocfig="f1" label="15"/>
    </refdesindxrow>
    <refdesindxrow>
      <refdes>W2
    </refdes>
      <callout assocfig="f1" label="3"/>
    </refdesindxrow>
    <refdesindxrow>
      <refdes>2AT1
    </refdes>
      <callout assocfig="f2" label="309"/>
    </refdesindxrow>
    <refdesindxrow>
      <refdes>2AT10
    </refdes>
      <callout assocfig="f2" label="552"/>
    </refdesindxrow>
    <refdesindxrow>
      <refdes>2AT11
    </refdes>
      <callout assocfig="f2" label="699"/>
    </refdesindxrow>
  </refdesindxwp>

```

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```
<refdesindxrow>
<refdes>2AT12
</refdes>
<callout assocfig="f2" label="699"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT13
</refdes>
<callout assocfig="f2" label="479"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT14
</refdes>
<callout assocfig="f2" label="479"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT2
</refdes>
<callout assocfig="f2" label="309"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT3
</refdes>
<callout assocfig="f2" label="558"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT4
</refdes>
<callout assocfig="f2" label="564"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT5
</refdes>
<callout assocfig="f2" label="705"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT5
</refdes>
<callout assocfig="f2" label="479"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT6
</refdes>
<callout assocfig="f2" label="494"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT7
</refdes>
<callout assocfig="f2" label="675"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2AT8
</refdes>
<callout assocfig="f2" label="624"/>
```

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</refdesindxrow>
<refdesindxrow>
<refdes>2A19
</refdes>
<callout assocfig="f2" label="552"/>
</refdesindxrow>
<refdesindxrow>
<refdes>2A1
</refdes>
<callout assocfig="f2" label="489"/>
</refdesindxrow>
</refdesindx>
</refdesindxwp>

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25 DESTRUCTION OF ARMY MATERIAL CHAPTER

25.1 Destruction of Army material <dim>.

At the direction of the acquiring activity, destruction procedures may be included as a chapter in a weapons system TM. The requirements contained in Section 15.10 apply except as noted below.

1. The <dim> components:
 - a. Chapter Title page <titlepg> (required). The element provides the title page preceding an information chapter (see Section 36.1.1.1).
 - b. Destruction introduction work package <destruct-introwp> (required) (see Section 15.10.2).
 - c. Destruction procedures work package <destruct-materialwp> (required – one or more) (see Section 25.1.2).
2. The DTD fragment for <dim> is graphically depicted.

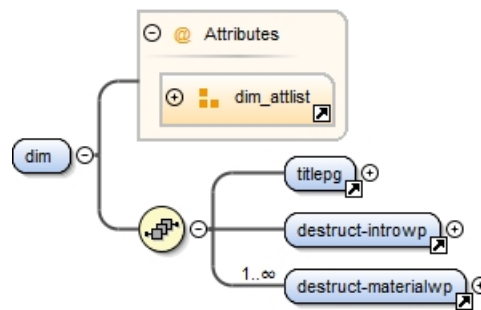


FIGURE 479. Destruction of Army material chapter <dim> DTD hierarchy

3. The DTD fragment for <dim> is:

```

<!ELEMENT dim (titlepg, destruct-introwp, destruct-materialwp+)>
<!ATTLIST dim
  chap-toc          (yes | no )          "yes"
  chngno            CDATA                 #REQUIRED
  frame             (yes | no )          "yes"
  revno             CDATA                 #REQUIRED
  tocentry          (0 | 1 | 2)          "1">
  
```

4. Attributes for <dim>:

- a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **chngno** – Change number (required) (see Section 36.3.12).
- c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- d. **revno** – Revision number (required) (see Section 36.3.7).

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- e. **tocentry** – In the TM table of contents, the attribute indicates the indenture level. The possible selections are **0** (do not include), **1** (the highest level or 1st indenture level), or **2** (the second indenture level) (default value is **1**).

25.1.1 Destruction manual introduction work package <destruct-introwp>.

The **<destruct-introwp>** is discussed in Section 15.10.2.

25.1.2 Destruction procedures work package <destruct-materialwp>.

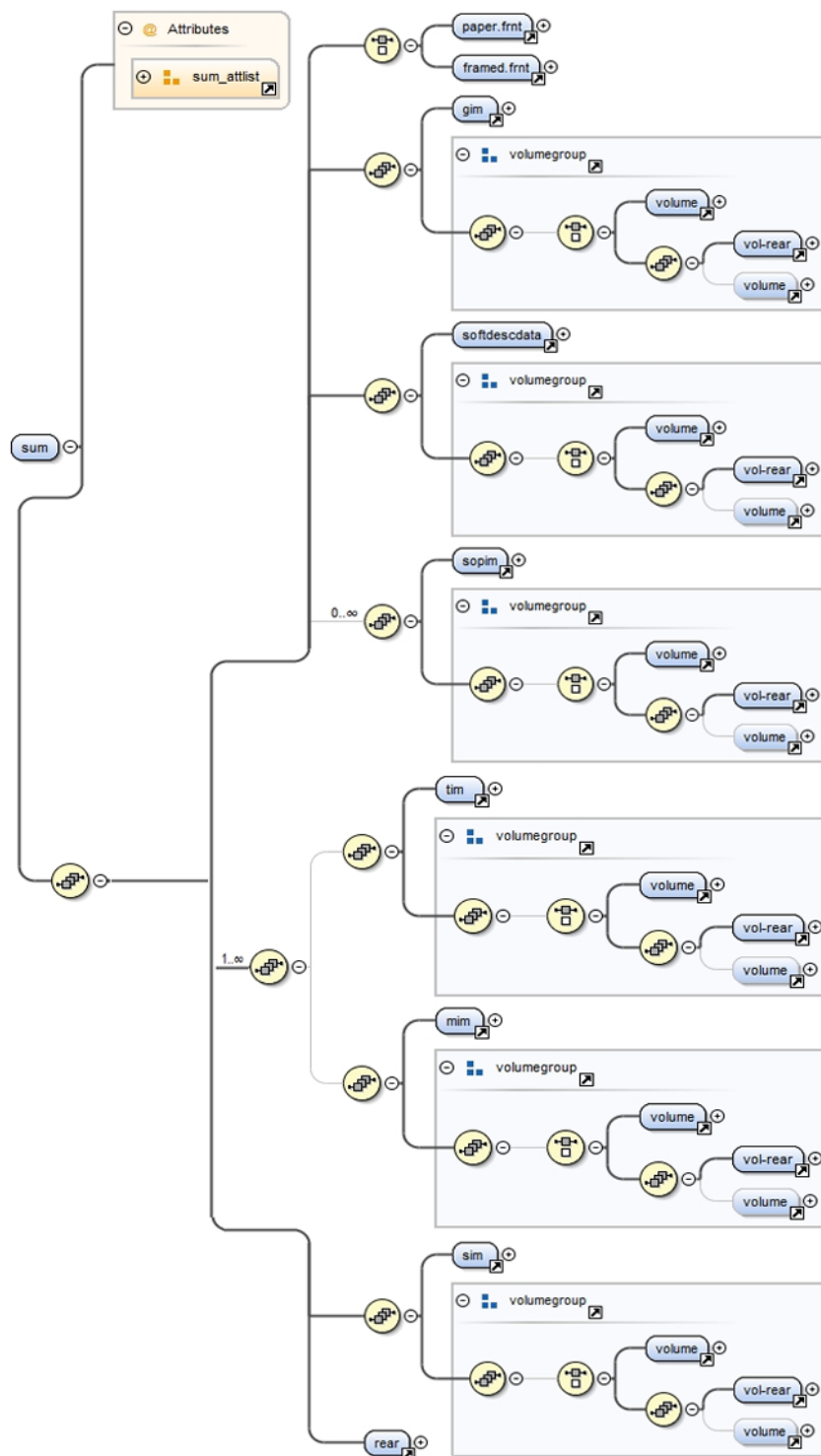
The **<destruct-materialwp>** is discussed in Section 15.10.2.5.

26 SOFTWARE USERS MANUAL (SUM) CHAPTER

26.1 Software Users Manual <sum>.

The <sum> provide the technical content requirements for the preparation of Software Users Manuals (SUM).

1. The components of a maintenance instruction chapter <sum> are:
 - a. Title page <titlepg> (required) (see Section 36.1.1.1).
 - b. Software general information work package <softginfowp> (required) (see Section 18.1.5.1).
 - c. Software summary work package <softsumwp> (required – one or more) (see Section 18.1.5.2).
 - d. Software effectivity work package <softeffectwp> (revisions only) (optional) (see Section 18.1.5.3).
 - e. Differences between versions work package <softdiffversionwp> (revisions only) (optional) (see Section 18.1.5.4).
2. The DTD fragment for <sum> is graphically depicted:



3. The DTD fragment for **<sum>** is:

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```
<!ELEMENT sum ((paper.frnt | framed.frnt), (gim, %volumegroup;), (soft-
descdata, %volumegroup;), (sopim, %volumegroup;)*, ((tim, %volu-
megroup;)?, (mim, %volumegroup;)?)+, (sim, %volumegroup;), rear)>
```

```
<!ATTLIST sum
```

dmwr-inclus	(parts parts-tools)	#IMPLIED
fit.paper.size	(pocket logbook standard double)	"standard"
maintitl	CDATA	#REQUIRED
maintlvls	(10 13 14 23 24 40 dmwr nmwr NA)	#REQUIRED
multivolume	(yes no)	"no"
pubno	CDATA	#IMPLIED
revno	CDATA	#REQUIRED
security	(uc fouo c s ts)	#IMPLIED>

4. Common attributes for **<sum>** are:

- a. **dmwr-inclus** – Specifies whether a DMWR/NMWR includes parts only or parts and tools.
- b. **fit.paper.size** – Fit paper size by selecting an attribute value from the list. The default value is **standard**.
- c. **maintitl** – Maintenance title supplies a literal version of the title for the maintenance-level. (required)
- d. **maintlvls** – Maintenance level identifies the lowest maintenance level/class authorized to use the manual; this attribute value is used in the stylesheet to supply the literal expression of the TM's maintenance level. (required)
- e. **multivolume** – Is the manual broken into volumes? The default value is **no**. This attribute is used by the stylesheet to provide volume numbers when needed.
- f. **pubno** – Publication number attribute specifies the technical manual publication number.
- g. **revno** – The overall revision number for the manual (required).
- h. **security** – Security classification (optional) (see Section 36.3.14).

26.1.1 Destruction manual introduction work package **<destruct-ginfowp>**.

The **<destruct-ginfowp>** is discussed in 25.1.1.

26.1.2 Destruction procedures work package **<destruct-materialwp>**

The **<destruct-materialwp>** is discussed in Section 25.1.2.

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27 SUPPORTING INFORMATION CHAPTER.

27.1 Supporting information <sim>.

Supporting information <sim> is to be prepared for weapon systems, major equipment, components and applicable support and interface equipment as work packages. Supporting information requirements are included for the preparation of technical data that supplements the specific operation and maintenance information contained in the TM. This supplemental information includes reference data, general maintenance and parts information and associated illustrations to provide the user in preparing supporting information work packages for a TM. Below are the components of a Supporting Information Chapter.

1. The components of a <sim> are:

- a. Chapter title page <titlepg> (required) (see Section 36.1.1.1).
- b. Reference Work Package <refwp> (required) (see 27.1.1).
- c. A choice of one of the following:
 - i. Supporting information for a battle damage manual contained in <bdarcategory> (see Section 27.2) or
 - ii. MAC introduction work package <macintrowp> (see Section 27.3) (optional) followed by a MAC work package <macwp> (see Section 27.4).
 - iii. A complex TM may require one or more of the following individual supporting work packages:
 - I. Components of End Item (COEI) and Basic Issue Items (BII) Lists work package <coeibiiwp> (see Section 27.5).
 - II. Additional Authorization List (AAL) work package <aalwp> (see Section 27.6).
 - III. Collateral Material work package <cmwp> (optional) (see Section 27.7).
 - IV. Expendable and durable items list work package <explistwp> (see Section 27.8).
 - V. Facility work package <facilwp> (optional) (see Section 23.10.1).
 - VI. Tool identification list work package <toolidwp> (see Section 27.9).
 - VII. Mandatory replacement parts list work package <mrplwp> (see Section 27.10).
 - VIII. Critical Safety Items work package <csi.wp> (see Section 27.11).
 - IX. Hand Receipt work package <handreceiptwp> (optional).
 - iv. Some TM types may require one of the following type work packages.
 - I. Lubricant types work package <lubetypeswp> (see Chapter 27).
 - II. Lubricant types work package <lospecnoteswp> (see Chapter 27).
 - III. Collateral material work package <cmwp> (see Chapter 27).
 - IV. Software basic issue items <softbiiwp> (see Chapter 27).
 - V. Facilities work package <facilwp> (see 27).
 - v. A less complex TM may include a small amount of information from one or more of the work packages listed above. The different supporting information chunks are grouped into a support items work package <supitemwp> (see Section 27.12).
 - vi. Optional additional generic work package(s) <genwp> (see Section 27.13).

2. The DTD fragment for **<sim>** is graphically depicted:

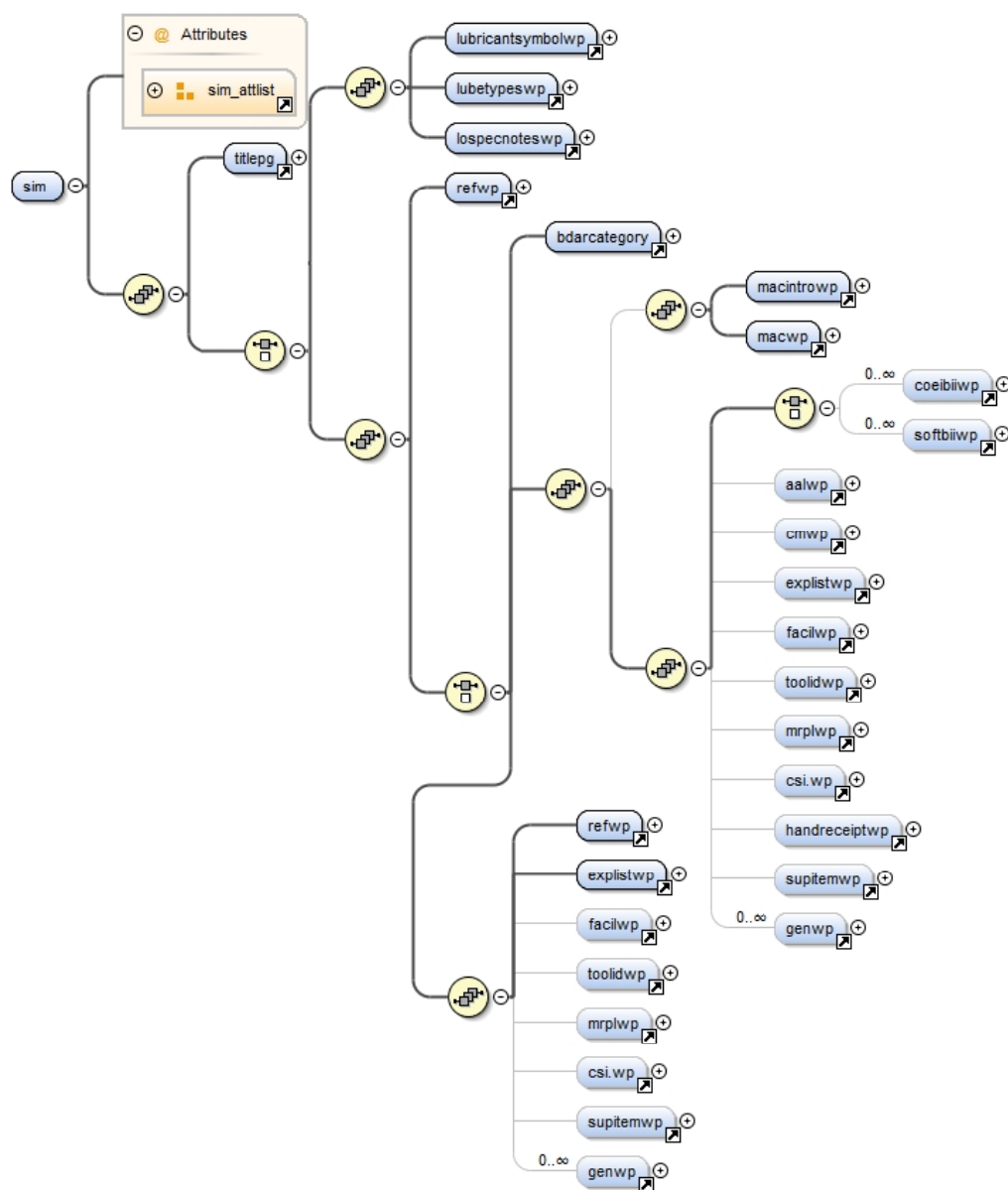


FIGURE 481. SIM chapter **<sim>** DTD hierarchy.

3. The DTD fragment for **<sim>** is:

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```

<!ELEMENT sim ((titlepg, ((lubricantsymbolwp, lubetypeswp, lospecnoteswp
| (refwp, (bdarcategory | ((macintrowp, macwp)?, (((coeibiiwp* | soft-
biiwp*), aalwp?, cmwp?, explistwp?, facilwp?, toolidwp?, mrplwp?, csi.wp?,
handreceiptwp?, supitemwp?, genwp*)))) | (refwp, explistwp, facilwp?, too-
lidwp?, mrplwp?, csi.wp?, supitemwp?, genwp*)))))) ((titlepg, ((lubricant-
symbolwp, lubetypeswp, lospecnoteswp) | (refwp, (bdarcategory |
((macintrowp, macwp)?, (((coeibiiwp* | softbiiwp*), aalwp?, cmwp?, ex-
plistwp?, facilwp?, toolidwp?, mrplwp?, csi.wp?, handreceiptwp?, supi-
temwp?, genwp*))) | (refwp, explistwp, facilwp?, toolidwp?, mrplwp?, csi.
wp?, supitemwp?, genwp*))))))>

<!ATTLIST sim
chap-toc                (yes | no )                "yes"
chngno                  CDATA                      #REQUIRED
frame                  (yes | no )                "yes"
revno                  CDATA                      #REQUIRED
tocentry               (0 | 1 | 2)                 "1">

```

4. Common attributes for **<sim>**:

- a. **chap-toc** – Create a chapter work package table of contents (optional). Select either **yes** or **no** with a default value **yes**.
- b. **chngno** – Change number (required) (see Section 36.3.12).
- c. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- d. **revno** – Revision number (required) (see Section 36.3.7).
- e. **tocentry** – In the TM table of contents, the attribute indicates the indenture level. The possible selections are **0** (do not include), **1** (the highest level or 1st indenture level), or **2** (the second indenture level) (default value is **1**).

27.1.1 References work package **<refwp>**.

The References work package is to be prepared and list all publications referenced in the TM and required by the user to operate and/or maintain the equipment. The publication or form, if known, should be referenced with a link directly or to the website where it can be obtained.

1. The components for **<refwp>**:

- a. Work package metadata (information about the work package) **<wp.metadata>** (optional) (see Section 16.4.1).
- b. Work package identification information **<wpidinfo>** (required) (see Section 16.2).
- c. Work package initial setup **<initial_setup>** (optional) (see Section 16.6).
- d. Work package scope **<scope>** (required) (see Section 36.1.4.24). The scope provides information concerning the use and content of the references work package.
- e. Individual paragraphs prepared for each publication type **<publist>** (required – one or more) (see Section 27.1.1.2).

2. The DTD fragment for **<refwp>** is graphically depicted.

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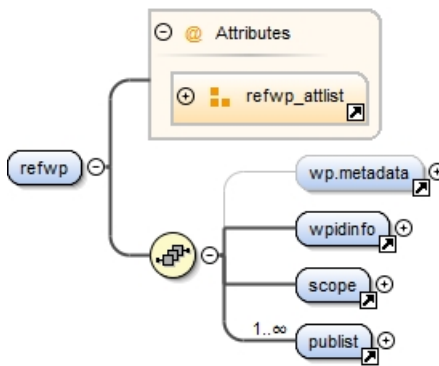


FIGURE 482. Reference work package DTD hierarchy <refwp>.

3. The DTD fragment for <refwp> is:

```
<!ELEMENT refwp (wp.metadata?, wpidinfo, scope, publist+)>
```

```
<!ATTLIST refwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"

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wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <refwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

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27.1.1.1 Reference work package scope <scope>.

Each reference work package is required to contain information providing the scope of the work package. The scope <scope> is discussed in Section 36.1.4.24.

27.1.1.2 Publication list <publist>.

Publication list lists all publications, forms, and similar data referenced in the TM that are required to operate or maintain the equipment. This list is identified by category name <title>, any applicable introduction/general information <trim para>, and associated publications <pubident> (listed by publication number in alphanumeric order).

1. The components for <publist>:
 - a. Publication Category Title <title> (required) (see Section 36.1.1.4).
 - b. Introductory Information Using Reduce Paragraph <trim para> (optional – zero or more) (see Section 36.1.1.8).
 - c. Publication Identification Number And Title <pubident> (required – one or more) (see Section 27.1.1.2.1).
2. The DTD fragment for <publist> is graphically depicted.

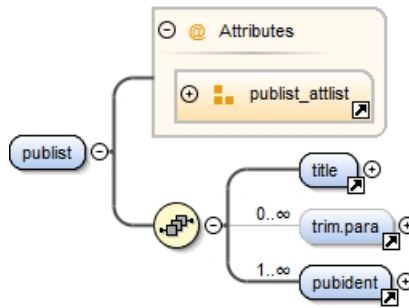


FIGURE 483. Publications listing <publist> DTD hierarchy.

3. The DTD fragment for <publist> is:

```
<!ELEMENT publist (title, trim para*, pubident+)>
```

```
<!ATTLIST publist
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for <publist>:

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- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.1.1.2.1 Publication identification <pubident>.

The publication identification number is the technical manual, Army Regulation number, or other identification publication number and publication title.

1. The components for <pubident>:
 - a. Publication number identified (required) through the use of:
 - i. An External Reference <extref> (see Section 33.2.1) or <link> (see Section 33.2.3).
 - ii. A Textual With No Reference <name> (see Section 36.1.4.18).
 - b. Publication Title <title> (required) (see Section 36.1.1.4).
2. The DTD fragment for <pubident> is graphically depicted.

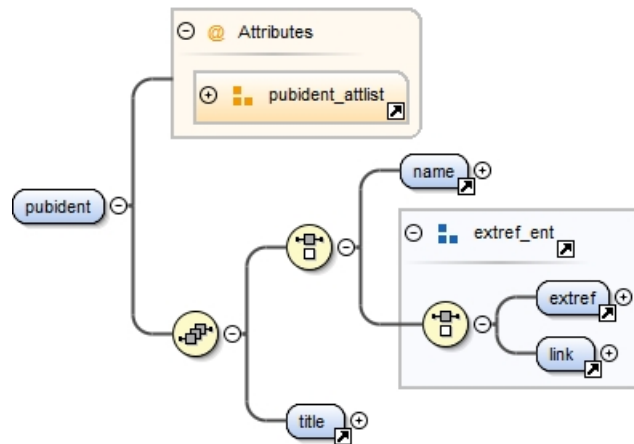


FIGURE 484. Publication identification <pubident> DTD hierarchy.

3. The DTD fragment for <pubident> is:

```
<!ELEMENT pubident ((name | %extref_ent;), title)>
```

```
<!ATTLIST pubident
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED

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comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<pubident>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.1.2 XML document instance fragment and output for **<refwp>**.

Example of an XML document instance fragment for **<refwp>**:

1.

```
<refwp wpno="S0020-9-4910-784-13NP" wpseq="0020" chngno="">
  <wpidinfo>
    <maintlvl level="maintainer"/>
    <title>References
  </title>
</wpidinfo>
<scope>
<title/>
<para>This Work Package lists all field manuals, technical manuals, forms,
pamphlets, Army regulations, and military standards referenced throughout this
manual.
</para>
</scope>
<publist>
<title>Field Manuals
</title>
<pubident>
<extref docno="FM 31-70" posttext=")" pretext="("/>
<title>Basic Cold Weather Manual
</title>
</pubident>
```

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<pubident>
 <name>FM 21-11
 </name>
 <title>First Aid for Soldiers
 </title>
 </pubident>
 <pubident>
 <name>FM 90-6
 </name>
 <title>Mountain Operations
 </title>
 </pubident>
 <pubident>
 <name>FM 3-3
 </name>
 <title>Chemical and Biological Contamination Avoidance
 </title>
 </pubident>
 <pubident>
 <name>FM 31-71
 </name>
 <title>Northern Operations
 </title>
 </pubident>
 <pubident>
 <name>FM 9-207
 </name>
 <title>Operation and Maintenance of Ordnance Material in Cold Weather
 </title>
 </pubident>
 <pubident>
 <name>FM 10-16
 </name>
 <title>General Fabric Repair
 </title>
 </pubident>
 </publist>
 <publist>
 <title>Technical Manuals
 </title>
 </pubident>
 <name>**TM 750-244-3**
 </name>
 <title>Procedures for Destruction of Army Materiel to Prevent Enemy Use
 </title>
 </pubident>
 <pubident>
 <name>TM 740-90-1
 </name>
 <title>Administrative Storage of Equipment
 </title>
 </pubident>
 <pubident>
 <name>TM 38-230-2

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```

</name>
<title>Packing of Materiel
</title>
</pubident>
</publist>
<publist>
<title>Forms
</title>
<pubident>
<name>DA Form 2408-9
</name>
<title>Equipment Control Record
</title>
</pubident>
<pubident>
<name>DA Form 2404
</name>
<title>Equipment Inspection and Maintenance Worksheet
</title>
</pubident>
<pubident>
<name>DA Form 2062
</name>
<title>Hand Receipt/Annex Number
</title>
</pubident>
<pubident>
<name>DD 361
</name>
<title>Transportation Discrepancy Report
</title>
</pubident>
<pubident>
<name>SF 368
</name>
<title>Product Quality Deficiency Report
</title>
</pubident>
<pubident>
<name>DA Form 2028-2
</name>
<title>Recommended Changes to Equipment Technical Publications
</title>
</pubident>
<pubident>
<name>DA Form 2028
</name>
<title>Recommended Changes to Publications and Blank Forms
</title>
</pubident>
</publist>
<publist>
<title>DA Pamphlets
</title>

```

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<pubident>
<name>DA PAM 738-750
</name>
<title>The Army Maintenance Management System (TAMMS)
</title>
</pubident>
</publist>
<publist>
<title>Commercial, Federal, or Military Standards
</title>
<pubident>
<name>ASTM-D6193
</name>
<title>Stitches and Seams
</title>
</pubident>
</publist>
</refwp>

2. Page-based TM stylesheet output example for **<refwp>**:

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0020

MAINTAINER MAINTENANCE**REFERENCES****SCOPE**

This Work Package lists all field manuals, technical manuals, forms, pamphlets, Army regulations, and military standards referenced throughout this manual.

Field Manuals

(FM 31-70)	Basic Cold Weather Manual
FM 21-11	First Aid for Soldiers
FM 90-6	Mountain Operations
FM 3-3	Chemical and Biological Contamination Avoidance
FM 31-71	Northern Operations
FM 9-207	Operation and Maintenance of Ordnance Material in Cold Weather
FM 10-16	General Fabric Repair

Technical Manuals

TM 750-244-3	Procedures for Destruction of Army Materiel to Prevent Enemy Use
TM 740-90-1	Administrative Storage of Equipment
TM 38-230-2	Packing of Materiel

Forms

DA Form 2408-9	Equipment Control Record
DA Form 2404	Equipment Inspection and Maintenance Worksheet
DA Form 2062	Hand Receipt/Annex Number
DD 361	Transportation Discrepancy Report
SF 368	Product Quality Deficiency Report
DA Form 2028-2	Recommended Changes to Equipment Technical Publications
DA Form 2028	Recommended Changes to Publications and Blank Forms

DA Pamphlets

DA PAM 738-750	The Army Maintenance Management System (TAMMS)
----------------	------------------------------------------------

Commercial, Federal, or Military Standards

ASTM-D6193	Stitches and Seams
------------	--------------------

END OF WORK PACKAGE

0020-1/blank

FIGURE 485. Example of page-based TM stylesheet output for <refwp>.**3. Frame-based TM or IETM stylesheet output example for <refwp>.**

<u>REFERENCES</u>	
Maintenance: FIELD SCOPE	
This work package lists all field manuals, forms, technical manuals and miscellaneous publications referenced in this manual.	
FIELD MANUALS	
FM 3-3	CBRN Decontamination Avoidance
FM 3-19	CBRN Reconnaissance
FM 9-207	Operation and Maintenance of Ordnance Material in Cold Weather
FM 20-22	Vehicle Recovery Operations
FM 21-11	First Aid for Soldiers

FIGURE 486. Example of frame-based TM stylesheet output for <refwp>.

27.2 Battle damage manual unique supporting information <bдарcategory>.

The battle damage assessment and repair manual <bдар> has slightly different supporting information requirements than a regular TM. In addition to a reference work package <refwp> (see Section 27.1.1), the BDAR manual also contains the following work packages:

1. An optional BDAR tools work package <bдарtoolswp> (optional) (see Section 27.2.1).
2. Work package identification information <wpidinfo> (required) (see Section 16.2).
3. Work package initial setup <initial_setup> (optional) (see Section 16.6).
4. An expendable and durable items work package <explistwp> (required) (see Section 27.8).
5. A list of substitute materials work package <substitute-matwp> (see Section 27.2.3).
6. The DTD fragment for <bдарcategory> is graphically depicted.

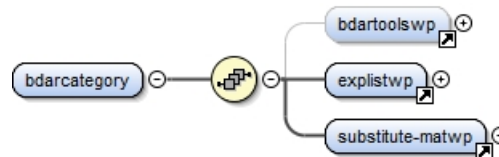


FIGURE 487. Battle damage manual supporting information <bдарcategory> DTD hierarchy.

7. The DTD fragment for <bдарcategory> is:

```
<!ELEMENT bдарcategory (bдарtoolswp?, explistwp, substitute-matwp)>
```

8. The <bдарcategory> has no attributes.

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27.2.1 Battle damage special tools and manufactured items work package <bdartoolswp>.

The <bdartoolswp> identifies any special tools or other non common support equipment, including locally manufactured items, that may be needed to support BDAR repairs.

1. The components for <bdartoolswp> are:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. Work package initial setup <initial_setup> (required) (see Section 16.6).
 - d. An introductory paragraph <intro> (see Section 36.1.4.14)
 - e. A choice of one of the following options:
 - i. A group consisting of a:
 - I. Tool identification list <toolidlist> (required) (see Section 27.9.2).
 - II. An optional modified list of manufactured items consisting of:
 - A. A manufactured items introduction <manu_items_introwp> (required) (see Section 23.11.1). The BDAR introduction only requires the introduction text from the manufactured items introduction work package.
 - B. A manufactured items index <manuindx> (required) (see Section 23.11.1.1).
 - C. A modified for battle damage manufactured items list <bdar-manuitem> (required – one or more).
 - f. Or the manufactured items index and modified battle damage manufactured items list.
2. The DTD fragment for <bdartoolswp> is graphically depicted.

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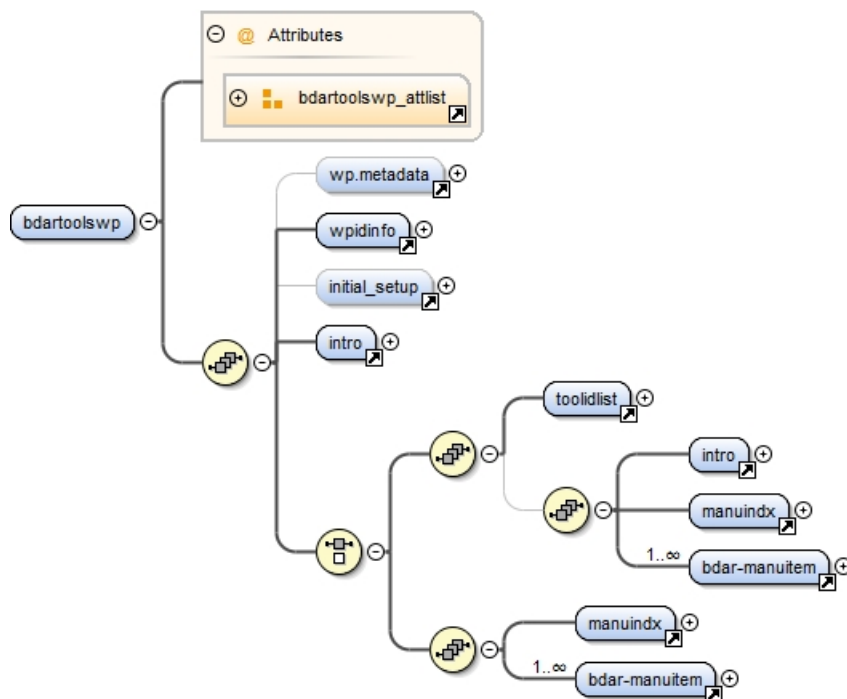


FIGURE 488. Battle damage special tools and manufactured items work package <bdartoolswp> DTD hierarchy.

3. The DTD fragment for <bdartoolswp> is:

```
<!ELEMENT bdartoolswp (wp.metadata?, wpidinfo, initial_setup?, intro,
((toolidlist, (intro, manuindx, bdar-manuitem+)? | (manuindx, bdar-manuitem+)))>
```

```
<!ATTLIST bdartoolswp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED

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inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<bdartoolswp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).

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- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

27.2.2 Battle damage expendable and durable items work package <explistwp>.

The <bdarkcategory> requires an expendable and durable items work package <explistwp> that lists any expendable or durable items that may be required in performing battle damage repair. The <explistwp> is tagged and discussed in Section 27.8.

27.2.3 Battle damage substitute and materials work package <substitute-matwp>.

The <substitute-matwp> provides information on all material and its substitutes that are allowed in performance of battle damage repair. If a lower quality alternative material is allowed for a BDAR procedure, any potential degradation is provided.

1. The components for <substitute-matwp>:
 - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c. An introduction related to the use of the work package <intro> (see Section 36.1.4.14).
 - d. A choice of one of the following options:
 - i. A group consisting of:
 - I. A single paragraph <para> containing all required information, or
 - II. A group containing the following:
 - A. Title <title> (required) (see Section 36.1.1.4).
 - B. Figtab <figtab> (optional – zero or more) (see 36.2.2).
 - C. Select one of the following information types:
 - A. Narrative paragraphs with descriptive or narrative titled text:
 - A. Note <note> (optional – zero or more) (see Section 28.1.3).
 - B. Narrative paragraph <para> (required – one or more) (see Section 36.1.1.6).
 - C. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1) (optional – zero or more).
 - D. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1) (required – one or more).

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2. The DTD fragment for **<substitute-matwp>** is graphically depicted.

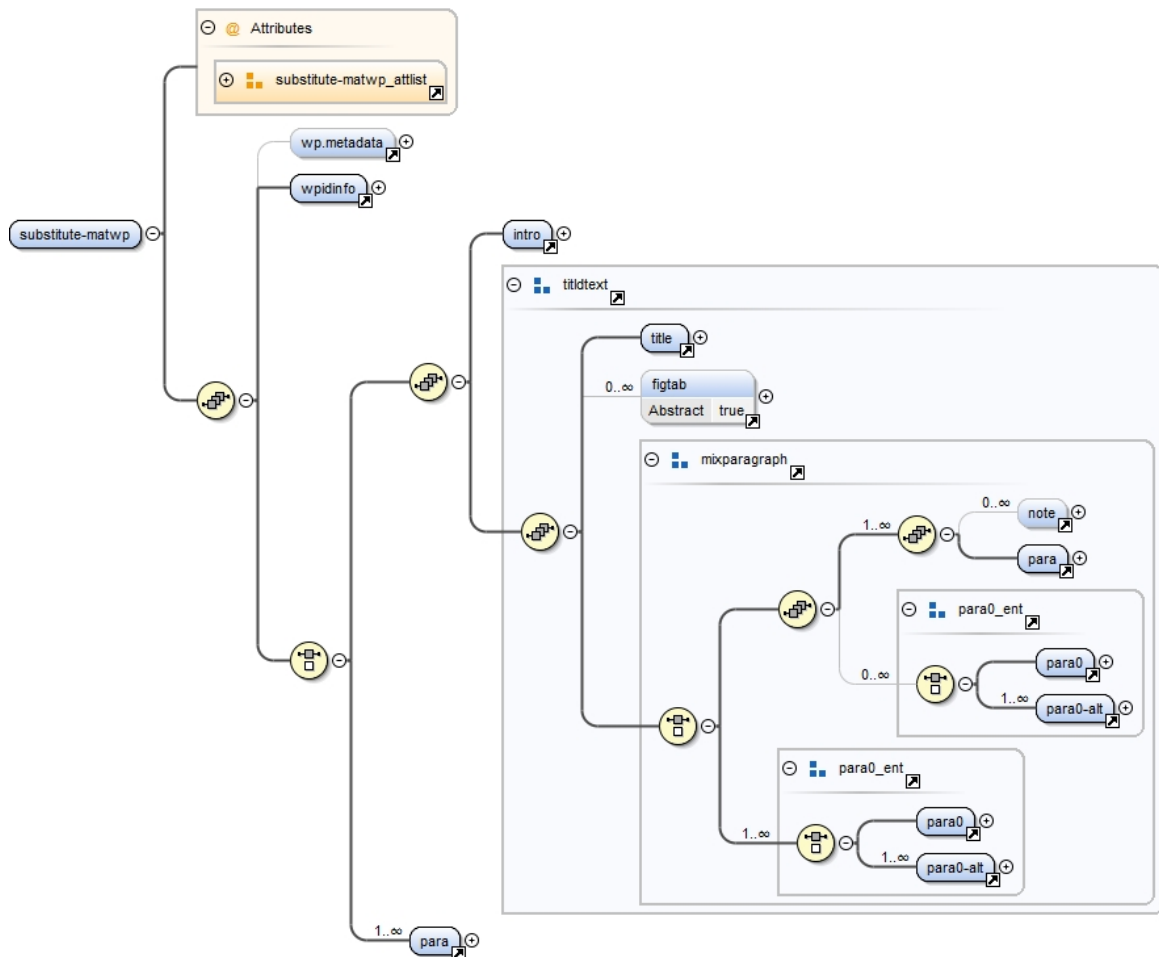


FIGURE 489. Battle damage substitute and materials work package <substitute-matwp> DTD hierarchy.

3. The DTD fragment for **<substitute-matwp>** is:

```
<!ELEMENT substitute-matwp ((wp.metadata?, wpidinfo, ((intro, %titld-
text;) | para+))>
```

```
<!ATTLIST substitute-matwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnngno	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED

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date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<substitute-matwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

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- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

27.3 Maintenance Allocation Chart (MAC) introduction work package <macintrowp>.

The MAC introduction work package contains the textual introduction MAC Work Package. The text for the MAC introduction is specified in MIL-STD-40051-1/-2.

1. The components for <macintrowp>:
 - a.** Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
 - b.** Work package identification information <wpidinfo> (required) (see Section 16.2).
 - c.** Introduction text <intro> (see Section 27.3.1 and Section 36.1.4.14).
2. The DTD fragment for <macintrowp> is graphically depicted.

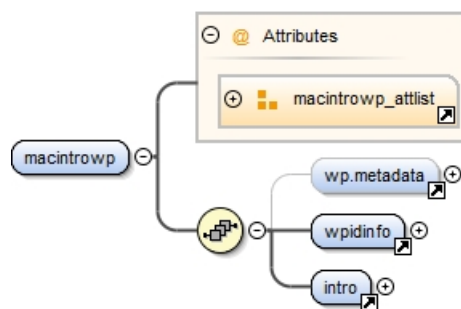


FIGURE 490. MAC introduction work package <macintrowp> DTD hierarchy.

3. The DTD fragment for <macintrowp> is:

```

<!ELEMENT macintrowp (wp.metadata?, wpidinfo, intro)>
<!ATTLIST macintrowp
    airforce                (yes | no)                "no"
  
```

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army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for <macintrowp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).

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- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

27.3.1 MAC introduction work package standard text.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XXII.

TABLE XXII. MAC introduction *<intro>* boilerplate entities.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Standard MAC Introduction		
Frame-based MAC	<i>&macintrowp.intro;</i>	<!ENTITY % frame-base "INCLUDE"><!ENTITY % page-base "IGNORE"><! ENTITY % mac.2-level "INCLUDE"><! ENTITY % mac.3-level "IGNORE"><! ENTITY % mac.nonav-

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TABLE XXII. MAC introduction <intro> boilerplate entities. (continued)

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Standard MAC Introduction		
		level "INCLUDE"><!ENTITY % mac.av-level "IGNORE">
Page-based MAC		<!ENTITY % frame-base "IGNORE"><!ENTITY % page-base "INCLUDE"><!ENTITY % mac.2-level "INCLUDE"><!ENTITY % mac.3-level "IGNORE"><!ENTITY % mac.5-level "IGNORE"><!ENTITY % mac.nonav-level "INCLUDE"><!ENTITY % mac.av-level "IGNORE">
<i>Aviation MAC Introduction</i>		
Frame-based Aviation MAC	&macintrowp.intro-av;	<!ENTITY % frame-base "INCLUDE"><!ENTITY % page-base "IGNORE"><!ENTITY % mac.2-level "INCLUDE"><!ENTITY % mac.nonav-level "IGNORE"><!ENTITY % mac.av-level "INCLUDE">
Page-based Aviation MAC		<!ENTITY % frame-base "IGNORE"><!ENTITY % page-base "INCLUDE"><!ENTITY % mac.2-level "INCLUDE"><!ENTITY % mac.nonav-level "IGNORE"><!ENTITY % mac.av-level "INCLUDE">

27.3.2 XML document instance fragment <macintrowp>.

The XML instances for the <macintrowp> are provided below. The page-based stylesheet output samples can be located in MIL-STD-40051-2.

1. Example of the <macintrowp> XML document instance fragment for a MAC Introduction work package using the MAC boilerplate entity **&mac.intro-std;** and setting the selectable as shown in TABLE XXVI.

```

<macintrowp wpno="s0002- X-XXXX-XXXX" tocentry="2" frame="yes" army="no" airforce="no"
navy="no" marines="no" wpseq="0437" deletewp="no">
  <wpidinfo>
    <maintlvl level="sustain"/>
    <title>Maintenance Allocation Chart (MAC)
  </title>
</wpidinfo>

```

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```
<intro frame="yes">&mac.intro-std;
</intro>
</macintrowp>
```

2. Example of an XML document instance fragment for an Aviation MAC Introduction work package using the MAC boilerplate entity *&mac.intro-av*; in the instance of the *<macintrowp>*:

```
<macintrowp wpno="s0002- X-XXXX-XXXX" tocentry="2" frame="no" army="no" airforce="no"
navy="no" marines="no" wpseq="0437" deletewp="no">
<wpidinfo>
<maintlvl level="asb"/>
<title>Maintenance Allocation Chart (MAC)
</title>
</wpidinfo>
<intro frame="no">&mac.intro-av;
</intro>
</macintrowp>
```

27.4 Maintenance Allocation Chart (MAC) work package *<macwp>*.

The MAC work package is to be prepared in FGC sequence to consolidate and identify those groups on the list which involve identified maintenance tasks. The MAC is prepared according to the approved source data provided by the acquiring activity.

1. The components for *<macwp>*:
 - a. Work package metadata (information about the work package) *<wp.metadata>* (optional) (see Section 16.4.1).
 - b. Work package identification information *<wpidinfo>* (required) (see Section 16.2).
 - c. A ground related Maintenance Allocation Chart (MAC) *<mac>* (required) (see Section 27.4.1) or an Aviation MAC *<avmac>* (required) (see Section 27.4.2).
 - d. Tools and test equipment requirements table *<tereqtab>* (required) (see Section 27.4.3).
 - e. Remarks table *<remarktab>* (required) (see Section 27.4.4).
 - f. Maintenance Allocation Chart (MAC) alternate *<mac-alt>* (see Section 35.2.1).
2. The DTD fragment for *<macwp>* is graphically depicted.

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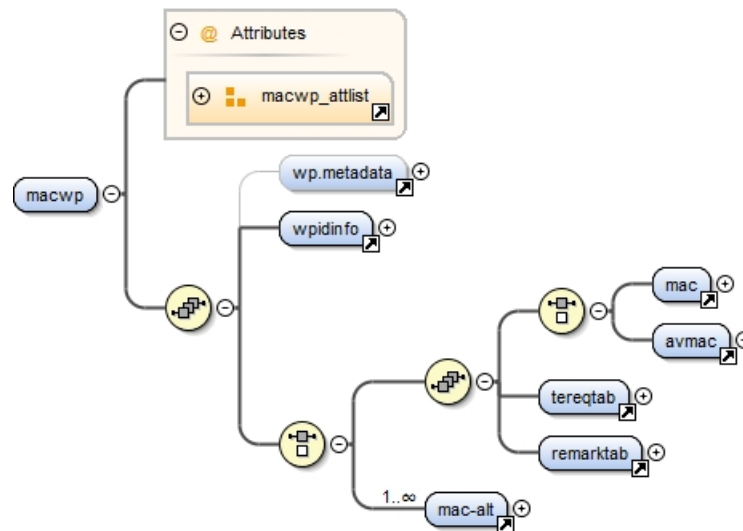


FIGURE 491. MAC work package <macwp> DTD hierarchy.

3. The DTD fragment for <macwp> is:

```
<!ELEMENT macwp (wp.metadata?, wpidinfo, (((mac | avmac), tereftab, remark-
tab) | (mac-alt+)))>
```

```
<!ATTLIST macwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date- time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"

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security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Attributes for **<macwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnyno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).

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- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

27.4.1 Standard Maintenance Allocation Chart (MAC) <mac>.

The MAC lists the maintenance functions, allowed maintenance levels and time assigned to each item. This element is equivalent to a table element in a structural table.

1. The components for <mac>:
 - a. Standard information title <title> (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number (this is generated by the stylesheet).
 - b. One or more MAC functional groupings <mac-group-2lvl> (required) (see Section 27.4.1.1).
2. The DTD fragment for <mac> is graphically depicted.

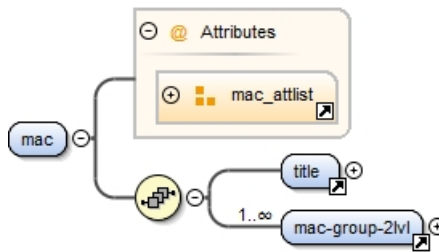


FIGURE 492. MAC <mac> DTD hierarchy.

3. The DTD fragment for <mac> is:

```
<!ELEMENT mac (title, mac-group-2lvl+)>
<!ATTLIST mac
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)         "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)         "0"
  security          (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

4. Common attributes for <mac>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).

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- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.1.1 Maintenance allocation chart <mac-group-2lvl>.

The element **<mac-group-2lvl>** lists each functional group numbers component(s)/assemble(s) information. In page-base, the element is equivalent to a **row** element in a table.

1. The components for **<mac-group-2lvl>**:
 - a. Functional group number **<groupno>** (required) (see Section 27.4.1.1.1).
 - b. Select either the component/assembly and qualify or select multiple components/assemblies.
 - i. Component/assembly item **<compassem>** (required). The element is similar to a **cell** in a structural table and is entered in column two (see Section 27.4.1.1.2).
 - ii. Qualifier – 2 Level Maintenance **<qualify-2lvl>** (required – one or more) identifies a MAC component qualification entry that contains maintenance function, maintenance level(s) work time, any tools and/or test equipment, and any remarks. In page-base, the element is equivalent to a **row** element in a table (see Section 27.4.1.1.3).
 - c. Component/Assemble Grouping **<compassemgroup-2lvl>** (required – one or more) (see Section 27.4.1.1.10).
2. The DTD fragment for **<mac-group-2lvl>** is graphically depicted.

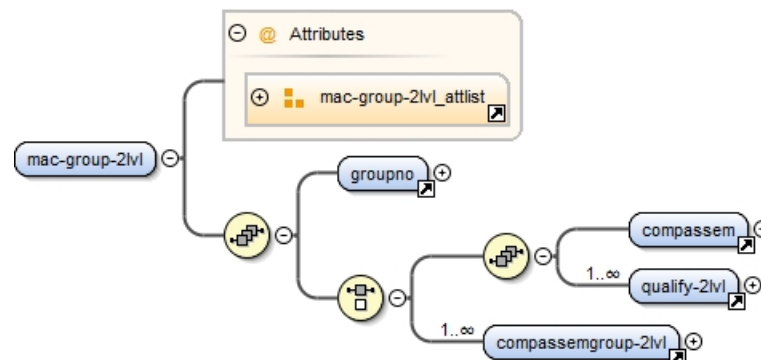


FIGURE 493. MAC functional group <mac-group-2lvl> DTD hierarchy.

3. The DTD fragment for **<mac-group-2lvl>** is:

```
<!ELEMENT mac-group-2lvl (groupno, ((compassem, qualify-2lvl+) | compassemgroup-2lvl+))>
```

```
<!ATTLIST mac-group-2lvl
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED

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delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<mac-group-21v1>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.1.1.1 Functional group number **<groupno>**.

The element **<groupno>** contains the FGC for the maintenance action(s). The element is similar to a **cell** in a structural table and is entered in column one of the MAC table.

1. The components for **<groupno>** are Parsable Characters – The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<groupno>** is:

```
<!ELEMENT groupno (#PCDATA)>
<!ATTLIST groupno
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security          (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

3. Common attributes for **<groupno>**:

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- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.1.1.2 Component/assembly item <compassem>.

The element <compassem> specifies the component, assembly, subassembly, or module name and, if applicable, the type designator for which maintenance is authorized.

1. The components for <compassem>:
 - a. Name <name> (required) (see Section 36.1.4.18).
 - b. Type Designator <typedes> (optional) (see Section 27.4.1.1.2.1).
2. DTD fragment for <compassem> is:

```
<!ELEMENT compassem (name, typedes?)>
<!ATTLIST compassem
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

3. Common attributes for <compassem>:
 - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – Unique identifier (optional) (see Section 36.3.7).
 - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.1.1.2.1 Type designator <typedes>.

The element <typedes> provides the equipment type designation.

1. The components for <typedes> are #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <typedes> is:

```
<!ELEMENT typedes (#PCDATA)>
```
3. No attributes for <typedes>.

27.4.1.1.3 Qualifier – 2 level Maintenance <qualify-2lvl>.

The element <qualify-2lvl> identifies a MAC component qualification entry that contains maintenance function, maintenance level(s) work time, any tools and/or test equipment, and any remarks. In page-base, the element is equivalent to a **row** element in a table.

1. The components for <qualify-2lvl>:
 - a. Maintenance function <maintfunc> (required). The element is similar to a **cell** in a structural table and is entered in column three of the MAC table (see Section 27.4.1.1.4).
 - b. Maintenance level classification <maintclass-2lvl> (required). The element is similar to a **cell** in a structural table and is entered in column 4 of the MAC table (see Section 27.4.1.1.5).
 - c. Tools and test equipment reference(s) <terefs> (optional). The element is similar to a **cell** in a structural table and is entered in column five of the MAC table (see Section 27.4.1.1.6).
 - d. Remark reference(s) <remarkrefs> (optional). The element is similar to a **cell** in a structural table and is entered in column six of the MAC table (see Section 27.4.1.1.8).
2. The DTD fragment for <qualify-2lvl> is graphically depicted:

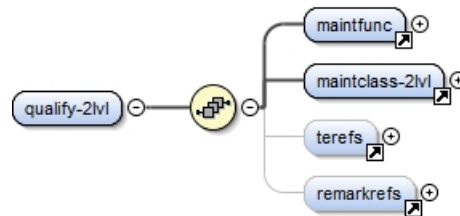


FIGURE 494. MAC action qualification <qualify-2lvl> DTD hierarchy.

3. The DTD fragment for <qualify-2lvl> is:

```
<!ELEMENT qualify-2lvl (maintfunc, maintclass-2lvl, terefs?, remarkrefs?)>
```
4. No attributes for <qualify-2lvl>.

27.4.1.1.4 Maintenance function <maintfunc>.

The element <maintfunc> provides the maintenance function (as listed from the MAC introduction) to be performed on the component/assembly item. The maintenance function element is EMPTY, but the **func** attribute is used to enter the maintenance function type from the list below. The element is similar to a **cell** in a structural table and is entered in column three.

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1. This list corresponds to tasks identified in the maintenance task **<maintsk>** list (see Section 23.7.1).
 - a. **adjust** – Maintains or regulates, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
 - b. **align** – Adjusts specified variable elements of an item to bring about optimum or desired performance.
 - c. **arm** – Maintenance procedures required to activate various types of munitions for combat or training.
 - d. **assem** – Step-by-step instructions required for assembling items disassembled or removed that make up components, assemblies or subassemblies.
 - e. **calibration** – The periodic testing and adjustment of precision measurement equipment against a known standard. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
 - f. **clean** – Maintenance procedures required to remove dirt or other contaminants from an item.
 - g. **configure** – Instructions for configuring the software for different uses/purposes and/or different users.
 - h. **cover** – Maintenance procedures required to place a protective wrapping over a vehicle to protect it from environmental conditions or to hide (camouflage) it.
 - i. **debug** – Instructions for locating software bugs and removing those bugs/correcting errors.
 - j. **disassem** – Maintenance procedures required to take apart components, assemblies, or subassemblies as required by the MAC and SMR coded items.
 - k. **extpwr** – Maintenance procedures required to apply electrical power from any authorized power source (external generator or facility power).
 - l. **hoist** – Maintenance procedures required to allow a vehicle to be raised by cables or ropes through attaching points.
 - m. **inspect** – Determines the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (by sight, sound, or feel).
 - n. **install** – Maintenance procedures required to perform operations necessary to properly place, locate, or position a part to make it part of the next higher assembly.
 - o. **installperdev** – Instructions for installing peripheral devices such as printers, scanners, modems, etc.
 - p. **jack** – Maintenance procedures required to prepare placement of jackstands or supporting devices to lift or raise a vehicle or other equipment to facilitate maintenance or other actions.
 - q. **load** – Maintenance procedures required to perform either:
 - i. For transportation, the act of placing assets onto a transportation medium (pallet, truck, container).
 - ii. For weapons/weapons systems, the act of placing munitions onto a vehicle or aircraft.
 - r. **lube** – Maintenance procedures required to apply a substance (oil, grease, graphite) to reduce friction.
 - s. **mark** – Maintenance procedures required to apply some form of identification information to equipment or munitions.
 - t. **moor** – Maintenance procedures required to secure a vehicle by chains, ropes or other means to protect the vehicle from environmental conditions or secure for transportation.
 - u. **ndi** – NDI are Non destructive step-by-step inspection procedures on preparing and accomplishing inspections or tests without damaging or destroying the equipment.
 - v. **none** – Maintenance functions to be performed, but is necessary for the FGC hierarchy.
 - w. **other maintsk** – Additional maintenance tasks developed when specific types of maintenance tasks are not covered.

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- x. **overhaul** – Maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
- y. **pack** – Maintenance procedures required to place equipment or munitions into containers or similar devices after maintenance operations have been completed.
- z. **paint** – Maintenance procedures required for painting, refinishing, and marking of assembled components, assemblies, subassemblies, or end item.
- aa. **park** – Maintenance procedures required to safely place a vehicle in a lot, ramp area or other designated location.
- ab. **pis** – Placing In Service (PIS) are maintenance procedures for actions not previously noted that may be required for an assembly, component, or end item, such as removal of an item from storage, preparation for installation on an end item, final servicing checks, calibration, leak checks, charging, pressurizing, and operational checks.
- ac. **prepforuse** – Maintenance procedures required to setup equipment for use after it has been unpacked.
- ad. **pss** – Packing, Shipment, and Storage (PSS) are those maintenance procedures for the preparation before storage or shipment of components, assemblies, and subassemblies.
 - i. **prepship** – Maintenance procedure for the preparation before shipment of components, assemblies, and subassemblies.
 - ii. **prestore** – Instructions for security, preservation, packing, and marking procedures of special long-term and short-term storage requirements for sensitive items.
- ae. **preserv** – Maintenance procedures required to treat systems and equipment whether installed or stored, to keep in a satisfactory condition to ensure a serviceable condition.
- af. **rebuild** – Services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles) considered in classifying Army equipment/components.
- ag. **remove** – Removal instructions of a component off an asset to facilitate and install the same item when required to perform service or other maintenance functions.
- ah. **replace** – Removal of an unserviceable item and installing a serviceable counterpart in its place. “Replace” is authorized by the MAC and assigned maintenance level is shown as the third position code of the SMR code.
- ai. **repair** – Application instructions to restore serviceability to a piece of hardware or software by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.
- aj. **ris** – Radio Interference Suppression (RIS) are maintenance instructions for primary components in the suppression system including the replacement, testing, removal, and installation.
- ak. **service** – Instructions for replenishment of fuel; oil; hydraulic and other fluids; oxygen, nitrogen, or other gases; and tire pressure. Including other such items and materials (except for lubricants) required for complete servicing of the equipment. Instructions and diagrams showing locations of regular and emergency servicing points are supplemented.
- al. **sling** – Maintenance procedures required to place a sling around a vehicle to allow it to be raised.
- am. **test** – Verifies serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.

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- an. softwaremaint** – Step-by-step instructions for software maintenance (installing, un-installing, etc.).
- ao. transport** – requirements for dimensions, weights, and types of transport that can and can't be used, including via air, sea, land and rail.
- ap. tow** – Maintenance procedures required to properly connect and safely move wheeled equipment from one point to another.
- aq. uninstallperdev** – Instructions for un-installing peripheral devices such as printers, scanners, modems, etc.
- ar. unload** – Unpacking instructions required to perform either:
 - i. For transportation, the act of removing assets from a transportation medium (pallet, truck, container).
 - ii. For weapons/weapons systems, the act of removing munitions from the weapon/weapons system.
- as. unpack** – Maintenance procedures required to remove equipment of munitions from storage or shipping containers/devices.
- at. upgrade** – Instructions for performing software upgrades and/or installing software patches.

2. The DTD fragment for **<maintfunc>** is:

```

<!ELEMENT maintfunc EMPTY>
<!ATTLIST maintfunc
func                (adjust | align | arm |          #REQUIRED
                    assem | calibration |
                    clean | cover | config-
                    ure | debug | disassem |
                    extpwr | hoist | inspect
                    | install | installper-
                    dev | jack | load | lube |
                    mark | moor | ndi | none |
                    other.maintsk | over-
                    haul | pack | paint | park
                    | pis | prepship | pre-
                    pstore | prepforuse |
                    preservation | rebuild |
                    remove | repair | re-
                    place | ris | service |
                    sling | softwaremaint |
                    test | transport | tow |
                    uninstallperdev | un-
                    load | unpack | upgrade)
wpid                IDREFS                #IMPLIED
taskid              IDREFS                #IMPLIED>

```

3. The attributes for **<maintfunc>** are:

- a. func** – function (required) references the remark code from the MACK remark table.
- b. taskid** – Task reference identifier (optional) is used to link directly in the external document to the specific task identifier value.
- c. wpid** – Work package reference identifier (optional) is used to link directly in the external document to the specific work package identifier value.

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27.4.1.1.5 Maintenance level classification <maintclass-2lv1>.

The element **<maintclass-2lv1>** contains the authorized maintenance level (or class as described in MIL-STD-40051-1/-2) and the time required to perform the task. The time required to complete the task is entered in the appropriate level of maintenance. The **<maintclass-2lv1>** is used in MAC and Aviation MAC tables. The single character codes used in the **<maintclass-2lv1>** are identical to those listed in AR 700-52.

1. The components for **<maintclass-2lv1>** requires one of the maintenance levels listed below:
 - a. (Field) Crew **<c>** (optional). The element is similar to a **cell** in a structural table and is entered in column four.
 - b. (Field) Maintainer **<f>** (optional). The element is similar to a **cell** in a structural table and is entered in column six.
 - c. (Sustainment) Below depot sustainment maintenance **<h>** (optional). The element is similar to a **cell** in a structural table and is entered in column six.
 - d. (Sustainment) Depot maintenance **<d>** (optional). The element is similar to a **cell** in a structural table and is entered in column seven.

2. The DTD fragment for **<maintclass-2lv1>** is:

```
<!ELEMENT maintclass-2lv1 (c, f?, h?, d?) | (f, h?, d?) | (h, d?) | d)>
```

3. The **<maintclass-2lv1>** element has no attributes.

27.4.1.1.6 Tools and test equipment reference(s) <terefs>.

The element provides the reference to the required tools and/or test equipment for the current maintenance task found in the tools and test equipment table. Each tool or test equipment reference is specified through the element **<teref>** and references the target identifier with the attribute **refs**.

1. The component for **<terefs>** is a Tools and Equipment Reference **<teref>** (required – one or more) (see Section 27.4.1.1.7).
2. The DTD fragment for **<terefs>** is:


```
<!ELEMENT terefs (teref+)>
```
3. The **<terefs>** element has no attributes.

27.4.1.1.7 Tools and equipment reference <teref>.

The element provides the reference to the required tools and/or test equipment for the current maintenance task found in the tools and test equipment table. Each tool or test equipment reference is specified through the element **<teref>** and references the target identifier with the attribute **refs**.

1. The component is EMPTY, but references the target identifier with the attribute **refs**.
2. The element **<teref>** contains a single attribute **refs** – A reference to the tools and equipment list. (required).

27.4.1.1.8 Remark reference(s) <remarkrefs>.

The element **<remarkrefs>** provides the reference to remarks concerning the maintenance task found in the remarks table. Each remark reference is specified through the element **<remarkrefs>**.

1. The component for **<remarkrefs>** is a remark reference **<remarkref>** (required – one or more) (see Section 27.4.1.1.9).

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2. The DTD fragment for **<remarkrefs>** is:

```
<!ELEMENT remarkrefs (remarkref+)>
```

3. The **<remarkrefs>** element has no attributes.

27.4.1.1.9 Remark reference **<remarkref>**.

The element **<remarkref>** is specified through the element **<remarkref>** and references the target identifier with the attribute **refs**.

1. The component is EMPTY, but references the target identifier with the attribute **refs**.
2. The element **<remarkref>** contains a single attribute **refs** – A reference to the tools and equipment list. (required).

27.4.1.1.10 Component/assemble grouping – 2 level maintenance **<compassemgroup-2lvl>**.

The element **<compassemgroup-2lvl>** is a wrapper tag to simplify marking up multiple components within the same functional group **<groupno>**.

1. The components for **<compassemgroup-2lvl>** are:
 - a. Component/assembly item **<compassem>** (required). The element is similar to a **cell** in a structural table and is entered in column two (see Section 27.4.1.1.2).
 - b. Qualifier – 2 Level Maintenance **<qualify-2lvl>** (required – one or more) identifies a MAC component qualification entry that contains maintenance function, maintenance level(s) work time, any tools and/or test equipment, and any remarks. In page-base, the element is equivalent to a **row** element in a table (see Section 27.4.1.1.3).
2. The DTD fragment for **<compassemgroup-2lvl>** is:


```
<!ELEMENT compassemgroup-2lvl (compassem, qualify-2lvl+)>
```
3. The **<compassemgroup-2lvl>** element has no attributes.

27.4.2 Aviation MAC **<avmac>**.

An AVMAC lists the maintenance functions, levels and times assigned to each item.

1. The components for **<avmac>**:
 - a. Standard information title **<title>** (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number (this is generated by the stylesheet).
 - b. Functional Grouping **<avmac-group-2lvl>** (required – one or more) (see Section 27.4.2.1).
2. The DTD fragment for **<avmac>** is graphically depicted.

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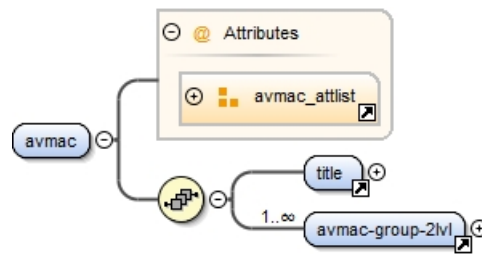


FIGURE 495. Aviation MAC <avmac> DTD hierarchy.

3. The DTD for <avmac> is:

```

<!ELEMENT avmac (title, avmac-group-2lvl+)>

<!ATTLIST avmac
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk          CDATA           #IMPLIED>

```

4. Common attributes for <avmac>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.2.1 AVMAC Functional Group Code (FGC) information <avmac-group-2lvl>.

The element groups the functional group number component(s)/assemble(s) information. The element is similar to a **row** in a structural table.

1. The components for <avmac-group-2lvl>:

- a. Functional group number <groupno> (required). The element contains the FGC for the maintenance action(s). The element is similar to a **cell** in a structural table and is entered in column one.
- b. A single component/assembly:

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- i. Component/assembly item **<compassem>** (required). The element specifies the component, assembly, subassembly, or module name **<name>** (required) and, if applicable, the type designator **<typesdes>** (optional) for which maintenance is authorized. The element is similar to a **cell** in a structural table and is entered in column two.
 - ii. Aviation maintenance action qualifier **<avqualify-2lv1>** (required – one or more) identifies the maintenance function, maintenance levels, required tools and test equipment reference(s), and remark reference(s) (see Section 27.4.2.1.2).
 - c. Or multiple component/assemblies **<avcompassem-group-2lv1>** (required – one or more) with each component/assembly containing:
 - i. Component/assembly item **<compassem>** (required). The element specifies the component, assembly, subassembly, or module name **<name>** (required) and, if applicable, the type designator **<typesdes>** (optional) for which maintenance is authorized. The element is similar to a **cell** in a structural table and is entered in column two.
 - ii. Aviation maintenance action qualifier **<avqualify-2lv1>** (required – one or more) identifies the maintenance function, maintenance levels, required tools and test equipment reference(s), and remark reference(s) (see Section 27.4.2.1.2).
2. The DTD fragment for **<avmac-group-2lv1>** is graphically depicted.

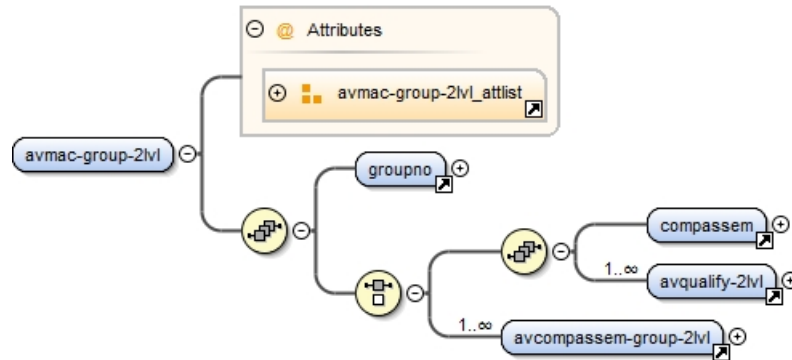


FIGURE 496. Aviation MAC functional group **<avmac-group-2lv1>** DTD hierarchy.

3. The DTD fragment for **<avmac-group-2lv1>** is:

```
<!ELEMENT avmac-group-2lv1 (groupno, ((compassem, avqualify-2lv1+) | av-
compassem-group-2lv1+))>
```

```
<!ATTLIST avmac-group-2lv1
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

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4. Common attributes for **<avmac-group-21v1>**:
 - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – Unique identifier (optional) (see Section 36.3.7).
 - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - h. **security** – Security classification (optional) (see Section 36.3.14).
 - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.2.1.1 Aviation component assembly **<compassem>**.

The **<avmac-group-21v1>** contains a component assembly identical to the one described in the ground MAC (see Section 27.4.1.1.2).

27.4.2.1.2 Aviation maintenance action qualification **<avqualify-21v1>**.

Aviation maintenance action qualification **<avqualify-21v1>** (required – one or more) identifies the maintenance function, estimate hours to perform by maintenance level, required tools and equipment reference(s), and remark reference(s). The element is similar to a **row** in a structural table.

1. The components for **<avqualify-21v1>**:
 - a. Maintenance function **<maintfunc>** (required) is the maintenance function (as listed from the MAC introduction) to be performed on the component/assembly item. The maintenance function element is EMPTY, but the **func** attribute is used to enter the maintenance function type from the list below. The element is similar to a **cell** in a structural table and is entered in column three of the MAC table.
 - i. The component is EMPTY, but the **func** attribute is used to enter the maintenance function type from the following list. This list corresponds to the tasks identified in the maintenance task **<maintsk>** (see Section 23.7.1).
 - I. **adjust** – Maintains or regulates, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
 - II. **align** – Adjusts specified variable elements of an item to bring about optimum or desired performance.
 - III. **arm** – Maintenance procedures required to activate various types of munitions for combat or training.
 - IV. **assem** – Step-by-step instructions required for assembling items disassembled or removed that make up components, assemblies or subassemblies.
 - V. **calibration** – The periodic testing and adjustment of precision measurement equipment against a known standard. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
 - VI. **clean** – Maintenance procedures required to remove dirt or other contaminants from an item.

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- VII. configure** – Instructions for configuring the software for different uses/purposes and/or different users.
- VIII. cover** – Maintenance procedures required to place a protective wrapping over a vehicle to protect it from environmental conditions or to hide (camouflage) it.
- IX. debug** – Instructions for locating software bugs and removing those bugs/correcting errors.
- X. disassem** – Maintenance procedures required to take apart components, assemblies, or subassemblies as required by the MAC and SMR coded items.
- XI. extpwr** – Maintenance procedures required to apply electrical power from any authorized power source (external generator or facility power).
- XII. hoist** – Maintenance procedures required to allow a vehicle to be raised by cables or ropes through attaching points.
- XIII. inspect** – Determines the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (by sight, sound, or feel).
- XIV. install** – Maintenance procedures required to perform operations necessary to properly place, locate, or position a part to make it part of the next higher assembly.
- XV. installperdev** – Instructions for installing peripheral devices such as printers, scanners, modems, etc.
- XVI. jack** – Maintenance procedures required to prepare placement of jackstands or supporting devices to lift or raise a vehicle or other equipment to facilitate maintenance or other actions.
- XVII. load** – Maintenance procedures required to perform either:
 - A.** For transportation, the act of placing assets onto a transportation medium (pallet, truck, container).
 - B.** For weapons/weapons systems, the act of placing munitions onto a vehicle or aircraft.
- XVIII. lube** – Maintenance procedures required to apply a substance (oil, grease, graphite) to reduce friction.
- XIX. mark** – Maintenance procedures required to apply some form of identification information to equipment or munitions.
- XX. moor** – Maintenance procedures required to secure a vehicle by chains, ropes or other means to protect the vehicle from environmental conditions or secure for transportation.
- XXI. ndi** – NDI are Non destructive step-by-step inspection procedures on preparing and accomplishing inspections or tests without damaging or destroying the equipment.
- XXII. none** – Maintenance functions to be performed, but is necessary for the FGC hierarchy.
- XXIII. other maintsk** – Additional maintenance tasks developed when specific types of maintenance tasks are not covered.
- XXIV. overhaul** – Maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
- XXV. pack** – Maintenance procedures required to place equipment or munitions into containers or similar devices after maintenance operations have been completed.
- XXVI. paint** – Maintenance procedures required for painting, refinishing, and marking of assembled components, assemblies, subassemblies, or end item.

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- XXVII. **park** – Maintenance procedures required to safely place a vehicle in a lot, ramp area or other designated location.
- XXVIII. **pis** – Placing In Service (PIS) are maintenance procedures for actions not previously noted that may be required for an assembly, component, or end item, such as removal of an item from storage, preparation for installation on an end item, final servicing checks, calibration, leak checks, charging, pressurizing, and operational checks.
- XXIX. **prepforuse** – Maintenance procedures required to setup equipment for use after it has been unpacked.
- XXX. **pss** – Packing, Shipment, and Storage (PSS) are those maintenance procedures for the preparation before storage or shipment of components, assemblies, and subassemblies.
 - A. **prepship** – Maintenance procedure for the preparation before shipment of components, assemblies, and subassemblies.
 - B. **prestore** – Instructions for security, preservation, packing, and marking procedures of special long-term and short-term storage requirements for sensitive items.
- XXXI. **preserv** – Maintenance procedures required to treat systems and equipment whether installed or stored, to keep in a satisfactory condition to ensure a serviceable condition.
- XXXII. **rebuild** – Services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles) considered in classifying Army equipment/components.
- XXXIII. **remove** – Removal instructions of a component off an asset to facilitate and install the same item when required to perform service or other maintenance functions.
- XXXIV. **replace** – Removal of an unserviceable item and installing a serviceable counterpart in its place. “Replace” is authorized by the MAC and assigned maintenance level is shown as the third position code of the SMR code.
- XXXV. **repair** – Application instructions to restore serviceability to a piece of hardware or software by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.
- XXXVI. **ris** – Radio Interference Suppression (RIS) are maintenance instructions for primary components in the suppression system including the replacement, testing, removal, and installation.
- XXXVII. **service** – Instructions for replenishment of fuel; oil; hydraulic and other fluids; oxygen, nitrogen, or other gases; and tire pressure. Including other such items and materials (except for lubricants) required for complete servicing of the equipment. Instructions and diagrams showing locations of regular and emergency servicing points are supplemented.
- XXXVIII. **sling** – Maintenance procedures required to place a sling around a vehicle to allow it to be raised.
- XXXIX. **test** – Verifies serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.
- XL. **softwaremaint** – Step-by-step instructions for software maintenance (installing, un-installing, etc.).
- XLI. **transport** – requirements for dimensions, weights, and types of transport that can and can’t be used, including via air, sea, land and rail.
- XLII. **tow** – Maintenance procedures required to properly connect and safely move wheeled equipment from one point to another.

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XLIII. uninstallperdev – Instructions for un-installing peripheral devices such as printers, scanners, modems, etc.

XLIV. unload – Unpacking instructions required to perform either:

- A.** For transportation, the act of removing assets from a transportation medium (pallet, truck, container).
- B.** For weapons/weapons systems, the act of removing munitions from the weapon/weapons system.

XLV. unpack – Maintenance procedures required to remove equipment of munitions from storage or shipping containers/devices.

XLVI. upgrade – Instructions for performing software upgrades and/or installing software patches.

ii. The **<maintfunc>** element has one attribute **func** (required).

b. Aviation Maintenance level classification **<avmaintclass-2lv1>** (required) provides the estimated time (in tenth of hours) or if unknown use a dash “–” to perform the maintenance function by maintenance level. The author enters one or more for the appropriate maintenance level(s) estimate time, as listed below:

- i. Aviation maintenance company **<o>** (optional). The element is similar to a **cell** in a structural table and is entered in column four.
- ii. Aviation support battalion **<f>** (optional). The element is similar to a **cell** in a structural table and is entered in column five.
- iii. Theater aviation sustainment maintenance group **<1>** (optional). The element is similar to a **cell** in a structural table and is entered in column six.
- iv. Depot **<d>** (optional) the element is similar to a **cell** in a structural table and is entered in column seven.

c. Tools and test equipment reference(s) **<terefs>** (optional) provides the reference to the required tools and/or test equipment for the current maintenance task found in the tools and test equipment table. Each tool or test equipment reference is specified through the element **<teref>** and references the target identifier with the attribute **refs**. The element is similar to a **cell** in a structural table and is entered in column eight (see Section 27.4.1.1.6).

d. Remark reference(s) **<remarkrefs>** (optional). The element is similar to a **cell** in a structural table and is entered in column six of the MAC table. (see Section 27.4.1.1.8)

2. The DTD fragment for **<avqualify-2lv1>** is graphically depicted:

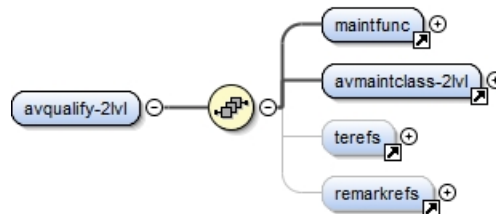


FIGURE 497. Aviation maintenance action qualification <avqualify-2lv1> DTD hierarchy.

3. The DTD fragments for **<avqualify-2lv1>**, **<maintfunc>**, **<avmaintclass-2lv1>**, **<terefs>**, **<teref>**, **<remarkrefs>**, and **<remarkref>** are:

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```

<!ELEMENT avqualify-2lvl (maintfunc, avmaintclass-2lvl, terefs?, remark-
refs?)>

<!ELEMENT maintfunc EMPTY>

<!ATTLIST maintfunc
func                                (adjust | align | arm |      #REQUIRED>
    assem | calibration |
    clean | cover | config-
    ure | debug | disassem |
    extpwr | hoist | inspect
    | install | installper-
    dev | jack | load | lube |
    mark | moor | ndi | none |
    other.maintsk | over-
    haul | pack | paint | park
    | pis | preship | pre-
    pstore | prepforuse |
    preservation | rebuild |
    remove | repair | re-
    place | ris | service |
    sling | softwaremaint |
    test | transport | tow |
    uninstallperdev | un-
    load | unpack upgrade)

taskid                             IDREFS                    #IMPLIED
wpid                               IDREFS                    #IMPLIED

<!ELEMENT avmaintclass-2lvl ((o, f?, l?, d?) | (f, l?, d?) | (l, d? | d)>

<!ELEMENT terefs (teref+)

<!ELEMENT teref EMPTY>

<!ATTLIST teref
refs                                IDREF                    #REQUIRED>

<!ELEMENT remarksrefs (remarkref+)

<!ELEMENT remarkref EMPTY>

<!ATTLIST remarkref
refs                                IDREF                    #REQUIRED>

```

4. There are no attributes for **<avqualify-2lvl>**.

27.4.3 Tools and test equipment requirements standard information **<tereqtab>**.

The element is used to list all the tools and test equipment, both special and common, required to maintain the equipment. The tool and test equipment references from the MAC targets are located within the element.

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1. The components of Tools and test equipment requirements standard information **<tereqtab>**:
 - a. Standard information title **<title>** (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
 - b. Tools and test equipment item **<teref-group>** (required – one or more) (see Section 27.4.3.1).
2. The DTD fragment for **<tereqtab>** is graphically depicted:

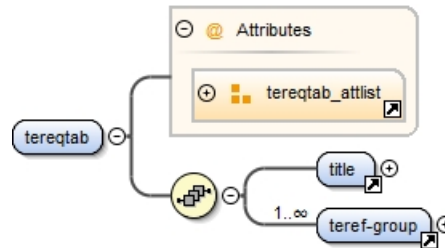


FIGURE 498. Tools and test equipment requirements table DTD hierarchy **<tereqtab>**.

3. The DTD fragment for **<tereqtab>** is:

```

<!ELEMENT tereqtab (title, teref-group+)>
<!ATTLIST tereqtab
    assocfig          IDREFS          #IMPLIED
    changeref         IDREFS          #IMPLIED
    comment           CDATA           #IMPLIED
    delchlvl          (0-99)         "0"
    id                ID              #IMPLIED
    idref             IDREFS         #IMPLIED
    inschlvl          (0-99)         "0"
    security           (uc | fouo | c | s | ts) #IMPLIED
    skilltrk          CDATA           #IMPLIED>
  
```

4. Common attributes for **<tereqtab>**:
 - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – Unique identifier (optional) (see Section 36.3.7).
 - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - h. **security** – Security classification (optional) (see Section 36.3.14).
 - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.3.1 Tools and test equipment item <teref-group>.

The element contains the information to identify and procure the tool or test equipment needed for the maintenance function. The element is similar to a **row** in a structural table.

1. The components of tools and test equipment item <teref-group>:
 - a. Reference code <terefcode> (required) (see Section 27.4.3.1.1). The element is similar to a **cell** in a structural table and is entered in column one.
 - b. Lowest allowable maintenance level for usage <maintenance> (required) (see Section 27.4.3.1.2). The element is similar to a **cell** in a structural table and is entered in column two.
 - c. Tool Name <name> (required) (see Section 36.1.4.18). The element is similar to a **cell** in a structural table and is entered in column three.
 - d. National Stock Number (NSN) <nsn> (required) (see Section 36.1.4.19). The element is similar to a **cell** in a structural table and is entered in column four.
 - e. Tool number <toolno> (required) (see Section 27.4.3.1.3). The element is similar to a **cell** in a structural table and is entered in column five.
2. The DTD fragment for <teref-group> is graphically depicted:

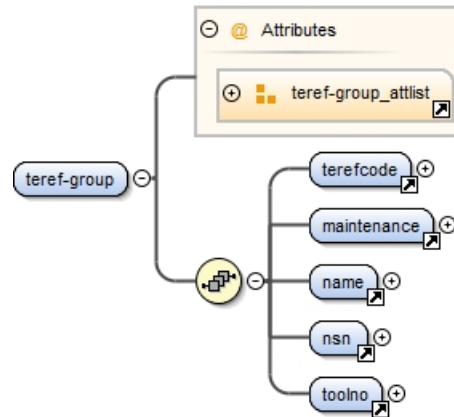


FIGURE 499. Tools and test equipment group <teref-group> DTD hierarchy.

3. The DTD fragment for <teref-group> is:

```
<!ELEMENT teref-group (terefcode, maintenance, name, nsn, toolno)>
```

```
<!ATTLIST teref-group
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"

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security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<teref-group>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.3.1.1 Reference code **<terefcode>**.

The element contains a tools and equipment reference code. The attribute **id** is the target for the MAC element **<teref>** and attribute **refs**. When the MAC references the tools and test equipment item, the text entered is the reference code used by the MAC.

1. The components of tools and equipment reference code **<terefcode>** is typed text (parsable characters).
2. The DTD fragment for **<terefcode>** is:

```
<!ELEMENT terefcode (#PCDATA)>
```
3. The **<terefcode>** element has one attribute **id** – Unique identifier (optional) (see Section 36.3.7) The unique identifier or target reference in the MAC for the element **<teref refs= " ">**.

27.4.3.1.2 Lowest maintenance level **<maintenance>**.

The element is used to identify the lowest level of maintenance authorized that requires the listed item. The lowest level of maintenance is entered through the required attribute **lvl**. The stylesheet will use and capitalize the **lvl** attribute value.

1. The lowest maintenance level **<maintenance>** is an EMPTY element. All text is obtained from the attribute **lvl**.
2. The DTD fragment for **<maintenance>** is:

```
<!ELEMENT maintenance EMPTY>
<!ATTLIST maintenance lvl (c | o | f | h | d | l ) #REQUIRED >
```
3. The attribute for **<maintenance>** is **lvl** – which specifies the lowest maintenance level code allowed.
 - a. The standard ground MAC uses the following maintenance level codes:
 - i. “C” – Crew or operator.
 - ii. “F” – Maintainer maintenance.

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- iii. "H" – Below depot sustainment.
- iv. "D" – Depot
- b. The aviation MAC utilizes the following maintenance level codes:
 - i. "O" – AMC.
 - ii. "F" – ASB.
 - iii. "L" – TASMG.
 - iv. "D" – Depot

27.4.3.1.3 Tool number <toolno>.

The element contains the manufacturer's part number, model number, or type number.

1. The components are parsable characters – The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <toolno> is:

```
<!ELEMENT toolno (#PCDATA)>
<!ATTLIST toolno
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)         "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)         "0"
  security           (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

3. Common attributes for <toolno>:
 - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
 - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
 - c. **comment** – Change information (optional) (see Section 36.3.12).
 - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
 - e. **id** – Unique identifier (optional) (see Section 36.3.7).
 - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
 - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
 - h. **security** – Security classification (optional) (see Section 36.3.14).
 - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.4 Remark standard information <remarktab>.

The element list any remarks to the maintenance functions as referenced in the MAC

1. The components for Remark standard information <remarktab>:
 - a. Standard information title <title> (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
 - b. Remark information <remark-group> (required – one or more) (see Section 27.4.4.1).
2. The DTD fragment for <remarktab> is graphically depicted:

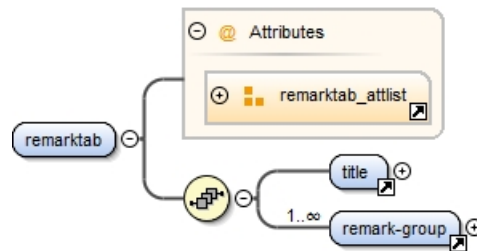


FIGURE 500. Tools and test equipment requirements table <remarktab> DTD hierarchy.

3. The DTD fragment for <remarktab> is:

```

<!ELEMENT remarktab (title, remark-group+)>
<!ATTLIST remarktab
    assocfig          IDREFS          #IMPLIED
    changeref         IDREFS          #IMPLIED
    comment           CDATA           #IMPLIED
    delchlvl          (0-99)          "0"
    id                ID              #IMPLIED
    idref             IDREFS          #IMPLIED
    inschlvl          (0-99)          "0"
    security           (uc | fouo | c | s | ts)  #IMPLIED
    skilltrk          CDATA           #IMPLIED>
  
```

4. Common attributes for <remarktab>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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27.4.4.1 Remark information <remark-group>.

The element contains the remark text and reference code. The element is similar to a **row** in a structural table.

1. The components of remark information **<remark-group>**:
 - a. Reference code **<remarkcode>** (required) (see Section 27.4.4.1.1). The element is similar to a **cell** in a structural table and is entered in column one.
 - b. Remarks **<remarks>** (required) (see Section 27.4.4.1.2). The element is similar to a **cell** in a structural table and is entered in column two.
2. The DTD fragment for **<remark-group>** is:


```
<!ELEMENT remark-group (remarkcode, remarks)>
```
3. There are no attributes for **<remark-group>**.

27.4.4.1.1 Reference code <remarkcode>.

The element contains a remarks reference code. The attribute **id** is the target for the MAC element **<remarkref>** and attribute **refs**. When the MAC references the remarks, the text entered is the reference code used by the MAC.

1. The components of tools and equipment reference code **<remarkcode>** is typed text (parsable characters).
2. The DTD fragment for **<remarkcode>** is:


```
<!ELEMENT remarkcode (#PCDATA)>
<!ATTLIST remarkcode
  id                ID                #REQUIRED>
```
3. Attributes for **<remarkcode>** is an **id** – a unique identifier or target reference in the MAC for the element **<remarkref refs= " ">**.

27.4.4.1.2 Remarks <remarks>.

The element contains remarks information pertinent to the maintenance function performed as indicated in the MAC.

1. The components of Remarks **<remarks>**:
 - a. Parsable characters or type text. – #PCDATA
 - b. Format text – **<emphasis>** (see Section 36.1.3.1).
 - c. Subscript – **<subscript>** (see Section 36.1.3.4).
 - d. Superscript – **<supscript>** (see Section 36.1.3.5).
 - e. Cross reference – **<xref>** (see Section 33.2.2).
 - f. External reference – **<extref>** (see Section 33.2.1).
 - g. Enhanced Linking – **<link>** (see Section 33.2.3).
 - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
 - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
 - j. Term – **<term>** (see Section 36.1.2.4.2).
 - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
 - l. Figure call out reference – **<callout>** (see Section 33.2.4.1).

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- m. Footnote – **<ftnote>** (see Section 32.1.1)
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic – **<graphic>** (see Section 31.2).
- p. Miscellaneous – **<misc>** (see 36.2.1).
- q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
- r. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
- s. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
- t. Graphic symbol – **<symbol>** (see Section 31.3.1).
- u. Torque value – **<torque>** (see Section 36.1.4.25).
- v. Voltage value – **<voltage>** (see Section 36.1.4.26).
- w. Null text – **<null>** (see Section 36.1.3.2).
- x. Changed text marker – **<change>** (see Section 36.1.3.7).

2. The DTD fragment for **<remarks>** is:

```
<!ELEMENT remarks (%text_ent;)*>
<!ATTLIST remarks
assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
delchlvl          (0-99)          "0"
id                ID              #IMPLIED
idref             IDREFS          #IMPLIED
inschlvl          (0-99)          "0"
security           (uc | fouo | c | s | ts) #IMPLIED
skilltrk          CDATA           #IMPLIED>
```

3. Common attributes for **<remarks>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.4.5 XML document instance fragment and output for a standard MAC <macwp>.

The MAC work package XML markup is shown below and the sample stylesheet output is shown MIL-STD-40051-1/-2:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % mac.2-level "INCLUDE">
<!ENTITY % mac.nonav-level "INCLUDE">
<!ENTITY % mac.av-level "IGNORE">
```

2. Example of an XML document instance fragment for a two-level MAC <mac>:

```
<macwp wpno="s00004-X-XXXX-XXX" tocentry="2" frame="yes" army="no" airforce="no" navy=
"no" marines="no" wpseq="0440" deletewp="no">
  <wpidinfo>
    <maintlvl level="unitlvl">
      <title>TSEC/ST-34 Maintenance Allocation chart (MAC)
    </title>
    </wpidinfo>
    <!-- MAC standard information -->
    <mac maintconcept="2">
      <title>MAC for TSEC/ST-34.
    </title>
    <mac-group-2lvl>
      <groupno>00
    </groupno>
    <compassem>
      <name>POWER UNIT, STP-34
    </name>
    </compassem>
    <qualify-2lvl>
      <maintfunc func="inspect"/>
    <maintclass-2lvl>
      <c>1.8
    </c>
    </maintclass-2lvl>
    <remarkrefs>
      <remarkref refs="remark-a">
    </remarkref>
    </remarkrefs>
    </qualify-2lvl>
    <qualify-2lvl>
      <maintfunc func="test"/>
    <maintclass>
      <c>0.3
    </c>
    </maintclass-2lvl>
    <remarkrefs>
      <remarkref refs="remark-b">
    </remarkref>
    </remarkrefs>
    </qualify-2lvl>
    <qualify-2lvl>
      <maintfunc func="repair"/>
```

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```

<maintclass>
<f>1.8
</f>
</maintclass-2lvl>
<terefs>
<teref refs="tool1"/>
<teref refs="tool2"/>
</terefs>
<remarkrefs>
<remarkref refs="remark-c">
</remarkrefs>
</qualify-2lvl>
<qualify-2lvl>
<maintfunc func="repair"/>
<maintclass-2lvl>
<h>2.0
</h>
</maintclass-2lvl>
<terefs>
<teref refs="tool1"/>
<teref refs="tool2"/>
<teref refs="tool3"/>
<teref refs="tool4"/>
<teref refs="tool5"/>
</terefs>
<remarkrefs>
<remarkref refs="remark-d"/>
<remarkref refs="remark-e"/>
</remarkrefs>
</qualify-2lvl>
<qualify-2lvl>
<maintfunc func="repair"/>
<maintclass-2lvl>
<d>2.0
</d>
</maintclass-2lvl>
<terefs>
<teref refs="tool1"/>
<teref refs="tool2"/>
<teref refs="tool3"/>
<teref refs="tool4"/>
</terefs>
<remarkrefs>
<remarkref refs="remark-d"/>
<remarkref refs="remark-e"/>
</remarkrefs>
</qualify-2lvl>
</mac-group-2lvl>
</mac>
<!-- Tools and test equipment standard information -->
<tereqtab>
<title>Tools and Test Equipment for TSEC/ST-34.
</title>
<teref-group>

```

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```
<terefcode id="tool1">1
</terefcode>
<maintenance lvl="h"/>
<name>Automatic test system ST-51
</name>
<nsn>
<fsc>5810
</fsc>
<niin>00-089-4599
</niin>
</nsn>
<toolno>TSEC/ST-51
</toolno>
</teref-group>
<teref-group>
<terefcode id="tool2">2
</terefcode>
<maintenance lvl="f"/>
<name>Multimeter, digital
</name>
<nsn>
<fsc>6625
</fsc>
<niin>01-139-2512
</niin>
</nsn>
<toolno>AN/PSM-45
</toolno>
</teref-group>
<teref-group>
<terefcode id="tool3">3
</terefcode>
<maintenance lvl="d"/>
<name>Multimeter, digital
</name>
<nsn>
<fsc>6625
</fsc>
<niin>01-145-2430
</niin>
</nsn>
<toolno>AN/USM 486
</toolno>
</teref-group>
<teref-group>
<terefcode id="tool4">4
</terefcode>
<maintenance lvl="h"/>
<name>Oscillilscope
</name>
<nsn>
<fsc>6625
</fsc>
<niin>01-187-7847
```

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```

</niin>
</nsn>
<toolno>AN/USM 488
</toolno>
</teref-group>
<teref-group>
<terefcode id="tool5">5
</terefcode>
<maintenance lvl="d"/>
<name>Power supply (0-35 VDC 2.4A)
</name>
<nsn>
<fsc>6130
</fsc>
<niin>00-006-5224
</niin>
</nsn>
<toolno>HP 6434B86
</toolno>
</teref-group>
<teref-group>
<terefcode id="tool6">6
</terefcode>
<maintenance lvl="d"/>
<name>Power supply tester
</name>
<nsn>
<fsc>NOT
</fsc>
<niin>APPLICABLE
</niin>
</nsn>
<toolno>ON502427
</toolno>
</teref-group>
<teref-group>
<terefcode id="tool7">7
</terefcode>
<maintenance lvl="h"/>
<name>Repair and soldering center (page)
</name>
<nsn>
<fsc>4940
</fsc>
<niin>01-031-4541
</niin>
</nsn>
<toolno>PRC-350C/equip
</toolno>
</teref-group>
<teref-group>
<terefcode id="tool8">8
</terefcode>
<maintenance lvl="f">

```


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```

<name>Tool, kit, electronic equipment
</name>
<nsn>
<fsc>5180
</fsc>
<niin>00-610-8177
</niin>
</nsn>
<toolno>TK-105/6
</toolno>
</teref-group>
</tereqtab>
<!-- Remarks standard information -->
<remarktab>
<title>Remarks for TSEC/ST-34.
</title>
<remark-group>
<remarkcode id="remark-a">A
</remarkcode>
<remarks>External.
</remarks>
</remark-group>
<remark-group>
<remarkcode id="remark-b">B
</remarkcode>
<remarks>Preventive maintenance checks and services (PMCS)
</remarks>
</remark-group>
<remark-group>
<remarkcode id="remark-c">C
</remarkcode>
<remarks>Replace rack installed unit, 0.4 hrs.
</remarks>
</remark-group>
<remark-group>
<remarkcode id="remark-d">D
</remarkcode>
<remarks>Bench top use only, 0.1 hrs.
</remarks>
</remark-group>
<remark-group>
<remarkcode id="remark-e">E
</remarkcode>
<remarks>Self-test.
</remarks>
</remark-group>
<remark-group>
<remarkcode id="remark-f">F
</remarkcode>
<remarks>Repair by PMA and authorized component replacement only.
</remarks>
</remark-group>
<remark-group>
<remarkcode id="remark-g">G

```

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```

</remarkcode>
<remarks>Complete unit and subassembly repair (except STP-34 switching assembly
and E-EB0/1) .
</remarks>
</remark-group>
<remark-group>
<remarkcode id="remark-h">H
</remarkcode>
<remarks>Complete unit and subassembly repair.
</remarks>
</remark-group>
<remark-group>
<remarkcode id="remark-i">I
</remarkcode>
<remarks>In compliance with TSEC/ST-34 CIDOS.
</remarks>
</remark-group>
<remark-group>
<remarkcode id="remark-j">J
</remarkcode>
<remarks>Function performed by specialized repair activity (SRA). (Theater
COMSEC Logistics Support Center-Europe or Lexington-Blue Grass Army Depot)
</remarks>
</remark-group>
</remarktab>
</macwp>

```

27.4.6 XML document instance fragment and output for an aviation (three-level) MAC <macwp>.

The aviation MAC work package XML markup is shown below and the sample stylesheet output is shown in MIL-STD-40051-1/-2:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```

<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % mac.2-level "IGNORE">
<!ENTITY % mac.nonav-level "IGNORE">
<!ENTITY % mac.av-level "INCLUDE">

```

2. Example of an XML document instance fragment for an aviation MAC <avmac>.

```

<macwp wpno="s00005-X-XXXX-XXX" tocentry="2" frame="yes" army="no" airforce="no" navy=
"no" marines="no" wpseq="0440" deletewp="no">
<wpidinfo>
<maintlvl level="o">
<title>TSEC/ST-34 Maintenance Allocation Chart (MAC)
</title>
</wpidinfo>
<!-- Aviation MAC Three-Level standard information -->
<avmac>
<title>Maintenance Allocation Chart (MAC)
</title>

```

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```

<avmac-group-2lvl>
<groupno>04
</groupno>
<compassem>
<name>POWER PLANT
</name>
</compassem>
<avqualify-2lvl>
<maintfunc func="none"/>
<avmaintclass-2lvl>○
</avmaintclass-2lvl>
</avqualify-2lvl>
</avmac-group-2lvl>
<avmac-group>
<groupno>0401
</groupno>
<compassem>
<name>ENGINE, TURBINE
</name>
</compassem>
<avqualify-2lvl>
<maintfunc func="inspect"/>
<avmaintclass-2lvl>
<o>–
</o>
</avmaintclass-2lvl>
<terefs>
<teref refs="tool1"/>
</terefs>
<remarkrefs>
<remarkref refs="remark-a"/>
</remarkrefs>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="test"/>
<avmaintclass>
<o>–
</o>
</avmaintclass-2lvl>
<remarkrefs>
<remarkref refs="remark-b"/>
</remarkrefs>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="test"/>
<avmaintclass-2lvl>
<f>– (3)
</f>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="test"/>
<avmaintclass-2lvl>
<d>–

```

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```

</d>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="service"/>
<avmaintclass>
<o>0.2
</o>
</avmaintclass-2lvl>
<remarkrefs>
<remarkref refs="remark-c"/>
</remarkrefs>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="remove"/>
<avmaintclass-2lvl>
<o>-
</o>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="replace"/>
<avmaintclass-2lvl>
<o>-
</o>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="repair"/>
<avmaintclass-2lvl>
<o>-
</o>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="repair"/>
<avmaintclass-2lvl>
<f>- (4)
</f>
</avmaintclass-2lvl>
<remarkrefs>
<remarkref refs="remark-a"/>
</remarkrefs>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="overhaul"/>
<avmaintclass-2lvl>
<o>-
</o>
</avmaintclass-2lvl>
</avqualify-2lvl>
</avmac-group-2lvl>
<avmac-group>
<groupno>040101

```

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```

</groupno>
<compassem>
<name>EXTERNAL LINES & HOSES
</name>
</compassem>
<avqualify>
<maintfunc func="inspect"/>
<avmaintclass-2lvl>
<o>-
</o>
</avmaintclass-2lvl>
<terefs>
<teref refs="tool3"/>
</terefs>
<remarkrefs>
<remarkref refs="remark-d"/>
</remarkrefs>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="test"/>
<avmaintclass-2lvl>
<f>-
</f>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="remove"/>
<avmaintclass-2lvl>
<o>-
</o>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="replace"/>
<avmaintclass-2lvl>
<o>-
</o>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="repair"/>
<avmaintclass-2lvl>
<f>-
</f>
</avmaintclas-2lvls>
</avqualify-2lvl>
</avmac-group-2lvl>
<avmac-group-2lvl>
<groupno>0402
</groupno>
<compassem>
<name>COMPRESSOR SECTION (COLD SECTION MODULE)
</name>
</compassem>

```

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```

<avqualify-2lvl>
<maintfunc func="inspect"/>
<avmaintclass-2lvl>
<o>0.1
</o>
</avmaintclass-2lvl>
<remarkrefs>
<remarkref refs="remark-e"/>
</remarkrefs>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="inspect"/>
<avmaintclass-2lvl>
<f>0.2
</f>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="test"/>
<avmaintclass-2lvl>
<f>-
</f>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="service"/>
<avmaintclass-2lvl>
<o>0.2
</o>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="repair"/>
<avmaintclass-2lvl>
<o>0.4
</o>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="repair"/>
<avmaintclass-2lvl>
<f>0.6
</f>
</avmaintclass-2lvl>
</avqualify-2lvl>
<avqualify-2lvl>
<maintfunc func="overhaul"/>
<avmaintclass-2lvl>
<d>-
</d>
</avmaintclass-2lvl>
</avqualify-2lvl>
</avmac-group-2lvl>
</avmac> . . .

```

</macwp>

27.5 Components of End Item (COEI) and Basic Issue Items (BII) lists work package <coeibiiwp>.

COEI and BII lists work package is to be prepared as an inventory for the equipment to ensure safe and efficient operation. The format of the COEI and BII is based on the number of items and usability. The COEI/BII has two different formats: Method A (see Section 27.5.1) or Method B (see Section 27.5.2).

1. The components for <coeibiiwp>:

- a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
- b. Work package identification information <wpidinfo> (required) (see Section 16.2).
- c. COEI/BII introduction <intro> (required) (see Section 27.5.1.1 for Method A or Section 27.5.2.1 for Method B and Section 36.1.4.14 for element usage).
- d. Method A (required) using either:
 - i. Components of End Item (COEI) standard information <coei> with all illustrations prior to the standard information (see Section 27.5.1.2).
 - ii. Basic Issue Items (BII) standard information <bii> with all illustrations prior to the standard information (see Section 27.5.1.3).
- e. Method B (required) using either:
 - i. Components of End Item (COEI) standard information <coei-opt> with each illustration included with each item (see Section 27.5.2.1.1).
 - ii. Basic Issue Items (BII) standard information <bii-opt> with each illustration included with each item (see Section 27.5.2.1.4).

2. The DTD fragment for <coeibiiwp> is graphically depicted:

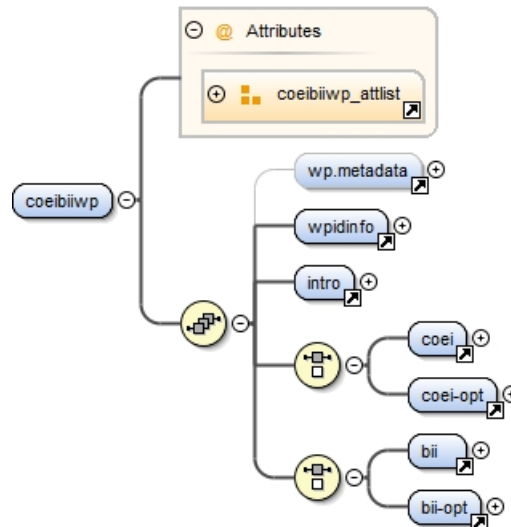


FIGURE 501. COEI and BII work package DTD hierarchy <coeibiiwp>.

3. The DTD fragment for <coeibiiwp> is:

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```
<!ELEMENT coeibiiwp (wp.metadata?, wpidinfo, intro, (coei | coei-opt), (bii
| bii-opt))>
```

```
<!ATTLIST coeibiiwp
```

airforce	(yes no)	"no"
army	(yes no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date time date- time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes no)	"no"
navy	(yes no)	"no"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2 3 4 5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Common attributes for <coeibiiwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).

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- h. crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

27.5.1 COEI/BII Method A.

When there are only a few items, the illustrations are placed above the tabular listing (Method A). The difference between Method A and Method B areas follows:

Method A illustrations display the end items before the COEI and BII list.

Method A COEI and BII list contains the Illustration Number in column one.

Method B displays the illustration with the end item in column two of the COEI and BII list.

Method B COEI and BII list contains the Item Number in column one.

27.5.1.1 COEI/BII (Method A) introduction <intro> standard text.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by

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selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XXIII.

TABLE XXIII. COEI/BII (Method A) introduction *<intro>* boilerplate entities

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
COEI/BII Introduction	<i>&coeibiiwp.intro;</i>	<i><!ENTITY % coeibiiwp.method-a "INCLUDE"><!ENTITY % coeibiiwp.method-b "IGNORE"></i>
Frame-based		<i><!ENTITY % frame-base "INCLUDE"><!ENTITY % page-base "IGNORE"></i>
Page-based		<i><!ENTITY % frame-base "IGNORE"><!ENTITY % page-base "INCLUDE"></i>
End Item Name		<i><!ENTITY short.end.item.name "Insert Short End Item Name"></i>
Exclude UOC		<i><!ENTITY % uoc-list "IGNORE"></i>
Include UOC		<i><!ENTITY % uoc-list "INCLUDE"><!ENTITY intro.uoc-list '![%uoc-list;] <deflist><title.term.def><title>Code</title><title>Used on</title></title.term.def><term.def id="uoc.xxx"><term>Insert UOC</term><def><para>Insert UOC Model Number </para></def></term.def></deflist>'></i>

27.5.1.1.1 Editing Usable On-Code (UOC) list *&intro.uoc-list;*.

When UOC exist for the end items they are listed in the introduction. Including the UOC and model number into introduction boilerplate entity is by editing the common UOC list boiler entity *&intro.uoc-list;*. This common boilerplate entity is used by the following introductions, to include UOC, which are COEI/BII, AAL, and RPSTL. Once UOC list is defined for the COEI/BII, the same list is used for both AAL and RPSTL. The information entered by replacing the existing *<term.def>* element and its content with a *<term.def>* (with ID attribute) for each UOC. Below is an example of *&intro.uoc-list;* changed:

```

<!ENTITY intro.uoc-list '![%uoc-list;]
<deflist>
<title.term.def>
<title>Code
</title>
<title>Used on
</title>
<title.term.def>

```

```

<term.def id="uoc.PAA">
<term>PAA
</term>
<def>
<para>Model XXX
</para>
</def>
</term.def>
<term.def id="uoc.PAB">
<term>PAB
</term>
<def>
<para>Model XXXX
</para>
</def>
</term.def>
<term.def id="uoc.PAC">
<term>PAC
</term>
<def>
<para>Model XXXXX
</para>
</def>
</term.def>
</deflist>
//>

```

27.5.1.2 Components of End Item (COEI) (Method A) <coei>.

COEI (Method A) contains all COEI illustrated and then list the component for inventory purposes.

1. The components for <coei>:
 - a. Figure <figure> (required – one or more) (see Section 24.4.2.1.1). The element provides a graphic displaying the locations where items can be stored.
 - b. COEI illustration <graphic> (required – one or more) (see Section 31.2). The COEI illustrations may be presented as a single graphic or be comprised of individual graphics. Using a single graphic for all illustration provides greater flexibility in organizing and utilizing white space.
 - c. COEI (Method A) standard information <coeitab> (required) (see Section 27.5.1.2.1).
2. The DTD fragment for <coei> is graphically depicted.

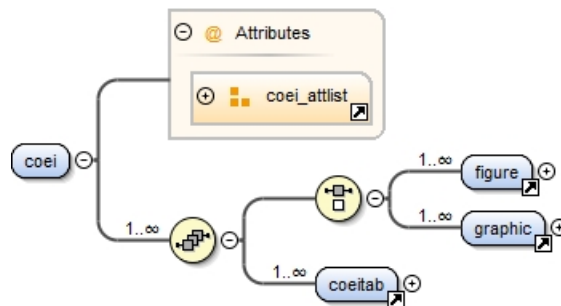


FIGURE 502. COEI (Method A) DTD hierarchy <coei>.

```
<!ELEMENT coei ((figure+ | graphic+), coeitab+)+>
<!--
!ATTLIST coei
assocfig          IDREFS          #IMPLIED
changeref         IDREFS          #IMPLIED
comment           CDATA           #IMPLIED
delchlvl          (0-99)          "0"
id                ID              #IMPLIED
idref             IDREFS          #IMPLIED
inschlvl          (0-99)          "0"
security           (uc | fouo | c | s | ts) #IMPLIED
skilltrk          CDATA           #IMPLIED-->
```

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.13).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

COEI (Method A) standard information lists all items that are included in the major end item and which may be separately packaged or stowed for transportation or movement.

- a. Standard information title **<title>** (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number (this is generated by the stylesheet).
- b. The COEI is displayed by either:
 - i. Grouping COEI (Method A) components by categories, use the element **<coei-category>** (required – one or more) (see Section 27.5.1.2.2).
 - ii. Each COEI (Method A) components is listed separately, use the element **<coei-entry>** (required – one or more) (see Section 27.5.1.2.3).
- c. On-board spares list **<on-board-spares>** (optional) (see Section 27.5.1.2.3.3).

2. The DTD fragment for `<coeitab>` is:

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```

<!ELEMENT coeitab (title, (coei-category+ | coei-entry+), on-board-
spares?)>
<!ATTLIST coeitab
applicable          IDREFS          #IMPLIED
assocfig            IDREFS          #IMPLIED
changeref           IDREFS          #IMPLIED
comment             CDATA           #IMPLIED
delchlvl            (0-99)          "0"
id                  ID              #IMPLIED
idref               IDREFS          #IMPLIED
inschlvl            (0-99)          "0"
security             (uc | fouo | c | s | ts) #IMPLIED
skilltrk            CDATA           #IMPLIED>

```

3. Common attributes for **<coeitab>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4)
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.5.1.2.2 COEI (Method A) category **<coei-category>**.

If a table is subdivided into groups, for example by subassemblies, the category element is used to represent the groups. After the category name is entered, the specific COEI (Method A) entries **<coei-entry>** is entered for that category. Usually more than one category is entered in the table.

1. The components for **<coei-category>**:

- a. Category title **<title>** (required) (see Section 36.1.1.4).
- b. COEI (Method A) entry(s) **<coei-entry>** (required – one or more) (see Section 27.5.1.2.3) for this category.

2. The DTD fragment for **<coei-category>** is:

```

<!ELEMENT coei-category (title, coei-entry+)>
<!ATTLIST coei-category
assocfig            IDREFS          #IMPLIED

```

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changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

3. Common attributes for **<coei-category>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.5.1.2.3 COEI (Method A) entry **<coei-entry>**.

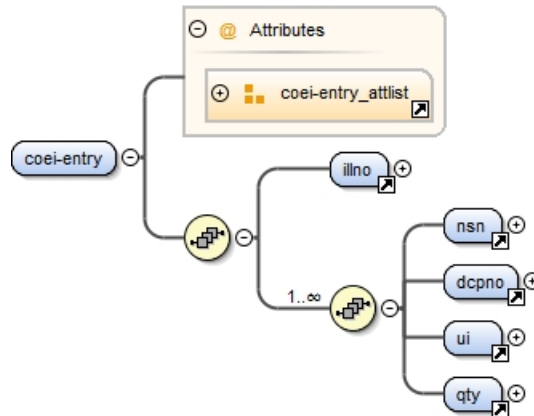
The COEI (Method A) entry contains the specific information about the item and references to the associated illustration. The element is similar to a **row** in a structural table.

1. The components for **<coei-entry>**:

- a. Illustration number **<illno>** (required) (see Section 27.5.1.2.3.1). The element is similar to a **cell** in a structural table and is entered in column one.
- b. Usually the COEI entry identifies a single component, but on occasions similar fit and function components are listed under the same illustration number (required – one or more).
 - i. National Stock Number (NSN) **<nsn>** (required) identifies the stock number of the item to be used for requisitioning purposes (see Section 36.1.4.19). The element is similar to a **cell** in a structural table and is entered in column two.
 - ii. Item name, description, CAGE code, part number, and UOC **<dcjno>** (required) (see Section 27.5.1.2.3.2).
 - I. The elements **<name>**, **<desc>**, **<cageno>**, and **<partno>** combined is similar to a **cell** in a structural table and is entered in column three.
 - A. Name **<name>** (required) (see Section 36.1.4.18).
 - B. Description **<desc>** (optional) (see Section 36.1.4.16).
 - C. The group containing the part number **<partno>** and CAGE code **<cageno>** requires both to be used.

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- A. Part number **<partno>** (required – one or more) (see Section 36.1.4.22).
 - B. CAGE code **<cageno>** (required – one or more) (see Section 36.1.4.1.8).
 - II. Usable On-Code (UOC) **<uoc>** (required – one or more) (see Section 24.4.2.1.6.4). The element is similar to a **cell** in a structural table and is entered in column four.
 - c. Unit of issue **<ui>** (required) provides the component size or amount when issued. The element is similar to a **cell** in a structural table and is entered in column four.
 - d. Quantity **<qty>** (required) (see Section 36.1.4.8). The element is similar to a **cell** in a structural table and is entered in column five.
2. The DTD fragment for **<coei-entry>** is graphically depicted:

FIGURE 503. COEI (Method A) entry **<coei-entry>** DTD hierarchy.

3. The DTD fragment for **<coei-entry>** is:

```
<!ELEMENT coei-entry (illno, (nsn, dcpno, ui, qty)+)>
<!ATTLIST coei-entry
  applicable          IDREFS          #IMPLIED
  assocfig            IDREFS          #IMPLIED
  changeref           IDREFS          #IMPLIED
  comment             CDATA           #IMPLIED
  delchlvl            (0-99)          "0"
  id                  ID              #IMPLIED
  idref               IDREFS          #IMPLIED
  inschlvl            (0-99)          "0"
  security             (uc | fouo | c | s | ts)  #IMPLIED
  skilltrk            CDATA           #IMPLIED>
```

4. Common attributes for **<coei-entry>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.5.1.2.3.1 Illustration number <illno>.

The element <illno> illustration call out number relates the illustration to the list. In page-base, the element is equivalent to an **entry** element in a table. The <illno> is entered in the first column in the BII table and in the COEI table.

1. The components for <illno> is narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <illno> is:

```
<!ELEMENT illno (#PCDATA)>
<!ATTLIST illno
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security           (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

3. Common attributes for <illno>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.5.1.2.3.2 Item name, description, CAGE code, part number, and UOC <dcjno>.

The element <dcjno> contains the name/nomenclature, additional information or description, CAGE code, part number, and the UOC. In page-base, the element is equivalent to an "entry" element in a table. The elements <name>, <desc>, <cageno>, and <partno> combined are similar to a cell in a structural table and is entered in column three in the Components Of End Item (COEI) and Basic Issue Items (BII) lists and Usable On-Code (UOC) <uoc> is entered in column four. In the Additional Authorization List (AAL) structural table the elements <name>, <desc>, <cageno>, and <partno> combined is entered in column two and Usable On-Code (UOC) <uoc> is entered in column three.

1. The components for <dcjno>:
 - a. Name <name> (required) (see Section 36.1.4.18).
 - b. Description <desc> (optional) (see Section 36.1.4.16).
 - c. The group containing the part number <partno> and CAGE code <cageno> requires both to be used.
 - i. Part number <partno> (required – one or more) (see Section 36.1.4.22).
 - ii. CAGE code <cageno> (required – one or more) (see Section 36.1.4.1.8).
 - d. Usable On-Code (UOC) <uoc> (required – one or more) (see Section 24.4.2.1.6.4).
2. The DTD fragment for <dcjno> is graphically depicted:

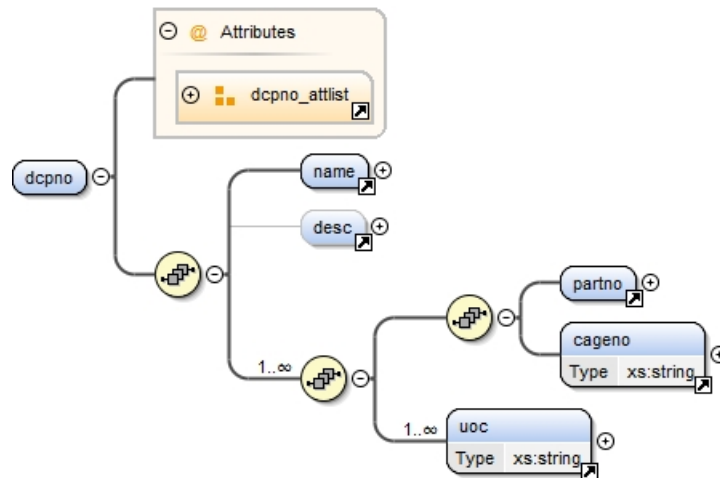


FIGURE 504. Item name, description, CAGE code, part number, and usable on-code <dcjno> DTD hierarchy.

3. The DTD fragment for <dcjno> is:

```
<!ELEMENT dcjno (name, desc?, ((partno, cageno), uoc+)+)>
```

```
<!ATTLIST dcjno
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED

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inschlvl	(0-99)	"0"
security	(uc fouo c s ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<dcpro>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.5.1.2.3.3 On-board spares (Method A) **<on-board-spares>**.

The element **<on-board-spares>** when applicable, is listed under a new heading or category name as “on-board spares.” Components are entered in the same format as the **<coei-entry>** in column three.

1. Components for **<on-board-spares>**:

- a. On-board spares title **<title>** (required) (see Section 36.1.1.4). MIL-STD-40051-1/-2 states the mandatory title is “ON-BOARD SPARES.” The element is similar to a **row** in a structural table. The element is similar to a **cell** in a structural table and is entered in column one.
- b. COEI (Method A) entry(s) **<coei-entry>** (required – one or more) (see Section 27.5.1.2.3).

2. The DTD fragment for **<on-board-spares>** is:

```
<!ELEMENT on-board-spares (title, coei-entry+)>
```

3. No attributes for **<on-board-spares>**.

27.5.1.3 Basic Issue Items (BII) (Method A) **<bii>**.

BII **<bii>** (Method A) is an illustrated list of all BII components. BII are those items required to operate the equipment that are not part of the end item.

1. The components for **<bii>** are:

- a. Figure **<figure>** (required – one or more) (see Section 24.4.2.1.1). The element provides a graphic displaying the locations where items can be stored.
- b. BII illustration **<graphic>** (required – one or more) (see Section 31.2). The BII illustrations may be organized into a single graphic or comprised of individual graphics. Using a single graphic for all illustrations provide greater flexibility in organizing and utilizing white space.
- c. BII (Method A) standard information **<biitab>** (required) (see Section 27.5.1.3.1).

2. The DTD fragment for **<bii>** is graphically depicted.

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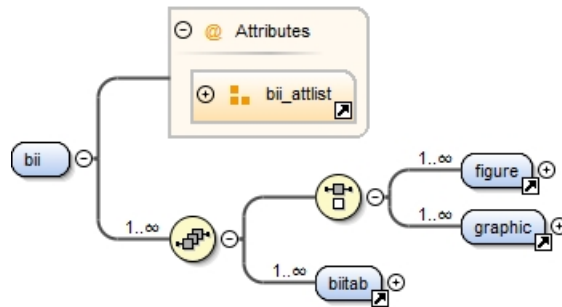


FIGURE 505. BII (Method A) DTD hierarchy <bii>.

3. The DTD fragment for <bii> is:

```
<!ELEMENT bii ((figure+ | graphic+), biitab+)>
<!ATTLIST bii
  assocfig          IDREFS          #IMPLIED
  changeref         IDREFS          #IMPLIED
  comment           CDATA           #IMPLIED
  delchlvl          (0-99)          "0"
  id                ID              #IMPLIED
  idref             IDREFS          #IMPLIED
  inschlvl          (0-99)          "0"
  security          (uc | fouo | c | s | ts) #IMPLIED
  skilltrk          CDATA           #IMPLIED>
```

4. Common attributes for <bii>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.5.1.3.1 BII (Method A) standard information <biitab>.

BII (Method A) standard information lists all the components required to operate the equipment that is not included with the end item as COEI.

1. The components for <biitab>:

- ```
<!ELEMENT biitab (title, (bii-category+ | bii-entry+))>
<!--ATTLIST biitab
applicable IDREFS #IMPLIED
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED-->
```

3. Common attributes for **<biitab>**:
- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - d. **comment** – Change information (optional) (see Section 36.3.12).
  - e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - f. **id** – Unique identifier (optional) (see Section 36.3.7).
  - g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - i. **security** – Security classification (optional) (see Section 36.3.14).
  - j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

**27.5.1.3.2 BII (Method A) category <bii-category>.**

If a table is subdivided into groups, for example by subassemblies, the category element is used to represent the groups. After the category name is entered, the specific BII (Method A) entry **<bii-entry>** is entered for that category. Usually more than one category is entered in the table.

1. The components for **<bii-category>**:

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- a. Category title **<title>** (required) (see Section 36.1.1.4).
  - b. BII (Method A) entry(s) **<bii-entry>** (required – one or more) (see Section 27.5.1.3.3) for this category.
2. The DTD fragment for **<bii-category>** is:

```
<!ELEMENT bii-category (title, bii-entry+)>
<!ATTLIST bii-category
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

3. Common attributes for **<bii-category>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.5.1.3.3 BII (Method A) category **<bii-entry>**.

The BII (Method A) entry contains the specific information about the item and references to the associated illustration. The element is similar to a **row** in a structural table.

1. The components for **<bii-entry>**:

- a. Illustration number **<illno>** (required) (see Section 27.5.1.2.3.1). The element is similar to a **cell** in a structural table and is entered in column one.
- b. Usually the BII entry has a single identification information, but on occasions similar fit and function components are listed under the same illustration number (required – one or more).
  - i. National Stock Number (NSN) **<nsn>** (required) identifies the stock number of the item to be used for requisitioning purposes (see Section 24.4.2.1.7.3). The element is similar to a **cell** in a structural table and is entered in column two.

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- ii. Item name, description, CAGE code, part number, and usable on-code (UOC) **<dcjno>** (required) (see Section 27.5.1.2.3.2).
- I. The elements **<name>**, **<desc>**, **<cageno>**, and **<partno>** combined is similar to a **cell** in a structural table and is entered in column three.
- A. Name **<name>** (required) (see Section 36.1.4.18).
- B. Description **<desc>** (optional) (see Section 36.1.4.16).
- C. The group containing the part number **<partno>** and CAGE code **<cageno>** requires both to be used.
- A. Part number **<partno>** (required – one or more) (see Section 36.1.4.22).
- B. CAGE code **<cageno>** (required – one or more) (see Section 36.1.4.1.8).
- II. Usable on-code (UOC) **<uoc>** (required – one or more) (see Section 24.4.2.1.6.4). The element is similar to a **cell** in a structural table and is entered in column four.
- c. Unit of issue **<ui>** (required) provides the component size or amount when issued. The element is similar to a **cell** in a structural table and is entered in column four.
- d. Quantity **<qty>** (required) (see Section 36.1.4.8). The element is similar to a **cell** in a structural table and is entered in column five.

2. The DTD fragment for **<bii-entry>** is graphically depicted:

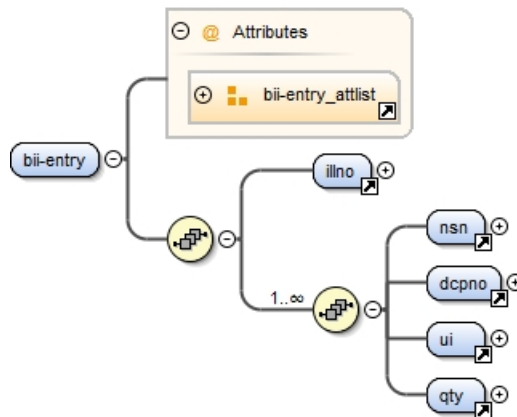


FIGURE 506. BII (Method A) entry DTD hierarchy **<bii-entry>**.

3. The DTD fragment for **<bii-entry>** is :

```
<!ELEMENT bii-entry (illno, (nsn, dcpno, ui, qty)+)>
```

```
<!ATTLIST bii-entry
```

|            |        |          |
|------------|--------|----------|
| applicable | IDREFS | #IMPLIED |
| assocfig   | IDREFS | #IMPLIED |
| changeref  | IDREFS | #IMPLIED |
| comment    | CDATA  | #IMPLIED |
| delchlvl   | (0-99) | "0"      |
| id         | ID     | #IMPLIED |
| idref      | IDREFS | #IMPLIED |

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|                       |                          |           |
|-----------------------|--------------------------|-----------|
| <code>inschlvl</code> | (0-99)                   | "0"       |
| <code>security</code> | (uc   fouo   c   s   ts) | #IMPLIED  |
| <code>skilltrk</code> | CDATA                    | #IMPLIED> |

4. Common attributes for **<bii-entry>** is:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.5.1.4 XML document instance fragment and output for COEI/BII work package (Method A) standard information <coeibiiwp>.

The COEI/BII work package (Method A) XML markup is shown below and the sample stylesheet output is shown MIL-STD-40051-1/-2:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % coeibiiwp.method-a "INCLUDE">
<!ENTITY % coeibiiwp.method-b "IGNORE">
<!ENTITY % uoc-list "INCLUDE">
<!ENTITY short.end.item.name "M198 howitzer">
<!ENTITY intro.uoc-list '<![%uoc-list;]
```

```
<deflist>
<title.term.def>
<title>Code
</title>
<title>Used on
</title>
</title.term.def>
<term.def id="uoc.PAA">
<term>PAA
</term>
<def>
<para>Model XXX
</para>
</def>
```

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```

</term.def>
<term.def id="uoc.PAB">
<term>PAB
</term>
<def>
<para>Model XXXX
</para>
</def>
</term.def>
<term.def id="uoc.PAC">
<term>PAC
</term>
<def>
<para>Model XXXXX
</para>
</def>
</term.def>
</deflist>
//>

```

2. Example of an XML document instance fragment for COEI/BII work package (Method A) <coeibiiwp>:

```

<coeibiiwp wpno="s00003-X-XXXX-XXX" tocentry="2" frame="yes" army="no" airforce="no" navy=
"no" marines="no" wpseq="0441" deletewp="no">
<wpidinfo>
<maintlvl level="unitlvl"/>
<title>M198 HOWITZER
</title>
</wpidinfo>&aal.intro;
<!-- START COEI Standard Information -->
<coe>
<graphic boardno="coe" unitmeasure="in">
</graphic>
<coeitab>
<title>Components of End Item List.
</title>
<coe-entry>
<illno>1
</illno>
<nsn>
<fsc>1005
</fsc>
<niin>00-706-8880
</niin>
<nsn>
<dcjno>
<name>MOUNT, MACHINE GUN 1:cal..50
</name>
<desc>(in mount on cupola)
</desc>
<partno>7068880
</partno>
<cageno>19204
</cageno>
<uoc>PAA

```



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```

</uoc>
</dcpno>
<ui>EA
</ui>
<qty>1
</qty>
</coei-entry>
<coei-entry>
<illno>2
</illno>
<nsn>
<fsc>1240
</fsc>
<niin>00-344-4643
</niin>
</nsn>
<dcpno>
<name>PERISCOPE:M27 (chief of section)
</name>
<desc>(stowage box cab wall)
</desc>
<partno>7633132
</partno>
<cageno>19200
</cageno>
<uoc>PAA
</uoc>
</dcpno>
<ui>EA
</ui>
<qty>1
</qty>
</coei-entry>
<coei-entry>
<illno>3
</illno>
<nsn>
<fsc>1240
</fsc>
<niin>00-509-2743
</niin>
</nsn>
<dcpno>
<name>PERISCOPE:M45 (driver's)
</name>
<desc>(stowage box driver's compartment)
</desc>
<partno>8213430
</partno>
<cageno>19200
</cageno>
<uoc>PAA
</uoc>
</dcpno>

```

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```

<ui>EA
</ui>
<qty>3
</qty>
</coei-entry>
<coei-entry>
<illno>4
</illno>
<nsn>
<fsc>1240
</fsc>
<niin>00-864-2930
</niin>
</nsn>
<dcjno>
<name>TELESCOPE, PANORAMIC M117
</name>
<desc>(in mount M145 or telescope box)
</desc>
<partno>7660400
</partno>
<cageno>19200
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</coei-entry>
<coei-entry>
<illno>5
</illno>
<nsn>
<fsc>1240
</fsc>
<niin>00-491-9676
</niin>
</nsn>
<dcjno>
<name>TELESCOPE, ELBOW: M118CA1
</name>
<desc>(in mount M146)
</desc>
<partno>10559855
</partno>
<cageno>19200
</cageno>
<uoc>PAB
</uoc>
</dcjno>
<ui>EA
</ui>

```

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```

<qty>1
</qty>
</coei-entry>
</coeitab>
</coei>
<!-- START BII Standard Information -->
<bii>
<graphic boardno="bii" unitmeasure="in">
</graphic>
<biitab>
<title>Basic Issue Items (BII)
</title>
<bii-entry>
<illno>1
</illno>
<nsn>
<fsc>1290
</fsc>
<niin>00-535-7629
</niin>
</nsn>
<dcjno>
<name>LIGHT, AIMING POST; M14
</name>
<partno>7197188
</partno>
<cageno>19200
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>2
</qty>
</bii-entry>
<bii-entry>
<illno>2
</illno>
<nsn>
<fsc>4930
</fsc>
<niin>00-766-3545
</niin>
</nsn>
<dcjno>
<name>LUBRICATING GUN, HAND: high pressure (in tool bag)
</name>
<partno>102758
</partno>
<cageno>36251
</cageno>
<uoc>PAA
</uoc>

```

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```

</dcpno>
<ui>EA
</ui>
<qty>1
</qty>
</bii-entry>
<bii-entry>
<illno>3
</illno>
<nsn>
<fsc>8415
</fsc>
<niin>00-266-8843
</niin>
</nsn>
<dcpno>
<name>MITTENS, CLOTH: (pair) M1942 (in oddment tray)
</name>
<partno>11655982
</partno>
<cageno>19207
</cageno>
<uoc>PAA
</uoc>
</dcpno>
<ui>EA
</ui>
<qty>2
</qty>
</bii-entry>
<bii-entry>
<illno>4
</illno>
<nsn>
<fsc>4930
</fsc>
<niin>00-262-8868
</niin>
</nsn>
<dcpno>
<name>OILER, HAND: steel, pump type, 1pt, spout 9 lg (in leftcab door stowage
box)
</name>
<partno>328
</partno>
<cageno>72798
</cageno>
<uoc>PAA
</uoc>
</dcpno>
<ui>EA
</ui>
<qty>1
</qty>

```

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```

</bii-entry>
<bii-entry>
<illno>5
</illno>
<nsn>
<fsc>7240
</fsc>
<niin>00-160-0455
</niin>
</nsn>
<dcjno>
<name>PAIL, UTILITY: 14-qt capability (on vehicle floor)
</name>
<partno>RRP35
</partno>
<cageno>81348
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</bii-entry>
</biitab>
</bii>
</coeibiiwp>

```

## 27.5.2 COEI/BII Method B.

When there are numerous items, the illustrations may be included within the tabular listing for better usability (Method B). The difference between Method A and Method B are as follows:

Method A illustrations display the end items before the COEI and BII list.

Method A COEI and BII list contains the Illustration Number in column one.

Method B displays the illustration with the end item in column two of the COEI and BII list.

Method B COEI and BII list contains the Item Number in column one.

### 27.5.2.1 COEI/BII (Method B) introduction <intro> standard text.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, refer to Section 37.5 and for specific boilerplate usages, refer to 37.5 and see TABLE XXIV.

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TABLE XXIV. COEI/BII (Method B) introduction **<intro>** boilerplate entities.

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
COEI/BII (Method B) Introduction	<b>&amp;coeibiiwp.intro;</b>	<b>&lt;!--ENTITY % coeibiiwp.method-a "IGNORE"--&gt;&lt;!--ENTITY % coeibiiwp.method-b "INCLUDE"--&gt;</b>
Frame-based		<b>&lt;!--ENTITY % frame-base "INCLUDE"--&gt;&lt;!--ENTITY % page-base "IGNORE"--&gt;</b>
Page-based		<b>&lt;!--ENTITY % frame-base "IGNORE"--&gt;&lt;!--ENTITY % page-base "INCLUDE"--&gt;</b>
End Item Name		<b>&lt;!--ENTITY short.end.item.name "Insert Short End Item Name"--&gt;</b>
Exclude UOC		<b>&lt;!--ENTITY % uoc-list "IGNORE"--&gt;</b>
Include UOC		<b>&lt;!--ENTITY % uoc-list "INCLUDE"--&gt;&lt;!--ENTITY intro.uoc-list '![/%uoc-list;  &lt;deflist&gt;&lt;title.term.def&gt;&lt;title&gt;Code&lt;/title.term.def&gt;&lt;title&gt;Used on&lt;/title&gt;&lt;/title.term.def&gt;&lt;term.def id="uoc.xxx"&gt;&lt;term&gt;Insert UOC&lt;/term&gt;&lt;def&gt;&lt;para&gt;Insert UOC Model Number &lt;/para&gt;&lt;/def&gt;&lt;/term.def&gt;&lt;/deflist&gt;'--&gt;</b>

**27.5.2.1.1 Components of End Item (COEI) (Method B) <coei-opt>.**

COEI (Method B) **<coei-opt>** contains a component of end item that lists and illustrates all COEI items for inventory purposes.

1. The components for **<coei-opt>** are:
  - a. Standard information title **<title>** (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
  - b. Grouping COEI (Method A) components by categories, use the element **<coei-category>** (required - one or more).
  - c. COEI (Method B) standard information **<coei-opt-entry>** (required – one or more) (see Section 27.5.2.1.2).
  - d. On-board spares list (Method B) **<on-board-spares-opt>** (optional) (see Section 27.5.2.1.3).
2. The DTD fragment for **<coei>** is graphically depicted.

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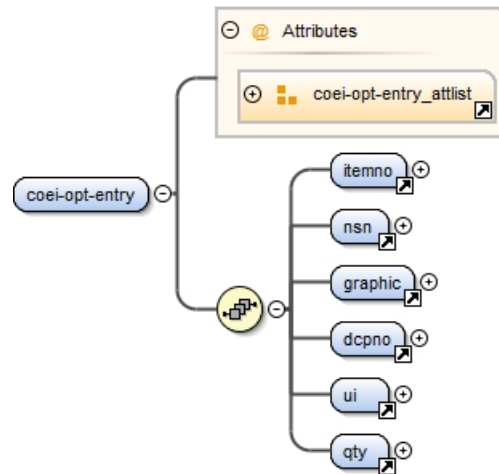


FIGURE 507. COEI (Method B) DTD hierarchy &lt;coei-opt&gt;.

## 3. The DTD fragment for &lt;coei-opt&gt; is:

```
<!ELEMENT coei-opt (title, (coei-opt-category+ | coei-opt-entry+), on-board-spares-opt?)>
```

```
<!ATTLIST coei-opt
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

## 4. Common attributes for &lt;coei-opt&gt;:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.5.2.1.2 COEI (Method B) entry <coei-opt-entry>.

The COEI (Method B) entry contains the specific information about the item and component illustration. The element is similar to a **row** in a structural table.

#### 1. Components for <coei-opt-entry>:

- a. Item number <itemno> (required) (see Section 36.1.4.7). The element is similar to a **cell** in a structural table and is entered in column one.
- b. National Stock Number (NSN) <nsn> (required) identifies the stock number of the item to be used for requisitioning purposes (see Section 36.1.4.19). The element is similar to a **cell** in a structural table and is entered in column two.
- c. COEI illustration <graphic> (required) (see Section 31.2). The element is similar to a **cell** in a structural table and is entered in column two.
- d. Item name, description, CAGE code, part number, and usable on-code (UOC) <dcjno> (required) (see Section 27.5.1.2.3.2).
  - i. The elements <name>, <desc>, <cageno>, and <partno> combined is similar to a **cell** in a structural table and is entered in column three.
    - I. Name <name> (required) (see Section 36.1.4.18).
    - II. Description <desc> (optional) (see Section 36.1.4.16).
    - III. The group containing the part number <partno> and CAGE code <cageno> requires both to be used.
      - A. Part number <partno> (required – one or more) (see Section 36.1.4.22).
      - B. CAGE code <cageno> (required – one or more) (see Section 36.1.4.1.8).
  - ii. Usable on-code (UOC) <uoc> (required – one or more) (see Section 24.4.2.1.6.4). The element is similar to a **cell** in a structural table and is entered in column four.
- e. Unit of issue <ui> (required) provides the component size or amount when issued. The element is similar to a **cell** in a structural table and is entered in column four.
- f. Quantity <qty> (required) (see Section 36.1.4.8). The element is similar to a **cell** in a structural table and is entered in column five.

#### 2. The DTD fragment for <coei-opt-entry> is graphically depicted:

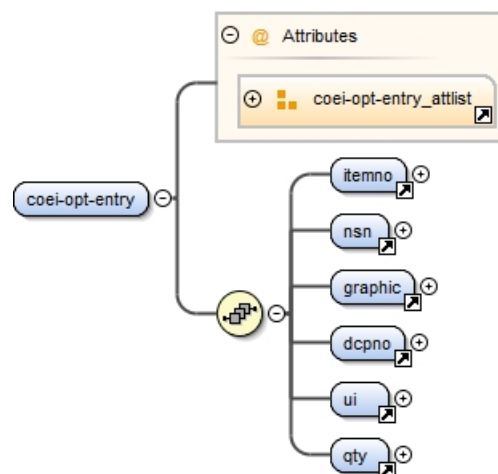


FIGURE 508. COEI (Method B) entry <coei-opt-entry> DTD hierarchy.



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3. The DTD fragment for **<coei-opt-entry>** is:

```

<!ELEMENT coei-opt-entry (itemno, nsn, graphic, dcpno, ui, qty)>
<!ATTLIST coei-opt-entry
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Common attributes for **<coei-opt-entry>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.5.2.1.3 On-board spares (Method B) **<on-board-spares-opt>**.

Any on-board spares, when applicable, are listed under a new heading or category name as “ON-BOARD SPARES” and components are entered in the same format as **<coei-opt-entry>**.

1. The components for **<on-board-spares-opt>**:

- a. On-board spares title **<title>** (required) (see Section 36.1.1.4). MIL-STD-40051-1/-2 states the mandatory title is “ON-BOARD SPARES.” The element is similar to a **row** in a structural table. The element is similar to a **cell** in a structural table and is entered in column one.
- b. COEI (Method B) entry(s) **<coei-opt-entry>** (required – one or more) (see 27.5.2.1.2) for this category.

2. The DTD fragment for **<on-board-spares-opt>** is:

```

<!ELEMENT on-board-spares-opt (title, coei-opt-entry+)>

```

3. There are no attributes for **<on-board-spares-opt>**.

### 27.5.2.1.4 Basic of Issue (BII) (Method B) <bii-opt>.

BII (Method B) contains a component of end item that lists and illustrates all BII items for inventory purposes.

1. The components for <bii-opt> are:
  - a. Standard information title <title> (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
  - b. <bii-opt-category> this category contains a title and a <bii-opt> entry element.
  - c. BII (Method B) component information <bii-opt-entry> (required – one or more) (see Section 27.5.2.1.5).
2. The DTD fragment for <bii-opt> is graphically depicted.

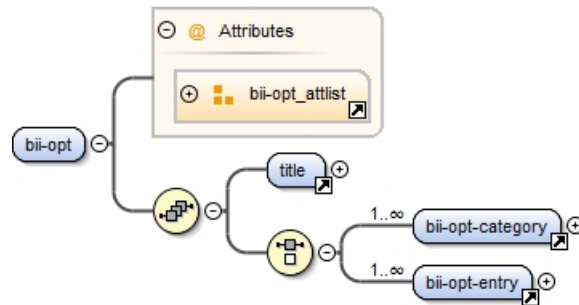


FIGURE 509. BII (Method B) <bii-opt> DTD hierarchy.

3. The DTD fragment for <bii-opt> is:

```
<!ELEMENT bii-opt (title, (bii-opt-category+ | bii-opt-entry+))>
<!ATTLIST bii-opt
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Common attributes for <bii-opt> are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

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- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.5.2.1.5 BII (Method B) entry **<bii-opt-entry>**.

The BII (Method B) entry contains the specific information about the item and component illustration. The element is similar to a **row** in a structural table and similar to a **row** in a structural table.

1. The components for **<bii-opt-entry>**:

- a. Item number **<itemno>** (required) (see Section 36.1.4.7). The element is similar to a **cell** in a structural table and is entered in column one.
- b. National Stock Number (NSN) **<nsn>** (required) identifies the stock number of the item to be used for requisitioning purposes (see Section 36.1.4.19). The element is similar to a **cell** in a structural table and is entered in column two.
- c. BII illustration **<graphic>** (required) (see Section 31.2). The element is similar to a **cell** in a structural table and is entered in column two.
- d. Item name, description, CAGE code, part number, and usable on-code (UOC) **<dcjno>** (required) (see Section 27.5.1.2.3.2).
  - i. The elements **<name>**, **<desc>**, **<cageno>**, and **<partno>** combined is similar to a **cell** in a structural table and is entered in column three.
    - I. Name **<name>** (required) (see Section 36.1.4.18).
    - II. Description **<desc>** (optional) (see Section 36.1.4.16).
    - III. The group containing the part number **<partno>** and CAGE code **<cageno>** requires both to be used.
      - A. Part number **<partno>** (required – one or more) (see Section 36.1.4.22).
      - B. CAGE code **<cageno>** (required – one or more) (see Section 36.1.4.1.8).
  - ii. Usable on-code (UOC) **<uoc>** (required – one or more) (see Section 24.4.2.1.6.4). The element is similar to a **cell** in a structural table and is entered in column four.
- e. Unit of issue **<ui>** (required) provides the component size or amount when issued. The element is similar to a **cell** in a structural table and is entered in column five.
- f. Quantity **<qty>** (required) (see Section 36.1.4.8). The element is similar to a **cell** in a structural table and is entered in column six.

2. The DTD fragment for **<bii-opt-entry>** is graphically depicted:

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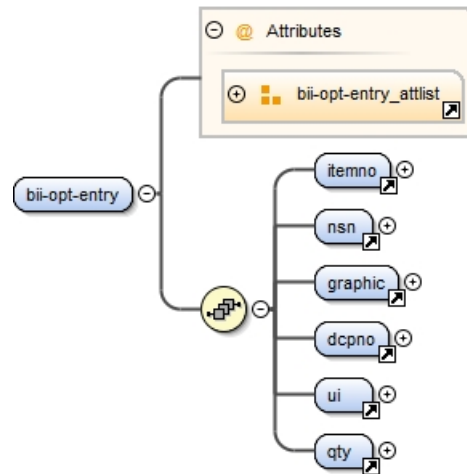


FIGURE 510. BII (Method B) entry &lt;bii-opt-entry&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;bii-opt-entry&gt; is:

```

<!ELEMENT bii-opt-entry (itemno, nsn, graphic, dcpno, ui, qty)>
<!ATTLIST bii-opt-entry
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

## 4. Common attributes for &lt;bii-opt-entry&gt;:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.5.2.2 XML document instance fragment and output for COEI/BII work package (Method B) standard information <coeibiiwp>.

The COEI/BII work package (Method B) XML markup is shown below and the sample stylesheet output is shown in MIL-STD-40051-1/-2:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % coeibiiwp.method-a "IGNORE">
<!ENTITY % coeibiiwp.method-b "INCLUDE">
<!ENTITY % uoc-list "INCLUDE">
<!ENTITY short.end.item.name "M198 howitzer">
<!ENTITY intro.uoc-list ' %uoc-list;
```

```
<deflist>
<title.term.def>
<title>Code
</title>
<title>Used on
</title>
</title.term.def>
<term.def id="uoc.PAA">
<term>PAA
</term>
<def>
<para>Model XXX
</para>
</def>
</term.def>
<term.def id="uoc.PAB">
<term>PAB
</term>
<def>
<para>Model XXXX
</para>
</def>
</term.def>
<term.def id="uoc.PAC">
<term>PAC
</term>
<def>
<para>Model XXXXX
</para>
</def>
</term.def>
</deflist>
/>
```

2. Example of an XML document instance fragment for COEI/BII work package (Method B) <coeibiiwp>:

```
<coeibiiwp wpno="s00003-X-XXXX-XXX" chngno="0" tocentry="2" frame="yes" army="no" airforce=
"no" navy="no" marines="no" wpseq="0441" deletewp="no">
<wpidinfo>
```

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```

<maintlvl level="unitlvl"/>
<title>M198 HOWITZER
</title>
</wpidinfo>&aal.intro;
<!-- START COEI Standard Information -->
<coei-opt>
<title>Components of End Item List.
</title>
<coei-opt-entry>
<itemno>1
</itemno>
<nsn>
<fsc>1005
</fsc>
<niin>00-706-8880
</niin>
</nsn>
<graphic boardno="coei1" unitmeasure="in">
<graphic>
<dcjno>
<name>MOUNT, MACHINE GUN 1:cal..50
</name>
<desc>(in mount on cupola)
</desc>
<partno>7068880
</partno>
<cageno>19204
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</coei-opt-entry>
<coei-opt-entry>
<itemno>2
</itemno>
<nsn>
<fsc>1240
</fsc>
<niin>00-344-4643
</niin>
</nsn>
<graphic boardno="coei2-3" unitmeasure="in">
<graphic>
<dcjno>
<name>PERISCOPE:M27 (chief of section)
</name>
<desc>(stowage box cab wall)
</desc>
<partno>7633132
</partno>

```

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```

<cageno>19200
</cageno>
<uoc>PAA
</uoc>
</dcpno>
<ui>EA
</ui>
<qty>1
</qty>
</coei-opt-entry>
<coei-opt-entry>
<itemno>3
</itemno>
<nsn>
<fsc>1240
</fsc>
<niin>00-509-2743
</niin>
</nsn>
<graphic boardno="coei2-3" unitmeasure="in">
<graphic>
<dcpno>
<name>PERISCOPE:M45 (driver's)
</name>
<desc>(stowage box driver's compartment)
</desc>
<partno>8213430
</partno>
<cageno>19200
</cageno>
<uoc>PAA
</uoc>
</dcpno>
<ui>EA
</ui>
<qty>3
</qty>
</coei-opt-entry>
<coei-opt-entry>
<itemno>4
</itemno>
<nsn>
<fsc>1240
</fsc>
<niin>00-864-2930
</niin>
</nsn>
<graphic boardno="coei4" unitmeasure="in">
<graphic>
<dcpno>
<name>TELESCOPE, PANORAMIC M117
</name>
<desc>(in mount M145 or telescope box)
</desc>

```

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```

<partno>7660400
</partno>
<cageno>19200
</cageno>
<uoc>PAA
</uoc>
<dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</coei-opt-entry>
<coei-opt-entry>
<itemno>5
</itemno>
<nsn>
<fsc>1240
</fsc>
<niin>00-491-9676
</niin>
</nsn>
<graphic boardno="coei5" unitmeasure="in">
<graphic>
<dcjno>
<name>TELESCOPE, ELBOW: M118CA1
</name>
<desc>(in mount M146)
</desc>
<partno>10559855
</partno>
<cageno>19200
</cageno>
<uoc>PAB
</uoc>
<dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</coei-opt-entry>
<coeitab>
</coei>
<!-- START BII Standard Information -->
<bii-opt>
<title>Basic Issue Items (BII)
</title>
<bii-entry-opt>
<itemno>1
</itemno>
<nsn>
<fsc>1290
</fsc>
<niin>00-535-7629
</niin>

```



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```

</nsn>
<graphic boardno="bii-1" unitmeasure="in">
</graphic>
<dcjno>
<name>LIGHT, AIMING POST; M14
</name>
<partno>7197188
</partno>
<cageno>19200
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>2
</qty>
</bii-entry-opt>
<bii-entry-opt>
<itemno>2
</itemno>
<nsn>
<fsc>4930
</fsc>
<niin>00-766-3545
</niin>
</nsn>
<graphic boardno="bii-2" unitmeasure="in">
</graphic>
<dcjno>
<name>LUBRICATING GUN, HAND: high pressure (in tool bag)
</name>
<partno>102758
</partno>
<cageno>36251
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</bii-entry-opt>
<bii-entry-opt>
<itemno>3
</itemno>
<nsn>
<fsc>8415
</fsc>
<niin>00-266-8843
</niin>
</nsn>
<graphic boardno="bii-3" unitmeasure="in">

```

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```

</graphic>
<dcjno>
<name>MITTENS, CLOTH: (pair) M1942 (in oddment tray)
</name>
<partno>11655982
</partno>
<cageno>19207
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>2
</qty>
</bii-entry-opt>
<bii-entry-opt>
<itemno>4
</itemno>
<nsn>
<fsc>4930
</fsc>
<niin>00-262-8868
</niin>
</nsn>
<graphic boardno="bii-4" unitmeasure="in">
</graphic>
<dcjno>
<name>OILER, HAND: steel, pump type, 1pt, spout 9 lg (in leftcab door stowage
box)
</name>
<partno>328
</partno>
<cageno>72798
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</bii-entry-opt>
<bii-entry-opt>
<itemno>5
</itemno>
<nsn>
<fsc>7240
</fsc>
<niin>00-160-0455
</niin>
</nsn>
<graphic boardno="bii-5" unitmeasure="in">
</graphic>

```

## MIL-HDBK-2361D

```

<dcjno>
<name>PAIL, UTILITY: 14-qt capability (on vehicle floor)
</name>
<partno>RRP35
</partno>
<cageno>81348
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</bii-entry-opt>
</bii-opt>
</coeibiiwp>

```

## 27.6 Additional Authorization List (AAL) work package <aalwp>.

The AAL work package identifies items that do not have to accompany the end item and do not have to be turned in with the end item. The AAL items are authorized for use by CTA, MTOE, TDA, or JTA. The AALWP is only used in an Operator's manual.

1. The components for <aalwp>:
  - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - c. AAL introduction <intro> (required) (see Section 27.5.1.1 for Method A or Section 27.5.2.1 for Method B and Section 36.1.4.14 for element usage).
  - d. Additional Authorization List standard information <aal> (required) (see Section 27.6.2).
2. The DTD fragment for <aalwp> is graphically depicted.

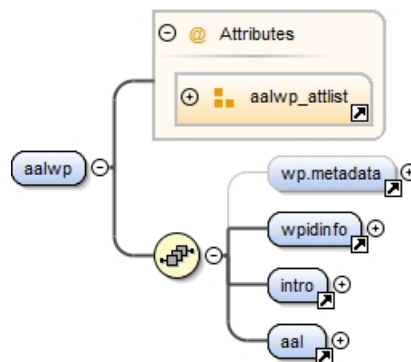


FIGURE 511. Additional Authorization List (AAL) work package DTD hierarchy <aalwp>.

3. The DTD fragment for <aalwp> is:

```

<!ELEMENT aalwp (wp.metadata?, wpidinfo, intro, aal)>
<!ATTLIST aalwp

```

## MIL-HDBK-2361D

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <aalwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).

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- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 27.6.1 AAL introduction <intro> standard text.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XXV.

TABLE XXV. AAL introduction <intro> boilerplate entities.

Description	Boilerplate Entity	Selectable. Entity to Set Editable Entity to Set
AAL Introduction	&aahwp.intro;	
Frame-based		<!ENTITY % frame-base "INCLUDE"><!ENTITY % page-base "IGNORE">

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TABLE XXV. AAL introduction *<intro>* boilerplate entities. (continued)

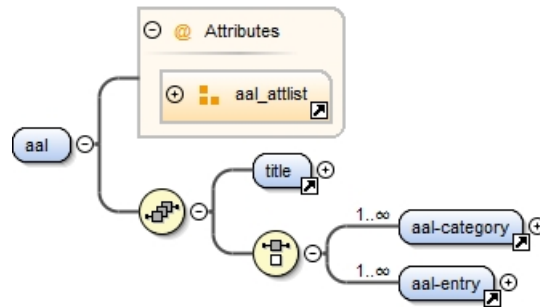
Description	Boilerplate Entity	Selectable. Entity to Set Editable Entity to Set
Page-based		<i>&lt;!ENTITY % frame-base "IGNORE"&gt;&lt;!ENTITY % page-base "INCLUDE"&gt;</i>
End Item Name		<i>&lt;!ENTITY short.end.item.name "Insert Short End Item Name"&gt;</i>
Exclude UOC		<i>&lt;!ENTITY % uoc-list "IGNORE"&gt;</i>
Include UOC		<i>&lt;!ENTITY % uoc-list "INCLUDE"&gt;&lt;!ENTITY intro.uoc-list '[%uoc-list;] &lt;deflist&gt;&lt;title.term.def&gt;&lt;title&gt;Code&lt;/title&gt;&lt;title&gt;&lt;title&gt;Used on&lt;/title&gt;&lt;/title.term.def&gt;&lt;term.def id="uoc.xxx"&gt;&lt;term&gt;Insert UOC&lt;/term&gt;&lt;def&gt;&lt;para&gt;Insert UOC Model Number &lt;/para&gt;&lt;/def&gt;&lt;/term.def&gt;&lt;/deflist&gt;'&gt;</i>

27.6.2 Additional authorization list *<aal>*.

A tabular list containing standard information of all items in the additional authorization list. AAL items are optional (discretionary), not essential to operate the end item, and are not listed on engineering drawings and not turned in with the end item. This element functions as the table element.

1. The components for *<aal>*:
  - a. Standard information title *<title>* (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
  - b. The AAL is displayed by either:
    - i. Grouping components by categories, use the element *<aal-category>* (required – one or more) (see Section 27.6.2.1).
    - ii. Each component is listed separately, use the element *<aal-entry>* (required – one or more) (see Section 27.6.2.1.1).
2. The DTD fragment for *<aal>* is graphically depicted:

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**FIGURE 512. Additional Authorization List (AAL) standard information DTD hierarchy <aal>.**

**3. The DTD fragment for <aal> is:**

```

<!ELEMENT aal (title, (aal-category+ | aal-entry+))>
<!ATTLIST aal
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 frame (yes | no) "no"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

**4. Common attributes for <aal>:**

- a. assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. comment** – Change information (optional) (see Section 36.3.12).
- d. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. frame** – In frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **no**).
- f. id** – Unique identifier (optional) (see Section 36.3.7).
- g. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. security** – Security classification (optional) (see Section 36.3.14).
- j. skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.6.2.1 AAL category <aal-category>.

If the standard information is subdivided into groups, for example by subassemblies, the category element is used to represent the groups. After the category name is entered, the specific AAL entry <aal-entry> is entered for that category. Usually more than one category is entered in the standard information.

1. The components for <aal-category> are:
  - a. Category title <title> (required) (see Section 36.1.1.4).
  - b. AAL entry(s) <aal-entry> (required – one or more) (see Section 27.6.2.1.1) for this category.
2. The DTD fragment for <aal-category> is graphically depicted:

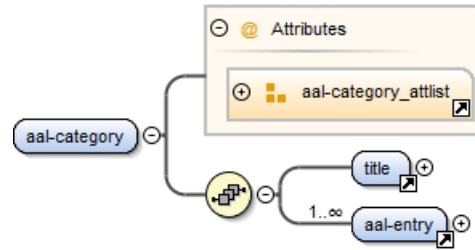


FIGURE 513. Additional Authorization List (AAL) category element DTD hierarchy <aal-category>.

3. The DTD fragment for <aal-category> is:

```
<!ELEMENT aal-category (title, aal-entry+)>
<!ATTLIST aal-category
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 frame (yes | no) "no"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Common attributes for <aal-category>:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **frame** – In frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **no**).
  - f. **id** – Unique identifier (optional) (see Section 36.3.7).



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- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.6.2.1.1 AAL entry <aal-entry>.

The AAL entry contains specific information about the item. The element is similar to a **row** in a structural table and it is similar to a **row** in a structural table.

#### 1. The components for <aal-entry>:

- a. National Stock Number (NSN) <nsn> (required – one or more) identifies the stock number of the item to be used for requisitioning purposes (see 39.1.4.20). Usually the AAL entry has a single NSN, but on occasions, similar fit and function components are listed under the same AAL item. The element is similar to a **cell** in a structural table and is entered in column one.
- b. Item name, description, CAGE code, part number, and usable on-code (UOC) <dcjno> (required) (see Section 27.5.1.2.3.2).
  - i. The elements <name>, <desc>, <cageno>, and <partno> combined is similar to a **cell** in a structural table and is entered in column two.
    - I. Name <name> (required) (see Section 36.1.4.18).
    - II. Description <desc> (optional) (see Section 36.1.4.16).
    - III. The group containing the part number <partno> and CAGE code <cageno> requires both to be used.
      - A. Part number <partno> (required – one or more) (see Section 36.1.4.22).
      - B. CAGE code <cageno> (required – one or more) (see Section 36.1.4.1.8).
  - ii. Usable on-code (UOC) <uoc> (required – one or more) (see Section 24.4.2.1.6.4). The element is similar to a **cell** in a structural table and is entered in column three.
- c. Unit of issue <ui> (required) provides the component size or amount when issued. The element is similar to a **cell** in a structural table and is entered in column four.
- d. Quantity <qty> (required) (see Section 36.1.4.8). The element is similar to a **cell** in a structural table and is entered in column five.

#### 2. The DTD fragment for <aal-entry> is graphically depicted:

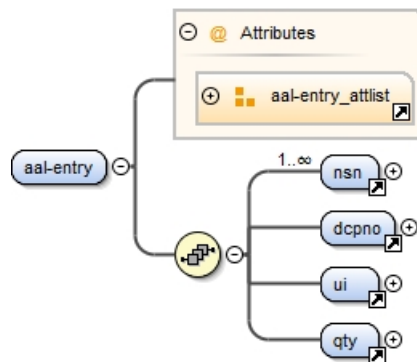


FIGURE 514. AAL entry <aal-entry> DTD hierarchy

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3. The DTD fragment for **<aal-entry>** is:

```

<!ELEMENT aal-entry (nsn+, dcpno, ui, qty)>
<!ATTLIST aal-entry
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Common attributes for **<aal-entry>**:

- a. **assocfig** – Associate one or more figures (optional) (see 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.6.3 XML document instance fragment and output for **<aalwp>**.

The AAL XML markup is shown below and the sample stylesheet output is shown MIL-STD-40051-1/-2:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```

<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % uoc-list "IGNORE">
<!ENTITY short.end.item.name "NBCRS FOXM93A1">

```

2. Example of an XML document instance fragment for AAL work package **<aalwp>**:

```

<aalwp wpno="s00004-X-XXXX-XXX" tocentry="2" frame="yes" army="no" airforce="no" navy="no"
marines="no" wpseq="0442" deletewp="no">
 <wpidinfo>
 <maintlvl level="unitlvl"/>
 <title>NBCRS FOX M93A1 ADDITIONAL AUTHORIZATION LIST (AAL)
 </title>
</wpidinfo>&aal.intro;

```

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```
<aal frame="no">
<title>Additional Authorization List.
</title>
<aal-entry>
<nsn>
<fsc>6665
</fsc>
<niin>01-105-5623
</niin>
</nsn>
<dcjno>
<name>ALARM, CHEMICAL AGENT
</name>
<partno>8762101
</partno>
<cageno>19200
</cageno>
<uoc>
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</aal-entry>
<aal-entry>
<nsn>
<fsc>1240
</fsc>
<niin>01-207-5787
</niin>
</nsn>
<dcjno>
<name>BINOCULARS, MOD, CON M22
</name>
<partno>9370122
</partno>
<cageno>19200
</cageno>
<uoc>
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</aal-entry>
<aal-entry>
<nsn>
<fsc>2590
</fsc>
<niin>01-148-7961
</niin>
</nsn>
```

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<dcjno>  
<name>CABLE KIT, SPECIAL PURPOSE  
</name>  
<partno>223592-2000  
</partno>  
<cageno>19200  
</cageno>  
<uoc>  
</uoc>  
</dcjno>  
<ui>EA  
</ui>  
<qty>2  
</qty>  
</aal-entry>  
<aal-entry>  
<nsn>  
<fsc>1080  
</fsc>  
<niin>00-623-7295  
</niin>  
</nsn>  
<dcjno>  
<name>CAMOUFLAGE SCREEN WOODLAND/DST POLES  
</name>  
<partno>11655722  
</partno>  
<cageno>34623  
</cageno>  
<uoc>  
</uoc>  
</dcjno>  
<ui>EA  
</ui>  
<qty>1  
</qty>  
</aal-entry>  
<aal-entry>  
<nsn>  
<fsc>1080  
</fsc>  
<niin>00-103-1246  
</niin>  
</nsn>  
<dcjno>  
<name>CAMOUFLAGE SCREEN WOODLAND RAD SCT  
</name>  
<partno>11655720  
</partno>  
<cageno>34623  
</cageno>  
<uoc>  
</uoc>  
</dcjno>

## MIL-HDBK-2361D

```

<ui>EA
</ui>
<qty>1
</qty>
</aal-entry>
<aal-entry>
<nsn>
<fsc>6665
</fsc>
<niin>01-199-4153
</niin>
</nsn>
<dcjno>
<name>CHEMICAL AGENT MONITOR (CAM)
</name>
<partno>11645620
</partno>
<cageno>34623
</cageno>
<uoc>
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</aal-entry>
</aal>
</aalwp>

```

## 27.7 Collateral Material (CM) work package <cmwp>.

This work package should be prepared for Marine Corps only manuals. This work package contains a list of items furnished with the end items upon initial issue and normally remain with the using unit during redistribution/rebuild or other change of custody of the end item unless otherwise directed by MARCORLOGCOM.

1. The components for <cmwp>:
  - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - c. COLLATERAL MATERIAL introduction <intro> (required) (see Section 27.7.1).
  - d. CM list <cmlist> (required) (see Section 27.7.2).
2. The DTD fragment for <cmwp> is graphically depicted.

## MIL-HDBK-2361D

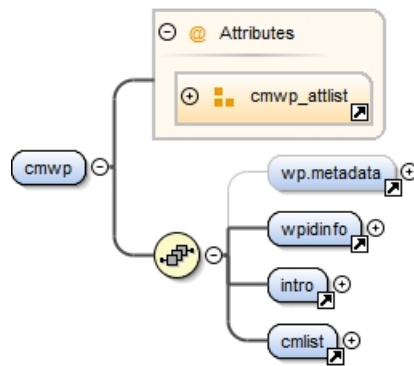


FIGURE 515. Collateral Material (CM) work package &lt;cmwp&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;cmwp&gt; is:

```
<!ELEMENT cmwp (wp.metadata?, wpidinfo, intro, cmlist)>
```

```
<!ATTLIST cmwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"

## MIL-HDBK-2361D

wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

4. Common attributes for **<cmwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

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**27.7.1 CM introduction <intro>.**

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-40051 uses boilerplates or XML general entities (see Chapter 37) that are a type of replacement text for these standard statements (see 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XXVI.

**TABLE XXVI. CM introduction <intro> boilerplate entities.**

<b>Description</b>	<b>Boilerplate Entity</b>	<b>Selectable Entity to Set Editable Entity to Set</b>
AAL Introduction	<i>&amp;cmwp.intro;</i>	
Frame-based		<i>&lt;!ENTITY % frame-base "IN-CLUE"&gt;&lt;!ENTITY % page-base "IGNORE"&gt;</i>
Page-based		<i>&lt;!ENTITY % frame-base "IGNORE"&gt;&lt;!ENTITY % page-base "INCLUDE"&gt;</i>
End Item Name		<i>&lt;!ENTITY short.end.item.name "Insert Short End Item Name"&gt;</i>
Exclude UOC		<i>&lt;!ENTITY % uoc-list "IGNORE"&gt;</i>
Include UOC		<i>&lt;!ENTITY % uoc-list "IN-CLUE"&gt;&lt;!ENTITY intro.uoc-list '![%uoc-list;] &lt;deflist&gt;&lt;title.term.def&gt;&lt;title&gt;Code&lt;/title&gt;&lt;title&gt;&lt;title&gt;Used on&lt;/title&gt;&lt;/title.term.def&gt;&lt;term.def id="uoc.xxx"&gt;&lt;term&gt;Insert UOC&lt;/term&gt;&lt;def&gt;&lt;para&gt;Insert UOC Model Number &lt;/para&gt;&lt;/def&gt;&lt;/term.def&gt;&lt;/deflist&gt;'&gt;</i>

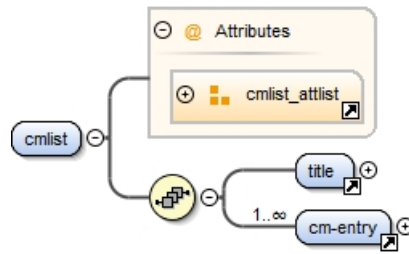
**27.7.2 Collateral material list <cmlist>.**

A tabular list containing standard information of all items in the additional authorization list. AAL items are optional (discretionary), not essential to operate the end item, not listed on engineering drawings and not turned in with the end item. This element functions as the table element.

- The components for **<cmlist>**:
  - Standard information title **<title>** (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
  - CM components are listed separately, **<cm-entry>** (required – one or more) (see Section 27.7.2.1).
- The DTD fragment for **<cmlist>** is graphically depicted.



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**FIGURE 516. Collateral Material (CM) list standard information <cmelist> DTD hierarchy.**

**3. The DTD fragment for <cmelist> is:**

```
<!ELEMENT cmelist (title, cm-entry+)>
<!ATTLIST cmelist
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

**4. Common attributes for <cmelist>:**

- a. assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. comment** – Change information (optional) (see Section 36.3.12).
- d. delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. id** – Unique identifier. (optional) (see Section 36.3.7).
- f. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. security** – Security classification (optional) (see Section 36.3.14).
- i. skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.7.2.1 CM entry <cm-entry>.

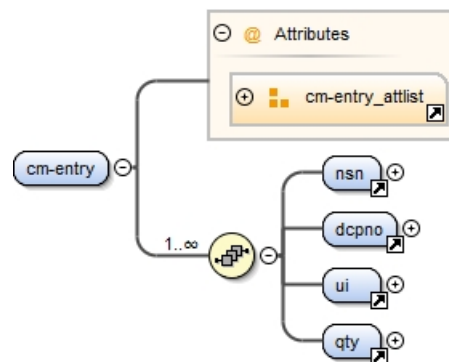
The AAL entry contains specific information about the item. The element <cm-entry> is similar to a **row** in a structural table and it is similar to a **row** in a structural table.

**1. Components for <cm-entry>:**

- a. National Stock Number (NSN) <nsn>** (required) identifies the stock number of the item to be used for requisitioning purposes (see Section 24.4.2.1.7.3). The element is similar to a **cell** in a structural table and is entered in column two.

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- b. Item name, description, CAGE code, part number, and usable on-code (UOC) **<dcjno>** (required) (see Section 27.5.1.2.3.2).
- i. The elements **<name>**, **<desc>**, **<cageno>**, and **<partno>** combined is similar to a **cell** in a structural table and is entered in column three.
    - I. Name **<name>** (required) (see Section 36.1.4.18).
    - II. Description **<desc>** (optional) (see Section 36.1.4.16).
    - III. The group containing the part number **<partno>** and CAGE code **<cageno>** requires both to be used.
      - A. Part number **<partno>** (required – one or more) (see Section 36.1.4.22).
      - B. CAGE code **<cageno>** (required – one or more) (see Section 36.1.4.1.8).
  - ii. Usable on-code (UOC) **<uoc>** (required – one or more) (see Section 24.4.2.1.6.4). The element is similar to a **cell** in a structural table and is entered in column four.
- c. Unit of issue **<ui>** (required) provides the component size or amount when issued. The element is similar to a **cell** in a structural table and is entered in column four.
- d. Quantity **<qty>** (required) (see Section 36.1.4.8). The element is similar to a **cell** in a structural table and is entered in column five.
2. The DTD fragment for **<cm-entry>** is graphically depicted:

FIGURE 517. CM entry **<cm-entry>** DTD hierarchy.

3. The DTD fragment for **<cm-entry>** is:

```
<!ELEMENT cm-entry (nsn, dcjno, ui, qty)+>
```

```
<!ATTLIST cm-entry
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<cm-entry>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.7.3 XML document instance fragment and output for **<cmwp>**.

The AAL XML markup is shown below and the sample stylesheet output is shown in MIL-STD-40051-1/-2:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % uoc-list "IGNORE">
<!ENTITY short.end.item.name "NBCRS FOXM93A1">
```

2. Example of an XML document instance fragment for AAL work package **<cmwp>**.

```
<cmwp chngno="" wpno="S0024B">
 <wpidinfo>
 <maintlvl level="maintainer">
 </maintlvl>
 <title>
 </title>
 </wpidinfo>
 <intro>
 <para0>
 <title>COLLATERAL MATERIAL (CM) ITEMS LIST INTRODUCTION
 </title>
 <subpara1>
 <title>Scope
 </title>
 <para>This work package lists collateral material items you are authorized for
the support of the (enter item name)
 </para>
 </subpara1>
 <subpara1>
 <title>General
```

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</title>

<para>This list identifies items that are to be requisitioned by the using unit except those with 9999 NSN.

</para>

</subpara1>

<subpara1>

<title>Explanation of Entries in the UURI

</title>

<para>National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

</para>

<para>Description, Part Number/Commercial and Government Entity Code (CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the CAGEC (in parentheses).

</para>

<para>Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. (Add the following only as applicable. Replace Xs with appropriate codes and model numbers.) These codes are identified below:

</para>

</subpara1>

<subpara1 hcp="no" esd="no">

<title>Explanation of Entries in the CM

</title>

<para hcp="no" esd="no">Column (1) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

</para>

<para hcp="no" esd="no">Column (2) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

</para>

<para hcp="no" esd="no">Column (3) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

</para>

<para>

<table>

<tgroup cols="">

<thead>

<row>

<entry>Code

</entry>

<entry>Used on

</entry>

</row>

</thead>

<tbody>

<row>

<entry>XXX

</entry>

<entry>Model XXX

</entry>

</row>

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```

<row>
<entry>XXX
</entry>
<entry>Model XXXX
</entry>
</row>
<row>
<entry>XXX
</entry>
<entry>Model XXXXX
</entry>
</row>
</tbody>
</tgroup>
</table>
</para>
<para>Add if applicable: Model XXX uses CM items (insert item numbers), Model
XXXX uses CM items (insert item numbers), and Model XXXXX use CM items (insert
item numbers) .
</para>
<para hcp="no" esd="no">Column (4) U/I. Unit of Issue (U/I) indicates the physical
measurement or count of the item as issued per the National Stock Numbers shown in
Column (1) .
</para>
<para hcp="no" esd="no">Column (5) Qty Recm. Indicates the quantity recommended.
</para>
</subpara1>
</para0>
</intro>
<cmlist>
<title>
</title>
<cm-entry>
<nsn>
<fsc>8340
</fsc>
<niin>-01-475-9648
</niin>
</nsn>
<dcjno>
<name inschlvl="1">Extension Assembly
</name>
<partno>5-4-7950
</partno>
<cageno>81337
</cageno>
<uoc>FQH, FTD
</uoc>
<uoc>FTD
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1

```

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```

</qty>
</cm-entry>
<cm-entry>
<nsn>
<fsc>5120
</fsc>
<niin>-00-900-6098
</niin>
</nsn>
<dcjno>
<name>Hammer, Sledge, 12-1b
</name>
<partno/>
<cageno>80244
</cageno>
<uoc>FQH, FTD, FTE, FTF
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</cm-entry>
<cm-entry>
<nsn>
<fsc>5120
</fsc>
<niin>-00-926-7116
</niin>
</nsn>
<dcjno inschlvl="1">
<name>Mallet, Wood
</name>
<partno/>
<cageno/>
<uoc>FQH, FTD, FTE, FTF
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</cm-entry>
<cm-entry>
<nsn>
<fsc/>
<niin/>
</nsn>
<dcjno>
<name delchlvl="2">Painter's Pole
</name>
<partno>R057
</partno>
<cageno>088W9

```

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```

</cageno>
<uoc>FQH, FTD
</uoc>
</dcpno>
<ui>EA
</ui>
<qty>1
</qty>
</cm-entry>
<cm-entry>
<nsn>
<fsc>8340
</fsc>
<niin>-00-262-5767
</niin>
</nsn>
<dcpno>
<name>Repair Kit, Tentage
</name>
<partno>MIL-C-3372
</partno>
<cageno>81349
</cageno>
<uoc>FQH, FTD, FTE, FTF
</uoc>
</dcpno>
<ui>EA
</ui>
<qty>1
</qty>
</cm-entry>
</cmlist>
</cmwp>

```

## 27.8 Expendable and durable items list work package <explistwp>.

The expendable and durable items list work package is to provide the user a list of all expendable and durable items called out in the TM text that are necessary to operate and/or maintain the equipment.

1. The components for <explistwp>:
  - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - c. Expendable and durable items introduction <intro> (required) (see Section 27.8.1) and (Section 36.1.4.14).
  - d. When expendable and durable items exists, the information is entered as standard information <explist>, otherwise a statement is provided stating no expendable and durable item apply.
    - i. Expendable and durable items standard information <explist> (required) (see Section 27.8.2).
    - ii. Paragraph <para> stating no expendable and durable item apply (required) (see Section 36.1.1.6).
2. The DTD fragment for <explistwp> is graphically depicted.

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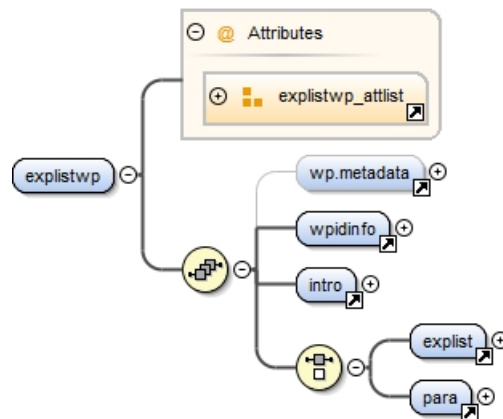


FIGURE 518. Expendable and durable items list work package DTD hierarchy <explistwp>.

3. The DTD fragment for <explistwp> is:

```
<!ELEMENT explistwp (wp.metadata?, wpidinfo, intro, (explist | para))>
```

```
<!ATTLIST explistwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"



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wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

## 4. Common attributes for &lt;explistwp&gt;:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

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**27.8.1 Expendable and durable items introduction <intro>.**

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XXVII.

**TABLE XXVII. Expendable and durable items introduction <intro> boilerplate entities.**

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Expendable and durable items Introduction	<i>&amp;exlistwp.intro;</i>	
Frame-based		<i>&lt;!ENTITY % frame-base "INCLUDE"&gt;&lt;!ENTITY % page-base "IGNORE"&gt;</i>
Page-based		<i>&lt;!ENTITY % frame-base "IGNORE"&gt;&lt;!ENTITY % page-base "INCLUDE"&gt;</i>
End Item Name		<i>&lt;!ENTITY short.end.item.name "Insert Short End Item Name"&gt;</i>
Lowest Maintenance Allowed (Remove levels that do not apply).		<i>&lt;!ENTITY exlistwp.intro.level "C=Operator/Crew, O = AMC, F = Maintainer/ASB, H = Below depot sustainement, L=TASMG, D = Depot"&gt;</i>

**27.8.2 Expendable and durable items standard information <exlist>.**

The element lists all expendable and durable items called out in the TM text that are necessary to operate and/or maintain the equipment.

1. The components for **<exlist>**:
  - a. Standard information title **<title>** (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
  - b. The expendable and durable items is displayed by either:
    - i. Grouping components by categories, use the element **<expdur-category>** (required – one or more) (see Section 27.8.2.1).
    - ii. Each component is listed separately, use the element **<expdur-entry>** (required – one or more) (see Section 27.8.2.1.1).
2. The DTD fragment for **<exlist>** is graphically depicted:

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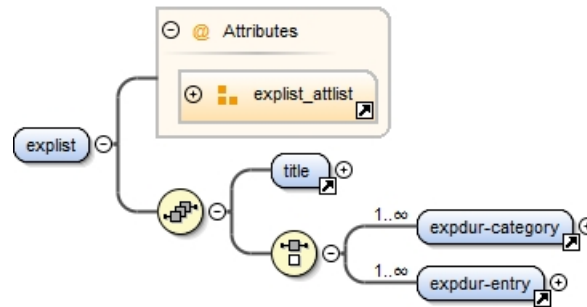


FIGURE 519. Expendable and durable items standard information DTD hierarchy <explist>.

3. The DTD fragment for <explist> is:

```
<!ELEMENT explist (title, (expdur-category+ | expdur-entry+))>
<!ATTLIST explist
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) #IMPLIED
 security (uc | fouo | c | s | ts) "0"
 skilltrk CDATA #IMPLIED>
```

4. Common attributes for <explist>:

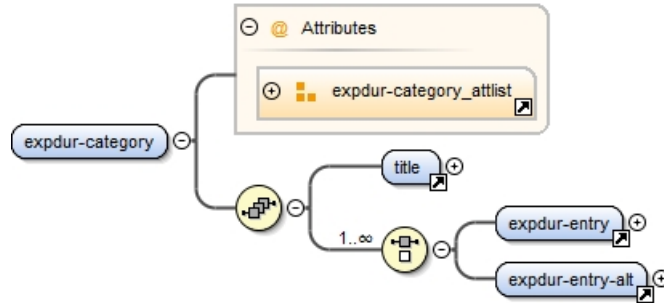
- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.8.2.1 Expendable and durable items category <expdur-category>.

If the standard information is subdivided into groups, for example by subassemblies, the category element is used to represent the groups. After the category name is entered, the specific expendable and durable items entries <expdur-entry> are entered for that category. Usually more than one category is entered in the standard information.

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1. The components for **<expdur-category>**:
  - a. Category title **<title>** (required) (see Section 36.1.1.4).
  - b. Expendable and durable items entry(s) **<expdur-entry>** (required – one or more) (see Section 27.8.2.1.1) or **<expdur-entry-alt>** (see Section 35.2.1) for this category.
2. The DTD fragment for **<expdur-category>** is graphically depicted.



**FIGURE 520. Additional Authorization List (AAL) category element <expdur-category> DTD hierarchy.**

3. The DTD fragment for **<expdur-category>** is:

```
<!ELEMENT expdur-category (title, (expdur-entry | expdur-entry-alt)+)>
```

```
<!ATTLIST expdur-category
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<expdur-category>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.8.2.1.1 Expendable and durable item entry <expdur-entry>.

The expendable and durable item entries contain the specific information about the item. The element is similar to a **row** in a structural table.

1. The components for <expdur-entry>:

- a. Item number <itemno> (required) (see Section 36.1.4.7). The element is similar to a **cell** in a structural table and is entered in column one.
- b. Lowest maintenance level <maintenance> (required) allowed to use the listed item (see Section 27.4.3.1.2). The element is similar to a **cell** in a structural table and is entered in column two.
- c. National Stock Number (NSN) <nsn> (required) identifies the stock number of the item to be used for requisitioning purposes (see Section 36.1.4.19). The element is similar to a **cell** in a structural table and is entered in column three.
- d. The elements <name>, <desc>, <cageno>, and <partno> is similar to a **cell** in a structural table and is entered in column four.
  - i. Name <name> (required) (see Section 36.1.4.18).
  - ii. Description <desc> (required) (see Section 36.1.4.16).
  - iii. The group containing the part number <partno> and CAGE code <cageno> requires both to be used.
    - I. Part number <partno> (required – one or more) (see Section 36.1.4.22).
    - II. CAGE code <cageno> (required – one or more) (see Section 36.1.4.1.8).
- e. Unit of issue <ui> (required) provides the component size or amount when issued. The element is similar to a **cell** in a structural table and is entered in column five.

2. The DTD fragment for <expdur-entry> is graphically depicted:

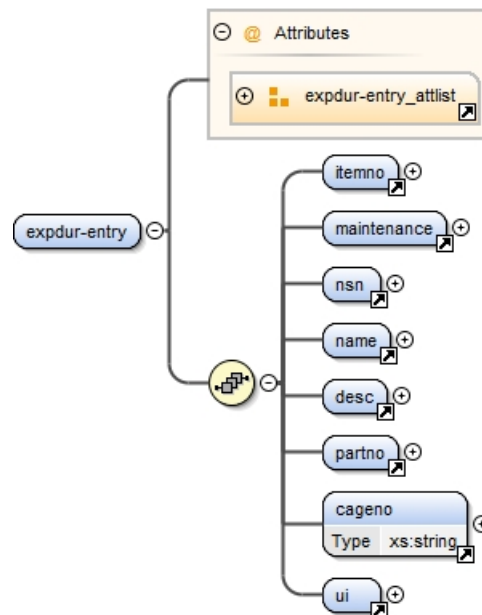


FIGURE 521. AAL entry <expdur-entry> DTD hierarchy.

3. The DTD fragment for <expdur-entry> is:

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```

<!ELEMENT expdur-entry (itemno, maintenance, nsn, name, desc, partno, cage-
no, ui)>
<!ATTLIST expdur-entry
applicable IDREFS #IMPLIED
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>

```

4. Common attributes for **<expdur-entry>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier. (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.8.3 XML document instance fragment and output for expendable and durable items list work package standard information <explistwp>.

The expendable and durable items work package XML markup is shown below and the sample stylesheet output is shown in MIL-STD-40051-1/-2:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```

<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY short.end.item.name "NBCRS FOXM93A1">
<!ENTITY explistwp.intro.level "C=Operator/Crew">

```

2. Example of an XML document instance fragment for expendable and durable items list work package <explistwp>.

```

<explistwp wpno="s00004-X-XXXX-XXX" chngno="0" tocentry="2" frame="yes" army="no" airforce=
"no" navy="no" marines="no" wpseq="0059" deletewp="no">

```

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```

<wpidinfo>
<maintlvl level="unitlvl"/>
<title>Expendable and Durable Items List
</title>
</wpidinfo>&explistwp.intro;
<explist>
<title>Expendable and Durable Items List.
</title>
<expdur-entry>
<itemno>1
</itemno>
<maintenance lvl="c"/>
<nsn>
<fsc>6810
</fsc>
<niin>00-201-0906
</niin>
</nsn>
<name>Alcohol, denatured, 16 ounce bottle
</name>
<desc>Grade III,
</desc>
<partno>O-E-760
</partno>
<cageno>81348
</cageno>
<ui>BT
</ui>
</expdur-entry>
<expdur-entry>
<itemno>2
</itemno>
<maintenance lvl="c"/>
<nsn>
<fsc>8030
</fsc>
<niin>01-138-1666
</niin>
</nsn>
<name>Antiseize Compound,
</name>
<desc>250-gram tube
</desc>
<partno>MIL-T-5544
</partno>
<cageno>81349
</cageno>
<ui>TU
</ui>
</expdur-entry>
<expdur-entry>
<itemno>3
</itemno>
<maintenance lvl="c"/>

```

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```

<nsn>
<fsc>6515
</fsc>
<niin>00-059-5235
</niin>
</nsn>
<name>Applicator,
</name>
<desc>disposable, package of 1000
</desc>
<partno>A-A-30016
</partno>
<cageno>58536
</cageno>
<ui>PK
</ui>
</expdur-entry>
<expdur-entry>
<itemno>4
</itemno>
<maintenance lvl="c"/>
<nsn>
<fsc>8020
</fsc>
<niin>00-224-8024
</niin>
</nsn>
<name>Brush, artist,
</name>
<desc>MTL ferrule, round, tapered point, Type I, camel hair
</desc>
<partno>H-B-118
</partno>
<cageno>81348
</cageno>
<ui>EA
</ui>
</expdur-entry>
<expdur-entry>
<itemno>5
</itemno>
<maintenance lvl="c"/>
<nsn>
<fsc>9150
</fsc>
<niin>01-054-6453
</niin>
</nsn>
<name>Cleaner, Lubricant & Preservation (CLP),
</name>
<desc>1-pint bottle with sprayer
</desc>
<partno>MIL-L-63640
</partno>

```



```
<cageno>81349
</cageno>
<ui>P
</ui>
</expdur-entry>
</explist>
</explistwp>
```

27.9 Tool identification list work package <toolidwp>.

The tool identification list work package is a list of the tools authorized to the levels of maintenance covered in the narrative portion of the TM and referenced in the initial setup of a work package.

- 1. Components for <toolidwp>:
  - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - c. Tool identification introduction <intro> (required) (see Section 27.9.1 and 36.1.4.14).
  - d. Tool identification list <toolidlist> (required) (see Section 27.9.2).
- 2. The DTD fragment for <toolidwp> is graphically depicted:

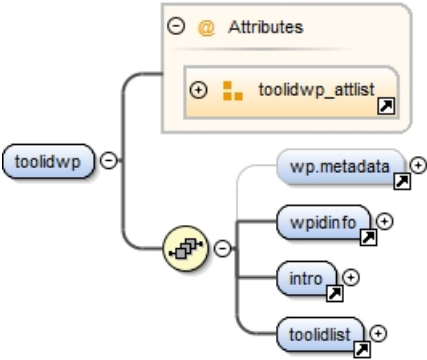


FIGURE 522. Tool Identification list work package DTD hierarchy <toolidwp>.

- 3. The DTD fragment for <toolidwp> is:

```
<!ELEMENT toolidwp (wp.metadata?, wpidinfo, intro, toolidlist)>
<!ATTLIST toolidwp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changelvl (0-9) "0"
 changeref IDREFS #IMPLIED
 chngno (0-99) "0"
 comment CDATA #IMPLIED
 crewmember CDATA #IMPLIED
```

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date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <toolidwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

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- o. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. isa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. security** – Security classification (optional) (see Section 36.3.14).
- u. skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 27.9.1 Tool identification list introduction <intro>.

MIL-STD-40051-1/-2 contains standard statements that are required for the element and appears in the same wording. MIL-STD-2361 uses boilerplates or XML general entities that are a type of replacement text for these standard statements (see Chapter 37). Boilerplates are defined in general entities and any variances are defined by selectable (page-based vs. frame-based) and/or editable (equipment name) entities contained in the XML DTD. Using boilerplates, authors can reduce text entry time and errors and provide the correct standard statement wording. For information on “how to use” general entity boilerplates, and for specific boilerplate usages, refer to Section 37.5 and see TABLE XXVIII.

**TABLE XXVIII. Tool identification list introduction <intro> boilerplate entities.**

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
Tool identification list Introduction	<i>&amp;toolidwp.intro;</i>	
Frame-based		<i>&lt;!ENTITY % frame-base "INCLUDE"&gt;&lt;!ENTITY % page-base "IGNORE"&gt;</i>
Page-based		<i>&lt;!ENTITY % frame-base "IGNORE"&gt;&lt;!ENTITY % page-base "INCLUDE"&gt;</i>
Depot (DMWR/NMWR) Manual		<i>&lt;!ENTITY % toolidwp.dmwr-nmwr "INCLUDE"&gt;&lt;!ENTITY % toolidwp.common "IGNORE"&gt;</i>
Non-Depot (DMWR/NMWR) Manual		<i>&lt;!ENTITY % toolidwp.dmwr-nmwr "IGNORE"&gt;&lt;!ENTITY % toolidwp.common "INCLUDE"&gt;</i>

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TABLE XXVIII. Tool identification list introduction &lt;intro&gt; boilerplate entities. (continued)

Description	Boilerplate Entity	Selectable Entity to Set Editable Entity to Set
End Item Name		<!--ENTITY short.end.item.name "Insert Short End Item Name"-->
Lowest Maintenance Allowed (Remove level that do not apply).		<!--ENTITY explistwp.intro.level "C=Operator/Crew, O = AMC, F = Maintainer/ASB, H = Below depot sustainement, L=TASMG, D = Depot"-->

## 27.9.2 Tool identification list standard information &lt;toolidlist&gt;.

A standard tool identification list includes a tabular listing of all tools required by the initial setup requirements of any procedure in the technical manual.

1. The components for <toolidlist>:
  - a. Standard information title <title> (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
  - b. The tool identification list is displayed by either:
    - i. Grouping components by categories, use the element <tool-category> (required – one or more) (see Section 27.9.2.1).
    - ii. Each component is listed separately, use the element <tool-entry> (required – one or more) (see Section 27.9.2.1.1).
2. The DTD fragment for <toolidlist> is graphically depicted:

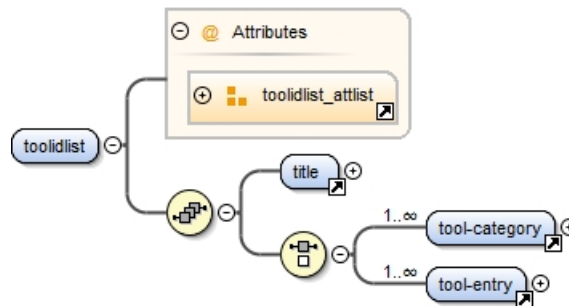


FIGURE 523. Tool identification list information DTD hierarchy &lt;toolidlist&gt;.

3. The DTD fragment for <toolidlist> is:

```
<!ELEMENT toolidlist (title, (tool-category+ | tool-entry+))>
<!ATTLIST toolidlist
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
```

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delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<toolidlist>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.9.2.1 Tool identification list category **<tool-category>**.

If the standard information is subdivided into groups, for example by subassemblies, the category element is used to represent the groups. After the category name is entered, the specific tool identification entry **<tool-entry>** is entered for that category. Usually more than one category is entered in the standard information.

1. The components for **<tool-category>**:
  - a. Category title **<title>** (required) (see Section 36.1.1.4).
  - b. Tool identification entry(s) **<tool-entry>** (required – one or more) (see Section 27.9.2.1.1) for this category.
2. The DTD fragment for **<tool-category>** is graphically depicted.

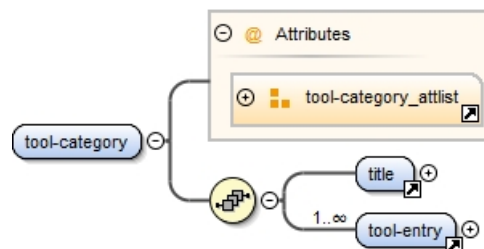


FIGURE 524. Tool Identification category element DTD hierarchy **<tool-category>**.

3. The DTD fragment for **<tool-category>** is:

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```

<!ELEMENT tool-category (title, tool-entry+)>
<!ATTLIST tool-category
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Common attributes for **<tool-category>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.9.2.1.1 Tool identification list entry **<tool-entry>**.

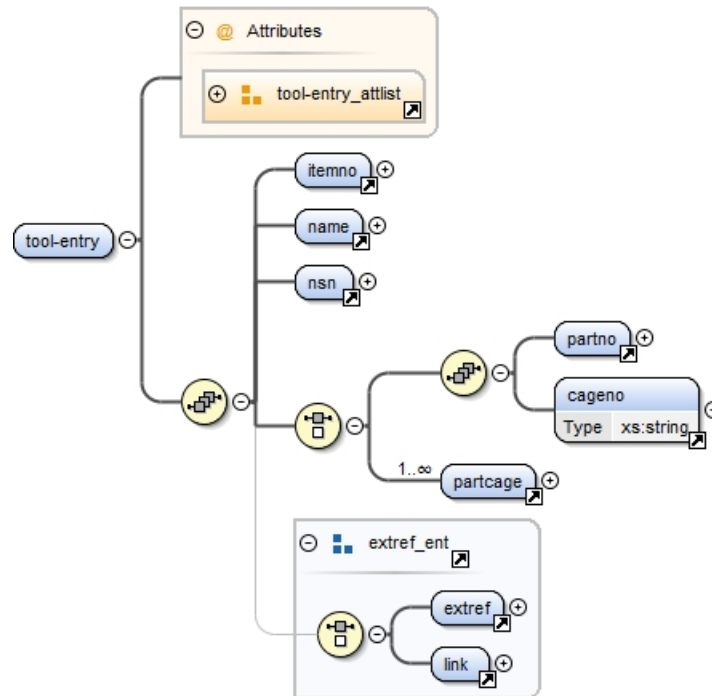
The tool identification list entries contain the specific information about the item. The element is similar to a **row** in a structural table.

1. The components for **<tool-entry>**:

- a. Item number **<itemno>** (required) (see Section 36.1.4.7). The element is similar to a **cell** in a structural table and is entered in column one.
- b. Tool name **<name>** (required) (see Section 36.1.4.18). The element is similar to a **cell** in a structural table and is entered in column two.
- c. National Stock Number (NSN) **<nsn>** (required) identifies the stock number of the item to be used for requisitioning purposes (see Section 36.1.4.19). The element is similar to a **cell** in a structural table and is entered in column three.
- d. Part number and CAGE code is either a single **<partno>** and **<cageno>** or multiple (when the tool has similar form and function) **<partcage>**. The part number and CAGE code are combined into a **cell** in a structural table and is entered in column four.

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- i. Part number **<partno>** (required) (see Section 36.1.4.22).
  - ii. CAGE code **<cageno>** (required) (see Section 36.1.4.1.8).
  - iii. Part number and CAGE code grouping **<partcage>** (required).
  - e. External link (optional) detailed information about the tool using either enhanced link **<link>** (see Section 33.2.3) or external reference **<extref>** (see Section 33.2.1). The element is similar to a **cell** in a structural table and is entered in column five.
2. The DTD fragment for **<tool-entry>** is graphically depicted:

FIGURE 525. Tool entry **<tool-entry>** DTD hierarchy.

3. The DTD fragment for **<tool-entry>** is:

```
<!ELEMENT tool-entry (itemno, name, nsn, ((partno, cageno) | partcage+), (%
extref_ent;?)?)>
```

```
<!ATTLIST tool-entry
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<tool-entry>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.9.3 XML document instance fragment and output for **<toolidwp>**.

The tool identification list work package XML markup is shown below and the sample stylesheet output is shown in MIL-STD-40051-1/-2:

- Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output:

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % toolidwp.dmw-nmwr "IGNORE">
<!ENTITY % toolidwp.common "INCLUDE">
<!ENTITY short.end.item.name "MICLIC">
```

- Example of an XML document instance fragment for a tool identification list work package **<toolidwp>**:

```
<toolidwp wpno="s00006-X-XXXX-XXX" chngno="0" tocentry="2" frame="yes" army="no" airforce="no" navy="no" marines="no" wpseq="0444" deletewp="no">
 <wpidinfo>
 <maintlvl level="unitlvl"/>
 <title>MICLIC
 <brk/>TOOL IDENTIFICATION LIST
 </title>
</wpidinfo>&toolidwp.intro;
<toolidlist>
 <title>MICLIC Tool Identification List
</title>
 <tool-entry>
 <itemno>1
 </itemno>
 <name>Adapter, socket wrench, 1/2 inch-3/4 inch
</name>
 <nsn>
```



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```

<fsc>5120
</fsc>
<niin>00-114-5207
</niin>
<nsn>
<partno>11655788-3
</partno>
<cageno>81349
</cageno>
<extref docno="TM 9-2350-252-20P-1"/>
</tool-entry>
<tool-entry>
<itemno>2
</itemno>
<name>Adapter, socket wrench, 3/8 inch-1/2 inch
</name>
<nsn>
<fsc>5120
</fsc>
<niin>00-240-8703
</niin>
<nsn>
<partno>EX503B
</partno>
<cageno>81349
</cageno>
<extref docno="TM 9-2350-252-20P-1"/>
</tool-entry>
<tool-entry>
<itemno>3
</itemno>
<name>Adapter, test
</name>
<nsn>
<fsc>4910
</fsc>
<niin>01-138-9334
</niin>
<nsn>
<partno>11629693-1
</partno>
<cageno>81349
</cageno>
<extref docno="TM 9-1250-252-20P-1"/>
</tool-entry>
<tool-entry>
<itemno>4
</itemno>
<name>Adapter, test
</name>
<nsn>
<fsc>4910
</fsc>
<niin>01-138-9335

```

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```

</niin>
</nsn>
<partno>11629693-2
</partno>
<cageno>81349
</cageno>
<extref docno="TM 9-2350-252-20P-1"/>
</tool-entry>
<tool-entry>
<itemno>5
</itemno>
<name>Adapter, torque wrench, 1/2 inch drive, 1/2 inch
</name>
<nsn>
<fsc>5120
</fsc>
<niin>00-399-1157
</niin>
</nsn>
<partno>2588756
</partno>
<cageno>81349
</cageno>
<extref docno="TM 9-2350-252-20P-1"/>
</tool-entry>
<tool-entry>
<itemno>6
</itemno>
<name>Adapter, torque wrench, 1/2 inch drive, 3/4 inch
</name>
<nsn>
<fsc>5120
</fsc>
<niin>00-399-1154
</niin>
</nsn>
<partno>2588757
</partno>
<cageno>81349
</cageno>
<extref docno="TM 9-2350-252-20P-1"/>
</tool-entry>
<tool-entry>
<itemno>7
</itemno>
<name>Adapter, torque wrench, 1/2 inch drive, 5/16 inch
</name>
<nsn>
<fsc>5120
</fsc>
<niin>01-115-1891
</niin>
</nsn>
<partno>12298105-1

```

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```

</partno>
<cageno>81349
</cageno>
<extref docno="TM 9-2350-252-20P-1"/>
</tool-entry>
<tool-entry>
<itemno>8
</itemno>
<name>Adapter, torque wrench, 1/2 inch drive, 15/16 inch
</name>
<nsn>
<fsc>5120
</fsc>
<niin>00-215-8200
</niin>
</nsn>
<partno>11663358-2
</partno>
<cageno>81349
</cageno>
<extref docno="TM 9-2350-252-20P-1"/>
</tool-entry>
<tool-entry>
<itemno>9
</itemno>
<name>Adjusting tool, belt
</name>
<nsn>
<fsc>4910
</fsc>
<niin>01-128-2670
</niin>
</nsn>
<partno>3375058
</partno>
<cageno>81349
</cageno>
<extref docno="TM 9-2350-252-20P-1"/>
</tool-entry>
<tool-entry>
<itemno>10
</itemno>
<name>Bit, screwdriver, 1/4 inch drive
</name>
<nsn>
<fsc>5120
</fsc>
<niin>00-316-9228
</niin>
</nsn>
<partno>TMC105A
</partno>
<cageno>81349
</cageno>

```

```

<extref docno="TM 9-2350-252-20P-1"/>
</tool-entry>
</toolidlist>
</toolidwp>

```

## 27.10 Mandatory Replacement Parts List (MRPL) work package <mrplwp>.

MRPL work package contains the mandatory replacement parts referenced in the task initial setups and procedural text.

### 1. Components for <mrplwp>:

- a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
- b. Work package identification information <wpidinfo> (required) (see Section 16.2).
- c. Introduction <intro> (required) (see Section 27.8.1 and Section 36.1.4.14).
- d. Mandatory replacement parts list <mrpl> (required) (see Section 27.10.1).

### 2. The DTD fragment for <mrplwp> is graphically depicted:

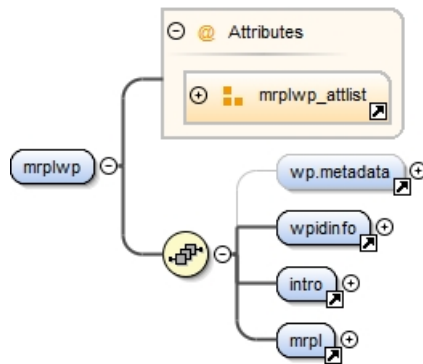


FIGURE 526. Mandatory replacement parts list work package <mrplwp> DTD hierarchy.

### 3. The DTD fragment for <mrplwp> is:

```

<!ELEMENT mrplwp (wp.metadata?, wpidinfo, intro, mrpl)>
<!ATTLIST mrplwp
 airforce (yes | no) "no"
 army (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changelvl (0-9) "0"
 changeref IDREFS #IMPLIED
 chngno (0-99) "0"
 comment CDATA #IMPLIED
 crewmember CDATA #IMPLIED
 date-time-stamp (date | time | date-
 time) #IMPLIED
 delchlvl (0-99) "0"

```

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deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for **<mrplwp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chngno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **"yes"**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 27.10.1 Mandatory Replacement Parts List (MRPL) <mrpl>.

The element lists the mandatory replacement parts referenced in the work package initial setup.

1. The components for <mrpl>:
  - a. Standard information title <title> (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
  - b. The MRPL is displayed by either:
    - i. Grouping components by categories, use the element <mrpl-category> (required – one or more) (see Section 27.10.1.1).
    - ii. Each components is listed separately, use the element <mrpl-entry> (required – one or more) (see Section 27.10.1.1.1).
2. The DTD fragment for <mrpl> is graphically depicted:

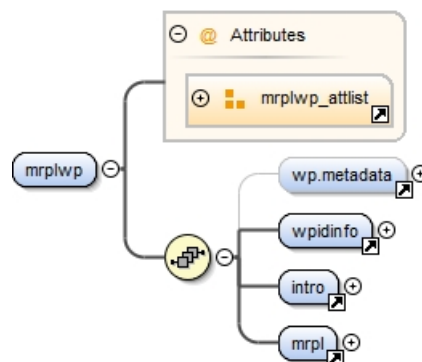


FIGURE 527. Mandatory Replacement Parts List (MRPL) standard information DTD hierarchy <mrpl>.

3. The DTD fragment for <mrpl> is:

## MIL-HDBK-2361D

```

<!ELEMENT mrpl (title, (mrpl-category+ | mrpl-entry+))>
<!ATTLIST mrpl
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 tocentry (0 | 1 | 2 | 3 | 4 | 5 |) "1">

```

#### 4. Common attributes for **<mrpl>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – In the TM table of contents indicate the indenture level. The possible selection is **0** do not include, **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default value is **1**) (see Section 16.3.6).

#### 27.10.1.1 MRPL category **<mrpl-category>**.

If the standard information is subdivided into groups, for example by subassemblies, the category element is used to represent the groups. After the category name is entered, the specific MRPL entries **<mrpl-entry>** are entered for that category. Usually more than one category is entered in the standard information.

##### 1. The components for **<mrpl-category>**:

- a. Category title **<title>** (required) (see Section 36.1.1.4).
- b. MRPL entry(s) **<mrpl-entry>** (required – one or more) (see Section 27.10.1.1.1) for this category.

##### 2. The DTD fragment for **<mrpl-category>** is graphically depicted.



FIGURE 528. Mandatory Replacement Parts List (MRPL) category <mrpl-category> DTD hierarchy.

3. The DTD fragment for <mrpl-category> is:

```
<!ELEMENT mrpl-category (title, mrpl-entry+)>
```

4. No attributes for <mrpl-category>.

#### 27.10.1.1.1 MRPL entry <mrpl-entry>.

The MRPL entries contain the specific information about the item. The element is similar to a **row** in a structural table.

1. The components for <mrpl-entry>:
  - a. Item number <itemno> (required) (see Section 36.1.4.7). The element is similar to a **cell** in a structural table and is entered in column one.
  - b. The part number and CAGE code are combined into a **cell** in a structural table and entered in column two.
    - i. Part number <partno> (required) (see Section 36.1.4.22).
    - ii. CAGE code <cageno> (required) (see Section 36.1.4.1.8).
  - c. National Stock Number (NSN) <nsn> (required) identifies the stock number of the item to be used for requisitioning purposes (see Section 36.1.4.19). The element is similar to a **cell** in a structural table and is entered in column three.
  - d. Part name <name> (required) (see Section 36.1.4.18). The element is similar to a **cell** in a structural table and is entered in column four.
  - e. Quality <qty> (required) (see Section 36.1.4.8). The element is similar to a “cell” in a structural table and is entered in column five.
2. The DTD fragment for <mrpl-entry> is graphically depicted:

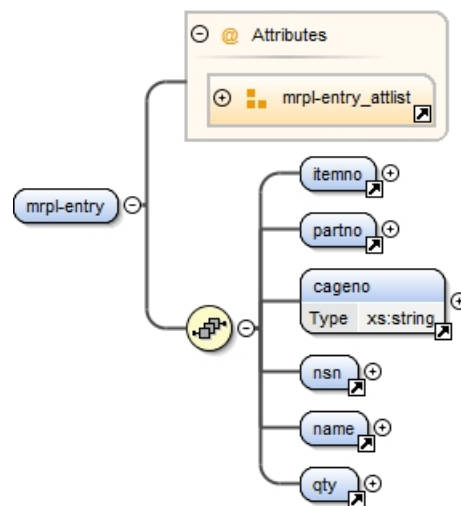


FIGURE 529. MRPL entry <mrpl-entry> DTD hierarchy.



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3. The DTD fragment for **<mrpl-entry>** is:

```

<!ELEMENT mrpl-entry (itemno, partno, cageno, nsn, name, qty)>
<!--ATTLIST mrpl-entry
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED-->

```

4. Common attributes for **<mrpl-entry>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.10.2 XML document instance fragment and output for **<mrplwp>**.

The MRPL work package XML markup is shown below and the sample stylesheet output is shown in MIL-STD-40051-1/-2:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```

<!--ENTITY % frame-base "IGNORE"-->
<!--ENTITY % page-base "INCLUDE"-->

```

2. Example of an XML document instance fragment for **<mrplwp>**:

```

<mrplwp wpno="s00009-X-XXXX-XXX" chngno="0" tocentry="2" frame="yes" army="no" airforce=
"no" navy="no" marines="no" wpseq="0446" deletewp="no">
 <wpidinfo>
 <maintlvl level="unitlvl"/>
 <title>Mandatory Replacement Parts List
 </title>

```

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```

</wpidinfo>
<intro frame="no">
<para0>
<title>MANDATORY REPLACEMENT PARTS LIST
</title>
<para>This work package includes a list of all mandatory replacement parts
referenced in the task initial setups and procedures. These are items that must
be replaced during maintenance whether they have failed or not. This includes
items based on usage intervals such as miles, time, rounds, fired, etc.
</para>
</para0>
</intro>
<mrpl tocentry="1">
<title>Mandatory Replacement Parts List
</title>
<mrpl-entry>
<itemno>1
</itemno>
<partno>12286941
</partno>
<cageno>19207
</cageno>
<nsn>
<fsc>2940
</fsc>
<niin>01-086-1605
</niin>
</nsn>
<name>Filter assembly (part of kit, P/N 5705132)
</name>
<qty>1
</qty>
</mrpl-entry>
<mrpl-entry>
<itemno>2
</itemno>
<partno>M83248/1-014
</partno>
<cageno>81349
</cageno>
<nsn>
<fsc>5330
</fsc>
<niin>00-166-0990
</niin>
</nsn>
<name>Preformed packing (item 54 is part of kit, P/N 5705132)
</name>
<qty>4
</qty>
</mrpl-entry>
<mrpl-entry>
<itemno>3
</itemno>

```

## MIL-HDBK-2361D

<partno>M83248/1-115  
</partno>  
<cageno>81349  
</cageno>  
<nsn>  
<fsc>5330  
</fsc>  
<niin>00-166-1066  
</niin>  
</nsn>  
<name>Preformed packing  
</name>  
<qty>2  
</qty>  
</mrpl-entry>  
<mrpl-entry>  
<itemno>4  
</itemno>  
<partno>M83248/1-904  
</partno>  
<cageno>81349  
</cageno>  
<nsn>  
<fsc>5330  
</fsc>  
<niin>00-020-0203  
</niin>  
</nsn>  
<name>Preformed packing  
</name>  
<qty>5  
</qty>  
</mrpl-entry>  
<mrpl-entry>  
<itemno>5  
</itemno>  
<partno>M83248/1-905  
</partno>  
<cageno>81349  
</cageno>  
<nsn>  
<fsc>5330  
</fsc>  
<niin>00-167-5166  
</niin>  
</nsn>  
<name>Preformed packing  
</name>  
<qty>2  
</qty>  
</mrpl-entry>  
<mrpl-entry>  
<itemno>6  
</itemno>

## MIL-HDBK-2361D

<partno>M83248/1-906  
</partno>  
<cageno>81349  
</cageno>  
<nsn>  
<fsc>5330  
</fsc>  
<niin>00-020-0186  
</niin>  
</nsn>  
<name>Preformed packing  
</name>  
<qty>2  
</qty>  
</mrpl-entry>  
<mrpl-entry>  
<itemno>7  
</itemno>  
<partno>M83248/1-908  
</partno>  
<cageno>81349  
</cageno>  
<nsn>  
<fsc>5330  
</fsc>  
<niin>00-020-0105  
</niin>  
</nsn>  
<name>Preformed packing  
</name>  
<qty>3  
</qty>  
</mrpl-entry>  
<mrpl-entry>  
<itemno>8  
</itemno>  
<partno>M83248/1-910  
</partno>  
<cageno>81349  
</cageno>  
<nsn>  
<fsc>5330  
</fsc>  
<niin>00-020-0067  
</niin>  
</nsn>  
<name>Preformed packing  
</name>  
<qty>3  
</qty>  
</mrpl-entry>  
<mrpl-entry>  
<itemno>9  
</itemno>

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```

<partno>M83248/1-916
</partno>
<cageno>81349
</cageno>
<nsn>
<fsc>5330
</fsc>
<niin>00-165-4565
</niin>
<nsn>
<name>Preformed packing
</name>
<qty>1
</qty>
</mrpl-entry>
<mrpl-entry>
<itemno>10
</itemno>
<partno>MS35333-39
</partno>
<cageno>96906
</cageno>
<nsn>
<fsc>5310
</fsc>
<niin>00-576-5752
</niin>
<nsn>
<name>Lockwasher
</name>
<qty>4
</qty>
</mrpl-entry>
</mrpl>
</mrplwp>

```

## 27.11 Critical Safety Items (CSI) work package <csi.wp>.

The CSI work package contains a listing of all critical safety items. The <csi.wp> is a combination of Flight Safety Critical Aircraft Parts (FSCAP) and the existing critical safety items. DoD and Army policy has been modified to combine the two.

1. The components for <csi.wp>:
  - a. Work package metadata (information about the work package <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - c. Critical Safety Items (CSI) <csi> (required – one or more) (see Section 27.11.1).
2. The DTD fragment for <csi.wp> is graphically depicted.

## MIL-HDBK-2361D

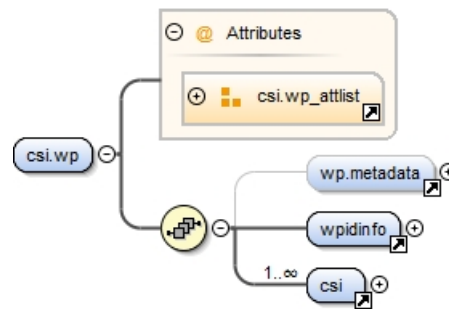


FIGURE 530. CSI work package &lt;csi.wp&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;csi.wp&gt; is:

```
<!ELEMENT csi.wp (wp.metadata?, wpidinfo, csi+)>
```

```
<!ATTLIST csi.wp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

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4. Common attributes for **<csi.wp>**:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnyno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 27.11.1 Critical Safety Items (CSI) <csi>.

The element identifies the CSI and associated characteristic(s) within overhaul/repair procedures. The location of the critical safety procedures or processes within the depot maintenance work packages is referenced.

1. The components for <csi>:
  - a. An introduction <intro> (optional) (see Section 36.1.4.14).
  - b. A critical safety items table <csi.tab> (required) (see Section 27.11.1.1).
2. The DTD fragment for <csi> is graphically depicted:

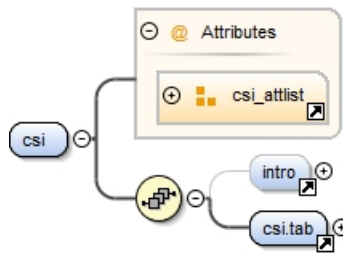


FIGURE 531. Critical Safety Items (CSI) <csi> DTD hierarchy.

3. The DTD fragment for <csi> is:

```

<!ELEMENT csi (intro?, (csi.tab))>
<!ATTLIST csi
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Common attributes for <csi>:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier. (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).



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- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 27.11.1.1 Critical safety items table <csi.tab>.

The CSI standard information table lists all critical safety items by nomenclature <name>, part number <partno>, CAGE <cageno>, and critical characteristic <desc>.

1. The components for <csi.tab>:
  - a. Standard information title <title> (required) (see Section 36.1.1.4). When standard information is represented in tabular format, do not include the table number, this is generated by the stylesheet.
  - b. FSCAP entry(s) <csi-entry> (required – one or more) (see Section 27.11.1.1.1).
2. The DTD fragment for <csi.tab> is graphically depicted:

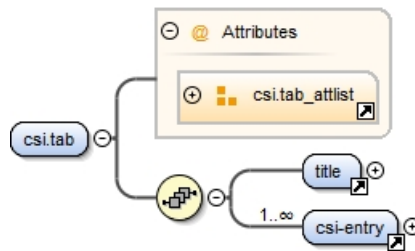


FIGURE 532. CSI standard information <csi.tab> DTD hierarchy.

3. The DTD fragment for <csi.tab> is:

```
<!ELEMENT csi.tab (title, csi-entry+)>
<!ATTLIST csi.tab
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Common attributes for <csi.tab>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).

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- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 27.11.1.1.1 Critical safety item entry(s) <csi-entry>.

The CSI entries contain the specific information and characteristic about the item. The element is similar to a **row** in a structural table and it is similar to a **row** in a structural table.

1. The components for <csi-entry>:

- a. Item name <name> (required) (see Section 36.1.4.18). The element is similar to a **cell** in a structural table and is entered in column one.
- b. The part number and CAGE code are combined into a **cell** in a structural table and is entered in column two.
  - i. Part number <partno> (required) (see Section 36.1.4.22).
  - ii. CAGE code <cageno> (required) (see Section 36.1.4.1.8).
- c. Item characteristic description <desc> (required) (see Section 36.1.4.16). The element is similar to a **cell** in a structural table and is entered in column three.

2. The DTD fragment for <csi-entry> is graphically depicted:

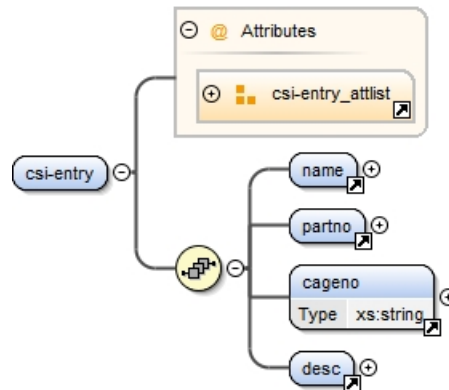


FIGURE 533. CSI Entry <csi-entry> DTD hierarchy.

3. The DTD fragment for <csi-entry> is:

```

<!ELEMENT csi-entry (name, partno, cageno, desc)>
<!ATTLIST csi-entry
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED

```

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inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<csi-entry>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

27.11.2 XML document instance fragment and output for **<csi.tab>**.

The FSCAP standard information XML markup is shown below and the sample stylesheet output is shown in MIL-STD-40051-1/-2:

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
```

2. Example of an XML document instance fragment for **<csi.tab>**:

```
<csi.tab>
<title>Critical Safety Items (CSI)
</title>
<csi-entry>
<name>Cluster Gear
</name>
<partno>7-211310027-3
</partno>
<cageno>02731
</cageno>
<desc>Process core and surface hardness.
</desc>
</csi-entry>
<csi-entry>
<name>Spur Gear
</name>
<partno>7-113100029-3
</partno>
<cageno>02731
</cageno>
<desc>Dimensions and contour of root area.
```

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```

</desc>
</csi-entry>
<csi-entry>
<name>Nut
</name>
<partno>7-113100121-3
</partno>
<cageno>02731
</cageno>
<desc>Process surface hardness.
</desc>
</csi-entry>
<csi-entry>
<name>Spindle
</name>
<partno>7-113100141-3
</partno>
<cageno>02731
</cageno>
<desc>Process core hardness.
</desc>
</csi-entry>
<csi-entry>
<name>Carrier Hub
</name>
<partno>7-311310016-3
</partno>
<cageno>02731
</cageno>
<desc>Process core and surface hardness.
</desc>
</csi-entry>
<csi-entry>
<name>Gearshaft
</name>
<partno>7-211310035-3
</partno>
<cageno>02731
</cageno>
<desc>Process core and surface hardness.
</desc>
</csi-entry>
<csi-entry>
<name>Gearshaft
</name>
<partno>7-211310039-5
</partno>
<cageno>02731
</cageno>
<desc>Process core and surface hardness.
</desc>
</csi-entry>
<csi-entry>
<name>Gear

```

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```

</name>
<partno>7-311310025-3
</partno>
<cageno>02731
</cageno>
<desc>Process core and surface hardness.
</desc>
</csi-entry>
</csi.tab>

```

## 27.12 Support items work package <supitemwp>.

The Support Items Work Package is used when the data contained in the supporting information work packages are minimal and the development of a separate work package is not required. The Support Items Work Package contains the applicable supporting lists.

1. The components for <supitemwp>:
  - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - c. Support items introduction <intro> (optional) (see Section 36.1.4.14). A brief introduction may be entered to describe the support items being shown and including entry information for the applicable standard information (see Section 27.12.1).
  - d. Components of End Item (COEI) standard information <coei> (optional) (see Section 27.5.1.2).
  - e. Basic Issue Items (BII) standard information <bii> (optional) (see Section 27.5.1.3).
  - f. Additional Authorization List (AAL) standard information <aal> (optional) (see Section 27.6.2).
  - g. Expendable and durable items standard information <explist> (optional) (see Section 27.8.2).
  - h. Tool identification standard information <toolidlist> (optional) (see Section 27.9.2).
  - i. Mandatory Replacement Parts List (MRPL) standard information <mrpl> (optional) (see Section 27.10.1).
  - j. Critical Safety Items (CSI) description <csi> (optional) (see Section 27.11.1).
2. The DTD fragment for <supitemwp> is graphically depicted.

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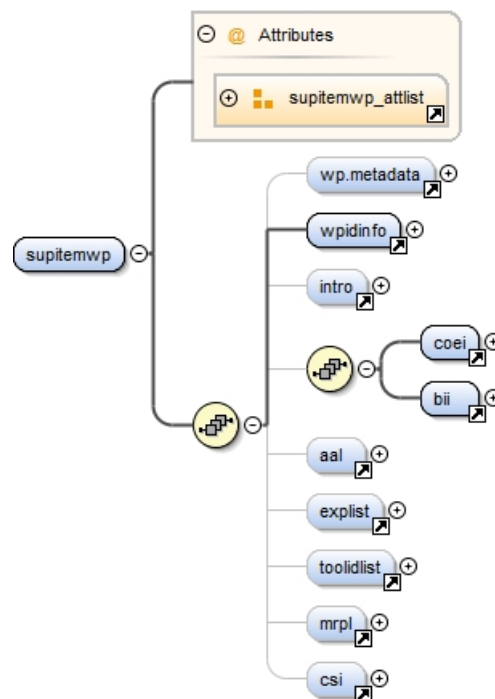


FIGURE 534. Support items work package DTD hierarchy &lt;supitemwp&gt;.

## 3. The DTD fragment for &lt;supitemwp&gt; is:

```
<!ELEMENT supitemwp (wp.metadata?, wpidinfo, intro?, (coei, bii)?, aal?,
explist?, toolidlist?, mrpl?, csi?)>
```

```
<!ATTLIST supitemwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"
changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"

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insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

## 4. Common attributes for &lt;supitemwp&gt;:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnghno** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date–time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).
- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).

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- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 27.12.1 Supporting items work package introduction tailoring.

The text from the introduction can be copied from the boilerplate entity file (simboil.ent) and used. All selectable entity references (marked sections such as:

```
<![%page-base; [. . .]])
```

in the editboil.ent file are removed and only the text for the type of information being used is copied. An example for a frame-base manual the selectable entity would be:

```
%frame-base;
```

```
Entry
```

```
%page-base;
```

```
Column
```

the information in *% page-base;* would be removed and the only text remaining is “Entry.”

### 27.12.2 XML document instance fragment and output for <supitemwp>.

The XML instance and its stylesheet output for a support items work package <supitemwp> that consists of a combined introduction <intro> COEI standard information <coei> expendable and durable items standard information <explist> and a MRPL standard information <mrpl>.

1. Example of an XML document instance fragment for selectable and editable entity to generate the correct text in the sample output.

```
<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
<!ENTITY % uoc-list "INCLUDE">
<!ENTITY short.end.item.name "M198 howitzer">
<!ENTITY intro.uoc-list ' %uoc-list;
```

```
<deflist>
<title.term.def>
<title>Code
</title>
<title>Used on
</title>
</title.term.def>
<term.def id="uoc.PAA">
<term>PAA
</term>
<def>
<para>Model XXX
</para>
```



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```

</def>
</term.def>
<term.def id="uoc.PAB">
<term>PAB
</term>
<def>
<para>Model XXXX
</para>
</def>
</term.def>
<term.def id="uoc.PAC">
<term>PAC
</term>
<def>
<para>Model XXXXX
</para>
</def>
</term.def>
</deflist>
'>

```

2. Example of an XML document instance fragment for a Support Items Work Package <supitemwp>.

```

<supitemwp wpno="s00010-X-XXXX-XXX" chngno="0" tocentry="2" frame="yes" army="no"
airforce="no" navy="no" marines="no" wpseq="0446" deletewp="no">
<wpidinfo>
<maintlvl level="unitlvl"/>
<title>Support items work package
</title>
</wpidinfo>
<!-- Combined introduction into the work package. Uses parts from the general entities &coeibiwp.intro;
and &expdurwp.intro;-->
<intro>
<para0>
<title>INTRODUCTION
</title>
<subpara1>
<title>Scope
</title>
<para>This work package lists Components of End Item (COEI), expendable and
durable items, and Mandatory Replacement Parts lists for the &short.end.item.name;
to help you inventory items for safe and efficient operation of the
equipment.
</para>
</subpara1>
<subpara1>
<title>General
</title>
<para>The COEI, expendable and durable items, and MRPL information is divided
into the following lists:
</para>
<subpara2>
<title>Components of End Item (COEI) .
</title>

```

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**<para>**This list is for information purposes only and is not authority to requisition replacements. These items are part of the **&short.end.item.name;**. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

**</para>**

**</subpara2>**

**<subpara2>**

**<title>**Expendable and durable items.

**</title>**

**<para>**These items are authorized to you by

**<extref docno="CTA 50-970" posttext=", Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items)"/>**,

**<extref docno="CTA 50-909" posttext=", Field and Garrison Furnishings and Equipment"/>**or

**<EXTREF DOCNO="CTA 8-100" POSTTEXT=", ARMY MEDICAL DEPARTMENT EXPENDABLE/DURABLE ITEMS"/>**.

**</PARA>**

**</SUBPARA2>**

**<SUBPARA2>**

**<TITLE>**Mandatory Replacement Parts List (MRPL).

**</title>**

**<para>**These items are all mandatory replacement parts referenced in the task initial setups and procedures. These are items that must be replaced during maintenance whether they have failed or not. This includes items based on usage intervals such as miles, time, rounds, fired, etc.

**</para>**

**</subpara2>**

**</subpara1>**

**<subpara1>**

**<title>**Explanation of Columns in the COEI List

**</title>**

**<para>**Column (1) Illus Number. Gives you the number of the item illustrated.

**</para>**

**<para>**Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

**</para>**

**<para>**Column (3) Description, Part Number/ (CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this entry. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

**</para>**

**<para>**Column (4) Usable on Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. **%intro.uoc;**

**</para>**

**<para>**Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in Column (2).

**</para>**

**<para>**Column (6) Qty Rqr. Indicates the quantity required.

**</para>**

**</subpara1>**

**<subpara1>**

**<title>**Explanation of Columns in the Expendable/Durable Items List.

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&lt;/title&gt;

<para>Column (1) Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (Use brake fluid (WP 0098, item 5)).

&lt;/para&gt;

<para>Column (2) Level. This entry identifies the lowest level of maintenance that requires the listed item: **&explistwp.intro.level;**

&lt;/para&gt;

<para>Column (3) National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

&lt;/para&gt;

<para>Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

&lt;/para&gt;

<para>Column (5) U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

&lt;/para&gt;

&lt;/subpara1&gt;

&lt;/para0&gt;

&lt;/intro&gt;

&lt;!-- COEI standard information--&gt;

&lt;coei&gt;

&lt;graphic boardno="coei" unitmeasure="in"&gt;

&lt;/graphic&gt;

&lt;coeitab&gt;

&lt;title&gt;Components of End Item List.

&lt;/title&gt;

&lt;coei-entry&gt;

&lt;illno&gt;1

&lt;/illno&gt;

&lt;nsn&gt;

&lt;fsc&gt;1005

&lt;/fsc&gt;

&lt;niin&gt;00-706-8880

&lt;/niin&gt;

&lt;/nsn&gt;

&lt;dcjno&gt;

&lt;name&gt;MOUNT, MACHINE GUN 1:cal..50

&lt;/name&gt;

&lt;desc&gt;(in mount on cupola)

&lt;/desc&gt;

&lt;partno&gt;7068880

&lt;/partno&gt;

&lt;cageno&gt;19204

&lt;/cageno&gt;

&lt;uoc&gt;PAA

&lt;/uoc&gt;

&lt;/dcjno&gt;

&lt;ui&gt;EA

&lt;/ui&gt;

&lt;qty&gt;1

&lt;/qty&gt;

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```

</coei-entry>
<coei-entry>
<illno>2
</illno>
<nsn>
<fsc>1240
</fsc>
<niin>00-344-4643
</niin>
</nsn>
<dcjno>
<name>PERISCOPE:M27 (chief of section)
</name>
<desc>(stowage box cab wall)
</desc>
<partno>7633132
</partno>
<cageno>19200
</cageno>
<uoc>PAA
</uoc>
</dcjno>
<ui>EA
</ui>
<qty>1
</qty>
</coei-entry>
</coeitab>
</coei>
<!-- Expendable and durable standard information-->
<explist>
<title>Expendable and Durable Items List.
</title>
<expdur-entry>
<itemno>1
</itemno>
<maintenance lvl="c"/>
<nsn>
<fsc>6810
</fsc>
<niin>00-201-0906
</niin>
</nsn>
<name>Alcohol, denatured,
</name>
<desc>Grade III, 16 ounce bottle
</desc>
<partno>O-E-760
</partno>
<cageno>81348
</cageno>
<ui>BT
</ui>
</expdur-entry>

```

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```

<expdur-entry>
<itemno>2
</itemno>
<maintenance lvl="c"/>
<nsn>
<fsc>8030
</fsc>
<niin>01-138-1666
</niin>
</nsn>
<name>Antiseize Compound,
</name>
<desc>250-gram tube
</desc>
<partno>MIL-T-5544
</partno>
<cageno>81349
</cageno>
<ui>TU
</ui>
</expdur-entry>
</explist>
<!-- MRPL standard information-->
<mrpl tocentry="1">
<title>Mandatory Replacement Parts List
</title>
<mrpl-entry>
<itemno>1
</itemno>
<partno>12286941
</partno>
<cageno>19207
</cageno>
<nsn>
<fsc>2940
</fsc>
<niin>01-086-1605
</niin>
</nsn>
<name>Filter assembly (part of kit, P/N 5705132)
</name>
<qty>1
</qty>
</mrpl-entry>
<mrpl-entry>
<itemno>2
</itemno>
<partno>M83248/1-014
</partno>
<cageno>81349
</cageno>
<nsn>
<fsc>5330
</fsc>

```

## MIL-HDBK-2361D

```
<niin>00-166-0990
</niin>
</nsn>
<name>Preformed packing (item 54 is part of kit, P/N 5705132
</name>
<qty>4
</qty>
</mrpl-entry>
</mrpl>
</supitemwp>
```

3. Example of a page-based TM stylesheet output for Support Items Work Package **<supitemwp>**.

## MIL-HDBK-2361D

0001

**CREW****SUPPORT ITEMS WORK PACKAGE****INTRODUCTION****Scope**

This work package lists Components of End Item (COEI), expendable and durable items, and Mandatory Replacement Parts lists for the name; to help you inventory items for safe and efficient operation of the equipment.

**General**

The COEI, expendable and durable items, and MRPL information is divided into the following lists:

**Components of End Item (COEI).** This list is for information purposes only and is not authority to requisition replacements. These items are part of the INSERT THE SHORT END ITEM NAME. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

**Expendable and durable items.** These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 50-970, Army Medical Department Expendable/Durable Items.

**Mandatory Replacement list (mrpl).** These items are all mandatory replacement parts referenced in the task initial setups and procedures. These are items that must be replaced during maintenance whether they have failed or not. This includes items based on usage intervals such as miles, time, rounds, fired, etc.

**Explanation of Columns in the COEI List**

Column (1) Illus Number. Gives you the number of the item illustrated.

Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this entry. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) Usable on Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. %intro.uoc;

Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in Column (2).

Column (6) Qty Rqr. Indicates the quantity required.

**Explanation of Columns in the Expendable/Durable Items List.**

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (Use brake fluid (W/P 0098, item 5)).

Column (2) Level. This entry identifies the lowest level of maintenance that requires the listed item: C = Crew, O = AMC, F = Maintainer or ASB, H = Below Depot or TASMG, D = Depot

Column (3) National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

0001-1

**FIGURE 535. Example of a page-based TM stylesheet output for <supitemwp> (Page 1 of 2).**

## MIL-HDBK-2361D

0001

**CREW****SUPPORT ITEMS WORK PACKAGE****INTRODUCTION****Scope**

This work package lists Components of End Item (COEI), expendable and durable items, and Mandatory Replacement Parts lists for the name; to help you inventory items for safe and efficient operation of the equipment.

**General**

The COEI, expendable and durable items, and MRPL information is divided into the following lists:

**Components of End Item (COEI).** This list is for information purposes only and is not authority to requisition replacements. These items are part of the INSERT THE SHORT END ITEM NAME. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

**Expendable and durable items.** These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V Repair Parts, and Heraldic Items), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 50-970, Army Medical Department Expendable/Durable Items.

**Mandatory Replacement list (mrpl).** These items are all mandatory replacement parts referenced in the task initial setups and procedures. These are items that must be replaced during maintenance whether they have failed or not. This includes items based on usage intervals such as miles, time, rounds, fired, etc.

**Explanation of Columns in the COEI List**

Column (1) Illus Number. Gives you the number of the item illustrated.

Column (2) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.

Column (3) Description, Part Number/(CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this entry. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) Usable on Code. When applicable, gives you a code if the item you need is not the same for different models of equipment. %intro.uoc;

Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in Column (2).

Column (6) Qty Rqr. Indicates the quantity required.

**Explanation of Columns in the Expendable/Durable Items List.**

Column (1) Item No. This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (Use brake fluid (W/P 0098, item 5)).

Column (2) Level. This entry identifies the lowest level of maintenance that requires the listed item: C = Crew, O = AMC, F = Maintainer or ASB, H = Below Depot or TASMG, D = Depot

Column (3) National Stock Number (NSN). This is the NSN assigned to the item which you can use to requisition it.

Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

0001-1

**FIGURE 536. Example of a page-based TM stylesheet output for <supitemwp> (Page 2 of 2).**



### 27.13 Additional generic work package(s) <genwp>.

The generic work package contains work packages that do not fit the content-specific work packages. There may be more than one additional generic work package contained in the supporting information chapter, and all would occur at the end of the supporting information chapter.

1. The components for <genwp> are:
  - a. Work package metadata (information about the work package) <wp.metadata> (optional) (see Section 16.4.1).
  - b. Work package identification information <wpidinfo> (required) (see Section 16.2).
  - c. Work package initial setup <initial\_setup> (required) (see Section 16.6).
  - d. One of the following elements is required by the DTD:
    - i. A single procedure <proc> (see Section 17.2).
    - ii. Descriptive or narrative titled text <para0> (see Section 36.1.1.9) and/or conditional narrative titled text first level <para0-alt> (see Section 35.2.1).
2. The DTD fragment for <genwp> is graphically depicted.

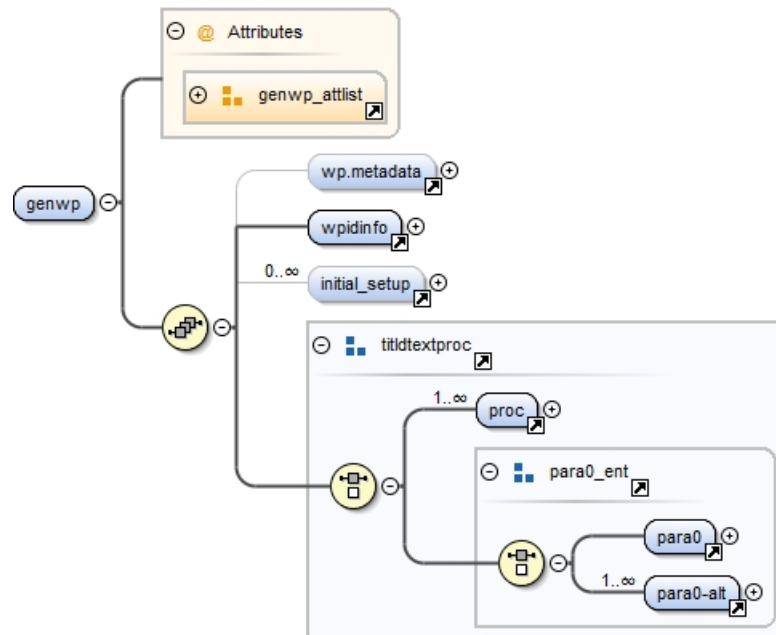


FIGURE 537. Additional generic work package DTD hierarchy <genwp>.

3. The DTD fragment for <genwp> is:

```
<!ELEMENT genwp (wp.metadata?, wpidinfo, initial_setup*, (%titldtext-
proc;))>
```

```
<!ATTLIST genwp
```

airforce	(yes   no)	"no"
army	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changelvl	(0-9)	"0"

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changeref	IDREFS	#IMPLIED
chnгно	(0-99)	"0"
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
date-time-stamp	(date   time   date-time)	#IMPLIED
delchlvl	(0-99)	"0"
deletewp	(yes   no)	"no"
fgc	CDATA	#IMPLIED
frame	(yes   no)	"yes"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
insertwp	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
marines	(yes   no)	"no"
navy	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(2   3   4   5)	"2"
wpno	ID	#REQUIRED
wpseq	CDATA	#IMPLIED>

#### 4. Common attributes for <genwp>:

- a. **airforce** – Indicates the work package pertains only to the U.S. Air Force (default value is **no**) (see Section 16.3.5).
- b. **army** – Indicates the work package pertains only to the U.S. Army (default is **no**) (see Section 16.3.5).
- c. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- d. **changelvl** – Specifies the change level (optional) (see Section 36.3.12).
- e. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- f. **chnгно** – Change number (required) (see Section 36.3.12).
- g. **comment** – Change information (optional) (see Section 36.3.12).
- h. **crewmember** – Indicates the information that pertains to a specific crewmember (optional) (see Section 16.3.1).
- i. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp (optional).
- j. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- k. **deletewp** – Specifies the work package has been deleted (default value is **no**) (see Section 36.3.12).

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- l. **fgc** – Specifies the functional group code that applies to the subject of the element (optional) (see Section 16.3.2).
- m. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **insertwp** – Specifies the new work package change sequence number (point work package) since last the TM revision. Note: After a revision is completed, the attribute is reset to **0** and is re-sequenced in the correct order (optional) (see Section 36.3.12).
- q. **lsa-id** – Logistic support analysis identification. Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM (optional) (see Section 16.3.3).
- r. **marines** – Indicates the work package pertains only to the U.S. Marine Corps (default value is **no**) (see Section 16.3.5).
- s. **navy** – Indicates the work package pertains only to the U.S. Navy (default value is **no**) (see Section 16.3.5).
- t. **security** – Security classification (optional) (see Section 36.3.14).
- u. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- v. **tocentry** – Table of contents level entry (default value is **2**) (see Section 16.3.6).
- w. **wpno** – Work package unique identification number (required). MIL-STD-40051-1/-2 specifies the identification number format (see Section 16.2.1.1).
- x. **wpseq** – Work package sequence number (optional) (see Section 16.2.2). MIL-STD-40051-1/-2 specifies a manually assigned four digit sequential number of the work package for the TM.

### 27.13.1 XML document instance fragment and output for <genwp>.

The XML instance and its stylesheet output for a support items work package <genwp>.

1. Example of an XML document instance fragment for a Generic Work Package:

```
<genwp chngno="0" airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no"
tocentry="2" wpno="S00131-X-XXXX-XXX" wpseq="0420">
 <wpidinfo>
 <maintlvl level="crew"/>
 <title>CARTRIDGE AND PROPELLANT ACTUATED DEVICES
 </title>
 </wpidinfo>
 <proc frame="yes" tocentry="0">
 <title>CARTRIDGE AND PROPELLANT ACTUATED DEVICES
 </title>
 <step1 qa="no">
 <para>The following list of items are Class V ammunition items and should be
 managed in accordance with
 <xref wpid="M0143-X-XXX-XXX"/>,
 <extref docno="DA PAM 710-2-1"/>.
 </para>
 </step1>
 <step1 qa="no">
 <para>Shelf life/Service Life (Retirement Interval) will be in accordance with
```

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**<extref docno="TB 9-1300-385" posttext=", MUNITIONS RESTRICTED OR SUSPENDED"/>.**  
 Changes to Shelf and Service life appear in Ammunition Supplemental Notices between quarterly revisions. This Manual is updated biannually, request for this document will be referred to

**<proponent>**

**<name>**Commander, AMCCOM, ATTN: AMSMC-QAS

**</name>**

**<address>**

**<city>**Rock Island

**</city>**

**<state>**IL

**</state>**

**<zip>**61299-6000

**</zip>**

**</address>**

**</proponent>.**

**</para>**

**</step1>**

**<step1 qa="no">**

**<para>**Shelf life. The total period of time, beginning the date of manufacture/cure/assembly that an item may remain in the combined wholesale (including manufacture) and retail storage system and still remain suitable for issue to, and use by end user (shelf life is not to be confused with service life which is a measurement of anticipated total in-use time).

**</para>**

**</step1>**

**<step1 qa="no">**

**<para>**Parts can be removed during the inspection nearest the time before removal is due. Exceptions to this are in

**<extref docno="TM 1-1500-328-23"/>.**

**</para>**

**</step1>**

**<step1 qa="no">**

**<para>**The computed item replacement, installation date, and lot number should be recorded on

**<extref docno="DA Form 2408-18"/>**for each installed item.

**</para>**

**</step1>**

**<step1 qa="no">**

**<para>**Be sure to fill out all forms, records, and worksheets required by

**<extref docno="DA PAM 738-751"/>**when replacing parts.

**</para>**

**</step1>**

**<step1 qa="no">**

**<para>**Unserviceable item should be tagged with NSN, installation date, removal date, reason for removal, lot number, helicopter type/model and serial number, and aviation unit designation, and returned to the supporting ammunition supply activity in the container to transport the replacement item.

**</para>**

**</step1>**

**<step1 qa="no">**

**<para>**The listing has four headings:

**<randlist bullet="yes">**

**<item>**NOMENCLATURE – Name of the part.

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</item>  
 <item>PART NUMBER - Number assigned to the part. Check  
 <extref docno="TM 1-1520-238-23P"/>for part numbers of replacement parts.  
 </item>  
 <item>NSN - National Stock Number assigned to the part. Reference  
 <extref docno="TM 1-1520-238-23P"/>.  
 </item>  
 <item>DoDAC - Department of Defense Ammunition Code. Indicates type of  
 Ammunition and Packaging. Ref  
 <extref docno="SB708-3" pretext="DOD Ammo Codes HDBK, "/>.  
 </item>  
 </randlist>  
 <table frame="all" tocentry="1">  
 <title>Cartridge and Propellant Actuated Devices  
 </title>  
 <tgroup align="left" char=" " charoff="50" cols="4" colsep="1" owsep="0">  
 <colspec align="left" colname="c1" colnum="1" colwidth="2.25\*"/>  
 <colspec align="left" colname="c2" colnum="2" colwidth="3.5\*"/>  
 <colspec align="center" colname="c3" colnum="3" colwidth="1.5\*"/>  
 <colspec align="center" colname="c4" colnum="4" colwidth="1.25\*"/>  
 <thead valign="bottom">  
 <row>  
 <entry align="center" colname="c1" rowsep="1">Nomenclature  
 </entry>  
 <entry align="center" colname="c2" rowsep="1">Part Number  
 </entry>  
 <entry colname="c3" colsep="1" rowsep="1">NSN  
 </entry>  
 <entry colname="c4" colsep="1" rowsep="1">DODAC  
 </entry>  
 </row>  
 </thead>  
 <tbody valign="top">  
 <row>  
 <entry colname="c1">Initiator, Cartridge MT06 (3 per)  
 </entry>  
 <entry colname="c2">7-311112017-39 51207-3 51207-7 6260964  
 </entry>  
 <entry colname="c3">1377-01-269-6496  
 </entry>  
 <entry colname="c4">1377-MT06  
 </entry>  
 </row>  
 <row>  
 <entry colname="c1">Severance Device (CA) MS90, Cord, Det  
 </entry>  
 <entry colname="c2">7-311112017-31 51135-1 6260906-1  
 </entry>  
 <entry colname="c3">1377-01-186-9899  
 </entry>  
 <entry colname="c4">1377-MS90  
 </entry>  
 </row>  
 </tbody>  
 </table>

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```

<entry colname="c1">Replaced by Thin Line Explosive SP03, Cord, Det
</entry>
<entry colname="c2">7-311112017-49
</entry>
<entry colname="c3">1377-01-356-7842
</entry>
<entry colname="c4">1377-SP03
</entry>
</row>
<row>
<entry colname="c1">Severance Device (CA) MS91, Cord, Det
</entry>
<entry colname="c2">7-311112017-33 51135-2 6260906-2
</entry>
<entry colname="c3">1377-01-186-9900
</entry>
<entry colname="c4">1377-MS91
</entry>
</row>
<row>
<entry colname="c1">Severance Device (CA) MS93, Cord, Det
</entry>
<entry colname="c2">7-311112017-37 51135-4 6260906-4
</entry>
<entry colname="c3">1377-01-186-9902
</entry>
<entry colname="c4">1377-MS93
</entry>
</row>
<row>
<entry colname="c1">Replaced by Thin Line Explosive SP02, Cord, Det
</entry>
<entry colname="c2">7-311112017-47
</entry>
<entry colname="c3">1377-01-356-7841
</entry>
<entry colname="c4">1377-SP02
</entry>
</row>
<row>
<entry colname="c1">Severance Device (CA) MS89, Cord, Det
</entry>
<entry colname="c2">7-311112017-43 51135-5 6260906-5
</entry>
<entry colname="c3">1377-01-170-5260
</entry>
<entry colname="c4">1377-MS89
</entry>
</row>
<row>
<entry colname="c1">Severance Device (CA) MS92, Cord, Det
</entry>
<entry colname="c2">7-311112017-35 51135-7 6260906-7
</entry>

```

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```

<entry colname="c3">1377-01-186-9901
</entry>
<entry colname="c4">1377-MS92
</entry>
</row>
<row>
<entry colname="c1">Severance Device (FWD) MS94, Cord, Det
</entry>
<entry colname="c2">7-311112017-5 51388-1 6260965-1
</entry>
<entry colname="c3">1377-01-184-6112
</entry>
<entry colname="c4">1377-MS94
</entry>
</row>
</tbody>
</tgroup>
</table>
</para>
</step1>
</proc>
</genwp>

```

2. Example of a page-based TM stylesheet output for Additional Generic Work Package **<genwp>**:

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0001

## CREW

## CARTRIDGE AND PROPELLANT ACTUATED DEVICES

## CARTRIDGE AND PROPELLANT ACTUATED DEVICES

- The following list of items are Class V ammunition items and should be managed in accordance with DA PAM 710-2-1.
- Shelf life/Service Life (Retirement Interval) will be in accordance with TB 9-1300-385, MUNITIONS RESTRICTED OR SUSPENDED. Changes to Shelf and Service life appear in Ammunition Supplemental Notices between quarterly revisions. This Manual is updated biannually, request for this document will be referred to Commander, AMCCOM, ATTN: AMSMC-QAS Rock Island IL 61299-6000.
- Shelf life. The total period of time, beginning the date of manufacture/cure/assembly that an item may remain in the combined wholesale (including manufacture) and retail storage system and still remain suitable for issue to, and use by end user (shelf life is not to be confused with service life which is a measurement of anticipated total in-use time).
- Parts can be removed during the inspection nearest the time before removal is due. Exceptions to this are in TM 1-1500-328-23.
- The computed item replacement, installation date, and lot number shall be recorded on DA Form 2408-18 for each installed item.
- Be sure to fill out all forms, records, and worksheets required by DA PAM 738-751 when replacing parts.
- Unserviceable item shall be tagged with NSN, installation date, removal date, reason for removal, lot number, helicopter type/model and serial number, and aviation unit designation, and returned to the supporting ammunition supply activity in the container to transport the replacement item.
- The listing has four headings:
  - NOMENCLATURE – Name of the part.
  - PART NUMBER – Number assigned to the part. Check TM 1-1520-238-23P for part numbers of replacement parts.
  - NSN – National Stock Number assigned to the part. Reference TM 1-1520-238-23P.
  - DoDAC – Department of Defense Ammunition Code. Indicates type of Ammunition and Packaging. Ref DOD Ammo Codes HDBK, SB708-3.

Table 1. Cartridge and Propellant Actuated Devices.

Nomenclature	Part Number	NSN	DODAC
Initiator, Cartridge MT06 (3 per)	7-311112017-39 51207-3 51207-7 6260964	1377-01-269-6496	1377-MT06
Severance Device (CA) MS90, Cord, Det	7-311112017-31 51135-1 6260906-1	1377-01-186-9899	1377-MS90
Replaced by Thin Line Explosive SP03, Cord, Det	7-311112017-49	1377-01-356-7842	1377-SP03
Severance Device (CA) MS91, Cord, Det	7-311112017-33 51135-2 6260906-2	1377-01-186-9900	1377-MS91
Severance Device (CA) MS93, Cord, Det	7-311112017-37 51135-4 6260906-4	1377-01-186-9902	1377-MS93
Replaced by Thin Line Explosive SP02, Cord, Det	7-311112017-47	1377-01-356-7841	1377-SP02
Severance Device (CA) MS89, Cord, Det	7-311112017-43 51135-5 6260906-5	1377-01-170-5260	1377-MS89
Severance Device (CA) MS92, Cord, Det	7-311112017-35 51135-7 6260906-7	1377-01-186-9901	1377-MS92
Severance Device (FWD) MS94, Cord, Det	7-311112017-5 51388-1 6260965-1	1377-01-184-6112	1377-MS94

END OF WORK PACKAGE

0001-1/blank

FIGURE 538. Example of a page-based TM stylesheet output for &lt;genwp&gt;.



## 28 ALERTS

### 28.1 Warnings, critical safety alerts, cautions, and notes.

Warnings, critical safety alerts, cautions, and notes identify information of sufficient importance or hazardousness. Definitions of and requirements for warnings, critical safety alerts, cautions, and notes are specified in MIL-STD-40051-1 and MIL-STD-40051-2. Warnings, critical safety alerts, cautions, and notes are tagged using the elements: **<warning>** (see Section 28.1.1), critical safety alerts **<csi.alert>** (see Section 28.1.1.4), **<caution>** (see Section 28.1.2), and **<note>** (see Section 28.1.3) respectively. These content models are similar with the differences being as follows:

1. Warnings may include signal words as specified in the **<signalword>** element.
2. For IETMs, the author can specify in the **acknowledge** attribute if a note is acknowledged or not. Warnings, critical safety alerts, and cautions do not have this attribute since they are always acknowledged.
3. Warnings and cautions may include icons as specified in the **<icon-set>** element.

#### 28.1.1 Warnings **<warning>**.

As specified in MIL-STD-40051-1 and MIL-STD-40051-2, a warning identifies an operation, procedure, or statement that if not performed properly may result in personal injury or death as well as danger of damage to the equipment. Warnings may be grouped and may include signal words or icons.

1. The components for **<warning>**:
  - a. Grouped warnings **<warning.group>** (required – two or more for grouped warnings, otherwise not used). Provides narrative for multiple warnings grouped into a single warning item (see Section 28.1.1.1).
  - b. Icon set **<icon-set>** (required – one or more for warnings that include hazard icons, otherwise not used). Identifies a series of hazard icons used as a unit to mark warnings (see Section 31.3.3).
  - c. Hazard signal word **<signalword>** (optional). This element contains the signal word relating the warning hazard icons (see Section 28.1.1.3).
  - d. One of the following groupings is required by the DTD:
    - i. A repeatable group consisting of a reduced content paragraph **<trim.para>** (see Section 36.1.1.8) or
    - ii. Random list **<randlist>** (see Section 36.1.2.3)
2. The DTD fragment for **<warning>** is graphically depicted.

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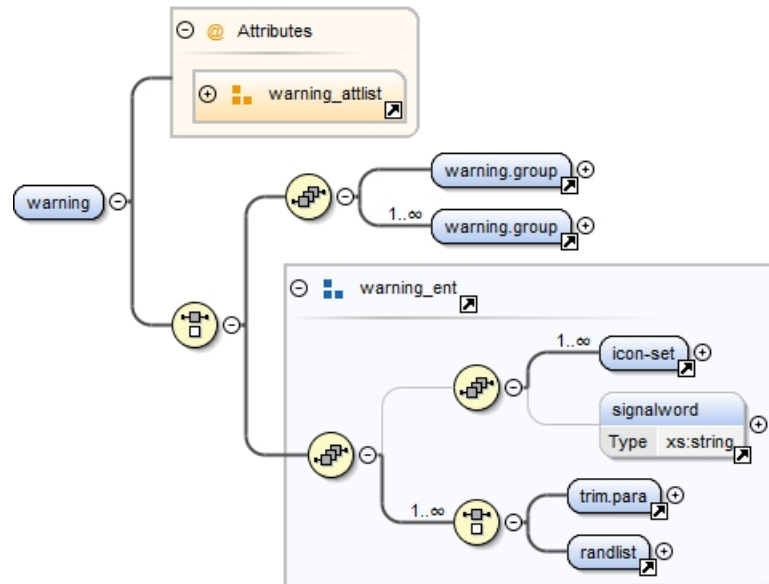


FIGURE 539. Warning &lt;warning&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;warning&gt; is:

```
<!ELEMENT warning ((warning.group, warning.group+) | %warning_ent;)>
```

```
<!ATTLIST warning
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
haz-abbrev	(yes   no)	'no'
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
keyword	CDATA	#IMPLIED
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

## 4. Attributes for &lt;warning&gt;:

- a. **keyword** – Specifies a word or phrase that may be used as the title of a warning or a caution such as “Heavy Item.”
- b. **haz-abbrev** – Determines if an abbreviated warning by hazard icon(s) and signal word only is to be used. A **yes** value indicates that an abbreviated warning by hazard icon(s) and signal word only is to be used. The default is **no**.

## 5. Common attributes for &lt;warning&gt;:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).

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- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 28.1.1.1 Grouped warnings <warning.group>.

Grouped warnings provide narrative for multiple warnings grouped into a single warning item. The <warning.group> element's content model includes the same elements that are used in <warning> (<icon-set>, <signalword>, <trim para>, and <randlist>). The attributes are also the same. The difference is that each warning is tagged in a separate <warning.group> element (see Section 28.1.1.1).

1. The DTD fragment for <warning.group> is graphically depicted:

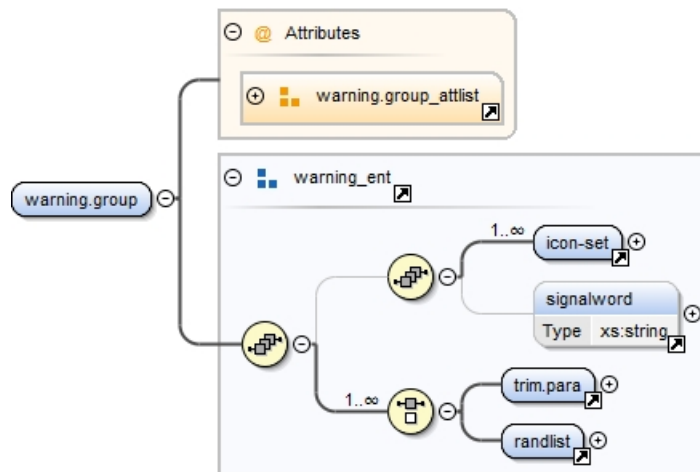


FIGURE 540. Warning <warning.group> DTD hierarchy.

2. The DTD fragment for <warning.group> is:

```
<!ELEMENT warning.group (%warning_ent;)>
<!ATTLIST warning.group
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
haz-abbrev (yes | no) "no"
id ID #IMPLIED
```

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

### 3. Attributes for <warning.group>:

- a. **haz-abbrev** – Determines if an abbreviated warning by hazard icon(s) and signal word only is to be used. A **yes** value indicates that an abbreviated warning by hazard icon(s) and signal word only is to be used. The default is **no**.

### 4. Common attributes for <warning.group>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

## 28.1.1.2 Icon set <icon-set>.

The <icon-set> element identifies a series of hazard icons used as a unit to mark warnings. The <icon-set> is explained in Section 31.3.3. An example of a warning with multiple icons is given in Section 28.1.5.

### 1. The DTD fragment for <icon-set> is:

```
<!ELEMENT icon-set EMPTY>
<!ATTLIST icon-set
```

alt	CDATA	#IMPLIED
assocfig	IDREFS	#IMPLIED
boardno	ENTITY	#REQUIRED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
hscale	CDATA	#IMPLIED
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
reprodep	CDATA	#IMPLIED

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reprowid	CDATA	#IMPLIED
security	(uc   fouo   c   s   ts)	#IMPLIED
scalefit	(yes   no)	#IMPLIED
skilltrk	CDATA	#IMPLIED
unitmeasure	(mm   cm   px   in   pt   pi)	"in"
vscale	CDATA	#IMPLIED>

## 2. Common attributes for **<icon-set>** are:

- a. **alt** – Additional text to assist in identifying the graphic (optional) (see Section 34.3.1).
- b. **boardno** – External graphic entity name (required) (see Section 31.2.1).
- c. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.
- d. **hscale** – Horizontal scaling factor (optional) (see Section 31.2.3).
- e. **reprowid** – Reproduction area width (optional) (see Section 31.2.3).
- f. **reprodep** – Reproduction area depth (optional) (see Section 31.2.3).
- g. **scalefit** – Scale the graphic to fit the reproduction area (optional) (see Section 31.2.3).
- h. **vscale** – Vertical scaling factor (optional) (see Section 31.2.3).
- i. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- j. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- k. **comment** – Change information (optional) (see Section 36.3.12).
- l. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- m. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- n. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- o. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- p. **security** – Security classification (optional) (see Section 36.3.14).
- q. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 28.1.1.3 Hazard signal word **<signalword>**.

The **<signalword>** element contains the signal word relating to the warning hazard icons. It is only used with an icon set and its use with the set is not required. The content model is #PCDATA. An example of a warning with multiple icons and a signal word is given in Section 28.1.6.

1. The **<signalword>** is #PCDATA.
2. The DTD fragment for **<signalword>** is graphically depicted:

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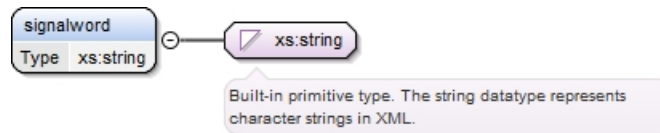


FIGURE 541. Hazard signal word &lt;signalword&gt; DTD hierarchy.

3. The DTD fragment for <signalword> is:

```
<!ELEMENT signalword (#PCDATA)>
```

4. There are no attributes for <signalword>.

#### 28.1.1.4 Critical safety alerts <csi.alert> (aviation only).

The critical safety alert is used to notify users that a procedure deals with an item with a critical safety or flight critical (the old FSCAP) designation. The <csi.alert> specifies the critical aspects of the item that if not met could cause a system failure, leading to the loss of an aircraft or air vehicle.

1. The components of <csi.alert> is a single limited content paragraph <trim para> (see Section 36.1.1.8).
2. The DTD fragment for <csi.alert> is graphically depicted:

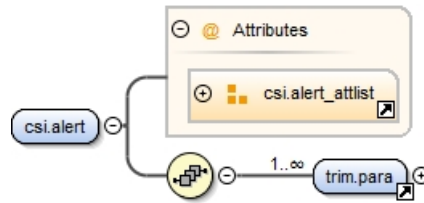


FIGURE 542. Critical safety alert &lt;csi.alert&gt; DTD hierarchy.

3. The DTD fragment for <csi.alert> is:

```
<!ELEMENT csi.alert (trim para+)>
```

```
<!ATTLIST csi.alert
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	CDATA	#IMPLIED
haz-abbrev	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	CDATA	#IMPLIED
keyword	CDATA	#IMPLIED
security	(uc   fouo   c   s   ts)	#IMPLIED

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skilltrk	CDATA	#IMPLIED
tocentry	( 0   1   2   3   4   5   )	"1">

4. Common attributes for **<csi.alert>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **haz-abbrev** – Determines if an abbreviated warning by hazard icon(s) and signal word only is to be used. A **yes** value indicates that an abbreviated warning by hazard icon(s) and signal word only is to be used. The default is **no**.
- g. **id** – Unique identifier (optional) (see Section 36.3.7).
- h. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- i. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- j. **keyword** – Specifies a word or phrase that may be used as the title of a warning or a caution such as “Heavy Item.”
- k. **security** – Security classification (optional) (see Section 36.3.14).
- l. **skilltrk** – Skill level (optional) (see Section 36.3.3).

## 28.1.2 Cautions **<caution>**.

A caution identifies risk of damage to the equipment if the procedure is not followed correctly. The content model for a caution is similar to that of a warning. Like warnings, cautions may be grouped and may include icons. One major difference is caution does not use signal words.

1. The components for **<caution>**:

- a. Grouped Cautions **<caution.group>** (required – two or more for grouped cautions, otherwise not used). Provides narrative for multiple cautions grouped into a single caution item (see Section 28.1.2.1).
- b. Icon set **<icon-set>** (required – one or more for warnings that include hazard icons, otherwise not used). Identifies the equipment damage caution icons used to mark cautions (see Section 31.3.3).
- c. One of the following groupings is required by the DTD:
  - i. A repeatable group consisting of a reduced content paragraph **<trim.para>** (see Section 36.1.1.8) or
  - ii. Random list **<randlist>** (see Section 36.1.2.3)

2. The DTD fragment for **<caution>** is graphically depicted.

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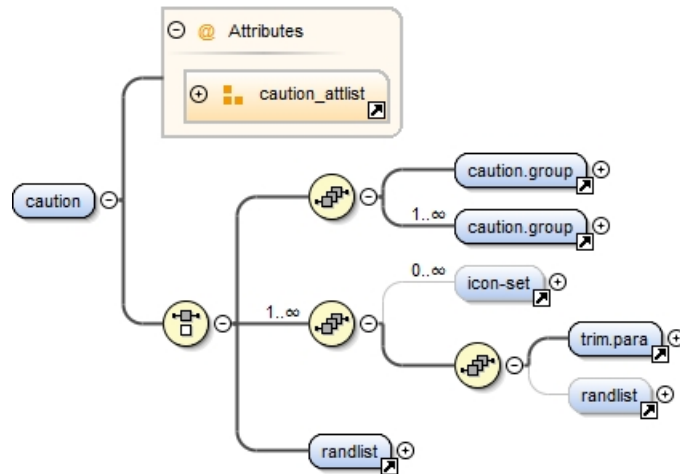


FIGURE 543. Caution &lt;caution&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;caution&gt; is:

```
<!ELEMENT caution ((caution.group, caution.group+) | (icon-set*, (trim.
para, randlist?)) + | randlist)>
```

```
<!ATTLIST caution
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

## 4. Common attributes for &lt;caution&gt; are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).



j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 28.1.2.1 Grouped cautions <caution.group>.

Grouped cautions provide narrative for multiple cautions grouped into a single caution item. The <caution.group> element's content model includes the same elements that are used in <caution> (<icon-set>, <signalword>, and <trim para>, <randlist>). The attributes are the same but each caution is tagged in a separate <caution.group>. The tagging for a grouped caution would be similar. See Section 28.1.9 for an example of a grouped warning.

1. The DTD fragment for <caution.group> is graphically depicted.

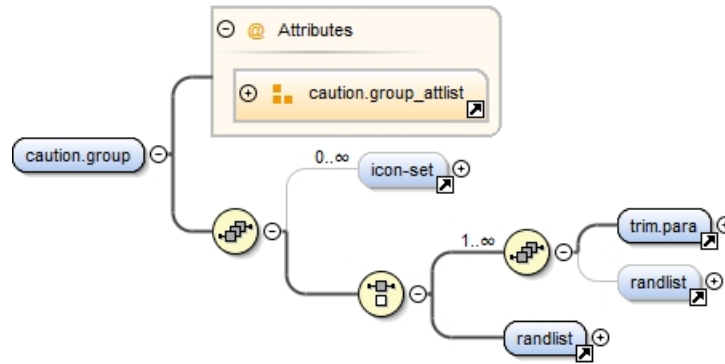


FIGURE 544. Grouped cautions <caution.group> DTD hierarchy.

2. The DTD fragment for <caution.group>:

```
<!ELEMENT caution.group (icon-set* , ((trim para , randlist?) + | randlist))
>

<!ATTLIST caution.group
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>
```

3. Common attributes for <caution.group>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

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- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 28.1.2.1.1 Icon set <icon-set>.

The <icon-set> element identifies a series of hazard icons used as a unit to mark cautions. The <icon-set> is explained in Section 31.3.3. The tagging for a caution would be similar. An example of a warning with multiple icons is given in Section 28.1.5.

### 28.1.3 Notes <note>.

A note highlights essential information, conditions, or statements or conveys important instructional data to the user. Notes are allowed in tasks, procedures, steps, and non-procedural information. Notes may be acknowledged using the attribute **acknowledge**.

1. The components for <note> are:
  - a. Grouped Notes <note.group> (required – two or more for grouped notes, otherwise not used). Provides narrative for multiple notes grouped into a single note item (see Section 28.1.3.1).
  - b. Icon set <icon-set> (required – one or more) for warnings that include hazard icons, otherwise not used). Identifies a series of hazard icons used as a unit to mark warnings (see Section 31.3.3).
  - c. One of the following groupings is required by the DTD:
    - i. A repeatable group consisting of a reduced content paragraph <trim para> (see Section 36.1.1.8) or
    - ii. Random list <randlist> (see Section 36.1.2.3).
2. The DTD fragment for <note> is graphically depicted:

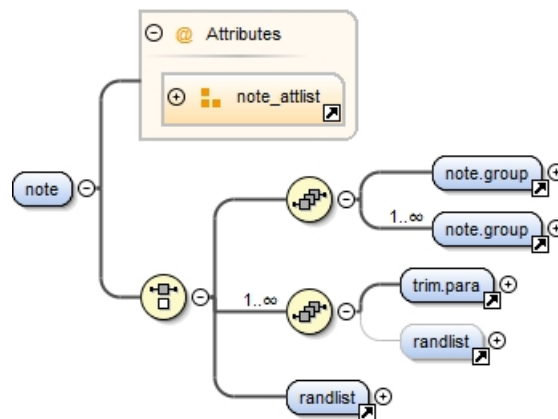


FIGURE 545. Note <note> DTD hierarchy.

3. The DTD fragment for <note> is:

```
<!ELEMENT note ((note.group , note.group+) | (trim para , randlist?)+ |
randlist)>
<!ATTLIST note
```

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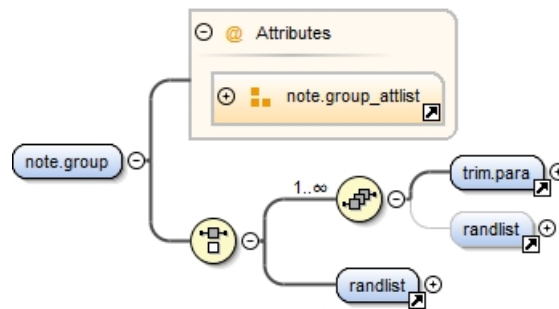
acknowledge	(yes   no)	'no"
applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. The element **<note>** has one unique attribute – **acknowledge** determines if the note is to be acknowledged. A **yes** value indicates that an acknowledgement will be required. A **no** value indicates that the user will not be presented with an acknowledgement. The default is **no**.
5. Common attributes for **<note>**:
  - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - d. **comment** – Change information (optional) (see Section 36.3.12).
  - e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - f. **id** – Unique identifier (optional) (see Section 36.3.7).
  - g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - i. **security** – Security classification (optional) (see Section 36.3.14).
  - j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 28.1.3.1 Grouped notes **<note.group>**.

Grouped notes provide narrative for multiple notes grouped into a single note item. The **<note.group>** element's content model includes the same elements that are used in **<note>** (**<icon-set>**, **<signalword>**, **<trim para>**, **<randlist>**). The attributes are also the same but each caution is tagged in a separate **<note.group>**. The gagging for a grouped caution would be similar. See Section 28.1.9 for an example of a grouped warning.

1. The DTD fragment for **<note.group>** is graphically depicted:



2. The DTD fragment for **<note.group>** is:

```
<!ATTLIST note.group
```

acknowledge	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

3. The element **<note.group>** has one unique attribute, **acknowledge** – Determines if the note is to be acknowledged. A **yes** value indicates that an acknowledgement will be required. A **no** value indicates that the user will not be presented with an acknowledgement. The default is **no**.
4. Common attributes for **<note.group>** are:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** – Unique identifier (optional) (see Section 36.3.7).
  - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - h. **security** – Security classification (optional) (see Section 36.3.14).
  - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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## 28.1.4 Example – Warnings, critical safety alerts, cautions and notes at the task level.

To tag warnings, critical safety alerts, cautions or notes at the task level, insert the appropriate **<warning>**, **<csi.alert>**, **<caution>**, **<note>** elements after the **<title>** element for the task. The example shown below depicts a page-based output for a warning at the task level. The warning appears on the page immediately after the task title and before the step information.

1. XML document instance fragment:

```
<opusualwp airforce="no" army="no" deletewp="no" frame="no" marines="no" navy="no" tocentry=
"2" wpno="OXXXXX-X-XXXX-XXX" wpseq="0003">
<wpidinfo>
<maintlvl level="operator"/>
<title>START ENGINE WITH OUTSIDE POWER SOURCE
</title>
</wpidinfo>
<initial_setup>
<tools>
<tools-setup-item>
<name>Slave cable
</name>
<itemref>
<para>
<xref itemid="S00035-X-XXX-XXX-0048" wpid="S00035-X-XXX-XXX"/>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>24 volt power source or other vehicle
</name>
<itemref>
<para>
<xref itemid="S00035-X-XXX-XXX-0044" wpid="S00035-X-XXXX-XXX"/>
</itemref>
</tools-setup-item>
</tools>
<persnreq>
<persnreq-setup-item>
<name>Driver
</name>
<qty>2
</qty>
</persnreq-setup-item>
</persnreq>
<ref>
<ref-setup-item>
<extref docno="TM X-XXX-XXX-XX"/>
</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item>
<condition>Vehicle unable to start under own power
</condition>
<itemref>
<para>
<xref wpid="OYYYYY-Y-YYYY-YYY"/>

```

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```

</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Operational vehicle engine stopped
</condition>
<itemref>
<para>
<xref posttext=")" pretext="(" wpid="OYYYY-Y-YYYY-YYY"/>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<opertsk>
<oper frame="yes" tocentry="0">
<proc>
<title>START ENGINE
</title>
<warning haz-abbrev="no">
<trim.para>Using ether to start engine can result in engine explosion. Personnel
can be injured or killed. Never use ether to assist starting an engine.
</trim.para>
</warning>
<step1 qa="no">
<para>Check that master power switch is OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that engine accessory switch is OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that turret power switch is OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that fire suppression switch is in manual.
</para>
</step1>
<step1 qa="no">
<para>Check that starter cutout override switch is OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that fwd and rear bilge pumps switches are OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that smoke screen generator switch is OFF.
</para>
</step1>
</proc>
</oper>
</opertsk>
</opusualwp>

```

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## 2. Stylesheet output:

		0003
<hr/>		
<b>OPERATOR MAINTENANCE</b>		
<b>START ENGINE WITH OUTSIDE POWER SOURCE</b>		
<hr/>		
<b>INITIAL SETUP:</b>		
<b>Tools</b>	<b>References</b>	
Slave cable (, )	TM X-XXX-XXX-XX	
24 volt power source or other vehicle (, )		
<b>Personnel Required</b>	<b>Equipment Condition</b>	
Driver - 2	Vehicle unable to start under own power (WP 0003)	
	Operational vehicle engine stopped ((WP 0003))	
<hr/>		
<b>START ENGINE</b>		
 <b>WARNING</b>		
Using ether to start engine can result in engine explosion. Personnel can be injured or killed. Never use ether to assist starting an engine.		
<ol style="list-style-type: none"> <li>1. Check that master power switch is OFF.</li> <li>2. Check that engine accessory switch is OFF.</li> <li>3. Check that turret power switch is OFF.</li> <li>4. Check that fire suppression switch is in manual.</li> <li>5. Check that starter cutout override switch is OFF.</li> <li>6. Check that fwd and rear bilge pumps switches are OFF.</li> <li>7. Check that smoke screen generator switch is OFF.</li> </ol>		
<b>END OF TASK</b>		
<b>END OF WORK PACKAGE</b>		

FIGURE 547. Task warning example.

## 28.1.5 Example – Multiple icons.

The **<icon-set>** element identifies the icon to be displayed with the warning or caution. More than one **<icon-set>** can be identified. The example shown below depicts a warning with multiple icons.

## 1. XML document instance fragment:

```

<warning haz-abbrev="no">
 <icon-set boardno="icon-chemical" unitmeasure="in"/>
 <icon-set boardno="icon-vapor" unitmeasure="in"/>
 <icon-set boardno="icon-eye-protection" unitmeasure="in"/>
 <trim. para>Fluorinated compound OT20 is an irritant to the eyes and skin. Use
 safety glasses and latex gloves or barrier cream. Keep sparks, flames and heat
 away. Keep grease off skin, eyes, and clothes.
 </trim. para>
</warning>

```

## 2. IETM Stylesheet output:



FIGURE 548. Multiple icons example.

### 28.1.6 Example – Abbreviated hazardous material warning.

The XML source and its stylesheet output depicting a warning with multiple icons and a signal word are shown below. The `<trim.para>` element is required for all warnings, however, it is not needed for warnings that use a signal word. Enter the `<trim.para>` element with an empty value as shown in this example.

1. XML document instance fragment:

```
<warning haz-abbrev="yes">
 <icon-set boardno="icon-chemical" unitmeasure="in"/>
 <icon-set boardno="icon-vapor" unitmeasure="in"/>
 <icon-set boardno="icon-fire" unitmeasure="in"/>
 <icon-set boardno="icon-eye-protection" unitmeasure="in"/>
 <signalword>ISOPROPYL ALCOHOL, TT-I-735
</signalword>
<trim.para>
</trim.para>
</warning>
```

2. IETM Stylesheet output:





FIGURE 549. Abbreviated hazardous material warning example.

### 28.1.7 Example – Warnings, critical safety alerts, cautions and notes for a step.

A warning, critical safety alert, caution or note that applies to a single step is tagged using the **<specpara>** for that step. For example, the XML source and its stylesheet output depicting a warning that applies to the first step in a maintenance task are shown below. The **<warning>** element is contained within the **<specpara>** in the **<step1>** element for the first step. The stylesheet output shows the warning as it would be displayed for an IETM. The step data is not displayed because the user has not yet acknowledged the warning.

#### 1. XML document instance fragment:

```
<maintsk>
<remove frame="yes" tocentry="0">
<proc>
<title>REMOVAL OF EMERGENCY LAMPHOLDER
</title>
<step1 qa="no">
<specpara>
<warning haz-abbrev="no">
<trim. para>28 Vdc is present at emergency light. To prevent personal injury,
ensure BLACKOUT LIGHTS circuit breaker is set to OFF before removing lampholder.
</trim. para>
</warning>
<para>At POWER CONTROL panel, set BLACKOUT LIGHTS circuit breaker to OFF.
</para>
</specpara>
</step1>
<step1 qa="no">
<para>Remove emergency light shield by removing four screws, lockwashers, and
washers.
</para>
</step1>
</proc>
</remove>
</maintsk>
```

#### 2. IETM Stylesheet output:

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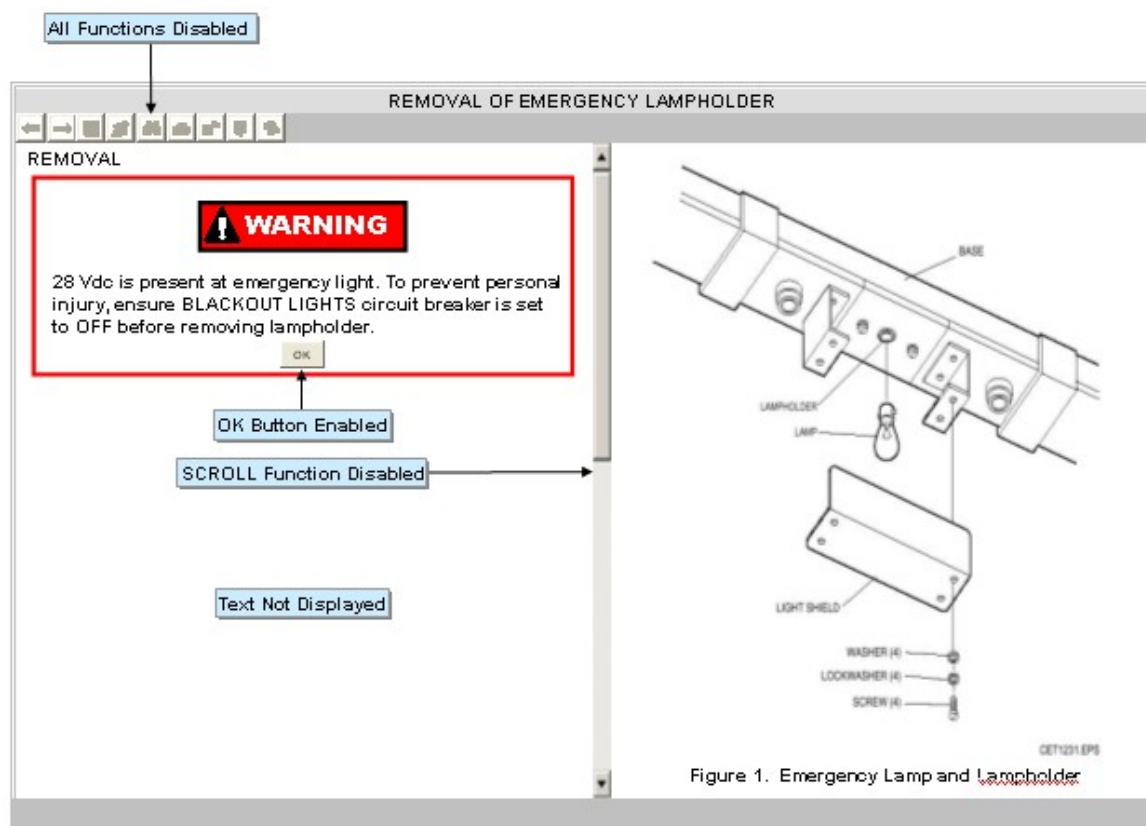


FIGURE 550. Step warning example prior to acknowledgement of warning alert.

### 28.1.8 Example – Text entities for warnings, critical safety alerts, cautions, and notes.

In a TM/IETM, the same warnings, critical safety alerts, cautions, or notes may appear in several tasks, procedures, or steps. Repeating the text for the warning, critical safety alert, caution, or note can result in errors. Creating text entities for warnings, critical safety alert, caution, and notes avoid such errors by letting the text be entered only once. The XML source depicting a text entity for a warning are shown below. This is the same example as shown in Section 28.1.7 except the text for the warning is entered in the **<trim para>** element has been replaced with the text entity named “WarningEmergencyLight.” The markup to create this text entity is shown at the beginning of the XML document instance fragment.

1. XML document instance fragment:

```
<!ENTITY WarningEmergencyLight "28 Vdc is present at emergency light. To prevent personal injury,
ensure BLACKOUT LIGHTS circuit breaker is set to OFF before removing lampholder."> . . .
<maintsk>
<remove frame="yes" tocentry="0">
<proc>
<title>REMOVAL OF EMERGENCY LAMPHOLDER
</title>
<step1 qa="no">
<specpara>
<warning haz-abbrev="no">
<trim para>&WarningEmergencyLight;
</trim para>
</warning>
```

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```

<para>At POWER CONTROL panel, set BLACKOUT LIGHTS circuit breaker to OFF.
</para>
</specpara>
</step1>
<step1 qa="no">
<para>Remove emergency light shield by removing four screws, lockwashers, and
washers
</para>
</step1>...
</proc>
</remove>

```

### 28.1.9 Example – Group warnings, cautions and notes.

Warnings, cautions, and notes on unrelated topics that pertain to the same task, procedure or step(s) may be grouped under one heading. The tagging for a group of cautions or notes would be similar. The XML source and its stylesheet output depicting a group of three warnings for a step are shown below.

1. XML document instance fragment:

```

<maintsk>
<remove frame="yes" tocentry="0">
<proc>
<title>REMOVAL OF EMERGENCY LAMPHOLDER
</title>
<step1 qa="no">
<specpara>
<warning haz-abbrev="no">
<warning.group haz-abbrev="no">
<trim.para>This is the first warning in the warning group.
</trim.para>
</warning.group>
<warning.group haz-abbrev="no">
<trim.para>This is the second warning in the warning group.
</trim.para>
</warning.group>
<warning.group haz-abbrev="no">
<trim.para>This is the third warning in the warning group
</trim.para>
</warning.group>
</warning>
<para>At POWER CONTROL panel, set BLACKOUT LIGHTS circuit breaker to OFF.
</para>
</specpara>
</step1>
<step1 qa="no">
<para>Remove emergency light shield by removing four screws, lockwashers, and
washers
</para>
</step1>
<step1 qa="no">
<para>Remove lamp by pushing it up, twisting, and pulling it down from the
lampholder
</para>

```

```

</step1> . . .
</proc>
</remove>
</maintsk>

```

## 2. Stylesheet output:

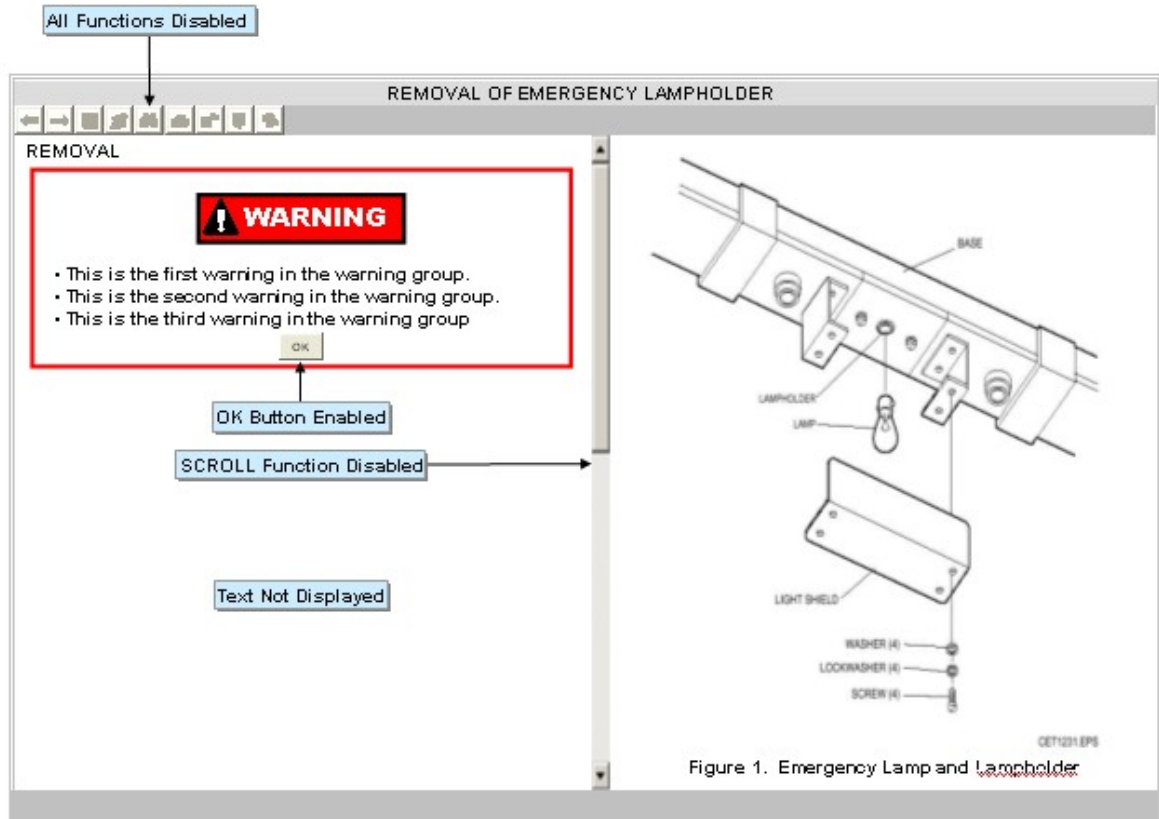


FIGURE 551. Group warning example prior to acknowledgement of warning alert.

### 28.1.10 Example – Multiple warnings, critical safety alerts, cautions, and notes at the task level.

To tag multiple warnings, critical safety alerts, cautions, and notes at the task level, insert the appropriate **<warning>**, **<csi.alert>**, **<caution>**, **<note>** elements after the **<title>** element for the task. The warnings appear first and the cautions appear second. Notes appear after the warnings and cautions. The example shown below depicts a page-based output for a warning, a caution and a note at the task level. The warning, critical safety alerts, cautions, and note appear on the page immediately after the task title and before the step information. The **acknowledge** attribute is set to **no** in the **<note>** element meaning there is no requirement to acknowledge the note.

#### 1. XML document instance fragment:

```

<opusualwp airforce="no" army="no" deletewp="no" frame="no" marines="no" navy="no" tocentry=
"2" wpno="OXXXXX-X-XXXX-XXX" wpseq="0003">
<wpidinfo>
<maintlvl level="operator"/>
<title>START ENGINE WITH OUTSIDE POWER SOURCE
</title>

```

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```

</wpidinfo>
<initial_setup>
<tools>
<tools-setup-item>
<name>Slave cable
</name>
<itemref>
<para>
<xref itemid="S00035-X-XXX-XXX-0048" wpid="S00035-X-XXX-XXX"//>
</itemref>
</tools-setup-item>
<tools-setup-item>
<name>24 volt power source or other vehicle
</name>
<itemref>
<para>
<xref itemid="S00035-X-XXX-XXX-0044" wpid="S00035-X-XXXX-XXX"//>
</itemref>
</tools-setup-item>
</tools>
<persnreq>
<persnreq-setup-item>
<name>Driver
</name>
<qty>2
</qty>
</persnreq-setup-item>
</persnreq>
<ref>
<ref-setup-item>
<extref docno="TM X-XXX-XXX-XX"//>
</ref-setup-item>
</ref>
<eqpconds>
<eqpconds-setup-item>
<condition>Vehicle unable to start under own power
</condition>
<itemref>
<para>
<xref wpid="OYYYY-Y-YYYY-YYY"//>
</itemref>
</eqpconds-setup-item>
<eqpconds-setup-item>
<condition>Operational vehicle engine stopped
</condition>
<itemref>
<para>
<xref posttext=")" pretext="(" wpid="OYYYY-Y-YYYY-YYY"//>
</itemref>
</eqpconds-setup-item>
</eqpconds>
</initial_setup>
<opertsk>
<oper frame="yes" tocentry="0">

```

## MIL-HDBK-2361D

```

<proc>
<title>START ENGINE
</title>
<warning haz-abbrev="no">
<trim.para>Using ether to start engine can result in engine explosion. Personnel
can be injured or killed. Never use ether to assist starting an engine.
</trim.para>
</warning>
<caution>
<trim.para>Battery or electrical damage can occur if electrical switches are left
on. Turn off all electrical switches in both vehicles.
</trim.para>
</caution>
<note acknowledge="no">
<trim.para>Steps 1 - 7 should be done in both operational and disabled vehicles.
</trim.para>
</note>
<step1 qa="no">
<para>Check that master power switch is OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that engine accessory switch is OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that turret power switch is OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that fire suppression switch is in manual.
</para>
</step1>
<step1 qa="no">
<para>Check that starter cutout override switch is OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that fwd and rear bilge pumps switches are OFF.
</para>
</step1>
<step1 qa="no">
<para>Check that smoke screen generator switch is OFF.
</para>
</step1>...
</proc>
</oper>
</opertsk>
</opusualwp>

```

## 2. IETM Stylesheet output:

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0003

---

**OPERATOR MAINTENANCE  
START ENGINE WITH OUTSIDE POWER SOURCE  
OPERATION UNDER USUAL CONDITIONS**

---

**INITIAL SETUP****Tools and Special Tools**

Slave Cable (WP 0024, Item 4)  
24 volt power source or other vehicle (WP 0024, Item 6)

**References**

TM X-XXX-XXX-XX

**Equipment Condition****Personnel Required**

Driver(2)

Vehicle unable to start under own power (WP 0021)  
Operational vehicle engine stopped (WP 0021)

---

**START ENGINE****WARNING**

Using ether to start engine can result in engine explosion. Personnel can be injured or killed. Never use ether to assist starting an engine.

**CAUTION**

Battery or electrical damage can occur if electrical switches are left on. Turn off all electrical switches in both vehicles.

**NOTE**

Steps 1 - 7 should be done in both operational and disabled vehicles.

1. Check that master power switch is OFF.
2. Check that engine accessory switch is OFF.
3. Check that turret power switch is OFF.
4. Check that fire suppression switch is in manual.
5. Check that starter cutout override switch is OFF.
6. Check that fwd and rear bilge pumps switches are OFF.
7. Check that smoke screen generator switch is OFF.

0003-1

**FIGURE 552. Multiple warning, caution and note example.**

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## 29 TABLES

A table is used when information can be presented more clearly in tabular form rather than in narrative text. There are three types of table structures allowed for use with MIL-STD-2361. The two types are Continuous Acquisition Life-Cycle Support (CALS) and standard information tables. CALS tables are generic structural tables and standard information tables (see Section 29.2) are MIL-STD-40051-1/-2 defined tables, in which columns and rows are inferred from content-specific tags.

### 29.1 Continuous Acquisition Life-Cycle Support (CALS) table <table>.

A generic table in MIL-STD-2361 follows a modified CALS table model. The Army does not use the CALS model element <tfoot> and they have also made changes to the content model of the table cell <entry> to allow additional content. The CALS table model uses structural tags that identify data by its place in the hierarchy of the table and how the material is formatted in the table.

#### 29.1.1 Table elements <table>.

The element <table> identifies and implements the CALS table model. Tables may have a table title and number. Tables that are titled are required to be numbered consecutively within each work package in the order of their reference starting with Arabic number 1. A table can have one or more table groups <tgroup>. Table groups can have different numbers of columns but the same width as the table. When a table has more than one table group, there are no spaces between the table groups in the table. The attributes of a table provide the display structure of the table. The attribute value of **frame** controls the line rulings of the outer frame of the table.

1. The components for <table>:

- a. Precondition <precond> (optional). The element indicates if the parent element is presented according to the results from the Boolean expression (see Section 29.1.1.1).
- b. Title <title> (optional). The element identifies the purpose of the table and distinguish that table from others in the TM (see Section 36.1.1.4).
- c. Table group <tgroup> (required – one or more). The element identifies a new portion of the table (see Section 29.1.1.2).

2. The DTD fragment for <table> is graphically depicted:

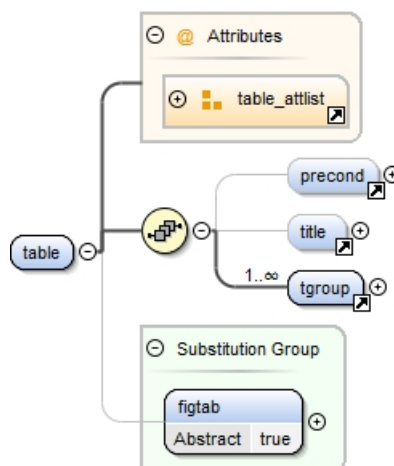


FIGURE 553. CALS table <table> DTD hierarchy.

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3. The DTD fragment for **<table>** is:

```

<!ELEMENT table (precond?, title?, tgroup+)>
<!ATTLIST table
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 colsep (0|1) #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 frame (top | bottom | topbot |
 all | sides | none) #IMPLIED
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 label CDATA #IMPLIED
 orient (port | land) #IMPLIED
 rowsep (0|1) #IMPLIED
 tabstyle NMTOKEN #IMPLIED
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 tocentry (0 | 1 | 2 | 3 | 4 | 5) "1">

```

4. Unique attributes for **<table>** are:

- a. **tabstyle** – Specified an unique table style defined in the stylesheet.
- b. **frame** – Describes position of outer rulings of the table.
- c. **colsep** – Default for all items in this table. If non-zero, display the internal column rulings to the right of each item. If zero, do not display column rulings. Ignore the last column, where the frame setting applies.
- d. **rowsep** – Default for all items in this table. If non-zero, display the internal row rulings below each item. If zero, do not display row rulings. Ignore the last row, where the frame setting applies.
- e. **orient** – Orientation of the entire table.
  - i. “PORT” – The table writing direction, along rows, is the same as marginal text.
  - ii. “LAND” – The table writing direction is 90° counterclockwise to marginal text.
- f. **label** – Stores manually entered table number for stylesheets that cannot generate numbers.

## 5. Common attributes:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).

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- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).
- k. **tocentry** – In the TM table of content indicate the indenture level. The possible selection is **0**. Do not include: **3** the 3rd level, **4** the 4th level, or **5** the 5th level (default is **1**) (see Section 16.3.6).

### 29.1.1.1 Precondition element <precond>.

Precondition element allows previous known information to be evaluated through the Boolean expression. The Boolean expression is evaluated by the frame-base viewer's Logic Engine (requires state (variable) information). If the Boolean expression evaluates to "True," then present or process content follows the element, otherwise the remaining content is skipped. Precondition element contains the element expression <expression> that defines an equation or expression to evaluate either a state (variable) information or precondition. Precondition element is used in a frame-based TM and usually with a state table.

1. The element <precond> consists of a single expression <expression> (required). The element defines an equation or expression to evaluate either to a state (variable) information or precondition (see Section 35.2.1.2).
2. The DTD fragment for <precond> is:
 

```
<!ELEMENT precond (expression)>
<!ATTLIST precond id ID #IMPLIED>
```
3. The element <precond> has a single **id** – specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

### 29.1.1.2 Table group <tgroup>.

Table group <tgroup> identifies the main content area of a table. A table group <tgroup> is a set of table subsets containing an optional heading subset, an optional footing subset, and one body subset. A table subset is a set of continuous rows within a table such as the header, footer, or body of a <tgroup>. There is no space between table subsets in a table. There are three types of table subsets - heading, footing, and body subsets. Tables are made up of table subset groups, (typically a single group), which contain table subsets, which are made up of columns and rows, which intersect to form cells

1. The components for <tgroup>:
  - a. Column specification (optional – zero or more) <colspec>. Column specification provides the details of the column. When new column's specifications is provided, it replaces a previous one in a table group (see Section 29.1.1.2.1).
  - b. Spanned column specification (optional – zero or more) <spanspec>. The element identifies any horizontal spanning of columns and a spanning name (see Section 29.1.1.2.4).
  - c. Table header (optional) <thead>. The element provides the heading of the table group columns (see Section 29.1.1.2.6).
  - d. Table body (required) <tbody>. The element identifies the body of a table group (see Section 29.1.1.2.10).

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2. The DTD fragment for **<tgroup>** is graphically depicted:

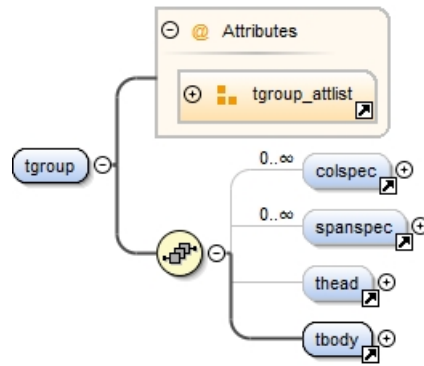


FIGURE 554. CALS table **<tgroup>** DTD hierarchy.

3. The DTD fragment for **<tgroup>** is:

```
<!ELEMENT tgroup (colspec*, spanspec*, thead?, tbody)>
<!ATTLIST tgroup
 align (left | right | center | "left"
 justify | char)
 char CDATA #IMPLIED
 charoff CDATA "50"
 cols CDATA #REQUIRED
 colsep (0 | 1) #IMPLIED
 rowsep (0 | 1) #IMPLIED
 tgroupstyle NMTOKEN #IMPLIED>
```

4. Attributes for **<tgroup>**:

- a. **cols** – Identifies the number of columns in the table group **<tgroup>** (required).
- b. **tgroupstyle** – A unique table group style defined in the stylesheet (optional). This attribute should be used sparingly. It is a Name Token type attribute and may contain any text. If the stylesheet cannot recognize the identified style, it will be ignored.
- c. **colsep** – Default for all items in this table group. If non-zero, display the internal column rulings. If zero, do not display column rulings. Ignore the last column, where the frame setting applies. If no value is entered, inherit from table (optional). The intent of the colsep is to place the line separator to the right, but this is application dependent.
- d. **rowsep** – Default for all items in this table group. If non-zero, display the internal row rulings below each item. If zero, donot display row rulings. Ignore the last row, where the frame setting applies. If no value is entered, inherit from table. As with the colsep, the rowsep location is application dependent. The intent is to appear as the bottom marker for the current row.
- e. **align** – Text horizontal position within the column. If no value is entered, the default value is flush left alignment.
  - i. "LEFT" – Alignment is flush left.
  - ii. "RIGHT" – Alignment is flush right.
  - iii. "CENTER" – Alignment is centered.

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- iv. “JUSTIFY” – Alignment is right/left justified.
- v. “CHAR” – Alignment is on the left most of the character specified in attribute “CHAR” and position by attribute “CHAROFF.”
- f. **charoff** – For attribute **align** with a value “CHAR,” percent of the current width to the left of the alignment character. If no value is entered, the default value is 50%.
- g. **char** – For attribute **align** with a value “CHAR,” the value is aligned on the first character occurrence. If no value is entered, the default value is a blank character.

### 29.1.1.2.1 Column specification <colspec>.

Column specification, when included, provides the details of each column in a table group. Each column of the table group has its own <colspec> and the characteristics default is inherited from either the table group or table heading.

1. Column specification <colspec> is EMPTY and the pertaining information is entered through its attributes.
2. The DTD fragment for <colspec> is graphically depicted.



FIGURE 555. CALS table <colspec> DTD hierarchy.

3. The DTD fragment for <colspec> is:

```

<!ELEMENT colspec EMPTY>
<!ATTLIST colspec
 align (left | right | center | "center"
 justify | char)
 charoff CDATA #IMPLIED
 char CDATA #IMPLIED
 colname NMTOKEN #IMPLIED
 colnum CDATA #IMPLIED
 colsep (0 | 1) #IMPLIED
 colwidth CDATA #IMPLIED
 rowsep (0 | 1) #IMPLIED>

```

4. Unique attributes for <colspec>:

- a. **colnum** – Identifies the column number, counting from 1, at left of the table.
- b. **colname** – Specifies name of column, used to specify the position in a row, or the start or end of a horizontal span of columns.
- c. **align** – Text horizontal position within the column. If no value is entered the default value is flush left alignment.
  - i. “LEFT” – Alignment is flush left.
  - ii. “RIGHT” – Alignment is flush right.

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- iii. "CENTER" – Alignment is centered.
- iv. "JUSTIFY" – Alignment is right/left justified.
- v. "CHAR" – Alignment is on the left most of the character specified in attribute "CHAR" and position by attribute "CHAROFF."
- d. **charoff** – For attribute **align** with a value "CHAR," percent of the current width to the left of the alignment character. If no value is entered the default value is 50%.
- e. **char** – For attribute **align** with a value "CHAR," the value is aligned on the first character occurrence. If no value is entered the default value is a blank character.
- f. **colwidth** – Enter either a proportional measure of the form number\*, i.e., "5\*" for 5 times the proportion, or "\*" ("1\*"); or, fixed measure, i.e., 2pt for 2 points, 3pi for 3 picas, 4in for 4 inches. Coefficients are positive integers.
- g. **colsep** – Default for all items in this table group. If non-zero, display the internal column rulings. If zero, do not display column rulings. Ignore the last column, where the frame setting applies. If no value is entered, inherit from table (optional). Intent of colsep is to place the line separator to the right, but this is application dependent.
- h. **rowsep** – Default for all items in this table group. If non-zero, display the internal row rulings below each item. If zero, do not display row rulings. Ignore the last row, where the frame setting applies. If no value is entered, inherit from table. As with the colsep, the rowsep location is application dependent though intent is it to appear as the bottom marker for the current row.

#### 29.1.1.2.2 Explanation of <colspec> attributes.

When column numbers **colnum** are used, the order number of the columns implicitly starts at 1. The attribute **colname** is provided when used in any <spanspec> and <entry>. A <colspec> contained in a table head should be complete for all columns. It overrides those on the containing table group <tgroup> and applies to just the table head <thead>. If the table head doesn't specify its <colspec>, then the table head inherits the <colspec>(s) of the containing table group <tgroup> (or the prior table group is used). The <colspec>(s) from the containing table group applies to the table body <tbody>. If the <colspec> element is not used, the table columns size will be equally divided based on the number of columns specified in the **cols** attribute in the <tgroup>. If a <colspec> is not provided for every column, the table application will set the parameters for columns without a <colspec>. For a four column table that is 6.5 inches wide with only one <colspec>, a **colwidth** of .5 inches, the remaining three columns will have a **colwidth** of 2 inches each. 6.5 minus the .5 inch in the single <colspec> equals 6 inches. This is divided by the three remaining columns.

#### 29.1.1.2.3 Examples of how column specification <colspec> is used.

Two examples of the use of the attributes of column specification and how the values of the attributes affect the columns are below. The difference between the examples, is the value of the attribute **align**. When the attribute **align** contains the value "char," the percent of the current width to the left of the alignment character is provided through the attribute **charoff**.

1. An example of the column specification element where the information is entered through its attributes to define the column: The attributes that describe the column is the "1" column of the table. Its **colname** is **col1**, the **align** of the data is "center," the column width **colwidth** is proportional (\*) of ".5\*in." The column separator **colsep** value "1" means display the internal column rulings to the right of entry and the number "1" in **rowsep** means display the internal horizontal row ruling below each entry; unless overridden by the corresponding attributes in a child element such as a cell entry <entry>.

```
<colspec colnum="1" colname="col1" align="center" colwidth=".5*in" colsep="1" rowsep="1"/>
```

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2. An example of the column specification element when the attribute **align** has the value of "char." The attributes describe that the **colnum** is the "second" column of the table, its **colname** is "col2," with **charoff** 25% of the **colwidth** of fixed column width of "1.5in" to be set aside to align any text to the left of the first capital letter "C" encountered in the cells in that column. The column will have both column **colsep** and row **rowsep** separators turned on unless overridden by the corresponding attributes in a child element such as the body, or a cell.

```
<colspec colnum="2" colname="col2" align="C" charoff="25" char="C" colwidth="1.5in" colsep="1" rowsep="1"/>
```

#### 29.1.1.2.4 Spanned column specification <spanspec>.

Spanned column specification defines a horizontal span of columns and associated attributes that can subsequently be referenced by the attribute **spanname** for repeated use in <entry>(s) in different <row>(s). A <spanspec> is defined in its <tgroup>. (The <spanspec> from the containing <tgroup> apply to <tbody>). Spanned column specification uses column names from <colspec> defined in that context. It gets default values from <colspec> which provides the name start **namest**, and name end **nameend**, attributes to identify the first and last columns of the span. The spanning is from left to right column order. The attribute column name **colname** is used, rather than **colnum** in identifying <spanspec>. The attribute **colname** of the element column specification <colspec>, is when there is a revision, the names are independent, which may change the number of inserted/deleted columns. When such redefinition occurs, any spanning should be by **namest** and **nameend**. The preferred method that provides better control of spanning columns, is to define the spanning in the entry <entry> of the first column using **namest** and **nameend**. Care should be taken when using a mixture of <spanspec> elements and <entry> attributes for spanning. It is possible to enter conflicting spans. It is up to the application to determine what to do (see Section 29.1.1.2.8).

1. The element <spanspec> is EMPTY and the pertaining information is entered through its attributes.
2. The DTD fragment for <spanspec> is graphically depicted:



FIGURE 556. Spanned column specification <spanspec> DTD hierarchy.

3. The DTD fragment for <spanspec> is:

```
<!ELEMENT spanspec EMPTY>
<!ATTLIST spanspec
 align (left | right | center | justify | char) "center"
 charoff CDATA #IMPLIED
 char CDATA #IMPLIED
 colsep (0 | 1) #IMPLIED
 namest CDATA #REQUIRED
 nameend CDATA #REQUIRED
 spanname CDATA #REQUIRED
 rowsep (0 | 1) #IMPLIED>
```

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4. Attributes for **<spanspec>**:

- a. **namest** (required) – Specifies name of the left most column of span. Names are identified in **<colspec>** of the current **<tgroup>**.
- b. **nameend** (required) – Specifies name of the right most column of span. Names are identified in **<colspec>** of the current **<tgroup>**.
- c. **spanname** – Specifies name of the spanned columns identified by the **namest** and **nameend** attributes.
- d. **align** – Text horizontal position within the column. If no value is entered the default value is flush left alignment.
  - i. “LEFT” – Alignment is flush left.
  - ii. “RIGHT” – Alignment is flush right.
  - iii. “CENTER” – Alignment is centered.
  - iv. “JUSTIFY” – Alignment is right/left justified.
  - v. “CHAR” – Alignment is on the left most of the character specified in attribute “CHAR” and position by attribute “CHAROFF.”
- e. **charoff** – For attribute **align** with a value “CHAR,” percent of the current width to the left of the alignment character. If no value is entered, the default value is 50%.
- f. **char** – For attribute **align** with a value “CHAR,” the value is aligned on the first character occurrence. If no value is entered, the default value is a blank character.
- g. **colsep** – Default for all items in this table group. If non-zero, display the internal column rulings. If zero, do not display column rulings. Ignore the last column, where the frame setting applies. If no value is entered, inherit from table (optional). The intent of the **colsep** is to place the line separator to the right, but this is application dependent.
- h. **rowsep** – Default for all items in this table group. If non-zero, display the internal row rulings below each item. If zero, do not display row rulings. Ignore the last row, where the frame setting applies. If no value is entered, inherited from table. As with the **colsep**, the **rowsep** location is application dependent though the intent is for it to appear as the bottom marker for the current row.

## 29.1.1.2.5 Example of how a spanned column specification is used.

An example of a spanned column specification where the information is entered through its attributes to define the spanning of the columns is below. The attributes describe that the column spanning starts **namest** with the column named **col1** and ends **nameend** with the column named **col3**. The name for the spanned column **spanname** is **span1**, the alignment of the data is **left**, and the number **1** in row separator means display the internal horizontal row ruling below its entry.

```
<spanspec namest="col1" nameend="col3" spanname="span1" align="left" rowsep="1"/>
```

29.1.1.2.6 Table head **<thead>**.

Table head identifies the heading in a table with a single **<tgroup>** or for each table group in a table. The **<thead>** is a child element of table group **<tgroup>**. Headings are displayed at the top of the table and again at the top of any continuation after a physical break between rows in a table body **<tbody>**.

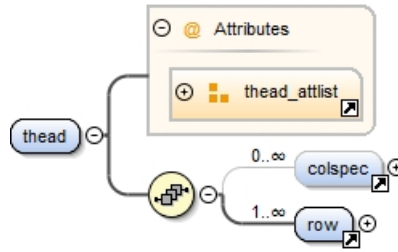
1. The components of **<thead>**:

- a. Column specification **<colspec>** (optional – zero or more). Column specification provides the details of the column. When new column's specifications is provided, it replaces a previous one in a table heading (see Section 29.1.1.2.1).



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- b. Row **<row>** (required – one or more). The element provides a horizontal collection of cells that identifies information in a table group (see Section 29.1.1.2.7).
2. The DTD fragment for **<thead>** is graphically depicted:

FIGURE 557. Table Header **<thead>** DTD hierarchy.

3. The DTD fragment for **<thead>** is:

```
<!ELEMENT thead (colspec*, row+)>
```

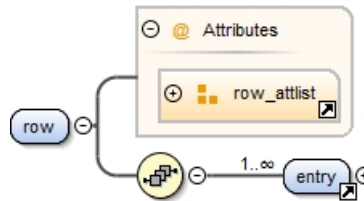
```
<!ATTLIST thead valign (top | middle | bottom) "bottom">
```

4. The element **<thead>** contains a single attribute **valign** – specifies the vertical alignment of content within the entry.

### 29.1.1.2.7 Row **<row>**.

Row is a horizontal collection of cells that identifies information in a table group **<tgroup>** of a table. The width of a row is the width of the table. The depth of a row is the depth of the deepest cell. Default values come from the table **<table>**, table group **<tgroup>** and column specification **<colspec>** attribute list values for like-named attributes.

1. The components **<row>** consists of one or more table cells **<entry>** (required – one or more) (see Section 29.1.1.2.8).
2. The DTD fragment for **<row>** is graphically depicted.

FIGURE 558. Table row **<row>** DTD hierarchy.

3. The DTD fragment for **<row>** is:

```
<!ELEMENT row (entry+)>
```

```
<!ATTLIST row
```

rowsep	(0   1)	#IMPLIED
applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED

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comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	IDREFS	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Attributes for **<row>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **rowsep** – Default for all items in this table group. If non-zero, display the internal row rulings below each item. If zero, do not display row rulings. Ignore the last row, where the frame setting applies. If no value is entered, inherit from table.

5. Common attributes for **<row>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

29.1.1.2.8 Entry **<entry>**.

Entry in a table identifies a cell in the row of a table header **<thead>** and table body **<tbody>**. Data entered in the cells of an XML table is entered as content of the **<entry>** element. The intersection of row location and column location as specified through the **<entry>** element locate a table cell, including spanned cells. Default values come from the column specification **<colspec>**, in table group, **<tgroup>**, table head **<thead>**, or table body **<tbody>** row attribute list values, for like-named attributes. A spanned entry not specified by a **<spanspec>** gets its defaults from its starting column. Preferred method of spanning columns horizontally is to use **<entry>** attributes name start **namest** and name end **nameend**. To vertically span specific rows use **<entry>**'s attribute **morerows**.

1. The components of a table cell **<entry>** consist of:

- a. Parsable data (#PCDATA) (optional – zero or more). The element provides the text for the TM number (see Section 6.2.2.1).
- b. Emphasis – **<emphasis>** (optional – zero or more). The element is used to emphasize the text of the entry (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (optional – zero or more). The element is used to format the text as subscript (see Section 36.1.3.4).

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- d. Superscript – **<supscript>** (optional – zero or more). The element is used to format the text as superscript (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (optional – zero or more). The element is used to reference the work package sequence number, figure, table, step(s), etc. (see Section 33.2.2).
- f. External reference – **<extref>** (optional – zero or more). The element is used to reference to external document information (see Section 33.2.1).
- g. Linking – **<link>** (optional – zero or more). The element provides a capacity to reference internal or external targets (see Section 33.2.3).
- h. IETM help information – **<help.info>** (optional – zero or more). The element is used for “help information” about the technical data used in frame-based manuals (see Section 35.3.3.7).
- i. Miscellaneous – **<misc>** (see 36.2.1).
- j. Controls and Indicators Entry – **<ctrlind>** (optional – zero or more). The element provides the name of the control and indicator (see Section 36.1.4.2).
- k. Control/Indicator value – **<ctrlind-val>** (optional – zero or more). The element provides a reading from a control or indicator (see Section 36.1.4.3).
- l. DoD ammunition code – **<dodac>** (optional – zero or more). The element provides identification of an ammunition type (see Section 36.1.4.4).
- m. Lubricant value – **<lubricant>** (optional – zero or more). The element provides identification of a lubricant (see Section 36.1.4.15).
- n. Graphic symbol – **<symbol>** (optional – zero or more). The element provides a graphic symbol not found in standard ISO character sets that is inserted as a graphic in text (see Section 31.3.1).
- o. Torque value or Limit – **<torque>** (optional – zero or more). The element provides a torque value or limit embedded in the text or table entry (see Section 36.1.4.25).
- p. Voltage value – **<voltage>** (optional – zero or more). The element provides the identification of a critical voltage measurement (see Section 36.1.4.26).
- q. Null – **<null>** (optional – zero or more). The element specifies that it contains no content and marking is identified by its attribute (see Section 36.1.3.2).
- r. Changed text marker – **<change>** (optional – zero or more). The element provides the scope and type of changed information that is indicated by being enclosed within start and end tags (see Section 36.1.3.7).
- s. Reduced Paragraph – **<trim.para>** (optional – zero or more). The element provides the same usage as a paragraph element, but contains a reduced content model (see Section 36.1.1.8).
- t. Graphic – **<graphic>** (optional – zero or more). The element provides a graphic, which is contained in an external entity (see Section 31.2).
- u. First level step in a procedure – **<step1>** (optional – zero or more). The element provides the first level step (see 17.3.1).
- v. Conditional First Level Step – **<step1-alt>** (optional – zero or more). The element provides multiple element options depending on the result from the precondition state (variable) information (see Section 35.2.1).
- w. Figure – **<figure>** (optional – zero or more). The element provides a graphic illustration, multi-sheet illustrations, graphic chart, or text illustrations (see Section 31.1.1).
- x. Procedure – **<proc>** (optional – zero or more) (see Section 17.2 for details on tagging) (see Section 17.2).

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- y. Notes – **<note>** (optional – zero or more). The element provides highlights to essential procedures, conditions, or statements or conveys important instructional data to the user (see Section 28.1.3).
  - z. Line Break – **<brk>** (optional – zero or more). The element causes a line break in the narrative (see Section 36.1.3.3).
  - aa. Index Reference – **<indxref>** (optional – zero or more). The element identifies text that will be included in the index (see Section 15.5.2.2.3).
  - ab. Term – **<term>** (optional – zero or more). The element identifies a word(s) that constitute the **term** in a glossary or to be defined in some other means (see Section 36.1.2.4.2).
  - ac. Term Definition – **<term.def>** (optional – zero or more). The element is a wrapper containing both a word *<term>* to be defined and its definition **<def>** (see Section 36.1.2.4.1).
  - ad. Illustration or legend callout – **<callout>** (optional – zero or more). The element allows manual entry of the index numbers contained on a figure or in a legend (see Section 33.2.4.1).
  - ae. Footnote **<ftnote>** – (optional – zero or more). The element identifies the content of a footnote contained in the text (see Section 32.1.1).
  - af. Footnote reference – **<ftnref>** (optional – zero or more). The element provides a reference to an existing footnote (see Section 32.1.1.2).
  - ag. Numbered list – **<seqlist>** (optional – zero or more). The element allows the entry of a numbered list (see Section 36.1.2.1).
  - ah. Bulleted list – **<randlist>** (optional – zero or more). The element allows the entry of a bulleted list into the cell (see Section 36.1.2.3).
  - ai. Definition list – **<deflist>** (optional – zero or more). The element allows the inclusion of a definition list within the cell (see Section 36.1.2.4).
2. The DTD fragment for **<entry>** is graphically depicted.

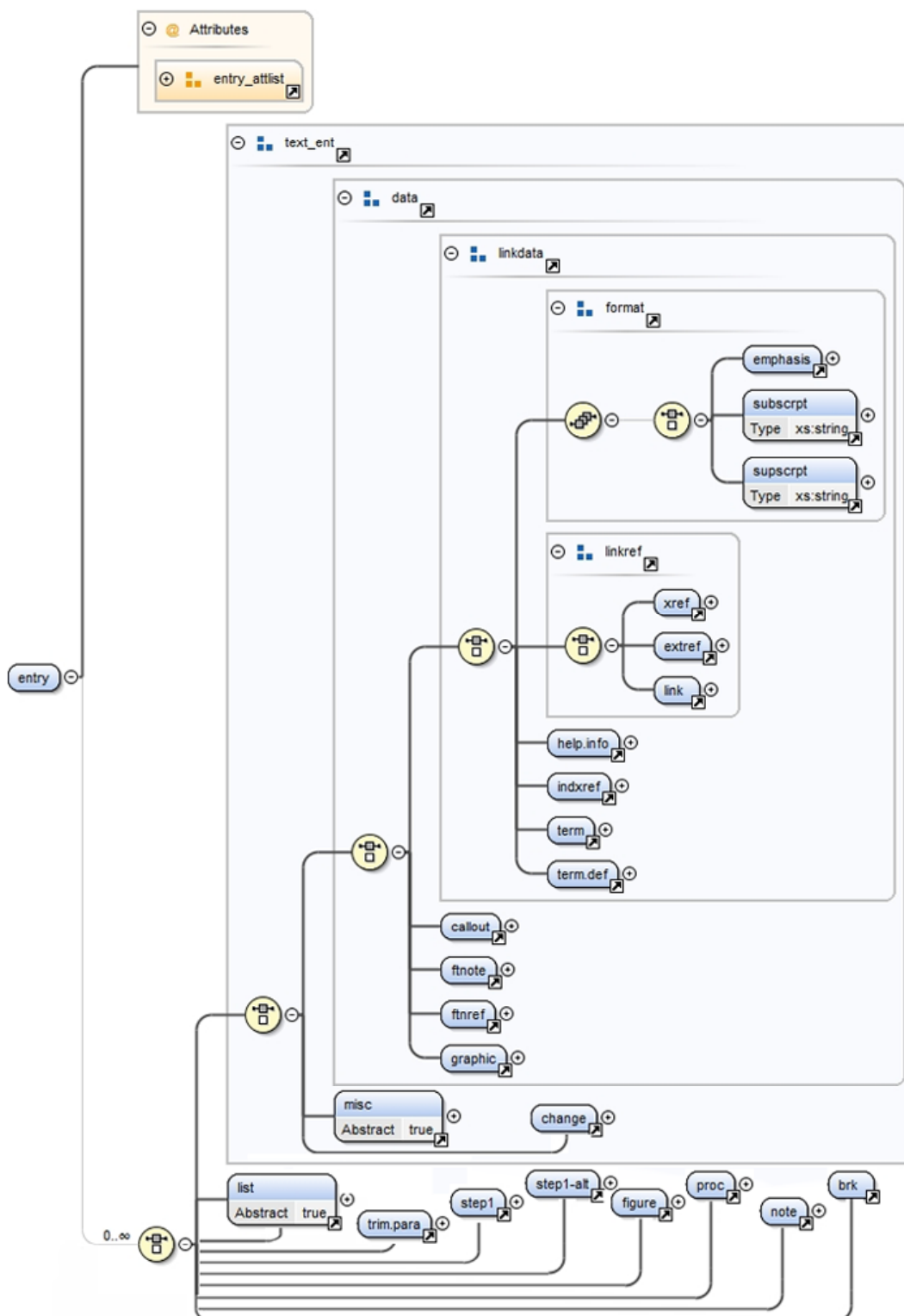


FIGURE 559. Table cell &lt;entry&gt; DTD hierarchy.

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3. The DTD fragment for **<entry>** is:

```
<!ELEMENT entry (%text_ent; | %list; | trim para | step1 | step1-alt | figure
| proc | note | brk) *>
```

```
<!ATTLIST entry
```

align	(left   right   center   justify   char)	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
char	CDATA	#IMPLIED
charoff	CDATA	#IMPLIED
colname	NMTOKEN	#IMPLIED
colsep	(0   1)	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
morerows	CDATA	"0"
namest	NMTOKEN	#IMPLIED
nameend	NMTOKEN	#IMPLIED
spanname	CDATA	#IMPLIED
rowsep	(0 1)	#IMPLIED
rotate	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
valign	(top   bottom   middle)	"top">

4. Attributes for **<entry>**:

- a. **colname** – Specifies the name of the column. Omit if **spanname** is present.
- b. **spanname** – Specifies name of the spanned columns, used to specify the position in a row. Used in conjunction with the **spanname** attribute in **<spanspec>**. Care should be taken when using the **<spanspec>** element and the **namest** and **nameend** attributes for the **<entry>** described below. There are two methods of showing column spanning. Through the use of **<spanspec>** and through the use of the cell's **namest** and **nameend** attributes. These methods may be ambiguous and provide conflicting spanning information. It is strongly recommended to use only one approach to spanning columns.
- c. **namest** – Specifies name of the left most column of span; is used in combination with **nameend** as an alternative to the **<spanspec>** approach. Names are identified in **<colspec>**, of the current table group **<tgroup>**.
- d. **nameend** – Specifies name of the right most column of a span. If a **nameend** is present with a **namest**, the application may present a warning or error. Names are identified in column specification **<colspec>**, of the current table group **<tgroup>**.

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- e. **morerows** – Specifies number of additional rows covered by a vertical span. The **morerows** attribute is sometimes confusing. This attribute specifies the number of additional rows to be vertically spanned (if you need to span three rows, the **morerows** value would be **2**, the current row plus two more rows). The author should also ensure the **<thead>** or **<tbody>** contain enough additional rows for the vertical spanning. Some applications may not be able to handle a table with insufficient rows for a vertical span.
  - f. **colsep** – If one, display the internal column vertical ruling to the right of each item; if zero, do not display. Ignore the last column, where the frame setting applies.
  - g. **rowsep** – Default for all items in this table group. If non-zero, display the internal row rulings below each item. If zero, do not display row rulings. Ignore the last row, where the frame setting applies. If no value is entered, inherited from the table.
  - h. **rotate** – Rotations are not additive to those specified in stylesheet. Content is either in the orientation of the table (value is zero) or 90 degrees counter clockwise to table orientation (value is **1**).
  - i. **valign** – Specifies the vertical alignment of content within the entry.
  - j. **align** – Text horizontal position within the column. If no value is entered the default value is flush left alignment.
    - i. “LEFT” – Alignment is flush left.
    - ii. “RIGHT” – Alignment is flush right.
    - iii. “CENTER” – Alignment is centered.
    - iv. “JUSTIFY” – Alignment is right/left justified.
    - v. “CHAR” – Alignment is on the left most of the character specified in attribute “CHAR” and position by attribute “CHAROFF.”
  - k. **charoff** – For attribute **align** with a value “CHAR,” percent of the current width to the left of the alignment character. If no value is entered the default value is 50%.
  - l. **char** – For attribute **align** with a value “CHAR,” the value is aligned on the first character occurrence. If no value is entered, the default value is a blank character.
5. Common attributes for **<entry>** are:
- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** – Unique identifier (optional) (see Section 36.3.7).
  - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - h. **security** – Security classification (optional) (see Section 36.3.14).
  - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 29.1.1.2.9 Example of a table heading.

An example of the XML for spanning a table heading in a table. Its attribute vertical alignment **valign** specifies alignment of content in the middle of the header. The table header is using the element column specification **<colspec>** to define the columns of the table head in the table. The first **<colspec>** attributes describe that the column is the **1** column of the table, its name is **col1**, the alignment of the data is center, the width of the column is

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"1.0" inch wide. The number "1" in column separator means display the internal column rulings to the right of entry and the number "1" in row separator means display the internal horizontal row ruling below each entry. The table headings are: first column "ITEM," second column "NAME" and third column "DESCRIPTION."

```
<thead valign="middle">
<colspec colnum="1" colname="col1" align="center" colwidth="1.0in"/>
<colspec colnum="2" colname="col2" align="center" colwidth="2.0in"/>
<colspec colnum="3" colname="col3" align="center" colwidth="3.0in"/>
<row>
<entry>ITEM
</entry>
<entry>NAME
</entry>
<entry>DESCRIPTION
</entry>
<row>
</thead>
```

### 29.1.1.2.10 Table body <tbody>.

The body of a table group contains one table body <tbody>. If there are multiple table groups in a table, then each table group will contain at least one table body. The columns specification <colspec> of the enclosing table group <tgroup> is the default specification for the enclosed table body <tbody>. Table group's attribute vertical alignment **valign** specifies alignment of content of the header. The default for **valign** is "top" unless specified.

1. The <tbody> consists of one or more row <row> elements (required – one or more). The element provides a horizontal collection of cells that identifies information in a table group (see Section 29.1.1.2.7).
2. The DTD fragment for <tbody> is:

```
<!ELEMENT tbody (row+)>
<!ATTLIST tbody
 valign (top | middle | bottom) "top">
```

3. The element <tbody> contains a single **valign** attribute that specifies the vertical alignment of content within the entry.

## 29.2 Standard information tables.

MIL-STD-40051-2 contains tables that consist of defined standard information and are designated as "Standard Information Tables." Some table content is mandatory while other content is optional. MIL-STD-2361 provides a unique set of content tags to define the specific data in the standard information tables. The stylesheet output display of a standard information table would display as if it was created in a CALS table but consisting of content data. MIL-STD-40051-2 standard tables have no deviations to the number of columns and the titles in the column headings.

### 29.2.1 Content tags in a standard table.

A standard table contains content tags that have names indicating their data content. Content tags embody the requirements contained in the respective functional requirements as described in MIL-STD-40051-1/-2. Content tags have names indicating their data content, such as Standard Mobilization Requirement table <mobiltab> containing the content tag for mobilization requirements entry <mobil-entry>. The <mobil-entry> is a content tag to wrap the data in the row(s) of the Mobilization Requirement table. Mobilization requirements entry tag <mobil-entry> is equivalent to a row tag <row> in a CALS table. By having its own unique set of content tags,



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the table information can be organized into data content so it can facilitate information access, sharing, reuse, management, control and change.

TABLE XXIX. compares the tags of a CALS table to the tagging of a Standard table.

**TABLE XXIX. CALS table tag equivalent to a standard mobilization requirement table tag.**

CALS TABLE	STANDARD TABLE
<code>&lt;table&gt;</code>	<code>&lt;mobiltab&gt;</code>
<code>&lt;title&gt;</code>	<code>&lt;title&gt;</code>
<code>&lt;tgroup&gt;</code>	These elements are defined by the specific standard table information.
<code>&lt;colspec&gt;</code>	
<code>&lt;thead&gt;</code>	
<code>&lt;row&gt;</code>	
<code>&lt;entry&gt;</code>	
<code>&lt;tbody&gt;</code>	
<code>&lt;row&gt;</code>	<code>&lt;mobil-entry&gt;</code>
<code>&lt;entry&gt;</code>	<code>&lt;xref&gt;</code>
<code>&lt;entry&gt;</code>	<code>&lt;actionreq&gt;</code>

### 29.2.2 Examples of standard information tables.

Below are some examples of standard information tables: For further examples of standard information tables, see TABLE XXXI. which references their location in MIL-STD-40051-1/-2.

1. An example of a standard table XML instance for Mobilization requirement table.

```

<mobiltab id="m00524-55-1520-250-2">
<title>Mobilization requirements
</title>
<mobil-entry>
<xref pagelocid="m00524-55-1520-250-1" wpid="m00524-55-1520-250-1"/>
<actionreq>Add "Depending on the urgency of requirements, availability of
materials, and fabrication lead time, provisions of this work package may be
relaxed. When that occurs, any practical method may be used to inscribe or attach
the data to the equipment, decals."
</actionreq>
</mobil-entry>
<mobil-entry>
<xref pagelocid="m00524-55-1520-250-1" wpid="m00524-55-1520-250-1"/>
<actionreq>Cleaning, Step 3. Add "Clean only to the extent necessary to perform
preshop analysis."
</actionreq>
</mobil-entry>
</mobiltab>

```

2. An example of a stylesheet formatted output for the Mobilization standard information table:

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TABLE XXX. Mobilization requirements.

WORK PACKAGE	ACTION
WP 0088	Add "Depending on the urgency of requirements, availability of materials, and fabrication lead time, provisions of this work package may be relaxed. When that occurs, any practical method may be used to inscribe or attach the data to the equipment, decals."
WP 0090	Cleaning, Step 3. Add "Clean only to the extent necessary to perform preshop analysis."

3. An example of a standard table XML instance for a PMCS table containing the "Man-Hour" column:

```

<pmcstable use-manhours="yes">
<title>PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)
</title>
<pmcs-entry>
<itemno>1
</itemno>
<interval>Before
</interval>
<manhours/>
<checked>Circuit Breaker
</checked>
<pmcsproc crewmember="Gunner">
<pmcspara>
<para>Refer to TM 9-2330-392-14&P for any Before PMCS checks and services.
Need more text here to fill out the area for the next entry. This will push the
next page down and maybe the formatting will work correctly. It is only incorrect
on the second entry. Everything else works fine.
</para>
<eqpnotavail>
<trim.para>Circuit breaker panel does not switch to the OFF position or will not
stay in the ON position.
</trim.para>
</eqpnotavail>
</pmcspara>
</pmcsproc>
</pmcs-entry>
<pmcs-entry>
<itemno>2
</itemno>
<interval>Before
</interval>
<manhours/>
<checked>Electrical Power Cable
</checked>
<pmcsproc crewmember="Driver">
<pmcspara>
<specpara>
<warning>
<trim.para>Electrical switches, outlets, or wiring that have exposed connections
or show signs of electrical shorts or arcing are a shock hazard. Disconnect
electrical power before handling.

```

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```

</trim.para>
</warning>
<para>Check electrical power cable for signs of cuts, exposed wires, and signs of
burns or electrical fire before plugging into generator or facility power.
</para>
</specpara>
<eqpnotavail>
<trim.para>Electrical power cable is shorting or is a shock hazard.
</trim.para>
</eqpnotavail>
</pmcspara>
</pmcsproc>
</pmcs-entry>
</pmcstable>

```

4. An example of a stylesheet formatted output for the PMCS standard information table:.

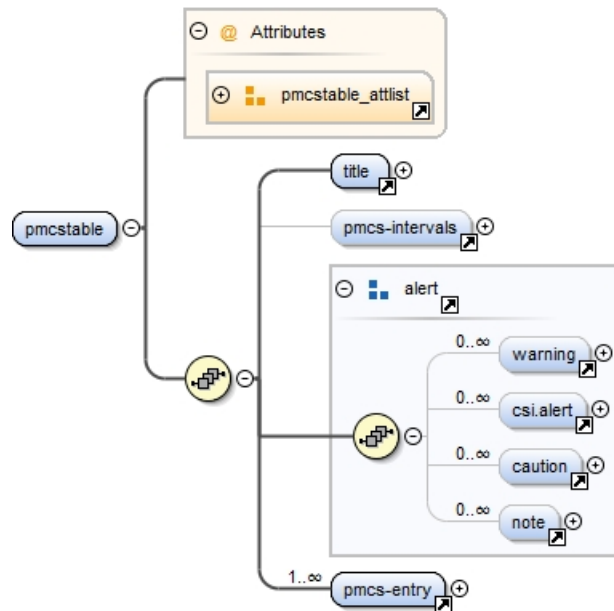


FIGURE 560. Formatted output for the PMCS standard information table.

### 29.2.3 List of standard information tables.

The following is a list of the standard information tables listed in MIL-STD-40051-1/-2. The list of tables includes the name of the standard information table, a reference where it is explained in this handbook, and the name of the work package that contains it:

TABLE XXXI. MIL-STD-40051-1/-2 standard information tables.

Standard Table	Work Package
Controls and Indicators <ctrlindtab> (19.1.1.1)	Controls and Indicators work package <ctrlindwp>
Criteria Inspection for Packaging <crit.insp.tab> (23.3.1.2.1)	Service Upon Receipt Work Package <surwp>
Checking Unpacked Equipment Components <pecul.insp.tab> (23.3.1.2.5)	Service Upon Receipt Work Package <surwp>

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TABLE XXXI. MIL-STD-40051-1/-2 standard information tables. (continued)

Standard Table	Work Package
Preventive Maintenance Checks and Services (PMCS) <pmcstable> (23.6.1)	Preventive Maintenance Checks and Services (PMCS) <pmcswp>
Classification of Material Defects <defect.tab> (23.7.1.1.1)	Maintenance Work Packages <maintwp>
Overhaul and Retirement Schedule <orsch.tab> (23.14.2.1.1)	Maintenance Work Packages <maintwp>
Depot Mobilization Requirements <mobilreq> (23.10.4.1)	Depot Mobilization Requirements Work Package <mobilwp>
Overhaul Inspection Procedures <oiptab> (23.10.3.1)	Overhaul Inspection Procedure – Work Package <oipwp>
Repair Parts List <plwp>24.4.2	Repair Parts List Work Package <plwp>
Special Tools List <tools> (16.6.3)	Parts Information and Repair Parts and Special Tools List <stl_partswp>
Kit Parts List <kitswp>24.4.4	Kits Parts List <kitswp>
Bulk Items List <bulk_itemswp>22.4.5	Bulk Items List <bulkwp>
National Stock Number (NSN) Index <nsn> (24.4.2.1.7.3)	National Stock Number (NSN) index work package <nsnindxwp>
Part Number Index <pnindxwp> (24.4.7.2.1)	Part Number Index Work Package <pnindxwp>
Reference Designator Index <refdesindx> (24.4.7.3.1)	Reference Designator Index Work Package <refdesindxwp>
Standard Maintenance Allocation Chart (MAC) <mac> (27.4.1)	Standard Maintenance Allocation Chart (MAC) <macwp>
Aviation Maintenance Allocation Chart (AVMAC) <avmac> (27.4.2)	Standard Maintenance Allocation Chart (MAC) <macwp>
Tools and Test Equipment Requirements (MAC/AVMAC) <tereqtat>27.4.3	Standard Maintenance Allocation Chart (MAC) <macwp>
Remarks (MAC/AVMAC) <remarks> (27.4.4.1.2)	Standard Maintenance Allocation Chart (MAC) <macwp>
Component of End Items (COEI) List <coei> (27.5.1.2)	Components of end item (COEI) and basic issue items (BII) lists work package (operator only) <coeibiiwp>
Basic Issue Items (BII) List <bii> (27.5.1.3)	Components of end item (COEI) and basic issue items (BII) lists work package (operator only) <coeibiiwp>
Additional Authorization List (AAL) <aal> (27.6.2)	AAL Work Package <aalwp>
Collateral Material (CM) List <cmlist> (27.7.2)	Collateral Material (CM) Work Package <cmwp>
Expendable and Durable Items List <explist> (27.8.2)	Expendable And Durable Items List Work Package <explistwp>

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TABLE XXXI. MIL-STD-40051-1/-2 standard information tables. (continued)

Standard Table	Work Package
Tool Identification List <toolidlist> (27.9.2)	Tool identification list work package <toolidwp>
Mandatory Replacement Parts List <mrpl> (27.10.1)	Mandatory Replacement Parts Work Package <mrplwp>
Critical Safety Items (CSI) <csi> (27.11.1)	Critical safety items (CSI) work package <csi. wp>

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## 30 STANDARD INFORMATION

Standard information is data that does not have any deviation to the content requirements including the use of standard headings in tables. The data specified in standard statements and standard tables is considered standard information. Standard information normally contains content tags that have names indicating their data content. Content tags embody the requirements contained in the respective functional requirements in MIL-STD-40051-1/-2. Boilerplate text can be used to insert the verbatim text of the standard information (see Chapter 37).

### 30.1 Types of standard information.

Standard information may consist of narrative text, such as a reporting of errors statement on a title block page or the majority of the text in the MAC or parts introduction work packages. This text is normally verbatim, there may be system unique identifiers required. The other type of standard information is in tabular form. Standard information tables have specific numbers of columns and header information. The remainder of the table lists system information through the use of content tags.

### 30.2 Presentation.

The presentation format is either "page oriented" or "frame-oriented." A page-based and frame-based presentation have the same content coverage. However, the display and presentation of the information may be different. Different stylesheets are used for the presentation of page-based or frame-based tables. Standard information formats, hotspot capabilities, linking to other applications (ordering parts) are determined by the acquiring activity and the IETM developer.

#### 30.2.1 Standard information formats.

Standard information can be formatted in the display device as the following possibilities listed below. For further information see MIL-HDBK-1222:

1. Form – is used to enter and submit additional information or the ability to review the data (parts ordering).
2. Page-based table – is used to present the information that does not require or need any special interactivity, but to provide reference information.
3. Frame-based table – is used to present information in form better for frame view (the ability to reduce categories not needed).
4. List – is used to list just enough information (item name, part number, NSN, etc.) to identify the data to provide a detailed view of the selected item in a separate data pane.
5. Checklist – is used to record the item was checked and completed. Additionally, the item may denote possible issues of the checked item (red highlighted item as "Not ready," yellow highlighted item as "Comment," button for comments, etc.). Each item may be presented completely as a table (refer to #2 or #3 above) or list (refer to #4 above). Using the list method, the next check item's detailed information could be automatically shown after marking the checked item task as completed.

#### 30.2.2 Page oriented standard information.

MIL-STD-40051-2 contains defined standard information statements or tables that are designated as "Standard Information." Standard information tables have no deviations to the number of columns and the titles in the column headings. Some table content is mandatory while other content is optional. MIL-STD-40051 provides a unique set of content tags to define the specific data in the standard tables. The stylesheet output display of a standard table is

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same as if the standard table was tagged as a CALS table. Below are some examples of page-based presentation on standard information statements and tables. For more examples and information see MIL-HDBK-1222.

### 30.2.2.1 Example of a page-based standard information statement export control warning.

The Export Control Warning **<export>** used in a TM front page contains only verbatim text. By entering the element **<export>**, the stylesheet will enter the appropriate text.

1. XML document instance fragment:

```
<export/>
```

2. Stylesheet Output:

**WARNING** – This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751, et. seq.) or the Export Administration Act of 1979 (Title 50, U.S.C., App. 2401, et seq.), as amended. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

**FIGURE 561. Example of a page-based standard information statement export control warning.**

### 30.2.2.2 Example of a page-based standard information national stock number index table.

The standard information specific of this table **<nsnindx>** are the titles for the standard table heading and the data that is requested. The specific data is the NSN number **<nsn>** and figure number **<callout>** and is wrapped with the tag – National Stock Number index entry or row **<nsnindxrow>**. The stylesheet formats the output of how the standard information tables are displayed.

1. XML document instance fragment. An example of an XML document instance fragment containing a page-based standard information National Stock Number Index table is found in Section 24.4.7.1.1.
2. Stylesheet Output:



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0023 00

## CREW

## NATIONAL STOCK NUMBER INDEX

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
7025 -01-474-3789			7021-01-475-0217		
7025-01-474-3791			7025-01-475-0229		
7025-01-474-3792			7025-01-475-0280		
			7025-01-475-0282		
7021-01-474-3793			7520-01-484-1219		
7025-01-474-5753					

END OF WORK PACKAGE

0023 00-1/blank

FIGURE 562. Example of a page-based standard information national stock number index table.

### 30.2.2.3 Example of a page-based standard information MAC table.

The standard information specific to this table, is the titles for the standard table heading and the data that is requested. The specific data is wrapped with the tag MAC grouping **<mac-group>**. The standard data contained in this grouping for a two-level MAC is group number **<groupno>**, is component/assembly **<compassem>** and the qualifier. The qualifier tag **<qualify>** is a wrapper for the specific data maintenance function **<maintfunc>**, maintenance classification level **<maintclass>**, tools and equipment references **<terefs>**, and remarks code **<remarks>**. The **<maintclass>** element contains the table entries: unit **<unit>**, direct **<direct>**, general support **<gensup>** and DMWR/NMWR support **<depot>**. The stylesheet formats the output of how the standard information tables are displayed.

1. XML document instance fragment. An example of an XML document instance fragment containing a page-based standard information two-level MAC table is found in Section 27.4.1.
2. Stylesheet Output:

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0440

## TSEC/ST-34 MAINTENANCE ALLOCATION CHART (MAC)

Table 1. MAC For TSEC/ST-34.

(1)  GROUP NUMBER	(2)  COMPONENT/ASSEMBLY	(3)  MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5)  TOOLS AND EQUIPMENT REF CODE	(6)  REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW (C)	MAIN- TAINER (F)	BELOW DEPOT (H)	DEPOT (D)		
00	POWER UNIT, STP-34	Inspect	1.8					A
		Test	0.3					B
		Repair		1.8			1, 2	C
		Repair			2.0		1, 2, 3, 4, 5	D, E
		Repair				2.0	1, 2, 3, 4	D, E

Table 2. Tools and Test Equipment for TSEC/ST-34.

TOOLS OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	H	Automatic test system ST-51	5810 00-089-4599	TSEC/ST-51
2	F	Multimeter, digital	6625-01-139-2512	AN/PSM-45
3	D	Multimeter, digital	6625-01-145-2430	AN/USM 486
4	H	Oscilloscope	6625 01-187-7847	AN/USM 488
5	D	Power supply (0-35 VDC 2.4A)	6130-00-006-5224	HP 6434B86
6	D	Power supply tester	NOT APPLICABLE	ON502427
7	H	Repair and soldering center (page)	4940-01-031-4541	PRC-350C/equip
8	F	Tool, kit, electronic equipment	5180 00-610-8177	TK 105/6

Table 3. Remarks for TSEC/ST-34.

REMARKS CODE	REMARKS
A	External.
B	Preventive maintenance checks and services (PMCS)
C	Replace rack installed unit, 0.4 hrs.
D	Bench top use only, 0.1 hrs.
E	Self-test.
F	Repair by PMA and authorized component replacement only.
G	Complete unit and subassembly repair (except STP-34 switching assembly and E-EBO/1).
H	Complete unit and subassembly repair.
I	In compliance with TSEC/ST-34 CIDOS.
J	Function performed by specialized repair activity (SRA). (Theater COMSEC Logistics Support Center-Europe or Lexington-Blue Grass Army Depot)

END OF WORK PACKAGE

0440-1/blank

FIGURE 563. Example of a page-based standard information MAC table.

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**30.2.3 Frame oriented standard information.**

MIL-STD-40051-1 contains defined standard information but the presentation of it in a frame-based may vary. The standard information can be presented (text, table, form, etc.) as prescribed by the acquiring activity. The stylists provide how the presentation of the data is viewed. See below for an example of frame-based presentation of standard information. For more examples and information see MIL-HDBK-1222. Some features found in various presentations are:

1. Tables are linked to the appropriate text and displayed when they do not appear in a pane on the user's viewer.
2. Scroll bars – the vertical and horizontal scroll bar is used to move through the table when it exceeds the length or width of the data pane.
3. If a table is scrollable, the table has "sticky" column headers.
4. Only the referencing text within a table cell is a hotspot.
5. Reference to a table cell or row scrolls the table directly to the referenced cell or row.
6. Reference to a table not in-line uses a single click of a text hotspot or an icon hotspot and displays the object in a separate panning/zooming pane.
7. When in-line table(s) are large or numerous, an icon hotspot may be used in place of the object to speed up the display.

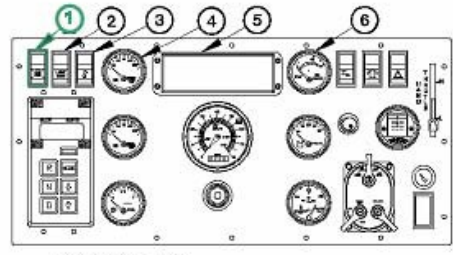
**30.2.3.1 Example of a frame-based presentation on controls and indicators standard information <ctrlindtab>.**

An example of a Controls and Indicators standard information <ctrlindtab> is displayed in three panes in a inner shell of a frame. The standard information that is specific of this table are the titles for the standard table heading and the data that is requested. The standard title headings are Key, Control/Indicator, and Function. The data is wrapped with the tag control/indicator row <ctrlindrow>. The control/indicator row wraps the data key <key>, control/indicator <ctrlind>, note <note>, and function <function>. The keys and controls/indicator are linked to the separate panes of data containing the functions of the control/indicator and the illustration. When a key and its controls/indicator of the table is selected, it displays the function in a separate pane. The illustration is displayed in a third pane containing callouts <ctrlindtab>. The callouts of the illustration can contain hotspot capabilities to the keys of the Controls and Indicators standard information providing versatile linkage of the data. The stylesheet formats the output of how the standard information tables are displayed.

1. XML document instance fragment. An example of an XML document instance fragment containing a frame-based presentation on Controls and Indicators standard information is found in Section 19.1.1.1.
2. Stylesheet Output:

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**DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS**

<b>Table 1. Instrument Panel Controls and Indicators.</b>		<b>Function</b>
<b>Key</b>	<b>Control/Indicator</b>	
<b>1</b>	<b>Radiator Fan Off Switch</b>	<p>When positioned to on, radiator fan off switch will illuminate to indicate the radiator fan is disabled. Radiator fan off switch will remain in the off position and not illuminated, unless otherwise directed.</p>  <p style="text-align: center;">STEERING WHEEL REMOVED FOR CLARITY</p>
2	Lamp Test Switch	
3	Ether Start Switch	
4	FRONT BRAKE AIR Pressure Gage	
5	Lighted Indicator Display	
6	OIL Pressure Gage	

**Figure 1. Instrument Panel Controls and Indicators**

FIGURE 564. Example of a frame-based presentation on controls and indicators standard information.

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## 31 ILLUSTRATION, GRAPHIC, AND MULTIMEDIA

### 31.1 Illustration.

Illustration is a general term used for all graphic presentations per MIL-HDBK-1222. An illustration is defined in two methods as a figure or inline graphic. A figure has the requirements for figure number, title, placement outside the narrative text (usually below the narrative), and text not wrapped around the figure (text located to the left or right side of the figure, or within the same cell as a figure within a table) in accordance to MIL-STD-40051-1/-2. An inline graphic is a small graphical object that is untitled and flows within the running narrative text, such as a symbol, icon, or equation.

#### 31.1.1 Figure **<figure>**.

The element **<figure>** element is generally used to display a graphic that provides additional descriptive or location to the associated narrative text. The **<figure>** element contains one of the following illustration types – a single-sheet graphic, a multi-sheet graphic, tabular layout, or narrative text.

1. The components of **<figure>**:

- a. An optional precondition **<precond>** that indicates if the figure is to be presented (see Section 29.1.1.1).
- b. A required figure title (excluding the figure number, which is generated by the stylesheet) **<title>** (see Section 36.1.1.4). As noted, the figure title in the source document is inputted before the illustration type. However, after the stylesheet has completed composition, the title information (with the generated figure number) is placed after the illustration type.
- c. Includes one of the following illustration types:
  - i. Single-sheet illustration includes an illustration **<graphic>** (see Section 31.2) followed by an optional legend **<legend>** (see Section 31.3.4).
  - ii. Multiple-sheet illustration **<subfig>** (see Section 31.1.3).
  - iii. Tabular illustration **<table>** (see Chapter 29).
  - iv. Narrative illustration **<verbatim>** (see Section 36.1.3.6).
  - v. Figtab **<figtab>** (optional – zero or more) (see Section 36.2.2).

2. The DTD fragment for **<figure>** is graphically depicted:

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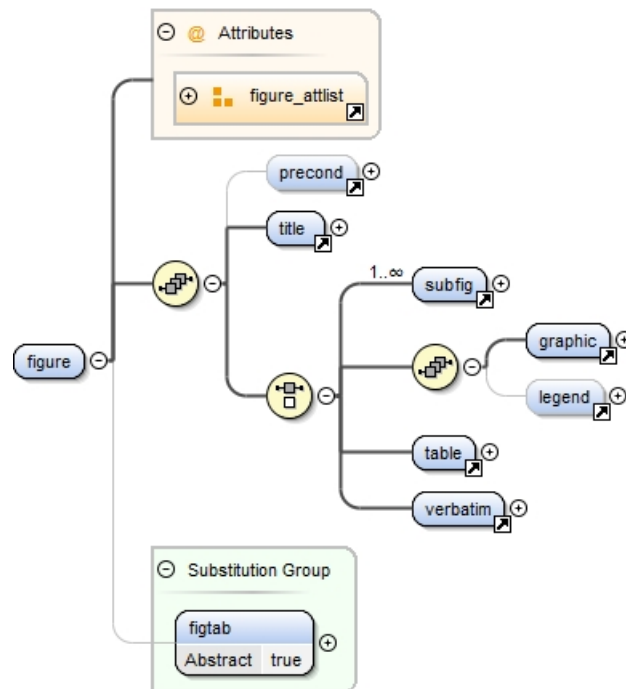


FIGURE 565. Figure DTD hierarchy &lt;figure&gt;.

## 3. The DTD fragment for &lt;figure&gt; is:

```
<!ELEMENT figure (precond?, title, (subfig+ | (graphic, legend?) | table |
verbatim))>
```

```
<!ATTLIST figure
```

applicable	IDREFS	#IMPLIED
application	(page   frame   both)	"both"
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
figtype	(normal-page   fo-rear )	"normal-page"
fo-size	(25x11   35x11   45x11 )	#IMPLIED
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
label	CDATA	#IMPLIED
pane	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(0   1   2   3   4   5  )	"1">



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4. Attributes for **<figure>**:

- a. **application** – Figure presentation method (optional) (default value is **both**) defines the figure presentation method for page-base only (**page**), frame-base only (**frame**), or for either method (**both**).
- b. **figtype** – Figure size type (Page-base only) (optional) (default value is **normal-page**). Frame-base ignores this attribute. In page-base, the attribute defines if the figure is an oversized (foldout) figure and presented at the end of the manual, in the foldout section (**fo-rear**) or normal sized figure and presented with the work package (**normal-page**).
- c. **fo-size** – Foldout size. Defines the paper size (in inches) for an oversized (foldout) figure when the **figtype (fo-rear)** is set. The available foldout sizes (includes the apron) are:
  - i. “25x11” – Foldout size is 25” by 11.”
  - ii. “35x11” – Foldout size is 35” by 11.”
  - iii. “45x11” – Foldout size is 45” by 11.”
- d. **pane** – New pane (Frame-base only) (optional) (default value is **no**). Page-base ignores this attribute. In frame-base, the attribute defines if the figure is shown in a separate page (**yes**) or in the same pane (**no**). The attribute value may be ignored, if the acquiring activity has specified the display engine determines the figure placement.
- e. **tocentry** – TOC level (optional) (default value is **1**). Defines the Table of Contents (TOC) placement level. When the attribute value is **0**, no TOC entry is entered, otherwise the number specifies the indenture level. The attribute level may be ignored if specified and allows the composition to determine the indenture level.

5. Common attributes for **<figure>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

## 31.1.1.1 Allowable figures for page-based TMs and IETMs.

The types of graphics that should be used when preparing page-based TMs and IETMs include line drawings, illustrations (tools and test equipment, special tools and test equipment, etc), photographs, engineering drawings, diagrams, charts and graphs. In accordance with MIL-HDBK-1222, the use of multiple-sheet and foldouts illustrations should be limited to page-based TMs only.

31.1.2 Single-sheet illustration type.

The single-sheet illustration is the option most commonly used. The elements used for single-sheet illustration are any precondition or applicability **<precond>**, an illustration title **<title>** (without the figure number), the graphic **<graphic>**, and an optional legend **<legend>**.

31.1.3 Multiple-sheet illustration type **<subfig>**.

The multiple-sheet illustration is used when a graphic requires two or more pages to represent the illustration.

- 1. The components of **<subfig>**:
  - a. An optional addendum to the figure title **<subtitle>**. The supplement text allows additional information about each illustration sheet, the words “(continued),” or any additional words to append to the existing figure title. The subtitle element is not used to insert the “Sheet x of y” numbering. This is handled by the attributes “sheet” and “totalsheets” or preferably by the stylesheet.
  - b. A required illustration **<graphic>** (see Section 31.2) followed by an optional legend **<legend>** (see Section 31.3.4).
  - c. Tabular illustration **<table>** (see Chapter 29).
  - d. Narrative illustration **<verbatim>** (see Section 36.1.3.6).
- 2. The DTD fragment for **<subfig>** is graphically depicted:

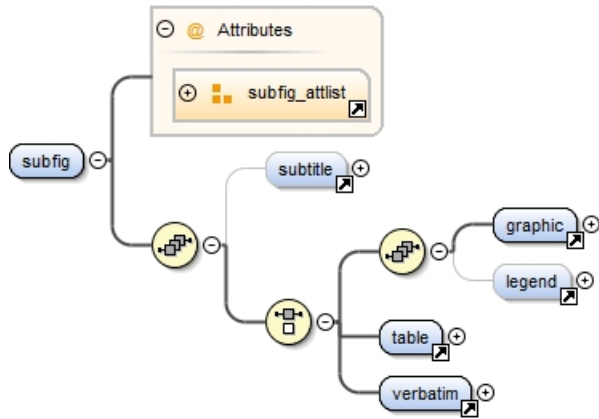


FIGURE 566. Multiple-sheet illustration DTD hierarchy **<subfig>**.

- 3. The DTD fragment for **<subfig>** is:

```
<!ELEMENT subfig (subtitle?, ((graphic, legend?) | table | verbatim))>
<!ATTLIST subfig
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
```

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sheet	CDATA	#IMPLIED
totalsheets	CDATA	#IMPLIED>

4. Attributes for **<subfig>**:

- a. **sheet** – Used to enter the sheet number of a multi-sheet figure. This will override any system generated counters.
- b. **totalsheets** – Provides the value for the total number of sheets in a multi-sheet figure. This will override any system generated counters.

5. Common attributes for **<subfig>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **id** – Unique identifier (optional) (see Section 36.3.7).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

6. Example multiple sheet illustration **<subfig>** using stylesheet generated sheet numbering is shown below:

```

<figure application="both" figtype="normal-page" pane="no">
<title>Electrical Power Distribution System
</title>
<subfig>
<subtitle>– Diagram
</subtitle>
<graphic boardno="g1340482-1" unitmeasure="in">
</graphic>
</subfig>
<subfig>
<subtitle>– Components
</subtitle>
<graphic boardno="g1340482-2" unitmeasure="in">
</graphic>
</subfig>
</figure>

```

The example would generate the following two figure sheet titles:

- a. Figure 1. Electrical Power Distribution System – Diagrams (Sheet 1 of 2).
- b. Figure 1. Electrical Power Distribution System – Components (Sheet 2 of 2).

### 31.1.4 Tabular illustration type.

A tabular illustration is used to illustrate a table example and identify the tabular information as a figure (illustration) and not as a table. The elements used for tabular illustration are a illustration title **<title>** (without the figure number) and a table (see Chapter 29).

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### 31.1.5 Narrative illustration type.

The narrative illustration is used for direct typing of information for an illustration. Unlike normal XML, the ENTER key (carriage return, line break, etc.), space and tab characters are maintained. The composed text uses a fixed spaced font (the space between characters are same amount). The option is used when typing the information is simpler to illustrate or allowing the author the flexibility to quickly update the illustrated data. An example for narrative text could be showing lines of computer program code. The elements used for narrative illustration are an illustration title **<title>** (without the figure number) and verbatim text **<verbatim>**.

### 31.2 External graphic **<graphic>**.

An external graphic is non-XML data that uses various binary graphical formats (CGM, PNG, BMP, etc.). The external graphic file and characteristics (format the placement and size) are defined in the attributes. Additional functionality (for IETMs usage only), is mapping links on the graphic illustration (see Section 31.2.4).

1. The element **<graphic>** consists of one or more optional graphical links (hotspots) **<mapref>** (see Section 31.2.4).
2. DTD graphically for **<graphic>** is depicted below:

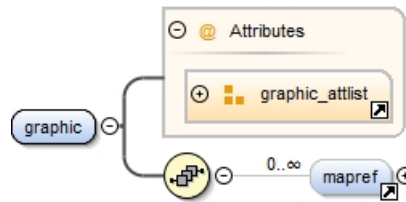


FIGURE 567. Graphic DTD hierarchy **<graphic>**.

3. The DTD fragment for **<graphic>** is:

```
<!ELEMENT graphic (mapref*)>
<!ATTLIST graphic
alt CDATA #IMPLIED
applicable IDREFS #IMPLIED
assocfig IDREFS #IMPLIED
boardno ENTITY #REQUIRED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
graphsty NMTOKEN #IMPLIED
hplace CDATA #IMPLIED
hscale CDATA #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
reprodep CDATA #IMPLIED
reprowid CDATA #IMPLIED
```

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scalefit	(yes   no)	#IMPLIED
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
unitmeasure	(mm   cm   px   in   pt   pi)	"in"
vscale	CDATA	#IMPLIED>

#### 4. Unique attributes for **<graphic>**:

- a. **hplace** – The attribute specifies, if any, the horizontal position of the graphic. The values are left, right, center, or none (system specific rules are used). If no specific value is applied the system specific rules are used.
- b. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.
- c. **alt** – Additional text to assist in identifying the graphic (optional) (see Section 34.3).
- d. **boardno** – External graphic entity name (required) (see Section 31.2.1).
- e. **graphsty** – Allows attributes to change stroke, color, fill, transparency, etc.
- f. **hscale** – Horizontal scaling factor (optional) (see Section 31.2.3).
- g. **reprowid** – Reproduction area width (optional) (see Section 31.2.3).
- h. **reprodep** – Reproduction area depth (optional) (see Section 31.2.3).
- i. **scalefit** – Scale the graphic to fit the reproduction area (optional) (see Section 31.2.3).
- j. **vscale** – Vertical scaling factor (optional) (see Section 31.2.3).

#### 5. Common attributes for **<graphic>** are:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier. (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 31.2.1 Graphic entity name.

The graphic entity name is a unique identifier name that points to the external graphic file. Since a single graphic may be reused numerous times throughout the publication, the graphic is defined once as an external ENTITY declaration found in the document type declaration at the beginning of the XML source file. The ENTITY declaration identifies entity name (name used in the XML source file), the file name, and graphic type (NOTATION

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described in Section 31.2.2). The entity name and the file name does not always have to be the same. The graphic file name could be denoted as an identifier (X1435930), but the entity name could be a common term (Bradley-side-view). The graphic entity file definition and usage example is shown in FIGURE 568.

```
<!ENTITY TTCSTM2447 SYSTEM "Graphics/TTCSTM2447.jpg" NDATA JPG>
<!ENTITY TTCSTM2446 SYSTEM "Graphics/TTCSTM2446.jpg" NDATA JPG>
<!ENTITY TTCSTM2437 SYSTEM "Graphics/TTCSTM2437.jpg" NDATA JPG>
<!ENTITY TTCSTM2436 SYSTEM "Graphics/TTCSTM2436.jpg" NDATA JPG>
<!ENTITY TTCSTM2424 SYSTEM "Graphics/TTCSTM2424.jpg" NDATA JPG>
```

**FIGURE 568. Graphic entity definition example.**

### 31.2.2 Graphic Notations.

“Notations identify, by name, the format of unparsed entities, elements with a notation attribute, or specific processing instructions” in accordance with W3C XML 1.0. Graphic notations are used to identify the format of the graphic content (non-XML data). Notation declarations define the named notation and provide an external identifier to an accompanying application capable of processing the illustrations in the defined format. A notation’s external identifier, may either be a PUBLIC or SYSTEM identifier and can be used to reference a processing application. The prescribed notations are declared in the DTD. Below shows examples of notation declarations:

```
<!NOTATION IGES PUBLIC "-//USA-DOD//NOTATION (ASME/ANSI Y14.26M-1987) Initial
Graphics Exchange Specification//EN">
<!NOTATION GIF SYSTEM "GIF">
```

The DTD contains the following predefined notation types:

**1. Graphic Notations:**

- a. “BMP” – Microsoft Windows Bitmap in accordance with ISBN 0-7923-9432-1: Graphic Notation.
- b. “CGM-CHAR” – Computer Graphic Metafile with character encoding in accordance with ISO 8632/2.
- c. “CGM-BINARY” – Computer Graphic Metafile with binary encoding in accordance with ISO 8632/3.
- d. “CGM-CLEAR” – Computer Graphic Metafile with clear text encoding in accordance with ISO 8632/4.
- e. “CGM” – Computer Graphic Metafile is a free and open international standard file format for 2D vector graphics, raster graphics, and text, and is defined by ISO/IEC 8632. All graphical elements can be specified in a textual source file that can be compiled into a binary file or one of two text representations.
- f. “DITROFF” – Device Independent UNIX Phototypesetter (TROFF)
- g. “DVI” – TeX Device Independent
- h. “EPS” – Encapsulated Postscript in accordance with ISBN 0-201-18127-4: Adobe
- i. “EQN” – Equation UNIX Phototypesetter (UNIX)
- j. “FAX” – CCITT Group 4 Facsimile Type 1 Untiled Raster
- k. “GIF” – Graphic Interchange Format
- l. “GIF87a” – Graphics Interchange Format 87a
- m. “GIF89a” – Graphics Interchange Format 89a
- n. “JPG” – Joint Photographic Experts Group

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- o.** “JPEG” – Joint Photographic Experts Group
  - p.** “IGES” – Initial Graphics Exchange Specification in accordance with ASME/ANSI Y14.26M
  - q.** “PCX” – ZSoft PCX bitmap in accordance with ISBN 0-7923-9432-1
  - r.** “PDF” – Postscript Document Format
  - s.** “PIC” – Picture UNIX Phototypesetter (TROFF)
  - t.** “PNG” – Portable Network Graphic in accordance with W3C TR/REC-png
  - u.** “PS” – Postscript
  - v.** “SGML” – Standard Generalized Markup Language in accordance with ISO 8879:1986
  - w.** “TBL” – Table UNIX Phototypesetter (TROFF)
  - x.** “TEX” – The TeXbook in accordance with ISBN 0-201-13448-9:Knuth
  - y.** “TIFF” – Tagged Image File Format bitmap
  - z.** “WMF” – Microsoft Windows Metafile in accordance with ISBN 0-7923-9432-1:Graphic Notation
  - aa.** “WPG” – WordPerfect Graphic format
  - ab.** “linespecific” – ASCII text with linebreak
- 2.** Audio Notations:
- a.** “AIF” – Audio Interchange File Format (AIFF)
  - b.** “AIFC” – Audio Interchange File Format (AIFF)
  - c.** “AIFF” – Audio Interchange File Format (AIFF)
  - d.** “AU” – uLaw/AU Audio File
  - e.** “CDA” – CD Audio Track
  - f.** “CDDA” – Audio Interchange File Format (AIFF)
  - g.** “KAR” – Musical Instrument Digital Interface (MIDI)
  - h.** “MID” – Musical Instrument Digital Interface (MIDI)
  - i.** “MIDI” – Musical Instrument Digital Interface (MIDI)
  - j.** “RMI” – Musical Instrument Digital Interface (MIDI)
  - k.** “SMF” – Musical Instrument Digital Interface (MIDI)
  - l.** “SND” – uLaw/AU Audio File
  - m.** “ULW” – uLaw/AU Audio File
  - n.** “WAV” – Waveform Audio File
  - o.** “WAX” – Windows Media Audio
  - p.** “WMA” – Windows Media Audio
- 3.** MP3 Notations:
- a.** “M3U” – MPEG Audio Stream, Layer III Playlist File
  - b.** “M3URL” – MPEG Audio Stream, Layer III Playlist File
  - c.** “MP3” – MPEG Audio Stream, Layer III
  - d.** “SWA” – MPEG Audio Stream, Layer III

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**4. Video Notation:**

- a.** “ASR” – Microsoft Automap Route
- b.** “ASX” – Windows Media Video
- c.** “AVI” – Audio Video Interleaved
- d.** “DIF” – Digital Video
- e.** “DV” – Digital Video
- f.** “FLI” – AutoDesk Animator
- g.** “MOV” – QuickTime Movie
- h.** “QT” – Quicktime Movie
- i.** “SMI” – Synchronized Multimedia Integration Language (SMIL)
- j.** “SML” – Synchronized Multimedia Integration Language (SMIL)
- k.** “VFW” – Video for Windows
- l.** “WM” – Windows Media Video
- m.** “WMP” – Windows Media Video
- n.** “WMV” – Windows Media Video
- o.** “WMX” – Windows Media Video
- p.** “WVX” – Windows Media Video

**5. Motion Picture Notation:**

- a.** “MLV” – MPEG
- b.** “MP2” – MPEG-2
- c.** “MP2V” – MPEG-2
- d.** “MP4” – MPEG-4
- e.** “MPA” – MPEG Audio
- f.** “MPE” – MPEG
- g.** “MPEG” – MPEG
- h.** “MPG” – MPEG-1
- i.** “MPG4” – MPEG-4
- j.** “RTS” – Streaming Movie
- k.** “RTSP” – Streaming Movie
- l.** “SDP” – Streaming Movie
- m.** “SWF” – Macromedia Flash Movie



### 31.2.3 Scaling graphics.

When graphic scaling is desired, two methods are used: scaling by percentage and scaling by size. When the percentage attributes (**hscale** or **vscale**) are non-zero values, the scaling by percentage method overrides the scaling by size method.

#### 1. Percentage

Scaling by percentage increases or decreases the graphic size by a specific amount, both vertically and horizontally. Many composition systems recommend (common practice) entering a value in either the **hscale** or the **vscale** attribute – not both. When only a single scaling by percentage attribute value is entered, the composition system will proportionately scale the other direction with the same percentage amount. If different values are entered in both attributes – the image is skewed. When the attribute value is 100, the graphic is actual size. If the graphics needs to be 10% greater in size, the attribute(s) value would be 110. If the graphics needs to be 10% lesser in size, the attribute(s) value would be 90.

#### 2. Size

Scaling by size (reproduction area) scales the graphic proportionally to fit the prescribed graphical size. If the graphic size is greater than the reproduction area and the **scalefit** attribute is set to no, the graphic will be cropped (in frame-based) or should produce an overflow error (in page-based), otherwise the graphic is scaled proportionally to the specified size.

### 31.2.4 Graphic hotspot reference **<mapref>**.

The element **<mapref>** provides the information to overlay hotspot reference on a graphic **<graphic>**. Graphic hotspot **<mapref>** element defines an area, within a graphic, that enables a link within a graphic to related text, or to invoke an object (multimedia, programs, applications, scripts etc.). The graphic hotspot is designed for use in frame-based/IETM applications. A hotspot reference can display additional content (acronym, tool tip, etc.), when the mouse is located over the area (mouse-over), when applicable. The hotspot reference has three overlay shapes, a circle **<map.circle>**, a rectangle (including a square) **<map.rectangle>**, and a polygon **<map.polygon>**.

The map coordinates **<map.coord>** defines the shape by the x (horizontal) and y (vertical) axis coordinates from the upper left corner. An important requirement is knowing the graphic dimension (height and width). Without the graphic dimensions, mapping references are not possible. Additionally, if the frame-based viewer allows graphic resizing, the map reference coordinates **<mapref>** are resized to the same percentage. Knowing the graphical dimensions, any item in the graphic can be outlined with the mapped shapes. The coordinate position attributes “x” and “y” contain the values and defines a unit of measurement (attribute **unitmeasure**) as millimeter (mm), centimeter (cm), pixel (px), inch (in), pica (pi), or point (pt).

#### 1. The component of **<mapref>** is one of the following overlay shape types:

- a. Overlay circle shape **<map.circle>** (see Section 31.2.4.1).
- b. Overlay rectangle or square shape **<map.rectangle>** (see Section 31.2.4.2).
- c. Overlay user defined shape **<map.polygon>** (see Section 31.2.4.3).

#### 2. The DTD fragment for **<mapref>** is graphically depicted:

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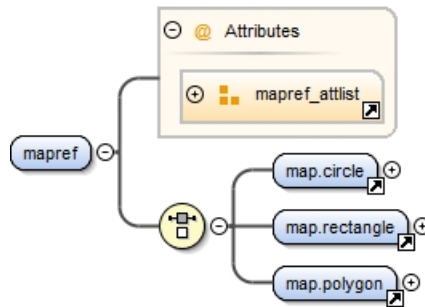


FIGURE 569. Graphic DTD hierarchy &lt;mapref&gt;.

3. The DTD fragment for **<mapref>** is:

```
<!ELEMENT mapref (map.circle | map.rectangle | map.polygon)>
<!ATTLIST mapref
 id ID #REQUIRED
 label CDATA #IMPLIED
 refdes CDATA #IMPLIED
 partref IDREF #IMPLIED>
```

4. Attributes for **<mapref>**:

- a. **id** – Unique identifier (required). The unique identifier is used to link to the graphical hotspot (**<callout>** element).
- b. **label** – Hotspot label (optional). Provides additional information about the referenced graphical hotspot (part number, description, NSN).
- c. **refdes** — Reference designator (optional). The reference designator illustration index number assigned to applicable repair part or special tool.
- d. **partref** – Part or link reference (optional). A reference to parts information unique identification value assigned to the parts information entry **<pi.item>**. The reference can also reference a **<link>** to start an external application.

### 31.2.4.1 Map circle hotspot **<map.circle>**.

The element **<map.circle>** overlays a circle using the map coordinate **<map.coord>** for the circle center and uses the attribute **radius** to determine the circle size. An example is placing a 12 point wide circle whose center is 1 inch from the top and 1 inch from left. The XML fragment is:

1. **radius** – Circle radius (required). Sets the radius of the circle based on the coordinates assigned by **<map.coord>**.
2. The DTD fragment for **<map.circle>** is graphically depicted:

FIGURE 570. Graphic DTD hierarchy of **<map.circle>**.

3. **unitmeasure** – Unit of measure (optional) (default value is "in"). Assigns the unit of measure for the circle's radius. Unit of measure values include "mm" (millimeter), "cm" (centimeter), "px" (pixel), "in" (inch), "pt" (point), or "pi" (pica).

```
<map.circle radius="6" unitmeasure="pt">
 <map.coord x="1" y="1" unitmeasure="in"/>
```

*</map.circle>*

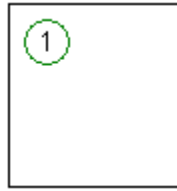


FIGURE 571. Map circle example.

#### 31.2.4.2 Map rectangle hotspot *<map.rectangle>*.

The element *<map.rectangle>* overlays a rectangle using two map coordinates *<map.coord>* for the upper left corner and lower right corner.

1. Example placing the 12 points by 12 points square whose upper left corner is 72 points from the top and 72 points from left. The two coordinates would be 72 by 72 points for upper left and 84 by 84 points for the lower right. The XML fragment is:

```
<map.rectangle>
<map.coord x="72" y="72" unitmeasure="pt"/>
<map.coord x="84" y="84" unitmeasure="pt"/>
</map.rectangle>
```



FIGURE 572. Map square example.

2. Example placing the 12 by 16 points rectangle whose upper left corner is 150 points from the top and 400 points from left. The two coordinates would be 150 by 400 points for upper left and 162 by 416 points for the lower right. The XML fragment is:

```
<map.rectangle>
<map.coord x="150" y="400" unitmeasure="pt"/>
<map.coord x="162" y="416" unitmeasure="pt"/>
</map.rectangle>
```



FIGURE 573. Map rectangle example.

### 31.2.4.3 Map polygon hotspot <map.polygon>.

The element <map.polygon> overlays a shape defined by the map coordinates <map.coord> by connecting from one map coordinate to the next in the order entered. The last coordinate and the first coordinate will make the final polygon side. A triangle, pentagon, or other shapes can be formed to basically outline a part or item in a graphic. Note the overlay does not need to exactly fit over the image.

1. Example placing a triangle over an object with 12 point sides starting the top angle 24 points from the top and 24 points from the left. The three coordinates would be 24 by 24 points, 30 by 44.4 points, and 18 by 44.4 points. The XML fragment is:

```
<map.polygon>
<map.coord x="24" y="24" unitmeasure="pt"/>
<map.coord x="30" y="44.4" unitmeasure="pt"/>
<map.coord x="18" y="44.4" unitmeasure="pt"/>
</map.polygon>
```

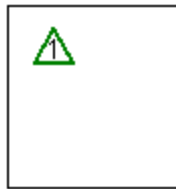


FIGURE 574. Map polygon triangle example.

2. Example placing the 12 points by 12 points square whose upper left corner is 72 points from the top and 72 points from left. The four coordinates would be 72 by 72 points, 84 by 72 points, 84 by 84 points, and 72 by 84 points. The polygon can generate a square, but with much more effort than the rectangle model. The XML fragment is:

```
<map.polygon>
<map.coord x="72" y="72" unitmeasure="pt"/>
<map.coord x="84" y="72" unitmeasure="pt"/>
<map.coord x="84" y="84" unitmeasure="pt"/>
<map.coord x="72" y="84" unitmeasure="pt"/>
</map.polygon>
```



FIGURE 575. Map polygon square example.

### 31.2.4.4 Map coordinates <map.coord>.

One or more mapping coordinates <map.coord> elements is required for each graphic hotspot <map.circle>, <map.rectangle>, <map.polygon>, depending on the selected shape. The x and y mapping coordinates are measured from the upper left-hand corner (0,0) of the graphic.

1. The element is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for <map.coord> is:

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```

<!ELEMENT map.coord EMPTY>

<!ATTLIST map.coord
 unitmeasure (mm | cm | px | in | pt | "in"
 pi)
 x CDATA #REQUIRED
 y CDATA #REQUIRED

```

### 3. Attributes for **<map.coord>**:

- a. **x** – X-axis (horizontal) coordinate (required). Enter a positive numeric value, omitting the unit of measure.
- b. **y** – Y-axis (vertical) coordinate (required). Enter a positive numeric value, omitting the unit of measure.
- c. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.

### 31.2.4.5 Creating graphic hotspots in the source data.

The following is an example for creating and linking a graphic hotspot:

1. Within the **<graphic>** element, insert a graphical hotspot **<mapref>** element(s). Enter one for each area identified to be hotspotted.
2. The **<mapref>** element requires an overlay hotspot shape. The example is using a rectangle shape **<map.rectangle>** element.
3. XML source code example for creating a rectangle hotspot in a graphic that links to the part's information **<pi.item>** in the Repair Parts List work package:

```

<figure id="">
<title>Gun Mount Support
</title>
<graphic boardno=""/>
<mapref id="">
<map.rectangle>
<map.coord x="">
<map.coord y="">
</map.rectangle>
</mapref>
</graphic>
</figure>
</map.coord>
</map.coord>
</map.rectangle>
</mapref>
</figure>

```

XML segment for **<pi.item>** in the Repair Parts List work package:

```

<pi.item id="p00392-9-1305-201_87" indent="0" type="part" fscap="no" mrp="no" csi="no" tereq="no">
<callout assocfig="p00392-9-1305-201-fig6" label="87"/>
<smr service="army" sourcecode="PA" maintcode="OZ" recovercode="Z"/>
<nsn>

```

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```

<fsc>5310
</fsc>
<niin>00-515-7449
</niin>
</nsn>
<partno>AN960C416L
</partno>
<cageno>88044
</cageno>
<desc>BRACKET
</desc>
<qty>2
</qty>
</pi.item>

```

### 31.3 Graphic inline with text.

A graphic inline with text is intended to be a small graphic set in the same line as the text, such as a symbol **<symbol>** warning or caution icon(s) **<icon-set>**, equation **<inlinegraphic>**, etc.

#### 31.3.1 Symbol **<symbol>**.

The **<symbol>** element is used for a graphic symbol not found in standard ISO character sets that is inserted as a graphic inline with the text.

1. The element **<symbol>** is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<symbol>** is:

```

<!ELEMENT symbol EMPTY>

<!ATTLIST symbol
alt CDATA #IMPLIED
assocfig IDREFS #IMPLIED
boardno ENTITY #REQUIRED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
hscale CDATA #IMPLIED
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
reprodep CDATA #IMPLIED
reprowid CDATA #IMPLIED
scalefit (yes | no) #IMPLIED
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED

```

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unitmeasure	(mm   cm   px   in   pt   pi	"in"
	)	
vscale	CDATA	#IMPLIED>

3. Unique attributes for **<symbol>**:

- a. **alt** – Additional text to assist in identifying the graphic (optional) (see Section 34.3.1).
- b. **boardno** – Board number specifies the name of the entity containing the external graphic file (see Section 31.2.1).
- c. **reprowid** – Repro width specifies the repro area width (see Section 31.2.3).
- d. **reprodep** – Repro depth specifies the repro area depth (see Section 31.2.3).
- e. **hscale** – Horizontal scale specifies the horizontal scaling factor. The number 100 is unscaled graphic (see Section 31.2.3).
- f. **vscale** – Vertical scaling specifies the vertical scaling factor. The number 100 is unscaled graphic (see Section 31.2.3).
- g. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.
- h. **scalefit** – Scale fit specifies the characteristic that allows the graphic to be scaled as needed to fit the size of the reproduction area, when attribute value is non-zero (see Section 31.2.3).

4. Common attributes for **<symbol>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

**31.3.2 Inline graphic <inlinegraphic>.**

The **<inlinegraphic>** element identifies a graphic that is maintained with the text (equation).

- 1. The element **<inlinegraphic>** is EMPTY and all pertinent information is entered through its attributes.
- 2. The DTD fragment for **<inlinegraphic>** is:

```
<!ELEMENT inlinegraphic EMPTY>
<!ATTLIST inlinegraphic
 alt CDATA #IMPLIED
 assocfig IDREFS #IMPLIED
```

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boardno	ENTITY	#REQUIRED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
hscale	CDATA	#IMPLIED
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
reprodep	CDATA	#IMPLIED
reprowid	CDATA	#IMPLIED
scalefit	(yes   no)	#IMPLIED
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
unitmeasure	(mm   cm   px   in   pt   pi)	"in"
vscale	CDATA	#IMPLIED>

3. Unique attributes for **<inlinegraphic>** are:

- a. **alt** – Additional text to assist in identifying the graphic (optional) (see Section 34.3.1).
- b. **boardno** – Board number specifies the name of the entity containing the external graphic file (see Section 31.2.1).
- c. **reprowid** – Repro width specifies the repro area width (see Section 31.2.3).
- d. **reprodep** – Repro depth specifies the repro area depth (see Section 31.2.3).
- e. **hscale** – Horizontal scale specifies the horizontal scaling factor. The number 100 is unscaled graphic (see Section 31.2.3).
- f. **vscale** – Vertical scaling specifies the vertical scaling factor. The number 100 is unscaled graphic (see Section 31.2.3).
- g. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.
- h. **scalefit** – Scale fit specifies the characteristic that allows the graphic to be scaled as needed to fit the size of the reproduction area, when attribute value is non-zero (see Section 31.2.3).

4. Common attributes for **<inlinegraphic>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).



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- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 31.3.3 Icon set <icon-set>.

The element <icon-set> identifies a series of hazard icons used as a unit to mark warnings or cautions; stored as a single graphic entity.

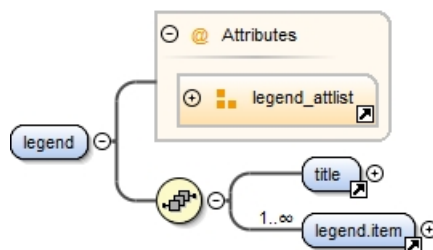
1. The element <icon-set> is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for <icon-set> is:

```
<!ELEMENT icon-set EMPTY>
<!ATTLIST icon-set
 alt CDATA #IMPLIED
 assocfig IDREFS #IMPLIED
 boardno ENTITY #REQUIRED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 hscale CDATA #IMPLIED
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 reprodep CDATA #IMPLIED
 reprovwidth CDATA #IMPLIED
 scalefit (yes | no) #IMPLIED
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED
 unitmeasure (mm | cm | px | in | pt | pi) "in"
 vscale CDATA #IMPLIED>
```

3. Unique attributes for <icon-set> are:
  - a. **alt** – Additional text to assist in identifying the graphic (optional) (see Section 34.3.1).
  - b. **boardno** – Board number specifies the name of the entity containing the external graphic file (see Section 31.2.1).
  - c. **reprovwidth** – Repro width specifies the repro area width (see Section 31.2.3).
  - d. **reprodep** – Repro depth specifies the repro area depth (see Section 31.2.3).
  - e. **hscale** – Horizontal scale specifies the horizontal scaling factor. The number 100 is unscaled graphic.

- ### 31.3.4 Legend <legend>.

1. The components of **<legend>**:
  - a. A required title **<title>** (see Section 36.1.1.4). Usually the title is “LEGEND,” but the author may enter different text.
  - b. One or more legend item **<legend.item>**. Each legend item contains the following elements:
    - i. A term **<term>** (see Section 36.1.2.4.2) or callout **<callout>** reference (see Section 33.2.4.1) being identified.
    - ii. The term or callout reference definition or description **<def>** (see Section 36.1.2.4.3)
    - iii. An optional link **<xref>** to further details on the term or callout reference.
2. DTD graphical hierarchy for **<legend>**:



**FIGURE 576. Legend <legend> and <legend.item> DTD hierarchy.**

3. The DTD fragment for **<legend>** is:

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```

<!ELEMENT legend (title, legend.item+)>
<!ATTLIST legend
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0">

<!ELEMENT legend.item ((term | callout), def, xref?)>
<!ATTLIST legend.item
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0">

```

4. Common attributes for **<legend>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

### 31.4 Authentication page **<authent>**.

The authentication page indicates the TM has been approved by the U.S. Army or other approved authentication agency (major command for a command publication). The authentication page is an external graphic obtained through the APD or major command channels after authentication has been completed.

- 1. The element **<authent>** is EMPTY and all pertinent information is entered through its attributes.
- 2. The DTD fragment for **<authent>** is:

```

<!ELEMENT authent EMPTY>
<!ATTLIST authent
 alt CDATA #IMPLIED
 boardno ENTITY #REQUIRED
 hscale CDATA #IMPLIED
 reprodep CDATA #IMPLIED
 reprowid CDATA #IMPLIED
 scalefit (yes | no) #IMPLIED
 unitmeasure (mm | cm | px | in | pt | pi) "in"
 vscale CDATA #IMPLIED>

```

- 3. Unique attributes for **<authent>** are:

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- a. **alt** – Additional text to assist in identifying the graphic (optional) (see Section 34.3.1).
- b. **boardno** – Board number specifies the name of the entity containing the external graphic file (see Section 31.2.1).
- c. **reprowid** – Repro width specifies the repro area width (see Section 31.2.3).
- d. **reprodep** – Repro depth specifies the repro area depth (see Section 31.2.3).
- e. **hscale** – Horizontal scale specifies the horizontal scaling factor. The number 100 is unscaled graphic.
- f. **vscale** – Vertical scaling specifies the vertical scaling factor. The number 100 is unscaled graphic (see Section 31.2.3).
- g. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.
- h. **scalefit** – Scale fit specifies the characteristic that allows the graphic to be scaled as needed to fit the size of the reproduction area, when attribute value is non-zero (see Section 31.2.3).

### 31.5 Back cover <back>.

The inside of the back cover may contain a graphic for a metric conversion table covering applicable units.

1. The element <back> is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for <back> is:

```
<!ELEMENT back EMPTY>
<!ATTLIST back
 alt CDATA #IMPLIED
 boardno ENTITY #IMPLIED
 hscale CDATA #IMPLIED
 reprodep CDATA #IMPLIED
 reprowid CDATA #IMPLIED
 scalefit (yes | no) #IMPLIED
 unitmeasure (mm | cm | px | in | pt | pi) "in"
 vscale CDATA #IMPLIED>
```

3. Attributes for <back> are:

- a. **alt** – Additional text to assist in identifying the graphic (optional) (see Section 34.3.1).
- b. **boardno** – Board number specifies the name of the entity containing the external graphic file (see Section 31.2.1).
- c. **reprowid** – Repro width specifies the repro area width (see Section 31.2.3).
- d. **reprodep** – Repro depth specifies the repro area depth (see Section 31.2.3).
- e. **hscale** – Horizontal scale specifies the horizontal scaling factor. The number 100 is unscaled graphic.
- f. **vscale** – Vertical scaling specifies the vertical scaling factor. The number 100 is unscaled graphic (see 31.2.3).

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- g. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.
- h. **scalefit** – Scale fit specifies the characteristic that allows the graphic to be scaled as needed to fit the size of the reproduction area, when attribute value is non-zero (see Section 31.2.3).

### 31.6 Multimedia functions.

Multimedia refers to the integration of text, graphics, audio, video and/or animation for the enhancement of the data being presented. Multimedia techniques should only be used in an IETM when it results in enhancing the presentation of the information or makes the process more effective. Multimedia is used to supplement the narrative and never used as the primary means of presenting information. This is specified in MIL-STD-40051-1. The starting and control keys are defined helper application and may be controlled by parameters being sent through the **<link>** element attribute **parameter** (see Section 33.2.3). Any audio, video, or animation must be approved by the acquiring activity before inclusion in an IETM. Multimedia standards and techniques are defined by the acquiring activity and in accordance with AR 25-30. XML source code example for invoking a multimedia application with a designated video clip:

```
<link xlink:href="c:\video_files\TM_9-2350-294-10-2\t00039-9-2350-294_v36.wmv" application="frame"
xreftype="multimedia" xmlns:xlink="http://www.w3.org/1999/xlink" xlink:type="simple" linkaction="prompt"
linkobject="">
<symbol boardno=""/>
</link>
```

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This page intentionally left blank.

## 32 FOOTNOTES

### 32.1 Footnote elements.

Footnotes are used essentially for reference, explanation, comments, or other information. The main elements that provide a footnote in a work package or in a table are footnote **<ftnote>** and footnote reference **<ftnref>**.

#### 32.1.1 Narrative footnote **<ftnote>**.

The element **<ftnote>** is used as the body of a footnote in the document. A footnote may contain one or more paragraphs **<ftnpara>**. The footnote does not appear until the element **<ftnref>** is entered. The **<ftnote>** does not have to be inserted in a specific spot in a document. It is recommended that it is inserted in the same work package as the footnote reference **<ftnref>** for reuse of work packages. The stylesheet will control where the footnote information is displayed.

1. The narrative footnote **<ftnote>** consists of one or more paragraph footnote elements **<ftnpara>** (required – one or more) (see Section 32.1.1.1).
2. The DTD fragment for **<ftnote>** is depicted:

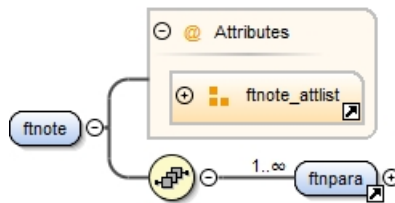


FIGURE 577. Narrative footnote **<ftnote>** DTD hierarchy.

3. The DTD fragment for **<ftnote>** is:

```
<!ELEMENT ftnote (ftnpara+)>
<!ATTLIST ftnote
 id ID #REQUIRED
 mark (ctr | mark) "ctr"
 label CDATA #IMPLIED>
```

4. Unique attributes for **<ftnote>**:

- a. **id** – Specifies the footnote identifier.
- b. **mark** – Used to specify the footnote prefix marking. When no value is entered the default value is “CTR.”
  - i. “CTR” – The footnote prefix is numbered.
  - ii. “MARK” – The footnote prefix is symbol defined in the GPO Manual of Style.
  - iii. **label** – Used to specify the number or symbol assigned to the footnote and overrides auto generation of a number or symbol by the composition system.

### 32.1.1.1 Paragraph footnote <ftnpara>.

The element <ftnpara> provides data text that contains the footnote information

1. The components of <ftnpara> are:
  - a. Parsable characters or type text. – #PCDATA
  - b. Format text – <emphasis> (see Section 36.1.3.1).
  - c. Subscript – <subscript> (see Section 36.1.3.4).
  - d. Superscript – <supscript> (see Section 36.1.3.5).
  - e. Cross reference – <xref> (see Section 33.2.2).
  - f. External reference – <extref> (see Section 33.2.1).
  - g. Enhanced Linking – <link> (see Section 33.2.3).
  - h. IETM help information – <help.info> (see Section 35.3.3.7).
  - i. Index reference – <indxref> (see Section 15.5.2.2.3).
  - j. Term – <term> (see Section 36.1.2.4.2).
  - k. Term definition – <term.def> (see Section 36.1.2.4.1).
  - l. Ordered (numbered) list – <seqlist> (see Section 36.1.2.1).
  - m. Unordered list – <randlist> (see Section 36.1.2.3).
  - n. Definition list – <deflist> (see Section 36.1.2.4).
  - o. Internet address (e-mail or homepage) – <internet> (see Section 36.1.4.1.7).
  - p. Proponent or organization address – <proponent> (see Section 36.1.4.23).
  - q. Telephone number – <phone> (see Section 36.1.4.1.6).
2. The DTD fragment for <ftnpara> is graphically depicted:



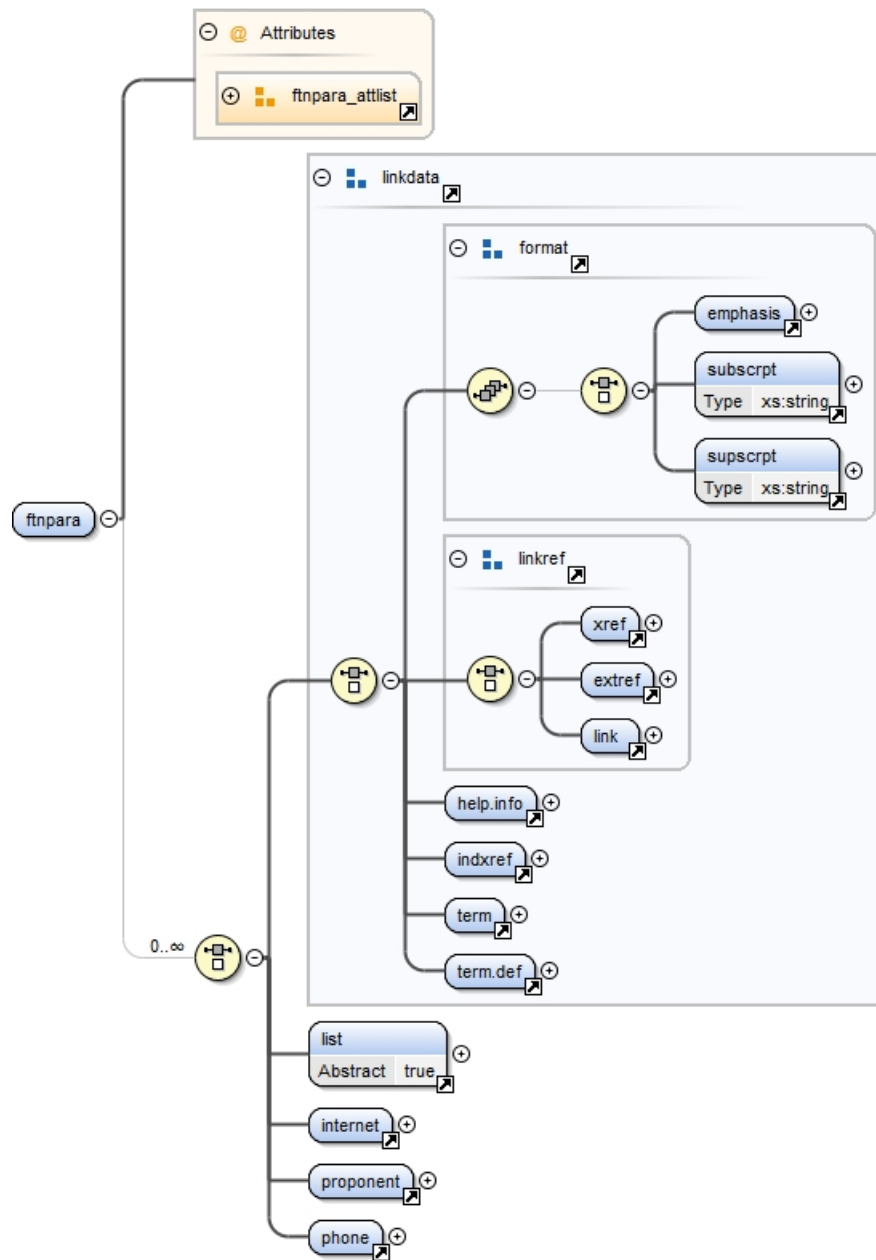


FIGURE 578. Narrative footnote &lt;ftnpara&gt; DTD hierarchy.

3. The DTD fragment for <ftnpara> is:

```
<!ELEMENT ftnpara (%linkdata; | %list; | internet | proponent | phone) *>
<!ATTLIST ftnpara
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0">
```

4. Common attributes:

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- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

### 32.1.1.2 Footnote reference <ftnref>.

The element <ftnref> is used to reference a footnote appearing in the footnote page area. The element is EMPTY and all pertinent information is entered through its attributes. The footnote reference is linked to the footnote by the use of the required cross-reference identifier's attribute **xrefid**. The footnote reference mark is controlled through the attributes **mark** or **label** of the element narrative footnote <ftnote>.

1. The DTD fragment for <ftnref> is:

```
<!ELEMENT ftnref EMPTY>
<!ATTLIST ftnref
 xrefid IDREF #REQUIRED>
```

2. The <ftnref> element contains a single **xrefid** – Reference to the footnote identifier. The composition system will generate the footnote text at the bottom of the referenced page.

## 32.2 Displaying footnotes.

Footnotes are displayed in a page-based differently than in a frame-based document.

### 32.2.1 Paged-based footnotes.

Footnotes are displayed at the bottom of the page of the footnote reference. To indicate the footnote, an enumeration or manually-assigned mark is placed at the footnote reference and also at the beginning of the footnote paragraph. Arabic numerals should be used to number the footnotes consecutively. When numbered footnotes may lead to ambiguity such as a chemical formula, other markings such as superscript letters, daggers, and other symbols may be used.

#### 32.2.1.1 Footnotes in tables.

When footnotes are used in tables, they are numbered for each table as they are displayed in the table. In page based TMs, footnotes are placed below the closing line of the applicable table unless the table is continued. Footnotes are displayed in IETM tables through the use of a mouse over or other similar technique. If the table is continued on other pages, place all footnotes at the bottom of the page on which they are referenced. The footnotes are in consecutive order as they are displayed in the table. Refer to MIL-HDBK-1222 for more information on using footnotes in a table. See the following example of a footnote in a table FIGURE 579.

1. Example of an XML document instance fragment for footnote <ftnote> and footnote reference <ftnref> in a Preventive Maintenance Checks and Services (PMCS) table <pmcstable>:

```
<pmcstable id="m00048-9-2320-365-46">
<title>Preventive Maintenance Checks and Services
</title>
<pmcs-entry id="m00048-9-2320-365-47">
<itemno>
<para>1
</itemno>
```

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<interval>Before  
 </interval>  
 <manhours>.2  
 </manhours>  
 <checked>Aural Target Detection  
 </checked>  
 <pmcsproc>  
 <pmcsstep1>  
 <para>Operate the Antenna Control switch to FWD and REV to direct the antenna at a test target  
 <ftnref xrefid="testtarget"/>  
 <ftnote id="testtarget">  
 <ftnpara>For setting up a test target at a known range/azimuth, refer to procedures in WP 0006 00.  
 </ftnpara>  
 </ftnote>of known range.  
 </para>  
 <eqpnotavail>  
 <trim. para>Test target is not heard in the headset as antenna sweeps past the target.  
 </trim. para>  
 </eqpnotavail>  
 </pmcsstep1>  
 <pmcsstep1>  
 <para>Set PWR switch to ON and Scan Method to MANUAL.  
 </para>  
 </pmcsstep1>  
 </pmcsproc>  
 </pmcs-entry>  
 <pmcs-entry id="m00048-9-2320-365-47">  
 <itemno>  
 <para>2  
 </itemno>  
 <interval>Before  
 </interval>  
 <manhours>.1  
 </manhours>  
 <checked>LEVEL indicator  
 </checked>  
 <pmcsproc>  
 <pmcsstep1>  
 <para>Check to see that bubble is in center of LEVEL indicator after adjusting leveling wheels as necessary.  
 </para>  
 <eqpnotavail>  
 <trim. para>Leveling bubble will not center in the indicator.  
 </trim. para>  
 </eqpnotavail>  
 </pmcsstep1>  
 </pmcsproc>  
 </pmcs-entry>  
 </pmcstable>  
 </pmcstable>

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## 2. The PMCS Table Example with footnote:

Table 1. Preventive Maintenance Checks and Services

ITEM NO	INTERVAL	MAN-HOUR	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY AVAILABLE IF:
1	Before	0.2	Aural Target Detection	1. Operate the Antenna Control switch to FWD and REV to direct the antenna at a test target <sup>1</sup> of known range. For setting up a test target at a known range/azimuth, refer to procedures in WP 0006 00. 2. Check to see that bubble is in center of <b>LEVEL</b> indicator after adjusting leveling wheels as necessary.	Test target is not heard in the headset as antenna sweeps past the target.
2	Before	0.1	LEVEL indicator	Check to see that bubble is in the center of <b>LEVEL</b> indicator after adjusting leveling wheels as necessary.	Leveling bubble will not center in the indicator.

<sup>1</sup> Test target is not heard in the headset as antenna sweeps past the target.

FIGURE 579. Example of how a footnote is displayed in a page-based document when used in a table.

## 32.2.1.2 Framed-based footnotes.

XML that is used in a page-based document for a footnote can be the same XML in a frame-based document. The display of the footnote is controlled by the stylesheets. The method to reference footnote data in a frame-based document is through the use of hotspotting or the mouse-over technique. If the mouse-over technique is used, a new window displays the note, etc. Refer to MIL-HDBK-1222 for more information on using hotspotting and mouse-over technique.

## 32.2.1.3 Footnotes in a table.

When referencing in a table, the hyperlink from a table cell is the reference text only, not the entire cell. Multiple hotspots within a cell are individually accessible.

1. The example below is how the same footnote that is shown in FIGURE 580. would display in a frame-based document using the mouse over technique:

Operate the Antenna Control switch to FWD and REV to direct the antenna at a test target. For setting up a test target at a known range/azimuth, refer to procedures in WP 0006 00.

FIGURE 580. Example of the display of a frame-base footnote in a table using the mouse-over technique.

## 33 LINKING

Linking or referencing provides a means to connect to associated information. Linking is commonly used in HTML with hotspots to other Web pages that are denoted usually by blue underlined text. In a paper environment the links provide the paragraph number, page number, work package sequence number, etc. Linking is created by the target information having a unique identifier and the linking information having a pointer or identification reference to the unique identifier. This section will discuss the various link methods and what is presented for page-based and frame-based presentation.

### 33.1 Identifier naming convention.

A major concern in linking is creating a unique identifier. MIL-STD-40051-1/-2 defines the method for work package identifier creation through the use of: information type (maintenance, troubleshooting, etc), a unique 5 digit number, and the basic portion of the TM number where the work package was first created (without the maintenance level, further breakout (“&P ”) or volume number). The TM number, after the initial creation, has no meaning to the information. It is simply a method to eliminate identification duplication. Work packages are not the only information referenced, but also objects such as figures, tables, steps, etc. This information needs to be unique not only in the current TM document, but in other information that references and reuses the information. Since a work package has a unique identifier associated to the information, good practice is to prefix each identifier in the work package with the corresponding work package identifier (work package identifier is “M00341-1-2345-678” and a figure could be identified with meaning as “M00341-1-2345-678-fig1” or with unique identifier sequence within the work package as “M00341-1-2345-678-00234”). Since the work package identifier is unique the identifiers within the work package would maintain its uniqueness.

### 33.2 Linking elements.

The elements for referencing information:

1. External reference – **<extref>** (see Section 33.2.1).
2. Internal reference – **<xref>** (see Section 33.2.2).
3. Enhanced external and internal reference – **<link>** (see Section 33.2.3).
4. Figures:
  - a. Figure callout reference – **<callout>** (see Section 33.2.4.1).
  - b. Figure callout mapping and part reference – **<mapref>** (see Section 31.2.4).
5. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
6. Troubleshooting – Logic Method (see 22.8.1).
  - a. Test block origin – **<origin>** (see Section 22.8.1.1).
  - b. Test block – **<testblock>** (see Section 22.8.1.1).
  - c. Test end block – **<endblock>** (see Section 22.8.1.1.5).
  - d. Test block reference – **<branchref>** (see Section 22.8.1.1.6).
7. Maintenance Allocation Chart – **<mac>** (see Section 27.4.1).
  - a. Test Equipment Reference – **<teref>** (see Section 27.4.1.1.7).
  - b. Remarks Reference – **<remarkref>** (see Section 27.4.1.1.9).
8. WP Sequence Number Reference – **<wpno>** (see Section 33.2.4.1.3).

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**33.2.1 External reference <extref>.**

The element indicates a reference to another TM, an information chapter outside the XML document, a work package outside the XML document, or an external document or other information (not residing in the XML document instance). Note that the attributes for this element contain the content to be displayed and not XML IDREFs since the references are external to the document instance. The <extref> is one of the original CALS linking elements. The functionality of <extref> may be better served through the element <link>.

1. The element <extref> is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for <extref> is:

```
<!ELEMENT extref EMPTY>
<!ATTLIST extref
 applicable IDREF #IMPLIED
 docno CDATA #IMPLIED
 figid CDATA #IMPLIED
 partid CDATA #IMPLIED
 posttext CDATA #IMPLIED
 pretext CDATA #IMPLIED
 revno CDATA #IMPLIED
 security (uc | fouo | c | s | ts) #IMPLIED
 tableid CDATA #IMPLIED
 taskid CDATA #IMPLIED
 wpid CDATA #IMPLIED>
```

3. Unique attributes for <extref>:
  - a. **docno** – Document number (optional) is used to determine the document number to be published and possibly used in a lookup table to establish a hot reference to the information.
  - b. **figid** – Figure reference identifier (optional) is used to link directly in the external document to the specific figure identifier value.
  - c. **partid** – Part reference identifier (optional) is used to link directly in the external document to the specific part identifier value.
  - d. **revno** – Document revision number (optional) is used to define a certain revision of the referenced document (MIL-STD 2361C, where the docno="MIL-STD-2361" and revno="C").
  - e. **tableid** – Table reference identifier (optional) is used to link directly in the external document to the specific table identifier value.
  - f. **taskid** – Task reference identifier (optional) is used to link directly in the external document to the specific task identifier value.
  - g. **wpid** – Work package reference identifier (optional) is used to link directly in the external document to the specific work package identifier value.
4. Common attributes for <extref>:
  - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - b. **posttext** – Post text (optional) is used to provide additional text after the hot reference, but not part of the hot reference ("").

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- c. **pretext** – Pretext (optional) is used to provide additional text before the hot reference, but not part of the hot reference (“(see ”).
  - d. **security** – Security classification (optional) (see Section 36.3.14).
5. Page-based display. The only information displayed are the attribute values of **pretext**, **docno**, and **posttext**. An example is a link to TM 9-2350-XXX-20.

The XML fragment is:

```
<extref pretext="(See " docno="TM 9-2350-XXX-20" posttext=")" wpid="M00054-9-2350-XXX" / >
```

Prints as “(See TM 9-2350-XXX-20).”

6. Frame-based display. The information to display can vary depending on the desired presentation. The same markup may be presented as “(See [TM 9-2350-XXX-20](#)).” or “(See [TM 9-2350-XXX-20 referenced WP](#)).” If the lookup table or catalog contains information about the referenced work package, the presentation may be presented as “(See [TM 9-2350-XXX-20 referenced WP Replace Gun Mount](#)).”

### 33.2.2 Internal reference <xref>.

The element **<xref>** is used to specify an internal cross reference to other information in the TM. The **<xref>** has an EMPTY content model and the attributes are used to specify what is being referenced. The composition system specifies how the ID referenced value(s) are to be resolved. The element can have multiple ID reference attributes that references different work package components (work package, task, figure) to create a single reference. An example is a reference to a work package and procedural steps. The element would use three attributes **wpid**, **stepstart** and **stepend** to identify the reference location and the composition system would generate “WP 0004 Steps 3-5.”

1. The components of **<xref>** is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<xref>** is:

```
<!ELEMENT xref EMPTY>
<!ATTLIST xref
 applicable IDREF #IMPLIED
 callout CDATA #IMPLIED
 figid IDREF #IMPLIED
 itemid IDREF #IMPLIED
 itemno CDATA #IMPLIED
 posttext CDATA #IMPLIED
 pretext CDATA #IMPLIED
 security (uc | fouo | c | s | ts) #IMPLIED
 stepend IDREF #IMPLIED
 stepstart IDREF #IMPLIED
 tableid CDATA #IMPLIED
 taskid CDATA #IMPLIED
 termdefid IDREF #IMPLIED
 tslocid IDREF #IMPLIED
```

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pagelocid	IDREF	#IMPLIED
wpid	CDATA	#IMPLIED>

### 3. Identification reference attributes for **<xref>**.

These attributes displayed values are determined and generated during composition. Having the resolution done during composition allows information to be moved or shifted, and when composed, the current reference information is shown. An example is a step in a procedure. The reference is currently pointing at the second step “Step 2” with “M00345-X-XXX-XXX-0354” as the ID. A new step is added to the procedure before the second step. Since the ID did not change and the reference did not change, the reference would generate “Step 3.” Identification reference attributes for **<xref>**:

- a. **figid** – Figure identification reference (optional) is targeted to the figure attribute **id**. Page-based and frame-based would generate “Figure “ and associated figure number.
  - b. **itemid** – Item number identification reference (optional) is targeted to the standard information (PMCS, AAL, etc) item entry (**<pmcs-entry>**, **<aal-entry>**) attribute **id**. Page-based and frame-based would generate “Item” and associated number.
  - c. **itemno** – Logical listing of procedures or items.
  - d. **pagelocid** – Supplies the IDREF to the ID of the page location.
  - e. **taskid** – Supplies the IDREF to the ID of a task or titled procedure (see Section 7.2.1.9).
  - f. **stepend** – Ending step identification reference (optional) is used only for last step in a range and is targeted to the step attribute **id**. Page-based and frame-based would use the two attributes to generate the step range as “Steps x-y.”
  - g. **stepstart** – Starting step identification reference (optional) is used when only a single step or the first step in a range and is targeted to the step attribute **id**. Page-based and frame-based would generate “Step ” and the associated step number for a single step.
  - h. **tableid** – Table identification reference (optional) is targeted to the table attribute **id**. Page-based and frame-based would generate “Table” and associated number.
  - i. **termdefid** – Term definition identification reference (optional) is targeted to a glossary or list of acronyms definition (element **<term.def>** ) attribute **id**. Page-based would not be identified. Frame-based would use a standard system generated reference such as [“\(Definition\)”](#) or highlight for a mouse-over to display the definition
  - j. **tslocid** – Troubleshooting procedure identification reference (optional) is targeted to a procedure (**<opcheckproc>**, **<tsproc>**, **<opcheck-tsproc>**) attribute **id**. Reference to a troubleshooting procedure object locator identifier defined in the troubleshooting WP **<tswp>**. The page-based will generate the literal “page ” and the page number and, if identified, a logic test or end block identifier. The frame-based will generate, if identified, a logic test or end block identifier or a standard system generated reference or icon such as [“Troubleshoot Link”](#) or [“Link.”](#)
  - k. **wpid** – Work package identification reference (optional) is targeted to the work package attribute **wpno**. Page-based would generate the “WP ” and associated WP sequence number. Frame-based would generate either the WP title or a standard system generated reference or icon to a work package such as [“WP Link.”](#)
4. Typed or hard coded reference information attribute. Some references, such as a callout on an illustration or an item number in a PMCS do not readily support being obtained through generated text. In this situation the reference is entered in the **callout** attribute with the remaining associate ID references (Work package, figure, etc). An example using a cross reference with hard coded item reference.
- a. XML fragment is:



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```
<xref wpid="M00034-X-XXX-XXX" figid="M00034-X-XXX-XXX-0034" callout="2"/>
```

b. Displays as “WP 0039, Figure 1, Item 2”

5. Common attributes for **<xref>**:

- a. **posttext** – Post text (optional) is used to provide additional text after the hot reference, but not part of the hot reference (“”).
- b. **pretext** – Pretext (optional) is used to provide additional text before the hot reference, but not part of the hot reference (“(see ”).
- c. **security** – Security classification (optional) (see Section 36.3.14).

### 33.2.2.1 Multiple identification references order.

The **<xref>** element allows multiple ID reference attributes for building referenced information that are separated by a comma “,”. The information is shown in the following order:

- 1. **wpid** and **termdefid**
- 2. **taskid**
- 3. **stepstart**, **stepend**, and **tslocid**
- 4. **tableid**
- 5. **itemid** and **itemno**
- 6. **figid**
- 7. **callout**

Several examples are shown below with the page-based output.

1. Example showing reference to the 45th work package and its “Replace Gun Mount” task:

a. XML fragment is:

```
<xref wpid="M00034-X-XXX-XXX" taskid="M00034-X-XXX-XXX-0001" pretext="(See " posttext=")" />
```

b. Prints as “(See WP 0045, Replace Gun Mount)”

2. Example showing reference to the 45th work package and the step range from 3 through 6.

a. XML fragment is:

```
<xref wpid="M00034-X-XXX-XXX" stepstart="M00034-X-XXX-XXX-0041" stepend="M00034-X-XXX-XXX-0044" pretext="(See " posttext=")" />
```

b. Prints as “(See WP 0045, Steps 3–6)”

3. Example showing reference to the 45th work package, the third step that contains the first figure in the work package.

a. XML fragment is:

```
<xref wpid="M00034-X-XXX-XXX" stepstart="M00034-X-XXX-XXX-0041" figid="M00034-X-XXX-XXX-0234" pretext="(See " posttext=")" />
```

b. Prints as “(See WP 0045, Step 3, Figure 1)”

4. Example showing reference to the 45th work package and the 34th item number in the expendable and durable list.

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- a. XML fragment is:
 

```
<xref wpid="M00034-X-XXX-XXX" stepstart="M00034-X-XXX-XXX-0041" figid="M00034-X-XXX-XXX-0234" pretext="(See " posttext=")"/>
```
  - b. Prints as "WP 0045, Item 34"
5. Example showing reference to the 45th work package, the 3rd work package table, and the 2nd work package figure contained within table.
- a. XML fragment is:
 

```
<xref wpid="M00034-X-XXX-XXX" figid="M00034-X-XXX-XXX-0244" tableid="M00034-X-XXX-XXX-0241" pretext="(See " posttext=")"/>
```
  - b. Prints as "(See WP 0045, Table 3, Figure 2)"

### 33.2.3 Enhanced linking <link>.

The element **<link>** is used to specify internal cross references (other information in the TM), external cross references (other TMs, publications, documents, multimedia objects [video, sound, animation, etc.], or applications [diagnostic software, calculator, etc.]). The element describes the actions the frame-based viewer performs before and after the linking process. The element defines when it is used for frame-based only, page-based only, or for both. The **<link>** element is based on the World Wide Web Consortium (W3C) XML Link (XLink) Language Recommendation.

1. The components of **<link>**:
  - a. Popup title bar text **<title>** (optional) (see Section 35.3.3.5).
  - b. Hot reference prompting (optional) has the following components.
    - i. Pretext **<pretext>** (optional) is used to provide additional text before the hot reference ("(see "). This additional text is not part of the hot reference.
    - ii. The hot reference text is one of the following required elements:
      - I. An icon **<symbol>** (see Section 31.3.1).
      - II. A marker indicating the stylesheet generates reference text **<ref.generate>**.
      - III. Or an entered prompt text **<prompt>**.
    - iii. Post text **<posttext>** (optional) is used to provide additional text after the hot reference, but not part of the hot reference ("").
  - c. Post linking **<returnlink>** (optional) (see Section 33.2.3.1.6).
  - d. Interaction **<interaction>**(optional) – Interaction with user to obtain diagnostic testing information (see Section 36.1.4.9).
2. The DTD fragment for **<link>** is graphically depicted:

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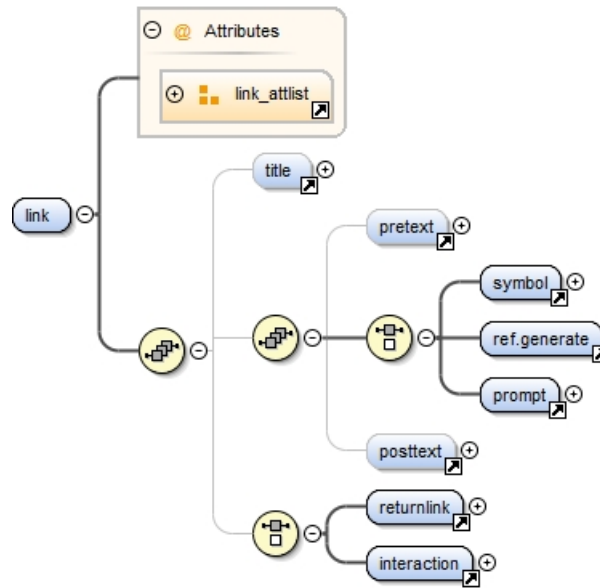


FIGURE 581. Enhanced linking DTD hierarchy &lt;link&gt;.

## 3. The DTD fragment for &lt;link&gt; is:

```
<!ELEMENT link (title?, (pretext?, (symbol | ref.generate | prompt), post-
text?)?, (returnlink | interaction?)?)>
```

```
<!ATTLIST link
```

alt	CDATA	#IMPLIED
applicable	IDREFS	#IMPLIED
application	(page   frame   both )	"frame"
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
linkaction	(prompt   immediate )	"prompt"
linkobject	(MPEG   MPG   MPE   MLV   MP2   MP2V   MPA   MP4   MPG4   ASR   ASX   WM   WMX   WMP   WMV   WVX   AVI   MOV   QT   SMI   SML   VFW   FLI   MP3   M3U   SWA   M3URL   WMA   WAX   WAV   MID   MIDI   RMI   SMF   KAR   AIF   AIFC   AIFF   CDDA   AU   SND   ULW   CDA   BMP   CGM-CHAR   CGM-	#IMPLIED

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	BINARY   CGM-CLEAR   DITROFF   DVI   EPS   EQN   FAX   GIF   GIF87a   GI- F89a   JPG   JPEG   IGES   PCX   PDF   PIC   PNG   PS   SGML   TBL   TEX   TIFF   WMF   WPG   linespecific)	
linktype	(goto   return   unde- fined )	"goto"
local	IDREF	#IMPLIED
localrange	IDREF	#IMPLIED
parameter	CDATA	#IMPLIED
popup	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
xlink:href	CDATA	#IMPLIED
xlink:type	(simple   complex)	#FIXED "simple"
xreftype	(tm   sc   wp   test   task   step1   paragraph   figure   table   part   document   setup.item   frame.help   program   multimedia   hotspot   pageno)	#IMPLIED>

#### 4. Unique attributes for <link>:

- a. **alt** – Alternate link text (optional) is a brief description of the link's purpose and shown when a mouse over is performed.
- b. **application** – Link prompt base (default value is **frame**) determines the link presentation when a difference between the page-based and frame-based display is required. The **application** attribute defines the link prompt if for frame-based only **frame**, page-based only **page**, both page-based and frame-based **both**.
- c. **linkaction** – Linking action (default value is **prompt**) determines if the prompt link is executed immediately **immediate**, or the user is prompted before executing the link **prompt** (see Section 33.2.3.1).
- d. **linktype** – Link return action (default value is **goto**) indicates what occurs after completing the linking action. Is control returned back to link position (attribute value is **return**) or continue with the linked area and does not return control back to the link position (attribute value is **goto**), or if the action to be taken has not been defined **undefined** (see Section 33.2.3.1.6).
- e. **linkobject** – The **linkobject** attribute identifies the type of external object the link is pointing to. This may be a graphic (by type [JPG or CGM]) or a multimedia file (audio or video file). The **linkobject** is defined in the DTD with the ENTITY *%notation.class*. The declared value of this ENTITY is contained in the file 'notation.ent.' As technology evolves, this list may be changed to include new types. Any external object declared in an XML file must, by the XML standard, be declared in the DTD. The 'notation.ent' file may be changed by programs as needed. However, if the file is changed, LOGSA

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should be informed so they may include the change. The changed file would also have to be provided to any other users of the raw (XML) data to avoid parsing errors.

- f. **local** – Internal reference (optional) indicates an internal (local to the current TM) reference to a target ID. When the attribute is used with **localrange**, the value is the starting reference. In XML, if an attribute ID reference value does not match another element's ID attribute value the document is not a valid XML document.
- g. **localrange** – Internal reference ending range (optional) indicates an internal (local to the current TM) reference to a target ID and is ending reference for a range. In XML, if an attribute ID reference value does not match another element's ID attribute value the document is not a valid XML document.
- h. **parameter** – Parameter(s) for an external application (optional) provides a delimited list for additional information to execute the application correctly.
- i. **popup** – Popup indicator (default value is no) indicates to the viewer if the link should be shown as a separate window (**yes**) or inline with the text (**no**).
- j. **xlink:href** – External reference (optional) is reused from the W3C Xlink Recommendation to find a remote resource (or resource fragment) outside the current TM. The value of the “**xlink:href**” attribute is a Uniform Resource Identifier (URI) reference, as defined in [IETF RFC 2396]. The passed URI reference is directed through a URI resolver to specified information. The URI is generally a Web address, but, as in HTML, an internal reference can be specified through the use a “#” following the address. The information following the “#” is the unique identifier contained in the referenced document (see Section 33.1 for identifier naming convention). When the option is used, the URI resolver will direct the user to the precise location in the referenced document. Good practice in naming the work package is use the identifier for the work package (work package identifier is “M00341–1–2345–678” the file name would be “M00341–1–2345–678.xml”). Using this convention would provide a common method to reference work packages in the current or external TMs.
- k. **xlink:type** – XLink reference method (Fixed as **simple**) indicates the support of standard referencing. Currently the standard does not support **complex** XLink referencing.
- l. **xreftype** – Target type (optional) defines the type of reference data and indicate possible stylesheet generated text, as one of the following types:
  - i. tm – Technical manual (TM)
  - ii. sc – Supply catalog (SC)
  - iii. wp – Work package (WP)
  - iv. test – Test procedure
  - v. task – Task
  - vi. step1 – Main step
  - vii. paragraph – Titled paragraph
  - viii.figure – Figure
  - ix. table – Table
  - x. part – Part information
  - xi. document – External document or publication
  - xii. setup.item – Initial setup item
  - xiii.frame help – Content specific help
  - xiv.program – External application
  - xv. multimedia – Multimedia file

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**xvi.hotspot** – Hotspot anchor (graphic mapping)

**xvii.pageno** – Supply current page number

5. Common attributes for **<link>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 33.2.3.1 Link prompt.

The **<link>** element, in a frame-based viewer, has the ability to define how the user sees the information and to specify if the reference is immediately linked to the information or if it is prompted before being linked to the information. The **<link>** element, in a page-based media, is limited to how referenced text is entered or created. The following paragraphs are mainly for frame-based development, but also describe how page-based systems would create referenced information generated text.

#### 33.2.3.1.1 Prompted reference “linkaction.”

The **<link>** element allows the author to determine if the user is prompted before going to a reference or if the user is immediately taken to the reference. This action is determined through the attribute **linkaction**. When the **linkaction** is set to **immediate**, the system will instantaneously jump to the referenced information and when set to **prompt** the system will display a hotspot text or symbol for the referenced information.

#### 33.2.3.1.2 Prompted link.

The **linkaction=“prompt”** will display a hotspot link before executing the link. The prompt types allowed are:

1. Narrative hotspot (uses the elements **<prompt>** (fixed text) (see Section 35.3.3.2).
2. Generated by the system link using one of the **<link>** elements reference attributes **<ref.generate>** (generated from the referenced item) (see Section 33.2.3.1.3).
3. Or graphical hotspot (using the element **<symbol>**) (see Section 31.3.1).

The attribute generated text displayed before **<pretext>** or after **<posttext>** the prompted data is displayed, but not hotspotted.

#### 33.2.3.1.3 Generated text from reference **<ref.generate>**.

A powerful XML feature is linking to other information and generating the referenced text information (through a stylesheet). The power in this capability is that information is constantly added, deleted, moved or rearranged,

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therefore causing the locator text to change (“Figure 2” is changed to “Figure 3” when new figure is added before the figure). Using generated locator text each time the information is presented or composed, the locators are current with information. The stylesheet determines how the locator is shown by saving the locator text associated with the identifier attribute value. The **<link>** element defines when the generated locator text is used by using the element **<ref.generate>**. The format for the generated locator text depends on the ID references used. The following items are the various formats:

1. Work package (**<maintwp>**) – “WP #####” (page-based) or “Title” (frame-based)
2. Task (**<replace>**) – “Title”
3. Test (**<testwithstate>**) – “Title”
4. Procedure (**<proc>**) – “Title”
5. Step (**<step1>**) — — “Step #”
6. Titled paragraph (**<para0>**) – “Title”
7. Figure (**<figure>**) – “Figure #”
8. Figure callout (**<mapref>**) – “Figure #, Item #”
9. Table (**<table>**) – “Table #”
10. Supporting information list item (**<mrpl-entry>**) in MRPL – “WP ###, Item #” (page-based) or “Title, Item #” (frame-based)

If the referenced object is outside the scope (in another document, work package or task) of the current location, the parent components information is used with the referenced text. An example in page-based is a reference to a figure in another work package. The locator text would generate the work package sequence number and reference figure number (WP 0034, Figure 3). The rules for the parent component information is the following:

1. Task in another work package – Work package locator information (WP 0045, Replacement).
2. Test in another work package – Work package locator information (WP 0059, Engine Compartment Fan Will Not Operate When Auxiliary Power Unit Is Operating).
3. Procedure in another:
  - a. Work package – Work package and task locator information ( WP 0245, Replacement, Right Bilge Pump).
  - b. Task but same work package – Task locator information (Replacement, Right Bilge Pump).
4. Step in another work package – Work package, task, and procedure (if applicable) locator information (WP 0134, Replacement, Step 3).
5. Titled paragraph in another:
  - a. Work package – Work package locator information (WP 0003, HMMWV Equipment Description).
  - b. Titled paragraph but same work package – All titled paragraphs parents' titles (Electrical System Theory, Splicing Wires where 1st level paragraph title is “Electrical System Theory” and 2nd level paragraph title is “Splicing Wires”).
6. Figure in another work package – Work package locator information (WP 0045, Figure 3).
7. Figure callout in another work package – Work package locator information (i.e. WP 0004, Figure 3, Item 5).
8. Table in another work package – Work package locator information (WP 0056, Table 2).

### 33.2.3.1.4 Prompt examples.

The following are examples using prompted links:

Example showing non-generated text **<prompt>**.

1. XML example is:

- a. 

```
<link xmlns:xlink CDATA #FIXED "http://www.w3.org/1999/xlink" linkaction="prompt"
application="both" local="G00003-X-XXX-XXX" xlink:type="simple" linktype="goto" xrefype=
"wp" popup="no">
<pretext> (See
</pretext>
<prompt>maintenance work package
</prompt>
<posttext>)
</posttext>
</link>
```
- b. Generated example frame-based is: “(See [maintenance work package](#))” and page-based is “(See maintenance work package).”

2. Example showing generated text **<ref.generate>**.

a. XML example is:

```
<link xmlns: xlink CDATA #FIXED "http://www. w3. org/1999/xlink" linkaction="prompt"
application="both" local="G00003-X-XXX-XXX" xlink: type="simple" linktype="goto" xrefype=
"wp" popup="no">
<pretext> (See
</pretext>
<ref.generate/>
<posttext>)
</posttext>
</link>
```

- b. Generated frame-based example is (assuming the referenced work package title is Replace Right Bilge Pump): “(See [Replace Right Bilge Pump](#))” and page-based example is (assuming the reference work package sequence number is “0433”) “(See WP 0433).”

3. Example using graphical (**<symbol>**). The graphical prompt is generally used only in frame-based viewers.

a. XML example is:

```
<link xmlns: xlink CDATA #FIXED "http://www. w3. org/1999/xlink" linkaction="prompt"
application="frame" local="G00003-X-XXX-XXX" xlink: type="simple" linktype="goto" xrefype=
"wp" popup="no">
<symbol boardno="gotolink" unitmeasure="in"/>
</link>
```

b. Generated frame-based example is:



### 33.2.3.1.5 Immediate reference.

The **linkaction="immediate"** will jump directly to the referenced information without prompting the user. The “immediate” value is primarily used after evaluating a test result to jump to the next test procedure or corrective action in the diagnostic work package. When **linkaction="immediate"** is set, the elements **<title>**,



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**<pretext>**, **<posttext>**, **<symbol>**, **<ref.generate>**, **<prompt>** are ignored, since no information is prompted before jumping to the link. An immediate link XML example:

```
<link xmlns:xlink CDATA #FIXED "http://www.w3.org/1999/xlink" linkaction="immediate" application="frame" local="G00003-X-XXX-XXX" xlink:type="simple" linktype="goto" xrefype="wp" popup="no"> . . .
</link>
```

### 33.2.3.1.6 Link return action.

After linking to the referenced information, the system needs to determine whether to return to the link origin or remain with the linked information after completing the referenced task. The **linktype** attribute is set to “goto” (indicates the user is not return to the original link) or “return” (indicates the user is returned to the original link). Cases where “goto” would be implemented are next test procedure, follow-on maintenance task, etc. Cases where “return” would be implemented are initial setup part item, equipment condition work packages, additional operation or maintenance work package, etc. After returning from a link, an optional follow-on link **<returnlink>** is provided to redirect the user to next information object. An example of follow-on link is after a test evaluation indicates a corrective action and is immediately linked to the information. After the task is completed, the user needs to confirm the corrected fault has been corrected. A follow-on link (prompted or immediate) conducts a retest of the malfunction (determines if the corrections fixed the malfunction and no additional malfunctions exist). The follow-on link example shows an immediately jump to the corrective maintenance work package and after returning will be prompted to retest (determine if the malfunction was fixed).

```
<link xmlns:xlink CDATA #FIXED "http://www.w3.org/1999/xlink" linkaction="immediate" application="frame" local="M00003-X-XXX-XXX" xlink:type="simple" linktype="return" xrefype="wp" popup="no">
<returnlink>
<link xmlns:xlink CDATA #FIXED "http://www.w3.org/1999/xlink" linkaction="prompt" application="frame" local="T00003-X-XXX-XXX" xlink:type="simple" linktype="goto" xrefype="wp" popup="no">
<prompt>Retest corrective fault
</prompt>
</link>
</returnlink>
</link>
```

### 33.2.3.1.7 Launch an application.

The **<link>** element provides the capability to launch an application or program through the **xlink:href** attribute. The application file location is entered in the **xlink:href** (launch 1558 test software **xlink:href**="1553.dll"). If any parameters are needed for the application the **parameter** attribute would contain the information (1553 reset parameters **parameter**="RESET RECALIBRATE"). The application location should be neutral to the directory structure, therefore the application should be in the current directory as the XML source or identified through a URI. An application using a prompted link is described in Section 33.2.3.1.

### 33.2.3.1.8 Launch multimedia.

The **<link>** element provides the capability to launch multimedia files through the **xlink:href** attribute. Similar to the launch application, the multimedia file is entered in **xlink:href** (launch HMMWV training video **xlink:href**="HMMWV\_training.avi"). The multimedia file location should be neutral to the directory structure, therefore the multimedia file should be in the current directory as the XML source or identified through an URI. The multimedia file is identified with the multimedia rendering application by either the file header information or file extension (as in example “avi”). During the loading of the XML source files, multimedia files, and frame-based viewer, the installation procedure needs to verify the appropriate multimedia rendering applications are available.

### 33.2.4 Figure linking.

Associated figure link elements are figure callout reference **<callout>**, figure hotspot reference **<mapref>**, and manufactured items figure number reference **<wpref>**.

#### 33.2.4.1 Figure callout reference **<callout>**.

The element **<callout>** appears in text to reference a callout number, letter, or symbol appearing in a figure. The element is EMPTY and all pertinent information is entered through its attributes. The callout presentation format is “(Figure #, Item #).”

1. The DTD fragment for **<callout>** is graphically depicted:



FIGURE 582. DTD depiction for **<callout>**.

2. The DTD fragment for **<callout>** is:

```
<!ELEMENT callout EMPTY>
<!ATTLIST callout
 applicable IDREFS #REQUIRED
 id ID #IMPLIED
 numref IDREF #IMPLIED
 partref IDREF #IMPLIED
 assocfig IDREF #REQUIRED
 label CDATA #IMPLIED>
```

3. The attributes for **<callout>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **id** – Unique identifier (optional) (see Section 36.3.7).
- c. **assocfig** (required) – references the figure **<figure>** containing the item being pointed to.
  - i. The figure callout number may or may not be linkable in the illustration, thus two methods are used to identify the callout value:
    - I. First, for systems that can generate a linked value, use the attribute **numref** (optional) – using either the Computer Graphic Metadata (CGM) attachment XML reference data file or the element **<mapref>** (see Section 31.2.4) that maps a coordinate(s) for a callout label hotspot within the graphic. The information within the reference provides the callout label. In frame-based system the CGM XML reference data file (or **<mapref>** when selected), the link is the callout hotspot in the graphic. The second method is when the composition system has no capability to resolve a callout label reference.
    - II. Second method, for manual systems uses the attribute **label** (optional) – used to enter or hard code the callout values.
- d. **partref** (optional) – links the associated parts information to the callout label item. The part reference permits the ability to display a parts ordering form.

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4. The following provides several examples using **<callout>**:

## a. Example without a linked figure callout.

## i. XML fragment is:

```
<callout assocfig="M00024-X-XXX-XXX-0034" label="2"/>
```

## ii. Prints as “(Figure 2, Item 2)”

b. Example with a linked callout in conjunction with a mapping reference element **<mapref>**.i. XML **<callout>** fragment is:

```
<callout assocfig="M00024-X-XXX-XXX-0034" numref="M00024-X-XXX-XXX-0348"/>
```

ii. XML **<mapref>** fragment is:

```
<mapref id=numref="M00024-X-XXX-XXX-0348" label="2">
 <map.circle radius="6" unitmeasure="pt">
 <map.coord x="72" y="72" unitmeasure="pt"/>
 </map.circle>
</mapref>
```

## iii. Generates in page-based composition as “(figure 2, Item 2).”

iv. Displays in frame-based as a reference “([Figure 2, Item 2](#))” to the mapped hotspot circle coordinates in the graphic.**33.2.4.1.1 Figure hotspot reference <mapref>.**

The element **<mapref>** and its child elements are discussed in Section 31.2.4.

**33.2.4.1.2 Manufactured item work package number reference <wpref>.**

The element **<wpref>** appears in text to only reference a figure number. The element is EMPTY and all pertinent information is entered through its attribute **idref**. The figure reference presentation format is “Work package #.”

**33.2.4.1.3 Work package sequence number reference <wpno>.**

The element **<wpno>** generates the work package number that is referenced from attribute **wpref**. The attribute references or links to the work package attribute **wpno** (contained in each work package XML element). Page-based systems will display the “WP” and work package sequence number (WP 0034) and frame-based systems will display the work package title as a hotspot ([Equipment Replacement](#)).

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## 34 FILTERING

### 34.1 Introduction.

Filtering is a process that narrows the displayed data to show only a specific and desired sub-set of data. As an example, the complete technical data for an aircraft can be filtered to only display to the user the data that applies to a requested tail-number. MIL-STD-40051-1 describes several types of filtering, including by model series, by modification, by Skill/Maintenance level and by unique identification code. Tags that support filtering are discussed in the following paragraphs.

### 34.2 Effectivity.

Filtering based upon differences in components is performed by examining the effectivity of the system. Effectivity is the act or process of identifying weapon systems or end-items and their hardware and software system and subsystems by their associated UOC, serial number, model number, part number/CAGEC, NSN, End Item Code (EIC), software version, or MWO. Effectivity is included to signify that certain configurations or modifications apply to a given weapon system/equipment. These configurations or modifications may require different maintenance procedures or operating instructions. The maintenance procedures or operating instructions that are applicable to a specific configuration or modification can be associated with that specific configuration or modification through the use of a unique identifier representing effectivity. This identifier is created and saved in the **id** attribute of the **<applic>** element. The **<applic>** element content model contains an effectivity entry for a given configuration or modification. Elements such as steps will have an **applicable** attribute. The author can enter the unique effectivity identifier(s) into this attribute to signify that the element applies only to a specific configuration(s) or modification(s). When the manual is used for a specific weapon system/equipment, only those elements with an effectivity for that specific weapon system/equipment will be processed and their content displayed where appropriate to the user. Note that when the **applicable** attribute is not set in a given element, the element content applies to all cases. When an element contains different content depending upon the effectivity, and there may be several configurations or modifications, several instances of the element can be created using the alternative conditions capability (see Section 34.3). In that case the first alternative condition to evaluate to true is the one that is used.

#### 34.2.1 System effectivity **<applic>**.

The System effectivity **<applic>** element provides the qualifications to identify the effective system by NSN, part number, unique ID, etc.

1. The **<applic>** consists of:

- a. A nomenclature **<name>** (required) – used to identify the system or equipment item (see 36.1.4.18).
- b. An optional national stock number **<nsn>** (optional) – used to provide a secondary form of identification for the equipment or system.
- c. An optional group consisting of a part number **<partno>** and associated CAGE code **<cageno>**. When used, both elements are required by the DTD. The **<partno>** and **<cageno>** may also be used to identify the equipment or system. (see Section 36.1.4.22 and Section 36.1.4.1.8).
- d. A required and repeatable group consisting of:
  - i. An optional element **<not>** (optional) – **<not>** is used in conjunction with the elements **<set>**, **<range>**, or **<single>** to indicate they are ‘not’ to be included in the effectivity list (see Section 34.2.1.1).
  - ii. A group consisting of one of the following:

### iii. <set>

#### 2. The graphical depiction of <applic>:

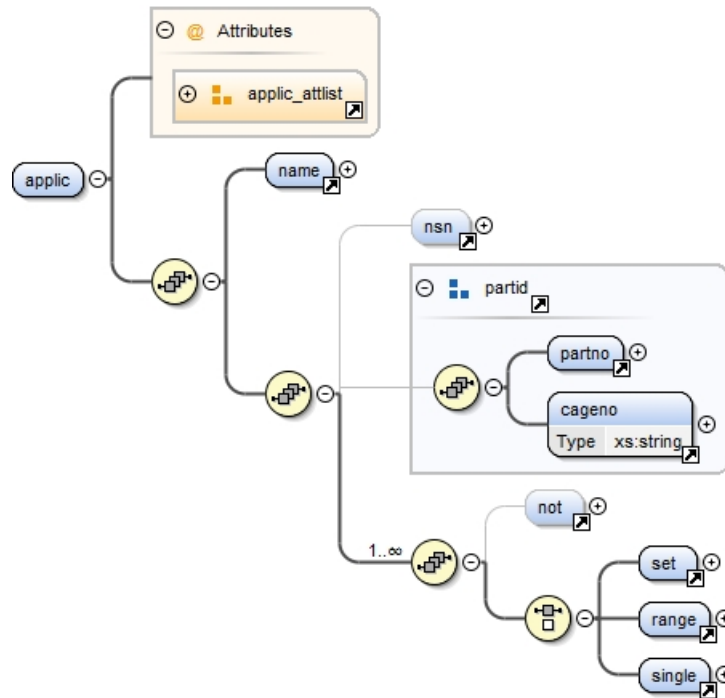


FIGURE 583. Content model of <applic>.

#### 34.2.1.1 Negative <not>.

The optional <not> identified an effectivity entry that includes everything except what has been identified in the <applic> element (in the <single>, <set>, or <range> elements).

1. The content model of <not> is EMPTY. All action is taken based on the presence of the element.
2. The DTD fragment for <not> is:  

```
<!ELEMENT not EMPTY>
```
3. The element <not> has no attributes.

#### 34.2.1.2 Effectivity type set <set>

The <set> element defines an effectivity filter group using the same information type. The type of information is serial number, MWO, UOC, Model Number, Software Version, and unique system identifier.

The element <set> consists of one of the following:

1. One or more equipment item serial numbers <serialno> (required – one or more) (see Section 34.2.1.3).
2. One or more modification work order numbers <mwo> (required – one or more) (see Section 34.2.1.4).
3. Usable on-code (UOC) <uoc> (required – one or more) (see Section 24.4.2.1.6.4). The element is similar to a cell in a structural table and is entered in column four.
4. One or model number(s) <modelno> (required – one or more) (see Section 36.1.4.17).

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5. One or more listings of software version used **<software\_version>** (required – one or more) (see Section 15.3.1.7).
6. One or more equipment identification codes **<eqp\_id>** (required – one or more) (see Section 34.2.1.5).

**34.2.1.3 Serial number <serialno>.**

Effectivity can be based upon serial numbers. Differences associated with equipment models or units of the same model that would affect operator or maintenance actions may be related explicitly to serial number ranges. The user would reference the content by serial number or by a range of serial numbers. The content model for the **<serialno>** element is #PCDATA.

**34.2.1.4 Modification work order number <mwo>.**

The element **<mwo>** lists any modification work order numbers that may have been accomplished on the equipment and may be used to identify the equipment configuration.

**34.2.1.5 Equipment identification code <eqp\_id>.**

The element **<eqp\_id>** is the equipment code used to identify that particular piece of equipment.

**34.2.1.6 Range <range>.**

The **<range>** element specifies a range of information for system effectivity. An example for a serial number range would be 00001 – 00100. The type of information is serial number, MWO, UOC, Model Number, Software Version, and unique system identifier.

1. The element **<range>** uses the same elements as **<set>**. The difference is **<range>** requires two of each data type, a start and end value. Range consists of:
  - a. One set of two equipment item serial numbers **<serialno>** (required – two) (see Section 34.2.1.3).
  - b. One set of two modification work order numbers **<mwo>** (required – two) (see Section 34.2.1.4).
  - c. One set of two model number(s) **<modelno>** (required – two) (see Section 36.1.4.17).
  - d. Usable on-code (UOC) **<uoc>** (required – one or more) (see Section 24.4.2.1.6.4). The element is similar to a **cell** in a structural table and is entered in column four.
  - e. Model number **<modelno>** (optional – zero or more). The model number **<modelno>** element is the official equipment or equipment piece model number (see Section 36.1.4.17).
  - f. One set of two listings of software version used **<software\_version>** (required – two) (see Section 15.3.1.7).
  - g. One set of two equipment identification codes **<eqp\_id>** (required – two) (see Section 34.2.1.5).
2. The content model is “(serialno, serialno) | (mwo, mwo) | (uoc, uoc) | (modelno, modelno) | (software\_version, software\_version) | (eqp\_id, eqp\_id).”

**34.2.1.7 Modification work order number <mwo>.**

The element **<mwo>** is any MWO numbers that may have been accomplished on the equipment and may be used to identify the equipment configuration.

1. The components for **<mwo>** element is #PCDATA.

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2. The DTD fragment for **<mwo>** is:

```
<!ELEMENT mwo (#PCDATA) >
```

3. The element **<mwo>** has no attributes.

### 34.2.1.8 Usable on code **<uoc>**.

The element **<uoc>** provides a listing of specific UOC that have been assigned to help make applicability identification easier.

1. The components for **<uoc>** element is #PCDATA.
2. The DTD fragment for **<uoc>** is:

```
<!ELEMENT serialno (#PCDATA) >
```

3. The element **<uoc>** has no attributes.

### 34.2.1.9 Model number **<modelno>**.

The element **<modelno>** lists any variations in model numbers for a given end item.

1. The components for **<modelno>** element is #PCDATA.
2. The DTD fragment for **<modelno>** is:

```
<!ELEMENT modelno (#PCDATA) >
```

3. The element **<modelno>** has no attributes.

### 34.2.1.10 Software version **<software\_version>**.

The element **<software\_version>** lists any variations in model numbers for a given end item

1. The components for **<software\_version>** element is #PCDATA.
2. The DTD fragment for **<software\_version>** is:

```
<!ELEMENT software_version (#PCDATA) >
```

3. The element **<software\_version>** has no attributes.

### 34.2.1.11 Equipment identification code **<eqp\_id>**.

The element **<eqp\_id>** the equipment unique identifier (VIN, tail number) for identification.

1. The components for **<eqp\_id>** element is #PCDATA.
2. The DTD fragment for **<eqp\_id>** is:

```
<!ELEMENT eqp_id (#PCDATA) >
```

3. The element **<eqp\_id>** has no attributes.

### 34.2.1.12 Single **<single>**.

The element **<single>** element specifies a single system effectivity information type. The information types are serial number, Modification Work Order, Usable On Code, Model Number, Software Version, and unique system identifier. The content model is “single (serialno | mwo | uoc | modelno | software\_version | eqp\_id)>.”



### 34.2.2 Technical Manual System Effectivity List <applic\_ref\_list>.

The <applic\_ref\_list> element contains a listing of all possible system effectivity configurations. When a work package has a system effectivity restriction, the work package references or links to the system effectivity list. The system effectivity <applic> elements are contained in this list. The IETM software will identify which of the system effectivity <applic> elements in this list apply to the specific system that the user is working on. This identification may be automatic or it may be obtained by prompting the user at login.

1. The <applic\_ref\_list> consists of one or more system effectivity <applic> (required – one or more) elements. The system effectivity <applic> element provides the qualifications to identify the effective system by NSN, part number, unique ID, etc. (see Section 15.3.1).
2. The DTD fragment for <applic\_ref\_list> is graphically depicted:

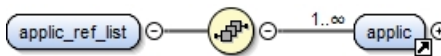


FIGURE 584. Technical manual system effectivity list <applic\_ref\_list> DTD hierarchy.

3. The DTD fragment for <applic\_ref\_list> is:  

```
<!ELEMENT applic_ref_list (applic+)>
```
4. The <applic\_ref\_list> has no attributes.

### 34.2.3 Effectivity attribute “applicable.”

The effectivity attribute **applicable** appears with many elements to identify those configurations that are applicable to the given element. The IETM software will identify which of the system effectivity <applic> elements in the system effectivity list <applic\_ref\_list> apply to the specific system that the user is working on. The effectivity attribute **applicable**, if it exists for an element, will have its referenced IDS (IDREFS) compared to those selected from the system effectivity list to see if there is at least one match. If there is a match, the element is processed. If there is no match, the element is skipped. The attribute list for an element that contains the **applicable** attribute would include the following:

```
<!ATTLIST... applicable IDREFS #IMPLIED>
```

### 34.2.4 Effectivity example.

An XML source and its stylesheet output (see FIGURE 585.) depicting a crew level maintenance procedure containing a step that is applicable to a specific model is shown below. In the figure, step 3 is shown because the vehicle being worked on is model M2A3. This step would not be displayed if another model was being worked on. The <applic\_ref\_list> element shown below contains a listing of all possible system effectivity configurations. The effectivity attribute **applicable** in the <step1> element that states to “Raise right squad bench seat,” identifies that step as pertaining only to model “M2A3.”

1. Example of an XML document instance fragment for effectivity:

```

<applic_ref_list>
<applic abbrevcode="M2A2" id="a0001-X-XXXX-XXX">
<name>Fighting Vehicle, Infantry
</name>
<nsn>
<fsc>2350
</fsc>
<niin>01-248-7619
</niin>

```

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```

</nsn>
<single>
<modelno>M2A2
</modelno>
</single>
</applic>
<applic abbrevcode="M3A2" id="a0002-X-XXXX-XXX">
<name>Fighting Vehicle, Cavalry
</name>
<nsn>
<fsc>2350
</fsc>
<niin>01-248-7620
</niin>
</nsn>
<single>
<modelno>M3A2
</modelno>
</single>
</applic>
<applic abbrevcode="M2A3" id="a0003-X-XXXX-XXX">
<name>Fighting Vehicle, Infantry
</name>
<nsn>
<fsc>2350
</fsc>
<niin>01-436-0005
</niin>
</nsn>
<single>
<modelno>M2A3
</modelno>
</single>
</applic>
<applic abbrevcode="M3A3" id="a0004-X-XXXX-XXX">
<name>Fighting Vehicle, Cavalry
</name>
<nsn>
<fsc>2350
</fsc>
<niin>01-436-0007
</niin>
</nsn>
<single>
<modelno>M3A3
</modelno>
</single>
</applic>
</applic_ref_list>...
<maintsk>
<service>
<title>Right front bilge pump
</title>
<step1>

```

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```

<para>Open power unit access door
<xref posttext=")" pretext="("wpid="M00009-X-XXX-XXXX"/>.
</para>
</step1>
<step1>
<para>Open front hull drain plug.
</para>
<step2>
<para>Open drain plug access door.
</para>
</step2>
<step2>
<para>Remove lock plate from stem.
</para>
</step2>
<step2>
<para>Turn handwheel to open front hull drain plug.
</para>
</step2>
</step1>
<step1 applicable="a0003-X-XXXX-XXX">
<para>Raise right squad bench seat
<xref posttext=")" pretext="("wpid="M00015-X-XXX-XXXX"/>
</para>
</step1>
<step1>
<para>Open rear hull drain plug
</para>
<step2>
<para>Pull up and turn fastener
</para>
</step2>
<step2>
<para>Remove floor plate
</para>
</step2>
<step2>
<para>Remove lock plate from stem
</para>
</step2>
<step2>
<para>Turn handwheel to open rear hull drain plug
</para>
</step2>
</step1>
</service>
</maintsk>

```

## 2. Stylesheet output:

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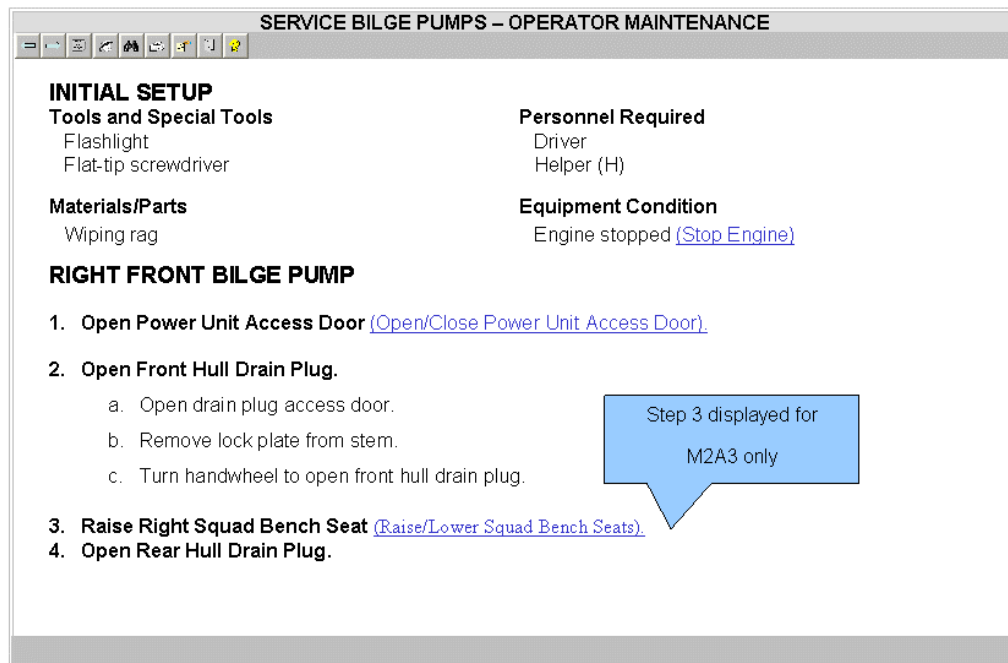


FIGURE 585. Effectivity example.

### 34.3 Alternative conditions.

Alternative conditions enable the user to be presented with information that has been filtered. This is to reflect the effectivity of the system and/or to reflect the current system state (see Section 35.2.1). Filtering with alternative conditions permits the display and processing of different content for an element based upon its effectivity. For example, a system might have several models and the first step in a procedure might be different for each model. The element **<step1-alt>** in the procedure **<proc>** element content model would contain a **<step1>** element for each model's first step. The effectivity attribute **applicable** in each of those **<step1>** elements would be set to the appropriate referenced id(s) in the system effectivity list **<applic\_ref\_list>**. If there are no preconditions **<precond>** associated with these steps, the first step having the appropriate effectivity will be selected and the remaining steps in the **<step1-alt>** element will be ignored. If there are preconditions (see Section 29.1.1.1), the first step with both a valid effectivity and a "True" evaluation of its precondition will be the step that is selected. If any of the above conditions are not satisfied the step would be skipped.

#### 34.3.1 Alternative conditions example.

The effectivity example above (see Section 34.2.4) could have been tagged using alternative conditions. In that case, the three models that do not require the third step to "raise the right squad bench seat," would be grouped as one alternative. This would be particularly useful if those models required that the third step identified an activity other than "raise the right squad bench seat." If the fourth step were the same for all models, no alternative conditions would be required for that step. The XML source depicting this case is shown below. The **<applic\_ref\_list>** element shown below contains a listing of all possible system effectivity configurations. The effectivity attribute **applicable** in the **<step1>** element, that states to "Raise right squad bench seat," identifies that step as pertaining

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only to model "M2A3." The effectivity attribute applicable in the **<step1>** element that states, (for the purpose of this example), to "Do something that pertains to the other three steps," identifies that step as pertaining to the other three models. Both of these steps are included in the content model for **<step1-alt>**.

1. XML document instance fragment:

```

<applic_ref_list>
 <applic abbrevcode="M2A2" id="a0001-X-XXXX-XXX">
 <name>Fighting Vehicle, Infantry
 </name>
 <nsn>
 <fsc>2350
 </fsc>
 <niin>01-248-7619
 </niin>
 <nsn>
 <single>
 <modelno>M2A2
 </modelno>
 </single>
 </applic>
 <applic abbrevcode="M3A2" id="a0002-X-XXXX-XXX">
 <name>Fighting Vehicle, Cavalry
 </name>
 <nsn>
 <fsc>2350
 </fsc>
 <niin>01-248-7620
 </niin>
 <nsn>
 <single>
 <modelno>M3A2
 </modelno>
 </single>
 </applic>
 <applic abbrevcode="M2A3" id="a0003-X-XXXX-XXX">
 <name>Fighting Vehicle, Infantry
 </name>
 <nsn>
 <fsc>2350
 </fsc>
 <niin>01-436-0005
 </niin>
 <nsn>
 <single>
 <modelno>M2A3
 </modelno>
 </single>
 </applic>
 <applic abbrevcode="M3A3" id="a0004-X-XXXX-XXX">
 <name>Fighting Vehicle, Cavalry
 </name>
 <nsn>
 <fsc>2350
 </fsc>

```

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```

<niin>01-436-0007
</niin>
</nsn>
<single>
<modelno>M3A3
</modelno>
</single>
</applic>
</applic_ref_list> . . .
<maintsk>
<service>
<title>Right front bilge pump
</title>
<step1>
<para>Open power unit access door
<xref posttext=")" pretext="(" wpid="M00009-X-XXX-XXXX"/>.
</para>
</step1>
<step1>
<para>Open front hull drain plug.
</para>
<step2>
<para>Open drain plug access door.
</para>
</step2>
<step2>
<para>Remove lock plate from stem.
</para>
</step2>
<step2>
<para>Turn handwheel to open front hull drain plug.
</para>
</step2>
</step1>
<step1-alt>
<step1 applicable="a0001-X-XXXX-XXX a0002-X-XXXX-XXX a0004-X-XXXX-XXX">
<para>Do something that pertains to the other three steps
</para>
</step1>
<step1 applicable="a0003-X-XXXX-XXX">
<para>Raise right squad bench seat
<xref posttext=")" pretext="(" wpid="M00015-X-XXX-XXXX"/>
</para>
</step1>
</step1-alt>
<step1>
<para>Open rear hull drain plug
</para>
<step2>
<para>Pull up and turn fastener
</para>
</step2>
<step2>
<para>Remove floor plate

```

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```

</para>
</step2>
<step2>
<para>Remove lock plate from stem
</para>
</step2>
<step2>
<para>Turn handwheel to open rear hull drain plug
</para>
</step2>
</step1> . . .
</service>
</maintsk>

```

### 34.4 Current system state information.

The management of dynamic and static state information is a required capability to achieve intelligent, interactive data display (see 35.1). This is a form of filtering since it narrows the displayed data to show only a specific and desired subset of data. The logic engine, in determining what path to take through the IETM, maintains and evaluates this state information (see Section 35.2). This functionality is fundamental to testing and troubleshooting sequences where the next test is often based on the result of the current test or input from the Materiel interface (dynamic state information). It also allows for the presentation of information to the user to be customized to the Materiel configuration or any system state.

### 34.5 Service specific information.

Filtering can be applied to joint service TMs/IETMs. Each work package includes the attributes **army**, **airforce**, **navy**, **marines** (see Section 16.4). A **yes** value assigned to at least one of these attributes, identifies the work package as being applicable to those specified services. Filtering can also be applied to joint service TMs/IETMs below the work package level. For example, a table containing fuel indicator correction factors might be only applicable to the Army in a joint service TM. Without filtering the table might be displayed to a Navy user as “Table 3: Fuel Indicator Correction Factors (Army Only).” With filtering, the TM could be displayed to that user without table 3. This can be done by setting state variables and evaluating an expression in the **<precond>** element for that **<table>** element (see Section 29.1.1.1).

### 34.6 Skill level.

Filtering at the step level can include the display of steps for a novice only in addition to steps that are for both novice and expert users. All step information is present in the TM. The display of the steps that are intended for novices can only be filtered out when an expert uses the system. The **skilllevel** attribute in the step elements, (**<step2>** through **<step5>**), can be set to either “novice” or “novice\_expert.” The skill level for a **<step1>** element, is given the mandatory value of “novice\_expert,” to indicate that first level steps are always to be displayed for both novices and experts alike (see Section 17.3).

### 34.7 Work package level.

Each work package has elements and attributes that can serve as inputs into a filtering processing. For example, the **<wpidinfo>** element (see Section 16.2) includes the **<maintlvl>** element which specifies the lowest authorized maintenance level to perform the work package. Access to work packages can be restricted to only users who are qualified to perform work at, or above, that maintenance level. Another example is each work package has attributes that identify service specific information that can be filtered (see Section 34.5). Refer to the section on work packages to see a complete list of work package elements and attributes (see Chapter 16).

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## 35 UNIQUE IETM FUNCTIONALITY

### 35.1 State tables.

The management of dynamic and static state information is a required capability to achieve intelligent, interactive data display. The capability of the system to collect and maintain the system state is achieved through the use of state variables and expressions that use these variables. The system maintains a list of variables and their associated values. This list is called a state table (refer to MIL-STD-40051-1 for state table requirements including state table input, limits and options). The system obtains values for variables through user dialogs and variable assignments. Variables are added as they are encountered in the element **<variable>**.

#### 35.1.1 Variable declaration **<variable>**.

All variables are declared in a variable declaration element **<variable>**. The **<initialize>** element in the **<variable>** element content model assigns a value to the variable. If the **<initialize>** element is not used, a null value is set when the variable is declared. The **<variable>** element is only used by the **<statemanipulation>** element (see Section 35.2.3).

1. The components of **<variable>**:
  - a. Initialize **<initialize>** (optional – zero or one) (see Section 35.1.1.1).
  - b. Dialog Box **<dialog\_ent>** or **<dialog-alt>** (optional – zero or one) (see Section 35.1.1.2).
  - c. Maintenance Data Collection **<mdc>** (optional – zero or more) (see Section 35.1.1.3).
2. The DTD fragment for **<variable>** is graphically depicted:

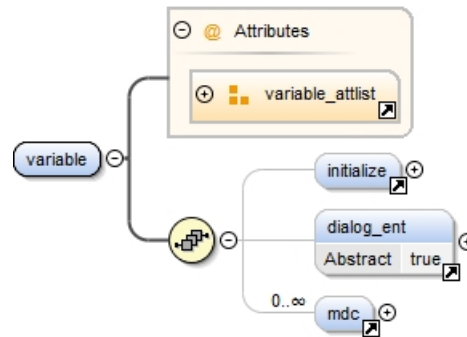


FIGURE 586. Variable declaration **<variable>** DTD hierarchy.

3. The DTD fragment for **<variable>** is:

```
<!ELEMENT variable (initialize?, (%dialog_ent;)?, mdc*)>
<!ATTLIST variable
 name CDATA #REQUIRED
 description CDATA #IMPLIED
 config (yes | no) #IMPLIED
 value-type (boolean | string | real | integer | fault) #REQUIRED
```

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precision	CDATA	#IMPLIED
scope	(global   local)	"global">

4. Unique attributes for **<variable>**:

1. **config** – Identifies if this variable pertains to a configuration item.
2. **description** – The variable description.
3. **name** – The required variable name to be used by the logic engine. Variable names are case sensitive and should not exceed a length of 64 characters.
4. **precision** – The level of precision of real type data.
5. **scope** – The state information variable data is kept within a **local** scope (it's only valid within the work package) or global (it's effective for the entire IETM). The default is **global**.
6. **value-type** – The required variable declaration type. Valid values are boolean, string, real, integer, and fault.

### 35.1.1.1 Initialize **<initialize>**.

Is used to set a variable to a starting value. The value is set using either the **<expression>** or the **<fault>** element in the **<initialize>** element content model.

1. The components of **<initialize>**:
  - a. Expression **<expression>** (required) (see 35.2.1.2).
  - b. Fault **<fault>** (required) (see 35.1.1.7.5).
2. The DTD fragment for **<initialize>** is graphically depicted.

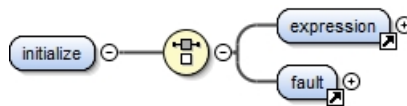


FIGURE 587. Initialize **<initialize>** DTD hierarchy.

3. The DTD fragment for **<initialize>** is:
 

```
<!ELEMENT initialize (expression | fault)>
```
4. The element **<initialize>** has no attributes.

### 35.1.1.2 Dialog box **<dialog>** or **<dialog-alt>**.

The element **<dialog>** defines either a conditional or non-conditional dialog. When a variable is referenced (see Section 35.1.1.5), an error condition occurs if a value for that variable does not exist. The author has the option to override this error condition by creating a dialog box (see Section 35.3) that would be displayed to the user when such an error occurs. This dialog box is specified in the content model for the **<variable>** element. The dialog box will include a variable reference that will assign a value to that variable. The author is responsible for correctly creating the dialog box (to include the use of the correct variable name in the variable reference). This dialog box is only processed by the system if the variable is being referenced and a value was not previously assigned. Dialog boxes are further discussed in Section 35.3.

### 35.1.1.3 Maintenance Data Collection <mdc>.

Specifies the state variable information value to be used for Maintenance Data Collection (MDC). The state variable information value is stored in the specified MDC variable name and is used in the maintenance records.

#### 35.1.1.4 Variable declaration example.

The XML source for several variable declarations is provided below. Each variable has a mandatory name and value type (see Section 35.1.1.7) as specified in the **name** and **value-type** attributes. The default value of **global** is set in the **scope** attribute. Several variables have descriptions as entered in the optional **description** attribute. Descriptions can be helpful in understanding what the variable represents.

```
<variable name="Vehicle RPM" scope="global" value-type="integer">
</variable> . . .
<variable name="Channelfield1" scope="global" value-type="string">
</variable> . . .
<variable name="ReadingWithinUpperBound" scope="global" value-type="boolean">
</variable> . . .
<variable description="Engine Compartment Fault" name="AT02A001-F1" scope="global" value-type="fault">
</variable> . . .
<variable description="Wiring Harness W420" name="AT02A001-F2" scope="global" value-type="fault">
</variable> . . .
<variable description="Evaluation Result" name="AT02A00114-EV-182" scope="global" value-type="integer">
</variable> . . .
<variable description="Radius of Map Circle" name="mapcircle" scope="global" value-type="real">
</variable> . . .
<variable name="Oil filter" scope="local" value-type="fault">
</variable>
```

#### 35.1.1.5 Variable reference <variableref>.

The element <variableref> is used to either assign/reassign a value to a variable or access the variable's value. The variable should have been previously declared in a variable declaration (see Section 35.1.1). The value can be assigned by the TM author in the source data, set by results from integrated tests, and/or inputted by the user. The variables are released or lost at the end of a maintenance session, unless specifically requested to save and resume the state table variable values. Evaluating the state table variables is accomplished through the Logic Engine (see Section 35.2).

1. The content model for <variableref> is empty
2. The DTD fragment for <variableref> is:

```
<!ELEMENT variableref EMPTY>
<!ATTLIST variableref name CDATA #REQUIRED >
```

3. The <variableref> has a single attribute **name** (required) – provides the variable name to be used by the logic engine. Variable names are case sensitive and should not exceed a length of 64 characters.

### 35.1.1.6 Variable reference example.

The XML source for several variable references is provided below. These references are the same variable as shown in the example of variable declarations (see Section 35.1.1.4). Each variable reference has a mandatory name as specified in the **name** attribute.

```
<variableref name="Vehicle RPM"/> . . .
<variableref name="Channel1field1"/> . . .
<variableref name="ReadingWithinUpperBound"/> . . .
<variableref name="AT02A001-F1"/> . . .
<variableref name="AT02A001-F2"/> . . .
<variableref name="AT02A00114-EV-182"/> . . .
<variableref name="mapcircle"/> . . .
<variableref name="Oil filter"/>
```

### 35.1.1.7 Variable value types.

Data used in expressions and assigned to variables are of an explicit data type. Valid values are boolean, string, real, integer, and fault. The available data types are described in MIL-HDBK-1222. Examples of variables being assigned an explicit data type are given in Section 35.1.1.4. Value type errors are captured by checking the characters against the defined value type. For instance, the integer type would fail if the value has alpha characters, such as "Yes."

#### 35.1.1.7.1 Boolean <boolean>.

The value for a Boolean data type is true or false. This value is assigned by selecting the appropriate element in the content model for <boolean>.

1. The components of <boolean> is one of the following:
  - a. True <true> (see Section 35.1.1.7.1.1)
  - b. False <false> (see Section 35.1.1.7.1.2)
2. The DTD fragment for <boolean> is graphically depicted.

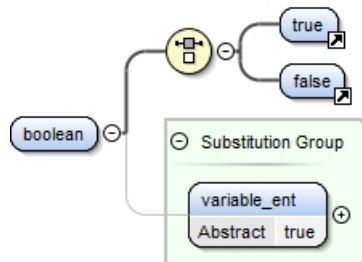


FIGURE 588. Boolean <boolean> DTD hierarchy.

3. The DTD fragment for <boolean> is:

```
<!ELEMENT boolean (true | false)>
<!ELEMENT true EMPTY>
<!ELEMENT false EMPTY>
```

4. The elements <boolean>, <true>, <false> have no attributes.

### 35.1.1.7.1.1 True <true>.

Assigns the boolean value to "True." The content model is EMPTY.

### 35.1.1.7.1.2 False <false>.

Assigns the boolean value to "False." The content model is EMPTY.

### 35.1.1.7.2 String <string>.

The value for string data is a set of ASCII characters. The content model is #PCDATA

1. DTD fragment for <string> is graphically depicted.

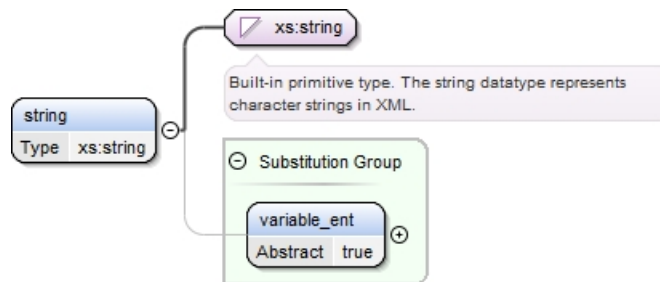


FIGURE 589. String <string> DTD hierarchy.

2. The DTD fragment for <string> is:

```
<!ELEMENT string (#PCDATA)>
```

3. The elements <string> has no attributes.

### 35.1.1.7.3 Real <real>.

Real data consists of both whole numbers and decimals. The content model is #PCDATA.

1. The DTD fragment for <real> is graphically depicted.

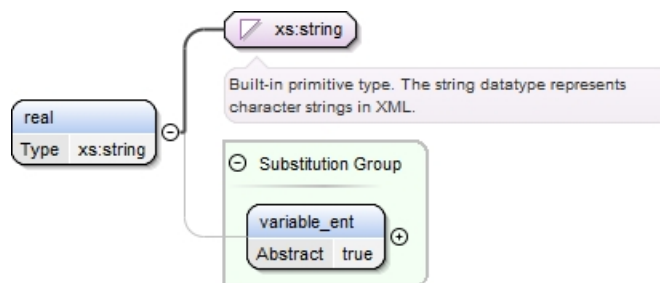


FIGURE 590. Real <real> DTD hierarchy.

2. The DTD fragment for <real> is:

```
<!ELEMENT real (#PCDATA)>
```

3. The elements <real> has no attributes.

### 35.1.1.7.4 Integer <integer>.

Integer data consists of whole numbers only. The content model is #PCDATA.

1. The DTD fragment for <integer> is graphically depicted.

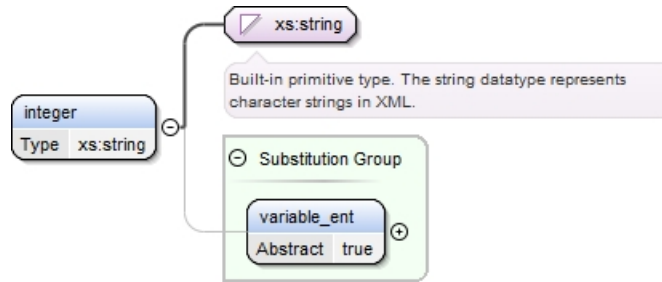


FIGURE 591. Integer <integer> DTD hierarchy.

2. The DTD fragment for <integer> is:  

```
<!ELEMENT integer (#PCDATA)>
```
3. The elements <integer> has no attributes.

### 35.1.1.7.5 Fault <fault>.

The <fault> element identifies fault conditions.

1. The components of <fault>:
  - a. Fault OK text <oktext> (optional – zero or one) (see Section 35.1.1.7.5.1).
  - b. Fault bad condition text <badtext> (optional – zero or one) (see Section 35.1.1.7.5.2).
  - c. Fault possible text <possibletext> (optional – zero or one) (see Section 35.1.1.7.5.3).
2. The DTD fragment for <fault> is graphically depicted.

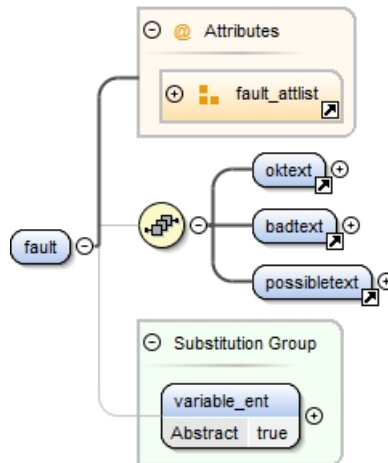


FIGURE 592. Fault <fault> DTD hierarchy.

3. The DTD fragment for <fault> is:

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```

<!ELEMENT fault (oktext, badtext, possibletext)>
<!ATTLIST fault
 dependency CDATA #IMPLIED
 fault-code CDATA #REQUIRED
 fault-ref IDREF #IMPLIED
 fault-state (ok | bad | possible) #REQUIRED
 weight CDATA #IMPLIED
 test CDATA #IMPLIED>

```

4. Unique attributes for **<fault>**:

- a. **dependency** – Dependencies that may effect the fault probability.
- b. **fault-code** – Identifies the associated fault code.
- c. **fault-ref** – Provides a link to a reference to fault information.
- d. **fault-state** – The current state of the test fault code. Allowable values are OK, possible, or bad.
- e. **test** – Specifies the resolution test procedure, which isolates the fault.
- f. **weight** – Initial weighting factor to determine the fault probability.

#### 35.1.1.7.5.1 Fault OK text **<oktext>**.

This element contains the text for when the fault condition is not the problem.

#### 35.1.1.7.5.2 Fault bad condition text **<badtext>**.

This element contains the text for when the fault condition is the problem.

#### 35.1.1.7.5.3 Fault possible text **<possibletext>**.

This element contains the text for when the fault condition is the possible fault.

### 35.2 Logic engine.

The logic engine is a software component that determines what path to take through the IETM. This software may be the function of either the IETM presentation application or some form of Maintenance Information System that includes the IETM presentation capability. The functionality that the Logic Engine provides is fundamental to testing and troubleshooting sequences. The next test is often based on the result of the current test or input from the Materiel interface (dynamic state information). It also allows for the presentation of information to the user to be customized to the Materiel configuration or any system state. To do this the Logic Engine will traverse through the work packages, evaluate alternative conditions, maintain state information, display dialogs and evaluate expressions. This section discusses alternative conditions, the manipulation of state information, and the evaluation of expressions. The creation and referencing of state information is addressed in Section 35.1. Dialog boxes are discussed in Section 35.3.

### 35.2.1 Alternative conditions.

The logic engine provides the capability for the user to be presented with information that has been filtered to reflect the current system state. The author can define system conditions. This determines when alternative procedures, statements, or steps should be followed. This is indicated through a precondition expression (see Section 35.2.1.1). This expression is included in the content model of the elements that represent a set of alternatives. The naming convention for these elements is **<ELEMENT-alt>**. The content model for these type of elements provides for multiple occurrences of the element. For example, the element **<dialog>** creates a dialog box (see Section 35.3.3.3). The **<precond>** element is included as an option in the content model for **<dialog>**. If the author wants to specify the use of alternative dialog boxes based on the evaluation of preconditions, the element **<dialog-alt>** would be used. The content model for **<dialog-alt>** is as follows:

```
<!ELEMENT dialog-alt (dialog+)>
```

A precondition would be set within each dialog element that is included as an alternative. The set of alternative conditions should produce only one or possibly no valid alternative conditions.

#### 35.2.1.1 Precondition **<precond>**.

The element **<precond>** consists of a single Boolean expression (see Section 35.2.2). The Boolean expression is evaluated by the Logic Engine (requires state (variable) information). If the Boolean expression evaluates to "True," then the data in the element following the expression is presented; otherwise, it is not. An example of a precondition is test equipment is already and a state variable has been set to "as connected." The user has no requirement to have the connection procedure re-displayed, since the test equipment has previously been connected.

1. The element **<precond>** consists of a single expression **<expression>** (required) (see Section 35.2.1.2).
2. The DTD fragment for **<precond>** is graphically depicted.

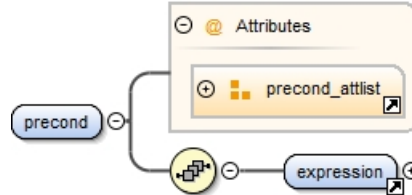


FIGURE 593. Precondition **<precond>** DTD hierarchy.

3. The DTD fragment for **<precond>** is:
 

```
<!ELEMENT precond (expression)>
 <!ATTLIST precond id ID #IMPLIED>
```
4. The element **<precond>** has a single attribute **id** – that specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

#### 35.2.1.2 Expression **<expression>**.

The element **<expression>** (see Section 35.2.1.2) in this context, defines an equation or declaration needed to evaluate to the precondition (requires Boolean results).

### 35.2.2 Expression evaluation.

The capability to branch, loop, and filter data is made possible by expression evaluation. Expressions are defined in the content of the **<expression>** element (see Section 35.2.1.2). Expressions include several data types and a rich



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set of operations are supported for each data type. An expression contains one of four operation forms: a binary operation between two expressions, a unary operation on a single expression, a state table variable, or a constant value. Expressions are authored by combining variables (or other expressions) and values with binary or unary operators. In their simplest form, an expression may be just a variable or a value.

1. Binary Operation. Binary operations are defined as an operation between two expressions. MIL-HDBK-1222 lists, for each operation, the forms that the operation can take, the return value data type, and provides a description. For example:
  - a. Binary Operation: **<and>**
  - b. Form: Boolean **<and>** Boolean.
  - c. Return Value: Boolean.
  - d. Description: 'True' if both Booleans are 'true', otherwise 'False'.
2. Unary Operation. Unary operations are defined as an operation on a single expression. MIL-HDBK-1222 lists the unary operations the Logic Engine needs to support and for each operation identifies the forms that the operation can take, the returned value data type, and provides a description. For example:
  - a. Unary Operation: **<factorial>**
  - b. Form: Boolean **<factorial>** Integer
  - c. Return Value: Integer.
  - d. Description: Returns the product of all integers, up to and including, the given integer. The form information defines the return value types for the expression on each side of the operator.
3. State table variable. If the expression contains only a **<variableref>** element, the value of the expression is obtained by looking up the current value of the variable in the state information.
4. Value. Values within an expression represent a constant. A value has an explicit data type through the value type declaration (see Section 35.1.1.7). If the expression contains only a value, the value is returned when the expression is evaluated.

### 35.2.2.1 Expressions **<expression>**.

The content model for the **<expression>** element contains numerous elements. These elements are grouped in this section for the purpose of simplifying the discussion on how to tag expressions. For example, there are 19 binary operators. These operators will be addressed as one component.

1. The components of **<expression>**:
  - a. Expression **<expression>** (optional) (see Section 35.2.1.2).
  - b. Variable reference **<variableref>** (optional) (see Section 35.2.2.1.2).
  - c. Value content model components (optional) (see Section 35.2.2.1.3).
  - d. A NIL value **<nil>** (optional) (see Section 35.2.2.1.4).
  - e. Unary operator content model components (optional) **<unop>** (see Section 35.2.2.1.5).
  - f. Variable entity content model components (optional) (see 35.2.2.1). This entity contains a sub group of elements listed below.
    - i. Boolean element **<boolean>**.
    - ii. Expression element **<expression>**.
    - iii. Fault element **<fault>**.
    - iv. Integer element **<integer>**.

- v. Nil element **<nil>**.
  - vi. Real element **<real>**.
  - vii. String element **<string>**.
  - viii. Variable reference element **<variableref>**.
  - g. Binary operator content model components (optional) **<binop>** (see Section 35.2.2.1.6).
  - h. Variable entity **<variable\_ent>**.
  - i. Trigonometry operator content model components **<trigop>**.
2. The DTD fragment for **<expression>** is graphically depicted.

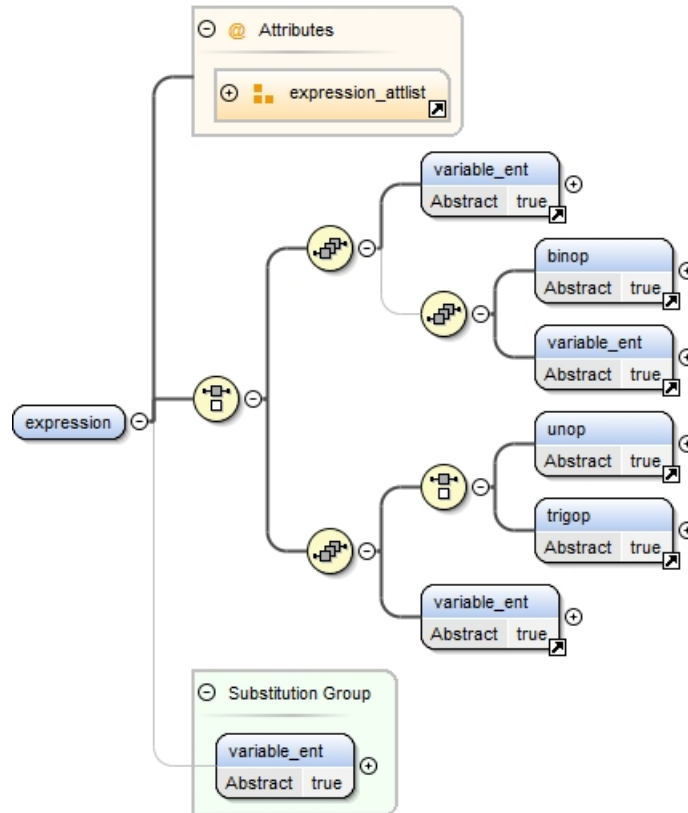


FIGURE 594. Expression **<expression>** DTD hierarchy.

3. The DTD fragment for **<expression>** is:

```
<!ELEMENT expression (((%variable_ent;), ((%binop;), (%variable_ent;))?)
| ((%unop; | %trigop;), (%variable_ent;)))>
```

```
<!ATTLIST expression
```

id	ID	#IMPLIED
print-form	CDATA	#IMPLIED>

4. The element **<expression>** contains one unique attribute of **print-form** – determines how the expression format is to be displayed. This attribute can contain descriptive text concerning how to print/display the expression.

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5. The element **<expression>** contains one common attribute of **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

### 35.2.2.1.1 Nesting of expressions.

The **<expression>** element can be nested and can return a value to the parent expression. This returned value can be output as the result of the parent expression or it can be used as an operand (a value to be input to the operator) in a binary or unary operation. An example is provided in Section 35.2.2.6.

### 35.2.2.1.2 Variable reference <variableref>.

The **<variableref>** element provides the capability to access a variable's value (see Section 35.1.1.5). This value can be returned as the result of the expression or it can be used as an operand (a value to be input to the operator) in a binary or unary operation. See Section 35.2.2.6 for examples.

### 35.2.2.1.3 Value content model components.

The **<expression>** element can contain an explicit value that is returned upon evaluation of the expression or it can be used as an operand (a value to be input to the operator) in a binary or unary operation. This value can be of **<boolean>**, **<string>**, **<real>**, **<integer>**, or **<fault>** type (see Section 35.1.1.7). Examples are provided in Section 35.2.2.2.

### 35.2.2.1.4 NIL value <nil>.

The element when assigned to a state (variable) will clear any value and causes state (variable) information to be empty. The **<expression>** element can contain a NIL value that is returned upon evaluation of the expression or it can be used as an operand (a value to be input to the operator) in an appropriate binary or unary operation. An example is provided in Section 35.2.2.2.

### 35.2.2.1.5 Unary operator content model components.

A unary operator specifies the type of operation to be performed on a single expression. The **<expression>** element that performs a unary operation will contain a unary operator element (**<facorial>**, **<sqrt>**, etc.). The content model for each unary operator is EMPTY. MIL-HDBK-1222 lists the unary operations the Logic Engine needs to support. Examples are provided in Section 35.2.2.4.

### 35.2.2.1.6 Binary operator content model components.

A binary operator specifies the type of operation (less than, greater than, etc.) to be performed between two expressions. The **<expression>** element that performs a binary operation will contain a binary operator element (**<lt>**, **<gt>**, etc.). The content model for each binary operator is EMPTY. MIL-HDBK-1222 lists the binary operations the Logic Engine needs to support. Examples are provided in Section 35.2.2.5.

## 35.2.2.2 Expressions – value examples.

The XML source for several expressions that simply return a constant value is provided below. For example, the expression with the **<integer>** tag would return an “8” integer value. The last example would return a null value.

```
<expression>
<string>CONNECTED
```

```

</string>
</expression> . . .
<expression>
<real>1.25
</real>
</expression> . . .
<expression>
<boolean>
<true/>
</boolean>
</expression> . . .
<expression>
<integer>8
</integer>
</expression> . . .
<expression>
<nil/>
</expression>

```

### 35.2.2.3 Expressions – variable examples.

The XML source for several expressions that return the value of a variable is provided below. The value type being returned would be that of the variable being referenced.

```

<expression>
<variableref name="Vehicle RPM"/>
</expression> . . .
<expression>
<variableref name="Channel1field1"/>
</expression> . . .
<expression>
<variableref name="ReadingWithinUpperbound"/>
</expression>

```

### 35.2.2.4 Expressions – unary operation examples.

The XML source for several expressions having a unary operation is provided below. In these examples the variable named “ReadingWithinUpperBound” is of type Boolean and the variable named “mapcircle” is of type real. The last example depicts a unary operation of an integer constant. The **<neg>** operation on the integer value “23” would return a “-23.”

```

<expression>
<not/>
<variableref name="ReadingWithinUpperbound"/>
</expression> . . .
<expression>
<empty/>
<variableref name="ReadingWithinUpperbound"/>
</expression> . . .
<expression>
<sqrt/>
<variableref name="mapcircle"/>
</expression> . . .
<expression>

```

```

</ln/>
<variableref name="mapcircle"/>
</expression> . . .
<expression>
<neg/>
<integer>23
</integer>
</expression>

```

### 35.2.2.5 Expressions – binary operation examples.

The XML source for two expressions having a binary operation is provided below. In the first example, the variables named “ReadingWithinUpperBound” and “ReadingWithinLowerBound” are of type Boolean. The **<and>** operator returns a true value if the two variables are true. A false value is returned if either (or both) variable(s) are false. In the second example, the variable named “mapcircle” is of type real. The Boolean value of true is returned if the value of “mapcircle” is greater than 1.0. The Boolean value of false is returned if the value of “mapcircle” is less than or equal to 1.0.

```

<expression>
<variableref name="ReadingWithinUpperbound"/>
<and/>
<variableref name="ReadingWithinLowerbound"/>
</expression> . . .
<expression>
<variableref name="mapcircle"/>
<gt/>
<real>1.0
</real>
</expression>

```

### 35.2.2.6 Expressions – complex example.

The XML source for a more complex expression is provided below. In this example the Logic Engine (by evaluating the **<defined>** unary operation) checks for the existence of a variable named “ReadingWithinUpperBound”. The Boolean result of this operation is ended with the result of comparing (using the **<eq>** binary operation) the Boolean value of the variable named “ReadingWithinLowerBound” to the Boolean value of true.

```

<expression>
<expression>
<defined/>
<variableref name="ReadingwithinUpperBound"/>
</expression>
<and/>
<expression>
<variableref name="ReadingWithinLowerBound"/>
<eq/>
<boolean>
<true/>
</boolean>
</expression>
</expression>

```

### 35.2.3 State information manipulation <statemanipulation>.

The element <statemanipulation> performs three state information functions. The first function will initialize a variable by defining the name, type, scope, etc. The second function is to initialize a variable and assign it a value through an expression or fault condition. The third function is to assign a value or stamp the date-time to a previously defined variable.

1. The components of <statemanipulation>:
  - a. Precondition <precond> (optional) (see Section 35.2.3.1).
  - b. One of the following choices is required:
    - i. Variable <variable> (required) (see Section 35.2.3.2).
    - ii. Variable Reference <variableref> (see Section 35.2.3.3) and one of the following:
      - I. Fault <fault> (optional) (see Section 35.2.3.4).
      - II. Date-Time Stamp <date-time\_stamp> (optional) (see Section 35.2.3.5).
      - III. Expression <expression> (optional) (see Section 35.2.3.6).
      - IV. State (variable) information manipulation <statemanipulation\_ent> (see Section 35.2.3).
2. The DTD fragment for <statemanipulation> is graphically depicted.

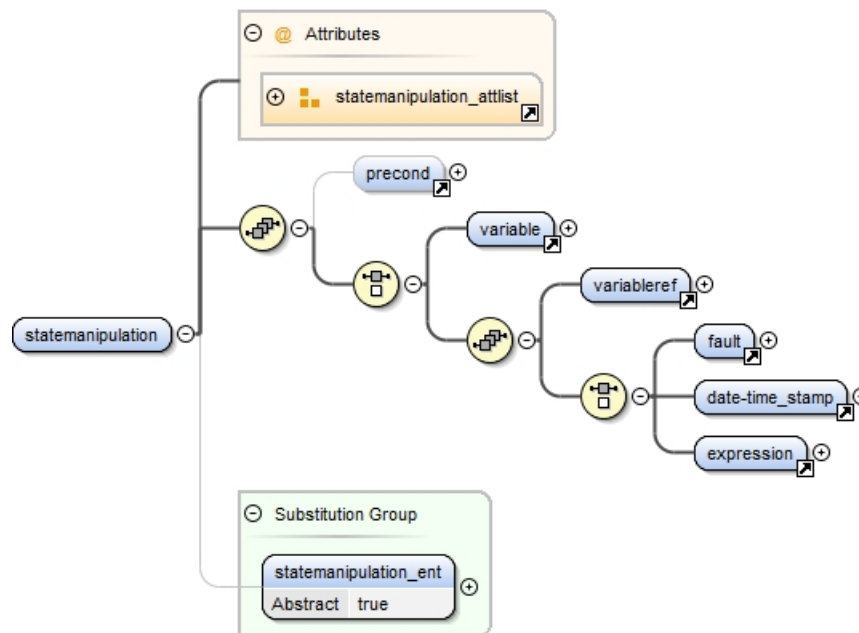


FIGURE 595. Expression <statemanipulation> DTD hierarchy.

3. The DTD fragment for <statemanipulation> is:

```
<!ELEMENT statemanipulation (precond?, (variable | (variableref, (fault |
date-time_stamp | expression))))>
```

```
<!ATTLIST statemanipulation
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED

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changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

#### 4. Common attributes for **<statemanipulation>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 35.2.3.1 Precondition **<precond>**.

The optional element **<precond>** (see Section 35.2.1.1) contains a Boolean expression. The Boolean expression is evaluated by the Logic Engine. If the Boolean expression evaluates to "True," then the state information manipulation function is performed, otherwise the remaining content in **<statemanipulation>** is skipped.

### 35.2.3.2 Variable **<variable>**.

The variable declaration element **<variable>** (see Section 35.1.1) identifies the variable to be initialized. When an optional **<fault>** or **<expression>** element is included in the **<initialize>** element in the **<variable>** element content model, the fault or expression value is assigned to the variable. Otherwise, the variable is assigned a null value.

### 35.2.3.3 Variable reference **<variableref>**.

The **<variableref>** element identifies the existing variable to be either assigned a value or have a date-time stamp be recorded. The assignment of a value is done through **<fault>** (see Section 35.1.1.7) or **<expression>** (see Section 35.2.2) elements.

### 35.2.3.4 Fault <fault>.

The element <fault> is an explicit data type (see Section 35.1.1.7.5) that provides text for the fault condition (OK, Possible Fault, and Known (Bad) Fault). An attribute in <fault> contains the associated fault code.

### 35.2.3.5 Date-Time stamp <date-time\_stamp>.

The <date-time\_stamp> element is used to record the date and/or time. This information supports maintenance data collection by recording when a variable was initialized/assigned a value.

1. The element <date-time\_stamp> is an EMPTY element with all data provided through its attribute.
2. The DTD fragment for <date-time\_stamp> is :  

```
<!ELEMENT date-time_stamp EMPTY>
<!ATTLIST date-time_stamp date-time (date | time | date-time) "date-time">
```
3. The element <date-time\_stamp> contains a single attribute of **date-time** attribute that determines if the **date**, **time** or both **date-time** are to be recorded. The default is **date-time**.

### 35.2.3.6 Expressions <expression>.

The <expression> element (see 35.2.1.2) evaluates to a value. This value is assigned to the variable being referenced.

### 35.2.3.7 State information manipulation examples.

The XML source for several state information manipulation examples is provided below. These examples show the use of variables and variable references.

```
<statemanipulation>
<variable name="Oil filter" value-type="fault" scope="local">
<initialize>
<expression>
<fault fault-code="XXX-YYY-ZZZ" fault-state="possible">
<oktext>Oil filter OK.
</oktext>
<badtext>Oil filter faulty.
</badtext>
<possibletext>Oil filter may be faulty.
</possibletext>
</fault>
</expression>
</initialize>
</variable>
</statemanipulation>
<statemanipulation>
<variable name="Vehicle RPM" scope="global" value-type="integer">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel1field1" scope="global" value-type="string">
</variable>
</statemanipulation>
```



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```

<statemanipulation>
<variable name="ReadingWithinUpperBound" scope="global" value-type="boolean">
</variable>
</statemanipulation>
<statemanipulation>
<variableref name="StateInformationVariable1"/>
<expression>
<string>Selected
</string>
</expression>
</statemanipulation>
<statemanipulation>
<variableref name="StateInformationVariable2"/>
<expression>
<string>Selected
</string>
</expression>
</statemanipulation>
<statemanipulation>
<variableref name="StateInformationVariable3"/>
<expression>
<string>Selected
</string>
</expression>
<statemanipulation>
<statemanipulation>
<variableref name="Oil filter"/>
<fault fault-code="045-011-005" fault-state="ok">
</fault>
</statemanipulation>

```

### 35.3 Dialog boxes.

Dialog boxes enable the user to communicate with the IETM, thus they are used to obtain information and provide feedback to the user. There are five kinds of dialog boxes: message, fill-in, menu, multiple-choice, and composite. The element **<dialog>** can be used to create each of these dialog box types. Common dialog components (including **<dialog>**) and each dialog box type are addressed below. For each dialog box type, the content model will be discussed followed by examples showing how to tag the dialog box and the resulting stylesheet output. The binary menu dialog box discussed below is a special case of a menu dialog box

#### 35.3.1 Some dialog box uses.

Dialog boxes can perform common calculations and obtain user acknowledgements. They can display/update state information for systems that provide this capability. Dialog boxes and their components can be filtered and a dynamic enabling feature is also provided. This feature allows for specific menus to be enabled or disabled (grayed out) depending on menu selections being entered by the user.

#### 35.3.2 Dialog box expanded use.

Dialog Boxes include several capabilities that are not required by MIL-STD-40051-1. For example, the 2361 DTD permits the author to specify if a dialog box should be displayed as a separate popup or inline with the text. This is done by setting a value in the popup attribute for those elements. This setting can be overridden since it is not a style

and format requirement. This may be done for a number of reasons as determined by the procuring activity. One reason is the stylesheet being used cannot create a separate popup.

### 35.3.3 Common dialog components.

The following elements and attributes are general dialog components used in dialog objects:

#### 35.3.3.1 Enable selection <enable>.

The element <enable> contains a Boolean expression <expression> to determine if the dialog object is active (enabled) or not active (disabled). The Boolean expression is evaluated by the Logic Engine (requires state variable information) each time a dialog data field is entered or selected. If the Boolean expression evaluates to "True," the dialog object is enabled, otherwise the remaining content in the dialog object is disabled (grayed out).

1. The element <enable> contains a single expression <expression> (required) (see Section 35.3.3.1.1).
2. The DTD fragment for <enable> is graphically depicted:



FIGURE 596. Enable selection <enable> DTD hierarchy.

3. The DTD fragment for <enable> is:  

```
<!ELEMENT enable (expression)>
```
4. The element <enable> has no attributes.

#### 35.3.3.1.1 Expressions <expression>.

The element <expression> defines an equation or expression that is evaluated (see Section 35.2.2.1).

#### 35.3.3.2 Prompt <prompt>.

The element <prompt> displays text for a response input from the user. The element <variableref> displays the current state variable value in the narrative. This utility can be used to display mathematical results, intrusive testing outcomes, etc.

1. The element <prompt> components:
  - a. Emphasis <emphasis> (optional – zero or more) (see Section 36.1.3.1).
  - b. Subscript <subscript> (optional – zero or more) (see Section 36.1.3.4).
  - c. Superscript <supscript> (optional – zero or more) (see Section 36.1.3.5).
  - d. Variable reference <variableref> (optional – zero or more) (see Section 35.1.1.5).
2. The DTD fragment for <prompt> is graphically depicted:

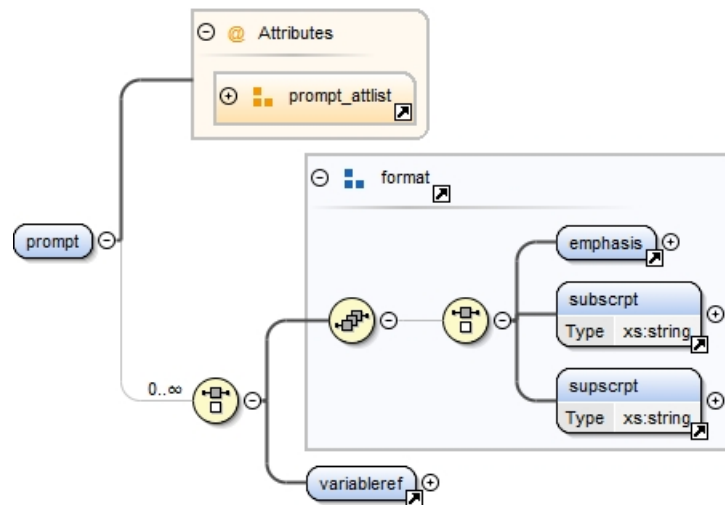


FIGURE 597. Prompt &lt;prompt&gt; DTD hierarchy.

3. The DTD fragment for **<prompt>** is:

```
<!ELEMENT prompt (%format; | variableref) *>
<!ATTLIST prompt
 id ID #IMPLIED
 position (left | right | top | bot- #IMPLIED>
 tom)
```

4. The element **<prompt>** contains one unique attribute **position** – that identifies where the prompt is displayed in relationship to the associated data field (a fill-in selection).
5. The element **<prompt>** contains one common attribute of **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

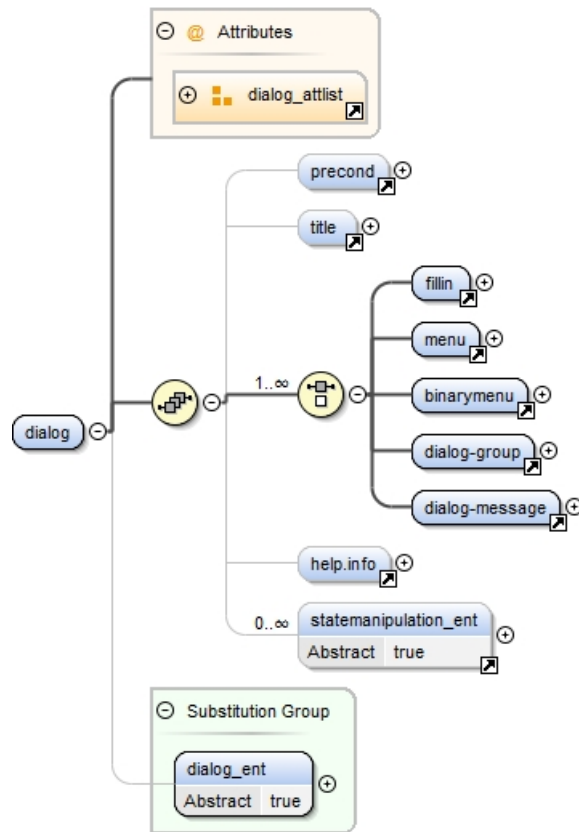
### 35.3.3.3 Dialog object <dialog>.

The element **<dialog>** creates any of the five dialog box types. As described below, this is done by selecting one of more of the elements that represent these types within the **<dialog>** content model.

1. The components of **<dialog>** are:
  - a. Precondition **<precond>** (optional) (see Section 35.3.3.4).
  - b. Title **<title>** (optional) (see Section 35.3.3.5).
  - c. One or more of the following dialog box types:
    - i. A fill in box **<fillin>** (see Section 35.3.4).
    - ii. Menu dialog **<menu>** (see Section 35.3.5).
    - iii. A binary menu dialog **<binarymenu>** (see Section 35.3.7).
    - iv. A group of dialog boxes **<dialog-group>** (see Section 35.3.7.11).
    - v. A message dialog **<dialog-message>** (see Section 35.3.7.20).
  - d. Context sensitive help information **<help.info>** (optional) (see Section 35.3.3.7).

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- e. State manipulation values **<statemanipulation>** or **<statemanipulation-alt>** (optional – zero or more) (see Section 35.3.3.8).
2. The DTD fragment for **<dialog>** is graphically depicted:

FIGURE 598. Dialog box **<dialog>** DTD hierarchy.

3. The DTD fragment for **<dialog>** is:

```
<!ELEMENT dialog (precond?, title?, (fillin | menu | binarymenu | dialog-
group | dialog-message)+, help.info?, (%statemanipulation_ent;)*)>
```

```
<!ATTLIST dialog
```

popup	(yes   no)	#IMPLIED
cancel_button	(yes   no)	"yes"
reset_button	(yes   no)	#IMPLIED
applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0–99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED

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inschlvl	(0–99)	“0”
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Unique attributes for **<dialog>**:

- a. **cancel\_button** – Determines if the dialog box will have a cancel button. A **yes** indicates that the dialog box will display a cancel button, a **no** indicates that it will not. The default is **yes**.
- b. **popup** – Identifies how the message box is to be displayed. A **yes** displays the message box as a separate popup window. A **no** displays the dialog box inline with the text.
- c. **reset\_button** – Determines if the dialog box will have a reset button. A **yes** indicates that the dialog box will display a reset button, a **no** indicates that it will not.

5. Common attributes for **<dialog>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 35.3.3.4 Precondition **<precond>**.

The optional element **<precond>** contains a Boolean expression (see Section 35.2.1.1). The Boolean expression is evaluated by the Logic Engine. If the Boolean expression evaluates to “True,” then the dialog box is presented to the user, otherwise the remaining content in **<dialog>** is skipped.

### 35.3.3.5 Title **<title>**.

The element **<title>** contains an optional dialog box title (see Section 36.1.1.4). Not all title element content model components are appropriate for use in tagging a dialog box title. Enter text using the #PCDATA, **<emphasis>**, **<subscript>**, or **<supscript>** tags as required to generate the displayed text/formatted text.

### 35.3.3.6 Dialog box type.

The element **<dialog>** allows for one or more of the following dialog box types.

- 1. A fill in box **<fillin>** (see Section 35.3.4).
- 2. Menu dialog **<menu>** (see Section 35.3.5).
- 3. A binary menu dialog **<binarymenu>** (see Section 35.3.7).

4. A group of dialog boxes **<dialog-group>** (see Section 35.3.7.11).
5. A message dialog **<dialog-message>** (see Section 35.3.7.20).

### 35.3.3.7 Help information **<help.info>**.

The element **<help.info>** provides help information about the data in the dialog box. The text may describe the data that is expected to be entered, where and why the information is needed, etc. This element is optional. When data for **<help.info>**, is provided, a "HELP" push button is displayed in the dialog box.

### 35.3.3.8 State manipulation values.

The elements **<statemanipulation>** (see Section 35.2.3) and **<statemanipulation-alt>** (see Section 35.2.1) set the state variable information for the dialog box. Several state variables can be set. The state variable is modified when the dialog box is acknowledged by the user.

### 35.3.4 Fill-in dialog box **<fillin>**.

The element **<fillin>** in **<dialog>** creates a dialog box that allows the user to enter data into fields in the dialog. This provides the capability to communicate to the IETM by prompting the user to enter text that can be processed.

1. The components of **<fillin>**:
  - a. Precondition **<precond>** (optional – zero or one) (see Section 35.3.4.1).
  - b. Enable **<enable>** (optional – zero or one) (see Section 35.3.4.2).
  - c. Prompt **<prompt>** (optional – zero or one) (see Section 35.3.4.3).
  - d. Variable reference **<variableref>** (required) (see Section 35.3.4.4).
  - e. Default **<default>** (optional – zero or one) (see Section 35.3.4.5).
  - f. One of the following may be included:
    - i. Numeric range **<numrange>** (optional – zero or one) (see Section 35.3.4.6).
    - ii. Validate **<validate>** (optional – zero or one) (see Section 35.3.4.7).
2. The DTD fragment for **<fillin>** is graphically depicted:

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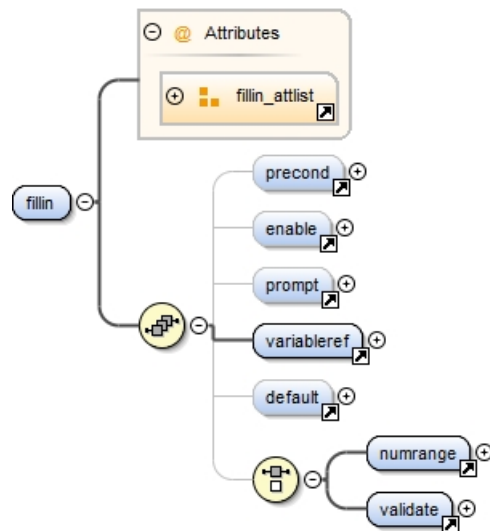


FIGURE 599. Fill-in dialog box &lt;fillin&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;fillin&gt; is:

```
<!ELEMENT fillin (precond?, enable?, prompt?, variableref, default?, (num-
range | validate)?)>
```

```
<!ATTLIST fillin
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
fieldsize	CDATA	"20"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
mandatory	(yes   no)	"yes"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

## 4. Attributes for &lt;fillin&gt;:

- a. **fieldsize** – Identifies the fill-in data field width in number of characters. Data that is longer than the displayed field is entered and can be scrolled by using the left and right cursor keys or mouse. The default value is a "20" character width data field.
- b. **mandatory** – Identifies if the fill-in text is required before the dialog can be completed. The default is **yes** (True).

## 5. Common attributes for &lt;fillin&gt;:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).

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- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 35.3.4.1 Precondition **<precond>**.

The optional element **<precond>** (see Section 35.2.1.1) contains a Boolean expression. The Boolean expression is evaluated by the Logic Engine. If the Boolean expression evaluates to “True,” then the fill-in is presented to the user, otherwise the remaining content in **<fillin>** is skipped.

### 35.3.4.2 Enable **<enable>**.

The optional element **<enable>** determines if the fill-in is active or not active (see Section 35.3.3.1).

### 35.3.4.3 Prompt **<prompt>**.

The element **<prompt>** contains the prompt text for inputting a response from the user into the associated data field (see Section 35.3.3.2).

### 35.3.4.4 Variable reference **<variableref>**.

The element **<variableref>** (see Section 35.1.1.5) is used to store the user’s state information that is inputted into the fill-in dialog box data field.

### 35.3.4.5 Default **<default>**.

The element **<default>** assigns an optional default value to the fill-in dialog box data field.

1. The components of **<default>**:
  - a. Expression **<expression>** (optional – zero or one) (see Section 35.3.4.5.1).
  - b. Text **<text>** (optional – zero or one) (see Section 35.3.4.5.2).
  - c. Variable reference **<variableref>** (optional – zero or one) (see Section 35.3.4.5.3).
2. The DTD fragment for **<default>** is graphically depicted:



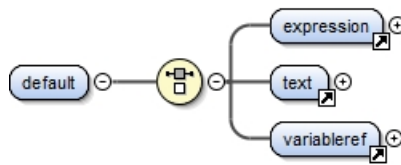


FIGURE 600. Default &lt;default&gt; DTD hierarchy.

3. The DTD fragment for **<default>** is:

```
<!ELEMENT default (expression | text | variableref)>
```

4. The element **<default>** has no attributes.

### 35.3.4.5.1 Expression **<expression>**.

The **<expression>** element (see Section 35.2.2) evaluates to a value. This value is assigned as the default for the fill-in dialog box entry.

### 35.3.4.5.2 Text **<text>**.

The element **<text>** contains textual data that is used as a default for the fill-in dialog box data field (see Section 36.1.1.19).

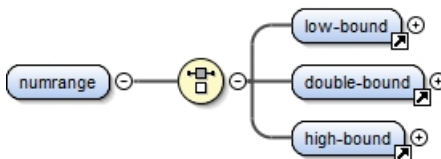
### 35.3.4.5.3 Variable reference **<variableref>**.

The element **<variableref>** (see Section 35.1.1.5) is used to store the user's state information that is inputted into the fill-in dialog box data field.

### 35.3.4.6 Numeric range **<numrange>**.

The optional element **<numrange>** identifies numerical range constraints for a fill-in dialog box data field.

1. The components of **<numrange>**:
  - a. Low bound **<low-bound>** (optional – zero or one) (see Section 35.3.4.6.1).
  - b. Double bound **<double-bound>** (optional – zero or one) (see Section 35.3.4.6.3).
  - c. High bound **<high-bound>** (optional – zero or one) (see Section 35.3.4.6.2).
2. The DTD fragment for **<numrange>** is graphically depicted:

FIGURE 601. Numeric range **<numrange>** DTD hierarchy.

3. The DTD fragment for **<numrange>** is:

```
<!ELEMENT numrange (low-bound | double-bound | high-bound)>
```

4. The element **<numrange>** has no attributes.

### 35.3.4.6.1 Low bound <low-bound>.

The element <low-bound> identifies the minimum acceptable input value (integer or real) for the fill-in dialog box data field. Use this element when there is a minimum range constraint but no maximum.

1. The components of <low-bound>:
  - a. Integer value <integer> (see Section 35.1.1.7.4).
  - b. Real value <real> (see Section 35.1.1.7.3).
  - c. Variable reference <variableref> (see Section 35.1.1.5).
  - d. Expression <expression> (see Section 35.2.1.2).
2. The DTD fragment for <low-bound> is graphically depicted:

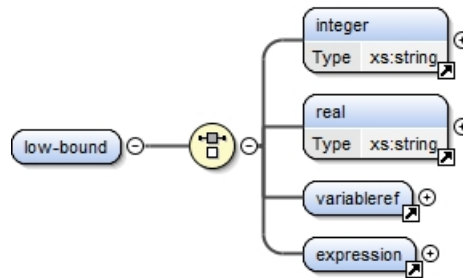


FIGURE 602. Low bound <low-bound> DTD hierarchy.

3. The DTD fragment for <low-bound> is:
 

```
<!ELEMENT low-bound (integer | real | variableref | expression)>
```
4. The element <low-bound> has no attributes.

### 35.3.4.6.2 High bound <high-bound>.

The element <high-bound> identifies the maximum acceptable input value (integer or real) for the fill-in dialog box data field. Use this element when there is a maximum range constraint but no minimum.

1. The components of <high-bound>:
  - a. Integer value <integer> (optional – zero or one) (see Section 35.1.1.7.4).
  - b. Real value <real> (optional – zero or one) (see Section 35.1.1.7.3).
  - c. Variable reference <variableref> (optional – zero or one) (see Section 35.1.1.5).
  - d. Expression <expression> (optional – zero or one) (see Section 35.2.1.2).
2. The DTD fragment for <high-bound> is graphically depicted:

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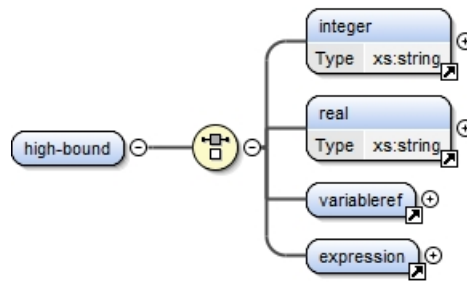


FIGURE 603. High bound &lt;high-bound&gt; DTD hierarchy.

3. The DTD fragment for <high-bound> is:

```
<!ELEMENT high-bound (integer | real | variableref | expression)>
```

4. The element <high-bound> has no attributes.

### 35.3.4.6.3 Double bound <double-bound>.

The element <double-bound> sets the fill-in dialog box data field entry's lowest and highest entered numerical (integer or real) values. Use this element when there are both minimum and maximum range constraints.

1. The components of <double-bound>:
  - a. Low bound <low-bound> (required) (see Section 35.3.4.6.1).
  - b. High bound <high-bound> (required) (see Section 35.3.4.6.2).
2. The DTD fragment for <double-bound> is graphically depicted:

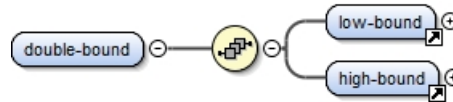


FIGURE 604. Double bound &lt;double-bound&gt; DTD hierarchy.

3. The DTD fragment for <double-bound> is:

```
<!ELEMENT double-bound (low-bound, high-bound)>
```

4. The element <double-bound> has no attributes.

### 35.3.4.7 Validate <validate>.

The element <validate> is used to verify numerical or non-numerical text. The <validate> element contains the <expression> element, which is used to evaluate the entered data to a Boolean result.

1. The element <validate> consists of a single expression <expression> (required) (see Section 35.2.1.2).
2. The DTD fragment for <validate> is graphically depicted:

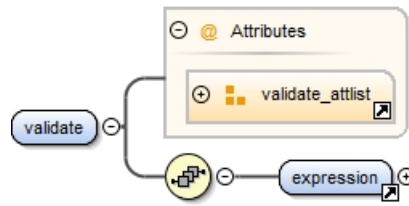


FIGURE 605. Validate &lt;validate&gt; DTD hierarchy.

3. The DTD fragment for <validate> is:

```
<!ELEMENT validate (expression)>
<!ATTLIST validate errmsg CDATA #REQUIRED>
```

4. The element <validate> contains the single attribute **errmsg** – indicates the text to be displayed for an invalid input.

#### 35.3.4.7.1 Fill-in dialog box – multiple entries example.

The XML source and its stylesheet output (see Figure 562) for a fill-in dialog box with multiple data fields are provided below. This example depicts a popup dialog box with a single line title and four lines of four data fields. The <dialog-group> element (see Section 35.3.7.11) is used four times to create each line. Each <dialog-group> element contains four <fillin> elements. The <fillin> elements contain a prompt and a data field. The prompt appears to the left of each data field because of the setting in the **position** attribute in the <prompt> element. The first prompt on each line contains the text and the three other prompts contain a space. The **fieldsize** attributes in the <fillin> elements are set to 3 indicating this is the width of each data field. No <fillin> element contains the default element, thus all data fields are initialized as blanks. The value in the **mandatory** attribute in the <fillin> elements is set to the default of **yes** indicating that an entry in each data field is required. The user will enter state (variable) information into the sixteen data fields. This data will be saved in the specified state variables that are identified by attribute **name** in the element <variableref>. The element <statemanipulation> is used to create these variables. The “OK” push button is not enabled because an entry should be made in each of the 16 data fields. The “CANCEL” push button appears since the **cancel\_button** attribute in <dialog> is set to **yes**.

1. XML document instance fragment:

```
<statemanipulation>
<variable name="Channel1field1" scope="global" value-type="string">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel1field2" scope="global" value-type="string">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel1field3" scope="global" value-type="string">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel1field4" scope="global" value-type="string">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel2field1" scope="global" value-type="string">
</variable>
```

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```

</statemanipulation>
<statemanipulation>
<variable name="Channel2field2" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel2field3" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel2field4" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel3field1" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel3field2" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel3field3" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel3field4" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel4field1" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel4field2" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel4field3" scope="global" value-type="string">
<variable>
</statemanipulation>
<statemanipulation>
<variable name="Channel4field4" scope="global" value-type="string">
<variable>
</statemanipulation>

<dialog-group separator="no">
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">Channel 1:
</prompt>
<variableref name="Channel1field1"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">

```

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```

</prompt>
<variableref name="Channel1field2"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel1field3"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel1field4"/>
</fillin>
</dialog-group>
<dialog-group separator="no">
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">Channel 2:
</prompt>
<variableref name="Channel2field1"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel2field2"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel2field3"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel2field4"/>
</fillin>
</dialog-group>
<dialog-group separator="no">
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">Channel 3:
</prompt>
<variableref name="Channel3field1"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel3field2"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">Channel 3:
</prompt>
<variableref name="Channel3field1"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">

```

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```

</prompt>
<variableref name="Channel3field2"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel3field3"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel3field4"/>
</fillin>
</dialog-group>
<dialog-group separator="no">
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">Channel 4:
</prompt>
<variableref name="Channel4field1"/>
<prompt position="left">Channel 3:
</prompt>
<variableref name="Channel3field1"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel3field2"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel3field3"/>
</fillin>
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">
</prompt>
<variableref name="Channel3field4"/>
</fillin>
</dialog-group>
<dialog-group separator="no">
<fillin fieldsize="3" mandatory="yes">
<prompt position="left">Channel 4:
</prompt>
<variableref name="Channel4field1"/>

```

## 2. Stylesheet output:

FIGURE 606. Fill-in dialog box – multiple entries example.

#### 35.3.4.7.2 Fill-in dialog box – number range and assigned default from an expression example.

The XML source and its stylesheet output (see FIGURE 607.) for a fill-in dialog box using a number range and an assigned default value from an expression is provided below. This example depicts a popup dialog box with a single line title and one fill-in data field. The **<fillin>** element contains a prompt and a data field. The prompt appears to the left of each data field because of the setting in the **position** attribute in the **<prompt>** element. The fill-in data will be saved in the variable named "Vehicle RPM" as identified by attribute **name** in the **<variableref>** element. The element **<statemanipulation>** has been previously used to create this variable. The author defined default value in element **<default>** is set to "5." The allowable range of integer values is set to "0" as the minimum value and "8" as the maximum value. The value of the **mandatory** attribute in the **<fillin>** element is set to the default of "yes." This indicates that an entry in the data field is required. The **fieldsize** attribute in the **<fillin>** element is set to 5 indicating that this is the width of the data field. The "OK" push button is enabled because an entry was made (the default value of 5) in the data field. The "CANCEL" push button appears since the **cancel\_button** attribute in **<dialog>** is set to 'yes.'

1. XML document instance fragment:

```

<statemanipulation>
 <variable name="Vehicle RPM" scope="global" value-type="integer">
 </variable>
</statemanipulation>
<dialog cancel_button="yes" popup="yes">
 <fillin fieldsize="5" mandatory="yes">
 <prompt position="left">USER RESPONSE
 </prompt>
 <variableref name="Vehicle RPM"/>
 <default>
 <expression>
 <integer>5
 </integer>
 </expression>

```



```

</default>
<numrange>
<double-bound>
<low-bound>
<integer>0
</integer>
</low-bound>
<high-bound>
<integer>8
</integer>
</high-bound>
</double-bound>
</numrange>
</fillin>
</dialog>

```

2. Stylesheet output:

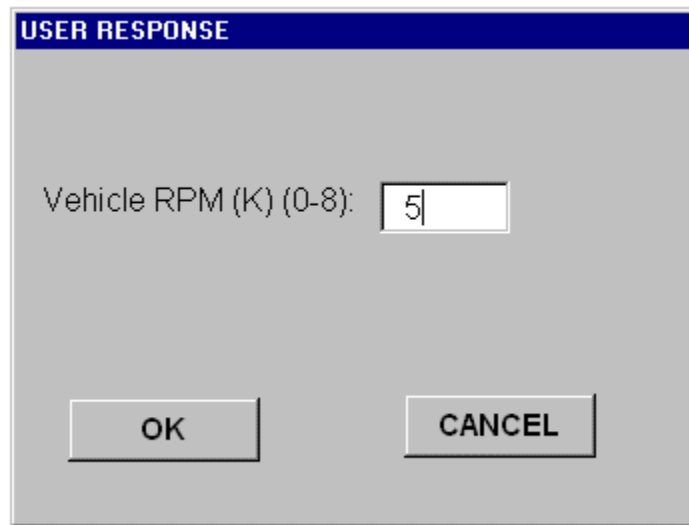


FIGURE 607. Fill-in dialog box – number range and assigned default from an expression example.

### 35.3.4.7.3 Fill-in dialog box – validate and assign default from a variable reference example.

The XML source and its stylesheet output (see FIGURE 608.) for a fill-in dialog box that validates user input and displays a default from a variable reference is provided below. This example depicts a popup dialog box with a single line title and one fill-in data field. The **<fillin>** element contains the prompt and a data field. The prompt entered in the (**<prompt>**) element appears to the left of each data field because of the setting in the position attribute. The fill-in data will be saved in the variable named “Vehicle RPM” as identified by attribute **name** in the **<variableref>** element. The element **<statemanipulation>** has been previously used to create this variable. The **<default>** element in **<fillin>** contains the current value of the referenced variable which is set to “7.” The **<validate>** element restricts entries to be between “0” as the minimum value and “8” as the maximum value. The value of the **mandatory** attribute in the **<fillin>** element is set to the default of “yes.” This indicates that an entry in the data field is required. The **fieldsize** attribute in the **<fillin>** element is set to 5 indicating that this is the width of the data field. The “OK” push button is enabled because an entry was made (the default value of 7) in the data field. The “CANCEL” push button appears since the **cancel\_button** attribute in **<dialog>** is set to 'yes.'

1. XML document instance fragment:

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```

<statemanipulation>
<variable name="Vehicle RPM" scope="global" value-type="integer">
<initialize>
<expression>
<integer>7
</integer>
</expression>
</initialize>
</variable>
</statemanipulation>
<dialog cancel_button="yes" popup="yes">
<fillin fieldsize="5" mandatory="yes">
<prompt position="left">USER RESPONSE
</prompt>
<variableref name="Vehicle RPM"/>
<default>
<variableref name="Vehicle RPM"/>
</default>
<validate errormsg="Value must be integer 0 - 8">
<expression>
<expression>
<integer>0
</integer>
</expression>
<variableref name="Vehicle RPM"/>
</expression>
<and/>
<expression>
<variableref name="Vehicle RPM"/>
</expression>
<integer>8
</integer>
</expression>
</expression>
</validate>
</fillin>
</dialog>
</integer>

```

2. Stylesheet output:

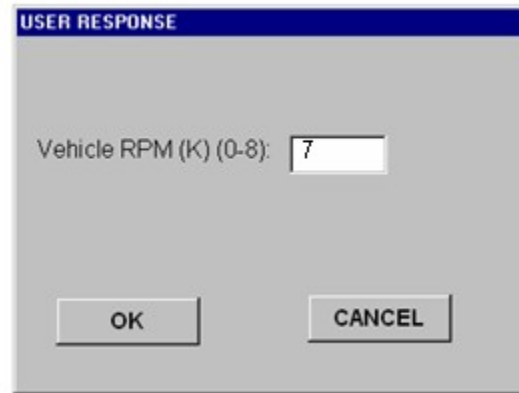


FIGURE 608. Fill-in dialog box – validate and assign default from a variable reference example.

### 35.3.5 Menu dialog box.

The menu dialog box provides the capability to communicate to the IETM by prompting the user to select one item from a list. The element **<menu>** within the element **<dialog>** (see Section 35.3.3.3) provides this capability in addition to providing a multiple choice capability (see Section 35.3.7.9). The element **<binarymenu>** in **<dialog>** can also create a menu dialog box in certain cases where there are only two choices (**yes** or **no**). The binary menu dialog box can be simpler to tag (see Section 35.3.7).

1. The components of **<menu>**:
  - a. Precondition **<precond>** (optional) (see Section 35.3.5.1).
  - b. Enable **<enable>** (optional) (see Section 35.3.5.2).
  - c. Prompt **<prompt>** (required) (see Section 35.3.5.3).
  - d. Choice **<choice>** (required one or more) (see Section 35.3.6).
2. The DTD fragment for **<menu>** is graphically depicted:

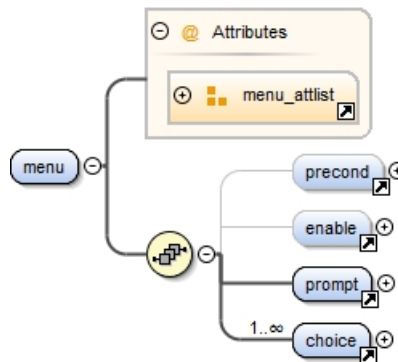


FIGURE 609. Menu **<menu>** DTD hierarchy.

3. The DTD fragment for **<menu>** is:

```
<!ELEMENT menu (precond?, enable?, prompt, choice+)>
```

```
<!ATTLIST menu
```

```
applicable
```

```
IDREFS
```

```
#IMPLIED
```

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assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
flow	(list   inline)	"list"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
mandatory	(yes   no)	"yes"
select	single	implied
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
type	(radio   button   pull down)	#REQUIRED>

4. Attributes for **<menu>**:

- a. **flow** – Identifies if the selection values are to be displayed vertically (in a list) or horizontally (inline). The default is "list." Either option is acceptable for a menu dialog box.
- b. **mandatory** – Identifies if a menu choice is required before the dialog can be completed. The default is **yes** (True). For a menu dialog box **mandatory** should be set to **yes**. NOTE: An entered space satisfies the mandatory condition.
- c. **select** – A required attribute that specifies if a single selection or multiple selections are permitted. The default is single. For a menu dialog box the select attribute value should be "single."
- d. **type** – Defines how the choice items are displayed. The options are as a radio, a button, or a pull down menu. For a menu dialog box the type should be set to "radio."

5. Common attributes for **<menu>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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**35.3.5.1 Precondition <precond>.**

The optional element **<precond>** (see Section 35.2.1.1) contains a Boolean expression. The Boolean expression is evaluated by the Logic Engine. If the Boolean expression evaluates to "True," then the menu is presented to the user, otherwise the remaining content in **<menu>** is skipped.

**35.3.5.2 Enable <enable>.**

The optional element **<enable>** determines if the menu is active or not active (see Section 35.3.3.1).

**35.3.5.3 Prompt <prompt>.**

The element **<prompt>** contains the optional prompt text for the menu (see Section 35.3.3.2). Any valid value for the **position** attribute is acceptable.

**35.3.6 Choice <choice>.**

The element **<choice>** is used in an IETM to display a menu choice prompt and to set state (variable) information. Element **<choice>** may contain an associated action as either an external application (the element **<link>**) or a secondary dialog (the element **<dialog>**). The associated action may be used to provide additional information (sound, image, execute diagnostic test, etc.) to assist with the dialog selection. The action is executed either by selecting the menu choice or clicking a push button (the element **<button>**) next to the suggested answer. After the action is completed, control returns to the dialog.

1. The components of **<choice>**:

- a. Precondition **<precond>** (optional) (see Section 35.3.6.1).
- b. Enable **<enable>** (optional) (see Section 35.3.6.2).
- c. Text **<text>** (required) (see Section 35.3.6.3).
- d. A choice of:
  - i. A link **<link>** (optional – zero or one) (see Section 35.3.6.4), or a dialog **<dialog>** (optional – zero or one) (see Section 35.3.6.5).
  - ii. A button **<button>** (optional – zero or more) (see Section 35.3.6.6).
- e. State manipulation values **<statemanipulation>** or **<statemanipulation-alt>** (required – one or more) (see Section 35.3.6.7).

2. The DTD fragment for **<choice>** is graphically depicted:

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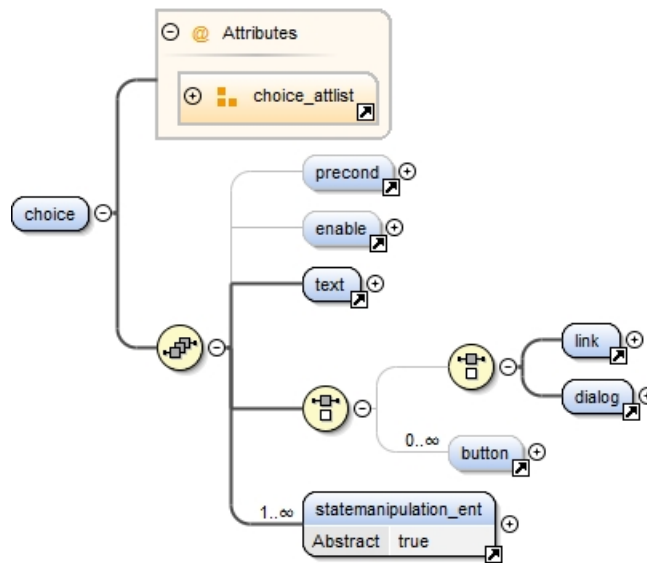


FIGURE 610. Choice &lt;choice&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;choice&gt; is:

```
<!ELEMENT choice (precond?, enable?, text, ((link | dialog)? | button*), (%
statemanipulation_ent;)+)>
```

```
<!ATTLIST choice
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
default	(yes   no)	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. The element <choice> has one unique attribute of **default** – Determines if this selection is the default selection. If **default** is set to **yes** then this selection is the default and its radio button is shown as being selected when the menu is first displayed. This selection is not the default if the value for **default** is **no** or if it is not specified. If more than one selection has its default set to **yes**, then the first selection in the menu list with a **yes** value for its **default** attribute is selected as the default.

## 5. Common attributes for &lt;choice&gt;:

- applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- changeref** – Change history or remarks reference (optional) (see Section 36.3.12).

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- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

**35.3.6.1 Precondition <precond>.**

The optional element **<precond>** (see Section 35.2.1.1) contains a Boolean expression. The Boolean expression is evaluated by the Logic Engine. If the Boolean expression evaluates to "True," then the menu is presented to the user, otherwise the remaining content in **<menu>** is skipped.

**35.3.6.2 Enable <enable>.**

The optional element **<enable>** determines if the menu is active or not active (see Section 35.3.3.1).

**35.3.6.3 Text <text>.**

The element **<text>** contains textual data to be displayed as a prompt for the menu choice (see 36.1.1.19).

**35.3.6.4 Link <link>.**

Identifies a link (see Section 33.2.3) to an external application that is associated with the menu selection. After the action is completed, control returns to the dialog.

**35.3.6.5 Dialog <dialog>.**

Identifies a secondary dialog (see Section 35.3.3.3) that is associated with the menu selection. After the action is completed, control returns to the dialog.

**35.3.6.6 Button <button>.**

Presents a push button that can be used (in lieu of selecting the menu choice) to execute an action (to a link or to present a secondary dialog) that is associated with the menu selection.

1. The components of **<button>**:
  - a. Prompt **<prompt>** (required). The element **<prompt>** contains the prompt text to be displayed for the button (see Section 35.3.3.2).
  - b. One of the following is required:
    - i. Link **<link>** (see Section 35.3.6.4).
    - ii. Dialog **<dialog>** (see Section 35.3.6.5).
2. The DTD fragment for **<button>** is graphically depicted.

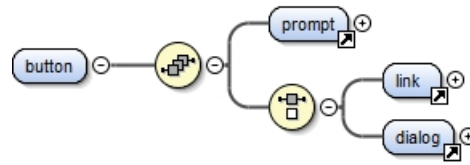


FIGURE 611. Choice &lt;button&gt; DTD hierarchy.

3. The DTD fragment for **<button>** is:

```
<!ELEMENT button (prompt, (link | dialog))>
```

4. The element **<button>** has no attributes

### 35.3.6.7 State manipulation values.

The elements **<statemanipulation>** (see Section 35.2.3) and **<statemanipulation-alt>** (see Section 35.2.1) set the state variable information for the menu selection. Several state variables can be set. The state variable is modified when the menu choice is made and the dialog box is acknowledged by the user.

### 35.3.6.8 Menu dialog box example.

The XML source and its stylesheet output (see FIGURE 612.) for a menu dialog box is provided below. This example depicts a popup dialog box with a single line title and three menu selections. Each selection initializes the same variable, but assigns it a different value. The **select** attribute is set by default to “single” indicating that only one choice can be made. The **mandatory** attribute is set by default to **yes** indicating that an entry is required. The first menu selection item is shown as being selected. The value of the **default** attribute for the choice was set to **yes**. An enable condition is set for the third menu selection item. This choice is “grayed” out since the **<enable>** element for that menu selection item evaluated to false. The menu prompt appears in bold by using the emphasis tag. The “OK” push button is enabled because a menu selection was made (the first selection is defaulted to). The “CANCEL” push button appears since the **cancel\_button** attribute in **<dialog>** is set to 'yes.'

1. **<statemanipulation>**  

```
<variable name="connected_testXYZ" scope="global" value-type="string">
 <initialize>
 <expression>
 <string>CONNECTED
 </string>
 </expression>
 </initialize>
</variable>
</statemanipulation>
<dialog cancel_button="yes" popup="yes">
 <title>Enter TITLE Here
</title>
 <menu flow="list" mandatory="yes" select="single" type="radio">
 <prompt position="left">
 <emphasis emph="bold">Select from the following:
 </emphasis>
 </prompt>
 <choice default="yes">
 <text>Selection 1
 </text>
 </choice>
 </menu>
</dialog>
```



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```

<variable name="StateInformationVariable" scope="global" value-type="integer">
<initialize>
<expression>
<integer>1
</integer>
</expression>
</initialize>
</variable>
</statemanipulation>
</choice>
<choice default="no">
<text>Selection 2
</text>
<statemanipulation>
<variable name="StateInformationVariable" scope="global" value-type="integer">
<initialize>
<expression>
<integer>2
</integer>
</expression>
</initialize>
</variable>
</statemanipulation>
</choice>
<choice default="no">
<enable>
<expression>
<variableref name="connected_testXYZ"/>
<eq/>
<string>DISCONNECTED
</string>
</expression>
</enable>
<text>Selection 3
</text>
<statemanipulation>
<variable name="StateInformationVariable" scope="global" value-type="integer">
<initialize>
<expression>
<integer>4
</integer>
</expression>
</initialize>
</variable>
</statemanipulation>
</choice>
</menu>
</dialog>
</integer>

```

2. Stylesheet output:

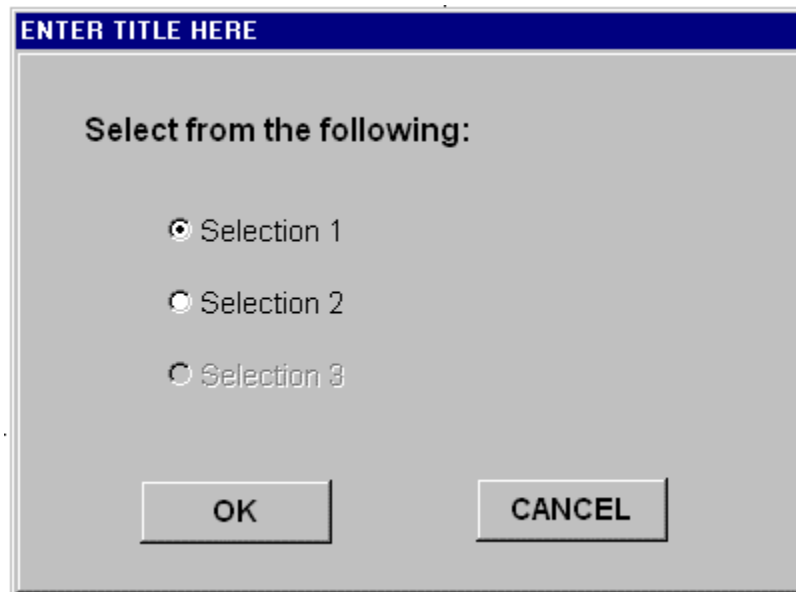


FIGURE 612. Menu dialog box example.

### 35.3.7 Binary menu dialog box <binarymenu>.

The element <binarymenu> within the element <dialog> (see Section 35.3.3.3) creates a special type of menu dialog box referred to as a binary menu dialog box. This type of dialog box provides the capability to communicate to the IETM by prompting the user to select one item from a two item list (yes or no, true or false, pass or fail).

1. The components of <binarymenu>:
  - a. Prompt <prompt> (required) (see Section 35.3.7.3).
  - b. Precondition <precond> (optional) (see Section 35.3.7.1).
  - c. Enable <enable> (optional) (see Section 35.3.7.2).
  - d. Yes with state <yesstate> (required) (see Section 35.3.7.4).
  - e. No with state <nostate> (required) (see Section 35.3.7.6).
2. The DTD fragment for <binarymenu> is graphically depicted.

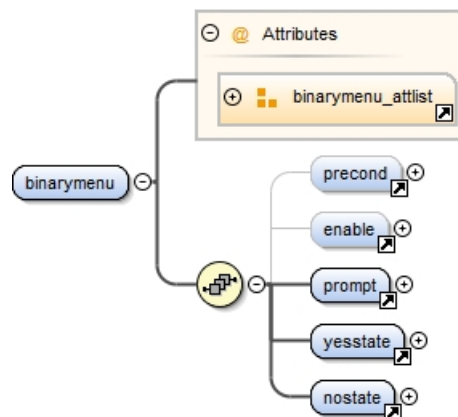


FIGURE 613. Binary menu &lt;binarymenu&gt; DTD hierarchy.

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3. The DTD fragment for **<binarymenu>** is:

```

<!ELEMENT binarymenu (precond?, enable?, prompt, yesstate, nostate)>
<!ATTLIST binarymenu
 answer (yesno | truefalse | "yesno"
 passfail)
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 default (yes | no) #IMPLIED
 delchlvl (0-99) "0"
 flow (list | inline) "list"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 mandatory (yes | no) "yes"
 security (uc | fouo | c | s | ts) #IMPLIED
 select (single) "single"
 skilltrk CDATA #IMPLIED
 type (radio | button | "radio">
 pull down)

```

4. Attributes for **<binarymenu>**:

- a. **answer** – Provides the type of answer to display on the screen. There are three types: **yesno**, **truefalse**, and **passfail**. The default is “yesno.”
- b. **default** – Selects one of the radio buttons as a default. If **yes** then the positive radio button is the default. If **no** then the negative radio button is the default. If not specified, neither radio button is the default.
- c. **type** – Defines how the choice items are displayed. The options are as a radio, a button or a pull down menu. For a binary menu dialog box the type should be set to “radio.”
- d. **select** – A required attribute in both **<menu>** and **<binary>** that specifies if a single selection or multiple selections are permitted. The default is single which is the only value that is permitted for a binary menu dialog box.
- e. **flow** – Identifies if the selection values are to be displayed vertically (in a list) or horizontally (inline). The default is **list**. Either option is acceptable for a binary menu dialog box.
- f. **mandatory** – Identifies if a menu choice is required before the dialog can be completed. The default is **yes** (True). For a binary menu dialog box **mandatory** should be set to **yes**. NOTE: An entered space satisfies the mandatory condition.

5. Common attributes for **<binarymenu>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).

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- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 35.3.7.1 Precondition <precond>.

The optional element <precond> (see Section 35.2.1.1) contains a Boolean expression. The Boolean expression is evaluated by the Logic Engine. If the Boolean expression evaluates to "True," then the binary menu is presented to the user, otherwise the remaining content in <binarymenu> is skipped.

### 35.3.7.2 Enable <enable>.

The optional element <enable> determines if the binary menu is active or not active (see Section 35.3.3.1).

### 35.3.7.3 Prompt <prompt>.

The element <prompt> contains the prompt text to be displayed for the binary menu (see Section 35.3.3.2). Any valid value for the **position** attribute is acceptable.

### 35.3.7.4 Yes with state <yesstate>.

The element <yesstate> is used in an IETM to set state (variable) information. When the positive menu item is chosen in the binary menu, state information (single or multiple) is set.

1. The components of <yesstate>:
  - a. State manipulation values <statemanipulation> or <statemanipulation-alt> (required – one or more) (see Section 35.3.7.5).
2. The DTD fragment for <yesstate> is graphically depicted.

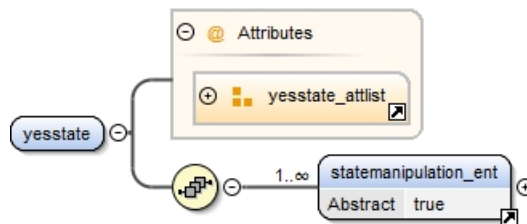


FIGURE 614. Yes with state <yesstate> DTD hierarchy.

3. The DTD fragment for <yesstate> is.

```

<!ELEMENT yesstate (%statemanipulation_ent;)+>
<!ATTLIST yesstate default (yes | no) "no" >

```

4. The element **<yesstate>** has one attribute of **default** – Determines if this selection is the default selection. If **default** is set to "yes" then this selection is the default and its radio button is shown as being selected when the binary menu is first displayed. This selection is not the default if the value for **default** is **no**.

### 35.3.7.5 State manipulation values.

The elements **<statemanipulation>** (see Section 35.2.3) and **<statemanipulation-ent>** (see Section 35.2.1) set the state variable information for the binary menu selection. Several state variables can be set. The state variable is modified when the binary menu choice is made and the dialog box is acknowledged by the user.

### 35.3.7.6 No with state **<nostate>**.

The element **<nostate>** is used in an IETM to set state (variable) information. When the negative menu item is chosen in the binary menu, state information (single or multiple) is set.

1. The components of **<nostate>**:
  - a. State manipulation values **<statemanipulation>** or **<statemanipulation-ent>** (required – one or more) (see Section 35.3.7.7).
2. The DTD fragment for **<nostate>** is graphically depicted.

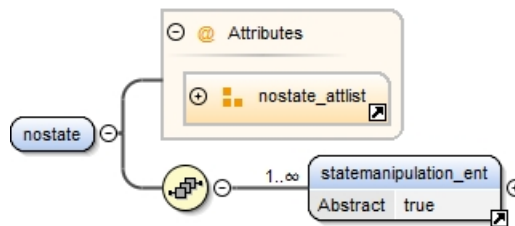


FIGURE 615. No with state **<nostate>** DTD hierarchy.

3. The DTD fragment for **<nostate>** is:

```
<!ELEMENT nostate (%statemanipulation_ent;)+>
<!ATTLIST nostate default (yes | no) "no" >
```

4. The element **<nostate>** has one attribute of **default** – Determines if this selection is the default selection. If **default** is set to **yes** then this selection is the default. The radio button is shown as being selected when the binary menu is first displayed. This selection is not the default if the value for **default** is "no."

### 35.3.7.7 State manipulation values.

The elements **<statemanipulation>** (see Section 35.2.3) and **<statemanipulation-ent>** (see Section 35.2.1) set the state variable information for the binary menu selection. Several state variables can be set. The state variable is modified when the binary menu choice is made and the dialog box is acknowledged by the user.

### 35.3.7.8 Binary menu dialog box example.

The XML source and its stylesheet output (see FIGURE 616.) for a binary menu dialog box are provided below. This example depicts a popup dialog box with a single line title and two menu selections (true or false). A variable is initialized and set to either true or false depending on the user's selection. Only one choice can be made. The **mandatory** attribute is set by default to "yes" indicating that an entry is required. The first menu selection item is shown as being selected since the value of the **default** attribute for that choice was set to "yes". The "OK" push

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button is enabled because a menu selection was made (the “True” selection is defaulted to). The “CANCEL” push button appears since the **cancel\_button** attribute in **<dialog>** is set to ‘yes.’

1. XML document instance fragment:

```

<dialog ok_caption="OK" popup="yes">
<title>ENTER TITLE HERE
</title>
<binarymenu answer="truefalse" default="yes" flow="list" mandatory="yes" select="single" type=
"radio">
<prompt position="left">Is the reading less than 5?
</prompt>
<yesstate default="no">
<statemanipulation>
<variable name="ReadingWithinUpperBound" scope="global" value-type="boolean">
<initialize>
<expression>
<boolean>
<true/>
</boolean>
</expression>
</initialize>
</variable>
</statemanipulation>
</yesstate>
<nostate default="no">
<statemanipulation>
<variable name="ReadingWithinUpperBound" scope="global" value-type="boolean">
<initialize>
<expression>
<boolean>
<false/>
</boolean>
</expression>
</initialize>
</variable>
</statemanipulation>
</nostate>
</binarymenu>
</dialog>
</boolean>

```

2. Stylesheet output:

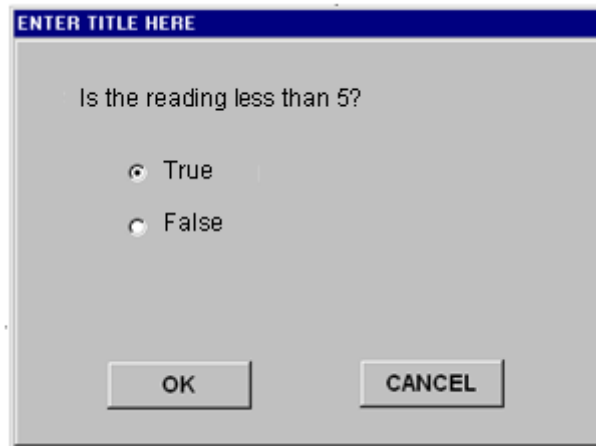


FIGURE 616. Binary menu dialog box example.

### 35.3.7.9 Multiple-choice dialog box <menu>.

The multiple-choice dialog box provides the capability to communicate to the IETM by prompting the user to select at least one item from a list. The element **<menu>** in **<dialog>** provides this capability in addition to providing a single choice capability (see Section 35.3.5). The only tagging difference between a menu dialog box and a multiple-choice dialog box, is the setting of the **select** attribute for the element **<menu>**. The **select** attribute is a required attribute that specifies if a single selection or multiple selections are permitted. The default is single. Set the **select** attribute to multiple for a multiple-choice dialog box. Otherwise, follow the tagging guidance provided in the Menu dialog box paragraph (see Section 35.3.5).

### 35.3.7.10 Multiple-choice dialog box example.

The XML source and its stylesheet output (see FIGURE 617.) for a multiple-choice dialog box is provided below. This example depicts a popup dialog box with a single line title and three menu selections. Each choice sets a previously initialized variable to "Selected." The element **<statemanipulation>** has been previously used to create these variables. The user has to select at least one choice. The **select** attributes set to "multiple" indicating that more than one choice can be made. The **mandatory** attribute is set by default to "yes" indicating that an entry is required. Two of the choices are shown as being checked because their **default** attribute was set to **yes**. The "OK" push button is enabled because at least one choice was selected (the defaults). The menu prompt appears in bold by using the emphasis tag. The "CANCEL" push button appears since the **cancel\_button** attribute in **<dialog>** is set to **yes**.

1. XML document instance fragment:

```

<statemanipulation>
<variable name="StateInformationVariable1" scope="global" value-type="string">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="StateInformationVariable2" scope="global" value-type="string">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="StateInformationVariable3" scope="global" value-type="string">
</variable>
</statemanipulation>

```

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```

<dialog cancel_button="yes" popup="yes">
<title>Enter TITLE Here
</title>
<menu flow="list" mandatory="yes" select="multiple" type="radio">
<prompt position="left">
<emphasis emph="bold">Select from the following:
</emphasis>
</prompt>
<choice default="yes">
<text>Selection 1
</text>
<statemanipulation>
<variableref/>
<name="StateInformationVariable1"/>
<expression>
<string>Selected
</string>
</expression>
</statemanipulation>
</choice>
<choice default="no">
<text>Selection 2
</text>
<statemanipulation>
<variableref name="StateInformationVariable2"/>
<expression>
<string>Selected
</string>
</expression>
</statemanipulation>
</choice>
<choice default="yes">
<text>Selection 3
</text>
<statemanipulation>
<variableref name="StateInformationVariable3"/>
<expression>
<string>Selected
</string>
</expression>
</statemanipulation>
</choice>
</menu>
</dialog>
</string>

```

## 2. Stylesheet output:



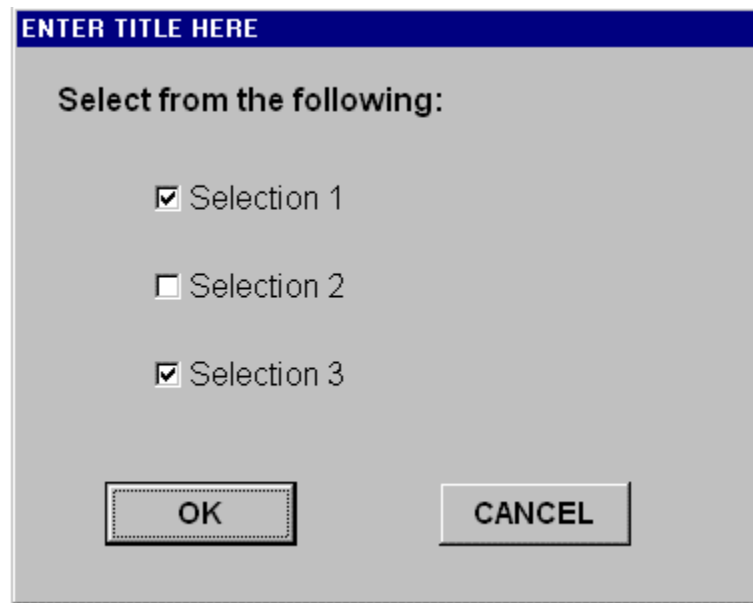


FIGURE 617. Multiple-choice dialog box example.

### 35.3.7.11 Composite menu dialog box <dialog-group>.

A composite dialog box contains any combination of messages, fill-ins, menus and multiple-choice dialog entries. This section will discuss how combinations of these entries are displayed in a dialog box. This includes a discussion of the element **<dialog-group>** which can be used to vary the presentation of these entries in the dialog box.

### 35.3.7.12 Layout of entries.

The elements **<dialog-message>**, **<fillin>**, **<menu>**, and **<binarymenu>** are entered in the **<dialog>** element either directly or as contained in the group dialog element **<dialog-group>**. This can be seen in the element declarations for **<dialog>** and **<dialog-group>**.

```
<!ELEMENT dialog (precond?, title?, (fillin | menu | binarymenu | dialog-group |
dialog-message+), help.info?, (%statemanipulation_ent;)*)>
```

```
<!ELEMENT dialog-group>
```

The selection of which method to use is based upon the desired presentation of these fill-in, menu, binary menu, multiple-choice and message entries in the dialog box. This includes deciding upon the placement of the entries from top to bottom and left to right. The element **<dialog-group>** provides the capability to display entries horizontally (inline). The **<dialog-group>** element also provides the capability to add a group title. If **<dialog-group>** is not used, the entries will be displayed in the dialog box vertically (as a list). In either case, the order of appearance is determined by the sequence in which the entries are made in the document instance.

NOTE: The presentation of data fields within an entry is still determined by the values that are set for that entry. For example, the data fields in a menu dialog box entry would be displayed as a list if its flow attribute is set to "list" even if the entry is included in **<dialog-group>**.

### 35.3.7.13 Group dialog content model <dialog-group>.

#### 1. The components of <dialog-group>:

- a. Precondition **<precond>** (optional) (see Section 35.3.7.14).

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- b. Enable **<enable>** (optional) (see Section 35.3.7.15).
  - c. Title **<title>** (optional) (see Section 35.3.7.16).
  - d. Dialog Box Type (required – one or more) (see Section 35.3.7.17).
  - e. A fill in box **<fillin>** (see Section 35.3.4).
  - f. Menu dialog **<menu>** (see Section 35.3.5).
  - g. A binary menu dialog **<binarymenu>** (see Section 35.3.7).
  - h. A group of dialog boxes **<dialog-group>** (see Section 35.3.7.11).
  - i. A message dialog **<dialog-message>** (see Section 35.3.7.20).
2. The DTD fragment for **<dialog-group>** is graphically depicted.

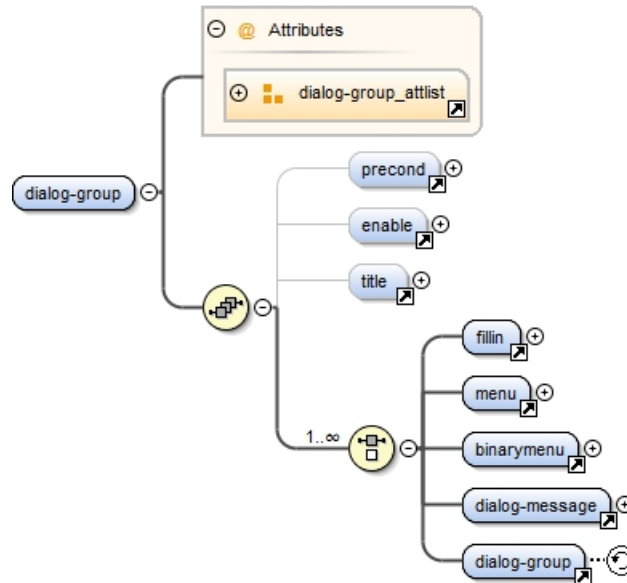


FIGURE 618. Group dialog **<dialog-group>** DTD hierarchy.

3. The DTD fragment for **<dialog-group>** is:

```
<!ELEMENT dialog-group (precond?, enable?, title?, (fillin | menu | binary-
menu | dialog-message | dialog-group)+)>
```

```
<!ATTLIST dialog-group
```

separator	(yes   no)	"no"
applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. The element **<dialog-group>** has one unique attribute of **separator** – that indicates if the dialog group is divided by a separator or boxing around dialog objects. Default is no.
5. Common attributes for **<dialog-group>**:
  - a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - d. **comment** – Change information (optional) (see Section 36.3.12).
  - e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - f. **id** – Unique identifier (optional) (see Section 36.3.7).
  - g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - i. **security** – Security classification (optional) (see Section 36.3.14).
  - j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 35.3.7.14 Precondition **<precond>**.

The optional element **<precond>** (see Section 35.2.1.1) contains a Boolean expression. The Boolean expression is evaluated by the Logic Engine. If the Boolean expression evaluates to "True," then the group dialog box is presented to the user, otherwise the remaining content in **<dialog-group>** is skipped.

#### 35.3.7.15 Enable **<enable>**.

The optional element **<enable>** determines if the group dialog is active or not active (see Section 35.3.3.1).

#### 35.3.7.16 Title **<title>**.

The element **<title>** (see Section 36.1.1.4) contains the optional group dialog title. This title is displayed above the displayed entries in the group. Not all title element content model components are appropriate for use in tagging a group dialog box title. Enter text using character data (#PCDATA) or the **<emphasis>**, **<subscript>** and **<supscript>** tags as required to generate the displayed text/formatted text.

#### 35.3.7.17 Dialog box type **<title>**.

The element **<dialog-group>** contains the required choice of fill-in **<fillin>**, menu **<menu>**, binary menu **<binarymenu>**, message **<dialog-message>**, and/or group dialog **<dialog-group>** entry(s). These elements provide the capability to create the five (5) dialog box types. Refer to Section 35.3.3.6 for more information on each type.

### 35.3.7.18 Composite dialog box example.

The XML source and its stylesheet output (see FIGURE 619.) for a composite dialog box are provided below. This example depicts a popup dialog box with a title bar text and 3 types of entries (fill-in, multiple choice and menu). The multiple choice and menu entries appear horizontally because they are in a group. The heading above them is the title for the group. The "OK" push button is not enabled because at least one choice is made in the multiple choice selections (a check appears in at least one of the squared boxes). The element **<help.info>** in **<dialog>** creates the help button and accompanying help text. The "CANCEL" push button appears since the **cancel\_button** attribute in **<dialog>** is set to **yes**.

1. XML document instance fragment:

```
<statemanipulation>
<variable name="Technician ID" value-type="string" scope="global">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="StateInformationVariable1" value-type="string" scope="global">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="StateInformationVariable2" value-type="string" scope="global">
</variable>
</statemanipulation>
<statemanipulation>
<variable name="StateInformationVariable3" value-type="string" scope="global">
</variable>
</statemanipulation>
<dialog cancel_button="yes" popup="yes" reset_button="no">
<title>USER RESPONSE
</title>
<fillin fieldsize="20" mandatory="yes">
<prompt position="bottom">
<emphasis emph="bold">ENTER TECHNICIAN ID
</emphasis>
</prompt>
<variableref name="Technician ID"/>
<default>
<text>Data Entry Field
</text>
</default>
</fillin>
<dialog-group separator="no">
<title>
<emphasis emph="bold">MULTIPLE CHOICE: OPTIONS?
</emphasis>
</title>
<menu flow="list" mandatory="yes" select="multiple" type="radio">
<prompt>
</prompt>
<choice>
<text>Option 1
</text>
<statemanipulation>
<variableref name="StateInformationVariable1"/>
```

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```

<expression>
<string>Selected
</string>
</expression>
</statemanipulation>
</choice>
<choice>
<text>Option 2
</text>
<statemanipulation>
<variableref name="StateInformationVariable2"/>
<expression>
<string>Selected
</string>
</expression>
</statemanipulation>
</choice>
<choice>
<text>Option 3
</text>
<statemanipulation>
<variableref name="StateInformationVariable3"/>
<expression>
<string>Selected
</string>
</expression>
</statemanipulation>
</choice>
</menu>
<menu flow="list" mandatory="yes" select="single" type="radio">
<prompt>
</prompt>
<choice>
<text>YES
</text>
<statemanipulation>
<variable name="StateInformationVariable" value-type="integer" scope="global">
<initialize>
<expression>
<integer>1
</integer>
</expression>
</initialize>
</variable>
</statemanipulation>
</choice>
<choice>
<text>NO
</text>
<statemanipulation>
<variable name="StateInformationVariable" value-type="integer" scope="global">
<initialize>
<expression>
<integer>0

```

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```

</integer>
</expression>
</initialize>
</variable>
</statemanipulation>
</choice>
<choice>
<text>MAYBE
</text>
<statemanipulation>
<variable name="StateInformationVariable" value-type="integer" scope="global">
<initialize>
<expression>
<integer>2
</integer>
</expression>
</initialize>
</variable>
</statemanipulation>
</choice>
</menu>
</dialog-group>
<help.info>
<para>This information is presented when the HELP push button is selected.
</para>
</help.info>
</dialog>

```

## 2. Stylesheet output:

FIGURE 619. Composite dialog box example.

### 35.3.7.19 Message **<message>**.

The element **<message>** presents to the user system information, state (variable) information, or results from evaluations. After acknowledgement, additional action may be specified. This element is primarily intended for legacy applications. The message dialog box **<dialog-message>** (see 35.3.7.20) should be used for new applications.

1. The components for **<message>** are:
  - a. Title **<title>** – (optional – zero or one) (see 35.3.3.5).
  - b. Message text **<messageline>** – (required – one or more) (see 35.3.7.20.2).
  - c. Help information **<help.info>** – (optional – zero or one) (see 35.3.3.7).
  - d. Link after message **<aftermessage>** (optional – zero or one).

### 35.3.7.20 Message dialog box **<dialog-message>**.

A message dialog box provides information from the IETM to user and does not require any user response, except to continue. The message dialog box can display results from a user requested calculation, intrusive test result, final corrective action, etc. A message dialog box is used when it is deemed necessary that the user acknowledge information such as essential procedures, conditions, statements or important instructional data. The element **<dialog-message>** in **<dialog>** creates a menu dialog box. For legacy applications, the element **<message>** can be used instead.

1. The components of **<dialog-message>**:
  - a. Precondition **<precond>** (optional) (see Section 35.3.7.20.1).

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- b. Message text **<messageline>** (required) (see Section 35.3.7.20.2).
2. The DTD fragment for **<dialog-message>** is graphically depicted.

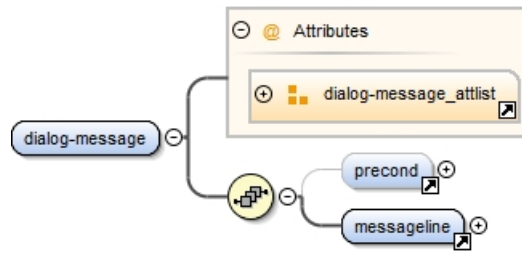


FIGURE 620. Message dialog box **<dialog-message>** DTD hierarchy.

3. The DTD fragment for **<dialog-message>** is:

```
<!ELEMENT dialog-message (precond?, messageline)>
<!ATTLIST dialog-message
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

4. Common attributes for **<dialog-message>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).



### 35.3.7.20.1 Precondition <precond>.

The optional element <precond> (see Section 35.2.1.1) contains a Boolean expression. The Boolean expression is evaluated by the Logic Engine. If the Boolean expression evaluates to "True," then the message is presented to the user, otherwise the remaining content in <dialog-message> is skipped.

### 35.3.7.20.2 Message text <messageline>.

The element <messageline> presents textual information in the message dialog box. State information may also be displayed.

1. The components for <messageline>:
  - a. Character data (#PCDATA) (see Section 6.2.2.1).
  - b. Emphasis <emphasis> (optional – zero or more). Provides for an emphasis capability (see Section 36.1.3.1).
  - c. Subscript <subscript> (optional – zero or more). Provides for a subscript capability (see Section 36.1.3.4).
  - d. Superscript <supscript> (optional – zero or more). Provides for superscript capability (see Section 36.1.3.5).
  - e. State information may be displayed by using the element <variableref> (optional – zero or more) (see Section 35.1.1.5).
2. The DTD fragment for <messageline> is graphically depicted.

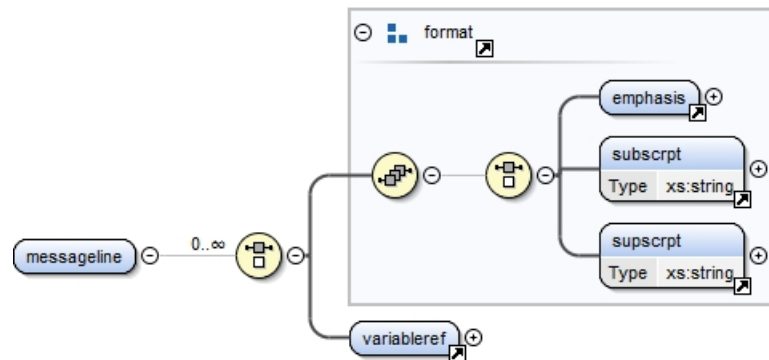


FIGURE 621. Message text <messageline> DTD hierarchy.

3. The DTD fragment for <messageline> is:
 

```
<!ELEMENT messageline (#PCDATA (emphasis | subscript | supscript) | variableref)
*>
```
4. The element <messageline> has no attributes.

### 35.3.7.20.3 Message dialog box – simple example.

The XML source and its stylesheet output (see FIGURE 622.) for a simple example of a message dialog box is provided below. This example depicts a popup message dialog box with a single line title and unformatted message text.

1. XML document instance fragment:

```

<dialog cancel_button="no" popup="yes">
<title>Enter TITLE Here
</title>
<dialog-message>
<messageline>The task is completed.
</messageline>
</dialog-message>
</dialog>

```

2. Stylesheet output:

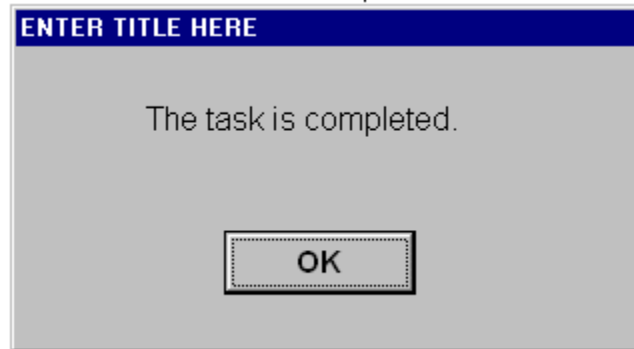


FIGURE 622. Message dialog box – simple example.

#### 35.3.7.20.4 Message dialog box – complex example.

The XML source and its stylesheet output (see FIGURE 623.) for a more complex example of a message dialog box is provided below. This example depicts a popup message dialog box with a title bar text, three formatted message lines (emphasis is used), display of state information and help text. In this example, the element **<statemanipulation>** defines the state information variable and sets its value. The element **<help.info>** in **<dialog>** creates the help button and accompanying help text.

1. XML document instance fragment:

```

<statemanipulation>
<variable name="connected_testXYZ" scope="global" value-type="string">
<initialize>
<expression>
<string>CONNECTED
</string>
</expression>
</initialize>
</variable>
</statemanipulation>
<dialog cancel_button="yes" popup="yes">
<title>Enter TITLE Here
</title>
<dialog-message>
<messageline>The task is completed. The
<emphasis color="blue" emph="bold">ABC
</emphasis>test equipment is
<variableref name="connected_testXYZ"/>
</messageline>
</dialog-message>

```

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`<help.info>`

`<para>`This message presents the user with the state of the test equipment  
(CONNECTED or DISCONNECTED)

`</para>`

`</help.info>`

`</dialog>`

`</string>`

2. Stylesheet output:

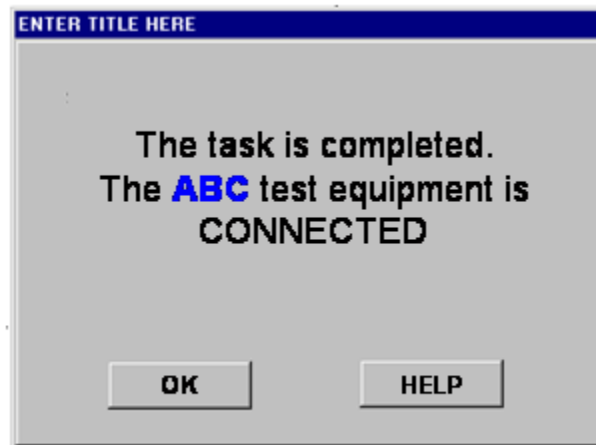


FIGURE 623. Message dialog box – complex example.

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## 36 COMMON STRUCTURE

### 36.1 Common elements.

These are elements common throughout MIL-STD-40051 and are shared with the various information chapters.

#### 36.1.1 Textual elements.

##### 36.1.1.1 Chapter Title Page <titlepg>.

The chapter title page is required for page-based TMs (refer to MIL-STD-40051-2). As specified in MIL-STD-40051-2, each chapter begins with a chapter title page. A separate chapter title page is not required for pocket size manuals.

1. The components of <titlepg>:
  - a. A required and repeatable group with the following content:
    - i. Name <name> (required). The <name> element provides the equipment or part nomenclature (see Section 36.1.4.18).
    - ii. An optional and repeatable group consisting of one or more of the following:
      - I. Part number <partno> (optional – zero or more). The <partno> element is the commercial part number (see Section 36.1.4.22).
      - II. Model number <modelno> (optional – zero or more). The model number <modelno> element is the official equipment or equipment piece model number (see Section 36.1.4.17).
      - III. National stock number <nsn> (optional – zero or more). The National Stock Number <nsn> element identifies the item's National Stock Number (NSN) (see Section 36.1.4.19).
  - b. An optional chapter level table of contents <contents> (optional). The element <contents> provides for an optional chapter level TOC (see Section 15.4.2.9).
  - c. Introduction <intro> (required) (see Section 36.1.4.14).
2. The DTD fragment for <titlepg> is graphically depicted.

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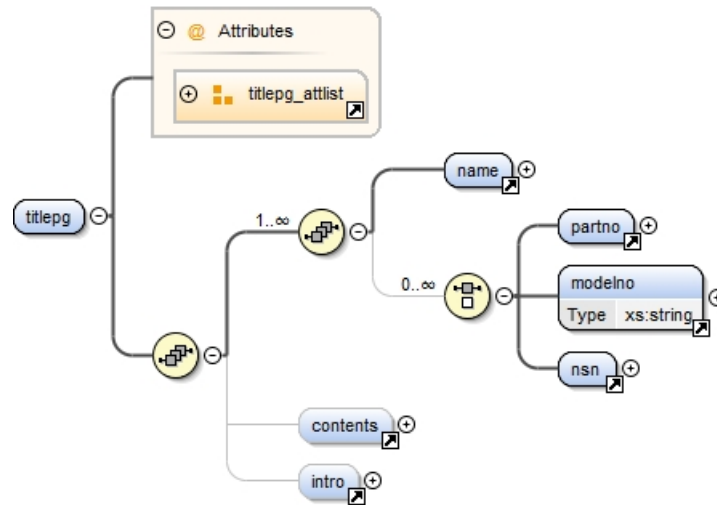


FIGURE 624. Chapter title page &lt;titlepg&gt; DTD hierarchy.

3. The DTD fragment for <titlepg> is:

```
<!ELEMENT titlepg ((name, (partno | modelno | nsn)*), contents?, intro?)>
```

```
<!ATTLIST titlepg
```

changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
inschlvl	(0-99)	"0"
maintlvl	(field   sustain   depot   operator   asb   amc   tasmg)	#REQUIRED

4. The <titlepg> contains one unique attribute of **maintlvl** – Specifies the lowest authorized maintenance level for the chapter. The levels are operator (crew), maintainer, below depot, Aviation Support Battalion (asb), Aviation Maintenance Company (amc), and Theater Aviation Sustainment Maintenance Group (tasmg), and Depot (depot).
5. Common attributes for <titlepg>:
- changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - comment** – Change information (optional) (see Section 36.3.12).
  - delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - inschlvl** – Insert change level (optional) (see Section 36.3.12).

### 36.1.1.2 Chapter title page example.

The XML source and its stylesheet output (see FIGURE 625.) depicting a chapter title page is shown below. In this example the publishing system generates the chapter number and displays the TM number. The nomenclature is taken from the <name> element. The maintenance level is taken from the <maintlvl> attribute.

1. XML document instance fragment:

```
<titlepg maintlvl="maintainer">
```

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```

<name>155 MM, M109A6 Howitzer
</name>
</titlepg> . . .
</mim>

```

## 2. Stylesheet output:

---

 TM 3-665-339-10
 

---

CHAPTER 6  
 UNIT MAINTENANCE INSTRUCTIONS  
 FOR  
 155 MM, M109A6 HOWITZER

Figure 569 Chapter title page example

FIGURE 625. Chapter title page example.

**36.1.1.3 Manual subtitle <stitle>.**

The element **<stitle>** provides an optional secondary title for the TM. It is placed immediately below the prime title **<prtitle>** to indicate the volume number and contents of every separately bound volume of a TM.

1. The components **<stitle>**:
  - a. The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
  - b. Emphasis **<emphasis>** (optional – zero or more) (see Section 36.1.3.1).
  - c. Subscript **<subscript>** (optional – zero or more) (see Section 36.1.3.4).
  - d. Superscript **<supscript>** (optional – zero or more) (see Section 36.1.3.5).
2. The DTD fragment for **<stitle>** is graphically depicted.

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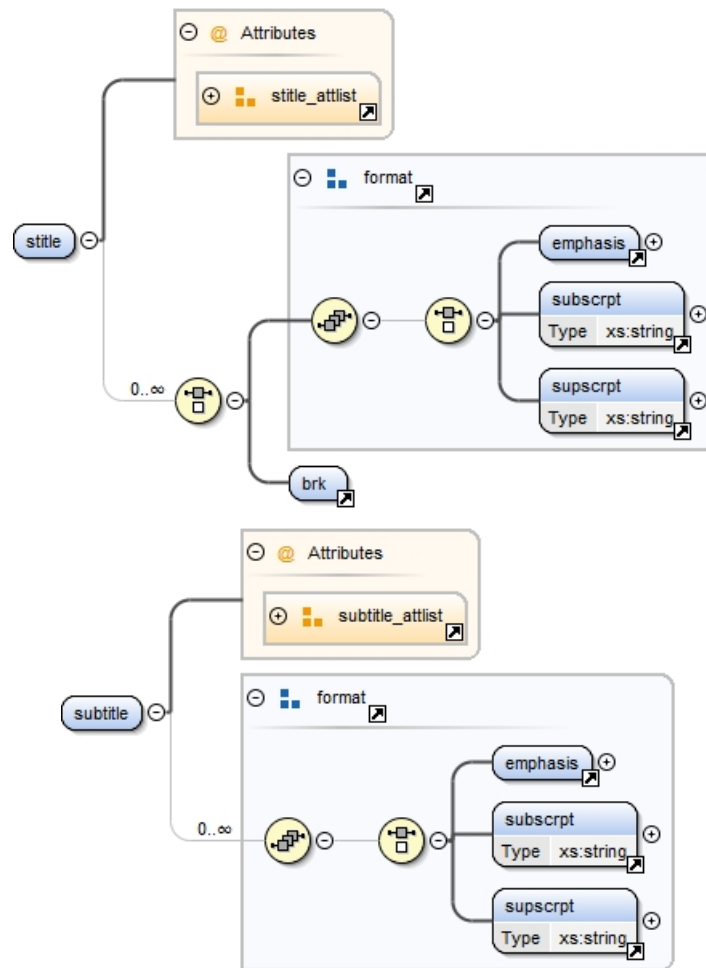


FIGURE 626. Manual subtitle &lt;stitle&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;stitle&gt; is:

```

<!ELEMENT stitle (%format;)*>
<!-- ATTLIST subtitle
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED-->

```

## 4. Common attributes for &lt;stitle&gt;:

- a. **security** – Security classification (optional) (see Section 36.3.14).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **inschlvl** – Insert change level (optional) (see Section 36.3.12).



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**36.1.1.4 Title <title>.**

The element **<title>** is used in multiple contexts within a TM. It provides a short lead into the data (textual, graphical, or tabular) that follows and is presented according to the composition system specifications of a particular context. The element **<brk>** provides cosmetic line breaks in titles.

1. The components **<title>**:

- a. Parsable characters or type text. – **#PCDATA**.
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. External Linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).
- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic – **<graphic>** (see Section 31.2).
- p. Miscellaneous – **<misc>** (see 36.2.1).
- q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
- r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
- s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
- t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
- u. Graphic symbol – **<symbol>** (see Section 31.3.1).
- v. Torque value – **<torque>** (see Section 36.1.4.25).
- w. Voltage value – **<voltage>** (see Section 36.1.4.26).
- x. Null text – **<null>** (see Section 36.1.3.2).
- y. Changed text marker – **<change>** (see Section 36.1.3.7).

2. The DTD fragment for **<title>** is graphically depicted.

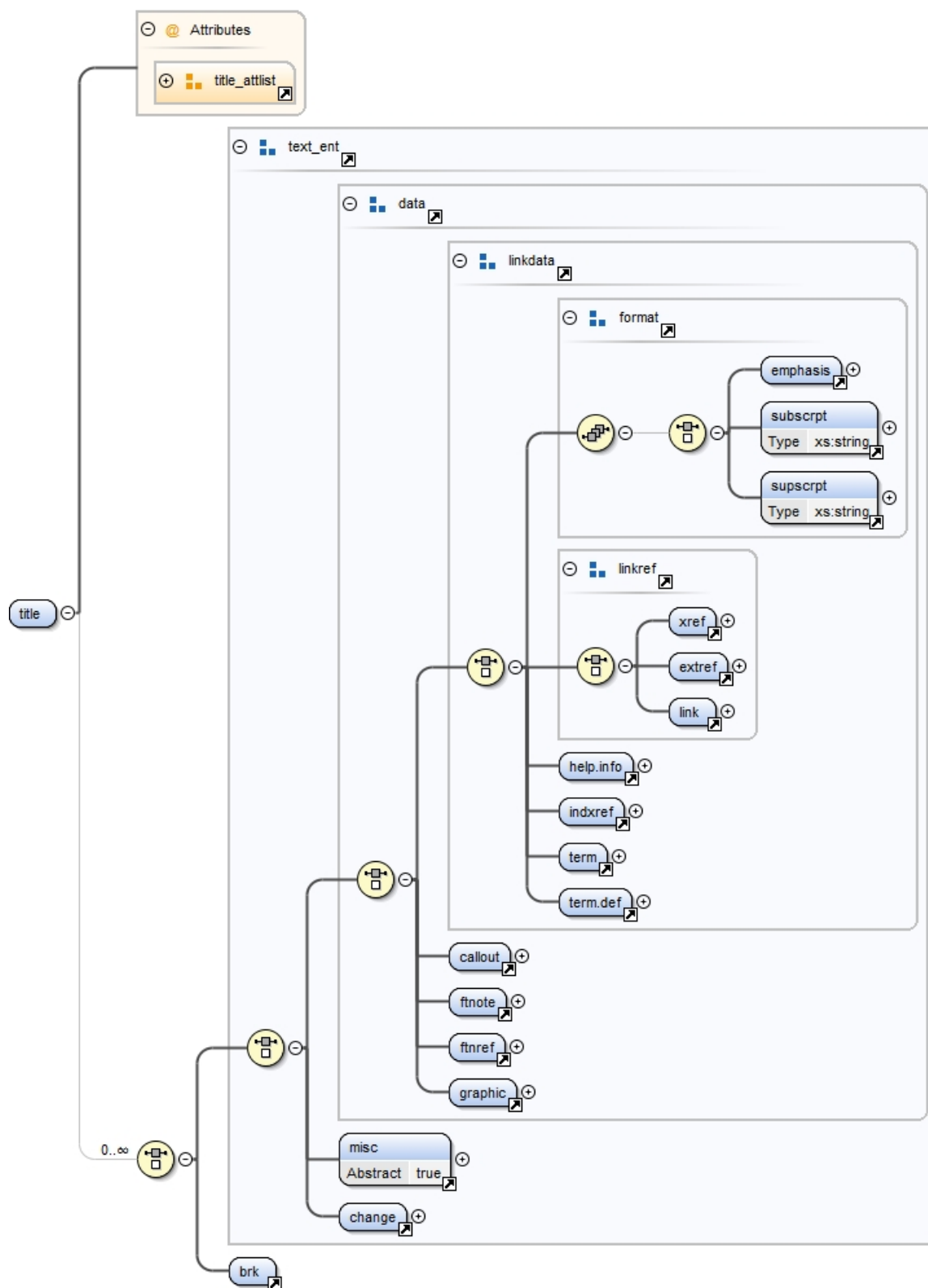


FIGURE 627. Title &lt;title&gt; DTD hierarchy.

3. The DTD fragment for <title> is:

## MIL-HDBK-2361D

```

<!ELEMENT title (%text_ent; | brk) *>

<!ATTLIST title
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

#### 4. Common attributes for **<title>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 36.1.1.5 Subtitle **<subtitle>**.

The element **<subtitle>** is only used with sub-figures **<subfig>** element and should display the words "Sheet X of Y." The words X and Y are numbers for the sheet the user is on out of the total number of sheets in the figure.

##### 1. The components **<subtitle>**:

- a. The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
- b. Format text – **<emphasis>** (optional – zero or more) (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (optional – zero or more) (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (optional – zero or more) (see Section 36.1.3.5).

##### 2. The DTD fragment for **<subtitle>** is graphically depicted.

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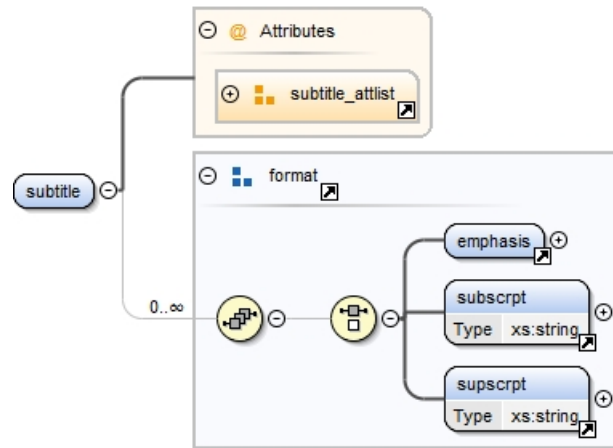


FIGURE 628. Subtitle &lt;subtitle&gt; DTD hierarchy.

3. The DTD fragment for <subtitle> is:

```
<!ELEMENT subtitle (%format;)*>
<!ATTLIST subtitle
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>
```

4. Common attributes for <subtitle>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.1.6 Paragraph text <para>.

The element <para> is used for paragraphs of text and can also contain embedded inline elements, lists, notes, tables, and figures referencing and content specific elements which may be contained within either one or more of the parameter entity.

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1. The components **<para>**:

- a. Parsable characters or type text. – #PCDATA.
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced Linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).
- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic – **<graphic>** (see Section 31.2).
- p. Miscellaneous – **<misc>** (see 36.2.1).
- q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
- r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
- s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
- t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
- u. Graphic symbol – **<symbol>** (see Section 31.3.1).
- v. Torque value – **<torque>** (see Section 36.1.4.25).
- w. Voltage value – **<voltage>** (see Section 36.1.4.26).
- x. Null text – **<null>** (see Section 36.1.3.2).
- y. Changed text marker – **<change>** (see Section 36.1.3.7).
- z. Internet address (e-mail or homepage) – **<internet>** (see Section 36.1.4.1.7).
- aa. Proponent or organization address – **<proponent>** (see Section 36.1.4.23).
- ab. Telephone number – **<phone>** (see Section 36.1.4.1.6).
- ac. Instruction data plate – **<instructplt>** (see Section 36.1.4.12).
- ad. Sequential List – **<seqlist>** (see Section 36.1.2.1).
- ae. Random List – **<randlist>** (see Section 36.1.2.3).
- af. Definition List – **<deflist>** (see Section 36.1.2.4).
- ag. Figure – **<figure>** (see Section 31.1.1).
- ah. Alternative Figure – **<figure-alt>** (see Section 35.2.1).
- ai. Inline graphic(s) – **<inlinegraphic>** (see Section 31.3.2).

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- aj.** Table – **<table>** (see Chapter 29).
  - ak.** Alternative table – **<table-alt>** (see Section 35.2.1).
  - al.** Verbatim text – **<verbatim>** (see Section 36.1.3.6).
  - am.** User interaction – **<interaction>** (see Section 36.1.4.9).
  - an.** State (Variable) Information Manipulation – **<statemanipulation-ent>** (see Section 35.2.3).
2. The DTD fragment for **<para>** is graphically depicted.

## MIL-HDBK-2361D

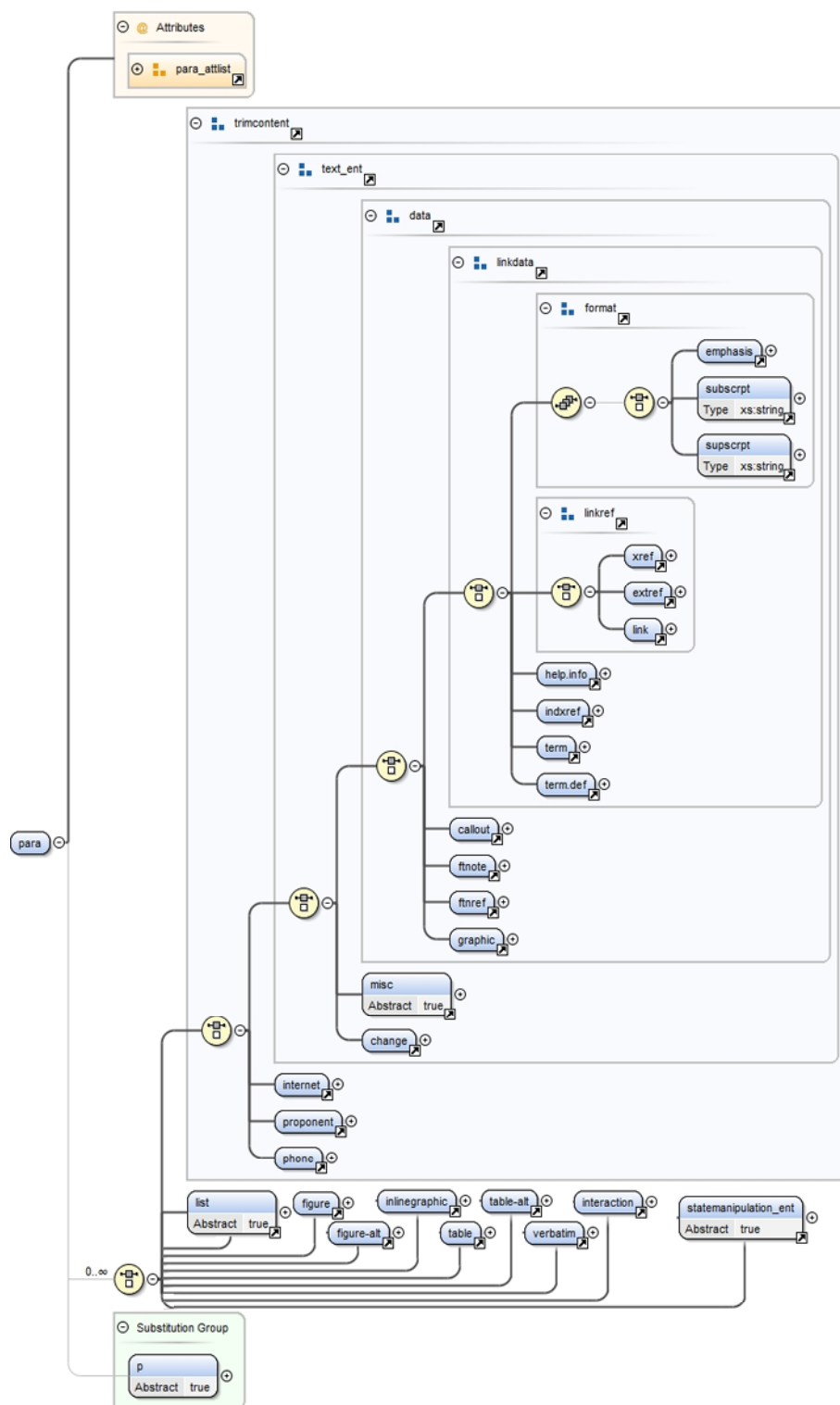


FIGURE 629. Paragraph text &lt;para&gt; DTD hierarchy.

3. The DTD fragment for **<para>** is:

## MIL-HDBK-2361D

```
<!ELEMENT para (%trimcontent; | %list; | figure | figure-alt | inlinegraphic
| table | table-alt | verbatim | interaction | %statemanipulation_ent;)*>
```

```
<!ATTLIST para
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
esd	(yes   no)	"no"
hcp	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

#### 4. Common attributes for **<para>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- g. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- h. **id** – Unique identifier (optional) (see Section 36.3.7).
- i. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- j. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- k. **security** – Security classification (optional) (see Section 36.3.14).
- l. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 36.1.1.7 Paragraph associated with an alert **<specpara>**.

The element **<specpara>** is a paragraph that is specifically associated with warnings, cautions, or notes. The actual narrative data will follow after the warning statement, caution statement, and/or note statement.

##### 1. The components **<specpara>**:

- a. At least one of the following is required:
  - i. Warning – **<warning>** (see Section 28.1.1).
  - ii. Critical safety item alert – **<csi.alert>** (see Section 28.1.1.4).



- iii. Caution – **<caution>** (see Section 28.1.2).
  - iv. Note – **<note>** (see Section 28.1.3).
  - b. Paragraph text – **<para>** (required) (see Section 36.1.1.6).
2. The DTD fragment for **<specpara>** is graphically depicted.

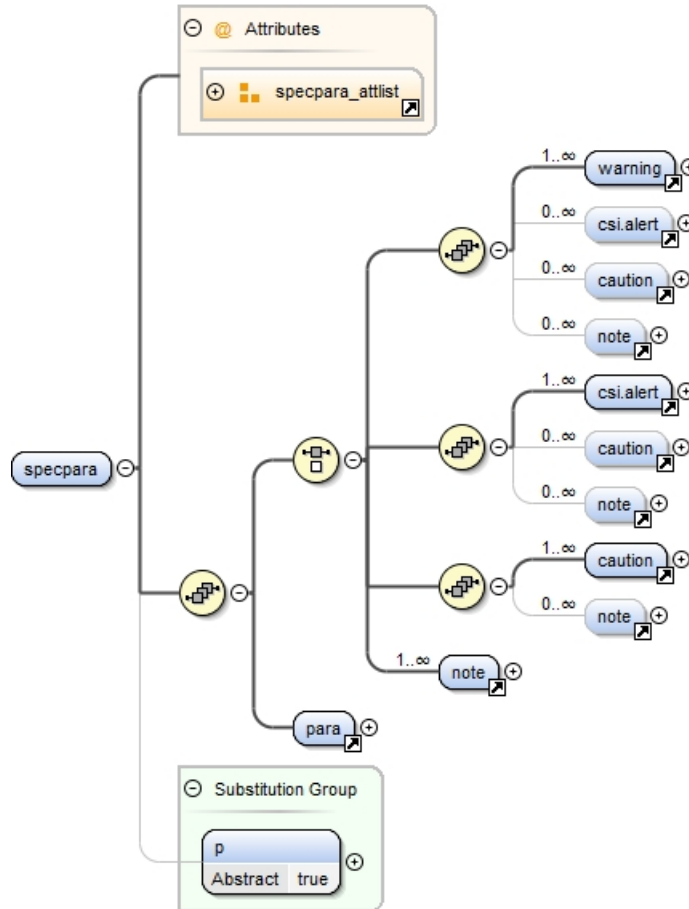


FIGURE 630. Paragraph associated with an alert **<specpara>** DTD hierarchy.

3. The DTD fragment for **<specpara>** is:

```
<!ELEMENT specpara (((warning+, csi.alert*, caution*, note*) | (csi.alert
+, caution*, note*) | (caution+, note*) | note+), para)>
```

```
<!ATTLIST specpara
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
esd	(yes   no)	"no"
hcp	(yes   no)	"no"
id	ID	#IMPLIED

## MIL-HDBK-2361D

<code>idref</code>	IDREFS	#IMPLIED
<code>inschlvl</code>	(0-99)	"0"
<code>security</code>	(uc   fouo   c   s   ts)	#IMPLIED
<code>skilltrk</code>	CDATA	#IMPLIED>

4. Common attributes for **<specpara>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- f. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- g. **id** – Unique identifier (optional) (see Section 36.3.7).
- h. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- i. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- j. **security** – Security classification (optional) (see Section 36.3.14).
- k. **skilltrk** – Skill level (optional) (see Section 36.3.3).

36.1.1.8 Reduced content paragraph **<trim.para>**.

The element **<trim.para>** provides the same functionality as paragraph **<para>** element, but with a reduced content model. The **<trim.para>** is used in elements where content such as a graphic, figure, table, or list is not allowed.

1. The components of **<trim.para>**:

- a. Parsable characters or type text. – #PCDATA.
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced Linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).
- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).

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- o.** Graphic – **<graphic>** (see Section 31.2).
  - p.** Miscellaneous – **<misc>** (see 36.2.1).
  - q.** Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
  - r.** Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
  - s.** DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
  - t.** Lubricant value – **<lubricant>** (see Section 36.1.4.15).
  - u.** Graphic symbol – **<symbol>** (see Section 31.3.1).
  - v.** Torque value – **<torque>** (see Section 36.1.4.25).
  - w.** Voltage value – **<voltage>** (see Section 36.1.4.26).
  - x.** Null text – **<null>** (see Section 36.1.3.2).
  - y.** Changed text marker – **<change>** (see Section 36.1.3.7).
  - z.** Internet address (e-mail or homepage) – **<internet>** (see Section 36.1.4.1.7).
  - aa.** Proponent or organization address – **<proponent>** (see Section 36.1.4.23).
  - ab.** Telephone number – **<phone>** (see Section 36.1.4.1.6).
- 2.** The DTD fragment for **<trim.para>** is graphically depicted.

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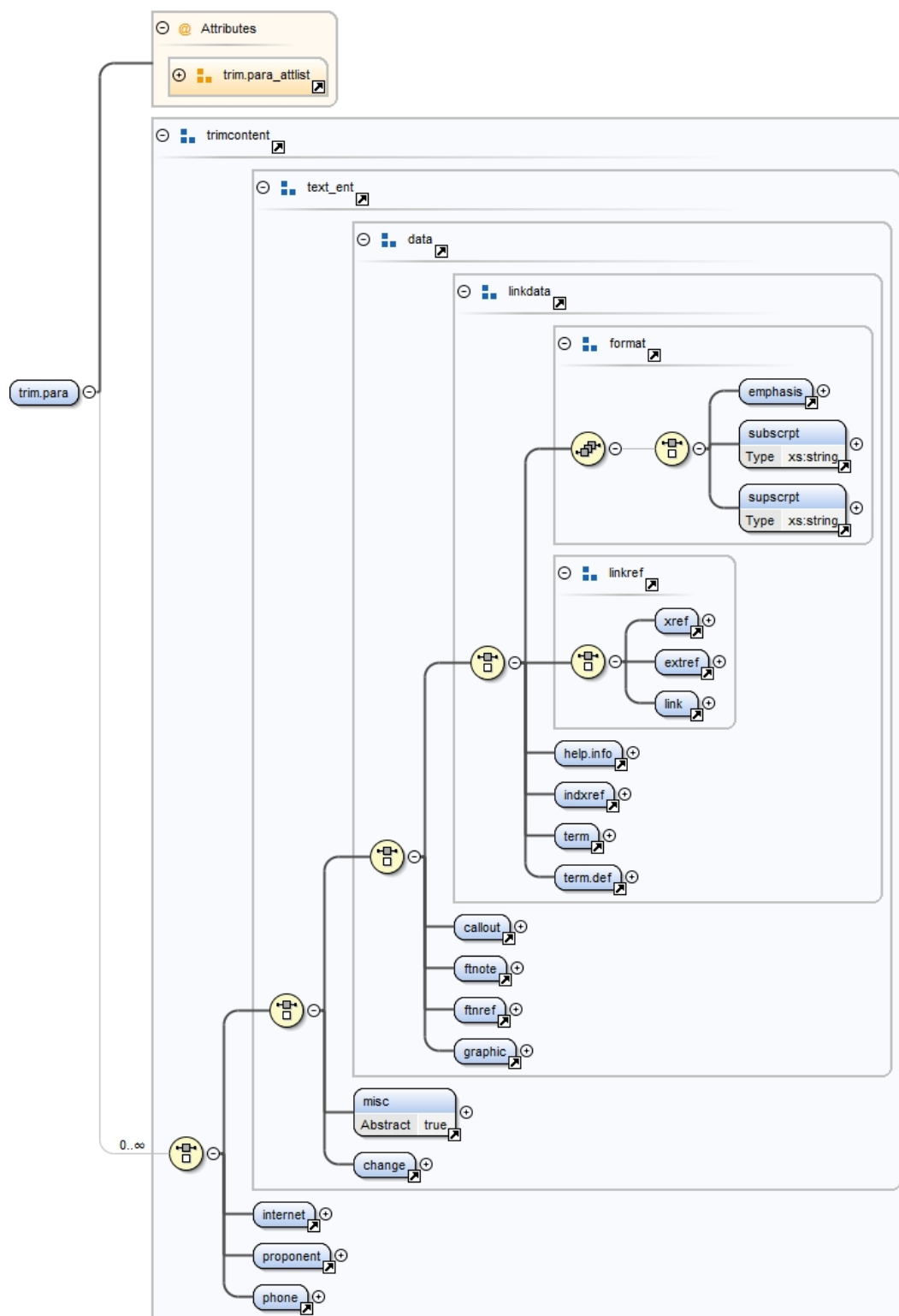


FIGURE 631. Reduced paragraph &lt;trim.paragraph&gt;.

3. The DTD fragment for <trim.paragraph> is:

## MIL-HDBK-2361D

```

<!ELEMENT trim.para (%trimcontent;)*>
<!ATTLIST trim.para
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
esd (yes | no) "no"
hcp (yes | no) "no"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>

```

#### 4. Common attributes for **<trim.para>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- e. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- f. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- g. **id** – Unique identifier (optional) (see Section 36.3.7).
- h. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- i. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- j. **security** – Security classification (optional) (see Section 36.3.14).
- k. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.1.9 Titled paragraph **<para0>**.

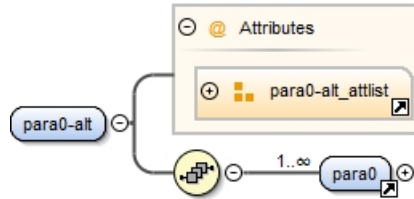
The element contains a title and possible paragraph with optional subordinate paragraphs.

#### 1. The components **<para0>** are:

- a. Precondition **<precond>** (optional) (see Section 29.1.1.1).
- b. Title **<title>** (required) (see Section 36.1.1.4).
- c. Select elements at least from either group (i) or group (ii):
  - i. First level subordinate paragraph **<subpara1>** (see Section 36.1.1.11) or alternate first level subordinate paragraph **<subpara1-alt>** (see Section 35.2.1).
  - ii. select one or more of the following elements:
    - I. Critical safety item alert – **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).

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- II. Note – **<note>** (optional – zero or more) (see Section 28.1.3).
  - III. Paragraph Text – **<para>** (required – one or more) (see Section 36.1.1.6).
  - IV. First level subordinate paragraph **<subpara1>** (optional – zero or more) (see Section 36.1.1.11) or alternate first level subordinate paragraph **<subpara1-alt>** (optional – zero or more) (see Section 35.2.1).
- d. The DTD fragment for **<para0>** is graphically depicted.

FIGURE 632. Titled paragraph **<para0>** DTD hierarchy.

- e. The DTD fragment for **<para0>** is:

```
<!ELEMENT para0 (precond?, title, ((subpara1 | subpara1-alt)+ | ((csi.
alert*, note*, para)+, (subpara1 | subpara1-alt)*)))>
```

```
<!ATTLIST para0
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
esd	(yes   no)	"no"
hcp	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
numbering	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

- f. The element **<para0>** contains one unique attribute of **crewmember** (optional) that is used to identify information that may be specific to a designated member of a crew.
- g. Common attributes for **<para0>**:
- i. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - ii. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - iii. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - iv. **comment** – Change information (optional) (see Section 36.3.12).

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- v. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- vi. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- vii. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- viii. **id** – Unique identifier (optional) (see Section 36.3.7).
- ix. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- x. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- xi. **numbering** – Paragraph title numbering (optional). (see Section 7.2.1.3.1).
- xii. **security** – Security classification (optional) (see Section 36.3.14).
- xiii. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.1.10 Conditional title paragraph <para0-alt>.

This element allows a filter to review preconditions and determine which option should be presented. The purpose of the <para0-alt> is identical to the <para0>.

1. The components <para0-alt>:
  - a. Title paragraph(s) <para0> (required – one or more) (see Section 36.1.1.9).
2. The DTD fragment for <para0-alt> is graphically depicted.

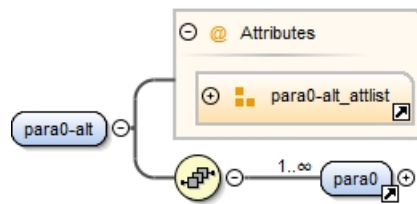


FIGURE 633. Conditional titled primary paragraph <para0-alt> DTD hierarchy.

3. The DTD fragment for <para0-alt> is:
 

```
<!ELEMENT para0-alt (para0+)>
<!ATTLIST para0-alt id ID #IMPLIED>
```
4. The element <para0-alt> contains a single attribute of **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).

### 36.1.1.11 First level subordinate paragraph <subpara1>.

This is the first level of subordinate paragraphs. It is used to expand on information contained in a primary titled paragraph <para0>.

1. The components <subpara1>:
  - a. Precondition <precond> (optional) (see Section 29.1.1.1) followed by required title <title> (see Section 36.1.1.4) and may be followed by either the group (i) or group (ii) elements:
    - i. Second level subordinate paragraph <subpara2> (see Section 36.1.1.13) or alternate second level subordinate paragraph <subpara2-alt> (see Section 35.2.1). Both the <subpara2> and <subpara2-alt> can occur more than once, in no particular order.

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- ii. Or an optional critical safety item alert **<csi.alert>** (see Section 28.1.1.4) or note **<note>** (see Section 28.1.3) followed by one or more paragraph **<para>** elements (see Section 36.1.1.6), which may be followed by either the **<subpara2>** or **<subpara2-alt>** which can occur more than once, in no particular order.
- b. The DTD fragment for **<subpara1>** is graphically depicted.

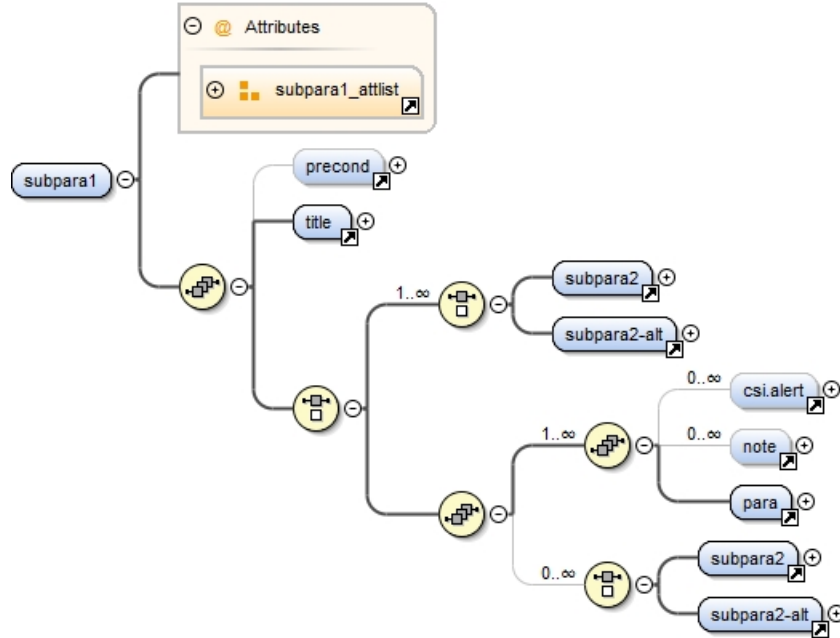


FIGURE 634. First level subordinate paragraph **<subpara1>** DTD hierarchy.

- c. The DTD fragment for **<subpara1>** is:

```
<!ELEMENT subpara1 (precond?, title, ((subpara2)+ | subpara2-alt | ((csi.alert*, note*, para)+, (subpara2 | subpara2-alt)*)))>
```

```
<!ATTLIST subpara1
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
esd	(yes   no)	"no"
hcp	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
numbering	(yes   no)	"no"



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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

- d. The element **<subpara1>** contains one unique attribute **crewmember** (optional) that is used to identify information that may be specific to a designated member of a crew.
- e. Common attributes for **<subpara1>**:
  - i. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
  - ii. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - iii. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - iv. **comment** – Change information (optional) (see Section 36.3.12).
  - v. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - vi. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
  - vii. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
  - viii. **id** – Unique identifier (optional) (see Section 36.3.7).
  - ix. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - x. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - xi. **numbering** – Paragraph title numbering (optional). (see Section 7.2.1.3.1).
  - xii. **security** – Security classification (optional) (see Section 36.3.14).
  - xiii. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.1.12 Alternate subpara1 <subpara1-alt>.

Alternate first level subordinate paragraph is used to support multiple configurations or variations. The attribute **id** is provided to **<subpara1-alt>** to allow linking to alternative state.

1. The components of **<subpara1-alt>**:
  - a. Alternate first level subordinate paragraph **<subpara1-alt>** (see Section 35.2.1).
2. The DTD fragment for **<subpara1-alt>** is graphically depicted.

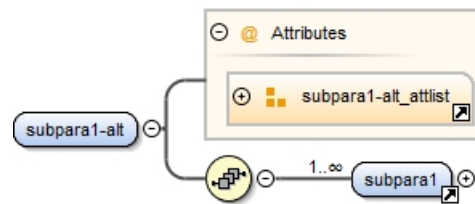


FIGURE 635. Alternate subpara1 <subpara1-alt> DTD hierarchy.

3. The DTD fragment for **<subpara1-alt>** is:
 

```
<!ELEMENT subpara1-alt (subpara1+)>
<!ATTLIST subpara1-alt id ID #IMPLIED>
```
4. The element **<subpara1-alt>** contains one single attribute of **id** – An identifier of the element which is assigned at origination, and remains unchanged as the document is revised or updated, even though the

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automatically assigned enumeration or manually-assigned "labels" change, (in some cases, many times). The value of the "id" is used when making references to the element from other portions of the document. If no ID is given, none will be maintained and the element cannot be cross-referenced by means of an IDREF on another element or with **<xref>** (see Section 33.2.2).

### 36.1.1.13 Second level subordinate paragraph **<subpara2>**.

This is the second level of subordinate paragraphs.

1. The components **<subpara2>**:

- a. Precondition **<precond>** (optional) (see Section 29.1.1.1) followed by required title **<title>** (required) (see Section 36.1.1.4) and may be followed by either the group (a) or group (b) elements:
  - i. Third level subordinate paragraph **<subpara3>** (optional – zero or more) (see Section 36.1.1.15) or alternate third level subordinate paragraph **<subpara3-alt>** (optional – zero or more) (see Section 35.2.1). Both the **<subpara3>** and **<subpara3-alt>** can occur more than once, in no particular order.
  - ii. An optional critical safety item alert **<csi.alert>** (see Section 28.1.1.4) or note **<note>** (optional – zero or more) (see Section 28.1.3) followed by one or more paragraphs **<para>** (required – one or more) (see Section 36.1.1.6), which may be followed by either the **<subpara3>** (optional – zero or more) or **<subpara3-alt>** (optional – zero or more) which can occur more than once, in no particular order.

b. The DTD fragment for **<subpara2>** is:

```
<!ELEMENT subpara2 (precond?, title, ((subpara3 | subpara3-alt)+ | (csi.
alert*, note*, para)+, (subpara3 | subpara3-alt)*))>
```

```
<!ATTLIST subpara2
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
esd	(yes   no)	"no"
hcp	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
numbering	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

- c. The element **<subpara2>** contains on unique attribute of **crewmember** (optional) that is used to identify information that may be specific to a designated member of a crew.
- d. Common attributes for **<subpara2>**:

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- i. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- ii. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- iii. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- iv. **comment** – Change information (optional) (see Section 36.3.12).
- v. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- vi. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- vii. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- viii. **id** – Unique identifier (optional) (see Section 36.3.7).
- ix. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- x. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- xi. **numbering** – Paragraph title numbering (optional). (see Section 7.2.1.3.1).
- xii. **security** – Security classification (optional) (see Section 36.3.14).
- xiii. **skilltrk** – Skill level (optional) (see Section 36.3.3).

**36.1.1.14 Alternate subpara2 <subpara2-alt>.**

Alternate second level subordinate paragraph is used to support multiple configurations. The attribute **id** provides **<subpara2-alt>** to allow linking to alternative state. The basic structure of the **<subpara2-alt>** model is identical to the **<subpara1-alt>**. See Section 36.1.1.12 for the breakdown and attributes.

**36.1.1.15 Third level subordinate paragraph <subpara3>.**

This is the third level of subordinate paragraphs. The structure and model for **<subpara3>** are identical to the **<subpara1>** (see Section 36.1.1.11).

**36.1.1.16 Alternate subpara3 <subpara3-alt>.**

Alternate second level subordinate paragraph is used to support multiple configurations. The attribute **id** provides **<subpara3-alt>** to allow linking to alternative state. The basic structure of the **<subpara3-alt>** model is identical to the **<subpara1-alt>**. See Section 36.1.1.12 for the breakdown and attributes.

**36.1.1.17 Fourth level subordinate paragraph <subpara4>.**

This is the fourth and lowest level of subordinate paragraphs allowed by MIL-STD-40051-1/-2.

1. The components **<subpara4>**:
  - a. Precondition **<precond>** (optional) (see Section 29.1.1.1).
  - b. Title **<title>** (required) (see Section 36.1.1.4).
  - c. Critical safety item alert **<csi.alert>** (optional – zero or more) (see Section 28.1.1.4).
  - d. Note **<note>** (optional – zero or more) (see Section 28.1.3).
  - e. Paragraph Text **<para>** (required – one or more) (see Section 36.1.1.6).
2. The DTD fragment for **<subpara4>** is graphically depicted.

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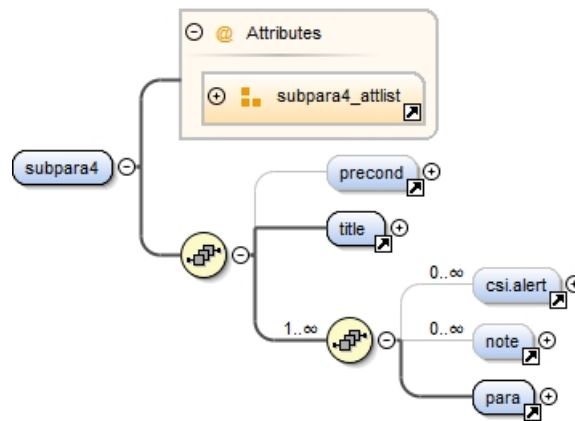


FIGURE 636. Fourth level subordinate paragraph &lt;subpara4&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;subpara4&gt; is:

```
<!ELEMENT subpara4 (precond?, title, ((csi.alert*, note*, para+)))>
```

```
<!ATTLIST subpara4
```

applicable	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
crewmember	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
esd	(yes   no)	"no"
hcp	(yes   no)	"no"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
numbering	(yes   no)	"no"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	(yes   no)	"no">

4. The element <subpara4> contains one unique attribute of **crewmember** (optional). This is used to identify information that may be specific to a designated member of a crew.

## 5. Common attributes for &lt;subpara4&gt;:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).

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- g. hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- h. id** – Unique identifier (optional) (see Section 36.3.7).
- i. idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- j. inschlvl** – Insert change level (optional) (see Section 36.3.12).
- k. numbering** – Paragraph title numbering (optional). (see Section 7.2.1.3.1).
- l. security** – Security classification (optional) (see Section 36.3.14).
- m. skilltrk** – Skill level (optional) (see Section 36.3.3).

**36.1.1.18 Alternate subpara4 <subpara4-alt>.**

Alternate fourth level subordinate paragraph, is used to support multiple configurations The attribute **id** provides subpara4-alt to allow linking to alternative state.

1. The components of **<subpara4-alt>**:
  - a.** Fourth Level Subordinate Paragraph **<subpara4-alt>** (required – one or more) (see Section 36.1.1.17)
2. The DTD fragment for **<subpara4-alt>** is:
 

```
<!ELEMENT subpara4-alt (subpara4+)>
<!ATTLIST subpara4-alt id ID #IMPLIED>
```
3. The element **<subpara4-alt>** contains a single attribute of **id** – An identifier of the element is assigned at origination and remains unchanged as the document is revised, or updated, even though the automatically assigned enumeration, or manually-assigned "labels" change, (in some cases, many times). The value of the "id" is used when making references to the element from other portions of the document. If no ID is given, none will be maintained and the element cannot cross-referenced by means of an IDREF on another element or with **<xref>** (see Section 33.2.2).

**36.1.1.19 Text element <text>.**

The **<text>** element is used to provide limited character data input in places where other mixed content models would not work. An example is a title may be required, but a full paragraph of text not appropriate.

1. The components **<text>**:
  - a.** Parsable characters or type text. – #PCDATA
  - b.** Format text – **<emphasis>** (see Section 36.1.3.1).
  - c.** Subscript – **<subscript>** (see Section 36.1.3.4).
  - d.** Superscript – **<supscript>** (see Section 36.1.3.5).
  - e.** Cross reference – **<xref>** (see Section 33.2.2).
  - f.** External reference – **<extref>** (see Section 33.2.1).
  - g.** Enhanced Linking – **<link>** (see Section 33.2.3).
2. The DTD fragment for **<text>** is graphically depicted.

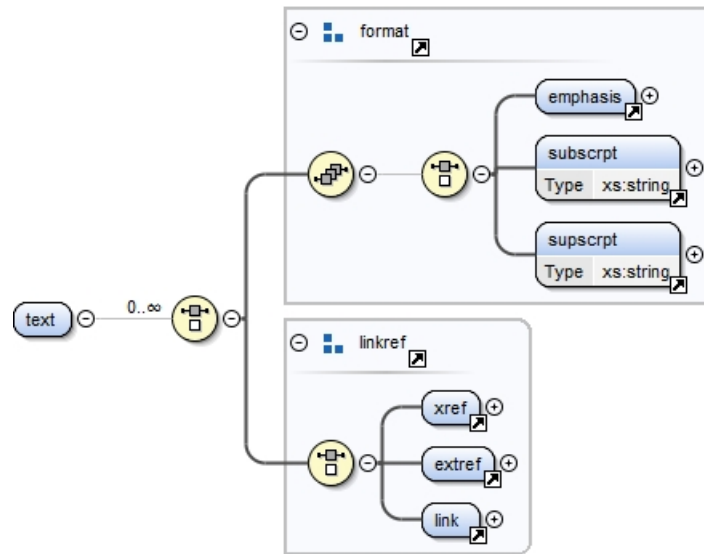


FIGURE 637. Text &lt;text&gt; content model.

3. The DTD fragment for <text> is:  
`<!ELEMENT text (%format; | %linkref;)*>`
4. The element <text> has no attributes.

## 36.1.2 List elements.

### 36.1.2.1 Sequence (ordered) list <seqlist>.

The element <seqlist> is used for a sequential or ordered list. The sequence of items is denominated by numbers or letters. The numbering scheme is identical to that for procedural steps shown in MIL-STD-40051-1/-2.

1. The components <seqlist>:
  - a. Title <title> (optional) (see Section 36.1.1.4).
  - b. Items <item> (required – one or more) (see Section 36.1.2.2) are required in a sequence list.
2. The DTD fragment for <seqlist> is graphically depicted.

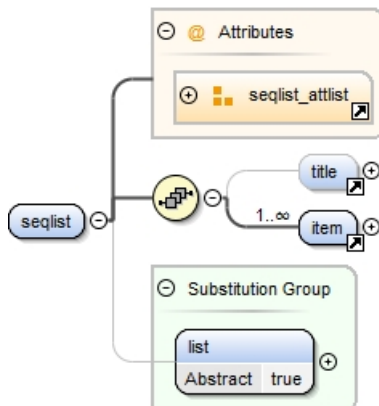


FIGURE 638. Sequence (ordered) list &lt;seqlist&gt; DTD hierarchy.

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3. The DTD fragment for **<seqlist>** is:

```

<!ELEMENT seqlist (title?, item+)>
<!--ATTLIST seqlist
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED-->

```

4. Common attributes for **<seqlist>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

5. Example of an XML instance and the stylesheet output for a sequential list **<seqlist>**:

- a. Example of an XML instance for a sequential list **<seqlist>**:

```

<seqlist>
<item>NOMENCLATURE
</item>
<item>PART NUMBER
</item>
<item>NSN
</item>
<item>DODAC
</item>
</seqlist>

```

- b. Stylesheet output for a sequential list:

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1. NOMENCLATURE
2. PART NUMBER
3. NSN
4. DODAC

FIGURE 639. Example of a sequential list &lt;seqlist&gt;.

**36.1.2.2 Item <item>.**

The element **<item>** is an entry in a sequential, random list or equipment item.

1. The components of **<item>**:
  - a. Parsable characters or type text. – #PCDATA.
  - b. Format text – **<emphasis>** (see Section 36.1.3.1).
  - c. Subscript – **<subscript>** (see Section 36.1.3.4).
  - d. Superscript – **<supscript>** (see Section 36.1.3.5).
  - e. Cross reference – **<xref>** (see Section 33.2.2).
  - f. External reference – **<extref>** (see Section 33.2.1).
  - g. Enhanced Linking – **<link>** (see Section 33.2.3).
  - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
  - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
  - j. Term – **<term>** (see Section 36.1.2.4.2).
  - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
  - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
  - m. Footnote – **<ftnote>** (see Section 32.1.1).
  - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
  - o. Graphic – **<graphic>** (see Section 31.2).
  - p. Miscellaneous – **<misc>** (see 36.2.1).
  - q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
  - r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
  - s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
  - t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
  - u. Graphic symbol – **<symbol>** (see Section 31.3.1).
  - v. Torque value – **<torque>** (see Section 36.1.4.25).
  - w. Voltage value – **<voltage>** (see Section 36.1.4.26).
  - x. Null text – **<null>** (see Section 36.1.3.2).
  - y. Changed text marker – **<change>** (see Section 36.1.3.7).
  - z. Internet **<internet>** (optional – zero or more) (see Section 36.1.4.1.7).
  - aa. Proponent **<proponent>** (required) (see Section 36.1.4.23).



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- ab.** Telephone number – **<phone>** (see Section 36.1.4.1.6).
  - ac.** Note – **<note>** (see Section 28.1.3) are required in a sequence list.
  - ad.** Sequence (ordered) list – **<seqlist>** (see Section 36.1.2.1) in an item.
  - ae.** Random list – **<randlist>** (see Section 36.1.2.3) in an item.
  - af.** Inline graphic(s) – **<inlinegraphic>** (see Section 31.3.2) in an item.
  - ag.** Illustration(s) – **<figure>** (see Section 31.1.1) in an item.
  - ah.** Alternative Illustration(s) – **<figure-alt>** (see Section 35.2.1) in an item.
  - ai.** Table **<table>** (see Chapter 29) and/or conditional table **<table-alt>** (see Section 35.2.1).
- 2.** The DTD fragment for **<item>** is graphically depicted.

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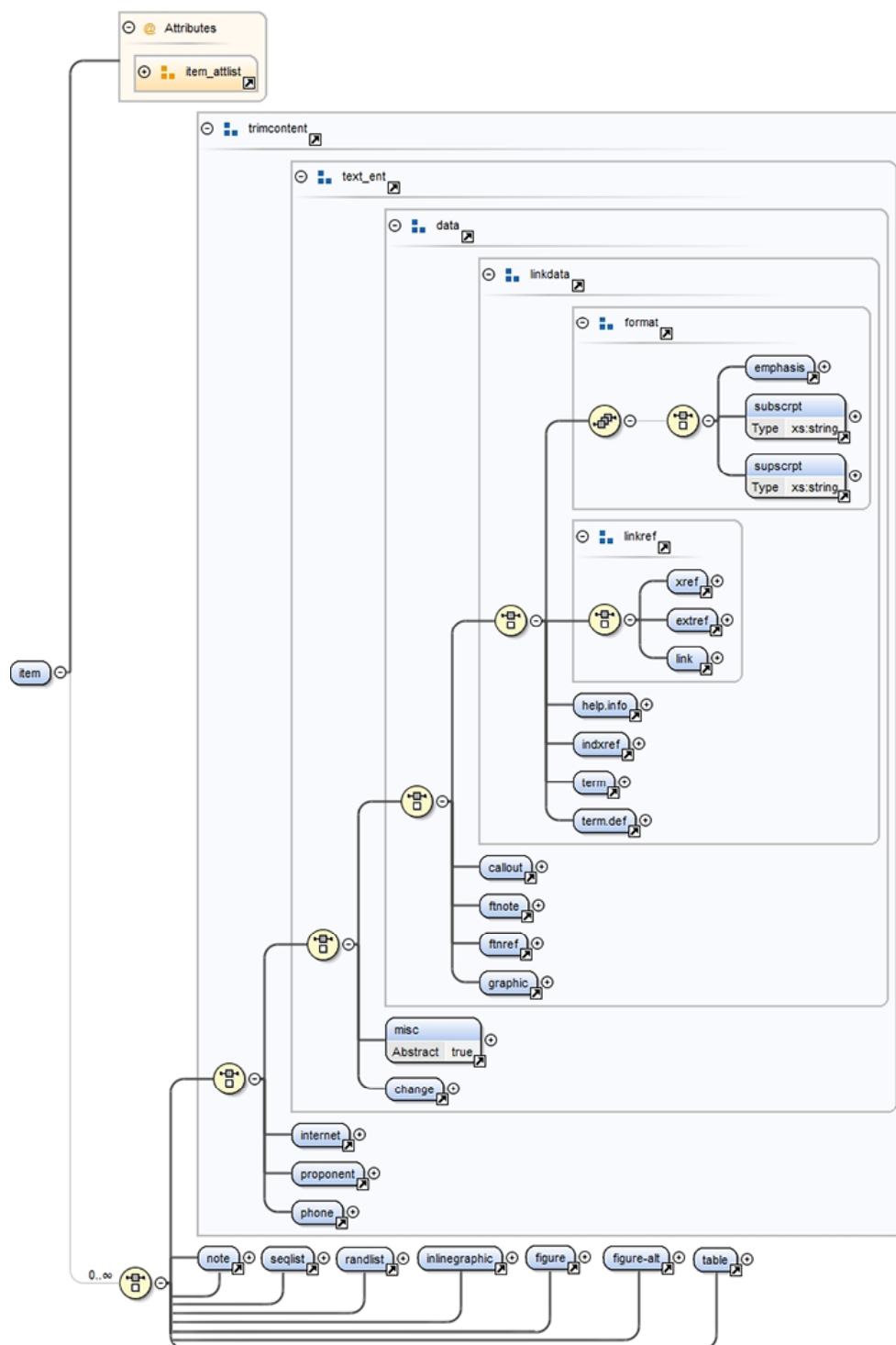


FIGURE 640. Item &lt;item&gt; DTD hierarchy.

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3. The DTD fragment for **<item>** is:

```

<!ELEMENT item (%trimcontent; | note | seqlist | randlist | inlinegraphic |
figure | figure-alt | table)*>

<!ATTLIST item
applicable IDREFS #IMPLIED
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
esd (yes | no) "no"
hcp (yes | no) "no"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
label CDATA #IMPLIED
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>

```

4. Attributes for **<item>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **label** – A label so the authors can enter counter strings rather than have the application do it.

5. Common attributes for **<item>** are:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **esd** – Electrostatic discharge requirement (default value is **no**) (see Section 36.3.6).
- f. **hcp** – Nuclear hardness requirement (default value is **no**) (see Section 36.3.6).
- g. **id** – Unique identifier. (optional) (see Section 36.3.7).
- h. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- i. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- j. **security** – Security classification (optional) (see Section 36.3.14).
- k. **skilltrk** – Skill level (optional) (see Section 36.3.3).

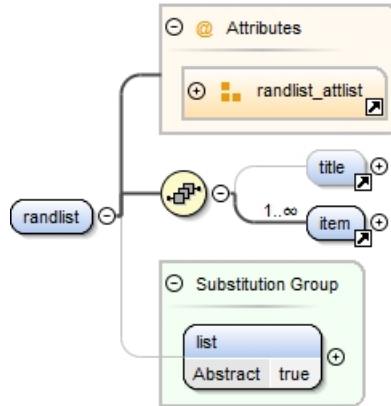
36.1.2.3 Random or bulleted list **<randlist>**.

The element **<randlist>** is used for a list of randomly ordered items and are not numbered. The bullet scheme, when specified, is the first level list uses a filled circle and the second level list uses a dash.

1. The components **<randlist>**:

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- a. Title **<title>** (optional) (see Section 36.1.1.4).
  - b. Item **<item>** (required – one or more) (see Section 36.1.2.2) are required in a random list.
  - c. List **<list>** (optional – zero or more) – The elements are usually contained within paragraphs. The list tag will identify the type of list being tagged. There are three types of XML lists: random, sequential, and definition lists (see 7.2.1.3.8).
2. The DTD fragment for **<randlist>** is graphically depicted.

FIGURE 641. Random list **<randlist>** DTD hierarchy.

3. The DTD fragment for **<randlist>** is:

```

<!ELEMENT randlist (title?, item+)>
<!ATTLIST randlist
 assocfig IDREFS #IMPLIED
 bullet (yes | no) "no"
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 prefix CDATA #IMPLIED
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Attributes for **<randlist>**:

- a. **bullet** – Specifies whether (non-zero number) or not a bullet (0) should precede each item. If no value is entered, the default is no bullet displayed.
- b. **prefix** – Specifies a character, word, or symbol (other than a bullet) that should precede each item.

5. Common attributes for **<randlist>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).

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- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** – Unique identifier (optional) (see Section 36.3.7).
  - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - h. **security** – Security classification (optional) (see Section 36.3.14).
  - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).
6. Example of an XML instance and the stylesheet output for a random list **<randlist>**.
- a. Example of an XML instance for a random list **<randlist>**:
 

```

<randlist bullet="yes">
<item>NOMENCLATURE – Name of the part.
</item>
<item>PART NUMBER – Number assigned to the part. Check
<extref docno="TM 1-1520-238-23P"/>for part numbers of replacement parts.
</item>
<item>NSN – National Stock Number assigned to the part. Reference
<extref docno="TM 1-1520-238-23P"/>.
</item>
<item>DODAC – Department of Defense Ammunition Code. Indicates type of
Ammunition and Packaging. Ref
<extref docno="SB708-3" pretext="DOD Ammo Codes HDBK, "/>.
</item>
</randlist>

```
  - b. Stylesheet output for a random list:
    - **NOMENCLATURE - Name of the part.**
    - **PART NUMBER - Number assigned to the part. Check "TM 1-1520-238-23P",  
for part numbers or replacement parts**
    - **NSN - National Stock Number assigned to the part. Reference "TM 1-1520-238-23P**
    - **DODAC - Department of Defense Ammunition Code. Indicates type of Ammunition  
and Packaging. Reference DOD Ammo Codes HDBK, SB 708-3"**

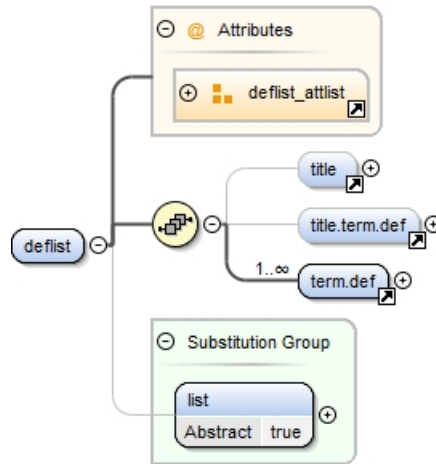
FIGURE 642. Example of a random list **<randlist>**.**36.1.2.4 Definition list <deflist>.**

The element **<deflist>** identifies a list of terms and definitions. The term can enclose a word, phrase, abbreviation, or symbol. The **<deflist>** may be used to build what equates to a two column table.

1. The components of **<deflist>** are:
  - a. Title **<title>** (optional) (see Section 36.1.1.4).
  - b. Term Definition Titles **<title.term.def>** (optional – zero or more) of a column contained in a deflist.
  - c. One or more term definition **<term.def>** (required – one or more) (see Section 36.1.2.4.1) are required in a definition list.

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- d. List **<list>** (optional – zero or more) – The elements are usually contained within paragraphs. The list tag will identify the type of list being tagged. There are three types of XML lists: random, sequential, and definition lists (see 7.2.1.3.8).
2. The DTD fragment for **<deflist>** is graphically depicted.

FIGURE 643. Definition list **<deflist>** DTD hierarchy.

3. The DTD fragment for **<deflist>** is:

```
<!ELEMENT deflist (title?, title.term.def?, term.def+)>
<!ATTLIST deflist
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
id ID #IMPLIED
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
security (uc | fouo | c | s | ts) #IMPLIED
skilltrk CDATA #IMPLIED>
```

4. Common attributes for **<deflist>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).

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i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

5. Example of an XML instance and the stylesheet output for a definition list **<deflist>**:

a. Example of an XML instance for a definition list **<deflist>**.

```

<deflist>
<title>Definition List
</title>
<title.term.def>
<title>Name
</title>
<title>Definition List
</title>
</title.term.def>
<term.def>
<term>NOMENCLATURE
</term>
<def>
<para>Name of the part.
</para>
</def>
</term.def>
<term.def>
<term>PART NUMBER
</term>
<def>
<para>Number assigned to the part. Check
<extref docno="TM 1-1520-238-23P"/>for part numbers of replacement parts.
</para>
</def>
</term.def>
<term.def>
<term>NSN
</term>
<def>
<para>National Stock Number assigned to the part. Reference
<extref docno="TM 1-1520-238-23P"/>.
</para>
</def>
</term.def>
<term.def>
<term>DODAC
</term>
<def>
<para>Department of Defense Ammunition Code. Indicates type of Ammunition and
Packaging. Ref
<extref docno="SB708-3" pretext="DOD Ammo Codes HDBK, "/>.
</para>
</def>
</term.def>
</deflist>

```

b. Stylesheet output for a definition list:

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## DEFINITION LIST

<u>Name</u>	<u>Description</u>
NOMENCLATURE	Name of the part.
PART NUMBER	Number assigned to the part. Check "TM 1-1520-238-23P", for part numbers or replacement parts
NSN	National Stock Number assigned to the part. Reference "TM 1-1520-238-23P".
DODAC	Department of Defense Ammunition Code. Indicates type of Ammunition and Packaging. Reference DOD Ammo Codes HDBK, SB 708-3"

FIGURE 644. Example of a definition list &lt;deflist&gt;.

## 36.1.2.4.1 Term definition &lt;term.def&gt;.

The element <term.def> is a wrapper tag that identifies an information row containing a term and a definition.

1. The components of <term.def>:
  - a. Term <term> (required) (see Section 36.1.2.4.2).
  - b. Definition <def> (required) (see Section 36.1.2.4.3).
2. The DTD fragment for <term.def> is:

```

<!ELEMENT term.def (term, def)>
<!ATTLIST term
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

3. Common attributes for <term.def>:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).



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- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.2.4.2 Term <term>.

The element <term> is a word, phrase, acronym, symbol or abbreviation to be defined in a definition list.

1. The components <term> are:
  - a. The element contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
  - b. Emphasis <emphasis> (optional – zero or more) (see Section 36.1.3.1).
  - c. Subscript <subscript> (optional – zero or more ) (see Section 36.1.3.4).
  - d. Superscript <supscript> (optional – zero or more) (see Section 36.1.3.5).
  - e. External cross reference <extref> (optional – zero or more) (see Section 33.2.1).
  - f. Cross reference <xref> (optional – zero or more) (see Section 33.2.2).
  - g. Dynamic linking <link> (optional – zero or more) (see Section 33.2.3).
2. The DTD fragment for <term> is graphically depicted:

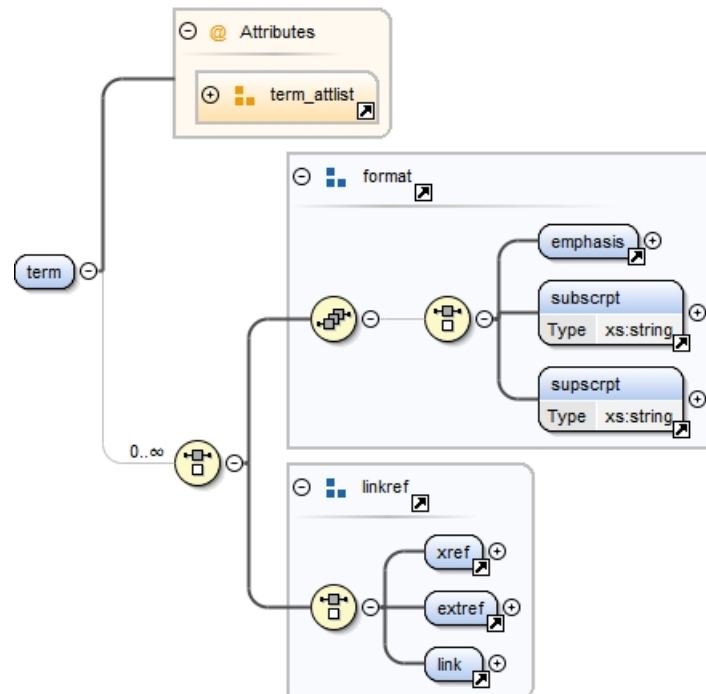


FIGURE 645. Term <term> DTD hierarchy.

3. The DTD fragment for <term> is:

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```

<!ELEMENT term (%format; | %linkref;)*>
<!ATTLIST term
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Common attributes for **<term>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.2.4.3 Definition **<def>**.

The element **<def>** is a definition for the term in a definition list. The element contains a general paragraph **<para>** (see 36.1.1.6).

1. The components **<def>** contains a single paragraph of text **<para>** (required) (see Section 36.1.1.6).
2. DTD graphically depicted:



FIGURE 646. Definition **<def>** DTD hierarchy.

3. The DTD fragment for **<def>** is:

```
<!ELEMENT def (para)>
```

4. The element **<def>** has no attributes.

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**36.1.3 Formatting elements.****36.1.3.1 Emphasis <emphasis>.**

The element **<emphasis>** is used for scope and style of emphasized information and is indicated by enclosing the material in start and end **<emphasis>** tags. Emphasis elements should be used only in situations where the emphasized material is embedded in plain text or where an exception from the usual style of the element specified in the stylesheet is needed. Emphasis elements can be nested to specify a combination of styles, such as ***underlined, bold, italic.***

**1. The components <emphasis>:**

- a.** Parsable characters or type text. – #PCDATA.
- b.** Format text – **<emphasis>** (see Section 36.1.3.1).
- c.** Subscript – **<subscript>** (see Section 36.1.3.4).
- d.** Superscript – **<supscript>** (see Section 36.1.3.5).
- e.** Cross reference – **<xref>** (see Section 33.2.2).
- f.** External reference – **<extref>** (see Section 33.2.1).
- g.** Enhanced Linking – **<link>** (see Section 33.2.3).
- h.** IETM help information – **<help.info>** (see Section 35.3.3.7).
- i.** Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j.** Term – **<term>** (see Section 36.1.2.4.2).
- k.** Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l.** Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m.** Footnote – **<ftnote>** (see Section 32.1.1).
- n.** Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o.** Graphic – **<graphic>** (see Section 31.2).
- p.** Miscellaneous – **<misc>** (see 36.2.1).
- q.** Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
- r.** Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
- s.** DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
- t.** Lubricant value – **<lubricant>** (see Section 36.1.4.15).
- u.** Graphic symbol – **<symbol>** (see Section 31.3.1).
- v.** Torque value – **<torque>** (see Section 36.1.4.25).
- w.** Voltage value – **<voltage>** (see Section 36.1.4.26).
- x.** Null text – **<null>** (see Section 36.1.3.2).
- y.** Changed text marker – **<change>** (see Section 36.1.3.7).

**2. The DTD fragment for <emphasis> is:**

```
<!ELEMENT emphasis (%text_ent;)*>
<!ATTLIST emphasis
```

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color	CDATA	#IMPLIED
emph	(caps   bold   italic   bolditalic   uline   strikeout   2line   smallcaps   overline)	#REQUIRED>

3. The element **<emphasis>** has two unique attributes:

- a. **color** – Color is used to emphasized text. The **color** attribute is ignored unless the **emph** is set to color.
- b. **emph** – Chose from the list of possible emphasis characteristics. The list can be expanded through the configuration file. Specifies the type of emphasis to be used.
  - i. “caps” – Specifies the data is capitalized all text.
  - ii. “bold” – Specifies the data is bold text.
  - iii. “italic” – Specifies the data is italicized text.
  - iv. “bolditalic” – Specifies the data is bold and italicized text.
  - v. “uline” – Specifies the data is underlined text.
  - vi. “strikeout” – Specifies the data is strikeout dash through each character.
  - vii. “2line” – Specifies the data is underlined with two lines.
  - viii. “smallcaps” – Specifies the data is capitalized using smallcaps.
  - ix. “overline” – Specifies the data is overlined text.

### 36.1.3.2 Null **<null>**.

The element **<null>** is used in an element which specifically indicates the element contains no content.

1. The element **<null>** is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<null>** is:

```
<!ELEMENT null EMPTY>
<!ATTLIST null
insert (na | nr | dash | secure | "none">
none)
```

3. The element **<null>** contains a single attribute of **insert** – Specifies what material is inserted in the table cell containing the null element, 'NA,' 'NR,' a long dash, classified status, or no insertion.

### 36.1.3.3 Line break **<brk>**.

The element **<brk>** is used to create a line break in specific elements in the DTD.

1. The element **<brk>** is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<brk>** is:

```
<!ELEMENT brk EMPTY>
```

3. The element **<brk>** has no attributes.

### 36.1.3.4 Subscript <subscript>.

The element <subscript> is used to format the text as subscript. The stylesheet formats the character or symbol written directly beneath, or next to, and slightly below a letter or number.

1. The element <subscript> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <subscript> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1):  

```
<!ELEMENT subscript (#PCDATA)>
```
3. The element <subscript> has no attributes.

### 36.1.3.5 Superscript <supscript>.

The element <supscript> is used to format the text as superscript. The stylesheet formats the text written above and immediately to one side of another.

1. The element <supscript> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <supscript> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1):  

```
<!ELEMENT supscript (#PCDATA)>
```
3. The element <supscript> has no attributes.

### 36.1.3.6 Verbatim <verbatim>.

The element <verbatim> is used for text to be presented as it is sequenced in the text stream and implies that white space may be maintained and XML record ends (carriage returns) are to be treated as line endings. Typically, verbatim text is presented in a monospaced font.

1. The element <verbatim> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <verbatim> is:

```
<!ELEMENT verbatim (#PCDATA)>
<ATTLIST verbatim
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0"
 xml:space (preserve) #IMPLIED>
```

3. The element <verbatim> has one unique attribute XML defined **xml:space** which specifies the XML processor will preserve space and line break characters.
4. Common attributes for <verbatim>:
  - a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - b. **comment** – Change information (optional) (see Section 36.3.12).
  - c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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**36.1.3.7 Changed information <change>.**

The element **<change>** is used to wrap limited types of changes in the XML. The **<change>** tag may only wrap PCDATA and requires a start and end tag.

1. The element **<change>** consists:

- a. Parsable characters or type text. – #PCDATA.
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced Linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).
- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic – **<graphic>** (see Section 31.2).
- p. Miscellaneous – **<misc>** (see 36.2.1).
- q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
- r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
- s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
- t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
- u. Graphic symbol – **<symbol>** (see Section 31.3.1).
- v. Torque value – **<torque>** (see Section 36.1.4.25).
- w. Voltage value – **<voltage>** (see Section 36.1.4.26).
- x. Null text – **<null>** (see Section 36.1.3.2).

2. The DTD fragment for **<change>** is:

```
<!ELEMENT change (%data; | %misc:)*>
<!--ATTLIST change
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0">
```

3. Common attributes for **<change>**:

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- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

### 36.1.4 Content specified elements.

#### 36.1.4.1 Address <address>.

The element <address> is used to enter an address.

1. The components of <address> are:
  - a. A required and repeatable group with the following content:
    - i. Service Nomenclature <servnomen> (optional) (see Section 15.4.2.6.28).
    - ii. Street Addresses <street> (optional – zero or more) (see Section 36.1.4.1.1).
    - iii. City <city> (required) (see Section 36.1.4.1.2).
    - iv. State <state> (required) (see Section 36.1.4.1.3).
    - v. Zip Code <zip> (optional) (see Section 36.1.4.1.4).
    - vi. Country <country> (optional) (see Section 36.1.4.1.5).
    - vii. Phone <phone> (optional – zero or more) (see Section 36.1.4.1.6).
    - viii. Internet <internet> (optional – zero or more) (see Section 36.1.4.1.7).
2. The DTD fragment for <address> is graphically depicted.

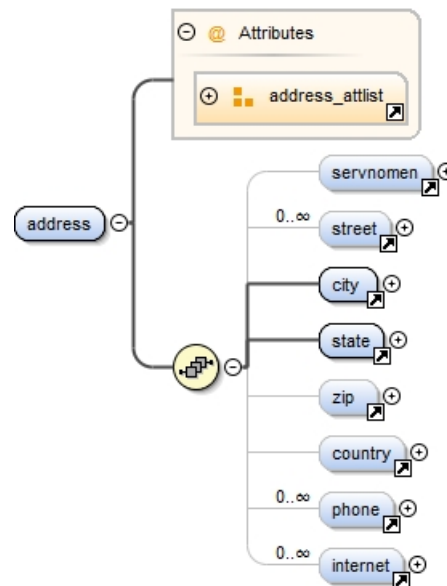


FIGURE 647. Address <address> DTD hierarchy.

3. The DTD fragment for <address> is:

## MIL-HDBK-2361D

```
<!ELEMENT address (servnomen?, street*, city, state, zip?, country?,
phone*, internet*)>
```

```
<!ATTLIST address
```

assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<address>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.15).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.4.1.1 Street **<street>**.

The element **<street>** is used to enter the full street address, including the number and street name, used in the address block.

1. The element **<street>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<street>** is:

```
<!ELEMENT street (#PCDATA)>
```

```
<!ATTLIST street
```

changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
inschlvl	(0-99)	"0">

3. Common attributes for **<street>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).



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- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

### 36.1.4.1.2 City <city>.

The element <city> is used to enter the name of the city used in an address block.

1. The element <city> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. DTD fragment for <city>:

```
<!ELEMENT city (#PCDATA) >
<!ATTLIST city
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0">
```

3. Common attributes for <city>:
  - a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - b. **comment** – Change information (optional) (see Section 36.3.12).
  - c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

### 36.1.4.1.3 State <state>.

The element <state> is used to enter the name of the state used in address block.

1. The element <state> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <state> is:

```
<!ELEMENT state (#PCDATA) >
<!ATTLIST state
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0">
```

3. Common attributes for <state>:
  - a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - b. **comment** – Change information (optional) (see Section 36.3.12).
  - c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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**36.1.4.1.4 Zip <zip>.**

The element **<zip>** is used to enter the name of the zip code used in address block.

1. The element **<zip>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<zip>** is:

```
<!ELEMENT zip (#PCDATA)>
<!ATTLIST zip
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0">
```

3. Common attributes for **<zip>**:
  - a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - b. **comment** – Change information (optional) (see Section 36.3.12).
  - c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

**36.1.4.1.5 Country <country>.**

The element **<country>** is used to enter the name of the country used in address block.

1. The element **<country>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<country>** is:

```
<!ELEMENT country (#PCDATA)>
<!ATTLIST country
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0">
```

3. Common attributes for **<country>**:
  - a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - b. **comment** – Change information (optional) (see Section 36.3.12).
  - c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

**36.1.4.1.6 Telephone number <phone>.**

The element **<phone>** is used to enter the commercial or DSN telephone number.

1. The element **<phone>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).

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2. The DTD fragment for **<phone>** is:

```

<!ELEMENT phone (#PCDATA)>
<!ATTLIST phone
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0"
 other CDATA #IMPLIED
 receive (voice | fax) "voice"
 type (dsn | coml | cell | other #REQUIRED>
)

```

3. Attributes for **<phone>**:

- a. **type** – Specifies the type of the phone, the allowable values are “dsn,” “coml,” “cell,” or “other.” There is no default, but the attribute is a required entry.
- b. **receive** – Specifies if the phone is being used as a voice or a fax.
- c. **other** – Specifies for other data in reference to the phone.

4. Common attributes for **<phone>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

**36.1.4.1.7 Internet address <internet>.**

The element **<internet>** is used to enter an e-mail address or the URL of a webpage.

1. The components for **<internet>**:

- a. Electronic Mail Address **<email>** (required) (see Section 36.1.4.1.7.1).
- b. Internet Home Page Address **<homepage>** (see Section 36.1.4.1.7.2).

2. The DTD fragment for **<internet>** is:

```

<!ELEMENT internet (email | homepage)>
<!ATTLIST internet
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 inschlvl (0-99) "0"
 narrative CDATA #IMPLIED
 show.address (0 | 1) "yes">

```

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3. Unique attributes for **<internet>**:
  - a. **narrative** – Narrative to use instead of the email or home page address.
  - b. **show.address** – Show the internet address with narrative attribute text.
4. Common attributes for **<internet>**:
  - a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - b. **comment** – Change information (optional) (see Section 36.3.12).
  - c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

**36.1.4.1.7.1 Electronic mail <email>.**

The element **<email>** is used to enter the electronic mail address.

1. The element **<email>** is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<internet>** is:

```
<!ELEMENT email EMPTY>
<!ATTLIST email
address CDATA #REQUIRED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
inschlvl (0-99) "0">
```

3. The element **<email>** contains a single unique attribute of **address** – use to enter the electronic mail address.
4. Common attributes for **<email>**:
  - a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - b. **comment** – Change information (optional) (see Section 36.3.12).
  - c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

**36.1.4.1.7.2 Internet home page address <homepage>.**

The element **<homepage>** is used to enter the internet home page address.

1. The element **<homepage>** is EMPTY and all pertinent information is entered through its attributes.
2. The DTD fragment for **<homepage>** is:

```
<!ELEMENT homepage EMPTY>
<!ATTLIST homepage
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
```

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<code>delchlvl</code>	(0-99)	"0"
<code>inschlvl</code>	(0-99)	"0"
<code>protocol</code>	(http   https   ftp)	"http"
<code>uri</code>	CDATA	#REQUIRED>

3. Unique attributes for **<homepage>**:

- a. **protocol** – Type of internet protocol used with the URI address. The allowable values are “http,” “https,” or “ftp.” The default value is “http.”
- b. **uri** – Uniform Resource Information (URI) for the Internet home page address.

4. Common attributes for **<homepage>**:

- a. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- b. **comment** – Change information (optional) (see Section 36.3.12).
- c. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- d. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

**36.1.4.1.8 Commercial and Government Entity Code (CAGEC) <cageno>.**

The element **<cageno>** is the Commercial and Government Entity Code (CAGEC). It is a five character code assigned to commercial activities that manufacture or supply items used by the Federal Government and to Government activities that control, design, or are responsible for the development of certain specifications, standards, or drawings which control the design of Government items. CAGE Code assignments are listed in the H4/H8 CAGE Publications.

- 1. The element **<cageno>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
- 2. The DTD fragment for **<cageno>** is:  

```
<!ELEMENT cageno (#PCDATA)>
```
- 3. The element **<cageno>** has no attributes.

**36.1.4.2 Control/Indicator <ctrlind>.**

The element **<ctrlind>** is used to identify a control or indicator used in a TMs text. The attribute **idref** is used to link to the control/indicator table for detailed information.

- 1. The element **<ctrlind>** consists of:
  - a. Parsable characters or type text. – #PCDATA.
  - b. Format text – **<emphasis>** (see Section 36.1.3.1).
  - c. Subscript – **<subscript>** (see Section 36.1.3.4).
  - d. Superscript – **<supscript>** (see Section 36.1.3.5).
  - e. Cross reference – **<xref>** (see Section 33.2.2).
  - f. External reference – **<extref>** (see Section 33.2.1).
  - g. Enhanced Linking – **<link>** (see Section 33.2.3).
  - h. IETM help information – **<help.info>** (see Section 35.3.3.7).

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- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
  - j. Term – **<term>** (see Section 36.1.2.4.2).
  - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
  - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
  - m. Footnote – **<ftnote>** (see Section 32.1.1).
  - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
  - o. Graphic – **<graphic>** (see Section 31.2).
  - p. Miscellaneous – **<misc>** (see 36.2.1).
2. The DTD fragment for **<ctrlind>** is graphically depicted.

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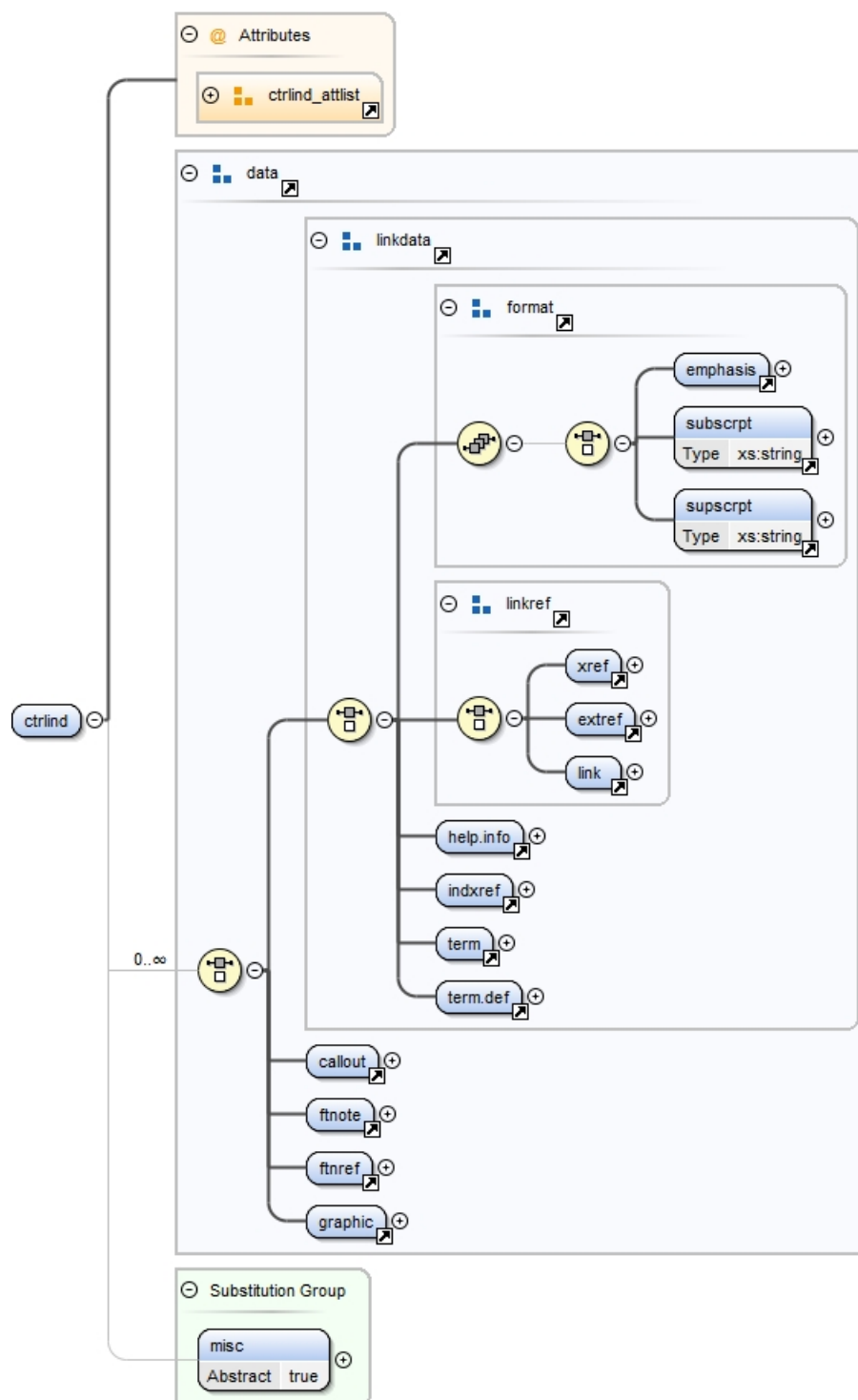


FIGURE 648. Control/Indicator &lt;ctrlind&gt; DTD hierarchy.

3. The DTD fragment for **<ctrlind>** is:

```
<!ELEMENT ctrlind (%data;)*>
```

```
<!ATTLIST ctrlind
```

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assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<ctrlind>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

36.1.4.3 Control/Indicator value **<ctrlind-val>**.

The element **<ctrlind-val>** identifies the reading on a control or indicator.

1. The element **<ctrlind-val>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. Miscellaneous – **<misc>** (see 36.2.1).
3. The DTD fragment for **<ctrlind-val>** is:

```

<!ELEMENT ctrlind-val (#PCDATA)>
<!ATTLIST ctrlind-val
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"
idref IDREFS #IMPLIED
inschlvl (0-99) "0"
measurement CDATA #IMPLIED

```



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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. The element **<ctrlind-val>** contains a single unique attribute of **measurement** – This identifies the measurement unit for the control or indicator.
5. Common attributes for **<ctrlind-val>**:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - g. **security** – Security classification (optional) (see Section 36.3.14).
  - h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 36.1.4.4 Department of Defense ammunition code <dodac>.

The element **<dodac>** is used to identify munitions by a DoD assigned code. This element is used within the ammunition work package only. The Department of Defense Ammunition Code definitively identifies a type of ammunition. This element is used within the ammunition work package only.

1. The element **<dodac>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. Miscellaneous – **<misc>** (see 36.2.1).
3. The DTD fragment for **<dodac>** is:  

```
<!ELEMENT dodac (#PCDATA)>
```
4. The element **<dodac>** has no attributes.

#### 36.1.4.5 Drawing name <dwgname>.

The element **<dwgname>** is used to identify the title box drawing name of a drawing required to properly perform the tasks within a work package.

1. The components for **<dwgname>**:
  - a. Parsable characters or type text. – #PCDATA.
  - b. Format text – **<emphasis>** (see Section 36.1.3.1).
  - c. Subscript – **<subscript>** (see Section 36.1.3.4).
  - d. Superscript – **<supscript>** (see Section 36.1.3.5).
  - e. Cross reference – **<xref>** (see Section 33.2.2).
  - f. External reference – **<extref>** (see Section 33.2.1).
  - g. Enhanced Linking – **<link>** (see Section 33.2.3).
  - h. Graphic – **<graphic>** (see Section 31.2).

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2. The DTD fragment for **<dwgname>** is:

```

<!ELEMENT dwgname (%format; | %linkref;)*>
<!--ATTLIST dwgname
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED-->

```

3. Common attributes for **<dwgname>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

36.1.4.6 Drawing number **<dwgno>**.

The element **<dwgno>** is the drawing number for drawings not included in the TM but required to perform the operation.

- 1. The element **<dwgno>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
- 2. The DTD fragment for **<dwgno>** is:

```

<!ELEMENT dwgno (#PCDATA)>
<!--ATTLIST dwgno
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED-->

```

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3. Common attributes for **<dwgno>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

36.1.4.7 Item number **<itemno>**.

The element **<itemno>** provides the item number that is assigned to an entry for reference purpose.

1. The components for **<itemno>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<itemno>** is:

```
<!ELEMENT itemno (#PCDATA)>
<!ATTLIST itemno
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED>
```

3. Common attributes for **<itemno>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **id** – Unique identifier (optional) (see Section 36.3.7).
- c. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

36.1.4.8 Quantity **<qty>**.

The element quantity **<qty>** indicates the number of personnel or quantity of materials/parts equipment required to perform the procedures in the work package.

1. The element **<qty>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<qty>** is:

```
<!ELEMENT qty (#PCDATA)>
<!ATTLIST qty
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
```

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idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

3. Common attributes for **<qty>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.4.9 User interaction **<interaction>**.

The element **<interaction>** provides ability to receive input from dialog prompts (Fill-In or Menu) and transmit results. The main function of the element is to assist with diagnostic. The element also can be used to provide standard mathematical operations during operations through the use of dialogs. The dialogs are created by technical writer and cannot be generated by the IETM user.

1. The components for **<interaction>**:

- a. State (variable) information manipulation **<statemanipulation\_ent>** (see Section 35.2.3).
- b. Dialog box – **<dialog>** (see Section 35.1.1.2).
- c. Message – **<message>** (see 35.3.7.20).
- d. Diagnostic Test **<diagnostic-test\_ent>** – (optional).

2. The DTD fragment for **<interaction>** is graphically depicted.

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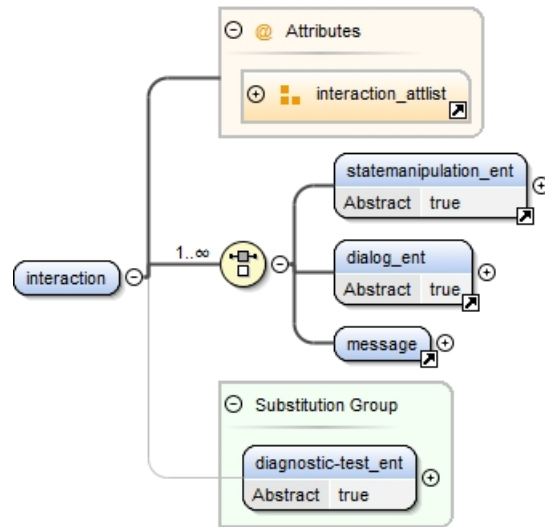


FIGURE 649. User Interaction &lt;interaction&gt;.

## 3. The DTD fragment for &lt;interaction&gt; is:

```

<!ELEMENT interaction (statemanipulation_ent | dialog_ent | message)>
<!ATTLIST interaction
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

## 4. Common attributes for &lt;interaction&gt;:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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**36.1.4.10 Reason <reason>.**

The element **<reason>** is used to explain the rationale for a change in **<change.history>**, what is to be accomplished on the **<coverpage>** of a depot preshop analysis, or what a special environment condition is in the **<specenv-setup-item>** of the **<initial\_setup>**.

1. The components for **<interaction>**:
  - a. Parsable characters or type text. – **#PCDATA**.
  - b. Format text – **<emphasis>** (see Section 36.1.3.1).
  - c. Subscript – **<subscript>** (see Section 36.1.3.4).
  - d. Superscript – **<supscript>** (see Section 36.1.3.5).
  - e. Cross reference – **<xref>** (see Section 33.2.2).
  - f. External reference – **<extref>** (see Section 33.2.1).
  - g. Enhanced Linking – **<link>** (see Section 33.2.3).
  - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
  - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
  - j. Term – **<term>** (see Section 36.1.2.4.2).
  - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
  - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
  - m. Footnote – **<ftnote>** (see Section 32.1.1).
  - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
  - o. Graphic – **<graphic>** (see Section 31.2).
  - p. Miscellaneous – **<misc>** (see 36.2.1).
  - q. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
  - r. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
  - s. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).
  - t. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
  - u. Graphic symbol – **<symbol>** (see Section 31.3.1).
  - v. Torque value – **<torque>** (see Section 36.1.4.25).
  - w. Voltage value – **<voltage>** (see Section 36.1.4.26).
  - x. Null text – **<null>** (see Section 36.1.3.2).
  - y. Changed text marker – **<change>** (see Section 36.1.3.7).
2. The DTD fragment for **<reason>** is:

```

<!ELEMENT reason (%text_ent;)*>

<!ATTLIST reason
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED

```

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delchlvl	(0-99)	"0"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

### 3. Common attributes for **<interaction>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 36.1.4.11 General or introductory information **<geninfo>**.

The element **<geninfo>** contains titled and subtitled paragraphs giving general or introductory information. The element is contained in various work package contexts; such as service upon receipt work package **<surwp>**, or contained as part of procedural instructions, such as cleaning an aircraft prior to shipping.

##### 1. The components for **<geninfo>**:

- a. Select one of the following information types:
  - i. Narrative paragraphs
    - I. Note **<note>** (optional – zero or more) (see 28.1.3).
    - II. Narrative paragraph **<para>** (required – one or more) (see 36.1.1.6).
  - ii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
- b. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).

##### 2. The DTD fragment for **<geninfo>** is graphically depicted.

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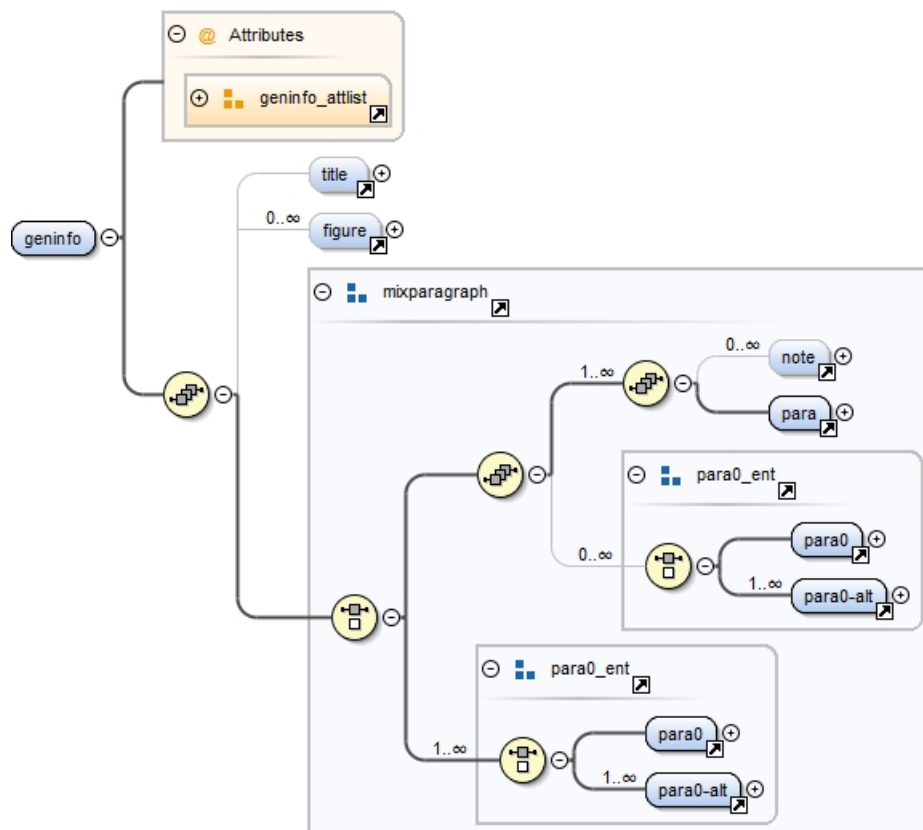


FIGURE 650. General or introductory information &lt;geninfo&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;geninfo&gt; is:

```
<!ELEMENT geninfo (title?, figure*, %mixparagraph;)>
```

```
<!ATTLIST geninfo
```

frame	(yes   no)	"no"
assocfig	IDREFS	#IMPLIED
changeref	IDREFS	#IMPLIED
comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. The element <geninfo> contains a single unique attribute of **frame** that indicates to the IETM system that the authors intends a frame break at this element.

## 5. Common attributes for &lt;geninfo&gt;:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).



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- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.4.12 Instruction plates and decals <instructplt>.

The element <instructplt> is used to specify those decals and instruction plates that are located on the equipment. This element may include one <para> (see Section 36.1.1.6) each of which may be preceded by a figure <figure> (see Section 31.1.1).

1. The components for <instructplt>:

- a. An optional group containing the following elements are required when the group is used:
  - i. A title <title> (required) (see Section 36.1.1.4).
  - ii. Paragraph <para> (required – one or more) (see Section 36.1.1.6).
- b. A figure <figure> (required) (see Section 31.1.1) that will illustrate the instruction plate.
- c. Item unique identification <iuid> (optional) (see 18.1.1). This element allows markings such as data plates, decals, or etchings.

2. The DTD fragment for <instructplt> is:

```
<!ELEMENT instructplt ((title, para)+, iuid*, figure)>
<!ATTLIST instructplt
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref (0-99) "0"
 inschlvl CDATA #IMPLIED
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

3. Common attributes for <instructplt>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).

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- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

**36.1.4.13 System condition statement <condition>.**

The element **<condition>** is used to describe either prerequisite, special environmental or equipment condition statement(s) prior to the work package procedure(s).

1. The components for **<condition>**:

The components for **<condition>** are one or more of the following:

- a. Parsable characters or type text. – **#PCDATA**.
- b. Format text – **<emphasis>** (see Section 36.1.3.1).
- c. Subscript – **<subscript>** (see Section 36.1.3.4).
- d. Superscript – **<supscript>** (see Section 36.1.3.5).
- e. Cross reference – **<xref>** (see Section 33.2.2).
- f. External reference – **<extref>** (see Section 33.2.1).
- g. Enhanced Linking – **<link>** (see Section 33.2.3).
- h. IETM help information – **<help.info>** (see Section 35.3.3.7).
- i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- j. Term – **<term>** (see Section 36.1.2.4.2).
- k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- m. Footnote – **<ftnote>** (see Section 32.1.1).
- n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- o. Graphic – **<graphic>** (see Section 31.2).

2. The DTD fragment for **<condition>** is graphically depicted.

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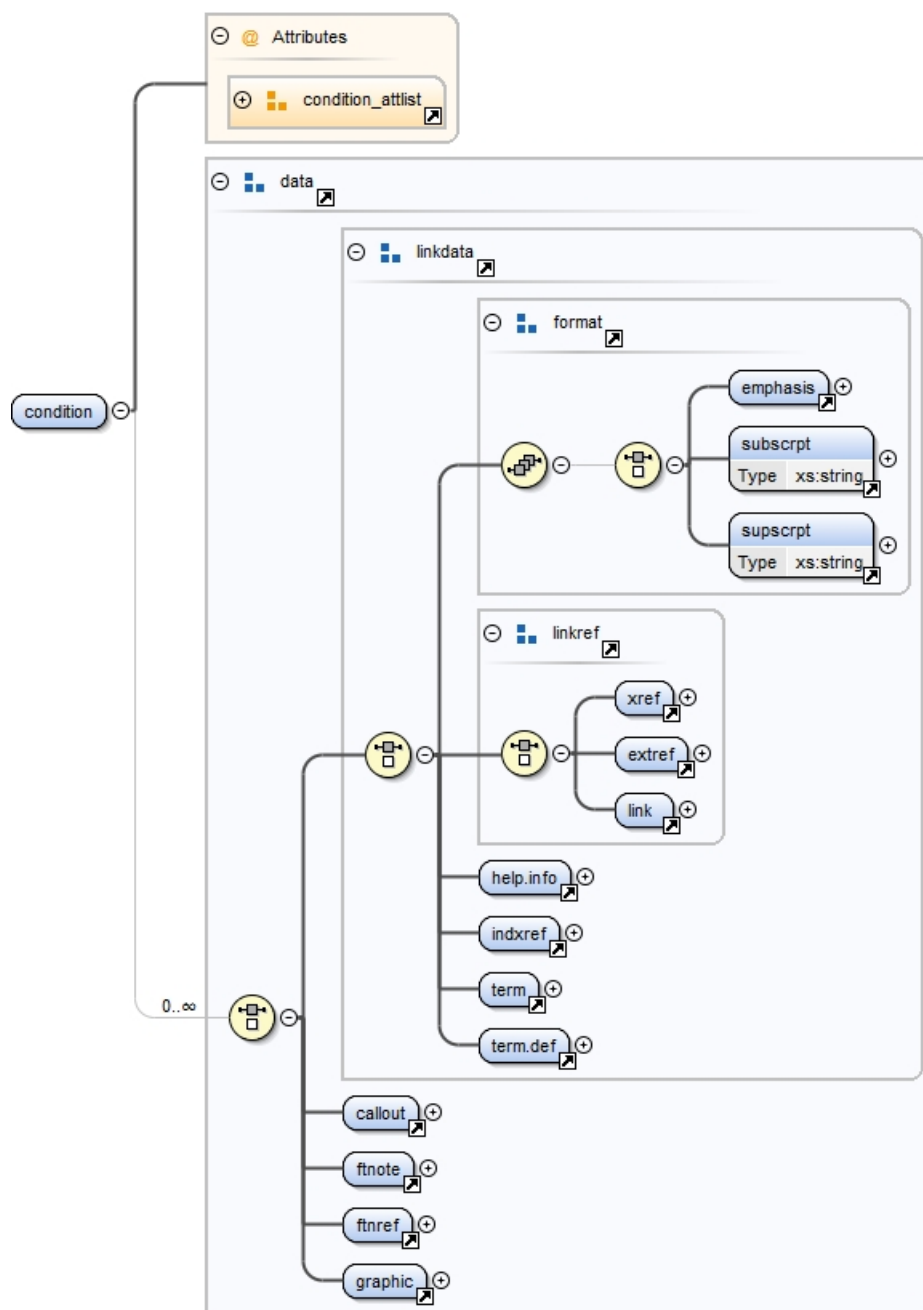


FIGURE 651. System condition statement &lt;condition&gt; DTD hierarchy.

## 3. The DTD fragment for &lt;condition&gt; is:

```
<!ELEMENT condition (%data;)*>
```

```
<!ATTLIST condition
```

```
assocfig IDREFS #IMPLIED
```

```
changeref IDREFS #IMPLIED
```

```
comment CDATA #IMPLIED
```

```
delchlvl (0-99) "0"
```

## MIL-HDBK-2361D

idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<condition>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.4.14 Introductory **<intro>**.

The element **<intro>** identifies an introductory section contained in various work packages, which often (but not always) has text that should be entered verbatim as boiler plate text from the governing specification TMs: MIL-STD-40051-1 or MIL-STD-40051-2.

1. The components for **<intro>**:
  - a. Primary Level Titled Paragraph **<para0>** (see Section 36.1.1.9).
  - b. Primary Level Conditional Titled Paragraph **<para0-alt>** (see Section 35.2.1)
2. The DTD fragment for **<intro>** is graphically depicted.

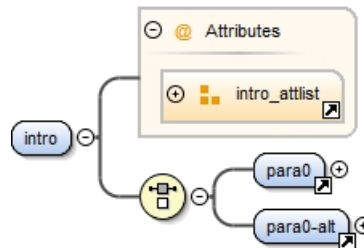


FIGURE 652. Introductory **<intro>** DTD hierarchy.

3. The DTD fragment for **<intro>** is:

```

<!ELEMENT intro (para0 | para0-alt)>
<!ATTLIST intro
 frame (yes | no) "no"
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED

```

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comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. The element **<intro>** contains a unique attribute of **frame** that indicates to the IETM system the author intends a frame break at this element.
5. Common attributes for **<intro>**:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** – Unique identifier. (optional) (see Section 36.3.7).
  - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - h. **security** – Security classification (optional) (see Section 36.3.14).
  - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.4.15 Lubricant **<lubricant>**.

The element **<lubricant>** identifies a lubricant within text, primarily within a lubrication work package.

1. The components for **<lubricant>** contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for **<lubricant>** is:

```

<!ELEMENT lubricant (#PCDATA)>
<!ATTLIST lubricant
 applicable IDREFS #IMPLIED
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"

```

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security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

### 3. Common attributes for **<lubricant>**:

- a. **applicable** – Applicability reference (optional) (see Section 16.4.1.4).
- b. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- c. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- d. **comment** – Change information (optional) (see Section 36.3.12).
- e. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- f. **id** – Unique identifier. (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

#### 36.1.4.16 Description **<desc>**.

The element **<desc>** provides the item description.

- 1. Parsable characters or type text. – #PCDATA.
- 2. Format text – **<emphasis>** (see Section 36.1.3.1).
- 3. Subscript – **<subscript>** (see Section 36.1.3.4).
- 4. Superscript – **<supscript>** (see Section 36.1.3.5).
- 5. Cross reference – **<xref>** (see Section 33.2.2).
- 6. External reference – **<extref>** (see Section 33.2.1).
- 7. Enhanced Linking – **<link>** (see Section 33.2.3).
- 8. IETM help information – **<help.info>** (see Section 35.3.3.7).
- 9. Index reference – **<indxref>** (see Section 15.5.2.2.3).
- 10. Term – **<term>** (see Section 36.1.2.4.2).
- 11. Term definition – **<term.def>** (see Section 36.1.2.4.1).
- 12. Figure callout reference – **<callout>** (see Section 33.2.4.1).
- 13. Footnote – **<ftnote>** (see Section 32.1.1).
- 14. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
- 15. Graphic – **<graphic>** (see Section 31.2).
- 16. Miscellaneous – **<misc>** (see 36.2.1).
- 17. Control/Indicator – **<ctrlind>** (see Section 36.1.4.2).
- 18. Control/Indicator value – **<ctrlind-val>** (see Section 36.1.4.3).
- 19. DoD ammunition code – **<dodac>** (see Section 36.1.4.4).

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- 20. Lubricant value – **<lubricant>** (see Section 36.1.4.15).
- 21. Graphic symbol – **<symbol>** (see Section 31.3.1).
- 22. Torque value – **<torque>** (see Section 36.1.4.25).
- 23. Voltage value – **<voltage>** (see Section 36.1.4.26).
- 24. Null text – **<null>** (see Section 36.1.3.2).
- 25. Changed text marker – **<change>** (see Section 36.1.3.7)
- 1. The DTD fragment for **<desc>** is:

```
<!ELEMENT desc (%text_ent;)*>

<!ATTLIST desc
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

- 2. Common attributes for **<desc>**:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **id** – Specifies unique identifier (target) to reference (optional) (see Section 36.3.7).
  - f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - h. **security** – Security classification (optional) (see Section 36.3.14).
  - i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.4.17 Model number **<modelno>**.

The element **<modelno>** is used to mark any official model number of a piece of equipment embedded in the text stream, work package setup information, chapter title pages, and front cover of the manual.

- 1. The element **<modelno>** contains Parsable characters or type text. – #PCDATA.
- 2. The DTD fragment for **<modelno>** is:
 

```
<!ELEMENT modelno (#PCDATA)>
```
- 3. The Element **<modelno>** has no attributes.

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**36.1.4.18 Name <name>.**

The element **<name>** is used to identify the official nomenclature of a component/assembly.

1. The components for **<name>** are:
  - a. Parsable characters or type text. – #PCDATA.
  - b. Format text – **<emphasis>** (see Section 36.1.3.1).
  - c. Subscript – **<subscript>** (see Section 36.1.3.4).
  - d. Superscript – **<supscript>** (see Section 36.1.3.5).
  - e. Cross reference – **<xref>** (see Section 33.2.2).
  - f. External reference – **<extref>** (see Section 33.2.1).
  - g. Enhanced Linking – **<link>** (see Section 33.2.3).
  - h. IETM help information – **<help.info>** (see Section 35.3.3.7).
  - i. Index reference – **<indxref>** (see Section 15.5.2.2.3).
  - j. Term – **<term>** (see Section 36.1.2.4.2).
  - k. Term definition – **<term.def>** (see Section 36.1.2.4.1).
  - l. Figure callout reference – **<callout>** (see Section 33.2.4.1).
  - m. Footnote – **<ftnote>** (see Section 32.1.1).
  - n. Footnote reference – **<ftnref>** (see Section 32.1.1.2).
  - o. Graphic – **<graphic>** (see Section 31.2).
  - p. A manual line break **<brk>** (see Section 36.1.3.3).
2. The DTD fragment for **<name>** is graphically depicted.



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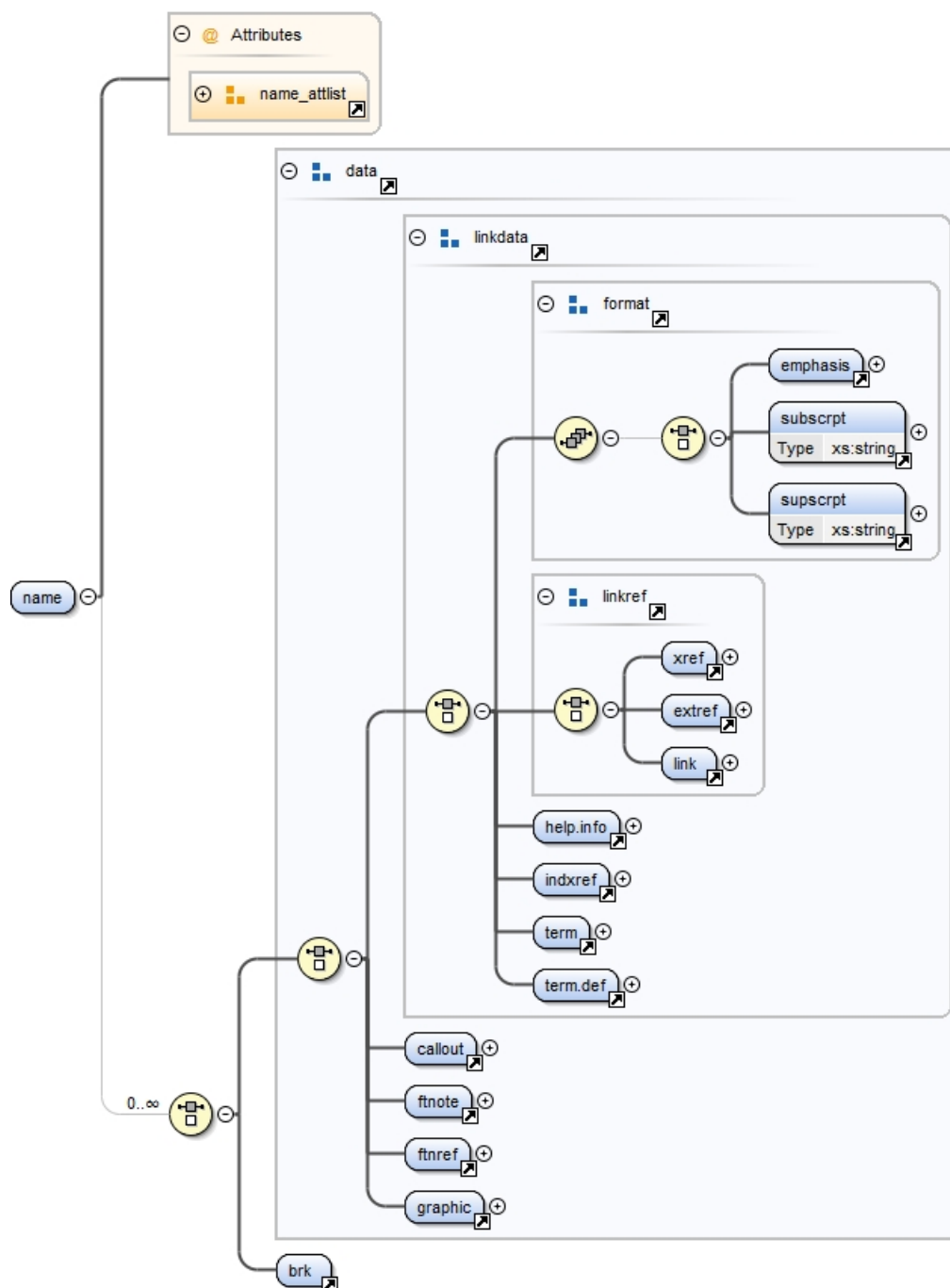


FIGURE 653. Name &lt;name&gt; DTD hierarchy.

3. The DTD fragment for **<name>** is:

```
<!ELEMENT name (%data; | brk) *>
```

```
<!ATTLIST name
```

```
assocfig IDREFS #IMPLIED
```

```
changeref IDREFS #IMPLIED
```

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comment	CDATA	#IMPLIED
delchlvl	(0-99)	"0"
idref	IDREFS	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED>

4. Common attributes for **<name>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- g. **security** – Security classification (optional) (see Section 36.3.14).
- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.4.19 National stock number **<nsn>**.

The element **<nsn>** is the National Stock Number and can be embedded within text stream to further identify the data, primarily on the front cover of the TM and title page of TMs (chapters) as applicable. The NSN **<nsn>** is also used as an identifying number in the work package setup information, and as a column in certain standard tables in supporting information such as the tool list. MIL-STD-40051-1/-2 contains restrictions on the use of the **<nsn>** in narrative text.

1. The components for **<nsn>**:

- a. Federal supply classification **<fsc>** (required) (see Section 36.1.4.20) may occur but it is not necessary. Either or both tags may occur many times with no specified sequence.
- b. National item identification number **<niin>** (required) (see Section 36.1.4.21).

2. The DTD fragment for **<nsn>** is graphically depicted.

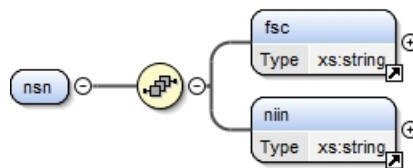


FIGURE 654. National Stock Number (NSN) **<nsn>** DTD hierarchy.

3. The DTD fragment for **<nsn>** is:

```
<!ELEMENT nsn (fsc, niin)>
```

4. The element **<nsn>** has no attributes.

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**36.1.4.20 Federal supply classification <fsc>.**

The federal supply classification element <fsc> federal supply classification contains the first four-digits code for the NSN. It is the classification of all items of supply used by the federal government. Each item of supply will be included in only one FSC. The FSC is made up of 2 two-digit numeric codes: the federal supply group and the federal supply class. Each Federal Supply Classification (FSC) code is derived from the Federal Supply Groups (FSG).

1. The element <fsc> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <fsc> is:  

```
<!ELEMENT fsc (#PCDATA)>
```
3. The element <fsc> has no attributes.

**36.1.4.21 National Item Identification Number (NIIN) <niin>.**

The element <niin> is the national item identification number (NIIN) and is the last nine-digits that identify each item of supply. The first two numbers of the NIIN represent the National Codification Bureau Code. This code identifies the country that entered the item into the supply system. The remaining seven digits are sequentially assigned and serve to individually identify each item in the Federal Catalog System (FCS). The element contains narrative text (#PCDATA) parsable character data.

1. The element <niin> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <niin> is:  

```
<!ELEMENT niin (#PCDATA)>
```
3. The element <niin> has no attributes.

**36.1.4.22 Part number <partno>.**

The element <partno> is used to identify a part number (see Section 24.4.2.1.7.1) and when allowed, can be embedded within text stream to further identify the data.

1. The element <partno> contains narrative text #PCDATA parsable character data (see Section 6.2.2.1).
2. The DTD fragment for <partno> is:  

```
<!ELEMENT partno (#PCDATA)>
<!ATTLIST partno
 assocfig IDREFS #IMPLIED
 idref IDREFS #IMPLIED>
```
3. Common attributes for <partno>:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).

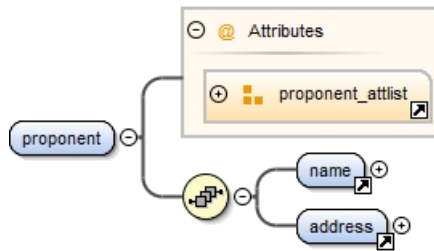
**36.1.4.23 Proponent <proponent>.**

The element <proponent> is used to enter the name <name> (see Section 36.1.4.18) and address <address> (see Section 36.1.4.1) of the organization supporting of the activity.

1. The components for <proponent>:

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- a. Name **<name>** (required) (see Section 36.1.4.18).
- b. Address **<address>** (required) (see Section 36.1.4.1).
2. The DTD fragment for **<proponent>** is graphically depicted.

FIGURE 655. Proponent **<proponent>** DTD hierarchy.

3. The DTD fragment for **<proponent>** is:

```

<!ELEMENT proponent (name, address)>
<!ATTLIST proponent
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

4. Common attributes for **<proponent>**:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **id** – Unique identifier. (optional) (see Section 36.3.7).
- f. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- g. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- h. **security** – Security classification (optional) (see Section 36.3.14).
- i. **skilltrk** – Skill level (optional) (see Section 36.3.3).

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**36.1.4.24 Scope <scope>.**

The element **<scope>** includes a brief statement of what is covered in the TM, information chapter, work package and/or procedure. This includes the type of manual, model numbers and equipment names, purpose of equipment, any special inclusions in the manual and any other pertinent information.

1. Title **<title>** (required) (see Section 36.1.1.4).
2. Figtab **<figtab>** – (optional – zero or more) (see 36.2.2).
3. Table **<table>** (see Chapter 29) and/or conditional table **<table-alt>** (see Section 35.2.1) (optional – zero or more).
4. Select one of the following information types:
  - a. Narrative paragraphs with descriptive or narrative titled text:
    - i. Note – **<note>** (optional – zero or more) (see Section 28.1.3).
    - ii. Narrative paragraph – **<para>** (required – one or more) (see Section 36.1.1.6).
    - iii. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (optional – zero or more).
  - b. Descriptive or narrative titled text **<para0>** (see Section 36.1.1.9) and/or conditional narrative titled text first level **<para0-alt>** (see Section 35.2.1) (required – one or more).
5. The DTD fragment for **<scope>** is graphically depicted:

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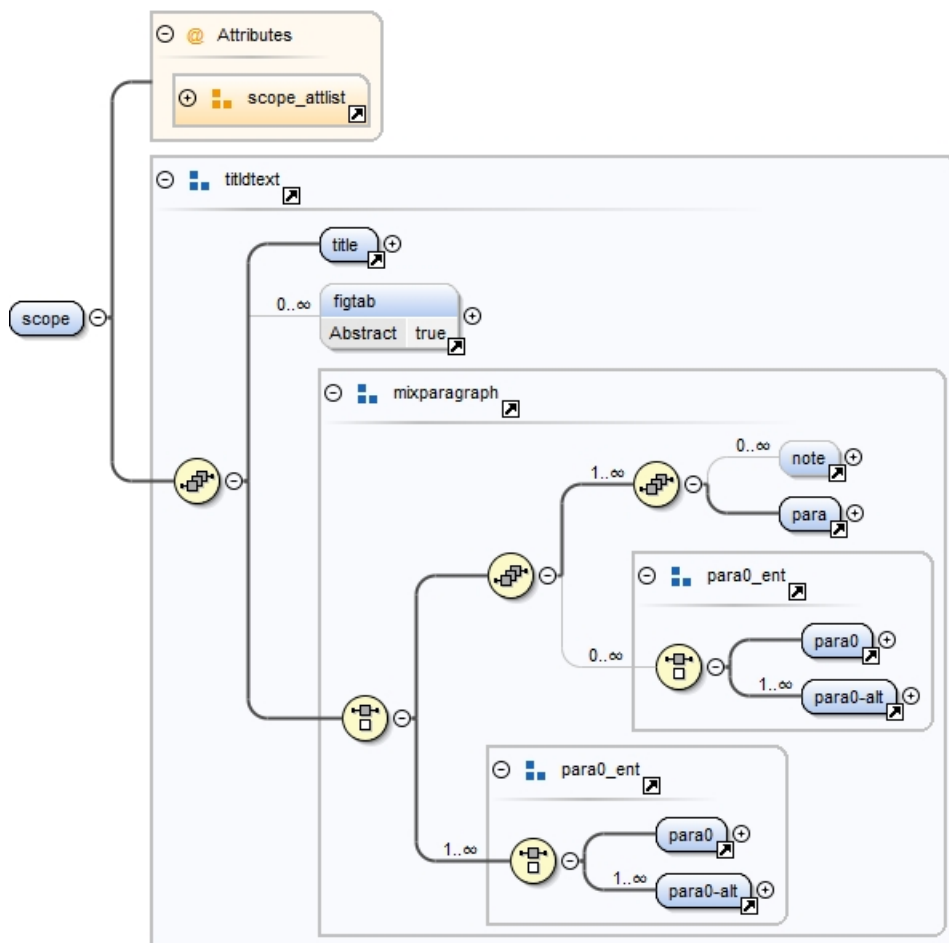


FIGURE 656. Scope &lt;scope&gt; DTD hierarchy.

6. The DTD fragment for **<scope>** is:

```

<!ELEMENT scope (%titldtext;)>
<!ATTLIST scope
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 frame (yes | no) "no"
 id ID #IMPLIED
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

7. Common attributes for **<scope>**:

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- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **frame** – In a frame-based TM or IETM, does the element start a new screen or frame of data (optional)? Select either **yes** or **no** (default value is **yes**).
- f. **id** – Unique identifier. (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.4.25 Torque value or limit <torque>.

The element <torque> is used to identify a torque value or limit embedded in the text or table entry.

1. The element <torque> contains narrative text #PCDATA parsable character data (see 6.2.2.1).
2. The DTD fragment for <torque> is:

```
<!ELEMENT torque (#PCDATA)>
<!ATTLIST torque
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 measurement CDATA #IMPLIED
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>
```

3. Common attributes for <torque>:

- a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
- b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Change information (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
- e. **measurement** – Identifies the measurement unit for the control or indicator.
- f. **id** – Unique identifier (optional) (see Section 36.3.7).
- g. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
- h. **inschlvl** – Insert change level (optional) (see Section 36.3.12).

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- i. **security** – Security classification (optional) (see Section 36.3.14).
- j. **skilltrk** – Skill level (optional) (see Section 36.3.3).

### 36.1.4.26 Voltage <voltage>.

The element <voltage> identifies a critical voltage measurement.

1. The DTD fragment for <voltage> is graphically depicted:

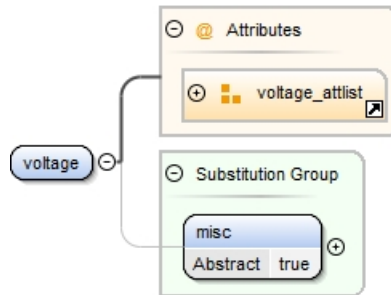


FIGURE 657. Voltage <voltage> DTD hierarchy.

2. The DTD fragment for <voltage> is:

```

<!ELEMENT voltage (#PCDATA)>
<!ATTLIST voltage
 assocfig IDREFS #IMPLIED
 changeref IDREFS #IMPLIED
 comment CDATA #IMPLIED
 delchlvl (0-99) "0"
 idref IDREFS #IMPLIED
 inschlvl (0-99) "0"
 measurement CDATA #IMPLIED
 security (uc | fouo | c | s | ts) #IMPLIED
 skilltrk CDATA #IMPLIED>

```

3. The element <voltage> has a single unique attribute of **measurement** – provides the measurement for the applicable voltages.
4. Common attributes for <voltage>:
  - a. **assocfig** – Associate one or more figures (optional) (see Section 36.3.7).
  - b. **changeref** – Change history or remarks reference (optional) (see Section 36.3.12).
  - c. **comment** – Change information (optional) (see Section 36.3.12).
  - d. **delchlvl** – Deletion change level (optional) (see Section 36.3.12).
  - e. **idref** – Reference identifier(s) (optional) (see Section 36.3.7).
  - f. **inschlvl** – Insert change level (optional) (see Section 36.3.12).
  - g. **security** – Security classification (optional) (see Section 36.3.14).



- h. **skilltrk** – Skill level (optional) (see Section 36.3.3).

## 36.2 Grouped Elements

### 36.2.1 Miscellaneous <misc>.

The element <misc> is used as a group element and a container for the following additional elements. Group elements are used to define a group of elements to be used in complex type definitions or only in situations where all the contained elements are being used.

1. The components of <misc> are:
  - a. Control and indicator – <ctrlind> (see 19.1.1.1.3).
  - b. Control and indicator value – <ctrlind-val> (see 36.1.4.3).
  - c. Dodac – <dodac> (see 36.1.4.4).
  - d. Lubricant – <lubricant> (see 36.1.4.15).
  - e. Null – <null> (see 16.6.12).
  - f. Symbol – <symbol> (see 31.3.1).
  - g. Torque – <torque> (see 36.1.4.25).
  - h. Voltage – <voltage> (see 36.1.4.26).
2. The DTD fragment for <misc> is graphically depicted.

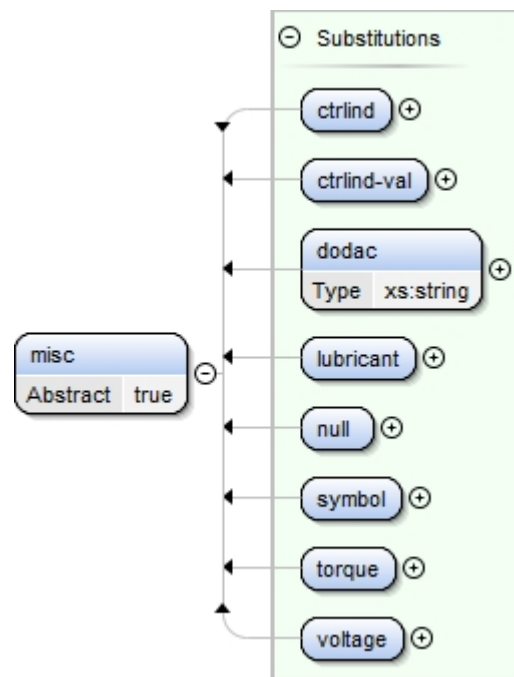


FIGURE 658. Miscellaneous <misc> DTD hierarchy

3. The DTD fragment for <misc> is:
 

```
<!ELEMENT misc (ctrlind | ctrlind-val | dodac | lubricant | null | symbol | torque | voltage)>
```

### 36.2.2 Figtab <figtab>.

The element **<figtab>** is used as a group element and a container for the following additional elements. Group elements are used to define a group of elements to be used in complex type definitions or only in situations where all the contained elements are being used.

1. The components of **<figtab>** are:
  - a. Figure – **<figure>** (see 24.4.2.1.1).
  - b. Figure-alt – **<figure-alt>** (see 35.2.1).
  - c. Lubetab – **<lubetab>** (see 36.2.3).
  - d. Table – **<table>** (see 29).
  - e. Table-alt – **<table-alt>** (see 35.2.1).
  - f. Step – **<step>** (see 17.3).
2. The DTD fragment for **<figtab>** is graphically depicted.

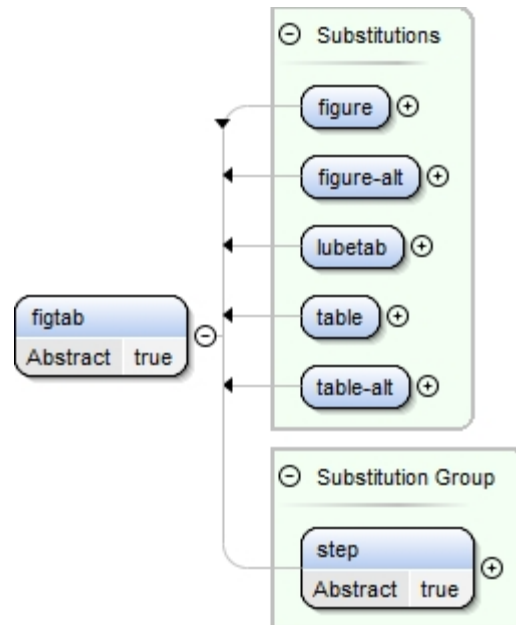


FIGURE 659. Figtab <figtab> DTD hierarchy

3. The DTD fragment for **<figtab>** is:
 

```
<!ELEMENT figtab (figure | figure-alt | lubetab | table | table-alt | step)>
```
4. Substitution group: **<step>**

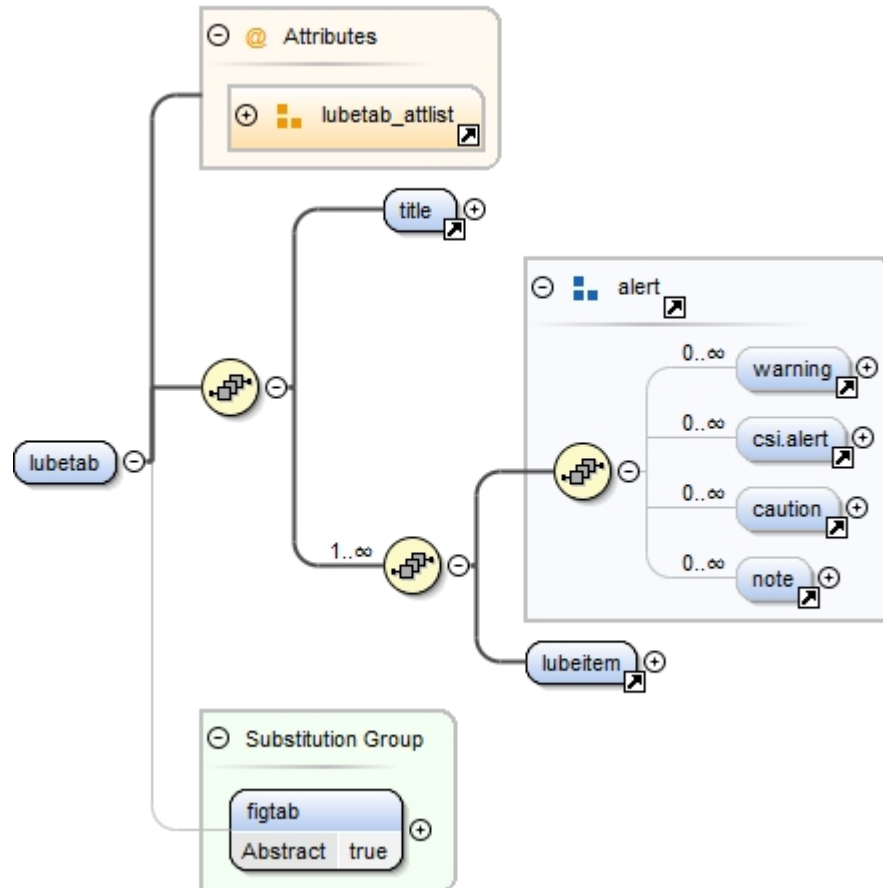
### 36.2.3 Lubetab <lubetab>.

The element **<lubetab>** is used as a group element and a container for the following additional elements. These elements are only used in situations where all the contained elements are being used.

1. The components of **<lubetab>** are:
  - a. Title – **<title>** (see 35.3.3.5).
  - b. Warning – **<warning>** (see 28.1.1).

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- c. Caution – **<caution>** (see 28.1.2).
  - d. Critical Safety Item – **<csi.alert>** (see 28.1.1.4).
  - e. Note – **<note>** (see 28.1.3).
  - f. Lubrication Item – **<lubeitem>**.
  - g. Figtab – **<figtab>** (see 36.2.2)
2. The DTD fragment for **<lubetab>** is graphically depicted.

FIGURE 660. Lubetab **<lubetab>** DTD hierarchy

3. The DTD fragment for **<lubetab>** is:

```

<!ELEMENT lubetab (title , warning* | csi.alert* | cau-
tion* | note* , lubeitem)>

<!ATTLIST howtouse
applicable IDREFS #IMPLIED
assocfig IDREFS #IMPLIED
changeref IDREFS #IMPLIED
comment CDATA #IMPLIED
delchlvl (0-99) "0"

```

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id	ID	#IMPLIED
idref	CDATA	#IMPLIED
inschlvl	(0-99)	"0"
security	(uc   fouo   c   s   ts)	#IMPLIED
skilltrk	CDATA	#IMPLIED
tocentry	(0   1   2   3)	"1">

#### 4. Substitution group **<figtab>**.

### 36.3 Common attributes.

The following attributes are common throughout MIL-STD-40051-1/-2 and entered in the DTD using parameter entity references.

#### 36.3.1

#### 36.3.2 Applicability.

Defines common elements that may require applicability identification.

1. The DTD fragment for **<applicable>** is:  
applicable IDREFS #IMPLIED>
2. **applicable** – Reference to the applicable configuration(s) specified in the WP identification information. When using an IETM that can filter information, this information is not presented when not applicable to the current configuration. Presentations that do not filter information, the information will be identified by the assigned associated abbreviation to designate applicability of the information.

#### 36.3.3 Skill level attribute.

Designation of the skill level of the user which the current element of information is aimed. A particular set of values common to all documents has not been created. Currently, the relevant values are set by contract.

1. The DTD fragment for **<skilltrk>** is:  
skilltrk CDATA #IMPLIED>

#### 36.3.4 Frame break attribute.

Identifies where possible frame breaks may occur.

1. The DTD fragment for **<frame>** is:  
frame (yes | no ) "no">

#### 36.3.5 Graphic attributes.

Attributes in this set supply common graphical properties necessary to present the image.

1. The DTD fragment is:

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boardno	ENTITY	#REQUIRED
reprowid	CDATA	#IMPLIED
reprodep	CDATA	#IMPLIED
hscale	CDATA	#IMPLIED
vscale	CDATA	#IMPLIED
scalefit	(yes   no )	#IMPLIED
alt	CDATA	#IMPLIED
unitmeasure	(mm   cm   px   in   pt   pi)	"in">

## 2. Attributes:

- a. **boardno** – Board number specifies the name of the entity containing the external graphic file.
- b. **reprowid** – Repro width specifies the repro area width.
- c. **reprodep** – Repro depth specifies the repro area depth.
- d. **hscale** – Horizontal scale specifies the horizontal scaling factor. The number 100 is unscaled graphic.
- e. **vscale** – Vertical scaling specifies the vertical scaling factor. The number 100 is unscaled graphic.
- f. **scalefit** – Scale fit specifies the characteristic that allows the graphic to be scaled as needed to fit the size of the reproduction area, when attribute value is non-zero.
- g. **hplace** – Horizontal placement specifies the horizontal placement in the available repro area. The position is flushed left, flushed right, centered or none.
- h. **alt** – Narrative to identify the graphic.
- i. **unitmeasure** – The attribute specifies the unit of measure for the value entered in **reprowid** or **reprodep** attributes. Declared values for this attribute include **mm** (millimeter), **cm** (centimeter), **px** (pixel), **in** (inch), **pt** (point), or **pi** (pica); default value is **in**.

## 36.3.6 Nuclear hardness and electrostatic discharge markings.

These attributes are for general use for any XML element. Marking attributes which specify a task or steps in a procedure relate to establishing nuclear hardness or could damage electrostatic sensitive parts.

1. The DTD fragment for **<hcp>** is:

```
hcp (yes | no) "no"
esd (yes | no) "no">
```

## 2. Description:

- a. **hcp** – Marks the task or a step in a procedure relating or contributing to establishing nuclear hardness.
- b. **esd** – Marks a task or a step in a procedure relating to handling or maintenance actions which could damage electrostatic sensitive parts.

## 36.3.7 References with ID attribute set.

Attributes in this set supply identifiers for the current element and references to other element's identifiers.

## 1. DTD fragment:

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id	ID	#IMPLIED
idref	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED>

## 2. Common attributes:

- a. **id** – An identifier of the element which is assigned at origination. It remains unchanged even if the document is revised or updated, even though the automatically assigned enumeration or manually-assigned "labels" change, in some cases multiple times. The value of the "ID" is used when making references to the element from other portions of the document. If no ID is given, none will be maintained and the element cannot be cross-referenced by means of an IDREF.
- b. **idref** – A reference to an identifier(s). The use of this attribute is specified in the composition system. It has no implied or default use.
- c. **assocfig** – A reference to a figure(s) associated with the current element.

## 36.3.8 Referencing attributes without ID's.

Attributes in this set supply identifiers for the current element and references to other element's identifiers.

## 1. DTD fragment:

idref	IDREFS	#IMPLIED
assocfig	IDREFS	#IMPLIED>

## 2. Definitions:

- a. **idref** – A reference to an identifier(s). The use of this attribute is specified in the composition system. It has no implied or default use.
- b. **assocfig** – A reference to a figure(s) associated with the current element.

## 36.3.9 Link reference type attribute.

Define the link element information type being targeted. The link types are Technical Manual (tm), Supply Catalog (sc), Work Package (wp), Test Procedure (test), Task (task), Step Level 1 (step1), Paragraph (paragraph), Figure (figure), Table (table), Part Item (part), External Document (document), Initial Setup Item (setup.item), IETM or Help Frame (frame.help), Application Program (program), Multimedia (multimedia), Hotspot (hotspot), Page Number (pageno) and Figtab (figtab).

## 1. DTD fragment:

```
tm | sc | wp | test | task | step1 | paragraph | figure | table | part | document |
setup.item | frame.help | program | multimedia | hotspot | figtab
```

## 36.3.10 Information module resource values.

These attributes specify format and content characteristics that apply to the information module as a whole. The attributes are not inherited from one TM to another; however, the attributes at the TM level override the same attributes at the TM level.

## 1. DTD fragment:

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chap-toc	(yes   no)	"yes"
revno	CDATA	#REQUIRED
frame	(yes   no)	"yes"
tocentry	(0   1   2)	"1">

## 2. Definitions:

- a. **chap-toc** – Specifies whether the chapter includes a chapter table of contents on the chapter title page; the stylesheet for the Information Module specifies what contents are extracted to this TOC. A yes value indicates that a TOC should be extracted and printed.
- b. **revno** – Revision number is the IM revision number.
- c. **frame** – Frame indicates to the IETM system the author's intended frame break.
- d. **tocentry** – Table of Contents Entry defines the indenture level in the TOC. When the level is zero, no entry in the TOC is used.

**36.3.11 Maintenance level attribute.**

Maintenance level attribute values is used for the separation of maintenance activities or functions in the U.S. Army according to the required skills.

## 1. DTD fragment:

```
crew | maintainer | below_depot | asb | amc | tasmg | depot
```

## 2. Description:

- a. "DEPOT" – Applies to depot maintenance level.
- b. "CREW" – Applies to crew/operator maintenance.
- c. "MAINTAINER" – Applies to non crew field maintenance.
- d. "BELOW DEPOT SUSTAINMENT" – Applies to sustainment maintenance performed below the depot.
- e. "AMCL" – Applies to aircraft maintenance company maintenance.
- f. "ASB" – Applies to aircraft service battalion maintenance.
- g. "TASMG" – Applies to aviation theater support group maintenance.

**36.3.12 Change level attributes.**

Set identifies change history, reason for change, and any additional comment for major level element.

## 1. DTD fragment:

inschlvl	CDATA	#IMPLIED
delchlvl	CDATA	#IMPLIED
comment	CDATA	#IMPLIED
chnгно	CDATA	#REQUIRED
changeref	IDREFS	#IMPLIED>

## 2. Attributes:

- a. **chnгно** – Change number is the number level of the information module.

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- b. **changeref** – Change Reference is used for the history or remarks reference (optional) (see Section 36.3.12).
- c. **comment** – Comment is used for additional information or comments (optional) (see Section 36.3.12).
- d. **delchlvl** – Deletion change level is used to delete the change level (optional) (see Section 36.3.12).
- e. **inschlvl** – Insert change level is used to insert the change level (optional) (see Section 36.3.12).

**36.3.13 Quality assurance attribute.**

Depot and aviation maintenance procedures that have a major quality assurance effect should be identified by the attribute **QA** at the step level.

1. The DTD fragment for **<qa>** is:  
`qa (yes | no ) "no">`
2. Description:
  - a. **qa** – Specifies whether or not the step in the procedure has a major quality assurance effect; a non-zero value indicates that it does.

**36.3.14 Security.**

These attributes are for general use for any XML element. The attribute defines security classification for the element and is inherited by any children to the element.

1. The DTD fragment for **<security>** is:  
`security (uc | fouo | c | s | ts) #IMPLIED>`
2. Definitions:
  - a. **security** – Specifies the security classification of the element. If no value is entered the implied value is unclassified.
    - i. “UC” – Indicates the element is unclassified.
    - ii. “FOUO” – Indicates the element is for official use only
    - iii. “C” – Indicates the element is confidential.
    - iv. “S” – Indicates the element is secret.
    - v. “TS” – Indicates the element is top secret.

**36.3.15 Standard information attributes.**

Defines common attributes associated to a standard table or information.

1. DTD fragment:
 

<code>applicable</code>	<code>IDREFS</code>	<code>#IMPLIED</code>
<code>tocentry</code>	<code>(0   1   2   3   4   5)</code>	<code>"1"&gt;</code>
2. Description:
  - a. **applicable** – Reference to the applicable configuration(s) specified in the WP identification information. When using an IETM that can filter information, this information is not presented when not applicable to the current configuration. Presentations that do not filter information, the information will be identified by the assigned associated abbreviation to designate applicability of the information.



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- b. **tocentry** – Include table information in the table of contents. Zero to five reference levels. Default is at one.

### 36.3.16 Task attributes.

Defines common attributes associated to a standard table or information.

#### 1. DTD fragment:

frame	(yes   no)	"yes"
tocentry	(0   3   4   5)	"0"
date-time-stamp	(date   time   date-time)	#IMPLIED>

#### 2. Description:

- a. **frame** – Set a frame break.
- b. **tocentry** – Include table information in the table of contents. Zero to five reference levels. Default is at one.
- c. **date-time-stamp** – Indicates a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp.

### 36.3.17 Tracking attributes.

Identifies tracking of document/work package creation, modifications, and versions occurring in more than one document. These attributes may be used with any element type that references these attributes in the document type declaration.

#### 1. DTD fragment:

fgc	CDATA	#IMPLIED
lsa-id	CDATA	#IMPLIED
wpseq	CDATA	#IMPLIED
insertwtp	CDATA	#IMPLIED
deletewtp	(yes   no)	"no">

#### 2. Description for:

- a. **fgc** – Specifies the functional group code that applies to the subject of the element (see Section 16.3.2).
- b. **lsa-id** – Specifies the identification of the subject of the element in logistic support analysis applying to the equipment covered in the TM.
- c. **insertwtp** – Specifies the new work package since last TM revision. The work package is added after the last inserted work package or between two existing work packages in a revision. After a revision is completed, the attribute is reset to '0' and is re-sequenced in the correct order.
- d. **deletewtp** – Specifies the work package has been deleted. The attribute is used for a place holder for the composition to determine the work package sequence number. The default value is '0.' The IDREF to reference is the deleted work package. The reference is used for a placeholder for output sequence number, until a revision is performed. After a revision is completed the work package is deleted from the assembly.

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**36.3.18 Work package body attributes.**

Any of the attributes in the associated attribute set may be used with this element/attribute.

**1. DTD fragment:**

<code>wpno</code>	ID	#REQUIRED
<code>crewmember</code>	CDATA	#IMPLIED
<code>tocentry</code>	(2   3   4   5)	"2"
<code>date-time-stamp</code>	(date   time   date-time)	#IMPLIED
<code>frame</code>	(yes   no)	"yes">

**2. Description for:**

- a. `wpno`** – A unique work package number assigned by the contracting activity at the time the work package is first created. This number remains the same when the work packages are reused.
- b. `frame`** – Set a frame break.
- c. `tocentry`** – Include table information in the table of contents.
- d. `date-time-stamp`** – Indicate a date-time stamp for the task when completed. The author indicates date only, time only, date and time, or blank for no time stamp.
- e. `crewmember`** – The crew member specifically assigned to the work package.

**36.3.19 Work package level.**

The attributes are for the separation of maintenance activities or functions in the U.S. Army according to the required skills.

**1. DTD fragment:**

<code>level</code>	<code>crew   maintainer   below_depot   asb   amc   tasmg   depot</code>	#REQUIRED>
--------------------	--------------------------------------------------------------------------	------------

**2. Definitions for:**

- a. "DEPOT"** – Applies to depot maintenance level.
- b. "CREW"** – Applies to crew/operator maintenance.
- c. "MAINTAINER"** – Applies to non crew field maintenance.
- d. "BELOW DEPOT SUSTAINMENT"** – Applies to sustainment maintenance performed below the depot.
- e. "AMCL"** – Applies to aircraft maintenance company maintenance.
- f. "ASB"** – Applies to aircraft service battalion maintenance.
- g. "TASMG"** – Applies to aviation theater support group maintenance.

**36.3.20 Joint publications for work package resource value attributes.**

These attributes are used to specify if the work package is for one or more services in a joint publications. The entity consists of the following optional attributes:

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## 1. DTD fragment:

army	(yes   no)	"no"
airforce	(yes   no)	"no"
navy	(yes   no)	"no"
marines	(yes   no)	"no">

## 2. Descriptions:

- a. **army** – United States Army
- b. **airforce** – United States Airforce
- c. **navy** – United States Navy
- d. **marines** – United States Marines

**36.3.21 Yes or no attribute values.**

Yes or no attribute values, denotes the implied value of the attribute to be either yes or no by logical necessity.

1. The DTD fragment for **<yesorno>** is:

yesorno (yes | no) #IMPLIED>

## 2. Definitions:

- a. **Yes** – value denotes the value of the attribute.
- b. **No** – value denotes the value of the attribute.

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## 37 BOILERPLATES

Boilerplates are a type of replacement text known as general entities in MIL-STD-40051-1/2 (see Section 37.2). Boilerplates can reduce authors errors and text entry time. MIL-STD-40051 uses general entities as boilerplates to insert standard statements as the exact working required in numerous TMs.

### 37.1 Boilerplate entities.

Boilerplates that are available in MIL-STD-40051 can be a single entities or an entity containing nested entities providing user specific information. Boilerplate text is a simple replacement for parsed text contained in the entity. Boilerplates will parse when inserted correctly with the markup of the TM.

### 37.2 Single boilerplate entity.

A general entity is used for inserting a standard statement. The boilerplate text for this statement is parsed text found between the single or double quotes ("or") and the ending quote. The distribution statement A **<a.statement>** shown below is a single general entity.

1. The boilerplate general entity is comprised of the following components:
  - a. Starts with a Markup Declaration Open (MDO) "<."
  - b. Followed by the XML reserved word "ENTITY."
  - c. Followed the predefined in MIL-STD-40051 entity name (see Section 37.6) with at least one space before and after the entity name.
  - d. Followed by the boilerplate text.
    - i. The boilerplate text or the replacement text always begins with a double quote (") or single quote (') and ends with the same quote marking. As note, the quote marking cannot be used within the boilerplate text (except as character entities) (see example in paragraph Section 37.3). When starting quote marks are used within boilerplate text, the general entity will be invalid XML, (will not parse), and the XML application will not recognize the general entity containing the boilerplate text.
    - ii. The boilerplate can contain just narrative text or the text can be surrounded by the appropriate elements.
2. Ends with the Markup Declaration Close (MDC) ">"
3. A single general entity declaration is shown in the example below for the distribution statement A.

```
<!ENTITY notices.dist.a.statement "
<a.statement>
<title> DISTRIBUTION STATEMENT A.
</title>
<text>Approved for public release; distribution is unlimited.
</text>
</a.statement>">
```

4. When the general entity is referenced in a document, the general entity name is preceded by the ampersand sign (&) and followed by a semi-colon (;) as shown in the example below:
 

**&notices.dist.a.statement;**

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### 37.3 Nested entities.

General entities may be nested. In MIL-STD-2361, this concept is used to allow for boilerplate customization for a specific document and/or local revision. In the example below, the nested entities *&short.end.item.name;* and *&ginfowp.wrntyref-time;* reflect the short item name and the warranty period as mileage, or time frame in the entity warranty information reference statement *&ginfowp.wrntyref;*. Nested entities may also contain text surrounded by tags. Note that the boilerplate text starts with a single quote (') and ends with a ('). However, within the boilerplate text there are tags such as paragraph *<para>* that contain attributes surrounded with double quote ("). This allows the general entity to be parsed.

1. Shown below is an example of the nested entity boilerplate warranty information *&ginfowp.wrntyref;* that has boilerplate text surrounded with tags:

```
<!ENTITY short.end.item.name "M198 Howitzer"> <!ENTITY ginfowp.wrntyref-time
"two years"> <!ENTITY ginfowp.wrntyref '
<title> WARRANTY INFORMATION
</title>
<para>The &short.end.item.name; is warranted for &ginfowp.wrntyref-time;. The warranty
starts on the date found in block 23 of
<extref docno="DA Form 2408-9" posttext=" Equipment Control Record"/>. Report all defects
to your supervisor, who will take appropriate action.
</para>'>
```

2. Shown below is the formatted output for the boilerplate warranty information *&ginfowp.wrntyref;*. The underline part shown below is the nested entities.

**WARRANTY INFORMATION** The M198 Howitzer is warranted for two years. The warranty starts on the date found in block 23 of DA Form 2408–9, Equipment Control Record. Report all defects to your supervisor, who will take appropriate action.

### 37.4 Inserting a general entity.

A boilerplate may be used for inserting a standard statement such as the distribution statement *<a.statement>* (see example in Section 37.2) in a technical manual. It can be used to insert the table header for a standard information table as defined in MIL-STD-40051-1/-2. Some work packages require standard information shown as tables. In the Supporting Information chapter, the Additional Authorization List work package *<aalwp>* consists mainly of standard paragraphs. Boilerplates are used, to insert the text to provide the standard text for the work package. The *<aalwp>* also contains the Additional Authorization List (AAL) *<aal>* standard information, which can be displayed as a table. Below are tag examples of the Additional Authorization List work package *<aalwp>* using boilerplates and without using boilerplates:

1. Example of the XML markup for an Additional Authorization List (AAL) work package using the boilerplates *&aalwp.intro;* (within *&aalwp.intro;* the revisable general entity *&short.end.item.name;* needs to be changed) for AAL introduction for *<aalwp>*.

```
<aalwp airforce="no" army="no" deletewp="no" frame="yes" marines="no" navy="no" tocentry="2"
wpno="GXXXXX-X-XXXX-XXX">
<wpidinfo>
<maintlvl level="avum-avim"/>
<title>Additional Authorization List (AAL) work package
</title>
</wpidinfo>&aalwp.intro;
<aal>
<title>Additional authorization title (AAL)
</title>
<aal-entry>
<nsn>
```

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<fsc>6665  
</fsc>  
<niin>01-105-5623  
</niin>  
</nsn>  
<dcjno>  
<name>ALARM  
</name>  
<desc> CHEMICAL AGENT  
</desc>  
<partno> 8762101  
</partno>  
<cageno> 19200  
</cageno>  
</dcjno>  
<uoc>  
</uoc>  
<ui>EA  
</ui>  
<qty>1  
</qty>  
</aal-entry>  
<aal-entry>  
<nsn>  
<fsc>1240  
</fsc>  
<niin>01-207-5787  
</niin>  
</nsn>  
<dcjno>  
<name>BINOCULARS  
</name>  
<desc>MOD, CON M22  
</desc>  
<partno>9370122  
</partno>  
<cageno>19200  
</cageno>  
<uoc>  
</uoc>  
<ui>EA  
</ui>  
<qty>1  
</qty>  
</aal-entry>  
<aal-entry>  
<nsn>  
<fsc>2590  
</fsc>  
<niin>01-148-7961  
</niin>  
</nsn>  
<dcjno>  
<name>CABLE KIT

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```

</name>
<desc>SPECIAL PURPOSE
</desc>
<partno>223592-200
</partno>
<cageno>19200
</cageno>
<dcjno>
<uoc>
</uoc>
<ui>EA
</ui>
<qty>2
</qty>
</aal-entry>
</aal>
</aalwp>

```

2. Example of the XML markup for an Additional Authorization List (AAL) work package without the boilerplate *&aalwp.intro*;

```

<aalwp airforce="no" army="no" deletewp="no" navy="no" tocentry="2" wpno="GXXXXX-X-XXXX-XXX">
 <wpidinfo>
 <maintlvl level="avum-avim"/>
 <title>Additional Authorization List (AAL) work package
 </title>
 </wpidinfo>
 <intro frame="no">
 <para0>
 <title>INTRODUCTION
 </title>
 <subpara1>
 <title>Scope
 </title>
 <para>This work package lists additional items you are authorized for the support of the NBCRS FOXM93A1.
 </para>
 </subpara1>
 <subpara1>
 <title>General
 </title>
 <para>This list identifies items that do not have to accompany the NBCRS FOXM93A1. and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.
 </para>
 </subpara1>
 <subpara1>
 <title>Explanation of Columns in the AAL
 </title>
 <para>Column (1) National Stock Number (NSN). Identifies the stock number of the item to be used for requisitioning purposes.
 </para>
 <para>Column (2) Description, Part Number/ (CAGEC). Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The

```



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last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

</para>

<para>Column (3) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

</para>

<para>Column (4) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in Column (1).

</para>

<para>Column (5) Qty Recm. Indicates the quantity recommended.

</para>

</subpara1>

</para0>

</intro>

<aal>

<title>Additional authorization title (AAL)

</title>

<aal-entry>

<nsn>

<fsc>6665

</fsc>

<niin>01-105-5623

</niin>

</nsn>

<dcjno>

<name>ALARM

</name>

<desc>CHEMICAL AGENT

</desc>

<partno>8762101

</partno>

<cageno>19200

</cageno>

</dcjno>

<uoc>

</uoc>

<ui>EA

</ui>

<qty>1

</qty>

</aal-entry>

<aal-entry>

<nsn>

<fsc>1240

</fsc>

<niin>01-207-5787

</niin>

</nsn>

<dcjno>

<name>BINOCULARS

</name>

<desc>MOD, CON M22

</desc>

<partno>9370122

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```

</partno>
<cageno>19200
</cageno>
</dcpno>
<uoc>
</uoc>
<ui>EA
</ui>
<qty>1
</qty>
</aal-entry>
<aal-entry>
<nsn>
<fsc>2590
</fsc>
<niin>01-148-7961
</niin>
</nsn>
</dcpno>
<name>CABLE KIT
</name>
<desc>SPECIAL PURPOSE
</desc>
<partno>223592-200
</partno>
<cageno>19200
</cageno>
</dcpno>
<uoc>
</uoc>
<ui>EA
</ui>
<qty>2
</qty>
</aal-entry>
</aal>
</aalwp>

```

### 37.5 MIL-STD-40051 boilerplates.

MIL-STD-40051 DTD includes nine (9) boilerplate external entity files. The general entities contain the required standard verbatim text contained in MIL-STD-40051-1/-2 to develop specific work packages in a TM. MIL-STD-2361 DTD provides the user with the predefined boilerplates for developing work packages from the nine (9) boilerplate entities with the content. The Selection (see Section 37.5.1.2.1) and the Editable (see Section 37.5.1.2.2) entities are the only two (2) revisable entity files of the nine (9) entity files (see Section 37.3 about nested entities). The remaining seven (7) boilerplate entities contain boilerplate text that uses entities from the two revisable entity files to provide TM specific information (short end item name). Some user specific information is known during the TM initial start and some is edited later during the TM development. User specific information is usually a nested entity (see example in Section 37.3) within the boilerplate statement, which is modified in the Editable entity file. There are two methods (automated and manual) available to edit the revisable entity files, which the XML application requires to make the boilerplates correlate with the TM. An automated application (see example in Section 37.5.1) is available on the LOGSA that prompts the writer for the required user specific information. The manual method, (see example in Section 37.5.1.2), is editing and updating the two revisable entity files with the

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inputted information. Details about each revisable entity is provided as comments in the entity file. The nine entity files are identified below:

1. Revisable entity files.
  - a. Selection. *<!ENTITY % selection\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 Selection Boilerplate REV 3.16 20070115//EN" "boilerplate/selectboil.ent">*.
  - b. Editable. *<!ENTITY % editable\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 Editable Boilerplate REV 3.16 20070115//EN" "boilerplate/editboil.ent">*.
2. Non-revisable entity files:
  - a. Production Front Matter Non-Editable Boilerplates. *<!ENTITY % prod\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 Production Boilerplate REV 3.16 20070115//EN" "boilerplate/prodboil.ent">*.
  - b. General Information Chapter Non-Editable Boilerplates. *<!ENTITY % gim\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 GIM Boilerplate REV 3.16 20070115//EN" "boilerplate/gimboil.ent">*.
  - c. Operator's Procedures Information Chapter Non-Editable Boilerplates. *<!ENTITY % opim\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 OPIM Boilerplate REV 3.16 20070115//EN" "boilerplate/opimboil.ent">*.
  - d. Maintenance Information Chapter Non-Editable Boilerplates. *<!ENTITY % tim\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 TIM Boilerplate REV 3.16 20070115//EN" "boilerplate/timboil.ent">*.
  - e. Maintenance Information Chapter Non-Editable Boilerplates. *<!ENTITY % mim\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 MIM Boilerplate REV 3.16 20070115//EN" "boilerplate/mimboil.ent">*.
  - f. Parts Information Chapter Non-Editable Boilerplates. *<!ENTITY % pim\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 PIM Boilerplate REV 3.16 20070115//EN" "boilerplate/pimboil.ent">*.
  - g. Supporting Information Chapter Non-Editable Boilerplates. *<!ENTITY % sim\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 SIM Boilerplate REV 3.16 20070115//EN" "boilerplate/simboil.ent">*.

### 37.5.1 Revisable boilerplate entities.

The automated application and the manual editing methods are used to revise the boilerplate entities. The two entity files (with entity declaration) are listed below:

1. The Selection entity file is located in the subdirectory "boilerplate" and entity file "selectboil.ent." The XML entity declaration is *<!ENTITY % selection\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 Selection Boilerplate REV 3.16 20070115//EN" "boilerplate/selectboil.ent">*.
2. The Editable entity file is located in the subdirectory "boilerplate" and entity file "editboil.ent." The XML entity declaration is *<!ENTITY % editable\_boilerplate PUBLIC "-//USA-DOD//ENTITIES MIL-STD-2361 Editable Boilerplate REV 3.16 20070115//EN" "boilerplate/editboil.ent">*.

#### 37.5.1.1 Automated boilerplate application.

The automated application, (downloadable from the LOGSA), prompts the writer for the required information to select a TM and edits the data in the Selection and Editable entity files for the equipment specific information needed for the TM. Refer to the TM Boilerplate Application Software Users Guide for assistance on how to use the

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automated boilerplate application. The TM Boilerplate Application Software Users Guide can be downloaded from the LOGSA.

### 37.5.1.2 Manually editing boilerplates.

The procedure to edit the revisable boilerplate entities requires the Selection (see Section 37.5.1.2.1) and (see Section 37.5.1.2.2). Editable entity files to be updated in a word processor that can handle plain text (non-formatted file), which most can achieve to provide the specific TM (see Section 37.5.1.2.1). After selecting the TM type to develop, the author edits the data in the Editable entity file for equipment specific information needed for the TM (see Section 37.5.1.2.2).

#### 37.5.1.2.1 Edit selection boilerplate text.

Selection boilerplate text provides the means to either, turned on (INCLUDE), or off (IGNORE), standard text in the non-revisable entity files, which depends on the TM being developed. Each entity group provides in the documentation comment, selectable choices and instructions on what to change.

1. An example is provided below of selecting the correct entities in the Selection Boilerplate file to develop a page-based TM. The TM is an unclassified, multiple service TM developed for the Army and Marines. The TM includes a RPSTL containing the National Stock Number (NSN), Part Number (PN) and Reference designator indexes. The TM includes a five-level MAC and uses Method A for displaying COEI and BII Standard Information. The entities that are used to develop the TM need to contain the value "INCLUDE."
- a. First select if the TM is either a page-based or frame-based TM. If a page-base is required, the *<%page-base;* should display "INCLUDE" and the *%frame-base;* should display "IGNORE."

```
<!-- DOCUMENTATION

** -TITLE-
** Page-Base Or Frame-Base TM Selection
** -INSTRUCTION-
** -IF- Frame-base or IETM
** -THEN-
** -SET- "frame-base" to "INCLUDE" -AND-
** -SET- "page-base" to "IGNORE"
** -IF- Page-base TM
** -SET- "frame-base" to "IGNORE" -AND-
** -SET- "page-base" to "INCLUDE"

-->

<!ENTITY % frame-base "IGNORE">
<!ENTITY % page-base "INCLUDE">
```

2. Select the services to be included in the TM. If a multiple service TM is required for the Army and Marines, set *%multi-tm;* to display "INCLUDE," set *%army-tm;* to display "INCLUDE," set *%usmc-tm;* to display "INCLUDE" and set the rest of the entities in the multiple service TM part to display "IGNORE." Setting the

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correct services to be included in the TM provides the user the correct verbatim text to be inserted in the TM for Army and Marine use.

```
<!-- DOCUMENTATION

** -TITLE-
** Services Included In TM
**
** -USED FOR-
** + Reporting Errors And Recommending Improvements Statement
** + RPSTL Introduction
**
** -INSTRUCTION-
** -IF- Multiple Service TM
** -THEN-
** -SET- multi-tm to "INCLUDE"
** -SET- single-tm to "IGNORE"
** -ELSE-
** -SET- multi-tm to "IGNORE"
** -SET- single-tm to "INCLUDE"
** TM includes:
** 1. Army
** -THEN-
** -SET- army-tm to "INCLUDE"
** -ELSE-
** -SET- army-tm to "IGNORE"
** 2. Navy
** -THEN-
** -SET- usn-tm to "INCLUDE"
** -ELSE-
** -SET- usn-tm to "IGNORE"
** 3. Air Force
** -THEN-
** -SET- usaf-tm to "INCLUDE"
** -ELSE-
** -SET- usaf-tm to "IGNORE"
** 4. Marines
** -THEN-
** -SET- usmc-tm to "INCLUDE" -AND-
** -SET- non-usmc-tm to "IGNORE"
```

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```

** -ELSE-
** -SET- usmc-tm to "IGNORE" -AND-
** -SET- non-usmc-tm to "INCLUDE"
** -EXAMPLE-
** When Army and the Navy is included in the TM
** -SET- "multi-tm", "army-tm", "usn-tm", and "non-usmc-tm" to "IN-
** CLUDE" -AND-
** -SET- "single-tm", "usaf-tm" and "usmc-tm" to "IGNORE."
** -SELECTABLE ENTITY LIST-
** multi-tm
** single-tm
** army-tm
** usn-tm
** usaf-tm
** usmc-tm
** non-usmc-tm

->
<!ENTITY % multi-tm "INCLUDE">
<!ENTITY % single-tm "IGNORE">
<!ENTITY % army-tm "INCLUDE">
<!ENTITY % usn-tm "IGNORE">
<!ENTITY % usaf-tm "IGNORE">
<!ENTITY % usmc-tm "INCLUDE">
<!ENTITY % non-usmc-tm "IGNORE">

```

3. Select if the TM is to be unclassified or classified. If the TM is to be unclassified then set *%class-tm*; to "IGNORE" then set *%unclass-tm*; to "INCLUDE."

```

<!-- DOCUMENTATION

** -TITLE-
** Classified TM/IETM
** -USED FOR-
** Reporting Errors And Recommending Improvements Statement
** -INSTRUCTION-
** -IF- Classified
** -THEN-
** -SET- "unclass-tm" to "IGNORE"
** -SET- "class-tm" to "INCLUDE"

```

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```

** -ELSE- -SET- "class-tm" to "IGNORE"
** -SET- "unclass-tm" to "INCLUDE"
** -SET- "class-tm" to "IGNORE"
**
** -SELECTABLE ENTITY LIST-
** class-tm
** unclass-tm

->
<!ENTITY % class-tm "IGNORE">
<!ENTITY % unclass-tm "INCLUDE">

```

4. Select if the TM is either a Preventive Maintenance Services (PMS) or a Phased Maintenance Inspection (PMI) or it is not one of these types. If the TM is not either a PMS or PMI TM, set *%pms\_or\_pmi-tm*; to "IGNORE."

```

<!-- DOCUMENTATION

** -TITLE-
** Preventive Maintenance Services (PMS) or
** Phased Maintenance Inspection (PMI) TM
**
** -INSTRUCTION-
** -IF- PMS or PMI TM
** -THEN- -SET- "pms_or_pmi-tm" to "INCLUDE"
** -ELSE- -SET- "pms_or_pmi-tm" to "IGNORE"
**
** -SELECTABLE ENTITY LIST-
** ammo-tm

->

<!ENTITY % pms_or_pmi-tm "IGNORE">

```

5. Select if the TM is an Army Conventional And Chemical Ammunition TM. If the TM is not, set *%ammo-tm*; to "IGNORE."

```

<!-- DOCUMENTATION

** -TITLE-
** Army Conventional And Chemical Ammunition TM
**

```

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```

** -INSTRUCTION-
** -IF- Conventional and Chemical Ammunition TM
** -THEN- -SET- "ammo-tm" to "INCLUDE"
** -ELSE- -SET- "ammo-tm" to "IGNORE"
**
** -SELECTABLE ENTITY LIST-
** ammo-tm

->

<!ENTITY % ammo-tm "IGNORE">

```

6. Select if the TM is a separate RPSTL TM or a TM that includes the RPSTL. If the TM includes a RPSTL and the TM has a number with P then set *%introwp.RPSTL\_manual-tm*; to "INCLUDE" and set *%introwp.RPSTL\_wp-tm*; to "IGNORE."

```

<!-- DOCUMENTATION

** -TITLE-
** Separate RPSTL TM or TM Includes RPSTL
** -INSTRUCTION-
** -IF- No RPSTL in TM
** -THEN-
** -SET- "introwp.RPSTL_manual-tm" to "IGNORE",
** -SET- "introwp.RPSTL_wp-tm" to "IGNORE"
** -IF- RPSTL TM (TM Number with P)
** -THEN-
** -SET- "introwp.RPSTL_manual-tm" to "INCLUDE",
** -SET- "introwp.RPSTL_wp-tm" to "IGNORE"
** -IF- TM includes RPSTL (TM Number with &P)
** -ELSE-
** -SET- "introwp.RPSTL_manual-tm" to "IGNORE"
** -SET- "introwp.RPSTL_wp-tm" to "INCLUDE"
** -SELECTABLE ENTITY LIST-
** RPSTL_manual-tm
** RPSTL_wp-tm

->

```



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```
<!ENTITY % RPSTL_manual-tm "INCLUDE">
```

```
<!ENTITY % RPSTL_wp-tm "IGNORE">
```

7. Select if the TM is either a DMWR or NMWR or neither. If the TM is neither set *%dmwr;* to "IGNORE" and set *%nmwr;* to "IGNORE."

```
<!-- DOCUMENTATION
```

```

```

```
** -TITLE-
```

```
** DMWR or NMWR Manual
```

```
** -INSTRUCTION-
```

```
** -IF- NOT Depot TM
```

```
** -THEN-
```

```
** -SET- "dmwr" to "IGNORE"
```

```
** -SET- "nmwr" to "IGNORE"
```

```
** -IF- Depot TM -AND- DMWR
```

```
** -THEN-
```

```
** -SET- "dmwr" to "INCLUDE"
```

```
** -SET- "nmwr" to "IGNORE"
```

```
** -IF- Depot TM -AND- NMWR
```

```
** -THEN-
```

```
** -SET- "dmwr" to "IGNORE"
```

```
** -SET- "nmwr" to "INCLUDE"
```

```
-SELECTABLE ENTITY LIST-
```

```
dmwr
```

```
nmwr
```

```

```

```
->
```

```
<!ENTITY % dmwr "IGNORE">
```

```
<!ENTITY % nmwr "IGNORE">
```

8. Select if there is any Usable On Code (UOC) to list. If the TM contains any UOC set the *%uoc-list;* to "INCLUDE."

```
<!-- DOCUMENTATION
```

```

```

```
** -TITLE-
```

```
** Any Usable On Code (UOC) to List
```

```
** -INSTRUCTION-
```

```
** -IF- TM contains UOC
```

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```

** -THEN-
** -SET- "uoc-list" to "INCLUDE"
** -ELSE-
** -SET- "uoc-list" to "IGNORE"
** -SELECTABLE ENTITY LIST-
** uoc-list

->

<!ENTITY % uoc-list "INCLUDE">

```

9. Select if the RPSTL Cross Reference Indexes contain one or more RPSTL Indexes. If the RPSTL includes one or more RPSTL Indexes set *%introwp.index*; to "INCLUDE."

```

<!-- DOCUMENTATION

** -TITLE-
** RPSTL Cross Reference Indexes
**
** -INSTRUCTION-
** -IF- RPSTL Includes One or More RPSTL Indexes
** -THEN- -SET- "introwp.index" to "INCLUDE"
** -ELSE- -SET- "introwp.index" to "IGNORE"
**
** -SELECTABLE ENTITY LIST-
** introwp.index

->

<!ENTITY % introwp.index "INCLUDE">

```

10. If the RPSTL Cross Reference Indexes *%introwp.index*; is set to "INCLUDE," the Cross Reference Indexes that are to be included in the TM need to be selected. If the RPSTL contains the National Stock Number (NSN), Part Number (PN) and Reference designator index set the *%introwp.nsn\_pn\_refdes-index*; to "INCLUDE" and the others to "IGNORE."

```

<!-- DOCUMENTATION

** -TITLE-
** RPSTL Cross Reference Index Used
**
** -INSTRUCTION-

```

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```

** -IF- "introwp.index=INCLUDE" (see above)
**
** -THEN-
**
** -IF- NSN -AND- Part No. -AND- Ref Des Indices Used
**
** -THEN-
**
** -SET- "introwp.nsn_pn_refdes-index" to "INCLUDE"
**
** "introwp.nsn-index" -AND- "introwp.pn_refdes-index"
** -AND-
** "introwp.pn-index" -AND- "introwp.refdes-index" to
** "IGNORE"
**
** -IF- NSN -AND- Part No. Indices Only Used
**
** -THEN-
**
** -SET- "introwp.nsn_pn-index" to "INCLUDE"
**
** -SET- "introwp.nsn_pn_refdes-index" -AND- "introwp.nsn_re-
** fdes-index" -AND-
**
** "introwp.nsn-index" -AND- "introwp.pn_refdes-index"
** -AND-
** "introwp.pn-index" -AND- "introwp.refdes-index" to
** "IGNORE"
**
** -IF- NSN Index Only Used
**
** -THEN-
**
** -SET- "introwp.nsn-index" to "INCLUDE"
**
** -SET- "introwp.nsn_pn_refdes-index" -AND- "introwp.nsn_re-
** fdes-index" -AND-
**
** "introwp.nsn_pn-index" -AND- "introwp.pn_refdes-index"
** -AND-
** "introwp.pn-index" -AND- "introwp.refdes-index" to
** "IGNORE"
**
** -IF- Part No. -AND- Ref Des Indices Only Used
**
** -THEN-
**
** -SET- "introwp.pn_refdes-index" to "INCLUDE"
**
** -SET- "introwp.nsn_pn-index" -AND- "introwp.nsn_refdes-index"
** -AND-
**
** "introwp.nsn-index" -AND- "introwp.nsn_pn_refdes-index"
** -AND-
** "introwp.pn-index" -AND- "introwp.refdes-index" to
** "IGNORE"
**
** -IF- Part No. Index Only Used
**
** -THEN-
**
** -SET- "introwp.pn-index" to "INCLUDE"
**
** -SET- "introwp.nsn_pn-index" -AND- "introwp.nsn_refdes-index"
** -AND-

```

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```

** "introwp.nsn-index" -AND- "introwp.nsn_pn_refdes-index"
 -AND-
** "introwp.pn_refdes-index" -AND- "introwp.refdes-index" to "IGNORE"
**
-IF- Ref Des Index Only Used
**
-THEN-
**
-SET- "introwp.refdes-index" to "INCLUDE"
**
-SET- "introwp.nsn_pn-index" -AND- "introwp.nsn_refdes-index"
-AND-
**
 "introwp.nsn-index" -AND- "introwp.nsn_pn_refdes-index"
 -AND-
**
 "introwp.pn_refdes-index" -AND- "introwp.pn-index" to
 "IGNORE"
**
**
** -EXAMPLE-
** If using NSN and Reference Designator Indexes set
** introwp.nsn_refdes-index "INCLUDE."
**
** -SELECTABLE ENTITY LIST-
** introwp.nsn_pn_refdes-index (NSN, Part No., Reference Designator)
** introwp.nsn_pn-index (NSN, Part No.)
** introwp.nsn_refdes-index (NSN, Reference Designator)
** introwp.nsn-index (NSN)
** introwp.pn_refdes-index (Part No., Reference Designator)
** introwp.pn-index (Part No.)
** introwp.refdes-index (Reference Designator)

->

<!ENTITY % introwp.nsn_pn_refdes-index "INCLUDE">
<!ENTITY % introwp.nsn_pn-index "IGNORE">
<!ENTITY % introwp.nsn_refdes-index "IGNORE">
<!ENTITY % introwp.nsn-index "IGNORE">
<!ENTITY % introwp.pn_refdes-index "IGNORE">
<!ENTITY % introwp.pn-index "IGNORE">
<!ENTITY % introwp.refdes-index "IGNORE">

```

11. Select the level of the MAC Maintenance Concept. If the MAC is a two-level, set the *%mac.2-level;* to "INCLUDE" and the *%mac.nonav-level;* to "INCLUDE" and the others to "IGNORE."

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```

<!-- DOCUMENTATION

** -TITLE-
** MAC Maintenance Concept
**
** -INSTRUCTION-
** -IF- MAC is Two-Level Maintenance
** -THEN-
** -SET- "mac.2-level" to "INCLUDE"
** -SET- "mac.5-level" to "IGNORE"
** -SET- "mac.nonav-level" to "INCLUDE"
** -SET- "mac.av-level" to "IGNORE"
** -IF- MAC is Five-Level (Legacy) Maintenance
** -SET- "mac.2-level" to "IGNORE"
** -SET- "mac.5-level" to "INCLUDE"
** -SET- "mac.nonav-level" to "INCLUDE"
** -SET- "mac.av-level" to "IGNORE"
** -IF- MAC is Aviation Maintenance
** -SET- "mac.2-level" to "IGNORE"
** -SET- "mac.5-level" to "IGNORE"
** -SET- "mac.nonav-level" to "IGNORE"
** -SET- "mac.av-level" to "INCLUDE"

** -SELECTABLE ENTITY LIST-
** mac.2-level
** mac.5-level
** mac.nonav-level
** mac.av-level

->
<!ENTITY % mac.2-level "INCLUDE">
<!ENTITY % mac.5-level "IGNORE">
<!ENTITY % mac.nonav-level "INCLUDE">
<!ENTITY % mac.av-level "IGNORE">

```

12. Select the method to display COEI and BII Standard Information. If Method A is to be used set *%coeibiwp.method-a;* to "INCLUDE" and *%coeibiwp.method-b;* to "IGNORE."

```

<!-- DOCUMENTATION

** -TITLE-

```

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```

** COEI and BII Standard Information Method Used
**
** The COEI and BII has two methods to display information Method A and
** Method B.
**
** -INSTRUCTION-
** -IF- Using METHOD A
** -THEN-
** -SET- "coeibiiwp.method-a" to "INCLUDE"
** -SET- "coeibiiwp.method-b" to "IGNORE"
** -ELSE-
** -SET- "coeibiiwp.method-a" to "IGNORE"
** -SET- "coeibiiwp.method-b" to "INCLUDE"
**
** -SELECTABLE ENTITY LIST-
** coeibiiwp.method-a
** coeibiiwp.method-b

->
<!ENTITY % coeibiiwp.method-a "INCLUDE">
<!ENTITY % coeibiiwp.method-b "IGNORE">

```

- 13.** Select the Tool Identification List Maintenance Level. If the maintenance level for the tool identification list is not a DMWR or NMWR, set *%toolidwp.common*; to "INCLUDE" and *%toolidwp.dmwr-nmwr*; to "IGNORE."

```

<!-- DOCUMENTATION

** -TITLE-
** Tool Identification List Maintenance Level SELECTION
** The Tool Identification has different narrative for DMWR/NMWR and re-
** maining maintenance levels.
** -INSTRUCTION-
** -IF- Depot (DMWR/NMWR) Maintenance Level
** -THEN-
** -SET- "toolidwp.dmwr-nmwr" to "INCLUDE"
** -SET- "toolidwp.common" to "IGNORE"
** -ELSE-
** -SET- "toolidwp.dmwr-nmwr" to "IGNORE"

```

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```

-SET- "toolidwp.common" to "INCLUDE"

-SELECTABLE ENTITY LIST-
 toolidwp.dmw-r-nmwr
 toolidwp.common

->
<!ENTITY % toolidwp.dmw-r-nmwr "IGNORE">
<!ENTITY % toolidwp.common "INCLUDE">

```

### 37.5.1.2.2 Editable boilerplate text.

Each information chapter has verbatim text, but some require user specific information. Some user specific information is known during the TM start and some will be edited later in the TM development. User specific information is usually a nested entity (see example in Section 37.3) within the non-revisable boilerplate text entity.

1. Example of a common editable entity *&short.end.item.name;* that is used in the boilerplate Reporting Equipment Improvement Recommendations (EIR) statement *&ginfowp.eir;* (located in the General Information entity file). Even though the entity *&short.end.item.name;* is found in the General Information Entity file, it is only changeable in the Editable entity file. Also, note, since the Selection entity file has indicated that the TM is for both Army and Marines, the additional required statement for Marines is included in the sample output:

```
<!ENTITY short.end.item.name "INSERT THE SHORT END ITEM NAME">
```

Replace the text in the editable entity *&short.end.item.name;* with "M198 Howitzer."

```
<!ENTITY short.end.item.name "M198 Howitzer">
```

2. Example of the boilerplate Reporting Equipment Improvement Recommendations (EIR) statement *&ginfowp.eir;* that would be inserted as an entity in a general information work package with the Editable entity *&short.end.item.name;* that was edited using "M198 Howitzer."

```

<!ENTITY ginfowp.eir '<title>REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS
(EIR)
</title><para>If your &short.end.item.name; needs improvement, let us know.
Send us an EIR. You, the user, are the only one who can tell us what you don't like
about your equipment. Let us know why you don't like the design or performance.
If you have Internet access, the easiest and fastest way to report problems or
suggestions is to go to <internet show. address="yes"> <homepage protocol=
"https" uri="aeps.ria.army.mil/aepspublic.cfm"/> (scroll down and choose the
"Submit Quality Deficiency Report" bar). The Internet form lets you choose to
submit an Equipment Improvement Recommendation (EIR), a Product Quality
Deficiency Report (PQDR) or a Warranty Claim Action (WCA). You may also submit
your information using a <extref docno="SF 368" posttext="Product Quality
Deficiency Report)"/>. You can send your SF 368 via e-mail, regular mail, or
facsimile using the addresses/facsimile numbers specified in <extref docno="DA
PAM 738-750" posttext="Functional Users Manual for the Army Maintenance
Management System (TAMMS)"/>. We will send you a reply.</para> <![%usmc-tm;
[<para>For Marine Corps users: Quality deficiency reports (QDR) should be
submitted on <extref docno="SF 368"/> in accordance with

```

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<extref docno="MCO 4855.10"/>. A reply will be furnished to you.</para>]]>'>  
</para></internet></para></title>

3. Example of a nested entity within the general entity Reporting Equipment Improvement Recommendations (EIR):

#### REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR)

If your M198 Howitzer needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. If you have Internet access, the easiest and fastest way to report problems or suggestions is to scroll down and choose the "Submit Quality Deficiency Report" bar. The Internet form lets you choose to submit an Equipment Improvement Recommendation (EIR), a Product Quality Deficiency Report (PQDR), or a Warranty Claim Action (WCA). You may also submit your information using a SF 368 (Product Quality Deficiency Report). You can send your SF 368 via e-mail, regular mail, or facsimile using the addresses/facsimile numbers specified in DA PAM 738-750, Functional Users Manual for the Army Maintenance Management System (TAMMS). We will send you a reply.

For Marine Corps users: Quality deficiency reports (QDR) should/are to be submitted on SF 368 in accordance with MCO 4855.10. A reply will be furnished to you.

### 37.6 List of boilerplates.

The following are lists of entities that are found in MIL-STD-40051-1/-2. The entities are listed in a table under the information chapter they pertain to. The selection list table contains only the entity's name and the entity. The seven other tables provide the entity's name, entity, and where it is referenced in MIL-STD-40051-1/-2. The eight (8) lists consist of the following:

1. Selection list (see Section 37.6.1)
2. Editable list (see Section 37.6.2)
3. Production list (see Section 37.6.3)
4. General information list (see Section 37.6.4)
5. Troubleshooting information list (see Section 37.6.5)
6. Maintenance information list (see Section 37.6.6)
7. Parts information list (see Section 37.6.7)
8. Supporting information list (see Section 37.6.8)

#### 37.6.1 Selection entity list.

TABLE XXXII. lists the boilerplates parameter entities found in the Selection entity file and listed by entity title and entity name. See Section 37.5.1.2.1 information on selection boilerplates.

TABLE XXXII. Selection list.

Entity Title	Entity Name.
Frame-base TM or IETM	<i>%frame-base;</i>
Page-base TM	<i>%page-base;</i>
Multiple Service TM	<i>%multi-tm;</i>
Single Service TM	<i>%single-tm;</i>
U. S. Army TM	<i>%army-tm;</i>



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TABLE XXXII. Selection list. (continued)

Entity Title	Entity Name.
U. S. Navy TM	<i>%usn-tm;</i>
U. S. Air Force TM	<i>%usaf-tm;</i>
U. S. Marines TM	<i>%usmc-tm;</i>
Non U. S. Marines TM	<i>%non-usmc-tm;</i>
Classified TM/IETM	<i>%class-tm;</i>
Unclassified TM/IETM	<i>%unclass-tm;</i>
Preventive Maintenance Services (PMS) or Phased Maintenance Inspection (PMI) TM	<i>%pms_or_pmi-tm;</i>
Army Conventional and Chemical Ammunition TM	<i>%ammo-tm;</i>
TM Number with P	<i>%RPSTL_manual-tm;</i>
TM Number with and P	<i>%RPSTL_wp-tm;</i>
DMWR Manual	<i>%dmwr;</i>
NMWR Manual	<i>%uoc-list;</i>
Usable On Code (UOC) to List	<i>%uoc-list;</i>
RPSTL Cross Reference Indexes	<i>%introwp.index;</i>
NSN, Part Number, and Reference Designator Cross Reference Indexes Only Used	<i>%introwp.nsn_pn_refdes-index;</i>
NSN and Part Number Cross Reference Indexes Only Used	<i>%introwp.nsn_pn-index;</i>
NSN and Reference Designator Cross Reference Indexes Only Used	<i>%introwp.nsn_refdes-index;</i>
NSN Cross Reference Indexes Only Used	<i>%introwp.nsn-index;</i>
Part Number and Reference Designator Cross Reference Indexes Only Used	<i>%introwp.pn_refdes-index;</i>
Part Number Cross Reference Indexes Only Used	<i>%introwp.pn-index;</i>
Reference Designator Cross Reference Indexes Only Used	<i>%introwp.refdes-index;</i>
MAC 2 Level Maintenance	<i>%mac.2-level;</i>
Non Aviation MAC	<i>%mac.nonav-level;</i>
Aviation MAC	<i>%mac.av-level;</i>
COEI and BII Standard Information Method A	<i>%coeibiiwp.method-a;</i>
COEI and BII Standard Information Method B	<i>%coeibiiwp.method-b;</i>

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TABLE XXXII. Selection list. (continued)

Entity Title	Entity Name.
Tool Identification List Maintenance DMWR/ NMWR	<i>%toolidwp.dmw-nmwr;</i>
Tool Identification List Maintenance	<i>%toolidwp.commo;</i>

**37.6.2 Editable entity list.**

TABLE XXXIII. lists boilerplate general entities found in the Editable entity file. The Editable boilerplates contain user specific information (see Section 37.5.1.2.2 information on Editable boilerplates). The table provides the entity title, name, and where it is referenced in MIL-STD-40051-1/-2. The boilerplates are used to develop TMs in page-based, frame-based manuals, or both.

TABLE XXXIII. Editable boilerplate list.

General Entity	
Title	Name
Short End Item Name	<i>&amp;short.end.item.name;</i>
Reason for the distribution restriction	<i>&amp;notices.dist.determined-reason;</i>
The date determined for the distribution restriction	<i>&amp;notices.dist.determined-date;</i>
The DoD office determining the distribution restriction	<i>&amp;notices.dist.determined-DoD-office;</i>
U.S. Army Proponent Activity and Address	<i>&amp;proponent-address.army;</i>
U.S. Army Proponent Fax Number	<i>&amp;proponent-fax.army;</i>
U.S. Army Proponent Email Address	<i>&amp;proponent-email.army;</i>
U.S. Marines Proponent Activity and Address	<i>&amp;proponent-address.usmc;</i>
U.S. Marines Proponent Fax	<i>&amp;proponent-fax.usmc;</i>
U.S. Marines Proponent Email	<i>&amp;proponent-email.usmc;</i>
U.S. Navy Proponent Activity and Address	<i>&amp;proponent-address.usn;</i>
U.S. Navy Proponent Fax Number	<i>&amp;proponent-fax.usn;</i>
U.S. Navy Proponent Email	<i>&amp;proponent-email.usn;</i>
Air Force Proponent Activity and Address	<i>&amp;proponent-address.usaf;</i>
U.S. Air Force Proponent Fax Number	<i>&amp;proponent-fax.usaf;</i>
U.S. Air Force Proponent Email	<i>&amp;proponent-email.usaf;</i>
Reporting Multi-Service Proponent Fax and Email Data (Frame-base Only)	<i>&amp;proponent-fax;</i>
Reporting Multi-Service Proponent Fax and Email Data (Frame-base Only)	<i>&amp;proponent-email;</i>
"How to Use This Manual" Internal to the TM	<i>&amp;howtouse.intl-agree.ref;</i>
"How to Use This Manual" External to the TM	<i>&amp;howtouse.intl-agree.pg;</i>

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TABLE XXXIII. Editable boilerplate list. (continued)

General Entity	
Title	Name
Warranty Period As Mileage Or Time Frame	<i>&amp;ginfowp.wrntyref-time;</i>
Quality of Material - Replacement, Repair, or Modification Requirements TM Number	<i>&amp;ginfowp.qual.mat.info-tm;</i>
Engineering Change Proposals Address	<i>&amp;ginfowp.ecp-address;</i>
Repair Parts WP Reference	<i>&amp;ginfowp.supdata-partlist.wpref;</i>
Supporting Data - Repair parts TM Reference	<i>&amp;ginfowp.supdata-partlist.tmref;</i>
PMS Scope and General Information - References and Data Figure Reference	<i>&amp;pms-ginfowp.fig1;</i>
PMS Scope and General Information - References and Data Figure Reference	<i>&amp;pms-ginfowp.fig2;</i>
PMS Scope and General Information - References and Data Figure Reference	<i>&amp;pms-ginfowp.fig3;</i>
PMS Scope and General Information - References and Data (Appropriate aircraft model number)	<i>&amp;pms-ginfowp.aircraft;</i>
PMS Scope and General Information - References and Data (Intermediate inspection performed flight hour cycle)	<i>&amp;pms-ginfowp.fly-hrs.intermediate;</i>
PMS Scope and General Information - References and Data (Periodic inspection performed flight hour cycle)	<i>&amp;pms-ginfowp.fly-hrs.periodic;</i>
PMI General Information ( aircraft model)	<i>&amp;pm-ginfowp.aircraft;</i>
PMI General Information (flight hour cycle to perform the PM requirements)	<i>&amp;pm-ginfowp.flight-cycle;</i>
PMI General Information (flight hour phases)	<i>&amp;pm-ginfowp.phase-hours;</i>
PMI General Information (maximum number of phases during the flight cycle)	<i>&amp;pm-ginfowp.no-phases;</i>
PMI General Information (latest issue of the aircraft TM number series Maintenance Manuals)	<i>&amp;pm-ginfowp.tm-maint;</i>
PMI General Information (aircraft TM number MTF requirements)	<i>&amp;pm-ginfowp.tm-mtf;</i>
PMI General Information (phase hour interval)	<i>&amp;pm-ginfowp.hour-interval;</i>
PMI General Information (phase hour cycle)	<i>&amp;pm-ginfowp.hour-cycle;</i>
PMI General Information (first phase number example)	<i>&amp;pm-ginfowp.first;</i>
PMI General Information (second phase number example)	<i>&amp;pm-ginfowp.second;</i>

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TABLE XXXIII. Editable boilerplate list. (continued)

General Entity	
Title	Name
PMI General Information (last phase number)	<i>&amp;pm-ginfowp.last-phase;</i>
PMI General Information (Reference to the WP sequence # or title and figure # that shows the aircraft's inspection areas)	<i>&amp;pm-ginfowp.fig1;</i>
PMI General Information (Reference to the required removal locations of access doors and panels inspection areas)	<i>&amp;pm-ginfowp.fig2;</i>
Illustration Manufactured Parts Maintenance Level	<i>&amp;manuwp.intro.maint-level;</i>
Illustration Manufactured Parts RPSTL Reference	<i>&amp;manuwp.intro.rpstl;</i>
PMCS AOAP Hour/Mileage Timeframe	<i>&amp;pmcsintrowp.intro.aoap.prescribed;</i>
PMCS AOAP Reference	<i>&amp;pmcsintrowp.intro.aoap;</i>
PMCS Introduction Component or Equipment	<i>&amp;pmcsintrowp.intro.component-equipment;</i>
PMCS Introduction Not Authorized Arctic Operation Component	<i>&amp;pmcswp.pmcstable.pmcproc.arctic-oper.not-auth. component;</i>
Maintenance WP Inspection And Test Ammunition Referenced Table	<i>&amp;maintwp.test-inspect.disposition-2.table-num;</i>
Aircraft Inspection Checklist TM for PMI WP	<i>&amp;pmiwp.geninfo.aircraft;</i>
Referenced Avionics TM for PMS Inspection WP	<i>&amp;pms-inspecwp.perform.tm;</i>
Lubrication Requirement Referenced Avionics TM	<i>&amp;pms-inspecwp.lubrication.tm;</i>
RPSTL Introduction Lowest Maintenance Level	<i>&amp;introwp.intro.lowest-maint;</i>
RPSTL Introduction Equipment Nomenclature	<i>&amp;introwp.intro.item;</i>
Maintenance Code "L" Specialized Repair Activity Designator	<i>&amp;introwp.intro.repair-act-des;</i>
Referenced Fabrication Instruction TM Number	<i>&amp;introwp.intro.fab-tm;</i>
Associated Publications in Separate RPSTL TM	<i>&amp;introwp.intro.assoc-pubs;</i>
Reference TM number for Higher Maintenance Level RPSTL Data	<i>&amp;introwp.intro.higher-maint-tm;</i>
Uncommon Abbreviations and Definitions in RPSTL	<i>&amp;introwp.intro.uncommon-abbr;</i>
UOC List	<i>&amp;intro.uoc-list;</i>
Expendable and Durable Maintenance Level Codes	<i>&amp;explistwp.intro.explain.level;</i>

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**37.6.3 Production front matter list.**

TABLE XXXIV. lists the boilerplates found in the Production Front Matter text entity file. The table provides the entity title, name, and where it is referenced in MIL-STD-40051-1/-2. The boilerplates develop TMs in page-based, frame-based manuals, or both.

**TABLE XXXIV. Production front matter boilerplate list.**

<b>General Entity</b>	
<b>Title</b>	<b>Name</b>
Availability Statement	<i>&amp;notices.avail;</i>
Disclosure Notice	<i>&amp;notices.disclos;</i>
Distribution Statements A	<i>&amp;notices.dist.a.statement;</i>
Distribution Statements B	<i>&amp;notices.dist.b.statement;</i>
Distribution Statements C	<i>&amp;notices.dist.c.statement;</i>
Distribution Statements D	<i>&amp;notices.dist.d.statement;</i>
Distribution Statements E	<i>&amp;notices.dist.e.statement;</i>
Distribution Statements F	<i>&amp;notices.dist.f.statement;</i>
Distribution Statements X	<i>&amp;notices.dist.x.statement;</i>
Export Control Notice Warning	<i>&amp;notices.export;</i>
Reporting Errors And Recommending Improvements Statement – Page-Based	
(Army Only), Unclassified/standard, Pocket size TMs, oversize TMs, and TMs with less than eight pages	<i>&amp;titleblk.reporting.std-pocket.army;</i>
(Marines Only), Unclassified/standard, Pocket size TMs, oversize TMs, and TMs with less than eight pages	<i>&amp;titleblk.reporting.std-pocket.usmc;</i>
Multi-Service Each Service's Statement Unclassified/standard, Pocket size TMs, oversize TMs, and TMs with less than eight pages	<i>&amp;titleblk.reporting.std-pocket.multi-service;</i>
Multi-service TMs, Unclassified, standard size TMs used for Army, USMC, Navy and/or Air Force	<i>&amp;titleblk.reporting.std.multi-service;</i>
(Army Only) Classified TMs	<i>&amp;titleblk.reporting.class.army;</i>
(Marines Only) Classified TMs	<i>&amp;titleblk.reporting.class.usmc;</i>
Multi-service TMs, Classified TMs used for Army, USMC, Navy and/or Air Force	<i>&amp;titleblk.reporting.class.multi-service;</i>
Reporting Errors And Recommending Improvements Statement – FRAME-BASED	
Classified IETMs	<i>&amp;reporting.ietm-class;</i>
(ARMY Only) IETM Army Only Unclassified/Classified IETMs	<i>&amp;titleblk.reporting.ietm.army;</i>
(USMC Only ) IETM Unclassified/Classified IETMs	<i>&amp;titleblk.reporting.ietm.usmc;</i>

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**TABLE XXXIV. Production front matter boilerplate list. (continued)**

General Entity	
Title	Name
Multi-service IETM Unclassified/Classified IETMs used for Army, USMC, Navy and/or Air Force	<i>&amp;titleblk.reporting.ietm.multi-service;</i>
PMS and PMI Title Block With Warning And Note Data	<i>&amp;titleblk.pm.warning.data;</i>
International Standardization Agreements Statement	<i>&amp;howtouse.intl-agree;</i>

**37.6.4 General information list.**

TABLE XXXV. lists the boilerplates found in the General Information Chapter text entity file. The table provides the entity title, name, and where it is referenced in MIL-STD-40051-1/-2. The boilerplates develop TMs in page-based, frame-based manuals, or both.

**TABLE XXXV. General information list.**

General Entity	
Title	Name
U. S. Army - Maintenance forms, records and reports (MFRR) statement	<i>&amp;ginfowp.mfrr-army;</i>
U.S. Marines - Maintenance forms, records and reports (MFRR) statement	<i>&amp;ginfowp.mfrr-usmc;</i>
Multi-Service Maintenance forms, records and reports (MFRR) statement	<i>&amp;ginfowp.mfrr-multiservice;</i>
Single-Service Maintenance forms, records and reports (MFRR) statement **	<i>&amp;ginfowp.mfrr-oneservice;</i>
Reporting equipment improvement recommendations (EIR) statement	<i>&amp;ginfowp.eir;</i>
Hand receipt (HR) manual statement	<i>&amp;ginfowp.handreceipt;</i>
Corrosion prevention and control (CPC) statement	<i>&amp;ginfowp.cpcdata;</i>
Warranty information reference statement	<i>&amp;ginfowp.wrntyref;</i>
Quality of material information statement	<i>&amp;ginfowp.qual.mat.info;</i>
Nuclear Hardness statement	<i>&amp;ginfowp.hcp;</i>
Engineering Change Proposals (ECP) statement	<i>&amp;ginfowp.ecp;</i>
Modification list statement	<i>&amp;ginfowp.modification;</i>
Deviations and Exceptions statement	<i>&amp;ginfowp.deviation;</i>
Mobilization Requirements statement	<i>&amp;ginfowp.mobreq;</i>
Flight Safety Critical Aircraft Parts Statement	<i>&amp;ginfowp.fscap;</i>
Cost Considerations Statement	<i>&amp;ginfowp.cost;</i>

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**TABLE XXXV. General information list. (continued)**

General Entity	
Title	Name
Common Tools And Equipment Statement	<i>&amp;ginfowp.supdata-partlist.wp;</i>
Parts Information Work Package Reference	<i>&amp;titleblk.reporting.class.usmc;</i>
Parts Information TM (Page ONLY)	<i>&amp;ginfowp.supdata-partlist.tm;</i>
Preventive Maintenance Service Scope and General Information (Preventive Maintenance Services Manual only)	<i>&amp;pms-ginfowp;</i>
Preventive Maintenance Inspection Scope and General Information (Phased Maintenance Inspection Manual only)	<i>&amp;pm-ginfowp.geninfo;</i>

**37.6.5 Troubleshooting information list.**

TABLE XXXVI. lists the boilerplates in the Troubleshooting Information Chapter text entity file. The table provides the entity title, name, and where it is referenced in MIL-STD-40051-1/-2. The boilerplates to develop TMs in page-based, frame-based manuals, or both.

**TABLE XXXVI. Troubleshooting information list.**

General Entity	
Title	Name
Standard Header for Troubleshooting System Sub-system Index	<i>&amp;tsindx.system.header;</i>
Standard Header for Troubleshooting Symptom/Malfunction Index	<i>&amp;tsindx.symptom.header;</i>
Standard Header for Troubleshooting Fault Code/Message Word Index.	<i>&amp;tsindx.messageword.header;</i>

**37.6.6 Maintenance information list.**

TABLE XXXVII. lists the boilerplates found in the Maintenance Information Chapter text entity file. The table provides the entity title, name, and where it is referenced in MIL-STD-40051-1/-2. The boilerplates develop TMs in page-based, frame-based manuals, or both.

**TABLE XXXVII. Maintenance information list.**

General Entity	
Title	Name
Periods Of Inventory Statement	<i>&amp;inventorywp.prdiv;</i>
Overhaul and Retirement Schedule Introduction Statement	<i>&amp;maintwp.orsch;</i>
Maintenance Work Package Inspection And Test Ammunition Statement – Disposition 1	<i>&amp;maintwp.test-inspect.disposition-1;</i>

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TABLE XXXVII. Maintenance information list. (continued)

General Entity	
Title	Name
Maintenance WP for Inspection And Test Ammunition Statements – Disposition 2	<i>&amp;maintwp.test-inspect.disposition-2;</i>
Maintenance WP for Inspection And Test Ammunition Statements – Disposition 3	<i>&amp;maintwp.test-inspect.disposition-3;</i>
Packaging Information for PPM Statement	<i>&amp;maintwp.ppm.packaging;</i>
Additional Information On-Data Plate Statement	<i>&amp;maintwp.test-pass.data-plate;</i>
Introduction For Illustrated List Of Manufacture	<i>&amp;manuwp.intro;</i>
Introduction For Depot Mobilization Requirements	<i>&amp;mobilwp.intro;</i>
AOAP Sampling Interval Statement	<i>&amp;pmcsintrowp.intro.aoap;</i>
AOAP Not Available/Non-Enrolled Statement	<i>&amp;pmcsintrowp.intro.aoap-na;</i>
Fluid Leakage Narrative For PMCS Statement	<i>&amp;pmcsintrowp.intro.fluid-leakage;</i>
Conditions To Change Oil Filter Statement	<i>&amp;pmcsintrowp.intro.oilfilter;</i>
PMCS Warranty Statement	<i>&amp;pmcsintrowp.intro.warranty;</i>
Standard Statement When No MRP Is Included In The PMCS	<i>&amp;pmcswp.pmcstable.mrplpart.no-mrp;</i>
PMCS Introduction Lubricant Is Authorized In Arctic Operation Note	<i>&amp;pmcswp.pmcstable.pmcspoc.arctic-oper.auth;</i>
PMCS Introduction Lubricant Is Not Authorized In Arctic Operation Note	<i>&amp;pmcswp.pmcstable.pmcspoc.arctic-oper.not-auth;</i>
PMI Checklist Concerning MTF Note	<i>&amp;pmi-chklistwp.note;</i>
PMI General Information Statement	<i>&amp;pmiwp.def-geninfo;</i>
PMI General information Statement	<i>&amp;pmiwp.geninfo;</i>
PMI Standard Of Serviceability Statement	<i>&amp;pmiwp.stdserv;</i>
PMS Inspection WP TM Reference Statement	<i>&amp;pms-inspecwp.perform;</i>
PMS Inspection Discrepancy Form Reference Statement.	<i>&amp;pms-inspecwp.checklist;</i>
PMS Inspection Last Item To Perform Statement	<i>&amp;pms-inspecwp.last-item;</i>
Specific TM Lubrication Requirement Statement	<i>&amp;pms-inspecwp.lubrication;</i>
Quality Assurance - Statement of Responsibility	<i>&amp;qawp.responsibility;</i>
Quality Assurance - In-process Inspections	<i>&amp;qawp.inprocess;</i>
Quality Assurance - Acceptance Inspections	<i>&amp;qawp.acceptance;</i>
Storage Aircraft General Information Statement	<i>&amp;storagewp.geninfo;</i>



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**TABLE XXXVII. Maintenance information list. (continued)**

General Entity	
Title	Name
Service Upon Receipt Checking Unpacked Equipment Mandatory Steps	<i>&amp;surwp.surmat.chkeqp.inspect;</i>
Aircraft Weighing And Loading General Information Statement **	<i>&amp;wtloadwp.geninfo;</i>

**37.6.7 Parts information list.**

TABLE XXXVIII. lists the boilerplates in the Parts Information Chapter text entity file. The table provides the entity title, name, and where it is referenced in MIL-STD-40051-1/-2. The boilerplates develop TMs in page-based, frame-based manuals, or both.

**TABLE XXXVIII. Parts information boilerplates.**

General Entity	
Title	Name
RPSTL Introduction	<i>&amp;introwp.intro;</i>
RPSTL Index Explanation (for NSN)	<i>&amp;introwp.index-explain.nsn;</i>
RPSTL Index Explanation (for PN)	<i>&amp;introwp.intro.index-explain.pn;</i>
RPSTL Index Explanation (for Reference Designator Index work package)	<i>&amp;introwp.intro.index-explain.refdes;</i>
NSN Index Format Explanation	<i>&amp;introwp.intro.index-format.nsn;</i>
Part Number Index Format Explanation	<i>&amp;introwp.intro.index-format.pn;</i>
Reference Designator Index Format Explanation	<i>&amp;introwp.intro.index-format.refdes;</i>
Reference Designator How to Locate	<i>&amp;introwp.intro.locate-repair-parts.refdes;</i>

**37.6.8 Supporting information list.**

TABLE XXXIX. lists the boilerplates in the Supporting Information Chapter text entity file. The table provides the entity title, name, and where it is referenced in MIL-STD-40051-1/-2. The boilerplates develop TMs in page-based, frame-based manuals, or both.

**TABLE XXXIX. Supporting information list.**

General Entity	
Title	Name
Standard MAC 2 Level Maintenance Introduction	<i>&amp;macintrowp.intro-std;</i>
Aviation MAC Introduction	<i>&amp;macintrowp.intro-av;</i>
COEI and BII Lists Work Package Introduction	<i>&amp;coeibiiwp.intro;</i>
COEI and BII Lists Work Package Supporting Information UOC List	<i>&amp;intro.uoc;</i>

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TABLE XXXIX. Supporting information list. (continued)

General Entity	
Title	Name
AAL Work Package Introduction	<i>&amp;aalwp.intro;</i>
AAL Work Package Introduction Supporting Information UOC List	<i>&amp;intro.uoc;</i>
Expendable And Durable Items List Work Package Introduction	<i>&amp;explistwp.explist.intro;</i>
Tools Identification List Work Package Introduction	<i>&amp;toolidwp.intro;</i>

## 38 NOTES

### 38.1 Intended use.

U. S. Army publications prepared in Standard Generalized Markup Language (SGML)/Extensible Markup Language (XML) in accordance with the information and guidance contained in this handbook is used for development of Army digital publications.

### 38.2 Subject term (key word) listing.

The following terms are to be used to identify the MIL-HDBK-2361 document during retrieval searches.

Digital Publications Development (DPD)

Document Type Definition (DTD)

Electronic Delivery

Equipment Publications

Extensible Markup Language (XML)

Formal Public Identifier (FPI)

Formatting Output Specification Instance (FOSI)

Information Reuse

Maintenance Instructions

Operator Instructions

Publishing, Electronic

SGML/XML objects and constructs

Standard Generalized Markup Language (SGML)

Stylesheets

Supporting Information

Technical Manual

Theory of Operation

Troubleshooting Instructions

Work Package

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### CONCLUDING MATERIAL

Custodians:

Army - TM

Navy - MC

Preparing Activity:

Army - TM

Review Activities:

Army - APD, AR, AT, AV,

CR, EA, GL, MI

Project Number:

TMSS-2016-006

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil/>.