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DETAIL SPECIFICATION
MANUALS, TECHNICAL - NONNUCLEAR MUNITIONS AND NUCLEAR WEAPONS BASIC INFORMATION, LOADING PROCEDURES MANUALS, AND STANDARD DATA PACKAGES
AND
LOADING PROCEDURES, NATO STAGE B CROSS-SERVICING, FUNCTIONAL CHECK PROCEDURES, AND END OF RUNWAY PROCEDURES CHECKLISTS

Comments, suggestions, or questions on this document should be addressed to AFLCMC/HIAM Technical Data Section, 4170 Hebble Creek Road, Bldg. 280, Door 15, Area A, Wright-Patterson AFB, OH 45433–5653 or emailed to SGMLsupport@us.af.mil. Since contact information can change, the currency of this address information should be verified using the ASSIST Online database at https://assist.dla.mil/.

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This detail specification is approved for use by the Department of the Air Force and is available for use by all Departments and Agencies of the Department of Defense.

1 SCOPE

1.1 Scope. This detail specification establishes the requirements for preparation of manuals and checklists for loading/unloading nuclear weapons and nonnuclear munitions on aircraft, and for checking various armament systems used to control/release/fire munitions and weapons that are approved for loading on an aircraft. This specification provides for digital delivery of data using the Document Type Definitions (DTDs) prescribed in appendices A through K.

1.2 Classification. The types of Technical Manuals (TM) prescribed within this detail specification (see 3.2) are as follows:

a. Nuclear Weapons Basic Information and Loading Procedures Manual (Fighter Aircraft) (see 3.2.1).

b. Nuclear Weapons Loading Procedures Manual (Bomber Aircraft) (see 3.2.2).

c. Nonnuclear Munitions Basic Information Manual (Standard Volume) (see 3.2.3).

d. Nonnuclear Munitions Loading Procedures Manual (see 3.2.4)

e. Nonnuclear Munitions Loading Standard Data Packages (see 3.2.5).

f. Loading Procedures Checklist (see 3.2.6).

g. Single Loading Procedures Checklist (see 3.2.6.1.1).

h. Integrated Loading Procedures Checklist (see 3.2.6.1.2).

i. Family Group Loading Procedures Checklist (see 3.2.6.1.3).

j. Nuclear Weapons Loading Procedures Checklist (see 3.2.6.1.4).

k. NATO Stage B Cross-Servicing Checklist (see 3.2.6.2).

l. Functional Check Procedures Checklist (see 3.2.6.3).

m. End of Runway (EOR) Procedures Checklist (see 3.2.6.4).

2 APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3 and 4 of this specification, whether or not they are listed.

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. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract. See 6.2b.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-5096 Manuals, Technical: Inspection and Maintenance Requirements; Acceptance and Functional Check Flight Procedures and Checklists; Inspection Work Cards; and Checklists; Preparation of

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-38784 Manuals, Technical: General Style and Format Requirements

(Copies of federal and military specifications, standards and handbooks are available at http://quicksearch.dla.mil/ or from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

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2.2.2 Other government documents, drawings, and publications. The following other government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation or contract.

PUBLICATIONS

AIR FORCE TECHNICAL MANUALS

TO 00-5-3 AF Technical Order Life Cycle Management

(Copies of documents required by contractors in connection with specific procurement functions should be obtained from the acquiring activity or as directed by the contracting officer.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated specifications or specification sheets), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3 REQUIREMENTS

3.1 Development and preparation. The development and preparation of manuals covered by this specification shall be in accordance with the requirements of MIL-STD-38784, and for checklists shall be in accordance with MIL-DTL-5096, except as otherwise specified herein.

3.1.1 Format and changes. See 3.1 for requirements for format and changes, with the exception that loading procedures shall be in single column format and checklists procedures may contain single steps.

3.1.1.1 TM electronic/print-unique functionality/formatting requirements. As specified by the acquiring activity (see 6.2c), the electronic presentation or print presentation unique functionality/formatting requirements shall apply for the development of all manuals specified herein (see 6.1.2).

3.1.2 Illustrations. See 3.1 and 6.13 for preparation of and changes to illustrations.

3.1.2.1 Location of illustrations. Electronic presentation: Links to supporting illustrations shall be located within the text to which they apply.

Print presentation: Illustrations and artwork shall be located as close as possible to the applicable text.

3.1.3 Nomenclature. Nomenclature of switches, circuit breakers, and other controls shall be as it appears on the aircraft decals, placards, engraved legends, and nameplates. Munition/weapon nomenclature used as chapter/section titles and on checklist title pages/screens, shall be common terminology. Nomenclature of Support Equipment (SE) and other type equipment, shall be the official assigned nomenclature, consisting of the item name and type designation. Munition/weapon and SE nomenclature used elsewhere in the manuals and checklists shall be common terminology, unless listed otherwise in the standard data package, which shall take precedence.

3.1.4 Warnings, Cautions, and Notes (WCNs). See 3.1 for preparation of WCNs.

3.1.5 Applicability notations. Procedural steps within the text, that are applicable to a specific item, shall be prefixed with applicability notations for identification. The applicability notations shall be explained in the manual introduction (see 6.7).

3.1.6 References. References shall be prepared according to 3.1, except as otherwise specified herein.

Electronic presentation: All references shall be linked to the data to which they apply, including for manuals/checklists published in PDF, unless otherwise specified by the acquiring activity (see 6.2d).

3.1.7 Standardization. The appearance of all nuclear and nonnuclear loading procedures manuals shall be as similar as possible.

3.1.7.1 Standard switch and indicator light terminology. Terms used for activating bomb release buttons, triggers, jettison buttons, sensing switches, etc., shall be "depressed," "released," or "momentarily depressed." All other switches shall be "positioned." Circuit breakers shall be "in" or "out." Lights shall be "on" or "off," "momentarily on," "momentarily off," or "flashing."

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3.1.7.2 Standardization of terms for procedural steps. Once a phrase such as "check that...," "ensure that...," "lift...," "raise...," etc., has been selected, the phrase shall remain the same throughout the loading manuals, as specified by the acquiring activity (see 6.2e).

3.1.7.3 Standardization of terms "if applicable" and "if required". The term "if required" shall not be used. Unless otherwise specified by the acquiring activity (see 6.2f), the term "if applicable" shall only be used when the completion of the procedural step may, or may not, be required due to aircraft configuration or load condition e.g., "remove power (if applicable)" is considered correct if the operation may require power in later steps.

3.1.7.4 Standardization of cockpit switch safing for aircraft preparation. Unless otherwise specified by the acquiring activity (see 6.2g), cockpit switch safing procedures shall read, "Check that all cockpit armament switches are in the OFF, SAFE, or NORMAL position." These procedures shall be amplified to include figure 6 showing required switch positions.

3.2 Manuals to be prepared. Procedures shall be covered through preparation of the following manual types, as specified by the acquiring activity (see 6.2h):

3.2.1 Nuclear Weapons Basic Information and Loading Procedures Manual (Fighter Aircraft). Contains weapons loading/unloading procedures, to include descriptive information and emergency procedures. See 3.3 for specific requirements. See appendix A for resources available for digital preparation of this manual.

3.2.2 Nuclear Weapons Loading Procedures Manual (Bomber Aircraft). Contains job-oriented loading procedures, including descriptive material and general support information. See 3.4 for specific requirements. See appendix B for resources available for digital preparation of this manual.

3.2.3 Nonnuclear Munitions Basic Information Manual (Standard Volume). Contains descriptive material for use with Nonnuclear Munition Loading Procedures manuals. See 3.5 for specific requirements. See appendix C for resources available for digital preparation of this manual.

3.2.4 Nonnuclear Munitions Loading Procedures Manual. Contains munition loading/unloading procedures, including emergency procedures. See 3.6 for specific requirements. See appendix D for resources available for digital preparation of this manual.

3.2.5 Nonnuclear Munitions Loading Standard Data Packages. Unless otherwise specified by the acquiring activity (see 6.2i), Standard Data Packages shall be prepared. Standard Data Packages contain standard munitions loading/unloading procedures and description information. See 3.7 for specific requirements. See appendix F for resources available for digital preparation of data packages.

3.2.6 Loading Procedures Checklist (CL-2 and subsequent, except CL-100). Contains condensed munitions/weapons loading/unloading procedures and briefing/emergency procedures. See 3.8 for specific requirements. See appendix G for resources available for digital preparation of this checklist.

3.2.6.1 Checklist subsets. The following types of checklists may be prepared (see 3.8.1 for detailed requirements).

3.2.6.1.1 Single Loading Procedures Checklist. Contains procedures applicable to one type of munition/weapon.

3.2.6.1.2 Integrated Loading Procedures Checklist. This checklist is prepared for two or more different types of munitions/weapons carried concurrently on the same aircraft without regard to whether such munitions/weapons are nuclear or nonnuclear.

3.2.6.1.3 Family Group Loading Procedures Checklist. This checklist is prepared for a group of nonnuclear munitions that have similar safety, functional, and loading characteristics.

3.2.6.1.4 Nuclear Weapons Loading Procedures Checklist. Contains team chief checks, pre-loading and post-loading checks, safety checks, unloading procedures, and other steps as required.

3.2.6.2 NATO Stage B Cross-Servicing Checklist (CL-1, CL-2, and subsequent). This checklist establishes the requirements for preparing checklists for loading/unloading nonnuclear munitions, flares, and chaff (including chaff dispensers) on aircraft in support of North Atlantic Treaty Organization (NATO) Stage

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B cross-servicing. The checklist is a supplement to the Stage A cross-servicing guide for aircraft. Specific requirements are located at 3.9 (see 3.9.2 for checklist CL-1 and 3.9.3 for checklist CL-2 and subsequent). See appendices I (checklist CL-1,) and J (checklist CL-2 and subsequent) for resources available for digital preparation of these checklists.

3.2.6.3 Functional Check Procedures Checklist (CL-1). Contains preparation and aircraft functional check procedures, along with emergency procedures. See 3.10 for specific requirements. See appendix K for resources available for digital preparation of this checklist.

3.2.6.4 End of Runway (EOR) Procedures Checklist (CL-100). Contains general, delayed flight/alert, immediate prior to launch, and safing procedures. See 3.11 for specific requirements. See appendix K for resources available for digital preparation of this checklist.

3.3 Nuclear Weapons Basic Information and Loading Procedures Manual (Fighter Aircraft). This manual consists of descriptive material, supplemental information, emergency procedures, and weapons loading/unloading procedures as detailed below (see 3.2.1 for overview). The following apply:

a. Nonnuclear munitions procedures shall not be incorporated in this manual.

b. Capitalization and underscoring of chapter, section, and paragraph titles shall be in accordance with the requirements of MIL-STD-38784 (see 6.8).

c. All information shall be unclassified.

3.3.1 Arrangement. The Nuclear Weapons Basic Information and Loading Procedures Manual (Fighter Aircraft) manual shall be arranged as follows:

a. Front matter (see 3.3.1.1).

b. Chapter 1 – Basic Information (see 3.3.1.2).

1. Section I – General Safety Requirements (see 3.3.1.2.1).
2. Section II – Emergency Procedures (see 3.3.1.2.2).
3. Section III – Aircraft Description and General Arrangement (see 3.3.1.2.3).
4. Section IV – Support Equipment (SE) Description (see 3.3.1.2.4).
5. Section V – Bomb/Weapon Descriptions (see 3.3.1.2.5).
6. Section VI – General Procedures (see 3.3.1.2.6).
7. Section VII – Aircraft Preparation (see 3.3.1.2.7).
8. Section VIII – Flight Circuit Test (FCT)/Functional Checks (see 3.3.1.2.8).
9. Section IX – Stray Voltage Checks (see 3.3.1.2.9).

c. Chapter 2 – Bombs/Weapons Loading Procedures (see 3.3.1.3).

1. General (see 3.3.1.3.2).
2. Loading Procedures (see 3.3.1.3.3).
3. Unloading Procedures (see 3.3.1.3.4).
4. Ferry Procedures (see 3.3.1.3.5).

d. Chapter 3 – Practice Bomb Loading Procedures (see 3.3.1.4).

1. General (see 3.3.1.4.1).
2. Loading Procedures (see 3.3.1.4.2).
3. Unloading Procedures (see 3.3.1.4.3).

3.3.1.1 Front matter. The front matter shall be in accordance with the requirements of MIL-STD-38784, except that no List of Illustrations (LOI) or List of Tables (LOT) shall be included.

3.3.1.1.1 Introduction. The introduction shall be arranged in accordance with the requirements of MIL-STD-38784, with the following additional requirements. The introduction shall include a Listing of

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Applicable Publications (LOAPs) and a precedence paragraph or statement, and a nuclear safety certification statement as provided by the acquiring activity (see 6.2j). Submittal and routing instructions for TM improvement reports shall be included, and shall reference TO 00-5-1 as the authority for recommending changes. A paragraph shall be included identifying the Air Force activity having technical responsibility for the manual (see 6.2k). Standard definitions of WCNs shall be included as the final entry of the introduction. Any other additional information shall be included, as provided by the acquiring activity (see 6.2l). See figure 1.

3.3.1.2 Chapter 1 – Basic Information. Unless otherwise specified by the acquiring activity (see 6.2m), all of the following sections shall be included (see 3.3b). When a section is not required, the section heading (section number and title) shall be included, followed by "Not Applicable." When specified by the acquiring activity (see 6.2n), additional sections shall be included, as specified by AFNWC/NCLS, and shall begin after the last of the required sections.

3.3.1.2.1 Section I – General Safety Requirements. Section I shall contain all general safety requirements necessary for preparation, handling, loading, and unloading of weapons/munitions (see 3.6.1.2.1).

3.3.1.2.2 Section II – Emergency Procedures. Section II shall contain emergency procedures related to weapons/munitions (see 3.6.1.2.2) or weapons/munitions loaded aircraft. Procedures shall be prefaced by a brief explanation of actions to be accomplished. Emergency procedures shall be marked in accordance with the requirements of MIL-STD-38784 and shall include the words "Emergency Procedures" directly below the TM identification number (see figures 2 and 3).

3.3.1.2.3 Section III – Aircraft Description and General Arrangement. Section III shall contain the aircraft description and general arrangement in an illustrated, informational form. The location of panels, switches, safety devices, etc., which are used as part of loading procedures, shall be shown. Each identified item shall have an accompanying brief description of its function/use. See figure 4.

3.3.1.2.4 Section IV – Support Equipment (SE) Description. In Section IV, descriptive information shall be included concerning testers, handling, and loading equipment listed as SE in loading procedures. Authorized nuclear weapons SE shall be listed in accordance with the Master Nuclear Certification List (MNCL) (see 6.16).

3.3.1.2.5 Section V – Bomb/Weapon Descriptions. Section V shall contain descriptive information on all nuclear weapons, trainers, and their components, that are approved for loading on the aircraft concerned.

3.3.1.2.6 Section VI – General Procedures. Section VI shall contain general information, followed by detailed procedures for selected items of a repetitive nature, within the different chapters of the manual (checking test equipment for proper operation, aircraft grounding procedures, marking of impulse cartridges, etc.). See figure 5.

3.3.1.2.7 Section VII – Aircraft Preparation. Section VII shall contain detailed steps required to prepare the basic aircraft and installed weapons/munitions accessories (see 3.6.1.2.5), e.g., rack, launcher, etc., for functional/stray voltage checks and weapons/munitions loading.

3.3.1.2.7.1 Aircraft Preparation. The Aircraft Preparation primary paragraph shall contain all steps required to prepare the basic aircraft for functional/stray voltage checks and weapons/munitions loading (see 3.6.1.2.5.1).

3.3.1.2.7.2 Installed Accessory Preparation. The Installed Accessory Preparation primary paragraph shall contain all necessary steps to prepare each installed weapon/munition accessory (see 3.6.1.2.5.2), e.g., rack, launcher, etc., for functional/stray voltage checks and weapons/munitions loading.

3.3.1.2.8 Section VIII – Flight Circuit Test (FCT)/Functional Checks. Section VIII shall contain all necessary steps to perform functional checks of the weapons munitions control/release/fire and jettison systems (see 3.6.1.2.6). See figure 6.

3.3.1.2.8.1 System requirements. When specified by the acquiring activity (see 6.2o), procedures shall be subdivided to meet weapon system requirements and additional primary paragraphs shall be included, as provided by AFNWC/NCLS, in the designated sequence.

3.3.1.2.9 Section IX – Stray Voltage Checks. Section IX shall contain all necessary steps to perform stray voltage test(s) of weapons/munitions control/release/fire and jettison systems (see 3.6.1.2.7). As a minimum,

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procedures shall reflect the application of power to the aircraft during the stray voltage checks, unless otherwise specified by the acquiring activity (see 6.2p).

3.3.1.3 Chapter 2 – Bombs/Weapons Loading Procedures. Arrangement (see 3.3c) shall be in accordance with 3.3.1.3.2 through 3.3.1.3.5.3. When specified by the acquiring activity (see 6.2q), this chapter shall be divided into sections with specified arrangement, as provided by AFNWC/NCLS. The organization of information within the chapter shall be dictated by the similarity of tasks to be performed (see 6.7). Integrated nuclear/nonnuclear loading procedures shall not be incorporated in the Nuclear Weapons Basic Information and Loading Procedures Manual.

3.3.1.3.1 Method of presentation. The presentation of the detailed procedures shall be standardized as much as possible. The following method of presentation shall be used:

3.3.1.3.1.1 Applicability notations. Applicability notations shall be in accordance with 3.1.5.

3.3.1.3.1.2 Illustrations. The illustrations shall be provided in a concise and standard form (see figures 5 and 6) and shall support the procedures/steps as needed.

Electronic presentation: Functionality shall be designed to enable the illustration(s) to be accessed and viewed simultaneously with the applicable procedural text. Illustrations shall otherwise meet the requirements of MIL-STD-38784 for electronic presentation.

Print presentation: Illustrations shall be as close as possible to the applicable step and be of a standard size, where possible. Illustration/text shall be arranged so that the procedures are on the right side and illustrations on the left side of the page or with procedures at the top and illustration across the bottom of the page. Illustrations shall be placed both along the left side and across the bottom of the page, if necessary. Pages shall not require turning to view an illustration.

3.3.1.3.1.3 Use of call outs and leader lines. Figure call outs shall be brief and concise. Referenced illustration content, such as a switch position directed by a procedural step, shall be indicated by leader lines or nomenclature call outs on the applicable figure (see figure 7).

Electronic presentation: Use of call outs and leader lines shall be in accordance with MIL-STD-38784 for electronic presentation; otherwise, if specified by the acquiring activity (see 6.2r), user graphic interface functionality shall be employed, such as mouse over, for triggering display of tooltips/ScreenTips (or similar), in place of call outs and leader lines. This may be applied to PDF.

3.3.1.3.1.4 Procedural identification.
Electronic presentation: If specified by the acquiring activity (see 6.2s), the primary sidehead title or first subordinate sidehead title of the text, i.e., procedure, contained in the viewable display shall be identified by being displayed under the TO number in the persistently viewable area. Identification displayed shall dynamically change while user sequences through the procedural information. An abbreviated weapon/munition (see 3.6.1.3.1.4) designation and aircraft station shall also be included in the identification, when the aircraft has more than single carriage capability. See examples in table below.

Print presentation: Procedural pages shall carry identification consisting of the primary sidehead title, or the initial first subordinate sidehead used, on left pages and the primary sidehead title, or the last first subordinate sidehead used, on right pages. An abbreviated weapon/munition (see 3.6.1.3.1.4) designation and aircraft station shall also be included, when the aircraft has more than single carriage capability. This identification shall be placed on one line if possible, below the TO number. Examples are:

	Nuclear	Nonnuclear
a.	TO 1F-XX-16 Loading/61/WB/CL	TO 1F-XXX-33-1-2 Ldg/BSU/CL/WS/CFT

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b.	TO 1F-XX-16 Acft Prep	TO 1F-XXX-33-1-2 Acft Prep
c.	TO 1F-XX-16 Unldg/Bomb	TO 1F-XXX-33-1-2 Unldg/Bomb GP (R)/MC

3.3.1.3.1.5 Identifying changed, added, or deleted material. Identification of changed, added, or deleted material shall be in accordance with the requirements of MIL-STD-38784.

3.3.1.3.1.6 Titles and headings. Procedure titles, and primary and first subordinate paragraphs, shall be limited to those listed in 3.3.1.3.2 through 3.3.1.3.5. If a specific paragraph is not applicable to a particular aircraft/weapon, the paragraph title shall be included, followed by "Not applicable." See table I.

3.3.1.3.1.7 Procedural steps. Procedural steps shall be numbered 1., 2., 3., etc.

3.3.1.3.2 General. Under the General primary paragraph, the following first subordinate paragraphs shall be covered:

3.3.1.3.2.1 Scope. The scope paragraph shall include a description of the purpose of the chapter, outline of the major functions therein, and the TM identification number of the supporting checklist.

3.3.1.3.2.2 Support Equipment (SE). The Support Equipment (SE) paragraph shall list all SE that may be needed to accomplish the requirements of the chapter. For -16 manuals, the use of nuclear safety certified or approved equipment is mandatory, and shall be listed in accordance with the Master Nuclear Certification List (MNCL) (see 6.16).

3.3.1.3.2.3 Specific safety requirements. The specific safety requirements paragraph shall include all specific safety procedures pertaining to the weapon/munition (see 3.6.1.3.2.1.3 and 3.7.1.3.2) and loading procedures.

3.3.1.3.3 Loading Procedures. Under the Loading Procedures primary paragraph, the following first subordinate paragraphs shall be covered.

3.3.1.3.3.1 Aircraft preparation. The following note and steps shall be included in all loading manuals:

NOTE

Refer to Chapter 1, Section _, for applicable aircraft preparation.

Refer to Chapter 1, Section _, for FCT/functional checks.

Refer to Chapter 1, Section _, for stray voltage checks.

Steps:

1. Perform aircraft preparation.
2. Perform required FCT/functional checks.
3. Perform required stray voltage checks.

3.3.1.3.3.2 Weapons/munitions preparation. The weapons/munitions preparation paragraph, applicable to a single weapon/munition (see 3.6.1.3.2.2.2 and 3.7.1.3.4), multiple rack, and pre-loaded accessories, shall include steps required to inspect and prepare each weapon/munition, including components. All steps shall be singular.

3.3.1.3.3.3 Cartridge installation. For the BRU-3, MAU-12, and similar racks, when the cartridges cannot be installed after the store is loaded due to configuration, the following note shall follow the paragraph title:

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NOTE

Omit step 1, if a stray voltage check was performed during aircraft preparation or FCT/functional check, provided no additional power has been applied to the aircraft.

The following steps shall be included–all steps shall be plural:

1. Perform required stray voltage checks.
2. Check impulse cartridges for serviceability.
3. Install impulse cartridges.

3.3.1.3.3.4 Loading. This paragraph shall include steps required to load the weapons. All steps shall be singular.

3.3.1.3.3.5 Cartridge installation. The following note shall follow the paragraph title:

NOTE

Omit steps 1 through 3, if impulse cartridges were installed as part of the loading, and a stray voltage check was performed during aircraft preparation or FCT/functional check, provided no additional power has been applied to the aircraft.

The following steps shall be included–all steps shall be plural:

1. Perform required stray voltage checks.
2. Check impulse cartridges for serviceability.
3. Install impulse cartridges.

3.3.1.3.3.6 Postloading inspection. This paragraph shall include steps required to ensure that safety devices are installed or removed as required. All steps shall be plural.

3.3.1.3.3.7 Delayed flight or alert. This paragraph shall include procedural steps required for safing of aircraft accessories, weapons/munitions (see 3.6.1.3.2.2.7 and 3.7.1.3.9), impulse cartridges, and procedural steps for optional readiness configurations. The following note shall be placed immediately following the mandatory procedures:

NOTE

Omission of, or options relating to, the following step(s) may be dictated by the local commander.

3.3.1.3.3.8 Immediately prior to launch. This paragraph shall include steps required to place the aircraft in a launch configuration. All steps shall be plural.

3.3.1.3.4 Unloading Procedures. Under this primary paragraph, the following first subordinate paragraphs shall be covered.

3.3.1.3.4.1 Safing. This paragraph shall include essential steps required to safe the aircraft/weapons/munitions (see 3.6.1.3.2.3.1 and 3.7.1.4.1), and install required safety devices. All steps shall be plural. The following note shall be placed immediately after the paragraph preceding the steps:

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NOTE

Omission of the following step(s) may be authorized by the local commander.

3.3.1.3.4.2 Preunloading. This paragraph shall include steps and checks required to prepare the aircraft/weapons/munitions (see 3.6.1.3.2.3.2 and 3.7.1.4.2) for unloading. All steps required to safe the aircraft/weapons/munitions shall be repeated in this paragraph. All steps shall be plural.

3.3.1.3.4.3 Unloading. This paragraph shall include steps required to unload the weapons/munitions (see 3.6.1.3.2.3.3) from the aircraft. All steps shall be plural.

3.3.1.3.5 Ferry Procedures. Under this primary paragraph, the following first subordinate paragraphs shall be covered.

3.3.1.3.5.1 Deployment. This paragraph shall include information regarding the proper configuration for deployment or logistic shipment on strike aircraft, and the statement: "Ferry checklist procedures are provided in TO 1F-XXX-16CL-X. For amplification of the checklist steps, refer to comparable steps presented in this technical order."

3.3.1.3.5.2 Strike to nonstrike. This paragraph shall include steps required to convert a strike-loaded aircraft to the configuration required for deployment to an alternate base, from which a strike mission may be flown.

3.3.1.3.5.3 Nonstrike to strike. This paragraph shall include steps required to reconfigure the aircraft to strike configuration in a minimum of turnaround time, after arrival at the alternate base.

3.3.1.4 Chapter 3 – Practice Bomb Loading Procedure. Loading procedures for practice bombs shall be essentially as identified in 3.3.1.3.

3.3.1.4.1 General. General information shall be in accordance with 3.3.1.3.2.

3.3.1.4.2 Loading Procedure. Loading procedures shall be in accordance with 3.3.1.3.3.

3.3.1.4.3 Unloading procedure. Unloading procedures shall be in accordance with 3.3.1.3.4.

3.4 Nuclear Weapons Loading Procedures Manual (Bomber Aircraft). This manual consists of descriptive material, general support information, supplemental information, and job-oriented loading procedures as detailed below (see 3.2.2 for overview). The following apply:

a. Capitalization and underscoring of chapter, section, and paragraph titles shall be in accordance with the requirements of MIL-STD-38784.

b. Illustrations shall be prepared in accordance with the requirements of MIL-STD-38784. Aircraft and weapon locator type illustrations shall not be used, except where essential to explain data in the supplemental loading information chapter and illustrations required for the job-oriented procedures.

c. Unless otherwise specified by the acquiring activity (see 6.2t), text shall be single column unjustified, and illustrations shall be integrated with text (except in job-oriented procedures).

d. All information shall be unclassified.

3.4.1 Arrangement. The Nuclear Weapons Loading Procedures Manual (Bomber Aircraft) shall be arranged as follows:

a. Front matter (see 3.4.1.1).

b. Chapter 1 – General Support Information (see 3.4.1.2).

c. Chapter 2 and subsequent – Loading Operations (see 3.4.1.3).

d. Chapter X – Supplemental Loading Information (see 3.4.1.4).

3.4.1.1 Front matter. The front matter shall be in accordance with the requirements of MIL-STD-38784. When specified by the acquiring activity (see 6.2u), the LOI or LOT shall not be included.

3.4.1.1.1 Introduction. The introduction shall be in accordance with the requirements of 3.3.1.1.1.

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3.4.1.2 Chapter 1 – General Support Information. This chapter shall contain equipment, safety, loading restrictions, and any necessary procedures and information pertaining to preparation of the aircraft for loading. In addition, a listing of aircraft components, controls, and indicators of direct concern to the load crew, shall be included.

3.4.1.2.1 Emergency procedures. If specified by the acquiring activity (see 6.2v), emergency procedures shall be provided similar to Chapter 1, Section II, of the Nuclear Weapons Basic Information and Loading Procedures Manual (Fighter Aircraft), Chapter 1 (see 3.3).

3.4.1.3 Chapter 2, 3, etc. – Loading Operations. Job-oriented loading procedures shall be presented for all stores. One chapter shall be used for each weapon or group of weapons. Chapter titles shall identify the applicable weapon(s). Breakdown shall be presented under the following primary paragraphs:

a. Loading preparation.

b. Loading procedures.

c. Loading completion procedures prefixed with applicability notations for the applicable bomb or warhead, if applicable (see 3.1.5).

3.4.1.3.1 Job-oriented procedures (Task Assignment List). The procedures within the manual shall be job-oriented, i.e., task assignments shall be listed for each load crew member in a time-phased sequence. The following apply:

a. A columnar arrangement shall be used (one column for each load crew member); horizontal alignment of tasks of the crew members shall be used to indicate tasks which must be performed at the same time.

b. Arabic numerals, used as column headings, shall be the load crew member designations; steps shall be numbered consecutively in Arabic numerals within each heading for each crew member.

c. Procedures shall be identified by the type of procedures and by the weapon designation, if applicable. This identification shall be placed below the TM identification number. (See Electronic and Print presentation.)

d. Only illustrations essential to the operation shall be used and they shall contain no text or callouts, other than arrowheads, to indicate the specific switch or equipment item mentioned in the procedural step.

e. Reference to these illustrations shall be accomplished by the expression "Figure XX" next to the number of the illustrated step. Illustrations in the job-oriented procedures shall not be used more than once; the illustrations shall be referenced as often as necessary.

f. Figure titles shall not be used in the job-oriented procedures.

Electronic presentation: Each scrollable view shall be identified by the type of procedures and by the weapon designation, if applicable. This identification shall be placed below the TM identification number in the persistent data window. See 3.4.1.3.1c. Illustration(s) shall be linked to the corresponding job-oriented procedures and arranged so that both illustration(s) and procedures may be viewed together.

Print presentation: Each page shall be identified by the type of procedures and by the weapon designation, if applicable (see 3.4.1.3.1c). This identification shall be placed below the TM identification number. When the job-oriented procedures require illustrations, they shall be placed on the left-hand page, if possible, and procedures on the facing right-hand page.

3.4.1.4 Chapter X – Supplemental Loading Information. This chapter shall follow the job-oriented procedures, and shall contain any additional information required by the load crew, such as when to perform safety checks and transfer procedures. The chapter shall be numbered in sequence behind the preceding chapters (see 3.4.1.3).

3.5 Nonnuclear Munitions Basic Information Manual (Standard Volume). This manual consists of descriptive material for use in conjunction with all USAF aircraft Nonnuclear Munition Loading Procedures manuals, as detailed below (see 6.15). See 3.2.3 for an overview. The following apply:

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a. Capitalization and underscoring of chapter, section, and paragraph titles shall be in accordance with the requirements of MIL-STD-38784.

b. The first section of a new chapter shall be in accordance with MIL-STD-38784.

c. Print presentation: Manual shall not contain foldout pages.

d. Illustrations shall be in accordance with 3.3.1.3.1.2.

e. Chapters 1 through 5 - Description: Descriptions of all munitions items, munitions suspension equipment, aircraft gun systems, munitions SE, and appropriate supplementary information shall be included in sufficient detail for loading purposes (see 6.17 and 6.18).

f. All information shall be unclassified.

Electronic presentation: Individual sections shall be contained in separate scrollable views.

Print presentation: After the first section of a chapter, subsequent sections within a chapter shall begin on an odd (right hand) page and not follow the text from a previous section.

3.5.1 Arrangement. The Nonnuclear Munitions Basic Information Manual (Standard Volume) shall be arranged as follows:

a. Front matter (see 3.5.1.1).

b. Chapter 1 – Munitions Description (see 3.5.1.2).

1. Section I – Missiles, Rockets, and Ammunition.
2. Section II – Bomb Type Munitions.
3. Section III – Fuzes.
4. Section IV – Impulse Cartridges, Chaff, Flares, and Photoflash.
5. Section V – Munitions Accessories.

c. Chapter 2 – Suspension Equipment Description (see 3.5.1.3).

1. Section I – Racks.
2. Section II – Launchers and Dispensers.

d. Chapter 3 – Guns and Gun Pods Description (see 3.5.1.4).

1. Section I – Guns.
2. Section II – Gun Pods.

e. Chapter 4 – Support Equipment (SE) Description (see 3.5.1.5).

1. Section I – Bomb Lift Trucks.
2. Section II – Munitions Handling and Loading Adapters.
3. Section III – Munitions Trailers.
4. Section IV – Ammunition Loading Systems.
5. Section V – Test Equipment.
6. Section VI – Test Adapters.

f. Chapter 5 – Supplemental Information (see 3.5.1.6).

1. Section I – Special Tools.
2. Section II and subsequent – other supplementary information (as many sections as required).

g. Chapter 6 – Support Equipment (SE) Inspection Criteria and Illustrated Parts Breakdown (IPB) (see 3.5.1.7).

1. Section I - SE Inspection Criteria.
2. Section II - SE IPB.

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3.5.1.1 Front matter. The front matter shall be in accordance with the requirements of MIL-STD-38784, except no LOI or LOT shall be used.

3.5.1.1.1 Introduction. The introduction shall be prepared in accordance with the requirements of MIL-STD-38784. Submittal and routing instructions for TM improvement reports shall be included, and shall reference TO 00-5-1 as the authority for recommending changes. A paragraph shall be included to identify the Air Force activity having technical responsibility for the manual (see 6.2k).

3.5.1.2 Chapter 1 – Munitions Description. Descriptive information shall be provided on all munitions, their components, and related accessories approved for loading on USAF aircraft. Fuze compatibility for each fuzed munition shall be shown, specifically identifying those munitions authorized for prefuzing and retention while unloading.

3.5.1.3 Chapter 2 – Suspension Equipment Description. Descriptive information shall be provided on all equipment used to launch, release, or dispense munitions from USAF aircraft.

3.5.1.4 Chapter 3 – Guns And Gun Pods Description. Descriptive information shall be provided on all guns and gun pods, if installed, used on USAF aircraft.

3.5.1.5 Chapter 4 – Support Equipment (SE) Description. Descriptive information shall be provided on testers and munitions handling/loading equipment listed under SE in USAF aircraft loading procedures manuals.

3.5.1.6 Chapter 5 – Supplemental Information. Descriptive information shall be provided on items required to support munitions loading operations on USAF aircraft, which are not covered in chapters 1 through 4. If no supplemental information, other than special tools, is required, special tools shall be a primary paragraph, rather than a section.

3.5.1.7 Chapter 6 – Support Equipment (SE) Inspection Criteria and Illustrated Parts Breakdown (IPB). If specified by the acquiring activity (see 6.2w), descriptive information shall be included for all testers and munitions handling/loading equipment listed under SE in the applicable USAF aircraft loading procedures manual.

3.6 Nonnuclear Munitions Loading Procedures Manual. This manual consists of supplemental information, emergency procedures, and munition loading/unloading procedures, as detailed below (see 3.2.4 for overview). The following apply:

a. Procedural step numbering shall follow that given for Loading Procedures Checklists (see 3.8.2.4.1.5): The numbering of steps shall be by a numeric character in sequential order and any substeps shall be numbered by a lower-case alpha character, in sequential order.

b. Capitalization and underscoring of chapter, section, and paragraph titles shall be in accordance with the requirements of MIL-STD-38784 (see 6.8).

c. Electronic presentation: Individual sections shall be contained in separate scrollable views.

d. All information shall be unclassified.

3.6.1 Arrangement. The Nonnuclear Munitions Loading Procedures Manual shall be arranged as follows:

a. Front matter (see 3.6.1.1).

b. Chapter 1 – Supplemental information (see 3.6.1.2).

1. Section I – General Safety Requirements (see 3.6.1.2.1).
2. Section II – Emergency Procedures (see 3.6.1.2.2).
3. Section III – Aircraft Description and General Arrangement (see 3.6.1.2.3).
4. Section IV – General Procedures (see 3.6.1.2.4).
5. Section V – Aircraft Preparation (see 3.6.1.2.5).
6. Section VI – Functional Checks (see 3.6.1.2.6).
7. Section VII – Stray Voltage Checks (see 3.6.1.2.7).

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c. Chapter 2 and subsequent – Loading Procedures. One chapter shall be used for each munition or group of munitions. Chapter titles shall identify the applicable munition(s) (see 3.6.1.3).

3.6.1.1 Front matter. The front matter shall be in accordance with the requirements of MIL-STD-38784, except no LOI or LOT shall be included.

3.6.1.1.1 Introduction. The introduction shall be prepared in accordance with the requirements of MIL-STD-38784. The introduction shall also contain a precedence paragraph or statement that will be furnished by the acquiring activity (see 6.2x). Submittal and routing instructions for TM improvement reports shall be included. TO 00-5-1 shall be referenced as the authority for recommending changes. A paragraph shall be included identifying the Air Force activity having technical responsibility for the manual (see 6.2k). Standard definitions of WCNs shall be included as the final entry of the introduction. See figure 8. Additional information shall be included, if specified by the acquiring activity (see 6.2x).

3.6.1.2 Chapter 1 – Supplemental Information. Unless otherwise specified by the acquiring activity (see 6.2y), this chapter shall have the following sections. Where sections are not required, the section heading (section number and title) shall be included, followed by "Not Applicable." When specified by the acquiring activity (see 6.2z), additional sections shall be included, of the type(s) as specified, and shall begin after the last of the required sections. Each section shall include the following information:

3.6.1.2.1 Section 1 – General Safety Requirements. General safety requirements information shall be in accordance with 3.3.1.2.1 (see 6.12).

3.6.1.2.2 Section II – Emergency Procedures. Emergency procedures coverage shall be in accordance with 3.3.1.2.2.

3.6.1.2.3 Section III – Aircraft Description and General Arrangement. Aircraft description and general arrangement information shall be in accordance with 3.3.1.2.3.

3.6.1.2.4 Section IV – General Procedures. General procedures coverage shall be in accordance with 3.3.1.2.6.

3.6.1.2.5 Section V – Aircraft Preparation. Aircraft preparation information shall be in accordance with 3.3.1.2.7.

3.6.1.2.5.1 Aircraft preparation. Aircraft preparation information shall be in accordance with 3.3.1.2.7.1.

3.6.1.2.5.2 Installed accessory preparation. Installed accessory preparation information shall be in accordance with 3.3.1.2.7.2.

3.6.1.2.6 Section VI – Functional Checks. Functional checks coverage shall be in accordance with 3.3.1.2.8. In addition, when Multiple Ejector Racks (MER), Triple Ejector Racks (TER), Bomb Release Units (BRU), etc., are installed, the functional check shall ensure that release and arming voltage is present, as a minimum, at the number one station of each item. One manual release and jettison mode will be functionally checked, as specified by the acquiring activity (see 6.2aa).

3.6.1.2.6.1 System requirements. Functional check procedures shall be further subdivided, if determined to be necessary, to meet weapon system requirements. When specified by the acquiring activity (see 6.2ab), additional primary paragraphs, as follows, shall be included .

a. Jettison checks.

b. Functional checks.

3.6.1.2.7 Section VII – Stray Voltage Checks. Stray voltage checks coverage shall be in accordance with 3.3.1.2.9.

3.6.1.3 Chapters 2, 3, 4, etc. – Loading Procedures. Arrangement of chapters 2 and subsequent shall be as specified in 3.6.1.3.2.1 through 3.6.1.3.2.3. When specified by the acquiring activity (see 6.2ac), these chapters shall be divided into sections with a sectional arrangement also as specified (see 6.13). The arrangement within a chapter shall be dictated by the similarity of tasks to be performed. The basic manual shall not contain integrated loading procedures.

3.6.1.3.1 Method of presentation. The presentation of the detailed procedures shall be standardized as much as possible. The following method of presentation shall be used:

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3.6.1.3.1.1 Applicability notations. Applicability notations shall be in accordance with 3.1.5.

3.6.1.3.1.2 Illustrations. Illustrations shall be in accordance with 3.3.1.3.1.2.

Electronic presentation only: Links to illustrations shall be placed as close as possible to the steps to which they apply.

3.6.1.3.1.3 Callouts. Figure callouts shall be in accordance with 3.3.1.3.1.3.

3.6.1.3.1.4 Procedural identification. Procedural identification shall be in accordance with 3.3.1.3.1.4.

3.6.1.3.1.5 Identifying changed, added, or deleted material. Identification of changed, added, or deleted material shall be in accordance with the requirements of MIL-STD-38784.

3.6.1.3.1.6 Titles and headings. Procedure titles and primary and subordinate paragraphs shall be limited to those listed in 3.6.1.3.2.1 through 3.6.1.3.2.3. If a specific paragraph is not applicable to a particular aircraft/munition, the paragraph title shall be included, followed by "Not applicable." See table I.

3.6.1.3.2 Chapter arrangement.

3.6.1.3.2.1 General. Under this primary paragraph, the following first subordinate paragraphs shall be covered.

3.6.1.3.2.1.1 Scope. The scope shall be in accordance with 3.3.1.3.2.1.

3.6.1.3.2.1.2 SE. SE shall be in accordance with 3.3.1.3.2.2.

3.6.1.3.2.1.3 Specific safety requirements. Specific safety requirements shall be in accordance with 3.3.1.3.2.3.

3.6.1.3.2.2 Loading procedures. Under this primary paragraph, the following first subordinate paragraphs shall be covered.

3.6.1.3.2.2.1 Aircraft preparation. Aircraft preparation shall be in accordance with 3.3.1.3.3.1.

3.6.1.3.2.2.2 Munitions preparation. Munitions preparation shall be in accordance with 3.3.1.3.3.2. In addition, this procedure shall include steps required to assemble and install authorized fuzes, prior to munitions loading. Procedures shall be included to verify the safety of each fuzed munition.

3.6.1.3.2.2.3 Cartridge installation. Cartridge installation shall be in accordance with 3.3.1.3.3.3.

3.6.1.3.2.2.4 Loading. This paragraph shall include steps required to load the munition. All steps shall be singular. Unless otherwise specified by the acquiring activity (see 6.2ad), this procedure shall include steps to remove fuze safety device(s) after munitions are loaded. These procedures shall also include steps to install fuzes that are not authorized for preloading installation.

3.6.1.3.2.2.5 Cartridge installation. Cartridge installation shall be in accordance with 3.3.1.3.3.5.

3.6.1.3.2.2.6 Postloading inspection. This paragraph shall include steps required to ensure that required safety devices are installed, bombs and fuzes are installed properly, and fuze safety devices have been removed or installed as required. All steps shall be plural.

3.6.1.3.2.2.7 Delayed flight or alert. Delayed flight or alert procedures shall be in accordance with 3.3.1.3.3.7.

3.6.1.3.2.2.8 Immediately prior to launch. Immediately prior to launch shall be in accordance with 3.3.1.3.3.8.

3.6.1.3.2.3 Unloading procedures. Under this primary paragraph, the following first subordinate paragraphs shall be covered.

3.6.1.3.2.3.1 Safing. Safing shall be in accordance with 3.3.1.3.4.1.

3.6.1.3.2.3.2 Preunloading. Preunloading shall be in accordance with 3.3.1.3.4.2.

3.6.1.3.2.3.3 Unloading. Unloading procedures shall be in accordance with 3.3.1.3.4.3.

3.6.1.3.2.3.4 Fuze and sensor removal. This paragraph shall include steps required to safe and remove the fuze or sensor (if applicable) from the nonnuclear munition. All steps shall be singular. The following note shall be placed immediately after the paragraph and preceding the steps:

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NOTE

With local commander approval, the following fuzes or sensors may remain installed.

3.7 Nonnuclear Munitions Loading Standard Data Packages. For data packages, paragraphs, tables, and figures shall be numbered in accordance with the requirements of MIL-STD-38784, with the exception that the Family Group number shall be used in lieu of a chapter number (see 6.8). Only grammatical changes to correct errors or improve compatibility with established manual style shall be permitted (see 6.18). See 3.2.5 for overview.

Print presentation: Pages shall be numbered in accordance with MIL-STD-38784.

3.7.1 Arrangement. Standard Data Packages shall be arranged as follows:

a. Front matter (see 3.7.1.1).

b. Munitions Description (see 3.7.1.2).

c. Standard Munitions Loading Procedures (see 3.7.1.3).

d. Standard Munitions Unloading Procedures (see 3.7.1.4).

3.7.1.1 Front matter. The front matter shall consist of a title page/screen and Table of Contents (TOC) in accordance with the requirements of MIL-STD-38784. The following is an exception to the general front matter requirements:

Electronic presentation: The front matter shall include a List of Changes (LOC) in lieu of a List of Effective pages (LEP).

Print presentation requirement: The front matter shall include a LEP.

3.7.1.1.1 Cover page. Electronic presentation: Refer to MIL-STD-38784.

Print presentation: The cover page shall be prepared in the same style and format as shown in figure 11.

3.7.1.2 Munitions Description. Munitions nomenclature/identification, weight, dimensions, length, integral safety features, and functional description shall be included. Any differences (if munition has more than one version) shall be described and illustrated.

3.7.1.2.1 Bomb fuzes. Descriptive data on bomb fuzes shall include a brief description and illustration of the fuze. The data shall also include functional type, safety devices, armed/safe indications, action, arming delays, and functioning delays.

3.7.1.2.2 Nomenclature. Nomenclature shall be in accordance with 3.1.3.

3.7.1.3 Standard Munitions Loading Procedures. The standard data package loading procedures shall contain the following information.

3.7.1.3.1 SE. SE shall be in accordance with 3.3.1.3.2.2. In addition, the following note shall be included for identifying the applicable aircraft procedures to be added by the acquiring activity (see 6.2ae):

NOTE TO SPM/SPO

List all SE, except common hand tools, required to load/unload munitions on/off aircraft.

3.7.1.3.2 Specific safety requirements. Specific safety requirements shall be in accordance with 3.3.1.3.2.3.

3.7.1.3.3 Aircraft preparation. Aircraft preparation shall be in accordance with 3.3.1.3.3.1 for aircraft procedures identified by the acquiring activity (see 6.2ae). The note heading shall be “NOTE TO SPM/SPO.”

3.7.1.3.4 Munitions preparation. Munitions preparation shall be in accordance with 3.3.1.3.3.2.

3.7.1.3.5 Cartridge installation. Cartridge installation shall be in accordance with 3.3.1.3.3.3.

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3.7.1.3.6 Loading. This paragraph shall include steps required to load the munition. All steps shall be singular. Unless otherwise specified by the acquiring activity, this procedure shall include steps to remove fuze safety device(s) after munitions are loaded (see 6.2ad). These procedures shall also include steps to install fuzes which are not authorized for preloading installation.

3.7.1.3.7 Cartridge installation. The following note shall be included for identifying the applicable aircraft procedures to be added by the acquiring activity (see 6.2ae):

NOTE TO SPM/SPO

Implement those procedures required for stray voltage checks at impulse cartridge breeches and installation of impulse cartridges.

3.7.1.3.8 Postloading inspection. Postloading inspection shall be in accordance with 3.6.1.3.2.2.6. In addition, the following note shall be included for identifying the applicable aircraft procedures to be added by the acquiring activity (see 6.2ae):

NOTE TO SPM/SPO

Implement those procedures required for checking that all pertinent aircraft steps have been accomplished.

3.7.1.3.9 Delayed flight or alert. Delayed flight or alert shall be in accordance with 3.3.1.3.3.7. In addition, the following note shall be included for identifying the applicable aircraft procedures to be added by the acquiring activity (see 6.2ae):

NOTE TO SPM/SPO

Implement those procedures required to place the aircraft in approved delayed flight or alert status.

3.7.1.3.10 Immediately prior to launch. This paragraph shall include munitions peculiar steps required to place the aircraft in a launch configuration. All steps shall be plural. The following note shall be included for identifying the applicable aircraft procedures to be added by the acquiring activity (see 6.2ae):

NOTE TO SPM/SPO

Implement those procedures required for preparing the aircraft for launch.

3.7.1.4 Standard Munitions Unloading Procedures. The standard data package unloading procedures shall include the following information.

3.7.1.4.1 Safing. Safing shall be in accordance with 3.3.1.3.4.1. In addition, the following note shall be included for identifying the applicable aircraft procedures to be added by the acquiring activity (see 6.2ae):

NOTE TO SPM/SPO

Implement those procedures required to safe the aircraft.

3.7.1.4.2 Preunloading. Preunloading shall be in accordance with 3.3.1.3.4.2. In addition, the following note shall be included for identifying the applicable aircraft procedures to be added by the acquiring activity (see 6.2ae):

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NOTE TO SPM/SPO

Implement those procedures required to prepare the aircraft for unloading munitions from aircraft.

3.7.1.4.3 Unloading. This paragraph shall include only those steps peculiar to munitions. All steps shall be singular. The following note shall be included for identifying the applicable aircraft procedures to be added by the acquiring activity (see 6.2ae):

NOTE TO SPM/SPO

Implement those procedures required for unloading the munitions from the aircraft.

3.7.1.4.4 Fuze and/or sensor. Fuze and/or sensor removal (if applicable) shall be in accordance with 3.6.1.3.2.3.4.

3.8 Loading Procedures Checklist (CL-2 and subsequent, except CL-100). This checklist consists of briefing/emergency procedures and condensed munitions/weapons loading/unloading procedures, as detailed below. The types of checklists to be prepared (see 3.8.1) shall be as specified by the acquiring activity (see 6.2af); for nuclear weapons loading checklists, as specified by Air Force Nuclear Weapons Center, Technical Order Branch (AFNWC/NCLS) (see 6.2ag). See 3.2.6 for overview. The following apply to all Loading Procedures Checklists:

a. The checklist shall only contain basic steps, with the exception of Nuclear Weapons Checklist which shall list each applicable cockpit switch and its proper position.

b. Any procedural step that pertains only to a specific munition/weapon, aircraft configuration, or accessory, shall be prefixed with applicability notations for identification, except for Single type checklists (see 3.1.5 and 3.8.1a).

c. Torque values, preset dimensions, orifice identifiers, etc., included in the loading procedures chapter shall be placed in the checklist.

d. Nuclear Weapons Loading Procedures Checklist for bomber aircraft shall stand-alone (i.e., shall not be a condensed version of the parent manual procedures).

e. The checklists shall contain complete briefing, loading, and unloading procedures in checklist format, oriented for use by the load team chief, to monitor loading.

f. All information shall be unclassified.

3.8.1 Checklist types. The following types of checklists may be required, if applicable:

a. Single: For one type of munition/weapon. The Single Loading Procedures Checklist shall be prepared according to the style and format of the Loading Procedures Checklist.

b. Integrated: For two or more different types of munitions/weapons carried concurrently on the same aircraft without regard to whether such munitions/weapons are nuclear or nonnuclear. The Integrated Loading Procedures Checklist shall contain a combination of procedural steps from -16 (nuclear) and -33 (nonnuclear) loading manuals. All information shall be unclassified. This checklist shall prepared according to the style and format of the Loading Procedures Checklist.

c. Family Group: For a group of nonnuclear munitions which have similar safety, functional, and loading characteristics. The Family Group Loading Procedures Checklist shall be prepared according to the style and format of the Loading Procedures Checklist.

d. Nuclear Weapons: The Nuclear Weapons Loading Procedures Checklist shall include team chief checks, pre-loading and post-loading checks, safety checks, unloading procedures, and other checks and steps required to safely complete the required operations. The checklist shall be

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written in the demand-response format. All information shall be unclassified. General preparation shall be in the same style and format as the Loading Procedures Checklist.

3.8.2 Arrangement. The general checklist requirements of MIL-DTL-5096 apply. Each checklist shall contain the following:

a. Front matter (see 3.8.2.1).

b. Load Crew Briefing (see 3.8.2.2).

c. Emergency Procedures (see 3.8.2.3).

d. Loading Procedures (see 3.8.2.4).

e. Unloading Procedures (see 3.8.2.4).

Print presentation: Arrangement shall be head to foot.

3.8.2.1 Front matter. The front matter shall be prepared in accordance with the checklist requirements of MIL-DTL-5096.

3.8.2.1.1 Introduction. The introduction shall provide a brief explanation for the purpose of the checklist. Submittal and routing instructions for TM improvement reports shall be included, and shall reference TO 00-5-1 as the authority for recommending changes. Additional information shall be included as specified by the acquiring activity (see 6.2l); for nuclear weapons loading checklists, as specified by AFNWC/NCLS. The introduction to nonnuclear loading checklists (-33 series only) shall contain a statement that the checklist provides for the check-off of procedural steps one time (when first completed). This relaxation of check-off requirements does not apply to nuclear loads appearing in -16 (nuclear loading) checklists since it could compromise nuclear safety. A list of abbreviations/acronyms shall not be included in checklists.

3.8.2.2 Load Crew Briefing. The Load Crew Briefing information shall state that an emergency procedures briefing shall be required prior to loading.

3.8.2.2.1 Specific briefing requirements. These briefings shall contain information on which the load crew will be briefed prior to loading. The briefing requirements shall contain all specific safety requirements from the loading procedures manual for the applicable munition(s)/weapon(s) being loaded.

3.8.2.3 Emergency Procedures. The Emergency Procedures information shall contain emergency markings in accordance with the requirements of MIL-STD-38784 and shall be prepared generally in accordance with this document. Emergency procedures for fire, drop/collision/incident, withdrawal time and distance, etc., shall be provided as shown in figure 9; the information shall be modified to reflect the specific equipment, procedures, and conditions to be supported, as specified by the acquiring activity (see 6.2ai). When more than one type of munition/weapon is included and withdrawal distances differ, evacuation distances shall be requested from the acquiring activity (see 6.20).

Electronic presentation: As specified by the acquiring activity (see 6.2aj), in lieu of printed lines (see figure 9), functionality shall be provided to permit entry of local emergency information by the user for fire, drop/collision/incident, withdrawal distances, and other emergency data; this shall also apply to checklists published in PDF. “Emergency Procedures” shall be displayed in the persistent data area below the TO identification number when emergency procedures information is displayed.

Print presentation: Each page shall include the words “Emergency Procedures” immediately above the page number (see figure 9).

3.8.2.4 Loading/Unloading Procedures. Paragraph headings used in the checklist shall be upper case. The “General” paragraph and its contents shall not be placed in the checklist.

3.8.2.4.1 Detailed requirements. All required steps shall be included for aircraft preparation and stray voltage checks.

3.8.2.4.1.1 Headings. Paragraph headings shall be worded the same as corresponding headings in the loading procedures manual.

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Electronic presentation: Each task level (task, airprepld, loadprep, etc…) shall be contained in a separate scrollable view. The heading at the top of the scrollable view shall contain the chapter heading information, followed by the task heading information.

Print presentation: Each heading (primary sidehead) shall begin on a new page.

3.8.2.4.1.2 Procedural steps. Steps which are considered routine action on all aircraft during loading procedures, and well within the capabilities of a trained technician, shall be omitted. Redundant Actions/checks shall be omitted; however, to ensure maximum safety, separate procedures for each fuze combination shall be included under appropriate subordinate headings. The number of steps shall be kept to a minimum.

3.8.2.4.1.3 Text. Steps shall be shortened by the elimination of excess words, and by use of abbreviations, so that one-line entries can be utilized to the greatest extent possible; however, steps shall be written to ensure ease of reading and interpretation. Steps shall follow the same sequence as they appear in the manual, but need not be numbered the same. Warnings in the loading procedures chapters shall be included in the checklists. See figure 10. When specified by the acquiring activity (see 6.2ak), cautions and notes shall be included. WCNs shall immediately precede the step to which they apply.

3.8.2.4.1.4 Illustrations. Unless otherwise specified by the acquiring activity (see 6.2al), illustrations shall not be included.

3.8.2.4.1.5 Numbering. Steps shall be numbered in numerical sequence under each heading; substeps shall be assigned lower case letters.

3.8.2.4.1.6 Step completion line or parentheses. Electronic presentation: A checkbox shall be used in lieu of parentheses. This shall apply to PDF, unless otherwise specified by the acquiring activity 6.2an.

Print presentation: Step completion parentheses shall be used in lieu of lines. Parentheses shall be placed in accordance with blank line (check space) requirements of MIL-DTL-5096 (see figure 10). Nuclear weapons loading procedures checklists for bomber aircraft shall include multiple step completion parentheses, as specified by the acquiring activity (see 6.2am).

3.8.2.4.1.7 Column format. Column format shall be in accordance with the checklist requirements of MIL-DTL-5096.

3.8.2.4.1.8 Type size. Electronic presentation: See table II for method for determining type font sizes for electronic display.

Print presentation: Text shall be 12-point type size.

3.8.2.4.1.9 Multi-carriage numbering. Electronic presentation: If specified by the acquiring activity (see 6.2ao), when aircraft have more than single carriage capability, the munition/weapon identification and aircraft station of the procedure contained in the scrollable view shall be displayed in the persistent data window below the TO number ID/procedure title.

Print presentation: When aircraft have more than single carriage capability, page content headings shall consist of applicable title and primary sidehead, munition/weapon identification, and aircraft station. These headings shall also be included at the bottom of each applicable checklist procedural page, above the page number. Nuclear weapons loading procedures checklists for bomber aircraft shall not have multi-carriage numbering.

3.9 NATO Stage B Cross-Servicing Checklist. This checklist shall be illustrated to ensure aircraft are safely cross-serviced without doubt or confusion. It shall contain emergency procedures and munitions loading procedures. All information shall be unclassified. See 3.2.6.2 for overview.

3.9.1 Loading Procedures Checklist. The Loading Procedures Checklist shall contain emergency procedures, loading procedures, and unloading procedures. All information shall be unclassified. When specified by the acquiring activity (see 6.2ap), these checklists shall be translated from English to the specified languages. Illustrated checklists shall be prepared, to ensure clarity during translation, so that aircraft are safely cross-serviced without doubt or confusion (see 6.1.1).

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3.9.1.1 Text style of writing. The checklists shall be written using clear, concise English. Short complete sentences that can be understood by allied personnel, and easily translated, shall be used. Every effort shall be made to avoid use of words with multiple meanings.

Print presentation: Each primary paragraph shall begin on a new page.

3.9.1.2 Steps arrangement. Steps shall be in numerical order under each heading; substeps shall be assigned lower case letters.

3.9.1.3 Column format. Column format shall be in accordance with the checklist requirements of MIL-DTL-5096.

3.9.1.4 Presentation of detailed procedures. The presentation of the detailed procedures shall be standardized as much as possible. The following method of presentation shall be used:

3.9.1.4.1 Illustrations. The following apply for illustrations (see figure 7):

a. Illustrations shall convey location, if applicable, and dimensional data with tolerance information.

b. The illustration shall be limited to the equipment upon which the tasks are to be performed, plus sufficient surroundings to allow a technician to easily locate the equipment item.

c. Callouts and identifier numbers, on the illustration, shall have a leader line connecting the number to the correct point on the illustration.

d. The callout and identifier numbers shall be limited to those used on the accompanying task step–the callouts, or identifiers, shall be keyed to the task step(s).

e. When an equipment item is first illustrated in a task and its location has not yet been specified, a general locator illustration shall be used to identify the location of the equipment item within the system.

f. Leader lines shall be used to help readers orient themselves with respect to the illustration and to provide directional movement in tasks.

3.9.1.4.2 Illustrations (special conditions). In addition to the above (see 3.9.1.4.1), the following requirements apply to special conditions, as specified by the acquiring activity (see 6.2aq):

Electronic presentation: Tasks shall contain linking to the associated illustration(s) in such a way that both task and illustration(s) may be presented together in the display in a readable manner or allow toggling between the text and illustration(s). In cases where the illustration(s) is used with more than one task, the illustration(s) shall reflect the callouts pertaining only to the individual task that is being displayed.

Print presentation:

a. Two or more tasks using the same illustration shall be included on the same page if both can be completed without crowding the page. Alpha suffixes shall be used on callout identifiers to identify callouts applicable to the second task.

b. If the associated illustration occupies less than a full page, instructional text shall be arranged on the top or bottom of the page to the extent possible without crowding.

c. If the text occupies less than a full page, but requires more than a full page to illustrate, a portion of the associated illustration shall be placed on the page containing the text.

d. Single page illustrations shall be repeated as necessary to support multi-page tasks.

3.9.1.4.3 Applicability notations. Applicability notations shall be in accordance with 3.1.5.

3.9.2 Checklist CL-1 arrangement. The general checklist requirements of MIL-DTL-5096 apply. The checklist shall contain the following:

a. Front matter (see 3.9.2.1).

b. General Procedures (see 3.9.2.2).

c. Aircraft Preparation (see 3.9.2.3).

Print presentation: The arrangement shall be head to foot.

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3.9.2.1 Front matter. Front matter shall be in accordance with the checklist requirements of MIL-DTL-5096.

3.9.2.1.1 Introduction. The introduction shall provide a brief explanation of the purpose of the checklist. Submittal and routing instructions for the TM improvement reports shall be included and shall reference TO 00-5-1 as the authority for recommending changes. A paragraph shall be included identifying the Air Force activity having technical responsibility for the manual (see 6.2k). Standard definitions of WCNs shall be provided. The definition of abbreviations shall be the final entry of the introduction (see figures 1 and 8).

3.9.2.2 General Procedures.

3.9.2.2.1 Support Equipment (SE). This paragraph shall list only the SE required to accomplish munitions loading. The nomenclature and any other information required to specifically identify this equipment, shall be included.

3.9.2.2.2 General safety requirements. This paragraph(s) shall contain all general safety requirements necessary for preparation, handling, loading, and unloading of munitions (see 6.12).

3.9.2.2.3 Emergency procedures. This paragraph(s) shall contain emergency procedures related to munitions-loaded aircraft with content and arrangement in accordance with 3.8.2.3. See 6.10 and figure 9.

3.9.2.2.4 Aircraft general arrangement. This paragraph(s) shall contain the aircraft general arrangement in an illustrated form, showing the location of panels and switches used by the load crew. See figure 4.

3.9.2.3 Aircraft Preparation. The Aircraft Preparation paragraph shall include steps which must be accomplished for munitions loading. The steps shall contain procedures for preparation of the aircraft and installed accessories for loading and a stray voltage check for those munitions/accessories as required. As a minimum, the procedure shall require power to be applied to the aircraft during stray voltage checks, unless otherwise specified by the acquiring activity (see 6.2p), in coordination with the responsible engineering organization. A configuration chart, depicting authorized loading configuration(s) for the specific munition, shall be displayed. The steps shall include procedures to safe any munitions items which might be on the aircraft prior to stray voltage checks, i.e., safe missile motors, disconnect AGM-65 igniter cable, etc.

3.9.3 Checklist CL-2, and subsequent, arrangement. The general checklist requirements of MIL-DTL-5096 shall apply. The checklist shall contain the following:

a. Front matter (see 3.9.3.1).

b. General Procedures (see 3.9.3.2).

c. Loading Procedures (see 3.9.3.3).

d. Unloading Procedures (see 3.9.3.4).

Print presentation: The arrangement shall be head to foot.

3.9.3.1 Front matter. The front matter shall be in accordance with the checklist requirements of MIL-DTL-5096.

3.9.3.2 General Procedures.

3.9.3.2.1 Support Equipment (SE). This paragraph shall be in accordance with 3.9.2.2.1.

3.9.3.2.2 Specific safety requirements. This paragraph shall contain all specific safety requirements pertaining to the munitions loading procedures of the specific munition.

3.9.3.3 Loading Procedures. Under the Loading Procedures chapter, the following paragraphs/tasks shall be covered.

3.9.3.3.1 Munitions preparation. This paragraph is applicable to a single munition and preloaded accessories; it shall include steps required to inspect and prepare each munition (including components). This procedure shall include steps required to assemble and install authorized fuzes prior to munitions loading. Procedures shall be included to verify the safety of each fuzed munition. All steps shall be singular.

3.9.3.3.2 Cartridge installation. All accessories that require preinstalled cartridges shall be included. This paragraph shall include steps required to check impulse cartridges for serviceability, and to properly

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install cartridges in those accessories that must have cartridges installed prior to loading munitions. All steps shall be plural.

3.9.3.3.3 Loading. This procedure shall include steps required to load stores. All steps shall be singular. This procedure shall include steps to remove fuzed safety devices after store is loaded.

3.9.3.3.4 Cartridge installation. This paragraph shall include steps required to check impulse cartridges for serviceability, and properly install cartridges in all accessories, as required. All steps shall be plural.

3.9.3.3.5 Postloading inspection. This paragraph shall include steps required to ensure that accessory safety devices are installed, bombs and fuzes are installed properly, and fuze safety devices have been removed or installed, as required. All steps shall be plural.

3.9.3.3.6 Immediately prior to launch. This paragraph shall include steps required to place the aircraft in a launch configuration. Steps shall be included to arm munition items safed during preparation (e.g., arm missile motors, connect AGM-65 igniter cable, etc.). All steps shall be plural.

3.9.3.4 Unloading Procedures. Under the Unloading Procedures chapter, the following paragraphs/tasks shall be covered.

3.9.3.4.1 Safing. This paragraph shall include essential steps required to safe the aircraft/munitions, and install associated safety devices. All steps shall be plural.

3.9.3.4.2 Preunloading. This paragraph shall include steps and checks required to prepare the aircraft/munitions for unloading. All steps required to safe the aircraft/munitions shall be repeated in the paragraph. All steps shall be plural.

3.9.3.4.3 Unloading. This paragraph shall include steps required to unload the munition from the aircraft. All steps shall be singular.

3.9.3.4.4 Fuze and sensor removal. This paragraph shall include steps required to safe and to remove the fuze and/or sensor, if applicable, from the munition. All steps shall be plural.

3.10 Functional Check Procedures Checklist (CL-1). This checklist shall be prepared in accordance with the general checklist requirements of MIL-DTL-5096 and the Loading Procedures Checklist requirements (see 3.8). See 3.2.6.3 for overview. In addition, the following requirements shall apply.

3.10.1 Arrangement. The checklist shall contain the following:

a. Front matter (see 3.10.1.1).

b. General Procedures (see 3.10.1.2).

c. Aircraft Preparation (See 3.10.1.3).

d. Functional Check (See 3.10.1.4).

Print presentation: The arrangement shall be head to foot.

3.10.1.1 Front matter. Front matter shall be in accordance with the checklist requirements of MIL-DTL-5096.

3.10.1.1.1 Introduction. The introduction shall provide a brief explanation of the purpose of the checklist. Submittal and routing instructions for the TM improvement reports shall be included and shall reference TO 00-5-1 as the authority for recommending changes. A paragraph shall be included identifying the Air Force activity having technical responsibility for the manual (see 6.2k). Standard definitions of "WARNING," "CAUTION," and "NOTE" shall be provided. The definition of abbreviations shall be the final entry of the introduction.

3.10.1.2 General Procedures.

3.10.1.2.1 Emergency Procedures. This paragraph(s) shall contain emergency procedures related to munitions-loaded aircraft with content and arrangement in accordance with 3.8.2.3. See 6.10 and figure 9.

3.10.1.3 Aircraft Preparation. The Aircraft Preparation paragraph shall include steps which must be accomplished for munitions loading. The steps shall contain procedures for preparation of the aircraft and installed accessories for functional checks for those munitions/accessories as required. The steps shall

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include procedures to safe any munitions items which might be on the aircraft prior to functional checks (i.e., safe pins, impulse cartridges, etc.).

3.10.1.4 Functional Check. The Functional Check paragraph shall contain all necessary steps to perform functional checks of the weapons control/release/fire and jettison systems.

3.11 EOR Procedures Checklist (CL-100). This checklist shall be prepared in accordance with the general checklist requirements of MIL-DTL-5096 and the Loading Procedures Checklist specific requirements (see 3.8). See 3.2.6.4 for overview. In addition, the following apply:

3.11.1 Arrangement. The EOR Procedures Checklist shall contain the following:

a. Front matter (see 3.11.1.1).

b. General Procedures (see 3.11.1.2).

c. Delayed Flight or Alert (see 3.11.1.3).

d. Immediately Prior to Launch (see 3.11.1.4).

e. Safing (see 3.11.1.5).

Print presentation: Arrangement shall be head to foot.

3.11.1.1 Front matter. The front matter shall be in accordance with the requirements of MIL-STD-38784.

3.11.1.1.1 Introduction. The introduction shall be prepared in accordance with the requirements of MIL-DTL-5096 and shall provide a brief explanation of the purpose of the checklist. Submittal and routing instructions for the TM improvement reports shall be included, and shall reference TO 00-5-1 as the authority for recommending changes. A paragraph shall be included identifying the Air Force activity having technical responsibility for the manual (see 6.2k). Standard definitions of WCNs shall be provided. The definition of abbreviations shall be the final entry of the introduction.

3.11.1.2 General Procedures.

3.11.1.2.1 General Safety Requirements. This paragraph(s) shall contain all general safety requirements necessary for the arming, safing, and loading of munitions.

3.11.1.2.2 Emergency Procedures. This paragraph(s) shall contain emergency procedures related to munitions-loaded aircraft with content and arrangement in accordance with 3.8.2.3. See figure 9. Emergency markings shall be in accordance with MIL-STD-38784.

3.11.1.3 Delayed Flight or Alert. This paragraph shall include steps required to ensure that safety devices are installed or removed as required. All steps shall be plural.

3.11.1.4 Immediately Prior to Launch. This paragraph shall include steps required to place the aircraft in a launch configuration. All steps shall be plural.

3.11.1.5 Safing. This paragraph shall include steps required to safe the aircraft/weapons/munitions, and install required safety devices. All steps shall be plural. The following note shall be placed immediately after the paragraph that precedes the steps:

NOTE

Omission of the following step(s) may be authorized by the local commander.

4 VERIFICATION

4.1 Verification Requirements. Before the technical data produced according to this specification is offered for acceptance, all tests, reviews, and verifications to determine that it conforms to the requirements in section 3 of the specification, shall be performed as specified by the acquiring activity. The Air Force Technical Order Policy and Procedures (AF TOPP) team provides the specific requirements for verification of

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technical data developed and delivered through this specification, as well as guidance for including these requirements in the solicitation or contract (see TO 00-5-3, 2.2.2).

4.2 Compliance. TMs shall meet all requirements of section 3 of this specification and the appropriate DTD appendix, as required by the acquiring activity (see 6.2). The requirements set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any requirements in this specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies, submitted to the government for acceptance, comply with all requirements of the contract. Use of sampling inspections shall be at the discretion of the contractor, and in accordance with commercially acceptable quality assurance procedures. However, use of sampling in QA procedures does not authorize submission of known defective material, either indicated or actual, nor does it commit the government to accept defective material.

5 PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2ar). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6 NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory).

6.1 Intended use. Manuals and checklists prepared in accordance with this document are for use in loading/unloading munitions/weapons on or in aircraft. The military-specific logistics support requirements for TMs covered by this detail specification are not provided in available commercial standards documents.

6.1.1 NATO Stage B. These checklists will also be used by NATO allies to load/unload munitions on aircraft; therefore, the checklists should be written in a simple, direct, and illustrated manner.

6.1.2 Managing requirements relative to electronic and print presentation unique functionality/formatting. Throughout section 3 in this detail specification, the statements labeled as "Electronic presentation" and "Print presentation" (see 6.9) provide data output related requirement options that are supportive of the content and formatting requirements stated within the paragraphs. The acquiring activity must decide (see 6.2c) between either electronic or print presentation-unique functionality/formatting requirements based on the type of publishing output being specified. For example, if the document is to be published in PDF, then the print presentation statements throughout are applicable (exceptions: electronic presentation statements would also apply for hot-linking of references within PDF documents and for color photographs). For documents designed to be displayed in web browsers in a non-print/non-document oriented format, e.g., Hypertext Markup Language (HTML), only the electronic presentation statements apply. Apart from electronic or print presentation statement options, the requirements of given paragraphs must be followed, as tailored by the acquiring activity.

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of this document.

b. If required, the specific issue of individual documents referenced (see 2.2.1).

c. Which of either the electronic or print presentation functionality/formatting requirements herein apply throughout; identify any exceptions by specific paragraph number. Assign by individual manual types in cases where they require different presentation requirements than the overall set of manuals (see 3.1.1.1).

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d. Electronic presentation: If references will not be linked to the applicable data, i.e., to external documents (see 3.1.6).

e. Grammatical phrases to be used (consult AFNWC/NCLS to determine technical terminology appropriate for nuclear weapons loading manuals) (see 3.1.7.2).

f. If use of the term "if applicable" is to be other than as specified in this document (see 3.1.7.3).

g. If cockpit switch safing procedures are to read other than as specified in this document (see 3.1.7.4).

h. Types of manuals to be prepared (see 3.2 and 6.19).

i. If Standard Data Packages will not be prepared (see 3.2.5 and 6.19).

j. Precedence paragraph or statement, nuclear safety certification statement, and additional information provided by AFNWC/NCLS to be included in manual introduction (see 3.3.1.1.1).

k. The Air Force activity having technical responsibility for the manuals and checklists (see 3.3.1.1.1, 3.5.1.1.1, 3.6.1.1.1, 3.9.2.1.1, 3.10.1.1.1, and 3.11.1.1).

l. Any additional information to be included in the introduction and for nuclear weapons loading checklists, as specified by AFNWC/NCLS (see 3.3.1.1.1 and 3.8.2.1.1).

m. If any sections in chapter 1 are not required (see 3.3.1.2).

n. If additional sections, specified by AFNWC/NCLS, are to be included in chapter 1, and, if so, type to be included (see 3.3.1.2).

o. If procedures are to be subdivided when required to meet weapon system requirements, if additional primary paragraphs, provided by AFNWC/NCLS, are to be included, and, if so, type to be included (see 3.3.1.2.8.1).

p. If procedures are not to reflect that power is to be applied to the aircraft during stray voltage checks (see 3.3.1.2.9 and 3.9.2.3).

q. If chapter 2 is to be divided into sections, and, if so, the arrangement of those sections, as provided by AFNWC/NCLS (see 3.3.1.3).

r. Electronic presentation: If digital graphic user interface functionality will be employed in place of call outs and leader lines (see 3.3.1.3.1.3).

s. Electronic presentation: If the primary sidehead title or first subordinate sidehead title of the procedure contained in the viewable display will be displayed under the TO number in the persistently viewable area (see 3.3.1.3.1.4).

t. If text is to be other than single column unjustified, and if illustrations are to be other than integrated with text (see 3.4c).

u. If the LOI and LOT will not be included in the front matter (see 3.4.1.1).

v. If emergency procedures will be provided in chapter 1 (see 3.4.1.2.1).

w. If descriptive information will be included in chapter 6 for all testers and munitions handling/loading equipment listed under SE in the applicable USAF aircraft loading procedures manual (see 3.5.1.7).

x. Precedence paragraph or statement to be included in the manual introduction and additional information, if any (see 3.6.1.1.1).

y. If all sections in chapter 1 are required (see 3.6.1.2).

z. If additional sections are to be included in chapter 1, and if so, the type(s) to be included (see 3.6.1.2).

aa. Manual release and jettison mode to be functionally checked (see 3.6.1.2.6).

ab. If additional primary paragraphs are to be included (see 3.6.1.2.6.1).

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ac. If chapters 2, 3, 4, etc., are to be divided into sections, and, if so, arrangement of those sections (see 3.6.1.3).

ad. If steps to remove fuze safety device(s) after munitions are loaded will not be included (see 3.6.1.3.2.2.4, 3.7.1.3.6).

ae. Aircraft procedures to be identified by the specified note (see 3.7.1.3.1, 3.7.1.3.3, 3.7.1.3.7, 3.7.1.3.8, 3.7.1.3.9, 3.7.1.3.10, 3.7.1.4.1,3.7.1.4.2, and 3.7.1.4.3).

af. Types of checklists to be prepared (see 3.8 and 6.19).

ag. The manner of preparation of nuclear weapons loading checklists, as specified by AFNWC/NCLS (see 3.8).

ah. Additional information to be included in checklist introduction (see 3.8.2.1.1).

ai. The tailoring of information in the emergency procedures (figure 9) required to reflect the specific equipment being covered (see 3.8.2.3).

aj. Electronic presentation: If digital interface functionality will be provided to accept inputs (local emergency information for fire, withdrawal distances, etc.) from the checklist user; whether this will be implemented for PDF checklist (see 3.8.2.3).

ak. If cautions and/or notes are to be included in checklists (see 3.8.2.4.1.3).

al. If illustrations are to be included (see 3.8.2.4.1.4).

am. Number of step completion parentheses required (see 3.8.2.4.1.6).

an. Electronic presentation: If PDF-published checklists will not include checkboxes in lieu of parenthesis (see 3.8.2.4.1.6).

ao. Electronic presentation: If the munition/weapon identification and aircraft station of the procedure contained in the scrollable view will be displayed in the persistent data window below the TO number ID/procedure title when aircraft have more than single carriage capability (see 3.8.2.4.1.9).

ap. If NATO Stage B loading procedures checklists are to be translated from English, and, if so, the language(s) required (see 3.9.1).

aq. Which, if any, of the electronic or print presentation special conditions apply (see 3.9.1.4.2).

ar. Packaging requirements (see 5.1).

6.3 Technical manuals. The requirement for technical manuals should be considered when this specification is applied on a contract. If technical manuals are required, specifications and standards that have been authorized and assigned an Acquisition Management Systems Control (AMSC) number must be listed on a separate Contract Data Requirements List (DD Form 1423), which is included as an exhibit to the contract. The technical manuals must be acquired under separate contract line item in the contract.

6.4 Definitions. For the purposes of this document, the following definitions apply.

6.4.1 Accessory. An item which is required to mate the munition/weapon to the aircraft and which remains as an integral part of the system (e.g. pylon, missile launcher and adapter, MER, TER, and other bomb racks).

6.4.2 Checklists. Checklists are condensed versions of the loading procedures in the manuals.

6.4.3 Integrated Checklist. A Technical Order (TO) pertaining to the loading of two or more different types of munitions/weapons. For example: AIM-120 (nonnuclear) and AIM-9 (nonnuclear), or AIM-9 B61 (nuclear).

6.4.4 Loading/unloading. Terms applied when a munition/weapon or an accessory loaded with a munition/weapon is placed on, or removed from, an aircraft (e.g. single bombs, preloaded accessories, preloaded rocket launchers, preloaded dispensers).

6.4.5 Munitions. A general term covering nonnuclear munitions.

6.4.6 Nonnuclear munitions. Nonnuclear bombs, fuzes, warheads, missiles, rockets, mines, destructors, pyrotechnics, LAU-Series Rocket Launchers, SUU-42/A and SUU-65 series dispensers, chemical materials, and

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items; such as, impulse cartridge jettison charges, training items, ammunition, and other non-aircraft inventory items considered similar or relative to nonnuclear munitions, including accessories which have been preloaded.

6.4.7 TOs. The term "TO" as used herein applies to both manuals and checklists.

6.4.8 Weapons. A general term that covers both bombs/missiles.

6.5 Acronyms. The acronyms used in this document are defined as follows:

AFMC	Air Force Materiel Command
AFNWC	Air Force Nuclear Weapons Center
AGM	Air-to-Ground Missile
AIM	Air-launch Interceptor Missile
BRU	Bomb Release Unit
CDRL	Contract Data Requirements List
FCT	Flight Circuit Test
GFAE	Government Furnished Aeronautical Equipment
GFE	Government Furnished Equipment
LAU	Launcher Auxiliary Unit
MAU	Miscellaneous Armament Unit
MER	Multiple Ejector Rack
NATO	North Atlantic Treaty Organization
NMCL	Master Nuclear Certification List
PDF	Portable Document Format
SDP	Standard Data Package, Source Data Package
SE	Support Equipment
SPM	System Program Manager
SPO	System Program Office
SUU	Suspended Utility Unit
TER	Triple Ejector Rack
TM	Technical Manual
WCN	Warning, Caution, Note

6.6 Subject term (key word) listing.

Emergency procedures

6.7 Bombs/weapons loading procedures. In cases where a specific weapon is to be loaded on an aircraft equipped with more than one type of bomb rack, all loading procedures may be presented in one section by prefixing minor procedural differences with applicability notations (see 3.1.5). However, loading procedures for a specific weapon, on an aircraft which has an internal and external carriage capability, may need to be placed in individual sections for each station loading (e.g., weapon bay) (see 3.3.1.3).

6.8 Chapter, section, and paragraph titles. Items with "(munitions)" indicate the requirement is also applicable to the nonnuclear munitions loading procedures manual and nonnuclear munitions loading standard data packages (see 3.3, 3.6 and 3.7).

6.9 Electronic versus print presentation unique functionality/formatting requirements. Requirements herein labeled as electronic and print presentation (see 6.1.2) address data functionality/formatting that is determined by two primary modes of rendering and outputting the TM data that are within the scope of this specification. They are defined as follows:

a. Electronic presentation: Specifies requirements used to develop TM data to be rendered for display on an electronic/digital system, such as various kinds of work station computers, glass cockpit displays, or Portable Electronic Devices (PED)/Commercial Mobile Devices (CMD).

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These requirements only apply to technical data developed as linear-structured compositions to be rendered digitally, i.e., HTML or equivalent web source data, for display in a browser or viewer. Electronic presentation requirements herein are not meant for development of PDF files, unless explicitly stated otherwise. Where data functionality requirements are specified through a separate document, such as a functionality matrix or a technical requirements document that is approved by the acquiring activity, they should reflect or reference the functionality requirements specified herein. NOTE: Requirements for higher level digital non-linear interactive data, i.e., Interactive Electronic TMs (IETMs) or Interactive Electronic Technical Publications (IETPs), are contained in a separate specification (see 6.11).

b. Print presentation: Specifies formatting requirements herein used to develop TM data to be rendered only as page-oriented or printed publications. Print presentation requirements herein also apply overall to development of PDF files, with limited exceptions.

6.10 Emergency procedures. Emergency procedures are included in standard data package 37 (see 3.9.2.2.3).

6.11 IETMs/IETPs. Requirements for digital functionality, formatting, and output of IETMs or IETPs are beyond the scope of this detail specification; refer to MIL-STD-3048.

6.12 General safety requirements. AFMAN 91-201, Explosive Safety Standards, and AFMAN 91–221, Weapons Safety Investigations and Reports, should be consulted for weapons safety information applicable to weapons loading procedures developed in accordance with this specification (see 3.3.1.2.1, 3.6.1.2.1, and 3.9.2.2.2). Standard data package 37 contains most of this information.

6.13 Illustrations. References to illustrations in the text need not state specifically the purpose of the illustration, if the purpose is obvious. Illustrations may be used more than once, if necessary, for clarity (see 3.1.2).

6.14 Integrated loading procedures checklists. These checklists may contain a combination of procedural steps from -16 (nuclear) and -33 (nonnuclear) loading manuals (see 3.2.6.1.2).

6.15 Loading procedures checklists. These checklists will be assigned the basic number of the Stage A cross-servicing guide (i.e., 1F-4C-2CL-X) (see 3.9.1).

6.16 Nuclear weapons SE. Authorized nuclear weapons SE should be listed in accordance with the Master Nuclear Certification List (MNCL) (see 3.3.1.2.4 and 3.3.1.3.2.2).

6.17 Source data. Source data for GFE/GFAE for manuals and checklists will be provided by the AFMC Program Management Office (PMO) having engineering responsibility, as follows (see 3.5e):

a. Description.

b. Illustrations.

c. Preloading and postloading checks during loading phases.

d. Safety precautions.

e. Preload preparation, if applicable.

f. Fuzing instructions.

g. Ground handling instructions.

h. Arming wire handling, if applicable.

i. Criteria for emergency procedures.

j. Peculiar SE.

k. Procedures for safety wiring and sealing.

l. Aircraft load configuration.

6.18 Standard data packages. Approved standard data packages contain descriptive information, illustrations, and procedural steps required for preparation of nonnuclear munitions loading manuals (see 3.2.5 and 3.5e).

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6.19 Types of TMs to be prepared. Types of TMs to be prepared (see 6.2i, h, and af) will be identified and stated in the contract or solicitation per guidance provided in TO 00-5-3. Entries made for "types of TMs to be prepared" options under 6.2 should make reference to the area of the contract or solicitation containing the list of TMs that are required to be developed by acquiring activity, such as to the Technical Manual Contract Requirements (TMCR), TM Type and Delivery Requirements table.

6.20 Withdrawal distances. If more than one type of munition/weapon is included, and withdrawal distances differ, evacuation distances will be furnished by the acquiring activity (see 3.8.2.3).

6.21 Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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TABLE I. Typical titles and headings

2.1 GENERAL.
2.1.1 Scope.
2.1.2 Support Equipment (SE).
2.1.3 Specific Safety Requirements.
2.2 LOADING PROCEDURES.
2.2.1 Aircraft Preparation.
2.2.1.1 Flight Circuit Test.
2.2.1.2 Stray Voltage Checks.
2.2.2 Munitions Preparation.
2.2.3 Cartridge Installation.
2.2.4 Loading.
2.2.4.1 Fuzing.
2.2.5 Post-loading.
2.2.6 Cartridge Installation.
2.2.7 Post-loading Inspection.
2.2.8 Delayed Flight or Alert.
2.2.9 Immediately Prior to Launch.
2.3 UNLOADING PROCEDURES.
2.3.1 Safing.
2.3.2 Pre-unloading.
2.3.3 Unloading.
2.3.4 Fuze or Sensor Removal.
2.4 TACTICAL FERRY PROCEDURES. (Nuclear only)
2.4.1 Deployment.
2.4.2 Strike to Nonstrike.
2.4.3 Nonstrike to Strike.

TABLE II. Minimum and Optimal Character Heights (electronic presentation)

Minimum and Optimal Character Heights for 16 and 20 Minutes of Arc at various viewing distances		
Viewing Distance (Inches)	Minimum Character Height 16 Minutes of Arc (Inches)	Optimal Character Height 20 Minutes of Arc (Inches)
18	0.08	0.11
24	0.11	0.14
30	0.14	0.17

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TABLE II. Minimum and Optimal Character Heights (electronic presentation) - Continued

36	0.17	0.21
42	0.20	0.24
48	0.22	0.28
54	0.25	0.31
60	0.28	0.35
66	0.31	0.38
72	0.34	0.42

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INTRODUCTION

1. PURPOSE.

The purpose of this technical order is to provide safe and reliable procedures for loading/unloading nuclear bombs, missiles, and practice bombs on X-XXX aircraft.

2. SCOPE.

This manual contains all procedures necessary for loading/unloading nuclear bombs, and all applicable practice bombs. Chapter 1 contains safety requirements, emergency procedures, general arrangements, general procedures, flight circuit test, flight equipment checks, functional checks, and munitions rejection criteria. Chapter 2, and on, contains loading, unloading, and ferry procedures for nuclear bombs.

3. RELATED PUBLICATIONS.

The following publications are referenced in and/or used in conjunction with this manual. The regulations listed contain detailed safety information regarding the equipment and procedures in this manual. TO 0-1-11N-CD-1, Numerical Index to Joint Nuclear Weapons Publications should be checked to determine the latest effective publication date. The checklists are those applicable for each weapon contained in this manual. Deployment procedures are contained in each bomb/weapons loading checklist.

LIST OF RELATED PUBLICATIONS

PUBLICATION NUMBER	PUBLICATION TITLE
AFI 91-101	Air Force Nuclear Weapons Surety Program
AFI 91-104	Nuclear Surety Tamper Control and Detection Program
AFI 91-XXX	Safety Rules for X-XXX Weapon System
TO 1X-XXX-16-CL-1	Nuclear Bomb Loading Procedures (B57)
TO 1X-XXX-16-CL-2	Nuclear Bomb Loading Procedures (B61)
TO 1X-XXX-16-CL-3	Nuclear/Nonnuclear Weapon Integrated Loading Procedures (Internal Gun, AIM-9, Chaff/Flare and B57/B61 Bombs)
TO 1X-XXX-16-CL-4	Nuclear Bomb Practice Bomb Loading Procedures (BDU-38B)

4. NUCLEAR SAFETY CERTIFICATION.

The support equipment and procedures contained herein have been evaluated and are acceptable for the prescribed use with nuclear weapons.

5. PRECEDENCE.

Compliance with procedures herein is mandatory. Use of war reserve nuclear weapons in peacetime operations requires nuclear weapon system safety rules published in the 91-series of Air Force instructions or disseminated by CSAF correspondence. In all instances, only those operations which are within the scope of the current applicable safety rules may be performed. Load crews are not required by this TO to have applicable nuclear weapon system safety rules in their possession at the loading site.

FIGURE 1. Typical introduction – Nuclear Weapons Basic Information and Loading Procedures Manual (Fighter Aircraft).

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TO 1X-XXX-16

NOTE

Load crews shall comply with AFI 91- 104 (Nuclear Surety Tamper Control and Detection Program) for access to the aircraft/bomb combination.

6. LOADING CONFIGURATIONS.

TO 1X-XXX-1 and TO 1X-XX-25 flight manuals contain information regarding weapons authorized for carriage and approved load configurations. Only those weapons and load configurations covered in the -1 and -25 manuals may be used.

7. ABBREVIATIONS/ACRONYMS.

Definitions of abbreviations/Acronyms appearing in this technical order and supporting checklists are as follows:

FCT	Flight Circuit Test
MAU	Miscellaneous Armament Unit
MFD	Multifunction Display

8. IMPROVEMENT REPORTS.

Improvement Reports, AFTO Form 22, or recommendations proposing changes to this technical manual shall be submitted in accordance with TO 00-5-1.

9. COMMENTS.

The Directorate of Nuclear Systems Engineering is the Air Force activity responsible for the accuracy of the technical contents of the manual. Any comments or recommendations other than improvement reports (AFTO Form 22) shall be forwarded through command headquarters to AFNWC Engineering and Technical Management Directorate (AFNWC/EN), Kirtland AFB, New Mexico.

10. DEFINITIONS.

The following definitions apply to WARNINGS, CAUTIONS, and NOTES within the procedures:

WARNING

Highlights an operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to or death of personnel.

CAUTION

Highlights an operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment, or loss of mission effectiveness.

NOTE

Highlights an operating or maintenance procedure, condition, or statement.

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FIGURE 1. Typical introduction – Nuclear Weapons Basic Information and Loading Procedures Manual (Fighter Aircraft). - Continued.

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SECTION II

EMERGENCY PROCEDURES

1.5 SCOPE

Emergency procedures consist of actions to be taken if munitions are involved in an accident or incident such as fire, collision, bomb dropped, or H70 blend hydrazine contamination. Typical examples of incidents are: (B61-3/2/5) the Ready/Safe switch is found in R (Ready) or the NUCLEAR caution light comes on. Loading crew personnel should be thoroughly familiar with these instructions.

1. (USAF) Refer to AFI 91- 201 and TO 11N-20-11 for firefighting guidance.
2. (BAF/FNLAF) Refer to ELO-1 for firefighting guidance.
3. Refer to TO 1F-16A-33-1-2 for emergency procedures on nonnuclear munitions.

1.6 INSTRUCTIONS.

NOTE

If any of the emergency conditions arise, appropriate personnel shall be notified. Under no circumstances shall troubleshooting or maintenance of the bomb be attempted by other than authorized personnel.

1.6.1 Waiting Period. In the event nuclear bombs become involved in an accident/incident or fire, the following procedures are mandatory and shall be performed by the loading crew prior to the arrival of base disaster control team.

1. If pullout cables are connected to the bomb, turn SMS off.
2. On the emergency page of the checklist in step 6 under FOR FIRE, record the time fire was extinguished; in step 2 under FOR DROP/COLLISION/INCIDENT, record the time SMS power is removed and time of accident/incident. These times shall be provided to the base disaster control team upon their arrival.
3. The minimum waiting periods provided in table 1-1 shall be observed before performing any operation on or movement of the bomb. These waiting periods are timed from the time recorded in step 2 above.

Table 1-1. Minimum Waiting Periods

BOMB	MINIMUM WAITING PERIOD
B61	30 minutes

1.6.2 Bomb Dropped or Collision. If bomb is dropped or collision occurs, perform the following:

1. If bomb case remains intact, report accident/incident in accordance with applicable directives.
2. If bomb case is ruptured, perform the following:
   a. Evacuate nonessential personnel to a minimum of 2000 feet.

FIGURE 2. Typical emergency procedures (odd page number).

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b. Notify base disaster control team.

c. Report accident/incident in accordance with applicable directives.

WARNING

- Danger is from detonation of High Explosive (HE) components and possible radioactive.
- Hazards of CB. CB has toxic effects when inhaled and is irritating when it comes in contact with the skin.

1.6.3 Munitions/Bomb Involved in Fire. In the event of fire during loading/unloading, evacuate nonessential personnel to at least the distance indicated in table 1-2. On the emergency procedures page of the checklist, record the time that flames envelop the munitions/bomb. This time shall be provided to firefighting supervisor/responsible official. Loading crews shall withdraw to the specified distance after fire envelops munition/bomb, or after arrival of firefighters, whichever occurs first.

1.6.4 Munitions/Bomb Involved in H70 Hydrazine Fuel Leak or Spill. If an H70 EPU hydrazine fuel leak occurs, the bomb shall be downloaded, and the aircraft placed in a nonalert status until the extent of damage to nuclear related aircraft wiring has been determined and corrected. When an H70 leak is discovered on a nuclear bomb loaded aircraft, take the following action:

1. Remove electrical power from the aircraft.
2. Evacuate the area and notify appropriate personnel.
3. After H70 fuel cleanup is completed, download the bomb as directed.

Table 1-2. Firefighting Guidance

Nomenclature	Withdrawal Time	Withdrawal Distance (FT) Nonessential Personnel	Fire Symbol
B-61	NA	2000	NA
BDU-38/B	NA	500	NA
Crtg, 20mm HEI/HEIT/INC	*	1800	2
Crtg, 20mm TP/API/API-T/APT	*	300	4
Crtg, Impulse	*	300	4
Crtg, Chaff	*	300	4
Flares	*	600	3
AIM-9 HE Warhead	45 sec to 2 min	1800	2
AIM-9 (live Mot & inert or Prac Warhead)	45 sec to 2 min	600	3

* No specific withdrawal time assigned.

FIGURE 3. Typical emergency procedures (even page number).

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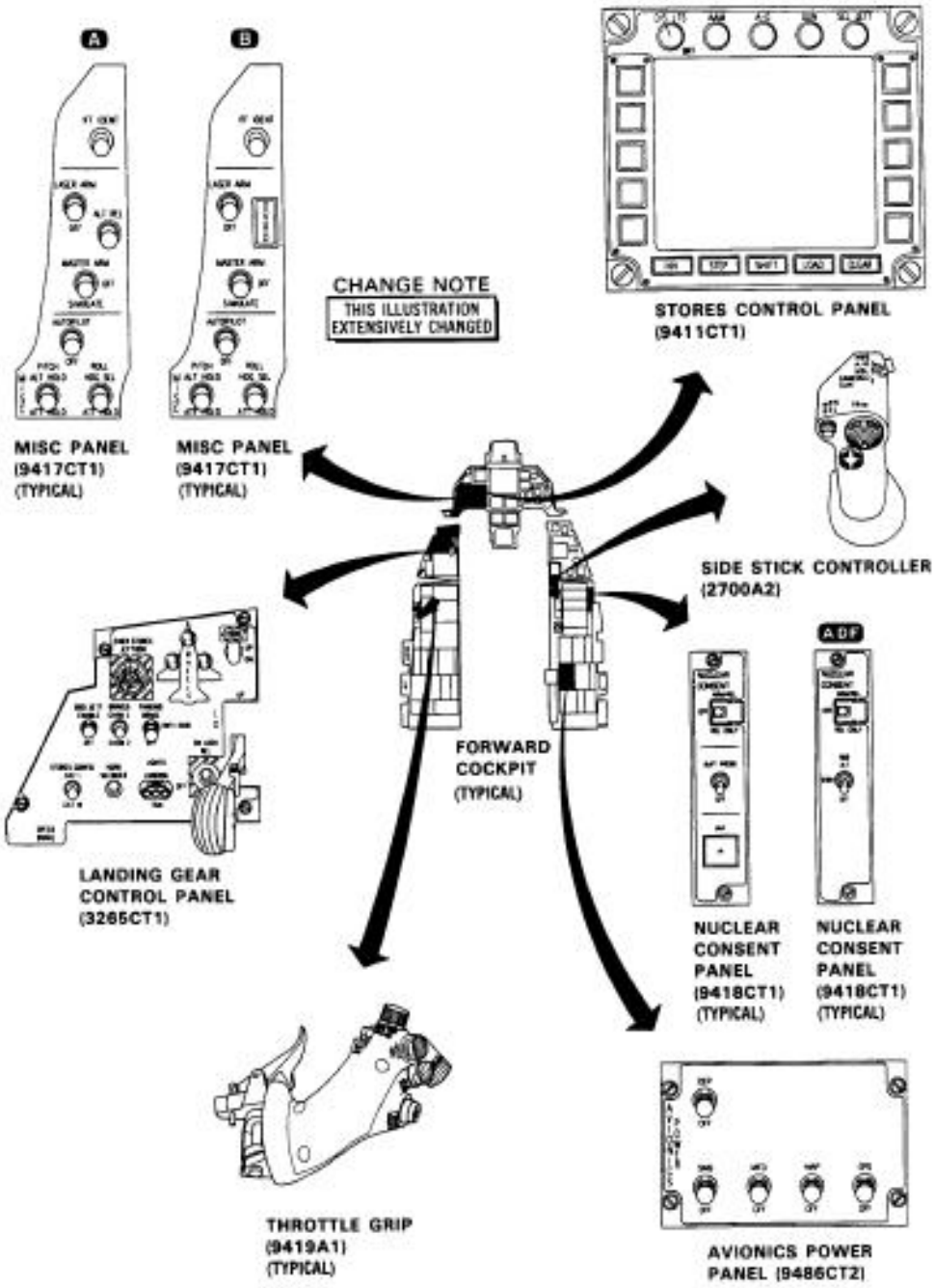

FIGURE 4. Typical aircraft arrangement.

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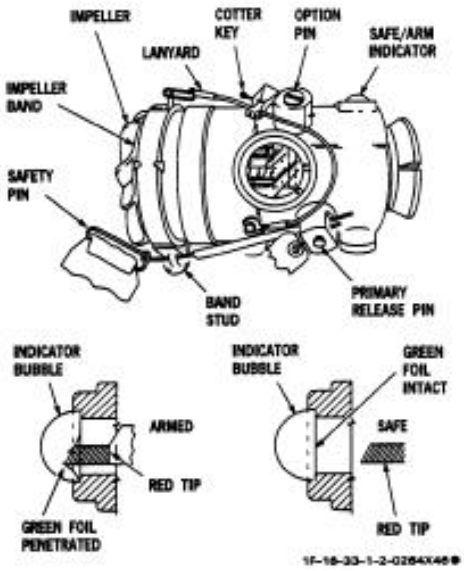

Figure 14-1. MK339 Mod 1 Fuze

g. (MK339 Mod 1) Check that SAFE/ARM indicator red pin has not punctured green foil at base of bubble (figure 14-1).

h. (MK339 Mod 1) Check that safety pin is installed through impeller band stud and primary release pin bracket (figure 14-1).

i. (MK339 Mod 1) Check that cotter key/arming wire is installed through option pin and bracket.

2. Check that fuze(s) is serviceable as follows: _____

a. Check that fuze is clean and not damaged.

b. (M907) Check that fuze vane is locked in position and not damaged.

c. (M907) Check that foil seal or tape covers slider ports.

d. (MK339 Mod 1) Check that fuze impeller is not dented or cracked.

e. (MK339 Mod 1) Check that fuze impeller band retention lanyard is installed.

f. (FMU-56D/B, FMU-110/B) Check that fuze radome is not cracked.

g. (FMU-110/B) Check that guide tube plug is installed in guide tube.

h. (MK339 Mod 1) Check that fuze time window is in line with suspension lugs and fuze is secured on nose of dispenser.

3. Check that fuze setting matches mission requirement. _____

4. Check that arming wire/lanyard is installed. _____

5. Check that tail plate is secure. _____

6. Check that fin is not damaged. _____

7. Check that arming wire guides to be used are not damaged. _____

8. Check that lanyard retention post, washers, and nuts are not damaged. _____

9. Check that suspension lugs are flush with dispenser, then backed out sufficiently to permit locking of rack. _____

FIGURE 5. Typical general procedures.

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TO 1F-16C-16
Flight Circuit Test

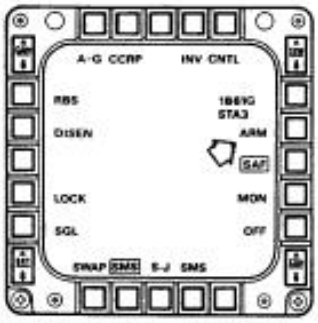

Figure 1-102. A-G Mode (ARM)

23. On adapter cable W11, position S1 selector switch to 3; STATUS light on. ____

24. On right console, position NUCLEAR CONSENT switch to ARM/REL. ____

25. On MISC panel, position MASTER ARM switch to MASTER ARM; MFD displays ARM (FIGURE 1-102). ____

NOTE

Disregard the NRIU bad status that may occur during steps 26 thru 29.

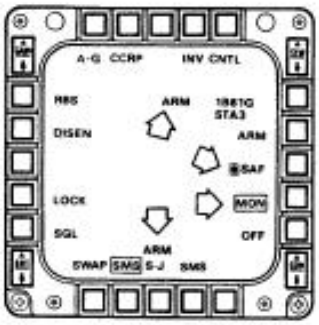

Figure 1-103. A-G Mode (ARM, *SAF, MON)

26. On adapter cable W11, position S2 selector switch to 3; MFD displays *SAF, highlights MON, WPN status ARM (FIGURE 1-103). ____

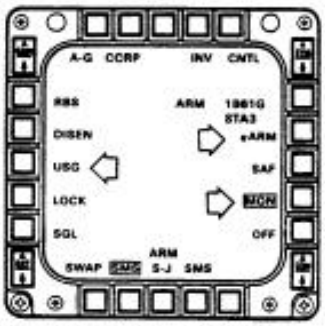

Figure 1-104. A-G Mode (USG, *ARM, MON)

27. On right MFD, depress and release OSB adjacent to ARM; MFD displays USG and *ARM and highlights MON (FIGURE 1-104); STATUS light off. ____

28. On voltage detector, position selector switch to SV; STATUS light off. ____

29. On voltage detector, position selector switch to PV; STATUS light off. ____

FIGURE 6. Typical Flight Circuit Test (FCT)/functional checks.

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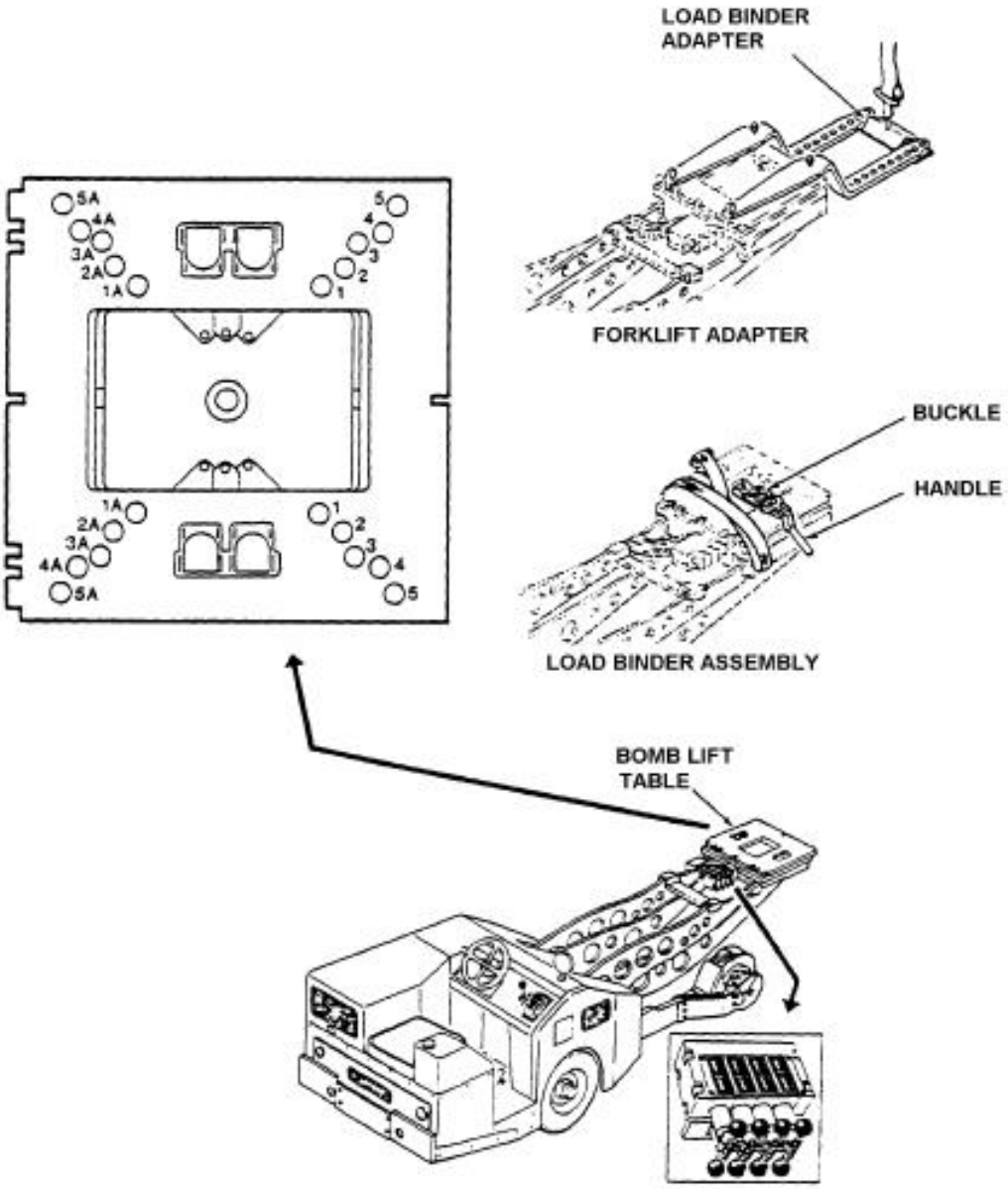

FIGURE 7. Typical illustrations.

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INTRODUCTION

1. PURPOSE.

The purpose of this technical manual is to provide safe and reliable procedures for loading and unloading nonnuclear munitions.

2. SCOPE.

This manual contains all procedures necessary for loading/unloading nonnuclear munitions. Chapter 1 contains general safety requirements, emergency procedures, general arrangement, general procedures, aircraft preparation, flight circuit test, functional checks, and stray voltage checks. Chapter 2 and subsequent contain loading and unloading procedures for each munition or group of munitions.

3. DEFERRED PROCEDURES.

Dependent upon restrictions dictated by actual combat conditions, performance of procedural steps under the headings "Delayed Flight or Alert," "Immediately prior to Launch,' 'Safing," and "Unloading" that are to be deferred for accomplishment in the Arming/Dearming area shall be as directed by the local commander.

4. FUNCTIONAL CHECKS.

Functional checks shall be performed within 30 days of loading, or more frequently if directed by the local commander. Functional checks shall be performed when the system has malfunctioned, or when trouble is suspected. Functional checks shall be valid for the period of time the aircraft remains of alert, during war emergencies or simulated war emergencies. Functional checks need not be performed if a turnaround mission is to be flown immediately. Functional checks need not be performed provided the stores were dropped successfully from that aircraft and no reconfiguration is required. Munitions preparation procedures under the subordinate paragraph headings PREFUZED or PRELOADED are written so that upon completion of the steps under these headings, the munition is ready for loading. Steps under PREFUZED or PRELOADED not previously accomplished, shall be accomplished using the procedures under the applicable subordinate paragraph heading.

5. PRECEDENCE.

When procedures outlined in this manual conflict with other directives, procedures in this manual shall take precedence, except for the aircraft -1 flight manual. Compliance with procedures in this manual is mandatory.

6. ABBREVIATIONS/ACRONYMS.

Definitions of abbreviations/acronyms appearing in this technical order and supporting checklists are as follows:

LAU	Launcher Aircraft Unit
MAU	Miscellaneous Armament Unit
MFD	Multifunction Display

7. IMPROVEMENT REPORTS.

Improvement Reports, AFTO Form 22, or recommendations proposing changes to this technical manual shall be submitted in accordance with TO 00-5-1.

FIGURE 8. Typical introduction – Nonnuclear Munitions Loading Procedures Manual.

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TO 1X-XXX-33

8. COMMENTS.

AFLCMC/LZPTP, is the Air Force activity responsible for the accuracy of the technical contents of the manual. Any comments or recommendations other than improvement reports (AFTO Form 22), shall be forwarded through major command headquarters to AFLCMC/LZPTP, Hill AFB, Utah 84056-5000.

9. DEFINITIONS.

WARNING

Highlights an operation or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to or death of personnel.

CAUTION

Highlights an operation or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to, or destruction of, equipment, or loss of mission effectiveness.

NOTE

Highlights an operation or maintenance procedure, condition, or statement.

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FIGURE 8. Typical introduction – Nonnuclear Munitions Loading Procedures Manual. - Continued.

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TO 1F-16A-16CL-3

EMERGENCY PROCEDURES

FOR FIRE

1. Fight fire; remove munitions.

2. Call _____ and give location _____.

3. Evacuate nonessential personnel to _____ feet.

4. Record time flames envelop munitions _____; give to firefighting supervisor.

5. Withdraw to _____ feet within _____ minutes after fire envelops munitions, or after arrival of firefighters, whichever occurs first.

NOTE

Step 6 entry is required only if a loading crew-member is present when fire is extinguished.

6. Record time fire is extinguished _____; give to EOD personnel. Waiting period is 30 minutes (B61).

FOR DROP/COLLISION/INCIDENT

1. Call _____.

2. Record time of accident/incident or when SMS power is removed _____; give to EOD personnel. Waiting period is 30 minutes (B61).

Emergency Procedures
E-1

FIGURE 9. Typical checklist emergency procedures

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EMERGENCY PROCEDURES - CONTINUED

WITHDRAWAL TIME AND DISTANCE

NOTE

Prior to commencing loading procedures, enter the applicable "WITHDRAWAL TIME AND DISTANCE" in "FOR FIRE" steps 3 and 5. Entries should be the item with the shortest withdrawal time/time group and the maximum withdrawal distance for any munition involved.

1. (USAF) Refer to AFMAN 91-201 and TO 11N-20-11 for firefighting guidance.

2. (BAF/RNLAF) Refer to ELO-1 for firefighting guidance.

3. If H70 hydrazine fuel should occur:

   a. Remove electrical power from aircraft.

   b. Evacuate the area and notify appropriate personnel.

   c. After H70 cleanup is completed, download the bomb as directed.

FIGURE 9. Typical checklist emergency procedures - Continued.

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EMERGENCY PROCEDURES - CONTINUED

Firefighting Guidance

Nomenclature	Withdrawal Time	Withdrawal Distance (ft) Non-essential Personnel	Fire Symbol
B61	NA	2000	NA
Crtg, 20 mm HEI/HEIT/INC	*	1800	2
Crtg, 20 mm TP/API/ API-T/APT	*	300	4
Crtg, Impulse	*	300	4
Crtg, Chaff	*	300	4
Flares	*	600	3
AIM-9 HE Warhd	45 sec to 2 min	1800	2

* No specific withdrawal time assigned.

FIGURE 9. Typical checklist emergency procedures - Continued.

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TO XX-XX-16-2CL-1

AIRCRAFT PREPARATION

1.	Aircraft - POSITIONED, CHOCKED & GROUNDED	( )
2.	Landing gear safety pins - INSTALLED	( )
3.	Firefighting & support equipment - POSITIONED	( )
4.	Rack safety pins - INSTALLED	( )
5.	Guns - SAFE	( )
6.	Seat & canopy pins - INSTALLED	( )
7.	Form 781 - CHECKED	( )
8.	Cockpit arm switches - OFF/SAFE/NORMAL	( )
9.	Pylons & racks - SERVICEABLE	( )
10.	Pylon electrical connectors - STOWED	( )
11.	CONSENT sw - SAFE	( )
12.	GEN sw - OFF	( )
13.	ENGINE MASTER sw - OFF	( )
14.	(C/D/E) NORMAL SW FLAPS - UP	( )
15.	(E) 556 SLATS/FLAPS - NORM	( )

Acft Prep/61/CL/WS
1

FIGURE 10. Typical checklist procedures (Aircraft Preparation)

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TO XX-XX-16-CL-1

AIRCRAFT PREPARATION (Continued)

16. (C/D/E) sel msl jett sw - OFF ( )

17 (C) Position cockpit sw:

a. Msl PWR - OFF

b. RADAR - HEAT - HEAT REJECT - RADAR

c.. ARM/SAFE - SAFE

d. INTLK - IN

e. BDN SEL - ALL

f. BOMB CONT - OFF

g. NUCL STORES - NORMAL

h. WPL SEL - BOMBS PAIRS

i. GAM - AUX - NORM

j. MA - SAFE

k. STEP - NORMAL ( )

Acft Prep/61/CL/WS
2

FIGURE 10. Typical checklist procedures (Aircraft Preparation) - Continued.

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FAMILY GROUP NO. 12

APPROVED

STANDARD DATA PACKAGE

FOR

-33 NON-NUCLEAR MUNITIONS LOADING MANUALS

BOMB, GENERAL PURPOSE, 500-POUND MK 82;
BOMB, PRACTICE, 500-POUND MK82/DBU-50/B AND BDU-50A/B
WITH BSU-49/B AIR INFLATABLE RETARDER (AIR),

AND

2000-POUND MK 84
WITH BSU-50/B AIR INFLATABLE RETARD (AIR)

APPLICABLE FUZE DATA REQUIRED FOR GROUP NO. 12
MUNITIONS DESCRIPTIVE DATA ARE CONTAINED IN
FAMILY GROUP NO. 40

THIS STANDARD DATA PACKAGE REPLACES ALL PREVIOUS ISSUES

FIGURE 11. Typical cover page – Standard Data Package.

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APPENDIX A

NUCLEAR WEAPONS BASIC INFORMATION AND LOADING PROCEDURES MANUAL MARKUP LANGUAGE TOOLS

A.1 SCOPE.

A.1.1 Scope. This appendix describes the standard Air Force (AF) markup language digital tools created for developing and delivering AF Technical Manuals (TMs). These tools are available in the Digital Support Suites (DSS) provided by the AF Technical Manual Specifications and Standards (TMSS) activity (see A.2). This appendix is a mandatory part of this detail specification. The information herein is intended for compliance.

A.1.2 Template Tool. The Document Type Definition (DTD) is the primary tool used as a template for authoring AF TMs and is based on rules outlined in MIL-PRF-28001 and ISO 8879. See A.2.1 for information about the DTD specified for this appendix subset.

A.2 DSS.

The DSS is comprised of the following tools for authoring and rendering the TM. See A.3 for information about obtaining DSS component files in digital format through the TMSS activity web site. For information about the current status and availability of DSS tools, see A.3.4.

A.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 3.2.1). To be delivered digitally, the TM shall be tagged using the applicable DTD provided through the TMSS activity. Information concerning the markup language type and use of DTDs currently provided, i.e., Standardized General Markup Language (SGML), may be obtained through the contacts listed under A.3.

A.2.2 Formatted Output Specification Instance (FOSI). The FOSI provides formatting for each element of an SGML tagged instance for rendering as a page-oriented document. It contains formatting information that conforms to the content specific requirements of this specification.

A.2.3 Tag Description Table (TDT). The TDT provides detailed descriptions of the elements contained in the DTD. The TDT contains the element tagging structure, parent elements, full element name, source paragraph, attribute descriptions unique to the element, and entities.

A.2.4 OmniMark™. DSSs contain OmniMark™ scripts designed to be used as a text processing language that enables authors to auto-generate redundant material that may be difficult to tag manually.

NOTE: FOSIs and OmniMark™ scripts are no longer supported and may not be available for some DSSs.

A.3 OBTAINING DSS TOOLS.

A.3.1 Obtaining files by users with mil web site access. The following applies to those interested in obtaining DSS component files who are on a mil internet domain, having mil web address access.

A.3.1.1 AF TMSS web site. DTDs, TDTs, and other files in the DSS can be accessed on the TMSS web site at https://techdata.wpafb.af.mil/TMSS/. On the web page, the “Baseline” menu option in the left pane contains three bulleted options called “Specifications”, “Standards”, and “Handbooks”. Hover the cursor over “Specifications” and a listing of the TMSS specifications will appear. Hover over the desired specification number and another drop down list will appear that contains an entry indicating the PDF version of the specification and other entries for the associated appendices. To obtain the preferred subset DTD, select the desired appendix from the list. The following items will appear on the downloading page: The name of the specification, the appendix number and name, the current version of the DSS, buttons to download specific DSS files provided and a “Download” button to download the entire DSS zip file.

A.3.2 Obtaining files by users with a Public Key Infrastructure (PKI) certificate or a Common Access Card (CAC). The following applies to those interested in obtaining DSS component files who have a PKI certificate or a CAC.

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APPENDIX A

A.3.2.1 AF TMSS SharePoint web site. DTDs, TDTs, and other files in the DSS can be accessed at the AF TMSS Sharepoint web site: https://cs3.eis.af mil/sites/OO-LG-MC-38/default.aspx.

A.3.3 Obtaining files by users without mil access, PKI certificate, or CAC. Those seeking to obtain DSS files who do not have mil web access, a PKI certificate, or a CAC should contact their government Program Management Office (PMO) or see A.3.4 to obtain information.

A.3.4 TMSS Helpdesk assistance. Address any requests or questions relating to the DSS by E-mail to SGMLSUPPORT@us.af.mil (organizational address: Wright-Patterson AFLCMC/HIAM_AF TMSS HLPDSK) or by postal mail to Air Force Technical Manual Specifications and Standards, AFMC AFLCMC/HIAM, 4170 Hebble Creek Road, Building 280, Door 15, Wright-Patterson AFB OH 45433-5653.

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APPENDIX B

NUCLEAR WEAPONS LOADING PROCEDURES MANUAL (BOMBER AIRCRAFT) MARKUP LANGUAGE TOOLS

B.1 SCOPE.

See A.1.

B.2 DSS.

See A.2.

B.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 3.2.2).

B.3 OBTAINING FILES.

See A.3.

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APPENDIX C

NONNUCLEAR MUNITIONS BASIC INFORMATION MANUAL (STANDARD VOLUME) MARKUP LANGUAGE TOOLS

C.1 SCOPE.

See A.1.

C.2 DSS.

See A.2.

C.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 3.2.3).

C.3 OBTAINING FILES.

See A.3.

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APPENDIX D

NONNUCLEAR MUNITIONS LOADING PROCEDURES MANUAL MARKUP LANGUAGE TOOLS

D.1 SCOPE.

See A.1.

D.2 DSS.

See A.2.

D.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 3.2.4).

D.3 OBTAINING FILES.

See A.3.

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APPENDIX E

INTEGRATED COMBAT TURNAROUND PROCEDURES MANUAL MARKUP LANGUAGE TOOLS

NOTE

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APPENDIX F

NONNUCLEAR MUNITIONS LOADING STANDARD DATA PACKAGES MARKUP LANGUAGE TOOLS

F.1 SCOPE.

See A.1.

F.2 DSS.

See A.2.

F.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 3.2.5).

F.3 OBTAINING FILES.

See A.3.

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APPENDIX G

LOADING PROCEDURES CHECKLIST MARKUP LANGUAGE TOOLS

G.1 SCOPE.

See A.1.

G.2 DSS.

See A.2.

G.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 3.2.6).

G.3 OBTAINING FILES.

See A.3.

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APPENDIX H

INTEGRATED COMBAT TURNAROUND PROCEDURES CHECKLIST MARKUP LANGUAGE TOOLS

NOTE

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APPENDIX I

NATO STAGE B CROSS-SERVICING CHECKLIST (CL-I) MARKUP LANGUAGE TOOLS

I.1 SCOPE.

See A.1.

I.2 DSS.

See A.2.

I.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 3.2.6.2).

I.3 OBTAINING FILES.

See A.3.

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APPENDIX J

NATO STAGE B CROSS-SERVICING CHECKLIST (CL–2 AND SUBSEQUENT) MARKUP LANGUAGE TOOLS

J.1 SCOPE.

See A.1.

J.2 DSS.

See A.2.

J.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 3.2.6.2).

J.3 OBTAINING FILES.

See A.3.

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APPENDIX K

FUNCTIONAL CHECK PROCEDURES CHECKLIST (CL-1)/END OF RUNWAY (EOR) PROCEDURES CHECKLIST (CL-100) MARKUP LANGUAGE TOOLS

K.1 SCOPE.

See A.1.

K.2 DSS.

See A.2.

K.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 3.2.6.3 and 3.2.6.4).

K.3 OBTAINING FILES.

See A.3.

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CONCLUDING MATERIAL

Custodians:
Air Force - 16

Preparing activity:
Air Force - 16
(Project TMSS-2014-027)

Review activities:
Air Force - 01, 10, 11, 99

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.