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DETAIL SPECIFICATION

MANUALS, TECHNICAL: AIRCRAFT STRUCTURE REPAIR; PREPARATION OF (WORK PACKAGE CONCEPT)

This specification is approved for use by the Naval Air Warfare Center, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense, within the distribution limitations noted at the bottom of this page.

1. SCOPE

1.1 Scope. This specification prescribes the technical content requirements for preparation of technical manuals for repair, corrosion control, and nondestructive inspection of aircraft structure and structural components at organizational, intermediate, and depot maintenance levels.

1.2 Classification. The following types of technical manuals will be prepared to this specification as directed by the requiring activity:

Type I - Aircraft Structure Repair, Corrosion Control, Illustrated Parts Breakdown, and Nondestructive Inspection Manual

Type II - Aircraft Structure Repair Manual

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code 414100B120-3, Highway 547, Lakehurst, NJ 08733-5100 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A AREA TMSS

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Type III - Aircraft Corrosion Control Manual

Type IV - Aircraft Nondestructive Inspection Manual

Type V - Illustrated Parts Breakdown Manual

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 recommendation 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 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 documents to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

DEPARTMENT OF DEFENSE

MIL-DTL-15014	-	Manual, Technical: Separate Illustrated Parts Breakdown, Technical Content Requirements (Work Package Concept).
MIL-DTL-81927	-	Manuals, Technical: Work Package Style, Format, and Common Technical Content Requirements; General Specification for (Work Package Concept).
MIL-DTL-81929	-	Manuals, Technical: Illustrated Parts Breakdown Figures; Technical Content Requirements (Work Package Concept).

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-410	-	Nondestructive Testing Personnel Qualification and Certification.

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

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.

PUBLICATIONS

FEDERAL

Code of Federal Regulations (CFR) 49	-	Transportation of Hazardous Materials.

NAVAL AIR SYSTEMS COMMAND

NAVAIR 00-25-700	-	Guide to General Style and Format of Work Package Technical Manuals.

(Application for copies of CFR 49 should be addressed to the Superintendent of Documents, Government Printing Office, Washington, DC 20402. Copies of manuals are available by request to: Commanding Officer, Naval Air Technical Services Facility (NATSF), 700 Robbins Avenue, Philadelphia, PA 19111-5097.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, 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 General.

3.1.1 Copyrights and advertising. Copyright material shall not be included in any publication prepared in accordance with this specification without written permission of the copyright owner. Proprietary legends shall not be shown. The manual shall not contain advertising matter. All

material prepared in accordance with this specification shall be Government property.

3.1.2 Proprietary data. The Government shall have unlimited right to the data prepared under this specification. Proprietary legends are not acceptable in technical manuals. The preparing activity shall disclose, in narrative or pictorial display, that information necessary to fulfill the requirements of this specification without disclosing that portion of the manufacturing process that the preparing activity wishes to safeguard.

3.1.3 Conflict between specifications. When conflict exists between MIL-DTL-81927 and the technical content requirements described herein, this specification shall take precedence. When conflict exists between the contract and this specification, the contract shall take precedence.

3.1.4 General style, format, and technical content. Manuals shall be prepared to work package (WP) concept. General style, format, and technical content shall be as specified in MIL-DTL-81927. MIL-DTL-81927 also provides the common requirements for WP concept manuals in the following areas:

a. Technical manuals using WP concept.

b. Style of writing.

c. Referencing requirements.

d. General format.

e. Technical manual arrangement.

f. Front matter (composite requirements).

g. Indexes (composite requirements).

h. Introduction (composite requirements).

i. Technical content WP (composite requirements).

(1) Title page (composite requirements).

(a) Title block.

(b) Reference material list.

(c) Alphabetical index.

(d) Record of technical directives.

(2) Support equipment required lists.

(3) Material required lists.

j. Artwork requirements.

k. Changes/revisions.

3.1.5 Illustrated parts breakdown (IPB).

3.1.5.1 Relationship between the IPB and the WP concept. The IPB is an integral part of the technical data to be prepared in support of maintenance tasks. Therefore, it is essential that the intent of the WP concept is followed in the development of the supporting IPB. Emphasis shall be placed on the accessibility of data, comprehensibility of supporting illustrations, and the use of the information presented. The IPB data shall be prepared in accordance with either MIL-DTL-81929 or MIL-DTL-15014, as applicable. The IPB figure(s) shall be an integral part of the maintenance element.

3.1.5.2 IPB figures. The format of IPB figures shall be compatible with all reproduction media. This shall be accomplished through control of legibility of the Group Assembly Parts List (GAPL), proper line art techniques in the preparation of supporting illustrations, and coordinated GAPL entries with illustrations (see 3.5 and NAVAIR 00-25-700).

3.1.6 Manual/volume common requirements. The common requirements stated herein apply to Types I, II, III, IV, and V manuals (see 1.2) unless specifically stated otherwise in the detail requirements.

3.1.7 Arrangement. The preferred method of coverage is a multimanual set of four separate manuals, type II, type III, type IV, and type V. Each of the separate manuals can be broken down into more than one manual or volume, as required.

3.2 Aircraft structure repair (detail requirements). Aircraft structure repair coverage shall contain information and instructions required to determine the extent of damage to airframe structure and structural components and to repair the damage The information and instructions shall cover repair of all repairable damage in any location. Repairs shall comply with all relevant design requirements. Repairs described in the manual shall be as simple as possible. Wherever practicable, only hand tools shall be used; however, use of jigs and power tools shall be specified when necessary. When applicable, instructions for one-time (ferry) flight repairs, temporary repairs, and critical area repairs shall include information on flight restrictions to be imposed until permanent repairs are completed.

3.2.1 Structure repair alphabetical index WP. A multimanual set alphabetical index WP for the structure repair manual/volume shall be prepared as specified in MIL-DTL-81927.

3.2.1.1 Aircraft structure visual index WP. The first volume of the structure repair manual shall include an aircraft structure visual index. This WP shall be numbered WP 001 0l. The aircraft structure visual index shall consist of an illustration which visually identifies each structural group covered in the manual. This index is used with the structural group repair index (3.2.9) to provide a quick reference to the repair data visually. This illustration shall include the following:

a. Views of the aircraft, exploded as necessary, to clearly show location of each major structural group covered by a technical content WP in the manuals.

b. An index number assigned to each structural group.

c. A table. This table may precede or follow the illustration portion of the index and shall be in the following form:

ITEM	NOMENCLATURE	MANUAL/WP NUMBER

(1) Item column. This column shall show all assigned index numbers in numerical order.

(2) Nomenclature column: This column shall show the name by which each item is identified throughout the manual.

(3) Manual/WP number column: When repair instructions are in the same manual as the index illustration, this column shall show the number of the WP containing the structural group repair index illustration (3.2.9) for the listed item. When the structural group repair index illustration (3.2.9) for the listed item is in a different volume, this column shall show the publication number and WP number containing the index for the item.

3.2.2 Structure repair introduction WP. An introduction WP shall be prepared as specified in MIL-DTL-81927. In addition to the requirements of MIL-DTL-81927, the following shall be included when applicable:

a. Pertinent information on how to use the manual or volume.

b. An explanation of applicability notations used in the manual or volume.

c. Definitions of unique terminology used in the manual. The following shall be defined in volumes to which they apply:

(1) Negligible damage.

(2) Repairable damage.

(3) Major damage.

(4) Temporary repair.

(5) One-time-flight repair.

d. A statement that use of temporary repair instructions shall be restricted to extraordinary or unusual circumstances such as crash damage or battle damage sustained in an environment not suitable for, or an area not easily accessible to, required personnel or equipment.

3.2.3 Damage classification. Damage to aircraft structure and to structural components shall be classified in one of the following categories

a. Negligible damage: Damage or distortion which can be permitted to exist as is.

b. Repairable damage: Damage which can be permanently corrected by reworking the damaged structure or components with no adverse effects upon structural integrity, flight characteristics, or safety of the aircraft. This includes minor replacement of parts and correction by a simple procedure such as removing dents, stop-drilling cracks, or temporary patching without placing restrictions on flight.

c. Major damage: Damage which requires replacement of structural components and major assemblies or engineering evaluation to determine the feasibility of repair.

3.2.4 Damage evaluation. Criteria (acceptance/rejection) for evaluating damage shall be defined. Limits shall be established and stated for assigning the appropriate damage classification defined in 3.2.3. Instructions and information, including illustrations, shall be prepared to the extent necessary to perform the following as required:

a. External inspection for skin deformation.

b. Detailed visual inspection for damage areas.

c. Inspection for fire damage by use of portable testers or as evidenced by discoloration.

d. Inspection for corrosion from residues of aircraft fire-fighting chemical materials.

e. Alignment checks.

f. Hard landing and over-G inspections.

g. Pressure tests for leaks and for strength.

h. Inspection for damage from severe engine stalls.

i. Inspection for damage from landing gear failure.

j. Inspection for damage from abnormal drag chute deployment.

k. Inspection for damage from tire blowout.

1. Inspection for damage to composite structure.

m. Inspection for wear in excess of wear tolerance limits.

n. Detailed NDI procedures for structurally significant items.

3.2.5 Structure repair classification and definition. For various applications, repairs may be defined using the following terminology:

a. Typical repair.

b. Specific repair.

c. Permanent repair.

d. Temporary repair.

e. One-time-flight repair.

f. Critical area repair.

g. Alternate repair.

3.2.5.1 Typical repair. A typical repair is a repair which is applicable to more than one structural group or component covered in the manual (normal means of permanent correction). When repairs contained in general series manuals (01-lA series, etc.) are acceptable for use, those procedures shall be referenced as specified in MIL-DTL-81927 (see 3.1.4).

3.2.5.2 Specific repair. A specific repair is a repair which covers types of damage or types of structure which cannot be adequately repaired using typical or common repairs.

3.2.5.3 Temporary repair. A temporary repair is one which may be made to permit the aircraft to be flown until such time as a permanent repair can be made. A temporary repair normally restores full load-carrying capabilities to the required member but may be deficient from the standpoint of interchangeability of parts, aerodynamics, or fatigue life. Normally, a temporary repair will be removed and a permanent repair installed at the earliest convenient time. Instructions for temporary repairs shall include any necessary information on flight restrictions which must be observed until permanent repairs have been completed. Temporary repairs shall

be as simple and practical as possible. Procedures shall require use of the most basic tools practical Supporting illustrations shall be clearly marked as depicting temporary repairs. Use of materials requiring unsophisticated fabrication techniques shall be stressed.

3.2.5.3.1 One-time-flight repair. A one-time-flight repair is a temporary repair which is made to restore limited load-carrying requirements to allow an aircraft to be flown to a repair station for application of permanent repairs. Instructions for one-time-flight repair shall include all necessary information on flight restrictions which must be observed during the ferry flight.

3.2.5.4 Permanent repair. A permanent repair is one which may be expected to equal or exceed the original design life of the repaired structure or component with no adverse effects upon the structural integrity, fatigue life, safety, or flying characteristics of the aircraft.

3.2.5.5 Critical area repair. Critical area repairs are specific permanent repairs in areas which are highly stressed, fatigue critical, or corrosion prone in normal usage. Damage in these areas would affect safety of the aircraft. Information and instructions for critical area repairs shall include necessary flight restrictions required.

3.2.5.6 Alternate repair. Alternate repairs shall be included when practical. When a repair involves use of an extrusion, an alternate using sheet, bar, or tubing should be presented. When new types of material are required, an alternate repair using more common, generally available material should be included.

3.2.6 Structure repair data arrangement. Technical content WPs in a structure repair manual shall be presented in the following order:

a. General information WPs.

b. Typical (common) repair data WPs.

c. Specific repair data WPs.

(1) Temporary repair data WPs.

(2) Permanent repair data WPs.

3.2.7 General information WPs. WPs containing general information relative to repair of aircraft structure and structural components shall be prepared. This shall include but not necessarily be limited to the following:

a. Aircraft description.

b. Shop practices.

c. Aircraft leveling and alignment.

d. Contour data.

e. Repair materials.

f. In-service tolerances.

3.2.7.1 Aircraft description. The first technical content WP(s) shall contain descriptive material applicable to structural repair of the aircraft. This shall include information of the following types plus any additional descriptive information pertinent to repair of the aircraft:

a. Types of construction used on the aircraft.

b. New materials used.

c. Principle dimensions.

d. Station location diagrams.

e. Structurally significant information.

f. Functionally significant information.

3.2.7.1.1 Types of construction. Brief descriptions and locations, supported by illustrations as necessary, of principle types of construction used in the aircraft shall be included. This should include such types as cantilever construction, stressed skin, tapered skin, plastics, and honeycomb.

3.2.7.1.2 Principle dimensions. An illustration showing principle dimensions of the aircraft shall be prepared. All significant dimensions required for structure repair shall be included.

3.2.7.1.3 Station location diagram. A diagram showing location of significant stations on the aircraft shall be prepared. Reference points shall be identified as established in the engineering drawings for the aircraft.

3.2.7.1.4 New types of materials. Brief descriptions of relatively new or unfamiliar materials such as composite materials and high strength steels not covered in general series manuals shall be included.

3.2.7.2 Repair materials. A separate WP containing lists of all materials required to make repairs detailed in the manual/volume shall be prepared. The following shall be shown for each item listed:

a. Nomenclature.

b. Government or commercial specification number.

c. Part number or procurement source.

d. Application.

3.2.7.2.1 Standard parts. Wherever possible, Government standard parts shall be specified for repair or replacement of damaged structure.

3.2.7.2.2 Extrusions. Extrusions shall be identified by material and die number or by source of supply. When practical, alternate repairs using sheet, bar, or tubing shall be included for repairs normally requiring extrusions.

3.2.7.3 Aircraft leveling and aligning. Information and procedures shall be included for leveling and aligning the aircraft. An illustration showing and identifying the points used in leveling the aircraft transversely and longitudinally shall be prepared. Leveling and aligning tools shall be identified and, if necessary, illustrated.

3.2.7.4 Support of structure. Information and procedures for supporting the aircraft structure during each repair shall include the following as required:

a. Identification of all stressed plates or panels which require shoring or supporting of structure prior to removal.

b. Instructions for fabricating supports.

c. Instructions for using supports.

3.2.7.5 Contour data. Contour data and dimensions shall be defined for major structural components such as wings, vertical stabilizer, and horizontal stabilizer. This information may be presented on illustrations. Instructions shall include data necessary for construction of templates, support fixtures, and jigs for use in repairing components. Where applicable, the data shall include a list of contour drawings and master dimension drawings for the aircraft.

3.2.7.6 In-service tolerance. Information shall include the following:

a. Permissible wear tolerances in excess of manufacturing tolerances.

b. Permissible misalignment in excess of manufacturing tolerances.

c. Permissible step-gap and mismatch tolerances.

d. Aircraft surface critical contour tolerances.

e. Reaming and bushing tolerances.

f. Allowable clearances.

3.2.7.7 Common shop practices. Common shop practices peculiar to the aircraft shall be included when not covered in general series manuals. The following types of information are included in this category:

a. Sheet metal forming.

b. Working titanium alloys.

c. Substitution, removal, and installation of fasteners equal to or better than original equipment.

d. Filling dimpled and countersunk holes.

e. Coin dimpling (including special tools required).

f. Repairing welds.

g. Substituting parts.

h. Local manufacturing of parts.

i. Working high strength steel.

j. Working composite materials.

3.2.7.8 Repairs contained in general repair manuals. When repairs contained in general series manuals are acceptable for use, those procedures shall be referenced as specified in MIL-DTL-81927 (see 3.1.4).

3.2.7.9 Crash handling and shipping. The following types of data shall be included to cover handling and shipping of crash damaged aircraft:

a. Procedures and safety precautions for handling hazardous items such as batteries, fuel, oil, liquid oxygen, and explosive devices. The requirements of CFR 49, OSHA regulations, and general series manuals shall be complied with.

b. Procedures for lifting the aircraft. This shall include identification of necessary handling equipment .

c. Procedures for moving the damaged aircraft from the crash site. This shall include identification of necessary handling equipment, securing the aircraft, required clearances after loading, and load weights.

d. References to corrosion control and preservation manuals for applicable corrosion prevention and preservation procedures.

e. Disassembly into structural groups or sections.

f. Weight and center of gravity of each component.

g. When applicable and not included in other available manuals, crating and shipping instructions. These shall include:

(1) Manufacturing of crates.

(2) Manufacturing of cradles.

(3) Installation of equipment in crates.

(4) Support points.

(5) Weight of each component.

(6) Weight and center of gravity of each crated component.

3.2.8 Typical repair data WPs. Typical repairs are those which are applicable to more than one structural group or component covered in the manual. To avoid unnecessary duplication, typical repairs shall be covered in separate WPs and referenced as needed. Typical repair WPs should include but shall not be limited to the following:

a. Skin patch repair.

b. Transparent panel repair.

c. Honeycomb structure repair.

d. Extrusion repair.

e. Sealed area repair.

f. Formed structure repair.

g. Plastic repair.

3.2.8.1 Repair of new/peculiar structure. Repair instructions and structurally significant or functionally significant information for new or peculiar structure such as tapered skins, sandwich material, honeycomb assemblies, reinforced plastics, and composite materials shall be included or referenced as specified in MIL-DTL-81927 (see 3.1.4).

3.2.9 Structural group repair index. An index illustration shall be prepared for each major structural group for which repair instructions are included in the manual. The index illustration shall either begin on the page following the alphabetical index of the first WP containing specific repair data for a structural group, or it shall be prepared as a WP immediately following the alphabetical index WP of the volume containing the repair data. The following shall be included on each index illustration:

a. A view of the structural group. Exploded views may be required to show hidden components. Each component for which instructions are prepared shall be shown.

b. An index number assigned to each illustrated component.

c. A table. This table shall be on the first sheet or sheets of the illustration and shall be in the following form:

ITEM	NOMENCLATURE	PART NUMBER	WP NUMBER

(1) Item column. This column shall show all assigned index numbers in numerical order.

(2) Nomenclature column. This column shall show the proper nomenclature by which each item is identified throughout the manual. (Refer to "nomenclature consistency" in MIL-DTL-81927.)

(3) Part number column. This column shall show the part number for each listed item.

(4) WP number column. This column shall show the number of the WP which contains the damage evaluation instructions. Entries in this column shall have the following form: 013 00/28.

3.2.10 Specific repair data WPs. Specific repairs are included to cover types of damage or types of structure which cannot be adequately covered using typical repairs alone. Specific repair WPs shall be prepared for each major structural group. The data in these WPs shall be presented in the following sequence for each structural group:

a. Damage identification and evaluation data (see 3.2.3, 3.2.4).

b. Typical repair procedures when applicable (see 3.2.8).

c. Specific repair procedures (see 3.2.10.4).

3.2.10.1 Repair data. Specific repair WPs shall show compliance with all relevant design requirements. They shall contain complete repair data including the following;

a. Definite, positive statements regarding repair decisions to preclude misinterpretation and indecision concerning use of typical repairs.

b. Cautions prohibiting all unauthorized repairs and procedures including combinations which would weaken or overstiffen structure beyond safe limits.

c. Where loads, material thickness, and margins of safety vary, tables shall be provided indicating the following data which is required to transfer design loads safely:

(1) location,

(2) material thickness,

(3) fastener size,

(4) fastener pattern,

(5) fastener spacing,

(6) doubler overlap,

(7) bonding requirements, and

(8) reinforcements.

d. Where loads do not vary, identification of typical loads and minimum design tolerance in tension, compression, and shear.

e. Illustrations showing where various types of repairs are to be used.

3.2.10.2 Damage identification and evaluation data. Damage identification and evaluation data (3.2.3 and 3.2.4) shall be included for each component covered in the structural group repair WPs. Each applicable category of damage shall be clearly defined for each component. Examples shall be prepared when necessary. Damage evaluation data shall include the following to the extent necessary to guide a technician to the procedure required to repair the aircraft:

a. Material specifications (composition, gauge, temper).

b. Structurally significant/functionally significant information.

c. Identification of damage limits.

d. Wear tolerance charts.

e. Stress classification.

3.2.10.3 Typical repair procedures. Applicable typical repair procedures (3.2.8) shall be referenced as specified in MIL-DTL-81927 (see 3.1.4).

3.2.10.4 Specific repair procedures. Information and procedures shall be included for repairing all major structural assemblies which are identified as repairable. At least one WP shall be prepared for each major assembly. Additional WPs shall be prepared as required because of complexity of the data necessary to thoroughly cover a given assembly. These WPs shall include the following types of data as applicable:

a. Support equipment required lists.

b. Materials required lists.

c. Structurally significant/functionally significant information.

d. Rework tolerances including minimum skin thickness.

e. Temporary repair procedures (including one-time-flight repairs).

f. Permanent repair procedures.

g. Contour data.

h. Procedures for constructing templates and repair jigs for use in repairing the assembly.

i. Precautions to be followed when working with toxic, corrosive, or combustible materials.

3.2.10.4.1 Structure sealing.

3.2.10.4.1.1 Airframe sealing. Sealing information and procedures shall be included for all areas which require sealing for purposes other than corrosion control. Sealing for corrosion control purposes shall be covered under corrosion control. The following shall be included in structure repair:

a. Identification of areas requiring sealing.

b. Type of sealant required in each area.

c. Sealing procedures.

d. Precautions to be observed while working with sealing materials.

3.2.10.4.1.2 Fuel tank sealing. Fuel tank sealing shall be covered in a separate WP(s).

3.2.10.4.2 Pressure testing. Information and procedures shall be included for pressure testing of sealed compartments when such testing is required to check for leakage or structural integrity after repair.

3.2.10.4.3 Control surface balancing. Information and procedures shall be prepared for mass balancing and dynamic balancing of those hinged control surfaces which have balancing provisions included in their design. Mass balancing shall be covered using calculated methods and using improvised methods with allowable field tolerances.

3.2.10.4.4 Removal and installation instructions. Procedures shall be included for removal and installation of all repairable structure that is not covered in the organizational level aircraft maintenance manual.

3.2.10.4.5 Local manufacturing or assembling. Information and procedures for local manufacture or assembly shall be included for items source coded for local manufacture or assembly when this data is not available from other manuals. In addition, information and procedures shall be included for manufacturing required items such as jigs, templates, supporting fixtures, and unique packing crates when these are not otherwise covered. Manufacturing procedures shall include dimensions and material requirements.

3.3 Corrosion control detail requirements. Corrosion control data shall contain information and procedures required to inhibit the onset of corrosion, to determine the location and extent of corrosion damage, to remove corrosion, and to apply necessary treatment to prevent further corrosion damage. When structure or components have been damaged by corrosion, applicable structure repair procedures shall be referenced to repair the damage.

3.3.1 Corrosion control introduction WP. An introduction WP shall be prepared as specified in MIL-DTL-81927 (see 3.1.4). In addition to the requirements of MIL-DTL-81927, the following shall be included as applicable:

a. Pertinent information on how to use the manual or volume.

b. An explanation of applicability notations used in the manual or volume.

3.3.2 Corrosion control - general information.

3.3.2.1 Corrosion control materials requirements. A separate WP containing lists of all materials required to complete the procedures detailed in the manual shall be prepared. The following shall be shown as applicable for each item listed:

a. Nomenclature.

b. Government specification number or commercial identification.

c. Application.

3.3.2.2 Protective covers. Protective covers required for corrosion control shall be identified, and procedures shall be included for installation on the aircraft. Illustrations shall be included as necessary.

3.3.2.3 Corrosion prone areas. Those areas on the aircraft which are particularly susceptible to corrosion shall be identified. Illustrations and tables shall be prepared as necessary to aid in locating and identifying corrosion prone areas. Informational charts, when necessary, shall be obtained from the Cognizant Field Activity (CFA).

3.3.3 Corrosion control practices. Corrosion control in most cases consists of a method for interrupting the corrosion cycle. General manuals available to maintenance personnel adequately cover the theoretical aspects of conditions leading to corrosion. The aircraft corrosion control manual/volume shall contain specific data required to protect a particular aircraft from damage by corrosion. Informational charts obtainable from the CFA should be used as supplemental source data.

3.3.3.1 Corrosion control data contained in other manuals. When corrosion control data contained in general manuals is acceptable for use, this data shall be referenced as specified in MIL-DTL-81927 (see 3.1.4).

3.3.3.2 Typical corrosion control data. Typical corrosion control data is that data which is applicable to more than one of the structural groups or components separately covered in the manual. To avoid unnecessary duplication, typical corrosion control data shall be presented in separate WPs and referenced as needed.

3.3.3.3 Inspection for corrosion. Data, illustrated as necessary, shall be prepared for inspecting aircraft structure and components for corrosion and damage from corrosion. Inspection data shall include the following as applicable:

a. Cleaning procedures.

b. Inspection by methods appropriate to the area on the aircraft.

c. Reference to applicable NDI manuals for appropriate procedures when required.

d. Criteria for recognizing and evaluating corrosion damage.

3.3.3.4 Cleaning. Data for cleaning the aircraft shall be included. Data shall be included for cleaning the entire aircraft and for cleaning selected areas and components as necessary. Illustrations locating and identifying the materials of the exterior surface of the aircraft and areas exposed by movable surfaces shall be prepared. When cleaning requirements are peculiar to the aircraft or its components, detailed procedures shall be included. Required cleaning agents, materials, and equipment shall be identified as specified in MIL-DTL-81927.

3.3.3.5 Stripping. Data for stripping paint and other protective coatings from the aircraft shall be included. Such data may be obtained from the CFA. Data shall be included for stripping the entire aircraft and for stripping selected areas and components as necessary. When stripping instructions are peculiar to the aircraft or its components, detailed procedures shall be included. Detailed stripping procedures shall include instructions for protecting surrounding areas from contamination during stripping. All required precautions to be observed while handling or using stripping materials and equipment shall be specified.

3.3.3.6. Corrosion removal. Data for removal of corrosion and corrosion products from aircraft structure and components shall be included. Typical and specific procedures shall be prepared for all types of corrosion which could occur in each type of metal used on the aircraft. Required materials and support equipment shall be identified.

3.3.3.7 Chemical treatment of metal surfaces. Data on types of chemical treatment applied during manufacturing and assembling of the aircraft shall be included. Tables listing all chemically treated magnesium and aluminum parts shall be included. The chemical treatment used on each listed part shall be identified by Government specification number and type. If a protective coating has not been qualified to a Government specification, a proprietary identification shall be listed. Touchup of damaged chemically treated surfaces shall be referenced to the applicable general series manual.

3.3.3.8 Corrosion control seals and sealants. Data shall be included for all areas where seals or sealants are used primarily for corrosion prevention. Sealing which is covered in structure repair instructions (pressurized areas, fuel cells, etc.) shall not be repeated. Types of sealant and areas where applied during manufacturing shall be identified. Sealant identification shall be by Government specification number and type. When there is no applicable Government specification, a proprietary identification shall be listed. Illustrations and/or tables shall be prepared to show location of form-in-place seals. General series manuals for aircraft corrosion control shall be referenced for use in restoring and maintaining seals and sealants. The manufacturer's instructions shall be included (directly or by reference) for applying proprietary products.

3.3.3.9 Paint systems. Data shall be included for the paint systems used on the aircraft. Illustrations and tables identifying the complete finish system (undercoat through finish coat) applied by the manufacturer on all areas of the exterior of the aircraft and areas exposed by movable surfaces shall be included. All materials listed shall be identified by Government

specification and type and, when significant, by manufacturer's identification. Touchup and repainting (i.e., method of application) procedures shall not be included.

3.3.3.9.1 Exterior marking. Illustrations and tables shall be included showing location; shall be included configuration including wording; orientation; and where significant, size of all exterior markings applied by the manufacturer. Applicable specification and general series manuals shall be referenced for restoration of exterior markings.

3.3.3.9.2 Interior markings. Illustrations and tables shall be included showing location; configuration; wording; orientation; and where significant, size of instructional markings applied by the manufacturer on the interior of the aircraft. Markings such as part numbers, reference designation numbers, and those on plates which are part of an assembly shall be omitted. Applicable specifications and general series manuals shall be referenced for restoration procedures for interior markings.

3.3.4 Repair of corrosion damage.

3.3.4.1 Classification of structure and components. For corrosion control purposes, structure and components of the aircraft shall be classified as critical or noncritical. Illustrations on which all critical areas and components are shown and identified shall be prepared. An item shall be classified as critical when a single failure of the item during any operating condition could result in one of the following:

a. Significant injury to occupants of the aircraft.

b. Loss of aircraft or one of its major components.

c. Loss of control.

d. Unintentional release of or inability to release any armament store.

3.3.4.2 Corrosion damage evaluation and limits. Criteria for evaluating corrosion damage shall be defined. Limits shall be established for assigning damage classifications within the definitions identified in the applicable structure repair manual (see 3.2.3).

3.3.4.3 Corrosion damage repair instructions. All repairs of structure and components damaged by corrosion shall be included by reference to procedures in applicable structure repair manuals.

3.4 Nondestructive inspection (NDI) data detail requirements. Aircraft NDI data shall include guidance and instructions for trained personnel in use of NDI methods on peculiar aircraft structure and structural components. The data shall include instructions, procedures, and techniques applicable to the aircraft for NDI methods such as liquid penetrant, magnetic particle, eddy current, ultrasonic, and radiographic. Other methods shall be included when they provide

significant improvement in inspection capabilities and are authorized by the requiring activity. Routine visual inspections (unaided eye, magnifying glass, borescope, optical fiber) normally shall not be included when such inspections are adequately covered in other maintenance manuals applicable to the aircraft. Detailed procedures for correcting defects shall be omitted.

3.4.1 NDI alphabetical index WP. The alphabetical index for an NDI manual or volume shall be prepared as specified in MIL-DTL-81927 (see 3.1.4).

3.4.1.1 NDI visual index. An illustration which indexes location of NDI for each structural group and component covered in the manual shall be prepared as a WP following the alphabetical index WP. This illustration shall include the following:

a. Views of the aircraft, exploded as necessary, to clearly show location of each structural group and component covered by a technical content WP in the manual.

b. An index number assigned to each structural group and component.

c. A table. This table may precede or follow the illustration portion of the index and shall be in the following form:

ITEM NOMENCLATURE WP NUMBER

(1) Item column: This column shall show all index numbers in numerical order.

(2) Nomenclature column: This column shall show the name by which each item is identified throughout the manual.

(3) WP number column: This column shall show the WP number or numbers containing NDI for each listed item.

3.4.2 NDI introduction WP. An introduction WP shall be prepared as specified in MIL-DTL-81927 (see 3.1.4). In addition to the requirements of MIL-DTL-81927, the following shall be included as applicable:

a. Pertinent information on how to use the NDI manual.

b. Brief definitions and descriptions of the NDI methods included in the detailed technical content of the manual.

c. A brief description of the aircraft oriented to NDI.

d. A summary of general safety precautions to be observed during application of NDI methods.

e. A brief general statement on training and qualification requirements of NDI personnel based on MIL-STD-4lO and OPNAVINST 4790.2.

f. A glossary of terms peculiar to NDI.

g. An illustration identifying and defining NDI symbols used in the manual.

3.4.3 NDI general information WP. General information relevant to NDI of aircraft structure and structural components shall be included.

3.4.4 NDI typical procedures WP. Typical NDI procedures are those which are applicable to more than one structural group or component. To avoid unnecessary duplication, typical procedures shall be presented in separate WPs and referenced as needed. Repetitive setup and test equipment adjustment procedures are considered typical procedures.

3.4.4.1 NDI procedures contained in other manuals. When NDI procedures contained in available general manuals are acceptable for use, this data shall be referenced rather than repeated in the aircraft manual.

3.4.5 NDI specific procedures WP. Specific NDI procedures shall be prepared when a structural group or component can be inspected by NDI methods and one of the following criteria applies:

a. A saving in maintenance costs or manpower will be realized by using NDI methods.

b. Operational effectiveness will be favorably affected.

c. Safe operation or reliability will be improved by using NDI methods.

3.4.5.1 Structural group. Each structural group or component shall be covered in a separate WP. Technical content of each WP shall include the following arranged in the sequence 1isted:

a. Item nomenclature.

b. Item description.

c. Defect description.

d. Primary NDI procedure.

e. Backup NDI procedure (if required).

3.4.5.2 Item nomenclature. The item to be inspected shall be identified by nomenclature consistent with IPB nomenclature for the item. When necessary for positive identification, the

part number shall be included.

3.4.5.3 Item description. The following information shall be specified, as applicable, for the item to be inspected:

a. Material from which manufactured.

b. Heat treatment condition.

c. Method of manufacture (cast, forged, extruded, rolled, etc.).

d. Surface chemical treatment.

e. Finish coatings.

f. A concise statement of the purpose or function of the item. This shall include type and direction of load carried when pertinent.

3.4.5.4 Defect description. The potential defect shall be described. This shall include:

a. Characterization of the defect with respect to type (fatigue crack, delamination, etc.).

b. Critical size.

c. Criteria such as material thickness, heat treatment condition;,assembly details of electronic, pyrotechnic or mechanical components, etc., which influence choice of NDI method.

d. Location and orientation with respect to loading or grain direction. Illustrations shall be used as necessary.

3.4.5.5 Primary NDI procedure. A primary NDI method shall be specified for each item to be inspected. Selection of the primary method shall be based on type of material and overall suitability of the chosen method for achieving desired results. The following factors also shall be considered in selecting the primary method:

a. There is maximum assurance that the method will detect the potential defect.

b. The method can be applied with minimum disassembly of the aircraft.

3.4.5.6 Backup NDI procedure. A backup NDI procedure shall be required in each case where the primary procedure does not include uncontestable data for determining serviceability of the item inspected. When the primary procedure uses an instrumented method (electromagnetic, ultrasonic, radiographic), a visual method (optical, magnetic particle, penetrant) is preferred for backup, provided that extensive disassembly is not required.

3.4.5.7 Content of NDI procedure. Each NDI procedure (primary or backup) shall include the following as applicable:

a. NDI personnel qualification (see 3.4.5.7.1).

b. Illustrations (see 3.4.5.7.2).

c. Support equipment required.

d. Materials required.

e. Frequency of inspection (see 3.4.5.7.4).

f. Preparation for testing (see 3.4.5.7.5).

g. Testing procedure (see 3.4.5.8).

h. Acceptance/rejection criteria (see 3.4.5.7.6).

i. Postinspection cleaning and corrosion control instructions (see 3.4.5.7.7).

3.4.5.7.1 NDI personnel qualification. Each inspection procedure shall include a brief notation indicating the minimum qualification of required NDI personnel as specified in MIL-STD-410 and OPNAVINST 4790.2.

3.4.5.7.2 Illustrations for NDI procedures. Each inspection procedure shall include illustrations as necessary to support procedural text. As a minimum, the following shall be illustrated:

a. General location of the inspection area within the aircraft.

b. Specific location of the item to be inspected.

c. Location and orientation of potential defects.

3.4.5.7.3 Local manufacturing of NDI support equipment. Procedures, including sketches, for local manufacturing of required standards, shoes, wedges, fixtures, and jigs shall be included as necessary. Materials, dimensions, surface finish, and tolerances shall be specified.

3.4.5.7.4 Frequency of NDI. Frequency of inspection shall be specified. When this requirement is covered in an applicable periodic maintenance requirements manual (PMRM), the PMRM shall be referenced in lieu of repeating the requirement in the NDI manual.

3.4.5.7.5 Preparation for NDI testing. Preparation for testing shall contain all procedures necessary to prepare the aircraft and the item to be inspected for implementation of the specified NDI procedure. Procedures contained in other available manuals shall be referenced rather than repeated. Procedures shall include the following:

a. Instructions for placing the aircraft in proper configuration.

b. Instructions for gaining access to the item to be inspected.

c. Instructions such as cleaning, paint removing, and disassembling as necessary to prepare the item for inspection.

3.4.5.7.6 Acceptance/rejection criteria. Reference shall be made to applicable structure repair manuals for detailed acceptance/rejection criteria.

3.4.5.7.7 Postinspection cleaning and corrosion control. When necessary, procedures shall be prepared for postinspection cleaning of the component and the inspection area. Procedures shall also be included for restoring lubricants, sealants, and protective coatings which have been disturbed during the inspection process. Procedures for restoring the aircraft to operational configuration shall be included. Procedures contained in other available manuals shall be referenced rather than repeated.

3.4.5.8 Specific NDI method minimum requirements. Each NDI procedure, whether identified as the primary procedure or as a backup procedure, shall include as a minimum the information listed in 3.4.5.8.1 through 3.4.5.8.5 for the method specified.

3.4.5.8.1 Liquid penetrant method. The following shall be included:

a. Support equipment required list, prepared as specified in MIL-DTL-81927 (see 3.1.4).

b. Materials required list, prepared as specified in MIL-DTL-81927 (see 3.1.4).

c. Preparation for testing (see 3.4.5.7.5).

d. Method of application of inspection materials.

e. Sensitivity and limitations of the penetrant material.

f. Dwell times for penetrant, emulsifiers, and developers. This shall include an indication of the temperatures at which the dwell times are valid.

g. Lighting requirements.

h. Magnification requirements (when necessary).

i. Postinspection cleaning (see 3.4.5.7.7).

3.4.5.8.2 Magnetic particle method. The following shall be included:

a. Support equipment required list, prepared as specified in MIL-DTL-81927 (see 3.1.4).

b. Materials required list, prepared as specified in MIL-DTL-81927 (see 3.1.4).

c. Preparation for testing (see 3.4.5.7.5). This shall include identification and instructions for removal from the inspection area of all sensitive equipment which could be adversely affected by magnetic flux.

d. Illustrations (see 3.4.5.7.2).

e. Type of magnetizing current (AC/DC).

f. Orientation of the magnetic field (longitudinal, circular, combined longitudinal - circular).

g. Flux density (current requirements to produce the desired strength in the magnetic field).

h. Location of coil or coils. This shall include information on contact between the item under test and the coil(s).

i. Number and duration of "Shots".

j. Location and cause of nonrelevant indications.

k. Magnification requirements (when necessary).

l. Demagnetization procedures. This shall include pertinent information concerning acceptability of a residual magnetic field after demagnetization.

m. Postinspection cleaning (see 3.4.5.7.7).

3.4.5.8.3 Eddy current (electromagnetic) method. The following shall be included:

a. Support equipment required list, prepared as specified in MIL-DTL-81927 (see 3.1.4).

b. Materials required list, prepared as specified in MIL-DTL-81927 (see 3.1.4).

c. Illustrations as required (see 3.4.5.7.2).

d. Preparation for testing (see 3.4.5.7.5). This shall include equipment setup procedures such as adjusting for sensitivity and liftoff. Step by step procedures shall be given to obtain from

a standard or setup block desired meter deflection and cathode ray tube (CRT) display for impedance plane.

e. Instructions for local manufacture of standards and setup blocks when required (see 3.4.5.7.3).

f. Area to be scanned.

g. Number of passes, probe translation, and scan rate.

h. Possible cause and location of nonrelevant indications.

3.4.5.8.4 Ultrasonic method. The following shall be included:

a. Support equipment required list, prepared as specified in MIL-DTL-81927 (see 3.1.4).

b. Materials required list, prepared as specified in MIL-DTL-81927 (see 3.1.4).

c. Illustrations as required (see 3.4.5.7.2).

d. Preparation for testing (see 3.4.5.7.5). This shall include step by step procedures for adjusting the equipment to produce a desired response from a defect standard. Illustrations shall be included as necessary to show the following without reference to dial settings: adjustment of sweep delay, sweep length, markers, and response amplitude.

e. Instructions for local manufacture of standards (see 3.4.5.7.3).

f. Area to be scanned.

g. Application and type of couplant.

h. Transducer movement. Changes in response signals in relation to transducer scanning shall be described or illustrated

i. Defect response. Illustrations shall show CRT display in relation to transducer location.

j. Possible cause and location of nonrelevant indications.

k. Postinspection cleaning (see 3.4.5.7.7).

3.4.5.8.5 Radiographic method. The following shall be included:

a. Support equipment required list, prepared as specified in MIL-DTL-81927 (see 3.1.4).

b. Materials required list, prepared as specified in MIL-DTL-81927 (see 3.1.4). This list shall include class and type of film based on signal to noise ratio and size and type of packaging (day pack, lead pack, or flexible cassette). When specially cut film or odd shapes are required, a dimensioned sketch of the film shall be provided.

c. Illustrations as required (see 3.4.5.7.2).

d. Preparation for testing (see 3.4.5.7.5). This shall include the following:

(1) Film placement. When more than one film is to be used, the number shall be stated and location of each film shall be identified.

(2) Location of the film identification marker. Use of a lead number belt shall be prescribed.

(3) Aiming point. Two dimensions shall be given for location.

(4) Location of source. Three dimensions are required including focal point to film or focus point to aiming point. All reference points shall be easily recognizable on typical, service configured aircraft. Angles shall not be used to indicate location references.

(5) Penetrameter location when required.

(6) Equipment settings (kilovoltage, milliamperage, and exposure times).

(7) Step by step inspection procedure. Radiation hazard warnings shall be included as necessary.

(8) Required density expressed in terms of the Hurter and Driffield (H & D) curve. The area on the film where density is to be measured shall be specified.

(9) Special film reading requirements when required.

3.5 IPB. IPBs and associated data applicable to the structure and structural components of the aircraft shall be prepared as specified in either MIL-DTL-15014 or MIL-DTL-81929, as applicable, except as otherwise specified herein. The IPB shall normally be prepared as a turn page manual to permit the expansion of the Group Assembly Parts List (GAPL) to add additional columns as required: material, description, repair ref, etc. Whenever practicable, the IPB shall be prepared to provide direct support to the Type II, III, and IV manuals, the aircraft

maintenance manuals, and the aircraft battle damage manuals. Refer to MIL-DTL-81927 (Multiple use of illustrations).

3.5.1 General arrangement. The structure repair IPB shall be developed using the arrangement requirements for a separate IPB multimanual set. The following coverage shall be provided:

3.5.1.1 Aircraft structure IPB visual index WP. The primary index in the structural repair series of manuals is the aircraft structure IPB visual index. This index is basically a visual index used to locate the damaged items and to identify the major structural groups. This index, together with the structural group IPB indexes (3.5.1.1.1), is used to provide a quick visual entry to the specific end item IPB figure. Standard reference to breakdown will provide access to the required IPB figure from the end item IPB figure.

3.5.1.1.1 Structural group IPB index. An index illustration for each major structure group in the aircraft (3.2.9) shall be provided to reference end item IPB figures.

3.5.1.2 Alphabetical index.

a. Single manual. Refer to MIL-DTL-81927 (Alphabetical index).

b. Multimanual set. Refer to MIL-DTL-81927 (Multimanual set alphabetical index) and to either MIL-DTL-15014 or MIL-DTL-81929, as applicable.

c. Multivolume set (alphabetical index for all volumes). Refer to MIL-DTL-81927 (Division of an existing manual).

3.5.1.3 Numerical index of part numbers. A numerical index of part numbers shall be provided as prescribed in MIL-DTL-15014 or MIL-DTL-81929, as applicable.

3.5.1.4 Numerical index of reference designations. When applicable, a numerical index of reference designations shall be provided as prescribed in MIL-DTL-15014 or MIL-DTL-81929, as applicable.

3.5.1.5 Technical content. Technical content of the IPB shall be provided as prescribed in MIL-DTL-15014 or MIL-DTL-81929, as applicable, except as follows:

a. The GAPL may be expanded to include structural repair data, as required for a composite listing, e.g., "MATERIAL", "REMARKS", "REPAIR REF", etc.

b. The "Figure specific" method of identifying "USABLE ON CODES" shall be used.

4. VERIFICATION

4.1 Verification. Verification shall be conducted as prescribed in the contract.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of material is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. 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 which may be helpful but is not mandatory.)

6.1 Intended use. Technical manuals prepared in accordance with this specification are intended for use in the repair of aircraft structure and structural components at organizational, intermediate, and depot maintenance levels.

6.2 Acquisition requirements. Acquisition documents must specify the following:

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

b. Type(s) of manuals to be prepared (see 1.2).

c. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2).

d. Packaging requirements (see 5.1).

6.3 Guidance documents. The following document is cited in section 3 of this specification and is provided for guidance and information only. Unless otherwise specified, the issue is that cited in the solicitation.

DEPARTMENT OF THE NAVY

INSTRUCTIONS

OPNAVINST 4790.2 - The Naval Aviation Maintenance Program (NAMP).

(Copies of directives and instructions are available by request to Commander, Naval Inventory Control Point Philadelphia, Publication/Forms Branch, Code 03334, 700 Robbins Ave., Philadelphia, PA 19111-5098.)

6.4 Technical manuals. The requirements for technical manuals must be considered when this specification is applied on a contract. If technical manuals are required, specifications and standards that have been cleared and listed in DoD 5010.12-L, Acquisition Management Systems and Data Requirements Control List (AMSDL) 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.

6.5 Specification figures. The figures previously included in this specification were intended to illustrate methods of presentation of technical data. They are being revised for incorporation into NAVAIR 00-25-700. Sample illustrations can be provided by the requiring activity, if requested. The sample figures shall not be interpreted as limiting the technical content requirements that are established by the text. The text will take precedence over all examples shown in the sample figures.

6.6 Subject term (key word) listing.

Instructions
Airframe maintenance
Corrosion control

6.7 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

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CONCLUDING MATERIAL

Preparing activity:
Navy - AS

(Project TMSS-N269)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.
   NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER MIL-DTL-85383A(AS)	2. DOCUMENT DATE (*YYMMDD*) 971126

3. DOCUMENT TITLE
MANUALS, TECHNICAL: AIRCRAFT STRUCTURE REPAIR; PREPARATION OF (WORK PACKAGE CONCEPT)

4. NATURE OF CHANGE (*Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.*)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (*Last, First, Middle Initial*)	b. ORGANIZATION	
c. ADDRESS (*Include Zip Code*)	d. TELEPHONE (*Include Area Code*) (1) Commercial: (2) DSN: (*If Applicable*)	7. DATE SUBMITTED (*YYMMDD*)

8. PREPARING ACTIVITY

a. NAME COMMANDER NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION	b. TELEPHONE NUMBER (*Include Area Code*) (1) Commercial: (732) 323-2947 (2) DSN: 624-2947
c. ADDRESS (*Include Zip Code*) CODE 414100B120-3 HIGHWAY 547 LAKEHURST, NJ 08733-5100	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office, 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 DSN 289-2340