INCH-POUND

MIL-STD-38784B
16 November 2020

SUPERSEDING
MIL-STD-38784A
w/CHANGE 2
4 September 2018

DEPARTMENT OF DEFENSE STANDARD PRACTICE

GENERAL STYLE AND FORMAT REQUIREMENTS FOR TECHNICAL MANUALS

AMSC N/A **AREA TMSS**

FOREWORD

1. This standard is approved for use by all Departments and Agencies of the Department of Defense.

2. The use of this standard for NAVAIR programs is limited to legacy data/manuals only.

3. This revision includes multiple editorial, structural, and requirements changes in addition to reorganizing the data to make use of section 5. The major changes include but are not limited to the following:

a. Added Controlled Unclassified Information (CUI) requirements.

b. Requirements for Technical Order Page Supplements (TOPS) have been removed as they are no longer authorized. Legacy Air Force programs should refer to TO 00-5-1 for guidance on phasing them out.

c. Requirements for difference data sheets have been removed as they are no longer authorized and applicability markings should be used instead. Legacy Air Force programs should refer to TO 00-5-1 for guidance on phasing them out.

d. Removed requirements for the effective date notice on the title page.

e. Nuclear surety procedure symbols are now restricted for use only on the title page and for procedural steps.

f. Added 6.2 option for subordinate paragraph level depth not to exceed six levels.

g. Clarified that steps have a maximum of four levels of depth.

h. Clarified publication date format.

i. Clarified that the foreword/preface/introduction and table of contents start on a right-hand page.

j. Clarified that the list of illustrations starts on a new page and the list of tables starts on a new page when there is no list of illustrations.

k. Limited footnote use to tables only.

l. Clarified disclosure notice requirements and corrected references.

m. Clarified that acronyms and terms can be defined in the foreword/preface/introduction.

n. Removed two level paragraph restriction for table of contents for publications with alphabetical indexes.

o. Clarified that sheet totals of multisheet illustrations should be updated when a sheet is added or removed.

p. Clarified the use of “T” and “F” for table and figure numbers listed in the alphabetical index and that column headers should reflect the contents in the alphabetical index.

q. Removed figure title and number from being considered part of the margin data.

r. Removed the ten or more figure/table requirement in order to have a list of illustrations or list of tables.

s. Removed requirement for duplication of information in volume one for appendices, glossaries, and list of effective pages.

t. Allowed for horizontal rules and shading for alternate rows in tables.

FOREWORD

u. Changed and standardized the date format for time compliance technical order list and the record of applicable technical directives table.

v. Removed extraneous Air Force handling and destruction notice requirement.

w. Removed the list of effective pages requirement for commercial manual supplements.

x. Changed single column justification to unjustified for the Air Force.

y. Removed the option of page numbering for multiple chapters on the same page with an exception allowed for brief manuals.

z. Removed continued table entry requirement.

aa. Removed directory note requirement for table footnotes.

ab. Clarified that references to other technical manuals can include figure/table titles in addition to paragraph titles.

ac. Added DoD dictionary requirement to abbreviations and acronyms.

ad. Clarified that boxhead titles for tables are required.

ae. Added proprietary marking information and updated destruction notice information.

af. Clarified that index numbers also get renumbered during complete revisions.

ag. Clarified that illustrations/tables for the front matter are numbered consecutively within the front matter.

ah. Cleaned up or removed many of the more open ended options in 6.2.

ai. Changed internal paragraph reference requirement to use the paragraph number instead of the paragraph title.

aj. Added requirements for applicability codes.

ak. Replaced print/electronic presentation requirements with paper/Portable Document Format (PDF) output requirements.

al. Updated requirements for changed text highlighting.

am. Added requirements for PDF bookmarks.

an. Added requirements for list of changes.

ao. Removed definitions and illustrations that were not used or referenced.

4. Comments, suggestions, or questions on this document should be addressed to AFLCMC/HIS 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, you may want to verify the currency of this address information using the ASSIST Online database at https://assist.dla.mil.

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

1 SCOPE

1.1 Scope. This standard covers the general style and format requirements for the preparation of standard Technical Manuals (TMs) and changes thereto. This includes all technical documents assigned a TM identification number and controlled by a TM management information system, or subject to requisition from an inventory control point. This standard provides for Standard Generalized Markup Language (SGML) Document Type Definition (DTD) usage (see appendices B through E) required for electronic data delivery, including PDF. This standard supplements the detail specifications used for specific TM types and related publications, but does not deliver any technical data. Unless specified otherwise herein, the examples at the end of this standard are typical and may be adapted to fit the specific equipment or situation being covered. All appendices are intended for compliance when applicable.

1.2 Types of manuals. The following types of manuals are covered in this standard:

Review Draft Copy (RDC) (see 5.1)
Preliminary Technical Manual (PTM) (see 5.2)
Final Reproducible Copy (FRC) (see 5.3)
Supplements (see 5.4)
Brief manual (see 5.5)
Combined manual (see 5.6)

1.3 Specific Service requirements. Throughout this publication, requirements that are only applicable to specific United States Military Services are indicated by the following: (A) Army, (F) Air Force, (M) Marine Corps, and (N) Navy. If applicable, Service markings are placed at the beginning of the paragraph title, then the entire paragraph as well as all subordinate paragraphs apply only to the applicable Service(s). If they are placed at the beginning of a paragraph, then the entire paragraph only applies to the applicable Service(s). Otherwise, the sentence or sentence fragment will only apply to the applicable Service(s).

1.4 Illustrations in this standard. The illustrations appearing in this standard are used only as examples. If there is any conflict between the text and illustrations of this document, the text applies.

2 APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this standard. This section does not include documents cited in other sections of this standard 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, 4, or 5 of this standard, 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.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-DTL-38807	Manuals, Technical - Illustrated Parts Breakdown
MIL-DTL-83495	Manuals, Technical - On-Equipment Maintenance Manual Set
MIL-DTL-87929	Manuals, Technical - Operation and Maintenance Instructions in Work Package Format (for USAF Equipment)
MIL-PRF-32216	Evaluation of Commercial Off-the-Shelf (COTS) Manuals and Preparation of Supplemental Data

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-1309	Definitions of Terms for Testing, Measurement and Diagnostics
MIL-STD-1808	System Subsystem Sub-Subsystem Numbering

(Copies of these documents are available online at https://quicksearch.dla.mil.)

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 of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE PUBLICATIONS

DoD 5220.22-M	National Industrial Security Program Operating Manual
DoDI 5200.48	Controlled Unclassified Information (CUI)
DoDI 5230.24	Distribution Statements on Technical Documents
DoDM 5200.01 Volume 2	DoD Information Security Program: Marking Of Information
DoDM 5200.01 Volume 3	DoD Information Security Program: Protection Of Classified Information

(Copies of these documents are available online at https://www.esd.whs.mil/DD/.)

DEFENSE FEDERAL ACQUISITION REGULATION SUPPLEMENT (DFARS)

DFARS 252.227-7013	Rights in Technical Data-Noncommercial Items.

(DFARS are available online at https://www.acquisition.gov/dfars.)

AIR FORCE TECHNICAL MANUALS

TO 00-5-1	AF Technical Order System
TO 00-5-3	AF Technical Order Life Cycle Management
TO 00-25-234	General Shop Practice Requirements for the Repair, Maintenance and Test of Electrical Equipment

(Copies of these documents required by users with ".mil" government web address access are available online at https://www.my.af.mil/etims/ETIMS/index.jsp. 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.)

AIR FORCE INSTRUCTIONS

AFI 16-201	AIR FORCE FOREIGN DISCLOSURE AND TECHNOLOGY TRANSFER PROGRAM
AFI 21-101	AIRCRAFT AND EQUIPMENT MAINTENANCE MANAGEMENT

(Copies of these documents are available online at https://www.e-publishing.af.mil. 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.)

ARMY REGULATIONS

AR 25-30	Army Publishing Program

(Copies of this document are available online at https://armypubs.army.mil/ProductMaps/PubForm/AR.aspx.)

DEPARTMENT OF THE NAVY ISSUANCES

SECNAV M-5510.1	Foreign Disclosure Manual

(Copies of this document are available online at https://www.secnav.navy.mil/doni/manuals-secnav.aspx.)

UNITED STATES GOVERNMENT PUBLISHING OFFICE

US Government Publishing Office Style Manual

(Copies of this document are available online at https://www.govinfo.gov/.)

CHAIRMAN OF THE JOINT CHIEFS OF STAFF

DoD Dictionary of Military and Associated Terms

(Copies of this document are available online at https://www.jcs.mil/Doctrine/DOD-Terminology-Program/.)

2.3 Non-Government publications. The following documents 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.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME-Y14.38	Abbreviations and Acronyms for use on Drawings and Related Documents

(Application for copies should be addressed to https://www.asme.org or the American Society of Mechanical Engineers, 22 Law Drive, PO Box 2900, Fairfield, NJ 07007-2900.)

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE ASTM-SI-10	Standard for use of the International System of Units (SI): The Modern Metric System
IEEE 945-1984	IEEE Recommended Practice for Preferred Metric Units for use in Electrical and Electronics Science and Technology

(Application for copies should be addressed to https://www.ieee.org/ or the Institute of Electrical and Electronics Engineers, Inc., Publications Office, 10662 Los Vaqueros Circle, PO Box 3014, Los Alamitos, CA 90720-1264.)

2.4 Order of precedence. Unless otherwise noted herein or in the contract, 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 DEFINITIONS

3.1 Acronyms used in this standard. The acronyms used in this standard are defined as follows:

AFOSH	Air Force Occupational Safety and Health
AFTO	Air Force Technical Order
AMSC	Acquisition Management Systems Control
ASME	American Society of Mechanical Engineers
ASSIST	Acquisition Streamlining and Standardization Information System
ASTM	American Society for Testing Materials
CAC	Common Access Card
COTS	Commercial Off-The-Shelf
CSP	Cybersecurity Protection
CUI	Controlled Unclassified Information
DFARS	Defense Federal Acquisition Regulation Supplement
DoD	Department of Defense
DTD	Document Type Definition
ECP	Engineering Change Proposal
ESDS	Electrostatic Discharge Sensitive
ETIMS	Enhanced Technical Information Management System
FCP	Fatigue/Fracture Critical Part
FRC	Final Reproducible Copy
HCP	Hardness Critical Processes
HTML	Hypertext Markup Language
IEEE	Institute of Electrical and Electronics Engineers
IPB	Illustrated Parts Breakdown

ISO	International Organization for Standardization
ITPS	Identifying Technical Publication Sheet
LEP	List of Effective Pages
LOC	List Of Changes
LOI	List Of Illustrations
LOT	List Of Tables
LRP	List Of Related Publications
NSP	Nuclear Surety Procedures
O&SHA	Operating and Support Hazard Analysis
OCI	Observable Critical Item
OCP	Observable Critical Process
OPCERT	Operational Certification
OSH	Occupational Safety and Health
PDF	Portable Document Format
PKI	Public Key Infrastructure
PTM	Preliminary Technical Manual
PTO	Preliminary Technical Order
RAC	Rapid Action Change
RDC	Review Draft Copy
RGB	Red/Green/Blue
RGL	Reading Grade Level
SGML	Standard Generalized Markup Language
SSSN	System Subsystem Sub-subsystem Numbering
TCTO	Time Compliance Technical Order
TDT	Tag Description Table
TM	Technical Manual
TMINS	Technical Manual Identification Number System
TMSS	Technical Manual Specifications and Standards
TO	Technical Order
TOC	Table Of Contents
TOFCN	TO Field Change Notice
XML	Extensible Markup Language

3.2 Definitions.

3.2.1 Apron (blank apron). A blank area starting at the binding edge of foldout pages (see 3.2.10) which is slightly wider than a normal page. The blank apron permits the technician to use a foldout while reading the associated text (see figure 1 for further information on blank aprons).

3.2.2 Boxhead title. Those titles which are enclosed by rules at the head of a column on tables and charts prepared as tables.

3.2.3 Callout. Anything placed on an illustration to aid in identifying the objects being illustrated, such as index numbers, nomenclatures, leader lines, arrows, and legends.

3.2.4 Caution. Highlights an essential 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. Cautions are further explained in appendix A.

3.2.5 Change. A change or change package is comprised of corrected pages to the basic manual. It consists of information that improves or clarifies the basic manual without requiring rewriting or reorganization of the technical content of the basic manual.

3.2.6 Change designator. A unique number or letter used to differentiate each change page from the original pages and to differentiate among changes.

3.2.7 Chapter. The next lower division of a publication, volume, or part (see 4.7.11).

3.2.8 Cover page. Functionally identical to a title page, but with thicker material, typically card stock or equivalent.

3.2.9 Final Reproducible Copy (FRC). The final document ready for reproduction and publication as an authenticated TM including all necessary changes made as a result of validation/verification and acquiring activity conditions of acceptance or approval. Delivery will be by digital media that includes, PDF files, SGML, HTML, XML tagged data, etc. (M) FRC equates to final draft equipment publication.

3.2.10 Foldout page. A foldout page has the same height as, but is wider than, a standard page.

Paper output: Foldout pages are folded either 2, 4 or 6 times (depending on width) to assume the dimensions of a standard page.

3.2.11 Icons. Icons are pictorial images which may be used in lieu of words. For example: the ESDS icon is used to represent “Electrostatic Discharge Sensitive.” See appendix A for authorized icons. See figure 2 and 3 for examples.

3.2.12 Index numbers/letters. Those callouts which consist of a number or letter referenced from text or leading to a legend (see 3.2.16).

3.2.13 Issue indicator. The issue indicator states the level of change or revision of the manual, e.g., Original, Change 1, Change 2, Revision 1, Revision 2, etc.

3.2.14 Leader lines. A line with or without arrowhead extending from index number or letter/nomenclature to item.

3.2.15 Leading. Leading is the vertical spacing between lines of type measured from baseline to baseline (bottom of line to bottom of next line below). Leading is measured in points.

3.2.16 Legend. A tabular listing of the index numbers/letters and their meanings.

3.2.17 Multivolume manuals. Multivolume manuals are assigned individual TM identification numbers. If a volume, because of its bulk, warrants being further divided, the acquiring activity will decide how these divisions will be identified. When specified for use by the acquiring activity, volumes will be used when a publication exceeds 1,500 printed pages (750 sheets). Foldouts are counted in page units (sheets).

3.2.18 Nomenclature callout. Nomenclatures or partial nomenclatures placed directly on the illustration; e.g., “POWER SUPPLY”, “½-INCH LOCK NUT.”

3.2.19 Note. Highlights an essential operating or maintenance procedure, condition, or statement. Do not use notes in place of procedural steps.

3.2.20 (N) Part. The next lower division of a publication below volume (see 4.7.11). Parts should normally be separately bound.

3.2.21 Preliminary Technical Manual (PTM). A PTM is intended for interim use to make the technical information available for test, verification, training purposes and operational use pending receipt of the FRC copy and distribution of paper/PDF manuals. (F) PTM equates to Preliminary Technical Order (PTO). (M) PTM equates to draft equipment publication.

3.2.22 Presentation requirements. Addresses data functionality/formatting that is determined by two primary output mediums (paper and PDF) for TM data that are within the scope of this standard (see 4.1). They are defined as follows:

3.2.22.1 Paper output. Specifies requirements used to develop TM data to be used as printed or paper publications. These are requirements that only apply due to the medium of the publication being paper, such as the need for volumes, binding edges, blank pages, left-hand/right-hand pages, blank aprons for foldouts, etc.

3.2.22.2 PDF output. Specifies requirements used to develop TM data to be used as PDF publications. These are requirements that only apply due to the PDF medium, such as hyperlinks and bookmarks.

3.2.23 Review Draft Copy (RDC). The RDC is used for review and coordination for technical accuracy and adequacy to evaluate the contractor's progress and assess compliance with applicable specifications and terms of the contract. (M) RDC equates to preliminary draft equipment publication. (N) RDC equates to review manuscript.

3.2.24 Revision. A revision is a second or subsequent edition of a manual which normally supersedes the preceding edition.

3.2.24.1 Complete revision. A complete revision requires rewrite or reorganization of the technical content of the material and is prepared in accordance with the current detail specification and as outlined by this standard.

3.2.24.2 Nonsuperseding revision. Normally revisions supersede the preceding edition. However, when a new manual is needed to cover a different configuration of a system or equipment for which there is a high degree of commonality, a nonsuperseding revision can be acquired to minimize cost. A nonsuperseding revision will stand on its own and will be identified by a unique TM identification number.

3.2.24.3 Update revision. An update revision incorporates the basic manual, all previous changes, and new data that would require the issuance of an additional change. The update is prepared by incorporating applicable portions into the manual without requiring rewrite or reorganization of the technical content of the material. It is prepared in the style and format of the basic manual.

3.2.25 Section. The next lower division of a chapter (see 4.7.11).

3.2.26 Set. A set is a number of individual manuals or volumes which comprises a complete TM package of information for an item.

3.2.27 Standard technical manual. A standard TM is any TM that conforms to the style and format requirements of this standard.

3.2.28 Supplement. A supplement is a complimentary TM which supplements information in a related TM.

3.2.29 Technical manual. TMs are publications that contain instructions for the installation, operation, maintenance, training, and support of weapon systems, weapon system components and support equipment. TM information may be presented in any form or characteristic including, but not limited to, hard copy, audio and visual displays, disks, and other electronic devices. A TM normally contains operational and maintenance instructions, parts lists or parts breakdowns, and related technical information or procedures exclusive of administrative procedures. Technical Orders (TO) that meet the criteria of this definition may also be classified as TMs.

3.2.30 Volume. The highest level division of a publication (see 4.7.11). Volumes are separately bound.

3.2.31 Warning. Highlights an essential operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to, or death of, personnel or long term health hazards. Warnings are further explained in appendix A of this standard.

4 GENERAL REQUIREMENTS

4.1 Paper/PDF outputs. See 3.2.22. In this standard, paper output requirements apply to technical data used as printed/paper publications while PDF output requirements apply to technical data used as PDF publications. When both outputs apply to a manual (i.e., a manual will be distributed in both paper (not just printed excerpts) and PDF formats), then only the paper output requirement applies unless otherwise specified in this standard.

4.2 Advertising. TMs shall contain no advertising except as required by 4.9.1.2.6.

4.3 Copyrighted material. TMs shall not contain copyrighted material except as specified in the Federal Acquisition Regulations/Defense Federal Acquisition Regulation Supplement. When copyrighted material is to be included in a technical publication, the preparer shall obtain prior written permission from the copyright owner/authorized agent for its use. The signed, written permission shall be delivered with the FRC copy when it is delivered. The written permission shall contain a statement declaring whether or not a copyright credit line is required (see 4.9.1.12).

4.4 Jointly used manuals. When manuals are acquired by one Service for joint use with another Service, see 4.7.3 regarding Army, Navy, Marine Corps and Air Force TM identification numbers. See figure 4, Note 2, regarding showing two or more identification numbers on cover/title page. Paragraphs in joint publications which do not apply to all Services concerned, shall be marked to indicate the Services to which they apply. For example: "4.4 (ARMY ONLY) THE LANDING GEAR."

4.5 Manual outline. When specified by the acquiring activity (see 6.2b) or detail specification, a manual outline shall contain the following:

a. A text outline that shall be in accordance with the requirements of the detail specification, showing volume, part, chapter, section and paragraph titles to indicate the intended coverage of the various aspects of the equipment or system. Each paragraph title or notation shall be followed by a brief statement outlining the information to be presented. The text outline shall clearly show the specific equipment/system and related procedures/data planned for inclusion in the manual.

b. An illustration outline and a table outline that shall be keyed to the text outline. Each illustration and table listed in the outlines shall be described. The illustration outline shall contain figure numbers, title, information, intent, approximate size and nature of illustration (exploded view, schematic, line drawing). The table outline shall describe the tables by table number and information content and in addition, a statement indicating the scope, depth or coverage.

c. An estimated page count for each chapter.

(F) Manual outlines are required when using MIL-DTL-83495 and MIL-DTL-87929.

PDF output: References shall be linked to the data to which they apply. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

4.6 Source data. The primary source data for TMs shall be engineering drawings. Sound engineering principles and techniques, available engineering analyses, service experience, performance data on the item and on similar items, and all other reliability and maintainability data available shall be used in the preparation of specific instructions.

4.7 Format.

4.7.1 Margin data. Margin data (generally the running heads and feet) shall be placed outside that portion of the page used for either narrative text, full page tabular data or full page illustrations, but within the printing area dimensions of the page. When applicable, margin data also consists of the change number, security classification, and page content/equipment identification. See 4.12.7 for deleted pages statement.

(A) Margin data will include pub number, change number, security classification and page number.

4.7.2 Running heads and feet. Paper output: Complete running heads and feet shall be included on all pages except title pages or pages otherwise blank. Blank pages which occur on the opposite side of classified pages shall be marked with the security classification of the nonblank side of the page.

PDF output: The above requirements apply except there shall be no blank pages.

4.7.2.1 Running heads.

4.7.2.1.1 Security classification and Controlled Unclassified Information (CUI). The security classification, including unclassified pages, of classified manuals and CUI markings for unclassified manuals shall appear at the top center of each page in bold face type in accordance with DoD 5220.22-M, DoDI 5200.48, and DoDM 5200.01 Volume 2. For foldouts, the security classification or CUI markings shall appear

in bold face type, ¾-inch from the right-hand edge and repeated continuously to the left with four inches of space between each marking.

4.7.2.1.2 TM identification number. Paper output: The TM identification number, as assigned for each volume and part, shall be in bold face type at the upper outer edge of each page and outer segment (page unit) of each foldout page.

PDF output: The TM identification number shall be in bold face type at the upper right-hand edge of each page.

4.7.2.1.3 (N) Binding edge (equipment or subject identification). Paper output: When specified by the acquiring activity (see 6.2c), the binding edge shall indicate the equipment or subject to which the manual applies and relate to the prime title. Appropriate abbreviations may be used. Top-bound manuals shall place this information on the top, left-hand corner.

4.7.2.1.4 (A) (M) (N) Outer edge (reference information). Paper output: When specified by the acquiring activity (see 6.2d), significant reference information such as chapter, section or subject titles, paragraph number or figure number shall be used or added. Appropriate abbreviations may be used. Top bound manuals shall have this information placed on the top, right-hand corner.

4.7.2.2 Running feet.

4.7.2.2.1 Page number. Paper output: Page numbers shall be located at the lower outer edge ending at the outside margin and shall be in bold face type. Even numbers shall be assigned to left-hand (verso) pages and odd numbers to right-hand (recto) pages. The page number for a foldout page shall be so placed (lower outer edge ending at the outside margin) that the number will be visible when the printed page is folded.

(A) Page numbers shall be located at the bottom center of each page.

PDF output: Page numbers shall be located at the lower right-hand edge ending at the right margin and shall be in bold face type.

(A) Page numbers shall be located at the bottom center of each page.

4.7.2.2.2 System Subsystem Sub-subsystem Numbering (SSSN). Paper output: When used, the SSSN shall appear in the lower outer corner of each page directly above the page number. SSSN shall not be placed at the bottom of front matter pages.

PDF output: When used, the SSSN shall appear in the lower right-hand corner of each page directly above the page number. SSSN shall not be placed at the bottom of front matter pages.

4.7.2.2.3 Issue indicator. Paper output: When specified by the acquiring activity ((N) see 6.2e), the issue indicator (see 3.2.13) of basic manuals, revisions and the change designator (see 3.2.6) for change pages shall be located at the outer edge of all pages on the same line as, and ½-inch to the inside of the page number.

PDF output: When specified by the acquiring activity ((N) see 6.2e), the issue indicator (see 3.2.13) of basic manuals, revisions and the change designator (see 3.2.6) for change pages shall be located at the right-hand edge of all pages on the same line as, and ½-inch to the left of the page number.

(N) When specified by the acquiring activity (see 6.2f), the word “Original” shall be included on basic pages.

4.7.2.2.4 Security classification and CUI. The security classification, including unclassified pages, of classified manuals and CUI markings for unclassified manuals shall appear at the bottom center of each page in bold face type in accordance with DoD 5220.22-M, DoDI 5200.48, and DoDM 5200.01 Volume 2. For foldouts, the security classification or CUI markings shall appear in bold face type, ¾-inch from the right-hand edge and repeated continuously to the left with four inches of space between each marking.

4.7.3 Technical manual identification number. The TM identification number assigned by the acquiring activity shall be located on each page as specified in 4.7.2.1.2. (A) For pocketbooks, the TM number is to appear on the front and back covers. However, when all the information for a 4 by 5½, 4 by 8, 4½ by 7 or 5 by 8-inch manual is placed horizontally on all pages and all pages are arranged head to foot, the TM identification number shall be placed in the upper right corner of all pages. If the publication is jointly used, each Service's number shall be prefixed with the word Army, Navy, (NAVSEA), (NAVAIR), (SPAWARS),

Marine Corps or Air Force as applicable. The acquiring activity's TM identification number shall be placed above the using activity's TM identification number. The using activity's numbers shall be in alphabetic sequence (by Service name) following the acquiring activity's number. See example below:

NAVY (NAVAIR)	AI-F18AA-WRM-070
ARMY	TM 11-1510-204-34
AIR FORCE	TO 21M-LGM30G-12
MARINE CORPS	TM 12345-10/1
NAVY (NAVSEA)	SE211-FA-MMA-010/SPS-10A

4.7.4 Numbering of pages, tables, illustrations, table footnotes and appendices.

4.7.4.1 Alternate page number placement. The page number shall be placed as specified in 4.7.2.2.1. However, when all the information for a 4 by 5½, 4½ by 7, 5½ by 7, 4 by 8 or 5 by 8-inch manual is placed horizontally on all pages, and all pages are arranged head to foot, the page number shall be placed in the lower right-hand corner of all pages.

(A) Page numbers shall be located at the bottom center of each page.

4.7.4.1.1 Blank page number. Paper output: A blank page shall be assigned a number but it shall appear on the preceding or following page. For example: if page 10 of chapter 1 is blank, page 9 shall bear the number 1-9/(1-10 blank); if page 9 of chapter 1 is blank, page 10 shall bear the number (1-9 blank)/1-10. When applicable, an added page, such as 1-10.1, shall show that 1-10.2 is blank.

PDF output: Blank page numbers shall not be assigned as there shall be no blank pages.

4.7.4.1.2 Pages, tables, and illustrations. Tables and illustrations shall be numbered consecutively within each chapter. Manuals divided into chapters and, in turn, into sections, shall contain consecutively numbered tables and illustrations for the entire chapter. Table and illustration numbers shall consist of two part Arabic numerals separated by a hyphen. The first part shall be the chapter number with the second part being the order within the chapter. For example:

Number	Meaning
* Table 2-17. (Title)	Chapter 2, table 17.
* Figure 2-17. (Title)	Chapter 2, figure 17.
† Figure 2-17. (Title) (Sheet 1 of 3)	Chapter 2, figure 17 is a multisheet (3 total) illustration. Remaining sheets shall be numbered in consecutive order; (Sheet 2) (Sheet 3) and so forth.

* Note that a manual may contain both a table and a figure 2-17.

† Only the first sheet of a multisheet illustration shall contain the total number of sheets (i.e., Sheet 1 of 3). (A) (M) Consecutive running sheets shall place the total sheet count on each page (i.e., Sheet 2 of 3).

Pages shall be numbered consecutively within each chapter. Manuals divided into chapters and, in turn, into sections, shall contain consecutively numbered pages for the entire chapter. Page numbers shall consist of two part Arabic numerals separated by a hyphen. The first part shall be the chapter number with the second part being the order within the chapter. For example:

Number	Meaning
2-17	Chapter 2, page 17.

Paper output: For numbering of blank pages, see 4.7.4.1.1. When specified by the acquiring activity (see 6.2g), the volume number shall be included with the page number. For example:

Number	Meaning
3-12-10	Volume 3, chapter 12, page 10.

4.7.4.1.2.1 Title pages. Title pages shall not be numbered. The reverse side of the title page, when used as a continuation of the title page (see 4.9.1), shall be numbered T-2.

4.7.4.1.2.2 (A) (M) Warning pages. Warning pages shall be numbered with lowercase letters, e.g., "a", "b", "c", etc.

4.7.4.1.2.3 List of effective pages (LEP). Paper output: The LEP shall be numbered using the letter "A" in the lower left-hand corner. When using a T-2 page, or when the LEP otherwise begins as a right-hand page, the letter "A" shall be in the lower right-hand corner. When additional pages are required, they shall be identified as "B", "C", etc.

(M) When there is only one page to the LEP it shall be numbered, e.g., A/(B blank) in the lower right-hand corner.

PDF output: The LEP shall be numbered using the letter "A" in the lower right-hand corner. When additional pages are required, they shall be identified as "B", "C", etc.

4.7.4.1.2.4 (F) Verification status page. The verification status page shall be numbered VS-1. If more than one page is required, they shall be numbered consecutively, and shall indicate the total number of pages, i.e., VS-1 of 3, VS-2 of 3, VS-3 of 3.

4.7.4.1.2.5 Front matter. Front matter pages, except change record pages, following the LEP and preceding chapter 1 shall be assigned sequential lower case Roman numerals, i.e., i, ii, iii, etc. Illustrations and tables for the front matter shall be consecutively numbered within the front matter in Arabic numerals (e.g., Figure 1, Table 1).

4.7.4.1.2.6 Foldout figure numbers. The figure numbers for foldouts (see 3.2.10) which fall at the end of the manual shall be "FO-1", "FO-2", etc., and shall be placed preceding the figure title under the illustration. The figure numbers for foldouts which fall at the end of a chapter or are interspersed with the text shall follow normal figure numbering sequence in accordance with 4.7.4.1.2. When a foldout consists of several sheets, the sheets shall be numbered in consecutive order following the figure title in accordance with 4.7.4.1.2.

Paper output: The figure number and title for a foldout page shall be so placed (lower outer corner) that the number will be visible when the printed page is folded.

4.7.4.1.2.7 Foldout page numbers. Paper output: The page numbers for foldout pages (see 3.2.10) which fall at the end of the manual shall be FP-1/(FP-2 blank), FP-3/(FP-4 blank), etc. The page numbers for foldout pages which fall at the end of a chapter or are interspersed with the text shall follow normal page numbering sequence in accordance with 4.7.4.1.2.

PDF output: The page numbers for foldout pages (see 3.2.10) which fall at the end of the manual shall be FP-1, FP-2, FP-3, FP-4, etc. The page numbers for foldout pages which fall at the end of a chapter or are interspersed with the text shall follow normal page numbering sequence in accordance with 4.7.4.1.2.

4.7.4.1.3 Table footnotes. Consecutive numbers beginning with "1" shall be used (lowercase letters, asterisks or other designators may be used where numbers would cause confusion). Footnote numbers and text shall be separated by two spaces. The numbering system shall be per table (i.e., footnote numbering restarts for each table).

4.7.4.1.4 Appendix. Appendices shall be identified by capital letters, e.g., APPENDIX A, APPENDIX B and so forth. Paragraphs, illustrations and tables for appendices shall be consecutively numbered within each appendix in Arabic numerals preceded by the capital letter of the appendix. For example:

Number	Meaning
Figure B-17	Appendix B, figure 17.
Table C-17	Appendix C, table 17.

Pages for appendices shall be consecutively numbered in Arabic numerals preceded by the capital letter of the appendix. For example:

Number	Meaning
A-17	Appendix A, page 17.

4.7.4.1.5 Glossary pages. The page numbers for an independent glossary shall be consecutively numbered in Arabic numerals with the word "Glossary" preceding the page number. For example: "Glossary 1."

4.7.4.1.6 Index pages. Unless otherwise specified by the acquiring activity ((A) (M) see 6.2h), page numbers for indexes shall be consecutively numbered in Arabic numerals with the word "Index" preceding the page number. For example: "Index 1."

4.7.5 Headings. Numbers and titles for parts, chapters, sections, appendices, glossaries, alphabetical indexes, etc., shall be in all capital letters centered at the top of the first page of text for each. The SECTION I heading shall be centered immediately below the chapter heading; subsequent section headings shall be centered on the page and precede the applicable text.

4.7.6 Foldout page and multisheet illustration limitations.

4.7.6.1 Foldout pages. Paper output: Multisheet illustrations should be used where possible, in lieu of foldouts (see 3.2.10), when usability will not be affected. When specified by the acquiring activity ((A) (M) (N) see 6.2i), foldout pages may be prepared for the manual sizes listed in 4.7.6.1g. (F) Foldouts are permitted unless otherwise specified in the applicable content specification. Foldouts shall meet the following requirements:

a. Foldout pages with a height greater than the standard page size (i.e., foldout-foldup pages) are not permitted.

b. Numbering of foldouts shall be in accordance with 4.7.4.1.2.6 and 4.7.4.1.2.7.

c. All foldout pages shall be prepared for printing on one side only.

d. Full blank aprons (see 3.2.1) shall be used.

e. Foldout pages shall not be spliced.

f. Foldout pages shall fall at the end of the manual (i.e., after the last chapter, appendix, or index, whichever forms the last portion). When specified by the acquiring activity ((M) (N) see 6.2j), foldout pages may instead be placed at the end of chapters or be interspersed within text pages. (A) Foldouts shall be placed at the end of the manual. (F) Foldouts may be interspersed with the text when required to enhance TO usability.

g. Maximum foldout page sizes and maximum printable area for foldout pages shall be as follows:

Manual Size	Foldout Maximum Page Size (including blank apron)	Foldout Maximum Printable Area
4 by 8	24 by 8	# 19½ by 7½
5½ by 7	35 by 7	* 28¾ by 6¼
5 by 8	31 by 8	# 25½ by 7½
8½ by 11	45 by 11	† 36 by 10

Minimum margins: ¼-inch top, bottom and side opposite binding edge.

* Minimum margins: ¼-inch top, ½-inch bottom and side opposite binding edge.

† Minimum margins: ½-inch top and bottom, ¼-inch side opposite binding edge.

PDF output: The above requirements apply except blank aprons shall not be used.

4.7.6.2 Multisheet illustrations. When an illustration exceeds one page but will not be prepared as a foldout, the illustration shall be divided and planned for presentation on facing pages and numbered in accordance with 4.7.4.1.2. Sheet 3, sheet 4, etc., can be planned for succeeding pages when required and if this treatment will not affect the usefulness of the manual.

4.7.7 Emergency page markings. Emergency information shall be marked as follows:

Paper output: Pages shall contain a broken black border in accordance with the requirements of figure 5. Emergency page markings are not considered margin data.

PDF output: The above requirements apply except the broken black border shall appear on all four sides since there is no binding edge.

4.7.8 Indentations. All lines on warnings, cautions and notes (see 3.2.31, 3.2.4 and 3.2.19) shall be indented five spaces or characters from both left and right margins. When the right margin is unjustified, indentations of five spaces shall be from the maximum allowable width of the typed text. Procedural steps in a paragraph structure shall be indented as described in 4.7.11.5.3. Procedural steps in other structures, e.g., on a table, shall have substeps indented two spaces. Each level of substep shall be indented an additional two spaces. When step numbers require double characters, such as aa., (10), (aa), etc., the number shall be indented only one space in order to maintain right justification of the numbers. For example:

z. xxxxxxxxx (9) xxxxxxxxxx

aa. xxxxxxxxx (10) xxxxxxxxxx

(M) See figure 10 for formatting.

4.7.9 Tables. See 4.8.9 and figures 6, 7, and 8 that provide an example of a typical table. Carry over lines shall be indented two spaces unless adequately spaced between entries.

4.7.9.1 Table titles. Tables shall be assigned table titles. The title shall follow two spaces after the table number and shall be centered above the applicable table. The first letter of the first word and of each principal word shall be capitalized. Table titles should begin with an identifying name. For example: “Table 3-1. Guidance System Test Points.” The title shall be short and describe the contents or purpose of the table. Tables applicable to one Service, in a manual that will be used by more than one Service, shall be identified. For example: “Table 2-3. (Army Only) Fuel Indicator Correction Factors.”

(M) Table titles shall not have a period at the end.

4.7.9.2 Boxhead titles, row shading, and rules. See 3.2.2. Tables shall be vertically and horizontally ruled as required for clarity. A horizontal rule shall be placed at the beginning (head) and at the end (foot) of a table and following column heads (boxhead titles). Tables shall include boxhead titles. The first letter of the first word and of each principal word of boxhead titles shall be capitalized; the remaining letters shall be lowercase. Table rows may include subtle background shading of light gray on alternating rows for additional clarity. When shading is used it shall not interfere with the readability of the table text. Tables shall be so designed that related entries in different columns are aligned.

The closing rule is omitted at the foot of a continued table; the opening rule is omitted at the head of the continuation of the table. For preprogrammed tables, with columns ruled for continued tables, the opening rule may be included at the head of the continuation of the table.

4.7.9.3 Continued table material. When a table is continued on a following page, the number and title shall be repeated at the head of the columns on all following pages of the table, followed by a dash and the word “Continued.” Boxhead titles shall also be repeated. The above information shall not be repeated on a following page when the page is a foot page of a head to foot tabular arrangement.

4.7.9.4 Footnotes to tables. Numbering of footnotes to tables shall be in accordance with 4.7.4.1.3. Footnotes, which shall be kept to the minimum consistent with clarity, shall be placed immediately below the table in which they are referenced. If a table is continued onto other pages, all footnotes shall be placed at the bottom of the page on which they are referenced or at the end of the table. For footnotes coming before the end of the table, a one inch horizontal rule shall be placed flush left below the table and the footnote placed under the rule. Footnotes at the end of the table shall be started on the second line below the closing rule. All table footnotes shall be indented five spaces from the left margin of the table and carry over lines shall return to the left margin of the table.

PDF output: Footnote superscript references shall be linked to the footnote explanation to which they apply. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

4.7.9.5 Landscape tables. Full page tables, placed sideways on a page, shall be turned 90 degrees counterclockwise. The table number and title for a turned table shall also be turned 90 degrees counterclockwise to stay centered above the table.

4.7.10 Illustration placement and legends. See 4.8.9 and 3.2.16.

4.7.10.1 Figure titles. Illustrations shall be assigned figure titles. The title shall follow two spaces after the figure number and shall be centered below the applicable illustration. The first letter of the first word and of each principal word shall be capitalized. Figure titles should begin with an identifying name. For example: “Figure 3-1. Guidance System Gyroscope Assembly.” The title shall be short and describe the contents or purpose of the illustration. Illustrations applicable to one Service, in a manual that will be used by more than one Service, shall be identified. For example: “Figure 2-3. (Army Only) Fuel Indicator.”

Full page illustrations, placed sideways on a page, shall be turned 90 degrees counterclockwise. The figure number and title for a turned illustration shall be placed at the bottom of the page with the manual in its normal position. When the majority of illustrations are turned, the figure number and title shall also be turned to appear below the illustration. For foldout figures, title spacing and centering requirements, see 4.7.6.1.

(M) Figure titles shall not have a period at the end.

4.7.10.2 Illustration legends. See 3.2.16. Legends shall be headed by the word “Legend” followed by the number of the figure to which it is applicable (see figure 9). If the legend is continued, the figure number and title shall be repeated, followed by a dash and the word “Continued.” The entire legend shall be indented 5 spaces. Only that information which is necessary to clearly identify the items shall be included in the legend. Where methods such as the tabular presentation technique (as in an Illustrated Parts Breakdown/Repair Parts and Special Tools List) are used, no legends are required.

4.7.10.3 System Subsystem Sub-subsystem Numbering (SSSN) numbers. SSSN numbers are required only for systems/equipment using the MIL-STD-1808 numbering system or when specified in the detail specification. When used, SSSN numbers shall be placed in the lower right-hand corner of the illustration. For contractor illustration identification numbers, see 4.11.12.

4.7.11 Divisions. The hierarchical breakdown of a publication shall be divided into volumes, parts, chapters, sections and paragraphs, as appropriate. There shall be at least two of each subdivision used, except paragraphs, i.e., where there is a volume, part, chapter 1 or section I, there shall be a volume, part, chapter 2 or section II. All volumes, parts, chapters, sections and primary and first subordinate paragraphs shall be titled.

4.7.11.1 Volumes. See 3.2.30. Paper output: Volumes shall be used and numbered consecutively in Arabic numerals. When authorized, volumes shall be used when a publication exceeds 1500 printed pages (750 sheets). Two or more volumes shall be identified sequentially by volume numbers and subtitles indicative of volume content and have a unique Technical Manual Identification Number System (TMINS) number assigned as provided by the acquiring activity. Volumes shall be separated by complete chapters, where possible. (A) (M) Separate volumes shall not be used to distinguish between models, i.e., -10 for basic model, -10-1 for model A, -10-2 for model B, etc. (F) Volumes shall be used when specified by the applicable content specification.

PDF output: Volumes shall not be used.

4.7.11.2 (N) Parts. See 3.2.20. Paper output: When a volume exceeds approximately three inches in thickness, it shall be divided by complete chapters (where possible) into separately bound parts. Each part shall be numbered consecutively in Arabic numerals. Each part shall be identified by both its volume and part numbers and have a unique TMINS number assigned as provided by the acquiring activity.

4.7.11.3 Chapters. See 3.2.7. Arabic numerals shall be used to number chapters consecutively throughout all volumes of the publication. Format shall be as shown on figures 6 and 7.

Paper output: Chapters shall begin on a right-hand page.

PDF output: Chapters shall begin on a new page.

4.7.11.4 Sections. See 3.2.25. Roman numerals shall be used to number sections consecutively within each chapter. Format shall be as shown on figures 6 and 7.

4.7.11.5 Paragraphs. Text shall be divided into primary paragraphs and subordinate paragraphs. Paragraphs may also be divided into procedural steps. Procedural steps may be further divided if necessary. Decimal paragraph numbering as described in 4.7.11.5.2 shall be used.

4.7.11.5.1 Paragraph headings. Paragraph headings (titles) are identified as primary sideheads, first subordinate sideheads, second subordinate sideheads, etc. Periods shall follow paragraph titles. There shall be two spaces between the paragraph number and the title.

(M) Periods shall not be used after paragraph titles when text does not follow the title (see figure 10). Acronyms shall not be used in headings, and acronyms shall be defined when first used in text.

4.7.11.5.1.1 Primary sideheads. Primary sideheads divide text within chapters or sections into two or more portions. There shall be at least one primary sidehead in each chapter or section. Primary sideheads stand alone (are not run in with text) and shall appear in capital letters. They shall begin at the left margin and shall be underscored. The paragraph following the primary sidehead shall begin two spaces below the primary sidehead (i.e., double spaced).

4.7.11.5.1.2 Subordinate paragraphs. Subordinate paragraphs shall be numbered. First subordinate paragraphs shall have a sidehead. Second and subsequent subordinate paragraphs should, but are not required to, have a sidehead. The first letter of the first word and of each principal word shall be capitalized, and the title shall be underscored. The text shall begin on the same line as the title/paragraph number and be separated by a period (if using a title) and two spaces. Carry over lines for all subordinate paragraphs shall return to the left margin. All subordinate sideheads shall begin two spaces below the preceding paragraph (i.e., double spaced) at the left margin. Unless otherwise specified by the acquiring activity (see 6.2k), breakdowns beyond the third subordinate shall not be used without the approval of the acquiring activity. Figure 11 shows samples of decimal paragraph numbering and decimal paragraph numbering with added material. Single column format shall use the same conventions as double column format.

4.7.11.5.2 Decimal paragraph numbering. Format for the decimal numbering method shall be as outlined in this paragraph and in figure 11. Paragraphs shall be numbered consecutively within chapters, appendices, introduction, and safety summary. All paragraph numbers within a chapter or appendix shall be preceded by the chapter number or appendix letter and a period (e.g., the first primary paragraph of chapter 3 would be 3.1, the second primary paragraph would be 3.2, etc). The first primary paragraph of the introduction would be “1” and the first primary paragraph of the safety summary would be “1”.

(M) See figure 10 for paragraph numbering.

4.7.11.5.3 Procedural steps. Procedural steps, also known as checklist items, shall be used to provide step-by-step instructions, such as disassembly, assembly and alignment procedures. Steps may be further divided into substeps, but shall not exceed four levels of depth. There shall be at least two of each subdivision used as a minimum, i.e., if there is a step a., there must be a step b., if there is a substep (1), there must be a substep (2), etc. Procedural steps shall be numbered in accordance with figure 11. Procedural steps shall not have titles. The text shall begin on the same line as the step number and be separated by two spaces. Carry over lines shall not return to the left margin but shall start under the first letter of the preceding line (blocked). Procedural steps shall begin two spaces below the preceding text (i.e.,

double spacing) and indented two spaces from the left margin. Substeps shall begin two spaces below the preceding step (i.e., double spacing) and indented an additional two spaces.

(M) See figure 10 for formatting.

4.7.11.6 Appendices. Appendices shall immediately follow the last chapter of the manual. Paragraphs, illustrations and tables for appendices shall be numbered in accordance with 4.7.4.1.4. (F) (N) Each manual or volume in a set (see 3.2.17 and 3.2.26) of manuals shall contain its own appendices. Pages for appendices shall be numbered in accordance with 4.7.4.1.4.

Paper output: Appendices shall begin on a right-hand page.

PDF output: Appendices shall begin on a new page.

4.7.11.7 Glossaries. Glossaries shall be used in TMs only when the terms are not adequately defined in the text, in the Army, Navy, Air Force, DoD or standard dictionary, or contained in the manual's foreword/preface/introduction. If a glossary is required, it shall immediately precede the alphabetical index, if any. Each manual or volume in a set (see 3.2.17 and 3.2.26) of manuals shall contain its own glossary. The glossary shall be prepared in the same column format that is used by the manual (i.e., single column or double column). Page numbers for a glossary shall be consecutively numbered as specified in 4.7.4.1.5.

4.7.11.8 Index. An alphabetical index shall be prepared when the number of titled paragraphs in a publication exceeds 100. When specified by the acquiring activity (see 6.2l), an index shall be prepared regardless of the number of paragraphs. It shall list pertinent subjects under every topic for which users are likely to look. “See” and “see also” references may be included to guide the user to other pertinent entries. All applicable paragraph numbers for each item shall be indicated. Figure and table numbers for items shall be preceded by an “F” and “T” respectively. If paragraph, figure, or table numbers cannot be used for a subject, then page numbers shall be used instead. The column headers of the index shall reflect the column's content (i.e., Paragraph, Figure, Table Number). See figure 12 for an example of a single column alphabetical index. The alphabetical index shall use a double column format when the manual is prepared in double column format. The alphabetical index shall be so constructed as to enable the user to easily locate any part, information or operation described in the text. Each manual or volume in a set (see 3.2.17 and 3.2.26) of manuals shall contain its own index. In addition, Volume 1 or the first manual of the set shall contain an index for all volumes or manuals in the set. Page numbers for alphabetical indexes shall be consecutively numbered as specified in 4.7.4.1.6. The alphabetical index shall be located at the end of the publication but will be located before foldout page(s).

Paper output: Alphabetical indexes shall begin on a right-hand page.

PDF output: Alphabetical indexes shall begin on a new page.

4.8 Style of writing. AFH 33-337, Tongue and Quill may be used as a reference for style of writing. Style of writing shall ensure:

a. Technical content shall be presented in language free of vague and ambiguous terms, using the simplest words and phrases which will convey the intended meaning. The U.S. Government Printing Office Style Manual shall be used as a general guide for capitalization, punctuation, compounding of words, numerals in the text and spelling of nontechnical words. All essential information shall be included, either by direct statements or by reference. Sentences shall be short and concise. Punctuation shall be used in a manner which aids in reading and prevents misreading. Sentences shall be rewritten when extensive punctuation is necessary for clarity. Technical words shall be used only when no other wording will convey the intended meaning.

b. For maximum clarity and usefulness, there shall be consistency in terminology and organization within the same publication or series of publications. Nomenclature shall be consistent within a publication and throughout parts lists, parts breakdowns and other directly related publications.

c. Quotation marks and underscoring shall not be used for emphasis.

d. Words which have more than one meaning which will fit the context in which they are used, such as “replace” for “reinstall,” shall not be used.

e. Chapter, section and paragraph headings shall be descriptive of the contents of the division they head; “General” and “Miscellaneous” shall not be used unless no other title will suffice.

f. Statements which explain applicability for individual items of equipment shall use specific serial number(s), block designator(s), specific model designator(s) or similar identification. Such terms as “on later equipment” and “on early serial numbers” shall not be used.

g. Technical publications shall make no reference to age, sex, race or national origin. Use sex neutral terms, except avoid use of the word “person” (terms such as “midshipman” and “workman” are considered sex neutral). Terms such as male and female connectors, pins, etc., are acceptable.

4.8.1 References. The text shall refer to:

a. Only models or types covered by the manual. To facilitate coverage of modified or additional models or types at a later date, references should be held to a minimum consistent with clarity.

b. The basic number of Government specifications and standards. When the contractor cannot ascertain the Government specification number, the contractor shall request this information from the acquiring activity, furnishing complete information concerning the material's composition, properties, characteristics, applications, manufacturer's specification number, etc.

c. Temperature readings as calibrated on the equipment. If other than Fahrenheit, the equivalent in Fahrenheit shall follow in parentheses. General temperature references, such as room temperature, shall normally be given in degrees Fahrenheit.

d. Speed, distance and other instrument readings as calibrated on the equipment.

e. Switch positions and panel markings exactly as marked on the equipment. However, symbols on panel markings may be spelled out when they cannot be produced by the composing equipment, such as the symbol for “ohm”, “infinity”, etc.

f. Measurements in U.S. standard units (ounces, pounds, gallons, inches, feet, knots, miles, etc.) except instances in which metric measurements are required. When the metric system is used on the equipment, conversion to U.S. standards shall follow in parentheses. If the detail specification so requires, conversion of U.S. measurements to metric measurements shall be indicated.

g. Illustrations by figure number, including section letter/number when applicable, and the sheet number for multisheet illustrations, when applicable. References shall be made only to illustrations within the same manual or another volume of the same manual.

h. Figure numbers first, followed by the index number (see 3.2.12). For example: “(figure 2-6, 34).” However, when multiple references in a paragraph refer to the same figure, only the first reference needs to indicate the figure number. If two or more figures are involved in the same sequence, the figure with the greater number of items shall be cited as described above. Index callouts (see 3.2.3 and 3.2.12) for items on remaining figures shall have the index number follow the figure number, e.g., “(figure 3-5, 21).” In such cases, the paragraph lead-in shall contain a statement similar to the following: “Item numbers below refer to figure 3-4 unless otherwise indicated.” When the sequence is unbroken for procedures requiring two or more pages, the figure number followed by a dash and the word “Continued” shall be repeated after the first reference on each succeeding page.

i. Parts on diagrams by enough of their reference designator to identify the item. For example: Resistor A6R11.

j. Tables by table number. Reference shall be made only to tables within the same manual or another volume of the same manual.

k. Other supporting paragraphs in the same manual or another volume of the same manual, by exact paragraph number followed by the volume/part number (if applicable) in parentheses.

l. Other subordinate paragraphs of the same primary paragraph as “above” or “below.” or by exact paragraph number.

m. Other TMs by TM identification number. Include exact paragraph/figure/table title when referencing a specific part of the TM, but omitting dates, page, and paragraph/figure/table numbers. Reference may be made only to publications in the publication system(s) of the Service(s) that will use the publications and are authorized at user level.

n. Table footnotes, when essential for reference, explanation when the use of a regular note will not suffice. Footnotes shall only be referenced within tables (see 4.7.9.4). Identical footnotes shall not be repeated within the table. Footnotes shall not be used for mandatory requirements.

o. Series of items as follows:

1. By following the basic number with "-series" when all numbers in the series are included. For example: "TO 00-20-series" includes all TM identification numbers beginning with 00-20.

2. By following the basic number with "series" (without a dash) when the basic number is immediately followed by a letter or is succeeding a higher number. For example: AFTO Form 781 series could include AFTO Forms 781A, 781K, etc.; DD Form 1570 series could include DD Forms 1571, 1575, 1577, etc.

p. When a reference applies only to one sentence, it shall be enclosed in parenthesis and placed at the end of the sentence with the period outside the parenthesis. For example: "...which will be used for this purpose (figures 2-9 and 2-10)." When a reference applies to the entire paragraph it shall be enclosed in parenthesis and placed after the paragraph title. For example: "5.3 Inspection Requirements. (Figure 3-2). Inspection shall be ..... system." When a reference applies to the entire paragraph, but the paragraph has no title, it shall be enclosed in parenthesis outside the sentence. For example: "...technical data change request. (TO 00-5-1)."

PDF output: References to paragraphs, illustrations, tables, and table footnotes shall be linked to the data to which they apply. Whenever possible, references to publications shall also be linked. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

4.8.1.1 Duplication of material. Duplication of material within a manual shall be avoided by referencing unless required for clarity or emphasis. To avoid duplication of more than two pages, other manuals shall be referenced in accordance with 4.8.1m. Except for classified material, cross referencing is prohibited when material of two pages or less is involved.

4.8.2 Grammatical person and mood. The second person imperative mood shall be used for procedures, i.e., "Remove test set from carrying case." Third person indicative mood shall be used for description and discussion, i.e., "When switch A is in the ON position, lamp (34) lights."

4.8.3 Readability. Unless otherwise specified by the acquiring activity ((A) (M) (N) see 6.2m), the Reading Grade Level (RGL) shall be nine. Technical publications shall be written to the capability of the target audience for which they are intended. (F) See TO 00-5-3 for information on calculation of RGL.

4.8.4 Abbreviations/acronyms. Use of abbreviations/acronyms shall be held to a minimum and each shall be spelled out the first time it appears in each chapter, section, part, job guide, work package or other division where confusion may exist or usability would be enhanced. An excellent rule to follow is: "when in doubt, spell it out." Abbreviations/acronyms which are accepted as words (radar, sonar, laser, etc.) need not be spelled out. When a phrase is being defined by an acronym, the first letter of each word shall be capitalized and elements shall not be separated by periods. For example: Offensive Avionics System (OAS). Abbreviations/acronyms used shall be in accordance with the requirements of ASME-Y14.38, except that abbreviations may be plural (s) or possessive ('s) after the first use. If a manual is prepared on composing equipment which cannot produce a certain abbreviation or symbol, such as "±" for "plus or minus", a substitute symbol, such as "+/-" or "+ or -," or an abbreviation, such as "POM", may be used. New abbreviations/acronyms shall not be created for words or terms that already have abbreviations/acronyms established in ASME-Y14.38 or in the DoD Dictionary of Military and Associated Terms. (F) (M) (N) All abbreviations/acronyms used in the manual shall be explained in the manual's foreword/preface/introduction.

4.8.5 Metric symbols. Metric symbols shall be in accordance with IEEE-ASTM-SI-10 and IEEE 945-1984.

4.8.6 Military terms. Military terms used shall be in accordance with the DoD Dictionary of Military and Associated Terms or any dictionary or glossary of military terms of the appropriate Service.

4.8.7 Automatic electronic test and checkout terminology. Terms used for automatic electronic test and checkout shall be in accordance with MIL-STD-1309.

4.8.8 Use of "shall", "will", "should", and "may". Use "shall" whenever a manual expresses a provision that is binding. Use "should" and "may" whenever it is necessary to express nonmandatory provisions. "Will" may be used to express a declaration of purpose. It may be necessary to use "will" in cases where simple futurity is required, e.g., "Power for the meter will be supplied by the ship."

4.8.9 Tables, charts, and graphs. Reference data (other than illustrations, drawings, diagrams) shall be presented in tabular, chart or graph form. Any other type of data which lends itself to tabular, chart or graph form may also be so presented. Tables, charts, and graphs shall be so designed that they are easily understood. Charts shall be presented as tables or illustrations, whichever is most appropriate. Graphs shall be considered illustrations, and be assigned figure numbers.

4.8.9.1 Tabular material. When a small amount of tabular information is to be inserted, and will not require referencing from adjacent text, it may be included within a paragraph of text without identifying it as a table.

4.8.10 Warnings, cautions and notes. See 3.2.31, 3.2.4, and 3.2.19. Unless otherwise specified by the acquiring activity ((A) (M) (N) see 6.2n), warnings and cautions for primary sidehead paragraphs shall precede the text but follow the paragraph headings to which they apply. For all subordinate sideheads and procedural steps, the warning or caution shall precede the paragraph or step. Notes may precede or follow applicable text, depending upon the material to be highlighted. Warnings, cautions and notes shall not contain procedural steps nor shall the headings be numbered. When a warning, caution or note consists of two or more paragraphs the heading WARNING, CAUTION, NOTE shall not be repeated above each paragraph. If it is necessary to precede a paragraph by both a warning and a note, or a caution and a note, etc., warnings shall precede cautions, which in turn shall precede notes. Figure 13 illustrates the styles. Warnings, cautions and notes shall be short, concise and used only to emphasize important or critical data. Warnings and cautions may be worded positively or negatively and shall state the hazard and result or reason, unless obvious. Appendix A of this standard provides additional guidance for inclusion of warnings and cautions.

(A) (M) Notes shall precede the applicable paragraph.

(M) See figure 14. Warnings shall be in all caps. If more than one paragraph in warnings, cautions or notes, put a space between each paragraph. Bullets may be used when there are three or more paragraphs within the warning, caution or note.

4.8.10.1 Health hazards. Each Service will reference their own safety program. (F) Procedures prescribed for the operation of equipment shall be consistent with the safety standards established by the Air Force Occupational Safety and Health (AFOSH) Standards. When exposure to hazardous chemicals or other adverse health factors or use of equipment cannot be eliminated, guidance pertaining to the exposure shall be included in the safety summary or a warning. A list of personnel protective devices shall be included. Appendix A provides additional guidance for inclusion of warnings. Icons (see 3.2.11) shall be used as described in appendix A.

4.8.10.2 Nuclear surety. Nuclear weapon or weapon system technical publication procedures containing operations, maintenance, troubleshooting, (F) Operational Certification (OPCERT), handling, movement, restraint configuration, loading, testing and delivery require certification for nuclear safety. The primary consideration for nuclear weapon systems is to ensure that the system is safe and the critical safety features of the weapon systems are not bypassed or rendered ineffective. If nuclear weapon or weapon system technical publication procedures require nuclear safety certification, applicable cautions shall be incorporated into technical publications to ensure that critical safety features are not degraded during operation and maintenance.

4.8.10.2.1 Nuclear surety procedure symbol. All Nuclear Surety Procedures (NSP) shall be marked with the NSP symbol. When specified by the acquiring activity (see 6.2o), the symbol **NSP** may be used in lieu of the boxed NSP symbol. Use of the symbol is as follows:

a. When any portion of a manual is nuclear safety certified, the symbol shall be inserted immediately following the title of the manual on the title page to indicate the manual contains NSP steps.

b. For each step that is nuclear safety certified, the symbol shall be inserted immediately following the step number or letter (e.g., "d. NSP Disconnect umbilical connector from...").

4.8.10.2.2 (F) (M) (N) Nuclear surety procedures symbol explanation. When applicable, the foreword/preface/introduction shall include the symbol and an explanation of the NSP symbol and other pertinent information as necessary to emphasize the uniqueness of nuclear surety. This shall include an explanation that all steps identified by the symbol must be followed as written to ensure nuclear surety is not degraded. This explanation shall be preceded by a CAUTION heading.

4.8.10.3 Nuclear hardness. If equipment to be operated, maintained or overhauled has nuclear survivability requirements (i.e., Over Pressure and Burst, Thermal Radiation, Electromagnetic Pulse or Transient Radiation Effects on Electronics), applicable cautions shall be incorporated into technical publications to ensure that hardness of equipment is not degraded during operation and maintenance.

4.8.10.3.1 Nuclear hardness symbol. All Hardness Critical Processes (HCP) shall be marked with the HCP symbol. When specified by the acquiring activity (see 6.2p), the symbol **HCP** may be used in lieu of the boxed HCP symbol. The symbol shall be prepared in the same style and size as the applicable paragraph sidehead. The symbol shall not be included in the paragraph title in the TOC. Use of the symbol is as follows:

a. When the entire procedure and all subordinate paragraphs/steps relate to establishing nuclear hardness, the symbol shall be inserted immediately following the paragraph number (e.g., "1.2 HCP HCP LRU REPAIR.").

b. When all subordinate paragraphs and steps do not contribute to establishing nuclear hardness, only those which do contribute will be annotated with the symbol.

c. Maintenance actions which could degrade hardness, but which are not directly involved in establishing nuclear hardness, will not be annotated with the symbol, but will be preceded by a caution.

4.8.10.3.2 (F) (M) (N) Nuclear hardness symbol explanation. When applicable, the foreword/preface/introduction shall include the symbol and an explanation of the HCP symbol and other pertinent information as necessary to emphasize the uniqueness of hardness features. This shall include an explanation that all paragraphs, procedures and steps identified by the symbol must be followed as written to ensure nuclear hardness is not degraded. This explanation shall be preceded by a CAUTION heading.

4.8.10.4 Electrostatic Discharge Sensitive (ESDS) parts. If equipment to be handled/maintained contains ESDS parts, components or circuits, applicable cautions and symbols shall be incorporated into technical publications to ensure ESDS parts are not damaged or degraded during handling/maintenance.

4.8.10.4.1 ESDS symbol. All paragraphs which address handling or maintenance which could damage ESDS parts shall be identified by the ESDS symbol. When specified by the acquiring activity (see 6.2q), the symbol **ESDS** may be used in lieu of the ESDS symbol. The symbol shall be prepared in the same style and size as the applicable paragraph sidehead. The symbol shall not be included in the paragraph title in the TOC. Use of the symbol is as follows:

a. When the entire procedure and all subordinate paragraphs/steps describe handling/maintenance which could damage ESDS parts, the ESDS symbol shall be inserted immediately following the paragraph number (e.g., "1.2 LRU REPAIR.").

b. When all subordinate paragraph and steps are not related to handling/maintenance which could damage ESDS parts, only those related will be annotated.

c. Maintenance actions which could damage ESDS parts, but which are not directly related to handling/maintenance of ESDS parts, will not be annotated with the ESDS symbol, but will be preceded by a caution.

d. Illustrations, drawings and schematics shall be marked with the ESDS symbol.

4.8.10.4.2 (F) (M) (N) ESDS symbol explanation. When applicable, the foreword/preface/introduction shall include the symbol and an explanation of the ESDS symbol. Other pertinent information shall be included as necessary to emphasize the uniqueness of ESDS parts. This will include an explanation that the ESDS symbol requires that all ESDS parts be handled according to ESDS device handling procedures. This explanation shall be preceded by a CAUTION heading. (F) The introduction shall refer to "ESDS device handling procedures in TO 00-25-234."

4.8.10.5 Fatigue and fracture critical parts. If equipment to be maintained contains Fatigue/Fracture Critical Parts (FCPs), applicable cautions and symbols shall be included to ensure these parts are not damaged or degraded during handling and maintenance.

4.8.10.5.1 FCP symbol. All fatigue and fracture critical parts shall be marked with the FCP symbol. When specified by the acquiring activity (see 6.2r), the symbol **FCP** may be used in lieu of the boxed FCP symbol. The symbol shall be prepared in the same style and size as the applicable paragraph sidehead. The symbol shall not be included in the paragraph title in the TOC.

4.8.10.5.2 (F) (M) (N) FCP symbol explanation. When applicable, the foreword/preface/introduction shall include the symbol and an explanation. Insert notes of caution regarding the temporary relocation, storage, removal, installation, inspection, and handling procedures for FCPs.

4.8.10.6 Observable criticality. If equipment to be operated or maintained has absorbability critical requirements, e.g., radar cross section/signature, applicable cautions shall be incorporated to ensure that equipment is not degraded during operation and maintenance.

4.8.10.6.1 Observable criticality symbol. All Observable Critical Items (OCIs) and Observable Critical Processes (OCPs) shall be marked with the OCI or OCP symbol as applicable. When specified by the acquiring activity (see 6.2s), the symbols **OCI** and **OCP** may be used in lieu of the boxed OCI and OCP symbols. The symbol shall be prepared in the same style and size as the applicable paragraph sidehead. Only the text version of the symbol shall be used in the applicable TOC paragraph title.

4.8.10.6.2 (F) (M) (N) Observable critical symbol explanation. When applicable, the foreword/preface/introduction shall include the symbol, an explanation of the symbol, and other pertinent information to emphasize the uniqueness of observable critical features. This shall include an explanation that all paragraphs, procedures, items, and steps identified by the OCI or OCP symbols must be followed as written, or the components handled in such a manner that ensure surface integrity is not degraded. This explanation shall be preceded by a CAUTION heading.

4.8.11 Energy efficiency requirements. When specified by the acquiring activity (see 6.2t), TMs covering products that directly consume energy in normal operations, and that commonly have a method of expressing energy efficiency, shall include their energy efficiency.

(F) Energy efficiency information is not required.

4.8.12 Environmental protection. All TMs that require the use, transportation, handling, storage or disposal of fuels, toxic and hazardous substances, chemicals, ordnance/munitions, etc., shall meet the requirements of the Federal Environmental Protection Standards.

4.8.13 (F) Cybersecurity protection. Technical publications shall be written to ensure Cybersecurity Protection (CSP) measures are taken during maintenance. Procedures shall be written in such a way as to alleviate or eliminate cybersecurity risks, as directed by TO 00-5-1/AFI 21-101.

4.8.13.1 Cybersecurity Protection symbol. All cybersecurity procedures shall be marked with the CSP symbol. When specified by the acquiring activity (see 6.2u), **CSP** may be used in lieu of the boxed CSP symbol. The symbol shall be prepared in the same style and size as the applicable paragraph sidehead. The symbol shall not be included in the paragraph title in the TOC. Use of the symbol is as follows:

a. When the entire procedure and all subordinate paragraphs/steps describe process/procedures that could be a cybersecurity threat, the CSP symbol shall be inserted immediately following the paragraph number (e.g., "1.2 CSP LRU REPAIR.").

b. When all subordinate paragraph and steps are not related to process/procedures which could provide a cybersecurity threat, only those related will be annotated.

c. Illustrations, drawings and schematic related to cybersecurity threat process/procedures shall be marked with the CSP symbol.

4.8.13.1.1 Cybersecurity Protection Symbol explanation. When applicable, the introduction shall include an explanation and the use of the symbol in technical publications. Other information shall be included as necessary to explain the uniqueness of cybersecurity. The explanation shall be preceded by a CAUTION heading/symbol. See the example of a cybersecurity statement below to be placed in the introduction of a TO. These may vary according to specific TO applications:

CAUTION

Cybersecurity Protection (CSP) Measures. Certain procedures within this technical order may present a risk of attack from malicious logic, such as malware, viruses, and Trojan horses. Equipment items used in this technical order, such as support equipment software programmers, test equipment, and laptops (eTools) may provide a point of entry for malware when connected to the weapon system. Refer to TO 00-5-1/AFI 21-101 for mandatory information about CSP procedures and preventive measures.

4.8.14 Applicability codes. Technical information that is only applicable to a particular configuration of equipment shall be identified through the use of applicability codes (also known as effectivity codes or TV codes). All applicability codes used in the manual, along with their associated meanings, shall be explained in the manual's foreword/preface/introduction. Applicability codes shall be formatted in a black rounded box with white text letters or numbers of the same font and font size as the surrounding text (e.g., 26). The applicability codes shall immediately precede the information it applies to. If it applies to an entire paragraph or step, then the applicability code shall appear after the paragraph/step number or label.

4.9 Front matter. Unless otherwise specified ((A) (M) (N) see 6.2w), material preceding the first chapter shall consist of the following in the order specified in table III.

4.9.1 Cover/title page. Manuals shall have either a cover (see 3.2.8) or title page or an abbreviated title. There shall be a cover and title page when specified by the acquiring activity (see 6.2x). The cover/title page shall contain the information indicated by figure 4. Figure 4 also lists the requirements for abbreviated titles. Abbreviated titles shall be used only when specified by the acquiring activity (see 6.2y). The TM identification number will be furnished by the acquiring activity (see 6.2z).

When specified by the acquiring activity (see 6.2aa), certain information such as the supersedure notice, supplement notice, disclosure notice and destruction notice, as applicable, may be placed on the reverse side of the title page (i.e., T-2 page) if additional space is needed to avoid overcrowding of the title page (i.e., small TMs such as job guides and work cards), see figure 15. The reverse side of the title page, when used as a continuation of the title page, shall be numbered as described in 4.7.4.1.2.1.

(A) (M) (N) The T-2 page shall be used only if absolutely necessary when reduced type size and leading will not allow all information to be presented on the title page. When a T-2 page is used, a statement shall be placed on the title page indicating which information has been moved to the T-2 page.

(F) Cover page shall not be used. Abbreviated title pages shall only be used for brief manuals (see 5.5), TO Field Change Notices (TOFCNs), Operational Supplements (see 5.4.3), and Safety Supplements (see 5.4.2).

(M) See figure 16 for a cover/title page example. For the latest cover page template go to: https://mcscviper.usmc.mil/sites/kc/ALPSKC/update/td/_layouts/15/start.aspx#//sites/kc/ALPSKC/update/td/SitePages/Technical%20Publications.aspx.

Paper output: (N) If there is both a cover and title page, the date shall be omitted from the cover page. (A) When specified by the acquiring activity (see 6.2ab), the date shall be included on the cover. (A) (M) (N) When specified by the acquiring activity (see 6.2ac), a manual shall require a backbone for binder or cover.

4.9.1.1 Security classification and CUI markings. The overall classification assigned to a TM shall agree with the highest classification assigned to any portion within. Security classification and CUI markings shall be in accordance with DoD 5220.22-M, DoDI 5200.48, and DoDM 5200.01 Volume 2 (see 6.2v). Security classification or CUI markings shall be placed conspicuously at the top and bottom of the cover/title page or abbreviated title and shall be placed in accordance with 4.7.2.1.1 and 4.7.2.2.4. When applicable, the CUI designation indicator, the classification authority block, and the CUI warning box shall appear on the cover/title page as shown in figure 4 and (M) figure 16.

4.9.1.2 Title. The TM title as indicated by the applicable detail specification shall consist of the following, located as shown on figure 4.

a. WARNING (if the manual contains unverified data).

b. Heading "TECHNICAL MANUAL".

c. Type of manual.

d. Maintenance level (if restrictive).

e. Prime title (name/nomenclature).

f. Subtitle (as applicable).

g. Manufacturer.

4.9.1.2.1 (F) Title warning. A manual containing unverified data shall have the following warning centered above the heading TECHNICAL MANUAL:

WARNING

This manual contains unverified procedures. Refer to the Verification Status Page(s) prior to performing any operation or maintenance procedures.

4.9.1.2.2 Type of manual. The type of manual (e.g. operation instructions, illustrated parts breakdown/repair parts and special tools list, maintenance instructions, etc.) shall be placed beneath the "TECHNICAL MANUAL" heading.

4.9.1.2.3 Maintenance level(s). The level(s) of maintenance, as appropriate, shall be placed beneath the manual type. (F) (N) When only one maintenance manual is being acquired to support a weapon, equipment or hardware, no level shall be specified unless restrictive, since it will be the only manual available for repair and maintenance at any designated maintenance level (Organizational, Intermediate or Depot).

4.9.1.2.4 Prime title. The nomenclature of the equipment, type/type designator, model, part number or subject (blocks, serial numbers or registration numbers, if appropriate) shall be positioned below the words identifying the manual type or maintenance level, if applicable. (A) (M) When specified by the acquiring activity (see 6.2ad), the national stock number and identification of other equipment covered in the manual shall be indicated. The classification of the equipment nomenclature shall be indicated as specified in DoD 5220.22-M if the publication itself is classified. The prime title shall be the same on all volumes and parts of a multivolume/part TM set (see 3.2.17 and 3.2.26).

4.9.1.2.5 Subtitle. A subtitle shall be used and located immediately below the prime title to indicate the contents of every separately bound volume and part of a TM.

4.9.1.2.6 (F) (M) (N) Manufacturer. Unless otherwise specified by the acquiring activity ((N) see 6.2ae), the identification of the manufacturer of the equipment shall appear below the equipment nomenclature or subtitle, as applicable.

(M) The identification of the manufacturer of the equipment shall only be used on commercial manuals.

4.9.1.3 (F) (N) Contract number. Unless otherwise specified by the acquiring activity (see 6.2af), the original contract number for the equipment shall be placed on all new issues and carried forward on all subsequent cover/title pages. If the contract number for a change or revision is different from the original

number, the number applicable to the change or revision shall be indicated on the cover/title page in addition to the original number. No more than two contract numbers, the original and the latest, need appear.

4.9.1.4 (M) (N) Seal. (N) The Department of the Navy Seal, with command identifier, is placed below the contract number(s).

(M) The Marine Corps Seal is placed per figure 16.

4.9.1.5 Supersedure notice. Unless otherwise specified the supersedure notice shall be placed on the title page when the manual/change/revision/Rapid Action Change (RAC) under preparation supersedes all or portions of other manuals/changes/revisions. When specified by the acquiring activity (see 6.2ag), the supersedure notice shall include a list of all currently superseded supplements and RACs. Superseded supplements/RACs shall normally be listed individually, but when several alphabetically/numerically sequenced supplements/RACs are superseded, they shall be grouped. When specified, the FRC that supersedes a PTM shall include the supersedure notice. The applicable portions of the following supersedure notice shall be used:

"This (manual/change/revision/RAC) supersedes (applicable manual/change/revision number or portions of) dated (date of superseded document), Change (change number) dated (change date), including (superseded supplement/RAC numbers)."

(F) Supersedure notices shall be used and shall include supplements superseded. No supersedure notice is required when PTOs are superseded.

4.9.1.6 Supplement notice. The supplement notice is used to show dependent and supporting publications when one cannot be used without the other. It applies to supplements, supplemental or partial manuals and basic manuals. Dependency is shown by such statements as "INCOMPLETE WITHOUT TO XX-XX-XX" or "USE WITH TO XX-XX-XX." Supporting publications are depicted by such statements as "THIS PUBLICATION SUPPLEMENTS TO XXXX- XX." The supplement notice shall be placed on the cover/title page initially, or at time of change or revision.

PDF output: Whenever possible, the supplement references shall be linked to the appropriate publication. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

4.9.1.7 Volume notice. Paper output: When specified by the acquiring activity (see 6.2ah), the cover/title page of each volume (see 3.2.30) shall contain a statement that the applicable volume is incomplete without the other volumes in the set (see 3.2.17 and 3.2.26).

4.9.1.8 (F) (N) Disclosure notice. (F) The following disclosure notice shall be placed on the title page of manuals approved for release to a foreign government, except those assigned distribution statement A, in accordance with AFI 16-201.

> This information is furnished on the condition that it will not be released to another nation without specific authority of the Department of the Air Force of the United States, that it will be used for military purposes only, that individual or corporate rights originating in the information, whether patented or not, will be respected, that the recipient will report promptly to the United States any known or suspected compromise, and that the information will be provided substantially the same degree of security afforded it by the Department of Defense of the United States. Also, regardless of any other markings on the document, it will not be downgraded or declassified without written approval of the originating U.S. agency.

(N) The following disclosure notice shall be placed on the title page of manuals approved for release to a foreign government, except those assigned distribution statement A, in accordance with SECNAV M-5510.1.

This information is furnished upon the condition that it or knowledge of its possession will not be disclosed to another nation, and that it will not be used for other than the military purpose for which it is being provided without specific authority from the U.S. Department of the Navy; that individual or corporate proprietary rights contained within, whether patented or not, will be respected; that the information will be provided the same degree of security afforded it by the U.S. Department of Defense. Regardless of any declassification markings, this information may not be downgraded or declassified by a foreign recipient without the written approval of the originating U.S. agency.

4.9.1.9 Distribution statement. All TMs shall have a distribution statement placed on the cover/title page (not T-2). The appropriate distribution statement, selected from DoDI 5230.24, will be provided by the acquiring activity (see 6.2ai). Selection of the statement shall be in accordance with the provisions of DoDI 5230.24.

4.9.1.9.1 Proprietary data distribution markings. When the contract defines limited data rights "Proprietary" with the distribution code "B" or "E", include the contract number and "[name of company] Proprietary" on each page containing proprietary data. And, the "Limited Rights" legend (for technical data only) required by DFARS 252.227-7013.

4.9.1.10 Export control warning. When required by the provisions of DoDI 5230.24 (see 6.2aj), a notice containing an export control warning label shall be placed on the cover/title page (not T-2) of each manual, manual supplement, revision or change.

4.9.1.11 Destruction notice. With the exception of unclassified technical documents authorized for public release (i.e., distribution statement "A"), technical documents shall be marked with a destruction notice on the cover/title page. For unclassified data, follow procedures in DoDI 5200.48 and DoDI 5230.24. For classified data, follow procedures in DoD 5220.22-M and DoDM 5200.01 Volume 3. All unclassified technical documents with distribution statements B, C, D, and E shall be marked with the Handling and Destruction Notice listed below.

HANDLING AND DESTRUCTION NOTICE. Comply with distribution statement and destroy by any method that will prevent disclosure of contents or reconstruction of the document.

If required, the T-2 page can be used to contain the destruction notice.

4.9.1.12 Copyright credit line. If required (see 4.3), the copyright credit line shall be included on the cover/title page. If a copyright credit line is required, include a statement of government rights to publish, reproduce, and distribute the TM. The copyright credit line will be provided by the copyright or patent owner. Credit lines should contain the complete name of the author(s), article title (when applicable), book title, editors and/or translators (when applicable), publisher, the copyright symbol ©, and copyright date. City of publication and page numbers may also be included. See DoDI 5230.24 for additional guidance.

If required, the T-2 page can be used to contain the copyright credit line.

4.9.1.13 Authority notice. The authority notice will be provided by the acquiring activity (see 6.2ak). Manuals to be jointly used shall show a joint authority notice.

(F) The authority notice shall be: "Published Under Authority of the Secretary of the Air Force."

4.9.1.14 Publication date. The publication date of the manual shall be the cutoff date from which no further changes to the manual are permitted without issuing a formal change. This is normally the "approved date", that is, the date the government accepts the manual subject to the inclusion of specified comments. If the acquiring activity does not advise the contractor the exact date to use, the publication date shall be the date at which the last material to be included was received. The day (one or two digits, no leading zeroes), month (spelled out, all caps, no abbreviations), and year (four digits) shall be given in that sequence. For example: "7 JULY 2011".

(M) Publication date shall be the last working day of the month in which the TM is signed/authorized.

4.9.1.15 (F) (M) (N) Change number (or letter) and date. See 4.12.2 for numbering of changes. The change number and date (one or two digit day with no leading zeroes, spelled out month name in all caps with no abbreviations, four digit year) shall be placed on the cover/title page as follows: "CHANGE 1 - 10 OCTOBER 1989" or "CHANGE A - 10 OCTOBER 1989".

4.9.2 (A) (M) Warning page. When specified by the acquiring activity (see 6.2al), a warning page shall include each general type of warning (see 3.2.31) and warning symbol used within the TM. This page shall not be a list of specific warnings that pertain to particular procedural steps, but shall include general subject data (e.g., radiation, chemicals, voltage, gas pressure, laser light, etc.) as shown in the examples on figure 17. The warning page shall be placed on the inside front cover or be the initial page(s) of the manual. These pages shall be numbered in accordance with 4.7.4.1.2.2.

4.9.3 (F) (M) (N) LEP. Paper output: An LEP shall be prepared in accordance with figure 18, page borders shall be optional. The LEP shall back up the title page and be numbered as specified in 4.7.4.1.2.3. (M) The LEP shall not back up the title page and instead be a new right-hand page. When using a T-2 page, this shall be a right-hand page. When the last page is a right-hand page, it shall not be backed up and will list the next succeeding page as blank, e.g., "B/(C blank)." The LEP shall be a complete list of all manual pages, including title page, T-2 page (if used), the LEP, verification status pages, TOC pages, safety summary pages, blank pages, deleted pages, added pages and foldout pages. The LEP shall include a statement of the total number of pages in the manual. The LEP shall be updated for each change or revision. The listing shall be held to a minimum by grouping numbers where applicable. The page numbers for a blank page and the printed side of the sheet shall be listed as separate numbers even though a double number will appear on the printed side of the sheet. Appropriate change numbers shall be placed in the "Change No." column. The words "Deleted" or "Blank" or "Added" shall be placed alongside the page number of pages so affected.

PDF output: A List Of Changes (LOC) shall be prepared instead of an LEP (see 4.9.4).

4.9.3.1 Identifying change numbers and dates. Paper output: On the LEP, above the listing of pages contained in the manual, shall be a list of applicable change numbers and dates.

4.9.3.2 Acquiring Service identification. Paper output: The abbreviation of the acquiring Service, e.g., USAF, shall be placed in the lower outer corner of the LEP (page "A" only). If a Service acquires a manual for exclusive use of another Service, the symbol in the lower outer corner of the page shall still show the abbreviation of the acquiring Service.

4.9.3.3 List of effective pages for multivolume manuals. Paper output: In a multivolume manual, each of the volumes shall include the listing of pages provided in that particular volume.

4.9.4 (F) (M) (N) List Of Changes (LOC). PDF output: A LOC shall be prepared in accordance with figure 19 and shall be numbered in the same manner as the LEP (see 4.7.4.1.2.3). The LOC shall consist of three parts, the publication history table, the total page number statement, and the LOC table.

A publication history table shall be located as shown in figure 19. The publication dates shall be listed in descending order starting with the most recent and ending with the original publication date. The remarks column may be used as needed to provide additional information as to the purpose of each subsequent publication release.

Below the publication history table, the following statement shall be included that lists the total number of pages in the publication:

"THE TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS XXX."

The LOC table shall be located below the total page number statement. The LOC table shall only list the changes from the most recent publication and shall have three columns, "Content Changed" (see 4.9.4.1), "Change Type" (see 4.9.4.2), and "Remarks" (see 4.9.4.3). For the original publication release, the LOC table shall not be included as there are no changes to list. Instead the LOC table header shall appear as "List of Changes - NONE".

Paper output: When specified by the acquiring activity (see 6.2am), an LOC shall be prepared in addition to the LEP. The LOC shall follow the LEP on the next page, continuing the LEP page numbering (i.e., typically page "B"). When used in conjunction with the LEP, only the LOC table is required, the publication history table and the total page number statement normally appearing in the LOC shall not be used as that information is already covered in the LEP (see figure 20).

4.9.4.1 Content Changed column. This column shall list all noneditorial changes for the most recent publication in sequential order starting from the beginning of the publication. Each entry shall list the label along with the type of label of the changed material. Examples of label types include Para, Figure, Table, Chapter, Section, and Step. For content that was changed without a corresponding label, then the closest parent label shall be used along with the words "Content in". For example, if a note was added to para 2.5.7, then the entry would read "Content in Para 2.5.7". These entries shall be linked to the data they reference. In the event the data referenced is no longer there due to the change material being deleted, then the entry shall link to the closest parent label.

4.9.4.2 Change Type column. The following values shall be used for this column: "Added" for newly added material; "Deleted" for newly deleted material; and "Modified" for newly changed material that doesn't fall into the "Added" or "Deleted" category.

4.9.4.3 Remarks column. This column may be used as needed to relay additional information about a specific change.

4.9.5 (F) Verification status page. All PTM/TMs which contain unverified data shall have a temporary verification status page(s) (see figure 21). Contractor format and/or additional columns may be used, if approved by the acquiring activity (see 6.2an). Upon completion of all verification, this page(s) shall be removed.

The following warning shall be placed at the top center of each verification status page:

WARNING

This manual contains unverified procedures. Unverified procedures shall only be performed during verification, in accordance with TOs 00-5-1 and 00-5-3. Performance of unverified procedures can result in injury to personnel or damage to equipment.

Verification status pages may be in contractor format but shall be tabular and include the TM identification number and date, change number and date, and TM management agency in the heading. Columns shall include the paragraph/function/procedure number, verification status, date verified and remarks. When specified, additional columns may be included.

Paper output: The verification status page(s) shall immediately follow the LEP as the next right-hand page and shall be numbered as specified in 4.7.4.1.2.4.

PDF output: The verification status page(s) shall immediately follow the LOC as the next new page and shall be numbered as specified in 4.7.4.1.2.4.

4.9.6 (M) (N) Change record. Paper output: Unless otherwise specified by the acquiring activity (see 6.2ao), a change record, when included, shall be prepared in accordance with figure 22, and shall be included in each separate volume. The change record should start on a right-hand page. These pages shall not be numbered.

4.9.7 Table Of Contents (TOC). A TOC listing parts, chapters, sections and paragraphs in the same order and with the exact titles used in the text, with page number, shall be placed at the beginning of each publication. There shall be no TOC preceding individual parts, chapters or sections.

Each manual or volume in a set (see 3.2.26 and 3.2.30) of manuals shall contain its own TOC. Volume 1 or the first manual of the set shall contain a complete TOC covering the entire set. Entries shall indicate the volume in which the referenced material appears; e.g., "Operating Instructions, Vol 1".

(F) (N) Layout shall conform to figure 23 except that a single column format shall be used when the manual is prepared in single column (see figure 24).

(A) Layout shall conform to figure 25.

(M) Only the single column format shall be used. Acronyms shall not be used in the headings/titles in the Table of Contents. See figure 26.

Paper output: The TOC shall begin on a right-hand page.

PDF output: The TOC shall begin on a new page. TOC entries shall be linked to the data to which they apply. NOTE: The linking requirement applies when both paper and PDF mediums are used (see 4.1).

4.9.8 List Of Illustrations (LOI). Publications containing illustrations (including charts and graphs with assigned figure numbers) shall have a LOI showing the figure number, title, and page number of each figure. This list shall include foldout pages, schematics, etc. Layout shall conform to figure 27 except that a single column format shall be used when the manual is prepared in single column (see figure 28). The LOI shall begin on a new page.

Each manual or volume in a set (see 3.2.26 and 3.2.30) of manuals shall contain its own LOI. Volume 1 or the first manual of the set shall contain a LOI for all volumes or manuals in the set.

(A) LOI is optional.

PDF output: LOI entries shall be linked to the figures to which they apply. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

4.9.9 List Of Tables (LOT). Publications containing tables (including charts assigned table numbers) shall have a LOT showing the table number, title, and page number of each table. Layout shall conform to figure 27 except that a single column format shall be used when the manual is prepared in single column (see figure 28). When there is no LOI, the LOT shall begin on a new page. Otherwise, the LOT shall immediately follow the LOI.

Each manual or volume in a set (see 3.2.26 and 3.2.30) of manuals shall contain its own LOT. Volume 1 or the first manual of the set shall contain a LOT for all volumes or manuals in the set.

(A) LOT is optional.

PDF output: LOT entries shall be linked to the figures to which they apply. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

4.9.10 (F) (M) (N) Foreword/Preface/Introduction. Foreword/Preface/Introduction shall contain the purpose and scope of the manual plus any other information required by the detail specification. The foreword/preface/introduction shall define abbreviations, acronyms, terms not adequately defined in any military or standard dictionary, nonstandard symbols, including any icons (see 3.2.11), and applicability codes (see 4.8.14) used in the manual. All definitions shall be listed alphabetically by the associated abbreviation/acronym/symbol/term. The first volume of a manual shall contain general information and reporting requirements (e.g., general circuit board data, feedback reports, special TM use requirements, error reporting, unique requisition needs, etc.) regarding all volumes and specific information applicable to Volume 1, as required. When specified by the acquiring activity (see 6.2ap), submittal and routing instructions for TM improvement reports shall be included in the foreword/preface/introduction as provided by the acquiring activity.

(F) The Air Force shall use introduction, not foreword or preface.

Paper output: The foreword/preface/introduction shall begin on a right-hand page.

PDF output: The foreword/preface/introduction shall begin on a new page.

4.9.10.1 International standardization agreements. The foreword/preface/introduction of a manual implementing an international standardization agreement(s) shall contain the following note:

NOTE

Certain provisions of this technical manual (identify by chapter, section, paragraph or similar manner, if appropriate) are the subject of international standardization agreement (insert the ABCA or ASCC standard number, the NATO, STANAG, NETR or NEPR number, or appropriate documentary reference). When change, revision or cancellation of this technical manual is proposed which will modify the international agreement concerned, the technical manual management activity will take appropriate action through international standardization channels, including departmental standardization offices, to change the agreement or make other appropriate accommodations.

4.9.10.2 List of Related Publications (LRP). When specified by the acquiring activity (see 6.2aq), a LRP shall be included in the foreword/preface/introduction. The list shall include only those publications referenced in the TM. The listing shall be in the following format with the title centered above the list and four spaces between the last character in the publication number column and the first character of the publication title column:

List of Related Publications

Number Title

(F) A list of related publications shall be required when such documents are required for completion of procedures directed in the TO.

PDF output: Whenever possible, the LRP entries shall be linked to the publications to which they apply. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

4.9.10.3 (F) List of Time Compliance Technical Orders (TCTOs). A list of applicable TCTOs shall be included in the introduction. The list shall include all TCTOs pertinent to the equipment covered. Once the modification has been incorporated and the TCTO rescinded, the listed item shall be removed at the next change. The TCTO Date shall be entered in YYYY-MM-DD format (e.g., “2019-01-25”). The listing shall be in the following format:

List of Time Compliance Technical Orders

TCTO Number	TCTO Title	TCTO Date

PDF output: Whenever possible, the TCTO entries shall be linked to the TCTOs to which they apply. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

4.9.10.4 Record of applicable technical directives. When specified by the acquiring activity (see 6.2ar), a record of applicable technical directives shall be included in the foreword/preface/introduction. The record shall include all technical directives that direct accomplishment and recording of material change, repositioning, modification or alteration in the characteristics of the equipment to which the technical directive applies. Once the technical directive has been rescinded, the listed item shall be removed at the next change or revision. If no technical directives (or Engineering Change Proposals (ECPs) as noted below) are applicable, the word “None” shall be listed below the title. The listing shall be in the following format:

Record of Applicable Technical Directives

Type/No.	Date	Title and ECP No.	Date Inc.	Remarks

a. The “Type/No.” column shall list the type and number of the directive. For example: “AFC 12.”

b. The “Date” column shall list the date of issue of the directive in YYYY-MM-DD format (e.g., “2019-01-25”). If the number of the directive has been assigned but the directive has not

been issued, the directive number shall be listed in the "Type/No." column and a dash shall be placed in the "Date" column.

c. The "Title and ECP No." column shall list the title of the directive and the ECP number, if applicable. If a directive is the direct result of an approved ECP, the ECP number shall be shown in parentheses following the directive title.

d. The "Date Inc." column shall list the date the information affected by the directive or ECP was incorporated. The date shall be entered in YYYY-MM-DD format (e.g., "2019-03-27"). If the directive number has been assigned and the directive has not been issued (retrofit program), but the ECP that incorporates the change in the production program has been approved, the ECP coverage shall be indicated by the date listed in this column and a notation in the "Remarks" column. For example: "ECP coverage only." When the directive is approved and incorporated in a later change or revision, the date of issue shall be entered, the date of incorporation shall be listed in this column (in lieu of the ECP coverage incorporation date), and the notation shall be removed from the "Remarks" column.

e. The "Remarks" column shall contain applicable remarks. If no remarks apply, a dash shall be entered.

(F) When applicable (usually for PTOs), the record of applicable technical directives shall be included in, or replace, the list of TCTOs.

4.9.11 (F) (N) Safety summary. All TMs containing warnings or cautions (see 3.2.31 and 3.2.4) shall have a safety summary. It shall include general precautions applicable to the safety and health exposures found in the TM. The safety summary shall be located as the last page(s) of the front matter. A sample of a safety summary is provided on figure 2 and 3. Appendix A provides further guidance.

4.9.11.1 General safety precautions. The safety summary shall contain general safety precautions. These general safety precautions shall not be repeated in the text of the manual. The use of safety glasses while soldering or that a soldering iron is hot, in an electronics manual, is an example of general safety precautions not to be repeated in the text. Soldering may not be an everyday occurrence in a manual covering propellers; therefore, warnings or cautions related to soldering techniques shall be included in the text. When in doubt, place the warning or caution in the text (see 4.8.10 and appendix A).

4.10 PDF bookmarks. PDF output: PDF bookmarks shall be created and shall reflect the arrangement of the manual. Each bookmark shall be linked to its destination and, when applicable, serve as a drop-down menu for nested bookmarks. Each bookmark shall have the same title, including label when applicable, as its destination as well as the same case sensitivity (i.e., upper, lower, title, or sentence case) and font family. The default state of all bookmarks shall be collapsed. The following is an example of bookmarks for a typical manual. NOTE: Arrangements may differ but shall always reflect the arrangement of the manual as specified by the applicable content specification with the exception of an additional initial bookmark for emergency information. The "+" symbol below represents a drop-down menu for the bookmark. These requirements shall apply when both paper and PDF mediums are used (see 4.1).

+ EMERGENCY INFORMATION (see 4.10.1)

TITLE PAGE (when applicable; links to the title page of the manual)

LIST OF EFFECTIVE PAGES (when applicable; links to the first page of the LEP)

LIST OF CHANGES (when applicable; links to the first page of the LOC)

VERIFICATION STATUS PAGE (when applicable; links to the first verification status page)

TABLE OF CONTENTS (links to the first page of the TOC; no additional nested bookmarks)

+ LIST OF ILLUSTRATIONS (when applicable; links to the first page of the LOI; see 4.10.2)

+ FIGURES (only when there is no LOI; links to the first figure; see 4.10.2)

+ LIST OF TABLES (when applicable; links to the first page of the LOT; see 4.10.3)

+ TABLES (only when there is no LOT; links to the first table; see 4.10.3)

+ INTRODUCTION (when applicable; links to the first page of the introduction; see 4.10.4)

+ SAFETY SUMMARY (when applicable; links to the first page of the safety summary; see 4.10.4)

+ CHAPTER X. CHAPTER TITLE (links to the first page of chapter X; see 4.10.4)

+ APPENDIX X. APPENDIX TITLE (when applicable; links to the first page of appendix X; see 4.10.4)

INDEX (when applicable; links to the first page of the alphabetical index; no additional nested bookmarks)

+ FOLDOUTS (when applicable; links to the first foldout; see 4.10.2)

4.10.1 Emergency information bookmark. When the manual contains emergency information (see 4.7.7), this bookmark shall appear first and shall link to the first paragraph containing emergency information. This bookmark shall have a drop-down menu and list all bookmarks for emergency information and present them at the same indenture level (i.e., without further nesting so it's one easily accessible list) and in the same sequence as they appear in the manual. This bookmark is in addition to, not a replacement of, bookmarks for the information where it would normally appear in the arrangement of the manual.

4.10.2 Illustration bookmarks. Bookmarks for illustrations shall include the word “Figure” in addition to the label and title (i.e., “Figure 1-1. Figure Title” or “Figure FO-1. Figure Title”). Bookmarks for illustrations shall be presented at the same indenture level with the exception of subsequent sheets in multisheet illustrations. For multisheet illustrations, the bookmark for the first sheet shall have a drop-down menu for all subsequent sheets.

4.10.3 Table bookmarks. Bookmarks for tables shall include the word “Table” in addition to the label and title (i.e., “Table 1-1. Table Title”). Bookmarks for tables shall be presented at the same indenture level.

4.10.4 Section and paragraph bookmarks. These bookmarks shall be presented in the same sequence and hierarchy as they appear in the manual (i.e., the bookmark for paragraph 1.1.1 shall be nested and appear in the drop-down menu for the paragraph 1.1 bookmark).

4.11 Illustrations. Style and techniques shall be of a quality which will produce artwork that will clearly, adequately, and economically portray the information to be illustrated. Illustrative material shall be used to: describe an item or idea if this can be done more efficiently and effectively by graphic methods; clarify text; present phases difficult to describe by text alone; call attention to details; and furnish graphic identification of parts and tools. Multiple sheet, or sequence number illustrations, in addition to step-by-step operational type, may be used for depicting disassembly, assembly, removal, installation, etc. Illustrations, other than foldouts, shall be located as near as possible to the point at which they are first referenced, except where this would require unnecessary duplication of illustrations.

4.11.1 Scale. Illustrations shall be prepared to as small a scale as possible consistent with effective use of space, with all essential details legible.

4.11.1.1 Letter size. The scale shall be such as to provide for a minimum letter size as required by table I.

PDF output: All textual components of the illustration shall be searchable. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

4.11.2 Photographs. When specified for use by the acquiring activity (see 6.2as), photographs shall be detailed and sharp, free of heavy shadows, distorted objects, cluttered foregrounds or backgrounds, and give good contrast from white, middle tones and black.

When specified by the acquiring activity (see 6.2at), color photographs may be used. Photographs may be edited to provide clarity and for the purpose of component identification, i.e., leader lines, callouts, etc.

(A) Use of color in photographs shall be as prescribed by AR 25-30.

4.11.3 Diagrams/wire lists. Diagrams/wire lists shall be arranged functionally. When wiring diagrams are included in a manual, wire lists shall not be included.

4.11.4 Exploded views. Exploded views of the equipment shall be used in parts breakdowns and for reference in disassembly/assembly instructions. Index numbers (see 3.2.12) shall be used to identify parts. If

the equipment is of such a nature that it cannot be adequately illustrated by a single exploded view, it shall be exploded by subassemblies as separate views. In such cases, an exploded view showing the complete equipment exploded into its major subassemblies shall be shown first. Parts which attach and connect the major assemblies together shall be shown on this illustration. These views and those in parts breakdowns shall be the same, with the sequence of index numbers in the order of disassembly.

4.11.5 Engineering drawings/wire lists. Engineering drawings/wire lists are acceptable only if they meet the content, arrangement, legibility and format requirements of the contract and detail specification, and the style, format and production requirements contained in this document. They must have all unnecessary data removed that would reduce the comprehension or clarity of the illustration. When wiring diagrams are included in a manual, wire lists shall not be included.

4.11.6 Multisection illustrations. Each section of a multisection illustration shall be identified by a capital letter (see figure 29). Sections may or may not be captioned, but if one section is captioned, all shall be captioned. Each caption, with the identifying letter as its first character, shall be centered with respect to the section to which it applies. Where captions are not used, the identifying letters shall be centered. Identifying letters and captions shall be larger and bolder than any other lettering on the illustration. Sections shall be separated by lines. Separation by shading shall not be used.

4.11.7 (M) (N) Cartoons. When specified by the acquiring activity (see 6.2au), the use of animated drawings and other visual techniques are permitted. Animated drawings shall not include copyrighted cartoon characters. Such presentations must serve a functional purpose.

4.11.8 Other types of illustrations. Depending on the type of information to be shown, a manual may contain illustrations such as frontispiece (assembled view), functional, cutaway, procedural, operational, exploded, location view, lubrication, waveform, etc. See figures 30, 31, 32 and 33.

4.11.9 Color in illustrations. When specified by the acquiring activity (see 6.2av), color shall be used and shall be held to the absolute minimum necessary to clarify functional operations. The number of colors shall be kept to a minimum by use of tints, patterns, cross hatching, dots, etc. When used, color shall not be used for decorative or nonessential purposes. Use of color shall not detract or distract from the information conveyed in the illustration.

(A) Use of color shall be as prescribed by AR 25-30. (F) Color may only be used if the applicable content specifications authorize its use.

4.11.10 Border rules. Border rules shall not be used for single illustrations, but shall be used to separate multisection illustrations on the same page (see figure 29).

4.11.11 Use of the human figure. Where it is necessary to illustrate an operation, procedure, or installation, illustrations may include a human figure or parts of the body. Jewelry shall not appear in any illustration. The human figure shall not be permitted to obscure details of the equipment necessary for a complete understanding of its operation. The human figure shall be clothed as designated by the acquiring activity. A cross section of races and sexes shall be used.

4.11.12 Credit lines. The artist's name shall not appear on any artwork; neither shall a manufacturer's name, symbol, or trademark appear on artwork for the purpose of identifying the illustration. A contractor's identification number may be used. When used, such numbers shall be in approximately 4- to 6-point type and placed in the lower right-hand corner of the illustration sufficiently removed to avoid being confused as part of the illustration or margin data.

4.11.13 Callouts. Index numbers, reference designator, nomenclature, leader lines, legends, procedures, etc., shall be used, when necessary, to identify significant features (see 3.2.3). Callouts shall be prepared by an electronic method. Lettering shall be in upper case. Nomenclatures shall appear on illustrations only if it can be done without crowding or reducing type size so as to make reading difficult. Callouts shall be placed in the background areas of illustrations when practical.

Unless otherwise specified by the acquiring activity ((A) (M) (N) see 6.2aw) type size shall be no smaller than 8-point and no larger than 10-point. Diagram callouts shall be no smaller than 8-point.

4.11.13.1 Index numbers. Index numbers for each separate figure shall start with Arabic numeral 1 and continue consecutively (see 3.2.12). Sequence on exploded views used to show assembly/disassembly shall be in disassembly order. Otherwise, sequence shall be from top to bottom or clockwise, when possible. For inserting index numbers during a change, see 4.12.5.2. All functional items shown on exploded views shall be identified except for exploded views used for disassembly/assembly.

All multisheet illustrations shall be considered one figure.

4.11.13.2 Nomenclature. Nomenclature of more than one line shall have the left margin justified (see 3.2.18). All lines of copy shall parallel the horizontal edges of the figure, whenever possible. When specified by the acquiring activity (see 6.2ax), a cross reference shall list the official nomenclature and its corresponding acronym or general usage nomenclature.

4.11.13.3 Leader lines and arrowheads. Leader lines and arrowheads may end close to the callout and object, or may touch the objects to which they apply (see 3.2.14). Lines shall be uniform, short and straight as possible; however, dog leg shaped lines are permitted. Lines and arrowheads shall not cross or come in contact with other callout lines or arrowheads nor shall they obscure essential details. For clarity, where illustration line(s) and leader line(s) intersect, break illustration line(s) to provide white space on either side of leader line. Arrowheads may be added for clarity. Arrowheads shall be uniform in shape and size when multiple arrowheads are used on a page.

4.11.14 Legends. When index numbers are used, a legend consisting of their numerical listing and their identification shall be included on, adjacent to (same page), or facing, the artwork (see 3.2.16).

4.11.15 Steps. Essential illustrations depicting mechanical operations shall be included as necessary. Operational or procedural illustrations shall have one or more text steps with each illustrated step. It is not necessary to illustrate each step of a maintenance procedure, such as the removal of screws with an ordinary screw driver, lifting off a cover after the screws have been removed, etc. Procedural illustrations should supplement the text by clarifying procedures which are of a special nature or are not obvious. The text step shall be as close to the illustrated step as possible. Steps shall be identified in the order in which they are to be accomplished (see figure 32). Alternate types of operational and procedural step illustrations are acceptable (see figure 33).

4.11.16 Reference designators. The application of reference designators shall be consistent with the reference designators marked on equipment.

4.11.17 Line drawing details.

4.11.17.1 Darkness and sharpness of lines. The darkness and sharpness of lines shall be sufficient to reproduce clearly at required reproduction size without additional treatment. Secondary lines, such as those used to indicate extensions or measurements (see figures 34 and 35) shall be lighter but strong enough to reproduce clearly at reproduction size. Shading may be used to give substance and form to the item depicted, to sharpen the contrast between the subject and its background or to increase effectiveness. Shadows shall be used only when necessary to provide a clear understanding of form, shape or depth. Shading effects shall not be used for decorative purposes. Accented lines may be used to emphasize detail. Lines, crosshatching, or mechanical patterns used for coding shall remain clearly defined when reduced to reproduction size (see figure 37).

Parallel lines on wiring and schematic diagrams shall in no case be less than 1/16-inch apart when reduced to reproduction size (see figure 36).

4.11.17.2 Designations, diagrams, and symbols. Designations, diagrams, graphic symbols and letter symbols shall be consistent with industry standards. (F) (M) (N) New designator, diagrams and symbols may be used if they are explained in the manual's foreword/preface/introduction (acquiring activity approval is required before any new designator, diagrams or symbols are used).

4.12 Changes. Paper output: When specified by the acquiring activity (see 6.2ay), the change package (see 3.2.5) shall conform to the style and format of the basic manual, and shall incorporate all approved information (e.g., engineering change proposals, ship alterations, ordnance alterations, machine alterations,

field changes, etc.). The changes shall also incorporate all advanced change notices and resolution of outstanding deficiencies.

PDF output: See 4.13 for revision requirements.

(F) See TO 00-5-1 and TO 00-5-3 for policy about updates, changes or revisions.

4.12.1 Changes to cover and title page. The cover and title page of unclassified manuals shall be updated to reflect the current distribution statement (see 4.9.1.9).

4.12.2 Numbering of changes. Each change to a manual shall be (A) (F) numbered or (M) (N) lettered in sequence and dated. Identification of changes after each revision of a manual shall begin over again with number 1 or letter A as applicable. Unless otherwise specified by the acquiring activity (see 6.2az), the change date shall be the date at which the material to be included was received.

4.12.3 Numbering of added material. Paper output: When paragraphs/illustrations/tables/pages are added by a change, existing paragraphs/illustrations/tables/pages shall be renumbered. If this involves renumbering more than ten paragraphs or will affect more than five pages, the following method shall be used. Except when added at the end of a sequence, in which case the next consecutive number shall be used, paragraphs shall be numbered by adding an alpha character (e.g., 2.4A, 2.4B, 2.4.1A, etc.) to the preceding paragraph number (see figure 11). Added illustrations/tables/pages shall be numbered by adding a decimal (e.g., 3-2.1, page 3-26.1, etc.). When it is necessary to add an illustration/table/page between items which have already been added by the preceding method, an alpha character shall be used (e.g., a page added between 3-26.2 and 3-26.3 would be 3-26.2A). Pages shall not be added between a right-hand (odd numbered) and a left-hand (even numbered) page. When new material is to be added to a right-hand page, any overrun shall be carried to the left-hand page. The overrun from the left-hand page shall be placed on the added page. Where material is to be added to a right-hand page (e.g., 2-5) and adequate blank space is available on the preceding left-hand page (e.g., 2-4), material at the top of 2-5 shall be moved to the bottom of 2-4 and the new material added to 2-5.

PDF output: Paragraphs, illustrations and tables shall be renumbered when added to existing technical data (see 4.13.1).

4.12.4 Transmittal cover sheets. Classified or unclassified changed pages, supplements or TCTOs to a classified manual shall be covered with an appropriate transmittal cover sheet in accordance with DoD 5220.22-M, DoDI 5200.48, and DoDM 5200.01 Volume 2.

4.12.5 Changes to illustrations. When changes are made to illustrations, the original artwork shall be used unless the preparation of new artwork is less expensive.

4.12.5.1 Illustration changes. Paper output: Sheets added to a set of multisheet illustrations which fall between existing sheets shall be assigned the preceding number plus a decimal number. For example: if a sheet is added between sheets 2 and 3, the added sheet becomes 2.1. If possible, the new sheet shall be added after the last sheet and be assigned the next consecutive number. The sheet total listed on the first sheet (see 4.7.4.1.2) shall be updated whenever a sheet is added or removed. If a callout (see 3.2.3) is deleted from an illustration, the word "(Deleted)" in parentheses shall be placed after the appropriate number in the legend.

4.12.5.2 Index number changes. Paper output: New callouts inserted between items when an illustration is changed shall be the same as the preceding index number with an added decimal number, e.g., 22.1, 22.2, etc. (A) Letters shall be used instead of decimal point numbers (e.g., 22A). When it is necessary to add a callout between items which have already been added by the preceding method, an alpha character shall be used (e.g., a callout added between 22.1 and 22.2 would be 22.1A).

4.12.6 Paper output: Deleted paragraphs, steps, illustrations, tables. Where a change deletes a paragraph, step/substep, illustration, or table without substituting another, the space formerly occupied by the paragraph, step/substep, illustration, or table can be used for other instructions, allowing for sufficient space to provide ¼-inch above and below a sentence such as "Paragraph 4-2 deleted." The TOC, LOI, LOT and index shall be changed as necessary.

4.12.7 Deleted pages. Paper output: When page number continuity is broken by deletion of a page and a blank page results, a statement indicating the deletion shall be placed in the bottom margin (right or left

corner, or centered, as space permits) of the preceding page or top margin of the succeeding page. For example: "All data on page . . . . . including . . . . . deleted." This also applies when two back to back pages are deleted. The statement shall be used only if the same manual change affects a preceding or succeeding page. A preceding or succeeding page shall not be changed merely to add this statement. In such instances, the LEP listings will be adequate.

4.12.8 Change designator. Paper output: Each page containing changed or added material shall bear the words "Change..." placed at the bottom of the page in the same corner and on the same line as the page number (see 3.2.6). The change designator shall begin approximately ½-inch to the right of the page number for an even numbered page, and end approximately ½-inch to the left of the page number for an odd numbered page (see figure 38). This change designator requirement is also applicable to all added pages, including those placed at the end of a manual.

4.12.9 Change symbols for text and tables. Paper output: Changes (except as noted below) to the text and tables (including new material on added pages) shall be indicated by a vertical line in the margin. The line shall extend the entire area of the material affected (outer margin for double column material, margin opposite binding edge for single column material) (see figure 38 and figure 39). Exception: pages with emergency markings (black diagonal lines around three edges) shall have the vertical line symbols placed along the inner margins for single column; for double column, the vertical line symbols which apply to the outside column shall be placed in the gutter between columns. Previous change symbols on a page shall be deleted when a page is subsequently changed. Symbols shall show current changes only. The vertical line change symbol shall be 6-point in width. It may be reduced 10 percent in width to allow for automatic composing equipment use providing it remains legible and obvious. If the composing equipment used is incapable of producing a vertical line, change symbols such as a number sign "#", plus sign "+", black circle or black square, or the letter "C", "R", or "X" may be used in lieu of the vertical line, if approved by the acquiring activity (see 6.2ba). (F) (M) (N) The meaning of these symbols shall be explained in the foreword/preface/introduction of the manual. Change symbols are not required for:

a. Front matter.

b. Indexes where the change cannot be identified.

c. Blank space resulting from the deletion of text, an illustration or part of an illustration, or a table (see 4.12.6).

d. Correction of minor inaccuracies such as spelling, punctuation, relocation of material, renumbering paragraphs, etc., unless such correction changes the meaning of instructive information and procedures.

e. Replacement or addition of a complete part, chapter, or section.

PDF output: The above requirements apply except the right margin shall be used to place change symbols. When specified by the acquiring activity (see 6.2bb), changed text highlighting shall be used in lieu of vertical change bars. Inserted content shall be highlighted using the color green with a Red/Green/Blue (RGB) value of R0/G255/B0. Modified content shall be highlighted using the color yellow with a RGB value of R255/G255/B0. Change marking shall be viewable when printed.

4.12.9.1 Change symbols for illustrations. Changes to line drawings, charts prepared as illustrations, graphs, diagrams and schematics shall be indicated by shading and screening to highlight the area containing the changed information. Extensively changed presentations shall be indicated by a screen border around the affected area. For minor changes not suitable for shading or screening, a miniature pointing hand shall be used (see figure 39).

4.12.10 (A) (M) Changes to loose-leaf publications. Paper output: The following applies to printed material only.

4.12.10.1 New material identification. The new material shall be identified as described in 4.12.9. An explanation of the method used shall be included in the change instruction sheets.

4.12.10.2 Change transmittal/instruction sheet. When specified by the acquiring activity (see 6.2bc), a change to a loose leaf manual shall include a (A) change transmittal sheet/(M) change instruction sheet in the format of figure 40. The change transmittal/instruction sheet shall:

a. Include the following statements:

(TM identification number and date) is changed as follows:

File this change sheet in front of the publication for reference purposes.

b. Be the first page of each change with additional pages, as required.

c. Provide clear instructions for required changes listed page by page.

d. Specify deleted or added pages, reasons for the changes, instructions for completing the change record, and instructions that the sheet be inserted in the volume.

e. If applicable, indicate that the change is the result of an equipment alteration, e.g., ORDALT, and identify the alteration by number.

f. Include an instruction for holders of the manuals at accomplishing activities not to incorporate the change in their copies of the manual until it is verified that the alteration has been accomplished. Also, an instruction for all other holders of the manual to incorporate the changes in their copies of the manual shall be included.

g. The appropriate distribution statement and export control notice (see 4.9.1.9 and 4.9.1.10), if applicable, shall be placed on the front of the change transmittal/instruction sheet. These statements shall be taken from the title page of the publication being changed.

(M) For the latest change instruction sheet template go to: https://mcscviper.usmc.mil/sites/kc/ALPSKC/update/td/_layouts/15/start.aspx#//sites/kc/ALPSKC/update/td/SitePages/Technical%20Publications.aspx.

4.12.11 (A) (M) Changes to permanently bound publications. Paper output: The following applies to printed material only.

4.12.11.1 Deletions. When a paragraph is to be deleted, the number of the page on which it appears shall be stated, followed by a statement that the paragraph is rescinded. For example: “Page 3. Paragraph 2-1 is rescinded.”

4.12.11.2 Additions. Except when added to the end of a sequence, added paragraphs shall be numbered according to 4.12.3. When added to the end of a series, the sequence shall be continued by using the next number or letter. The number of the page where the added material would appear if it were incorporated into the existing manual shall be stated, followed by a statement to the effect that the material is being added. This shall be followed by the number, title, and text of the new paragraph. For example:

Page 3-14. Paragraph 3.5.1A and 3.5.1B are added after 3.5.1.

3.5.1A Refer to TO XX-XX-XXX for coaxial connector repair procedures.

3.5.1B Refer to TO XX-XX-XX for LRU checkout and troubleshooting procedures.

4.12.11.3 Text supersession. When a paragraph is changed extensively or replaced entirely, the paragraphs shall be superseded. The number of the page on which the paragraph appears shall be stated, followed by a statement to the effect that the paragraph is superseded. This shall be followed by the number, title, and text of the superseding paragraph. For example:

Page 1-6. Paragraph 1.2 is superseded as follows:

1.2 RECORD AND REPORT FORMS.

1.2.1 Depreservation Guide. STD Form XXXX, Depreservation Guide for Engineer Equipment.

1.2.2 Other Forms. For other record and report forms applicable to operator/crew and organizational maintenance, refer to TM XX-XXX.

4.12.11.4 Minor changes. When a minor change to a lengthy paragraph is necessary, only the affected portion of the paragraph shall be stated. For example:

Page 1-10, paragraph 1.12 b(3) - In line 1, “four copies” is changed to read “three copies”.

4.12.11.5 Changes to tabular material. When changes are made in lengthy tabular material, deletions, additions, and substitutions shall be listed in page sequence and the page number on which each change occurs shall be shown. For example:

Page B-15, appendix B.

The following are deleted from the list of classes:

Page B-15. 5133 Drills, Counter-bores and Countersinks, 5905 Resistors

Page B-16. 6115 Generators and Generators Sets

The following changes are made in the columns indicated:

Page B-21. The description of class 4010 is changed to read “Chain and Wire Rope”.

Page B-27. Class number “2960”, appearing between class 2930 and 2940, is corrected to read “2935”.

4.13 Revisions. When specified by the acquiring activity (see 6.2bd), a complete, update, nonsuperseding, or pickup revision shall be prepared (see 3.2.24). Revisions shall incorporate current information from previously issued changes to the existing manual. The acquiring activity will determine the type of revision. The following information shall be presented to the acquiring activity for consideration in approving the type of revision to be prepared. This information shall be presented sufficiently in advance to permit the acquiring activity time to reach a decision, yet not delay submittal of data.

a. Percent of change.

b. Reason for revision; such as change in equipment configuration, excess number of changes outstanding, major inadequacies, cost considerations, etc.

(F) See TO 00-5-1 and TO 00-5-3 for policy about updates, changes or revisions.

(M) Revisions are required when the number of corrected and updated pages are more than 25 percent of the total manual.

4.13.1 Renumbering and removal. In a complete revision, all pages, paragraphs, tables, illustrations and index numbers shall be renumbered, as necessary, to eliminate all number suffixes and to establish correct sequence. Complete revisions shall be prepared to current specifications and standards. In an update revision, suffixed paragraph, table, illustration and index numbers shall be retained when use of the manual will not be substantially improved by renumbering. All change numbers and change dates shall be removed from pages. All partial pages, miniature pointing hands, shading, screening, vertical lines in margin and other change symbols shall be eliminated.

4.13.2 Revision change symbols. When specified by the acquiring activity ((A) (M) (N) see 6.2be), after all previous change symbols have been eliminated, new change symbols shall be inserted to identify technical changes in text, illustrations and tables that differ in the revision from those contained in the latest previous edition of the manual (see 4.12.9).

(A) Revision change symbols may be used, but are neither prohibited nor required.

(F) Revision change symbols are required unless the changes are so extensive as to defeat the purpose of symbol use.

5 DETAILED REQUIREMENTS

5.1 Review Draft Copy (RDC). See 3.2.23. Unless otherwise specified by the acquiring activity (see 6.2bf), the RDC shall be provided. See appendix B for the DSS to be used for digital development and delivery of RDCs.

5.1.1 Preparation. To be delivered in paper or digital format as authorized by the acquiring activity. The RDC shall be technically edited and shall be computer generated. The RDC may be issued initially in single column format, and may contain voids where information is not available.

Paper output: The RDC shall be double spaced, on one side of the sheet only. The page size and image area shall be in accordance with 5.3.3. The binding edge shall not be less than 1-inch and the outside edge not less than ¼-inch. The method of duplication, covering and binding shall provide legible, collated copies.

PDF output: The above requirements apply, except there is no need for extra margin space on the binding edge and both sides of the sheet may be used.

5.1.2 Page numbering. Page numbering techniques shall approximate what will be used in the FRC. These page numbers are used only to establish the continuity of the RDC (see 3.2.23) and have no bearing on page numbers which will appear later in the FRC.

5.1.3 (A) (M) Cover/title page. When specified by the acquiring activity (see 6.2bg), the words “Draft” or “Final Draft” shall be centered above the words “TECHNICAL MANUAL.”

5.1.4 TOC. The page number column for the TOC may be left blank when working on RDC during the early stages of preparation. The page number column may be filled in, if the composition equipment can produce the TOC automatically.

5.1.5 (A) (M) Table cutlines. The point at which a table or (when appropriate) chart is to be placed shall be indicated by a break in the text and the insertion of the table number and title (see figure 9). Cutlines shall be placed at the end of the first paragraph or subparagraph to which they pertain. The table number shall begin at the left margin and there shall be a double space above and below the cutline. During the creation of the PTM or FRC, the table is mounted in place and the cutline becomes the table title.

5.2 Preliminary Technical Manual (PTM). See 3.2.21. Unless otherwise specified by the acquiring activity (see 6.2bf), the PTM shall be provided. When specified by the acquiring activity (see 6.2bh), PTM copies of the manual shall be provided as interim editions, preliminary issues for training purposes, or for other early uses. Before being superseded by published manuals, PTMs shall be complete and validated as accurate. See appendix B for the DSS to be used for digital development and delivery of PTMs.

5.2.1 Preparation. To be delivered in paper or digital format as authorized by the acquiring activity. The PTM shall be developed in accordance with the applicable detail specifications so that the conversion effort from preliminary to FRC is minimal. The PTM shall contain all front matter, text, illustrations and tables to be included in the manual as specified in the detail specification. The PTM shall be technically edited, validated and shall be computer generated. PTMs provided as interim editions, preliminary issues for training purposes, or for other early uses shall have the same style and format as the FRC.

The PTM page size and image area shall be in accordance with 5.3.3.

Paper output: The method of duplication, covering and binding shall provide legible collated copies.

5.2.2 Cover/title page. When applicable, the word “PRELIMINARY” shall be centered above the words “TECHNICAL MANUAL” (or type of publication).

5.3 Final Reproducible Copy (FRC). See 3.2.9. Unless otherwise specified by the acquiring activity (see 6.2bf), the FRC shall be provided. See appendix B for the DSS to be used for digital development and delivery of FRCs.

5.3.1 Preparation. To be delivered in digital format. The FRC shall include all text information (including tabular data and emergency page markings when applicable) and artwork. The FRC shall have the following minimum acceptable features:

a. Single or double column format for 8½ by 11-inch and manuals with larger page sizes, as specified by the acquiring activity ((F) (N) see 6.2bi). Single column format for manuals with smaller page sizes. (A) (M) Single column format for page-based manuals.

b. Single spacing.

c. (A) (M) Unjustified right margins. (N) Justified right margins. (F) Unjustified right margins for single column format. (F) Justified right margins for double column format.

d. Type styles and sizes shall be comparable to those shown in table I.

5.3.2 Leading and vertical spacing. Layout shall conserve space without lessening usability or clarity of material (see figures 6 and 7). Blank spaces shall be avoided whenever possible. Leading (see 3.2.15) and vertical spacing as indicated by table I shall be used for best legibility and conservation of space. Double spacing of text within a paragraph, or similar wastefulness, is unacceptable. Layout practices shall not result in:

a. The first line of a paragraph being at the bottom of a page or column (orphan).

b. The last line of a paragraph being at the top of a new page (widow).

c. A sidehead falling on the last line of a page or column.

d. Warnings, cautions and notes (see 3.2.31, 3.2.4, and 3.2.19) being divided so that first lines or group of icons (see 3.2.11) appear on one page and remaining lines or group of icons on another (first lines or group of icons may appear in the left column with remaining lines in the right column on the same page).

e. Warnings, cautions and notes being separated from the paragraph they apply to (warnings, cautions and notes may appear in the left column with applicable paragraphs in the right column on the same page).

f. Undesirable location of an illustration or table.

5.3.3 Page size and reproduction area. Text and artwork shall not exceed the dimensions in table II for the indicated size manual. Manuals shall be produced in accordance with the dimensions in table II. Unless otherwise specified by the acquiring activity (see 6.2bj), manuals shall be prepared in 8½ by 11-inch size.

(F) Page size shall be as specified in the applicable content specification.

PDF output: All manuals shall be produced in single column format. There shall be no extra space for the binding edge margin.

5.3.4 Emergency pages printing size. Paper output: Emergency pages shall be ¼-inch oversize to ensure proper printing of the bleed borders.

5.3.5 (A) (M) (N) Binder/cover backbone. Paper output: The backbone for the binder or cover of a manual shall be in accordance with figure 42.

5.4 Supplements. See 3.2.28. When specified by the acquiring activity (see 6.2bk), supplements shall be prepared. They shall conform in style and format with the existing manual with the exception of commercial manual supplements. Commercial manual supplements shall follow the requirements of this standard for style and format. See appendix C for the DSS to be used for digital development and delivery of supplemental manuals. See appendix D for the DSS to be used for digital development and delivery of safety, operational, routine, and commercial manual supplements.

5.4.1 Classified supplements. The title pages of both the basic manual and the supplement shall contain a cross reference note (see 4.9.1.6). Supplements shall contain the minimum amount of information required to protect security and maintain continuity of thought. Acquiring activity approval is required for each supplement.

PDF output: Whenever possible, the cross reference note shall be linked to the appropriate publication. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

5.4.2 Safety supplements. Safety supplement "SS" borders and the words "SAFETY SUPPLEMENT" at the top and bottom of the supplement shall be in red. Other text lettering, numbering, etc., shall be in black (see figure 41). Detailed requirements for formal safety supplements are as follows:

5.4.2.1 Safety supplement margin. The abbreviated title of a safety supplement shall have multiple "SS" along the top, bottom, and side borders with the word "SAFETY SUPPLEMENT" at the bottom of the page.

5.4.2.2 Title designator. The words "SAFETY SUPPLEMENT" shall be positioned above the words "TECHNICAL MANUAL". The nomenclature shall be the same as the basic manual.

5.4.2.3 Supplement notices and replacement notices. A notice shall reference the basic manual supplemented, and, if applicable, reference any publication(s) replaced. For example:

> "This publication supplements TO 1C-141A-6, dated 13 September 1979 and supersedes interim safety supplement TO 1C-141A-6SS-144, dated 23 December 1980, with no changes to the text."

PDF output: Whenever possible, references shall be linked to the appropriate publication. NOTE: This applies when both paper and PDF mediums are used (see 4.1).

5.4.2.3.1 Reference notice. The following, or similar, sentence shall be provided in the notice:

> A suitable reference to this supplement will be made on the title page of the basic publication.

5.4.2.4 Responsibility notice. The responsibility notice shall be positioned as shown on figure 41.

5.4.2.5 Distribution statement. Unless otherwise specified by the acquiring activity (see 6.2bl), the distribution statement from the basic manual shall be used.

5.4.2.6 Publication date. The publication date shall be the same as the date of the replaced interim safety supplement unless the formal supplement contains additional changes.

5.4.2.7 Security information. The security markings shall be the same as for other title pages.

5.4.3 Operational supplements. See figure 43. Detailed requirements for formal operational supplements shall be the same as for formal safety supplements except:

a. The margin shall consist of multiple "OS" in lieu of "SS".

b. The words "OPERATIONAL SUPPLEMENT" in lieu of "SAFETY SUPPLEMENT".

c. The supplement shall be printed in black.

5.4.4 Routine supplements. A routine supplement title page will be the same as the operational supplement title page, except that the title shall be the single word "SUPPLEMENT" and margins shall be blank.

5.4.5 Incorporation of supplements into manuals. Whenever practical, supplements, other than those of a higher classification, shall be incorporated into the next change of the manual.

5.4.6 (F) Commercial manual supplements. When specified by the acquiring activity (see 6.2bm), commercial manual supplements shall be developed for Commercial Off-The-Shelf (COTS) manuals. Each supplement shall consist of a title page (see 5.4.6.1), supplemental information, Identifying Technical Publication Sheet (ITPS) cover page (see 5.4.6.3), and an optional safety summary (see 5.4.6.4). The supplement will be filed with the COTS manual per TO 00-5-1. Appendix D provides the DTD for electronic delivery of data.

5.4.6.1 Title page. The title page shall be developed per TO 00-5-1 and follow the content and format as shown in figure 44.

5.4.6.2 Supplemental information. Supplemental information shall be provided as nontitled paragraphs that are enumerated using single, Arabic numerals. They may either be a single paragraph describing what must be done to the commercial manual (i.e., "delete para x") or as an instruction of what should be done with the following information (i.e., "add the following…") in accordance with TO 00-5-1. Supplemental information shall follow the content and format as shown in figure 44.

5.4.6.3 ITPS cover page. The ITPS cover page shall be developed per TO 00-5-1 and follow the content and format as shown in figure 45. For ITPS cover pages without supplemental information, follow the

content and format as shown in figure 46. ITPS cover pages used with Federal Aviation Administration manuals shall also include the file location of the manual per MIL-PRF-32216.

5.4.6.4 Safety summary. When specified by the acquiring activity (see 6.2bn), a safety summary shall be provided as part of the supplement. The safety summary shall be developed per 4.9.11 and shall follow the content and format as shown in figure 2 and 3.

5.5 Brief manual. Paper output: Unless otherwise specified by the acquiring activity, manuals of twenty pages or less shall be prepared in accordance with the requirements stated elsewhere in this standard. See appendix E for the DSS to be used for digital development and delivery of brief manuals conforming to the requirements below.

a. Not be required to have front matter (except abbreviated title). The foreword/preface/introduction and safety summary may be included when applicable.

b. Have the first page consist of an abbreviated title and text below it.

c. On the first page, the page number shall be placed below the text at the bottom of the page, and shall be assigned Arabic numeral 1.

d. Have chapters or sections begin on left or right-hand pages with no blank pages.

e. Contain more than one chapter or section on a page, where possible.

f. Have pages, paragraphs, illustrations and tables numbered consecutively throughout the manual with single Arabic numerals, disregarding chapter and section number.

g. Always be revised, never have changes issued.

h. Contain the words “THE END” placed on a new line following the last line of text on the last page, shall be centered, and written in the same size and font as the regular text of the manual.

PDF output: The above requirements apply except there shall be no binding edge or left/right pages. All page numbers shall be in the lower right-hand corner of the page.

5.6 (F) Combined manual. If specified by the acquiring activity (see 6.2bo), an Illustrated Parts Breakdown (IPB) shall be combined with the maintenance manual. When combined, the IPB chapter shall be prepared in accordance with MIL-DTL-38807 and shall be the last chapter or section of the manual. The IPB chapter shall be sectionalized (e.g., Section I Introduction, Section II Maintenance Parts List, etc.).

6 NOTES

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

6.1 Intended use. Technical publications prepared in accordance with this standard are intended for use in the installation, operation, maintenance, repair and logistics support of military equipment/systems or for accomplishment of assigned missions and to set a style and format standard for related publications for which no other standards exist.

6.1.1 Information for printed manual production (paper). For information relating to printed manual production, see the following:

a. Page imposition (figure 47).

b. Page hole drilling (figure 48).

c. Page bleed border imposition (figure 49).

d. Page folding (figure 1).

6.2 Acquisition requirements. Acquisition documents should specify the following:

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

b. If outlines should be provided (see 4.5).

c. (N) If the binding edge should indicate the equipment or subject to which the manual applies (see 4.7.2.1.3).

d. (A) (M) (N) If the outer edge should indicate significant reference information (see 4.7.2.1.4).

e. (N) If the issue indicator should be used (see 4.7.2.2.3).

f. (N) If “Original” will be used in the issue indicator (see 4.7.2.2.3).

g. If volume number will be included with the page number (see 4.7.4.1.2).

h. (A) (M) If index page numbers will be other than as specified in this document (see 4.7.4.1.6).

i. (A) (M) (N) If foldout pages may be prepared (see 4.7.6.1).

j. (M) (N) If foldout pages will be interspersed within text pages or fall at the end of the chapter instead of at the end of the manual (see 4.7.6.1f).

k. If a maximum of four, five, or six levels of subordinate paragraphs will be used (see 4.7.11.5.1.2).

l. If an index will be prepared regardless of the number of paragraphs (see 4.7.11.8).

m. (A) (M) (N) If reading grade level of narrative material will be other than as specified in this document (see 4.8.3).

n. (A) (M) (N) If the placement of warnings and cautions will be other than as specified in this document (see 4.8.10).

o. If **NSP** will be used instead of NSP (see 4.8.10.2.1).

p. If **HCP** will be used instead of HCP (see 4.8.10.3.1).

q. If **ESDS** will be used instead of  (see 4.8.10.4.1).

r. If **FCP** will be used instead of FCP (see 4.8.10.5.1).

s. If **OCP** or **OCI** will be used instead of OCP or OCI (see 4.8.10.6.1).

t. If energy efficiency information is required (see 4.8.11).

u. (F) If **CSP** will be used instead of CSP (see 4.8.13.1).

v. Appropriate security classification markings in accordance with DoD 5220.22-M, DoDI 5200.48, and DoDM 5200.01 Volume 2 (see 4.9.1.1).

w. (A) (M) (N) Front matter peculiar requirements (see 4.9).

x. If there will be a cover and title page (see 4.9.1).

y. If abbreviated titles will be used (see 4.9.1).

z. The TM identification number will be furnished by the acquiring activity (see 4.9.1).

aa. If T-2 page will be used (see 4.9.1).

ab. (A) If the date will be included on the cover (see 4.9.1).

ac. (A) (M) (N) If a backbone is required (see 4.9.1).

ad. (A) (M) Use of national stock number, applicable to the equipment, on cover/title page (see 4.9.1.2.4).

ae. (N) If identification of the manufacturer will be other than as specified in this document (see 4.9.1.2.6).

af. (F) (N) If use of contract number will be other than as specified in this document (see 4.9.1.3).

ag. If supersedure notice will be other than as specified in this document, and if supplements/RACs/PTMs will be listed in the notice (see 4.9.1.5).

ah. If volume notice is required (see 4.9.1.7).

ai. Appropriate distribution statement selected from DoDI 5230.24 (see 4.9.1.9).

aj. If a notice containing an export control warning label is required (see 4.9.1.10).

ak. Authority notice wording (see 4.9.1.13).

al. (A) (M) If a warning page(s) is required (see 4.9.2).

am. If an LOC will be prepared in addition to an LEP (see 4.9.4).

an. If contractor format and/or additional columns may be used on verification status page(s) (see 4.9.5).

ao. (M) (N) If the change record will be other than as specified in this document (see 4.9.6).

ap. (F) (M) (N) If submittal and routing instructions for TM improvement reports is required (see 4.9.10).

aq. If a list of related publications is required (see 4.9.10.2).

ar. If a record of applicable technical directives is required (see 4.9.10.4).

as. If photographs may be used (see 4.11.2).

at. If color photographs may be used (see 4.11.2).

au. (M) (N) If cartoons may be used (see 4.11.7).

av. If color may be used in illustrations (see 4.11.9).

aw. (A) (M) (N) If callout type size will be other than as specified in this document (see 4.11.13).

ax. If a nomenclature cross reference is required (see 4.11.13.2).

ay. If change packages are required (see 4.12).

az. If the change date will be other than as specified in this document (see 4.12.2).

ba. If change symbols will be other than as specified in this document (see 4.12.9).

bb. If changed text highlighting will be used instead of vertical change bars (see 4.12.9).

bc. If (A) change transmittal sheets/(M) change instruction sheets will be furnished (see 4.12.10.2).

bd. If revisions will be prepared and type of revision (see 4.13).

be. (A) (M) (N) If revision change symbols are required (see 4.13.2).

bf. If the RDC, PTM, or FRC will not be provided (see 5.1, 5.2, and 5.3).

bg. (A) (M) If Draft or Final Draft will be used (see 5.1.3).

bh. If PTM copies of the manual are to be provided as interim editions, preliminary issues or for other early uses (see 5.2).

bi. (F) (N) Whether 8½ by 11 inch and larger manuals will be single or double column (see 5.3.1a).

bj. Page size selected from table II, if other than 8½ by 11 (see 5.3.3).

bk. If supplements will be prepared (see 5.4).

bl. If a supplement distribution statement will be other than as specified in this document (see 5.4.2.5).

bm. (F) If commercial manual supplements will be developed for COTS manuals (see 5.4.6).

bn. (F) If a safety summary will be included in the commercial manual supplement (see 5.4.6.4).

bo. (F) If manuals combined with an IPB will be prepared (see 5.6).

6.3 (F) Tailoring guidance. Tailoring guidance for the options listed in 6.2 is available for Air Force programs via a tailoring tool which can be downloaded at https://techdata.wpafb.af.mil/tmss/index.html.

6.4 Subject term (key word) listing.

Brief Manual
Final Reproducible Copy
Preliminary Technical Manual
Review Draft Copy
Safety Summary
Supplements

6.5 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.

TABLE I. Style, capitalization, leading and vertical spacing.

Use	Type Style	Capitalization	Leading	Vertical Spacing
TM identification no.	Sans serif, bold 10	Upper case		36 points from top of page to top of text
Page no.	Sans serif, bold 10			36 points from bottom of page bottom of text
Change no.	Sans serif, bold 10	Upper case		36 points from bottom of page bottom of text
Page content/equipment identification	Sans serif, bold 10	Upper and lower case		36 points from top of page top of text
Security classification	Sans serif, bold 14	Upper case		36 points from top and bottom of page to top and bottom of text respectively
SSSN Footer	Sans serif, bold 18			6 points above page no.
Deleted page notation	Serif, bold 8	Upper and lower case		36 points from top and bottom of page to top and bottom of text respectively
Chapter/Appendix label and title	Sans serif, bold 14	Upper case		48 points below TM identification No.; 18 points above text, table, or illustration
Section no. and title	Sans serif, bold 14	Upper case		28 points below TM identification no. or text of previous section; 24 points below chapter title; 18 points above text, table, or illustration.
Table of contents, list of illustrations, list of tables fore-word/preface/intro-duction, safety summary index, glossary and appendix headings	Sans serif, bold 14	Upper case		48 points below TM identification no.; 18 points above text.
Text	Serif 10	Upper and lower case		18 points below TM identification no. or chapter/section title; 12 points above or below table or illustration; 6 points above page no.; 12 points above or below warning, caution, and note headings.
Emphasis	Italic and/or bold 10	Upper and lower Case	1	

TABLE I. Style, capitalization, leading and vertical spacing - Continued.

Use	Type Style	Capitalization	Leading	Vertical Spacing
Formulas and equations	Math 10	Upper and lower Case	1	12 points above/below text, table or illustration
Primary sideheads	Sans serif 10	Upper case	2	18 points below TM identification no. or chapter/section title; 12 points above/below text, table or illustration; 12 points above/below warning, caution and note headings
Subordinate sideheads	Sans serif 10	Upper and lower Case	2	18 points below TM identification no. or chapter/section title; 12 points below table or illustration; 12 points below warning, caution and note headings
Figure no. and title	Serif, italic or bold 10	Upper case for first letter of each principal word	2	18 points below illustration; 6 points above page number
Legend text	Sans serif 8	Upper case for first letter of first word	1	28 points below illustration
Legend on artwork	Sans serif 8	Upper case	1	As required
Table no. and title	Serif, italic or bold 10	Upper case for first letter of each principal word	2	18 points above table; 18 points below TM identification no.
Boxhead titles	Serif 10	Upper case for first letter of each principal word	1	
Table text	Serif 10	Upper and lower case	2	
Rules	0.75 point width			
Table footnotes	Serif 8	Upper and lower case	1	18 points below table
Warning and caution headings	Sans serif, extra bold 10 (boxed)	Upper case		12 points above and below text
Note headings	Sans serif, extra bold 10	Upper case		12 points above and below text
Maintenance parts list, numerical index and reference designation index column heads	Sans serif 8	Upper case	1	

TABLE I. Style, capitalization, leading and vertical spacing - Continued.

Use	Type Style	Capitalization	Leading	Vertical Spacing
Maintenance parts list text	Sans serif 8 or 10	Upper and lower case	1	
Numerical index and reference designation index Text	Sans serif 8	Upper and lower case	1	12 points space after every tenth entry
For type sizes pertaining to the cover/title page, see figure 4 and (M) figure 16. All type sizes may be plus-or-minus one point. Slight variations in spacing and leading are permitted. Final reproducible copy shall use above type sizes. (M) Times New Roman font shall be used instead of sans serif. IT IS NOT THE INTENT OF THIS STANDARD TO SPECIFY THE METHODS OR COMPOSING EQUIPMENT TO BE USED, BUT ONLY TO SPECIFY REQUIRED RESULTS.				

TABLE II. Page size and reproduction area.

Paper Size of Printed Manuals	^Width - Text/Art		Depth - Text/Art		Depth (Including Margin Data)	
(Inches)	(Inches)	(Picas)	(Inches)	(Picas)	(Inches)	(Picas)
#4 by 5½	3⅛	19	4½	27	5	30
4½ by 7	3⅝	22	6	36	6½	39
4 by 8	3⅛	19	7	42	7½	45
4½ by 8	3½	21	7	42	7½	45
5½ by 7	4½	27	5¾	35	6¼	38
5 by 8	4⅛	25	7	42	7½	45
6½ by 9½	5½	33	8½	51	19	54
9½ by 6½	8½	51	5½	33	6	36
8½ by 11	*7	44	9	54	10	60
17 by 11	15¾	94	9	54	10	60
^	PDF output: The extra space reserved for the binding edge margin shall instead be used for text/art. The widths shown in this column are for when a binding edge margin is used (generally 1 inch). For example, a 8½ by 11 inch manual without a binding edge would have 8 inches for text/art with .25 inch left/right margins.					
#	A 4 by 5½-inch manual, volume, or part shall not exceed 200 pages (100 sheets).					
*	Double column, each column shall be approximately 3½ inches wide with an approximately ¼-inch gutter between. Single column shall be 7¼-inches wide.					

TABLE III. Front matter.

MATERIAL	ARMY	NAVY	AIR FORCE	MARINE CORPS
Cover/Title Page or Abbreviated Title (as applicable)	x	x	x	x
T-2 Page (as applicable)	x	x	x	x
Warning Page (as applicable)	x			x
List of Effective Pages		x	x	x
List of Changes		x	x	x
Verification Status Page (as applicable)			x	
Change Record (as applicable)		x		x
Table of Contents	x	x	x	x
List of Illustrations (as applicable)	x	x	x	x
List of Tables (as applicable)	x	x	x	x
Introduction			x	
Foreword/Preface/Introduction		x		x
Safety Summary (as applicable)		x	x	

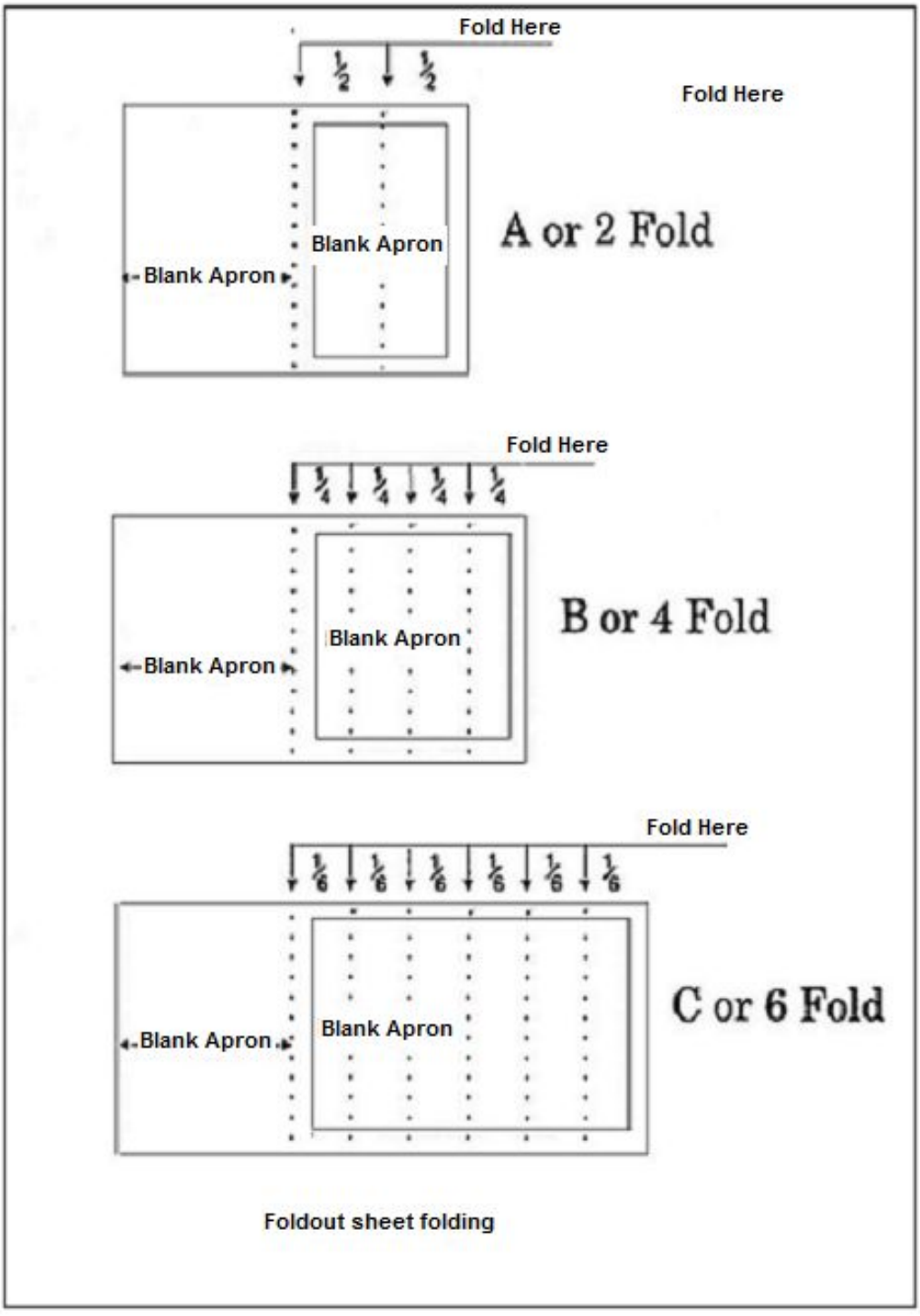


FIGURE 1. Page folding.

SAFETY SUMMARY

1 GENERAL SAFETY INSTRUCTIONS.

This manual describes physical and chemical processes which may cause injury or death to personnel, or damage to equipment if not properly followed. This safety summary includes general safety precautions and instructions that must be understood and applied during operation and maintenance to ensure personnel safety and protection of equipment. Prior to performing any task, the WARNINGs, CAUTIONs and NOTEs included in that task shall be reviewed and understood.

2 WARNINGS, CAUTIONS AND NOTES.

WARNINGs and CAUTIONs are used in this manual to highlight operating or maintenance procedures, practices, conditions or statements which are considered essential to protection of personnel (WARNING) or equipment (CAUTION). WARNINGs and CAUTIONs immediately precede the step or procedure to which they apply. WARNINGs and CAUTIONs consist of four parts: heading (WARNING, CAUTION or Icon [see HAZARDOUS MATERIALS WARNINGS]), a statement of the hazard, minimum precautions, and possible result if disregarded. NOTEs are used in this manual to highlight operating or maintenance procedures, practices, conditions or statement which are not essential to protection of personnel or equipment. NOTEs may precede or follow the step or procedure, depending upon the information to be highlighted. The headings used and their definitions are as follows.

WARNING

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

CAUTION

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

3 HAZARDOUS MATERIAL WARNINGS.

Hazardous Materials Warnings in this manual are provided through use of the Hazard Symbols listed below. Consult the HAZARDOUS MATERIALS DESCRIPTION below or Safety Data Sheets (SDSs) (Occupational Safety and Health Administration [OSHA] Form 20 or equivalent) for specific information on hazards, effects, and protective equipment requirements. If you do not have an SDS for the material involved, contact your supervisor, or the base Safety or Bioenvironmental Engineering Offices.

3.1 Hazardous Materials Icons. Icons are used in this manual to identify dangers associated with hazardous materials. The icons used and their definitions are as follows.

	The abstract symbol bug shows that a material may contain bacteria or viruses that present a danger to life or health.
	The symbol of drops of liquid onto a hand shows that the material will cause burns or irritation of skin and tissue.
	The rapidly expanding symbol shows that the material may explode if subjected to high temperatures, sources of ignition or high pressure.
	The symbol of a person wearing goggles shows that the material will injure eyes.
	The symbol of a flame shows that the material can ignite and burn.
	The symbol of a skull and crossbones shows that the material is poisonous or a danger to life.
	The symbol of three circular wedges shows that radioactive energy is emitted which can injure tissue and organs.
	The symbol of a human figure in a cloud shows that the material gives off vapors that are a danger to life or health.

3.2 Hazardous Materials Description. The following hazardous materials are used in this manual. Each icon represents certain hazards as described above. Beneath the icons is the hazardous material name and a reference number.

FIGURE 2. Example safety summary (double column).

and reference number is a description of the hazardous material. Only the icons, material name, and reference number are used in the text of the manual. If a full description of the hazard material is required while performing procedures in this manual, use the reference number to locate the appropriate description below.

THREAD COMPOUND, MIL-C-38736 1

Thread Compound, MIL-C-38736, is flammable and toxic to eyes, skin and respiratory tract. Skin and eye protection required. Avoid repeated or prolonged exposure. Keep Thread Compound, MIL-C-38736, off skin, eyes, and clothes; do not breathe vapors. Keep away from open flames or other sources of ignition.

AMINE ACID HALOGENATED ORGANIC SOLVENT, MIL-S-4784 2

Amine Acid Halogenated Organic Solvent, MIL-S-4784, contains trace amounts of bacteria and is toxic to eyes, skin and respiratory tract. Respirator, skin and eye protection required. Keep Amine Acid Halogenated Organic Solvent, MIL-S-4784, off skin, eyes, and clothes; do not breathe vapors. Keep away from open flames or other sources of ignition.

ELECTRON TUBE, OA2 3

Electron Tube, OA2, contains radioactive material. Avoid repeated or prolonged exposure, TO XX-XXX-XX lists protective equipment required and provides instructions for safe handling and disposal of radioactive tubes.

4 SAFETY PRECAUTIONS.

The following safety precautions shall be observed while performing procedures in this manual.

- Dangerous voltages are present at system connectors. Ensure power is OFF prior connecting or disconnecting cables.
- Do not wear metal frame glasses, rings, watches, or other metal jewelry while working on electronic equipment.
- Some cleaning materials specified herein are flammable and/or toxic. Keep away from open flame or other ignition sources. Provide adequate ventilation and avoid skin/eye exposure.
- Cleaning with compressed air can create airborne particles that may enter eyes or penetrate skin. Pressure shall not exceed 30 psig. Wear goggles. Do not direct compressed air against skin.

FIGURE 2. Example safety summary (double column) - Continued.

SAFETY SUMMARY

1 GENERAL SAFETY INSTRUCTIONS.

This manual describes physical and chemical processes which may cause injury or death to personnel, or damage to equipment if not properly followed. This safety summary includes general safety precautions and instructions that must be understood and applied during operation and maintenance to ensure personnel safety and protection of equipment. Prior to performing any task, the WARNINGs, CAUTIONs and NOTEs included in that task shall be reviewed and understood.

2 WARNINGS, CAUTIONS AND NOTES.

WARNINGs and CAUTIONs are used in this manual to highlight operating or maintenance procedures, practices, conditions or statements which are considered essential to protection of personnel (WARNING) or equipment (CAUTION), WARNINGs and CAUTIONs immediately precede the step or procedure to which they apply. WARNINGs and CAUTIONs consist of four parts: heading (WARNING, CAUTION or Icon [see HAZARDOUS MATERIALS WARNINGS]), a statement of the hazard, minimum precautions, and possible result if disregarded. NOTEs are used in this manual to highlight operating or maintenance procedures, practices, conditions or statement which are not essential to protection of personnel or equipment. NOTEs may precede or follow the step or procedure, depending upon the information to be highlighted. The headings used and their definitions are as follows.

WARNING

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

CAUTION

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

3 HAZARDOUS MATERIAL WARNINGS.

Hazardous Materials Warnings in this manual are provided through use of the Hazard Symbols listed below. Consult the HAZARDOUS MATERIALS DESCRIPTION below or Safety Data Sheets (SDSs) (Occupational Safety and Health Administration [OSHA] Form 20 or equivalent) for specific information on hazards, effects, and protective equipment requirements. If you do not have an SDS for the material involved, contact your supervisor, or the base Safety or Bioenvironmental Engineering Offices.

3.1 Hazardous Materials Icons. Icons are used in this manual to identify dangers associated with hazardous materials. The icons used and their definitions are as follows.

The abstract symbol bug shows that a material may contain bacteria or viruses that present a danger to life or health.

The symbol of drops of liquid onto a hand shows that the material will cause burns or irritation of skin and tissue.

The rapidly expanding symbol shows that the material may explode if subjected to high temperatures, sources of ignition or high pressure.

FIGURE 3. Example safety summary (single column).

The symbol of a person wearing goggles shows that the material will injure eyes.

The symbol of a flame shows that the material can ignite and burn.

The symbol of a skull and crossbones shows that the material is poisonous or a danger to life.

The symbol of three circular wedges shows that radioactive energy is emitted which can injure tissue and organs.

The symbol of a human figure in a cloud shows that the material gives off vapors that are a danger to life or health.

3.2 Hazardous Materials Description. The following hazardous materials are used in this manual. Each icon represents certain hazards as described above. Beneath the icons is the hazardous material name and a reference number. Below the icons, material name, and reference number is a description of the hazardous material. Only the icons, material name and reference number are used in the text of the manual. If a full description of the hazardous material is required while performing procedures in this manual, use the reference number to locate the appropriate description below.

THREAD COMPOUND, MIL-C-38736 1

Thread Compound, MIL-C-38736, is flammable and toxic to eyes, skin and respiratory tract. Skin and eye protection required. Avoid repeated or prolonged exposure. Keep Thread Compound, MIL-C-38736, off skin, eyes, and clothes; do not breathe vapors. Keep away from open flames or other sources of ignition.

AMINE ACID HALOGENATED ORGANIC SOLVENT, MIL-S-4784 2

Amine Acid Halogenated Organic Solvent, MIL-S-4784, contains trace amounts of bacteria and is toxic to eyes, skin and respiratory tract. Respirator, skin and eye protection required. Keep Amine Acid Halogenated Organic Solvent, MIL-S-4784, off skin, eyes, and clothes; do not breathe vapors. Keep away from open flames or other sources of ignition.

ELECTRON TUBE, OA2 3

Electron Tube, OA2, contains radioactive material. Avoid repeated or prolonged exposure, TO XX-XXX-XX lists protective equipment required and provides instructions for safe handling and disposal of radioactive tubes.

x

FIGURE 3. Example safety summary (single column) - Continued.

4 SAFETY PRECAUTIONS.

The following safety precautions shall be observed while performing procedures in this manual.

- Dangerous voltages are present at system connectors. Ensure power is OFF prior connecting or disconnecting cables.
- Do not wear metal frame glasses, rings, watches, or other metal jewelry while working on electronic equipment.
- Some cleaning materials specified herein are flammable and/or toxic. Keep away from open flame or other ignition sources. Provide adequate ventilation and avoid skin/eye exposure.
- Cleaning with compressed air can create airborne particles that may enter eyes or penetrate skin. Pressure shall not exceed 30 psig. Wear goggles. Do not direct compressed air against skin.

FIGURE 3. Example safety summary (single column) - Continued.

SECURITY CLASSIFICATION [1]
IDENTIFICATION NUMBER [2]

FORMERLY XX-XX-XX-X [3]

VOUME NO./PART NO. [4] REVISION NO. [5]

TITLE [6] BLOCK

TECHNICAL MANUAL [7]
TYPE OF PUBLICATION [8]
MAINTENANCE LEVEL(S) [9]

NOMENCLATURE OF EQUIPMENT [10]
TYPE, MODEL, PART NUMBER, NATIONAL STOCK NUMBER OR SUBJECT

SUBTITLE [11]

MANUFACTURER [12]

CONTRACT NUMBER [13]

NAVY SEAL [14]

SUPERSEDURE NOTICE [15]

SUPPLEMENT NOTICE [16]

VOLUME NOTICE [17]

DISCLOSURE NOTICE [18]

DISTRIBUTION NOTICE [19]

EXPORT CONTROL NOTICE [20]

DESTRUCTION NOTICE [21]

COPYRIGHT CREDIT LINE [22]

CUI WARNING BOX [23]

AUTHORITY NOTICE [24]

DATE [25] CHANGE NO. - DATE [26]

CLASSIFICATION AUTHORITY BLOCK [27] CUI DESIGNATION INDICATOR [28]

SECURITY CLASSIFICATION [1]

FIGURE 4. Example cover/title page.

	Notes	Type Size
1.	The security classification or CUI markings assigned by the acquiring activity shall be as specified in DoD 5220.22-M, DoDI 5200.48, and DoDM 5200.01 Volume 2.	24
2.	The acquiring activity shall furnish the TM identification number(s). If the manual will be jointly used by more than one Service, the acquiring Service's number shall appear at the top with the other Service's number immediately below it. Each Service's number shall be prefixed with the word Army, Navy, Marine Corps, or Air Force as appropriate. All numbers shall appear above the ruled line, near the right margin, except for Naval Sea Systems Command numbers, which shall be on the left margin.	24
3.	When a manual is renumbered, the former TM identification number shall appear below the new number, preceded by the word "Formerly". Both numbers shall remain at this location until the first revision, at which time only the new number shall be shown.	14
4.	Required for multivolume/multipart sets only, located below TM identification number.	14
5.	(N) Required when it is advisable to indicate status for publications subject to frequent revisions. Especially significant when the same TM identification numbers are maintained for superseding revisions identified by a change of the publication date.	14
6.	The title is required to provide all information necessary to relate the manual to its subject and content, such that readers can discern the applicability of the manuals and can discriminate between manuals of similar applicability. The title consists of a heading, the type of manual, the level of maintenance, the prime title and subtitle as applicable.	14
7.	The words TECHNICAL MANUAL shall appear in the upper center portion of the page. When applicable, the word PRELIMINARY shall be centered above the words TECHNICAL MANUAL. For flight manuals, the appropriate term shall be used instead of TECHNICAL MANUAL. Not required for Space and Naval Warfare Systems Command and Naval Sea Systems Command technical manuals.	14
8.	Required to define the specific type of technical manual (e.g. Maintenance Manual, Illustrated Parts Breakdown, Repair Parts and Special Tools List, Inspection Manual etc.).	14
9.	Required to define the specific intended level of maintenance, when the manual is restricted for use at a specified level.	14
10.	The prime title: nomenclature of the equipment, type, model, part number, (blocks, serial numbers, registration, if appropriate), national stock number or subject shall be positioned below the words identifying the manual type. Also, the classification of the equipment nomenclature shall be indicated as specified in DoD 5220.22-M, DoDI 5200.48, and DoDM 5200.01 Volume 2.	18
11.	Indicates the content covered. Required on multivolume/multipart publications to differentiate between the coverage among volumes.	14
12.	Identification of the manufacturer of the equipment shall appear below the equipment nomenclature.	8

FIGURE 4. Example cover/title page - Continued.

	Notes	Type Size
13.	The original contract number for the equipment shall be placed on all new issues and carried forward on all subsequent title pages. If the contract number for a change or revision is different from the original number, the number applicable to the change or revision shall be indicated on any new title pages, in addition to the original number. No more than two contract numbers, the original and the latest, need appear.	8
14.	(N) The Department of the Navy seal, with Command identifier, is used.	1¼ - 1½ inches
15.	When a manual supersedes a previous issue, or another manual, a supersedure notice shall be placed in the space indicated.	8
16	When a manual supplements, or is supplemented by, another manual, a supplement notice shall be placed in the space indicated.	8
17.	When a manual is one volume of a multivolume set, a volume notice shall be placed in the space indicated.	8
18.	(F) (N) When required, a disclosure notice shall be placed in the space indicated.	8
19.	The distribution statement shall be placed in the space indicated.	8
20.	When required, the export control notice shall be placed in the space indicated.	8
21.	The destruction notice shall be placed in the space indicated.	8
22.	When required, the copyright credit line shall be placed in the space indicated.	8
23.	Classified manuals containing CUI shall display a CUI warning box on the cover/title page (not T-2) in accordance with DoDI 5200.48.	8
24.	Indicates the authority under which the manual is acquired and issued. It shall be placed on the cover/title page (not T-2). This statement will be furnished by the acquiring activity.	8
25.	The publication date.	18
26.	Change title pages shall show a change number and date.	14
27.	Classified manuals shall display the classification authority block on the cover/title page (not T-2) in accordance with DoD 5220.22-M and DoDM 5200.01 Volume 2.	8
28.	Manuals containing CUI shall display the CUI designation indicator on the cover/title page (not T-2) in accordance with DoDI 5200.48.	8

Spacing between the necessary information shall be such as to result in an attractive, well balanced title page. Horizontal lines, one (1) point high, shall be placed across the page, one just below the TM identification number and the second just above the date.

For cover/title pages smaller than the standard size of 8½ by 11 inches, type size may be reduced as needed to fit the information legibly on the page.

When an abbreviated title followed by text on the same page is used instead of a cover/title page, the abbreviated title shall be confined to a 7 by 5 ½ inch area. Type size shall be such that all the information can be included within the prescribed area. Abbreviated title pages shall be used only when specified by the acquiring activity.

FIGURE 4. Example cover/title page - Continued.

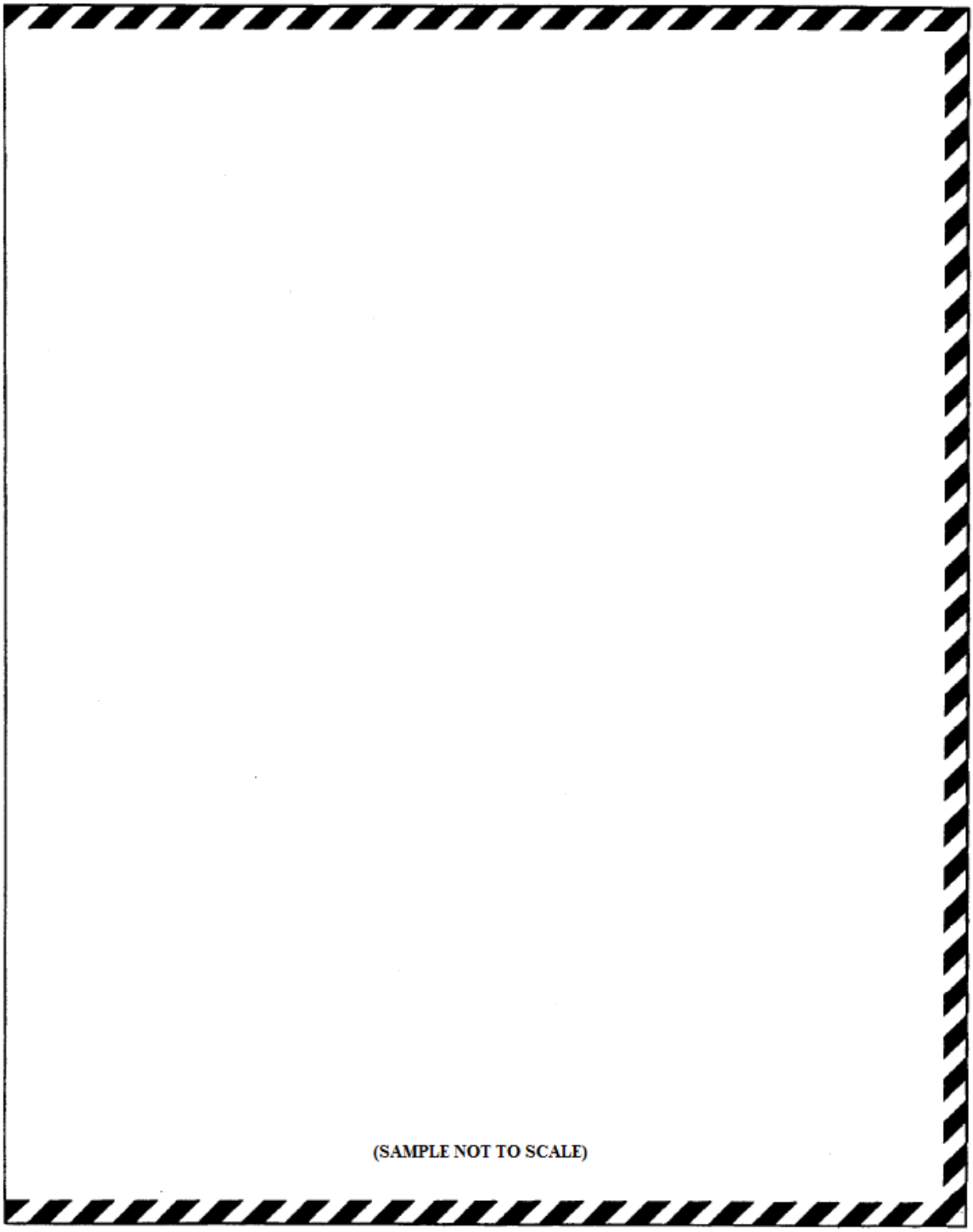


FIGURE 5. Example emergency page markings.

CHAPTER 1
GENERAL MAINTENANCE PROCEDURES

SECTION I HYDRAULIC SYSTEM

1.1 HYDRAULIC SYSTEM PERTINENT DATA.

Data pertinent to the operation and physical properties of the hydraulic system are provided in table 1-1.

1.2 HYDRAULIC SYSTEM TUBING AND FITTINGS.

1.2.1 Titanium Tubing. Ti-3A1-2.3V titanium tubing is used for all pressure lines, return lines, all lines in high temperature areas and all flex lines. Titanium tubing is used because it is corrosion resistant, strong, lightweight and can withstand high temperatures.

1.2.2 Dynatube Fittings. Dynatube fittings are made of 6AL-3V titanium. They have a metal to metal seal that uses hydraulic pressure in the lines to increase sealing pressure. Dynatube fittings are used to meet the high temperature, high pressure, no leak requirements of aircraft hydraulic systems.

1.2.3 Dynatube Fittings. Permaswage fittings are made of 6AL-3V titanium. They provide permanent connections between line assemblies not disconnected during normal maintenance. The outside of the fitting is swaged. The swage is transferred to the outside of the tubing, providing a permanent seal.

1.3 HYDRAULIC LINE REMOVAL AND INSTALLATION.

Figure 1-1 shows the location of all aircraft hydraulic lines and connections. It also shows location and positon of support clamps. Table 1-2 provides inspection/replacement criteria. Table 1-3 provides torque values for all size lines.

1.3.1 Removal. Typical hydraulic line removal is as follows.

WARNING

Very high pressure is present in hydraulic lines when hydraulic system power is on. Ensure hydraulic system power is OFF prior to loosening or removing lines. Serious injury or death may result.

a. Remove support clamps from hydraulic line(s). Inspect clamps and retain for use during assembly if undamaged.

CAUTION

Hydraulic lines may twist or flex during removal or installation. Use two wrenches to ensure lines are not twisted or flexed during removal. Failure of hydraulic lines may result.

b. Using two wrenches, loosen dynatube fitting coupling nuts and remove hydraulic lines(s).

Table 1-1. Hydraulic System Pertinent Data.

Feature	Operating Parameter
Hydraulic Fluid	MIL-H-83282
Nominal Operating Pressure	3000 Pounds per Square Inch (psi)
Reservoir Usable Fluid Capacity	1.7 Gallons
Reservoir 1 Shutoff Level	0.865 Gallons
Reservoir 2 Shutoff Level	0.416 Gallons
Filtration	
Pressure	23 Micron Absolute
Return	21 Micron Absolute

FIGURE 6. Example typical TM page (double column).

CHAPTER 1
GENERAL MAINTENANCE PROCEDURES

SECTION I HYDRAULIC SYSTEM

1.1 HYDRAULIC SYSTEM PERTINENT DATA.

Data pertinent to the operation and physical properties of the hydraulic system are provided in table 1-1.

1.2 HYDRAULIC SYSTEM TUBING AND FITTINGS.

1.2.1 Titanium Tubing. Ti-3A1-2.3V titanium tubing is used for all pressure lines, return lines, all lines in high temperature areas and all flex lines. Titanium tubing is used because it is corrosion resistant, strong, lightweight and can withstand high temperatures.

1.2.2 Dynatube Fittings. Dynatube fittings are made of 6AL-3V titanium. They have a metal to metal seal that uses hydraulic pressure in the lines to increase sealing pressure. Dynatube fittings are used to meet the high temperature, high pressure, no leak requirements of aircraft hydraulic systems.

1.2.3 Dynatube Fittings. Permaswage fittings are made of 6AL-3V titanium. They provide permanent connections between line assemblies not disconnected during normal maintenance. The outside of the fitting is swaged. The swage is transferred to the outside of the tubing, providing a permanent seal.

1.3 HYDRAULIC LINE REMOVAL AND INSTALLATION.

Figure 1-1 shows the location of all aircraft hydraulic lines and connections. It also shows location and positon of support clamps. Table 1-2 provides inspection/replacement criteria. Table 1-3 provides torque values for all size lines.

1.3.1 Removal. Typical hydraulic line removal is as follows.

WARNING

Very high pressure is present in hydraulic lines when hydraulic system power is on. Ensure hydraulic system power is OFF prior to loosening or removing lines. Serious injury or death may result.

a. Remove support clamps from hydraulic line(s). Inspect clamps and retain for use during assembly if undamaged.

CAUTION

Hydraulic lines may twist or flex during removal or installation. Use two wrenches to ensure lines are not twisted or flexed during removal. Failure of hydraulic lines may result.

b. Using two wrenches, loosen dynatube fitting coupling nuts and remove hydraulic lines(s).

Table 1-1. Hydraulic System Pertinent Data.

Feature	Operating Parameter
Hydraulic Fluid	MIL-H-83282
Nominal Operating Pressure	3000 Pounds per Square Inch (psi)
Reservoir Usable Fluid Capacity	1.7 Gallons
Reservoir 1 Shutoff Level	0.865 Gallons
Reservoir 2 Shutoff Level	0.416 Gallons
Filtration	

FIGURE 7. Example typical TM page (single column).

Table 6-1. Aircraft Principal Data.

Item	Dimension
Aircraft	
Span	52’10”
Length [1]	73’9”
Height [2]	28’8”
Maximum takeoff weight	53,400 pounds
Wing	
Span	52’10”
Chord at Root	311.5”
Chord at Tip	78.3”
Sweep (Leading Edge)	45”
Aspect Ratio	3.51
Stabilator	
Span	38’3”
Chord at Root	157.0”

Table 6-1. Aircraft Principal Data - Continued.

Item	Dimension
Stabilator - Continued	
Chord at Tip	47.5”
Sweep (Leading Edge) [3]	50”
Aspect Ratio	2.55
Vertical Tail	
Chord at Root	125.0”
Cord at Tip	35.6”
Sweepback [3]	44’44”
Aspect Ratio	1.89

1 Length measured from tip of radome with no accessory pitot tubes installed. Consult TO XX-XXX-XX-X for information regarding pitot tubes.

2 Maximum take off weight for normal configuration. See TO XX-XXX-XX-X for information regarding takeoff weight for special mission configuration.

3 Measured at root.

FIGURE 8. Example typical continued table.

Figure 1-1. GCU Wiring Tester – Exploded View, (illustration identification number) CUTLINE

Legend for Figure 1-1:

1. Screw, phillips head, 4-40 x ½-inch
2. Plate
3. Lockwasher, internal star, 1/4-inch
4. Trigger guard
5. Relay
6. Connector
7. Indicator light shell
8. Indicator light cover
9. Maltese cross indicator light
10. Screw, phillips head, 4-40 x ¾-inch
11. Battery test button
12. Wiring harness
13. Screw, phillips head, 4-40 x 3/16-inch

FIGURE 9. Example figure cutline with legend.

This example represents formatting used for the US Marine Corps Technical Manuals TM. Marine Corps uses TIMES NEW ROMAN 10 font.

CHAPTER 6

INTRODUCTION

Section I. GENERAL INFORMATION

Capitalize every letter in the primary side heading. Capitalize first letter of each word in subordinate side headings. The Marine Corps shows seven levels for paragraphs, for example:

6-1. PRIMARY HEADING

a. First-Level Subparagraph. This is a first level subparagraph. The text immediately follows the paragraph title and carry over lines return to the left margin. Only the first line of text is indented. A first level subparagraph side head/title is underlined.

(1) Second-Level Subparagraph. This is a second level subparagraph. The text immediately follows the paragraph title and carry over lines return to the left margin. Only the first line of text is indented. A second level subparagraph should have a title, but it is not require. If it has a title, it will be underlined.

(a) Third-Level Subparagraph. This is a third level subparagraph. The text immediately follows the paragraph title and carry over lines return to the left margin. Only the first line of text is indented. A third level subparagraph should have a title, but it is not required. If it has a title, it will be underlined.

1 Fourth-Level Subparagraph

a Fifth-Level Subparagraph

(1) Sixth-Level Subparagraph

(a) Seventh-Level Subparagraph

6-1. PRIMARY HEADING

a. First-Level Procedural Step. This is a first level procedural step. The step label is indented two spaces from the left. The text is indented an additional two spaces and is always blocked to align under the paragraph. If the step has a title, it will be underlined.

b. When there is an "a.", there must be a "b."

(1) Second-Level Procedural Step. This is the second level procedural step. The step label is indented four spaces from the left margin. Procedural steps always use block format and align under the paragraph. If the step has a title, it will be underlined.

(2) When there is a (1), there should be a (2).

(a) Third-Level Procedural Step. This is the third level procedural step. Step label is indented six spaces from the left margin. Procedural steps always use block format and align under the paragraph. If the step has a title, it will be underlined.

(b) When there is an (a), there must be a (b).

1 Fourth-Level Procedural Steps always use block format and align under the paragraph.

a Fifth-Level Procedural Step

(1) Sixth-Level Procedural Step

(a) Seventh-Level Procedural Step

Note: When the paragraphing level goes above "z", please refer to MIL-STD-38784, page iii. This page shows the double alpha character sequencing order.

FIGURE 10. (M) Example TM paragraph numbering.

1.3 PRIMARY SIDEHEAD.

This is a primary paragraph. Primary sideheads stand alone. Primary sideheads may be followed by one, AND ONLY ONE, unnumbered paragraph of text. A primary sidehead or paragraph may be by a first subordinate paragraph or a first level procedural step. In Technical Manuals (TM) a paragraph is considered one block of text not several blocks of text.

1.3.1 First Subordinate Sidehead. This is a first subordinate paragraph. The text is run in with the title and carry over lines return to the left margin. A first subordinate paragraph may be followed by another first subordinate paragraph a second subordinate paragraph or a first level procedural step.

1.3.1.1 Second Subordinate Sidehead. This is a second subordinate paragraph. Second subordinate paragraphs should, but are not required to have a title. The text is run in with the title and carry over lines return to the left margin. A second subordinate paragraph may be followed by another second subordinate paragraph a third subordinate paragraph or a first level procedural step.

1.3.1.1.1 Third Subordinate Sidehead. This is a third subordinate paragraph. Third subordinate paragraphs should, but are not required to have a title. The text is run in with the title and carry over lines return to the left margin. A third subordinate paragraph may be followed by another third subordinate paragraph or a first level procedural step.

1.4 PRIMARY PARAGRAPH FOLLOWED BY PROCEDURAL STEPS.

a. This is a first level procedural step. Steps do not have titles. The step label is indented two spaces from the left margin. The text is indented an additional two spaces and is blocked. A first level procedural step may be followed by additional first level steps or second level steps.

b. Where there is an a. there should be a b.

(1) This is a second level procedural step. The step label is indented four spaces from the left margin. A second level procedural may be followed by additional second level steps or third level steps.

(2) Where there is an (1) there should be a (2).

(a) This is a third level procedural step. The step label is indented six spaces from the left margin. A third level procedural step may be followed by additional third level steps or fourth level steps.

(b) Where there is an (a) there should be a (b).

1 This is a fourth level procedural step. The step label is indented eight spaces from the left margin. A fourth level procedural step may be followed by additional fourth level steps.

2 Where there is a 1 there should be a 2.

1.5 PRIMARY SIDEHEAD.

1.5.1 First Subordinate Sidehead. First subordinate sidehead followed by second subordinate sidehead.

1.5.1.1 Second Subordinate Sidehead. Second subordinate sidehead followed by third subordinate sidehead.

1.5.1.1.1 Third Subordinate Sidehead. Third subordinate sidehead followed by procedural steps.

a. This is a first level procedural step.

b. Where there is an a. there should be a b.

FIGURE 11. Example decimal paragraph numbering.

(1) This is a second level procedure step.

(2) Where there is a (1) there shall be a (2).

(a) This is a third level procedural step.

(b) Where there is a (a) there should be a (b)

1 This is a fourth level procedural step.

2 Where there is a 1 there should be a 2.

1.6 PRIMARY SIDEHEAD.

Primary paragraph followed by an added primary paragraph.

1.6A ADDED PRIMARY SIDEHEAD.

This paragraph shows numbering for added primary paragraphs.

1.6B ADDED PRIMARY SIDEHEAD.

This paragraph shows numbering for added primary paragraphs.

1.7 PRIMARY SIDEHEAD.

1.7.1 First Subordinate Sidehead. First subordinate paragraph followed by an added first subordinate paragraph.

1.7.1A Added First Subordinate Sidehead. This paragraph shows numbering for added first subordinate paragraphs.

1.7.1B Added First Subordinate Sidehead. This paragraph shows numbering for added first subordinate paragraphs.

1.7.2 First Subordinate Sidehead. First subordinate paragraph following an added first subordinate paragraph.

1.7.2.1 Second Subordinate Sidehead. Second subordinate paragraph followed by an added second subordinate paragraph.

1.7.2.2.1 Third Subordinate Sidehead. Third subordinate paragraph followed by an added third subordinate paragraph.

1.7.2.2.1A Added Third Subordinate Sidehead. This paragraph shows numbering for added third subordinate paragraphs.

1.7.2.2.1B Added third Subordinate Sidehead. This paragraph shows numbering for added third subordinate paragraphs.

1.7.2.2.2 Third Subordinate Sidehead. Third subordinate paragraph following an added third subordinate paragraph.

a. First level procedure step followed by an added first level procedural step.

FIGURE 11. Example decimal paragraph numbering - Continued.

a1. Added first level procedural step. This step shows numbering of added first level procedure steps.

a2. Added first level procedural step. Step shows numbering of added first level procedural steps.

b. First level procedural step following an added first level procedural step.

(1) Second Level procedural step followed by an added second level procedural step.

(1A) Added second level procedural step. This step shows numbering of added second level procedural steps.

(1B) Added second level procedural step. This step shows numbering of added second level procedural steps.

(2) Second level procedural step following an added second level procedural step.

(a) Third level procedural step followed by and added third procedural step.

(a1) Added third level procedural step. This step shows numbering of added third level procedural steps.

(a2) Added third level procedural step. This step shows numbering of added third level procedural steps.

(b) Third level procedural step followed by and added third level procedural step.

1 Fourth level procedural step followed by an added fourth level procedural step.

1A Added fourth level procedural step. This step shows numbering of added fourth level procedural steps.

1B Added fourth level procedural step. This step shows numbering of added fourth level procedural steps.

2 Fourth level procedural step following an added fourth level procedural step.

FIGURE 11. Example decimal paragraph numbering - Continued.

INDEX

FIGURE 12. Example alphabetical index.

WARNING, CAUTIONs and NOTES, Warning, Caution and Note headings and their definitions are as follows:

WARNING

OR

WARNING

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

CAUTION

OR

CAUTION

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

NOTE

Highlights and essential operating or maintenance procedure, condition or statement.

FIGURE 13. Example styles for warnings, cautions, and notes.

WARNING

IF THE VIEW PARAMETERS SCREEN MISSION TAB DOES NOT DISPLAY A MISSION NAME, MISSION CENTER, OR DTED LOADED, THE AN/TPQ-49 ASSUMES THAT ALL OF THE TERRAIN SURROUNDING THE RADAR IS AT SEA LEVEL. IN MOST SITUATIONS, THIS CREATES LARGE ERRORS IN POOS, WHICH COULD POTENTIALLY LEAD TO GRAVE BODILY INJURY OR DEATH IN DANGER CLOSE SITUATIONS. THE OPERATOR IS REQUIRED TO LOAD A MISSION INTO THE RADAR PRIOR TO OPERATION.

CAUTION

Changing the configuration of the Laptop or Radar is prohibited and violates the AN/TPQ-49/54 Information Awareness (IA) policy. Additionally, DO NOT connect the system Laptop to an external network or download any additional programs or software on the Laptop. The AN/TPQ-49/54 should only be networked with other AN/TPQ-49/54 systems or authorized fire control networks.

NOTE

Before operating the LCMR/LCMR-M, ensure that all the operating procedures contained in this manual have been read and fully understood.

NOTE

Radar assembly requires two personnel and takes approximately 20 minutes.

FIGURE 14. (M) Example warnings, cautions, and notes.

IDENTIFICATION NUMBER

This manual supersedes TO XX-XXX-XX-X dated 16 April 1991, Change 4 dated 14 November 1993 including Operational Supplements TO XX-XXX-XX-X dated 6 August 1991 and TO XX-XXX-XX-X dated 12 December 1993.

This manual supplements TO XX-XXX-XX-X dated 4 September 1992.

This manual is incomplete without Volume thru XX.

HANDLING AND DESTRUCTION NOTICE – Comply with distribution statement and destroy by any method that will prevent disclosure of contents or reconstruction of the document.

FIGURE 15. Example T-2 page.

(1) TM xxxxxX-XX/X
VOLUME X OF X

(2) CUI
(3) U. S. MARINE CORPS TECHNICAL MANUAL

(4) OPERATOR AND FIELD MAINTENANCE MANUAL

(5) FOR

(6) NOMENCLATURE
(7) MODEL

(8)

(9) NSN XXXX-XX-XXX-XXXX

Controlled by: Marine Corps Systems Command
Controlled by: [Program office (PfM or PM)]
CUI Category: Defense
Distribution/Dissemination Controls:
POC: Name and Phone (XXX) XXX-XXXX (PM's Admin #)

Remove SUPERSEDURE NOTICE if not needed.

(10) **SUPERSEDURE NOTICE**: This publication supersedes TM xxxxxX-XX/X, dated MONTH YYYY.

(11) **DISTRIBUTION STATEMENT ( )**: Distribution authorized to U.S. Government agencies and their contractors, Critical Technology, (date of Determination). Other requests for this document shall be referred to Marine Corps Systems Command, Attn: Program Manager xxxxxxxxxxxxxxxxxxx, 2200 Lester Street, Quantico, VA 22134-5010.

(12) **DESTRUCTION NOTICE**: Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

(13) CUI

(14) MONTH YYYY
(15) PCN XXX XXXXXX XX

FIGURE 16. (M) Marine Corps cover page.

TM Cover Page Font Size Guide

1. **Short title**- Font size 22 pts.
2. **CUI** – Font size 14 pts. and all caps.
3. **U. S. MARINE CORPS TECHNICAL MANUAL**- Font size 14 pts. and all caps
4. **OPERATOR AND FIELD MAINTENANCE MANUAL**- Font size 24 pts., bold and all caps
5. **FOR**- Font size 14 pts. and all caps
6. **NOMENCLATURE**- Font size 22 pts., bold and all caps
7. **MODEL**- Font size 18 pts., bold and all caps
8. **MC Seal**- 2 inches in diameter
9. **NSN**- Font size 16 pts. and bold
10. **SUPERSEDURE NOTICE**- Font size 10 pts.
11. **DISTRIBUTION STATEMENT**- Font size 10 pts.
12. **DESTRUCTION NOTICE**- Font size 10 pts.
13. **CUI**- Font size 14 pts.
14. **MONTH YYYY**- Font size 12 pts., bold and all caps
15. **PCN**- Font size 12 pts. and bold

FIGURE 16. (M) Marine Corps cover page - Continued.

WARNING
RADIATION HAZARD

Co 60

Tube types OA2 and 6530/PL-35 (TR tubes) used in this equipment contain radioactive material (para 0-0). These tubes are potentially hazardous when broken; see qualified medical personnel and the Safety -- Director if you are exposed to or cut by broken tubes. For first aid instructions see TB 750-237 and AR 755-15. Use extreme care in replacing these tubes (para 0-0) and follow safe procedures in their handling, storage and disposal (para 0-0). Refer to paragraph 0-0 and to TB 750-237 and AR 755-15 for instructions on handling, storage and disposal of radioactive material.

Never place radioactive tubes in your pocket.

Use extreme care not to break radioactive tubes while handling them.

Never remove radioactive tubes from cartons until ready to use them.

SAMPLE A

ELECTROMAGENTIC
RADIATION

DO NOT STAND IN THE DIRECT PATH OF THE ANTENNA WHEN THE POWER IS ON! DO NOT WORK ON THE WAVE GUIDES WHILE THE POWER IS ON

High frequency electromagnetic radiation can cause fatal internal burns. It can literally “cook” internal organs and flesh. If you feel the slightest warming effect while near this equipment MOVE AWAY QUICKLY

SAMPLE B

FIGURE 17. (A) (M) Example warnings for warning page.

WARNING **RADIATION HAZARD** This equipment contains the following radioactive tubes: (List applicable tubes and equipment locations) Radiation may be present at unsealed or broken waveguide elements. Sample C
WARNING **DANGEROUS CHEMICALS** are used in this equipment. DEATH or severe burns may result if personnel fail to observe safety precautions. Sample D
WARNING **HIGH VOLTAGE** Is used in the operation of this equipment. DEATH ON CONTACT may result if personnel fail to observe safety precautions. Learn the areas containing high voltage in each piece of equipment. Be careful not to contact high voltage connections when installing or operating this equipment. Before working inside the equipment, turn power off and ground points of high voltage potential before touching them. Sample E
WARNING **GASES OR AIR UNDER PRESSURE** **3000 PSI AIR PRESSURE** Is used in the operation of this equipment. DEATH or sever injury may result if personnel fail to observe safety precautions. Sample F

FIGURE 17. (A) (M) Example warnings for warning page - Continued.

TO XX-XXX-XX-X

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

LIST OF EFFECTIVE PAGES

NOTE The portion of the text affected by the changes is indicated by a vertical Line in the outer margins of the page. Changes to illustrations are indicated by shaded or screened areas, or by miniature pointing hands.

Dates of issue for original and change pages are:

Original . . . . . 0 . . . . . 1 January 1991		Change . . . . . 4 . . . . . 6 July 1992	
Change . . . . . 1 . . 19 September 1991		Change . . . . . 5 . . 25 September 1992	
Change . . . . . 2 . . . 20 December 1991		Change . . . . . 6 . . . . . 29 March 1993	
Change . . . . . 3 . . . 21 February 1992		Change . . . . . 7 . . . 15 February 1994	

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 326. CONSISTING OF THE FOLLOWING:

Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.
Title	7	4-1 - 4-7	0	8-57 - 8-59	3
A	7	4-8 - 4-9	3	8-60 - 8-64	0
i - ii	2	4-10 - 4-16	0	Index 1 - Index 4	7
iii	7	4-17 - 4-21	3	Index 5	6
iv - viii	2	4-22 - 4-33	0	Index 6 Blank	0
ix - x	0	4-34 - 4-39	5		
1-1 - 1-2	0	4-40 Blank	0		
1-3	3	5-1	6		
1-4 Blank	0	5-2 - 5-15	0		
2-1 - 2-2	0	5-16 - 5-17	1		
2-3	2	5-18 Blank	1		
2-4 - 2-8	0	5-19 - 5-26	2		
3-1	5	5-26.1 Added	2		
3-2 Blank	5	5-26.2 Blank	2		
3-3 - 3-4	7	5-27 - 5-44	0		
3-5	2	5-45 - 5-47	4		
3-6	4	5-48 - 5-54	0		
3-7	0	6-1 - 6-9	0		
3-8	4	6-10 - 6-11	3		
3-9 - 3-10	0	6-12	0		
3-11	4	6-13 - 6-16	4		
3-12 - 3-18	0	6-17	0		
3-19	1	6-18 Blank	0		
3-20 Blank	1	7-1 - 7-13	0		
3-21	0	7-14	1		
3-22 - 3-23	5	7-15 - 7-21	0		
3-24 Blank	5	7-22	6		
3-25	2	7-23 - 7-36	0		
3-26 Blank	2	7-37 - 7-40	4		
3-27	4	7-41	2		
3-28 Blank	4	7-42 Blank	2		
3-29 - 3-31	0	7-43 - 7-52	0		
3-32	2	7-53	7		
3-32.1 Added	7	7-54 - 7-61	0		
3-32.2 Blank	7	7-62 Blank	0		
3-33 - 3-35	5	8-1 - 8-3	0		
3-36 - 3-39	1	8-4 - 8-5	1		
3-40	5	8-6 - 8-22	0		
3-41	6	8-23 - 8-24	3		
3-42 Blank	6	8-25 - 8-30	0		
3-43 - 3-46	0	8-31	4		
3-47 - 3-54	7	8-32 - 8-56	0		

*Zero in this column indicates an original page

A Change 7 USAF

(SAMPLE NOT TO SCALE)

FIGURE 18. (F) (M) (N) Example list of effective pages.

LIST OF CHANGES

Publication History

Publication Date	Revision	Remarks
3 March 2020	2	Updated safety information. Added procedures applicable to model C.
15 April 2019	1	Added procedures applicable to model B.
31 January 2018	Original Publication	

THE TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 120.

List of Changes

Content Changed	Change Type	Remarks
Content in Title Page	Added	Added model numbers.
Para 1.4	Modified	Updated safety information.
Figure 2-3	Added	
Content in Step 4	Deleted	Removed NOTE.
Content in Table 3-1	Added	Added row for model C.
Para 3.3.10	Added	Added procedures applicable to model C.

A

FIGURE 19. (F) (M) (N) Example list of changes.

LIST OF CHANGES

Content Changed	Change Type	Remarks
Content in Title Page	Added	Added model numbers.
Para 1.4	Modified	Updated safety information.
Figure 2-3	Added	
Content in Step 4	Deleted	Removed NOTE.
Content in Table 3-1	Added	Added row for model C.
Para 3.3.10	Added	Added procedures applicable to model C.

FIGURE 20. (F) (M) (N) Example list of changes following an LEP.

WARNING

This manual contains unverified procedures. Unverified procedures shall only be performed during verification procedures, in accordance with TOs 00-5-1 and 00-5-3. Performance of unverified procedure may result in injury to personnel of damage to equipment.

TO Number	Date	TO Management Agency
Change Number/Date		

Function/Para/ Figure etc.	Verification Status	Date Verified	Remarks
Title Page			
LEP			
TOC			
Foreword			
Safety Summary			
1.1			
1.2			
1.2.1			
1.2.2			
1.2.3			
1.2.4			
1.2.4.1			
1.2.4.2			
1.2.4.2.1			
1.2.4.2.2			
1.2.4.2.3			
1.2.5			
1.2.5.1			
1.2.5.2			
1.3			
1.3.1			
Figure 1-1.			
1.4			
1.4.1			
1.4.1.1			
1.4.1.2			
1.4.1.3			
1.4.2			
Table 1-1.			
1.4.3			

FIGURE 21. (F) Example verification status page.

RECORD OF CHANGES

CHANGE NO.	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY

FIGURE 22. (M) (N) Example change record.

TABLE OF CONTENTS

i

(SAMPLE NOT TO SCALE)

FIGURE 23. (F) (N) Example table of contents (double column).

TABLE OF CONTENTS

FIGURE 24. (F) Example table of contents (single column).

TM X-XXXX-XXX-XX

TECHNICAL MANUAL

No. X-XXXX-XXX-XX

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 31 August 2019

Maintainer Maintenance Manual
For
XYZ System

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms), located in the back of this manual directly to: (*name and address of proponent*). You may also send in your recommended changes via electronic mail or by fax. Our fax number is (*insert DSN and commercial number of proponent*). Our email address is (*insert address of proponent*). You may also submit your recommended changes at the following web site (*insert appropriate URL*) A reply will be furnished to you.

i

FIGURE 25. (A) Example table of contents.

TM XXXXXX-OR

TABLE OF CONTENTS

(SAMPLE NOT TO SCALE)

FIGURE 26. (M) Example table of contents.

TO XX-XXX-XX-X

LIST OF ILLUSTRATIONS

LIST OF TABLES

(SAMPLE NOT TO SCALE)

FIGURE 27. Example list of illustrations and list of tables (double column).

TO XX-XXX-XX-X

LIST OF ILLUSTRATIONS

LIST OF TABLES

FIGURE 28. Example list of illustrations and list of tables (single column).

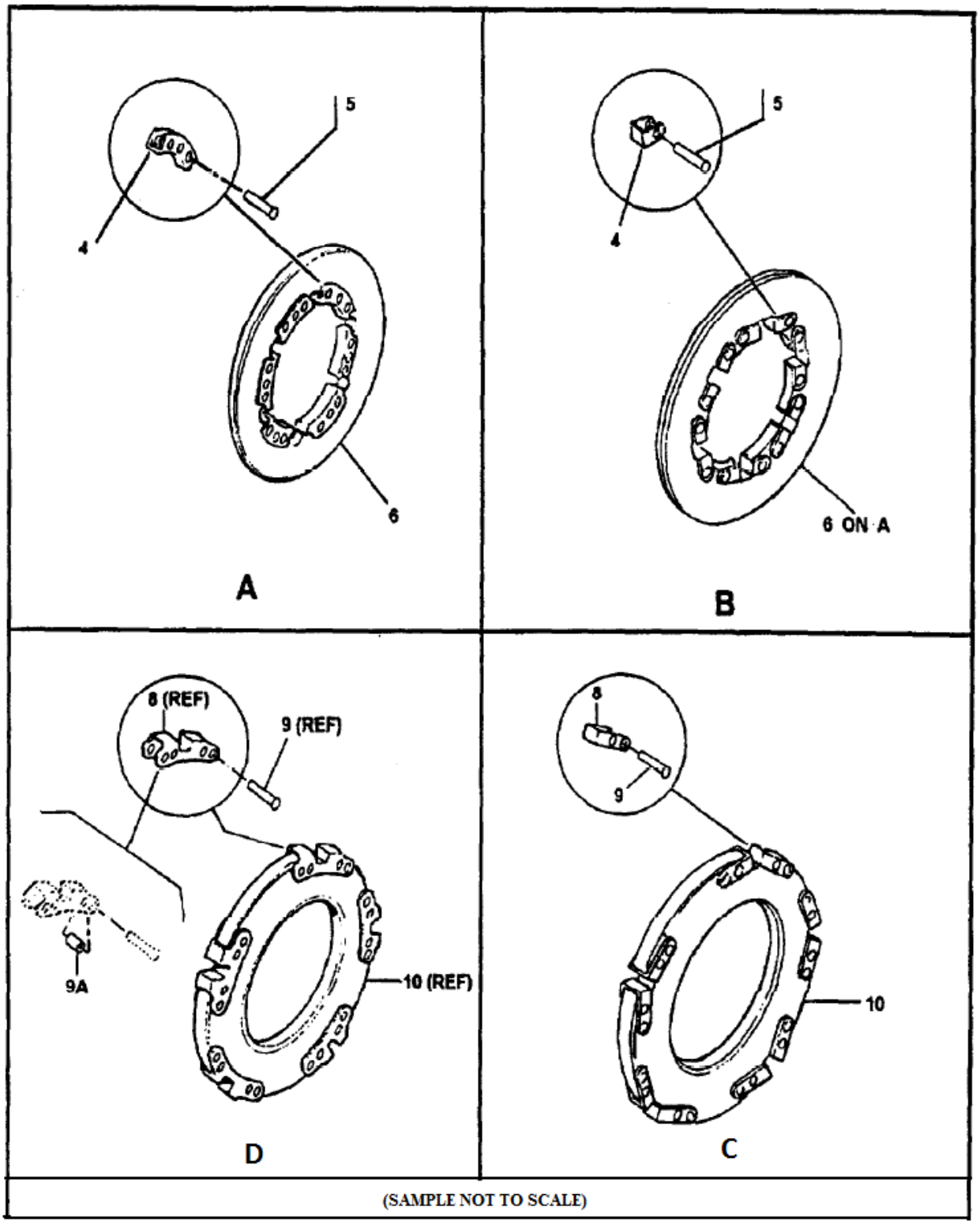


FIGURE 29. Example multisection illustration.

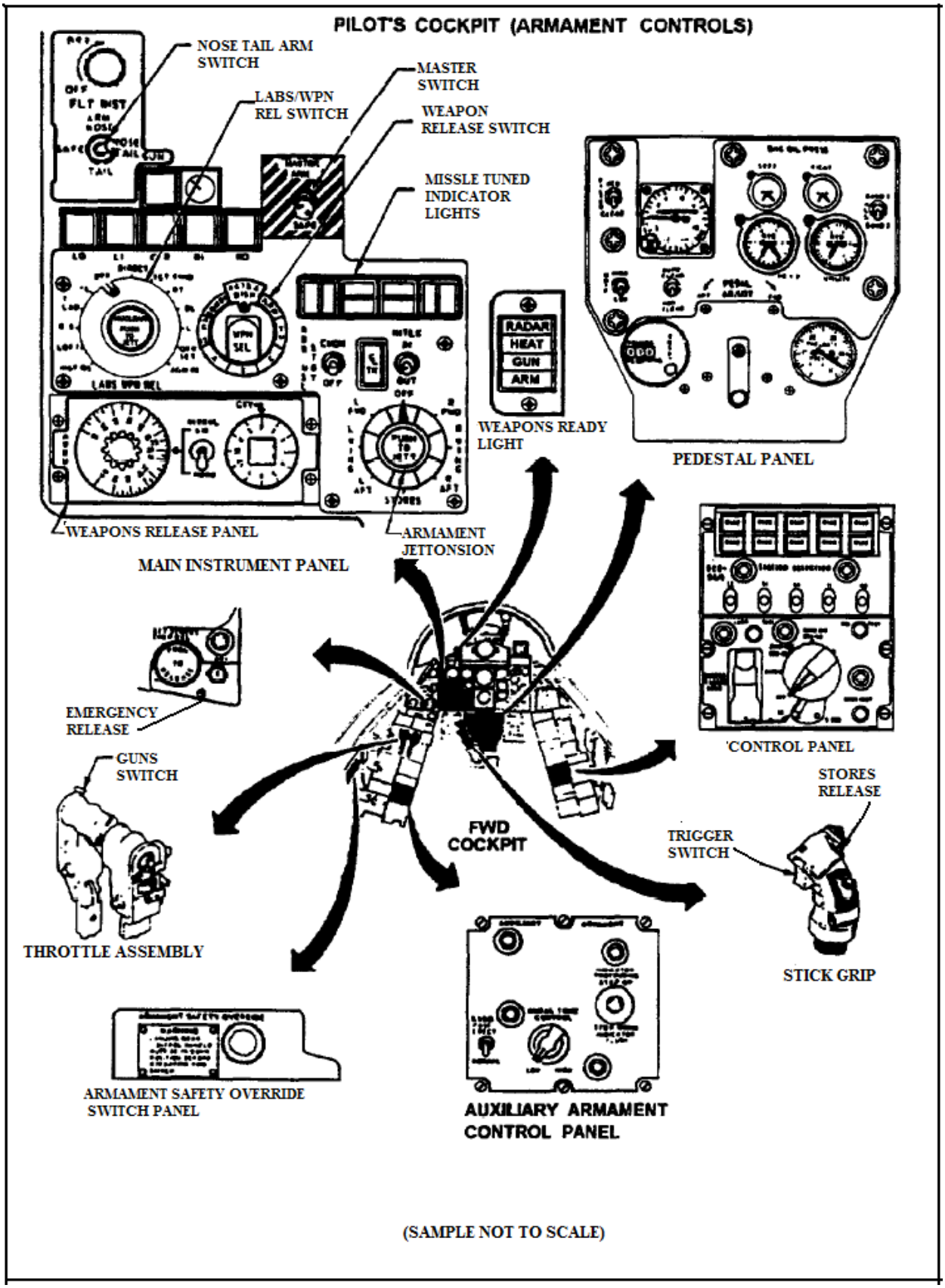


FIGURE 30. Example functional illustration - location view.

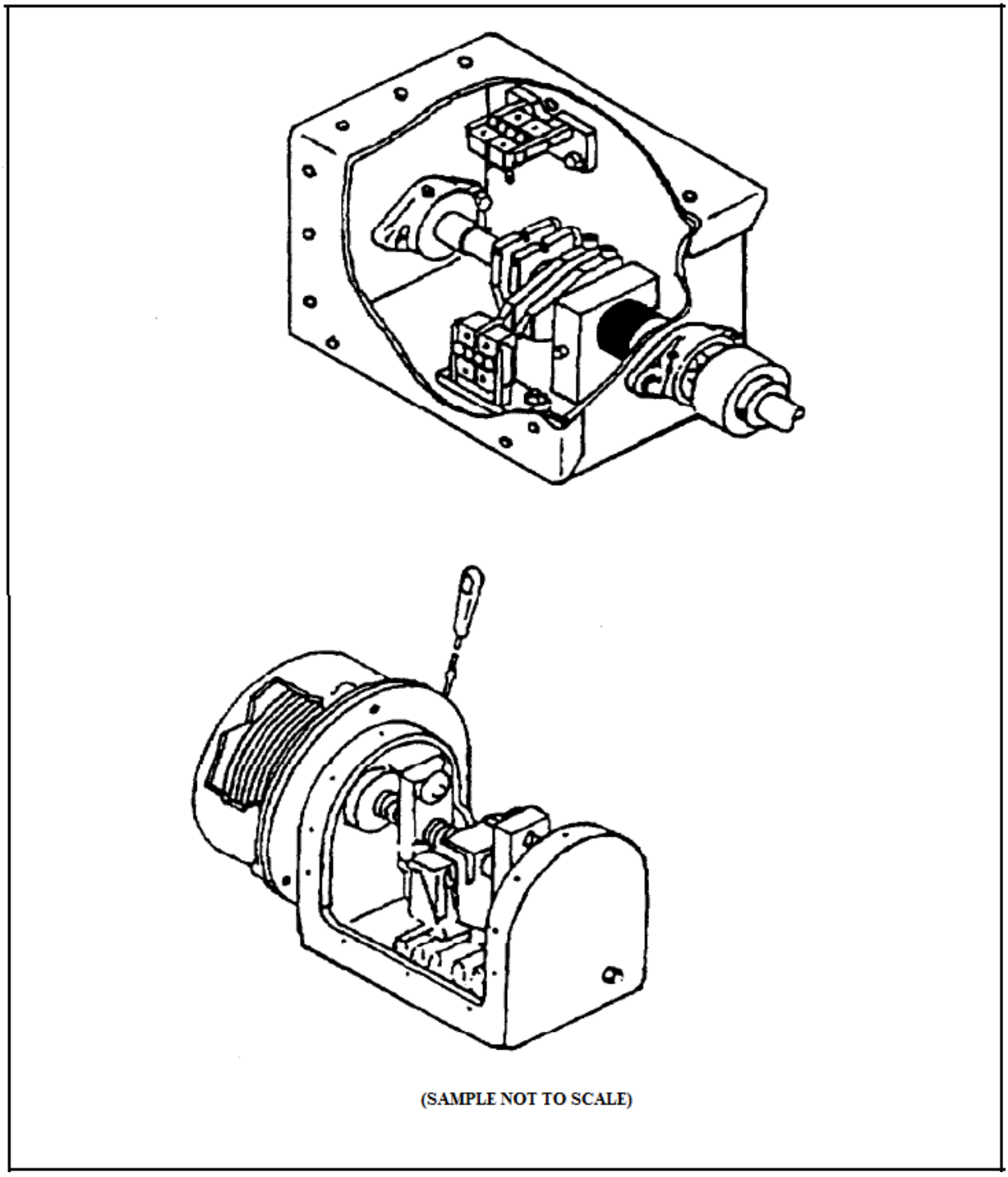


FIGURE 31. Example cutaway illustrations.

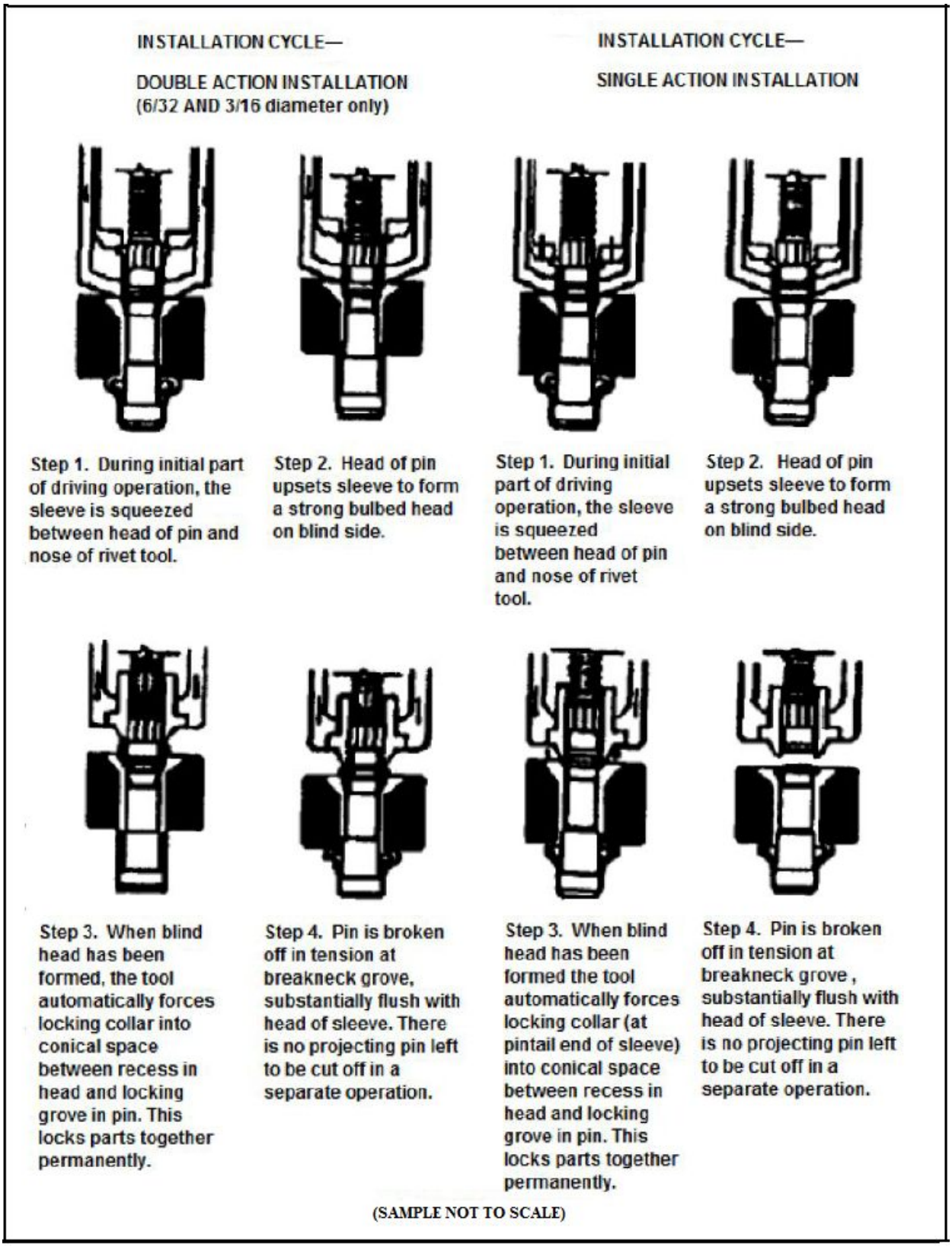
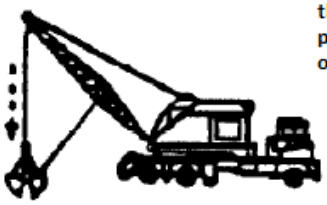
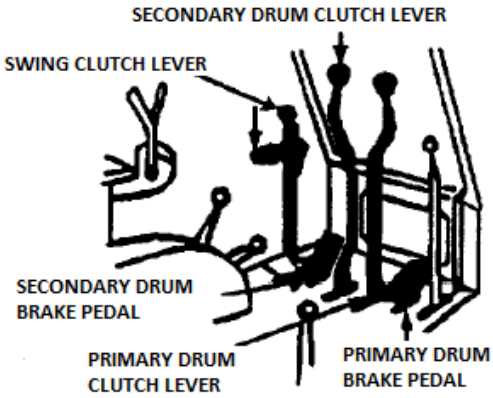


FIGURE 32. Example procedural illustrations.

FILLING THE CLAMSHELL

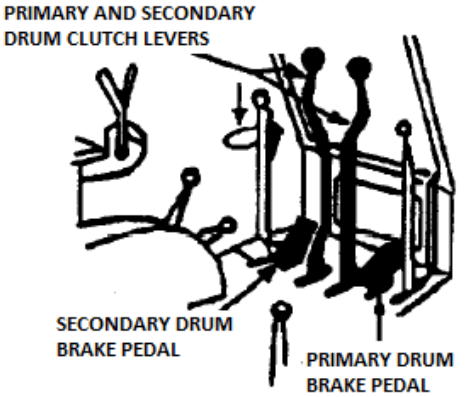
Pull back on the drum clutch levers until the clamshell bucket is high enough to clear being moved. Then push the drum clutch levers to neutral position, applying both brake pedals, swing clamshell over material Release the secondary drum brake to open clamshell then release primary drum brake pedal to lower clamshell bucket over material.





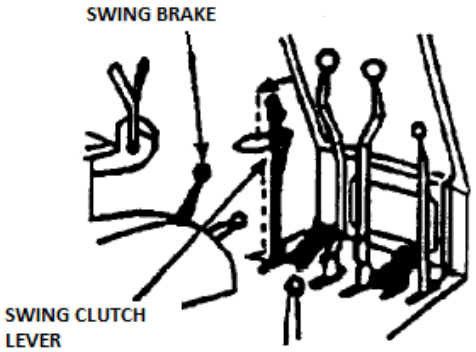
CLOSING AND HOISTING

To close the clamshell bucket pull back on the secondary drum clutch lever. Move the lever until the bucket is filled with material and closed. When the bucket is closed, release the primary drum brake pedal and pull the primary drum clutch lever back. Hold both levers back until the load has reached the desired height. Return both drum clutch levers to neutral and at the same time apply both drum brake pedals.



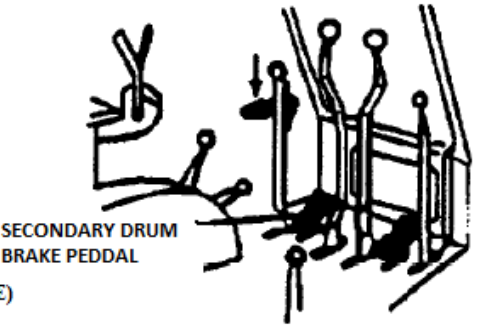
SWINGING

Push the swing clutch lever forward to swing the crane to the left. Pull it to the rear to go to the right. Swing slowly and evenly to avoid bucket whipping. When handling fine materials keep on secondary line but coordinate primary drum to avoid excessive slack in the primary line.



DUMPING

To dump the bucket, release the secondary drum brake pedal.



(SAMPLE NOT TO SCALE)

FIGURE 33. Example operational illustrations.

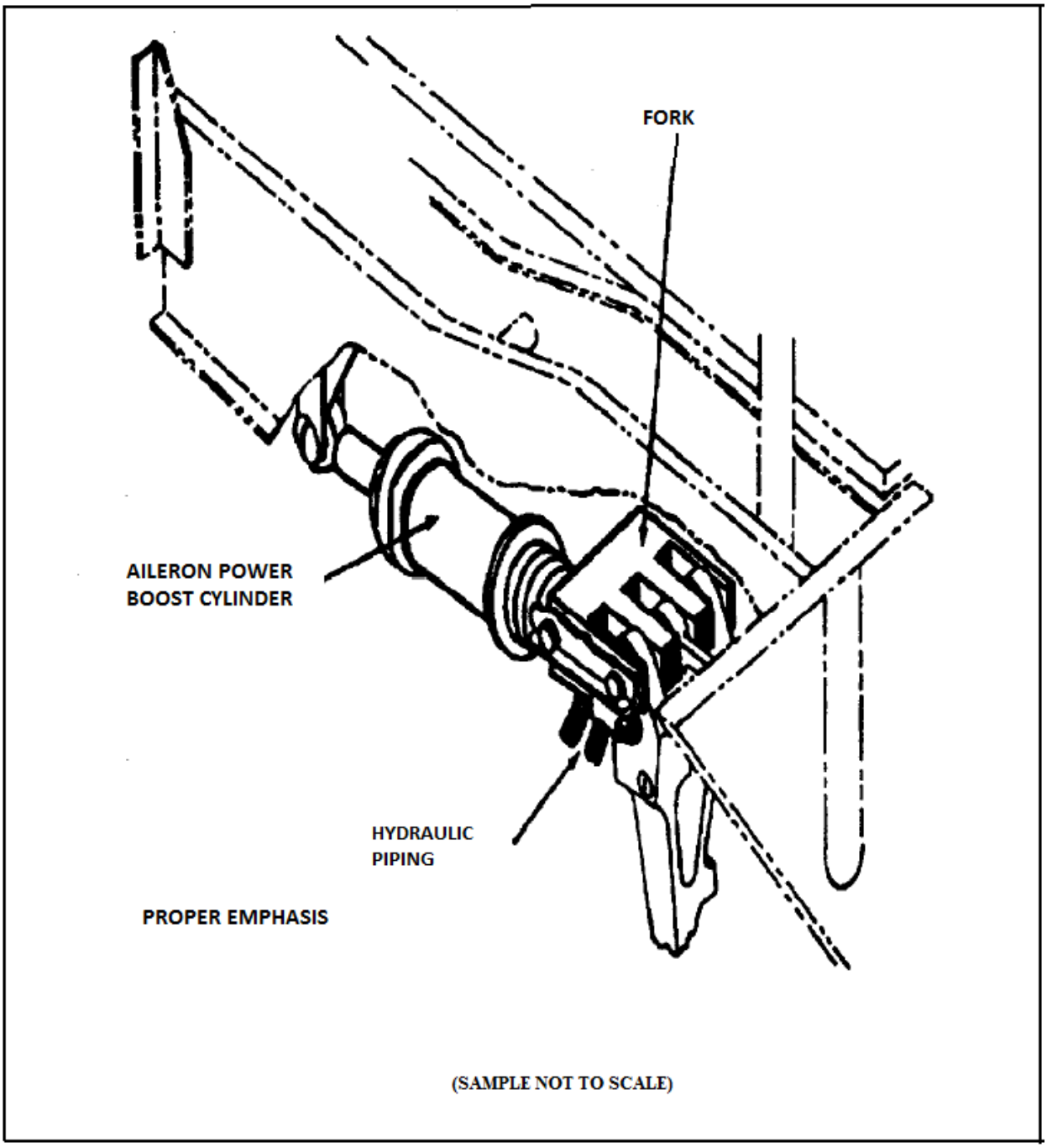


FIGURE 34. Example emphasis and subordination of detail.

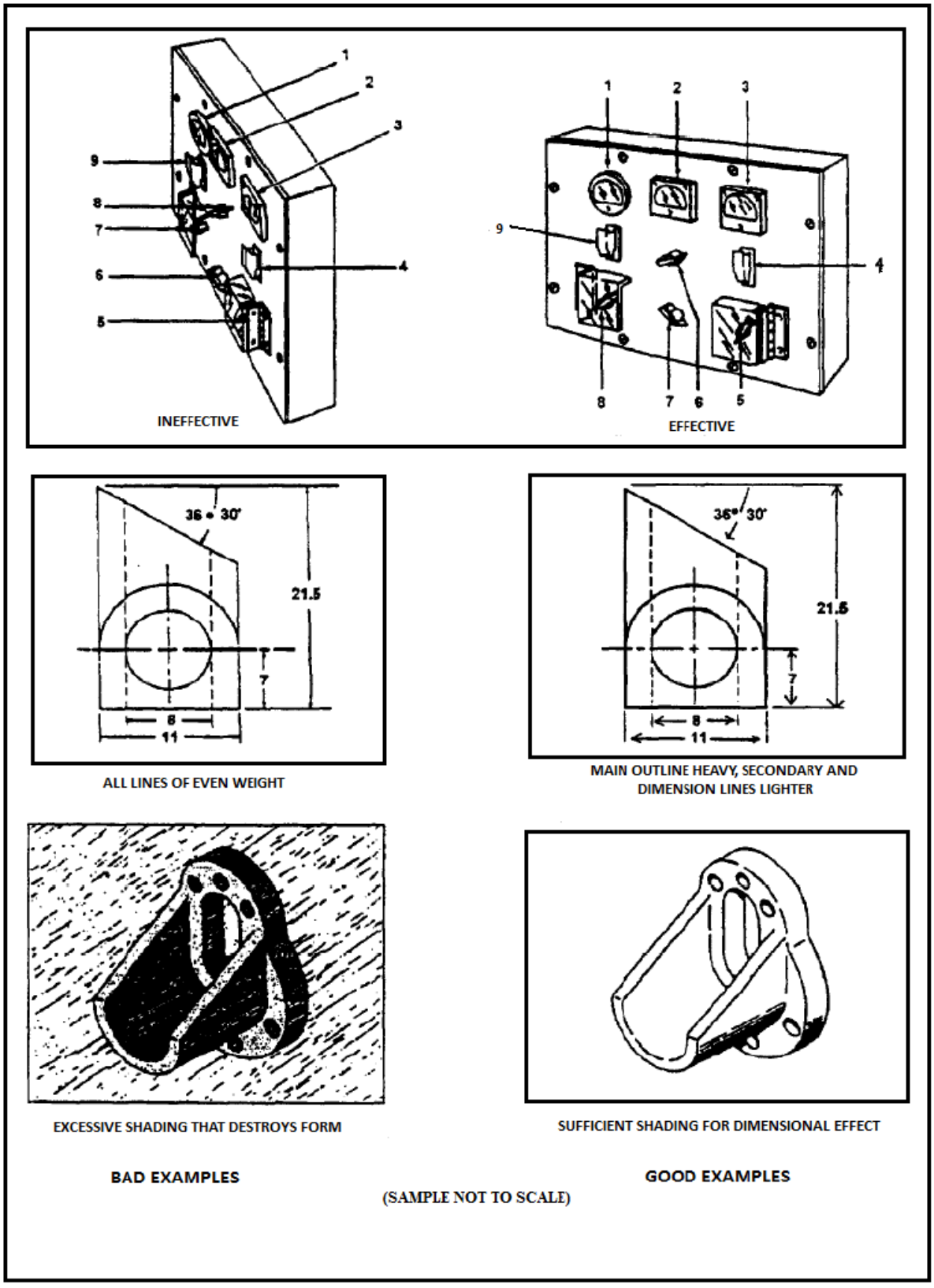


FIGURE 35. Examples of angle view, line weight, and shading.

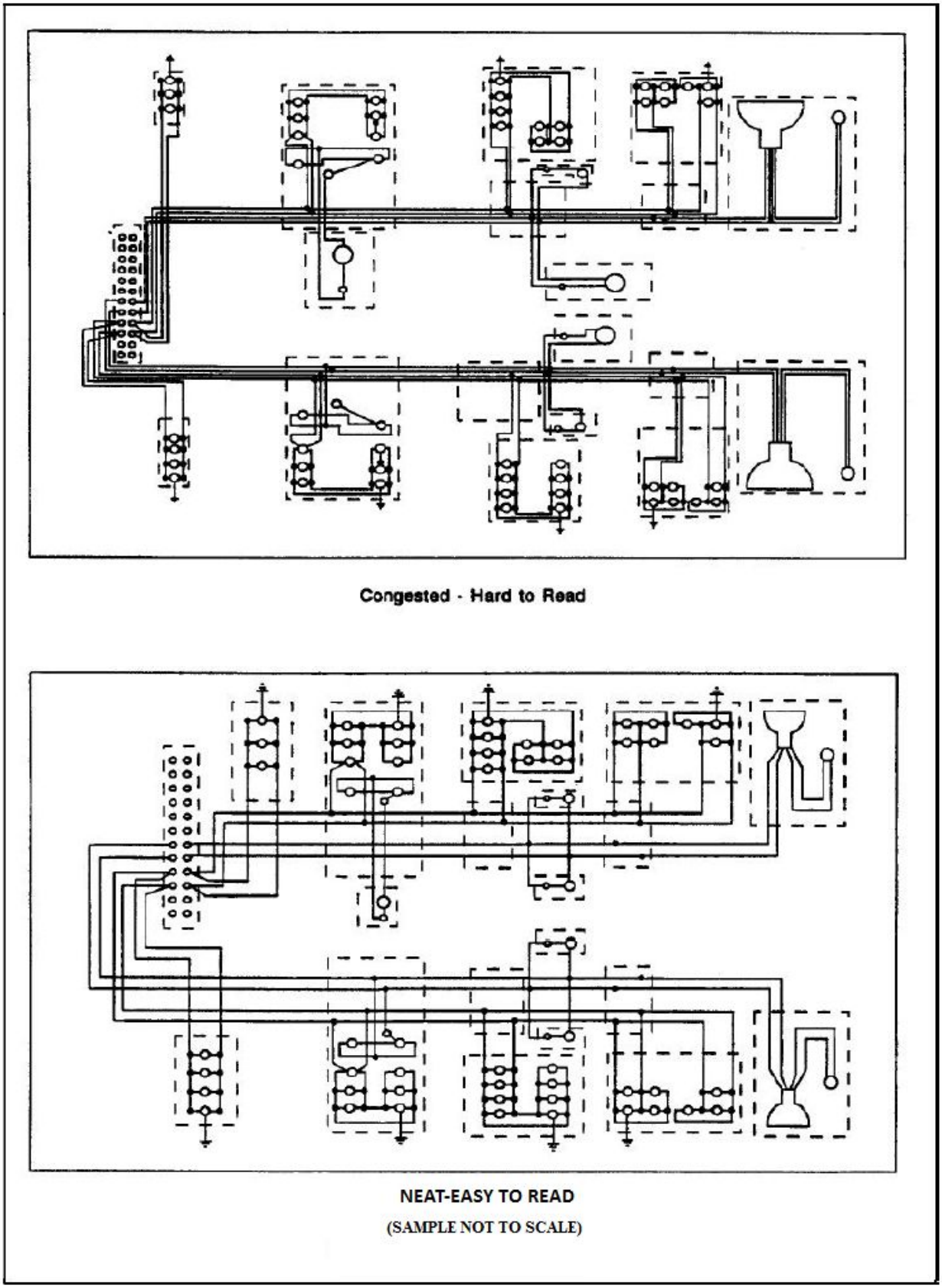


FIGURE 36. Example line separation on diagrams.

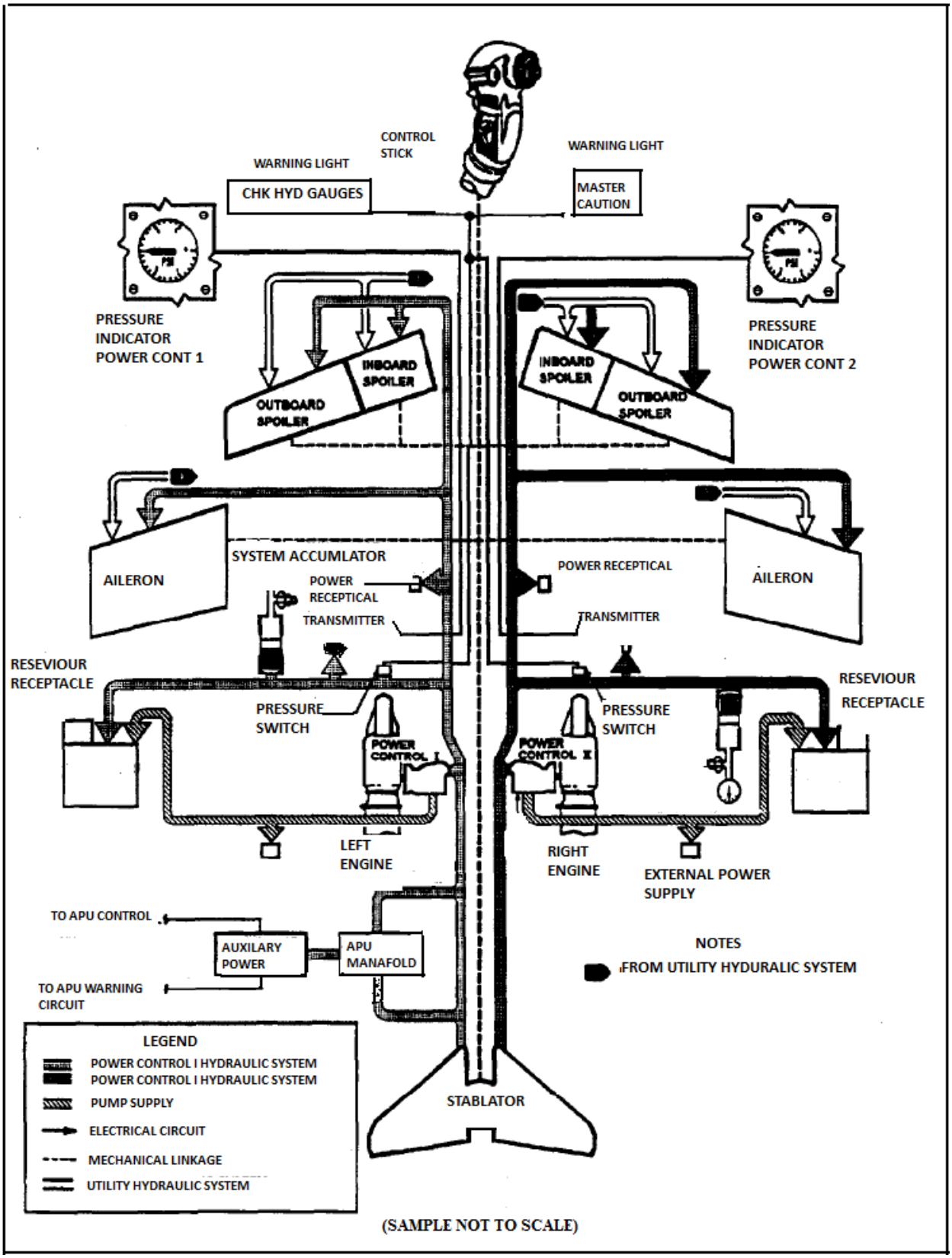


FIGURE 37. Example use of patterns instead of color.

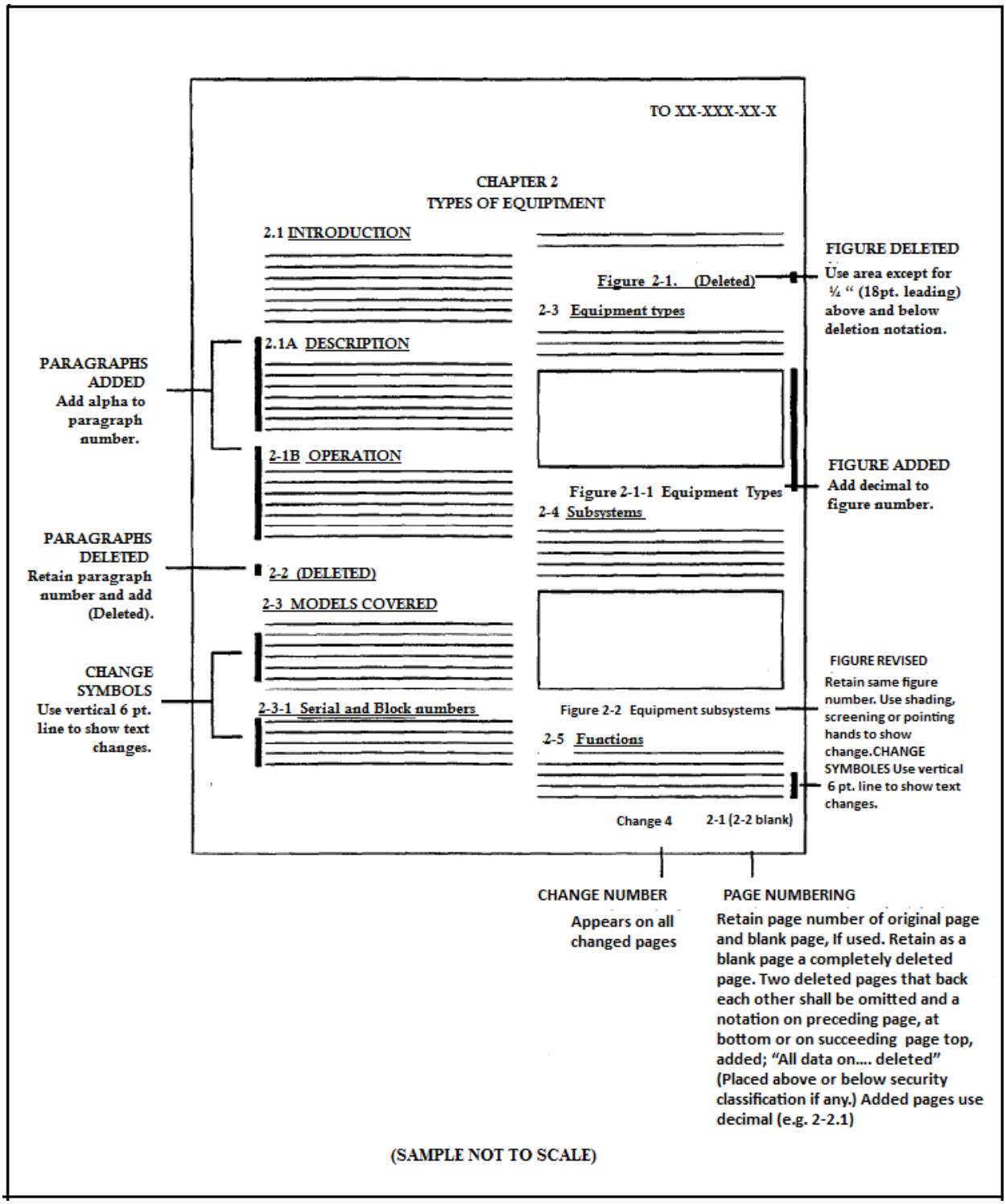


FIGURE 38. Example change page markings.

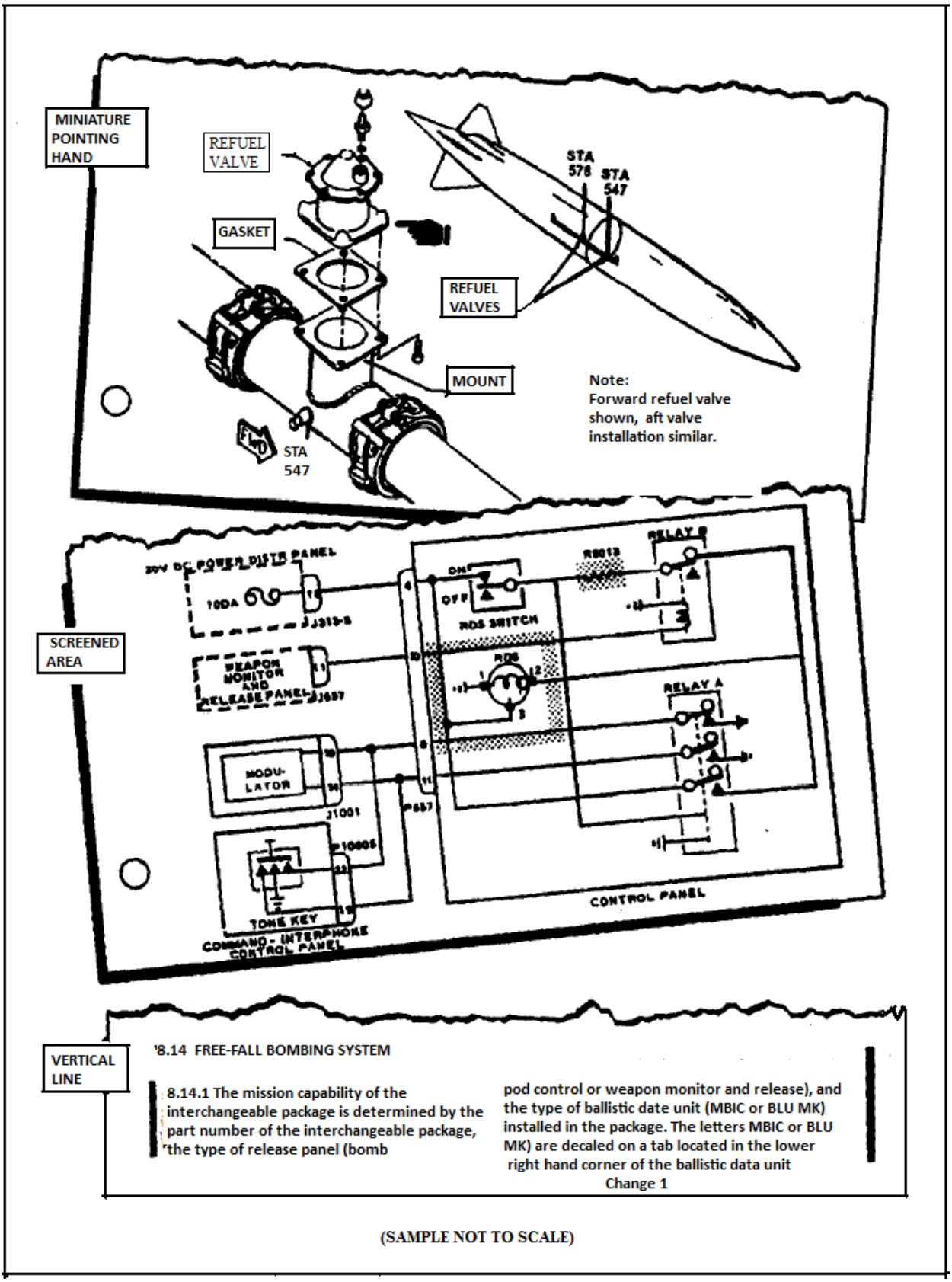


FIGURE 39. Example change symbols.

MANUAL NUMBER

CHANGE
NO. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 31 AUGUST 2019

OPERATOR MANUAL
FOR
TEST SET
RADAR ABC
NSN XXXX-XX-XXX-XXXX (EIC XXX)

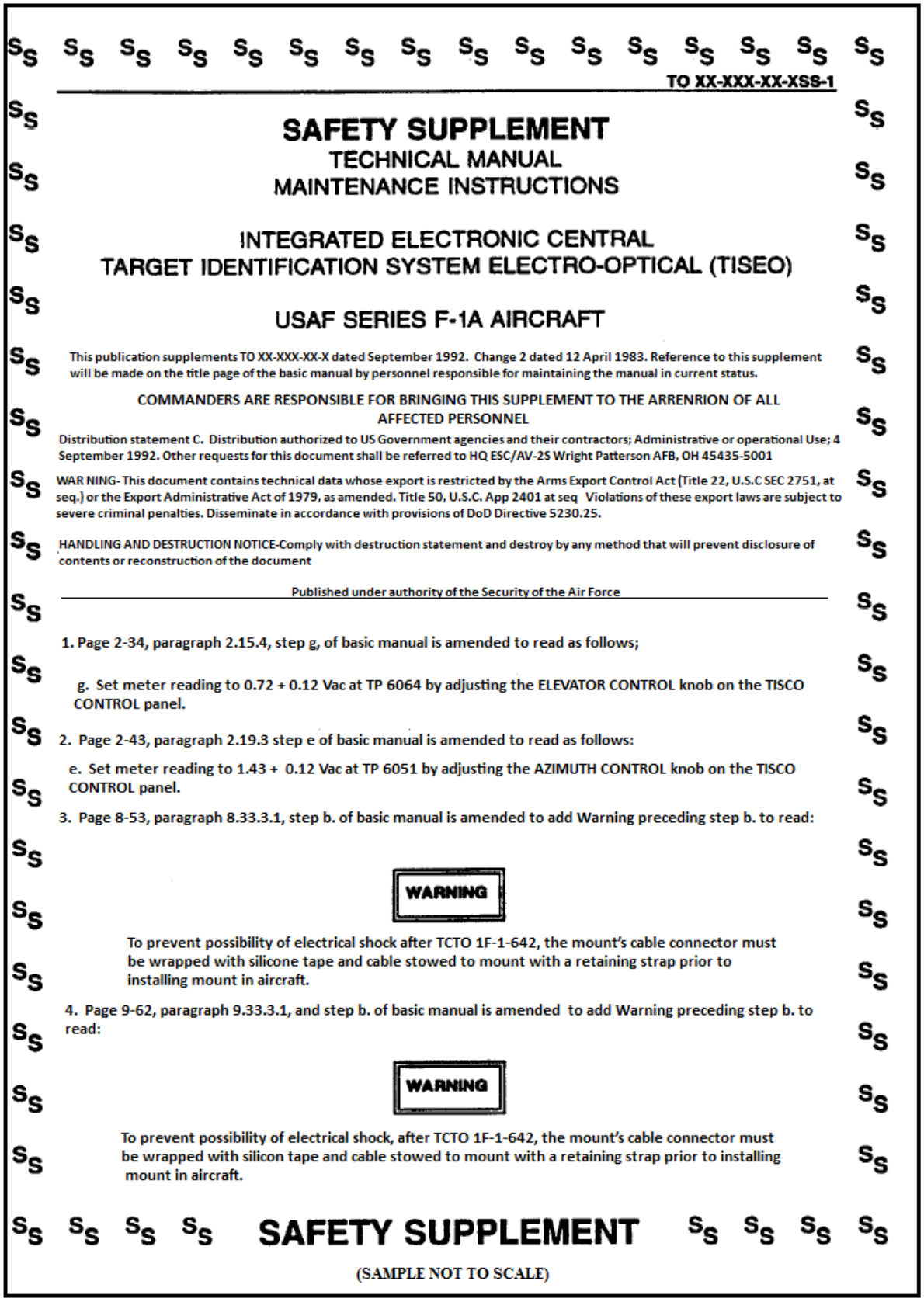
DISTRIBUTION STATEMENT A. Approved for public release distribution is unlimited.

TM XX-XXXX-XXX-XX, 10 June 2018, is updated as follows:

1. File this sheet in front of the manual for reference.
2. This change is a result of new preventive maintenance checks and service procedures and new expendable/durable supplies and materials.
3. New or updated text is indicated by a vertical bar in the outer margin of the page.
4. Added illustrations are indicated by a vertical bar adjacent to the figure number. Changed illustrations are indicated by a miniature pointing hand adjacent to the updated area and a vertical bar adjacent to the figure numbers.
5. Remove old pages and insert new pages as indicated below:

Remove Pages	Insert Pages
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

FIGURE 40. Example (A) change transmittal/(M) change instruction sheet.



TO XX-XXX-XX-XSS-1

SAFETY SUPPLEMENT

TECHNICAL MANUAL
MAINTENANCE INSTRUCTIONS

INTEGRATED ELECTRONIC CENTRAL
TARGET IDENTIFICATION SYSTEM ELECTRO-OPTICAL (TISEO)

USAF SERIES F-1A AIRCRAFT

This publication supplements TO XX-XXX-XX-X dated September 1992. Change 2 dated 12 April 1983. Reference to this supplement will be made on the title page of the basic manual by personnel responsible for maintaining the manual in current status.

COMMANDERS ARE RESPONSIBLE FOR BRINGING THIS SUPPLEMENT TO THE ARRENRION OF ALL AFFECTED PERSONNEL

Distribution statement C. Distribution authorized to US Government agencies and their contractors; Administrative or operational Use; 4 September 1992. Other requests for this document shall be referred to HQ ESC/AV-2S Wright Patterson AFB, OH 45435-5001

WAR NING- This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C SEC 2751, at seq.) or the Export Administrative Act of 1979, as amended. Title 50, U.S.C. App 2401 at seq Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

HANDLING AND DESTRUCTION NOTICE-Comply with destruction statement and destroy by any method that will prevent disclosure of contents or reconstruction of the document

Published under authority of the Security of the Air Force

1. Page 2-34, paragraph 2.15.4, step g, of basic manual is amended to read as follows;

g. Set meter reading to 0.72 + 0.12 Vac at TP 6064 by adjusting the ELEVATOR CONTROL knob on the TISCO CONTROL panel.

2. Page 2-43, paragraph 2.19.3 step e of basic manual is amended to read as follows:

e. Set meter reading to 1.43 + 0.12 Vac at TP 6051 by adjusting the AZIMUTH CONTROL knob on the TISCO CONTROL panel.

3. Page 8-53, paragraph 8.33.3.1, step b. of basic manual is amended to add Warning preceding step b. to read:

WARNING

To prevent possibility of electrical shock after TCTO 1F-1-642, the mount's cable connector must be wrapped with silicone tape and cable stowed to mount with a retaining strap prior to installing mount in aircraft.

4. Page 9-62, paragraph 9.33.3.1, and step b. of basic manual is amended to add Warning preceding step b. to read:

WARNING

To prevent possibility of electrical shock, after TCTO 1F-1-642, the mount's cable connector must be wrapped with silicon tape and cable stowed to mount with a retaining strap prior to installing mount in aircraft.

SAFETY SUPPLEMENT

(SAMPLE NOT TO SCALE)

FIGURE 41. Example safety supplement.

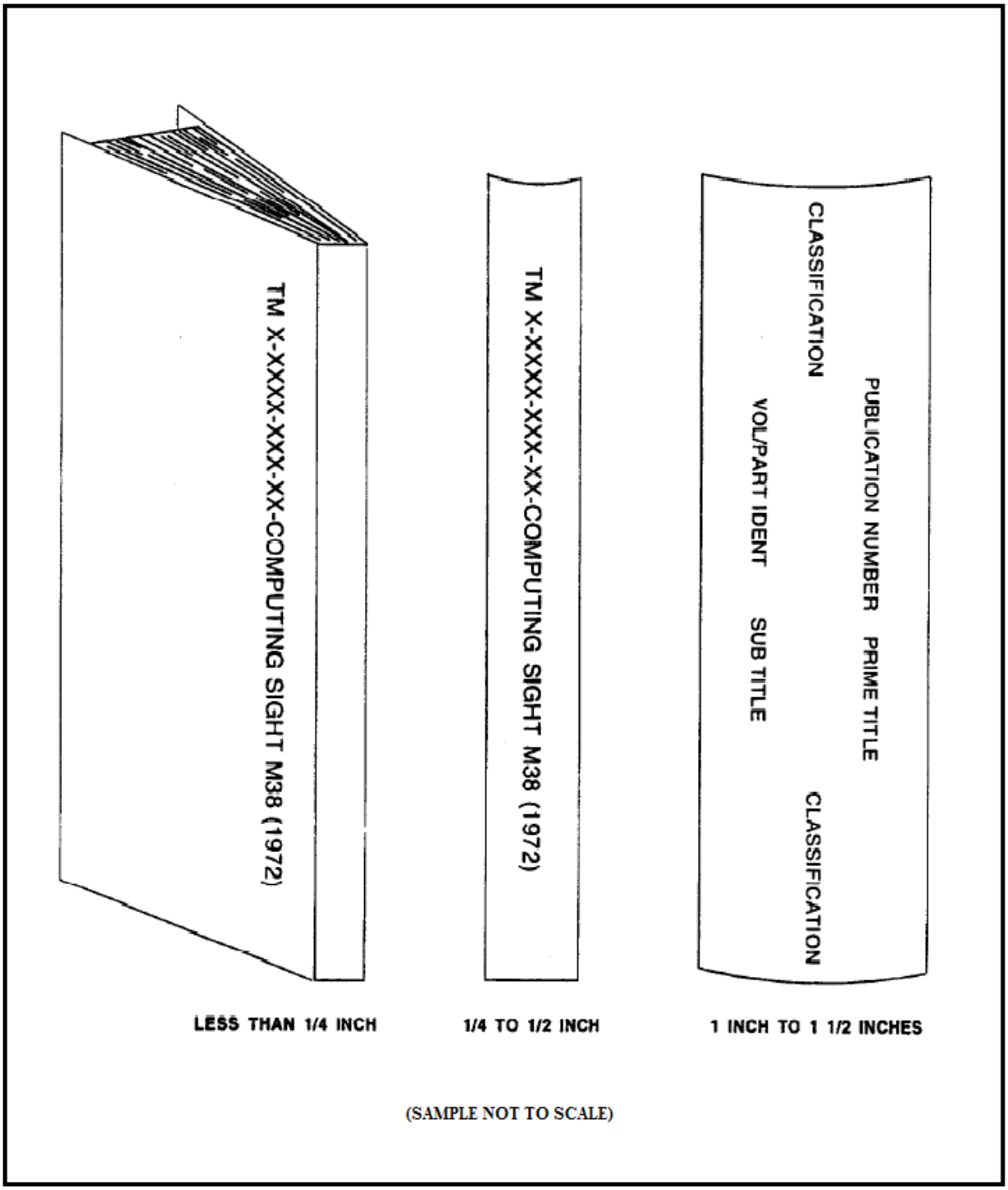
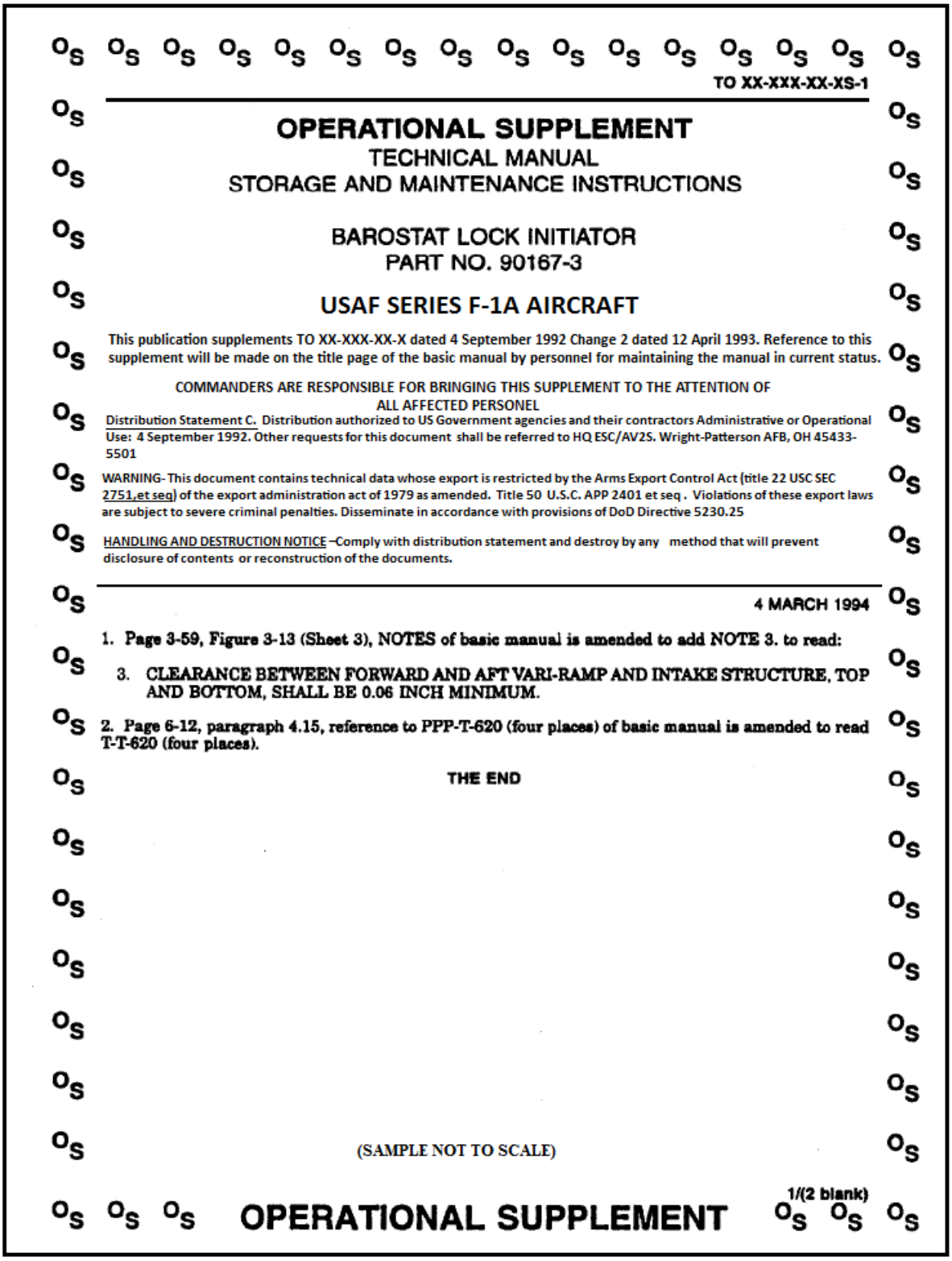


FIGURE 42. (A) (M) (N) Example backbone for binder or cover.



TO XX-XXX-XX-XS-1

OPERATIONAL SUPPLEMENT

TECHNICAL MANUAL
STORAGE AND MAINTENANCE INSTRUCTIONS

BAROSTAT LOCK INITIATOR
PART NO. 90167-3

USAF SERIES F-1A AIRCRAFT

This publication supplements TO XX-XXX-XX-X dated 4 September 1992 Change 2 dated 12 April 1993. Reference to this supplement will be made on the title page of the basic manual by personnel for maintaining the manual in current status.

COMMANDERS ARE RESPONSIBLE FOR BRINGING THIS SUPPLEMENT TO THE ATTENTION OF ALL AFFECTED PERSONEL

Distribution Statement C. Distribution authorized to US Government agencies and their contractors Administrative or Operational Use: 4 September 1992. Other requests for this document shall be referred to HQ ESC/AV2S. Wright-Patterson AFB, OH 45433-5501

WARNING- This document contains technical data whose export is restricted by the Arms Export Control Act (title 22 USC SEC 2751,et seq) of the export administration act of 1979 as amended. Title 50 U.S.C. APP 2401 et seq . Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25

HANDLING AND DESTRUCTION NOTICE –Comply with distribution statement and destroy by any method that will prevent disclosure of contents or reconstruction of the documents.

4 MARCH 1994

1. **Page 3-59, Figure 3-13 (Sheet 3), NOTES of basic manual is amended to add NOTE 3. to read:**

   3. **CLEARANCE BETWEEN FORWARD AND AFT VARI-RAMP AND INTAKE STRUCTURE, TOP AND BOTTOM, SHALL BE 0.06 INCH MINIMUM.**

2. **Page 6-12, paragraph 4.15, reference to PPP-T-620 (four places) of basic manual is amended to read T-T-620 (four places).**

THE END

(SAMPLE NOT TO SCALE)

1/(2 blank)

OPERATIONAL SUPPLEMENT

FIGURE 43. Example operational supplement.

TO XXX-X-XX-X
15 MAY 2012

COMMERCIAL MANUAL SUPPLEMENT
TECHNICAL MANUAL

THIS REVISION SUPERSEDES TO XXX-X-XX-X, DATED 15 AUGUST 2011, IN ITS ENTIRETY.

PURPOSE: This technical publication is issued for the purpose of identifying the following commercial manual for Air Force use.

MANUFACTURER:	Benton Harbor Aviation Tools Group Kalamazoo, MI (Code: 00001)
CONTRACT NO:	F12345-70-C-0123
EQUIPMENT:	Torque Adapter 180000-1
TITLE:	Overhaul Instructions (with parts breakdown), Torque Adapter 18000-1
ADDITIONAL IDENTIFICATION:	Publication No. ATA 60-1
DATE:	1 JULY 2003, Revision 1-17 April 2011

DISCLOSURE NOTICE – This information is furnished upon the condition that it will not be released to another nation without the specific authority of the Department of the Air Force of the United States, that it will be used for military purposes only, that individual or corporate rights originating in the information, whether patented or not, will be respected, that the recipient will report promptly to the United States any known or suspected compromise, and that the information will be provided substantially the same degree of security afforded it by the Department of Defense of the United States. Also, regardless of any other markings on the document, it will not be downgraded or declassified without written approval of the originating United States agency.

DISTRIBUTION STATEMENT – The appropriate distribution statement, selected from DoDI 5230.24 will be provided from the acquiring activity.

WARNING – This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751, et seq.) or the Export Administration Act of 1979 (Title 50, U.S.C., App 2401 et seq.), as amended. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

HANDLING AND DESTRUCTION NOTICE – Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

Published under authority of the Secretary of the Air Force.

NOTICE: Reproduction for non-military use of the information or illustrations contained in this publication is not permitted. The policy for military reproduction is established for the Army in AR 38-4, for the Navy and Marine Corps in OPNAVINST 5510.1, and for the Air Force AFPD 34-1.

1 Page i/ii TOC – After Chapter 12 Illustrated Parts List – ADD as follows:

ADD: Appendix A Item Unique Identification (IUID) Required Information.....(PAGE) A-1

2 Page 101 – ADD new sentence to paragraph 2 as follows:

Refer to paragraph 4A for Unique Identification (IUID) marking instructions and Appendix A, Table A-1 for identification of parts to be marked.

3 Page 201/202, Add warning prior to text as follows:

WARNING

Compressed air used for cleaning purposes shall not exceed 30 psi and then shall be used only when goggles or face shields are used for personnel eye protection.

4 Page 301 – ADD new paragraph 4.A as follows:

4.A ITEM UNIQUE IDENTIFICATION (IUID). Visually inspect the identification plate/label/item for the Unique Item Identifier (UII) marking. If present, visually inspect for damage to the symbol. Ensure readability by using hand-held electronic reader, if symbol is not present or damaged mark/restore. REF: Drawing 200123456, Appendix A, Table A-1 of this TO for identification of parts to be marked, TO 00-25-260 and MIL-STD-130.

FIGURE 44. (F) Example commercial manual supplement title page and supplemental data.

TO XXX-X-XX-X
15 MAY 2012

5 Page 401, Section 5 Paragraph C.; Change as follows:

C INSRUCTIONS FOR HANDLING DIODES AND TRANSISTORS

CAUTION

Diodes and transistors can be damaged if correct procedures are not observed when handling them. Proper methods are necessary to prevent damage caused by excessive heat, surge currents and excessive peak inverse voltage. Mistakes that rarely cause electron tube burnout usually permanently damage a diode or transistor. The following paragraphs outline methods of preventing excessive heat and surge currents.

6 Page 701, Section 8, Paragraph A; Delete paragraph A.

7 Remove the attached identifying Publication Cover Page and insert the page ahead of the commercial title page. Post this supplement in the back of the manual as required by TO 00-5-1.

2

FIGURE 44. (F) Example commercial manual supplement title page and supplemental data - Continued.

TO XXX-X-XX-X
15 MAY 2012

IDENTIFYING TECHNICAL PUBLICATION SHEET FOR COMMERCIAL MANUAL

THIS REVISION SUPERSEDES TO XXX-X-XX-X, DATED 15 AUGUST 2011, IN ITS ENTIRETY.

PURPOSE: This technical publication is issued for the purpose of identifying and authorizing the following commercial manual for Air Force use.

MANUFACTURER:	Benton Harbor Aviation Tools Group
	Kalamazoo, MI (Code: 00001)
CONTRACT NO:	F12345-70-C-0123
EQUIPMENT:	Torque Adapter 180000-1
TITLE:	Overhaul Instructions (with parts breakdown), Torque Adapter 18000-1
ADDITIONAL IDENTIFICATION:	Publication No. ATA 60-1
DATE:	1 JULY 2003, Revision 1-17 April 2011

DISCLOSURE NOTICE – This information is furnished upon the condition that it will not be released to another nation without the specific authority of the Department of the Air Force of the United States, that it will be used for military purposes only, that individual or corporate rights originating in the information, whether patented or not, will be respected, that the recipient will report promptly to the United States any known or suspected compromise, and that the information will be provided substantially the same degree of security afforded it by the Department of Defense of the United States. Also, regardless of any other markings on the document, it will not be downgraded or declassified without written approval of the originating United States agency.

DISTRIBUTION STATEMENT X – Distribution authorized to U.S. Government Agencies and private individuals or enterprises eligible to obtain export-controlled technical data in accordance with DoDD 5230.25, 15 November 1996. Controlling DoD office is LIIS, Tinker AFB, Oklahoma 73145-3029.

WARNING – This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751, et seq.) or the Export Administration Act of 1979, as amended, Title 50, U.S.C., App 2401 et seq. Violation of these export-control laws is subject to severe criminal penalties. Dissemination of this document is controlled under DoD Directive 5230.25.

HANDLING AND DESTRUCTION NOTICE – Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

Published under authority of the Secretary of the Air Force.

SUPPLEMENTAL DATA

LIST OF AFFECTED PAGES IN BASIC MANUAL.

i/ii (TOC)	701	706	718	1106
101	702	707	719	1107
201/202	703	708	901/902	1108
301	704	716	1001	
401	705	717	1104	

SUPPLEMENTARY INFORMATION. The information contained in the above identified commercial manual is supplemented as follows:

a. Table of Contents
b. Section 5
c. Section 8

FIGURE 45. (F) Example ITPS cover page for a COTS manual with supplemental information.

TO XXX-X-XX-X
2 OCTOBER 2015

IDENTIFYING TECHNICAL PUBLICATION SHEET FOR COMMERCIAL MANUAL

THIS PUBLICATION SUPERSEDES TO XXX-X-XX-X, DATED 15 AUGUST 2011, IN ITS ENTIRETY.

PURPOSE: This technical publication is issued for the purpose of identifying the following commercial manual for Air Force use.

MANUFACTURER:	ELDON PO Box 100 4500 Whirlwind Rd McGaheysville, VA, 22840
CONTRACT NO:	F12345-70-C-0123
REQUISITION NO:	NA
EQUIPMENT:	N1 Rotor Percent of RPM Indicator 9-201-01
TITLE:	Overhaul Instructions with Illustrated Parts Breakdown – N1 Rotor Percent of RPM Indicator – Part Number 9-201-01
ADDITIONAL IDENTIFICATION:	ELDON Document 367510
DATE:	2014-11-15

DISCLOSURE NOTICE – This information is furnished upon the condition that it will not be released to another nation without the specific authority of the Department of the Air Force of the United States, that it will be used for military purposes only, that individual or corporate rights originating in the information, whether patented or not, will be respected, that the recipient will report promptly to the United States any known or suspected compromise, and that the information will be provided substantially the same degree of security afforded it by the Department of Defense of the United States. Also, regardless of any other markings on the document, it will not be downgraded or declassified without written approval of the originating United States agency.

DISTRIBUTION STATEMENT – The appropriate distribution statement, selected from DoDI 5230.24 will be provided from the acquiring activity.

WARNING – This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec 2751, et seq.) or the Export Administration Act of 1979 (Title 50, U.S.C., App 2401 et seq.), as amended. Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DoD Directive 5230.25.

HANDLING AND DESTRUCTION NOTICE – Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

Published under authority of the Secretary of the Air Force.

FIGURE 46. (F) Example ITPS cover page for a COTS manual with no supplemental information.

Overall Page Size*		Printed Area*		Binding Edge*	Margins*		
A	B	C	D	E	F	G	⇦Layout dimension
2.75	‡96	‡91	2.5	0.125	0.125	2.5	Scroll checklist
4	5.5	5	3.125	0.625	0.25	0.25	
4.5	7	6.5	3.625	0.625	0.25	0.25	
4	8	7.5	3.125	0.625	0.25	0.25	
‡24	8	7.5	19.5	4.25	0.25	0.25	4 by 8 foldout
5	8	7.5	4.125	0.625	0.25	0.25	
‡31	8	7.5	25.5	5.25	0.25	0.25	5 by 8 foldout
4.5	8	7.5	3.5	0.75	0.25	0.25	
5.5	7	6.5	4.5	0.5	0.5	0.5	
‡35	7	6.5	29	5.75	0.25	0.25	5.5 by 7 foldout
5	8	7.5	4.5	0.25	0.25	0.25	
8	5	4.5	7.5	0.25	0.25	0.25	Work card
6.5	9.5	9	5.5	0.75	0.25	0.25	
9.5	6.5	6	8.5	0.75	0.25	0.25	
8.5	11	10	7.25	1	0.25	0.5	
‡45	11	7.5	36	8.75	0.25	0.25	8.5 by 11 foldout
11	17	10	15.75	1	0.25	0.5	
17	11	16	9.75	1	0.25	0.5	

Notes:
*All dimensions are in inches.
‡ Maximum

Imposition and single page (after trimming) dimensions.

FIGURE 47. Page imposition.

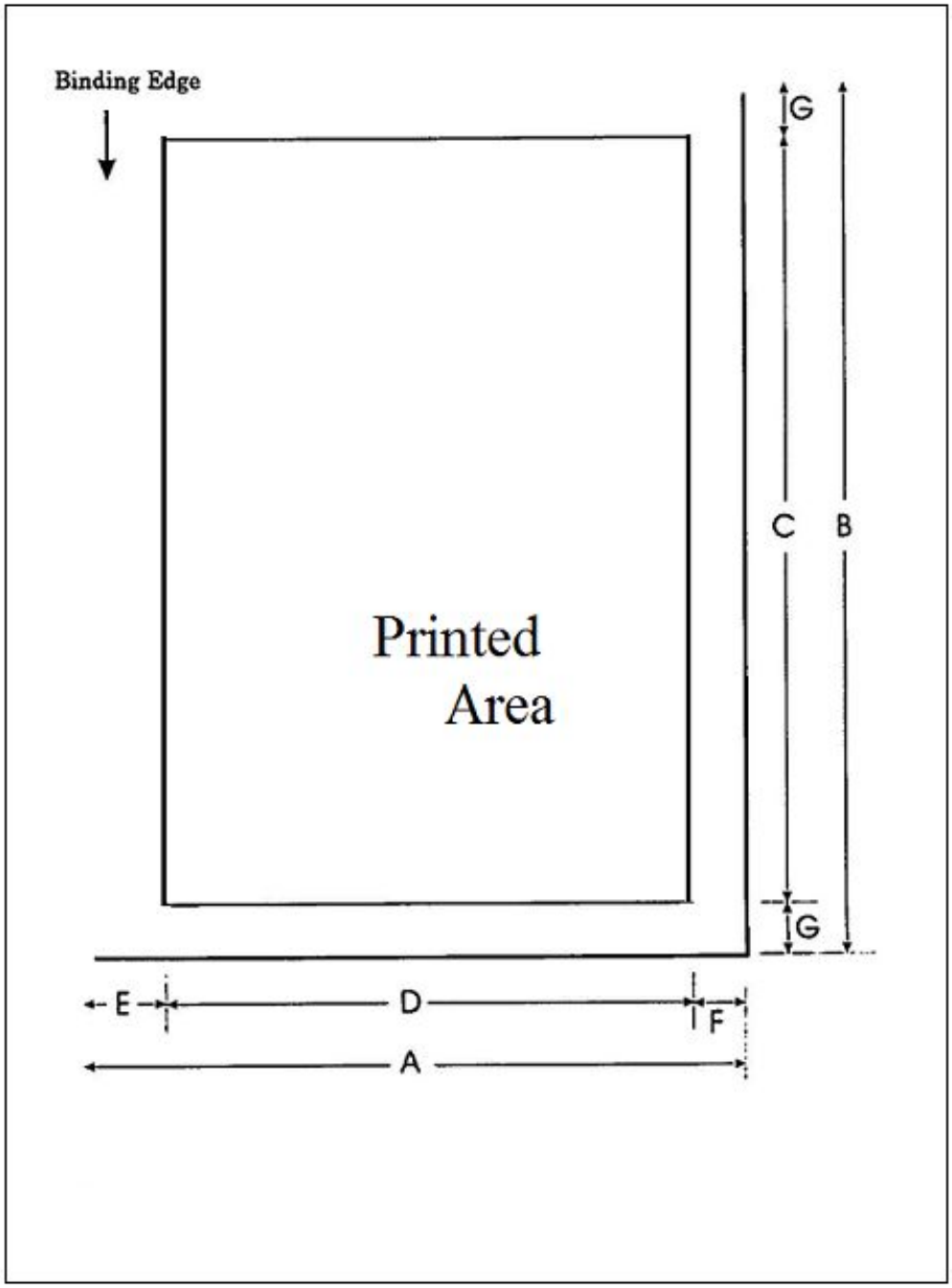
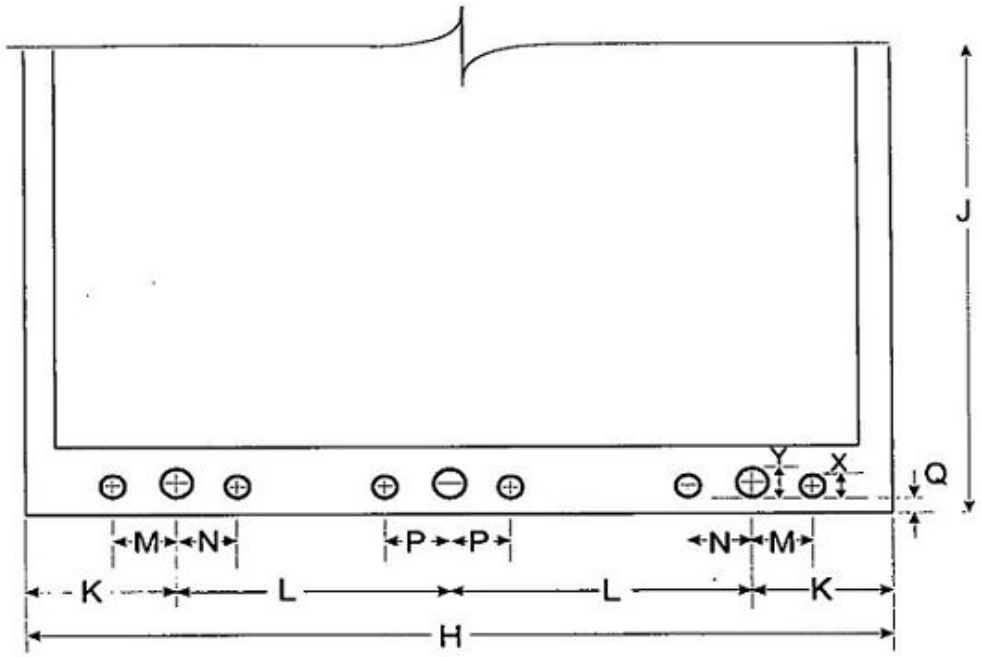


FIGURE 47. Page imposition - Continued.



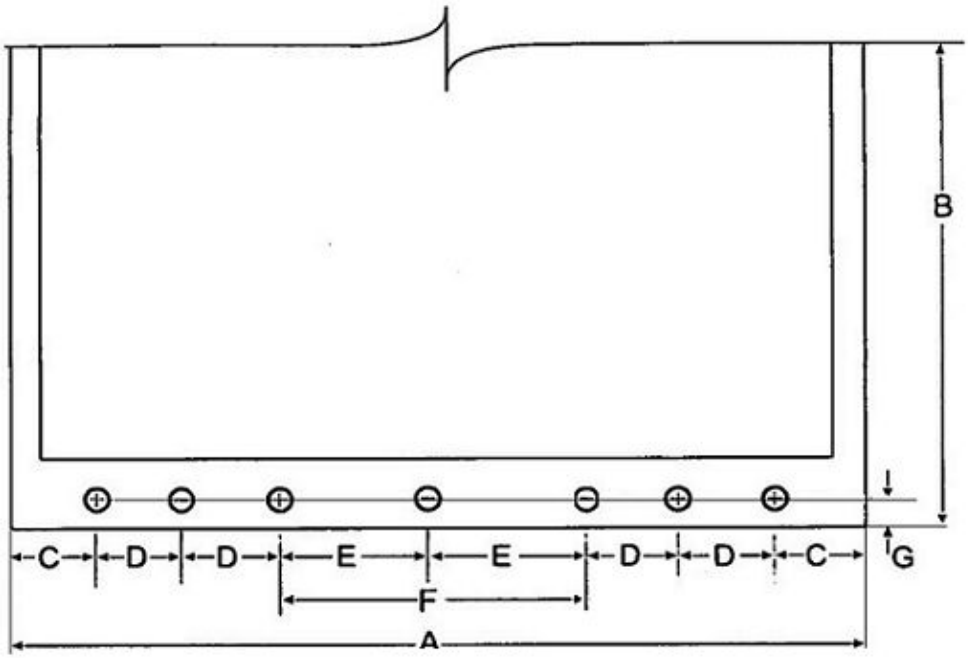
Dimensions
In Inches

Page Size		Hole Placement					
H	J	K	L	M	N	P	Q
6.5	9.5	1.25	3.5	0.75	--	--	0.18'
8.5	11(3 hole)	2	3.5	--	--	--	0.43'
8.5	11(5 hole)	2	3.5	0.75	--	--	0.18'
8.5	11(9 hole)	2	3.5	0.75	0.75	0.75	0.18'
11	17	2	3.5	0.75	--	--	0.37!

X= 0.25
Y= 0.4375

Drilling dimensions for 3,5, and 9 hole manuals.

FIGURE 48. Page hole drilling.



Dimensions
In Inches

Page Size		Hole Placement				
A	B	C	D	E	F	G
7	5.25	0.5	0.75	--	3	0.25
8	4	1	0.75	--	3	0.25
8	4.5	1	1	1	--	0.312
8	5	1	0.75	--	3	0.25
17	11	1.5	2.75	--	2.75	3

NOTE: Holes are 0.25 inch diameter

Drilling dimensions for 6 and 7 hole manuals.

FIGURE 48. Page hole drilling - Continued.

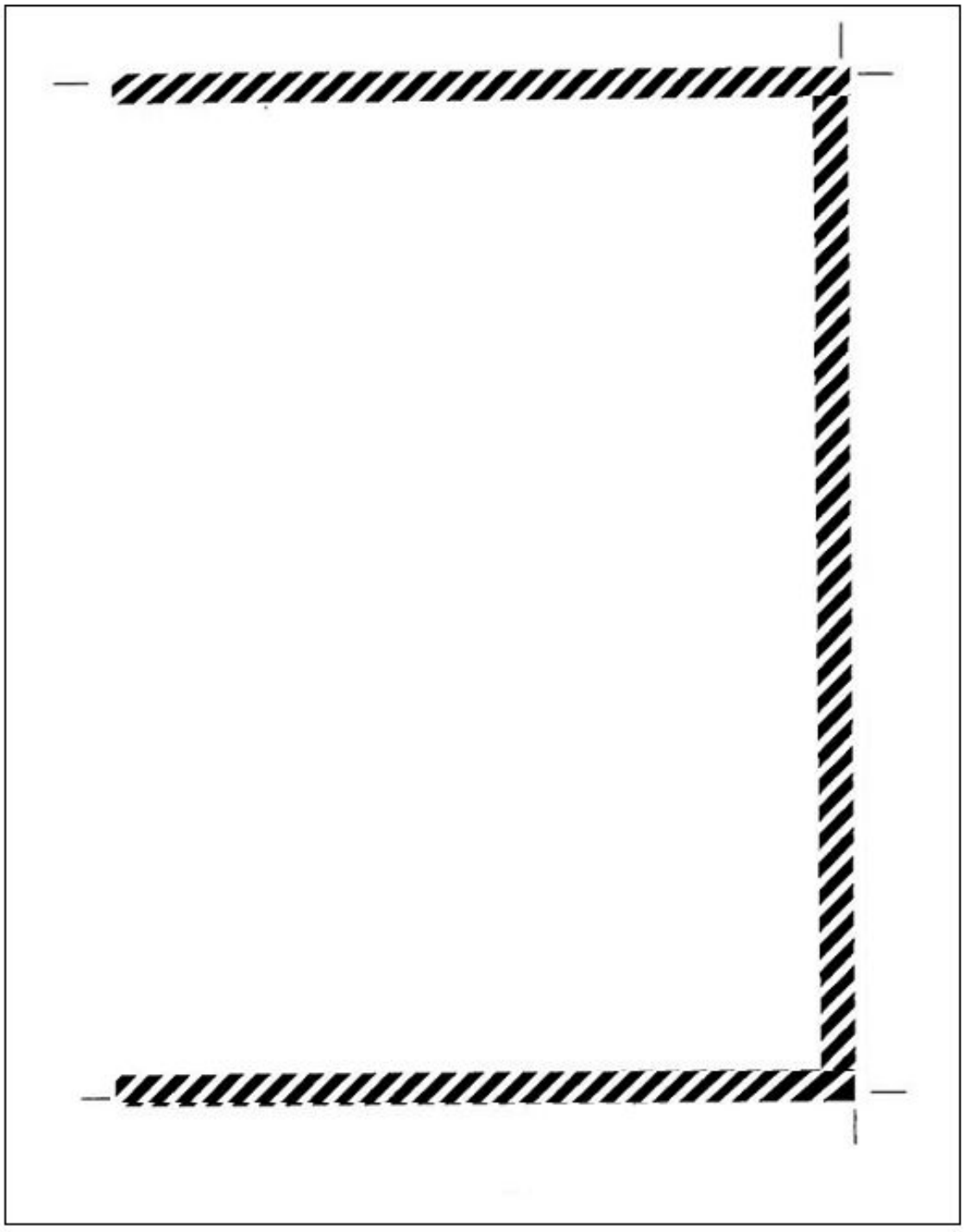


FIGURE 49. Page bleed border imposition.

APPENDIX A

GUIDELINES FOR INCLUSION OF OCCUPATIONAL SAFETY AND HEALTH WARNINGS AND CAUTIONS IN TECHNICAL MANUALS

A.1 SCOPE

A.1.1 Scope. This document includes guidance for the inclusion of Occupational Safety and Health (OSH) guidance in the text of technical manuals. The intent is to provide sufficient information to allow a standardized approach to the task, eliminate some of the confusion, and improve the TM preparation process overall. It does not apply to Flight Manuals. This appendix is a mandatory part of this standard. The information contained herein is intended for compliance.

A.1.2 Philosophy. This standard contains definitions, examples, and general information. This appendix must be used in conjunction with this standard. This appendix contains the following philosophies which are critical to the effective inclusion of OSH guidance in TMs:

a. TMs cannot be made to be stand-alone safety and health documents. They are but one component of a comprehensive safety and health system that includes, among other things, ongoing industrial hygiene programs, ongoing ground and system safety programs, safety education programs, and worker/management involvement. TMs therefore should support, and be supported by, the entire system.

b. The “cry wolf” syndrome definitely applies to WARNINGS in TMs and should be avoided. Simply stated, if you warn about everything, you warn about nothing.

c. Personnel or equipment hazards cannot be controlled strictly through the inclusion of WARNING or CAUTION statements; they are too easily overlooked. Therefore, after exhausting design and engineering considerations, the premium must be on writing effective and safe task procedures. Then WARNINGS and CAUTIONS may be needed to alert and emphasize, but not to provide procedures.

A.2 GENERAL GUIDANCE

A.2.1 Human Factors. TM procedures are subject to being overlooked or circumvented when they are deemed unworkable or impractical. Careful consideration of environmental factors, equipment design or layout, human nature, and other human factors will help ensure the overall integrity of the task procedures.

A.2.2 When to use WARNING/CAUTION statements.

a. As indicated by the definition in this standard, WARNING statements are reserved for the protection of personnel and CAUTION statements are reserved for equipment or system protection. Do not use CAUTIONS for health hazards.

1. WARNINGS and CAUTIONS should be used for those unique conditions, steps or processes that require additional emphasis because of the inherently dangerous nature of the task or the potential for a “surprise” not otherwise readily obvious from the procedure.

2. A WARNING should be used to advise of injury or occupational illness potential, but only based on the reasonable likelihood that the reader's health or safety will be impacted in such a manner as to cause immediate concern and a disabling injury or occupational illness will result if the task procedure or stated precaution are not closely followed. Injury is defined as traumatic bodily harm caused by a single or one day exposure to an external force, toxic substance (usually associated with accidents and spills in work places where the specific agent is not normally in the environment), or physical agent which will result in restricted duty, lost time, or worse. The occupational illness is defined as any abnormal physical condition or disorder, other than one resulting from an injury (as defined above), caused by repeated exposure to chemical, biological, or physical agents associated with the occupational environment which will result in restricted duty, lost time, or worse.

APPENDIX A

3. Specific direction as to which specific procedures require the use of warnings or cautions should be obtained from logistic analysis and system safety. The responsible safety office also should be requested to review TM procedures for compliance with safety concerns.

b. Risk assessment and the related issue of whether or not additional emphasis is required is somewhat subjective. Decisions concerning these issues should be based on as much information as possible including historical mishap data from related systems, research, and the experience of all those involved in the TM preparation process. Often, the latter is the best indicator of the need for additional comment. Through the acquisition phase of major weapon systems, the decision to include a WARNING or CAUTION statement in the text can often be made by consulting the Operating and Support Hazard Analysis (O&SHA) Preliminary Hazard Analysis (PHA).

c. WARNINGS or CAUTIONS are not to be used for environmental protection concerns or security information.

A.2.3 Wording and structure of WARNING/CAUTION statements.

a. A WARNING or CAUTION statement should consist of four parts: a signal word (WARNING, CAUTION, or Icon see 3.2.29, 3.2.4 and 3.2.11), a concise statement of the hazard, minimum precautions, and the possible result if the WARNING or CAUTION is disregarded, unless obvious or as specified by the acquiring activity. In cases where hazardous materials are being used and the conditions in A.2.5.e.2 exist, a hazardous material Icon(s) shall be used. A sample format of these Icons is presented on figure 2 and 3.

1. The signal word will always be included using one of the styles, or similar, referenced in this standard. Whichever style is used, it must be used consistently.

2. The remaining parts can be arranged in any way that gets the point across; however, following the hazard statement first, precaution second, and result third format is often the most clear and concise method. Brevity is important. If the possible result is obvious, it need not be included.

3. A precaution is a short statement of hazard mitigation that tells the reader to take care, e.g., “use eye protection”, or “keep arms and hands clear”. Certain precautions may reference other publications or direct people to consult with another agency (e.g., “...consult Bioenvironmental Engineering”). However, guidance of this nature should be considered for inclusion in a safety summary (see A.2.5).

b. WARNING or CAUTION statements shall never contain procedures critical to the effective and safe completion of the task. For example:

WARNING

Cleaning with compressed air can create airborne particles that may enter eyes or penetrate skin. Pressure shall not exceed 30 psig. Wear goggles. Do not direct compressed air against skin.

In the above example, the statement “Pressure shall not exceed 30 psig.” should not appear in the warning and instead should be part of the procedural steps for the task.

c. Negatively worded statements (e.g., “Failure to adhere.”, or “DO not use.”) are acceptable and sometimes the best way to convey the message.

d. Multiparagraph or excessively long WARNINGS and CAUTIONS are not specifically disallowed by this standard but lengthy statements are a good indication that the task procedures are not written with the needed safety steps or procedures included.

APPENDIX A

e. Pay strict attention to the definitions of “shall”, “will”, “should”, and “may” in this standard. The use of these words must be consistent with exposures or conditions which require comparable WARNINGS or CAUTIONS.

A.2.4 Placement of WARNING/CAUTION statements.

a. This standard contains general requirements.

b. WARNINGS or CAUTIONS should be placed in the text immediately prior to the step or procedure to which they apply. The same WARNING or CAUTION need not be repeated within a procedure as long as the emphasis and impact of the WARNING or CAUTION is not lost because of a break in the procedures.

c. There is no stated maximum on the number of unrelated CAUTIONS or WARNINGS that can be placed on a page. Under no conditions should they be so numerous so as to obscure the procedures. Properly written procedures should eliminate the need for consecutive WARNINGS. Sandwiching short (one line or two line) procedures between WARNINGS and CAUTIONS should be avoided.

A.2.5 Safety summary sheets or sections.

a. All TMs containing warnings or cautions shall have a safety summary. In conjunction with properly written procedures, the safety summary can eliminate the need for many WARNINGS or CAUTIONS which can contain general safety precautions.

b. Provide a safety summary in accordance with this standard in the front of the manual preceding the first text page. The safety summary provided on figures 2 and 3 is only an example of the type, depth, and format of general shop safety information necessary. It is not all inclusive. Only the first two paragraphs (see figures 2 and 3), or similar wording detailing the significance and use of WARNING and CAUTION statements, should be considered common to all safety summaries. Additional paragraphs can be added depending upon the class of hazard found in the TM.

c. Nearly any topic can be considered for inclusion in a safety summary: mechanized material handling equipment; overhead lifting devices; wood or metal working machine use and guarding; etc., General precautions related to storage, etc., can also be included.

d. Safety summaries are an excellent place to provide general safety or health instructions, but they must be tailored to the TM.

1. Live circuitry guidance is probably not applicable to a corrosion control TM. This does not preclude the possibility, however, of a WARNING in the text of a corrosion control TM if the text establishes the likelihood of exposure to injurious current.

2. The converse is also true. It would be appropriate to include live circuitry guidance in the safety summary of an avionics maintenance manual. However, WARNINGS inserted in the text prior to every point of potential current exposure would not be required, as long as the procedures identify the proper controls, e.g., “discharge capacitor XXXXX,” or “... turn off power and tag out (lock out) switch”. It is reasonable to assume a trained avionics maintenance technician is fully aware of the hazards of live circuitry; emphasis beyond a safety summary would be needed only in the event that the equipment, procedures or work environment presented an unusual situation to the technician.

e. Inclusion of general guidance in a safety summary does not preclude the need for a WARNING or CAUTION if the text calls out a nonroutine use or application.

1. For example: in a parts cleaning TM, general guidance in the safety summary related to air pressures (30 psig), chip guarding, eye protection, etc., would suffice as long as the task procedures include the minimum required controls (pressure regulation, etc.) as procedural steps. A CAUTION may still be required, however, if the text specifies 15 psig for a delicate piece of equipment that would be damaged if the technician proceeded under the general guidance included in the safety summary.

APPENDIX A

2. Many industrial hygiene/occupational health concerns can be addressed in the same manner. In TMs that frequently call for routine solvent applications, WARNINGS would not be needed throughout the text as long as the minimum required controls are called for in the task procedures. General guidance regarding solvents could be included in the safety summary. Additional emphasis would then be required only if a procedure calls for a nonroutine application, such as heating the solvent, or an unusual, potentially more toxic solvent. In that event, a WARNING could be used depending on the ability of the process to cause immediate safety or health concerns. This approach can be used for many of the occupational health concerns associated with commonly used substances, e.g., hydraulic fluids, oils, fuels, paints, thinners, adhesives, sealants, etc.

f. WARNINGS or CAUTIONS should not simply be extracted from the text and inserted verbatim in a safety summary. An acceptable approach would be to provide a general summary of guidance, classed by exposure. WARNINGS or CAUTIONS must still be placed in the text, however, based on the risk associated with the steps or procedure.

g. Excessively long safety summaries are discouraged. If a TM requires extensive safety or health guidance, a safety section or chapter should be considered.

h. (F) The above general guidance on safety summaries is also applicable to job guide input conditions pages.

1. General, tailored guidance can be included in the system level job guide as long as the guidance is tailored to the entire system.

2. General information applicable to an entire procedure should be included on the input conditions pages if it applies to the entire procedure covered.

A.3 POINTS OF CONTACT

A.3.1 Coordination. All those involved in the TM preparation process must remember that the OSH guidance included in the TMs is not the only line of defense against serious mishaps but it is sometimes the last. The effective inclusion of OSH guidance can almost never be accomplished by a single individual with a distinct background. It must be a coordinated effort among system experts, safety professionals, technical writers and the potential user. Questions arising from this process should be referred to the appropriate Safety Office and the acquiring activity. Do not ignore existing contractual or command requirements.

A.4 CONSTRUCTION OF HEALTH HAZARD ICONS

A.4.1 Reason for developing the icon. See 3.2.11. Samples of the icons are shown in an example safety summary on figures 2 and 3. The major reason for suggesting the use of icons for hazardous materials is to save space in the manuals, while still conveying a clear message of the hazard to the technician using the manual. Since the icon presents a visual image of the hazard rather than a more abstract message, recognition should be much faster than with a worded warning. The task of the graphic designer, in this case, is to make the icon as small as possible, while maintaining enough quality in the image to provide almost instant recognition. An optimum image height of ½-inch (three lines) has been selected as the best compromise between image quality and space savings. A bold rectangular outline with rounded corners was also selected for the icon. The width of the icon may vary as necessary for image quality while maintaining the height.

APPENDIX B

STANDARD TECHNICAL MANUAL MARKUP LANGUAGE TOOLS

B.1 SCOPE

B.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 B.3). This appendix is a mandatory part of this standard. The information herein is intended for compliance.

B.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 B.3 for information about the DTD specified for this appendix subset.

B.2 DSS

The DSS is comprised of the following tools for authoring and rendering the TM. See B.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 B.3.

B.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see section 4). 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., Standard Generalized Markup Language (SGML), may be obtained through the contacts listed under B.3.

B.2.2 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.

B.3 OBTAINING DSS TOOLS

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

B.3.1.1 AF TMSS website. DTDs, TDTs, and other files in the DSS can be accessed on the TMSS website at https://techdata.wpafb.af.mil/tmss/index.html. On the web page, the “Baseline Tools” menu option in the left pane contains two bulleted options called “Specifications & Digital Support Suites (DSSs)” and “Standards & Digital Support Suites (DSSs)”. Hover the cursor over “Standards & Digital Support Suites (DSSs)” and a listing of the TMSS standards will appear. Hover over the desired standard and another drop down list will appear that contains an entry indicating the PDF version of the standard 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 standard, 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.

B.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:

B.3.2.1 AF TMSS SharePoint website. DTDs, TDTs, and other files in the DSS can be accessed at the AF TMSS SharePoint website: https://usaf.dps.mil/teams/12316/default.aspx.

B.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 or see B.3.4 to obtain information.

B.3.4 TMSS Helpdesk assistance. Address any requests relating to the DSS by e-mail to SGMLSUPPORT@us.af.mil (organizational address: Wright-Patterson AFLCMC/HIS-TMSS Help Desk) or by

APPENDIX B

postal mail to Air Force Technical Manual Specifications and Standards, AFMC/AFLCMC/HIS, 4170 Hebble Creek Road, Building 280, Door 15, Wright-Patterson AFB OH 45433-5653.

B.3.5 (M) Marine Corps DTD. The Marine Corps DTD is USMC-V1 and will be provided at time of contract award.

APPENDIX C

SUPPLEMENTAL TECHNICAL MANUAL MARKUP LANGUAGE TOOLS

C.1 SCOPE

See B.1.

C.2 DSS

See B.2.

C.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 5.4).

C.3 OBTAINING DSS TOOLS

See B.3.

APPENDIX D

TECHNICAL MANUAL SUPPLEMENT MARKUP LANGUAGE TOOLS

D.1 SCOPE

See B.1.

D.2 DSS

See B.2.

D.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 5.4).

D.3 OBTAINING DSS TOOLS

See B.3.

APPENDIX E

BRIEF MANUAL MARKUP LANGUAGE TOOLS

E.1 SCOPE

See B.1.

E.2 DSS

See B.2.

E.2.1 DTD. The DTD provides the structure and content template in accordance with the content specific requirements of this specification (see 5.5).

E.3 OBTAINING DSS TOOLS

See B.3.

INDEX

A

B

C

D

E

F

G

H

I

J

L

M

N

O

P

R

S

T

U

V

W

CONCLUDING MATERIAL

Custodians:
Army - TM
Navy - OS
Air Force - 16

Preparing activity:
Air Force - 16
(Project TMSS-2020-014)

Review activities:
Army - AV, CR
Navy - AS, MC, SH
Air Force - 70, 170, 184

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.