

MIL-T-27018E(USAF)
3 October 1966
 Superseding
 MIL-T-27018D(USAF)
 13 March 1964

MILITARY SPECIFICATION

TECHNICAL MANUAL: WEAPON LOADING PROCEDURES, AIR DEFENSE FIGHTER-INTERCEPTOR AIRCRAFT, PREPARATION OF

1. SCOPE. This specification covers the detail requirements for the preparation of technical manuals for mixed loads of nuclear and nonnuclear air-to-air missiles and rockets on or into air defense (fighter-interceptor) aircraft.
2. APPLICABLE DOCUMENTS. The following documents of the issue in effect on the date of invitation for bids, form a part of this specification to the extent required herein:

SPECIFICATIONS

Military

MIL-M-4410	Technical Manuals: Title Pages, List of Effective Pages, and Reproduction Assembly Sheet, Photolith Negatives; Printing; and Binders
MIL-C-25816	Checklists for Special Weapon Delivery and Loading Technical Manuals, Preparation Of
MIL-M-38730	Technical Manuals: General Requirements for Preparation Of

REGULATIONS

Air Force

205-1	Safeguarding Military Information
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PUBLICATIONS

Technical Orders

T.O. 00-5-1	AF Technical Order System
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(Copies of documents required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 General Requirements

3.1.1 General Manner of Preparation. The general manner of preparation shall be in accordance with MIL-M-4410 and MIL-M-38730 with the exceptions specified herein. In cases where this specification and the general specifications conflict, this specification shall govern. The technical manuals shall be prepared in the form of negatives.

3.1.1.1 Exceptions to MIL-M-38730. The following exceptions to MIL-M-38730 shall apply:

a. Lists. Lists of tables, illustrations, and TCTO's shall not be required.

b. Outline. An outline shall be required for a basic manual; the outline will be reviewed and approved by the responsible engineering agency. An outline may be required for a change/revision.

c. Page Content Headings. Page content headings consisting of specific identification only shall be placed below the T.O. number as specified herein.

d. Illustrations. Illustrations may be used more than once, if necessary, for clarity. Reference to illustrations in the text need not state specifically the purpose of the illustration if the purpose is obvious. Changes to illustrations shall be indicated by change bars.

e. Nomenclature. Nomenclature shall be standardized throughout the manual. If authorized by the responsible engineering agency, nomenclature may be shortened or abbreviated to its common name.

f. Reference to Other Publications. Reference to other pertinent publications may be made. However, references to specific paragraphs or sentences shall not be made. If a small amount of information is needed (one printed page maximum) from another publication, the applicable portion shall be extracted, modified if necessary, and included in the manual. If reference to the entire contents or a major portion of another publication is necessary, the cross reference shall be only to the applicable publication number. However, reference shall not be made to another publication which requires still further reference to a third publication.

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g. Text Presentation. Text for the standard size manuals shall be typed single column, continuous across the page; the right hand margin shall not be justified. A standard office typewriter may be used to prepare reproducible copy. Type size and face shall be consistent within a manual; final size of the type for the text shall be approximately 10 pt. Artwork shall be integrated with the text.

h. Change Bars. In the procedural volume, change bars shall be placed along the right hand side of the text; i.e., between the text of the step and the line for job orienting the step. For illustration changes in the procedural volume, the change bar shall be placed along the left hand side of the illustration. In other portions of the manual and in the checklist, change bars shall be used as stated in MIL-M-38730.

3.1.2 Type of Manual to be Prepared. The manual shall be a multivolume type with checklist(s), consisting of the following:

- | | | |
|-----------------------------------|---|--|
| I - Weapon Loading Data | } | standard size manual, 8 1/4 by 10 3/4 inches |
| II - Weapon Loading Procedures | | |
| III - Weapon Loading Checklist(s) | | 5 by 8 inches |

3.2 Arrangement (I - Weapon Loading Data.) This volume of the manual shall have the following arrangement:

Front Matter
Descriptive Data

3.2.1 Front Matter. The front matter shall contain the following items in the order indicated:

Title Page
List of Effective Pages
Table of Contents
Introduction

3.2.1.1 Title Page. The title page shall be prepared in accordance with the requirements of MIL-M-4410. If the manual is classified, the following documentation shall be used on the title page:

"THIS PUBLICATION CONSISTS OF _____ CLASSIFIED
PAGES OF _____ TOTAL PAGES."

If the manual is Secret or higher,

"COPY NO. _____ OF _____ COPIES" shall be added to the documentation.

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3.2.1.2 List of Effective Pages. The list of effective pages shall be prepared in accordance with the requirements of MIL-M-4410.

3.2.1.3 Table of Contents. The table of contents shall be prepared in accordance with the requirements of MIL-M-38730. The table of contents shall be typed single column. Classified entries may be included if required.

3.2.1.4 Introduction. The introduction shall be prepared in accordance with the requirements of MIL-M-38730. In addition, a list of applicable reference documents and statements concerning deficiency reports and comments shall be included.

3.2.2 Descriptive Data. This volume of the manual shall briefly describe all equipment utilized in the procedures volume of the manual as listed in the following subparagraphs.

3.2.2.1 The aircraft.

3.2.2.2 All weapons covered in the procedures.

3.2.2.3 All pertinent equipment, such as test, loading, handling, and ancillary equipment.

3.2.2.4 All switches used in the loadings.

3.2.3 Notes, cautions, and warnings shall not be used in this volume.

3.2.4 Illustrations of safety wires and seals shall be actual photographs if possible. When line drawings are used, they shall be exact in every detail. Explanation of how to safety wire shall be included.

3.3 Arrangement. (II - Weapon Loading Procedures). This volume of the manual shall have the following arrangement:

Front Matter

Section I - General Requirements

Section II - Emergency Procedures

Sections III, IV, etc. - Load Condition (No.)

Normally one section is used for each load condition; however, procedures for several load conditions may be combined in one section to avoid excessive repetition. This volume shall be unclassified.

3.3.1 Front Matter. Front matter for this volume shall consist of the following items in the order indicated:

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Title Page
List of Effective Pages
Table of Contents
Introduction

3.3.1.1 Title Page. The title page shall be prepared in accordance with the requirements of MIL-M-4410.

3.3.1.2 List of Effective Pages. The list of effective pages shall be prepared in accordance with the requirements of MIL-M-4410.

3.3.1.3 Table of Contents. The table of contents shall be prepared in accordance with the requirements of MIL-M-38730 and shall be typed single column.

3.3.1.4 Introduction. In addition to the requirements of MIL-M-38730, the introduction shall contain brief explanations of the augmenting volumes; definitions of note, caution, and warning; list of applicable references (by number only); statements concerning technical responsibility and submission of deficiency reports and comments; and any other information pertinent to the use of the manual.

3.3.2 Section I - General Requirements. This section shall contain general requirements pertinent to the aircraft/weapons for all load conditions.

3.3.3 Section II - Emergency Procedures. This section shall contain information and procedures relative to emergencies involving the nuclear weapon or to the aircraft with the nuclear weapon aboard. Each page in this section shall have a 1/4-inch black, diagonal-striped bleed border extending approximately 2 inches along each side at the top outer corner.

3.3.4 Section III, etc. - Load Conditions (1), etc. Each section shall normally contain loading and unloading procedures for one load condition. Within each section the unloading procedures shall start on a new page. The definitions of each load condition, number of load conditions, and coverage and placement of any alternate procedures shall be furnished by the responsible engineering agency. Duplicated procedures may be covered by referring to the primary set of procedures in the same load condition. If authorized, procedures for several load conditions may be combined within one section to avoid excessive duplication. Unloading procedures may be covered by reference only.

3.3.4.1 Loading Procedures. Loading procedures shall include step-by-step procedures for loading the weapons on or into the aircraft, from the time the crew reports to the aircraft through loading cleanup. Necessary

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checks and tests on the aircraft and weapons shall be included. Normally, loading procedures shall be presented under the following subheadings:

- Aircraft loading preparation
- Rack/Launcher preparation
- *Missile/Rocket (as applicable) inspection
- *Missile/Rocket (as applicable) loading
- Loading completion

*Use applicable weapon designation: e.g., AIR-2A Inspection.

3.3.4.2 Unloading Procedures. Unloading procedures shall include the step-by-step procedures necessary for unloading the weapons and returning the armament to a configuration for storage or transfer. Necessary checks and tests on the aircraft and weapons shall be included. Normally, the following breakdown shall be used:

- Aircraft unloading preparation
- *Missile/Rocket (as applicable) unloading
- *Missile/Rocket (as applicable) inspection
- Unloading completion

*Use applicable weapon designation; e.g., AIR-2A.

3.3.4.3 Logistic Movement Ferry Procedures. If required, logistic movement procedures for the nuclear weapons shall be included. These procedures may be presented as a separate checklist or as a list of the deviations from the strike procedures. Method of presentation will be directed by the responsible agency.

3.3.4.4 Format for Sections III, etc. The procedures in these sections shall be presented in single-column layout (see figure 1). For illustrated load conditions, illustrations shall be as small as practical, of standard width (approximately 2 inches), and shall be placed on the left hand side of the page. Two small illustrations, such as for cockpit checks, may be placed next to each other, provided their total width does not exceed the standard illustration width. For non-illustrated load conditions, the steps will use the full page width, except for the job-orienting line space. Lines shall be provided at the right hand side of the page for the using organizations to job orient (indicate the crew member(s) who should perform the step) the procedures. The loading and unloading procedures shall start on a new page; other headings do not require a new page. The following format details apply to these sections and to the use of figure 1:

a. For illustrated steps, the text of the step shall be placed beside the illustration.

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b. Notes, cautions, and warnings applicable to steps shall be centered above the text for the step.

c. If several steps apply to the same illustration (e.g., checkout of the rack), these steps shall be placed next to the figure. The steps shall then be identified in the illustration by arrows containing the applicable step numbers. If a step, or two small steps, fall between two illustrations and do not apply to either illustration, the steps shall be centered between the illustrations. They shall retain the same margin as illustrated steps (as indicated by sample step 18 in figure 1).

d. Illustrations shall be placed flush left. Figure numbers and figure titles shall not be used in the procedures.

e. The lines for job-orienting (right hand side of the page) shall be given for each step, opposite the first line of the step.

f. Amplification of a step shall begin on a new line (below the step) and indented to align its left margin with the beginning of the text of the step.

g. A minimum of 1 1/2 spaces shall be left between steps. Directions concerning illustration coverage shall be furnished by the responsible engineering agency.

h. When two illustrations are placed side by side, the applicable steps shall be identified within the illustrations by arrows containing the step numbers.

3.3.4.5 Page Content Headings. Page content headings for the procedure headings shall consist of the load condition (LC) number and procedural title, such as aircraft loading preparation, placed below the T.O. number. When more than one procedural title appears on a page, the last title on the page shall be used in the page content heading.

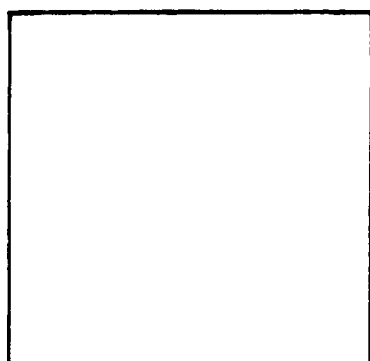
3.4 Arrangement. (III - Loading Checklist). This portion of the manual shall contain checklists for each load condition. The general provisions of MIL-C-25816 shall apply. The following arrangement shall be used:

Front Matter

Emergency Checklist Page	} Either separate checklist T.O.s or one
Checklists	
	T.O. containing separate sections for
	each load condition.

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T.O. IF-89J-16-2
LC-1/AIR-2A Loading



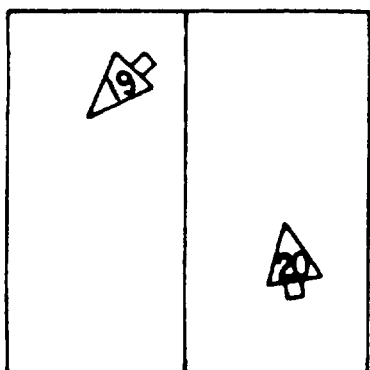
14. Remove and stow rocket aft umbilical receptacle protective cover. _____

15. Connect aft umbilical cable assembly plug to rocket. _____

16. Compress and screw aft umbilical cable assembly adapter nut into rocket aft umbilical receptacle. _____

17. Tighten adapter nut firmly. _____

18. Release aft cradle strap lock and remove strap from around rocket. _____



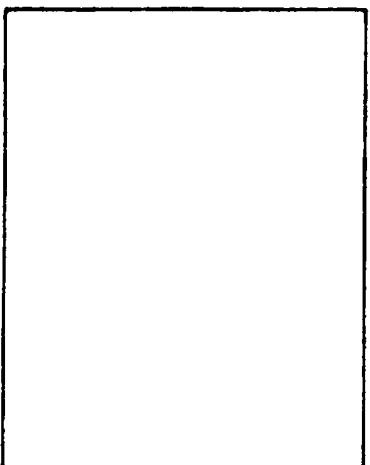
19. Check that launcher latch lock assembly is extended fully aft. _____

20. Aline rocket lugs to engage launcher rails. _____

If required, adjust rocket pitch angle with adjustment crank; position rocket forward or aft with longitudinal adjustment crank or by repositioning trailer (reset trailer brakes).

CAUTION

While performing step 21, care must be taken to guide the umbilical cable assemblies up into the pylon.



21. Raise rocket until forward launch lugs and aft launch lugs are alined with launcher rails. _____

If required, aline forward launch lug with rail by rotating roll brake knob counterclockwise to release brake; rotate rocket by hand, and sight for correct alinement from front of pylon. Then rotate roll brake knob clockwise to lock rocket in position.

FIGURE 1. PROCEDURES PAGE LAYOUT

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3.4.1 Front Matter. The front matter shall consist of the following items in the order indicated:

- Title Page
- List of Effective Pages
- Table of Contents (if required)
- Introduction

3.4.1.1 Title Page. The title page shall be prepared in accordance with the requirements of MIL-M-4410 with the page size adjusted to 5 by 8 inches.

3.4.1.2 List of Effective Pages. The list of effective pages shall be prepared in accordance with the requirements of MIL-M-4410 with the page size adjusted to 5 by 8 inches.

3.4.1.3 Table of Contents. If one T.O. with sections for each load condition is prepared, the table of contents shall list the sectional breakdown, showing the armament covered in each section. If separate checklist T.O.s are prepared, tables of contents are not required.

3.4.1.4 Introduction. The introduction shall contain a brief statement of the purpose, scope, and intended use of the checklists, explanation of abbreviations and definitions; reference to augmenting manuals; and any other relevant information that will aid in using the checklists. The introduction need not start on a new page.

3.4.1.5 Checklist Content. Each section shall contain a complete set of checklists for one load condition, or if authorized, separate checklist T.O.s may be prepared for each load condition or combination of load conditions. Checklists shall be given for loading and unloading, if required. Steps shall be numbered consecutively in arabic numerals within loading and within unloading. Normally the following outline shall apply:

- Emergency Procedures (see figure 2)
- Loading Procedures (see figure 3)
 - Aircraft preparation
 - Missile/Rocket (as applicable) preparation
 - Loading
 - Loading completion
- Unloading Procedures
 - Aircraft unloading preparation
 - Missile/Rocket unloading (as applicable)
 - Missile/Rocket inspection (as applicable)
 - Unloading completion

Normally, checklist headings shall be identical to those used in the procedure volume. If required, logistic movement procedures shall be furnished as a separate checklist T.O.

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5 in.

1/2 inch Clipboard Space

EMERGENCY PROCEDURES

FOR FIRE

1. Fight fire; remove rocket
2. Call _____ and give location _____
3. Evacuate nonessential personnel to 2000 feet
4. Record time flames envelop rocket _____
give to firefighting supervisor
5. Withdraw to 2000 feet within 1 minute after fire
envelops rocket, or after arrival of firefighters,
whichever occurs first

FOR DROP/COLLISION

1. Call _____

8 in.

1/4 inch black diagonal striped bleed border

Text approx. 12 pt.

8 pt. type approx.

T.O. IF-000-16-2CL-1 LC-1 Date 1-1

FIGURE 2. CHECKLIST EMERGENCY PROCEDURES PAGE (TYPICAL)

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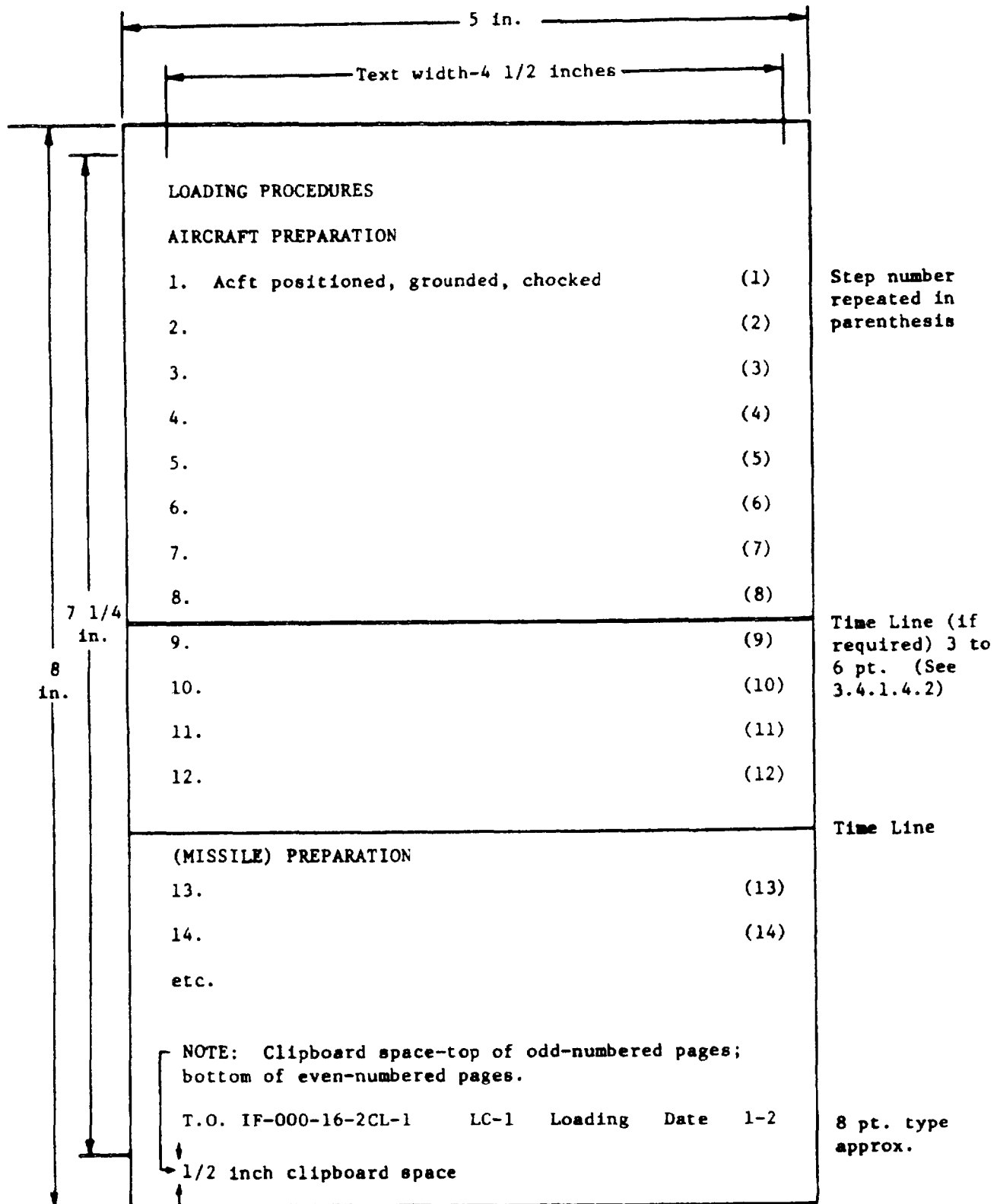


FIGURE 3. CHECKLIST PROCEDURES PAGE (MIL-T-27018E)

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3.4.1.5.1 Time Lines. If required, time lines shall be used in the checklist; each time line shall be 3-6 pt. wide. Data for placement of time lines shall be furnished by the responsible engineering agency.

3.5 Negatives. Negatives shall meet the requirements of MIL-M-4410.

3.6 Maintenance. The manual shall be maintained in accordance with the requirements of MIL-M-38730.

4. QUALITY ASSURANCE PROVISIONS

4.1 Basic Manual and Checklist. Preliminary manuscripts shall be submitted to the responsible engineering agency for review. Comments and corrections resulting from this review shall be incorporated into the review copies.

4.1.2 Review Conference. A review conference shall be held at the contractor's facility, or may be combined with a verification (ref T.O. 00-5-1) at an operation location. Review copies shall contain all data required by this specification and shall be in the form of manuscript (text double spaced) with art. The copy shall be reviewed for technical adequacy and accuracy. Before preparation of reproducible copy is begun, final manuscripts shall be approved for technical content and to ascertain that results of review/verification have been correctly incorporated into the copy.

4.1.3 Review of Reproducible Copy. Prior to preparation of negatives, reproducible copy shall be reviewed by the responsible engineering agency for technical accuracy and conformance to specifications.

4.1.4 Proof Copies. Four proof copies, reproduced from the final negatives by ozalid or other means, shall be forwarded to the responsible engineering agency on or before the date of shipment of the negatives.

4.2 Changes

4.2.1 Preliminary Review. Preliminary drafts of the manuscript for changes shall be submitted to the responsible engineering agency for review. Manuscripts for changes shall be clear and legible and shall include, as a minimum, a listing of existing art work to be used. Any changes in the art or requirements for new art shall be indicated. Comments and corrections resulting from this review shall be returned to the contractor for inclusion in the reproducible copy. If the change requires a verification conference, review copies of the changed data will be required.

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4.2.2 Review of Reproducible Copy and Proof Copies. Reproducible copy of changes shall be reviewed and proof copies furnished as specified for the basic manual.

4.3 Revisions. Revisions shall normally be prepared, reviewed and approved, and proof copies furnished as specified for the basic manual. Printed copies of the previous issue of the manual may be used for review/verification.

4.4 Negatives. Negatives shall meet the requirements of MIL-M-4410. In addition, checklist negatives shall meet the size requirements of MIL-C-25816.

5. PREPARATION FOR DELIVERY

5.1 Negatives. Negatives shall be prepared for shipment in accordance with MIL-M-4410.

5.2 Security Provisions. All shipments shall observe the applicable provisions of AFR 205-1.

6. NOTES

6.1 Intended Use. Technical manuals prepared according to this specification are for the use in mixed loads of nuclear and nonnuclear air-to-air missiles and rockets from fighter-interceptor (air defense) aircraft.

6.2 Responsible Engineering Agency. The Air Force Weapons Laboratory is the responsible engineering agency for nuclear weapon data in technical manuals prepared according to this specification.

Custodian
Air Force - 15

Preparing Activity
Air Force - 15

WLIR
EAC/EO

SPECIFICATION ANALYSIS SHEET		Form Approved Budget Bureau No. 119-R004
<p style="text-align: center;">INSTRUCTIONS</p> <p>This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity (as indicated on reverse hereof).</p>		
SPECIFICATION		
ORGANIZATION (of submitter)		CITY AND STATE
CONTRACT NO.	QUANTITY OF ITEMS PROCURED	DOLLAR AMOUNT \$
MATERIAL PROCURED UNDER A		
<input type="checkbox"/> DIRECT GOVERNMENT CONTRACT <input type="checkbox"/> SUBCONTRACT		
1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?		
A. GIVE PARAGRAPH NUMBER AND WORDING.		
B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.		
2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID		
3. IS THE SPECIFICATION RESTRICTIVE?		
<input type="checkbox"/> YES <input type="checkbox"/> NO IF "YES", IN WHAT WAY?		
4. REMARKS (Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)		
SUBMITTED BY (Printed or typed name and activity)		DATE

FOLD

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