

**TECHNICAL MANUAL**

**GENERAL SUPPORT MAINTENANCE MANUAL**

**(INCLUDING REPAIR PARTS AND**

**SPECIAL TOOLS LIST)**

**FOR**

**WARHEAD SECTION, GUIDED**

**MISSILE: HIGH EXPLOSIVE,**

**M251 (NSN 1336-00-123-8072)**

**AND**

**M251A1 (NSN 1336-01-095-0131)**

**AND**

**WARHEAD SECTION, GUIDED**

**MISSILE: TRAINING,**

**M201 (NSN 6920-00-933-2532)**

**This copy is a reprint which includes current pages from Changes 1 through 3.**

Change )  
 )  
No. 4 )

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, DC, 20 May 1994

**TECHNICAL MANUAL  
INTERMEDIATE GENERAL SUPPORT MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)  
FOR  
WARHEAD SECTION, GUIDED MISSILE: HIGH EXPLOSIVE  
M251 (NSN 1336-00-123-8072)  
AND  
M251A1 (NSN 1336-01-095-0131)  
AND  
WARHEAD SECTION, GUIDED MISSILE: TRAINING  
M201 (NSN 6920-00-933-2532)**

TM 9-1336-489-40&P, 14 May 1982, is changed as follows:

1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Added or revised illustrations are indicated by a vertical bar adjacent to the identification number. When an entire appendix is added or revised, the vertical bar will be adjacent to the title only.

Remove pages

A and B  
4-9 and 4-10  
C-1 thru C-6

Insert pages

A and B  
4-9 and 4-10  
C-1 thru C-6

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

By Order of the Secretary of the Army:

GORDON R. SULLIVAN  
*General, United States Army  
Chief of Staff*

Official:

MILTON H. HAMILTON  
*Administrative Assistant to the  
Secretary of the Army*  
06198

Distribution:

To be distributed in accordance with DA Form 12-32 E, Block #0582, requirements for TM 9-1336-489-40&P

CHANGE  
NO. 3



TM 9-1336-489-40&P  
C3

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, DC, 16 June 1986

**TECHNICAL MANUAL  
INTERMEDIATE GENERAL SUPPORT MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)  
FOR  
WARHEAD SECTION, GUIDED MISSILE:  
HIGH EXPLOSIVE  
M251 (NSN 1336-00-123-8072)  
AND  
M251A1 (NSN 1336-01-095-0131)  
AND  
WARHEAD SECTION, GUIDED MISSILE:  
TRAINING  
M201 (NSN 6920-00-933-2532)**

TM 9-1336-489-40&P, 14 May 1982, is changed as follows:

Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Added or revised illustrations are indicated by a vertical bar adjacent to the identification number. The TM title on this change sheet has been updated to agree with MRSA letter dated 25 July 1985. The revised title is applicable throughout this manual.

Remove pages

A  
i and ii  
4-1 and 4-2  
B-3 and 13-4  
B-7 and 13-8

Insert pages

A  
i and ii  
4-1 and 4-2  
13-3 and B-4  
B-7 and 13-8

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

By Order of the Secretary of the Army:

JOHN A. WICKIAM, JR.  
*General, United States Army  
Chief of Staff*

Official:

R.L. DILWORTH  
*Brigadier General, United States Army  
The Adjutant General*

Distribution:

To be distributed in accordance with DA Form 12-32-R, Organizational Maintenance requirements for LANCE Missile System.

CHANGE }  
NO. 2 }

TM 9-1336-489-40&P  
C2

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, DC, 31 December 1984

TECHNICAL MANUAL  
GENERAL SUPPORT MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)  
FOR  
WARHEAD SECTION, GUIDED MISSILE:  
HIGH EXPLOSIVE,  
M251 (NSN 1336-00-123-8072)  
AND  
M251A1 (NSN 1336-01-095-0131)  
AND  
WARHEAD SECTION, GUIDED MISSILE:  
TRAINING  
M201 (NSN 6920-00-933-2532)

TM 9-1336-489-40&P, 14 May 1982, is changed as follows:

1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Added or revised illustrations are indicated by a vertical bar adjacent to the identification number.

*Remove pages*

A  
i and ii  
1-1 and 1-2  
3-1 thru 3-4  
4-1 thru 4-4  
4-9 and 4-10  
A-1 (A-2 blank)  
B-1 thru B-6  
C-1 and C-2

*Insert pages*

A  
i and ii  
1-1 and 1-2  
3-1 thru 3-4  
4-1 thru 4-4  
4-9 and 4-10  
A-1 (A-2 blank)  
B-1 thru B-6  
C-1 and C-2

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

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.  
*General, United States Army*  
*Chief of Staff*

Official:

ROBERT M. JOYCE  
*Major General, United States Army*  
*The Adjutant General*

Distribution:

To be distributed in accordance with DA Form 12-31, General Support Maintenance requirements for LANCE Missile System.

CHANGE }  
NO. 1 }

TM 9-1336-489-40&P  
C1

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
Washington, DC, 10 Oct 1983

**TECHNICAL MANUAL  
GENERAL SUPPORT MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS AND  
SPECIAL TOOLS LIST)  
FOR  
WARHEAD SECTION, GUIDED MISSILE:  
HIGH EXPLOSIVE,  
M251 (NSN 1336-00-123-8072)  
AND  
M251A1 (NSN 1336-01-095-0131)  
AND  
WARHEAD SECTION, GUIDED MISSILE:  
TRAINING,  
M201 (NSN 6920-00-933-2532)**

TM 9-1336-489-40&P, 14 May 1982, is changed as follows:

1. Remove old page and insert new pages as indicated below. New or changed material is indicated by vertical bar in the margin of the page. Added or revised illustrations are, indicated by a vertical bar adjacent to the identification number.

Remove pages

None  
3-1 thru 3-4  
4-1 and 4-2  
4-9 thru 4-12  
B-3 and B-4  
C-1 and C-2

Insert pages

A  
3-1 thru 3-4  
4-1 and 4-2  
4-9 thru 4-12  
B-3 and B-4  
C-1 and C-2

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

By Order of the Secretary of the Army:

Official:

ROBERT M. JOYCE  
*Major General, United States Army  
The Adjutant General*

JOHN A. WICKHAM, JR.  
*General, United States Army'  
Chief of Staff*

DISTRIBUTION:

To be distributed in accordance with DA form 12-31, General Support Maintenance requirements for LANCE Missile System.

LIST OF EFFECTIVE PAGES

When applicable, insert latest change pages and dispose of superseded pages in accordance with applicable regulations.

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 56  
CONSISTING OF THE FOLLOWING:

<i>Page No.</i>	<i>*Change No.</i>	<i>Page No.</i>	<i>Change No.</i>
Cover	0	4-9	4
A and B	4	4-10 thru 4-12	1
i	3	A-1	2
ii and iii	0	A-2 blank	0
iv blank	0	B-1 and B-2	2
1-1 and 1-2	2	B-3	3
2-1	0	B-4 thru B-6	2
2-2 blank	0	B-7	0
3-1	1	B-8	3
3-2	2	B-9 thru B-13	0
3-3	1	B-14 blank	0
3-4	2	C-1 thru C-6	4
3-5 and 3-6	0	D-1 thru D-7	0
4-1 and 4-2	3	D-8 blank	0
4-3	2	Authentication Page	0
4-4 thru 4-8	0		

\* Zero indicates an original page.

**Change 4 A**

**THIS PAGE INTENTIONALLY LEFT BLANK**

**Change 4 B**

HEADQUARTERS  
 DEPARTMENT OF THE ARMY  
 WASHINGTON, DC, 14 May 1982

**INTERMEDIATE GENERAL SUPPORT MAINTENANCE MANUAL  
 (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)  
 FOR  
 WARHEAD SECTION, GUIDED MISSILE:  
 HIGH EXPLOSIVE, M251  
 (NSN 1336-00-123-8072)  
 AND  
 M251A1  
 (NSN 1336-01-095-0131)  
 AND  
 WARHEAD SECTION, GUIDED MISSILE:  
 TRAINING, M201  
 (NSN 6920-00-933-2532)**

**REPORTING OF ERRORS**

You can help improve this manual. If you find any mistakes or know of a way to improve the procedures, please let us know. Mail your DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMCMAY-T (D), Dover, NJ 07801-5001. A reply will be furnished to you.

			Paragraph	Page
CHAPTER	1.	INTRODUCTION		
Section	I.	General		
		Scope .....	1-1	1-1
		Forms, records, and reports .....	1-2	1-1
		Description and Data.....	1-3	1-2
	II.	Safety Precautions		
		General precautions.....	1-4	1-2
	III.	Storage, Storage Monitoring, Storage Inspection General .....	1-5	1-2
CHAPTER	2.	TOOLS AND EQUIPMENT		
		General.....	2-1	2-1
		Repair parts .....	2-2	2-1
		Common tools and equipment .....	2-3	2-1
		Special equipment .....	2-4	2-1

\*This manual supersedes TM 9-1336-489-40&P, 11 April 1975, including all changes.



		Paragraph	Page
CHAPTER	3.	INSPECTION REQUIREMENTS	
Section	I.	General	
		Purpose of inspection.....	3-1 3-1
		Ammunition surveillance program.....	3-2 3-1
		Inspections.....	3-3 3-1
		Inspection methods.....	3-4 3-2
		Extent of inspections.....	3-5 3-2
	II.	Classification of Material Defects	
		General.....	3-6 3-2
		In-process and final inspection.....	3-7 3-2
		Disposition.....	3-8 3-2
CHAPTER	4.	MAINTENANCE PROCEDURES	
Section	I.	INTRODUCTION	
		General.....	4-1 4-1
		Disposition instructions.....	4-2 4-1
		Disassembly and assembly procedures.....	4-3 4-1
		Replacement of parts.....	4-4 4-1
		Cleaning.....	4-5 4-1
		Preservation.....	4-6 4-1
	II.	Preparation	
		General.....	4-7 4-1
		Placing warhead section on Lance maintenance stand.....	4-8 4-2
	III.	Repair of Warhead Sections	
		M816 fuze replacement(M201 warhead section only).....	4-9 4-2
		Electronic shielding gasket (knitted wire mesh Rfseal,M251 and M251only)...	4-10 4-3
		Headless shoulder pins.....	4-11 4-3
	IV.	Shipping and Storage Container Repairs	
		General.....	4-12 4-3
		Forklift slots and dents.....	4-13 4-3
		Stacking bracket and cover lift bar.....	4-14 4-5
		Container lifting bar.....	4-15 4-5
		Wooden runner.....	4-16 4-5
		Strap assembly.....	4-17 4-5
		Shear mount.....	4-18 4-6
		Closure pin and chain assembly.....	4-19 4-6
		Guide pin.....	4-20 4-9
	V.	Painting and Marking	
		Paint removal.....	4-21 4-9
		Preparation.....	4-22 4-9
		Painting and marking.....	4-23 4-9
		Repackaging.....	4-24 4-12
APPENDIX	A.	REFERENCES.....	A-1
	B.	REPAIR PARTS AND SPECIAL TOOLS LIST.....	B-1
	C.	EXPENDABLES SUPPLIES.....	C-1
	D.	ILLUSTRATED LIST OF MANUFACTURED ITEMS.....	D-1

LIST OF ILLUSTRATIONS

Figure No.	Title	Page
3-1	Inspection requirements for resilient mounts.....	3-5
4-1	Warhead section fuze to give area .....	4-2
4-2	Stacking bracket and lift handles .....	4-4
4-3	Shipping and storage container.....	4-5
4-4	Shipping and storage container M544.....	4-7
4-5	Container base assembly-aft end.....	4-8
4-6	Warhead sections M251 and M251A1-painting and marking.....	4-10
4-7	Shipping and storage container M544-painting and marking .....	4-11
4-8	Warhead section M201-painting and marking .....	4-12
B-1	Warhead section-electronic time guided-missile fuze and rocket to give.....	B-8
B-2	Warhead section-aft ring assembly and skin assembly .....	B-9
B-3	Shipping and storage container-cover assembly and base assembly .....	B-10
B-4	Shipping and storage container-suspension frame assembly (strap assembly) and saddle cushion.....	B-11
B-5	Shipping and storage container-suspension frame assembly (shear mount).....	B-12
B-6	Beam-type sling, M22.....	B-13
B-7	H4244 wrench.....	B-13
B-8	LANCE maintenance stand.....	B-13
D-1	Electronic shielding gasket, part No. 9267740.....	D-1
D-2	Indexing angle, part No. 9211162 .....	D-2
D-3	Lifting bar pin, part No. 9219994.....	D-2
D-4	Guide pin, part No. 9211152.....	D-3
D-5	Skid stop, right, part No. 9211158-1.....	D-4
D-6	Skid stop, left, part No. 9211158-2.....	D-5
D-7	Wooden runner, part No. 9211127.....	D-6
D-8	LANCE maintenance stand.....	D-7

## CHAPTER 1

## INTRODUCTION

## Section I. GENERAL

**1-1. Scope**

a. This manual contains instructions for the information of personnel responsible for general support (GS) maintenance of the high explosive guided missile warhead section M251, the high explosive guided missile warhead section M251A1, and the training guided missile warhead section M201. These instructions contain information on maintenance which is beyond the scope of tools, equipment, or supplies normally available to user units.

**NOTE**

**All procedures in this manual pertain to general support personnel only. There are no direct support responsibilities for these warhead sections.**

b. Information in this manual is to be used in conjunction with, and is supplementary to, information in the operator and organizational maintenance manual TM 9-1336-489-12&P.

c. The instructions in this manual are intended for GS maintenance specialists who have been thoroughly trained in maintenance practices.

d. Appendix A contains a list of current references including supply and technical manuals, forms, and other available authorized publications applicable to this materiel.

e. Appendix B contains a list of repair parts and special tools that are required to perform GS maintenance of this materiel. Illustration references prefixed with B (e.g., fig. B-1, fig. B-2, etc.) refer to illustrations in appendix B, Repair Parts and Special Tools List.

f. Appendix C contains a list of expendable supplies authorized for cleaning, preservation, painting, marking, and other maintenance related operations.

g. Appendix D contains an illustrated list of items authorized to be manufactured at General Support Maintenance level.

**1-2. Forms, Records, and Reports**

a. *General.* Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750. Lot numbers of the affected items will be included in all reports. The forms required by using units issued this warhead

section are listed in Appendix A. For a listing of all forms, refer to the current DA Pam 310-1.

b. *Field Report of Accidents.* Any accident involving injury to personnel or damage to materiel will be reported on DA Form 285 (Accident Report) in accordance with AR 385-40.

c. *Malfunctions Involving Ammunition or Explosives.*

(1) A malfunction is defined as the failure of an ammunition item to function in accordance with the design, intent, and expected performance when fired, launched, or when explosive components function during a non-functional test. Malfunctions do not include accidents and incidents resulting from negligence, malpractice, or implications in other situations such as vehicle accidents, fires, etc.. However, malfunctions do include abnormal or premature function of an ammunition item as a result of normal handling, maintenance, storage, transportation, and tactical deployment.

(2) The commanding officer or senior individual in charge of the activity will immediately contact the officer under whose supervision the ammunition for the activity is maintained or issued, and will report all available facts concerning the malfunction as prescribed in AR 75-1.

d. *Report of Damaged or Improper Shipment.* All shipments of these warhead sections received in damaged or unsatisfactory condition because of deficiencies in preservation, packaging, marking, loading, storage, or handling will be reported on SF 364 (Report of Discrepancy) in accordance with AR 735-11-2 and/or SF 361 (Discrepancy in Shipment Report) in accordance with AR 55-38.

e. *Disposition of Unserviceable Ammunition and Components.* An ammunition condition report will be submitted on all unserviceable ammunition components in order that appropriate disposition instructions may be issued. The report will be prepared on DA Form 2415 (Ammunition Condition Report) in accordance with DA PAM 738-750. Multiple reports of a similar nature can also be submitted on the same DA Form 2415.

f. *Equipment Improvement Recommendations.* Standard Form 368 (Quality Deficiency Report) will be used to submit equipment improvement recommendation (EIR's) in accordance with DA PAM 738-750.

*g. Inspection and Maintenance Records.*

(1) Records of inspections and maintenance will be maintained on DA Form 2409 (Equipment Maintenance Log (Consolidated)) or other applicable documents, as required. This record provides a complete inspection and maintenance history of the munition. When there is a change of custody of warhead sections, these records will be forwarded to the organization receiving the warhead sections.

**NOTE**

**Equipment Maintenance Logs are not stored inside containers since some inspections do not require opening containers.**

(2) The record will be prepared in accordance with DA PAM 738-750 except as follows:

(a) Block 7--Change title to read: LOT NUMBER. Enter lot number.

(b) Blocks 4, 8, 10, 11 and 12--leave blank.

(c) Section C--Use columns a through d.

(d) insert organization designation in section B when warhead section is transferred to another organization.

(3) When the DA Form 2409 is completely filled, a photostatic copy will be forwarded to Headquarters, U.S. Army Armament, Munitions and

Chemical Command, ATTN: AMSMC-DSM-B (D), Dover, New Jersey 07801-5001. A new DA Form 2409 will be used as a continuation sheet. As each form is filled, a copy will be forwarded to the above address. When the warhead section is expended, the completed original form(s) will be forwarded to the above address as soon as tactically feasible.

*h. Data Card* A data card is prepared for each lot of ammunition. The data cards will not physically accompany shipments from the manufacturer, but will be shipped separately. Master data card files will be maintained at U.S. Army Armament, Munitions and Chemical Command, ATTN: AMSMC-QAD (R), Rock Island, Illinois 61299-6000, and distributed as required. These cards are used to record the lot and serial numbers of the warhead sections, the lot and serial number of each major component, applicable drawings, and other pertinent data such as date of manufacture, National Stock Number and applicable instructions or remarks, when required.

**1-3. Description and Data**

Refer to TM 9-1336-489-12&P for a description of, and tabulated data pertaining to, the warhead sections, components, and the shipping and storage container.

**Section II. SAFETY PRECAUTIONS**

**1-4. General Precautions**

**WARNING**

**Refer to TM 9-1336-489-12&P for safety precautions. There are no safety precautions peculiar to general support maintenance.**

**Section III. STORAGE, STORAGE MONITORING, STORAGE INSPECTION**

**1-5. General**

Procedures outlined in TM 9-1336-489-12&P pertain to General Support Maintenance Units.

## CHAPTER 2

### TOOLS AND EQUIPMENT

---

#### 2-1. General

Repair parts, tools, and equipment are issued to the maintenance organizations for maintaining the warhead sections M251, M251A1, and M201. Tools and equipment should not be used for purposes other than those prescribed and, when not in use, should be stored properly. The use of unauthorized tools and equipment could damage the material.

#### 2-2. Repair Parts

Repair parts are supplied to the maintenance organizations for replacement of those parts that become worn, broken, or otherwise unserviceable. These repair parts are listed in appendix B, which is the authority for requisitioning.

#### 2-3. Common Tools and Equipment

Standard and commonly used tools and equipment having general application to the warhead section are authorized for issue by tables of organization and equipment or by tables of allowances.

#### 2-4. Special Equipment

Special equipment authorized for issue to maintenance personnel for use with warhead sections is listed in appendix B. A brief description is given below.

a. *Beam-Type Sling M22* (fig. B-6). Refer to TM 9-1336-489-12&P for instructions in the use of the beam-type sling M22.

b. *Wrench H4244* (fig. B-7). The open end wrench H4244 is used to disengage or engage the TEE-Head bolts of the shipping and storage container M544.

c. *Lance Maintenance Stand* (fig. B-8).

(1) The LANCE maintenance stand is fabricated locally by GS maintenance personnel. It is used to support the warhead section for maintenance work. This stand is fabricated of wood in accordance with instructions found in appendix D.

(2) Units authorized and equipped with the H4243 handling stand may use it as an alternate for the LANCE maintenance stand. Refer to TM 9-1190-281-14 for instructions in the use of the H4243 stand.

## CHAPTER 3

## INSPECTION REQUIREMENTS

## Section I. GENERAL

**3-1. Purpose of Inspection**

a. Inspection criteria contained in this publication are provided to assure that all maintenance performed will restore the item(s) to an acceptable quality level and to assure safety in storage.

b. A complete plan of all maintenance work is required. Prepare standing operating procedures (SOP) that contain detailed production techniques, standards, and controls necessary to produce a quality product. Refer to TM 9-1300-250 for planning procedures and (SOP) preparation.

**3-2. Ammunition Surveillance Program**

Surveillance includes those actions necessary to evaluate the current degree of serviceability of ammunition. See AR 702-6, AR 740-1, AR 702-12, and SB 742-1 for policy, responsibilities, and procedures applicable to the Ammunition Surveillance and Quality Evaluation Program.

**3-3. Inspections***a. Serviceability.*

(1) Ammunition items will be inspected by a quality assurance specialist (ammunition surveillance) or MOS 55 X 40 personnel under the guidance of a quality assurance specialist (ammunition surveillance) to determine serviceability or unserviceability.

(2) Required maintenance for unserviceable materiel will be indicated on the inspection report.

*(a) Initial receipt inspection.* Warhead sections received directly from a manufacturer, storage installation or depot will be inspected upon receipt according to the criteria listed in table 3-1. This inspection will be performed on a sample of the new material. The sample size and acceptance criteria will be according to table 4-1 of TM 9-1336489-12&P, the inspection lot will not exceed 100 warhead sections and will consist of items with identical stock numbers, manufactured under similar conditions and stored under similar conditions and time periods. All items found with critical defects will be disposed of as directed in table 3-1 and reported in accordance with paragraphs 1-2e and 1-2g. Disposition of remaining items will be in accordance with paragraph 3-8.

*(b) Receipt inspection (turn in from users).* This inspection is required upon receipt of items turned in from using units to determine if the items are ready for re-issue or require maintenance. All containers which have been opened and resealed by using units will be thoroughly inspected in accordance with all inspections listed in table 3-1 for both container and warhead section. If seals of the original manufacturer, storage installation, or depot have not been broken, perform only a visual inspection of the outer container in accordance with table 3-1. However, if conditions are found which indicate further inspection is necessary, such as structural damage, major corrosion, etc., proceed to open the containers and perform all inspections listed in table 3-1. Items found with critical defects will be disposed of as directed in table 3-1 and reported in accordance with paragraphs 1-2e and 1-2g. Disposition of remaining items will be in accordance with paragraph 3-8.

*(c) Pre-issue inspection.* When warhead sections are to be issued and the lot has not been inspected within the past six months (either initial receipt or storage inspection), or the QASAS in charge determines that additional inspection is required prior to release, pre-issue inspection will be performed. The inspection method and disposition shall be in accordance with storage inspection procedures described in TM 9-1336-489-12&P.

*b. Premaintenance.* At the unpack operation, prior to rework, ammunition items will be screened 100 percent. GS personnel will perform premaintenance screening, which will include the following:

(1) All items with critical nonfunctional defects (those which may be determined without the aid of function testing) will be separated from the quantity to be maintained and disposed of as directed in table 3-1. Destruction will be reported in accordance with paragraphs 1-2e and 1-2g.

(2) All items with defects, as listed in table 3-1, will be corrected during maintenance.

(3) Other evidence of poor workmanship or defects that could cause accelerated deterioration or

adversely affect the function of the items will be corrected

*c. In-Process.*

(1) In-process inspections are an integral part of the maintenance procedures to assure that previous work is adequate and acceptable prior to proceeding with further operations.

(2) Since these inspections are part of the maintenance procedures contained in chapter 4, they will not be specifically covered in this chapter.

*d. Final Acceptance.*

(1) Ammunition items will be inspected after maintenance has been completed. The final acceptance inspection will determine whether or not maintenance accomplished has returned unserviceable munitions to an acceptable condition.

(2) Quality assurance specialist (ammunition surveillance) or MOS 55 X 40 personnel under the

guidance of a quality assurance specialist (ammunition surveillance) will perform this inspection prior to returning the material to its storage area.

**3-4. Inspection Methods**

*a. Visual Inspection.* Careful observation of item, noting listed defects and any other abnormalities.

*b. Manual Inspection.* Movement by hand of specified area of item to determine if listed defect(s) exist (e.g., incorrect loose part).

*c. Gage Inspection.* Checking an item with a measuring instrument to determine if its size is acceptable in certain critical areas. Defects are derived from predetermined standards.

**3-5. Extent of Inspections**

All processed items will be subjected to in-process inspections and a final acceptance inspection.

**Section II. CLASSIFICATION OF MATERIAL DEFECTS**

**3-6. General**

Ammunition and packaging defects are listed by category and method of inspection in table 3-1. Categories of defects are defined in SB 742-1. An acceptable quality level (AQL) is not defined in SB 742-1 for defects in warhead sections and containers being inspected during maintenance operations.

**3-7. In-Process and Final Inspection**

*a.* All items (warhead sections and containers) processed will be subject to in-process and 100 percent final inspection to assure acceptability.

*b.* In-process and final inspections will be included as an integral part of all maintenance procedures.

**3-8. Disposition**

*a.* Each item that contains no major defects listed in table 3-1 is acceptable for issue and use. Items with minor defects may be issued, but defects should be corrected, if feasible.

*b.* Items found with defects will be reworked within the capability of the unit as specified in the Maintenance Allocation (IAC) Chart.

*c.* When required maintenance is beyond the capability of the unit, request disposition instructions (DA Form 2415) per IDA PAM 738-750 through ammunition maintenance channels.

*d.* Any maintenance operation which results in a change to the information on the lot ammunition data card requires the addition of an alphabetic suffix to the lot number. Lot suffixes for each lot or operation will be obtained through ammunition maintenance channels.

**Table 3-1. Classification of Material Defects Shipping and Storage Container M544**

Component	Category	Defect	Method of inspection	Corrective action
Outer container	Minor	Lead seals not in place or broken.	Visual	Para 4-24
	Major	Cover lift bars/stacking brackets, cracked, broken or loose.	Visual/Manual	Para 4-14
	Major	Container lift bars cracked, broken, loose.	Visual/Manual	Para 4-15
	Major	Markings not in agreement with figure 4-7: or illegible.	Visual	Para 4-23
	Major	Forklift slots or forklift handling brackets unserviceable.	Visual	Para 4-13
	Minor	FEE head bolt threads not coated with thin protective coating of primer.	Visual	Para 4-6, <i>a</i> and <i>b</i>

**Table 3-1. Classification of Material Defects-Continued**

Component	Category	Defect	Method of inspection	Corrective action
Outer container-Continued	Minor	Cracks up to 5 inches long which extend through wooden runner.	Visual/ gage	TM 9-1336-489-12&P
	Major	Cracks more than 5 inches long which extend through wooden runner. Corrugated fasteners on bottom surface of wooden runner. Wooden runner broken or worn more than 113 of load bearing surface.	Visual gage	Para 4-16
	Major	Wooden runner loose or improperly installed	Visual/ Manual	TM 9-1339-489-12&P
	Major	Peeling or inadequate paint.	Visual	Para 4-21,4-22, 4-23.
	Minor	Scratches.	Visual	TM 9-1336-489-12&P
	Major	Stacking bolts missing/unserviceable.	Visual	TM 9-1336-489-12&P
	Major	TEE-Head bolts missing/unserviceable.	Visual	TM 9-1336-489-12&P
	Minor	Spring-tension clips missing/unserviceable.	Visual/ Manual	TM 9-1336-489-12&P
	Major	Corrosion causing pitting and perforations.	Visual	Para 3-8c
	Minor	Corrosion which can be removed.	Visual	TM 9-1336-489-12&P
	Minor	Fungus or foreign material.	Visual	TM 9-1336-489-12&P
	Major	Punctures. Dents of any size which impair structural integrity of container.	Visual	Para 3-8c
Major	Dents greater than 1/2 inch in depth and greater than 10 square inches in area which do not impair the structural integrity of the container and which can be removed.	Visual/ gage	Para 4-13	
Inner container and flange area	Minor	Guide pins bent/missing/broken.	Visual	Para 4-20 also TM 9-1336-489-12&P
	Major	Drain holes clogged.	Visual	TM 9-1336-489-12&P
	Major	Forward retaining straps/cushions unserviceable/missing, chain/safety pin missing.	Visual/ manual	Para 4-17 and 4-19. also TM 9-1336-489-12&P
	Major	Suspension frame/shear mounts/attaching hardware unserviceable/missing.	See figure 3-1	Para 4-18
	Major	Aft support plate loose.	Visual/ manual	TM 9-1336-489-12&P
	Major	Corrosion causing pitting and perforations.	Visual	Para 3-8c
	Minor	Corrosion which can be removed.	Visual	TM 9-1336-489-12&P
	Minor	Fungus or foreign material.	Visual	TM 9-1336-489-12&P
	Major	Peeling or inadequate paint.	Visual	Para 4-21, 4-22, and 4-23
Minor	Scratches	Visual	TM 9-1336-489-12&P	
<b>WARHEAD SECTIONS: M251 AND M251A1</b>				
Fuze-ogive area; stations 3 to 22	Critical	Red (red with white letter "A" on later production fuzes) shows in fuze safe/arm monitor window.	Visual	None: notify EOD. See Warning below.
	Major	Fuze damaged; dials stuck. (See CAUTION and NOTE following Table 3-1.)	Visual/ manual	Para 3-8c
	Minor	Fuze lead wire seals, missing/broken.	Visual	TM 9-1336-489-12&P
Skin area: between stations 22 and 96	Critical	Punctures or damage exposing interior detonating cord/boosters/bombs or grenades.	Visual	None: notify EOD. See 2nd warning: following Table 3-1
Aft area: stations 96 to 100	See table 3-2	Electronic shielding gasket (see Table 3-2).	See Table 3-2	See Table 3-2



**Table 3-1. Classification of Material Defects-Continued**

Component	Category	Defect	Method of inspection	Corrective action
<b>WARHEAD SECTIONS: M201, M251 AND M251A1</b>				
Fuze-ogive area Stations 3 to 22	Major	Dents in ogive:	Visual	TM 9-1336-489-12&P
	Major	Ogive loose.	Manual	TM 9-1336-489-12&P
	Major	Fuze knob cover and latch assembly damaged.	Visual/ manual	TM 9-1336-489-12&P
	Major	Fuze damaged; dials stuck (M201 only). (See CAUTION and NOTE following Table 3-1.)	Visual/ manual	Para 4-9
	Major	Fuze loose.	Visual/ manual	TM 9-1336-489-12&P
	Minor	Fuze setting not on EVENT: 000.0, ARM: 80, SECO: OFF.	Visual	TM 9-1336-489-12&P
Skin area	Major	Markings do not agree with figure 4-6 or figure 4-8, or illegible.	Visual	Para 4-21, 4-22, and 4-23
	Minor	Fungus or foreign material	Visual	TM 9-1336-489-12&P
	Minor	Corrosion which can be removed.	Visual	TM 9-1336-489-12&P
	Major	Dents in excess of 3/16 in. deep or 6 in. long; punctures which are not critical.	Visual gage	Para 3-8c
	Major	Peeling or inadequate paint.	Visual	Para 4-21, 4-22, and 4-23
	Minor	Scratches	Visual	TM 9-1336-489-12&P
Aft area	Major	Swing-bolt lock unserviceable/loose/missing.	Visual/ manual	TM 9-1336-489-12&P
	Major	Swing bolts unserviceable/difficult to move/swing too freely.	Manual	TM 9-1336-489-12&P
	Major	Bulkhead punctured/deformed.	Visual	Para 3-8c
	Major	Cable connector unserviceable/flag and cover missing.	Visual	TM 9-1336-489-12&P
	Major	Headless shoulder pins (alignment and shear pins) loose; missing/unserviceable.	Visual/ manual	TM 9-1336-489-12&P, also para 4-11.
	Minor	Spring plunger frozen	Manual	Para 4-11.1.
Overall	Major	Warhead section visibly out of concentricity.	Visual	TM 9-1336-489-12&P
Warhead section in container	Major	Swing bolts not correctly placed in support plate slots and/or torqued.	Visual/ manual	TM 9-1336-489-12&P

**WARNING  
(M251 AND M251A1 ONLY)**

If red indicator (red with white letter "A" on later production fuzes) is showing in SAFE-ARM monitor window of fuze M811, the fuze is at least partially armed. Do not continue inspection. Personnel will evacuate the area to a covered position not less than 500 meters away and notify Explosive Ordnance Disposal personnel.

**CAUTION**

Carefully open knob-locking latch on fuze to prevent damage to latch or latch pins.

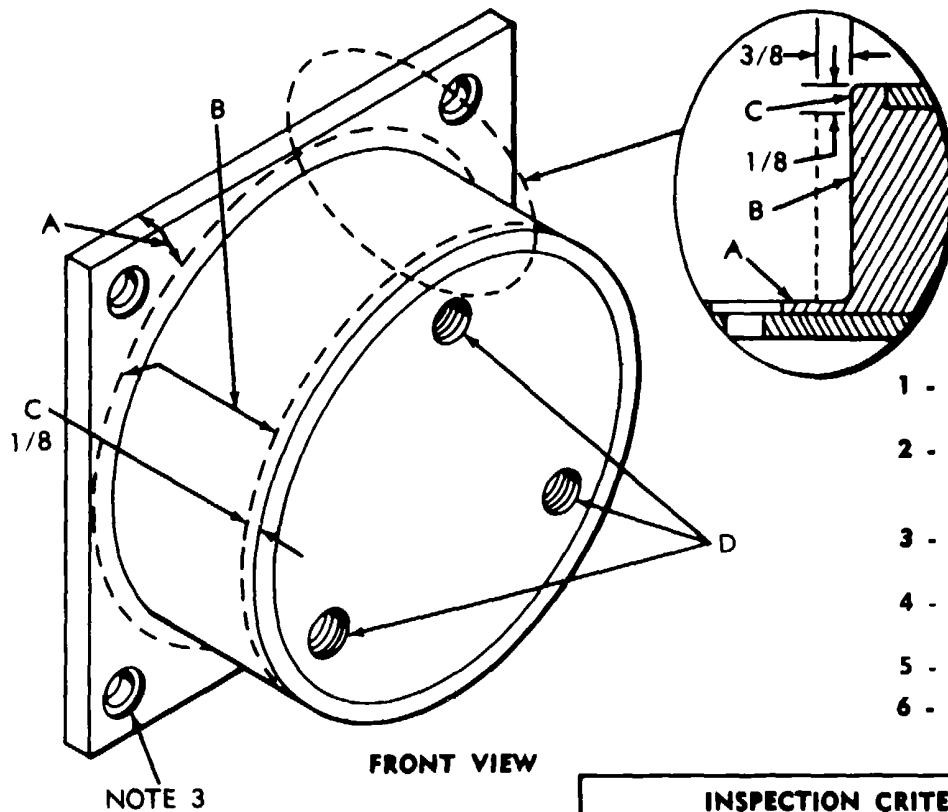
**WARNING  
(M251 AND M251A1 ONLY)**

Any bombs or grenades accidentally released from the warhead section will not be handled or moved under any circumstances. Personnel will evacuate the area to a covered position not less than 500 meters away and notify Explosive Ordnance Disposal personnel.

**NOTE**

Turn all six knobs on fuze to ensure freedom of movement. Leave knobs in the following positions:

Event: 000.0  
 Arm: 80  
 SECO: OFF



**NOTES:**

- 1 - MOUNTS SHALL NOT BE REMOVED SOLELY FOR INSPECTION PURPOSES.
- 2 - AREA D WILL BE INSPECTED ONLY WHEN DISASSEMBLY OF RESILIENT MOUNTS IS REQUIRED.
- 3 - ANY DAMAGE AT MOUNTING HOLE AREAS IS NOT CAUSE FOR REJECTION.
- 4 - ALL DIMENSIONS SHOWN ARE IN INCHES AND ARE APPROXIMATE.
- 5 - DELETED.
- 6 - MOLD INDENTATIONS OR PROJECTIONS ARE NOT CAUSE FOR REJECTION.

NOTE 3

- CAUTION -

VISUAL INSPECTION ONLY WILL BE PERFORMED. NO PROBING OR PHYSICAL PRESSURE EITHER BY FINGER PRESSURE OR WITH A TOOL WILL BE APPLIED WHILE CONDUCTING INSPECTION, SINCE THIS CAN INFLICT DAMAGE TO THE MOUNT.

INSPECTION CRITERIA FOR RESILIENT MOUNTS		
DEFECT	AREA	ACTION
HOLES, CUTS, GOUGES, TEARS AND PUNCTURES	A	REJECT, IF METAL PLATE IS EXPOSED AND THERE IS VISIBLE EVIDENCE OF CORROSION.
	B	REJECT (SEE NOTE 6)
	C	REJECT IF WITHIN 1/8 INCH OF EDGE AND METAL PLATE EXPOSED.
STRIPPED THREADS	D	REJECT

AR 101913

Figure 3-1. Inspection requirements for resilient mounts.

**Table 3-2. Inspection Requirements for Electronic Shielding Gasket**

Category	Defect	Method of inspection	Corrective action
Minor	Foreign material	Visual	Clean
Major	Loose or improperly installed.	Visual/manual	Para 4-10
Major	Gouged; cut from outer edge to inner edge.	Visual	Para 4-10
Major	Missing.	Visual	Para 4-10
Major	Wire separated from rubber.	Visual	Para 4-10
Major	Ends separated by more than 1/4 inch.	Visual	Para 4-10

## CHAPTER 4

## MAINTENANCE PROCEDURES

## Section I. INTRODUCTION

**4-1. General**

a. This section contains instructions for the guidance of general support maintenance personnel in repair of warhead sections and the storage container M544. These instructions are supplementary to operator and organizational maintenance instructions contained in TM 9-1336-489-12&P.

b. The scope of maintenance is determined by the maintenance allocation chart contained in TM 9-1336489-12&P. Only those parts listed in appendix B are replaceable. If a part is damaged beyond repair and is not carried as a repair part in appendix B, the next higher assembly or the component to which the part belongs that is listed as a repair part will be used.

c. All necessary tools and equipment must meet safety requirements of TM 9-1300-206.

**4-2. Disposition Instructions**

a. *Unserviceable-Irreparable Items.* Unserviceable items will be reported for disposition on DA Form 2415 (Ammunition Condition Report) in accordance with TM 38-750.

b. *Serviceable Items.* Items which are returned to a serviceable condition as a result of the maintenance prescribed in this manual may be either returned to storage for subsequent issue or returned to the using organizations from which received.

**4-3. Disassembly and Assembly Procedures****WARNING****(M251 AND M251A1 ONLY)**

**Ruptured skin, or exposed or loose bombs or grenades indicate a dangerous condition. Loose bombs or grenades will not be handled or moved under any circumstances. Personnel will evacuate the area to a covered position not less than 500 meters away and notify Explosive Ordnance Disposal personnel.**

## Section II. PREPARATION

**4-7. General**

Some repairs may be performed on warhead section while it is resting on suspension frame assembly of the shipping and storage container (cover removed). These repairs include those which are performed on upper, more accessible part of warhead section. Other repairs may require removal of warhead section to a Lance maintenance stand (fig. B-8).

a. Good judgment should be exercised to keep disassembly to a minimum in making a required replacement. When disassembly is necessary, it will be conducted in a logical manner. Care should be used in handling components during replacement to prevent damage. Components should be examined closely to determine the need for replacement.

b. As parts and assemblies are removed, they will be placed on a clean, flat surface to prevent damage. Parts which are removed from an assembly should be kept together and segregated from those of other assemblies.

c. Assembly of a unit will normally be accomplished in reverse order to that of disassembly.

**4-4. Replacement of Parts**

a. All screws and bolts having stripped, crossed, stretched, burred, or damaged threads; cracked, broken or worn shanks, or damaged or mutilated heads will be replaced with new or serviceable items.

b. All washers having scored surfaces, or mutilated or damaged edges, will be replaced with new or serviceable items.

c. All nuts having crossed or stripped threads, or damaged or mutilated external surfaces, will be replaced with new or serviceable items.

**4-5. Cleaning**

Dirt, fungus, and other foreign matter will be removed from surfaces of warhead section and container with cleaning cloths or brushes and mineral spirits, paint thinner or dry-cleaning solvent. Refer to TM 9-1336489-12&P for cleaning instructions.

**4-6. Preservation**

a. All threads and mating surfaces must be clean, dry, and free of corrosion.

b. A thin protective coating of primer (TT-P-664) will be applied to container TEE-Head bolts after torquing.

**4-8. Placing Warhead Section on Lance Maintenance Stand**

Refer to TM 9-1336-489-12&P for opening container and placing warhead section on the Lance maintenance stand.

Section III. REPAIR OF WARHEAD SECTIONS

4-9. M816 Fuze Replacement (M201 Warhead Section Only)

a. Disengage ogive (fig. 4-1) by depressing two pushbuttons, one on each side of the ogive. As pushbuttons are depressed, catch levers will swing out. If the levers do not swing out, a small screwdriver may be used to pry the levers out. Refer to TM 91336-489-12& P, paragraph 3-6.c (4) for lever lubrication procedures.

a. 1 Slide ogive forward keeping arrows aligned. DO NOT force ogive to turn or twist while sliding. When the ogive is fully extended, a guide pin on the telescope tube will reach a stop. At this position the guide pin aligns with a slot and will allow the ogive to rotate downward in a counterclockwise direction to the open position.

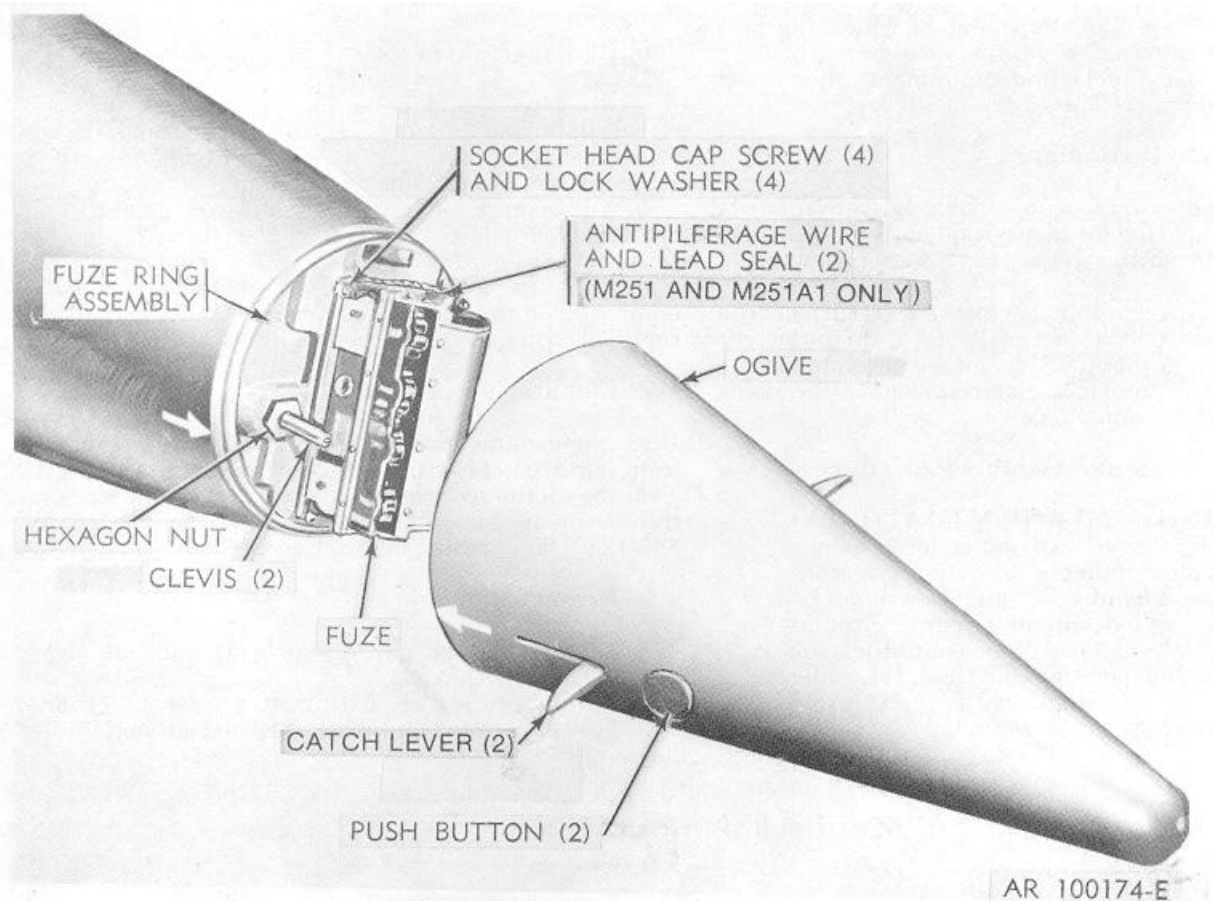


Figure 4-1. Warhead section fuze/ogive area.

b. Using a 5/32-inch hexagon-head screw key (Allen Wrench) loosen and remove four socket head cap screws (fig. 4-1) and lockwashers securing fuze plate. Remove fuze.

c. Obtain serviceable fuze M816. Open metal container and remove cushion and carton. Remove fuze from carton.

d. Install fuze (fig. B-1) on warhead section fuze plate and secure with four socket head cap screws and

lockwashers using a 5/32-inch hexagon-head screw key. Torque to  $30 \pm 5$  inch-pounds with torque handle and 5/32-inch socket head wrench attachment.

e. Close ogive by sliding aft and aligning arrow on ogive and, warhead section (fig. 4-1). Depress two catch levers to lock ogive to forward assembly. If closing ogive is difficult, refer to TM 9-1336-489-12&P for adjustment of devices or replacement of clamping catches.

b. *Repair.* Remove new gasket material from package and cut to length in accordance with instructions in Appendix D..

**WARNING**

**Use gloves to prevent possible cutting of fingers during installation.**

c. *Installation.* Insert gasket (10, fig. B-2) into circular cavity in aft ring with fingers. Ensure ends butt against each other snugly. Cut off excess wire.

**4-11. Headless Shoulder Pins**

a. When alignment pins (9, fig. B-2) or shear pins (8, fig. B-2) are broken so that manual removal is impossible, a carbide drill and screw extractor may be used.

b. Depending upon whether an alignment or shear pin is to be removed, consult table 4-1 for drill size, drill depth, and screw extractor recommended.

**Table 4-1. Tool and Depth Recommendations for Removal of Headless Shoulder Pins**

	Alignment pin (larger diameter)	Shear pin (smaller diameter)
Drill bit size	3/16 inch	1/8 inch
Depth of hole	1/2 inch	3/8 inch
Screw extractor size (GGG-E-936 Type 1, class 2).	2	1

c. Drill a hole in the center of affected pin to a diameter and depth recommended in table 4-1.

d. Place screw extractor into hole and tap lightly with a hammer.

e. Turn screw extractor counterclockwise to remove broken pin. Normally hand force is sufficient to accomplish this, but an additional tool (i.e., wrench, vise-grip) may be used if necessary.

**4-11.1. Removal of Frozen Spring Plunger**

a. When spring plungers (7, fig. B-2) are frozen and cannot be adjusted or removed, remove the swing bolt from warhead in accordance with TM 9-1336489-12&P.

b. Using a 1/16-inch hexagon-head screw key, turn the spring plunger clockwise, toward and into swing bolt slot, until removed.

**NOTE**

**This is in a direction opposite to removal procedure now in TM 9-1336-489-12&P.**

c. Cut or chip off plastic plunger flush with swing bolt slot or face of spring plunger body. Use screwdriver in slot on face of spring plunger body to turn spring plunger until removed.

**CAUTION**

**Aft ring contains detonating cord.**

d. If the spring plunger remains frozen, using either a hand or air operated drill, drill into the spring plunger body from the swing bolt slot using a 3/32-inch bit.

**CAUTION**

**Exercise care not to damage WHS skin or aft ring. Drill until drill point contacts spring inside spring plunger.**

e. Remove drill and insert a No. 1 easy-out. Turn easy-out with a tap handle in a counterclockwise direction to remove the spring plunger. If spring inside spring plunger interferes with the insertion of the easy-out, it will be necessary to drill a hole of 7/64-inch diameter into spring plunger from either end in order to remove spring.

f. After the spring plunger body is removed, clean the threads using a 10-32 bottoming tap.

**Section IV. SHIPPING AND STORAGE CONTAINER REPAIRS**

**4-12. General**

This section details the procedures for disassembling, cleaning, inspecting, repairing, and reassembling components of the M544 shipping and storage container.

**WARNING**

**No welding will be performed on containers loaded with high**

**explosive warhead sections M251 or M251A1.**

**4-13. Forklift Slots and Dents**

Straighten dents and forklift slot (fig. 4-2) damage with hammer and mandrel or body-worker tools. Weld broken forklift handling bracket as necessary. Weld should be applied continuously on all edges, inside and outside.

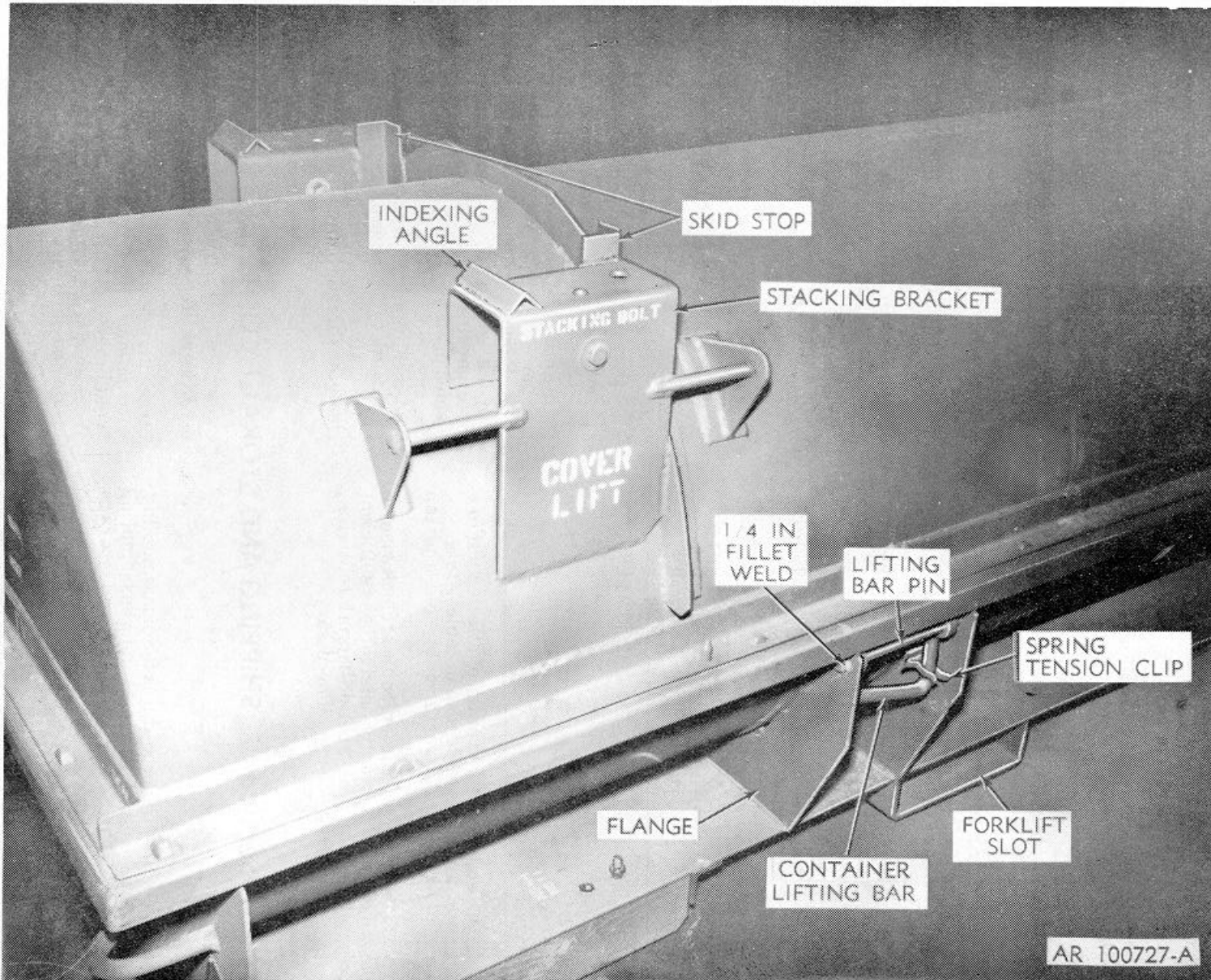


Figure 4-2. Stacking bracket and lift handles.

**4-14. Stacking Bracket and Cover Lift Bars**

- a. Remove damaged skid stop and indexing angle (fig. 4-2) on top of stacking bracket on cover assembly by removing welds holding skid stop and indexing angle to stacking bracket.
- b. Fabricate right or left skid stop (1 or 2, fig. B-3) and indexing angle (3, fig. B-3) in accordance with instructions in appendix D and weld to stacking brackets as shown in figure 4-2 using 3/16-inch fillet weld.
- c. Weld cover lift bars in place if damaged.
- d. Paint repaired areas in accordance with paragraph 4-23.

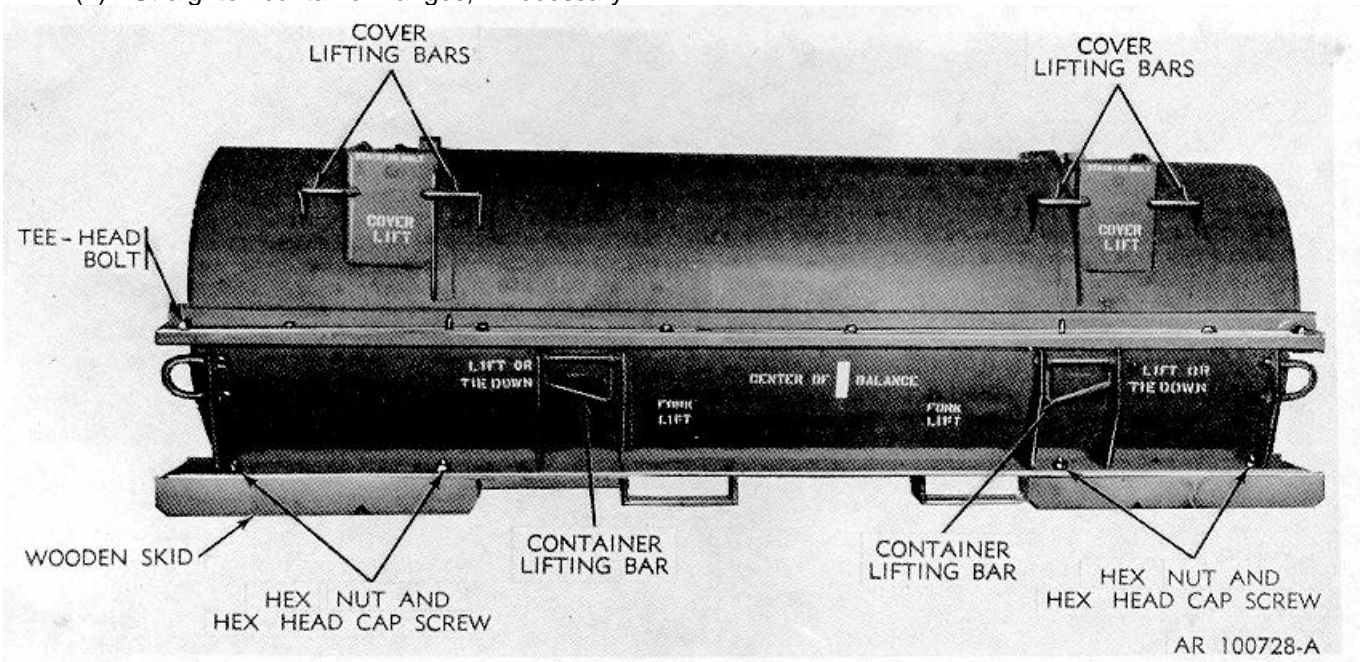
**4-15. Container Lifting Bar**

- a. Removal (fig. 4-2).
  - (1) Grind down welds holding lifting bar pin to container flanges.
  - (2) Drive pin out of container flanges to remove lifting bar. TM 9-1336-489-40& P
- b. Repair.
  - (1) Straighten container flanges, if necessary.

- (2) Fabricate lifting bar pin in accordance with instructions in appendix D.
- c. Installation (fig. B-3).
  - (1) Place pin (10) through openings in right liftingbar (11) or left lifting bar (12).
  - (2) Insert pin into container flanges (fig. 4-2) ensuring proper orientation of lifting bar.
  - (3) Apply 1/4-inch fillet weld around two ends of pin extending from container flanges.

**4-16. Wooden Runner**

- a. Removal (fig. 4-3). Using 1/2-inch open-end wrench on hexagon nut and a 1/2-inch socket wrench on cap screw, remove nut, lockwasher, cap screw, and flat washer securing one end of runner to base assembly. Repeat operation to remove parts from other end of runner. Remove runner.
- b. Repair. Fabricate new runner in accordance with instructions in appendix D.



**Figure 4-3. Shipping and storage container.**

- c. Installation (fig. B-3). Using a 1/2-inch open end wrench and a 1/2-inch socket wrench, install wooden skid (20) on base assembly with hexagon head cap screw (18), flat washer (19), lockwasher (8), and hexagon nut (17) at locations shown in figure 4-3. Torque to 35±5 ft/lb.

**4-17. Strap Assembly**

- a. General. Replace unserviceable strap assembly. If there is a missing or unserviceable rubber cushion on a serviceable strap assembly, replace

- cushion (see TM 9-1336-489-12&P) without removing strap assembly.
- b. Removal (fig. B-4). Using two 3/8-inch open-end wrenches, remove self-locking nut (1) and cap screw (2) securing strap to suspension frame.
- c. Installation. Install strap assembly (3) in suspension frame assembly with hexagon-head cap screw (2) and hexagon self-locking nut (1). Torque to 200 inch-pounds.



**4-18. Shear Mount**

a. *Removal.* Remove shear mount (fig. 4-5) from suspension frame assembly by removing one machine screw and two each cap screw and lockwasher.

b. *Installation.*

(1) Attach shear mount (8, fig. B-5) to base assembly with four each hexagon-head cap screw (6), flat washer (7), lockwasher (5), and hexagon nut (4). Torque each screw to 400 inch-pounds.

(2) Attach shear mount to suspension frame assembly with three screws. Install two each

lockwashers (3) and hexagon-head cap screw (2) in lower holes of shear mount and torque to 570 inch-pounds. Install machine screw (1) in upper hole of shear mount. Torque upper screw to 100 inch-pounds.

**4-19. Closure Pin and Chain Assembly**

Replace closure pin (4, fig. B-4) and/or chain as required. Cut a 5-inch length of chain and tack weld to suspension frame assembly below hook for strap assembly toward front of container. See figure 4-4.

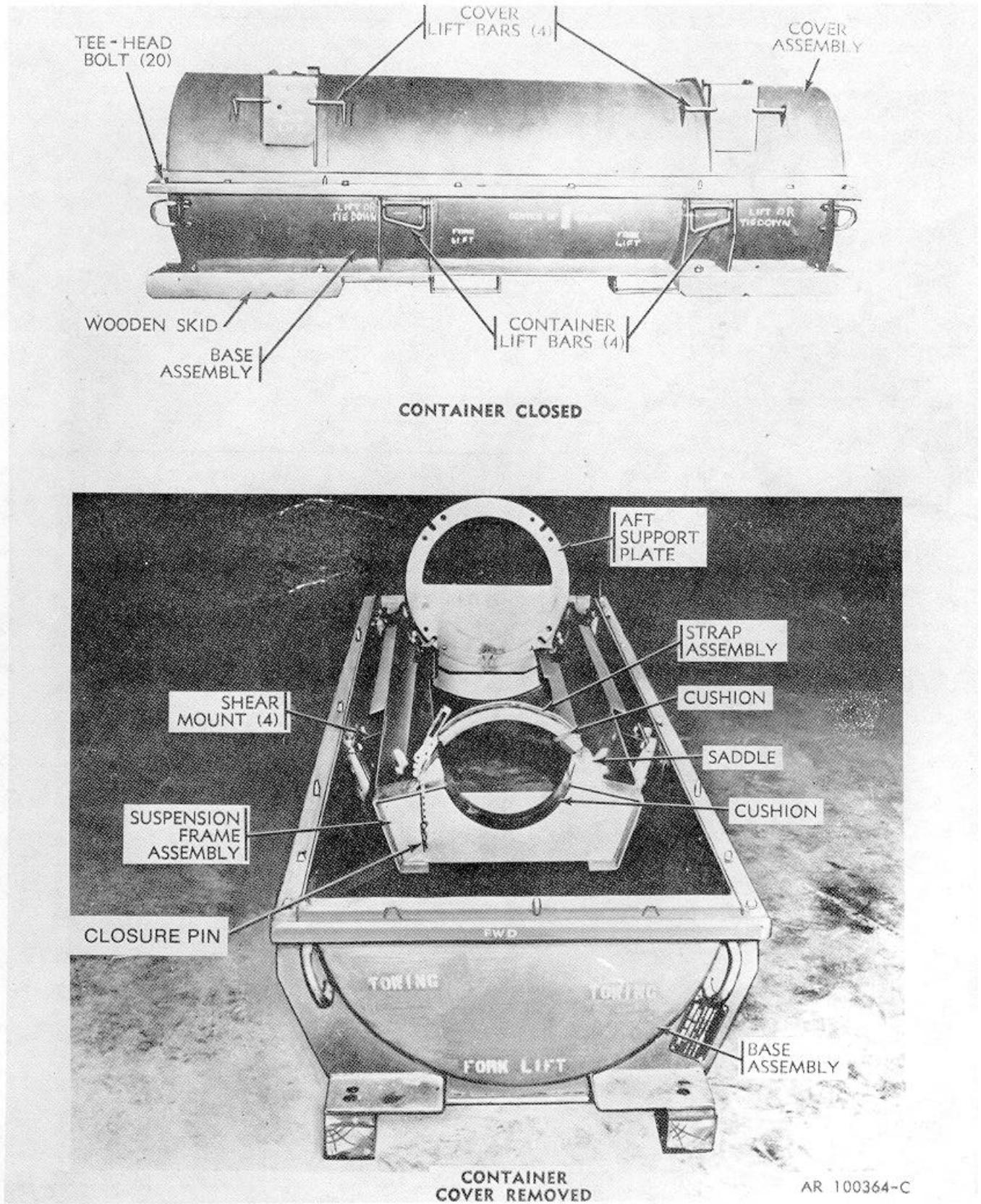


Figure 4-4. Shipping and storage container M544.

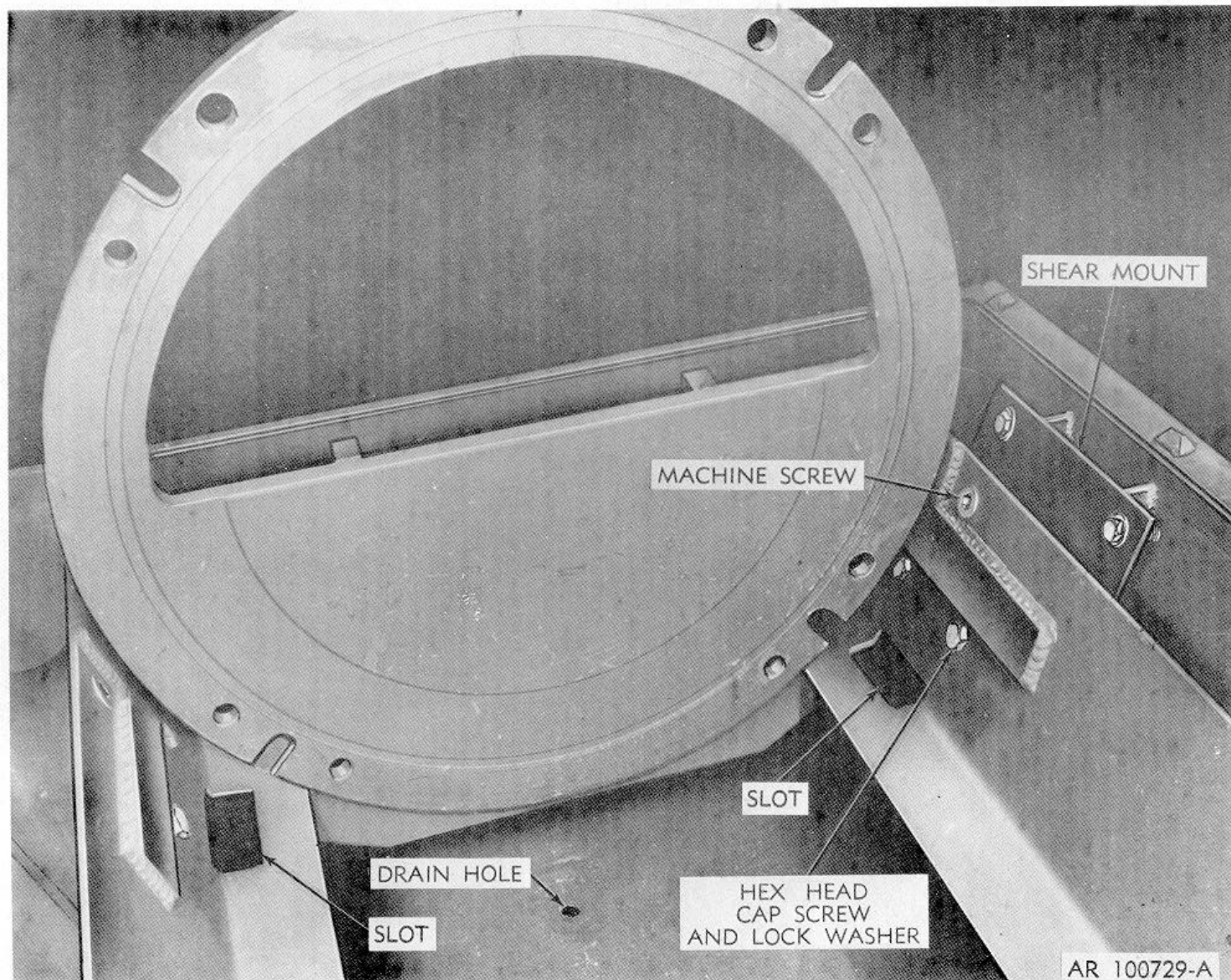


Figure 4-5. Container base assembly - aft end.

**4-20. Guide Pin**

- a. Replace any of six guide pins (21, fig. B-3) which may be missing. Fabricate replacement pin in accordance with instructions in appendix D.
- b. Drive remains of broken pin, if present, from container flange. Grind away welds underneath flange, if necessary.
- c. Position replacement pin in flange hole vacated by damaged pin so that pin protrudes approximately 1/8

to 1/4 inch below flange. Tapered end of pin shall be upward.

- d. Weld pin around entire circumference with 1/8-inch continuous weld to underside of flange.
- e. Paint pin in accordance with paragraph 4-23.

**Section V. PAINTING AND MARKING**

**4-21. Paint Removal**

Use abrasive paper to remove paint. Sandblast or vapor-blast equipment may also be used where available, if desired.

**4-22. Preparation**

Prior to painting, mask rubber saddle cushions, rubber shear mounts, and identification plate. Remove stacking bolts from container; swing bolts from warhead section. Tee-head bolts will not be removed from container if threaded end is staked to prevent loss of nut. Repaint any bare metal exposed by blistering and peeling, and other defects of painted surfaces in accordance with paragraph 4-23.

**NOTE**

When repainting, restore original color paint unless otherwise directed. The paints used are lusterless olive drab enamel, TT-E-516, or green chemical agent resistant coating (CARC), MIL-C46168. Some M201 warhead sections and containers are painted olive drab; others are painted green (camouflage). All M251 warhead sections are painted olive drab; however, their containers are either olive drab or green (camouflage). All M251A1 warhead sections and exterior of their containers are painted green CARC; however, the interior of the containers may be olive drab or green (camouflage).

**4-23. Painting and Marking**

a. Area to be painted will be sanded with fine sandpaper, and edge of surrounding paint feathered to produce a smooth finish.

b. A coat of metal pretreatment coating followed by a coat of primer will be applied to bare metal before painting. Allow primer to dry. When chemical agent resistant coating (CARC) is used, apply epoxy primer, MIL-P-23377, Class 1 or 2, on warhead section (aluminum surface) and epoxy primer, MIL-P-52192 on container (steel surface). Thinner, MIL-T-81772, may be used with CARC.

c. Make sure surfaces are dry before applying stencil ink. Table 4-2 lists appropriate figures for guidance in warhead section and container painting and marking. If no warhead section is to be packed into the container; disregard instructions referring to 4-inch squares and warhead section nomenclature. Different shades of paint are permitted provided specification requirements are met.

**Table 4-2. Painting and Marking Instructions**

Item	Figure No. for painting and marking instructions
Warhead sections M251 and M251A1	4-6
Container M544	4-7
section M201	4-8

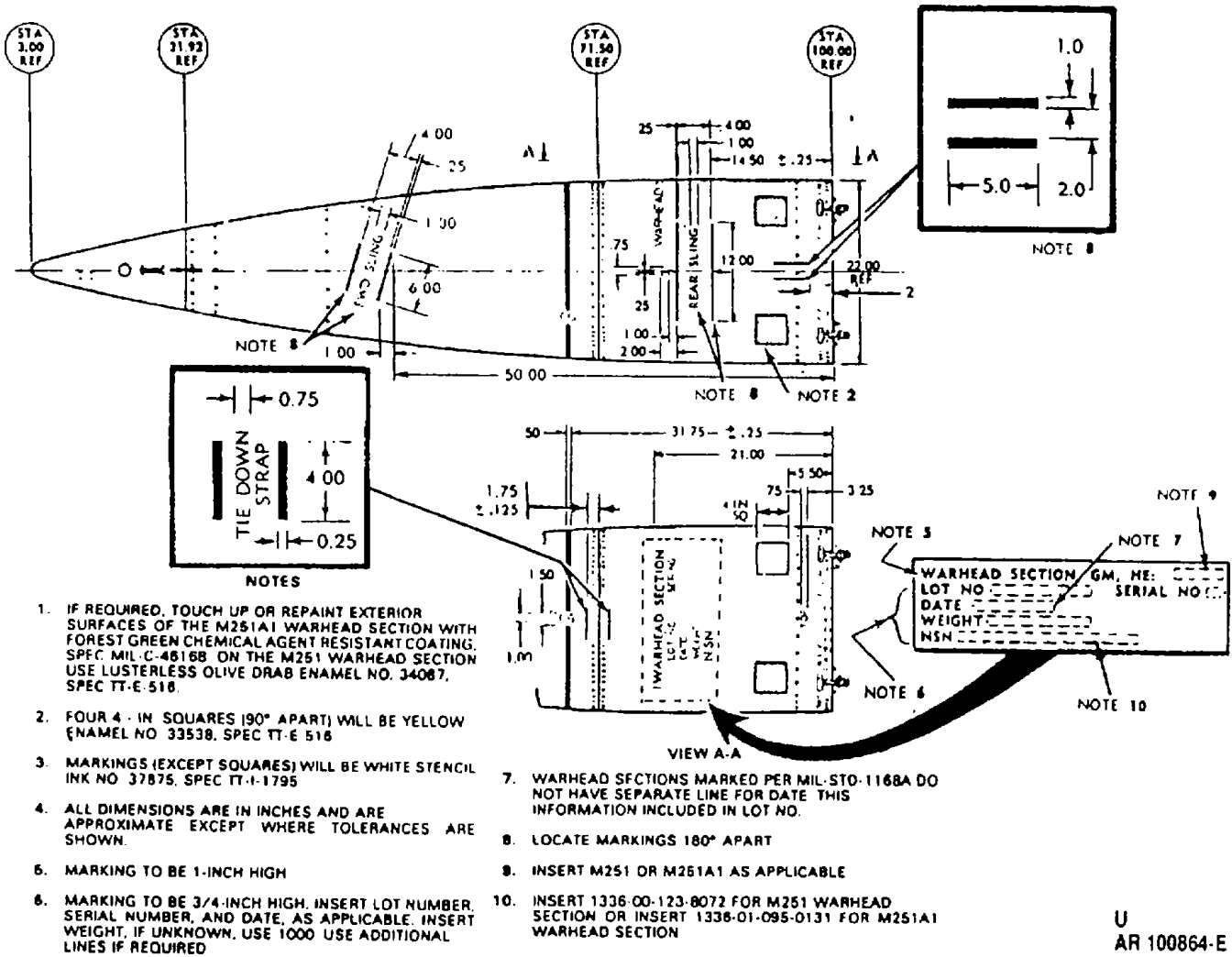
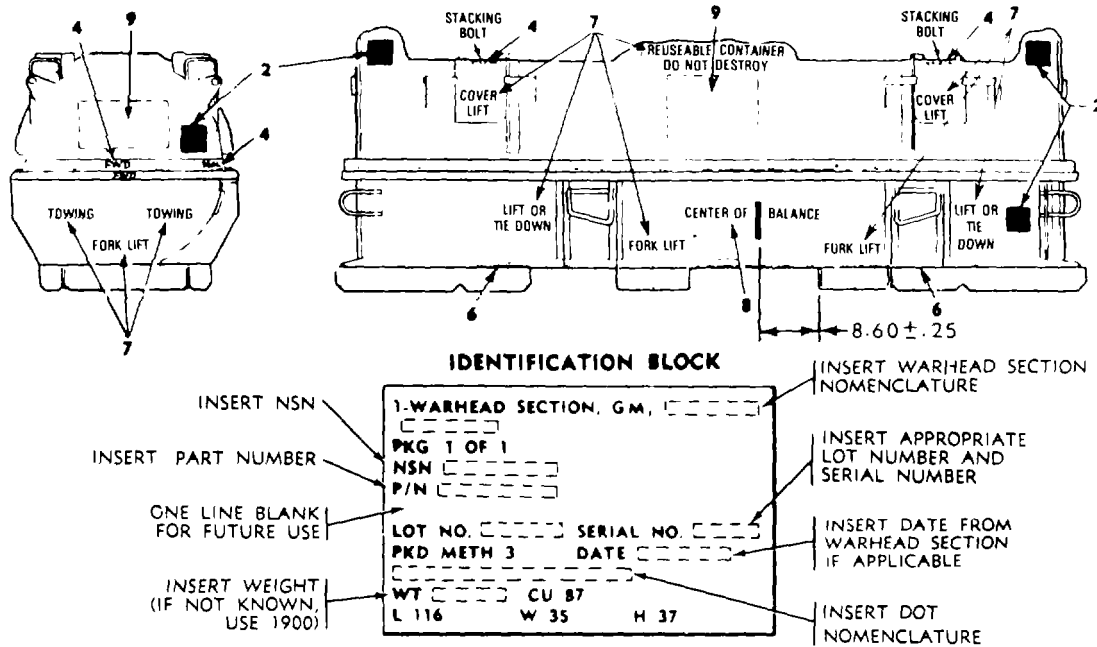


Figure 4-6. Warhead sections M251 and M251A1 - painting and marking.

Change 1 4-10

U  
AR 100864-E



MARKING TABLE				
NOMENCLATURE	NSN	PART NUMBER	DOT NOMENCLATURE	COLOR OF SQUARE (NOTE 2)
WARHEAD SECTION, GM HE M251	1336-00-123-8072	9284000	EXPLOSIVE PROJECTILE	YELLOW 33538
WARHEAD SECTION, GM, TRAINING M201	6920-00-933-2532	9215598	(NONE)	BRONZE 17043
WARHEAD SECTION, GM, HE M251A1	1336-01-095-0131	9332549	EXPLOSIVE PROJECTILE	YELLOW 33538

**NOTES:**

- IF REQUIRED, TOUCH UP OR REPAINT EXTERIOR OF THE M201 OR M251 WARHEAD SECTION CONTAINERS WITH LUSTERLESS OLIVE DRAB ENAMEL 34087, SPEC TT-E-516, OR FOREST GREEN (CAMOUFLAGE) ENAMEL. SPEC MIL-E-52798. FOR THE M251A1 WARHEAD SECTION CONTAINER USE FOREST GREEN CHEMICAL AGENT RESISTANT COATING, SPEC MIL-C-46168.
- POSITION 4-INCH SQUARE DIAGONALLY OPPOSITE, APPROXIMATELY AS SHOWN (4 EACH) AND ON LONGITUDINAL CENTER LINE (2 EACH) USING ENAMEL TT-E-516 OR TT-E-488, COLOR IN ACCORDANCE WITH MARKING TABLE NO SQUARES FOR EMPTY CONTAINER
- ALL OTHER MARKINGS TO BE MADE WITH STENCIL INK WHITE 37875 FOR OLIVE DRAB CONTAINERS AND BLACK ENAMEL MIL-E-52798 FOR FOREST GREEN CONTAINERS. ALL MARKING LOCATIONS ARE APPROXIMATE, EXCEPT CENTER OF BALANCE BAR SHALL BE EQUIDISTANT FROM FORK LIFT SLOTS.
- USING 1/2-INCH HIGH LETTERS, MARK "FWD" 2 PLACES AS SHOWN. "STACKING BOLT" 4 PLACES ON STACKING BRACKETS; AND "SEAL" 2 PLACES OPPOSITE CORNERS
- DELETED
- USING 1/2-INCH HIGH LETTERS, MARK "M599 M544 M511" 4 PLACES NEAR INNER STACKING BOLT HOLES.
- USING 1-INCH HIGH LETTERS, MARK "COVER LIFT" 4 PLACES ON STACKING BRACKETS, "LIFT OR TIE DOWN" 4 PLACES OUTSIDE OF LOWER LIFT HANDLES: "FORK LIFT" 6 PLACES, 2 ON EACH SIDE ABOVE FORK LIFT SLOTS FAR ENOUGH UP TO BE EASILY READ AND 1 ON EACH END; "TOWING" 4 PLACES, 2 ON EACH END; "REUSABLE CONTAINER DO NOT DESTROY" 1 PLACE ON TOP.
- USING 1-INCH HIGH LETTERS, MARK "CENTER OF BALANCE" 2 PLACES, 1 ON EACH SIDE. BAR MEASURES 1 INCH X 6 INCHES ELIMINATE MARKING, IF CONTAINER IS EMPTY.
- WITH WARHEAD SECTION PACKED, REFER TO IDENTIFICATION BLOCK AND MARKING TABLE. ENTIRE DETAIL IS IN 1/2-INCH LETTERS. WHEN CONTAINER IS EMPTY IGNORE DETAIL AND MARK **EMPTY** IN 1-INCH HIGH LETTERS FOLLOWED BY "WT 900 CU87" "L116 W35 H37" IN 1/2-INCH HIGH LETTERS IN PLACE OF THE DETAIL.

AR 100863-E

Figure 4-7. Shipping and storage container M544-painting and marking.

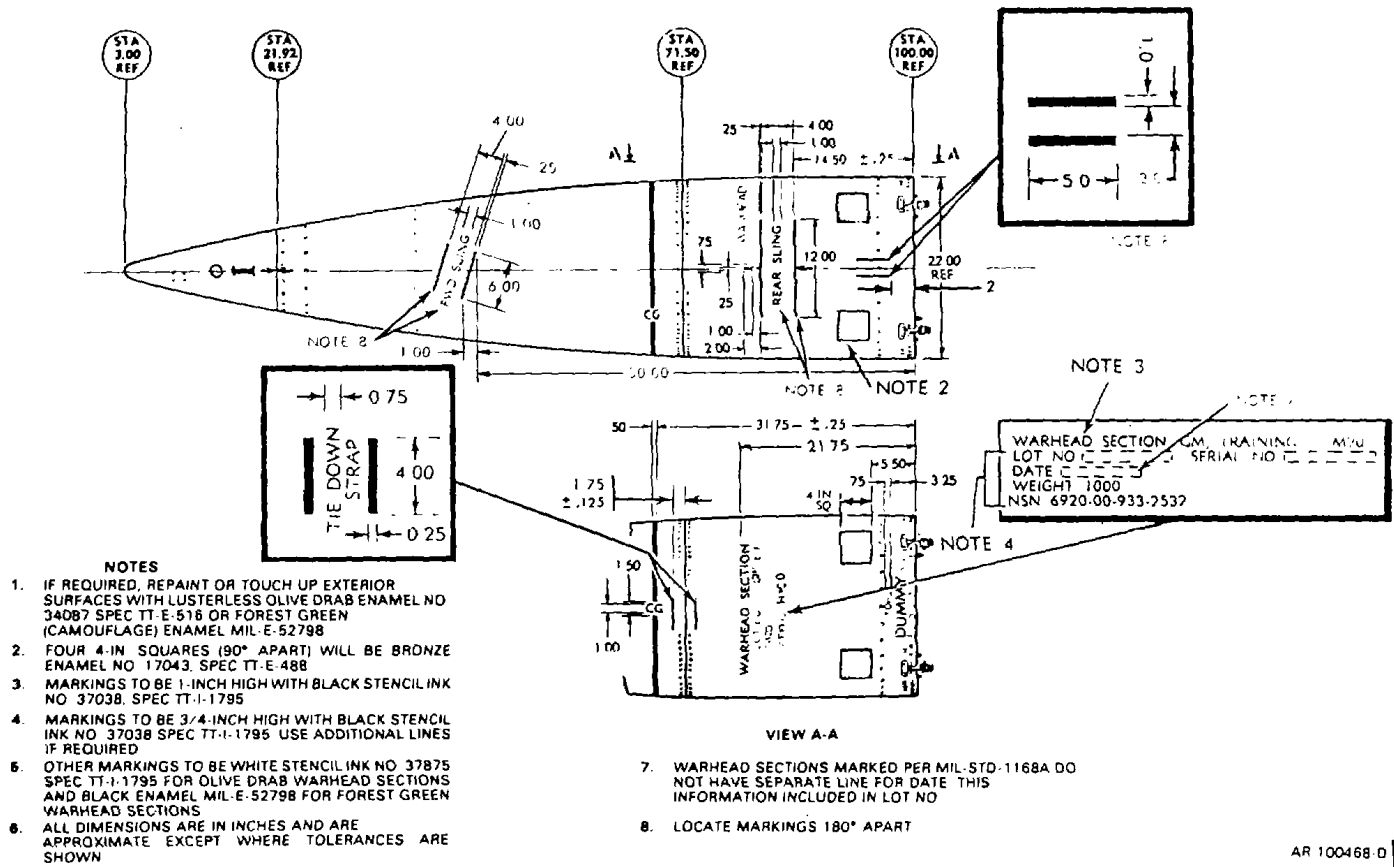


Figure 4-8. Warhead section M201 - painting and marking.

**4-24. Repackaging**

a. Repack warhead section into shipping and storage container in accordance with TM 9-1336-489-12&P.

b. Install lead wire seals in two opposite corners of container flange.

Change 1 4-12

**APPENDIX A**

**REFERENCES**

**A-1. Publication Indexes**

The following publication index should be consulted frequently for the latest changes or revisions of references given in this appendix and for new publications relating to the materiel covered in this manual:

Consolidated Index of Army Publications and Forms-.....	DA Pam 310-1
The Army Maintenance Management System (TAMMS)- .....	DA Pam 738-750

**A-2. Technical Manuals**

Common Wood and Metal Repair .....	FM 43-4
Operator's Manual for Welding Theory and Application .....	TM 9-237
Use and Care of Handtools and Measuring Tools .....	TM 9-243
Operator's Organizational Direct Support and General Support Maintenance (Including Depot Maintenance Repair Parts and Special Tools List) Lance Handling Equipment.....	TM 9-1190-281-14
Ammunition and Explosives Standards .....	TM 9-1300-206
Ammunition Maintenance.....	TM 9-1300-250
Operator's and Organizational Maintenance Manual (Including Repair Parts and Special Tools List Warhead Section, Guided Missile, High Explosive M251 and M251A1; and Training M201).....	TM 9-1336-489-12&P

**A-3. Army Regulations**

Reporting of Transportation Discrepancies in Shipments.....	AR 55-38
Malfunctions Involving Ammunition and Explosives .....	AR 75-1
Accident Reporting and Records .....	AR 385-40
Ammunition Stockpile Reliability Program (ASRP) .....	AR 702-6
Quality Assurance Specialist (Ammunition Surveillance).....	AR 702-12
Reporting of Item and Packaging Discrepancies.....	AR 735-11-2
Storage and Supply Activity Operations .....	AR 740-1

**A-4. Forms**

Accident Report .....	DA Form 285
Recommended Changes to Publications and Blank Forms.....	DA Form 2028
Equipment Maintenance Log (Consolidated) .....	DA Form 2409
Ammunition Condition Report .....	DA Form 2415
Discrepancy in Shipment Report .....	SF 361
Report of Discrepancy.....	SF 364
Quality Deficiency Report.....	SF 368

**A-5. Supply Manuals**

Ammunition Surveillance Procedures.....	SB 742-1
Tool Kit, Special Weapons: Organizational Maintenance, LANCE (NSN 5180-00-160-8572) (LIN W42993) .....	SC 5180-95-CL-A65
Tool Kit, Guided Missile: Organizational Maintenance, Mechanical Repairman, LANCE (NSN 5180-00-077-1648) (LIN W42320) .....	SC 5180-95-CL-B01



APPENDIX B

REPAIR PARTS AND SPECIAL TOOLS LIST

Section I. INTRODUCTION

**B-1. Scope**

This appendix lists repair parts and special tools required for the performance of general support maintenance of warhead sections M251, M251A1, and M201, and shipping and storage container M544.

**B-2. General**

This appendix is divided into the following sections:

- a. *Repair Parts List-Section II.* A list of repair parts authorized for the performance of maintenance at the general support level.
- b. *Special Tools List-Section III.* A list of special tools, test, and support equipment authorized for the performance of maintenance at the general support level.
- c. *National Stock Number and Part Number Index-Section IV.* A list, in ascending numerical sequence, of all National Stock Numbers appearing in the listings, followed by a list in alphameric sequence, of all part numbers appearing in the listings. National Stock Number and part numbers are cross-referenced to each illustration figure and item number appearance.

**B-3. Explanation of Columns**

The following provides an explanation of columns in sections II and III:

- a. *Illustration.* This column is divided as follows:
  - (1) *Figure number.* Indicates the figure number of the illustration on which the item is shown.
  - (2) *Item number.* indicates the callout number used to reference the item on the illustration.
- b. *Source, Maintenance, and Recoverability Codes (SMR).*
  - (1) *Source code.* Source code (first and second positions) indicates the source for the listed item. Source codes are:
 

<i>Code</i>	<i>Explanation</i>
KF-An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.	
MH-Item to be manufactured or fabricated at the general support maintenance level.	
PA-Item procured and stocked for anticipated or known usage.	
PE-Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.	

- | <i>Code</i>  | <i>Explanation</i>   |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
|--|--|-------------|--------------------|--|--|--|--|---|--|---|--|---|--|--|--|--|--|--|--|-------------|--------------------|--|--|--|--|---|--|--|---|
| PG-Item procured and stocked to provide for sustained support for the life of the equipment. it is applied to an item peculiar to the equipment which because of probable discontinuance or shutdown of production facilities would prove uneconomical to reproduce at a later time. |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| XD-A support item that is not stocked. When required, item will be procured through normal supply channels.  |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
|  | (2) <i>Maintenance code.</i> Maintenance code consists of two parts-USE code (third position) and REPAIR code (fourth position). USE code indicates the lowest maintenance level authorized to remove, replace, and use the listed item. REPAIR code indicates whether the item is to be repaired, and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). Maintenance codes are: <table border="0" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;"><i>Code</i></th> <th style="text-align: left;"><i>Explanation</i></th> </tr> </thead> <tbody> <tr> <td>O-Support item is removed, replaced, and used at the organizational maintenance level.</td> <td></td> </tr> <tr> <td>H-Support item is to be removed, replaced, used at general support level.</td> <td></td> </tr> <tr> <td colspan="2"><i>Repair</i></td> </tr> <tr> <td>D-The lowest maintenance level capable of complete repair of the support item is the depot level.</td> <td></td> </tr> <tr> <td>H-The lowest maintenance level capable of complete repair of the support item is the general support level.</td> <td></td> </tr> <tr> <td>O-The lowest maintenance level capable of complete repair of the support item is the organizational level.</td> <td></td> </tr> <tr> <td>Z-Nonreparable. No repair is authorized.</td> <td></td> </tr> <tr> <td></td> <td>(3) <i>Recoverability code.</i> Recoverability code (fifth position) indicates the disposition action on an unserviceable item. Recoverability codes are:                             <table border="0" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;"><i>Code</i></th> <th style="text-align: left;"><i>Explanation</i></th> </tr> </thead> <tbody> <tr> <td>D-Repairable item. When beyond lower level repair capability, return to Depot. Condemnation and disposal not authorized below depot level.</td> <td></td> </tr> <tr> <td>Z-Nonreparable item. When unserviceable, condemn and dispose of at the level indicated in position 3 (use code).</td> <td></td> </tr> <tr> <td>O-Repairable item. When uneconomically repairable, condemn and dispose at organizational level.</td> <td></td> </tr> </tbody> </table> </td> </tr> <tr> <td></td> <td>c. <i>National Stock Number.</i> This column indicates the National Stock Number assigned to the item and will be used for requisitioning purposes.</td> </tr> </tbody> </table> | <i>Code</i> | <i>Explanation</i> | O-Support item is removed, replaced, and used at the organizational maintenance level.   |  | H-Support item is to be removed, replaced, used at general support level.  |  | <i>Repair</i>   |  | D-The lowest maintenance level capable of complete repair of the support item is the depot level. |  | H-The lowest maintenance level capable of complete repair of the support item is the general support level. |  | O-The lowest maintenance level capable of complete repair of the support item is the organizational level. |  | Z-Nonreparable. No repair is authorized. |  |  | (3) <i>Recoverability code.</i> Recoverability code (fifth position) indicates the disposition action on an unserviceable item. Recoverability codes are: <table border="0" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;"><i>Code</i></th> <th style="text-align: left;"><i>Explanation</i></th> </tr> </thead> <tbody> <tr> <td>D-Repairable item. When beyond lower level repair capability, return to Depot. Condemnation and disposal not authorized below depot level.</td> <td></td> </tr> <tr> <td>Z-Nonreparable item. When unserviceable, condemn and dispose of at the level indicated in position 3 (use code).</td> <td></td> </tr> <tr> <td>O-Repairable item. When uneconomically repairable, condemn and dispose at organizational level.</td> <td></td> </tr> </tbody> </table> | <i>Code</i> | <i>Explanation</i> | D-Repairable item. When beyond lower level repair capability, return to Depot. Condemnation and disposal not authorized below depot level. |  | Z-Nonreparable item. When unserviceable, condemn and dispose of at the level indicated in position 3 (use code). |  | O-Repairable item. When uneconomically repairable, condemn and dispose at organizational level. |  |  | c. <i>National Stock Number.</i> This column indicates the National Stock Number assigned to the item and will be used for requisitioning purposes. |
| <i>Code</i>  | <i>Explanation</i>   |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| O-Support item is removed, replaced, and used at the organizational maintenance level.   |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| H-Support item is to be removed, replaced, used at general support level.  |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| <i>Repair</i>  |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| D-The lowest maintenance level capable of complete repair of the support item is the depot level.  |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| H-The lowest maintenance level capable of complete repair of the support item is the general support level.  |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| O-The lowest maintenance level capable of complete repair of the support item is the organizational level.   |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| Z-Nonreparable. No repair is authorized.   |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
|  | (3) <i>Recoverability code.</i> Recoverability code (fifth position) indicates the disposition action on an unserviceable item. Recoverability codes are: <table border="0" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: left;"><i>Code</i></th> <th style="text-align: left;"><i>Explanation</i></th> </tr> </thead> <tbody> <tr> <td>D-Repairable item. When beyond lower level repair capability, return to Depot. Condemnation and disposal not authorized below depot level.</td> <td></td> </tr> <tr> <td>Z-Nonreparable item. When unserviceable, condemn and dispose of at the level indicated in position 3 (use code).</td> <td></td> </tr> <tr> <td>O-Repairable item. When uneconomically repairable, condemn and dispose at organizational level.</td> <td></td> </tr> </tbody> </table>   | <i>Code</i> | <i>Explanation</i> | D-Repairable item. When beyond lower level repair capability, return to Depot. Condemnation and disposal not authorized below depot level. |  | Z-Nonreparable item. When unserviceable, condemn and dispose of at the level indicated in position 3 (use code). |  | O-Repairable item. When uneconomically repairable, condemn and dispose at organizational level. |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| <i>Code</i>  | <i>Explanation</i>   |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| D-Repairable item. When beyond lower level repair capability, return to Depot. Condemnation and disposal not authorized below depot level.   |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| Z-Nonreparable item. When unserviceable, condemn and dispose of at the level indicated in position 3 (use code).   |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
| O-Repairable item. When uneconomically repairable, condemn and dispose at organizational level.  |  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |
|  | c. <i>National Stock Number.</i> This column indicates the National Stock Number assigned to the item and will be used for requisitioning purposes.  |             |                    |  |  |  |  |   |  |   |  |   |  |  |  |  |  |  |  |             |                    |  |  |  |  |   |  |  |   |

d. *Part Number.* This column indicates the primary number used by the manufacturer (individual, company, firm, corporation, or government activity), which controls the design characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

e. *Federal Supply Code for Manufacturers (FSCM).* This column indicates a 5-digit numeric code used to identify the manufacturer, distributor, or Government agency that controls the design characteristics of the item.

f. *Description.* This column indicates the Federal item name and any additional description of the item required.

g. *Unit of Measure (UM).* A two-character alphabetic abbreviation indicating the unit upon which the allowances are based; e.g., ft, ea, pr, etc..

h. *Quantity Incorporated in Unit.* This column indicates the quantity of the item used with or on the equipment.

**B-4. How to Locate Repair Parts**

a. When National Stock Number or reference number is unknown:

(1) *First.* Using the table of contents, determine the functional or subfunctional group within which the repair part belongs; i.e., warhead section, rocket fuze, etc.. This is necessary since illustrations are prepared for groups and listings are divided into the same groups.

(2) *Second.* Find the illustration covering the functional or subfunctional group to which the repair part belongs.

(3) *Third.* Identify the repair part in the illustration and note the illustration figure and item number of the repair part.

(4) *Fourth.* Using the repair parts listing, find the functional or subfunctional group to which the repair part belongs and locate the illustration figure and item number identified in (2) above. The part is listed opposite the figure and item number shown.

b. When National Stock Number or part number is known:

(1) *First.* Using the index of National Stock Numbers and part numbers, find the pertinent National Stock Number or part number. This index is in ascending NSN sequence followed by a list of part numbers in ascending alphanumeric sequence, cross-referenced to the illustration figure number and item number.

(2) *Second.* Using the repair parts find the functional or subfunctional group of the repair parts and the illustration figure number and item number referenced in the index of National Stock Numbers and part numbers.

**B-5. Abbreviations**

al.....	aluminum
bev-hd.....	beveled head
cd.....	cadmium
ck.....	countersunk
res.....	corrosion resistant steel
dia.....	diameter
did.....	drilled
ea .....	each
fil.....	fillister
fin .....	finish
fl .....	flat
h .....	high
hd .....	head
hex.....	hexagon
id.....	inside diameter
int.....	internal
lg .....	long
No.....	number
NF.....	National Fine Thread
od .....	outside diameter
pass.....	passivated
pltd.....	plated
rd .....	round
ru .....	rubber
S .....	steel
thk.....	thick
UNC.....	Unified National Coarse Thread
UNF .....	Unified National Fine Thread
UNJF .....	Unified National (controlled radius
.....	root) Fine Thread
u/w.....	used with
w.....	wide
Zn .....	zinc

**B-6. Federal Supply Code for Manufacturers**

<i>Code</i>	<i>Manufacturer</i>
19200, 19203 .....	US Army Armament, Munitions and Chemical Command
96906.....	Military Standards

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
FIG NO.	ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
B-1		PAOZZ	1336-01-015-6186	9298793	19203	GROUP 01 -HIGH EXPLOSIVE GUIDED MISSILE WARHEAD SECTIONS M251 AND M251A1 AND TRAINING GUIDED MISSILE WARHEAD SECTION M201 0101 -GUIDED MISSILE FUZE KIT, KNOB COVER AND LATCH ASSEMBLY, CONSISTS OF:		1
B-1	1	KFOZZ	.....	MS35206-208	92906	SCREW, MACHINE	ea	5
B-1	2	KFOZZ	.....	MS35333-69	96906	WASHER, LOCK	ea	5
B-1	3	KFOZZ	.....	MS35206-213	96906	SCREW, MACHINE	ea	5
B-1	4	KFOZZ	.....	MS35338-40	96906	WASHER, LOCK	ea	5
B-1	5	KFOZZ	.....	9208864	19203	STANDOFF, KNOB COVER	ea	5
B-1	6	KFOZZ	.....	9294661	19203	KNOB COVER AND LATCH ASSEMBLY	ea	1
B-1	7	PGHDD	1336-00-188-9762	9206336	19203	FUZE, GUIDED MISSILE, TRAINING: M816(M201 only).	ea	1
B-1	8	PAHZZ	5305-00-543-5795	MS24677-25	96906	SCREW CAP, SOCKET HEAD fi S, cd-pltd, No. 10-24 UNC 2A X 3/4 t M201 only).	ea	4
B-1	9	PAHZZ	5310-00-045-3296	MS35338-43	96906	WASHER, LOCK: S, cd-chromate-fin. 13/64 in. id, 11/32 in. od, 1/16 in. thk. (M210 only).	ea	4
B-1	10	PGOOO	1340-00-057-1741	9208608.	19200	0102-OGIVE OGIVE, ROCKET:	ea	1
B-1	11	PAOZZ	6920-00-615-9045	9293477	19203	SCREW, TELESCOPE TUBE:	ea	1
B-1	12	PAOZZ	5305-00-891-1789	NAS514-P103210P	92906	SCREW, MACHINE: cross-recess, FI-ck-hd, alloy-S, cd-pltd, No. 10-32 UNJF-3A X 5/8	ea	8
B-1	13	PAOZZ	5340-01-106-8517	9208333	19200	CATCH, CLAMPING	ea	2
B-1	14	PAOZZ	5340-01-182-1059	9208775	19203	0103-AFT RING ASSEMBLY CLEVIS ASSEMBLY	ea	2
B-1	15	PAOZZ	5365-01-187-0894	9208303	19203	NUT, ADJUSTMENT	ea	2
B-1	16	PAOZZ	5368-01-191-3504	8836202	19203	SPRING, CLEVIS	ea	2
B-2	1	PAOZZ	5315-00-841-4442	MS16562-224	96906	PIN, SPRING: cres, 1/8 in. dia, 3/4 in. [g, 1/32 in. thk (part of swing-bolt assembly).	ea	4
B-2	2	PAOZZ	5310-00-001-1301	9237309	19203	NUT, PLAIN, EXTENDED WASHER DOUBLE HEXAGON: S, cd-pltd, 5/8-18 UNJF-3B, 13/16 in. w, 45/64 in. h, 1-1/4 od of washer (part of swing-bolt assembly).	ea	4
B-2	3	PAOZZ	5310-00-614-3505	MS15795-820	96909	WASHER, FLAT: cres, 5/8 in. id, 1-5/16 in. od, 1/8 in. thk(part of swing-bolt assembly).	ea	4
B-2	4	PAOZZ	5305-00-705-2481	MS24694S69	96906	SCREW MACHINE: cross-recess fi-ck-hd, S, cd-pltd, No. 10-32 NF 3A X 1-23/32.	ea	8
B-2	5	PAOZZ	6920-00-057-7169	9208329	19203	LOCK, TEE-BOLT: al-alloy, 1-7/16 in. h, 41/64 in. w, 2-41/64 in. lg.	ea	4
B-2	6	PAOZZ	5306-00-172-3171	9237322	19203	BOLT, TEE-HEAD: alloy-S, 5/8-18 UNF-3A x 3- L9/32,5/8 in. dia (part of swing-bolt assembly).	ea	4
B-2	7	PAOZZ	6920-00-057-7168	9208288	19203	PLUNGER, SPRING: S, No. 10-32 UNF-2A X 7/8.	ea	4
B-2	8	PAOZZ	5315-00-933-7586	8877426	19203	PIN, SHOULDER, HEADLESS: cres, 1-1/2 in. lg (shear).	ea	6

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
FIG NO.	ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
						<i>GROUP 01 -HIGH EXPLOSIVE GUIDED MISSILE WARHEAD SECTIONS M251 AND M251A1 AND TRAINING GUIDED MISSILE WARHEAD SECTION M201 -Continued 0103-AFT RING ASSEMBLY-Continued</i>		
B-2	9	PAOZZ	5315-00-189-4661	8877425	19203	PIN, SHOULDER, HEADLESS: cres, 2 in. lg (alignment).	ea	2
B-2	10	MHHZZ	.....	9267740	19203	SHIELDING GASKET, ELECTRONIC: (knitted wire mesh RF seal, M251 and M251A1 only).	ea	5
B-2	11	PAOZZ	5935-00-279-1587	9281653	19203	COVER, ELECTRICAL CONNECTOR: protective cover and flag assembly)	ea	1
						<i>GROUP 02- WARHEAD SECTION SHIPPING AND STORAGE CONTAINER M544 0201-COVER ASSEMBLY</i>		
B-3	1	MHHZZ	.....	9211158-1	19203	STOP, SKID: (right) fabricated locally of structural steel, 1-3/4-in. x 1-3/4-in. angle, (refer to bulk materials).	ea	2
B-3	2	MHHZZ	.....	9211158-2	19203	STOP, SKID: (left) fabricated locally of structural steel, 1-3/4-in. x 1-3/4-in. angle, (refer to bulk materials).	ea	2
B-3	3	MHHZZ	.....	9211162	19203	ANGLE, INDEXING: fabricated locally of structural steel, i-in. x 1-in. angle, (refer - to bulk materials).	ea	4
B-3	4	PAOZZ	5310-00-067-9507	MS51922-37	96906	NUT, SELF-LOCKING, HEXAGON	ea	4
B-3	5	PAOZZ	5310-00-809-3079	MS27183-19	96906	WASHER, FLAT: s, cd-pltd, 1/2 in. id, 1-3/8 in. od, 7/64 in. thk.	ea	8
B-3	6	PAOZZ	5305-00-719-5275	MS90727-128	96906	SCREW, CAP, HEXAGON HEAD	ea	4
						<i>0202-BASE ASSEMBLY</i>		
B-3	7	PAOZZ	5310-00-732-0560	MS51968-14	96906	NUT, HEXAGON: S, cd-chromate-fin, 1/2-20 UNF-2B, 3/4 in. w, 7/16 in. h.	ea	20
B-3	8	PAOZZ	5310-00-584-5272	MS35338-48	96906	WASHER, LOCK: S, cd-chromate-fin, 1/2 in. id, 7/8 in, od, 1/8 in. thk.	ea	28
B-3	9	PAOZZ	5306-00-061-5671	9211131	19203	BOLT, TEE-HEAD: S, cd-chromate-fin, 1/2-20 UNF-2A x 2.	ea	20
B-3	10	MHHZZ		9219994	19203	PIN: lifting bar: fabricated locally of metal rod, 3/4-in. dia. 8-3/4 in. lg. (refer to bulk materials).	ea	4
B-3	11	PAHZZ	8140-00-003-5997	9219220-2	19203	BAR, LIFTING: (right)	ea	2
B-3	12	PAHZZ	8140-00-003-5996	9219220-1	19203	BAR, LIFTING: (left)	ea	2
B-3	13	PAOZZ	5310-00-081-8087	MS21044-N06	96906	NUT, SELF-LOCKING. HEXAGON: S, cd-pltd, No. 6-32 UNJC-3B	ea	4
B-3	14	PAOZZ	5310-00-082-1404	MS27183-6	96906	WASHER, FLAT: S, cd-pltd, 5/32 in. id, 3/8 in. od, 3/64 in. thk.	ea	4

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
FIG NO.	ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
						<i>GROUP 02-WARHEAD SECTION SHIPPING AND STORAGE CONTAINER M544-Continued 0202-BASE ASSEMBLY-Continued</i>		
B-3	15	PAOZZ	5305-00-889-3001	MS35206-231	96906	SCREW, MACHINE: cross-recess-pan-hd, S, cd-chromate-fin., No. 6-32 NC-2A X 5/8.	ea	4
B-3	16	PAOZZ	5340-00-235-9685	9223266	19200	CLIP, SPRING TENSION: S, vinyl-coated, 1.63 in. w, 2 in. lg.	ea	4
B-3	17	PAHZZ	5310-00-768-0318	MS51967-14	96906	NUT, HEXAGON: S, cd-chromate fin, 1/2-13 UNC 2B, 3/4 in. w, 7/16 in h.	ea	8
B-3	18	PAHZZ	5305-00-071-2018	MS90728-125	96906	SCREW, CAP, HEXAGON HEAD: S, cd-chromate-fin., 1/2-13 UNC-2A X 4-1/2.	ea	8
B-3	19	PAHZZ	5310-00-809-3079	MS27183-19	96906	WASHER, FLAT: S, cd-pltd, 9/16 in. id 1-3/8 in. od, 3/32 in. th.	ea	8
B-3	20	MHHHZ	.....	9211127	19203	SKID: wooden; fabricated locally of 4 in. X 6 in. (nominal) lumber (refer to bulk materials).	ea	4
B-3	21	MHHZZ	.....	9211152	19203	PIN, GUIDE: fabricated locally of metal rod, 1/2-in. dia, 1-1/2 to 1-5/8 in. lg (refer to bulk materials).	ea	6
						<i>0203-SUSPENSION FRAME ASSEMBLY</i>		
B-4	1	PAHZZ	5310-00-483-8789	MS17829-6F	96906	NUT, SELF-LOCKING, HEXAGON: S. cd-chromate-fin., 3/8-24 UNF-3B, 15/32 in. w, 9/16 in. h.	ea	1
B-4	2	PAHZZ	5305-00-269-2816	MS90726-72	96906	SCREW, CAP, HEXAGON HEAD: S, cd-chromate fin., 3/8-24 UNF-2A X 3-1/2.	ea	1
B-4	3	PAHZZ	8140-00-063-8148	9211125	19203	STRAP ASSEMBLY	ea	1
B-4	4	PAHZZ	8140-00-615-9028	9211180	19203	PIN, CLOSURE	ea	1
B-4	5	PAOZZ	8140-00-060-7417	9211163-1	19203	CUSHION: ru, 13.88 in. lg	ea	1
B-4	6	PAOZZ	8140-00-063-8149	9211163-2	19203	CUSHION: ru, 14.6 in. lg	ea	1
B-5	1	PAHZZ	5305-00-952-6693	MS35191-342	96906	SCREW, MACHINE: cross-recess fl-ck-hd, S, cd-pltd, 1/2-20 UNF-2A X 3/4.	ea	4
B-5	2	PAHZZ	5305-00-716-8192	MS90726-107	96906	SCREW, CAP, HEXAGON HEAD: S, cd-pltd, 1/2-20 UNF-2A X 3/4.	ea	8
B-5	3	PAHZZ	5310-00-584-5272	MS35338-48	96906	WASHER, LOCK: S, cd-chromate fir, 1/2 in. id, 7/8 in. od. 1/8 in. thk.	ea	8
B-5	4	PAHZZ	5310-00-732-0559	MS51968-8	96906	NUT, HEXAGON: S, cd-chromate fin., 3/8-24 UNF-2B, 9/16 in. w, 11/32 in. h.	ea	16
B-5	5	PAHZZ	5310-00-637-9541	MS35338-46	96906	WASHER, LOCK: S, cd-chromate fin. 3/8 in. id, 11/16 in. od, 3/32 in. thk.	ea	16
B-5	6	PAHZZ	5305-00-269-2803	MS90726-60	96906	SCREW, CAP, HEXAGON HEAD: S, cd-chromate fin., 3/8-24 UNF-2A.	ea	16
B-5	7	PAHZZ	5310-00-080-6004	MS27183-14	96906	WASHER, FLAT: S, cd-chromate fin., 13/32 in. id, 13/16 in. od, 5/64 in. thk.	ea	16
B-5	8	PAHZZ	8140-00-060-7416	9211130	19203	MOUNT, SHEAR:	ea	4

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
FIG NO.	ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
						<i>GROUP 03-BULK MATERIAL</i>		
.....	.....	XDHZZ	5510-00-220-6150	MML751	81348	LUMBER: 2 X 8 in. boards, soft wood, 9-ft long; two required (used to fabricate side rails and rear cradle of LANCE maintenance stand). Local procurement permissible.	ft	
.....	.....	XDHZZ	5510-00-220-6152	MML751	81348	LUMBER: 2 X 10 in. boards, soft wood, 6-ft long; one required (used to fabricate forward cradle of LANCE maintenance stand). Local procurement permissible.	ft	
.....	.....	XDHZZ	5510-00-267-2135	MML736	81348	LUMBER: 4 X 6 in. oak boards, 12-ft long; one required (used to fabricate four skids for one warhead section container). Alternate Lumber: 4 X 6 in. hardwood, MIL-STD-731, group IV, II, or II (oak, pecan, rock elm, white ash, beech, birch, hackberry, hard maple, hickory), length as required (to be procured locally).	ft	
.....	.....	XDHZZ	9510-00-596-2280	ASTM A576	81346	METAL ROD: Hot-rolled carbon steel, Spec ASTM A576, Composition 1020, 1/2-in. dia, 10-ft long (used to fabricate guide pins for base assembly of warhead section containers). Alternate Metal Rod: Hot-rolled carbon steel, Spec ASTM A575, 1/2-in. dia, length as required (to be procured locally).	ft	
.....	.....	XDHZZ	9510-00-189-7496	ASTM A576	61346	METAL ROD: Hot-rolled carbon steel, Spec ASTM A576, composition 1020, 3/4-in dia, 10-ft long (used to fabricate pins for lifting bars on base assembly of warhead section containers). Alternate Metal Rod: Hot-rolled carbon steel, Spec ASTM A575 3/4-in. dia, length as required (to be procured locally).	ft	
.....	.....	XDHZZ	9520-00-277-5986	QQS741	81348	STRUCTURAL STEEL: 1-in. X 1-in. angle steel, 0.125 in. thick, spec QQ-S-741, 20-feet long (used to fabricate indexing angles for stacking brackets on cover assembly of warhead section containers). Alternate Structural Steel: 1-in. X 1-in. angle steel, 0.125 in. thick, Spec ASTM A36, length as required (to be procured locally).	ft	

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
FIG NO.	ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
.....	.....	XDHZZ	9520-00-289-7016	QQS741	81348	STRUCTURAL STEEL: 1-3/4 in. X 1-3/4 in. angle steel, 0.188 in. thick, Spec QQ-S-741, 18 ft long (used to fabricate skid stops for stacking brackets for cover assembly of warhead section container), Alternate Structural Steel: 1-3/4 in. X 1-3/4 in. angle steel, 0.188 in. thick. Spec ASTM A36, length as required (to be procured locally).	ft	
.....	.....	XDHZZ	5999-00-992-5541	07-0101-0004	12881	SHIELDING GASKET, ELECTRONIC: knitted wire mesh imbedded in silicone rubber, 0.125 in. X 0.125 in. X 18 ft lg (used to fabricate electronic shielding (RF) gasket for aft ring of warhead section).	ft	

**SECTION III. SPECIAL TOOLS AND EQUIPMENT LIST**

(1) ILLUSTRATION		(2)	(3)	(4)	(5)	(6)	(7)	(8)
FIG NO.	ITEM NO.	SMR CODE	NATIONAL STOCK NUMBER	PART NUMBER	FSCM	DESCRIPTION	U/M	QTY INC IN UNIT
B-6	.....	PEODD	1450-00-937-0894	10162468	18876	SLING, BEAM TYPE: M22 (authorized by TOE/TDA)	ea	-
B-7	.....	PAOZZ	5120-00-866-6677	9219129	19203	WRENCH, OPEN END, FIXED: H4244 (issued two per LANCE Missile Mating Tool Kit)	ea	-
B-8	.....		.....	.....	.....	LANCE MAINTENANCE STAND	ea	-

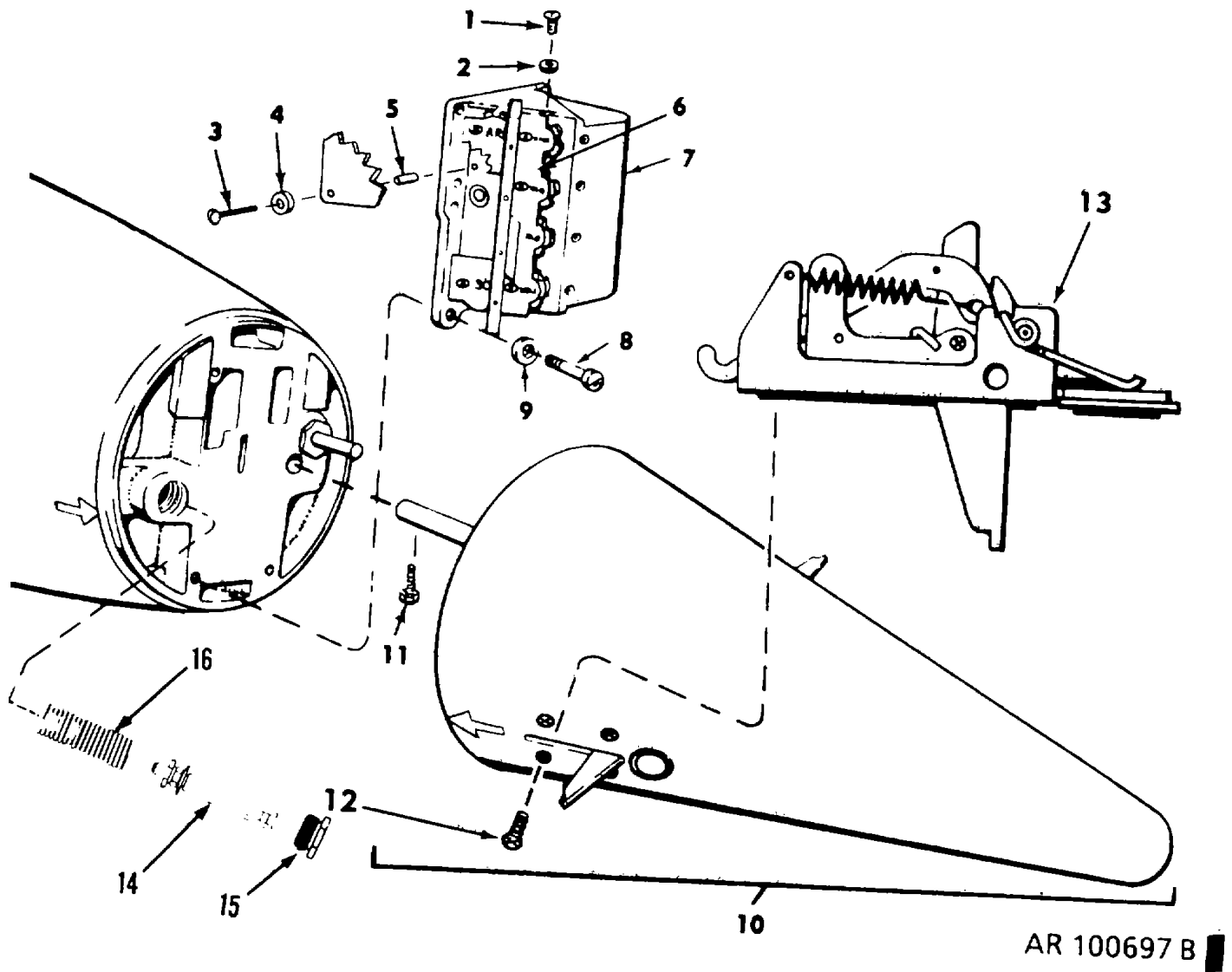


Figure B-1. Warhead section-electronic time guided-missile fuze and rocket ogive.

Change 3 B-8



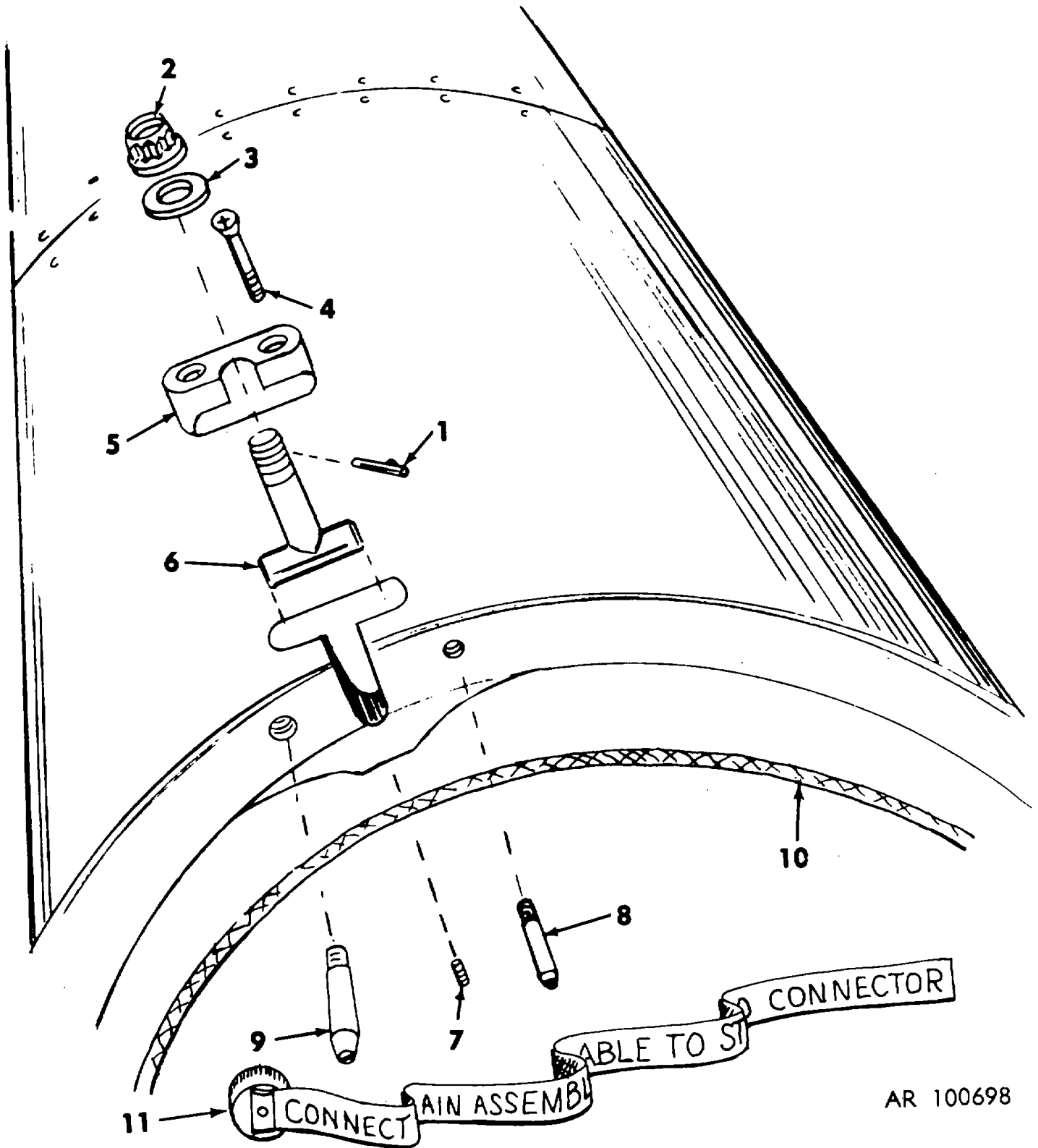
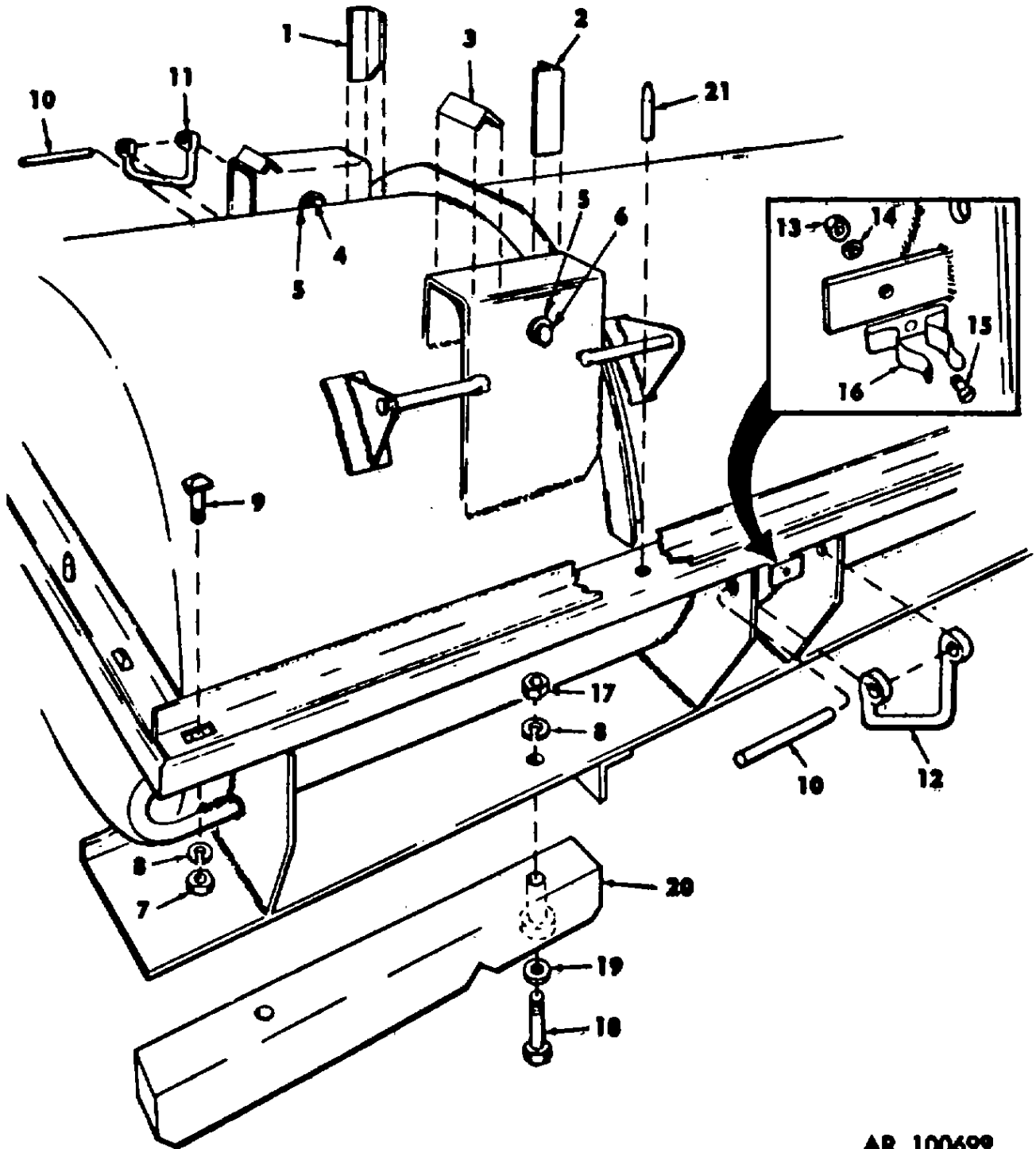
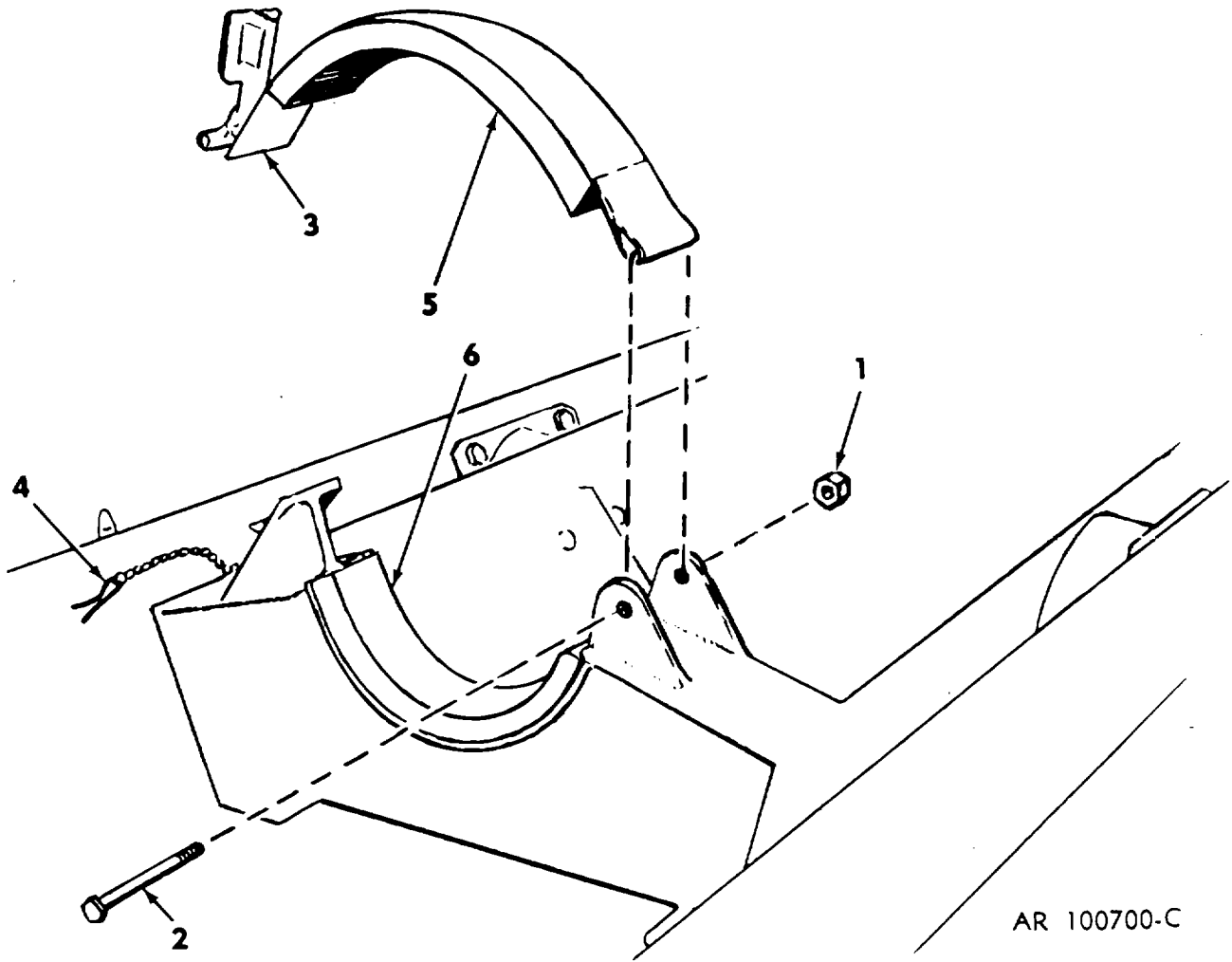


Figure B-2. Warhead section-aft ring assembly and skin assembly



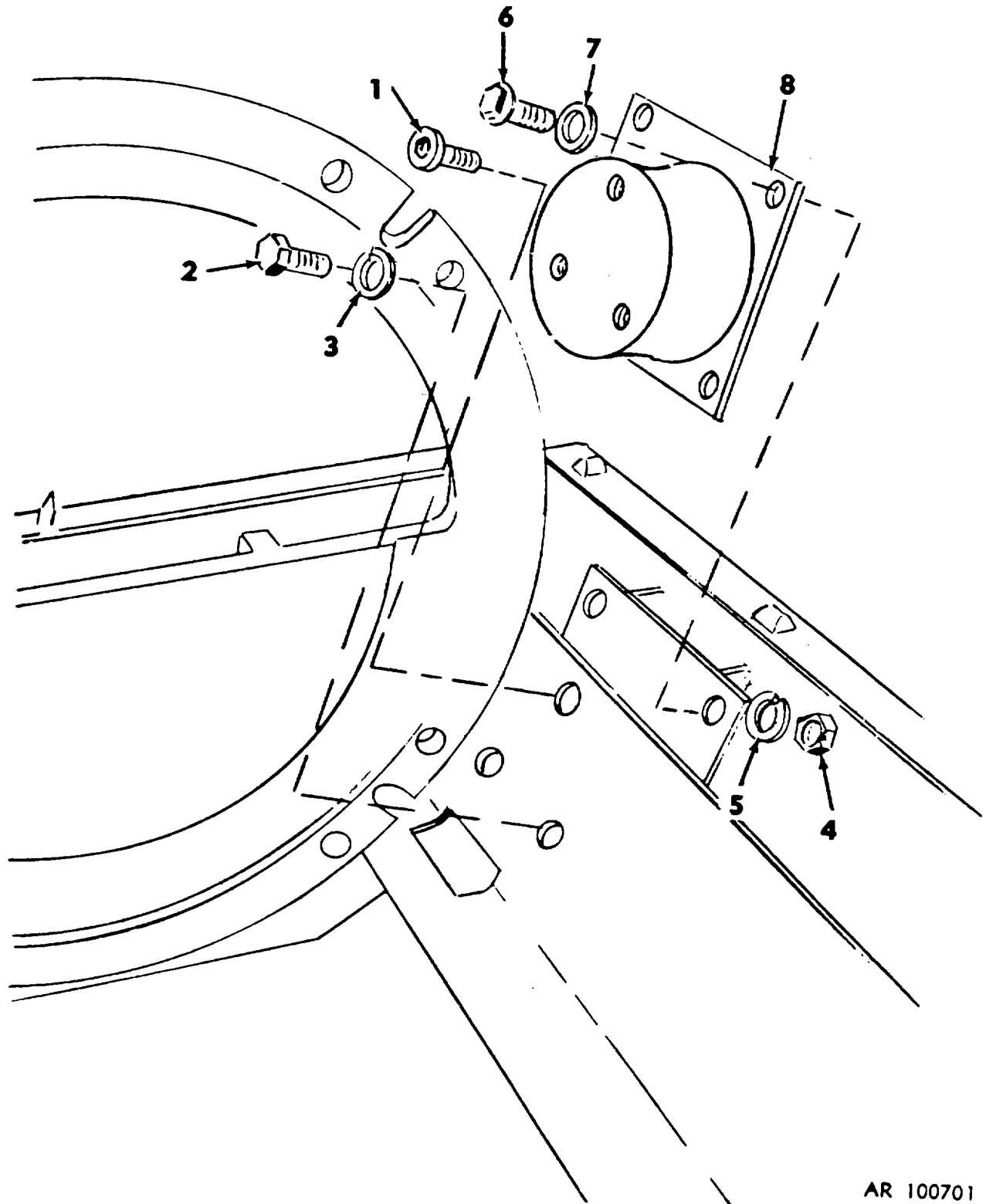
AR 100699

Figure B-3. Shipping and storage container-cover assembly and base assembly.



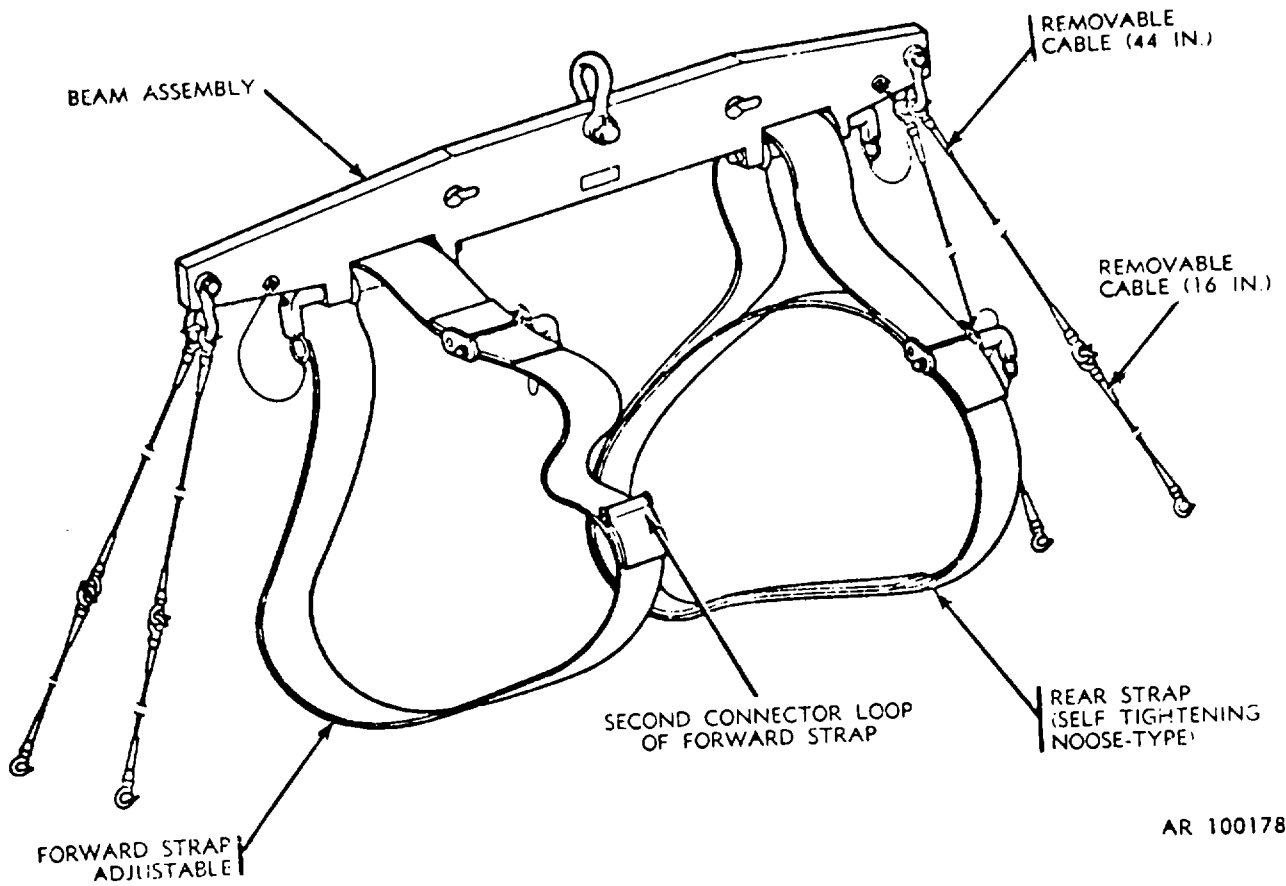
AR 100700-C

Figure B-4. Shipping and storage container-suspension frame assembly (strap assembly) and saddle cushion.



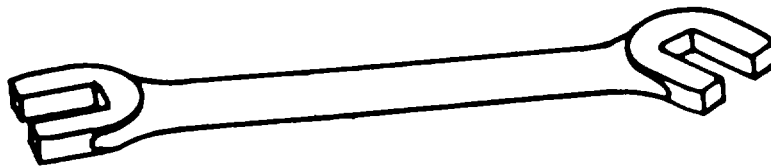
AR 100701

Figure B-5. Shipping and storage container-suspension frame assembly (shear mount).



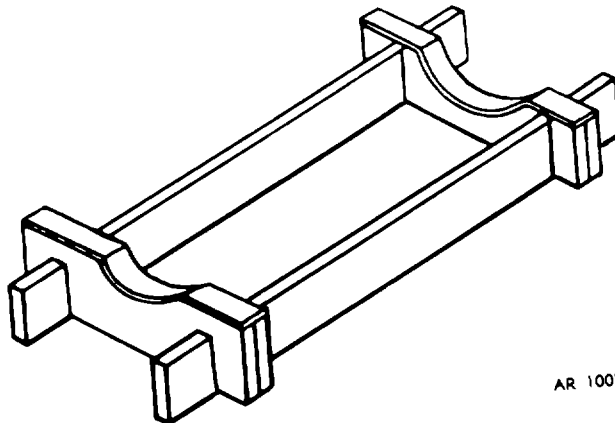
AR 100178A

Figure B-6. Beam-type sling, M22.



AR 100725

Figure B-7. H4244 wrench.



AR 100246

Figure B-8. LANCE maintenance stand.

**APPENDIX C**  
**EXPENDABLE AND DURABLE ITEMS LIST**

---

**SECTION I. INTRODUCTION**

**C-1. SCOPE**

This appendix lists expendable and durable items you will need to maintain the Guided Missile warhead and trainer. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (except Medical, Class V, Repair Parts, and Heraldic items).

**C-2. EXPLANATION OF COLUMNS**

- a. Column (1) Item number. This number is assigned to the entry in the listing for referencing when required.
- b. Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item.

C - Operator/Crew  
O - Unit Maintenance  
F - Direct Support Maintenance  
H - General Support Maintenance

c. Column (3) National Stock Number. This is the National Stock Number (NSN) assigned to the item; use it to request or requisition the item.

d. Column (4) Description. Indicates the federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial and Government Entity Code (CAGEC) in parentheses followed by the part number.

e. Column (5) Unit of Measure (U/M)/Unit of Issue (U/I). This measure is expressed by a two-character alphabetical abbreviation (i.e., EA, IN, PR). If the unit of measure differs from the unit of issue, as shown in the Army Master Data File (AMDF), requisition the lowest unit of issue that will satisfy your requirements.

**Change 4 C-1**

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M/ U/I
1	O	8040-00-262-9011	ADHESIVE: Rubber (81348) MM-A-1617	PT
2	O	8020-00-242-7266	BRUSH, PAINT: Hog bristle, flat w/sq edge, 3-in. w, 7/8 in. thisk, 3-1/4 in. exposed leg. (81348) H-B-420	EA
3	O	8020-00-850-0084	BRUSH, PAINT: Hog bristle, oval, w/chisel edge, 1/2-in. w, 1-7/8 in. min exposed lg. (45092) 456SIZE2	EA
4	O	7520-00-248-9285	BRUSH, STENCIL: Fountain type 1-3/8 in. dia. (81348) H-B-00621	EA
5	O	7920-00-255-5135	BRUSH, WIRE, SCRATCH: Beryllium-copper alloy curved handle, 14 in. x 15/16 in. block 6 in. x 1-1/4 in. wire brush (81348) HB178	EA
6	O	4010-00-262-1551	CHAIN, WELDLESS: Aluminum alloy, 0.028 in. thk (81348) RRC271	BX
7	O	6850-00-984-5853	CLEANING COMPOUND, SOLVENT: (81349) MIL-C-81302	CN
8	O	5350-00-192-5049	CLOTH, ABRASIVE: Closed coating, al-oxide No. 120 grit, 9 x 11 in. (81349) A-A-1048	PG
9	O	7920-00-292-9204	CLOTH, CLEANING: White, lintless fabric, 18 in. x 18 in. (88001) C1851	BX
10	O	5350-00-221-0872	CLOTH, ABRASIVE: Crocus cloth, 9 x 11 in. (58536) A-A-1206	PG
11	O	8030-00-850-7076	COATING COMPOUND, METAL PRETREATMENT: Resin acid, 1 qt kt (81349) DOD-P-15328	KT
12	O	8030-00-779-4699	COATING KIT, ALUMINUM, CORROSION RESISTING: (84063) CHEMICALKIT120	KT'

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M/ U/I
13	O	8030-00-231-2345	CORROSION PREVENTIVE COMPOUND: Cold application, dry hard film (81349) MIL-C-16173	GL
14	O	7930-00-249-8036	DETERGENT, GENERAL PURPOSE: Powder, 5 lb. container (81348) A-A-1376	CO
15	O	8010-00-297-2116	ENAMEL: Olive drab, lusterless No. 34087 (81348) TT-E-516	GL
16	O	8010-00-848-9272	ENAMEL: Olive drab, lusterless No. 34087 pressurized can (81348) TT-E-516	PT
17	O	8010-00-297-2112	ENAMEL: Yellow, No. 33538 (81348) TT-E-516	GL
18	O	8010-00-079-2750	ENAMEL: Bronze, No. 17043, pressurized can (81348) TT-E-00488	PT
19	O	8010-00-111-8005	ENAMEL: Camouflage, black (81349) MIL-E-52798	GL
20	O	8010-00-935-7080	EPOXY PRIMER, COATING KIT: 1 qt kit, yellow, type 1, class 1 (81349) MIL-P-23377	KT
21	O	8010-01-315-9306	EPOXY PRIMER, COATING KIT: 1 qt kit, yellow, type 1, class 2 (81349) MIL-P-23377	KT
22	O	5315-00-597-9766	FASTENER, CORRUGATED, WOOD JOINT: (81348) FF-F-133	BX
23	O	8305-00-191-1101	FELT SHEET: 1/2 in. thk x 6 in. w (81348) CF206	SF
24	O	7510-00-224-6732	INK, MARKING STENCIL: White No. 37875 (58536) A-A-208	PT
25	O	7510-00-469-7910	INK, MARKING STENCIL: Black No. 37038, pressurized can (38512) AN-1	PT



(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M/ U/I
26	O	7510-00-419-9564	INK, MARKING STENCIL: White No. 37875, opaque liquid for nonporous surfaces, pressurized can (58536) A-A-208	PT
27	O	5350-00-221-0881	PAPER, ABRASIVE: Open coat (58536) A-A-1201	PG
28	O	5350-00-186-8821	PAPER, ABRASIVE: Closed coat (58536) A-A-120	PG
29	O	8010-01-160-6742	POLYURETHANE COATING: Green No. 383 CARC, 4 gal (81349) MIL-C-46168	KT
30	O	8010-01-162-5578	POLYURETHANE COATING: Green No. 383 CARC, 1 gal (81349) MIL-C-46168	KT
31	O	8010-01-193-0517	PRIMER, COATING: Epoxy, 1 gl kt (used on steel surfaces) (81349) MIL-P-53022	KT
32	O	8010-00-292-1127	PRIMER, COATING: Zinc-chromate (81348) TT-P-664	GL
33	O	8010-00-899-8825	PRIMER, COATING: Zinc-chromate pressurized can (83421) 8010-00-899-8825	PT
34	O	8010-00-515-2258	REMOVER, PAINT: Alkali, liquid form (81348) TT-R-248	CN
35	O	8010-00-227-1694	REMOVER, PAINT: Alkali-type, powder form (81348) TT-R-230	DR
36	O	5340-00-902-0426	SEAL, ANTIPIILFERAGE: Lead and wire, 4 strand (used on container M544) (96906) MS51938-6	HD
37	O	5340-00-491-7632	SEAL, ANTIPIILFERAGE: Lead and wire, 2 strand, P/N 9267743 (used on M811 fuze) (2 per bag) (96906) MS51938-5	EA
38	O	9310-00-160-7858	STENCIL BOARD: (58536) A-A-1733	HD

(1) Item Number	(2) Level	(3) National Stock Number	(4) Description	(5) U/M/ U/I
39	O	8135-00-836-0810	TAPE, PRESSURE SENSITIVE ADHESIVE: Blue (81348) PPP-T-60	YD
40	O	8010-00-181-8079	THINNER, AIRCRAFT COATING: (used with chemical agent resistant coating) (81349) MIL-T-81772	CN
41	O	8010-00-160-5794	THINNER, PAINT PRODUCTS: (81348) TT-T-306	GL
42	O	8030-00-229-3534	WOOD PRESERVATIVE, PENTACHLOROPHENAL MIXTURE: (81348) TT-W-572	GL

**INTENTIONALLY LEFT BLANK**

☆U.S. G.P.O. :1994-546-043:80738

027397-004

**Change 4 C-6**

APPENDIX D

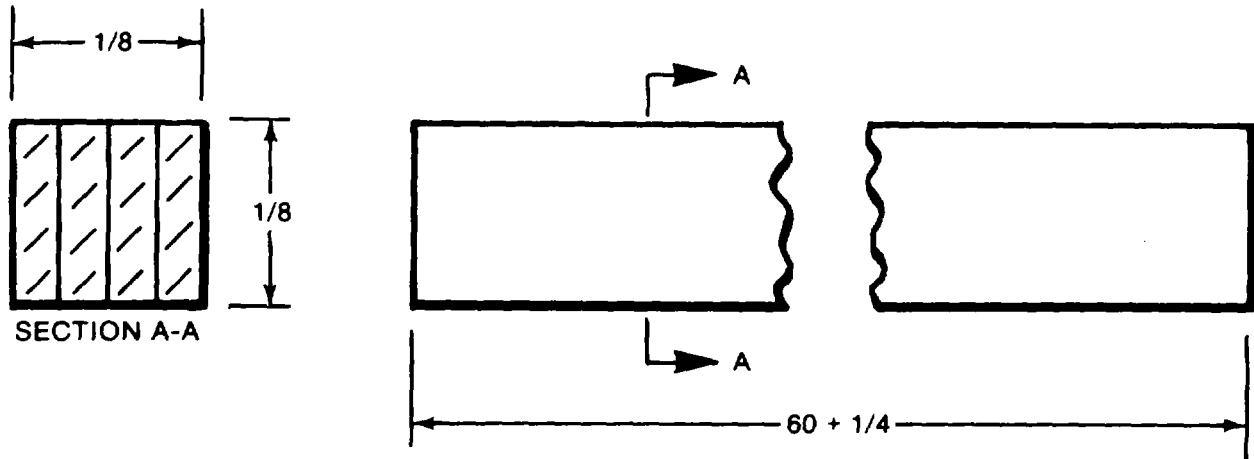
ILLUSTRATED LIST OF MANUFACTURED ITEMS

D-1. Introduction

This appendix includes complete instructions for making items authorized to be manufactured or fabricated at general support maintenance. A part number index in alphanumeric order is provided for cross-referencing the part number of the item to be manufactured to the figure which covers fabrication criteria. All materials needed for manufacture of an item are listed by NSN or specification number on the illustration. These materials are also listed in Appendix B or Appendix C.

D-2. Manufactured Items Index

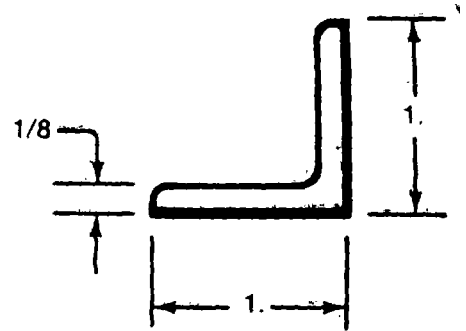
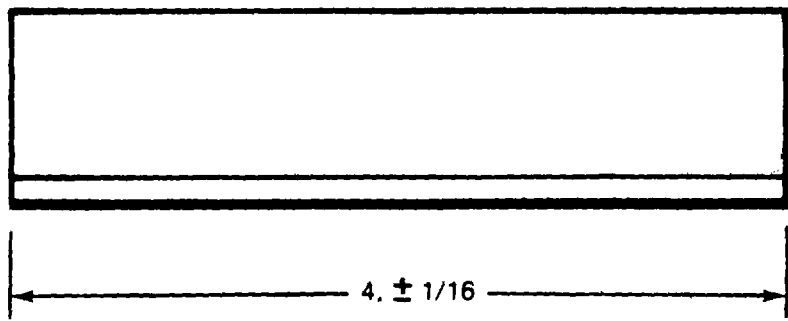
Figure No.	Part Number	Description
D-1	9267740	Electronic Shielding Gasket
D-2	9211162	Indexing Angle
D-3	9219994	Lifting Bar Pin
D-4	9211152	Guide Pin
D-5	9211158-1	Skid Stop, Right
D-6	9211158-2	Skid Stop, Left
D-7	9211127	Wooden Runner
D-8	N/A	LANCE Maintenance Stand



- NOTES:
1. CUT FROM NSN 5999-00-992-5541 STRIP MATERIAL.
  2. DIMENSIONS ARE IN INCHES.

ARD81-0139

Figure D-1. Electronic shielding gasket, part No. 9267740.

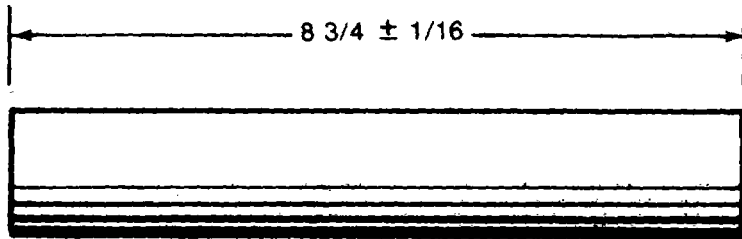


NOTES:

1. FABRICATE FROM NSN 9520-00-277-5986 STOCK.
2. ALTERNATE MATERIAL: STRUCTURAL STEEL ANGLE, SPEC ASTM A36.
3. DIMENSIONS ARE IN INCHES.

ARD81-0140

Figure D-2. Indexing angle, part No. 9211162.

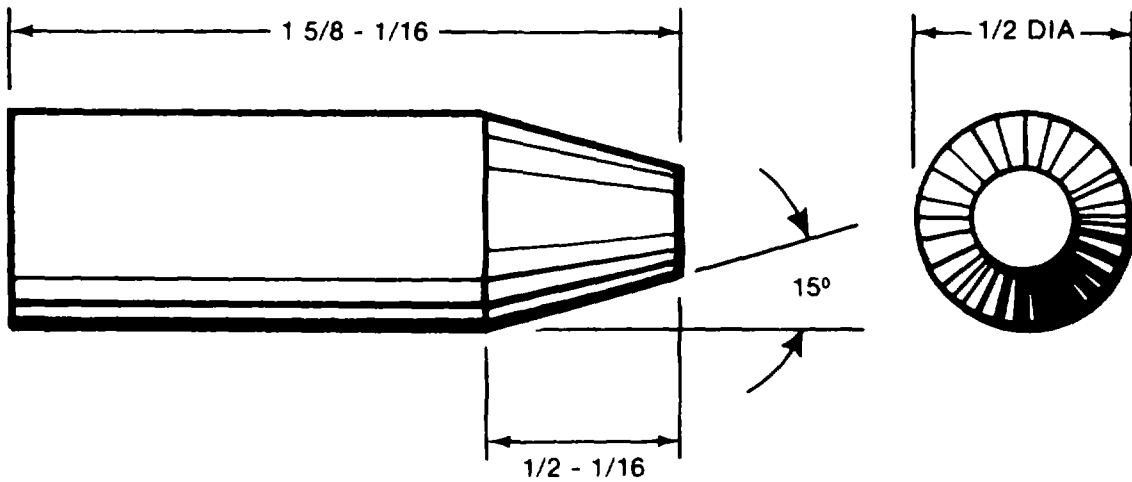


NOTES:

1. FABRICATE FROM NSN 9510-00-189-7496 STOCK.
2. ALTERNATE MATERIAL: HOT-ROLLED CARBON STEEL ROD, SPEC ASTM A575.
3. DIMENSIONS ARE IN INCHES.

ARD81-0141

Figure D-3. Lifting bar pin, part No. 9219994.

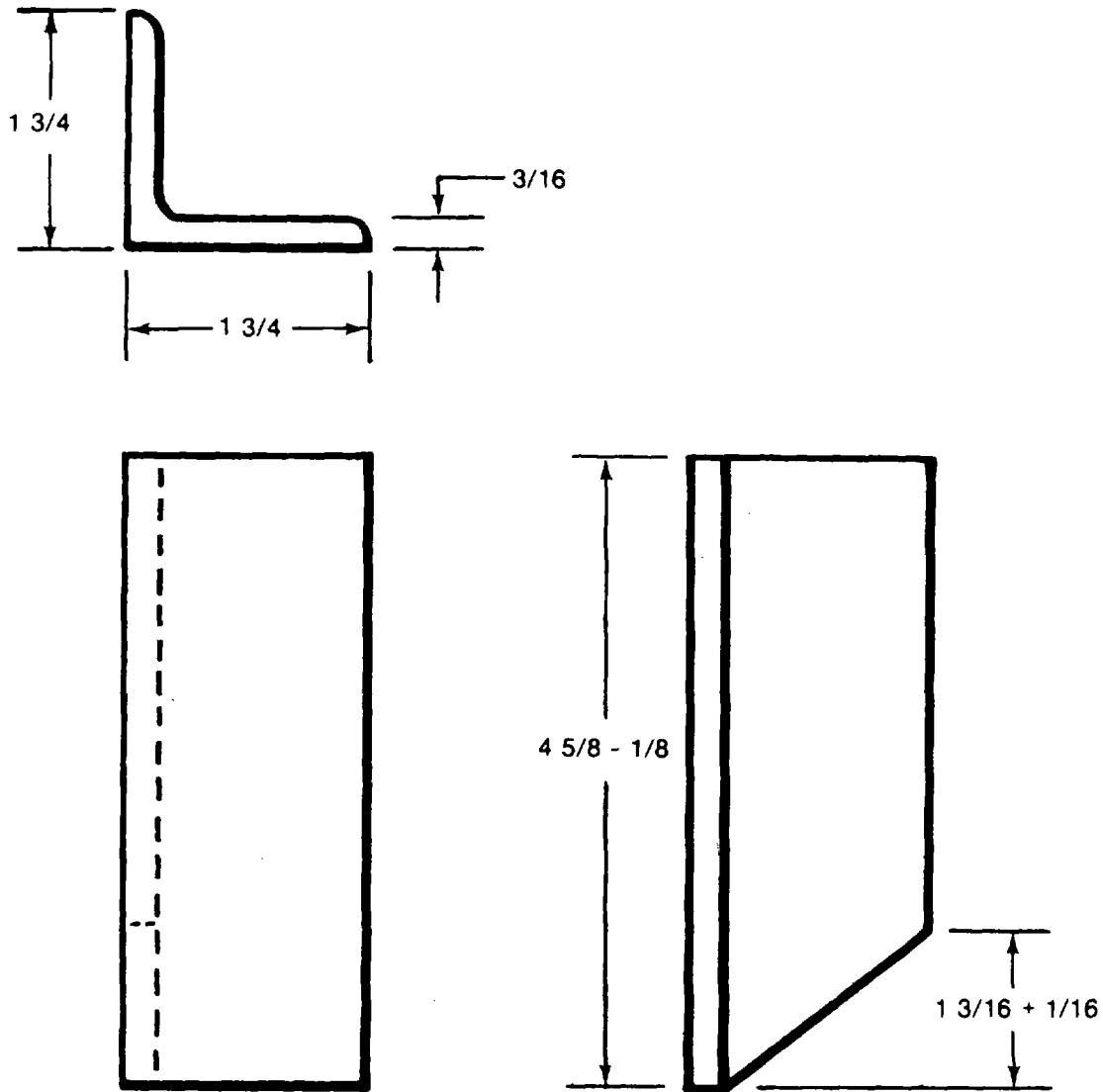


NOTES:

1. FABRICATE FROM NSN 9510-00-596-2280 STOCK.
2. GRIND APPROXIMATE  $15^\circ$  TAPER ON ONE END.
3. ALTERNATE MATERIAL: HOT-ROLLED CARBON STEEL ROD, SPEC ASTM A575.
4. DIMENSIONS ARE IN INCHES.

ARD81-0142

Figure D-4. Guide pin, part No. 9211152.

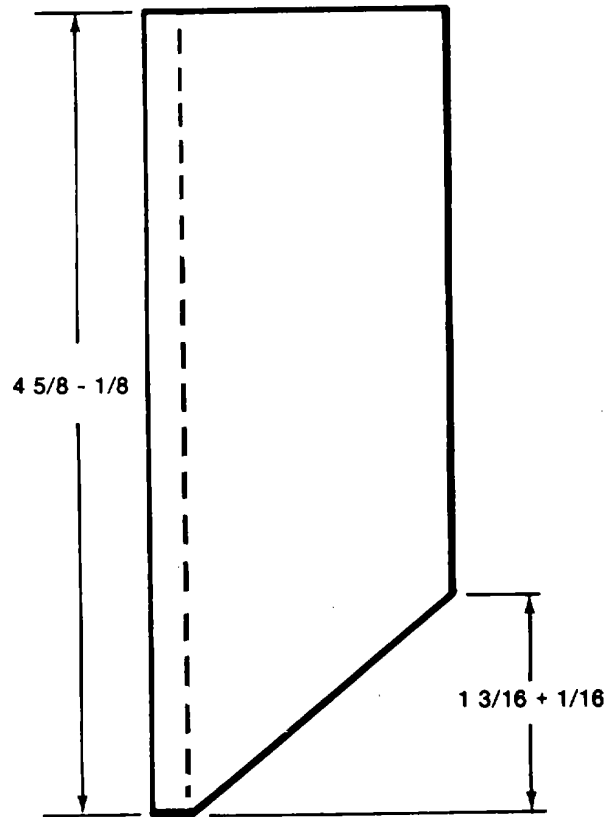
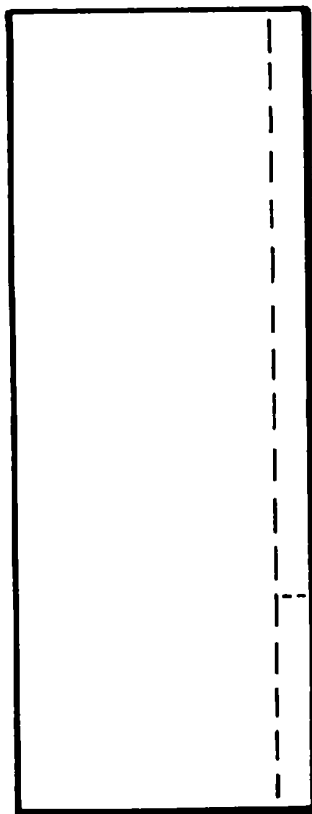
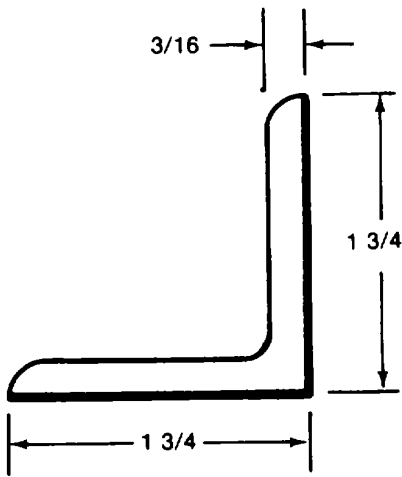


NOTES

- 1 FABRICATE FROM NSN 9520-00-289-7016 STOCK.
- 2 ALTERNATE MATERIAL: STRUCTURAL STEEL ANGLE. SPEC ASTM A36.
- 3 DIMENSIONS ARE IN INCHES

ARD81-0143

Figure D-5. Skid stop, right, part No. 9211158-1.



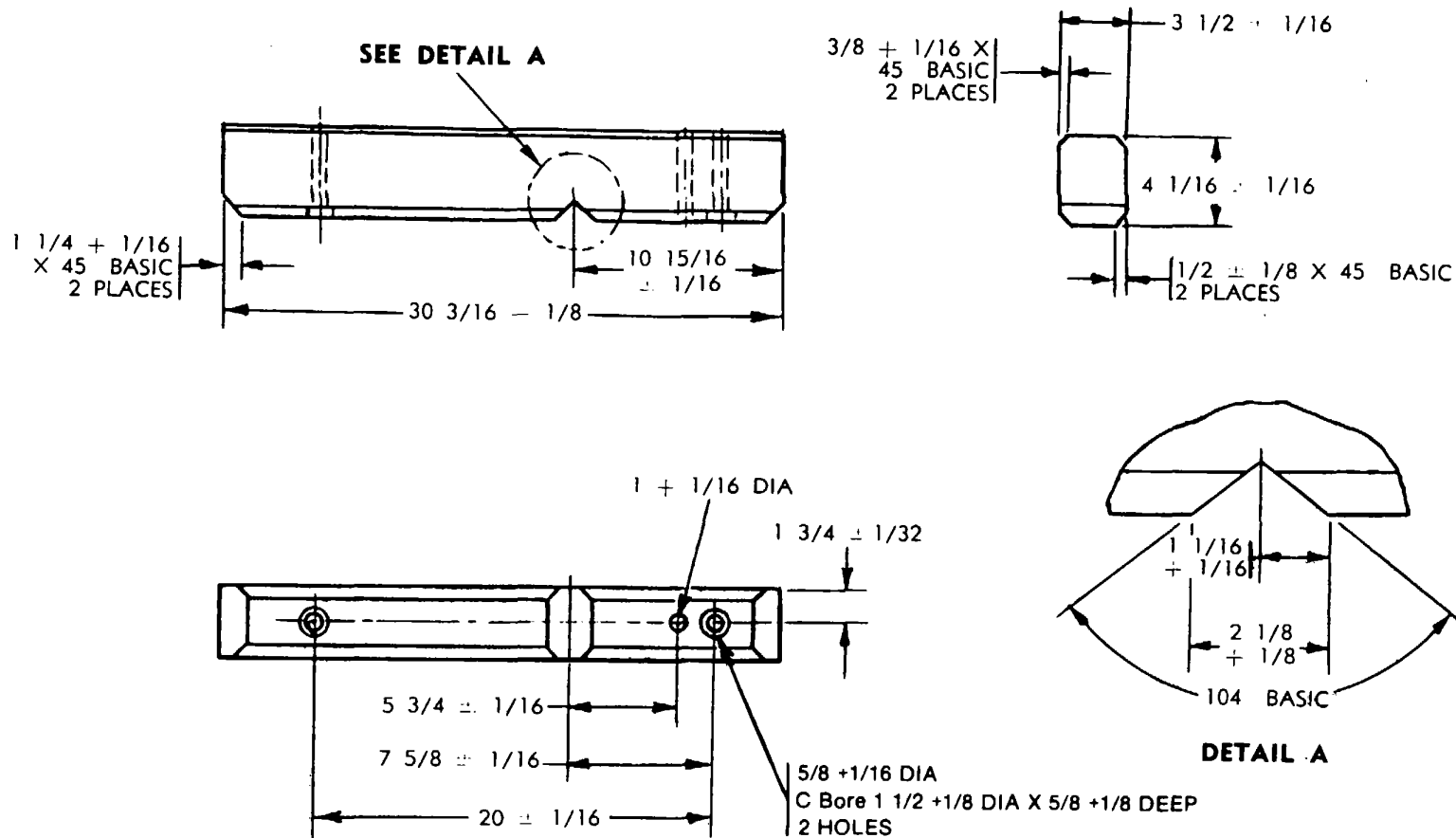
NOTES:

1. FABRICATE FROM NSN 9520-00-289-7016 STOCK.
2. ALTERNATE MATERIAL: STRUCTURAL STEEL ANGLE, SPEC ASTM A 36.
3. DIMENSIONS ARE IN INCHES.

ARD81-0144

Figure D-6. Skid stop, left, part No. 921158-2.



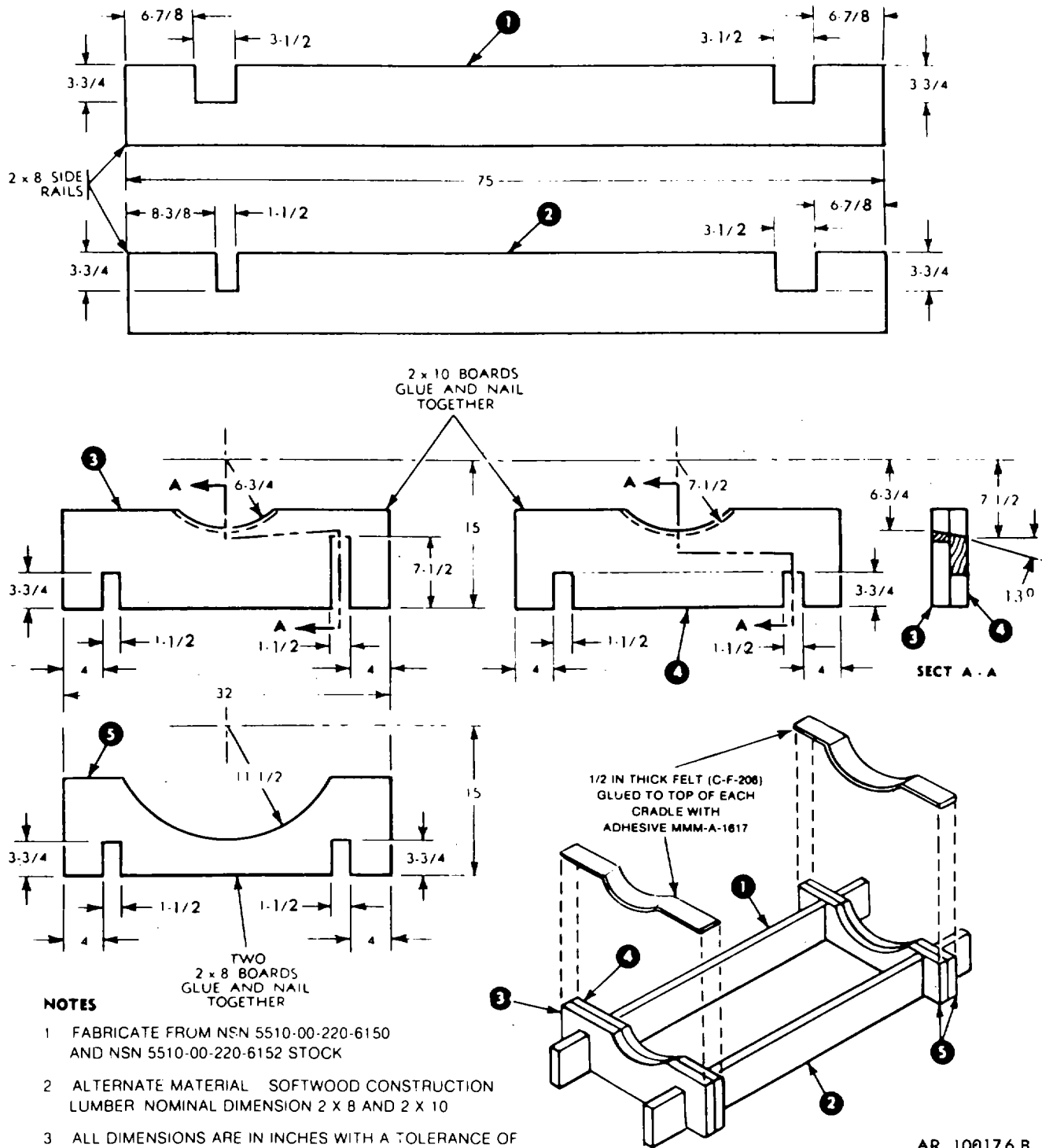


AR 101914A

**NOTES:**

1. Fabricate from NSN 5510-00-267-2135 stock.
2. Alternate material: 4 X 6 in. hardwood lumber, MIL-Std-731, group IV, III, or II (oak, pecan, rock elm, white ash, beech, birch, hackberry, hard maple, hickory).
3. Dimensions are in inches.
4. Preserve with wood preservative. When dry, apply two coats of olive drab enamel, spec TT-E-516 or forest green enamel, spec MIL-E-52798.

Figure D-7. Wooden runner, part No. 9211127.



**NOTES**

- 1 FABRICATE FROM NSN 5510-00-220-6150 AND NSN 5510-00-220-6152 STOCK
- 2 ALTERNATE MATERIAL SOFTWOOD CONSTRUCTION LUMBER NOMINAL DIMENSION 2 X 8 AND 2 X 10
- 3 ALL DIMENSIONS ARE IN INCHES WITH A TOLERANCE OF + 1/16 IN
- 4 STAND DESIGNED FOR ASSEMBLY WITHOUT USE OF NAILS TO ALLOW FOR DISASSEMBLY
- 5 PRESERVE WITH OLIVE DRAB ENAMEL SPEC TT-E-516

**Figure D-8. LANCE maintenance stand.**

By Order of the Secretary of the Army:

Official:

ROBERT M. JOYCE  
*Brigadier General, United States Army*  
*The Adjutant General*


E. C. MEYER  
*General United States Army*  
*Chief of Staff*

Distribution:

To be distributed in accordance with DA Form 12-32, Direct Support and General Support Maintenance requirements for LANCE Missile System.

☆U.S. GOVERNMENT PRINTING OFFICE: 1991 - 281-486/43043

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

 <p style="font-size: 1.2em; font-weight: bold; margin: 0;">SOMETHING WRONG WITH PUBLICATION</p> <p style="font-style: italic; margin: 0;">THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL.</p>				FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)	
				DATE SENT	
PUBLICATION NUMBER		PUBLICATION DATE		PUBLICATION TITLE	
BE EXACT PIN-POINT WHERE IT IS				IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.	
PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.		
PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER				SIGN HERE	

## The Metric System and Equivalents

### Linear Measure

1 centimeter = 10 millimeters = .39 inch  
 1 decimeter = 10 centimeters = 3.94 inches  
 1 meter = 10 decimeters = 39.37 inches  
 1 dekameter = 10 meters = 32.8 feet  
 1 hectometer = 10 dekameters = 328.08 feet  
 1 kilometer = 10 hectometers = 3,280.8 feet

### Weights

1 centigram = 10 milligrams = .15 grain  
 1 decigram = 10 centigrams = 1.54 grains  
 1 gram = 10 decigrams = .035 ounce  
 1 decagram = 10 grams = .35 ounce  
 1 hectogram = 10 decagrams = 3.52 ounces  
 1 kilogram = 10 hectograms = 2.2 pounds  
 1 quintal = 100 kilograms = 220.46 pounds  
 1 metric ton = 10 quintals = 1.1 short tons

### Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce  
 1 deciliter = 10 centiliters = 3.38 fl. ounces  
 1 liter = 10 deciliters = 33.81 fl. ounces  
 1 dekaliter = 10 liters = 2.64 gallons  
 1 hectoliter = 10 dekaliters = 26.42 gallons  
 1 kiloliter = 10 hectoliters = 264.18 gallons

### Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch  
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches  
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet  
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet  
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres  
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

### Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch  
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches  
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

## Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

### Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
----	---------------------------	-------------------------------	------------------------	----

PIN: 027397-000