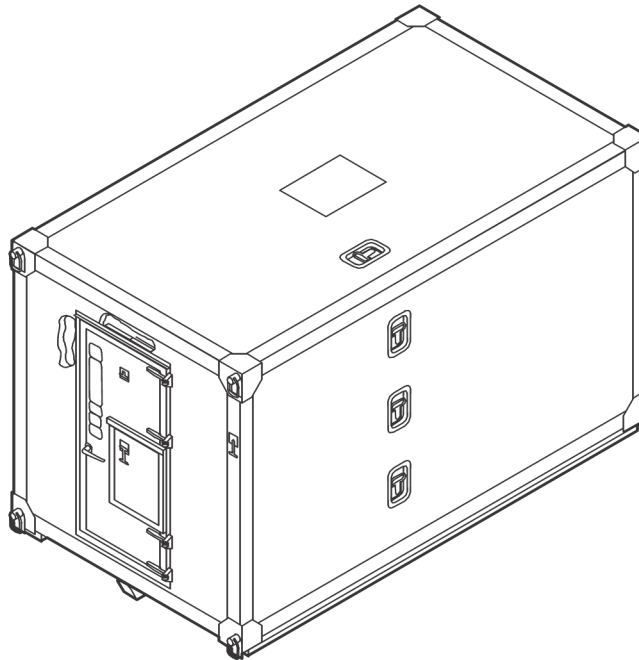


***TM 10-5411-207-13&P**

TECHNICAL MANUAL
OPERATOR AND FIELD MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
FOR
SHELTER, ELECTRICAL EQUIPMENT

S-280C/G UNSHIELDED
(NSN 5411-01-092-0892)

S-280C/G SHIELDED
(NSN 5411-01-304-3069)



SUPERSEDURE NOTICE: This manual supersedes TM 10-5411-207-14, dated 18 September 1989 and TM 10-5411-207-24P dated 19 August 1991.

DISTRIBUTION STATEMENT A— Approved for public release, distribution is unlimited.

HEADQUARTERS, DEPARTMENT OF THE ARMY

15 APRIL 2016

WARNING SUMMARY

INTRODUCTION

The following safety and hazardous materials warnings appear throughout this manual. Review these warnings and ensure that you understand them and can apply them during operation and maintenance of the equipment. Failure to follow these warnings may result in serious injury or death to personnel.

FIRST AID

For first aid treatment, refer to Field Manual, FM 4-25.11, First Aid.

EXPLANATION OF GENERAL SAFETY WARNING ICONS



FLYING PARTICLES – Arrows bouncing off face with face shield shows that particles flying through the air will harm face.



HEAVY PARTS – Hand with heavy object on top shows that heavy parts can crush and harm.



HEAVY PARTS – Foot with heavy object on top shows that heavy parts can crush and harm.



HEAVY PARTS – Heavy object on human figure shows that heavy parts present a danger to life or limb.

WARNING SUMMARY – (Continued)

GENERAL SAFETY WARNING DESCRIPTIONS

WARNING



To prevent injury or death to personnel when operating a forklift, verify that all personnel are clear of the shelter.

To avoid injury to personnel and damage to the shelter, only the personnel actually engaged in the loading operation should be permitted near the truck, the lifting device, or the shelter.

All instructions must come from the supervisor of the loading crew.

All personnel must remain clear of truck while shelter is being lowered into place.

To prevent injury to personnel, use care in lifting and carrying door.

Before performing maintenance on the underside of the floor, ensure that the shelter is supported properly to prevent injury to personnel.

Before performing maintenance on the skids, ensure that the shelter is supported properly to prevent injury to personnel.

WARNING



Drilling creates metal chips that can enter the eyes and cause injury. Eye protection is required.

WARNING SUMMARY – (Continued)

EXPLANATION OF HAZARDOUS MATERIALS ICONS



FIRE – Flame shows that a material may ignite and cause burns.



CHEMICAL – Drops of liquid on hand shows that the material will cause burns or irritation to human skin or tissue.



VAPOR – Human figure in a cloud shows that material vapors present a danger to life or health.



EYE PROTECTION – Person with goggles shows that the material will injure the eyes.

HAZARDOUS MATERIALS WARNING DESCRIPTION

WARNING



Wear gloves when mixing and applying adhesive and hardener.

WARNING



Adhesives and solvents are flammable and toxic. Keep away from heat and open flames. To avoid injury or death to personnel, no smoking is allowed.

WARNING



Use adhesives and solvents in a well-ventilated area.

WARNING SUMMARY – (Continued)

Avoid skin and eye contact and breathing of vapors.

Wear protective goggles and gloves in accordance with manufacturer's instructions.

WARNING



Toluene solvents are flammable. Keep away from heat, sparks, and open flame. Keep the containers closed when not used. Use only with adequate ventilation. Avoid prolonged breathing of vapors or repeated contact with skin. To avoid injury or death to personnel, no smoking is allowed.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE: This manual supersedes TM 10-5411-207-14, dated 18 September 1989 and TM 10-5411-207-24P dated 19 August 1991. Zero in the "Change No." column indicates an original page or work package.

Date of issue for the original manual is:

Original 15 April 2016

The total number of pages for front and rear matter is 36. The total number of work packages in this manual is 45 consisting of the following:

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HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 15 APRIL 2016

TECHNICAL MANUAL
OPERATOR AND FIELD MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
FOR
SHELTER, ELECTRICAL EQUIPMENT S-280C/G
(NSN 5411-01-092-0892: UNSHIELDED)
(NSN 5411-01-304-3069: SHIELDED)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this publication. If you find any errors, or if you would like to recommend any improvements to the procedures in this publication, please let us know. The preferred method is to submit your DA Form 2028 (Recommended Changes to Publications and Blank Forms) through the Internet on the TACOM Unique Logistics Support Applications (TULSA) Web site. The Internet address is <https://tulsa.tacom.army.mil>. Access to all applications requires CAC authentication, and you must complete the Access Request form the first time you use it. The DA Form 2028 is located under the TULSA Applications on the left-hand navigation bar. Fill out the form and click on SUBMIT. Using this form on the TULSA Web site will enable us to respond more quickly to your comments and to better manage the DA Form 2028 program. You may also mail, E-mail, or fax your comments or DA Form 2028 directly to the U.S. Army TACOM Life Cycle Management Command. The postal mail address is U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-MPP/ TECH PUBS, MS 727, 6501 E. 11 Mile Road, Warren, MI 48397-5000. The E-mail address is tacomlcmc.daform2028@us.army.mil. The fax number is DSN 786-1856 or Commercial (586) 282-1856. A reply will be furnished to you.

CURRENT AS OF 28 February 2014

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HOW TO USE THIS MANUAL

The procedures in this manual are for the Operator and the Maintainer. In most work packages the Maintainer is a **91B Wheeled Vehicle Mechanic**. In WP 0017, the Maintainer is a **44B Metal Worker**.

This manual provides general information and maintenance procedures for the Shelter, Electrical Equipment S-280C/G.

A Warning Summary appears at the beginning of this manual. These warnings are repeated at appropriate points throughout the manual. Become familiar with these warnings before using or performing maintenance on the shelter.

This manual is divided into chapters representing main categories of information (e.g., General Information, Equipment Description, and Theory of Operation; Operator Instructions and Troubleshooting Procedures).

Each chapter is divided into work packages, which are identified by a four-digit number (e.g., 0001, 0002) printed in the upper right or left corner of each page.

The Table of Contents, at the front of the manual, lists all chapters and work packages by title. There is also an alphabetical subject index at the back of the manual to enable you to quickly locate specific information by topic.

This manual contains standard maintenance procedures as well as Preventive Maintenance Checks and Services (PMCS) and troubleshooting procedures. If the shelter needs repair but you are not sure what is wrong or how to fix it, refer to the Troubleshooting Index in Chapter 3. Identify the malfunction, locate it in the Troubleshooting Index, then refer to the troubleshooting procedure indicated for that symptom. Then perform the corresponding corrective actions in the order listed. If the malfunction is not listed in the troubleshooting table or is not corrected by the corrective action listed, notify the next higher level of maintenance.

Also included in Chapter 7 of this manual is a Repair Parts and Special Tools List (RPSTL), which provides illustrations and identification information for all parts and tools used in this manual.

The Supporting Information in Chapter 8 includes a list of reference publications, Maintenance Allocation Chart (MAC), Components of end Item (COEI), Basic Issue Items (BII) and Expendable and Durable Items List work packages. These work packages supplement specific operation and maintenance information contained in this manual.

ORGANIZATION OF THIS MANUAL

In this manual, primary chapters appear in upper case/capital letters; work packages are presented in numeric sequence, e.g., 0001, 0002; paragraphs within a work package are not numbered and are presented in a titled format. For a first level paragraph, titles are in all upper case/capital letters, e.g., FRONT MATTER. Subordinate paragraph titles will have the first letter of the first word of each principal word all upper case/capital letters, e.g., Manual Organization and Page Numbering System. The location of additional material that must be referenced is clearly marked. Illustrations supporting maintenance procedures/text are located underneath, or as close as possible to their referenced paragraph.

FRONT MATTER. Front matter consists of front cover, warning summary, title block, table of contents, and how to use this manual page.

CHAPTER 1 – GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION. Chapter 1 Contains introductory information on the S-280 and its associated equipment as well as theory of operation.

CHAPTER 2 – OPERATOR INSTRUCTIONS. Chapter 2 provides operator instructions required for use of the S-280 by the operator, including description and use of controls and indicators, and operational deployment cycles.

CHAPTER 3 – TROUBLESHOOTING PROCEDURES. Chapter 3 provides a troubleshooting Index, and Operator and Field troubleshooting procedures.

CHAPTER 4 – PREVENTIVE MAINTENANCE INSTRUCTIONS. Chapter 4 provides Preventive Maintenance Checks and Services (PMCS) instructions authorized at the operator and field maintenance levels.

HOW TO USE THIS MANUAL – (Continued)

CHAPTER 5 – MAINTENANCE INSTRUCTIONS. Chapter 5 provides maintenance procedures authorized at the Operator level that includes service upon receipt, cleaning and replacement procedures.

CHAPTER 6 – MAINTENANCE INSTRUCTIONS. Chapter 6 provides component repair and replacement procedures authorized at the Maintainer level, including general rivet and welding instructions.

CHAPTER 7 – PARTS INFORMATION. Chapter 7 provides Repair Parts and Special Tools List (RPSTL) information, including authorized repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of operator and field maintenance of the S-280.

CHAPTER 8 – SUPPORTING INFORMATION. Chapter 8 provides supporting information that includes the Maintenance Allocation Chart, Special Tools List, the Components of End Item List, Basic Issue Items List, Expendable and Durable Items List, and Mandatory Replacement Parts List.

REAR MATTER. Rear matter consists of alphabetical index, DA Form 2028, authentication page, and back cover.

CHAPTER 1

**GENERAL INFORMATION, EQUIPMENT DESCRIPTION AND THEORY OF
OPERATION**

FOR

S-280C/G UNSHIELDED (NSN 5411-01-092-0892)

S-280C/G SHIELDED (NSN 5411-01-304-3069)

OPERATOR INSTRUCTIONS

GENERAL INFORMATION

SCOPE

This manual explains how to keep your S-280 unshielded and S-280 shielded shelters in good operating condition. It includes Operator and Field level maintenance and repair procedures. The S-280 unshielded and S-280 shielded are lightweight, transportable shelters that house a wide variety of military systems and components. The S-280 shielded is equipped with radio frequency/electromagnetic interference shielding. The S-280 unshielded shelter has no such shielding. Additional maintenance data relevant to a specifically configured shelter can be found in the applicable end item technical manual.

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures for equipment maintenance shall be those prescribed (as applicable) by DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual; DA PAM 738-751, Functional Users Manual for the Army Maintenance Management Systems - Aviation (TAMMS-A); or AR 700-138, Army Logistics Readiness and Sustainability.

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR) AND PRODUCT QUALITY DEFICIENCY REPORTS (PQDR)

You can tell us what you don't like about your equipment or what you would change about the design or performance. If your shelter needs improvement, send us an EIR. If you have Internet access, the easiest and fastest way to report problems or suggestions is to go to <https://aeps.ria.army.mil/aepspublic.cfm> (scroll down and choose the "Submit Quality Deficiency Report" bar). The Internet form lets you choose an Equipment Improvement Recommendation (EIR), a Product Quality Deficiency Report (PQDR), or a Warranty Claim Action (WCA). You may also submit your information using an SF 368 (Product Quality Deficiency Report). You can send your SF 368 via E-mail, regular mail, or facsimile using the addresses/facsimile numbers specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual. We will send you a reply.

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army material is a continuing concern. Report any corrosion problems with the equipment so that the problem can be corrected and preventive improvements can be made.

Corrosion is an electrochemical process that causes the degradation of metals. It is commonly caused by exposure to moisture, acids, bases, or salts. An example is the rusting of iron. Corrosion damage in metals can be seen, depending on the metal, as tarnishing, pitting, fogging, surface residue, and/or cracking.

Plastics, composites, and rubbers can also degrade. Degradation is caused by heat, oxidation (oxygen), solvents, or light (typically UV). The most common causes are excessive heat or light. Damage appears as cracking, softening, swelling, and/or breaking.

Submit an SF Form 368, Product Quality Deficiency Report to the address specified in DA PAM 750-8, The Army Maintenance Management System (TAMMS) Users Manual.

OZONE DEPLETING SUBSTANCES (ODS)

The S-280 shelter does not use ozone depleting substances (ODS), Class 1 or otherwise. Refer to the end item technical manual for any applicable ODS data for a specifically configured shelter.

DESTRUCTION OF ARMY MATERIEL TO PREVENT ENEMY USE

Destruction of Army equipment to prevent enemy use shall be in accordance with TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use (Mobility Equipment Command).

PREPARATION FOR STORAGE OR SHIPMENT

Prepare the shelter for storage or shipment as described in WP 0033.

GENERAL INFORMATION - (CONTINUED)**WARRANTY INFORMATION**

The S-280 unshielded and S-280 shielded shelters are warranted by Gichner Shelter Systems for 12 months or by Ramim Engineering Works, Ltd. for 24 months. Warranty starts on the date specified on DA Form 2408-9(Equipment Control Record) in the logbook. Report all defects in material or workmanship to your supervisor. Refer to Warranty Technical Bulletin TB 10-5411-207-14(Gichner) or TB 10-5411-207-24-1 (Ramim).

NOMENCLATURE CROSS-REFERENCE LIST

The following table is a cross-reference of official names and nomenclature.

Table 1. Nomenclature Cross-Reference List

Official Nomenclature	Common Name
Personnel Door	Door
Shelter, Electrical Equipment S-280C/G	S-280 or Shelter
Sling, Multiple Leg	Hold Down, Tiedown, or Lifting Sling
Keeper, Shelter and Keeper, Slide	Keeper
Shim, Keeper Select	Shim

LIST OF ABBREVIATIONS/ACRONYMS

The following table is a list of acronyms and abbreviations contained in this manual:

Table 2. List of Abbreviations and Acronyms

Acronym or Abbreviation	Item
BII	Basic Issue Item
C/G	Model designator only
CAGEC	Commercial and Government Entity Code
COEI	Component of End Items
EMI	Electromagnetic Interference
ESD	Electrostatic Discharge
MAC	Maintenance Allocation Chart
MRPL	Mandatory Replacement Parts List
NSN	National Stock Number
PMCS	Preventive Maintenance, Checks, and Services
RFI	Radio Frequency Interference
RPSTL	Repair Parts and Special Tools List
RTV	Room Temperature Vulcanizing
TDR	Transportation Discrepancy Report
TMDE	Test, Measurement, and Diagnostic Equipment
UOC	Usable on Code
WP	Work Package

SAFETY, CARE, AND HANDLING

Because this is a shelter for electrical equipment, refer to the end item technical manuals for any applicable control standards for Electrostatic Discharge (ESD) for a specifically configured shelter.

COMMON TOOLS AND EQUIPMENT

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE), CTA 50-970, Expendable/Durable Items (Except: Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items, as applicable to your unit.

Repair parts and tools are listed and illustrated in the Repair Parts and Special Tools List (RPSTL).

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

The S-280 unshielded and S-280 shielded shelters are lightweight, mobile shelters used to transport and house various types of equipment. The construction of the shelter consists of aluminum face sheets enclosing a polyurethane foam composition core. The shelter is for outdoor use in all weather conditions. The shielded shelters are equipped with radio frequency/electromagnetic (RFI/EMI) shielding to protect the electronic equipment inside.

LOCATION AND DESCRIPTIONS OF MAJOR COMPONENTS

As shown in Figure 1 the S-280 has the following features:

LIFTING AND HOLD-DOWN EYEBOLTS

Attachments for a sling to lift the shelter and to secure the shelter on a truck (Figure 1, Item 1)

HAND-HOLD

Provides a handle for use when climbing the recessed steps (Figure 1, Item 2)

SKIDS

Permit a fully equipped shelter to be towed over rough terrain; provide forklift access (Figure 1, Item 3)

RECESSED STEPS

Allow access to the roof (Figure 1, Item 4)

TOWING EYEBOLTS

Attachments for cable assembly when towing the shelter and guiding a sling-lifted shelter into position (Figure 1, Item 5)

EMERGENCY EXIT PANEL

Provides an emergency exit for personnel; also allows fresh air to enter shelter (Figure 1, Item 6)

PERSONNEL DOOR

Provides personnel entry into the shelter (Figure 1, Item 7)

EQUIPMENT DESCRIPTION AND DATA - (CONTINUED)

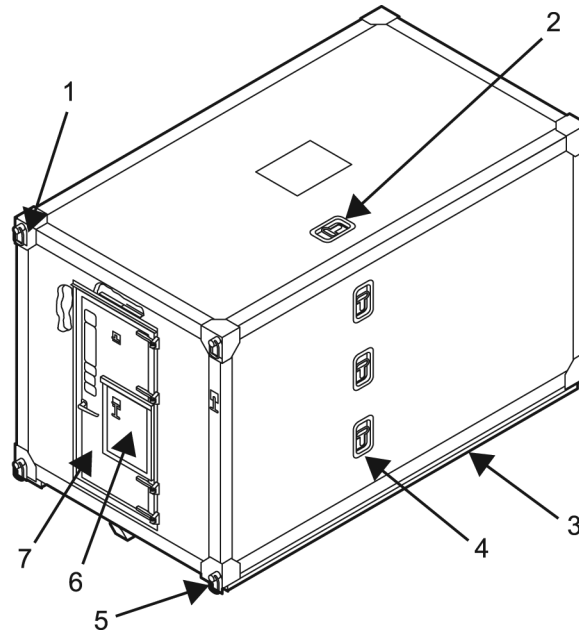


Figure 1. S-280: Major Components.

DIFFERENCES BETWEEN MODELS

The only difference between the shielded and unshielded shelter models is the addition of a radio frequency interference/electromagnetic interference (EMI) shielding modification kit that is installed on the shielded shelter. The unshielded shelter becomes shielded once the modification kit and a new nameplate are installed.

The addition of the RFI/EMI shielding modification kit allows shielded shelters to provide electromagnetic shielding for the electronic equipment contained inside. The shield provides at least 60 dB EMI attenuation in the frequency range from 0.15 MHz to 10,000 MHz.

The RFI/EMI shield is a continuous metallic surface that maintains continuity around joints, door openings, and other possible sources of radiation leak. Shielded shelters have a metallic door shield that mates with another conductive surface on the door jamb.

Any component mentioned in this manual that is exclusive to a shielded shelter will be noted as SHIELDED.

EQUIPMENT DATA

Dimensions and weights for the S-280 are listed in Table 1.

Table 1. Shelter Dimensions and Weights

	Inches	Centimeters
Height	86.375	219.4
Width	87	220.9
Length	147	373.38
Gross Weight	Pounds	Kilograms
	1,400 (Unshielded)	636.4 (Unshielded)
	1,413 (Shielded)	640.9 (Shielded)
Payload	Feet ³	Meters ³
	5,000	2,268
Volume	psi	kPa
	640	59.4

EQUIPMENT DESCRIPTION AND DATA - (CONTINUED)

Load on Skids	0.96	4.69

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS**THEORY OF OPERATION**

GENERAL

There are no operating instructions applicable to the basic S-280. Refer to the applicable end item technical manual for the Theory of Operation associated with a specifically-configured shelter.

END OF WORK PACKAGE

CHAPTER 2
OPERATOR INSTRUCTIONS
FOR
S-280C/G UNSHIELDED (NSN 5411-01-092-0892)
S-280C/G SHIELDED (NSN 5411-01-304-3069)

OPERATOR INSTRUCTIONS**DESCRIPTION AND USE OF OPERATOR CONTROLS AND INDICATORS**

The S-280 shelters have neither electrical nor mechanical controls or indicators. Refer to the applicable end item technical manual for information about controls and indicators that apply to specifically configured S-280 shelters.

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

OPERATION UNDER USUAL CONDITIONS

INITIAL SETUP:

NOT APPLICABLE

SITING

Before the shelter arrives, consider the size and weight of the shelter (see WP 0002) to have the necessary space and handling equipment ready. A level site is desired but is not absolutely necessary. Prepare the site as follows:

- Determine the position and orientation of the shelter so the door can be fully opened and closed.
- Remove obstructions, debris, or rocks.

END OF TASK

ASSEMBLY AND PREPARATION

No assembly procedures are necessary.

END OF TASK

INITIAL ADJUSTMENTS

No adjustments to the shelter are necessary.

END OF TASK

OPERATING PROCEDURES

No operating procedures are applicable to the basic shelter. Refer to the end item technical manual for operating procedures applicable to a specifically-configured shelter.

END OF TASK

DECALS AND INSTRUCTION PLATES

Shelter Markings

Shelter markings are shown in Figure 1 where lettering is stenciled or silk-screened in accordance with MIL-M-13231 GR II. For a non-camouflaged shelter the color is black (MIL-C-46168). For camouflaged shelters, lettering is green 383 on black background, and lettering is black on green and brown backgrounds (MIL-C-46168).

OPERATION UNDER USUAL CONDITIONS - (CONTINUED)

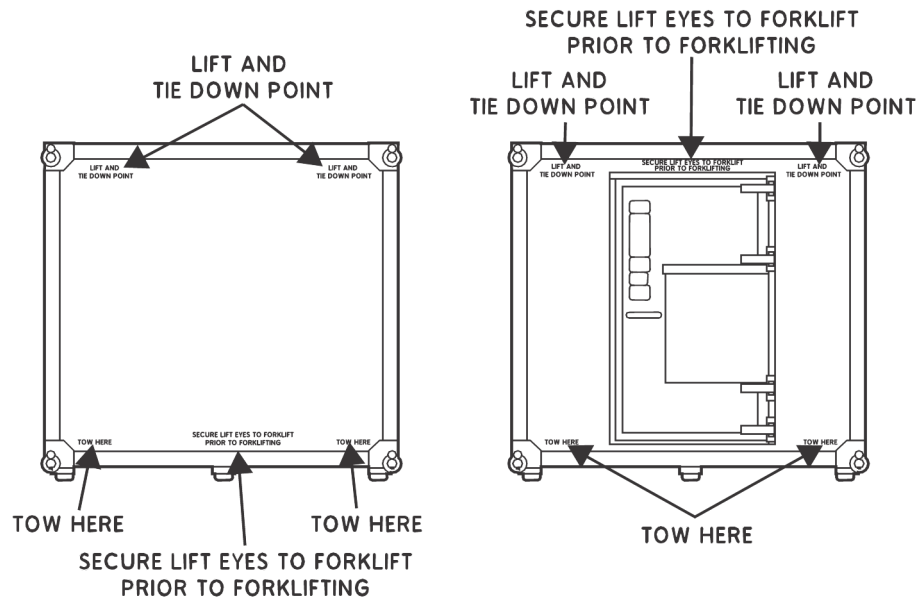


Figure 1. Shelter Markings.

Instruction Plates

As shown in Figure 2, the S-280 has the following Instruction Plates and content:

Table 1. Content of the Instruction Plates

Instruction Plate	Content
Figure 2, Item 1	UNLATCH VENT COVER DURING AIR LIFT KEEP VENT COVER OPEN WHEN SHELTER IS OCCUPIED REMOVE DRAIN PLUG DURING AIR AND RAIL TRANSPORT
Figure 2, Item 2	PUSH CATCH TO RELEASE DOOR STOP BRACE
Figure 2, Item 3	SECONDARY EXIT REMOVE 4 HAND KNOBS LIFT OUT EXIT PANEL
Figure 2, Item 4	THE SURFACES OF THIS SHELTER HAVE BEEN PAINTED WITH CARC FOR TOUCH UP EXTERIOR USE ONLY LUSTERLESS GREEN 383 POLYURETHANE IAW MIL C 46188 INTERIOR USE ONLY EPOXY POLYAMIDE IAW MIL C 22750

OPERATION UNDER USUAL CONDITIONS - (CONTINUED)

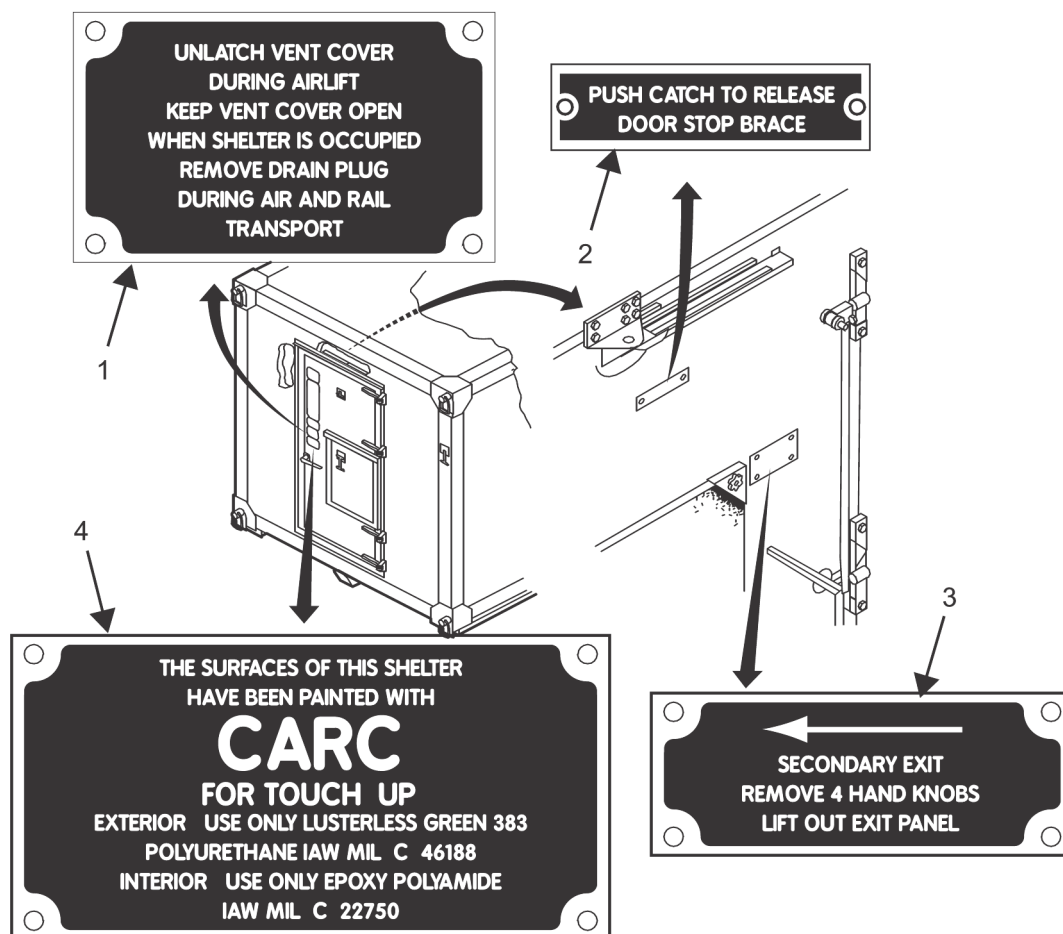


Figure 2. Instruction Plates.

END OF TASK

PREPARATION FOR MOVEMENT

CAUTION

1. Verify that the door is closed and padlocked.
2. If the shelter is being moved by truck, verify that the shelter is tied down and blocked.
3. Refer to WP 0028 for lifting and loading procedures. Refer to the end item technical manual for additional instructions applicable to a specifically-configured shelter.

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS
OPERATION UNDER UNUSUAL CONDITIONS

INITIAL SETUP:**NOT APPLICABLE**

NOT APPLICABLE

OPERATION IN UNUSUAL WEATHER

The S-280 shelters are for use in all weather. However, any shelter that is subjected to salt air, wind-driven sand, or coral dust shall be inspected by site personnel at least once per week. Additional requirements for operation in unusual weather can be found in the end item technical manual.

END OF TASK**EMERGENCY PROCEDURES**

To prevent water leaks, immediately patch any damage to the shelter walls or ceiling. In an emergency, use any kind of tape or water-resistant materials to cover a puncture or a large hole. Temporary patches must be replaced with permanent patches as soon as possible. Refer to WP 0017 for General Shelter Repair instructions.

END OF TASK**DECALS**

Information about decals on the S-280 is in WP 0005.

END OF TASK**STORAGE AND SHIPPING**

Information about storage and shipping of the S-280 is in WP 0033.

END OF TASK**END OF WORK PACKAGE**

CHAPTER 3

TROUBLESHOOTING PROCEDURES

FOR

S-280C/G UNSHIELDED (NSN 5411-01-092-0892)

S-280C/G SHIELDED (NSN 5411-01-304-3069)

FIELD MAINTENANCE
TROUBLESHOOTING INDEX

TROUBLESHOOTING INDEX

The troubleshooting index lists the common malfunctions that can develop during operation or maintenance of the shelter. Locate the malfunction in the following lists and refer to the corresponding work package for the troubleshooting procedure. Fault isolation is limited to components that can be repaired or replaced at the operator or the maintainer level.

Each malfunction is highlighted at the top of the page and is followed by a task for you to perform. After performing that task, the diagram asks you whether the malfunction has been corrected. If it has not been corrected, the diagram gives you another task.

If you are an Operator, the number of malfunctions that you can correct is limited.

OPERATOR

- Door does not open or close smoothly.
- Door handle is jammed or does not operate smoothly.
- Water is leaking into the shelter.

MAINTAINER

- Door does not open or close smoothly.
- After opening, door does remain open.
- Door handle is jammed or does not operate smoothly.
- EMI/RFI Interference.
- Water is leaking into the shelter.

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS**OPERATOR TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Tools and Special Tools**

None

Personnel Required

Operator

References

WP 0010

WP 0016

WP 0023

WP 0024

Material/Parts

Lubricant, Solid Film (Item 19, WP 0044)

GENERAL INFORMATION

This work package contains troubleshooting information for isolating the problems that can be resolved by the Operator.

- Door does not open or close smoothly.
- Door handle is jammed or does not operate smoothly.
- Water is leaking into the shelter.

OPERATOR TROUBLESHOOTING PROCEDURES - (CONTINUED)

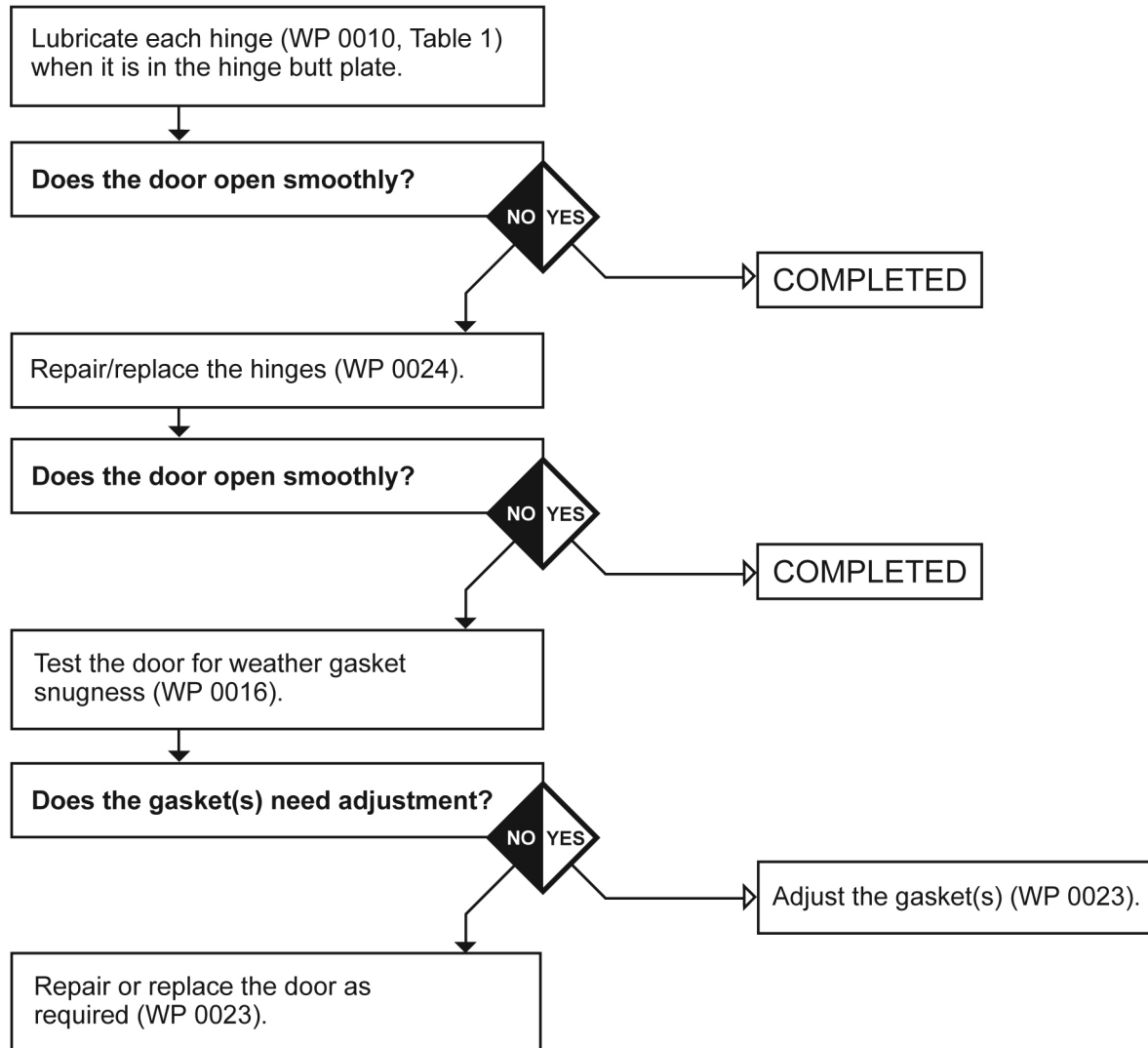
Symptom- Door does not open smoothly

Figure 1. Operator Troubleshooting: Symptoms and Procedures.

END OF WORK PACKAGE

FIELD MAINTENANCE
MAINTAINER TROUBLESHOOTING PROCEDURES

INITIAL SETUP:**Tools and Special Tools**

None

Personnel Required

91B Wheeled Vehicle Mechanic; 44B Metal Worker

Material/Parts

Lubricant, Solid Film (Item 19, WP 0044)

Sealing Compound (Item 28, WP 0044)

GENERAL INFORMATION

This work package contains information for isolating the issues that can be resolved by the Maintainer.

- Door does not open or close smoothly.
- After opening, door does remain open.
- Door handle is jammed or does not operate smoothly.
- EMI/RFI Interference.
- Water is leaking into the shelter.

MAINTAINER TROUBLESHOOTING PROCEDURES - (CONTINUED)

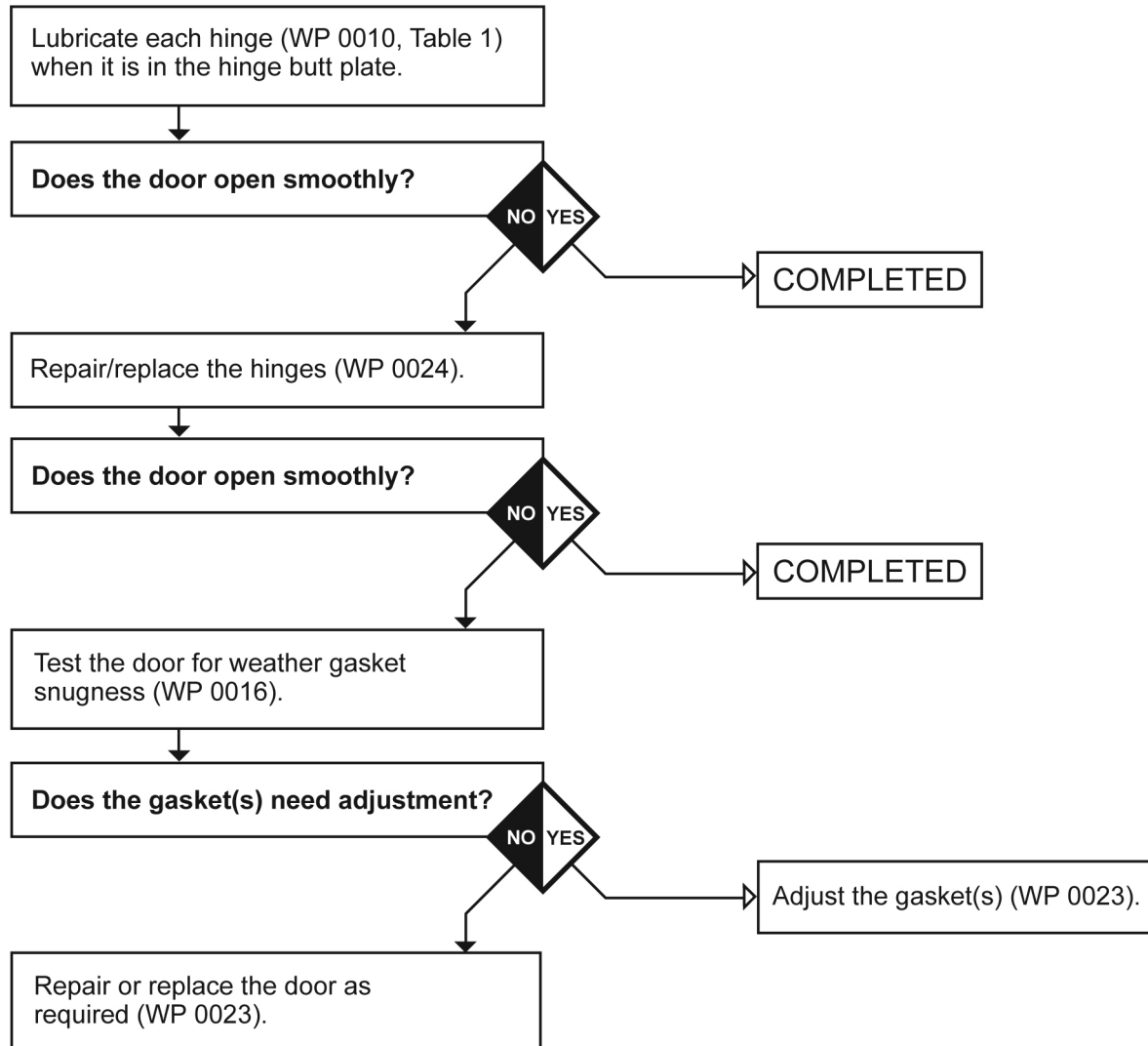
Symptom- Door does not open smoothly

Figure 1. Symptom: Door Does Not Open Smoothly.

MAINTAINER TROUBLESHOOTING PROCEDURES - (CONTINUED)

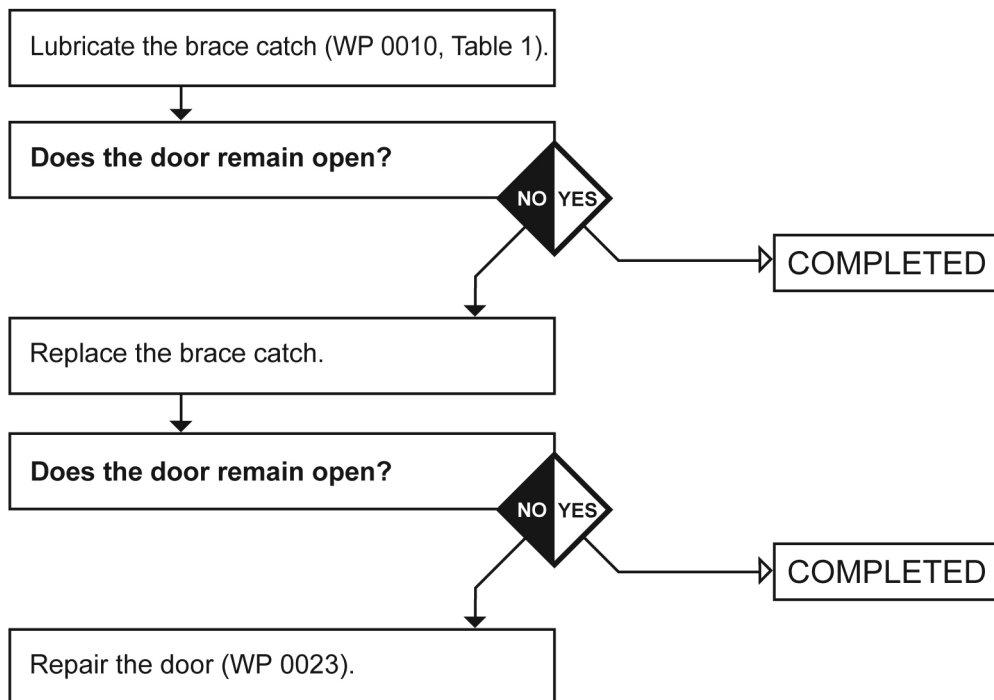
Symptom- After opening, door does not remain open

Figure 2. Symptom: After Opening, Door Does Not Remain Open.

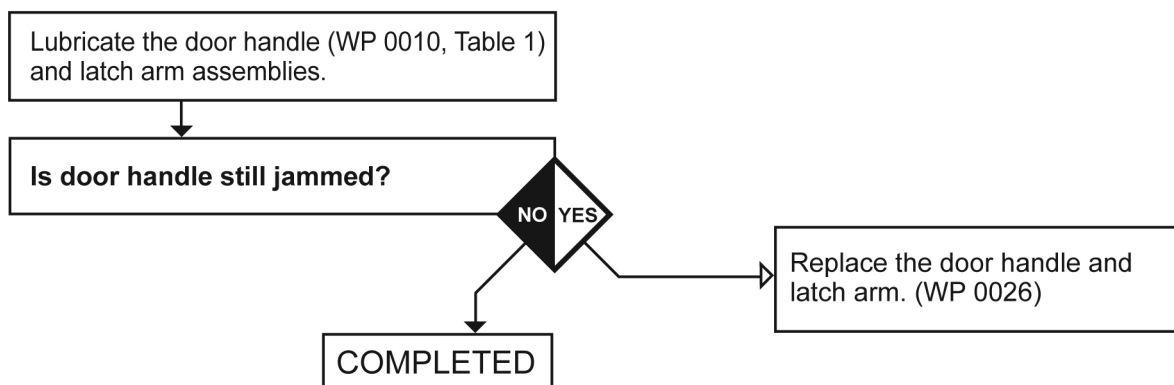
Symptom- Door handle is jammed

Figure 3. Symptom: Door Handle Is Jammed.

MAINTAINER TROUBLESHOOTING PROCEDURES - (CONTINUED)

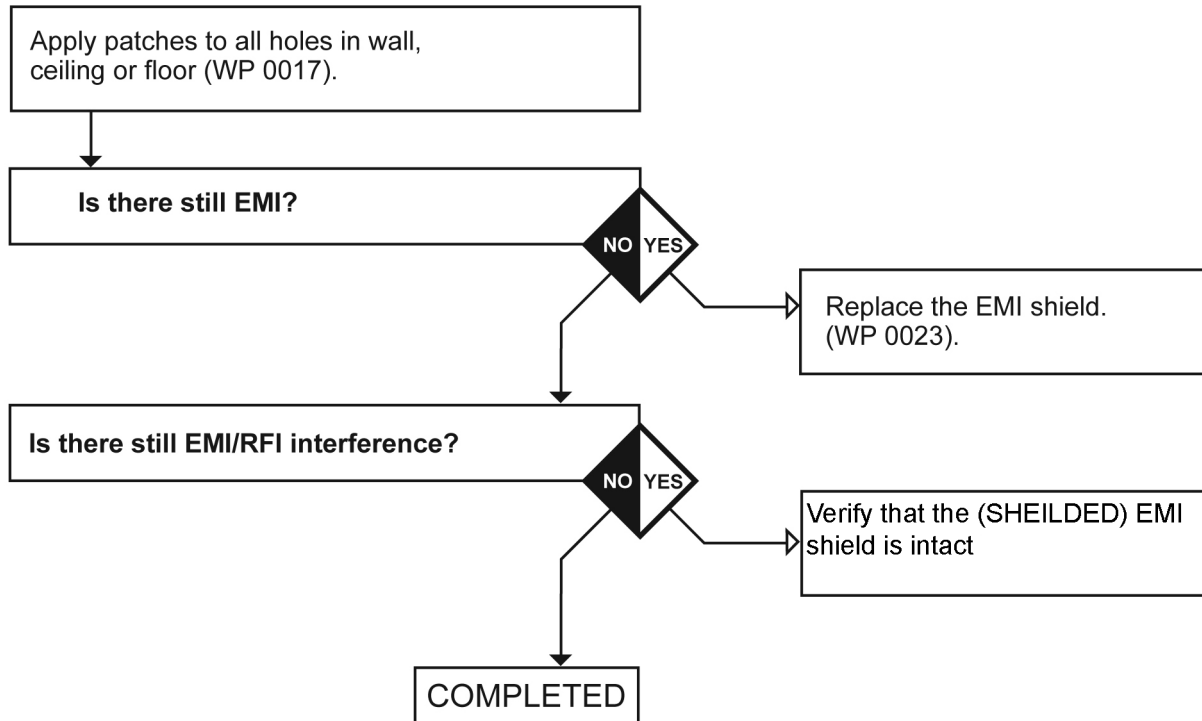
Symptom- EMI/RFI Interference

Figure 4. Symptom: EMI/RFI Interference.

MAINTAINER TROUBLESHOOTING PROCEDURES - (CONTINUED)

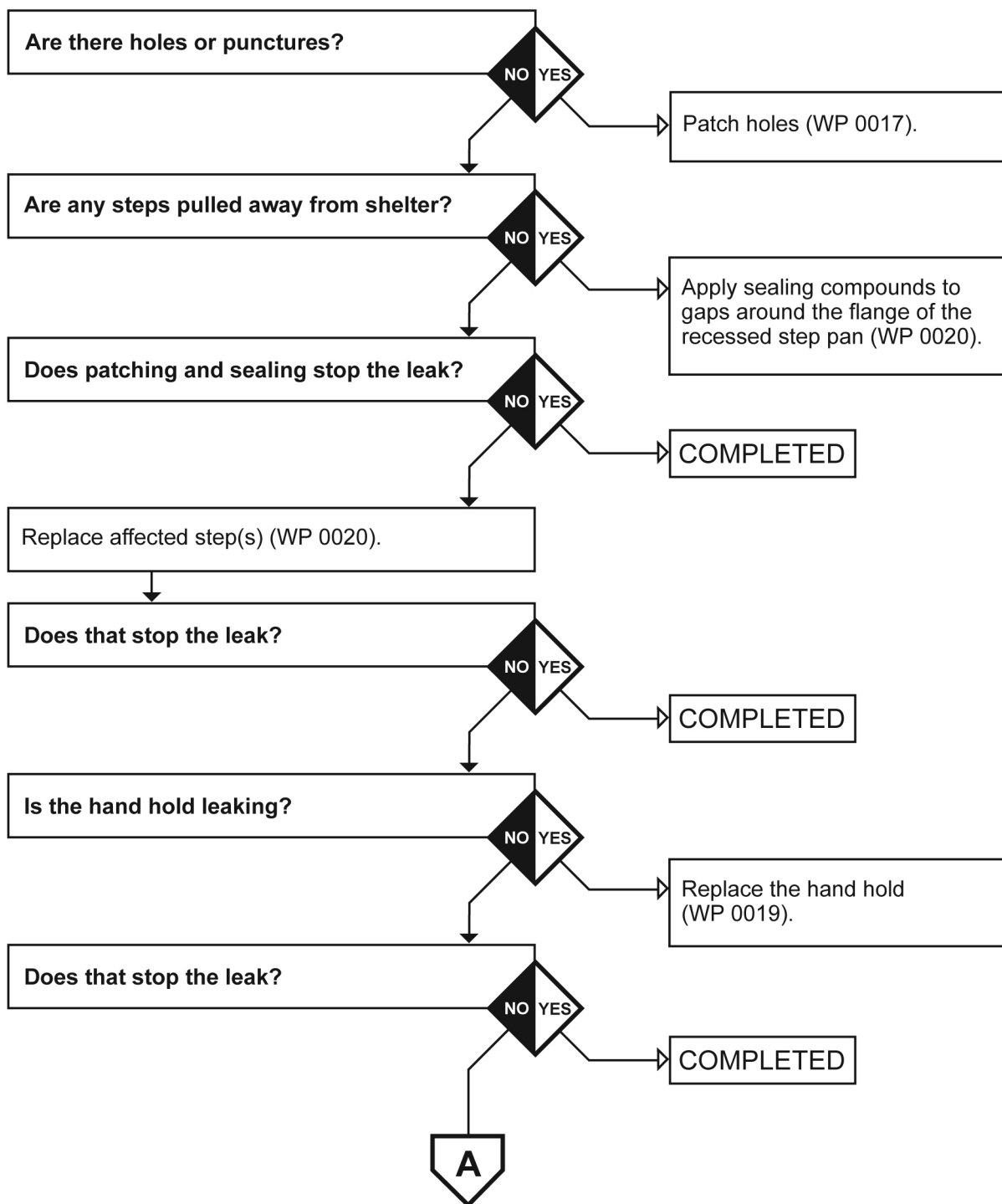
Symptom- Water is leaking into the shelter

Figure 5. Symptom: Water Is Leaking Into the Shelter.

MAINTAINER TROUBLESHOOTING PROCEDURES - (CONTINUED)

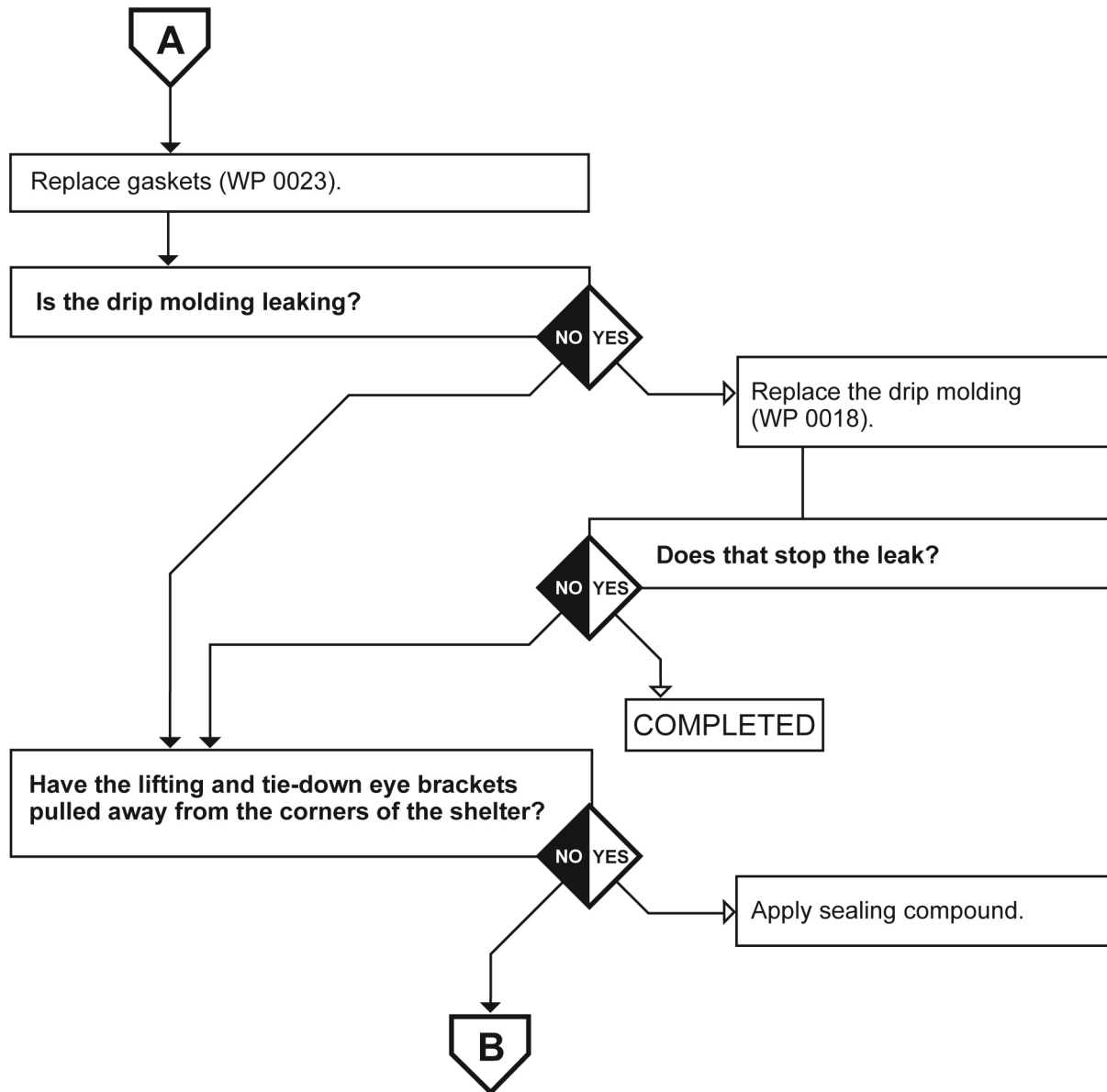
Symptom- Water is leaking into the shelter

Figure 6. Symptom: Water Is Leaking Into the Shelter (continued).

MAINTAINER TROUBLESHOOTING PROCEDURES - (CONTINUED)

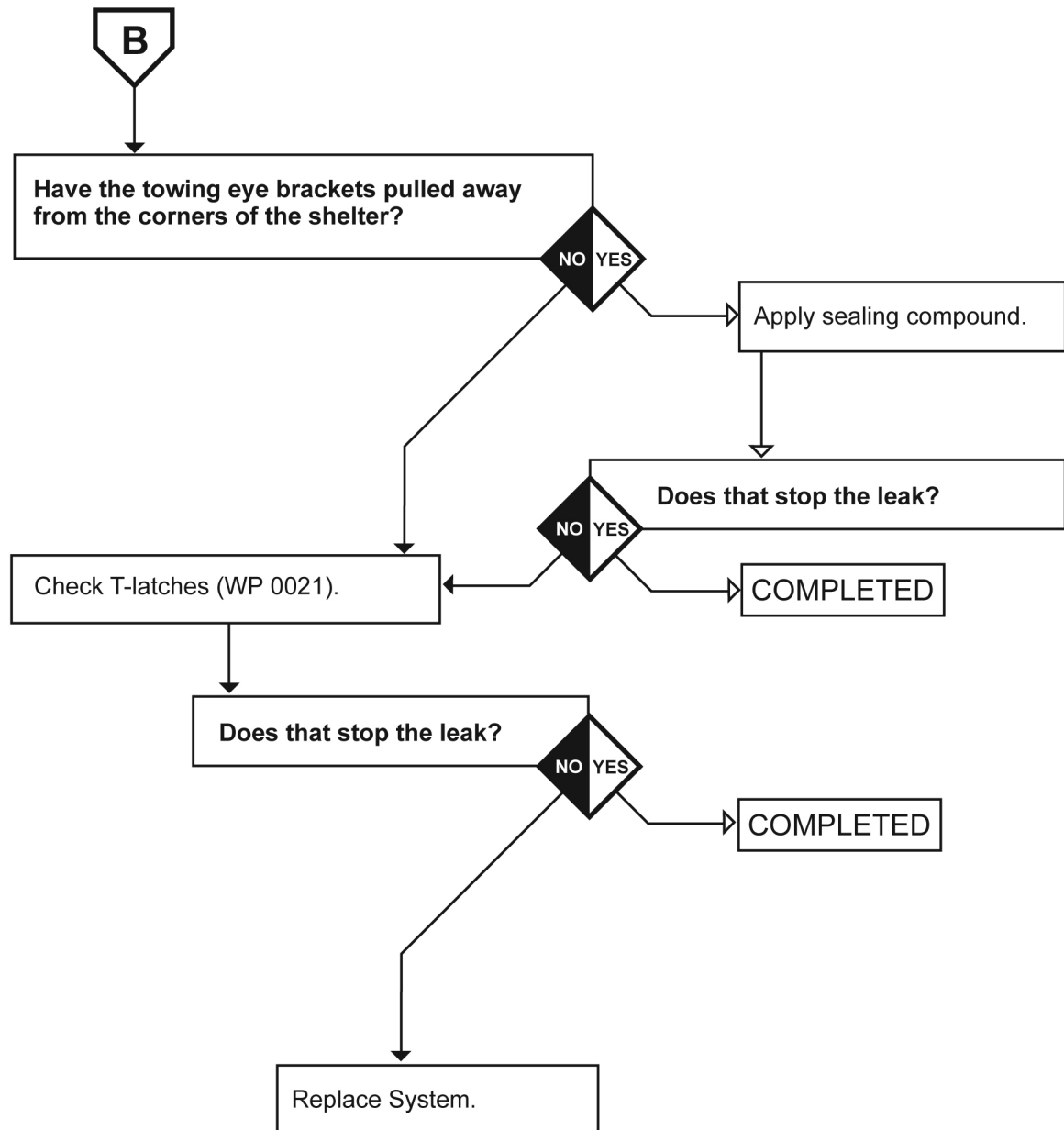
Symptom- Water is leaking into the shelter

Figure 7. Symptom: Water Is Leaking Into the Shelter (continued).

END OF WORK PACKAGE

CHAPTER 4

PREVENTIVE MAINTENANCE INSTRUCTIONS

FOR

S-280C/G UNSHIELDED (NSN 5411-01-092-0892)

S-280C/G SHIELDED (NSN 5411-01-304-3069)

OPERATOR INSTRUCTIONS

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS) INTRODUCTION

GENERAL

Preventive Maintenance Checks and Services (PMCS) are systematic inspections and servicing of equipment. Always perform the PMCS in the same order, so it becomes a habit. Once you've had some practice, you'll quickly spot anything wrong. Perform the PMCS as follows:

Before — Before you use the shelter. Pay attention to warnings, cautions, and notes. You can perform these "Before" checks as you walk around the shelter.

During — While you use the shelter. "During" means to monitor the shelter and its related components while it is actually in use. Pay attention to warnings, cautions, and notes.

After — After using the shelter. Pay attention to warnings, cautions, and notes.

Quarterly — Once every 3 months.

NOTE

Perform your "Weekly" checks in addition to the "Before" checks under the following conditions:

If you are the assigned operator and have not operated the equipment since the last weekly check was performed, or if you are operating the equipment for the first time.

Use DA Form 2404 (Equipment Inspection and Maintenance Worksheet) to record any faults that you discover before, during, or after operation, unless you can fix them. You DO NOT need to record faults that you fix.

PMCS PROCEDURES

The PMCS table (WP 0011) lists the inspections required. The PMCS table includes the following columns:

ITEM NUMBER — Source number for the TM number column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, when recording PMCS results.

INTERVAL — When to perform a certain check or service.

ITEM TO BE CHECKED OR SERVICED — Component that requires inspection.

PROCEDURE — What to check for and how to check it.

ITEM IS NOT READY/AVAILABLE IF — Why the equipment cannot be used.

LUBRICATION INSTRUCTIONS

To prevent rust and corrosion, lubricate the following items according to the Intervals in the PMCS table. (To locate the item to lubricate, see the figures in the associated work package.)

Table 1. Locations of Items that Require Lubrication

Door Hinges	WP 0024, Hinge pin (Figure 1, Item 6) when it is in the hinge butt plate (Figure 1, Item 7)
Door Handle and Latches	WP 0026, Handle (Figure 2 Items 22 & 31) and latch arm assemblies (, Item 7)
Door Braces	WP 0028, Door brace catch (Figure 2, Item 10)
Recessed Step Pan	WP 0010, Step (Figure 2, Item 3)
Towing Eyes	WP 0030, Eyebolt (Figure 1, Item 1)
Lifting Eyes	WP 0029, Eyebolt (Figure 2, Item 1)

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

INITIAL SETUP:

Tools and Special Tools

None

Personnel Required

Operator

Materials/Parts

Lubricant, Solid Film (Item 19, WP 0044)

Table 1. Preventive Maintenance Checks And Service (PMCS)

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Before	Overall Shelter	1. Inspect for dents, punctures, delamination, or any other damage. 2. Inspect the exterior of the shelter for missing or loose parts and mounting hardware.	Punctured. Parts loose or missing.
2	Before	Drip Molding	Inspect for missing or damaged blind rivets.	Damaged or missing blind rivets.
3	Before	T-Latch	Inspect for secure mounting.	Damaged or insecure mountings.
4	Before	Hinges	Inspect for secure mounting.	Damaged or insecure mountings.
5	Before	Personnel Door	1. Check door surfaces for punctures. 2. Verify that the door opens and closes smoothly. 3. Check air filters and louvers. 4. Check weather gaskets. 5. Verify that the (SHIELDED) EMI shield is complete and intact.	Punctured. Rusty, loose, or missing hardware. Filters or louvers are blocked. Weather gaskets deteriorated. (SHIELDED) EMI shield is not intact.
6	Before	Emergency Exit Panel	1. Inspect the panel and latches. 2. Remove the emergency exit panel assembly.	Panel and/or latches are damaged or insecure. Emergency exit panel assembly cannot be removed.

PREVENTIVE MAINTENANCE CHECKS and SERVICES (PMCS) - (CONTINUED)

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
7	Before	Door Latch	Check that the door handle and door latch operate smoothly.	Door cannot be opened or cannot be closed securely.
8	Before	Latch Lock	1. Check that the door handle and door latch operate smoothly. 2. Inspect for wear, damage, and secure mounting.	Door cannot be opened or cannot be closed securely. Latch lock assembly worn, damaged, or mounted insecurely.
9	Before	Door Brace	Verify that the door brace assembly opens smoothly and the catch holds the brackets in place.	Loose or missing hardware.
10	Before	Towing Eyes	Verify that rings and pins rotate freely.	Worn, rusty, loose, or missing hardware.
11	Before	Lifting and Tiedown Eyes	Verify that rings and pins rotate freely.	Worn, rusty, loose, or missing hardware.
12	Before	Skids	Verify that skids are securely mounted to shelter.	Skids damaged or mounted insecurely.
13	Before	Hold Down/ Lifting Sling	1. Inspect for excessive wear. 2. Inspect plate and eyebolt assembly. 3. Inspect cable assembly hooks.	Cables are frayed. Eyebolts are deformed. Cable hooks are deformed.
14	Daily	Drain, Floor	Inspect for wear, damage, or insecure mounting.	Floor drain worn, damaged, or insecurely mounted.
15	Weekly	Drip Molding	Inspect for missing or damaged blind rivets.	Damaged or missing blind rivets.
16	Weekly	T-Latch	Inspect for secure mounting.	Damaged or insecure mountings.
17	Weekly	Hinges	Inspect for secure mounting.	Damaged or insecure mountings.
18	Weekly	Personnel Door	1. Check door surfaces for punctures. 2. Verify that the door opens and closes smoothly.	Punctured. Rusty, loose, or missing hardware.

PREVENTIVE MAINTENANCE CHECKS and SERVICES (PMCS) - (CONTINUED)

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
			3. Check air filters and louvers. 4. Check weather gaskets. 5. (SHIELDED) Verify that the EMI shield is in place and undamaged.	Filters or louvers are blocked. Weather gaskets deteriorated. (SHIELDED) EMI shield is not intact.
19	Weekly	Emergency Exit Panel	1. Inspect the panel and latches. 2. Remove the emergency exit panel assembly.	Panel and/or latches are damaged or insecure. Emergency exit panel assembly cannot be removed.
20	Weekly	Door Latch	Check that the door handle and door latch operate smoothly.	Door cannot be opened or closed securely.
21	Weekly	Latch Lock	1. Check that the door handle and door latch operate smoothly. 2. Inspect for wear, damage, and secure mounting.	Door cannot be opened or cannot be closed securely. Latch lock assembly worn, damaged, or mounted insecurely.
22	Weekly	Door Brace	Verify that the door brace assembly opens smoothly and the catch holds the brackets in place.	Loose or missing hardware.
23	Monthly	Overall Shelter	1. Inspect for dents, punctures, delamination, or any other damage. 2. Inspect the exterior of the shelter for missing or loose parts and mounting hardware.	Punctured. Parts loose or missing.
24	Monthly	Handhold	Inspect for damaged or non-functioning bail handle and missing blind rivets.	Damaged or non-functioning bail handle; missing blind rivets.
25	Monthly	Recessed Step Pans	Verify that steps remain up, then remain down.	Loose or missing hardware.

PREVENTIVE MAINTENANCE CHECKS and SERVICES (PMCS) - (CONTINUED)

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
26	Monthly	Towing Eyes	Verify that rings and pins rotate freely.	Worn, rusty, loose, or missing hardware.
27	Monthly	Lifting and Tiedown Eyes	Verify that rings and pins rotate freely.	Worn, rusty, loose, or missing hardware.
28	Monthly	Skids	Verify that skids are securely mounted to shelter.	Skids damaged or mounted insecurely.

END OF WORK PACKAGE

CHAPTER 5
OPERATOR INSTRUCTIONS
FOR
S-280C/G UNSHIELDED (NSN 5411-01-092-0892)
S-280C/G SHIELDED (NSN 5411-01-304-3069)

OPERATOR INSTRUCTIONS**SERVICE UPON RECEIPT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2, Item 1)

Personnel Required

91B Wheeled Vehicle Mechanic

Materials/Parts

Hold Down/Lifting Sling (WP 0036, Figure 8)

References

WP 0033

SF 361

INTRODUCTION

This work package describes the procedures for receiving an S-280 in the field.

Unpacking

The basic S-280 is ready for use immediately with no unpacking required. Refer to the end item technical manual for unpacking instructions applicable to a specifically configured shelter.

Processing Unpacked Equipment**INSPECTION UPON RECEIPT**

1. If the shelter has been damaged, report the damage on SF 361, Transportation Discrepancy Report (TDR).
2. The drain plug should have been loosened for shipment. Tighten it.
3. If the shelter is either crated or mounted on a pallet, refer to the end item technical manual for unpacking instructions.
4. If the shelter is to be loaded onto a truck or transferred from one truck to another, lift, load, and secure the shelter with a hold down/lifting sling, as described in WP 0033.

Processing Unpacked Equipment

No processing procedures are required for a basic S-280. Refer to the end item technical manual for processing instructions applicable to a specifically configured shelter.

END OF TASK**INSTALLATION INSTRUCTIONS**

No installation procedures are required for a basic S-280. Refer to the end item technical manual for installation instructions applicable to a specifically configured shelter.

END OF TASK**END OF WORK PACKAGE**

OPERATOR INSTRUCTIONS**CLEANING AND SANITATION**

INITIAL SETUP:**Tools and Special Tools**

None

Personnel Required

Operator

Materials/PartsNone

GENERAL CLEANING INSTRUCTIONS**CAUTION**

Do not use abrasive cleaning compounds.

Use only soft cloth on any painted or coated surfaces.

Refer to the end item technical manuals for cleaning instructions pertaining to components of a specifically configured shelter.

END OF TASK**END OF WORK PACKAGE**

OPERATOR INSTRUCTIONS**DOOR LATCH LUBRICATION**

INITIAL SETUP:**Tools and Special Tools**

None

Personnel Required

Operator

Materials/PartsLubricant, Solid Film (Item 19, WP 0044)

LUBRICATION

Once per month, lubricate the door latches (Figure 1, Item 1, 2, 3).

DOOR LATCH LUBRICATION - (CONTINUED)

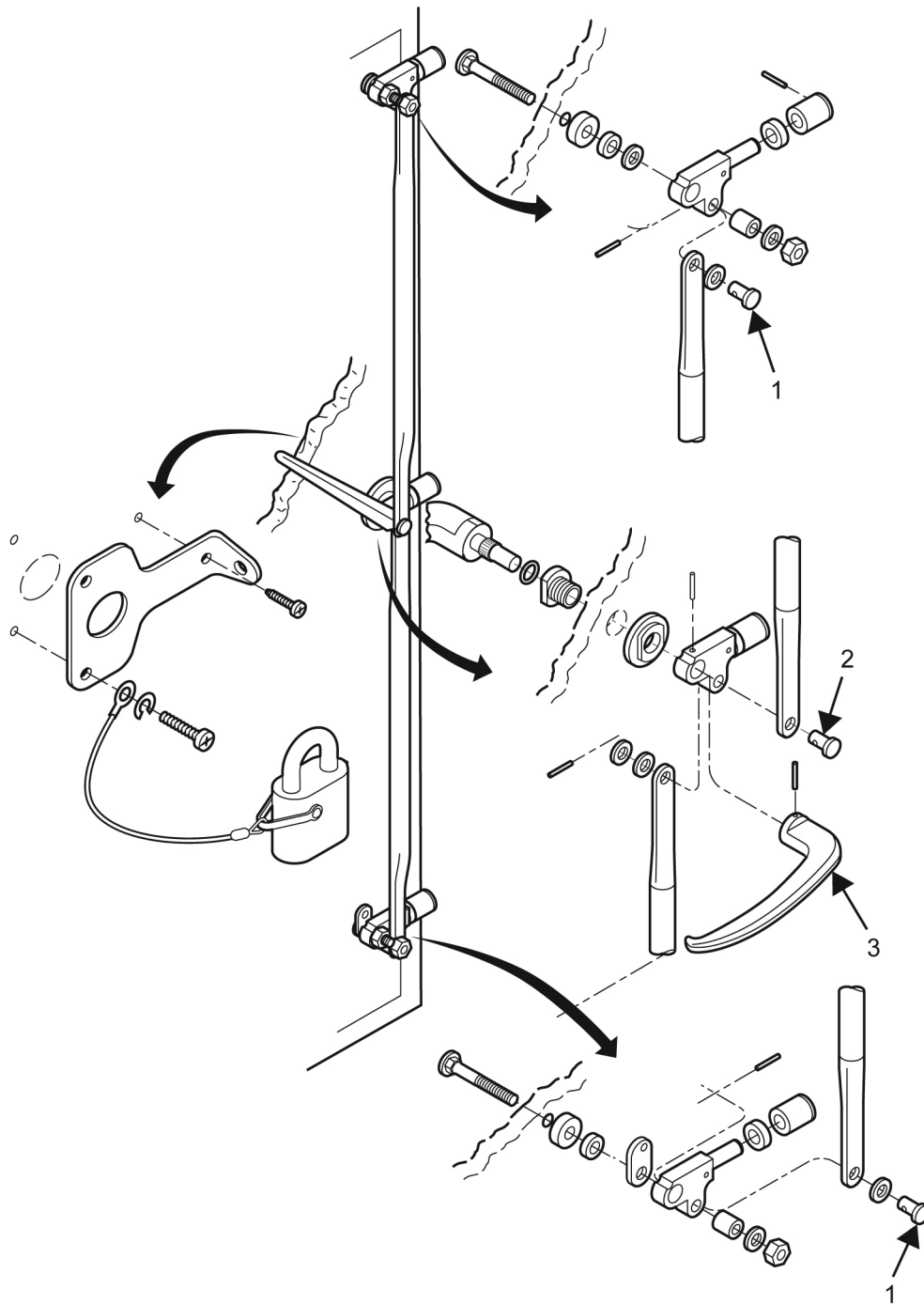


Figure 1. Door Latch Assembly.

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS**PERSONNEL DOOR WEATHER GASKET PRESSURE TEST**

INITIAL SETUP:**Tools and Special Tools**

None

Personnel Required

Operator

Materials/Parts

Piece of paper: 2-1/2 in. square; 0.005 in. thick

ReferencesWP 0023

GENERAL INFORMATION

The pressure of the weather gasket is a function of its tightness to the bearing surface. The following procedure is a hands-on test of the pressure of the weather gasket.



Figure 1. Personnel Door and Emergency Exit Panel: Outside View.

TESTING PERSONNEL DOOR WEATHER GASKET PRESSURE**NOTE**

Perform the following procedure at the center, top, and bottom of the personnel door, 1/2 inch from each corner, and along the side of the door in two places (approximately 1/3 and 2/3 the height of the door) in Figure 2 as shown.

1. Place a single piece of paper (0.005 inches maximum thickness; 2-1/2 inches wide) between the weather gasket and its bearing surface, as shown in Figure 2 at the first test point.
2. Close and lock the door.

NOTE

The lack of resistance to the withdrawal of the paper means that the gasket is not touching its bearing surface, indicating insufficient pressure.

3. Withdraw the paper. Resistance to the withdrawal of the paper indicates proper seal pressure. If there is no resistance, the door must be adjusted as described in WP 0023.
4. At each of the remaining test points in Figure 2 repeat steps 1 through 3. If there is resistance at all of the test points, sufficient seal pressure exists.

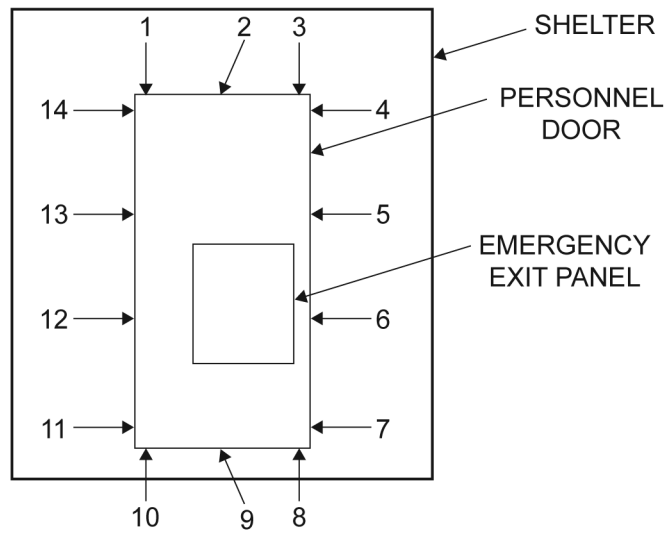
PERSONNEL DOOR WEATHER GASKET PRESSURE TEST - (CONTINUED)

Figure 2. Test Locations: Door Weather Gasket.

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

EMERGENCY EXIT PANEL GASKET PRESSURE TEST

INITIAL SETUP:**Tools and Special Tools**

None

References

WP 0020

WP 0023

Materials/Parts

Piece of paper: 2-1/2 in. square; 0.005 in. thick

Personnel Required

Operator

GENERAL INFORMATION

The pressure of the weather gasket is a function of its tightness to the bearing surface. The following procedure is a hands-on test of the pressure of the weather gasket.



Figure 1. Personnel Door and Emergency Exit Panel: Outside View.

EMERGENCY EXIT PANEL: PRESSURE OF THE WEATHER GASKET**NOTE**

Perform the following procedure at the center point of both sides and the bottom edge of the emergency exit panel.

1. Place a single piece of paper (0.005 inches thickness; 2-1/2 inches wide) between the weather gasket and its bearing surface, at the first test point.
2. Close and latch the cover of the emergency exit panel.

NOTE

The lack of resistance to the withdrawal of the paper means that the gasket is not touching its bearing surface, indicating insufficient pressure.

3. Withdraw the paper. Resistance to the withdrawal of the paper indicates proper seal pressure. If there is no resistance, the gasket of the emergency exit panel cover must be adjusted. If the gasket is damaged, contact Maintainer maintenance to replace the gasket.
4. At each of the remaining test points, repeat steps 1 through 3. If there is resistance at all of the test points, sufficient seal pressure exists.

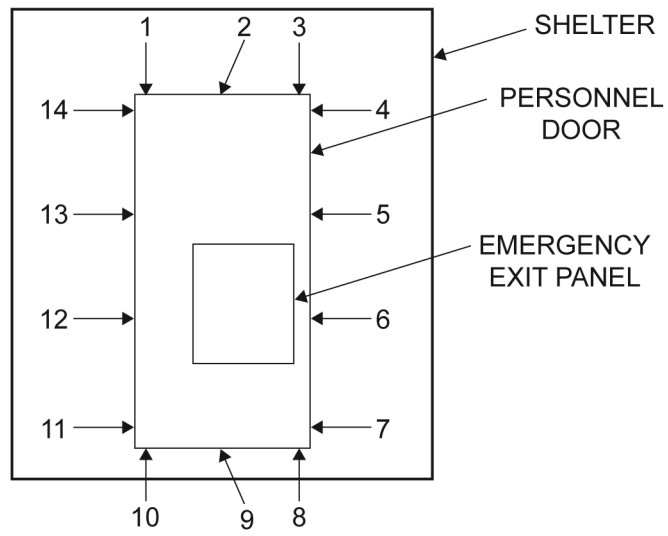
EMERGENCY EXIT PANEL GASKET PRESSURE TEST - (CONTINUED)

Figure 2. Test Locations: Door Weather Gasket.

END OF TASK

END OF WORK PACKAGE

CHAPTER 6
MAINTENANCE INSTRUCTIONS
FOR
S-280C/G UNSHIELDED (NSN 5411-01-092-0892)
S-280C/G SHIELDED (NSN 5411-01-304-3069)

FIELD MAINTENANCE**GENERAL SHELTER REPAIR****INITIAL SETUP:****Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
 Drill, Electric (WP 0041, Table 2. Item 2)
 Drill, Twist (WP 0041, Table 2. Item 3)
 Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)

Materials/Parts

Adhesive (Item 1, WP 0044)
 Adhesive (Item 3, WP 0044)
 Aluminum Sheet (Item 4, WP 0044)
 Caulking Cartridge (blank) (Item 5, WP 0044)
 Caulking Gun (Item 6, WP 0044)
 Cloth, Abrasive (Item 7, WP 0044)
 Cloth, Abrasive (Item 8, WP 0044)
 Cloth, Cotton (Item 10, WP 0044)
 Cloth, Fiberglass (Item 11, WP 0044)
 Container, Unwaxed, 16 oz. (Item 12, WP 0044)
 Core Material (Item 13, WP 0044)
 Fiber Filled Polyester Resin (Item 14, WP 0044)

Materials/Parts Continued

Gloves (Item 16, WP 0044)
 Hardener, Adhesive (Item 17, WP 0044)
 Plywood, ½" Thick, 3' X 3' (Item 23, WP 0044)
 Polyethylene Sheet (Item 24, WP 0044)
 Polyethylene Sheet (Item 25, WP 0044)
 Rivet, Blind (Item 26, WP 0044)
 Rivnut (WP 0034)
 Roller Kit, Paint (Item 27, WP 0044)
 Tape Pressure Sensitive Adhesive (Item 31, WP 0044)
 Tape, Pressure Sensitive Adhesive 1/2 inch (Item 32, WP 0044)
 Toluene, Technical (Item 33, WP 0044)

Personnel Required

44B Metal Worker

References

WP 0034
 WP 0044
 TM 43-0139

GENERAL INFORMATION

The following procedures are performed by a 44B Metal Worker:

- Replacing the data plates
- Repairing the shelter exterior temporarily
- Repairing delamination
- Repairing a small or shallow dent
- Patching a large or deep dent
- Patching a small skin puncture or cut
- Repairing a large single skin puncture or cut
- Surface preparation, priming, and painting

REPLACING THE DATA PLATES

Replace all missing, damaged, or defective plates.

1. Remove four rivnuts (Figure 1, Item 2) attaching the data plate (Figure 1, Item 1) at the top of the door. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
2. Put the data plate (Figure 1, Item 1) in place, and secure it to the door with four rivnuts (Figure 1, Item 2). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)

NOTE

The following procedures are the same for all other data plates in the shelter.

3. Remove four blind rivets (Figure 1, Item 3) securing data plate (Figure 1, Item 4) to the surface of the shelter and remove plate. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
4. Put the data plate (Figure 1, Item 4) on the door and secure with four blind rivets (Figure 1, Item 3). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)

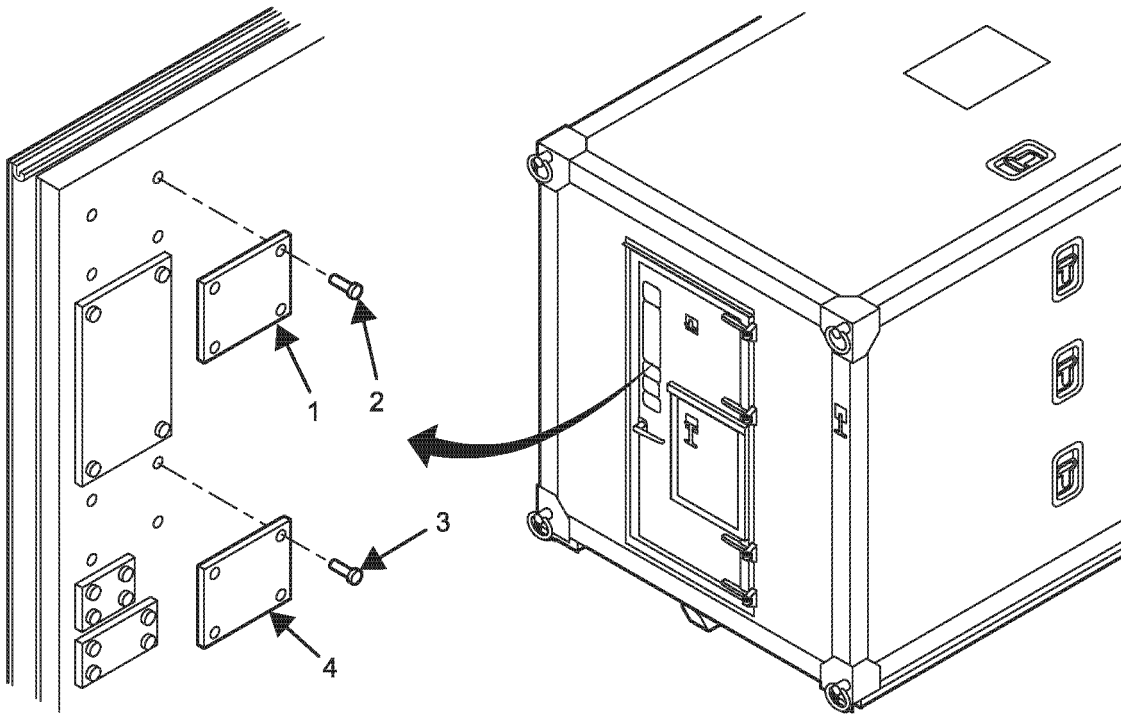
GENERAL SHELTER REPAIR - (CONTINUED)

Figure 1. Replacing the Data Plates.

END OF TASK**REPAIRING THE SHELTER EXTERIOR TEMPORARILY**

Any puncture in the shelter exterior, including punctures in the door skin, must be patched immediately to prevent water leaks. Dents without punctures do not require patching. However, if bare metal is exposed, touch-up paint shall be applied. (See Surface Preparation, Priming, and Painting task.)

WARNING

Solvents are flammable and toxic. Keep away from heat and open flames. Use in a well-ventilated area. Avoid skin and eye contact and breathing of vapors. Wear protective goggles and gloves when mixing and applying adhesive and hardener. To avoid injury or death to personnel, no smoking is allowed.

CAUTION

Paint strippers can contaminate the panel core, the adhesive, and the sealing compound. Do not use paint strippers to remove paint.

GENERAL SHELTER REPAIR - (CONTINUED)**NOTE**

Ceiling and floor panel compositions are the same as the wall panel composition. The same method of repair applies to all panels.

NOTE

The term “adhesive” in the following task refers only to WP 0044 Item 1.

1. Bend in the edges of the puncture below the surface of the unbroken face sheet. Do not allow broken edges to contact the opposite face sheet.
2. Remove the loose fragments of foam and dust.
3. Clean and dry the area surrounding puncture using clean cloth soaked with solvent. Wipe off solvent.
4. Inject the adhesive into puncture.
5. Apply a bead of adhesive approximately 1/4 inch wide over the cuts in the face sheet. Do not smooth out.
6. Plan the application of the tape. Length and width, number of strips, overlaps, and method of application will affect the seal. Each piece of tape shall extend approximately 1-1/2 inches beyond the adhesive. Tape must be applied to bare clean metal. If width of damaged area exceeds width of tape, overlap the tape strips at least 1/2 inch. If three or more strips of tape are required, apply the center strip first.
7. Hold the tape taut and apply lightly. Do not apply with rolling motion from end to end or side to side and do not rub strips into place. Tape strips must tightly adhere to each other. Rolling, rubbing, and excessive pressure will squeeze the adhesive out from under the tape.
8. Touch up with paint as required.

END OF TASK**REPAIRING DELAMINATION**

The roof, floor, end walls, and sidewalls are constructed of inner and outer aluminum panels, which are attached to structural mounting members. The area between the inner and outer panels is filled with a polyurethane core bonded to the panels with an epoxy adhesive. Separation of aluminum panel and polyurethane core will cause a structural weakness in the area affected. To restore the overall strength of the shelter, large areas of delamination should be repaired as soon as possible.

Delaminated areas of the shelter can be detected by movements of the aluminum panel similar to the movement of the bottom of an oil can when pressed. The presence of delaminated areas should produce a light, hollow sound and a bonded area a dull, solid sound. Sound will also change when tapping cross-panel mounting members. When it has been determined that a shelter panel area has been delaminated, repair as follows:

NOTE

The term “adhesive” in the following task refers only to WP 0044 Item 1.

1. Mark off the limits of the delaminated area (Figure 2, Item 2).

CAUTION

To ensure that the opposite shelter wall skin is not punctured, verify that the drill bit has a drill stop attached, which will prohibit it from exceeding a depth of 5/8 inch.

GENERAL SHELTER REPAIR - (CONTINUED)

2. Using Figure 2 as a visual guide, drill a 3/16 inch diameter hole in approximate center of the delaminated area of affected panel only (Figure 2, Item 3). This hole will be used to pump epoxy adhesive into delaminated area.
3. Drill 3/16 inch diameter pressure release holes (Figure 2, Item 1) no closer than 1/2 inch from the edge of the delaminated surface. Determine the number of holes by the size of the delamination area. (Release holes should be approximately 2 inches apart.)

WARNING

Wear gloves when mixing and applying adhesive and hardener. To avoid injury or death to personnel, no smoking is allowed.

NOTE

The hardener (WP 0044, Item 17) is extremely sensitive to moisture absorption. Therefore, verify that the lid of the hardener container is firmly in place after material has been removed from shipping or storage container. Both the adhesive and the hardener have a shelf life of one year.

4. Using the outline of the marked delaminated area (Figure 2, Item 2), mask off the surrounding area (approximately a width of 2 feet) with Kraft wrapping paper or newspaper. In a clean, empty cartridge, mix thoroughly the adhesive and hardener per the manufacturer's recommendations.
5. Using an oval-tip caulking gun with the adhesive/hardener mixture in the cartridge, force the adhesive/hardener mixture directly into the clearance holes in the guidelines as follows:

CAUTION

The following repair procedures must be accomplished within one hour of mixing adhesive. Do not attempt any repair unless temperature is between 64°F and 85°F.

- a. Place the nozzle of the caulking gun in the center hole of the delaminated area (Figure 2, Item 3) and inject the adhesive/hardener mixture.
- b. When the space is filled with adhesive/hardener mixture, remove the caulking gun. With a roller, knead or roll lightly over the filled panel surface, making certain that the mixture fills all areas and that trapped air and surplus mixture is moved out through pressure release holes (Figure 2, Item 1).
- c. Seal the center hole (Figure 2, Item 3) with masking tape.

WARNING

Toluene solvents are flammable. Keep away from heat, sparks, and open flame. Keep the containers closed when not used. Use only with adequate ventilation. Avoid prolonged breathing of vapors or repeated contact with skin. To avoid injury or death to personnel, no smoking is allowed.

- d. Using a soft cloth lightly coated with toluene, remove excess adhesive/hardener mixture from the filled panel surface.

GENERAL SHELTER REPAIR - (CONTINUED)

- e. Cover the filled panel with a polyethylene sheet.
- f. Place a plywood sheet or equivalent against polyethylene sheet and apply an even surface pressure (bracing is sufficient) over repaired area for at least 24 hours.
- g. When the mixture has been allowed to cure the required time, remove plywood and polyethylene sheet.
- h. To remove excess cured mixture, sand the repaired area with a coarse grit abrasive cloth.
- i. Redrill a 0.190 diameter (#11 drill) by 5/8 inch deep hole at each of the holes previously drilled in steps 2 and 3 (Figure 2 Items 1 & 3). Slightly countersink the drilled hole with a punch (0.062 by 120 degrees) and install a 3/16 inch diameter countersunk closed end blind rivet. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
- j. Fill the hollow core portions of the rivets and any surrounding uneven surface with fiber-filled polyester resin. Allow to dry for 1 hour.
- k. Grind to remove excess cured the repaired surface smooth and using an abrasive cloth, remove any rough areas on the surface and thoroughly clean the repaired area with a cotton cloth lightly coated with toluene.
- l. Prime and paint the repaired panel surface and the rivet heads. (See Surface Preparation, Priming, and Painting tasks.)

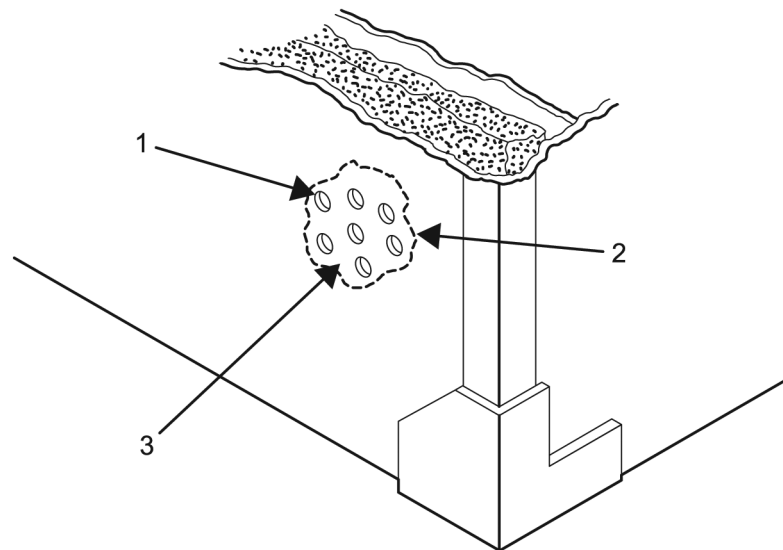


Figure 2. Repairing Panel Skin Delamination.

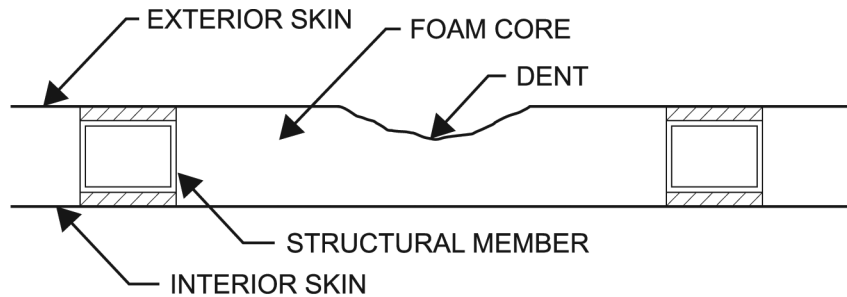
END OF TASK**REPAIRING A SMALL OR SHALLOW DENT****NOTE**

The following repair procedures are for a damaged area not exceeding 64 square inches.

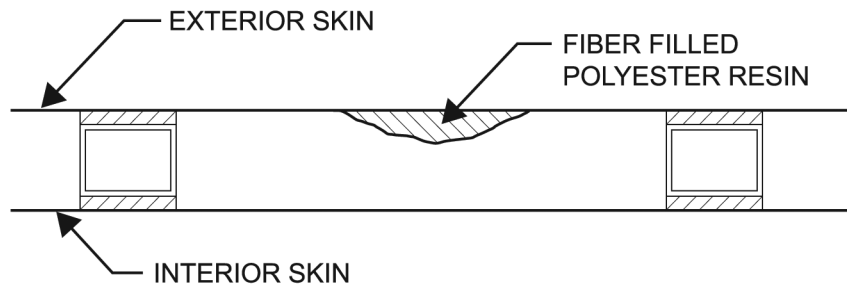
1. Remove all paint or foreign matter from the dent (Figure 3 A), and an area approximately three inches wide around the dent, with an abrasive cloth and toluene.
2. Roughen the skin surface with coarse grit abrasive cloth. Be sure that the area is completely clean. Do not touch the area with hands or wipe with an oily cloth.
3. Fill the dent and smooth out evenly to a featheredge as shown in Figure 3 B, using fiber-filled polyester resin.
4. Allow the repair mix to set thoroughly in accordance with the manufacturer's recommendations.

GENERAL SHELTER REPAIR - (CONTINUED)

5. Sand off the excess material flush with the contour of the skin surface as shown in Figure 3 B.
6. Prime and paint the repaired surface. (See the Surface Preparation, Priming, and Painting task.)



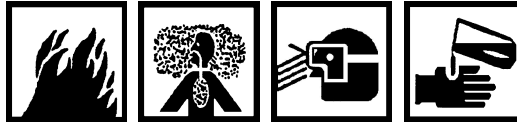
A - SMALL OR SHALLOW DENT IN SANDWICH CONSTRUCTION WITH ALUMINUM STRUCTURAL MEMBERS.



B - REPAIRED SMALL OR SHALLOW DENT.

Figure 3. Repairing a Small or Shallow Dent.

END OF TASK

GENERAL SHELTER REPAIR - (CONTINUED)**PATCHING A LARGE OR DEEP DENT****WARNING**

Toluene solvents are flammable. Keep away from heat, sparks, and open flame. Keep the containers closed when not used. Use only with adequate ventilation. Avoid prolonged breathing of vapors or repeated contact with skin. To avoid injury or death to personnel, no smoking is allowed.

NOTE

The following repair procedures are for an area located between structural members of between 64 to 100 square inches. To determine whether a large or deep dent is between structural members, tap the area with a small screwdriver handle. A structural member is identified by a tight, drum-like sound as opposed to the soft sound of areas between members. Extensive damage, such as denting or buckling of the exterior shelter skin (which displaces the opposite shelter skin) generally constitutes an irreparable type damage.

NOTE

The term “adhesive” in the following task refers only to WP 0044 Item 1.

1. With abrasive cloth and toluene, remove all paint or foreign matter from the dent (Figure 4 A), and an area approximately three inches further radius around the dent.
2. Roughen the skin surface with coarse grit abrasive cloth. Be sure that the area is completely clean. Do not touch the area with hands or wipe with an oily cloth.
3. Fill the dent and smooth out evenly to a featheredge as shown in Figure 4 B, using fiber-filled polyester resin.
4. Cut a piece of fiberglass cloth that will cover the restored area and extend approximately two inches around the filled-in dent.

WARNING

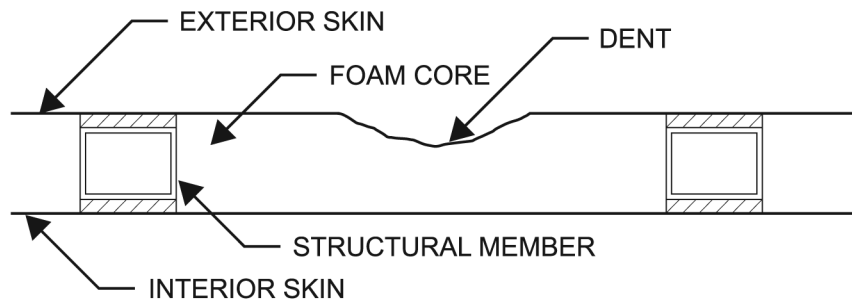
Wear gloves when mixing and applying adhesive and hardener. To avoid injury or death to personnel, no smoking is allowed.

NOTE

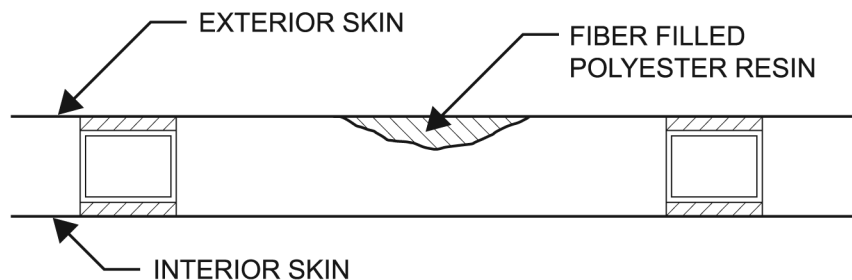
The hardener is extremely sensitive to moisture absorption. Therefore, verify that the lid of the hardener container is firmly replaced after material has been removed. Both the adhesive and the hardener materials have a shelf life of one year.

GENERAL SHELTER REPAIR - (CONTINUED)

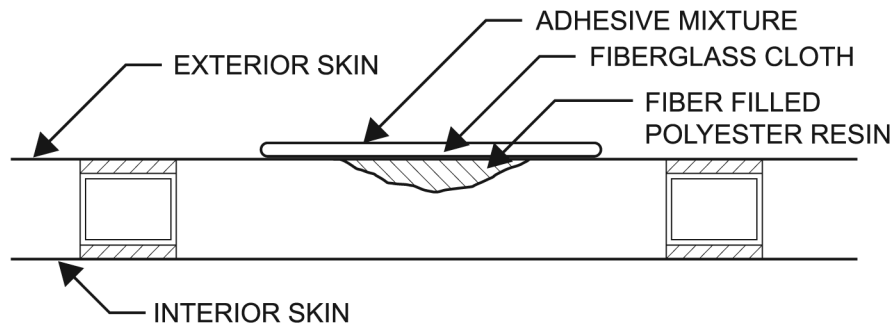
5. In a clean, empty cartridge, mix thoroughly the adhesive and hardener per the manufacturer's recommendations.
6. Apply a liberal coating of adhesive mixture over the filled-in dent (Figure 4B) extending approximately two inches around the dent.
7. Place the fiberglass cloth over the coating of adhesive mixture and press lightly (Figure 4C).
8. Apply a liberal coating of the adhesive mixture over the fiberglass cloth; work from the center of the fiberglass cloth to the extreme edges. Be careful that all edges of the fiberglass cloth are thoroughly saturated.
9. Allow the mixed adhesive to set thoroughly and sand off excess.
10. Prime and paint the required surface. (Refer to Surface Preparation, Priming, and Painting task.)



A - LARGE OR DEEP DENT IN SANDWICH CONSTRUCTION BETWEEN STRUCTURAL MEMBERS.



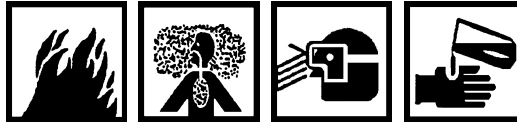
B - LARGE OR DEEP DENT FILLED IN WITH REPAIR MIX.



C - REPAIRED LARGE OR DEEP DENT.

Figure 4. Repairing a Large or Deep Dent.

END OF TASK

GENERAL SHELTER REPAIR - (CONTINUED)**PATCHING A SMALL SKIN PUNCTURE OR CUT****WARNING**

Toluene solvents are flammable. Keep away from heat, sparks, and open flame. Keep the containers closed when not used. Use only with adequate ventilation. Avoid prolonged breathing of vapors or repeated contact with skin. To avoid injury or death to personnel, no smoking is allowed.

NOTE

The term "adhesive" in the following task refers only to WP 0044 Item 1.

Interior skin punctures require conductive sealant to maintain EMI shielding of the shelter.

1. Select an aluminum sheet patch that overlaps the puncture modeled in Figure 5 A, or cut by one inch in all directions.
2. Position the aluminum sheet over the puncture and lightly scribe the area of the patch on the shelter skin.
3. Remove all paint or foreign matter from the puncture area and an area approximately one inch around the scribed mark using an abrasive cloth and toluene.
4. With the aluminum sheet over the puncture area, mark the holes to be drilled for 3/16 inch blind rivets (#11 drill) around the perimeter of the patch, 1/2 inch from the edge of the patch, on one-inch centers. Remove aluminum sheet from the puncture area and drill the marked holes for the 3/16 inch blind rivets (#11 drill). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
5. Roughen the skin surface of the shelter with coarse grit abrasive cloth. Verify that the area is completely clean. Do not touch the area with the hands or wipe with an oily cloth.
6. Fill the puncture with fiber-filled polyester resin. Smooth out the resin evenly to a featheredge, as shown in Figure 5 B.
7. Allow the resin to set thoroughly. Sand off excess until the repaired area is flush with the contour of the skin surface.
8. Use the aluminum sheet as a template to mark the holes for the blind rivet in the skin of the shelter, and drill #30 holes in the skin of the shelter.

WARNING

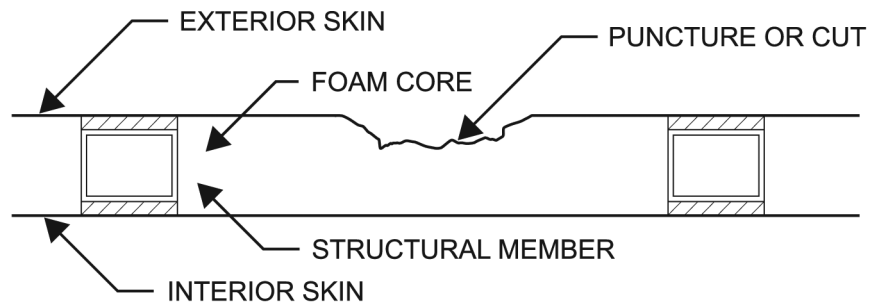
Wear gloves when mixing and applying adhesive and hardener. To avoid injury or death to personnel, no smoking is allowed.

GENERAL SHELTER REPAIR - (CONTINUED)**NOTE**

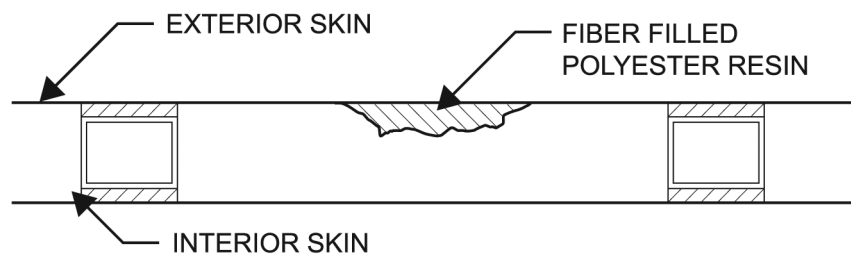
The hardener is extremely sensitive to moisture absorption. Therefore, verify that the lid is tight on the hardener container after material has been removed. Both the adhesive and the hardener have a shelf life of one year.

9. In a clean, empty cartridge, mix thoroughly the adhesive and hardener per the manufacturer's recommendations.
10. Coat the back surface of the aluminum sheet and the shelter skin within the scribe lines with adhesive mixture.
11. Position the aluminum sheet over the repaired area.
12. Dip the blind rivets in the adhesive mixture and secure the Aluminum Sheet to the shelter (Figure 5 C) using blind rivets. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
13. With a cotton cloth saturated in toluene, squeeze out and remove immediately any excess adhesive mixture.
14. Prime and paint the repaired surface. (Refer to the Surface Preparation, Priming, and Painting task.)

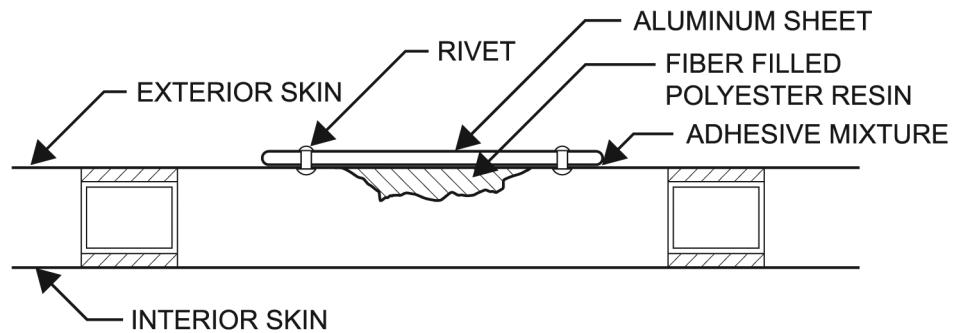
GENERAL SHELTER REPAIR - (CONTINUED)



A - SMALL SINGLE SKIN PUNCTURE OR CUT IN SANDWICH CONSTRUCTION.



B - SMALL SINGLE SKIN PUNCTURE OR CUT FILLED IN WITH REPAIR MIX.



C - REPAIRED SMALL SINGLE SKIN PUNCTURE OR CUT.

Figure 5. Repairing a Small Skin Puncture or Cut.

END OF TASK

GENERAL SHELTER REPAIR - (CONTINUED)**REPAIRING A LARGE SINGLE SKIN PUNCTURE OR CUT****WARNING**

Toluene solvents are flammable. Keep away from heat, sparks, and open flame. Keep the containers closed when not used. Use only with adequate ventilation. Avoid prolonged breathing of vapors or repeated contact with skin. To avoid injury or death to personnel, no smoking is allowed.

NOTE

The following repair procedures are for damaged skin between structural members. If the puncture or cut did not seriously damage the foam core, follow the procedures in the task Repairing a Large or Deep Dent. If the puncture or cut damaged the foam core, follow the procedures below using block insulation or a cutout.

Interior skin punctures require conductive sealant to maintain EMI shielding of the shelter.

NOTE

The "adhesive" in the following task refers only to WP 0044, Table 1. , Item 3.

1. Select an aluminum sheet patch that overlaps the puncture or cut by one inch in all directions.
2. Use the aluminum sheet as a template positioned over the puncture or cut, and lightly scribe the area of the aluminum sheet on the skin of the shelter.
3. Use a saw to cut and remove the punctured or cut skin area approximately one inch within the scribed mark (Figure 6 A & B). While cutting, do not cause additional damage to wall or interior skin.
4. Cut the foam core evenly along the edges where the skin is removed and remove the damaged foam core (Figure 6 B), maintaining perpendicular and straight edges.
5. Select a piece of core material or a cutout of the same type sandwich construction (Figure 6 C).
6. Measure the core material or cutout to fit the opening where the skin and foam were removed. If a cutout is used, remove the aluminum skin from one side of the cutout.
7. Using an abrasive cloth and toluene, remove all paint or foreign matter from the overlap area on the skin of the shelter and an area approximately one inch around the scribed mark. If the cutout is used, remove all paint or foreign matter from the aluminum skin of the cutout.
8. Roughen the skin surface with coarse-grit abrasive cloth. If a cutout is used, roughen the surface of the aluminum skin.

WARNING

Wear gloves when mixing and applying adhesive and hardener. To avoid injury or death to personnel, no smoking is allowed.

GENERAL SHELTER REPAIR - (CONTINUED)**NOTE**

The hardener is extremely sensitive to moisture absorption. Therefore, verify that the lid of the hardener container is firmly replaced after material has been removed. Both the adhesive and the hardener materials have a shelf life of one year.

9. In a clean, empty cartridge, mix thoroughly the adhesive and hardener per the manufacturer's recommendations.
10. With the adhesive/hardener mixture, coat the interior of the opening where the skin and foam core were removed.
11. Insert the core material or cutout into the opening where the skin and foam core were removed (Figure 6 D).
12. With the aluminum sheet over the puncture area, drill #30 holes around the perimeter of the patch, 1/2 inch from edge of patch, on one-inch centers.
13. Coat the exposed core material or cutout and the overlapping area with the adhesive / hardener mixture.
14. Dip the blind rivets in the adhesive / hardener mixture and secure the aluminum sheet to the shelter (Figure 6 E). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
15. Smooth and tape the adhesive / hardener mixture (squeezed out during the riveting process) along the edges of the aluminum sheet and immediately remove excess adhesive / hardener mixture with cotton cloth saturated in toluene.
16. Prime and paint the repaired surface. (Refer to the Surface Preparation, Priming, and Painting task below.)

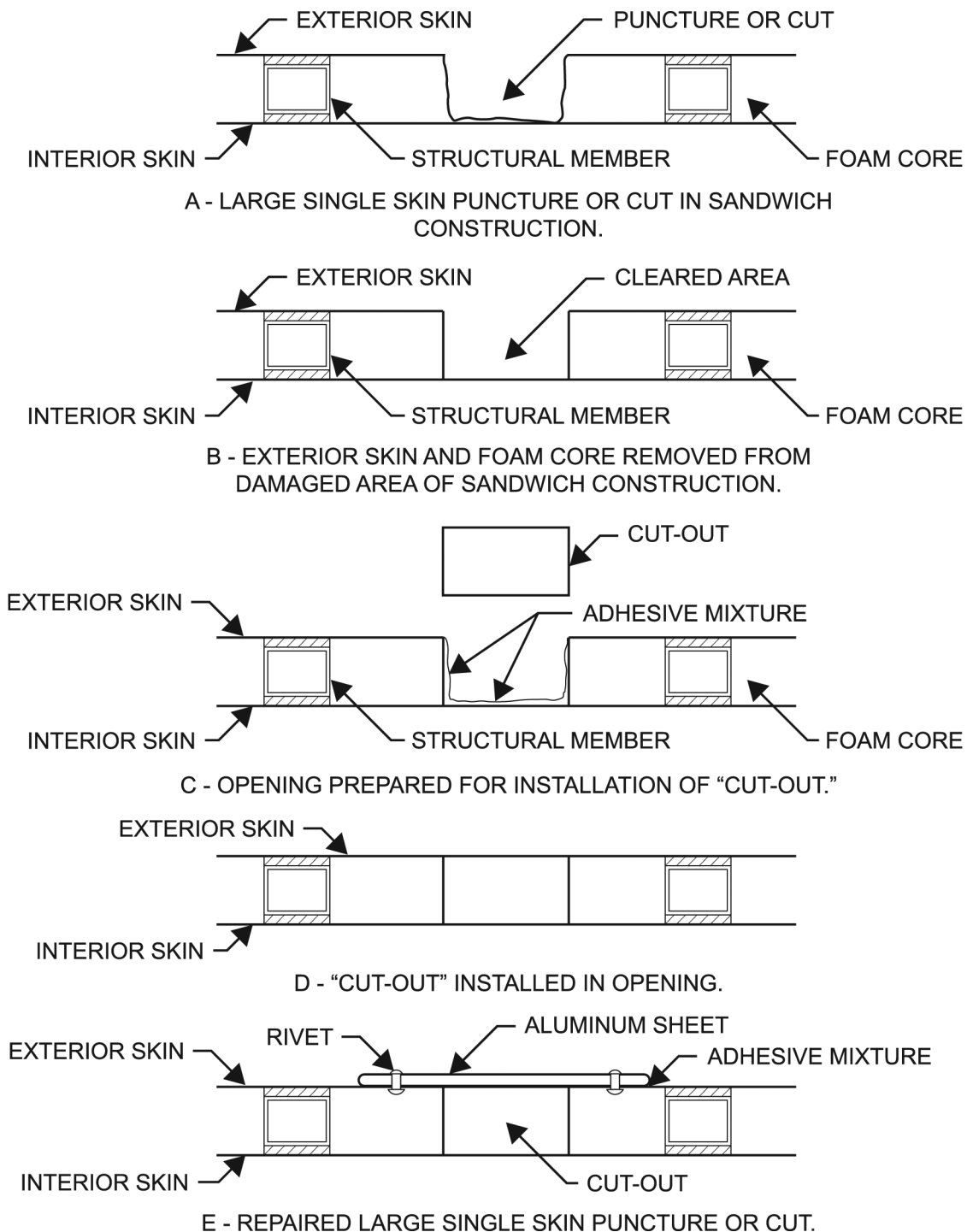
GENERAL SHELTER REPAIR - (CONTINUED)

Figure 6. Repairing a Large Skin Puncture or Cut.

END OF TASK**SURFACE PREPARATION, PRIMING, AND PAINTING**

All bare metal shall be painted to prevent corrosion. Touch up small dents and chips. Repaired sections of panels must be primed for protection against corrosion before painting. Detailed priming and painting instructions can be

GENERAL SHELTER REPAIR - (CONTINUED)

found in TM 43-0139. Do not attempt to repaint large areas such as the complete exterior, interior, or the ceiling. If large areas need repainting, notify higher level of maintenance.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE

DRIP MOLDING ASSEMBLY REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
 Drill, Electric (WP 0041, Table 2. Item 2)
 Drill, Twist (WP 0041, Table 2. Item 3)
 Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)

Materials/Parts

Rivets, Blind (Item 26, WP 0044)

Material/Parts Continued

Sealing Compound (Item 28, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

References

WP 0034

GENERAL INFORMATION

The following removal and/or installation of the drip molding is to be performed by a 91B Wheeled Vehicle Mechanic.

REMOVING THE DRIP MOLDING

Remove the seven blind rivets (Figure 1, Item 1) securing the drip molding. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)

INSTALLING THE DRIP MOLDING

1. Position the new drip molding (Figure 1, Item 2) on the shelter so that the mounting holes line up with the holes above the door.
2. Fasten the drip molding with seven blind rivets (Figure 1, Item 1). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
3. Apply a continuous bead of sealing compound around the edge of the drip molding.

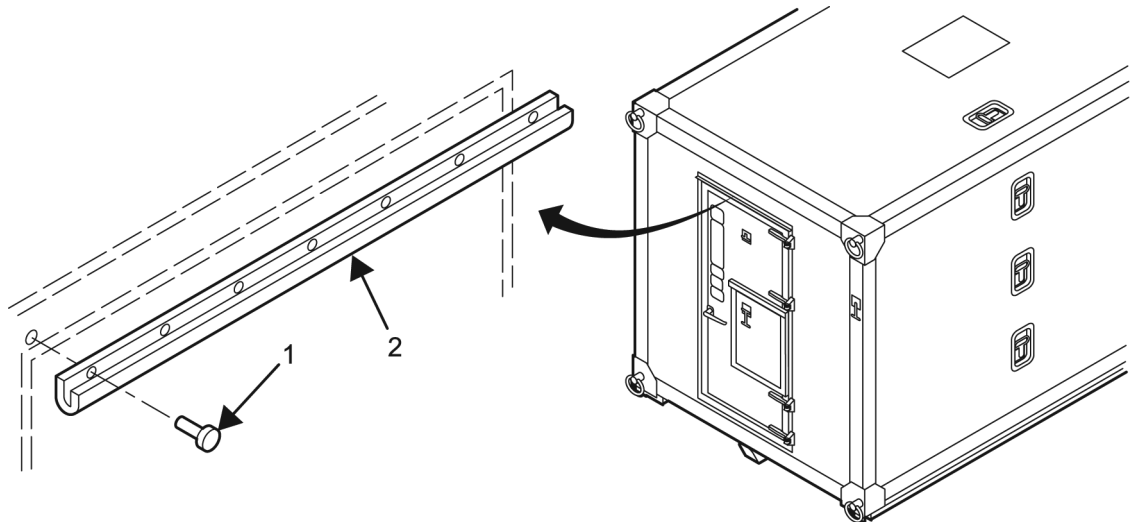


Figure 1. Replacing the Drip Molding.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

HANDHOLD ASSEMBLY REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
 Drill, Electric (WP 0041, Table 2. Item 2)
 Drill, Twist (WP 0041, Table 2. Item 3)
 Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)

Materials/Parts

Rivets, Blind (Item 26, WP 0044)

Materials/Parts Continued

Lubricant, Solid Film (Item 19, WP 0044)
 Sealing Compound (Item 28, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

References

WP 0034

The following removal and/or installation of the handhold is to be performed by the 91B Wheeled Vehicle Mechanic.

NOTE

If only the bail handle (Figure 1, Item 1) needs to be replaced, perform the following steps in the procedures below: step 1 of Removing the Handhold, and steps 3 and 4 of Installing the handhold.

REMOVING THE HANDHOLD

1. Drill out the five rivets (Figure 1, Item 2) securing the bail handle (Figure 1, Item 1) to the handhold pan (Figure 1, Item 4) and remove the bail handle.
2. Remove the ten blind rivets (Figure 1, Item 3) securing the handhold pan (Figure 1, Item 4) to roof of the shelter and remove the handhold assembly. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)

END OF TASK**INSTALLING THE HANDHOLD**

1. Place the handhold pan (Figure 1, Item 4) at the proper position on the roof of the shelter.
2. Attach the handhold pan (Figure 1, Item 4) to the shelter roof with the ten blind rivets (Figure 1, Item 3).
3. Secure the bail handle (Figure 1, Item 1) to the handhold pan (Figure 1, Item 4) with five rivets (Figure 1, Item 2). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
4. Apply a continuous bead of sealing compound around the edge of the bail handle (Figure 1, Item 1) and the edge of the handhold pan (Figure 1, Item 4).

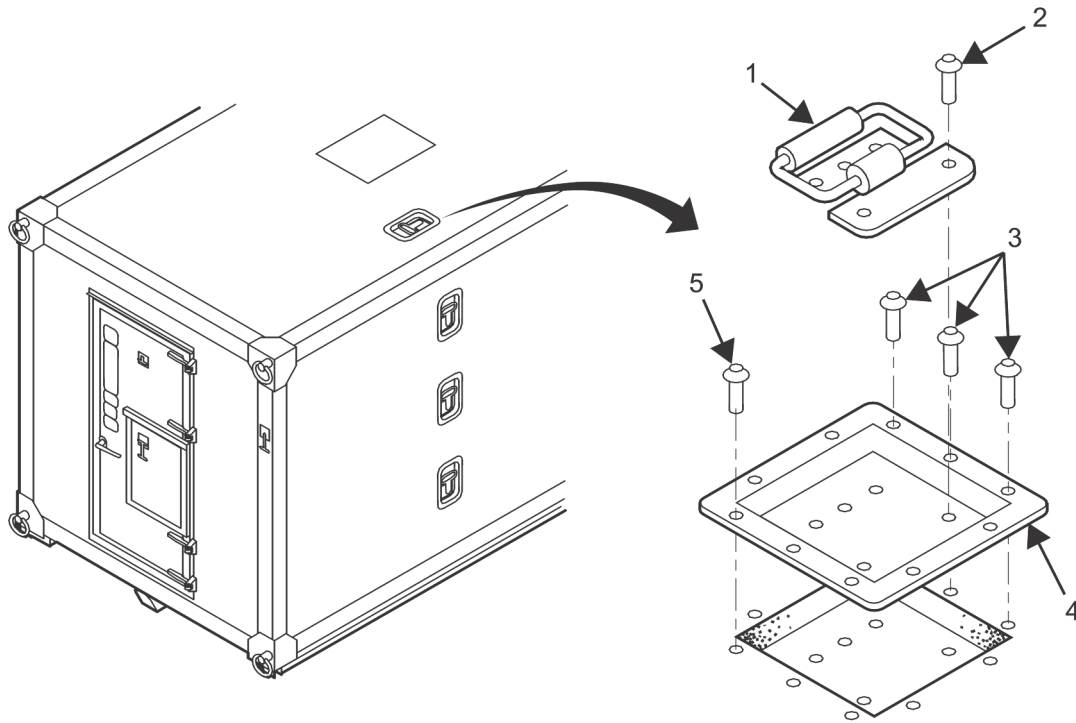
HANDHOLD ASSEMBLY REPLACEMENT - (CONTINUED)

Figure 1. Replacing the handhold Assembly.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE**RECESSED STEP PAN ASSEMBLY REPAIR OR REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
Drill, Electric (WP 0041, Table 2. Item 2)
Drill, Twist (WP 0041, Table 2. Item 3)
Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)

Materials/Parts

Rivets, Blind (Item 26, WP 0044)

Materials/Parts Continued

Sealing Compound (Item 28, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

References

WP 0034

Removal and replacement of the recessed step pan is performed by the 91B Wheeled Vehicle Mechanic.



Figure 1. Recessed Step Pan.

REMOVING THE RECESSED STEP PAN

1. Pull the step (Figure 2, Item 3) out and down to its operating position.
2. Remove the two locknuts (Figure 2, Item 4) and remove the step (Figure 2, Item 3).
3. Remove three blind rivets (Figure 2, Item 2) and seven blind rivets (Figure 2, Item 5) attaching the recessed step pan (Figure 2, Item 1) and remove from wall. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)

END OF TASK**INSTALLING THE RECESSED STEP PAN**

1. Position the recessed step pan (Figure 2, Item 1) on the shelter wall.
2. Verify that the step can be mounted on the captive bolts (Figure 2, Item 6).
3. Secure with seven blind rivets (Figure 2, Item 5) and three blind rivets (Figure 2, Item 2). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
4. Put the recessed step (Figure 2, Item 3) in place and guide the captive bolts through the mounting holes (Figure 2, Item 6).
5. Using two locknuts (Figure 2, Item 4), secure the step (Figure 2, Item 3) to the recessed step pan (Figure 2, Item 1).
6. Place a bead of sealing compound around the edges of the Recessed Step Pan assembly.

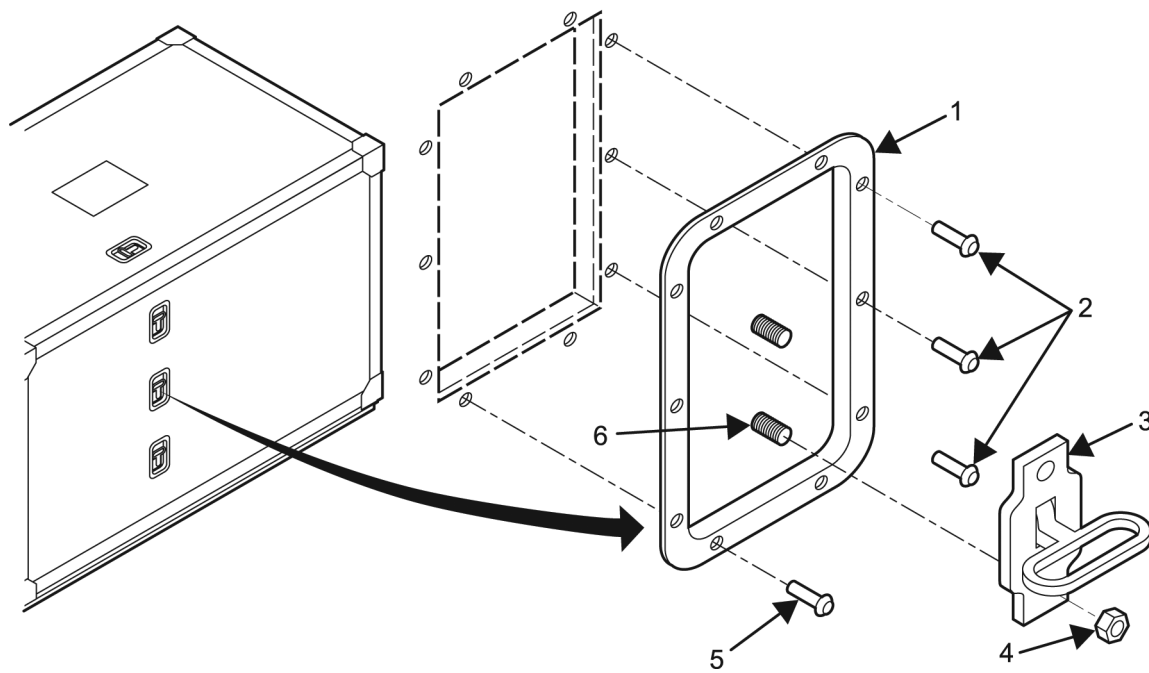
RECESSED STEP PAN ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

Figure 2. Replacing the Recessed Step Pan Assembly.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

T-LATCH ASSEMBLY REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
 Drill, Electric (WP 0041, Table 2. Item 2)
 Drill, Twist (WP 0041, Table 2. Item 3)
 Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)

Materials/Parts

Rivets, Blind (Item 26, WP 0044)

Materials/Parts Continued

Sealing Compound (Item 28, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

References

WP 0034

Removal and replacement of the T-latch is performed by the 91B Wheeled Vehicle Mechanic.

REMOVING THE T-LATCH ASSEMBLY AND T-LATCH HOLDER

1. Remove the four blind rivets (Figure 1, Item 5) securing each of the two the T-Latch assemblies (Figure 1, Item 4) to the shelter. Remove the T-Latch assemblies. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
2. Remove and retain the four screws (Figure 1, Item 6) securing the T-Latch holder (Figure 1, Item 7) to the door panel, and for each of the four screws, retain the following:
 - a. One flat washer (Figure 1, Item 3)
 - b. One lock washer (Figure 1, Item 2)
 - c. One nut (Figure 1, Item 1)

END OF TASK**INSTALLING THE T-LATCH ASSEMBLY AND T-LATCH HOLDER****NOTE**

Dip all of the screws in sealing compound before installation.

1. Place the new T-Latch holder (Figure 1, Item 7) on the door panel, and secure with the four retained screws (Figure 1, Item 6), the flat washers (Figure 1, Item 3), the lock washers (Figure 1, Item 2), and the nuts (Figure 1, Item 1).
2. Secure the T-Latch assembly (Figure 1, Item 4) with four blind rivets (Figure 1, Item 5). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
3. Apply a bead of sealing compound around the edge of the T-Latch holder.

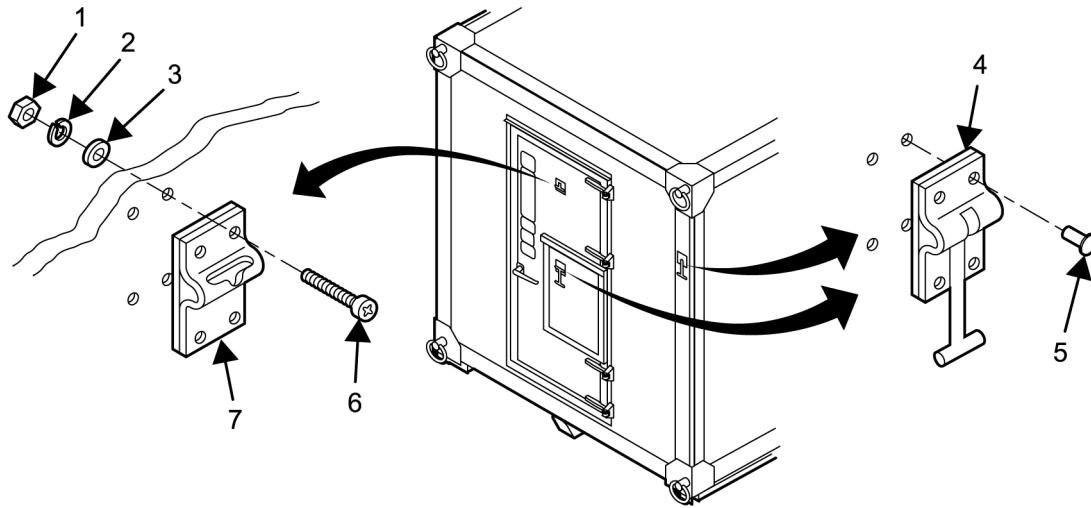
T-LATCH ASSEMBLY REPLACEMENT - (CONTINUED)

Figure 1. Removing the T-Latch Assemblies and T-Latch Holder.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

DRAIN FLOOR ASSEMBLY REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
Drill, Electric (WP 0041, Table 2. Item 2)
Drill, Twist (WP 0041, Table 2. Item 3)
Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)

Materials/Parts

Sealing Compound (Item 28, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

References

WP 0034

WARNING

Before performing maintenance on the underside of the floor, verify that the shelter is supported properly to prevent injury to personnel.

CAUTION

Raise the shelter approximately two feet above ground and place the supports under the outside skids.

Repairing and/or replacing of the floor drain is performed by the 91B Wheeled Vehicle Mechanic.

REMOVING THE FLOOR DRAIN

1. Remove the four blind rivets (Figure 1, Item 3) attaching the plate (Figure 1, Item 4) to the underside of the floor panel. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
2. Remove the flare from the bottom of the tube (Figure 1, Item 7).
3. Push up and remove the tube and remove the plate.
4. Remove the rivet (Figure 1, Item 2) attaching the drain plug and chain (Figure 1, Item 1).
5. Remove the four rivets (Figure 1, Item 6) attaching the drain pan (Figure 1, Item 5) to the floor, and remove the drain pan.

END OF TASK**INSTALLING THE FLOOR DRAIN**

1. Place the drain pan (Figure 1, Item 5) with the chamfer facing down, and secure to the floor with four blind rivets (Figure 1, Item 6). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
2. Secure the plate (Figure 1, Item 4) on the underside of the floor panel with four blind rivets (Figure 1, Item 3).
3. Apply sealing compound to the drain tube (Figure 1, Item 7) where it contacts the drain pan (Figure 1, Item 5).
4. Insert the drain tube (Figure 1, Item 7) in the hole.
5. Flare the end of the tube touching the plate (Figure 1, Item 4) against the chamfer of the plate.
6. Place the drain plug (Figure 1, Item 1) in the drain. Secure the drain plug chain to the pan (Figure 1, Item 5) with the rivet (Figure 1, Item 2).

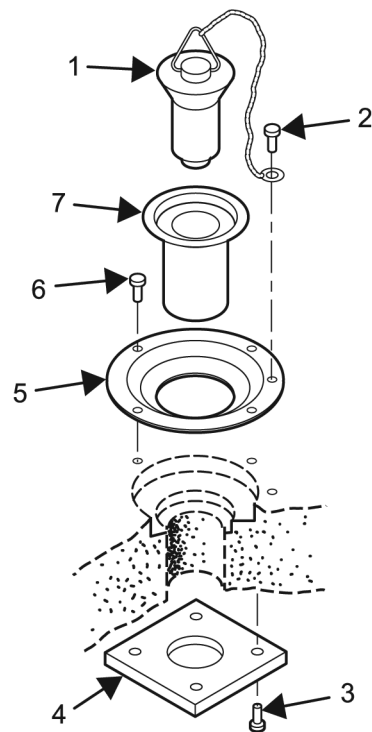
DRAIN FLOOR ASSEMBLY REPLACEMENT - (CONTINUED)

Figure 1. Removing or Replacing the Floor Drain.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

DOOR ASSEMBLY REPAIR OR REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
 Drill, Electric (WP 0041, Table 2. Item 2)
 Drill, Twist (WP 0041, Table 2. Item 3)
 Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)

Materials/Parts

Adhesive, RTV (Item 2, WP 0044)

Materials/Parts Continued

Gasket (Item 15, WP 0044)
 Rivets, Blind (Item 26, WP 0044)
 Sealing Compound (Item 28, WP 0044)
 Shield, Isolator, EMI (Item 29, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

References

WP 0015
 WP 0034
 WP 0041
 WP 0044

To replace the door, only complete the Removing and Installing procedures.

Procedures for removing, disassembling, and installing the door are performed by the 91B Wheeled Vehicle Mechanic.

REMOVING THE DOOR

1. Remove and retain the ten screws (Figure 1, Item 5) attaching the door stop bracket (Figure 1, Item 4) to the inside of the door, and a screw (Figure 1, Item 6) attaching the chain end.
2. Remove and retain two bolts (Figure 1, Item 7), one bolt (Figure 1, Item 8), three flat washers (Figure 1, Item 2), and three self-locking nuts (Figure 1, Item 1) attaching each of the four hinges (Figure 1, Item 3) to the door.

WARNING

To prevent injury to personnel, use extreme care in lifting and carrying door.

3. Open the door and remove it.

END OF TASK**DISASSEMBLING THE DOOR**

1. Turn each of the four knob assemblies (Figure 2, Item 6) counterclockwise to release the emergency exit panel (Figure 2, Item 14) and remove panel from door.
2. Remove the rivet (Figure 2, Item 9) attaching the knob chain (Figure 2, Item 10) to the mounting bracket (Figure 2, Item 5) and remove the knob (Figure 2, Item 6). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
3. Remove two rivets (Figure 2, Item 8) attaching each panel mounting bracket (Figure 2, Item 5); remove the brackets.
4. Remove 17 rivets (Figure 2, Item 13) attaching the drip molding (Figure 2, Item 11) to door and remove drip molding and drip cap strip (Figure 2, Item 12).
5. Remove and retain four screws (Figure 2, Item 7), flat washers (Figure 2, Item 3), lock washers (Figure 2, Item 2), and nuts (Figure 2, Item 1) attaching each T-latch holder (Figure 2, Item 4) to door and remove holder.

DOOR ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)**WARNING**

To avoid injury or death to personnel, no smoking is allowed.

6. Remove the weather gasket (Figure 2, Item 15) and clean any adhesive residue from track.
7. Remove the EMI shield (Figure 2, Item 16).

END OF TASK**ASSEMBLING THE DOOR****WARNING**

Wear gloves when mixing and applying adhesive and hardener. To avoid injury or death to personnel, no smoking is allowed.

CAUTION

Allow at least 30 minutes cure time for the adhesive before using the door.

1. Apply adhesive (WP 0044, Item 2) in the grooved track all around door and snap a new gasket (Figure 2, Item 15) in place in the door track.
2. Clean the EMI shield track of any dirt, place a new shield (Figure 2, Item 15) over the track and snap into place.

NOTE

Dip the screws in sealing compound prior to installation.

3. Place the T-latch holder (Figure 2, Item 4) on the door panel and secure with four screws (Figure 2, Item 7), flat washers (Figure 2, Item 3), lock washers (Figure 2, Item 2), and nuts (Figure 2, Item 1).
4. Place drip molding (Figure 2, Item 11) and drip cap strip (Figure 2, Item 12) on door and secure with 17 blind rivets (Figure 2, Item 13).
5. Position each mounting bracket (Figure 2, Item 5) in place on inside of door and secure to door with four blind rivets (Figure 2, Item 8).
6. Screw the knob assembly (Figure 2, Item 6) into the mounting bracket (Figure 2, Item 5) and secure the knob assembly chain (Figure 2, Item 10) to the bracket with a blind rivet (Figure 2, Item 9).
7. Place the emergency exit panel (Figure 2, Item 14) on the door opening, and secure it to the door by turning the four knob assemblies (Figure 2, Item 6) clockwise.
8. Test the tightness of the emergency exit panel weather gasket in accordance with WP 0015.
9. Apply a continuous bead of sealing compound around the mating surface of the T-latch holder (Figure 2, Item 4) and mounting brackets (Figure 2, Item 5).

END OF TASK

DOOR ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)**REPLACING THE DOOR**

1. Position door in place and turn door handle to closed position.
2. Butt each of the four hinges (Figure 1, Item 3) against the door and secure using two bolts (Figure 1, Item 7), one bolt (Figure 1, Item 8), three flat washers (Figure 1, Item 2), and three self-locking nuts (Figure 1, Item 1).
3. Secure the door stop bracket (Figure 1, Item 4) to inside of door using ten screws (Figure 1, Item 5) and secure the chain end with a screw (Figure 1, Item 6).

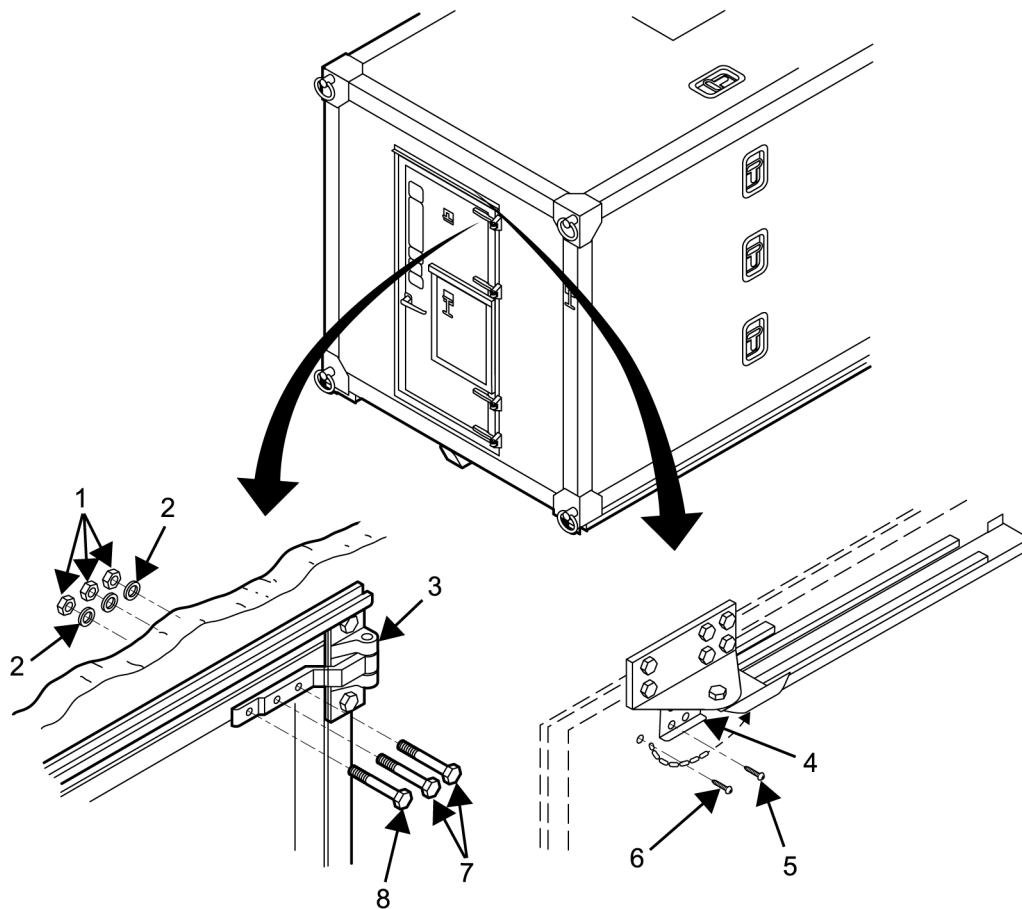


Figure 1. Removing the Door Assembly.

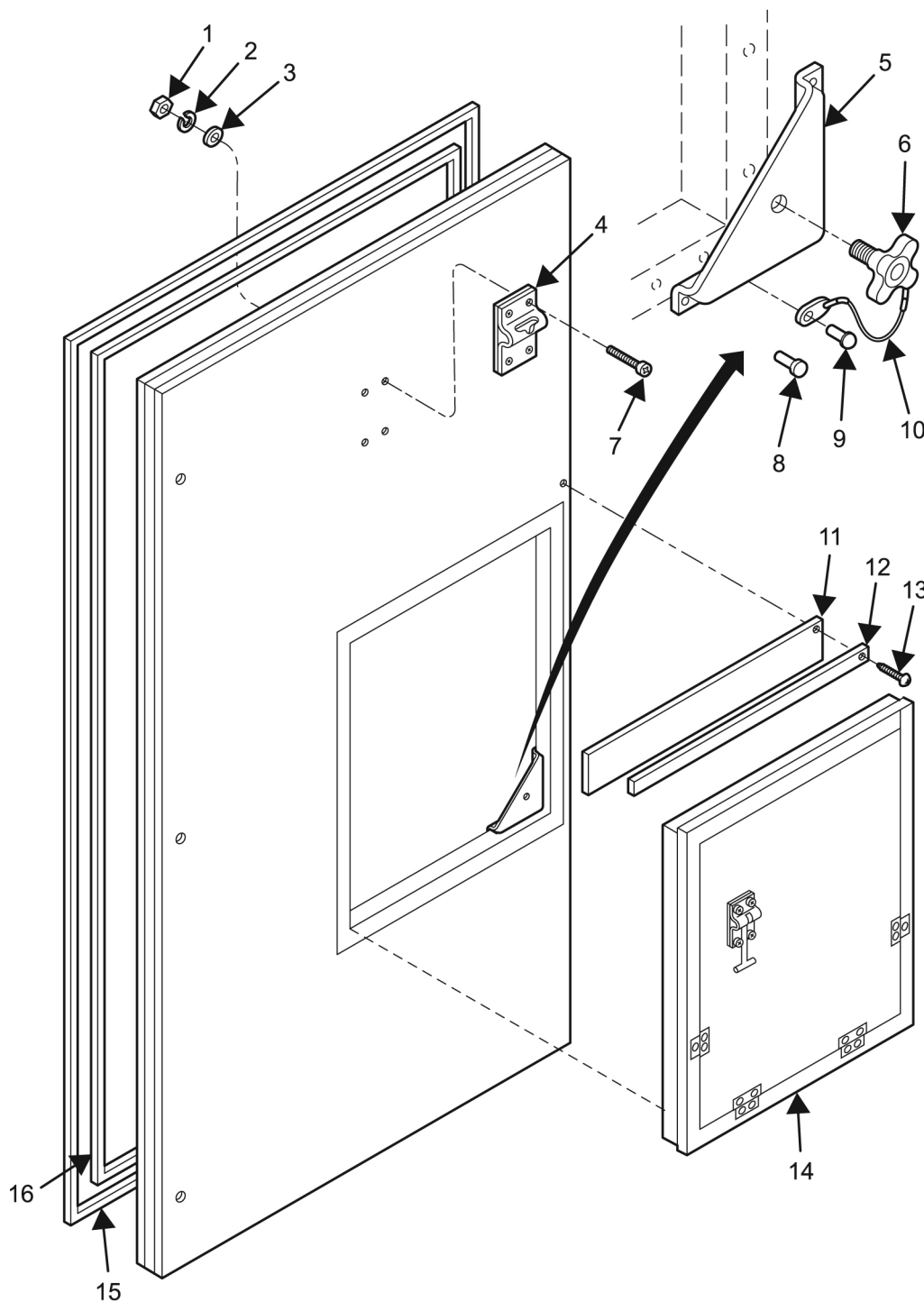
DOOR ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

Figure 2. Repairing the Door Assembly.

END OF TASK**DOOR WEATHER GASKET ADJUSTMENT**

Adjusting the door assembly means adjusting the pressure of the weather gasket by installing shims between the shelter and the hinges and/or keepers. Adjust the pressure when inadequate pressure exists as determined in WP 0015.

DOOR ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)**Adjusting the Weather Gasket Pressure (Hinge Side)****NOTE**

Perform the following procedure on all four hinge assemblies, one at a time:

1. To increase the weather gasket pressure on the hinge side of the door, open the door and remove and retain the following:
 - a. Two bolts (Figure 3, Item 6)
 - b. Two flat washers (Figure 3, Item 2)
 - c. Two self-locking nuts (Figure 3, Item 1) attaching the hinge butt plate (Figure 3, Item 5) to the shelter
 - d. One shim (Figure 3, Item 3)
 - e. One shim (Figure 3, Item 4)

NOTE

If additional shims are required, add them up to a maximum total thickness of 0.096 inches. If the seals are not tight after the maximum allowable thickness is obtained, replace the gasket.

3. Insert additional shim(s) between the hinge butt plate (Figure 3, Item 5) and the shelter.
4. Secure the hinge butt plate (Figure 3, Item 5) to the shelter with the following:
 - a. Shim(s) (Figure 3, Item 3)
 - b. Shim(s) (Figure 3, Item 4)
 - c. Two bolts (Figure 3, Item 6)
 - d. Two flat washers (Figure 3, Item 2)
 - e. Two self-locking nuts (Figure 3, Item 1)
5. Repeat steps 1 through 3 for each of the remaining hinge assemblies.
6. Repeat the test procedure in WP 0015. If necessary, repeat this adjustment procedure until sufficient seal pressure is developed or until maximum allowable shim thickness is reached.

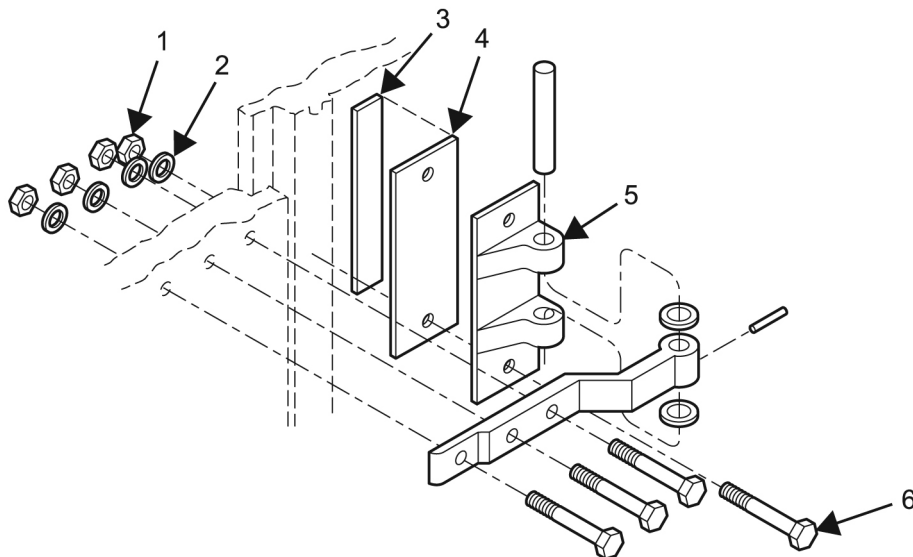


Figure 3. Adjusting the Weather Gasket Seal Pressure (Hinge Side).

DOOR ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)**Adjusting the Weather Gasket Pressure (Latch Side)**

Perform the following procedure on all three keeper assemblies, one at a time.

NOTE

If more than one shim (0.032 in. thick) is required, you can use only three (0.096 in. total).

If the seals are not tight after the maximum allowable thickness is obtained, replace the gasket.

1. To increase the weather gasket pressure on the latch side of the door, open the door; remove and retain the following:
 - a. Hex head screw (Figure 4, Item 4).
 - b. Lock washer (Figure 4, Item 3) from the top hole of the keeper (Figure 4, Item 2).
2. Remove and retain the following:
 - a. Hex head screw (Figure 4, Item 6).
 - b. Lock washer (Figure 4, Item 5) from the bottom hole of the keeper (Figure 4, Item 2).
 - c. Keeper (Figure 4, Item 2).
 - d. Latch lock assembly (center keeper assembly only) (Figure 4, Item 7).
3. Add a shim (Figure 4, Item 1) between the keeper and the shelter.
4. Repeat steps 1 through 3 for each of the remaining two keeper assemblies.
5. Repeat the test procedure in WP 0015. If necessary, repeat this adjustment procedure until sufficient seal pressure is developed or until maximum allowable shim thickness is reached.

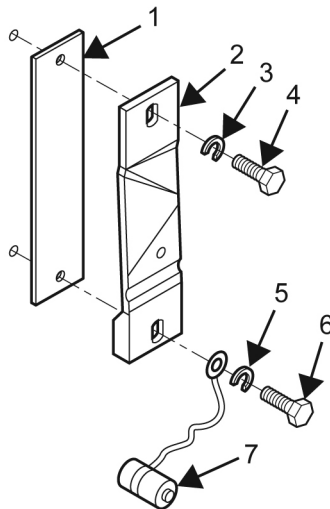


Figure 4. Adjusting the Weather Gasket Seal Pressure (Latch Side).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE**HINGE ASSEMBLY REPAIR OR REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2.
Item 1)

Materials/Parts

Sealing Compound (Item 28, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

Repair consists of replacing damaged parts. Replacement consists of replacing all parts of the hinge assembly.

There are four hinges on the door of the shelter. The procedures for removing, disassembling, reassembling, and installing a hinge must be performed by the 91B Wheeled Vehicle Mechanic.

REMOVING THE HINGE

1. Remove and retain two bolts (Figure 1, Item 12), one bolt (Figure 1, Item 13), three flat washers (Figure 1, Item 14), and three nuts (Figure 1, Item 1) attaching the hinge body (Figure 1, Item 10) to the door panel.
2. Remove and retain two bolts (Figure 1, Item 11), two flat washers (Figure 1, Item 3), and two nuts (Figure 1, Item 2) attaching the hinge butt plate (Figure 1, Item 7) to the shelter, and remove the hinge and shims (Figure 1, Item 4) and (Figure 1, Item 5).

END OF TASK**DISASSEMBLING THE HINGE**

1. With a pin punch, remove the spring pin (Figure 1, Item 9), and push the hinge pin (Figure 1, Item 6) out of the hinge butt plate (Figure 1, Item 7).
2. Remove the hinge body (Figure 1, Item 10) and two hinge washers (Figure 1, Item 8) from the hinge butt plate.

END OF TASK**ASSEMBLING THE HINGE**

1. Position the hinge washers (Figure 1, Item 8) and hinge body (Figure 1, Item 10) in place on the hinge butt plate (Figure 1, Item 7) and secure by inserting the hinge pin (Figure 1, Item 6) into the hinge butt plate.
2. Attach spring pin (Figure 1, Item 9) to hinge body (Figure 1, Item 10) to secure hinge pin (Figure 1, Item 6).

END OF TASK**INSTALLING THE HINGE****NOTE**

Before installing the bolts, coat the bolt shafts and the underside of the bolt heads with sealing compound (Figure 1 Items 12 & 13).

1. Position the shim(s) (Figure 1, Item 4) and shim (Figure 1, Item 5) and the hinge butt plate (Figure 1, Item 7) in place on the shelter wall and secure to the shelter with two bolts (Figure 1, Item 11), two flat washers (Figure 1, Item 3) and two nuts (Figure 1, Item 2).
2. Push hinge body (Figure 1, Item 10) flat against door panel and secure to door with two bolts (Figure 1, Item 12), a bolt (Figure 1, Item 13), three flat washers (Figure 1, Item 14), and three nuts (Figure 1, Item 1).
3. Apply a continuous bead of sealing compound around the edge of the hinge butt plate and hinge body, and cover bolt heads with sealing compound.

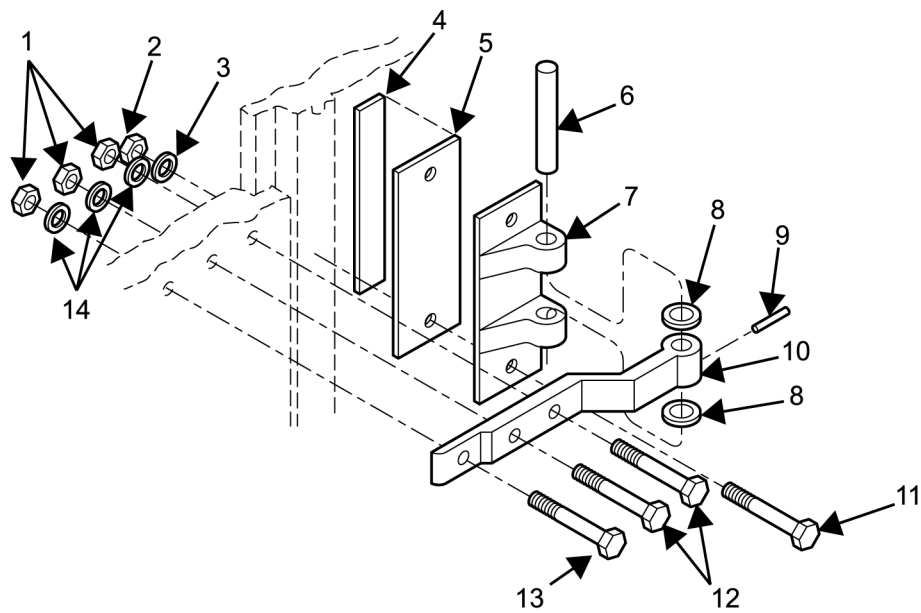
HINGE ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

Figure 1. Repairing the Hinge Assembly.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

EMERGENCY EXIT PANEL ASSEMBLY REPAIR

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
 Drill, Electric (WP 0041, Table 2. Item 2)
 Drill, Twist (WP 0041, Table 2. Item 3)
 Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)

Materials/Parts

Adhesive (Item 2, WP 0044)
 Gasket (Item 15, WP 0044)

Materials/Parts Continued

Rivets, Blind (Item 26, WP 0044)
 Sealing Compound (Item 28, WP 0044)
 Shield, Isolator, EMI (Item 29, WP 0044)
 Tape (Item 30, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

References

WP 0034
 WP 0015

Procedures for removing, disassembling, reassembling, and installing the emergency exit panel must be performed by the 91B Wheeled Vehicle Mechanic.

REMOVING THE EMERGENCY EXIT PANEL**WARNING**

To prevent injury to personnel, use care in lifting and carrying door.

1. Turn each of the four knobs (Figure 1, Item 1) counterclockwise to release the emergency exit panel (Figure 2, Item 18).
2. Push out the emergency exit panel and remove it.

END OF TASK**DISASSEMBLING THE EMERGENCY EXIT PANEL**

1. Remove the weather gaskets (Figure 2, Item 17) from the inside edges of the panel and panel cover (Figure 2, Item 18).
2. Remove the (SHIELDED) wire mesh gasket (Figure 2, Item 16) from the panel (Figure 2, Item 18).
3. Remove and retain one nut (Figure 2, Item 13) and two nylon flat washers (Figure 2, Item 12) that secure each of the four latches (Figure 2, Item 11) and remove the latches.
4. Remove two rivets (Figure 2, Item 15) attaching each of the four stud plate assemblies (Figure 2, Item 14) to the panel and remove each stud plate. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
5. Remove two rivets (Figure 2, Item 10) and one rivet (Figure 2, Item 9) attaching each of the four strike plates (Figure 2, Item 8) to cover, and remove strike plates.
6. Reach behind the panel, take hold of each air filter (Figure 2, Item 19), pull out of position, and remove.
7. Remove four rivets (Figure 2, Item 1) attaching the divider strip (Figure 2, Item 21) to the back of the panel and remove the strip.
8. Remove two rivets (Figure 2, Item 1) attaching each corner gusset (Figure 2, Item 22) to the back of the panel, and remove gussets.
9. Remove and retain 92 screws (Figure 2, Item 2).

EMERGENCY EXIT PANEL ASSEMBLY REPAIR - (CONTINUED)

10. Remove the sealing compound from retaining strips (Figure 2, Item 6 and 7), louver (Figure 2, Item 5) and the panel frame (Figure 2, Item 20).

END OF TASK**ASSEMBLING THE EMERGENCY EXIT PANEL**

1. Place the (SHIELDED) wire mesh tape (Figure 2, Item 3), (SHIELDED) filter (Figure 2, Item 4), intake louver assembly (Figure 2, Item 5) and four retaining strips (Figure 2, Item 6) and (Figure 2, Item 7) inside the panel frame (Figure 2, Item 20) and secure with 92 screws (Figure 2, Item 2).
2. Place each of the four corner gussets (Figure 2, Item 22) on the back of the panel frame and secure each with two blind rivets (Figure 2, Item 1).
3. Place the divider strip (Figure 2, Item 21) and secure to the panel frame with four blind rivets (Figure 2, Item 1). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
4. Insert two air filters (Figure 2, Item 19) in place in the back of the panel.
5. Place each of the four strike plates (Figure 2, Item 8) in position and secure to the panel cover with two blind rivets (Figure 2, Item 10) and one blind rivet (Figure 2, Item 9).
6. Position each of the four stud plate assemblies (Figure 2, Item 14) on the panel flange and secure each with two blind rivets (Figure 2, Item 15).
7. Place a nylon flat washer (Figure 2, Item 12) over the stud of each stud assembly (Figure 2, Item 14), then a latch (Figure 2, Item 11), and secure in place with a nylon flat washer (Figure 2, Item 12) and nut (Figure 2, Item 13).

WARNING

To avoid injury or death to personnel, no smoking is allowed.

8. Clean any adhesive residue from weather gasket in the panel and cover, and apply sealing compound in the track grooves.

CAUTION

Allow at least 30 minutes cure time for the sealing compound to adhere before using the panel.

9. Snap the new weather gaskets (Figure 2, Item 17) in the track on the panel and the cover flanges.
10. Clean the (SHIELDED) EMI track of any dirt, place a new EMI shielded wire mesh gasket (Figure 2, Item 17) over the track and snap in place.
11. Apply sealing compound over retaining strips (Figure 2 Items 6 and 7), screw ends (Figure 2, Item 2), and edge of (SHIELDED) wire mesh tape (Figure 2, Item 3) and flange of louver assembly (Figure 2, Item 5).

END OF TASK**INSTALLING THE EMERGENCY EXIT PANEL****CAUTION**

Leave the emergency exit panel assembly in a horizontal position after application of sealing compound, until it is no longer tacky to the touch.

EMERGENCY EXIT PANEL ASSEMBLY REPAIR - (CONTINUED)

1. Place the emergency exit panel assembly (Figure 2, Item 18) in the opening of the door.
2. Turn each of the four knobs (Figure 1, Item 1) clockwise to secure emergency exit panel assembly to the door.
3. Test the tightness of the emergency exit panel weather gasket in accordance with WP 0015.

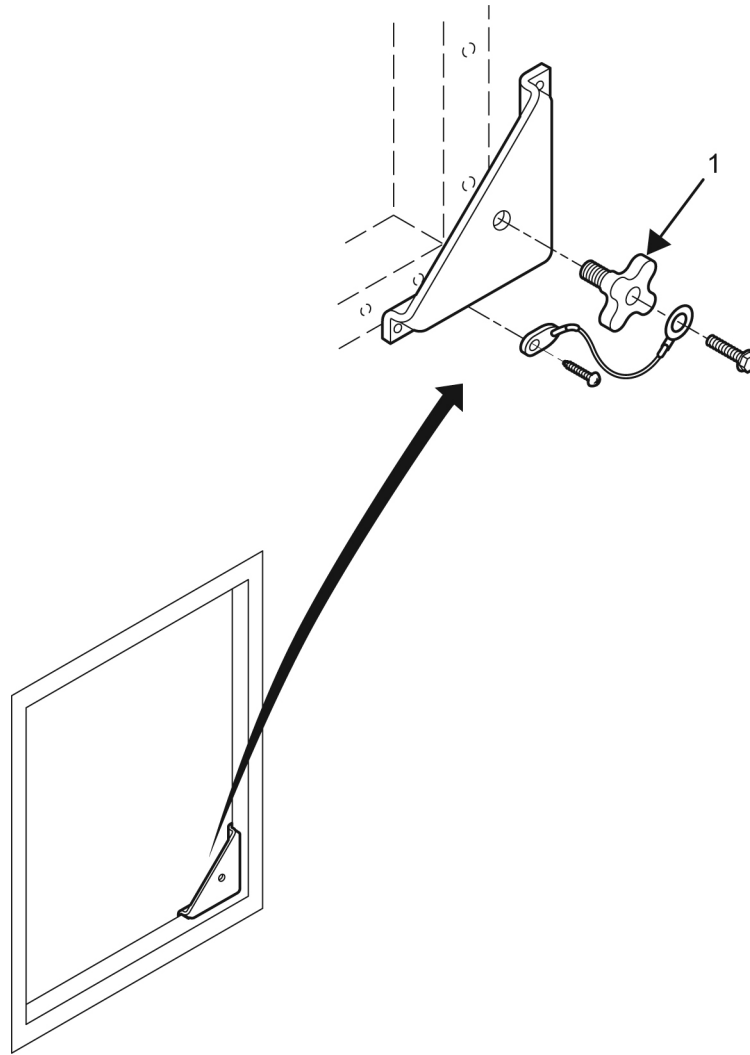


Figure 1. Removing/Installing the Emergency Exit Panel.

EMERGENCY EXIT PANEL ASSEMBLY REPAIR - (CONTINUED)

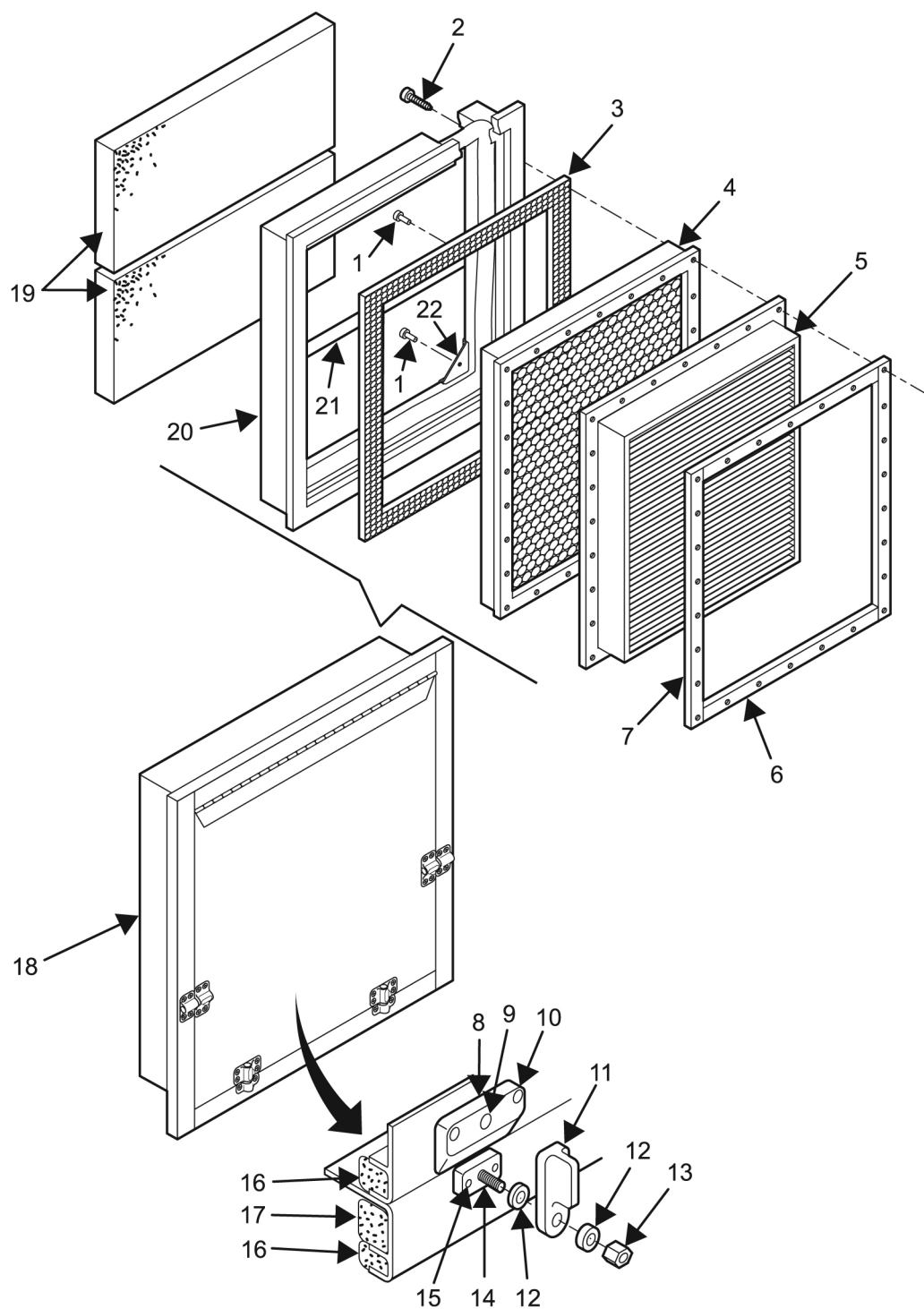


Figure 2. Disassembling/Assembling the Emergency Exit Panel.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE**DOOR LATCH ASSEMBLY REPAIR OR REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2, Item 1)

Materials/Parts

Lubricant, Solid Film (Item 19, WP 0044)

Materials/Parts Continued

Sealing Compound (Item 28, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

There are three door latches: top, bottom, and middle (with door handle shown in Figure 1). There is a separate procedure below for disassembling and assembling each one.

REMOVING THE TOP DOOR LATCH

1. With a pilot punch from the tool kit, punch out the spring pin (Figure 2, Item 13).
2. Remove the flat washer (Figure 2, Item 14).
3. Pull the headed pin free (Figure 2, Item 15). Push the latch rod (Figure 2, Item 16) to the side.
4. Remove the self-locking nut (Figure 2, Item 12) and release the following:
 - a. Flat washer (Figure 2, Item 11)
 - b. Sleeve spacer (Figure 2, Item 10)
 - c. Latch arm assembly (Figure 2, Item 7)
 - d. Ring spacer (Figure 2, Item 4)
 - e. Shim washer (Figure 2, Item 3)
 - f. Plate spacer (Figure 2, Item 2)
 - g. Bolt (Figure 2, Item 1)

END OF TASK**REMOVING THE BOTTOM DOOR LATCH**

1. With a pilot punch, remove the spring pin (Figure 2, Item 13), and remove the flat washer (Figure 2, Item 14).
2. Pull the headed pin (Figure 2, Item 15). Push the straight rod (Figure 2, Item 23) to the side.
3. Remove the nut (Figure 2, Item 12) to release the following:
 - a. Flat washer (Figure 2, Item 11)
 - b. Sleeve spacer (Figure 2, Item 10)
 - c. Latch arm assembly (Figure 2, Item 7)
 - d. Latch arm detent (Figure 2, Item 24)
 - e. Shim washer (Figure 2, Item 3)
 - f. Plate spacer (Figure 2, Item 2)
 - g. Bolt (Figure 2, Item 1)

DOOR LATCH ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

Figure 1. Middle Door Latch, with Handle.

END OF TASK**REMOVING THE MIDDLE DOOR LATCH**

1. Punch out the spring pin (Figure 2, Item 13), and remove the flat washer (Figure 2, Item 14) from the latch arm assembly (Figure 2, Item 7).
2. Pull the headed pin (Figure 2, Item 20). Push the latch rods (Figure 2, Item 16) and (Figure 2, Item 23) to the side.
3. Punch out the spring pin (Figure 2, Item 21) attaching the inside handle (Figure 2, Item 22) to the latch arm (Figure 2, Item 30). Remove the inside handle.
4. Punch out the grooved pin (Figure 2, Item 31) from the underside of the latch arm assembly (Figure 2, Item 7), and remove the grooved pin to release the latch arm assembly. Pull the outside handle (Figure 2, Item 30) out of the door.
5. Remove the O-ring (Figure 2, Item 17) from the shaft of the outside handle (Figure 2, Item 30).
6. Turn the round bearing sleeve nut (Figure 2, Item 19) counterclockwise to release the handle shaft bearing sleeve (Figure 2, Item 18).
7. From the end of the padlock and chain assembly (Figure 2, Item 25), remove and retain one machine screw (Figure 2, Item 26) and one lock washer (Figure 2, Item 28).
8. Remove and retain two screws (Figure 2, Item 27), and remove the escutcheon plate (Figure 2, Item 29) from the door panel.

DOOR LATCH ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

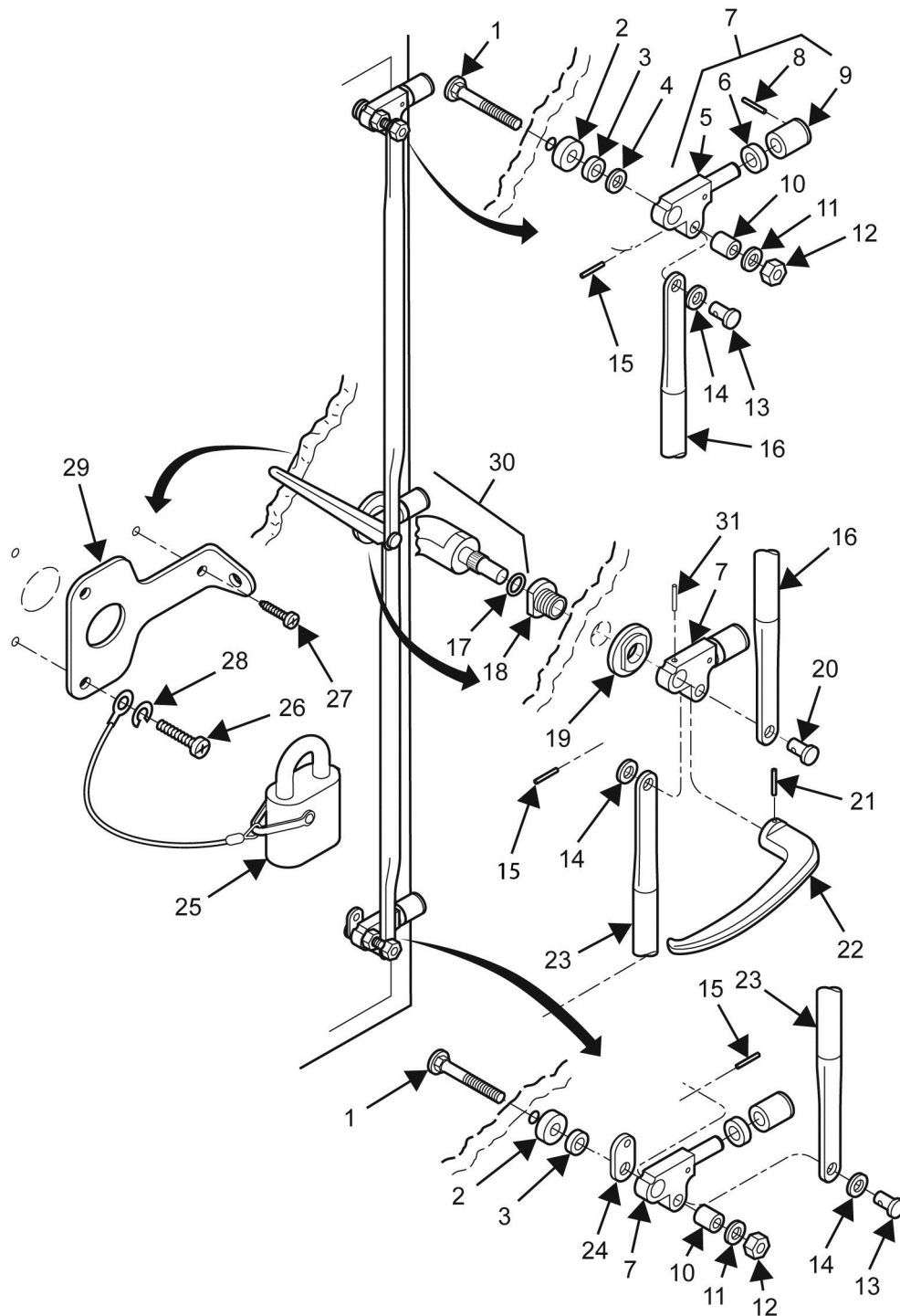


Figure 2. Replacing the Door Latch Assembly.

END OF TASK

DOOR LATCH ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)**INSTALLING THE MIDDLE DOOR LATCH**

1. Place the escutcheon plate (Figure 2, Item 29) over the mounting holes on the door panel and secure with two screws (Figure 2, Item 27).
2. Place the mounting end of the padlock chain (Figure 2, Item 25) over the mounting hole and secure with a lock washer (Figure 2, Item 28) and a machine screw (Figure 2, Item 26).
3. Place the roller extension (Figure 2, Item 6) and roller latch (Figure 2, Item 9) onto the latch arm (Figure 2, Item 5) and secure with the spring pin (Figure 2, Item 8).
4. Insert the handle shaft bearing sleeve (Figure 2, Item 18) into the hole from the outside of the door panel. Secure with the bearing sleeve nut (Figure 2, Item 19) from the inside of the panel.
5. Place the O-ring (Figure 2, Item 17) on the outside handle shaft (Figure 2, Item 30).
6. Insert the door handle shaft (Figure 2, Item 30) through the handle shaft bearing sleeve (Figure 2, Item 18).
7. Insert the latch arm (Figure 2, Item 7) onto the door handle shaft (Figure 2, Item 30) and secure with spring pin (Figure 2, Item 31).
8. Place the inside handle (Figure 2, Item 22) onto the door handle shaft (Figure 2, Item 30) and secure with spring pin (Figure 2, Item 21).
9. Align the holes on the latch rod assemblies (Figure 2, Item 16 & 23) with the hole on the latch arm (Figure 2, Item 7), and insert headed pin (Figure 2, Item 20). Place a washer (Figure 2, Item 14) onto the headed pin (Figure 2, Item 20).
10. Apply a continuous bead of sealing compound around the heads of the bolts (Figure 2, Item 1) and the periphery of the escutcheon plate (Figure 2, Item 29).

END OF TASK**INSTALLING THE BOTTOM DOOR LATCH**

1. Place the roller extension (Figure 2, Item 6) and roller latch (Figure 2, Item 9) onto the latch arm (Figure 2, Item 5) and secure with the spring pin (Figure 2, Item 8).
2. Place the bolt (Figure 2, Item 1) through the mounting hole on the door, and add the following:
 - a. Plate spacer (Figure 2, Item 2)
 - b. Shim washer (Figure 2, Item 3)
 - c. Latch arm detent (Figure 2, Item 24) (When installing the latch arm detent, open the latch mechanism so that the raised surface is in the hole of the latch arm.)
 - d. Latch arm assembly (Figure 2, Item 7)
 - e. Sleeve spacer (Figure 2, Item 10)
 - f. Flat washer (Figure 2, Item 11)
 - g. Secure with self-locking nut (Figure 2, Item 12).
3. Insert the headed pin (Figure 2, Item 15) through the hole on the latch rod (Figure 2, Item 23), put the flat washer (Figure 2, Item 14) onto the headed pin (Figure 2, Item 15), and secure to the latch arm with a spring pin (Figure 2, Item 13).

END OF TASK**INSTALLING THE TOP DOOR LATCH**

1. Place the roller extension (Figure 2, Item 6) and roller latch (Figure 2, Item 9) onto the latch arm (Figure 2, Item 5) and secure with the spring pin (Figure 2, Item 8).
2. Place the bolt (Figure 2, Item 1) through the mounting hole on the door, and add the following:
 - a. Plate spacer (Figure 2, Item 2)
 - b. Shim washer (Figure 2, Item 3)
 - c. Ring Spacer (Figure 2, Item 4)
 - d. Latch arm assembly (Figure 2, Item 7)

DOOR LATCH ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

- e. Sleeve spacer (Figure 2, Item 10)
 - f. Washer (Figure 2, Item 11)
 - g. Secure with self-locking nut (Figure 2, Item 12).
3. Insert the headed pin (Figure 2, Item 15) through the hole on the latch rod (Figure 2, Item 16), put the flat washer (Figure 2, Item 14) onto the headed pin (Figure 2, Item 15), and secure to the latch arm with a spring pin (Figure 2, Item 13).

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE**LATCH LOCK ASSEMBLY REPAIR OR REPLACEMENT**

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2, Item 1)

Personnel Required

91B Wheeled Vehicle Mechanic

Materials/Parts

Lock Washers

NOTE

When you are replacing only the latch lock (Figure 1, Item 6) of the center keeper, perform Step 1 of Removing the Keeper, and Step 2 of Installing the Keeper.

Removal and replacement of the keeper and/or door latch is performed by the 91B Wheeled Vehicle Mechanic. The procedure is the same for each of the three keeper assemblies except where noted for the center keeper assembly.

REMOVING THE KEEPER

1. Remove and retain the cap screw (Figure 1, Item 5). Discard lock washers (Figure 1, Item 3) from the bottom hole of the keeper (Figure 1, Item 2); if it is the center keeper, remove the latch lock assembly (Figure 1, Item 6).
2. Remove and retain the cap screw (Figure 1, Item 4). Discard lock washers (Figure 1, Item 3) from the top hole of the keeper (Figure 1, Item 2), and remove the keeper and the shim (Figure 1, Item 1).

END OF TASK**INSTALLING THE KEEPER**

1. Align the holes of the shim (Figure 1, Item 1) and keeper (Figure 1, Item 2) with the holes on the shelter wall, and secure to the shelter at the top hole with the cap screw (Figure 1, Item 4) and lock washer (Figure 1, Item 3). Repeat for the bottom hole.
2. If it is the center keeper, secure the tab of the latch lock assembly (Figure 1, Item 6) to the wall at the bottom hole using a cap screw (Figure 1, Item 5) and lock washer (Figure 1, Item 3).

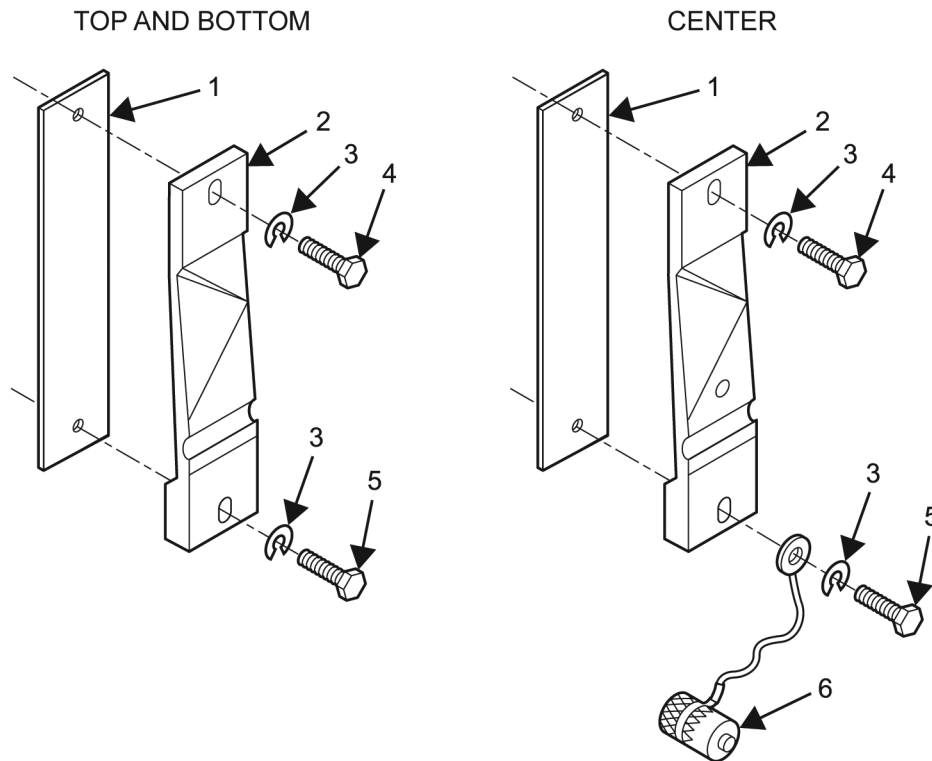
LATCH LOCK ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

Figure 1. Replacing the Keepers and/or Shims.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

DOOR BRACE ASSEMBLY REPAIR OR REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's (WP 0041, Table 2.
Item 1)

Materials/Parts

None

Personnel Required

91B Wheeled Vehicle Mechanic

Procedures for removing, disassembling, reassembling, and installing the door brace are performed by the 91B Wheeled Vehicle Mechanic. Repair of the Door Brace Assembly is limited to the replacement of defective parts. Replace defective parts only to the extent necessary.

REMOVING THE DOOR BRACE

1. Remove and retain the ten screws (Figure 1, Item 6) attaching the door brace (Figure 1, Item 3) and door stop bracket (Figure 1, Item 8) to the door panel.
2. Remove and retain screw (Figure 1, Item 7) attaching the pin and chain assembly (Figure 1, Item 5) to the door panel.
3. Remove and retain the six hex head screws (Figure 1, Item 4) attaching the door stop angle (Figure 1, Item 2) and the shim (Figure 1, Item 1) to the shelter wall and remove the door brace (Figure 1, Item 3) and the shim.

END OF TASK

DISASSEMBLING THE DOOR BRACE

1. Remove the cotter pin (Figure 2, Item 5) and release the chain and pin assembly (Figure 2, Item 3) and door stop bracket (Figure 2, Item 4).
2. Punch out the spring pin (Figure 2, Item 6) and release the door brace catch (Figure 2, Item 10).
3. Remove the cotter pin (Figure 2, Item 9) attaching the castle nut (Figure 2, Item 8) and remove castle nut, flat washer (Figure 2, Item 7), and bolt (Figure 2, Item 2) to remove the lower brace assembly (Figure 2, Item 11) from the brace assembly (Figure 2, Item 12).
4. Remove the cotter pin (Figure 2, Item 1), bolt (Figure 2, Item 13), flat washer (Figure 2, Item 15), and castle nut (Figure 2, Item 16) attaching the brace assembly (Figure 2, Item 12) to the door stop angle (Figure 2, Item 14).

END OF TASK

ASSEMBLING THE DOOR BRACE

1. Position the end of brace assembly (Figure 2, Item 12) under door stop angle (Figure 2, Item 14), align mounting holes and secure with a bolt (Figure 2, Item 13), flat washer (Figure 2, Item 15), castle nut (Figure 2, Item 16), and cotter pin (Figure 2, Item 1).
2. Place the lower brace assembly (Figure 2, Item 11) under the brace assembly (Figure 2, Item 12), align the mounting holes and secure with bolt (Figure 2, Item 2), flat washer (Figure 2, Item 7), castle nut (Figure 2, Item 8), and cotter pin (Figure 2, Item 9).
3. Using the spring pin (Figure 2, Item 6), attach the door brace catch (Figure 2, Item 10) to the lower brace assembly (Figure 2, Item 11).
4. Place the free end of the lower brace assembly (Figure 2, Item 11) inside the door stop bracket (Figure 2, Item 4) and secure with the pin and chain assembly (Figure 2, Item 3).
5. Secure the pin and chain assembly (Figure 2, Item 3) with cotter pin (Figure 2, Item 5).

END OF TASK

INSTALLING THE DOOR BRACE

1. Position the shim (Figure 1, Item 1) and doorstop angle (Figure 1, Item 2) on the shelter wall and secure with six hex head screws (Figure 1, Item 4).

DOOR BRACE ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

2. Place the door stop bracket (Figure 1, Item 8) on the door, and secure to the door panel with ten screws (Figure 1, Item 6).
3. Secure the chain end of the pin and chain assembly (Figure 1, Item 5) to door panel with one screw (Figure 1, Item 7).

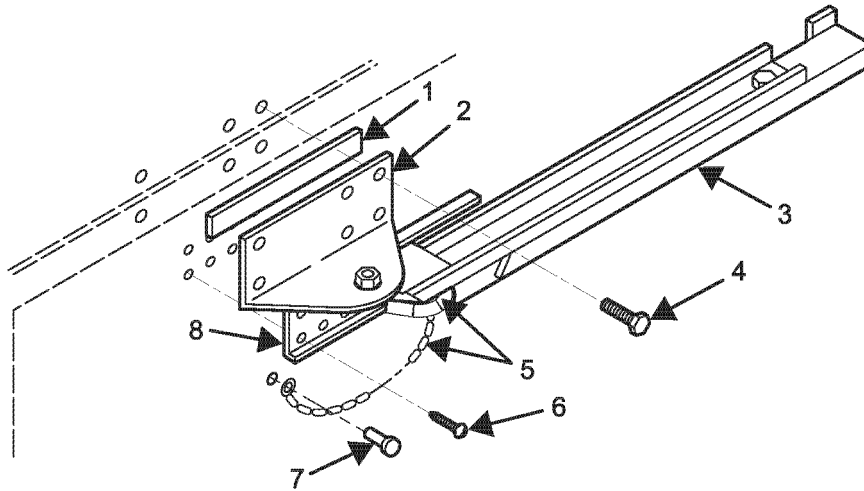


Figure 1. Removing the Door Brace.

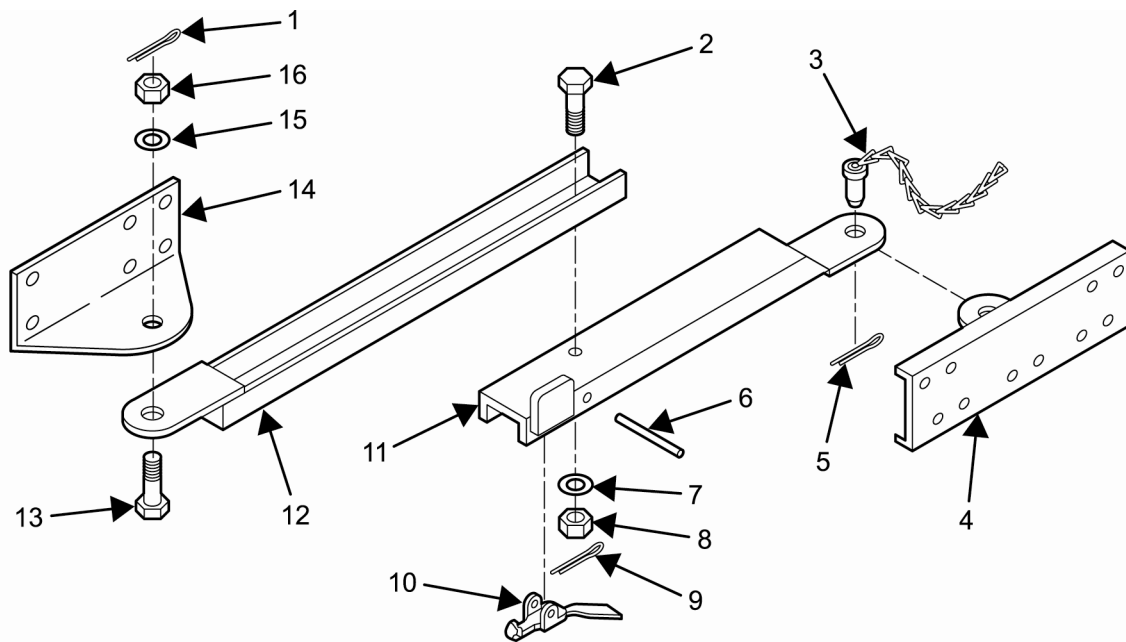


Figure 2. Repairing/Replacing the Door Brace.

END OF TASK**END OF WORK PACKAGE**

OPERATOR INSTRUCTIONS

LIFTING/TIEDOWN EYE ASSEMBLY REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2.
Item 1)
Wrench, Spanner (WP 0041, Table 2. Item 4)

Personnel Required

Operator

Materials/Parts

Sealing Compound (Item 28, WP 0044)

The lifting and tiedown eye(s), on the upper four corners of the shelter can be replaced by either the operator or the maintainer shown in Figure 1.

REMOVING THE LIFTING AND TIEDOWN EYE

1. Using a spanner wrench, loosen the threaded ring collar (Figure 2, Item 1) that attaches the lifting and tiedown eye assembly (Figure 2, Item 2) to the shelter by turning it counterclockwise.
2. Remove the threaded ring collar (Figure 2, Item 1).



Figure 1. Lifting and Tiedown Eye Assembly.

END OF TASK**INSTALLING THE LIFTING AND TIEDOWN EYE**

1. Place the lifting and tiedown eye assembly (Figure 2, Item 2) at the proper position on the shelter.
2. Loosely screw on the threaded ring collar (Figure 2, Item 1) of the lifting and tiedown eye assembly.
3. Add a continuous bead of sealing compound around the threaded ring collar.
4. Using a spanner wrench, tighten the threaded ring collar.

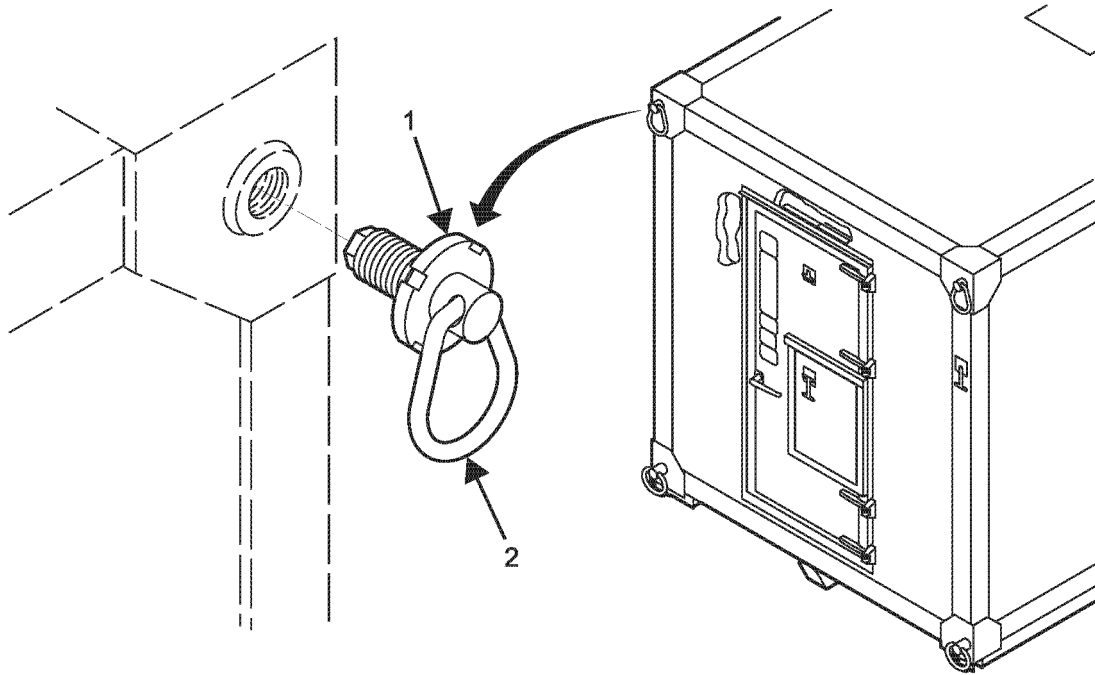
LIFTING/TIEDOWN EYE ASSEMBLY REPLACEMENT - (CONTINUED)

Figure 2. Replacing the Lifting and Tiedown Eyebolt.

END OF TASK

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

TOWING EYE ASSEMBLY REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

Tool Kit, General Mechanic's (WP 0041, Table 2.
Item 1)
Wrench, Spanner (WP 0041, Table 2. Item 4)

Personnel Required

Operator

Materials/Parts

Sealing Compound (Item 28, WP 0044)

REMOVING THE TOWING EYE

1. Using a spanner wrench, loosen the threaded ring collar of the towing eye (Figure 1, Item 1) by turning it counterclockwise.
2. Remove the threaded ring collar and dispose.

END OF TASK**INSTALLING THE TOWING EYE**

1. Loosely thread the threaded ring collar of the replacement towing eye assembly (Figure 1, Item 2) onto the shelter.
2. Add a continuous bead of sealing compound around the threaded ring collar.
3. Using a spanner wrench, tighten the towing eye.

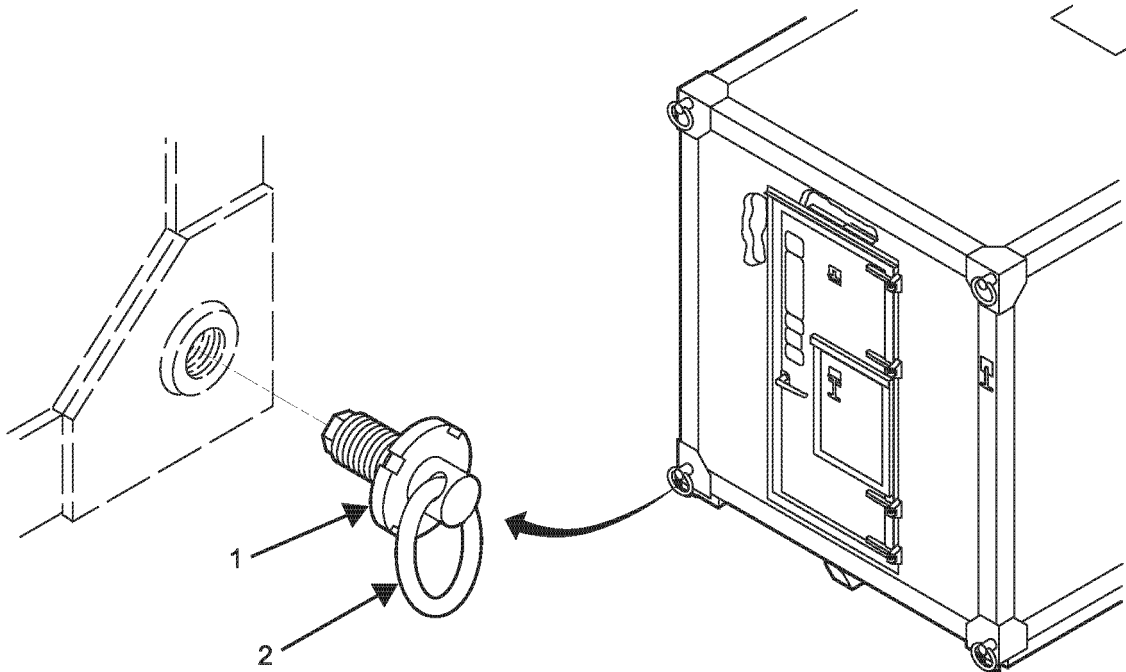


Figure 1. Replacing the Towing Eyebolt.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE

SKID ASSEMBLY REPAIR OR REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
 Drill, Electric (WP 0041, Table 2. Item 2)
 Drill, Twist (WP 0041, Table 2. Item 3)
 Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)

Materials/Parts

Rivets, Blind (Item 26, WP 0044)
 Sealing Compound (Item 28, WP 0044)

Personnel Required

91B Wheeled Vehicle Mechanic

References

WP 0034

WARNING



Before performing maintenance on the skids, ensure that the shelter is supported properly to prevent injury to personnel.

CAUTION

Raise the shelter and place supports on the bottom of the front and rear panels between skids. The skids should be approximately one foot above the ground.

Removal and replacement of the skid is performed by the 91B Wheeled Vehicle Mechanic. Although the skids may be dented, they can be used again if the shock mounts and foam filler internally are replaced. Repair of the skid assembly is limited to the replacement of defective parts.

REMOVING THE SKID

1. Remove and retain six machine bolts (Figure 1, Item 5), 12 flat washers (Figure 1, Item 3), and six self-locking nuts (Figure 1, Item 2) attaching each skid assembly (Figure 1, Item 6) to its skid mounting bracket (Figure 1, Item 4); remove the skid assembly.
2. Remove the shock mounts (Figure 1 Items 13 & 15) and the core (Figure 1 Items 10, 11, & 12).
3. Remove four blind rivets (Figure 1, Item 9) attaching each of the four channel brackets (Figure 1, Item 7) and laminated shims (Figure 1, Item 8) and remove the brackets and shims. (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)

NOTE

Replace the skid mounting bracket (Figure 1, Item 4) only when it appears severely damaged and does not allow the proper installation of the skid.

4. Remove and retain 16 captive screws (Figure 1, Item 14) attaching each skid mounting bracket (Figure 1, Item 4) to the underside of the shelter, and remove the skid mounting bracket (Figure 1, Item 4) and shims (Figure 1 Items 1, 18, 17, & 16).

END OF TASK

INSTALL THE SKID

1. Put the shims (Figure 1 Items 16, 17, 18, & 1) and each skid mounting bracket (Figure 1, Item 4) in place.

SKID ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

2. Secure each to the underside of the shelter with 16 captive screws (Figure 1, Item 14).
3. Place four channel brackets (Figure 1, Item 7) and laminated shims (Figure 1, Item 8) inside the skid runner.
4. Align the mounting holes and secure to skid runner with four blind rivets (Figure 1, Item 9). (Refer to WP 0034 for instructions on installing or removing blind rivets and rivnuts.)
5. Place the new shock mounts (Figure 1 Items 13 & 15) and the cores (Items 10, 11, & 12).
6. Position each skid assembly (Figure 1, Item 6) inside the skid mounting bracket. (Figure 1, Item 4).
7. Secure with six hex head bolts (Figure 1, Item 5), twelve flat washers, (Figure 1, Item 3), and six nuts (Figure 1, Item 2).

SKID ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)

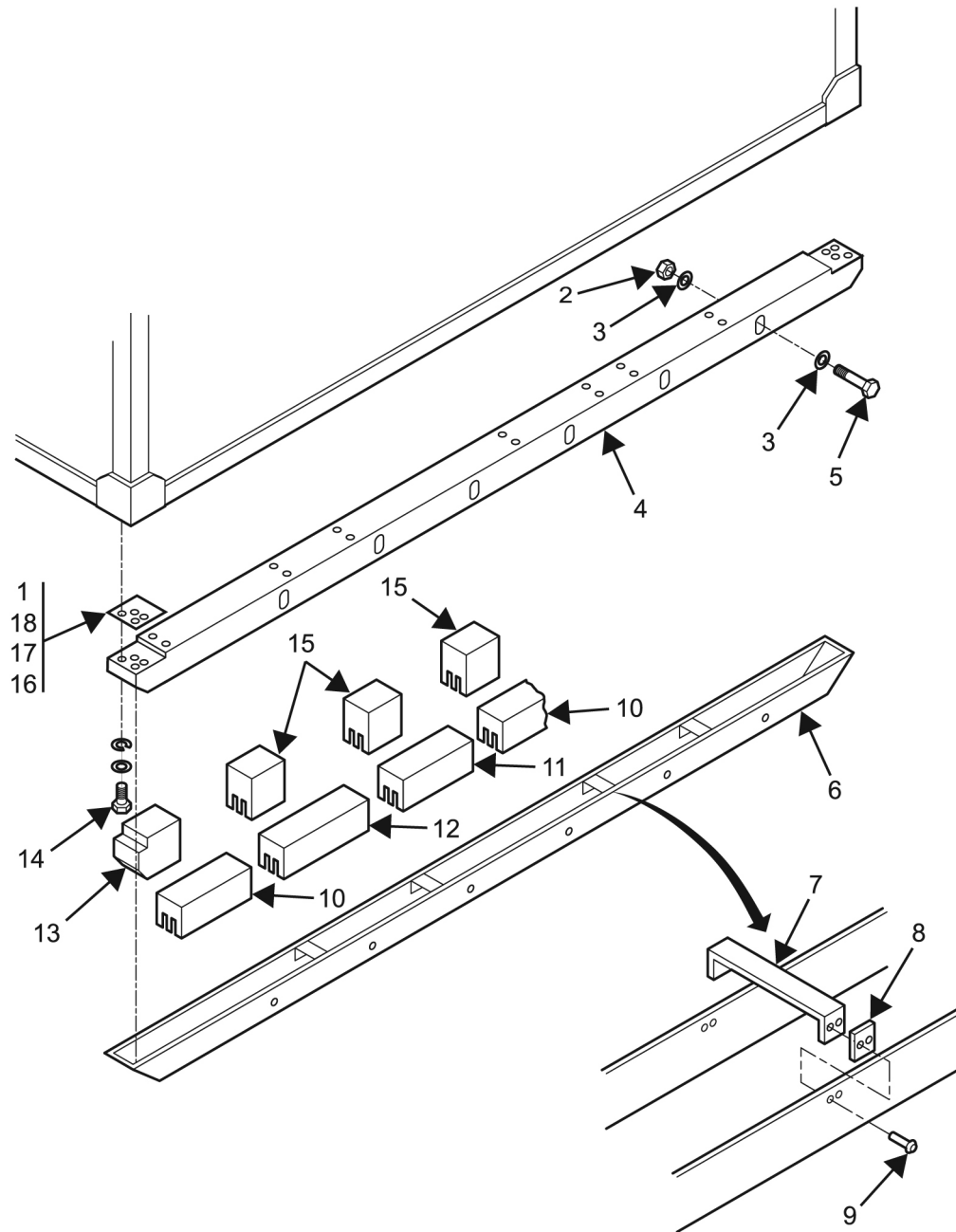


Figure 1. Replacing the Skid Assembly.

END OF TASK

END OF WORK PACKAGE

FIELD MAINTENANCE

HOLD DOWN ASSEMBLY REPAIR OR REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's (WP 0041, Table 2, Item 1)

Materials/Parts

None

Personnel Required

91B Wheeled Vehicle Mechanic

To remove an entire hold down assembly shown in Figure 1, perform the following procedure on each of the four separate legs of the assembly. Repair of the hold down assembly is limited to the replacement of defective parts.

REMOVING THE HOLD DOWN/LIFTING SLING

NOTE

For each leg of the hold down/lifting sling, perform the following steps:

1. Loosen the turnbuckle (Figure 1, Item 4).
2. Open the safety snap (Figure 1, Item 2) of the hook at the end of the wire rope (Figure 1, Item 3). Remove the hook from the thimble of the ring assembly (Figure 1, Item 1).
3. Open the safety snap of the hook connected to the eyebolt on the mounting plate (Figure 1, Item 5) and remove the hook from the eyebolt (Figure 1, Item 8).
4. Unscrew each of the two eyebolts from the mounting plate (Figure 1, Item 5).
5. Push the looped cable (Figure 1, Item 6) out of the mounting plate (Figure 1, Item 5).
6. Cut the cable between the stop sleeve (Figure 1, Item 7) and the swaging sleeve (Figure 1, Item 9). Pull the swaging sleeve end of the cable (Figure 1, Item 6) out of the plate, clip the cable off the eyebolt, and discard the cable (Figure 1, Item 6).
7. Repeat steps 1 through 6 for the other legs of the hold down/lifting sling.

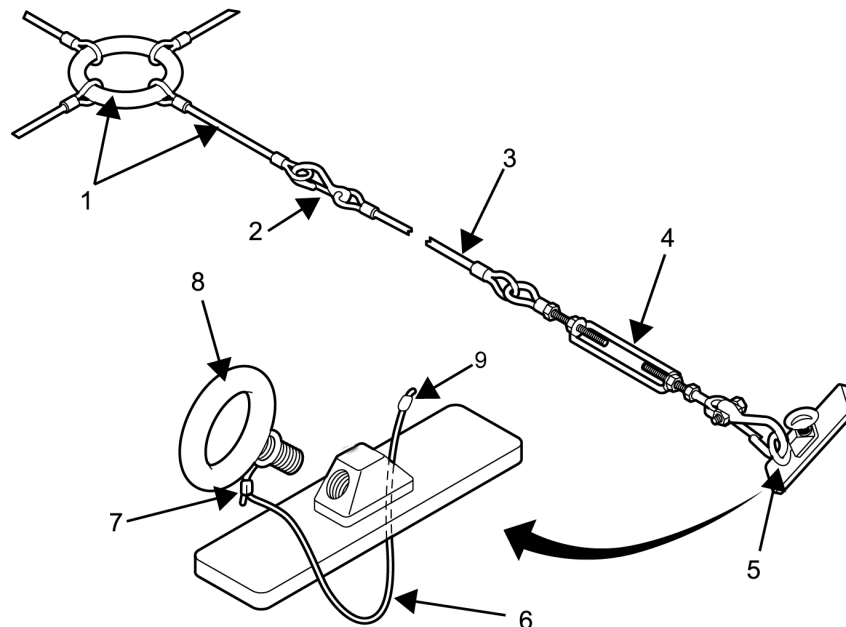


Figure 1. Removing the Hold Down/Lifting Sling.

END OF TASK

HOLD DOWN ASSEMBLY REPAIR OR REPLACEMENT - (CONTINUED)**REPLACING THE HOLD DOWN/LIFTING SLING**

1. Push a new cable (Figure 1, Item 6) through the mounting plate (Figure 1, Item 5).
2. Attach a swaging sleeve (Figure 1, Item 9) at the end of the cable. and pull the cable out until the swaging sleeve stops inside the mounting plate.
3. Pull the cable out until the swaging sleeve stops inside the mounting plate.
4. Attach the other end of the cable (Figure 1, Item 7) around the eyebolt (Figure 1, Item 8) and secure to eyebolt with a sleeve.
5. Attach the hook nearest the turnbuckle (Figure 1, Item 4) to the eyebolt (Figure 1, Item 8), and engage the safety snap.
6. Attach the hook opposite the turnbuckle (Figure 1, Item 2) to the thimble of the ring assembly (Figure 1, Item 1), and engage the safety snap.
7. Repeat steps 1 through 6 for the other legs of the hold down/lifting sling.
8. When all four legs are connected as described above, tighten the four turnbuckles (Figure 1, Item 4).

END OF TASK**END OF WORK PACKAGE**

OPERATOR INSTRUCTIONS

PREPARATION FOR STORAGE AND SHIPMENT

INITIAL SETUP:**Tools and Special Tools**

Hold down/Lifting sling

Personnel Required

Operator

Materials/Parts

None

Preparation for shipping by truck or train or lifting by crane or helicopter requires the following steps to be performed by either the operator or the maintainer.

PREPARATION FOR SHIPMENT**CAUTION**

Pack, brace, and tie down the equipment inside the shelter to avoid damage to either the wall covering or to the equipment.

NOTE

Refer to the procedures within this work package for instructions on loading, lifting, and securing the shelter. Refer to the end item technical manual for additional preparation instructions applicable to a shelter with specific configuration.

1. If the shelter is being moved by truck, verify that the shelter is properly tied down and blocked to prevent movement.
2. Verify that the lifting sling is available and in good condition.
3. Verify that the skids are in good condition and securely mounted to the shelter, and that the drain plug is loosened for air or rail transport.
4. Verify that the door is closed and padlocked.

LIFTING, LOADING, AND SECURING THE SHELTER**WARNING**

To prevent injury or death to personnel when operating a forklift, verify that all personnel are clear of the shelter.

NOTE

On each end of the shelter are stenciled instructions for using the forklift.

1. Place forks between the outside skids.
2. Before lifting, securely attach the lifting eyes of the shelter to the forklift truck.

PREPARATION FOR STORAGE AND SHIPMENT - (CONTINUED)**CAUTION**

To prevent toppling and damage to the shelter, use extreme care in securing, lifting, carrying, and lowering the shelter into position.

3. Lift and carry the shelter to its designated position.
4. Release the lifting eyes from the forklift.
5. Lower the forks of the forklift and slowly back up.

LIFTING THE SHELTER WITH CRANE OR HELICOPTER**CAUTION**

If the shelter is punctured during loading or securing, repair the puncture as soon as possible to prevent moisture from seeping in.

Do not jerk, bounce, or jar the shelter when lifting.

Avoid swinging the shelter from side to side.

Do not butt or push the shelter into place with a forklift.

1. Place the lifting sling on the roof of the shelter.
2. Adjust the turnbuckles (Figure 1, Item 7) so that the legs of the sling are of equal length.
3. Attach the hooks of the lifting sling to the four lifting eyes of the shelter (Figure 1, Item 6).
4. Insert the lifting hook (Figure 1, Item 2) of the crane or helicopter into the lifting ring (Figure 1, Item 1).
5. Tie 1/2-inch ropes (Figure 1, Item 3) at least 15 feet long, to each rear towing eye (Figure 1, Item 5) to use as guide ropes.

LOADING THE SHELTER ONTO A TRUCK**WARNING**

To avoid injury to personnel and damage to the shelter, only the personnel actually engaged in the loading operation should be permitted near the truck, the lifting device, or the shelter.

All instructions must come from the supervisor of the loading crew.

NOTE

The personnel door of the shelter must face the rear of the truck; the other end of the shelter must be flush against the front of the truck bed.

1. Lower the truck tailgate (Figure 1, Item 4) (if applicable), and verify that all tools and equipment have been removed from the truck bed.
2. Position one person at the free end of each guide rope (Figure 1, Item 3).
3. Slowly lift the shelter with the crane or the helicopter high enough to clear the truck bed.
4. Back the truck into position under the shelter.

PREPARATION FOR STORAGE AND SHIPMENT - (CONTINUED)**WARNING**

All personnel must remain clear of the truck while the shelter is being lowered into place.

5. Using the two guide ropes (Figure 1, Item 3), align the shelter above the truck bed while lowering the shelter onto the truck bed.
6. When the lifting sling is slack on the roof of the shelter, remove the lifting ring (Figure 1, Item 1) from the lifting hook (Figure 1, Item 2).
7. Unsnap the turnbuckle hooks (Figure 1, Item 7) from the arms of the lifting ring, and secure it to the truck.
8. Remove the sling hooks from the lifting eyes (Figure 1, Item 6).

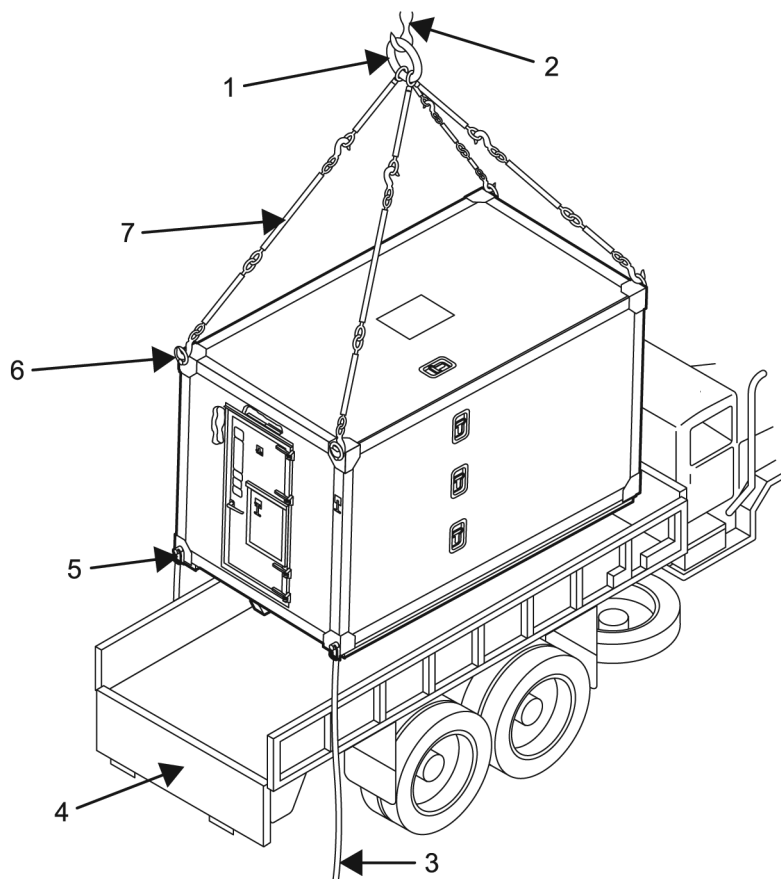
END OF TASK**LOADING THE SHELTER ONTO A TRUCK**

Figure 1. Lifting and Loading the Shelter.

PREPARATION FOR STORAGE AND SHIPMENT - (CONTINUED)

1. Install the plate (Figure 2, Item 4) and eyebolt assemblies (Figure 2, Item 5), which are part of the hold down assembly, on the cargo bed side-rails (Figure 2, Item 3 & 6) of the truck.
2. With the hooks from the end of the sling still in the tiedown eyes of the shelter, secure the sling as follows: Place the hooks from the turnbuckle portions of the sling into the eyebolts on the side(s) of the truck (Figure 2 Door Latch Assembly, as shown). Verify that the sling hooks point away from the shelter.

CAUTION

Do not overtighten turnbuckles (Figure 2, Item 1). Overtightening may damage or tear the eyes (Figure 2, Item 2) from the shelter.

3. By hand, evenly tighten all turnbuckles (Figure 2, Item 1).
4. With a bar or rod inserted in the turnbuckle slot, turn each tightened turnbuckle an additional half turn.
5. Insert the appropriately-sized wooden blocks between the shelter Skids and the sides of truck bed.
6. Insert the appropriately-sized wooden blocks between the shelter Skids and the cab wall.
7. Raise and secure the truck tailgate.

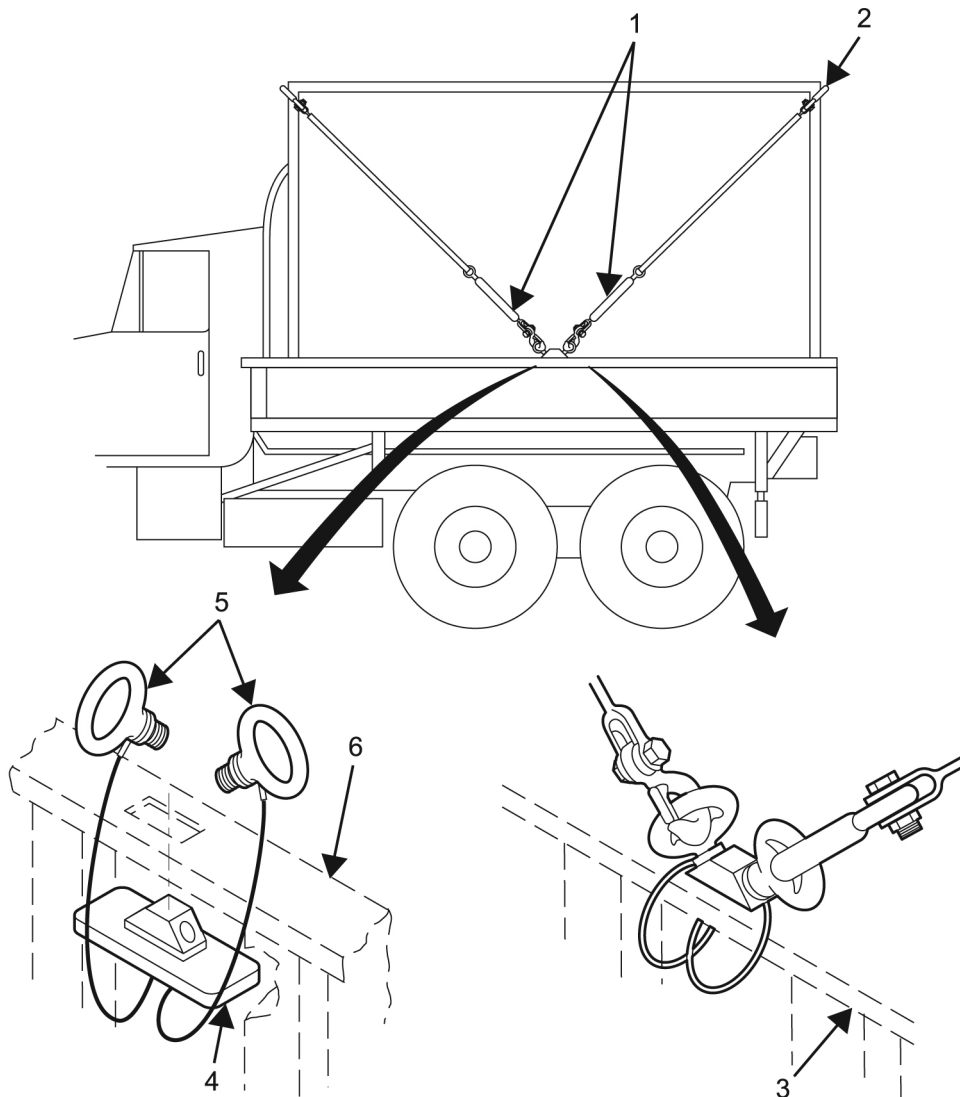


Figure 2. Securing the Shelter on a Truck.

PREPARATION FOR STORAGE AND SHIPMENT - (CONTINUED)**Loading the Shelter on a Flatbed Truck or Rail Car**

The shelter and its payload can be transported by commercial cargo vehicle or any standard 40-foot rail flatcar used in the continental United States. For flatbed truck transport, secure the shelter as shown in Figure 3 secure the shelter. For rail transport, block and brace the shelter as shown in Figure 4 to avoid shifting. A loaded shelter can withstand humping speeds of nine miles per hour.

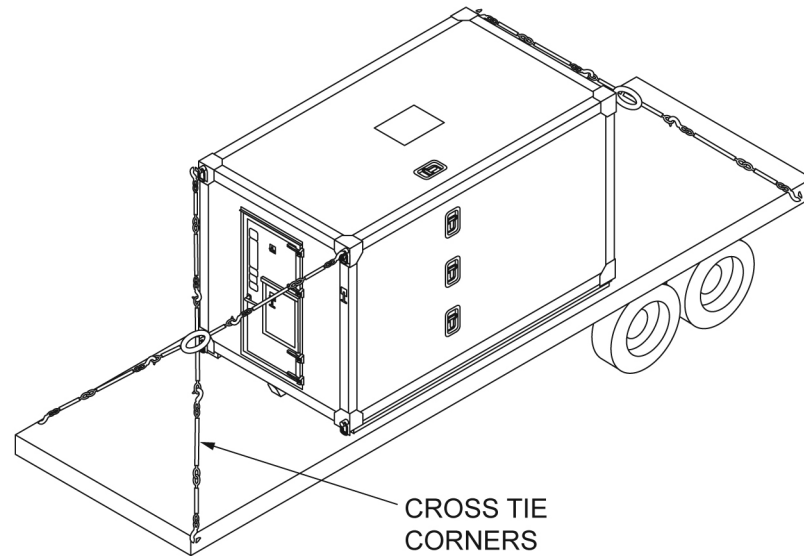


Figure 3. Flatbed Truck Tiedown.

PREPARATION FOR STORAGE AND SHIPMENT - (CONTINUED)

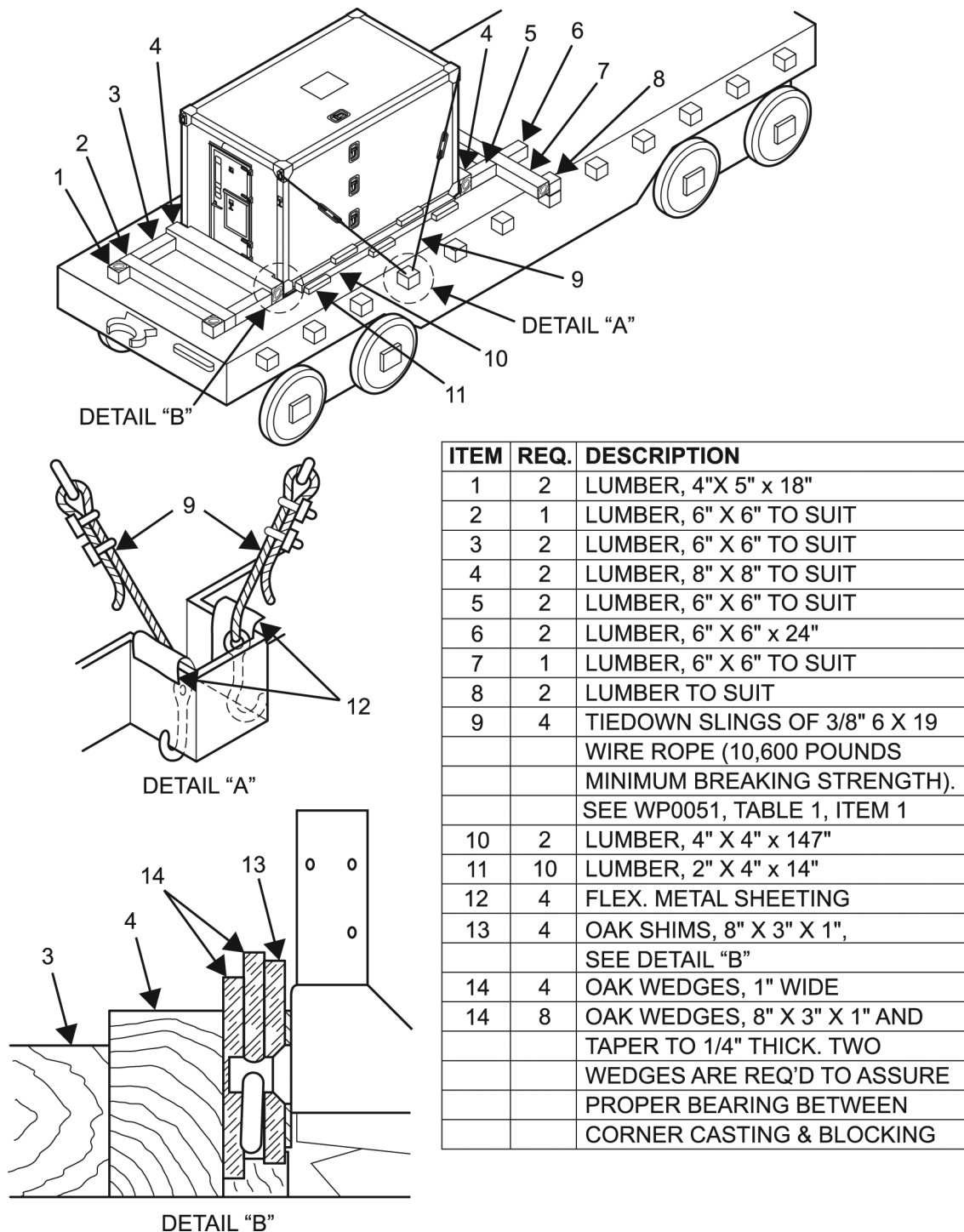


Figure 4. Rail Tiedown.

END OF TASK

PREPARATION FOR STORAGE AND SHIPMENT - (CONTINUED)**STORING THE SHELTER**

Temperature and humidity fluctuations can cause accumulation of moisture within the shelter, which can damage the equipment. To minimize moisture accumulation in the shelter during storage inside a warehouse, keep the doors, louver covers, and drain holes open. During outdoor storage, keep the doors and the drain holes closed, but keep louver covers open.

END OF TASK**END OF WORK PACKAGE**

FIELD MAINTENANCE

RIVET REPAIR AND REPLACEMENT

INITIAL SETUP:

Tools and Special Tools

Tool Kit, General Mechanic's (WP 0041, Table 2. Item 1)
 Drill, Electric (WP 0041, Table 2. Item 2)
 Drill, Twist (WP 0041, Table 2. Item 3)
 Riveter, Blind, Hand (Blind Rivet) (WP 0041, Table 2. Item 5)
 Riveter, Blind, Hand (Blind Rivnut) (WP 0041, Table 2. Item 6)

Materials/Parts

Pin, Headless, Straight (Item 22, WP 0044)
 Rivets, Blind (Item 26, WP 0044)
 Sealing Compound (Item 28, WP 0044)
 Rivnut (WP 0028 Table 2 in this WP)

Personnel Required

91B Wheeled Vehicle Mechanic

GENERAL REPAIR INFORMATION

This work package contains general maintenance and repair procedures applicable to the general shelter body as well as to previous maintenance procedures in this chapter. These are maintainer level tasks. Wherever these general tasks apply, they are referred to in the appropriate work package.

Since most shelters contain sensitive electronic equipment that cannot be easily removed, unit level maintenance and repair will primarily involve shelter exteriors or easily accessible interior areas, unless floors, ceilings or walls have evidence of water intrusion that can jeopardize operation of the equipment. The shelter shall be returned to the depot for repair if any of the following conditions exist:

- Panel damage spans a structural member.
- Replacement of an entire wall, ceiling, or floor is required.
- Welding is required.
- Damage to a structural member is severe enough to cause distortion of a wall, especially in edge or corner areas.
- Lift, tow, or tiedown fittings or corner castings are damaged severely enough to possibly damage the underlying structure.

BLIND RIVET OVERVIEW

Blind rivets are used in locations where only one side of the area to be worked on is accessible. Blind pop rivets must be used in the shelter foam and beam panels, since the hammering required to install conventional rivets would damage the material.

The types of rivets used in the shelter are shown in Figure 1 and Figure 2 and described in Table 1. When installing floor patches, countersunk head rivets (styles K and T) are preferred, but dome head rivets (styles R and S) are acceptable. When installing interior wall patches, use countersunk head rivets wherever dome head rivets will interfere with the proper installation of equipment. Use closed end rivets (styles K and R) for exterior repairs and floor repairs to prevent moisture and dirt from entering panels.

RIVET REPAIR AND REPLACEMENT - (CONTINUED)

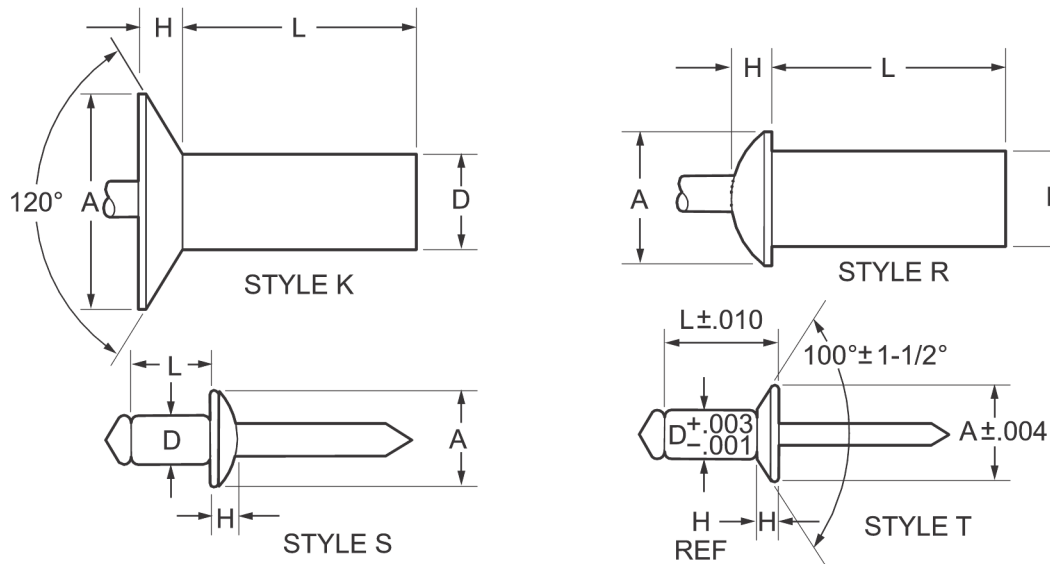


Figure 1. Blind Rivet Types.

Table 1. Blind Rivets

Part No. 1/	Style	Dim A	Dim H	Dim D	Dim L
AD42H	R	0.236	0.051	1/8	0.361
AD43H	R	0.236	0.051	1/8	0.377
AD45H	R	0.236	0.051	1/8	0.502
AD62H	R	0.375	0.081	3/16	0.345
AD64H	R	0.375	0.081	3/16	0.470
AD68H	R	0.375	0.081	3/16	0.720
AD42S	R	0.236	0.051	1/8	0.361
MS20470AD6-8	R	0.375	0.080	3/16	0.375
NAS1398D4-3	R	0.250	0.067	0.156	0.326
NAS1398D4-4	R	0.250	0.067	0.156	0.388
NAS1398D6-3	R	0.375	0.080	0.187	0.350
NAS1398D6-5	R	0.375	0.080	0.187	0.475
NAS1398D6-8	R	0.375	0.080	0.187	0.662
NAS1399D4-4	R	0.225	0.042	0.125	0.385
NAS1399D6-6	R	0.353	0.070	0.187	0.537
NAS1739E4-3	R	0.286	0.047	0.173	0.375

RIVET REPAIR AND REPLACEMENT - (CONTINUED)

1/ Part Number Code Explanations

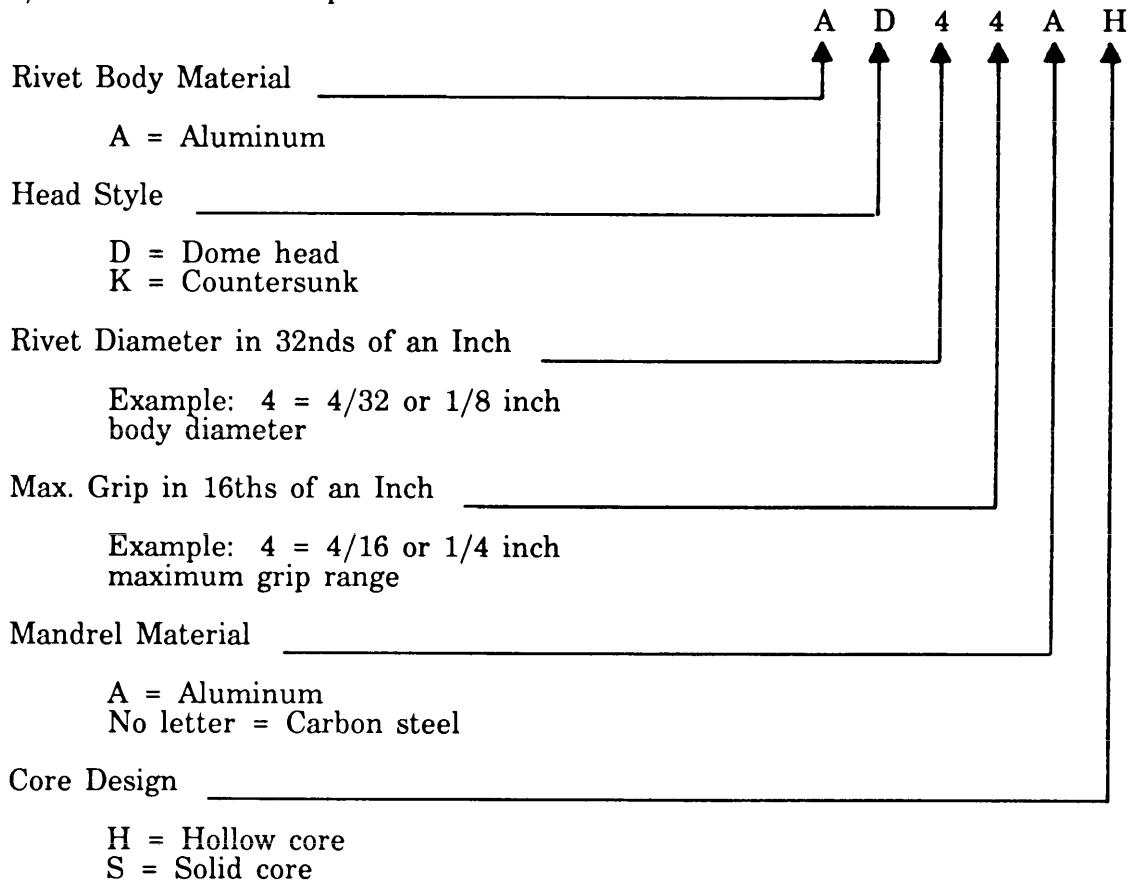


Figure 2. Part Number Code Explanations.

NOTE

Use open-end rivets only where moisture and dirt will not affect the shelter.

RIVNUT OVERVIEW

Rivnuts (threaded inserts) are tubular rivets with internal threads and are used throughout the shelter wherever blind threads are required. The types of rivnuts used in the shelter are shown in Figure 3 and described in Table 2.

Use flat head rivnuts (styles D and E) wherever head thickness will not interfere with installation of equipment. Countersunk head rivnuts (style C) are used for flush installation. Keyed rivnuts are used in locations subject to vibration and torque. Use closed end rivnuts (styles C and E) for exterior repairs and floor repairs to keep moisture and dirt from entering panels. Use open-end rivnuts (style D) in areas where sealing is not required.

RIVET REPAIR AND REPLACEMENT - (CONTINUED)

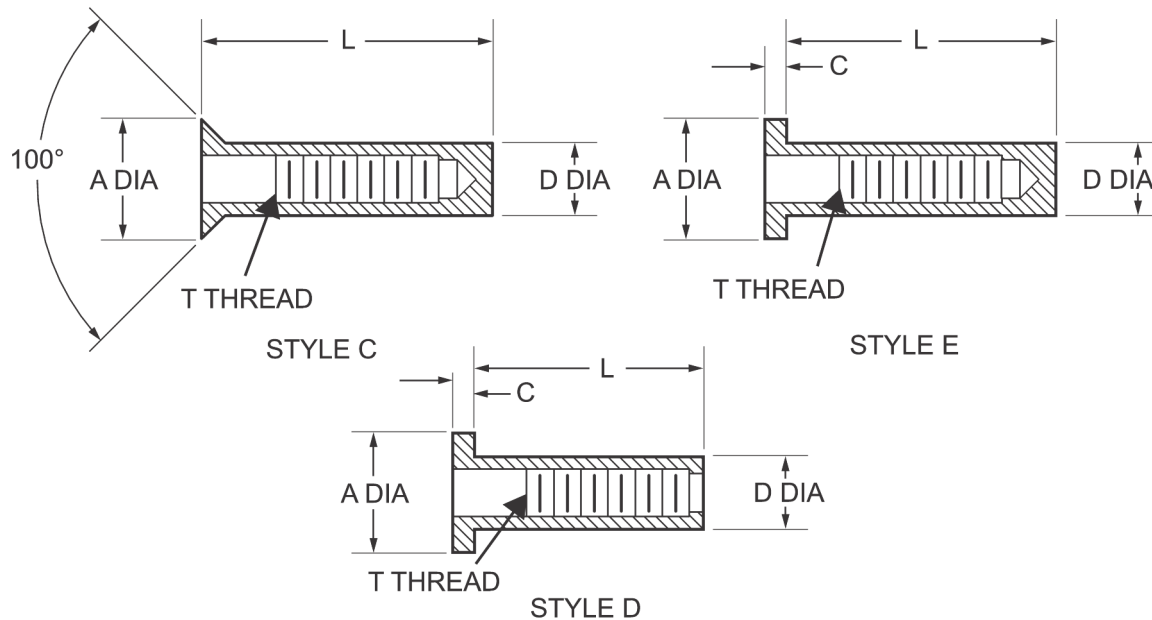


Figure 3. Rivnut Types.

Table 2. Rivnuts

Part No.	Style	Dim A (in.)	Dim D (in.)	Dim L (in.)	T	Dim C (in.)	Grip Range (in.)
S31B125CS1	E	0.665	0.413	1.187	5/16-18 UNC-3B	0.062	0.030-0.125
S31B425CS1	E	0.665	0.413	1.531	5/16-18 UNC-3B	0.062	0.350-0.425
SS8B120	E	0.357	0.221	0.500	8/32 UNC-3B	0.032	0.075-0.120

INSTALLING BLIND RIVETS

NOTE

When installing a new rivet in the same location as a rivet that has been removed, if the diameter of the hole was enlarged during removal of the rivet, use the next larger diameter rivet for replacement. Clean the rivets with solvent before installing.

1. Determine the type, size and grip range of the rivet to be used (Figure 4). Grip length equals combined thickness of materials being riveted together. The grip range of rivet must encompass the grip length.

WARNING



Drilling creates metal chips that can enter the eyes and cause serious injury. Eye protection is required.

RIVET REPAIR AND REPLACEMENT - (CONTINUED)**CAUTION**

Do not drill deeper than necessary to install a rivet; any deeper and you might drill through the other side of the panel.

NOTE

A drilled hole size must match the size of the rivet being used. Multiple sheets can be drilled at the same time when the sheets are held together with sheet fasteners.

2. Drill a hole in the structure.
3. Remove all metal chips and burrs from the drilled holes.
4. If you are installing a flush head rivet, countersink a hole using a 100° or 120° machine countersink.
5. Before installing, coat all rivets with sealing compound.
6. Insert a rivet into the hole. Verify that the sheets are held tightly together.
7. Select the proper pulling head for a rivet being installed, and install the pulling head on the rivet gun.
8. Insert the stem of the rivet into the pulling head.
9. With the pulling head parallel to the axis of the rivet, upset the rivet. Exert firm pressure but do not bend or buckle the metal sheets. Stem will break off below the surface of the rivet head. No trimming should be required.
10. Verify that the riveted parts are not loose, the rivet does not rotate, and the rivet head is seated tightly against the riveted surface. If rivet is loose or improperly installed, remove it and install a new one.

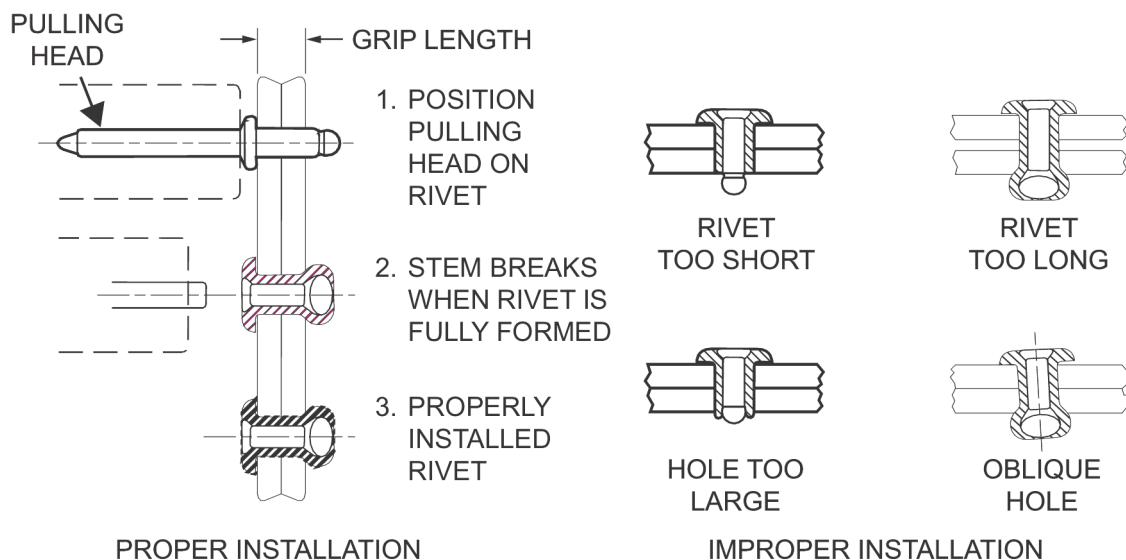


Figure 4. Installing Blind Rivets.

END OF TASK

RIVET REPAIR AND REPLACEMENT - (CONTINUED)**REMOVING BLIND RIVETS****WARNING**

Drilling creates metal chips which may enter eyes and cause serious injury. Eye protection is required.

NOTE

When drilling through the rivet head, be careful to avoid enlarging the hole. Keep the drill perpendicular to material being drilled and do not exert excessive pressure on drill, or else the replacement rivets will be loose.

1. Drill through the head of the rivet only, using the hole in rivet as a guide (Figure 5). Use the proper drill size as determined using Table 3.

Table 3. Proper Drill Size for Removing Rivets

Rivet Size (in.)	Drill Size
1/8	No. 30
5/32	No. 20
3/16	No. 11
1/4	1/4 in.

2. Using a pin punch, pry off the rivet head.

CAUTION

Do not punch the rivet shanks out as you may damage the other side of the panel.

3. Using a pin punch, push out the remainder of the rivet shank. If the shank will not push out easily, drill it out.

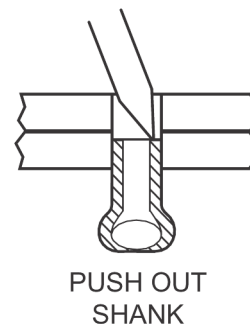
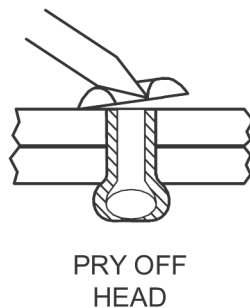
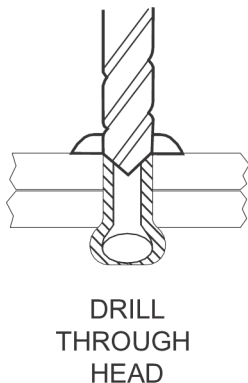


Figure 5. Removing Blind Rivets.

END OF TASK

RIVET REPAIR AND REPLACEMENT - (CONTINUED)**INSTALLING RIVNUTS****NOTE**

When installing a new rivnut in the same location as a rivnut that has been removed, if the diameter of the hole was enlarged during removal, use the next larger diameter rivnut for replacement.

1. Determine the thread size, grip range, style, and material of rivnut to be used (Figure 6). Grip length equals combined thickness of materials being fastened together. The grip range of rivnuts must encompass the grip length.

WARNING

Drilling creates metal chips which may enter eyes and cause serious injury. Eye protection is required.

CAUTION

Do not drill deeper than necessary to install the rivnut as you may drill through other side of panel.

NOTE

The drill hole size must match the size of the rivnut being used.

2. Drill a hole in the structure.
3. Remove all metal chips and remove burrs from drilled holes.
4. When installing a countersunk head rivnut, countersink a hole using a 100° machine countersink.
5. Thread the stem of the appropriate pull-up stud into the rivnut. The stud should protrude through open end rivnuts, or be 1-1/2 threads from bottoming in closed end rivnuts.
6. Coat the rivnut body with sealing compound before installing.
7. Insert the rivnut in the hole. Verify that the sheets are held tightly together before pulling.
8. With the pull-up stud parallel to the axis of the rivnut, pull up on the rivnut. Exert firm pressure but do not bend or buckle the metal sheets.
9. Verify that the fastened parts are not loose, the rivnut does not rotate and the rivnut head is seated tightly against the surface. Verify that the rivnut threads are in good condition. If threads are damaged or rivnut is improperly installed, remove it and install a new one.

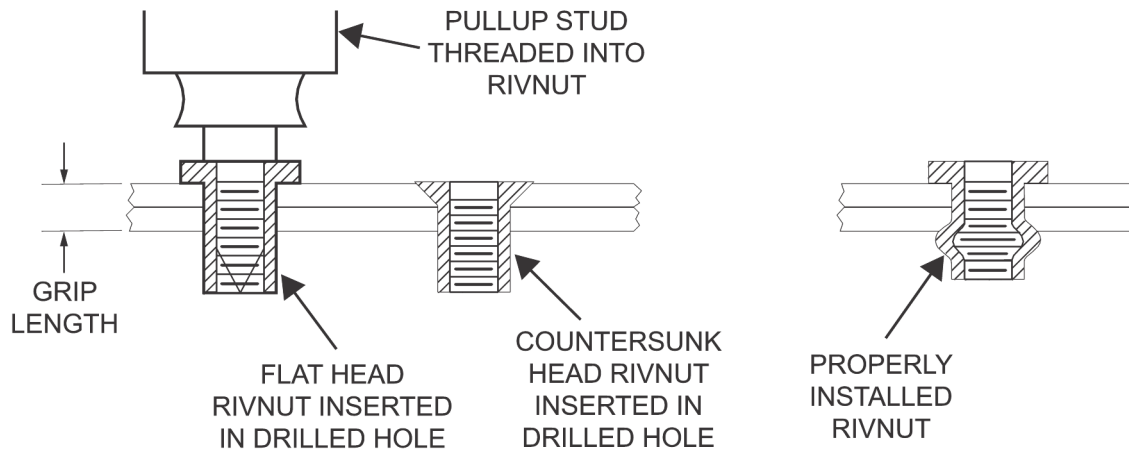
RIVET REPAIR AND REPLACEMENT - (CONTINUED)

Figure 6. Installing Rivnuts.

END OF TASK**REMOVING RIVNUTS****WARNING**

Drilling creates metal chips which may enter eyes and cause serious injury. Eye protection is required.

1. Drill through the head of the rivnut with the same size drill used to make original hole. The counter-bore in the rivnut will act as a drill guide (Figure 7).
2. Remove the head of the rivnut.

CAUTION

Do not puncture the opposite face sheet of the panel when punching out the rivnut shank.

3. Using a pin punch slightly smaller than the hole in the structure, punch out the shank of the rivnut. Punch only enough to disengage. Move the rivnut aside to install the new rivnut.

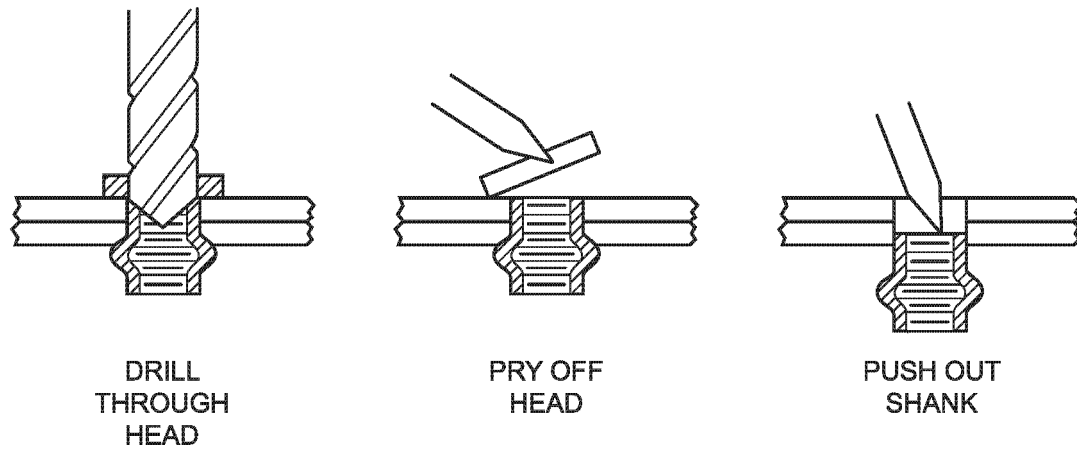
RIVET REPAIR AND REPLACEMENT - (CONTINUED)

Figure 7. Removing Rivnuts.

END OF TASK**REPAIRING TURNING RIVNUTS****WARNING**

Drilling creates metal chips that can enter eyes and cause serious injury. Eye protection is required.

1. Drill a 0.062 (+0.003/-0.001) diameter hole 1.00 inch long on the stem of the turning rivnut as shown in Figure 8.
2. Install a headless straight pin into the hole. Torque requirements are shown in Table 4.

Table 4. Maximum Torque Requirement for Rivnut Screws

Screw Size	Torque (lbs/inch)
4-40	8
6-32	12
8-32	20
10-32	20
1/4-20	50
5/16-18	65
3/8-16	120

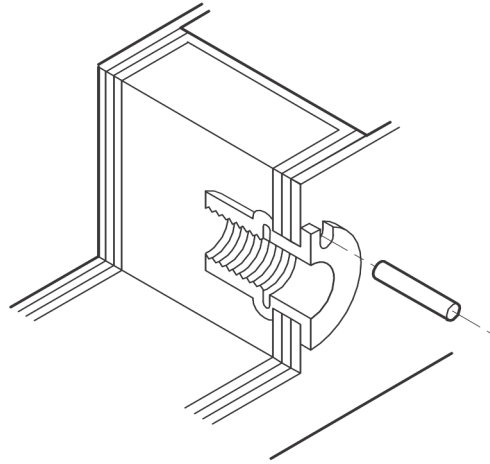
RIVET REPAIR AND REPLACEMENT - (CONTINUED)

Figure 8. Repairing a Turning Rivnut.

END OF TASK

END OF WORK PACKAGE

CHAPTER 7
REPAIR PARTS LIST
FOR
S-280C/G UNSHIELDED (NSN 5411-01-092-0892)
S-280C/G SHIELDED (NSN 5411-01-304-3069)

FIELD MAINTENANCE

INTRODUCTION

SCOPE

This Repair Parts and Special Tools List (RPSTL) lists the authorized spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); other special support equipment required for performance of operator and field maintenance of the S-280. It authorizes the requisitioning, issue, and disposition of spares, repair parts, and special tools as indicated by the source, maintenance, and recoverability (SMR) codes.

GENERAL

In addition to the Introduction work package, this RPSTL is divided into the following work packages.

1. **Repair Parts List Work Packages.** Work packages containing lists of spares and repair parts authorized for use in the performance of maintenance at the levels determined by the MAC/SMR code. These work packages also include parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending alphanumeric sequence, with the parts in each group listed in ascending figure and item number sequence. Sending units, brackets, filters, and bolts are listed with the component they mount on. Bulk materials are listed by item name in FIG. BULK at the end of the work packages. Repair parts kits are listed at the end of the individual work packages. Repair parts for reparable special tools are also listed in a separate work package. Items listed are shown on the associated illustrations.
2. **Special Tools List Work Packages.** This work package lists any spare parts required for the special tools, TMDE, or other support equipment listed in the Special Tools Work Package that are not listed in any other publication.
3. **Cross-Reference Indexes.** There are two cross-references: The National Stock Number Index and Part Number Index each refer you to the corresponding figure and item number.

EXPLANATION OF COLUMNS IN THE REPAIR PARTS LIST AND SPECIAL TOOLS LIST

ITEM NO. (Column 1). The number identifying the items called out in the illustration.

SMR CODE (Column 2). The SMR code containing supply/requisitioning information, maintenance level authorization criteria, and disposition instruction, as shown in the following breakout. This entry may be subdivided into four subentries, one for each service.

Table 1. SMR Code Explanation.

Source Code XX	Maintenance Code XX	Recoverability Code X
1st two positions: How to get an item.	3rd position: Who can install, replace, or use the item.	4th position: Who can do complete repair* on the item.
		5th position: Who determines disposition action on unserviceable items.

*Complete Repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

Source Code: The source code tells you how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanations of source codes follow:

INTRODUCTION - (CONTINUED)

<u>Source Code</u>	<u>Application/Explanation</u>
PA	Items coded PC are subject to deterioration. Stock items; use the applicable NSN to requisition/request items with these source codes. They are authorized to the level indicated by the code entered in the third position of the SMR code.
PB	
PC	
PD	
PE	
PF	
PG	
PH	
PR	
PZ	
KD	Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance level indicated in the third position of the SMR code. The complete kit must be requisitioned and applied.
KF	
KB	
MF-Made at field	Items with these codes are not to be requisitioned/requested individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the bulk material group work package of the RPSTL. If the item is authorized to you by the third position code of the SMR code, but the source code indicates it is made at a higher level, order the item from the higher level of maintenance.
MH-Made at below depot/sustainment level	
ML-Made at SRA	
MD-Made at depot	
MG-Navy only	
AF-Assembled by field	Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the third position of the SMR code authorizes you to replace the item, but the source code indicates the item is assembled at a higher level, order the item from the higher level of maintenance.
AH-Assembled by below depot sustainment level	
AL-Assembled by SRA	
AD-Assembled by depot	
AG-Navy only	
XA	Do not requisition an "XA" coded item. Order the next higher assembly. (Refer to NOTE below.)
XB	If an item is not available from salvage, order it using the CAGEC and part number.
XC	Installation drawings, diagrams, instruction sheets, field service drawings; identified by manufacturer's part number.

INTRODUCTION - (CONTINUED)**Source Code****Application/Explanation**

XD

Item is not stocked. Order an XD-coded item through local purchase or normal supply channels using the CAGEC and part number given, if no NSN is available.

NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes except for those items source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

Maintenance Code. Maintenance codes tell you the level(s) of maintenance authorized to use and repair support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

Third Position. The maintenance code entered in the third position tells you the lowest maintenance level authorized to remove, replace, and use an item. The maintenance code entered in the third position will indicate authorization to the following levels of maintenance:

Maintenance Code Application/Explanation

F-	Field maintenance can remove, replace, and use the item.
H-	Below Depot Sustainment maintenance can remove, replace, and use the item.
L-	Specialized repair activity can remove, replace, and use the item.
G-	Afloat and ashore intermediate maintenance can remove, replace, and use the item (Navy only).
K-	Contractor facility can remove, replace, and use the item.
Z-	Item is not authorized to be removed, replaced, or used at any maintenance level.
D-	Depot can remove, replace, and use the item.

*NOTE - Army may use C in the third position. However, for joint service publications, Army will use O.

Fourth Position. The maintenance code entered in the fourth position tells you whether or not the item is to be repaired and identifies the lowest maintenance level with the capability to do complete repair (perform all authorized repair functions).

NOTE

Some limited repair may be done on the item at a lower level of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

Maintenance Code Application/Explanation

F-	Field is the lowest level that can do complete repair of the item.
H-	Below Depot Sustainment is the lowest level that can do complete repair of the item.
L-	Specialized repair activity (enter specialized repair activity or TASMG designator) is the lowest level that can do complete repair of the item.
D-	Depot is the lowest level that can do complete repair of the item.
G-	Both afloat and ashore intermediate levels are capable of complete repair of the item (Navy only).
K-	Complete repair is done at contractor facility.
Z-	Irreparable. No repair is authorized.
B-	No repair is authorized. No parts or special tools are authorized for maintenance of "B" coded item. However, the item may be reconditioned by adjusting, lubricating, etc., at the user level.

INTRODUCTION - (CONTINUED)

Recoverability Code. Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is shown in the fifth position of the SMR code as follows:

<u>Recoverability Code</u>	<u>Application/Explanation</u>
Z-	Irreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code.
F-	Reparable item. When uneconomical to repair, condemn and dispose of the item at the field level.
H-	Reparable item. When uneconomical to repair, condemn and dispose of the item at the below depot sustainment level.
D-	Reparable item. When beyond lower level repair capability, return the item to depot. Condemnation and disposal of the item are not authorized below depot level.
L-	Reparable item. Condemnation and disposal are not authorized below Specialized Repair Activity (SRA).
A-	Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.
G-	Field level reparable item. Condemn and dispose at either afloat or ashore intermediate levels. (Navy only)
K-	Reparable item. Condemnation and disposal to be performed at contractor facility.

NSN (Column 3). The NSN for the item is listed in this column.

CAGEC (Column 4). The Commercial and Government Entity Code (CAGEC) is a five-digit code which is used to identify the manufacturer, distributor, or Government agency/activity that supplies the item.

PART NUMBER (Column 5). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

NOTE

When you use an NSN to requisition an item, the item you receive may have a different part number than the number listed.

DESCRIPTION AND USABLE ON CODE (UOC) (Column 6). This column includes the following information:

1. The federal item name, and when required, a minimum description to identify the item.
2. Part numbers of bulk materials are referenced in this column in the line entry to be manufactured or fabricated.
3. Hardness Critical Item (HCI). A support item that provides the equipment with special protection from electromagnetic pulse (EMP) damage during a nuclear attack.
4. The statement END OF FIGURE appears just below the last item description in Column 6 for a given figure in both the repair parts list and special tools list work packages.

QTY (Column 7). The QTY (quantity per figure) column indicates the quantity of the item used in the breakout shown on the illustration/figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column instead of a quantity indicates that the quantity is variable and quantity may change from application to application.

EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGES FORMAT AND COLUMNS

1. National Stock Number (NSN) Index Work Package. NSNs in this index are listed in National Item Identification Number (NIIN) sequence.
STOCK NUMBER Column. This column lists the NSN in NIIN sequence. The NIIN consists of the last nine digits of the NSN. When using this column to locate an item, ignore the first four digits of the NSN. However, the complete NSN should be used when ordering items by stock number. For example, if the NSN is 5385-01-574-1476, the NIIN is 01-574-1476.

INTRODUCTION - (CONTINUED)

FIG. Column. This column lists the number of the figure where the item is identified/located. The figures are in numerical order in the repair parts list and special tools list work packages.

ITEM Column. The item number identifies the item associated with the figure listed in the adjacent FIG. column. This item is also identified by the NSN listed on the same line.

2. Part Number (P/N) Index Work Package. Part numbers in this index are listed in ascending alphanumeric sequence (vertical arrangement of letter and number combinations which places the first letter or digit of each group in order A through Z, followed by the numbers 0 through 9 and each following letter or digit in like order).

PART NUMBER Column. Indicates the part number assigned to the item.

FIG. Column. This column lists the number of the figure where the item is identified/located in the repair parts list and special tools list work packages.

ITEM Column. The item number is the number assigned to the item as it appears in the "figure referenced in the adjacent figure number column.

SPECIAL INFORMATION

UOC. The UOC appears in the lower left corner of the Description Column heading. Usable on codes are shown as "UOC..." in the Description Column (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models.

Fabrication Instructions. Bulk materials required to manufacture items are listed in the bulk material functional group of this RPSTL. Part numbers for bulk material are also referenced in the Description Column of the line item entry for the item to be manufactured/fabricated. Detailed fabrication instructions for items source coded to be manufactured or fabricated are found Chapter 5.

Index Numbers. Items which have the word BULK in the figure column will have an index number shown in the item number column. This index number is a cross-reference between the NSN/Part Number (P/N) Index work packages and the bulk material list in the repair parts list work package.

Illustrations List. The illustrations in this RPSTL contain field authorized items. Illustrations published in the applicable TM for the S-280 for the below depot sustainment maintenance level RPSTL that contain field authorized items also appear in this RPSTL. The tabular list in the repair parts list work package contains only those parts coded "F" in the third position of the SMR code, therefore, there may be a break in the item number sequence.

HOW TO LOCATE REPAIR PARTS

When NSNs or Part Numbers Are Not Known

1. Using the table of contents, determine the assembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and lists are divided into the same groups.
2. Find the figure covering the functional group or the subfunctional group to which the item belongs.
3. Identify the item on the figure and note the number(s).
4. Look in the repair parts list work packages for the figure and item numbers. The NSNs and part numbers are on the same line as the associated item numbers.

When NSN Is Known

1. Look in the STOCK NUMBER column of the NSN index work package. The NSN is arranged in NIIN sequence. Note the figure and item number next to the NSN.
2. Turn to the figure and locate the item number. Verify that the item is the one you are looking for.

When Part Number Is Known

1. Look in the PART NUMBER column of the part number index work package.
2. Identify the figure and item number.

INTRODUCTION - (CONTINUED)

3. Look up the item on the figure in the applicable repair parts list work package.

END OF WORK PACKAGE

FIELD MAINTENANCE

REPAIR PARTS LIST

REPAIR PARTS LIST - (CONTINUED)

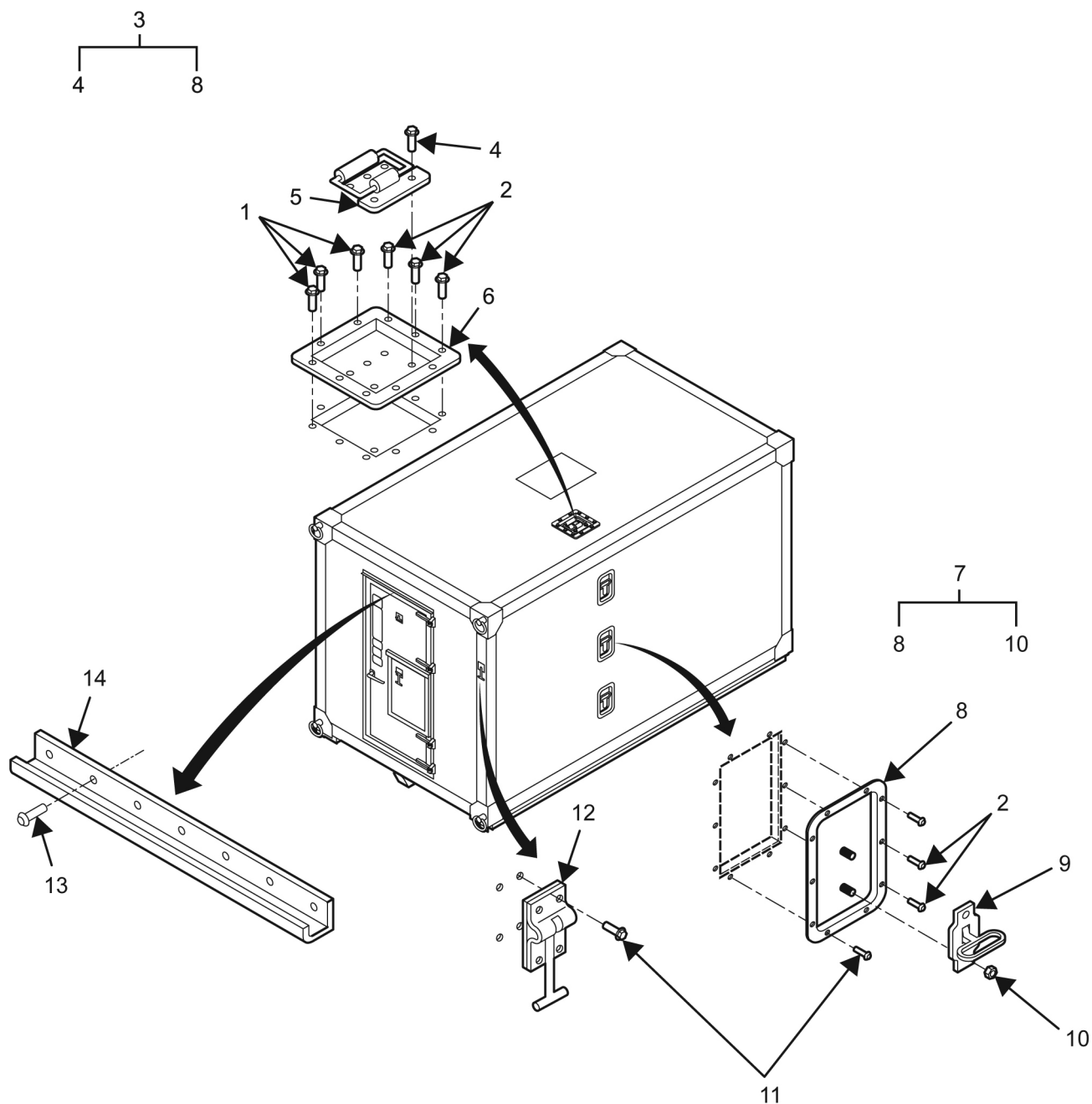


Figure 1. Shelter, Electrical Equipment S-280 (Sheet 1 of 3).

REPAIR PARTS LIST - (CONTINUED)

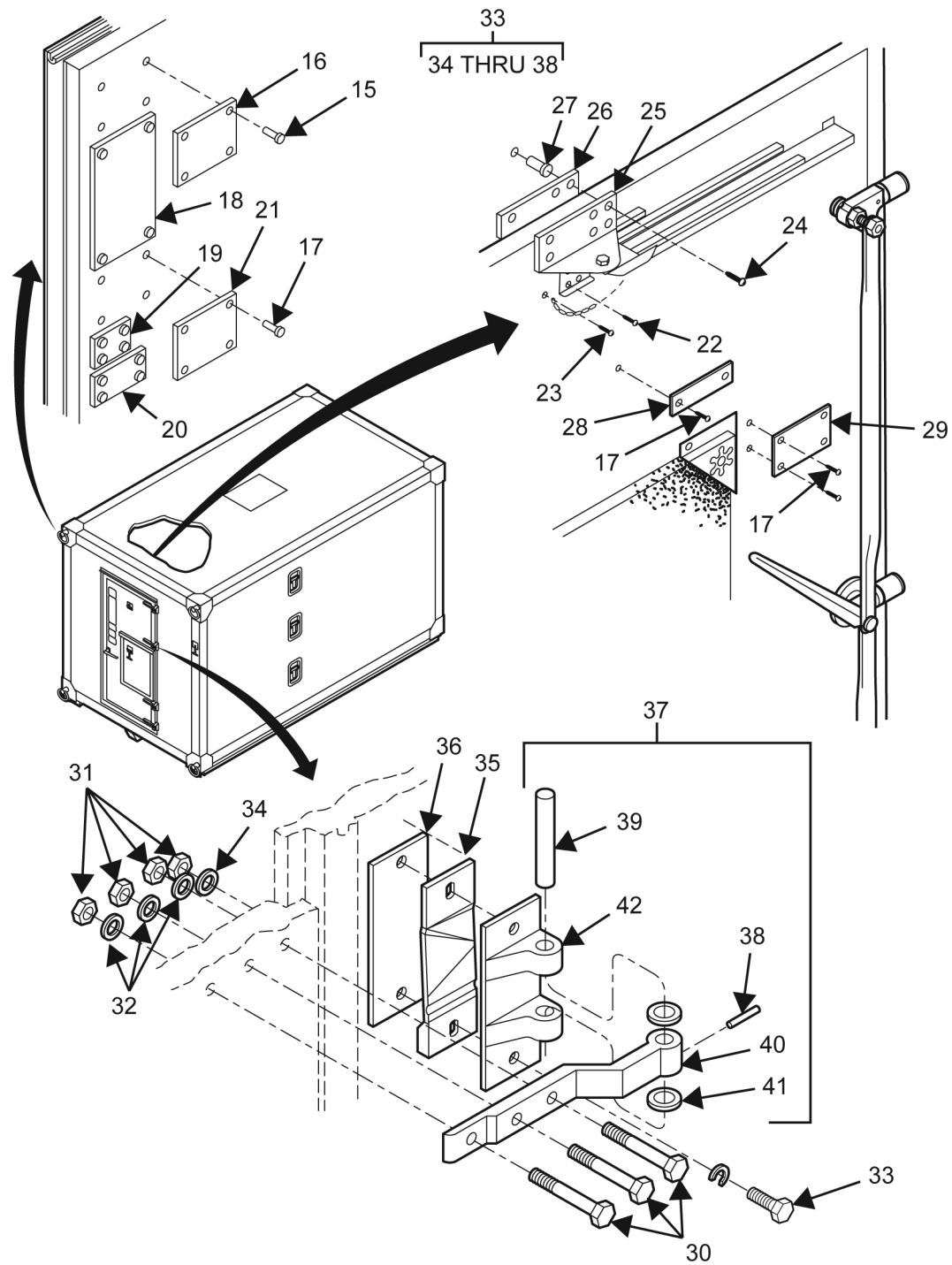


Figure 1. Shelter, Electrical Equipment S-280 (Sheet 2 of 3).

REPAIR PARTS LIST - (CONTINUED)

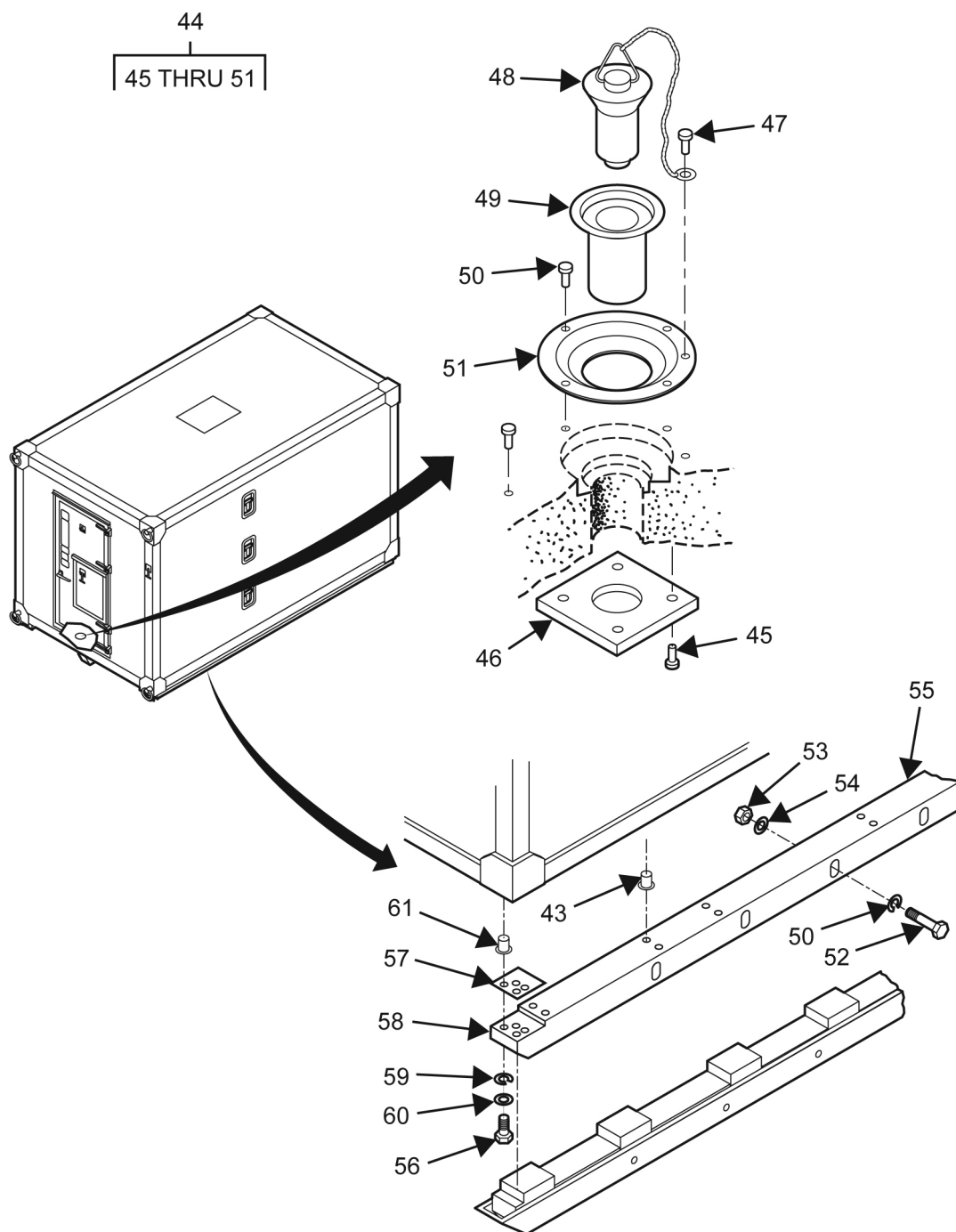


Figure 1. Shelter, Electrical Equipment S-280 (Sheet 3 of 3).

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 00 SHELTER, ELECTRICAL EQUIPMENT S-280 FIGURE 1 Shelter, Electrical Equipment S-280	
1	PAFZZ	5320-00-956-7362	7707	AD62H	RIVET,BLIND	7
					UOC: EVQ, FWH	
2	PAFZZ	5320-01-032-6534	81349	M24243/6-A608H	RIVET,BLIND	24
					UOC: EVQ, FWH	
3	PAFFF	5410-00-933-0845	81337	SM-C-165382	HANDHOLD	1
					UOC: EVQ, FWH	
4	PAFZZ	5320-00-117-6853	80205	MS20470AD6-8	.RIVET, SOLID	5
					UOC: EVQ, FWH	
5	PAFZZ	5340-00-836-1938	96906	MS18012-3	.HANDLE, BAIL	1
					UOC: EVQ, FWH	
6	PBFZZ	5410-01-302-6277	81337	SM-C-165383	.PAN, HANDHOLD	1
					UOC: EVQ, FWH	
7	PAFFF	5342-01-1146-2139	19220	AL3-575709	FOLDING STEP ASSY	3
					UOC: EVQ, FWH	
8	XDZZF		19220	AL-15951	.PAN, RECESSED STEP	3
					UOC: EVQ, FWH	
9	PAFZZ	5410-00-919-4958	19220	1-585809-25	.STEP, FOLDING	3
					UOC: EVQ, FWH	
10	PAFZZ	5310-01-360-9045	19220	15949	.NUT, SELF-LOCKING, HE	2
					UOC: EVQ, FWH	
11	PAFZZ	5320-00-956-7355	81337	5-4-1303-76	RIVET,BLIND	25
					UOC: EVQ, FWH	
12	PAFZZ	5340-00-493-9235	19220	AL5601-Z	STRIKE, CATCH	1
					UOC: EVQ, FWH	
13	PAFZZ	5320-00-874-4471	7707	AD45H	RIVET, BLIND	7
					UOC: EVQ, FWH	
14	XDFZZ		81337	SM-B-947164	DRIP MOLD, DOOR	1
					UOC: EVQ, FWH	
15	PBFZZ	5310-01-097-6608	80205	NAS1329C08B120	NUT, PLAIN, BLIND RIV	7
					UOC: EVQ, FWH	
16	XBFZZ		81337	SM-B-947228	PLATE, DATA, AIRCRAFT	1
					UOC: EVQ, FWH	
17	PBFZZ	5320-01-295-9924	7707	AD42H	RIVET,BLIND	16
					UOC: EVQ, FWH	
18	XBFZZ		81337	SM-C-165466	PLATE, TRANSPORT	1
					UOC: EVQ, FWH	
19	XBFZZ		81337	SM-B-947229	PLATE, NAME	1
					UOC: EVQ, FWH	
19	XBFZZ		81337	SM-B-595079	PLATE, NAME	1
					UOC: EVQ, FWH	

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
20	XBFZZ		81337	SM-B-340031	PLATE, AIRBORNE INST	1
					UOC: EVQ, FWH	
21	XBFZZ		81337	SM-B-947239	PLATE, PAINT INSTR	1
					UOC: EVQ, FWH	
22	PAFZZ	5305-00-052-7436	96906	MS24617-54	SCREW, TAPPING.....	10
					UOC: EVQ, FWH	
23	PFFZZ	5305-00-533-5446	96906	MS35493-53	SCREW, WOOD	1
					UOC: EVQ, FWH	
24	PAFZZ	5306-00-637-8062	88044	AN101011	BOLT, MACHINE	6
					UOC: EVQ, FWH	
25	PFFZZ	5340-01-155-3503	81337	SCC200135	BRACKET, ANGLE	1
					UOC: EVQ, FWH	
26	PFFZZ	5365-01-271-4763	80063	SM-B-947231	SHIM	1
					UOC: EVQ, FWH	
27	PBFZZ	5325-00-989-4535	96906	MS35914-150	INSERT, SCREW THREAD	6
					UOC: EVQ, FWH	
28	XBFZZ		81337	SM-C-564811	PLATE, INSTRUCTION.....	1
					UOC: EVQ, FWH	
29	XBFZZ		81337	SM-B-615256	PLATE, SECEXIT, DATA	1
					UOC: EVQ, FWH	
30	PAFZZ	5306-00-182-1514	88044	AN5C26A	BOLT, MACHINE	12
					UOC: EVQ, FWH	
31	PAFZZ	5310-00-807-1469	80205	MS21042-5	NUT, SELF-LOCKING, EX	16
					UOC: EVQ, FWH	
32	PAFZZ	5310-00-625-5756	80205	MS15795-812	WASHER, FLAT	8
					UOC: EVQ, FWH	
33	PAFZZ	5306-00-182-1513	88044	AN5C25A	BOLT, MACHINE	8
					UOC: EVQ, FWH	
34	PAFZZ	5310-00-167-0803	80205	NAS1149C0563R	WASHER, FLAT	8
					UOC: EVQ, FWH	
35	PFFZZ	5410-00-231-6429	80063	SCC200154	KEEPER, SHELTER	2
					UOC: UOC, EVQ, FWH	
36	XDFZZ		80036	SC-B-200153-1	SHIM, KEEPER SELECT.....	1
					UOC: UOC, EVQ, FWH	
37	PAFFF	5340-00-917-6104	81337	SMC317057	HINGE, BUTT	4
					UOC: EVQ, FWH	
38	PAFZZ	5315-00-058-9784	80205	MS16562-237	.PIN, SPRING	1
					UOC: EVQ, FWH	
39	PFFZZ	5315-01-344-5995	81337	SM-B-508785	.PIN, STRAIGHT, HEADLE	1
					UOC: EVQ, FWH	
40	PFFZZ	5340-01-355-5083	81337	SM-C-508783	LEAF, STRAP HINGE	1
					UOC: EVQ, FWH	

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
41	PAFZZ	5310-00-945-4429	81337	SM-B-317129	.WASHER, FLAT UOC: EVQ, FWH	2
42	PFFZZ	5340-01-355-5082	81337	SM-C-508784	.LEAF, BUTT HINGE UOC: EVQ, FWH	1
43	PAFZZ	5310-01-346-1593	3481	S31B425CS1	NUT, PLAIN, BLIND RIV UOC: EVQ, FWH	37
44	PFFFF	4510-01-361-8324	81337	SM-D-947154	DRAIN, FLOOR INSTALL UOC: EVQ, FWH	1
45	PAFZZ	5320-00-882-8388	81349	M24243/6A403H	.RIVET, BLIND UOC: EVQ, FWH	4
46	PFFZZ	5340-01-574-3834	81337	SM-C-947155	.PLATE, RESILIENT MOU UOC: EVQ, FWH	1
47	PAFZZ	5320-00-956-7355	81337	5-4-1303-76	.RIVET, BLIND UOC: EVQ, FWH	1
48	PFFZZ	4510-01-245-3752	80063	SM-D-947154-4	.STOPPER, WASTE DRAIN UOC: EVQ, FWH	1
49	XAFZZ		81337	SM-B-947157	.TUBE UOC: EVQ, FWH	1
50	PAFZZ	5320-00-957-3582	81349	M24243/6-A402F	.RIVET, BLIND UOC: EVQ, FWH	4
51	XAFZZ		81337	SM-C-947156	.PAN, DRAIN UOC: EVQ, FWH	1
52	PAFZZ	5306-00-543-5578	96906	MS16208-68	BOLT, MACHINE UOC: EVQ, FWH	1
53	PAFZZ	5310-00-050-6646	96906	MS17830-6C	NUT, SELF-LOCKING, HE UOC: EVQ, FWH	18
54	PFFZZ	5310-00-582-5677	80205	MS15795-810	WASHER, FLAT UOC: EVQ, FWH	36
55	XBFZZ		81337	SM-D-947235	MTG BRACKET, SKID UOC: EVQ, FWH	3
56	PAFZZ		70276	56517	SCREW UOC: EVQ, FWH	24
57	PFFZZ	5365-01-344-6758	81337	SM-C-947169-1	SHIM UOC: EVQ, FWH	1
58	PFFZZ	5365-01-345-0593	81337	SM-C-947169-2	SHIM UOC: EVQ, FWH	1
59	PFFZZ	5365-01-346-3827	81337	SM-C-947169-3	SHIM UOC: EVQ, FWH	1
60	PFFZZ	5365-01-344-4352	81337	SM-C-947169-4	SHIM UOC: EVQ, FWH	1
61	PAFZZ	5310-01-346-1593	3481	S31B425CS1	NUT, PLAIN, BLIND RIV UOC: EVQ, FWH	24

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
64	PAFZZ	5310-00-883-9417	80205	MS35338-158	WASHER, LOCK.....	6
65	PAFFF	5342-01-239-8427	81337	SC-B-781197	UOC: UOC, EVQ, FWH LATCH LOCK ASSEMBLY.....	1
66	PAFFZ	4030-01-088-2952	96906	MS51844-62	UOC: UOC, EVQ, FWH .SWAGING SLEEVE, WIRE.....	1
67	XAFZZ		80063	SC-B-781198	UOC: UOC, EVQ, FWH .PIN	1
68	XAFZZ		81349	MIL-C-5424	UOC: UOC, EVQ, FWH .ROPE, WIRE.....	1
69	XAFZZ		80063	SC-B-781199	UOC: UOC, EVQ, FWH .TAB.....	1
70	XAFZZ	81337	81337	SC-C-781201	UOC: UOC, EVQ, FWH .SLEEVE, STOP.....	1
71	XAZZF	5340-01-368-2082	81337	SC-B-781204	UOC: UOC, EVQ, FWH KEEPER, SLIDE	1
					UOC: UOC, EVQ, FWH END OF FIGURE	

REPAIR PARTS LIST - (CONTINUED)

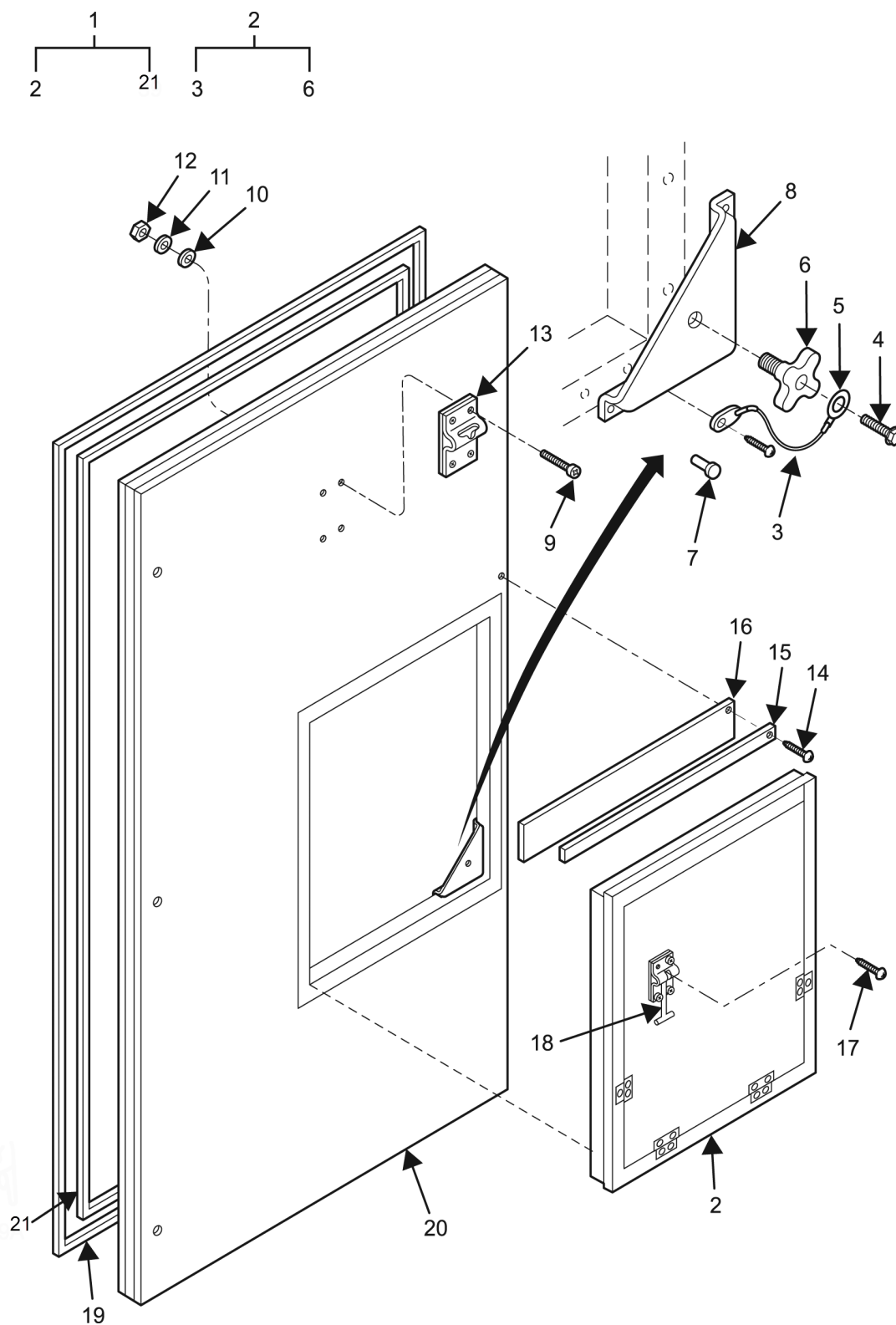


Figure 2. Door Assembly.

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 01 DOOR ASSEMBLY FIGURE 2 Door Assembly.	
1	XDFFF		81337	SM-D-947166	DOOR ASSEMBLY	1
2	PFFFF	5355-01-362-4117	81337	SM-C-450441	UOC: EVQ, FWH .KNOB	1
3	PAFZZ	4030-00-515-4102	70892	13AN	UOC: EVQ, FWH ..FASTENER, BEAD CHAIN	1
4	PAFZZ	5305-00-253-5625	80205	MS21318-46	UOC: EVQ, FWH ..SCREW, DRIVE	1
5	PAFZZ	4010-00-889-2210	70892	13S	UOC: EVQ, FWH ..CHAIN, BEAD	1
6	PBFZZ	5355-01-174-4622	81337	SM-C-615263	UOC: EVQ, FWH ..KNOB	1
7	PAFZZ	5320-00-708-7856	80205	NAS1398D6-8	UOC: EVQ, FWH ..RIVET, BLIND	8
8	PBFZZ	5340-01-346-9863	81337	SM-C-450443	UOC: EVQ, FWH ..BRACKET, MOUNTING	4
9	PAFZZ	5305-00-984-7364	96906	MS35206-273	UOC: EVQ, FWH ..SCREW, MACHINE	4
10	PAFZZ	5310-00-809-8546	96906	MS27183-8	UOC: EVQ, FWH ..WASHER, FLAT	4
11	PAFZZ	5310-00-045-3296	80205	MS35338-43	UOC: EVQ, FWH ..WASHER, LOCK	4
12	PAFZZ	5310-00-934-9758	80205	MS35649-202	UOC: EVQ, FWH ..NUT, PLAIN, HEXAGON	4
13	PAFZZ		19220	AL5601-Z	UOC: EVQ, FWH ..STRIKE, CATCH, KEEPER	1
14	PAFZZ	5320-00-081-8302	80205	NAS1398D6-3	UOC: EVQ, FWH ..RIVET, BLIND	17
15	PFFZZ	5340-01-346-9991	81337	SM-B-450465	UOC: EVQ, FWH ..PLATE, MOUNTING	1
16	PBFZZ	9320-00-134-9663	81337	SM-B-555572-6	UOC: EVQ, FWH ..RUBBER STRIP	1
17	XDFZZ		80205	NAS1398D6-5	UOC: EVQ, FWH ..RIVET, BLIND	4
18	PBFZZ		81337	SM-B-555598-1	UOC: EVQ, FWH ..STRIKE, CATCH	1
19	PBFZZ	5330-00-545-5221	81337	SM-C-564839	UOC: EVQ, FWH ..GASKET, SILICONE	1
					UOC: EVQ, FWH	

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
20	XDFZZ		81337	SM-D-947167	.PANEL ASSEMBLY, DOOR UOC: EVQ, FWH	1
21	XDFZZ		81337	SM-B-564670-3	.SHIELD, EMI UOC: EVQ, FWH END OF FIGURE	1

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 0101 EMERGENCY EXIT PANEL FIGURE 3 Emergency Exit Panel Assembly.	
1	XDFFF		81337	SM-D-450462	.PANEL ASSY, EMERG.-	1
					UOC: EVQ, FWH	
2	PAFZZ	5330-00-545-5221	81337	SM-C-564839	..GASKET	1
					UOC: EVQ, FWH	
3	XDFZZ		72962	2INTU040	..NUT, PLAIN, HEXAGON	4
					UOC: EVQ, FWH	
4	PAFZZ	5310-00-925-9671	81337	SM-D-450462-3	..WASHER, FLAT	8
					UOC: EVQ, FWH	
5	PAFZZ	5340-00-118-0018	81337	SM-B-450447	..LATCH, RIM	4
					UOC: EVQ, FWH	
6	PAFZZ	5320-00-451-9162	80205	NAS1739E4-3	..RIVET, BLIND	8
					UOC: EVQ, FWH	
7	PFFZZ	5365-01-360-9993	81337	SM-B-450448	..SPACER, PLATE	4
					UOC: EVQ, FWH	
8	PAFZZ	5320-00-993-7357	80205	NAS1399D4-5	..RIVET, BLIND	8
					UOC: EVQ, FWH	
9	PAFZZ	5320-00-057-7208	80205	NAS1398D4-4	..RIVET, BLIND	12
					UOC: EVQ, FWH	
10	XDFZZ		81337	SM-D-595081	..STRIKE	4
					UOC: EVQ, FWH	
11	PAFZZ	5999-00-025-9059		SM-C-450466	..SHIELD, EMI.....	1
					UOC: EVQ, FWH	
12	PAFZZ	9330-00-107-1165	80063	SM-C-450466	..SHEET, PLASTIC.....	2
					UOC: EVQ, FWH	
13	PAFZZ	5320-00-069-0055	80205	NAS1398D4-3	..RIVET, BLIND	4
					UOC: EVQ, FWH	
14	PFFZZ	5411-01-343-9018	81337	SM-B-450432	..STRIP-DIVIDER	1
					UOC: EVQ, FWH	
15	PFFZZ	5411-01-343-9019	81337	SM-B-450435	..CORNER GUSSET	4
					UOC: EVQ, FWH	
16	XDFZZ		81337	SM-D-450462-10	..SCREW, MACHINE	92
					UOC: EVQ, FWH	
17	XDFZZ		81337	SM-C-615264	..INTAKE LOUVER ASSY	1
					UOC: EVQ, FWH	
18	XDFZZ	5310-01-364-3122	81337	SM-C-615262-1	..NUT STRIP	2
					UOC: EVQ, FWH	
19	XDFZZ	5310-01-347-5252	81337	SM-C-615262-2	..NUT STRIP	2
					UOC: EVQ, FWH	
20	PAFZZ	5825-00-937-5248	80063	SCD621052	..SHIELD KIT	1
					UOC: EVQ, FWH	

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
21	PAFZZ	5999-00-196-1299	81337	SM-B-450436-1	..TAPE, WIRE MESH	1
					UOC: EVQ, FWH	
22	PAFZZ	4130-00-007-2526	81337	SM-C-450478	..FILTER ELEMENT	1
					UOC: EVQ, FWH	
					END OF FIGURE	

REPAIR PARTS LIST - (CONTINUED)

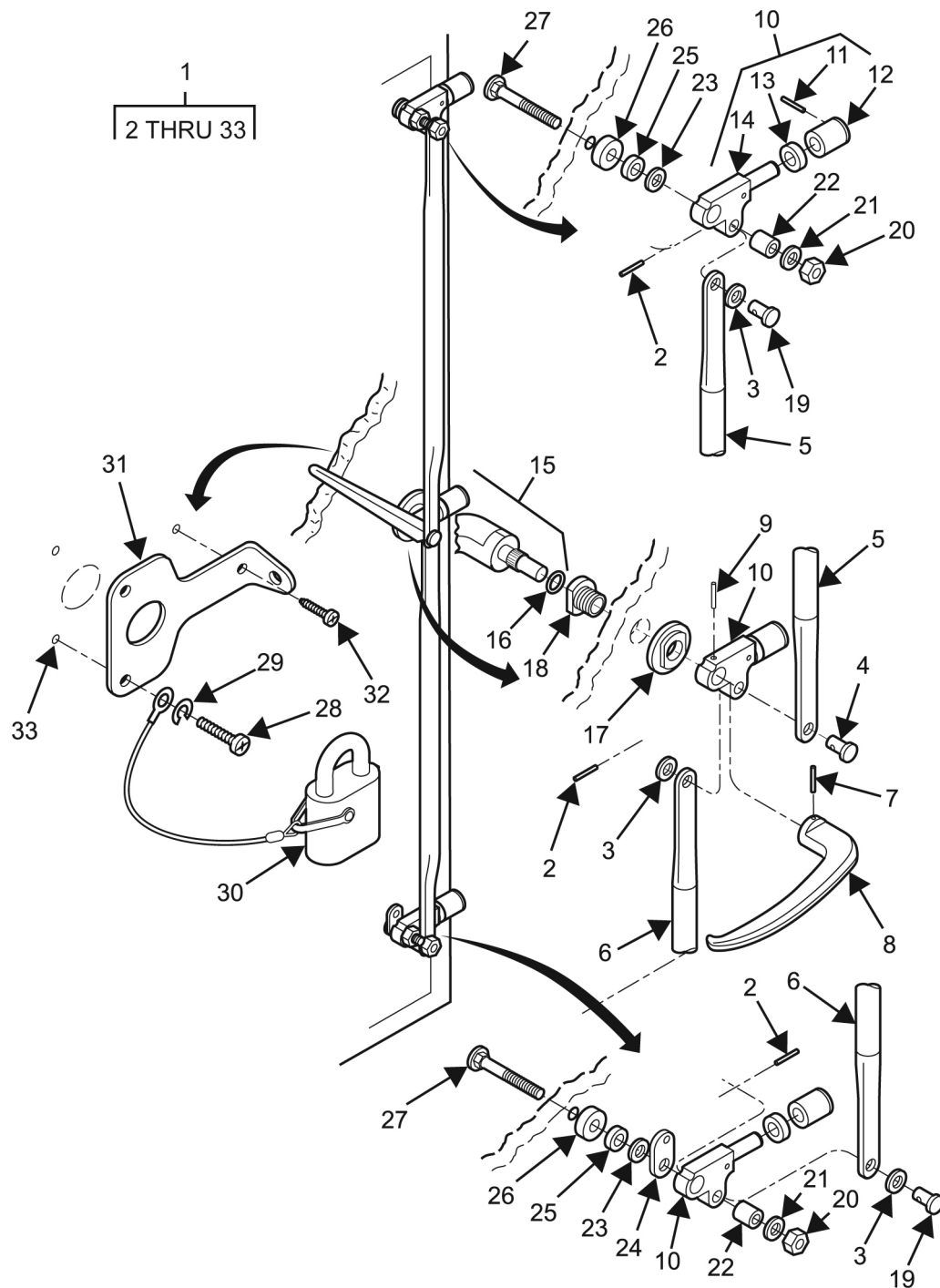


Figure 4. Door Latch Assembly.

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 02 DOOR LATCH ASSEMBLY FIGURE 4 Door Latch Assembly.	
1	PBFFF	5342-00-794-4440	81337	SC-D-200140	DOOR LATCH ASSY	1
2	PAFZZ	5310-00-881-2253	80205	MS16562-221	UOC: EVQ, FWH .PIN, SPRING	3
3	PAFZZ	5310-00-183-4355	88044	AN960C616L	UOC: EVQ, FWH .WASHER, FLAT	4
4	PAFZZ	5315-00-957-2649	96906	MS20392-5C33	UOC: EVQ, FWH .PIN, STRAIGHT, HEADED	1
5	XDFZZ		81337	SC-D-563202GRII	UOC: EVQ, FWH .ROD, STRAIGHT, HEADLE	1
6	PAFZZ	5342-00-793-1099	81337	SCD563202GRI	UOC: EVQ, FWH .ROD, SPECIAL	1
7	PAFZZ	5315-00-846-8337	80205	MIL-P-10971	UOC: EVQ, FWH .PIN, SPRING	1
8	PAFZZ	5340-00-794-4610	81337	SMB113596	UOC: EVQ, FWH .HANDLE, DOOR	1
9	PAFZZ	5315-00-062-5417	80205	MS35674-41	UOC: EVQ, FWH .PIN, GROOVED, HEADLESS	1
10	PAFFF	5342-00-229-5747	81337	SC-C-200141	UOC: EVQ, FWH .LATCH ARM ASSEMBLY	3
11	PBFZZ	5315-00-754-1844	96906	MS171528	UOC: EVQ, FWH ..PIN, SPRING	1
12	XAFZZ		80063	SCB200143	UOC: EVQ, FWH ..ROLLER-LATCH	1
13	XAFZZ		80063	SCB200144	UOC: EVQ, FWH ..ROLLER-EXTENSION	1
14	XAFZZ		80063	SCC200142	UOC: EVQ, FWH ..ARM-LATCH	1
15	PAFZZ		81337	SM-C-113597	UOC: EVQ, FWH .HANDLE, DOOR OUTSIDE	1
16	PAFZZ	5331-00-248-3847	81337	SM-C-113597	UOC: EVQ, FWH ..O-RING	1
17	PBFZZ	5310-00-307-1519	80063	SCB200150	UOC: EVQ, FWH .NUT, PLAIN, ROUND	1
18	PAFZZ	5365-01-342-9977	80063	SC-B-200151	UOC: EVQ, FWH .BUSHING, MACHINE THR	1
19	PAFZZ	5315-00-075-5828	96906	MS20392-5C23	UOC: EVQ, FWH .PIN, STRAIGHT, HEADED	2
					UOC: EVQ, FWH	

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
20	PAFZZ	5310-01-422-0760	80205	MS17830-10C	.NUT, SELF-LOCKING, HE..... UOC: EVQ, FWH	2
21	PAFZZ	5310-00-301-4558	81337	SCB200146	.WASHER, FLAT UOC: EVQ, FWH	2
22	PAFZZ	5365-00-263-9560	81337	SC-B-200145	.SPACER, SLEEVE..... UOC: EVQ, FWH	2
23	PFFZZ	5365-00-037-8762	80063	SMB615259-2	.SPACER, RING..... UOC: EVQ, FWH	1
24	PBFZZ	5342-01-082-3431	81337	SC-B-595073	.DETENT..... UOC: EVQ, FWH	1
25	PFFZZ	5365-01-345-2924	81337	SC-D-20014 ITEM	.WASHER, SHIM..... UOC: EVQ, FWH	2
26	PFFZZ	5365-00-173-7010	81337	SM-B-615259-1	.SPACER, PLATE..... UOC: EVQ, FWH	2
27	PFFZZ	5306-01-345-2437	80063	SM-B-162200	.BOLT, SQUARE NECK UOC: EVQ, FWH	2
28	PAFZZ	5305-00-050-9230	96906	MS51957-64	.SCREW, MACHINE UOC: EVQ, FWH	1
29	PAFZZ	5310-00-869-9576	80205	MS35338-157	.WASHER, LOCK..... UOC: EVQ, FWH	1
30	PAFZZ	5340-01-239-8705	81337	SC-C-595537	.PADLOCK UOC: EVQ, FWH	1
31	XDFZZ		80063	SM-C-615255	.PLATE, ESCUTCHEON..... UOC: EVQ, FWH	1
32	PFFZZ	5305-00-533-5446	96906	MS35493-53	.SCREW, WOOD UOC: EVQ, FWH	2
33	PBFZZ	5325-00-143-0394	96906	MS35914-149	.INSERT, SCREW THREAD UOC: EVQ, FWH	1
					END OF FIGURE	

REPAIR PARTS LIST - (CONTINUED)

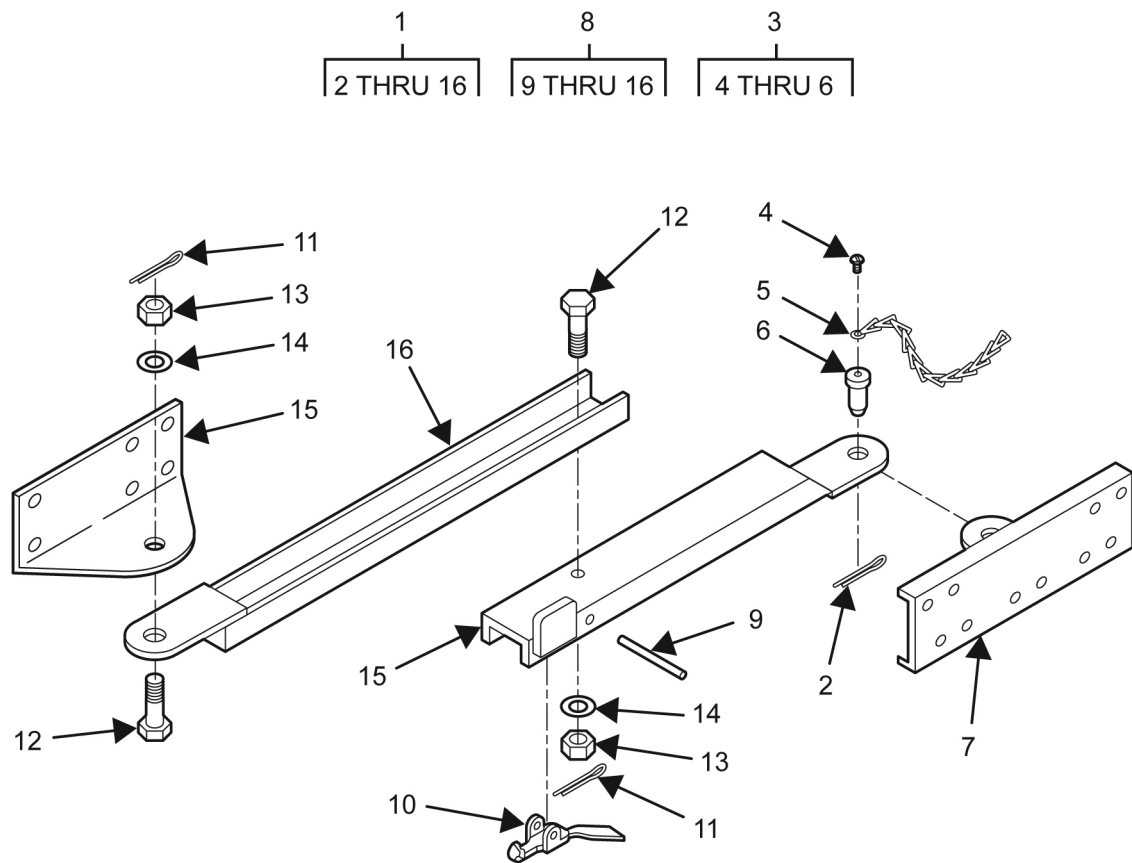


Figure 5. Door Brace Assembly.

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 03 DOOR BRACE ASSEMBLY FIGURE 5 Door Brace Assembly.	
1	PAFFF	5410-01-276-7663	81337	SC-D-595548	DOOR BRACE ASSEMBLY	1
					UOC: EVQ, FWH	
2	PAFZZ	5315-01-359-1451	96906	MS24665-285	..PIN, COTTER	1
					UOC: EVQ, FWH	
3	PBFFF	4010-00-436-3300	80063	SMB340027	..PIN AND CHAIN ASSY	1
					UOC: EVQ, FWH	
4	PAFZZ	5305-00-253-5622	80205	MS21318-41	..SCREW, DRIVE	1
					UOC: EVQ, FWH	
5	XDFZZ		1BD74	3607T24	..CHAIN, SASH	1
					UOC: EVQ, FWH	
6	PBFZZ	5315-00-890-3461	96906	MS20392-6C17	..PIN, STRAIGHT, HEADED	1
					UOC: EVQ, FWH	
7	PFFZZ	5340-01-174-7366	81337	SM-C-340028	..BRACKET, DOOR STOP	1
					UOC: EVQ, FWH	
8	PBFFF	5410-00-007-5164	81337	SC-D-595078	..DOOR BRACE ASSEMBLY	1
					UOC: EVQ, FWH	
9	PAFZZ	5315-00-058-9756	80205	MS16562-227	..PIN, SPRING	1
					UOC: EVQ, FWH	
10	PFFZZ	5340-01-175-9152	81337	SC-C-595039	..STRIKE, CATCH	1
					UOC: EVQ, FWH	
11	PAFZZ	5315-00-234-1863	80205	MS24665-300	..PIN, COTTER	2
					UOC: EVQ, FWH	
12	PFFZZ	5306-01-274-6069	88044	AN7C7	..BOLT, MACHINE	2
					UOC: EVQ, FWH	
13	PAFZZ	5310-00-167-1283	80205	AN310C7	..NUT, PLAIN, CASTELLAT	2
					UOC: EVQ, FWH	
14	XDFZZ		80205	AN960C716	..WASHER, FLAT	2
					UOC: EVQ, FWH	
15	PFFZZ	5410-01-183-2376	81337	SCC200158	..BRACE ASSY	1
					UOC: EVQ, FWH	
16	PFFZZ	5340-01-154-5276	81337	SCC200157	..BRACE ASSY	1
					UOC: EVQ, FWH	
					END OF FIGURE	

REPAIR PARTS LIST - (CONTINUED)

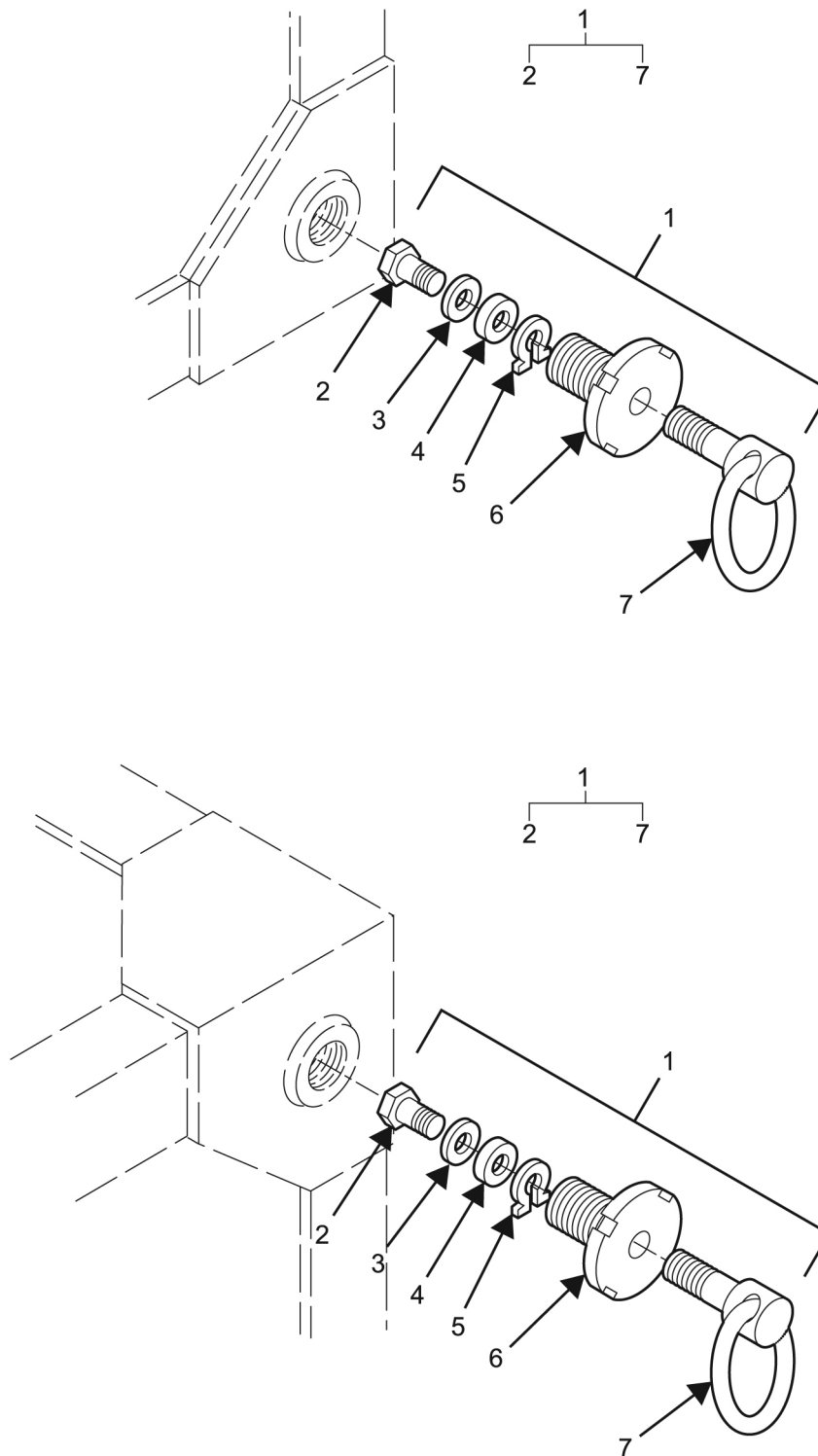


Figure 6. Towing Eye Assembly (Top); Lifting & Tiedown Eye Assembly (Bottom).

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 04 TOWING EYE ASSEMBLY and LIFTING & TIEDOWN EYE ASSEMBLY	
					FIGURE 6 Towing Eye Assembly (Top); Lifting & Tiedown Eye Assembly (Bottom).	
1	XDFFF		81337	SM-C-947147	EYE, TOWING ASSY.....	4
					UOC: EVQ, FWH	
1	XDFFF		81337	SM-C-947147	BOLT, EYE	4
					UOC: EVQ, FWH	
2	PFFZZ	5306-01-270-5453	81337	SM-B-947152	.BOLT, EXTERNALLY REL	1
					UOC: EVQ, FWH	
3	PBFZZ	5310-01-270-1743	81337	SM-B-947234	.WASHER, FLAT	1
					UOC: EVQ, FWH	
4	PFFZZ	5365-01-300-7150	81337	SM-B-947151	.SPACER, RING.....	1
					UOC: EVQ, FWH	
5	PBFZZ	5325-01-128-5300	96906	MS3217-4098	.RING, RETAINING	1
					UOC: EVQ, FWH	
6	PFFZZ	5365-01-346-2016	81337	SM-B-947149	.BUSHING, MACHINE THR	1
					UOC: EVQ, FWH	
7	PBFZZ	5411-01-343-9021	5Z539	SM-C-947177	.RING, CONNECTING, ROU	1
					UOC: EVQ, FWH	
					END OF FIGURE	

REPAIR PARTS LIST - (CONTINUED)

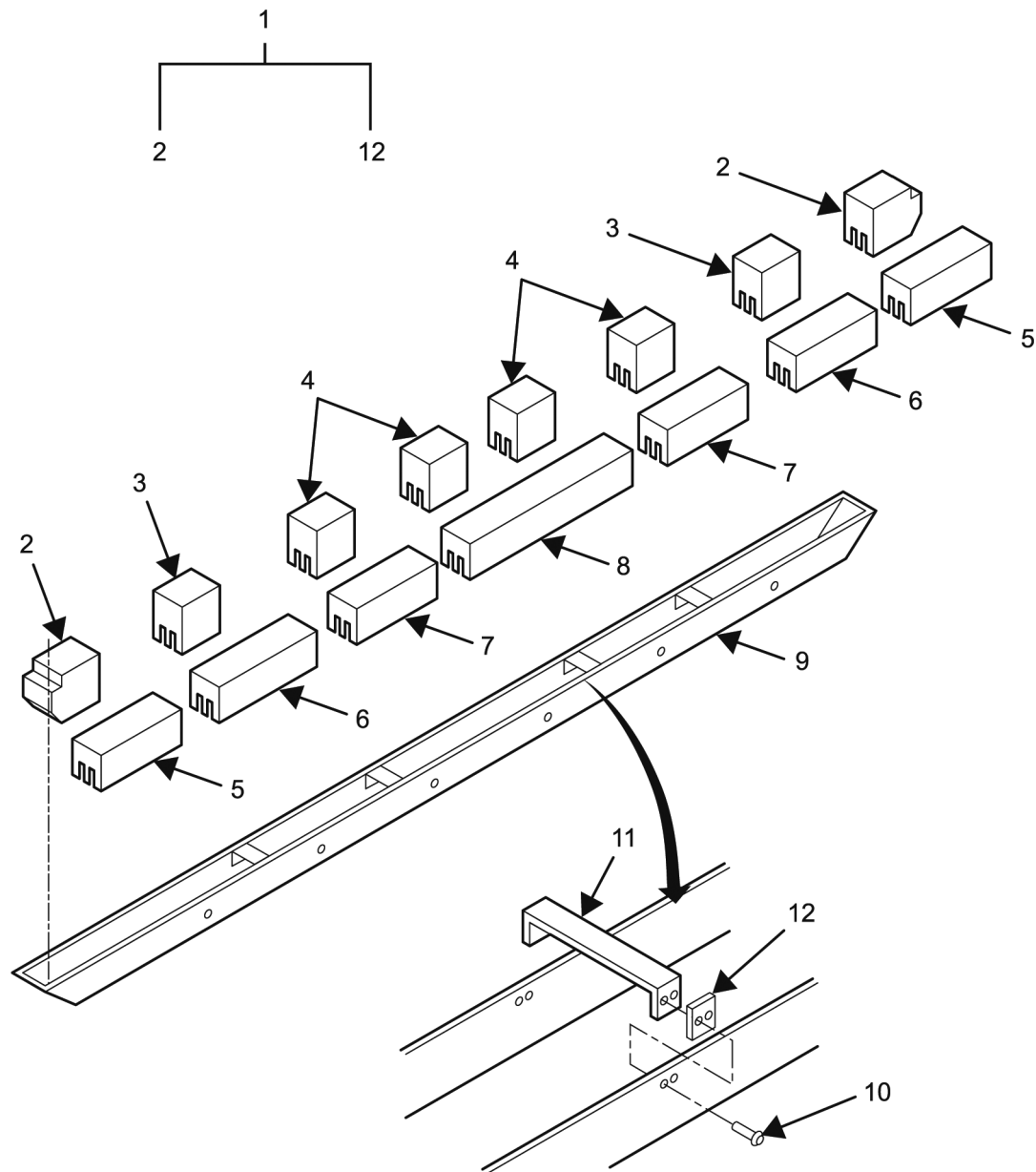


Figure 7. Skid Assembly.

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 05 SKID ASSEMBLY FIGURE 7 Skid Assembly.	
1	PFFFF	5411-01-343-9020	81337	SM-D-947238	SKID ASSEMBLY, SHELT	3
2	PFFZZ	5340-01-185-4972	81337	SMC 947230	UOC: EVQ, FWH .BUMPER	2
3	XDFZZ		81337	SM-C-947237	UOC: EVQ, FWH .BUMPER, NONMETALLIC	2
4	PFFZZ	5342-00-794-4243	81337	SM-C-555515-3	UOC: EVQ, FWH .SHOCK MOUNT SKID	4
5	XAFZZ		81337	SM-C-947174-5	UOC: EVQ, FWH .CORE	2
6	XAFZZ		81337	SM-C-947174-3	UOC: EVQ, FWH .CORE	2
7	XAFZZ		81337	SM-C-947174-2	UOC: EVQ, FWH .CORE	2
8	XAFZZ		81337	SM-C-947174-4	UOC: EVQ, FWH .CORE	1
9	XAFZZ		81337	SM-D-947236	UOC: EVQ, FWH .SKIDRUNNER WELD	1
10	PBFZZ	5320-00-012-0747	80205	NAS1399D6-6	UOC: EVQ, FWH .RIVET, BLIND	16
11	XAFZZ		81337	SM-B-555506	UOC: EVQ, FWH .BRACKET, CHANNEL	4
12	XAFZZ		81337	SC-B-595498	UOC: EVQ, FWH .SHIM, LAMINATED	1
					UOC: EVQ, FWH END OF FIGURE	

REPAIR PARTS LIST - (CONTINUED)

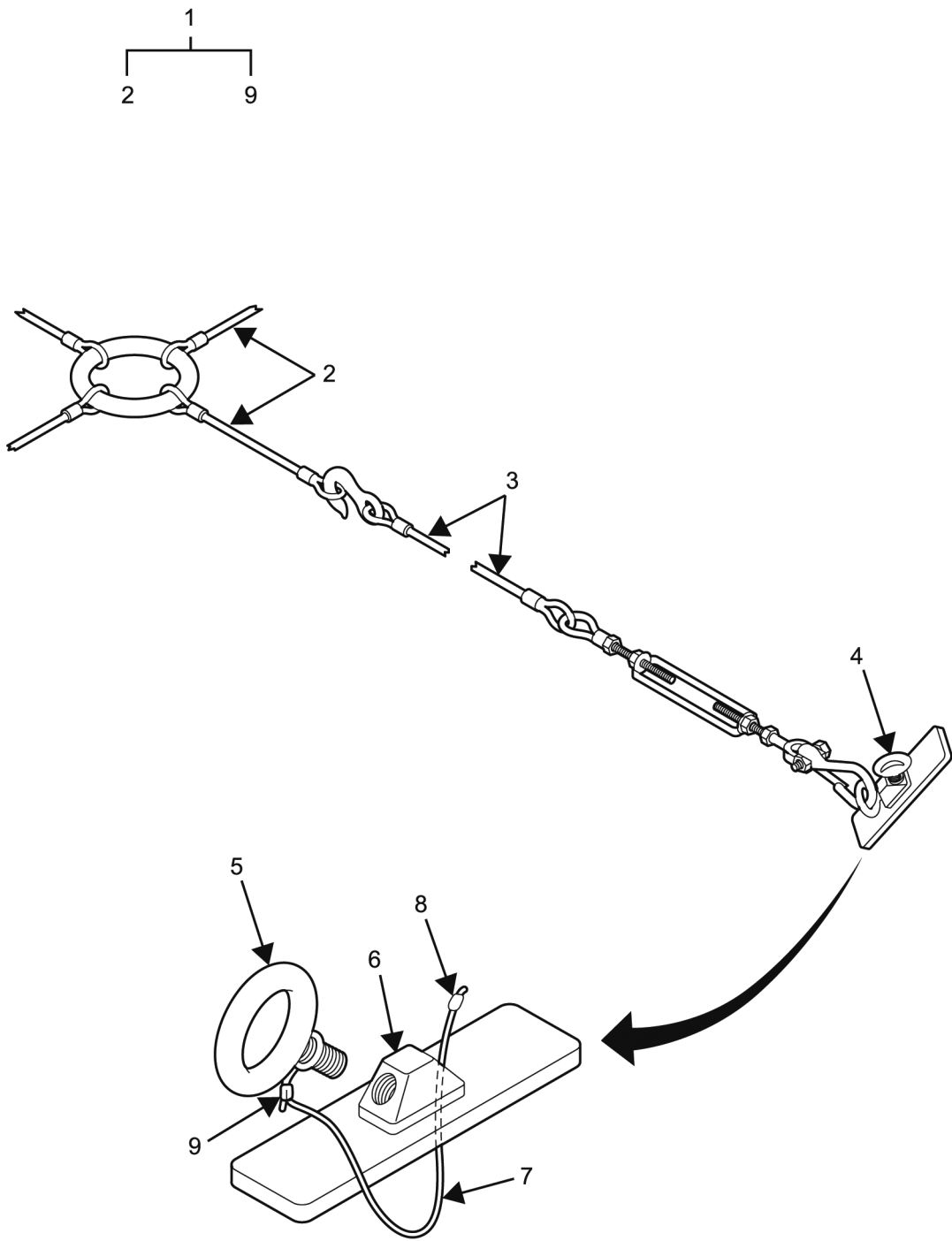


Figure 8. Hold Down Assembly.

REPAIR PARTS LIST - (CONTINUED)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
					GROUP 06 HOLD DOWN ASSEMBLY FIGURE 8 Hold Down Assembly.	
1	PAFFF	3940-00-805-5533	81337	SC-D-36423	SLING, MULTIPLE LEG	1
					UOC: EVQ, FWH	
2	XDFZZ		81337	17-1-5304	.RING ASSEMBLY	1
					UOC: EVQ, FWH	
3	PAFZZ	4010-01-460-6670	81337	SC-D-36424	.WIRE ROPE ASSEMBLY,	1
					UOC: EVQ, FWH	
4	PAFZZ	5410-00-030-6925	81337	SC-C-595076	.PLATE AND EYEBOLT A.....	2
					UOC: EVQ, FWH	
5	XDFZZ		81337	SC-B-595075	.BOLT, EYE	2
					UOC: EVQ, FWH	
6	PFFZZ	5340-01-344-6918	81337	SC-D-595074	.PLATE, MOUNTING.....	1
					UOC: EVQ, FWH	
7	XBFZZ		81337	SC-D-595076-1	.CABLE	2
					UOC: EVQ, FWH	
8	PBFZZ	4030-00-466-2575	76691	871-1Q	.SLEEVE	1
					UOC: EVQ, FWH	
9	PBFZZ	4030-00-431-5536	76691	28-1-C	.SWAGING, SLEEVE, WIRE 1.....	1
					UOC: EVQ, FWH	
					END OF FIGURE	

FIELD MAINTENANCE

NATIONAL STOCK NUMBER (NSN) CROSS REFERENCE

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
5410-00-007-5164	5	8			13
5320-00-012-0747	7	10	5305-00-533-5446	1	19
5305-00-021-3620		2		2	32
5410-00-030-6925	8	4	5306-00-543-5578	1	48
5365-00-037-8762	2	23	5330-00-545-5221		19
5310-00-045-3296		11			22
5310-00-050-6646	1	49	5310-00-582-5677	1	50
5305-00-050-9230	2	28	5310-00-625-5756	1	28
5305-00-052-7436	1	18	5306-00-637-8062	1	20
5320-00-057-7208		29	5320-00-708-7856		7
5315-00-058-9756	5	9	5315-00-754-1844	2	11
5315-00-058-9784	1	34	5342-00-793-1099	2	6
5315-00-062-5417	2	9	5342-00-794-4243	7	4
5320-00-069-0055		32	5342-00-794-4440	2	1
5315-00-075-5828	2	19	5340-00-794-4610	2	8
5320-00-081-8302		14	3940-00-805-5533	8	1
9330-00-107-1165		31	5310-00-807-1469	1	27
5320-00-117-6853	1	4	5310-00-809-8546		10
5340-00-118-0018		25	5340-00-836-1938	1	5
9320-00-134-9663		16	5315-00-846-8337	2	7
5325-00-143-0394	2	33	5310-00-869-9576	2	29
5310-00-167-0803	1	30	5320-00-874-4471	1	9
5310-00-167-1283	5	13	5320-00-882-8388	1	41
5365-00-173-7010	2	26	5310-00-883-9417		3
5306-00-182-1513	1	29	4010-00-889-2210		5
5306-00-182-1514	1	26	5315-00-890-3461	5	6
5310-00-183-4355	2	3	5340-00-917-6104	1	33
5305-00-207-8253		1	5410-00-919-4958		3
5342-00-229-5747	2	10	5310-00-925-9671		24
5410-00-231-6429		11	5410-00-933-0845	1	3
5315-00-234-1863	5	11	5310-00-934-9758		12
5331-00-248-3847	2	16	5310-00-945-4429	1	37
5305-00-253-5622	5	4	5320-00-956-7355	1	7
5305-00-253-5625		4		1	43
4030-00-262-1574		3	5320-00-956-7362	1	1
5365-00-263-9560	2	22	5315-00-957-2649	2	4
5310-00-301-4558	2	21	5320-00-957-3582	1	46
5310-00-307-1519	2	17	5305-00-984-7364		9
5310-00-398-2189	2	20	5325-00-989-4535	1	23
4030-00-431-5536	8	9	5320-00-993-7357		28
4010-00-436-3300	5	3	1015-01-019-7117	2	2
5320-00-451-9162		26	5320-01-032-6534	1	2
4030-00-466-2575	8	8	5315-01-061-2060	5	2
5340-00-493-9235	1	8	5342-01-082-3431	2	24

NATIONAL STOCK NUMBER (NSN) CROSS REFERENCE - (CONTINUED)

STOCK NUMBER	FIG.	ITEM	STOCK NUMBER	FIG.	ITEM
4030-01-088-2952		5	5411-01-343-9020	7	1
5310-01-097-6608	1	11	5411-01-343-9021		7
5342-01-114-2139		1	5365-01-344-4352	1	56
5325-01-128-5300	6	5	5315-01-344-5995	1	35
		5	5365-01-344-6758	1	53
5340-01-154-5276	5	16	5340-01-344-6918	8	6
5340-01-155-3503	1	21	5365-01-345-0593	1	54
5355-01-174-4622		6	5306-01-345-2437	2	27
		18	5365-01-345-2924	2	25
5340-01-174-7366	5	7	5310-01-346-1593	1	39
5340-01-175-9152	5	10		1	57
5410-01-183-2376	5	15	5365-01-346-2016	6	6
5340-01-185-4972	7	2			6
5342-01-239-8427		4	5306-01-346-3451		1
5340-01-239-8705	2	30	5365-01-346-3827	1	55
4510-01-245-3752	1	44	5340-01-346-9863		8
5310-01-270-1743	6	3	5340-01-346-9991		15
5310-01-270-1743		3	5310-01-347-5252		38
5306-01-270-5453	6	2	5340-01-355-5082	1	38
		2	5340-01-355-5083	1	36
5365-01-271-4763	1	22	5310-01-360-9045		2
5306-01-274-6069	5	12	5365-01-360-9993		27
5410-01-276-7663	5	1	5365-01-361-0034	6	7
5320-01-295-9924	1	13	4510-01-361-8324	1	40
5365-01-300-7150	6	4	5355-01-362-4117		2
		4	5310-01-364-3122		37
5410-01-302-6277	1	6	5340-01-368-2082		10
5365-01-342-9977	2	18	4010-01-460-6670	8	3
5411-01-343-9018		33	5340-01-574-3834	1	42
5411-01-343-9019		34			

END OF WORK PACKAGE

FIELD MAINTENANCE
PART NUMBER CROSS REFERENCE

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
AD42H	1	13	MS35307-308		1
AD45H	1	9	MS35338-157	2	29
AD62H	1	1	MS35338-158		3
AL-15951		4	MS35338-43		11
AL3-575709		1	MS35493-53	1	19
AL5601-Z	1	8	MS35493-53	2	32
AN101011	1	20	MS35649-202		12
AN310C7	5	13	MS35674-41	2	9
AN5C25A	1	29	MS35914-149	2	33
AN5C26A	1	26	MS35914-150	1	23
AN7C7	5	12	MS51844-62		5
AN960C616L	2	3	MS51957-64	2	28
AN960C716	5	14	NAS1149C0563R	1	30
M24243/6-A402F	1	46	NAS1329C08B120	1	11
M24243/6A403H	1	41	NAS1398D4-3		32
M24243/6-A608H	1	2	NAS1398D4-4		29
MIL-C-5424		7	NAS1398D6-3		14
MS15795-810	1	50	NAS1398D6-5		17
MS15795-812	1	28	NAS1398D6-8		7
MS16208-68	1	48	NAS1399D4-5		28
MS16562-221	2	2	NAS1399D6-6	7	10
MS16562-227	5	9	NAS1739E4-3		26
MS16562-237	1	34	NAS561C-26	2	7
MS171528	2	11	S31B425CS1	1	39
MS17830-10C	2	20		1	57
MS17830-6C	1	49	SCB200143	2	12
MS18012-3	1	5	SCB200144	2	13
MS20392-5C23	2	19	SC-B-200145	2	22
MS20392-5C33	2	4	SCB200146	2	21
MS20392-6C17	5	6	SCB200150	2	17
MS20470AD6-8	1	4	SC-B-200151	2	18
MS21042-5	1	27	SC-B-200153-1		12
MS21318-41	5	4	SC-B-595073	2	24
MS21318-46		4	SC-B-595075	8	5
MS24617-54	1	18	SC-B-595498	7	12
MS24665-285	5	2	SC-B-781197		4
MS24665-300	5	11	SC-B-781198		6
MS27183-8		10	SC-B-781199		8
MS29513-115	2	16	SC-B-781204		10
MS3217-4098	6	5	SCC200135	1	21
		5	SC-C-200141	2	10
MS35206-273		9	SCC200142	2	14
MS35307-307		2	SCC200154		11

PART NUMBER CROSS REFERENCE - (CONTINUED)

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
SCC200157	5	16	SM-B-947228	1	12
SCC200158	5	15	SM-B-947229	1	15
SC-C-595039	5	10	SM-B-947231	1	22
SC-C-595076	8	4	SM-B-947234	6	3
SC-C-595537	2	30	SM-B-947234		3
SC-C-781201		9	SM-B-947239	1	17
SC-D-20014 ITEM	2	25	SMC 947230	7	2
SC-D-200140	2	1	SM-C-113597	2	15
SC-D-36423	8	1	SM-C-165382	1	3
SC-D-36424	8	3	SM-C-165383	1	6
SCD563202GRI	2	6	SM-C-165466	1	14
SC-D-563202GR II	2	5	SMC317057	1	33
SC-D-595074	8	6	SM-C-340028	5	7
SC-D-595076-1	8	7	SM-C-450441		2
SC-D-595078	5	8	SM-C-450443		8
SC-D-595548	5	1	SM-C-450466		31
SMB113596-1	2	8	SM-C-508783	1	36
SM-B-162197-2	1	31	SM-C-508784	1	38
SM-B-162200	2	27	SM-C-555515-3	7	4
SM-B-317129	1	37	SM-C-564811	1	24
SMB340027	5	3	SM-C-564839		19
SM-B-340031	1	16			22
SM-B-450432		33	SM-C-615255	2	31
SM-B-450435		34	SM-C-615262-1		37
SM-B-450447		25	SM-C-615262-2		38
SM-B-450448		27	SM-C-615263		6
SM-B-450465		15			18
SM-B-508785	1	35	SM-C-615264		36
SM-B-555506	7	11	SM-C-947147	6	1
SM-B-555572-6		16	SM-C-947155	1	42
SM-B-555598-2		13	SM-C-947156	1	47
SM-B-595079	1	15	SM-C-947169-1	1	53
SM-B-615256	1	25	SM-C-947169-2	1	54
SM-B-615259-1	2	26	SM-C-947169-3	1	55
SMB615259-2	2	23	SM-C-947169-4	1	56
SM-B-947146	1	32	SM-C-947174-2	7	7
SM-B-947148	6	7	SM-C-947174-3	7	6
SM-B-947149	6	6	SM-C-947174-4	7	8
SM-B-947149		6	SM-C-947174-5	7	5
SM-B-947151	6	4	SM-C-947176		1
SM-B-947151		4	SM-C-947177		7
SM-B-947152	6	2	SM-C-947237	7	3
		2	SM-D-450462		21
SM-B-947157	1	45	SM-D-450462-10		35
SM-B-947164	1	10	SM-D-450462-3		24

PART NUMBER CROSS REFERENCE - (CONTINUED)

PART NUMBER	FIG.	ITEM	PART NUMBER	FIG.	ITEM
SM-D-595081		30	5-4-4783	8	9
SM-D-947154	1	40	13AN		3
SM-D-947154-4	1	44	13S		5
SM-D-947166		1	1-585809-25		3
SM-D-947167		20	17-1-5304	8	2
SM-D-947235	1	51	2INTU040		23
SM-D-947236	7	9	3607T24	5	5
SM-D-947238	7	1	5-4-1303-76	1	7
15949		2	5-4-1303-76	1	43
56517	1	52	871-1Q	8	8

END OF WORK PACKAGE

CHAPTER 8
SUPPORTING INFORMATION
FOR
S-280C/G UNSHIELDED (NSN 5411-01-092-0892)
S-280C/G SHIELDED (NSN 5411-01-304-3069)

FIELD MAINTENANCE

REFERENCES

SCOPE

This appendix lists forms, pamphlets, field manuals, technical manuals, military specifications, military standards, technical bulletins, technical circulars and common table of allowances in this manual.

FORMS AND RECORDS

AR 700-138	Army Logistics Readiness and Sustainability
AR 750-1	Army Materiel Maintenance Policy
CTA 8-100	Army Medical Department Expendable/Durable Items
DA Form 2028	Recommended Changes to Publications and Blank Forms
DA Form 2404	Equipment Inspection and Maintenance Worksheet
DA Form 2408-9	Equipment Control Record
DA PAM 25-30	Consolidated Index of Army Publications and Blank Forms
DA PAM 738-750	Functional Users Manual for the Army Maintenance Management System (TAMMS)
DA PAM 738-751	Functional Users Manual for the Army Maintenance Management System – Aviation (TAMMS-A)
DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual
SF 361	Transportation Discrepancy Report (TDR)
SF 368	Quality Deficiency Report (QDR)

MILITARY SPECIFICATIONS

CCC-C-440	Cloth, Cheesecloth, Cotton, Bleached and Unbleached
MIL-C-22750	Coating, Epoxy, Polyamide
MIL-C-46168	Coating, Aliphatic, Polyurethane, Chemical Agent Resisting
MIL-C-46188	Polyurethane, Lusterless Green 383
MIL-L-23398	Lubricant, Solid Film, Air Drying, Corrosion Inhibiting
MIL-M-13231	Marking of Electronic Items
MIL-S-8802	Sealing Compound, Temperature-Resistant, Integral Fuel Tank and Fuel Cell Cavities, High Adhesion Sealant
MIL-S-8660C	Silicone Compound, NATO Code Number S-736
QQ-A-200/8	Aluminum Alloy, Bar, Rod, Shapes, Tube and Wire, Extruded
QQ-A-250/11	Aluminum Alloy 6061, Plate and Sheet
TT-T-306	Thinner, Synthetic Resin, Enamels
TT-T-548	Toluene, Technical Grade

TECHNICAL MANUALS AND BULLETINS

CTA 8-100	Army Medical Department Expendable/Durable Items
CTA 50-909	Field and Garrison Furnishings and Equipment
CTA 50-970	Expendable/Durable Items
FM 4-25.11	First Aid
FM 21-11	Artificial Respiration (First Aid Procedures)
TB 10-5411-207-14	Warranty Program for Electrical Equipment Shelters (Gichner)
TB 10-5411-207-24-1	Warranty Program for Electrical Equipment Shelters (Ramim)
TM 43-0139	Painting Instructions for Field Use
TM 750-244-3	Destruction of Army Material to Prevent Enemy Use

END OF WORK PACKAGE

FIELD MAINTENANCE

MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION

The Army Maintenance System MAC

This introduction provides a general explanation of all maintenance and repair functions authorized at the two maintenance levels under the Two-Level Maintenance System concept.

This MAC (immediately following the introduction) designates overall authority and responsibility for the performance of maintenance functions on the identified end item or component. The application of the maintenance functions to the end item or component shall be consistent with the capacities and capabilities of the designated maintenance levels, which are shown on the MAC in column (4) as:

Field – includes two subcolumns, Crew (C) and Maintainer (F).

Sustainment – includes two subcolumns, Below Depot (H) and Depot (D).

The maintenance to be performed at field and sustainment levels is described as follows:

1. Crew maintenance. The responsibility of a using organization to perform maintenance on its assigned equipment. It normally consists of inspecting, servicing, lubricating, adjusting, and replacing parts, minor assemblies, and subassemblies. The replace function for this level of maintenance is indicated by the letter "C" in the third position of the Source, Maintenance, and Recoverability (SMR) code. A "C" appearing in the fourth position of the SMR code indicates complete repair is possible at the crew maintenance level.
2. Maintainer maintenance. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "F" appearing in the third position of the SMR code. An "F" appearing in the fourth position of the SMR code indicates complete repair is possible at the field maintenance level. Items are returned to the user after maintenance is performed at this level.
3. Below depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "H" appearing in the third position of the SMR code. An "H" appearing in the fourth position of the SMR code indicates complete repair is possible at the below depot sustainment maintenance level. Items are returned to the supply system after maintenance is performed at this level.
4. Depot sustainment. Maintenance accomplished on a component, accessory, assembly, subassembly, plug-in unit, or other portion either on the system or after it is removed. The replace function for this level of maintenance is indicated by the letter "D" or "K" appearing in the third position of the SMR code. Depot sustainment maintenance can be performed by either depot personnel or contractor personnel. A "D" or "K" appearing in the fourth position of the SMR code indicates complete repair is possible at the depot sustainment maintenance level. Items are returned to the supply systems after maintenance is performed at this level.

The tools and test equipment requirements table (immediately following the MAC) lists the tools and test equipment (both special tools and common tool sets) required for each maintenance function as referenced from the MAC.

The remarks table (immediately following the tools and test equipment requirements) contains supplemental instructions and explanatory notes for a particular maintenance function.

Maintenance Functions

Maintenance functions are limited to and defined as follows:

1. Inspect. To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination (e.g., by sight, sound, or feel). This includes scheduled inspection and gauging, and evaluation of cannon tubes.
2. Test. To verify serviceability by measuring the mechanical, pneumatic, hydraulic, or electrical characteristics of an item and comparing those characteristics with prescribed standards on a scheduled basis, i.e., load testing of lift devices and hydrostatic testing of pressure hoses.
3. Service. Operations required periodically to keep an item in proper operating condition, e.g., to clean (includes decontaminate, when required), to preserve, to drain, to paint, or to replenish fuel, lubricants, chemical fluids, or gases. This includes scheduled exercising and purging of recoil mechanisms. The following are examples of service functions:

MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION - (CONTINUED)

- a. Unpack. To remove from packing box for service or when required for the performance of maintenance operations.
- b. Repack. To return item to packing box after service and other maintenance operations.
- c. Clean. To rid the item of contamination.
- d. Touch up. To spot paint scratched or blistered surfaces.
- e. Mark. To restore obliterated identification.
4. Adjust. To maintain or regulate, within prescribed limits, by bringing into proper position, or by setting the operating characteristics to specified parameters.
5. Align. To adjust specified variable elements of an item to bring about optimum or desired performance.
6. Calibrate. To determine and cause corrections to be made or to be adjusted on instruments of test, measuring, and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.
7. Remove/install. To remove and install the same item when required to perform service or other maintenance functions. Install may be the act of placing, seating, or fixing into position a spare, repair part, or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.
8. Paint (ammunition only). To prepare and spray color coats of paint so that the ammunition can be identified and protected. The color indicating primary use is applied, preferably, to the entire exterior surface as the background color of the item. Other markings are to be repainted as original so as to retain proper ammunition identification.
9. Replace. To remove an unserviceable item and install a serviceable counterpart in its place. "Replace" is authorized by the MAC and assigned maintenance level is shown as the third position code of the SMR code.
10. Repair. The application of maintenance services, including fault location/troubleshooting, removal/installation, disassembly/assembly procedures and maintenance actions to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item, or system.

NOTE

The following definitions are applicable to the "repair" maintenance function:

Services. Inspect, test, service, adjust, align, calibrate, and/or replace.

Fault location/troubleshooting. The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or Unit Under Test (UUT).

Disassembly/assembly. The step-by-step breakdown (taking apart) of a spare/functional group coded item, to the level of its least component, that is assigned an SMR code for the level of maintenance under consideration (i.e., identified as maintenance significant).

Actions. Welding, grinding, riveting, straightening, facing, machining, and/or resurfacing.

11. Overhaul. That maintenance effort (service/action) prescribed to restore an item to a completely serviceable/operational condition as required by maintenance standards in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.
12. Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (e.g., hours/miles) considered in classifying Army equipment/components.

Explanation of Columns in the MAC

MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION - (CONTINUED)

Column (1) Group Number. Column (1) lists Functional Group Code (FGC) numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies, and modules with the Next Higher Assembly (NHA).

Column (2) Component/Assembly. Column (2) contains the item names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

Column (3) Maintenance Function. Column (3) lists the functions to be performed on the item listed in column (2). (For a detailed explanation of these functions refer to "Maintenance Functions" outlined above.)

Column (4) Maintenance Level. Column (4) specifies each level of maintenance authorized to perform each function listed in column (3), by indicating work time required (expressed as man-hours in whole hours or decimals) in the appropriate sub-column. This work time figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance levels, appropriate work time figures are to be shown for each level. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item, or system) to a serviceable condition under typical field operating conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the MAC. The symbol designations for the various maintenance levels are as follows:

Field:

C Crew maintenance

F Maintainer maintenance

Sustainment:

L Specialized Repair Activity (SRA)

H Below depot maintenance

D Depot maintenance

NOTE

The "L" maintenance level is not included in column (4) of the MAC. Functions to this level of maintenance are identified by work time figure in the "H" column of column (4), and an associated reference code is used in the REMARKS column (6). This code is keyed to the remarks, and the SRA complete repair application is explained there.

Column (5) Tools and Equipment Reference Code. Column (5) specifies, by code, those common tool sets (not individual tools), common Test, Measurement, and Diagnostic Equipment (TMDE), and special tools, special TMDE, and special support equipment required to perform the designated function. Codes are keyed to the entries in the tools and test equipment table.

Column (6) Remarks Code. When applicable, this column contains a letter code, in alphabetical order, which is keyed to the remarks table entries.

Explanation of Columns in the Tools and Test Equipment Requirements

Column (1) Tool or Test Equipment Reference Code. The tool or test equipment reference code correlates with a code used in column (5) of the MAC.

Column (2) Maintenance Level. The lowest level of maintenance authorized to use the tool or test equipment.

Column (3) Nomenclature. Name or identification of the tool or test equipment.

Column (4) National Stock Number (NSN). The NSN of the tool or test equipment.

Column (5) Tool Number. The manufacturer's part number.

MAINTENANCE ALLOCATION CHART (MAC) INTRODUCTION - (CONTINUED)**Explanation of Columns in the Remarks**

Column (1) Remarks Code. The code recorded in column (6) of the MAC.

Column (2) Remarks. This column lists information pertinent to the maintenance function being performed as indicated in the MAC.

END OF WORK PACKAGE

FIELD MAINTENANCE
MAINTENANCE ALLOCATION CHART

Table 1. MAC for Shelter, Electrical Equipment S-280

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAIN- TAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
00	SHELTER ASSEMBLY	Inspect Replace Repair	0.1	4.0 5.0			, , , , , , , , , ,	A B, D
01	DOOR ASSEMBLY	Inspect Test Adjust Replace Repair	0.3 0.1	2.4 4.0 3.0			, , , , , , , ,	B D
0101	EMERGENCY EXIT PANEL ASSEMBLY	Inspect Test Replace Repair	0.1 0.1	0.7 1.7			, , , , , , , ,	 D
02	DOOR LATCH ASSEMBLY	Inspect Service Replace Repair	0.1 0.3	1.0 1.4				B
03	DOOR BRACE ASSEMBLY	Inspect Replace Repair	0.2	1.8 0.7				
04	LIFTING AND TIEDOWN EYE ASSEMBLY	Inspect Replace Repair	0.1	0.2 1.0			, ,	D D
05	SKID ASSEMBLY	Inspect Replace Repair	0.2	3.7 1.0			, , , , , , , ,	
06	HOLD DOWN ASSEMBLY	Inspect Replace Repair	0.1	0.1 0.2				

MAINTENANCE ALLOCATION CHART - (CONTINUED)

Table 2. TOOLS AND TEST EQUIPMENT

TOOLS OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	TOOL KIT, GENERAL MECHANIC'S	5180-01-548-7634	PD484
2	F	DRILL, ELECTRIC	5130-00889-8994	W-D-661
3	F	DRILL, TWIST	5133-00-189-9256	150-11 (INEX4)
4	F	WRENCH, SPANNER	5120-00-613-7912	QB80101-6
5	F	RIVETER, BLIND, HAND	5120-00-224-9298	C-6000-632
6	F	RIVETER, BLIND, HAND	5120-01-020-7814	C-722-3124L
7	F	TOOL KIT, ELECTRONIC SYSTEM	5180-01-460-9328	TK-105A/G

Table 3. REMARKS

REMARKS CODE	REMARKS
A	SKIN DAMAGE, THREAD FASTENED PARTS, GASKET.
B	LUBRICATE HINGES AND DOOR MECHANISM, REPLACE DOOR FILTER, TOUCH UP PAINT.
C	REPLACE DAMAGED PART.
D	REPLACE ENTIRE ASSEMBLY; NO REPAIR PARTS FUNCTIONAL GROUP CODE ASSIGNED.

END OF WORK PACKAGE

FIELD MAINTENANCE**COMPONENTS OF END ITEMS AND BASIC ISSUE ITEMS LIST**

There are no Components of End Items (COEI) for the S-280. For configured shelters, refer to the technical manuals for incorporated components for their respective COEI Lists.

Components of End Item (COEI). This list is for information purposes only; it does not yield authority to requisition replacements. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Items of COEI are removed and separately packaged for transportation or shipment only when necessary. Illustrations are furnished to help you find and identify the items.

Basic Issue Items (BII). These essential items are required to place the shelter in operation, operate it, and to do emergency repairs. Although shipped separately packaged, BII must be with the shelter during operation and when it is transferred between property accounts. Listing these items is your authority to request/requisition them for replacement based on authorization of the end item by the TOE/MTOE. Illustrations are furnished to help you find and identify the items.

The Basic Issue Items (BII) required to operate and maintain the S-280 are included in the BII List below.

Column (1) Item Number. Gives you the reference number of the item listed.

Column (2) National Stock Number (NSN) and Illustration. Identifies the stock number of the item to be used for requisitioning purposes and provides an illustration of the item.

Column (3) Description, Part Number/(CAGEC). Identifies the Federal Item Name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI and BII is also included in this column. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (4) Usable On Code. When applicable, gives you a code if the item you need is not the same for different models of equipment.

Column (5) U/I. Unit of Issue (U/I) indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (2).

Column (6) Qty Rqr. Indicates the quantity required.

Table 1. Components of End Item List

(1) ITEM NUMBER	(2) NATIONAL STOCK NUMBER (NSN) AND ILLUSTRATION	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
		: There are no components of end item. ()			

Table 1. Basic Issue Items List

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER (NSN)	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) USABLE ON CODE	(5) U/I	(6) QTY RQR
1	3940-00-805-5533	SLING, MULTIPLE LEG: SC-D-36423 (81337)		EA	1

END OF WORK PACKAGE

FIELD MAINTENANCE**ADDITIONAL AUTHORIZATION LIST**

There are no Additional Authorized Parts for the S-280. For configured shelters, refer to the technical manuals for incorporated components for their respective Additional Authorization Lists (AAL).

END OF WORK PACKAGE

OPERATOR INSTRUCTIONS

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Scope

This work package lists expendable and durable items that you will need to operate and maintain the Shelter, Electrical Equipment S-280.

General

This list is for information 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), CTA 50-909, Field and Garrison Furnishings and Equipment or CTA 8-100, Army Medical Department Expendable/Durable Items.

Explanation Of Columns In The Expendable/Durable Items List

Column (1) Item No. This number is assigned to the entry in the list and is referred to in the narrative instructions to identify the item (e.g., ITEM NUMBER 1 is ADHESIVE 8063 SM B-563559).

Column (2) Level. This column identifies the lowest level of maintenance that requires the listed item (include as applicable: C = Crew, O = AMC, F = Maintainer or ASB, H = Below Depot or TASMG, D = Depot).

Column (3) National Stock Number (NSN). This is the NSN assigned to the item. Use this number when ordering the item.

Column (4) Item Name, Description, Part Number/(CAGEC). This column provides the other information you need to identify the item. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses).

Column (5) U/I. Unit of Issue (U/I) code shows the physical measurement or count of an item, such as gallon, dozen, gross, etc.

Table 1. Expendable and Durable Items List

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER AND (CAGEC)	(5) U/I
1	F	8040-01-197-0228	ADHESIVE SM-B-563559 (80063)	KT
2	F	8040-00-843-0802	ADHESIVE RTV 108-2.8OZ (01139)	KT
3	F	8040-00-078-9774	ADHESIVE 732RTV (F7286)	OZ
4	F		ALUMINUM SHEET, 0=.040 IN THICK QQ-A-250/11, 6061-T6	SH
5	F		CAULKING CARTRIDGE (BLANK)	EA
6	F		CAULKING GUN, 10-1/2" L X 3/8" OVAL TIP	EA
7	F	5350-00-253-4393	CLOTH, ABRASIVE 051144-02461 (76381)	PG
8	F	5350-00-161-9066	CLOTH, ABRASIVE ANSI-B74.18 (80204)	PG
9	F	5350-00-253-4393	CLOTH, ABRASIVE 051144-02461 (76381)	PG
10	F	6850-00-948-5853	CLOTH, COTTON	YD
11	F		CLOTH, FIBERGLASS	SH

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - (CONTINUED)

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER AND (CAGEC)	(5) U/I
12	F		CONTAINER, UNWAXED, 16 OZ UU-C-80611	EA
13	F		CORE MATERIAL SM-C-595565	SH
14	F		FIBER FILLED POLYESTER RESIN	GL
15	F	5330-00-545-5221	GASKET SMC564839 (80063)	EA
16	F	8415-00-634-5021	GLOVES, MEN'S A-A-50021 (58536)	PR
17	F	8040-00-105-0826	HARDENER, ADHESIVE VERAMID 140 (0JS01)	GL
18	F	9150-01-260-2534	LUBRICANT, SOLID FILM MIL-L-23398D (34227)	CN
19	F	9150-00-954-7422	LUBRICANT, SOLID FILM MIL-L-22398 (81349)	QT
20	F		PAINT, LUSTERLESS GREEN NO. 383, POLYURETHANE MIL-C-46168	GL
21	F		PAINT, POLYAMIDE EPOXY MIL-C-22750	GL
22	F	5315-00-078-0112	PIN, HEADLESS, STRAIGHT MS16556-608 (96906)	EA
23	F		PLYWOOD, 1/2" THICK 3' X 3'	SH
24	F		POLYETHYLENE SHEET	SH
25	F		POLYETHYLENE SHEET	SH
26	F	5320-00-490-5523	RIVET, BLIND M24243/7-A606H (81349)	EA
27	F	8020-00-689-5379	ROLLER KIT, PAINT A-A-2851 (58536)	KT
28	F	8030-00-753-5005	SEALING COMPOUND, 6 OZ AMS-S-8802 (81343)	CA
29	F	5841-01-161-6810	SHIELD, ISOLATOR, EMI 359981-1 (96241)	RL
30	F		TAPE, EMI SHIELDING SM-B-450436-1	EA
31	F	7510-00-266-6710	TAPE, PRESSURE SENSITIVE ADHESIVE 802563 (18876)	RO
32	F	7610-00-266-6714	TAPE, PRESSURE SENSITIVE ADHESIVE 1/2 IN 232 1/2 IN. (76381)	RO
33	F	6810-00-281-2002	TOLUENE, TECHNICAL 9060184 (18876)	GL

END OF WORK PACKAGE

FIELD MAINTENANCE**MANDATORY REPLACEMENT PARTS LIST**

There are no Mandatory Replacement Parts for the S-280. For configured shelters, refer to the technical manuals for incorporated components for their respective Mandatory Replacement Parts Lists (MRPL).

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By Order of the Secretary of the Army:

Official:

A handwritten signature in black ink, appearing to read "Gerald B. O'Keefe".

GERALD B. O'KEEFE
*Administrative Assistant to the
Secretary of the Army*
1609604

MARK A. MILLEY
*General, United States Army
Chief of Staff*

Distribution:

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These are the instructions for sending an electronic 2028

The following format must be used if submitting an electronic 2028. The subject line must be exactly the same and all fields must be included; however only the following fields are mandatory: 1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15, 16, 17, and 27.

From: "Whoever" <whoever@avma27.army.mil>

To: TACOMLCMC.DAForm2028@us.army.mil

Subject: DA Form 2028

1. From: Joe Smith
2. Unit: home
3. Address: 4300 Park
4. City: Hometown
5. St: MO
6. Zip: 77777
7. Date Sent: 19-OCT-93
8. Pub no: 55-2840-229-23
9. Pub Title: TM
10. Publication Date: 04-JUL-85
11. Change Number: 7
12. Submitter Rank: MSG
13. Submitter FName: Joe
14. Submitter MName: T
15. Submitter LName: Smith
16. Submitter Phone: 123-123-1234
17. Problem: 1
18. Page: 2
19. Paragraph: 3
20. Line: 4
21. NSN: 5
22. Reference: 6
23. Figure: 7
24. Table: 8
25. Item: 9
26. Total: 123
27. Text:

This is the text for the problem below line 27.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is ODISC4.						Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE 21 October 2003
TO: (Forward to proponent of publication or form) (Include ZIP Code) U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-MPP / TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000						FROM: (Activity and location) (Include ZIP Code) PFC JANE DOE Co A 3 RD Engineer Br. Ft Leonard Wood, MO 63108	
PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS							
PUBLICATION/FORM NUMBER TM 10-1670-296-23&P						DATE 30 October 2002	TITLE Unit Manual for Ancillary Equipment for Low Velocity Air Drop Systems
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).	
	0036 00-2				1	<i>In Table 1, Sewing Machine Code Symbols, the second sewing machine code symbol should be MDZZ not MD22</i> <i>Change the manual to show Sewing Machine, Industrial: Zig-Zag; 308 stitch; medium-duty; NSN 3530-01-181-1421 as a MDZZ code symbol.</i>	
<i>*Reference to line numbers within the paragraph or subparagraph.</i>							
TYPED NAME, GRADE OR TITLE Jane Doe, PFC				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION (508) 233-4141 DSN 256-4141		SIGNATURE Jane Doe Jane Doe	

TO: (Forward direct to addressee listed in publication) U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-MPP / TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000					FROM: (Activity and location) (Include ZIP Code) PFC JANE DOE Co A 3 RD Engineer Br. Ft Leonard Wood, MO 63108			DATE 21 October 2003	
PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS									
PUBLICATION NUMBER TM 10-1670-296-23&P					DATE 30 October 2002		TITLE Unit Manual for Ancillary Equipment for Low Velocity Air Drop Systems		
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION	
0066 00-					4			Callout 16 in figure 4 is pointed to a <u>D-Ring</u> . In the Repair Part List key for Figure 4, item 16 is called a <u>Snap Hook</u> . Please correct one or the other.	
PART III – REMARKS (Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)									
TYPED NAME, GRADE OR TITLE				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION			SIGNATURE		

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TO: (Forward to proponent of publication or form) (Include ZIP Code) Commander, US Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS MS 727, 6501 E.11 Mile Road Warren, MI 48397-5000						FROM: (Activity and location) (Include ZIP Code)	
PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS							
PUBLICATION/FORM NUMBER TM 10-5411-207-13&P						DATE 15 April 2016	TITLE Operator and Field Maintenance Manual Including Repair Parts and Special Tools List (RPSTL) for Shelter, Electrical Equipment S-280 C/G Unshielded and Shielded
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).	
<i>*Reference to line numbers within the paragraph or subparagraph.</i>							
TYPED NAME, GRADE OR TITLE				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION		SIGNATURE	

TO: <i>(Forward to proponent of publication or form) (Include ZIP Code)</i> U.S. Army TACOM Life Cycle Management Command, ATTN: AMSTA-LCL-MPP / TECH PUBS 6501 E. 11 Mile Road, Warren, MI 48397-5000					FROM: <i>(Activity and location) (Include ZIP Code)</i>			DATE 28 February 2014	
PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS									
PUBLICATION NUMBER TM 10-5411-207-13&P					DATE 15 April 2016			TITLE Operator and Field Maintenance Manual Including Repair Parts and Special Tools List (RPSTL) for Shelter, Electrical Equipment S-280 C/G Unshielded and Shielded	
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION	
PART III – REMARKS <i>(Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)</i>									
TYPED NAME, GRADE OR TITLE				TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION				SIGNATURE	

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TO: (Forward to proponent of publication or form) (Include ZIP Code) Commander, US Army TACOM Life Cycle Management Command ATTN: AMSTA-LCL-MPP/TECH PUBS MS 727, 6501 E.11 Mile Road Warren, MI 48397-5000						FROM: (Activity and location) (Include ZIP Code)			
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ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON <i>(Provide exact wording of recommended changes, if possible).</i>			
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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 dekagram = 10 grams = .35 ounce
 1 hectogram = 10 dekagrams = 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 = 1,076.4 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 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)

<u> </u> °F	Fahrenheit	5/9 (after	Celsius	<u> </u> °C
	temperature	subtracting 32)	temperature	

