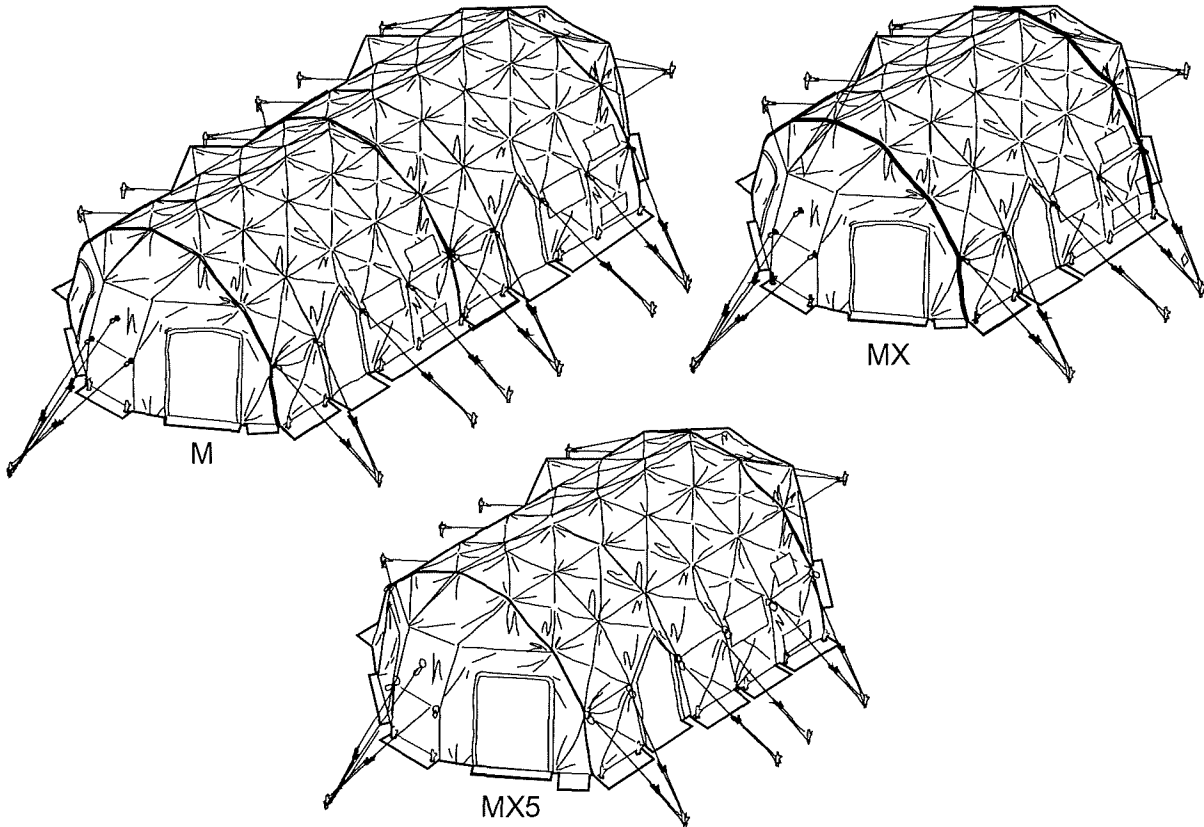


TECHNICAL MANUAL
OPERATOR AND FIELD MAINTENANCE MANUAL
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST
FOR

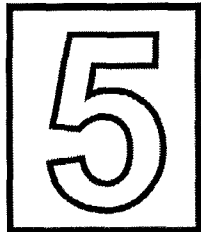
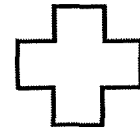
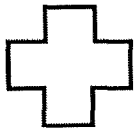
M Series Shelters



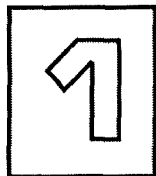
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08 MAY 2015

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SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK.



SEND FOR HELP AS SOON AS POSSIBLE.



DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL.



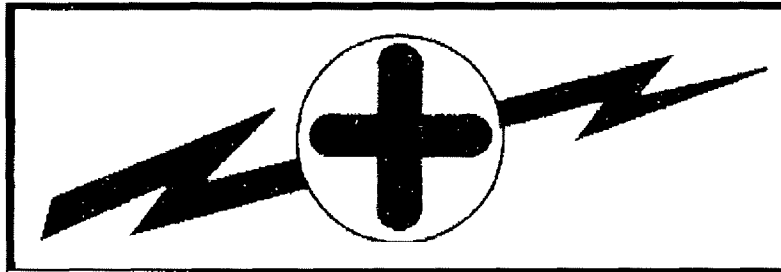
IF POSSIBLE, TURN OFF THE ELECTRICAL POWER.



IF YOU CANNOT TURN OFF THE ELECTRICAL POWER, PULL, PUSH OR LIFT THE PERSON TO SAFETY USING A DRY WOODEN POLE, OR A DRY ROPE, OR SOME OTHER INSULATING MATERIAL.



AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION.

WARNING**HIGH VOLTAGE**

is used in operation of this equipment

DEATH ON CONTACT

may result if personnel fail to observe safety precautions

Never work on electronic equipment unless there is another person nearby who is familiar with operation and hazards of the equipment and who is competent in administering first aid. When operators aid the technician, the technician must warn operators about dangerous areas.

When possible, shut off power supply to equipment before beginning work on equipment. Take particular care to ground every capacitor that could potentially store a dangerous electrical charge. Turn off power when working inside equipment. Always ground every part of equipment before touching it.

Be careful to not contact high-voltage connections or 115 VAC input connections when installing or operating equipment.

Whenever the nature of operation permits, keep one hand away from equipment to reduce hazard of current flowing through the body.

WARNING Do not be misled by the term "low voltage." Under adverse conditions, potentials as low as 50 volts may cause death.

For Artificial Respiration, refer to FM 4-25 11



ELECTRICAL HAZARD

Under adverse conditions, voltage used in equipment within the shelter can cause death or serious injury. Observe the following safety precautions:

GROUND THE EQUIPMENT

Before connecting primary power cables; connect grounding cable from ground lug on power control box to earth ground. Do not remove grounding cable until signal cables and primary power cables have been disconnected and generator has been shut down.

AVOID THE POWER INPUT

Be careful not to contact 115 VAC input connections when installing or servicing equipment.

DO NOT SERVICE ALONE

Never work on equipment unless there is another person nearby who is familiar with operation and hazards of equipment and who can administer first aid.

USE ONLY ONE HAND

Whenever possible, use only one hand to service equipment. Keep other hand away to reduce hazard of current flowing through vital organs of the body.

WARNING



BURN HAZARD

Equipment and generators may be hot to touch. Allow unit to cool before handling or use gloves when handling. Serious injury or death from burns or scalding could result from contact with high-pressure steam and/or liquid. Failure to observe this warning can result in serious injury.

WARNING



HEAVY EQUIPMENT

Improperly lifting or carrying heavy equipment can result in serious injury or death. Refer to the following weight limits as guidelines.

Handling Function	One-Person Max Lift	Two-Person Max Lift	Two-Person Max. Lift (Male Only)
Lift object from floor and place it on surface not greater than 5 feet above floor	37 lb	74 lb	112 lb
Lift object from floor and place it on surface not greater than 3 feet above floor	44 lb	88 lb	174 lb
Carry object 33 feet or less	42 lb	84 lb	164 lb.

WARNING

Do not operate power unit generator sets inside the shelter unless exhaust discharge is properly vented to the outside. Exhaust discharge contains noxious and deadly fumes that can cause death or serious injury.

LIST OF EFFECTIVE PAGES/WORK PACKAGES

NOTE Zero in the "Change No" column indicates an original page or work package

Date of issue for the original manual is

Original: 31 AUG 2012

Revised: 08 MAY 2015

**TOTAL NUMBER OF PAGES FOR FRONT AND REAR MATTER IS 34 PAGES AND
TOTAL NUMBER OF WORK PACKAGES IS 39 CONSISTING OF THE FOLLOWING:**

Page/WP No.	Change No.	Page/WP No.	Change No.
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Change Table (2 pgs)	1	WP 0029 (4 pgs)	1
i - xii	1	WP 0030 (2 pgs)	1
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WP 0001 (6 pgs)	1	Chp 8 title page	1
WP 0002 (6 pgs)	1	WP 0032 (2 pgs)	1
WP 0003 (2 pgs)	1	WP 0033 (2 pgs)	1
Chp 2 title page	1	Chp 9 title page	1
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WP 0005 (54 pgs)	1	WP 0035 (4 pgs)	1
WP 0006 (12 pgs)	1	WP 0036 (2 pgs)	1
WP 0007 (2 pgs)	1	WP 0037 (12 pgs)	1
WP 0008 (4 pgs)	1	WP 0038 (2 pgs)	1
WP 0009 (2 pgs)	1	WP 0039 (2 pgs)	1
Chp 3 title page	1	INDEX (4 pgs)	1
WP 0010 (2 pgs)	1	DA2028	1
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WP 0012 (2 pgs)	1		
WP 0013 (2 pgs)	1		
WP 0014 (2 pgs)	1		
WP 0015 (8 pgs)	1		
Chp 5 title page	1		
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WP 0017 (2 pgs)	1		
Chp 6 title page	1		
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HOW TO USE THIS MANUAL

PURPOSE AND SCOPE

This technical manual provides Operator and Service level maintenance information for the M Series Shelters. To simplify the discussions, the M Series Shelters will be referred to throughout this manual as the shelter. The information includes equipment description and theory of operation, Operator instructions, troubleshooting procedures, maintenance and testing procedures, and supporting data including Repair Parts and Special Tools List for identifying and ordering repair parts.

ARRANGEMENT, IDENTIFICATION AND LOCATION OF FRONT MATTER, REAR MATTER, CHAPTERS, AND WORK PACKAGES

This manual is composed of front matter, chapters containing Work Packages (WPs), and rear matter. These areas are described in greater detail in the following paragraphs.

Front Matter

The front matter includes such items as the Warning Summary, List of Effective Pages/WPs, Table of Contents, and How to Use This Manual.

Chapters and Work Packages

The WPs contain information pertinent to the performance of specific tasks. Each WP is maintained as a separate entity. The WPs are grouped into chapters based on overall content. WPs are arranged in numerical sequence regardless of chapter division. The chapter divisions and the WPs contained within the chapters are listed in the Table of Contents. The contents of each chapter are outlined briefly in the following paragraphs.

Chapter 1 - General Information, Equipment Descriptions, and Theory of Operation This chapter provides general and descriptive information concerning the equipment. Theory of Operation appropriate to the maintenance level covered is also provided.

Chapter 2 - Operator Instructions This chapter provides a description and location of the controls, indicators, and connectors used in the M Series Shelters. It also contains a description and location of the decals and data plates for each piece of equipment and operation under usual and unusual conditions.

Chapter 3 - Operator Troubleshooting Procedures This chapter provides operational checkout and troubleshooting procedures appropriate to the maintenance level covered.

Chapter 4 - Operator Maintenance Instructions This chapter provides information on performing preventive maintenance actions. Included are instructions concerning service upon receipt of equipment, inspection, preventive maintenance checks and services, and repair actions.

Chapter 5 - Maintainer Troubleshooting Procedures This chapter provides troubleshooting/fault isolation procedures appropriate to the maintenance level covered.

Chapter 6 - Maintainer Maintenance Instructions This chapter provides information on performing preventive maintenance actions. Included are instructions concerning service upon receipt of equipment, inspection, preventive maintenance checks and services, operational check, and repair actions.

Chapter 7 - Parts Information This chapter provides information on the Repair Parts and Special Tools List (RPSTL). This chapter also contains the national stock number list and part number list. The RPSTL is used to support the maintenance actions in Chapters 4 and 6.

Chapter 8 – Destruction of Equipment to Prevent Enemy Use This chapter provides information on how to damage the M Series Shelters to prevent usage by the enemy.

Chapters and Work Packages - Continued

Chapter 9 - Supporting Information. Included are a list of reference material, the Maintenance Allocation Chart (MAC) which identifies maintenance actions and their maintenance levels, Components of End Item (COEI) list, Additional Authorization List (AAL), and Expendable and Durable Items list

Rear Matter

The rear matter includes an alphabetical index and copies of DHS Form 2028 for recommending improvements to this manual

Identifying Work Packages

Each WP is identified by a four-digit number. These first digits are assigned sequentially. A new WP that is inserted between two WPs shall use a point numbering scheme to create a new number that logically fits between the two existing WP numbers. Point numbers shall start with "1" and continue in numerical sequence as needed. WPs are revised due to equipment configuration differences, support equipment differences, or other similar situations. For example:

- WP 0035 might cover installation of a handle on a basic unit
- WP 0035 1 might cover installation of the same handle on a differently configured unit,
- or
- installation of an alternate handle in place of the original handle, requiring a different procedure,
- or
- installation of the handle using an alternate technique or different tool,
- or
- installation of the handle using alternate fasteners.

Locating Work Packages

There are two ways to locate a WP when the number is not known, using the Table of Contents in the manual's front matter and using the Index in the manual's rear matter

Locating a Work Package in the Table of Contents

First determine the category of the WP subject and then find the appropriate chapter in the Table of Contents. Scan the WP titles in that chapter until the WP subject matter is found. Follow the leader line to find the WP number.

TABLE OF CONTENTS		<u>WP Sequence</u>
<u>No.</u>		<u>Page No.</u>
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Locating a Work Package in the Index

Look up the subject matter alphabetically in the Index. The index lists the applicable WP number and the page number within the WP on which the subject matter starts

SAMPLE INDEX		
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	A	
Additional Authorization List (AAL)	0038
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WORK PACKAGE CONTENT AND PRESENTATION

The content and the presentation techniques used in the WPs vary according to the material covered.

Common Features

In all cases, the WP title is placed at the top of the page immediately below the manual and WP number and is set off by horizontal lines as shown below

Operation & Maintenance w/RPSTL	M Series Shelters	0002
GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION		
M SERIES SHELTER		
EQUIPMENT DESCRIPTION AND DATA		

On the second and subsequent pages of the WP, the manual and WP number are repeated

The page number is placed at the bottom of the page and consists of the WP number and a sequential number denoting the page within the WP as shown below

0002-1

Paragraphs are not numbered

Primary paragraphs are denoted by headings set in **BOLD UPPER CASE (CAPITAL)** type

Secondary and lower-level paragraphs are denoted by headings set in Bold Upper and Lower Case type These paragraphs always relate to and are subordinate to the most recent primary paragraph heading

Figures and tables (excluding the RPSTL) are numbered sequentially within each WP starting with numeral 1

Descriptive Narrative

For WPs consisting primarily of descriptive narrative (equipment data, theory of operation, etc) text begins immediately below the WP title

Procedures

The example below is for WPs consisting primarily of procedures such as maintenance tasks, operating instructions, etc The initial setup section provides information on tools, material/parts, personnel required, and equipment condition Procedural steps are numbered

Operation & Maintenance w/RPSTL	M Series Shelters	0022
SHELTER OUTER LINER REMOVAL/REPLACEMENT		
INITIAL SETUP:		
Tools and Special Tools General mechanic's tool kit (WP 36, Table 2)	References WP 0005 WP 0014	
Materials/Parts Shelter Outer Liner ground	Equipment Condition Shelter spread out on	
Personnel Required Two		
REMOVAL		
1 If necessary, strike the shelter (Figure 1, Item 2) (see WP 0005)		
2 Spread shelter (Figure 1, Item 2) out to full extension so that cover being replaced is face up		

In most cases, figures relating to the procedural step are also provided When the figure is indexed (as in maintenance procedures), procedural steps include the figure number and item number inside parentheses

Supporting Information

The Supporting Information WPs contain instructions detailing the content and presentation techniques used in the WP

CHAPTER 1

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

M Series Shelters

GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION
M SERIES SHELTERS
GENERAL INFORMATION

SCOPE

M Series Shelters

This Operator and Field Maintenance Manual including Repair Parts and Special Tools List (RPSTL) provide instructions and procedures for setup, operation, teardown, maintenance, and repair of three M Series Shelters. To simplify the discussions, the M Series Shelters will sometimes be referred to throughout this manual as the shelter. There are three variants of the M Series Shelter: the M, the MX, and the MX5, are shown in Figure 1 in deployed configurations.

The M Series Shelters is a soft-walled shelter with integral framework that can be rapidly deployed in the field by a minimum of four to six people. The shelters do not require any special equipment for either erecting or striking.

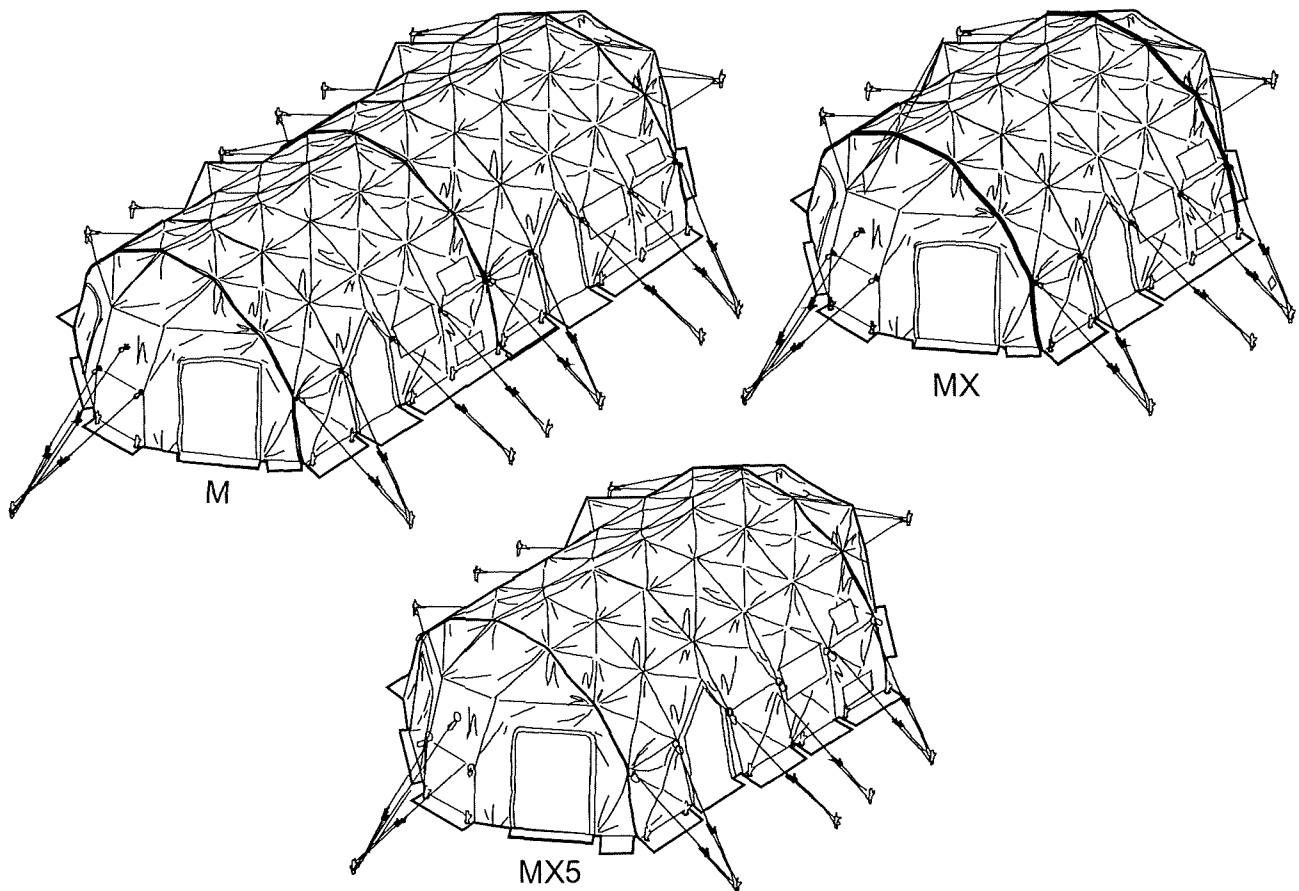


Figure 1 M Series Shelters Configurations

MAINTENANCE FORMS, RECORDS, AND REPORTS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by (as applicable) 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)

If the equipment needs improvement, let us know. Submit us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368, Product Quality Deficiency Report. Mail it to.

HDT Expeditionary Systems, Inc.
Technical Publications Group
5855 Endeavor Way
Tanner, AL 35671
Phone 256.774.1563, Fax 256 774 1567

CORROSION PREVENTION AND CONTROL (CPC)

Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with the M Series Shelters be reported so that the problem can be corrected and improvements can be made to prevent future problems.

Corrosion specifically occurs with metals. It 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 in 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 thermal (heat), oxidation (oxygen), salivation (solvents), or photolytic (light, typically UV) processes. The most common exposures are excessive heat or light. Damage from these processes will appear as cracking, softening, swelling, and/or breaking.

HDT Systems' Form 2028 Product Quality Deficiency Report, should be submitted to

HDT Expeditionary Systems, Inc.
Technical Publications Group
5855 Endeavor Way
Tanner, AL 35671
Phone 256 774 1563, Fax 256 774 1567

OZONE DEPLETING SUBSTANCES (ODS)

In accordance with Executive Order 12856, other public laws, DoD policy, and Army policy, the use of ODS has been banned for all new acquisitions. Operation and maintenance of the M Series Shelters does not require the use of ODS.

DESTRUCTION OF ARMY MATERIAL TO PREVENT ENEMY USE

Procedures to destroy this equipment to prevent enemy use are located in Chapter 8 of this manual. Additional information can be found in TM 750-244-2, Procedures for Destruction of Electronic Material to Prevent Enemy Use.

PREPARATION FOR STORAGE OR SHIPMENT

Place items in administrative storage for short periods of time when a shortage of maintenance resources exists. It should be possible to place items in a state of mission readiness either within 24 hours or within the time frame that the directing authority may determine. Keep appropriate maintenance records during storage.

Prior to placing the equipment in administrative storage, Army activities perform Preventive Maintenance Checks and Services (PMCS), complete Equipment Serviceability Criteria (ESC) evaluations, correct shortcomings and deficiencies, and complete all Modification Work Orders (MWO). When removing items from administrative storage, the operator performs PMCS to ensure operational readiness.

Inside storage is preferred for items selected for administrative storage. If inside storage is not available, use trucks, vans, or other containers.

WARRANTY INFORMATION

Report all defects to your immediate supervisor, who will take appropriate action. Contact the Regional Support Center (RSC) representative for further information on warranted items.

All XB Series Shelters and related accessories are warranted for 60 months (5 years). The warranty starts on the day that a company representative signs for it. Report all defects to your immediate supervisor, who will take appropriate action.

NOMENCLATURE CROSS-REFERENCE LIST

Common names and/or abbreviations are used in this manual to make a procedure easier to read. Table 1 matches the official nomenclatures with the common names.

Table 1 Nomenclature Cross-Reference List

OFFICIAL NOMENCLATURE	COMMON NAME
Air Conditioner	Environmental Control Unit, ECU
Air Duct Hose	Supply/Return Duct
Cinch Belt	Cinch Straps
Tent Component Kit	Field Repair Kit
M Series Shelter	Shelter

LIST OF ABBREVIATIONS/ACRONYMS

Table 2 is an alphabetical list of abbreviations/acronyms used throughout this manual

Table 2 Abbreviation/Acronym List

ABBREVIATION/ACRONYM	NAME
BII	Basic Issue Items
BTU	British Thermal Unit
CAGEC	Commercial and Government Entity Code
COEI	Components of End Item
CPN	Command Post Node
CP	Command Post
CPC	Corrosion Prevention and Control
CPCS	Command Post Communication System
CPP	Command Post Platform
D	Depot
DMR	Depot Mobilization Requirements
DS	Direct Support
ECU	Environmental Control Unit
EIR	Equipment Improvement Recommendations
EMI	Electro Magnetic Interference
ESD	Electrostatic Discharge
FM	Field Manual
FO	Foldouts
GS	General Support
HCP	Hardness Critical Procedures
HDBK	Handbook
HEMP	High-Altitude Electromagnetic pulse
HMMWV	High Mobility Multi-Purpose Wheeled Vehicle
HVAC	Heating, Ventilating and Air Conditioning
I/O	Input/Output
ICM	Integrated Cable Management
MAC	Maintenance Allocation Chart
MOS	Military Occupational Specialties
MWO	Modification Work Order
NBC	Nuclear, Biological, and Chemical
NSL	Near Strike Lightning
NSN	National Stock Number
ODS	Ozone Depleting Substances
PDP	Power Distribution Panel
PMCS	Preventive Maintenance Checks and Services
PQDR	Product Quality Deficiency Report
PSI	Pounds per Square Inch
P/N	Part Number

Table 2 Abbreviation/Acronym List – Continued.

ABBREVIATION/ACRONYM	NAME
QA	Quality Assurance
RFI	Radio Frequency Interference
RPSTL	Repair Parts and Special Tools List
SDR	Supply Discrepancy Report
SMR	Source, Maintenance and Recoverability
SOP	Standing Operating Procedure
TAMMS	The Army Maintenance Management System
TB	Troubleshooting
TDR	Transportation Discrepancy Report
TMDE	Test, Measurement, and Diagnostic Equipment
U/I	Unit of Issue
UPS	Uninterruptible Power Supply
VAC	Voltage, Alternating Current
WP	Work Package

QUALITY OF MATERIAL

Material used for replacement, repair, or modification must meet the requirements of this Operator and Field Maintenance Manual. If quality of material requirements is not stated in this Operator and Field Maintenance Manual, the material must meet the requirements of the drawings, standards, specifications, or approved engineering change proposals applicable to the subject equipment.

SAFETY, CARE, AND HANDLING

To prevent personal injury and damage to equipment, obey the following general rules and precautions:

1. Become familiar with the warnings and cautions listed in the front of this manual.
 - a. Warnings – Present circumstances or procedures that, if not strictly adhered to, may cause injury or death.
 - b. Cautions – Present circumstances that can cause damage to equipment or loss of the mission.
2. Recognize that equipment in transport bags may be at least a two-person carry.
3. Before touching any electrical component, discharge static electricity by touching a metal chassis or cabinet. A static discharge to an electrical component can destroy internal circuits.
4. Know where emergency equipment is located. Read instructions on fire extinguisher labels.
5. Ensure hands are clean before working on equipment.

NUCLEAR HARDNESS

There is no Hardness Critical Procedures (HCP) for the M Series Shelter.

SUPPORTING INFORMATION FOR REPAIR PARTS, SPECIAL TOOLS, TMDE AND SUPPORT EQUIPMENT

Repair parts are listed and illustrated in parts information work packages WP 0024 through WP 0029 of this manual. Maintenance Allocation Chart (MAC) is in WP 0036.

END OF WORK PACKAGE

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GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION
M SERIES SHELTERS
EQUIPMENT DESCRIPTION AND DATA

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

The M Series Shelters are composed of an articulating frame with pre-attached interior and exterior covers. The MX Shelter is shown in Figure 1 in a deployed configuration.

The difference between each model of the M Series Shelters is that the M Shelter uses two main shelter sections whereas the MX Shelter only uses one main shelter section. The MX5 Shelter has an additional 4 ft. frame section (quad) added to the overall length of the main shelter section. All three variants of the M Series Shelter will use the same end cap section.

Each frame section consists of an arrangement of various sized struts connected as pairs and articulated through a series of hubs. The hubs enable the struts to move freely and allow for quick erect and strike. The interior and exterior cover fabric is fire retardant, mildew resistant, and water repellent. The covers are also abrasion and UV resistant. The exterior fabric enhances blackout in the visual and near infrared spectrum. Covers are pre-attached to the frame at the hubs (via keepers) in so that there is approximately one foot of dead air space between the covers and acts as natural insulation. The covers are removable in the event of damage or change of mission. All shelters feature screen windows, conditioned air supply and return duct ports, wind lines, and ground staking brackets.

DIFFERENCES BETWEEN MODELS

There are twelve variations in the M Series Shelter family as listed below*

The following pages in WP 0002 define the weights and dimensions of these variations and provide an illustration for clarification.

- M SHELTER, GREEN, Part Number MA100100G is a green shelter
- M SHELTER, TAN, Part Number MA100500T is a tan shelter
- M SHELTER, EMI, GREEN, Part Number SH201-0928G is a green shelter
- M SHELTER, EMI, TAN Part Number SH201-0928T is a tan shelter

- MX SHELTER, GREEN, Part Number MXA2000G is a green shelter
- MX SHELTER, TAN, Part Number MXA2000T is a tan shelter
- MX SHELTER, EMI, GREEN, Part Number 1009325 is a green shelter.
- MX SHELTER, EMI, TAN, Part Number 1009324 is a tan shelter

- MX5 SHELTER, GREEN, Part Number SH201-0601G is a green shelter
- MX5 SHELTER, TAN, Part Number SH201-0601T is a tan shelter
- MX5 SHELTER, EMI, GREEN, Part Number SH201-0938G is a green shelter
- MX5 SHELTER, EMI, TAN, Part Number SH201-0938T is a tan shelter

NOTES

* Side doors not available on EMI versions

** Additional optional configurations for the M Series Shelters are available. Contact your local HDT representative or call 1-800-GO-DRASH

The Model differences have no effect on operation or maintenance functions

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

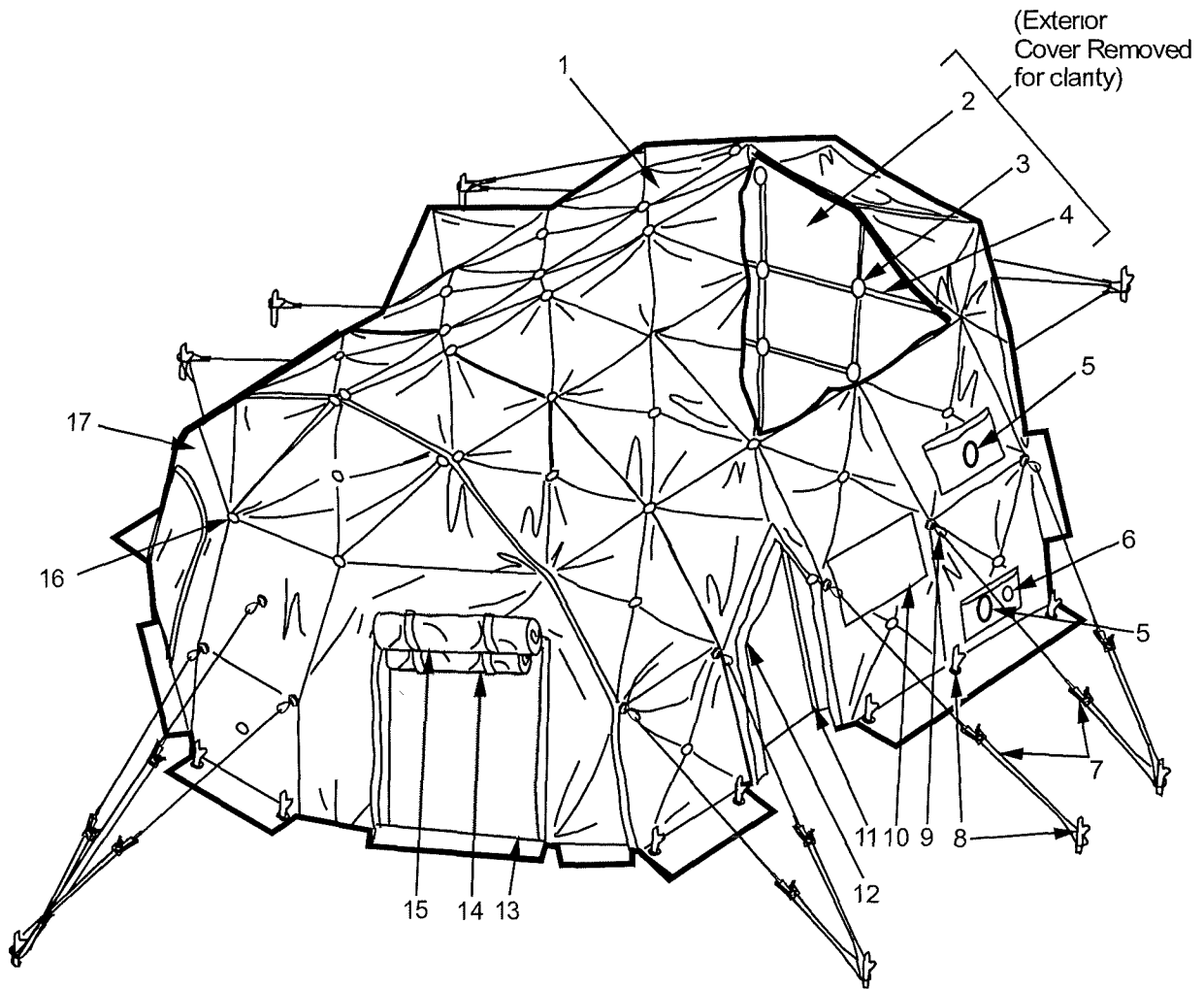
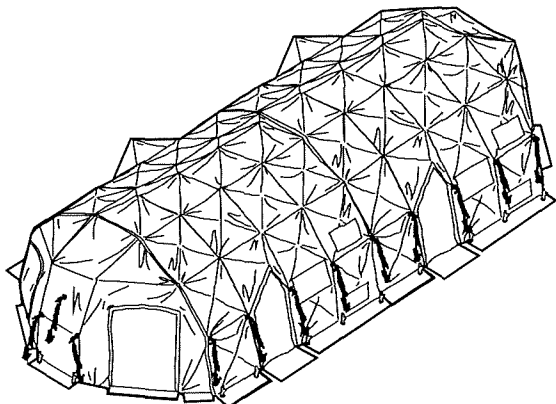


Figure 1 Components of an MX Shelter

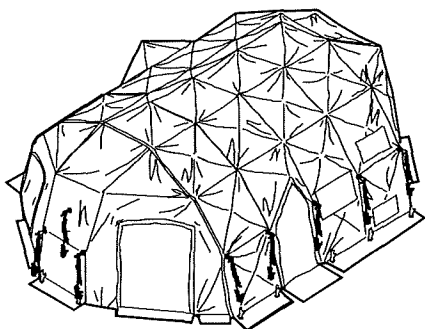
Table 1 MX Shelter Components

ITEM	COMPONENT	FUNCTION
1	Exterior Cover	Exterior fabric cover provides thermal barrier to help insulate shelter Fire retardant, mildew resistant, water repellent, abrasion and UV resistant
2	Interior Cover	Internal fabric cover provides thermal barrier to help insulate shelter White fabric color enhances visibility in shelter interior
3	Hub	Polycarbonate hub links shelter frame struts together and provides flexibility to frame when erecting or striking shelter
4	Strut/Frame	Various length frame struts linked via hubs provide shape to shelter, provide fastening points to interior and exterior covers, and provide strength to hang interior lights
5	Duct Port, Upper and Lower	Matching openings in exterior and interior covers for routing conditioned air to or from Environmental Control Unit (ECU) Fabric covers both openings when not in use
6	Electrical Port	Matching openings in exterior and interior covers for routing power or other cabling in or out of shelter Fabric covers both openings when not in use.
7	Wind Lines	Secure shelter to ground during windy conditions
8	Stakes	Secure shelter and wind lines to ground
9	Looped Keeper	Looped keepers Exterior Looped Keepers for tethering wind lines to shelter and for securing shelter to ground stakes Interior Looped Keepers for hanging lights and routing cables
10	Window	Matching openings in exterior and interior covers for allowing natural light and fresh air into shelter Fabric covers openings when not in use
11	Extension door, Interior	Used as a connection between shelter interior cover and interior door
12	Extension door, Exterior	Used as a connection between shelter exterior cover and exterior door
13	Integrated Floor	Detachable floor cover provides seal between shelter interior sides and Integrated Floor to prevent entry by insects or vermin Water proof fabric maintains dry working environment within shelter.
14	Inner Door	Fabric doors provide entry/exit to shelter and seal against weather Doors may be rolled up to allow natural light and fresh air into shelter or for moving equipment into/out of shelter
15	Outer Door	Fabric doors provide entry/exit to shelter and seal against weather Doors may be rolled up to allow natural light and fresh air into shelter or for moving equipment into/out of shelter
16	Plain Keeper	Plain Keeper, Exterior only, used to secure outer fabric cover to shelter frame
17	End Cap	End section which connects to middle section of a M Series Shelter The End Cap consists of two doors, a frame and an inner and outer cover

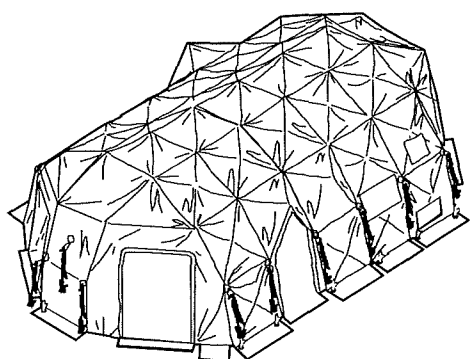
EQUIPMENT DATA - SPECIFICATIONS



M Shelter		
Physical Dimensions:	feet / inch	m / cm
Length - Interior	46.0	14.0
- Exterior	47.7	14.5
Width - Interior	18.0	5.49
- Exterior	19.8	6.04
Height - Interior	9.7	2.96
- Exterior	11.1	3.38
Entire Shelter Usable Area	748 Sq Ft	69.5 Sq M
Entire Shelter Total Weight	1,115 LBS	506.8 Kg
Packed Dimensions	56 x 44.5 x 31.5	142 x 113 x 80



MX Shelter		
Physical Dimensions:	feet / inch	m / cm
Length - Interior	29.1	8.9
- Exterior	30.7	9.4
Width - Interior	18.0	5.49
- Exterior	19.8	6.04
Height - Interior	9.7	2.96
- Exterior	11.1	3.38
Entire Shelter Usable Area	442 Sq Ft	41 Sq M
Entire Shelter Total Weight	625 LBS	283.5 Kg
Packed Dimensions	56 x 44.5 x 31.5	142 x 113 x 80



MX5 Shelter		
Physical Dimensions:	feet / inch	m / cm
Length - Interior	33.3	10.1
- Exterior	34.9	10.6
Width - Interior	18.0	5.49
- Exterior	19.8	6.04
Height - Interior	9.7	2.96
- Exterior	11.1	3.38
Entire Shelter Usable Area	519 Sq Ft	48.2 Sq M
Entire Shelter Total Weight	742 LBS	328.4 Kg
Packed Dimensions	56 x 44.5 x 33.5	142 x 113 x 85.1

NOTE Side doors not available with EMI version

Figure 2 M Series Shelters Specifications.

EQUIPMENT DATA - CONTINUED

Table 2 M Series Shelters Specifications

Physical Dimensions

(Length, Width, Height, Usable Area, Total Weight and Packed Dimensions*)	Depends on Model (See Equipment Data Specifications for specific models)
---	-----	----	-----	--

Thermal Dimensions

Operating Range, Minimum	..	-50°F (-46 C)
Maximum	+131°F (+55 C)
Insulation Factor**	..	R-2 1
Max Storage Temperature	..	+160 °F (71 1 C)

Weights (Additional to each Model Shelter)

Steel Stake Bag, (Includes 25 steel stakes one 3 lb hammer, and transport bag)	..	48 lb (21 7 kg)
--	----	-----------------

NOTE

* Packed Dimensions of Shelter includes one main section, three shelter cinch belts, four, or six (depending on model) push poles, technical manual, shelter repair kit and transport bag.

** See WP 0003, Theory of Operation, for explanation of Shelter Insulation Factor

END OF WORK PACKAGE

**GENERAL INFORMATION, EQUIPMENT DESCRIPTION, AND THEORY OF OPERATION
M SERIES SHELTERS
THEORY OF OPERATION**

M Series Shelters

The M Series Shelters are a mobile, lightweight, rugged, reliable, and user-friendly soft-walled shelter solution to establish life support, command and control or medical structures in any environment. The shelters can be quickly erected in the field providing an open, unobstructed interior, with provisions for mounting internal lighting, heating/cooling ducts, and power generation/distribution cables in support of multiple configurations.

The M Series Shelters consists of a frame with two pre-attached covers. The frame is made up of various sized strut pairs and articulating hubs that enable the struts to move freely for quick erect and strike. Both the interior and exterior covers are made with specially coated polyester fabrics, are fire retardant, mildew resistant and water repellent. The covers incorporate abrasion resistant and UV resistant fabrics. The exterior fabric finish enhances blackout in the visual and near infrared spectrum. Both covers are pre-attached to the frame at the hub points in such a way that there is approximately one foot of dead air space between the covers serving as natural insulation. These covers are easily removable in the event of damage or change of mission.

The integrated floor (floor is made from a heavy-duty polyester material) which provides a barrier against insects and vermin, abrasions, and ground moisture. All M Series Shelters feature screen windows, conditioned air supply and return duct ports, wind lines, and ground stake eyes.

The M Series Shelters can be easily set up within minutes of arriving at location with a minimum of four to six people and can be taken down just as quickly. These shelters do not require any assembly in the field nor do they require any special equipment or tools for either erecting or striking. Simply offload and position, lift and spread, push up, attach end caps and secure.

The M Series Shelters packs down to less than 2 percent of deployed size for easy transport.

Thermal Insulation

The following text explains the thermal insulation characteristics of DRASH soft-walled shelters. The thermal insulation criteria used in buildings or shelters is commonly rated in what is called as R-value. R is a measure of a material's resistance to heat flow. It is defined as L/k , where L is the thickness of the insulation and k is the thermal conductivity of the material. If the thickness remains constant, R is expressed as the temperature difference (exterior-interior) required to cause heat to flow through a unit area of material (ft^2 of a wall) at the rate of one heat unit per hour. The result is ratio $^{\circ}\text{F} \times \text{ft}^2 / \text{Btu}/\text{hr}$.

The U-value of an insulation is the reciprocal of its R-value ($U=1/R$). U is the heat transfer coefficient, and expresses the rate of heat transfer through a unit area caused by a difference of one degree between the two sides of the component (walls). In heating mode, the smaller the U-factor the less heat is transferred to the exterior and lost by the shelter.

The family of DRASH Tactical Soft shelters are insulated by a wall of 1 foot of air contained between the two fabric covers. A simple test was performed to determine the U-value of a Model 2 shelter. Inside the hermetically closed shelter two electric heaters (1500W each) were producing heat. The electrical power drawn by the two heaters and the interior and exterior temperatures were recorded every 15 minutes. The electrical power was converted into heat. Knowing the total area of the fabric wall for a Model 2, U was computed as $\text{Heat} / (\text{Area} \times \Delta\text{Temp})$. Five readings were made in order to average an accurate value. The most reliable value was determined on September 13, 1997 when we used high accuracy test instrumentation. U-factor was calculated to be 0.477 [$\text{Btu}/(\text{hr} \times ^{\circ}\text{F} \times \text{ft}^2)$] (See the example on the next page). Consequently, $R=1/U=2.1$.

Thermal Insulation - Continued

The value of U doesn't vary significantly with the size of the DRASH model. Knowing the square footage of each DRASH Model wall surface, one can calculate the amount of heat [Btu/hr] needed to maintain a certain temperature inside the tent.

For example

CUSTOMIZE SPECIFIC TO M Series Shelters (Surface Area =1,124 ft²), the outside temperature is -40°F and we need 64 °F inside the shelter, the amount of heat necessary to maintain the ΔT=104 °F can be calculated as follows

$$Q = (\text{Area} \times \Delta T) / U = (1,124 \text{ [ft}^2\text{]} \times 104 \text{ [}^\circ\text{F]}) / 0.477 \text{ [Btu/(hr} \times \text{F} \times \text{ft}^2\text{)]} = 55,759 \text{ [Btu/hr]}$$

The above calculations didn't take in consideration other factors like solar radiation, cover color and reflectivity, exposure to wind, latent heat sources inside the tent such as occupants, lighting, and equipment.

Expandability

The M Series Shelters can also be connected to additional soft-wall and rigid-wall shelters to increase its mission capabilities.

M Series EMI Shelters

The M Series EMI Shelters' interior cover, floor, and doors are constructed from an independently-tested RFI blocking material for a completely enclosed shield. It protects sensitive electronic equipment from the effects of Electromagnetic Interference (EMI), and contains Radio Frequency Interference (RFI) signals generated by the equipment within, (includes greater than -50db attenuation of RFI over a frequency range of 150MHz to 3.0GHz). EMI Shelters also reduce the potentially damaging effects of a High-Altitude Electromagnetic Pulse (HEMP) and the harmful effects of electrical coupling that can be caused by Near Strike Lightning (NSL). A robust grounding system protects personnel from Electrostatic Discharge (ESD) and Electrical System Fault. The EMI Shelter can interconnect with other shelters to increase overall footprint.

END OF WORK PACKAGE

CHAPTER 2
OPERATOR INSTRUCTIONS
FOR
M SERIES SHELTERS

**OPERATOR INSTRUCTIONS
M SERIES SHELTERS
DESCRIPTION AND USE OF OPERATOR CONTROLS, INDICATORS, AND CONNECTORS**

GENERAL

This work package contains illustrations and tables that describe location and function of each control, indicator, and connector used for operation of M Series Shelters. Each major component is shown in detail in Figures 1 through 5 and their functions described in associated tables

AIR DUCT AND ELECTRICAL PORTS

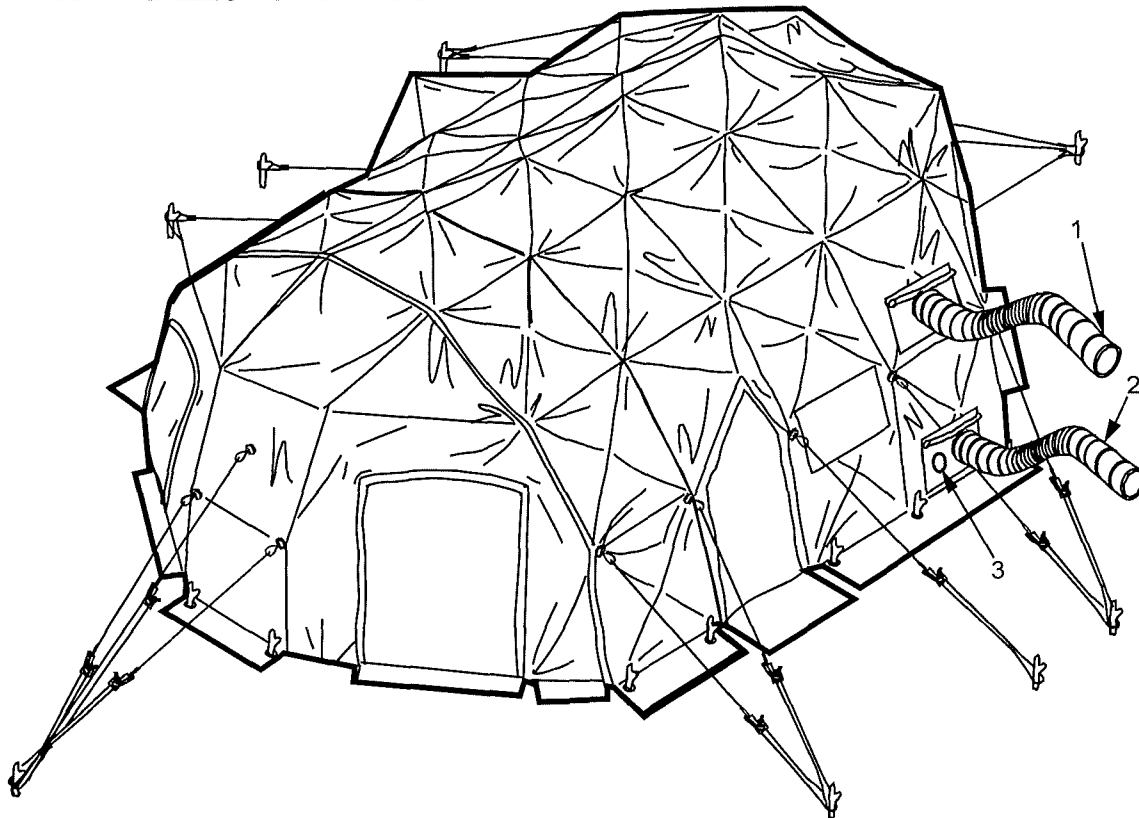


Figure 1 Air Duct and Electrical Ports

Table 1. Air Duct and Electrical Ports

ITEM	CONTROLS, INDICATORS, AND CONNECTORS	FUNCTION
1	Duct Port, Upper	Cool air input Lower duct port used for return air There is an identical port on the opposite side of the shelter (not shown)
2	Duct Port, Lower	Hot air input Upper duct port used for return air. There is an identical port on the opposite side of the shelter (not shown)
3	Electrical Port	Electrical wire port for interior shelter electrical connections. There is an identical port on the opposite side of shelter (not shown)

SHELTER

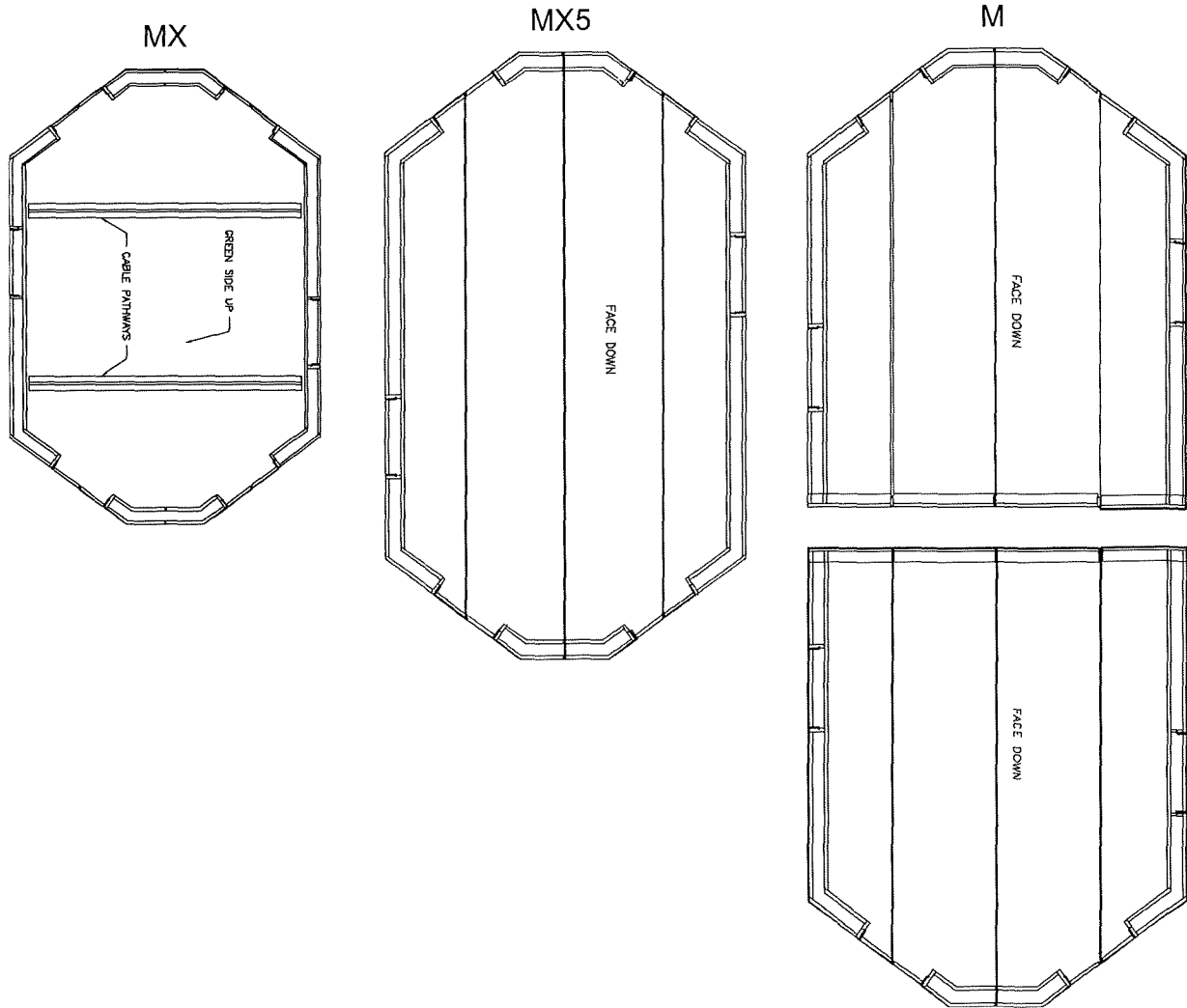


Figure 2 Shelter Floor/Ground Cover

Table 2 Shelter Floor/Ground Cover

ITEM	CONTROLS, INDICATORS, AND CONNECTORS	FUNCTION
1	Floor/Ground Cover	Detachable, water-proof fabric floor provides seal between the ground and interior sides to prevent entry of insects, varmints, and maintain dry working environment within shelter. The shelter floor/ground cover is secured inside the shelter by hoop and loop seams (Velcro strips)

SHELTER - CONTINUED

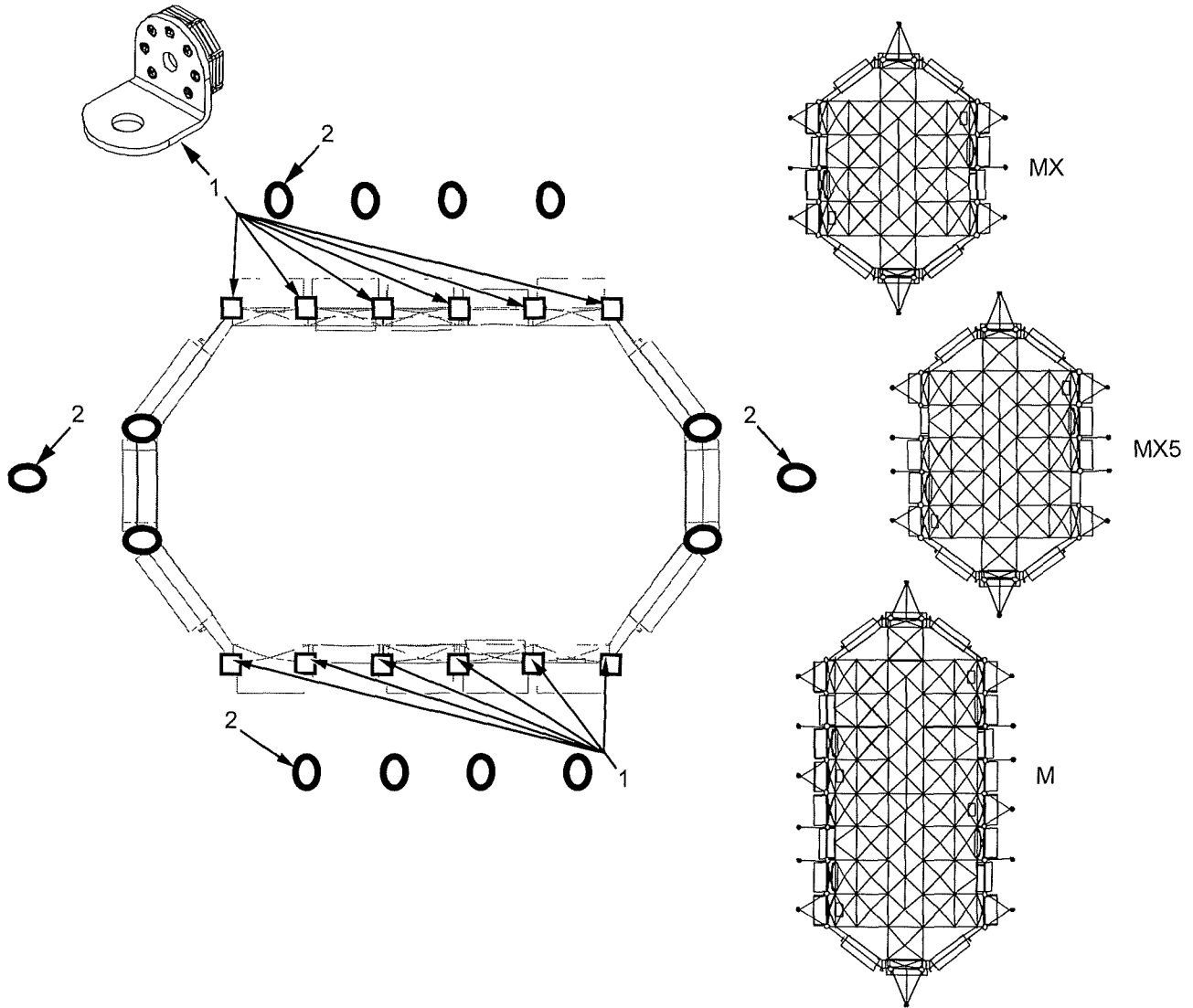


Figure 3 Ground Stake Brackets and Wind Line Stake Pattern

Table 3 Ground Stake Brackets and Wind Line Stake Pattern

ITEM	CONTROLS, INDICATORS, AND CONNECTORS	FUNCTION
	Ground stakes are provided with the shelter. Proper deployment of the shelter requires that all ground stakes be used as follows:	
1	Ground stake brackets	Steel brackets with stake eyes to secure shelter to ground
2	Wind line ground stakes	Wind line ground stakes are required to properly secure shelter to resist high wind conditions.

SHELTER – CONTINUED

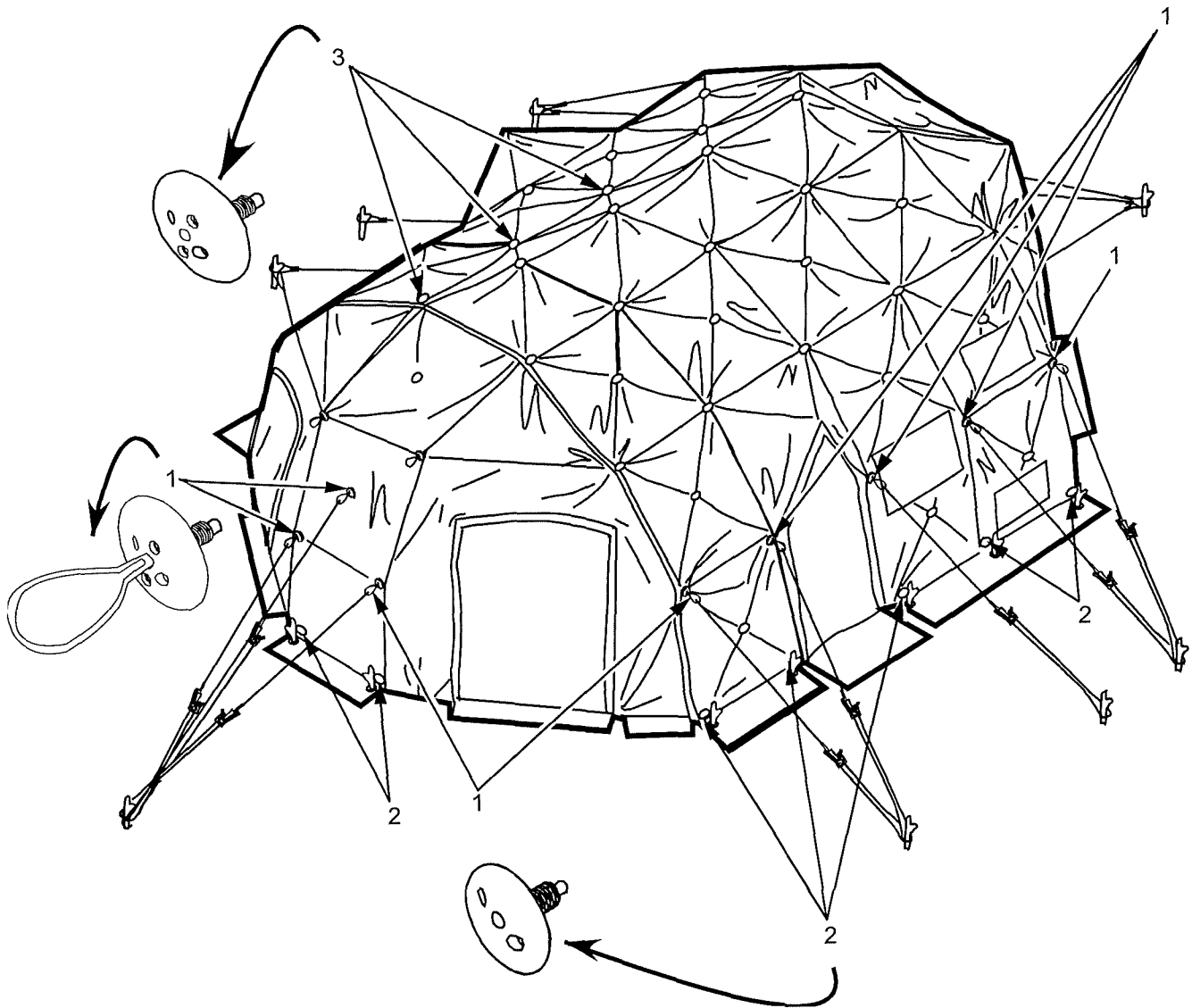


Figure 4 Exterior Keeper and Looped Keeper Locations

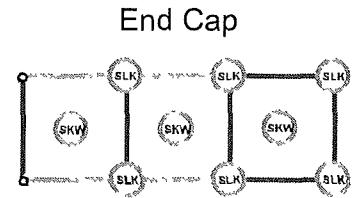
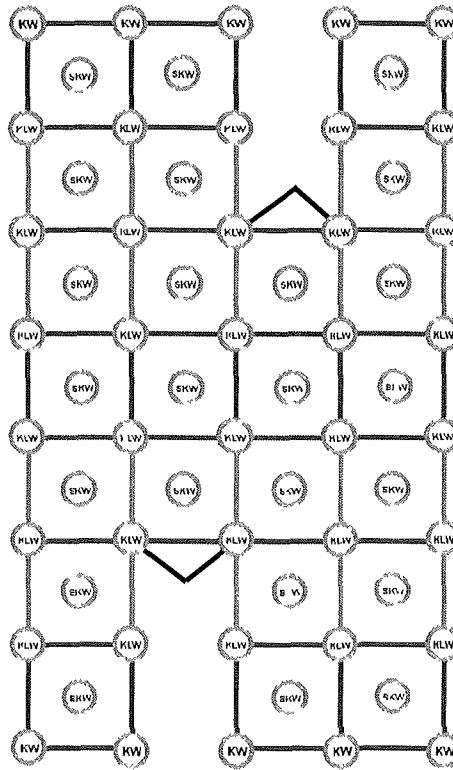
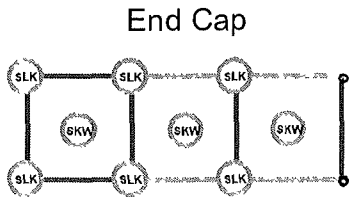
Table 4 Exterior Keeper and Looped Keeper Locations

ITEM	CONTROLS, INDICATORS, AND CONNECTORS	FUNCTION
1	Looped Keeper	Looped keepers secure wind lines from shelter to ground stakes
2	Exterior Small Plain Keeper	Small plain keepers secure exterior cover skirt to stake bracket and shelter frame
3	Exterior Large Plain Keeper	Large plain keepers secure exterior cover to shelter frame

SHELTER FRAME

MX Center Section

Top View Flattened Interior



- = Large Plain Keeper, White
- = Looped Keeper, White
- = Small Plain Keeper, White
- = Small Looped Keeper, White

Figure 5 Interior Plain and Looped Keeper Location

Table 5 Interior Plain and Looped Keeper Location

ITEM	CONTROLS, INDICATORS, AND CONNECTORS	FUNCTION
1	Large Plain Keeper, White	Large plain keepers secure the interior cover skirt to the frame
2	Looped Keeper, White	Looped keepers secure the interior cover to the frame and provide secure points for mounting lights and routing interior cabling
3	Small Plain Keeper, White	Small plain keepers secure the interior cover to the frame in every other keeper place that is not utilized by a looped keeper and or the skirt
4	Small Looped Keeper, White	Small looped keepers secure the end cap interior cover to frame

END OF WORK PACKAGE

**OPERATOR INSTRUCTIONS
M SERIES SHELTERS
OPERATION UNDER USUAL CONDITIONS**

GENERAL

This Work Package covers site selection, setup of standard as well as optional features, and teardown procedures for the M Series Shelters

NOTE

The following set and strike procedures use illustrations of the common M Series shelters. Remember that M Series shelters with EMI option do not have side doors

SITE REQUIREMENTS

To ensure minimal problems and good operation of the shelter, ensure area is

- Dry and level with minimum clearing of 45 feet (13.7 meter) x 30 feet (9.2 meter) for deployment and operation of the shelter (see Figure 1)
- Free of items (trees, buildings, or other structures) that would impede set-up of M Series Shelters or cause physical interference for, shelter, system grounding, and all other associated equipment
- Free of items (e.g., towers, power lines, radar, trees, buildings,) that would cause interference with electronic equipment being used inside of shelter

NOTE

If using (optional) Hard Floor under the shelter, install hard floor first
See procedure starting on page 5-37

SITE REQUIREMENTS – CONTINUED

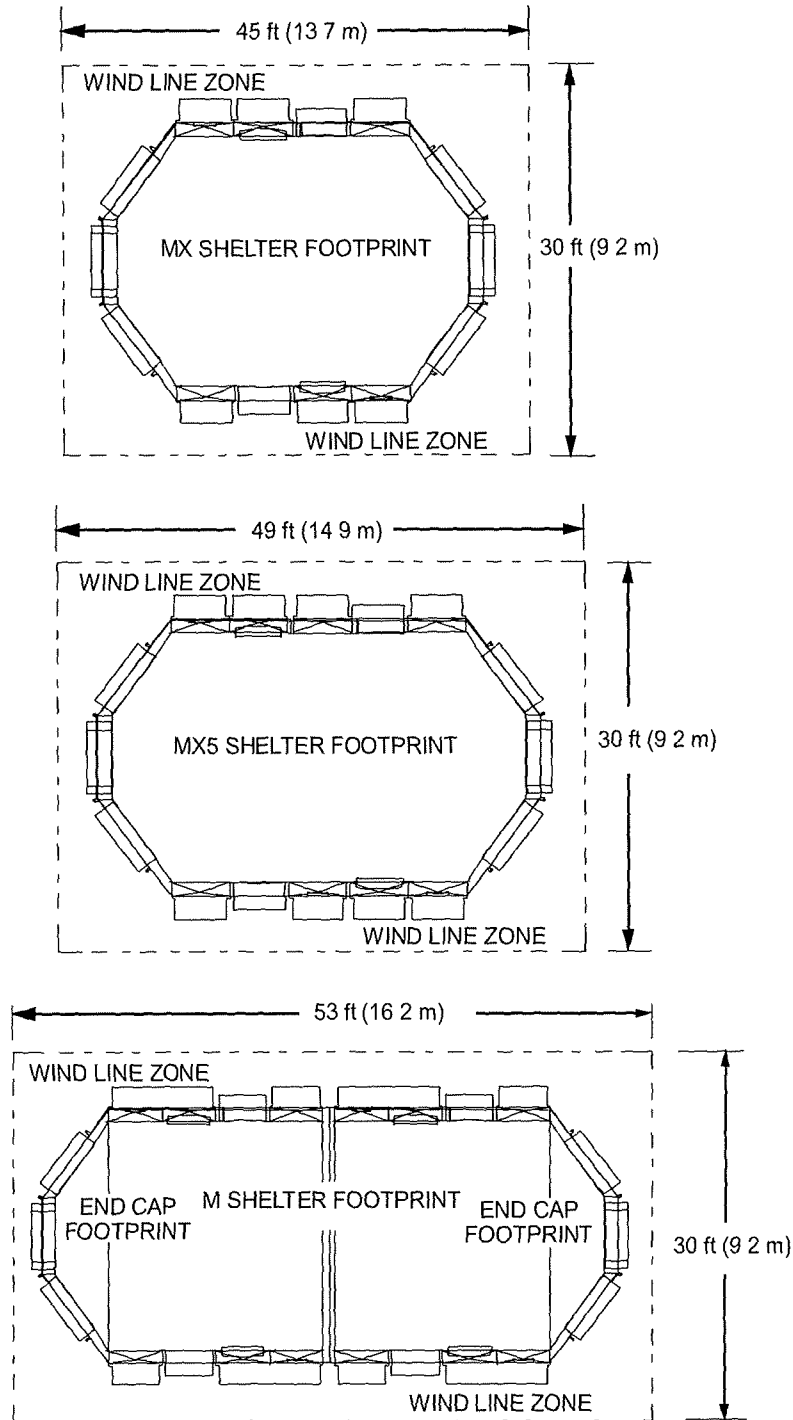


Figure 1 M Series Shelters Deployment Footprint

ASSEMBLY AND PREPARATION FOR USE

Review all shelter setup and operating instructions prior to starting the deployment.

Review Work Package 0037, Components of End Item (COEI), and become familiar with equipment identification

Establish a minimum of six person team and appoint one person as team leader who will have responsibility of coordinating all shelter setup procedures

SHELTER SETUP**NOTE**

The shelter transport bag is a four-person lift and each end cap transport bag is a two person lift

For the M Shelter setup, there will be two shelter transport bags that will be placed between the end caps

- 1 Place shelter transport bag(s) (Figure 2, Item 2) for MX/MX5 Shelter, (Figure 2, Item 3) for M Shelter close to where shelter will be raised
- 2 Place shelter end cap bags approximately 10 feet apart on either side of the center point where the shelter will be raised (for a total of 20 feet between each shelter (Figure 2, Items 2 or 3) and end cap (Figure 2, Item 1).
3. Stand shelter transport bag (Figure 3, Item 1) upright and undo cinch straps, remove shelter repair kit (Figure 3, Item 7), push poles (Figure 3, Item 2) and cinched shelter bundle (Figure 3, Item 5)
- 4 Remove cinch strap (Figure 3, Item 4) and unroll the floor (Figure 3, Item 3) from the cinched shelter (Figure 3, Item 5) and remove floor from immediate area.

SHELTER SETUP – CONTINUED

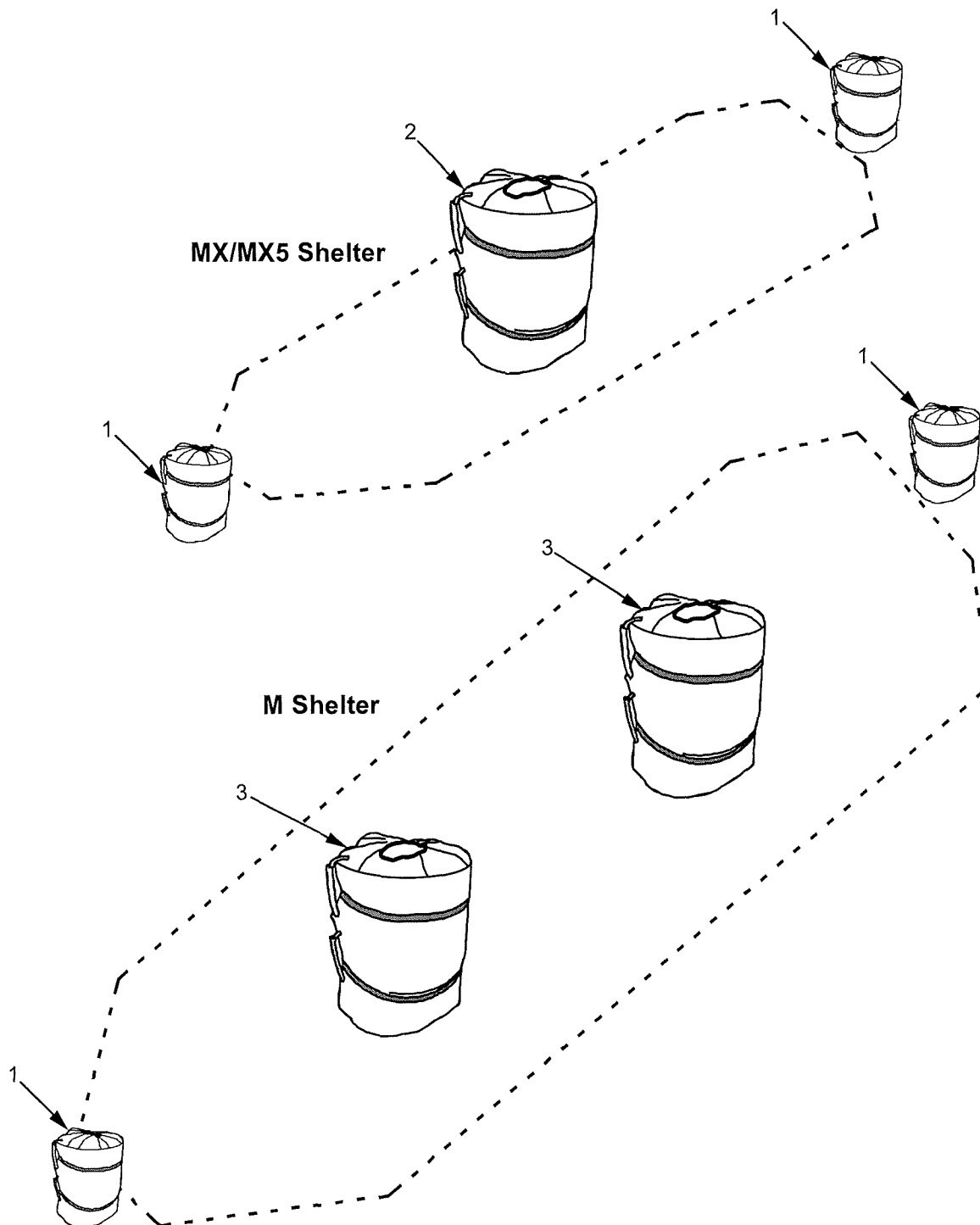


Figure 2 Placement of Main Shelter Section and End Cap Bags

SHELTER SETUP – CONTINUED

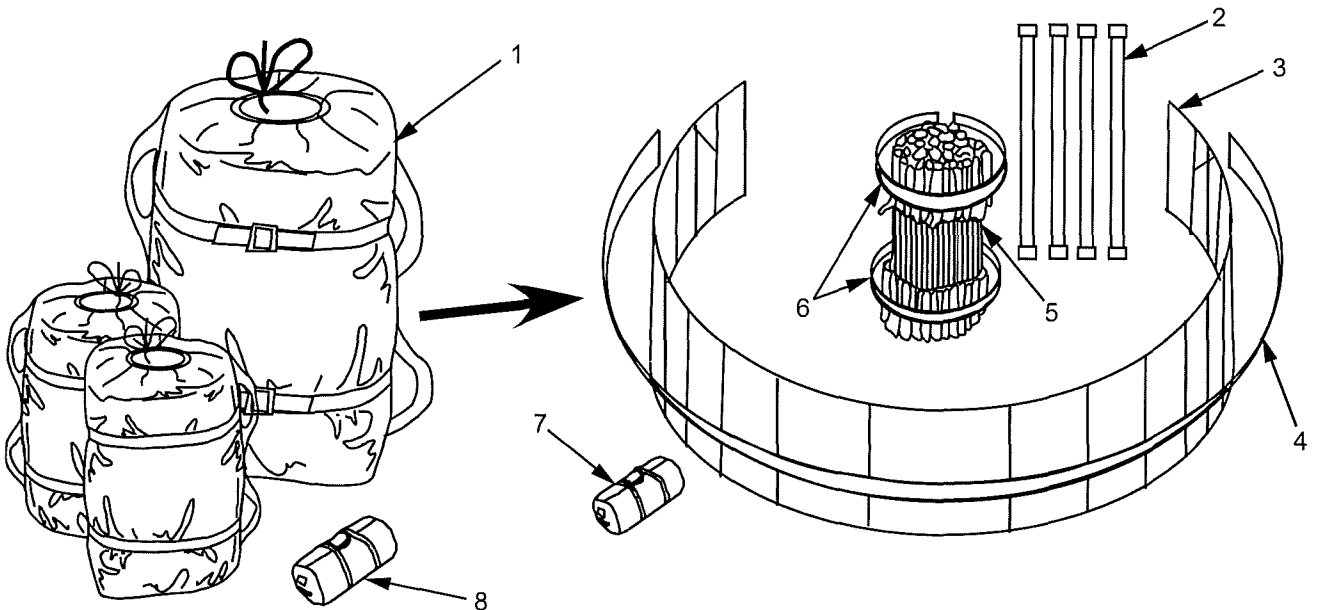


Figure 3 Unpack Shelter Items.

NOTE

The floor serves multiple purposes. First as protection from damp/wet ground, and second as a seal between the ground and the sides of the shelter.

5. Locate the one Stake Kit (Figure 3, Item 8) included with the MX and MX5 Shelters. The M Shelter gets two Stake Kits.
6. Stand shelter up so that exterior side (green or tan) is facing up and interior side (white) is facing down.
7. Orient main shelter section so that the open end of shelter is facing end cap bags. Proper alignment will reduce repositioning of the shelter later.
8. Remove two shelter cinch straps (Figure 3, Item 6) and place in transport bag to prevent loss. The repair kit (Figure 3, Item 7) should also be returned to transport bag.
9. If the shelter is to be used in conjunction with (joined to) other shelters, orient the shelter so that an open end of the shelter is facing the shelter to be joined to. Proper alignment will reduce the repositioning of the shelter later.

END OF TASK

Expand Shelter

- 1 Position six team members around shelter perimeter (see Figure 4)
- 2 Locate outermost exterior keepers (keepers with the coated steel wire loops) which are attached to the hubs

CAUTION

When lifting hubs, lift from underneath where hub is connected to strut. Do not lift the shelter by the struts only. Do not lift by coated steel wire loops. The outermost exterior hubs and the top of the struts are the only places from which shelter should be lifted.

Check that wind lines are not snagged on any hubs or fabric areas.

If any resistance is felt by any team member, immediately yell "STOP", identify restriction (WP 0010, Operator Troubleshooting Index), and correct it.

3. With both hands, grasp hubs and on the Team Leader's command, lift the shelter, take two short steps backward, and put the shelter down.
4. Continue to lift, step back, and expand shelter as shown in Figure 4 until the shelter is at maximum spread (at maximum spread, the shelter will resist any further expansion).

NOTE

For M Shelter, expand second main shelter section and position next to first expanded shelter.

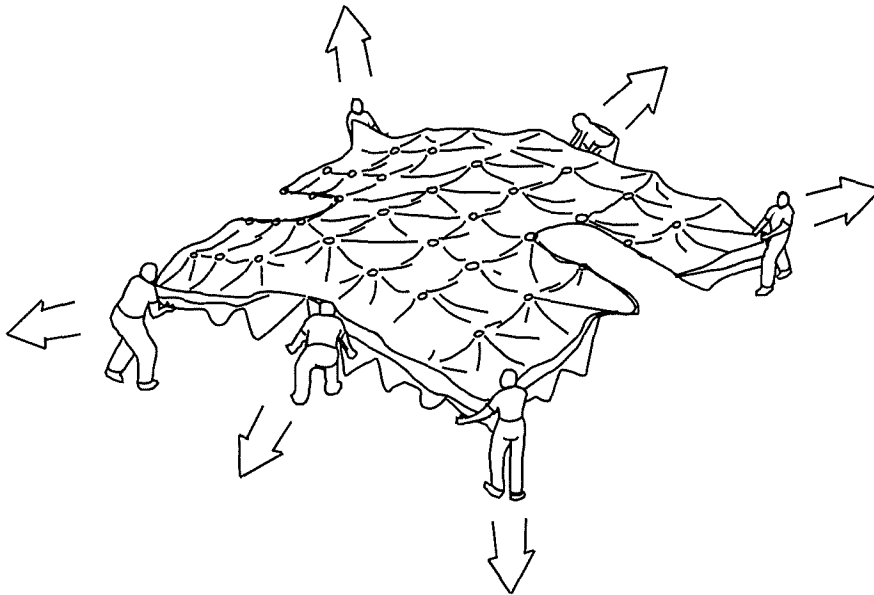


Figure 4 Expand Shelter.

- 5 For continuation of MX/MX5 Shelter setup, proceed to procedures "Attach End Caps to Main Section"
- 6 For continuation of M Shelter setup, proceed to procedures "Join Each Main Shelter Section"

Joining Each Main Shelter Section for M Shelter (Only)

After expanding the two main shelter sections, they may need to be adjusted to make a proper connection at the center. If so, use personnel to lift one main shelter section slightly and move it as needed with respect to the stationary main shelter section.

Before the shelter is raised to full height, both main shelter sections must be joined together as follows:

- 1 Locate black tabs sewn into centers of both ends of the main shelter section exterior cover (Figure 5, Item 1)
- 2 Beginning at black tab, join main shelter section exterior cover hook-and-loop seam to black tab on other main shelter section exterior cover hook-and-loop flap, working from center outwards until sewn-in red tab or grommet of each main shelter section

NOTE

If the hook-and-loop seam is fastened beyond the sewn-in red tabs or grommets on the double hook connector strip (Figure 5, Item 2), the shelter will not lift properly and internal struts could break.

- 3 Ensure that all hook-and-loop seams are smooth in order to prevent leaks
- 4 Repeat step 2 for hook and loop seam connection on the other side

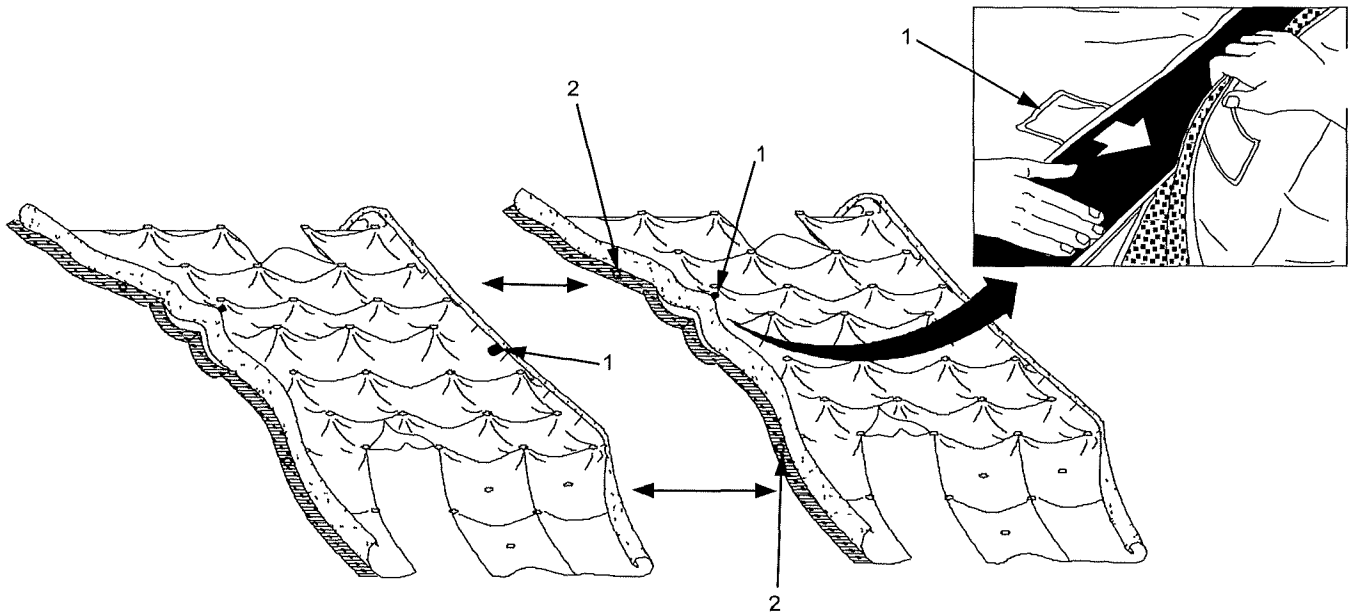


Figure 5 Joining Each Main Shelter Sections for M Shelter

END OF TASK

Attach End Caps to Main Shelter Section

Before the shelter is raised to full height, the two end caps are attached to the main shelter section as follows

- 1 Remove both end caps from transport bags (Figure 2, Item 1)
2. Remove cargo straps from end caps and stow in transport bags
- 3 Expand end caps in same manner as shown in Figure 4
- 4 Orient each end cap so that red hubs are pointed towards mounting pins on main shelter section frame
- 5 Unroll two cover sides of each end cap.
- 6 Align both end caps (Figure 6, Item 1) to two open ends of the main shelter section (Figure 6, Item 2)

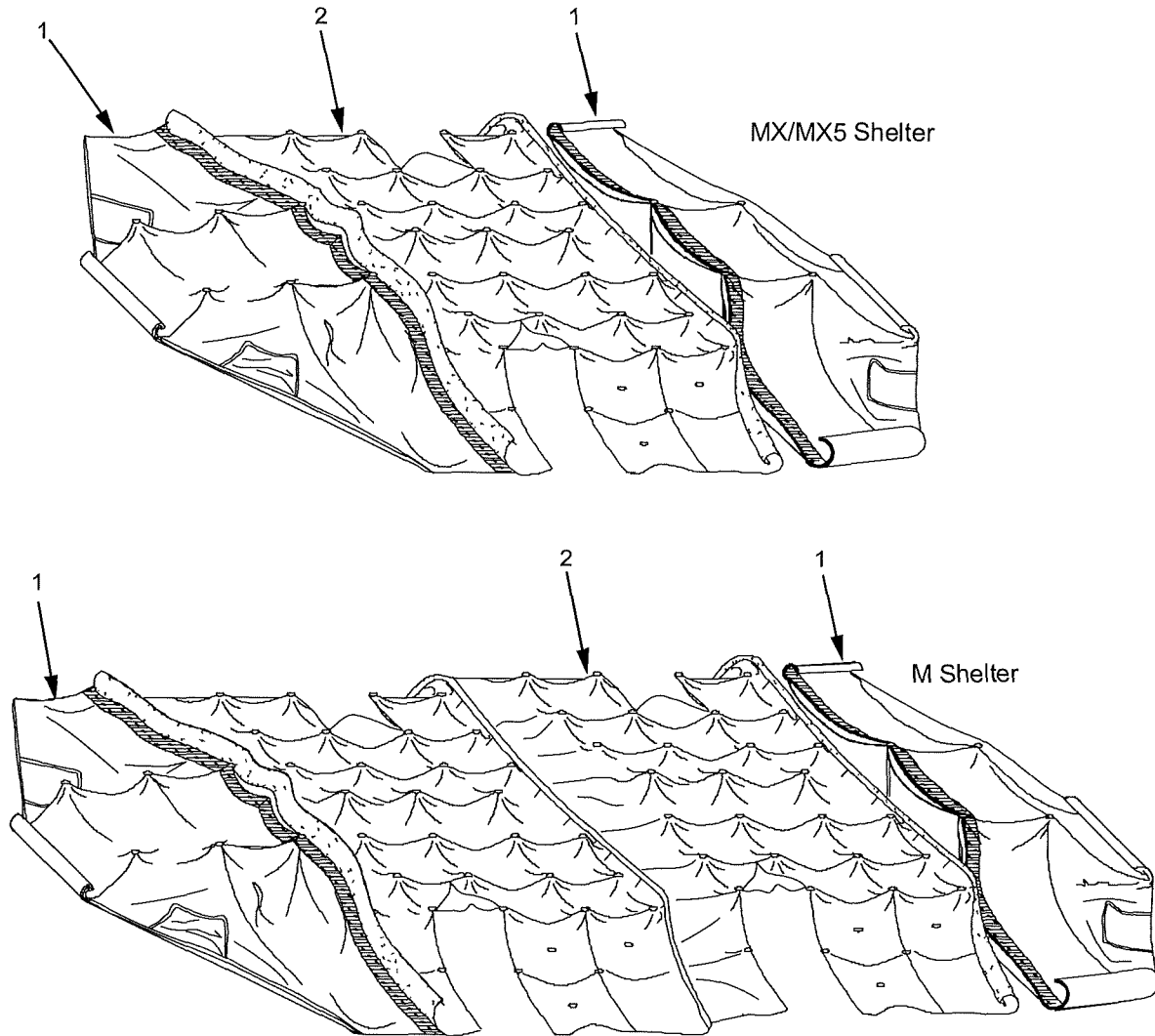


Figure 6 Position End Caps Next to Center Section

Attach End Caps to Main Shelter Section - Continued

- 7 Secure one end cap frame (Figure 6, Item 1) to one end of the main shelter section frame (Figure 6, Item 2) by lifting end cap and placing red end cap hubs (Figure 7, Item 2) onto pin protruding from the white colored hubs (Figure 7, Item 3) on the main shelter section frame
- 8 Insert pin (Figure 7, Item 5) to secure red hubs to white hubs.

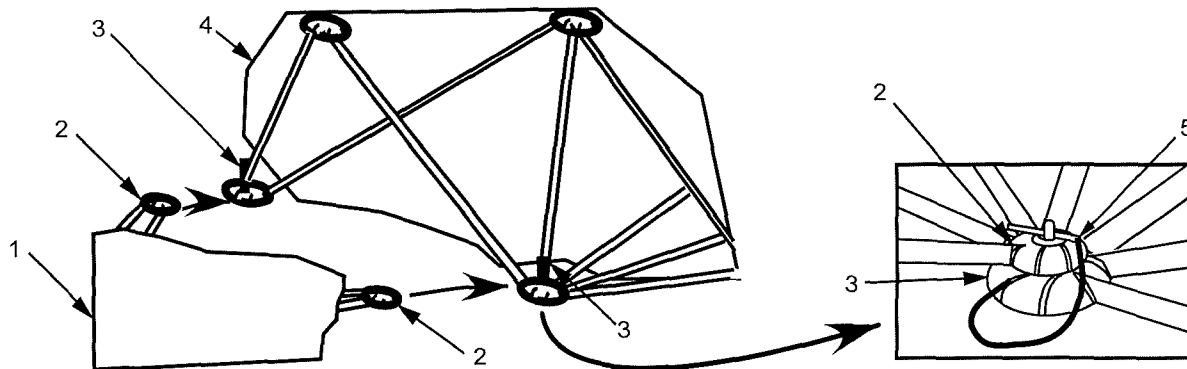


Figure 7. Secure End Cap Frame to Center Section Frame

- 9 Locate black tabs sewn into centers of both ends (Figure 8, Item 1) and on the centers of main shelter section exterior cover (Figure 8, Item 2)
- 10 Beginning at black tab on end cap, join end cap exterior hook-and-loop seam to black tab on main shelter section exterior hook-and-loop flap, working from center outwards to edge of upper end cap frame

NOTE

If the hook-and-loop seam is fastened beyond the sewn-in red tabs or grommets on the double hook connector strip (Figure 8, Item 3), the shelter will not lift properly and internal struts could break

- 11 Locate sewn-in red tabs or grommets on both ends of main shelter section interior cover and on both ends of end cap interior cover
- 12 Beginning at the red tab on end cap, connect the hook-and-loop seam to the flap, working from the red tab outward to the sewn-in red tab or grommet of the double hook connector strip on each side of the main shelter section hook-and-loop flap

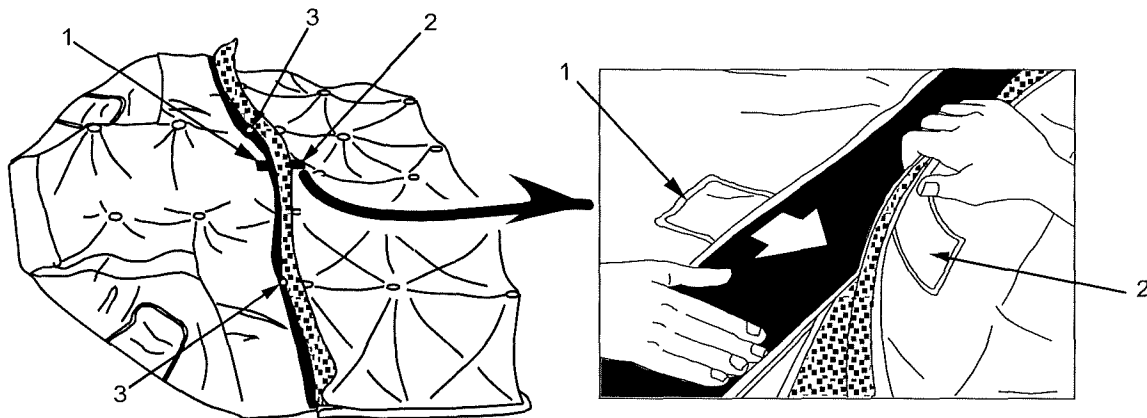
Attach End Caps to Main Shelter Section - Continued

Figure 8 Secure End Cap Covers to Main Shelter Section Covers

- 13 Attach hook-and-loop seam on end cap exterior cover down to the sewn-in red tab or grommet
- 14 Ensure that all hook-and-loop seams are smooth in order to prevent leaks
- 15 If not already opened, unzip the doors on end caps to allow access for push poles
- 16 Repeat above steps for opposite end cap

END OF TASK

Lifting – First Lift**NOTE**

A minimum of four personnel, each with their own push poles, are required to perform the following steps for the MX Shelter

A minimum of four six personnel, each with their own push poles, are required to perform the following steps for the MX5 Shelter

A minimum of eight personnel, each with their own push poles, are required to perform the following steps for the M Shelter

Lifting the any of the M Series shelters is performed in two stages First Lift to push pole height and Second Lift to full height

- 1 Locate the push poles in the transport bag and distribute to the team personnel. The MX shelter is provided with four push poles, MX5 shelter is provided with six push poles, and the M shelter is provided with eight push poles
- 2 Look under shelter exterior cover and locate the red flags (Figure 9) secured on both sides of the interior cover (one or two red flags per side) There is one keeper associated with each red flag

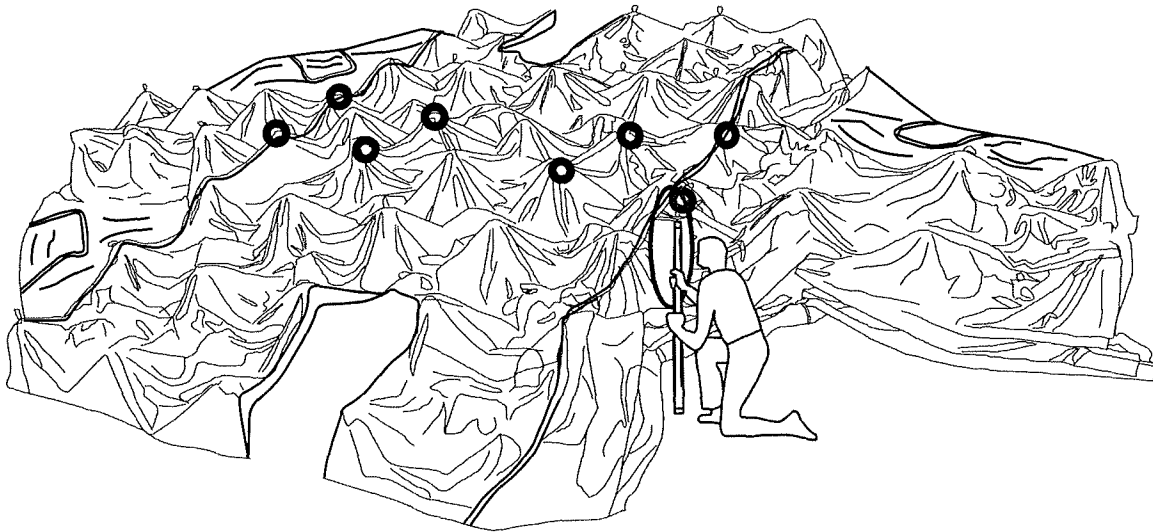


Figure 9 Position of Red Flag Keepers

- 3 Each team member must place one hand on flagged keeper and hold push pole in other hand

CAUTION

Never lift on a keeper that does not have a red flag Failure to follow this caution could result in damage to the shelter

- 4 On command, simultaneously lift shelter with one hand and place their respective push poles under keeper with the red flag.
- 5 As quickly as possible, lift until push poles will fit vertically between ground and keeper
- 6 Slowly lower shelter until push poles are supporting entire shelter as shown in Figure 9 and Figure 10

Lifting – First Lift - Continued**NOTE**

Some shelters have additional red flags on the interior cover which are used for the second lift

- 7 If there are additional red flags on the interior cover, one team member at a time will need to move push pole from their initial outer red flag position to the second inner red flag position closest to them

WARNING

Team personnel are required to always hold the shelter when it is resting on the push poles because it is not totally stable. The team leader must always monitor this operation and should immediately stop progress if there is any sideways motion of the shelter. Serious personal injury and damage to the shelter could result.

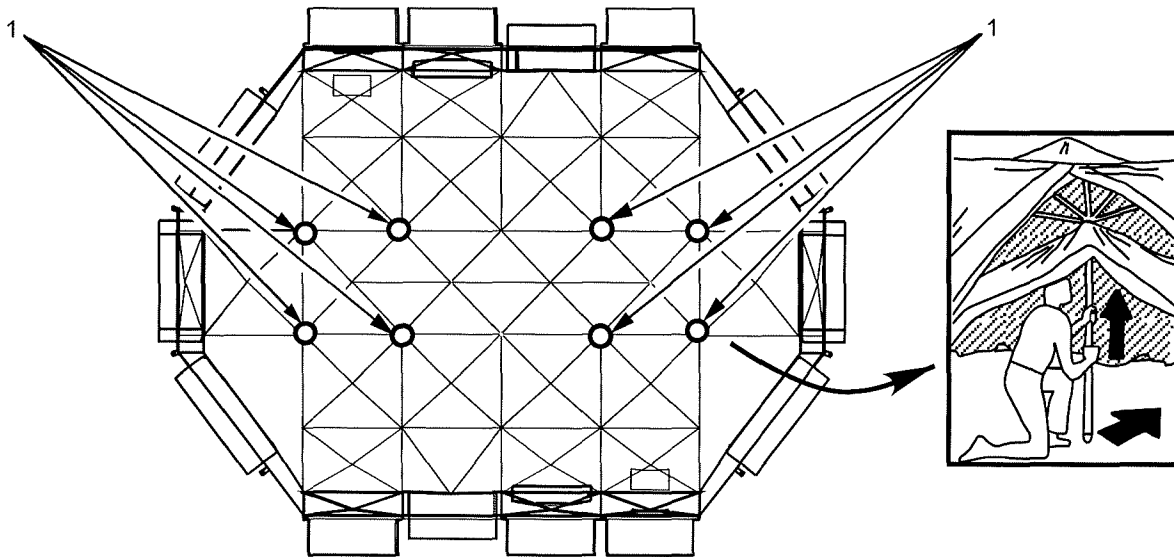


Figure 10. Shelter Resting on Push Poles

- 8 For continuation of MX/MX5 Shelter setup, proceed to procedures for "Lifting – Second Lift"
- 9 For continuation of M Shelter setup, proceed to procedures "Attach Seam Reinforcement" before continuing "Lifting – Second Lift"

Attach Seam Reinforcement Strip for M Shelter (Only)**WARNING**

Team personnel must hold the shelter steady when it is resting on the push poles because it is not totally stable. The team leader must always monitor this operation and should immediately stop progress if there is any sideways motion of the shelter. Serious personal injury and damage to the shelter could result.

- 1 Locate bag containing the seam reinforcement
- 2 While team personnel hold the shelter steady, two personnel should enter the shelter to attach the seam reinforcement strip to the center of both main shelter sections
- 3 Locate sewn-in red tabs on both the interior cover connector and on the seam reinforcement strip as shown in Figure 11
- 4 Beginning at the center red tab as shown in Figure 11 on interior cover, join interior cover hook and loop seam to the center red tab on seam reinforcement strip hook and loop flap, working from center outwards to sewn-in red tab three-quarter of the way down from the top

NOTE

If the hook-and-loop seam is fastened beyond the sewn-in red tabs on the interior cover connector strip, the shelter will not lift properly and internal struts could break.

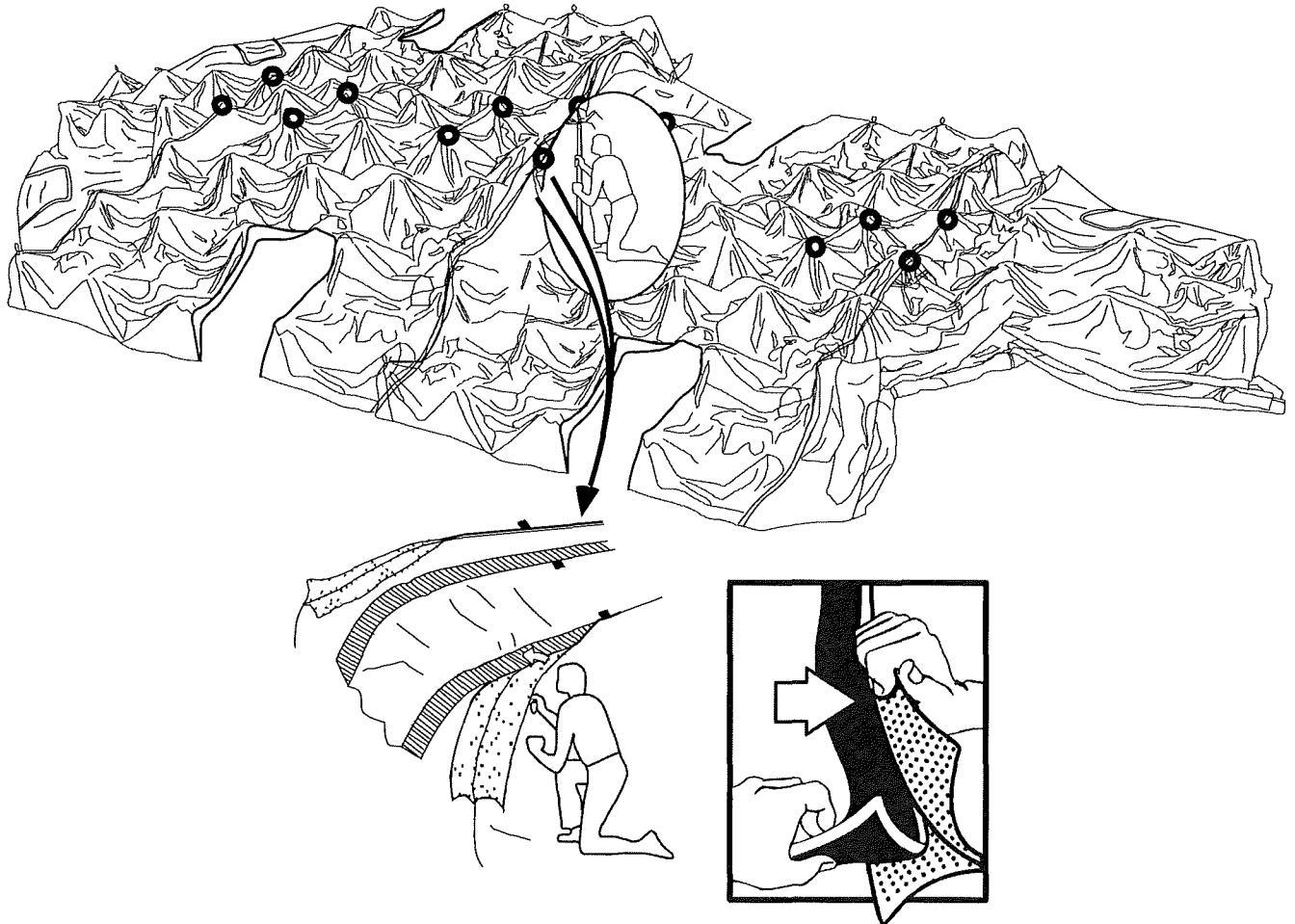
Attach Seam Reinforcement Strip for M Shelter (Only) - Continued

Figure 11 Attaching Seam Reinforcement Strip

5. Ensure that all hook and loop seams are smooth in order to prevent leaks
6. Repeat steps 3 and 4 to attach interior cover connector to seam reinforcement strip on other half of the main shelter section

END OF TASK

Lifting - Second Lift**CAUTION**

If setting up during high winds, position additional team personnel along the windward side to hold wind lines while shelter is being raised

Never lift on keepers that do not have red flags. Damage to frame could result

Prior to final lift, all team personnel should check that doors and wind lines are not caught on any hubs or between struts. A snagged cover or wind line will prevent shelter from lifting to full height

If any resistance is felt, stop immediately to prevent possible damage to the shelter

- 1 Grasp bottom of push polls and on command, lift shelter upwards until side walls come to a vertical position and shelter is self-supporting
- 2 Inspect hubs attached at bottom of shelter frame and make sure hubs are in a vertical position. If necessary, lift and push into position
3. The shelter should now be fully erect as shown in Figure 12
- 4 If shelter is not in desired location, go to Reposition Shelter (page 0005-18)
- 5 If shelter is in desired location, finish securing both end caps to main shelter section by attaching hook and loop seam from grommet down to ground
- 6 For M Shelter Only, finish securing seam reinforcement strip to the interior cover by attaching hook and loop seam from grommet down to ground
- 7 If shelter is in desired location, start at one corner and place one stake (Figure 12, Item 1) through each shelter staking loop (Figure 12, Item 3) and each shelter staking bracket (Figure 12, Item 2) on all sides of the shelter and hammer stakes into ground using the hammer provided in the shelter stake kit
- 8 Install Floor for M Shelter (page 0005-19) or for MX/MX5 Shelter (page 0005-20) and Secure Shelter (page 0005-20)
- 9 Return push poles, cinch straps, and stake bag to shelter transport bag

Lifting - Second Lift - Continued

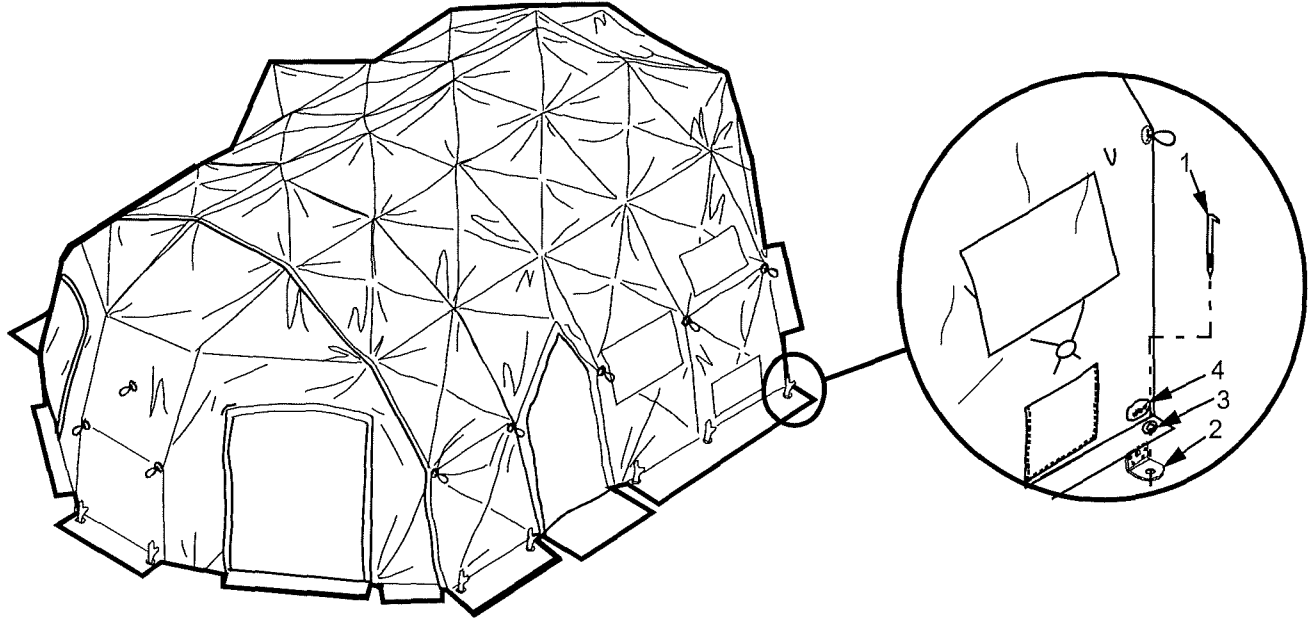


Figure 12 Shelter in Erected Position

END OF TASK

Reposition Shelter

The following two methods are used to reposition the shelter

Method 1 - Push Poles

- 1 From inside the shelter, place push poles against keeper associated with each red flag (refer to Figure 9 and 10 Item 1) and lift shelter off ground
- 2 Team personnel should move shelter in unison so that shelter is positioned correctly Stop immediately if bottom of any wall drags on ground
- 3 Return push poles to the transport bag and place out of the immediate work area

Method 2 – Arms and hands

- 1 For small adjustments, position team personnel at four corners (Figure 13, Item 1) and at the ends (Figure 13, Item 2).
- 2 Lift the shelter from the corners (Figure 13, Items 1) and ends (Figure 13, Items 2) in unison and move to desired position
- 3 Have team personnel inspect hubs (Figure 12, Item 4) attached at bottom of shelter frame and make sure hubs are in a vertical position If necessary, lift and push into position

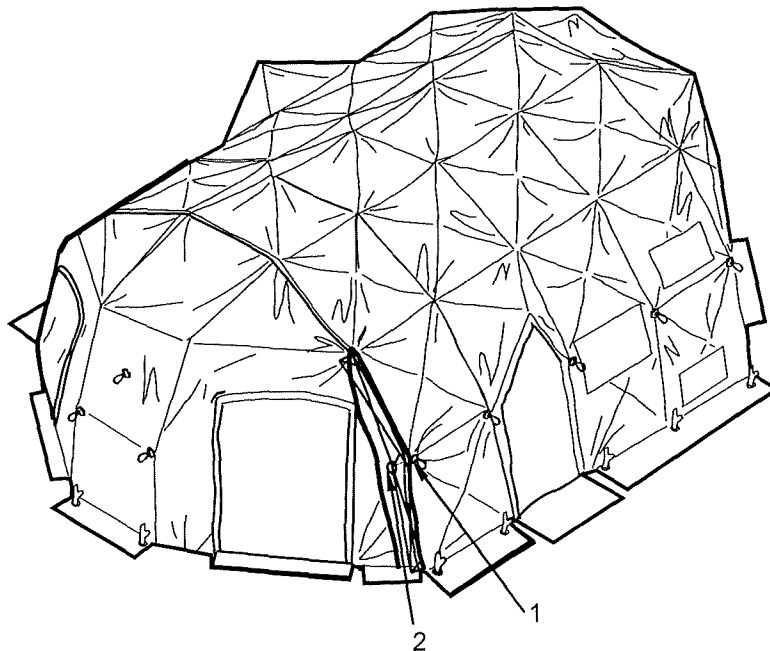


Figure 13 Shelter Lift Locations

END OF TASK

Install Floor – M Shelter

1. Prepare to install shelter floor by ensuring that all inner flaps are pulled in and are laying flat with hook and loop fastener strip facing up
2. Identify which shelter side door will be used as the primary door.
3. Place floor inside shelter by primary door and unfold floor
4. Center door flap on floor to shelter side door
5. Check fit of floor with respect to shelter
6. Starting at the primary door, begin attaching floor along the side of main shelter section as shown in Figure 14.
9. Pull floor tight towards inside of secondary door to remove any slack or bumps
10. Join opposite side of floor to shelter to complete one half of the main shelter section floor installation
11. Repeat steps 3 - 10 for installing the second floor in the other half of the main shelter section

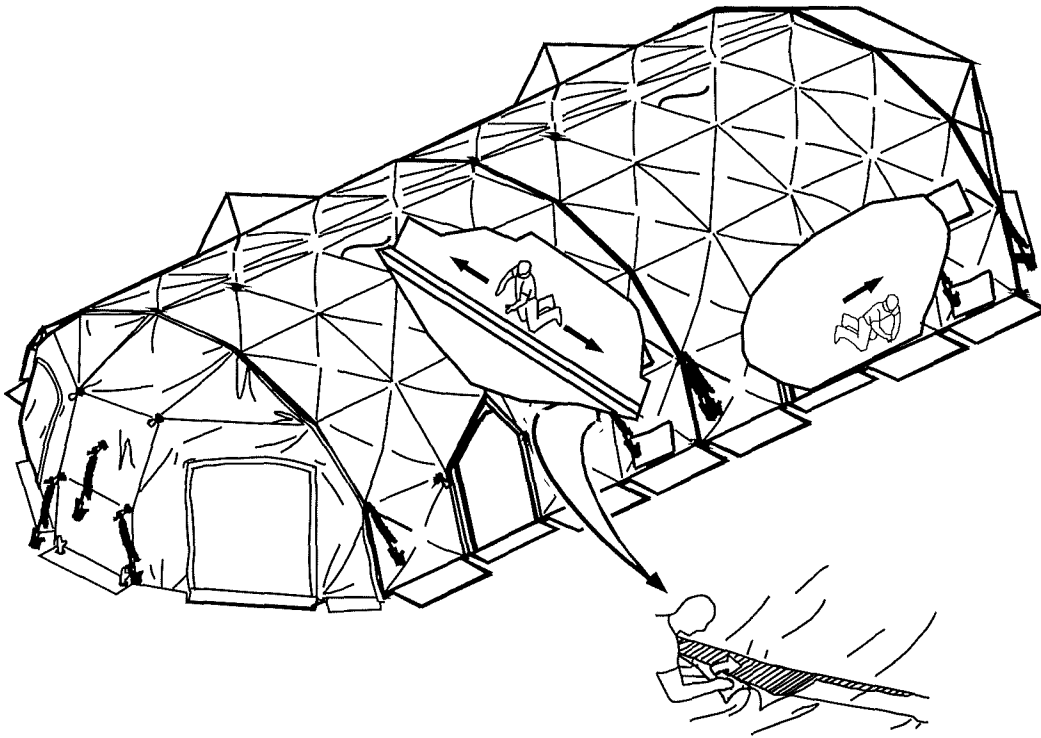


Figure 14 Attach Floor to M Shelter

12. Ensure all slack or bumps have been removed and any final adjustments before attaching the center hook and loop connection
13. Join both floors in the center by overlapping one end on top of the other end and attaching the hook and loop seams together.
14. Ensure all seams are smooth to prevent any hazards

END OF TASK

Install Floor – MX and MX5 Shelter

- 1 Prepare to install shelter floor by ensuring that all inner flaps are pulled in and are lying flat with hook and loop fastener strip facing up
- 2 Identify which shelter side door will be used as the primary door
- 3 Place floor inside shelter by primary door and unfold floor
- 4 Center door flap on floor to shelter side door
- 5 Check fit of floor with respect to shelter
- 6 Using two team personnel begin attaching floor to shelter center section on either side of door and work in opposite directions as shown in Figure 15 and complete joining floor to one side of shelter
- 7 Pull floor tight towards inside of secondary door to remove any slack or bumps
- 8 Join opposite section of floor to shelter to complete floor installation

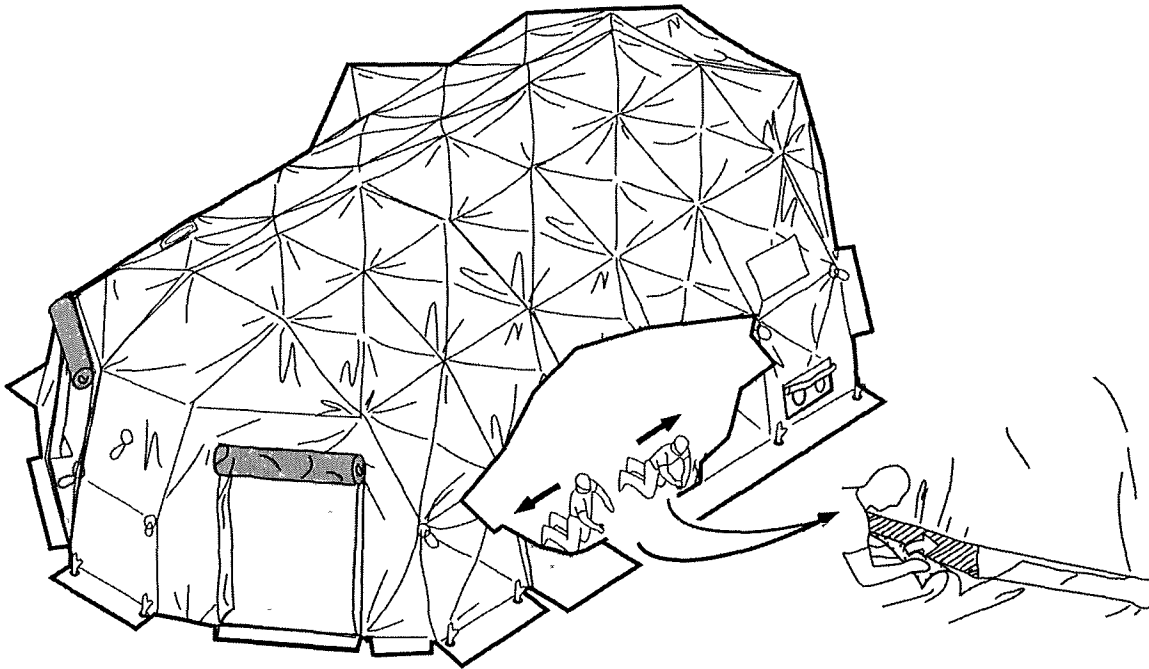


Figure 15 Attach Floor to Shelter

END OF TASK

Connect ECU Ducts to Shelter**NOTE**

This procedure is generic to cover the basics of connecting air handling ducts from an Environmental Control Unit (ECU) to the shelter. ECU ducts are not provided with the shelter.

- 1 Remove ducts from transport bags and place transport bags out of the immediate work area
- 2 Position belted end of each duct toward shelter ECU ports and loosen belt on each duct

NOTE

Some ducts have a fine screen mesh on one side of duct opposite belted end. Screen mesh end of duct goes inside shelter. The belted side of the ducts goes to the ECU.

- 3 Insert air supply duct (Figure 17, Item 2) through upper ECU duct port (Figure 17, Item 1)
- 4 Insert air return duct (Figure 17, Item 3) through lower ECU duct port (Figure 17, Item 4)
- 5 To cool shelter, pull air supply duct (Figure 17, Item 2) through upper duct port (Figure 17, Item 1). Pull air return duct (Figure 17, Item 3) through lower duct port (Figure 17, Item 4). Ensure there is approximately two feet of air supply duct and one foot of air return duct pulled into shelter at each port.
- 6 To heat shelters, pull air supply duct (Figure 17, Item 3) through lower duct port (Figure 17, Item 4). Pull air return duct (Figure 17, Item 2) through upper duct port (Figure 17, Item 1). Ensure that there is approximately two feet of air supply duct and one foot of air return duct pulled into shelter at each port.

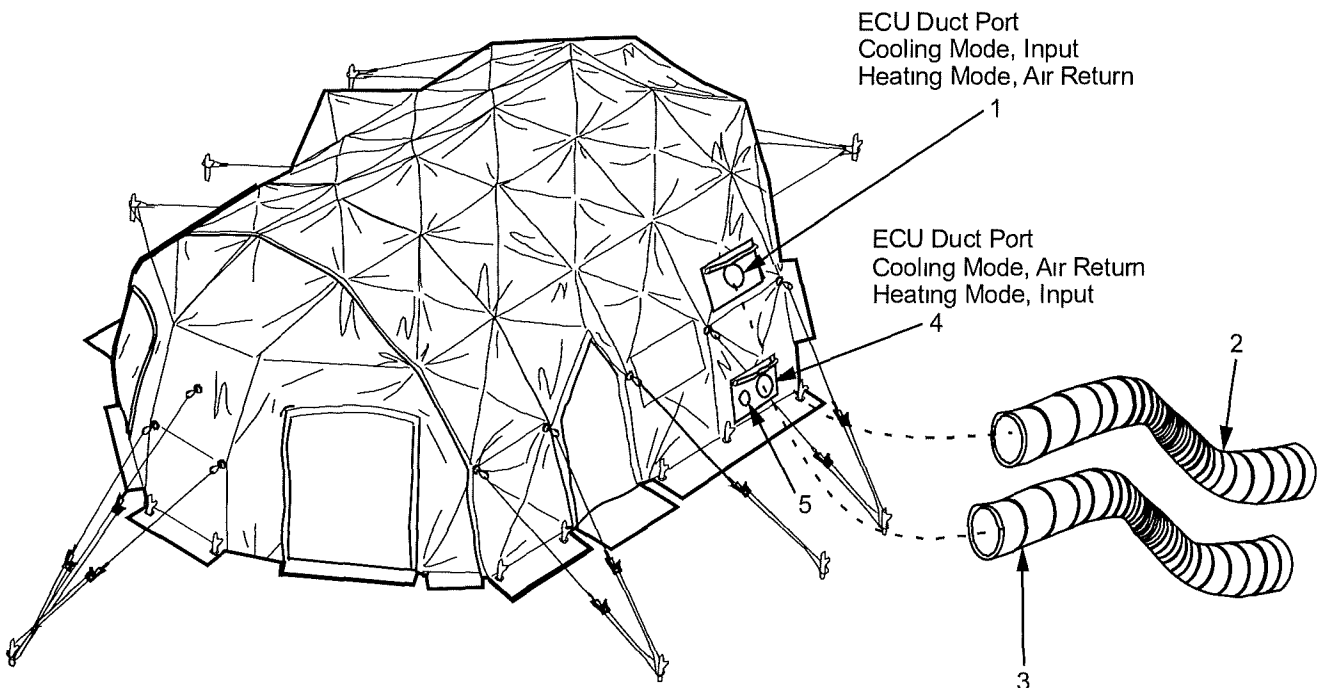


Figure 17 Connect Ducts to Shelter

END OF TASK

Shelter Cable Management

NOTE

Shelter cable management is for the MX Shelter only. The M and MX5 shelters do not have the cable runs built into the shelter floor.

There are two cable sleeves built into the shelter, one per side, to route various cable into the shelter. Also, there are two cable runs built into the MX shelter floor to help manage the routing of various cables around the shelter interior.

NOTE

Depending on mission requirements, cables can be routed into the shelter from one or both sides as shown in Figure 18.

- 1 Open the hook-and-loop cover of either cable sleeve (Figure 18, Item 4) on the sides of the shelter next to the ECU duct ports.
- 2 Run your cable(s) (Figure 18, Item 3) into and through either (or both) cable sleeve located in shelter interior and exterior covers (Figure 18, Item 4).
- 3 If cables need to cross the shelter floor (Figure 18, Item 2) to reach their destination, place the cables in the hook-and-loop runs (Figure 18, Item 1) in the shelter floor immediately below the cable sleeves.

NOTE

The hook-and-loop covers to shelter cable runs and cable sleeves should always be closed around the cable to prevent possible tripping hazards in the floor and to secure the best possible environmental seal for the shelter sides.

- 5 Route cables through shelter so that cables do not interfere with movement of personnel and equipment in and around the shelter.

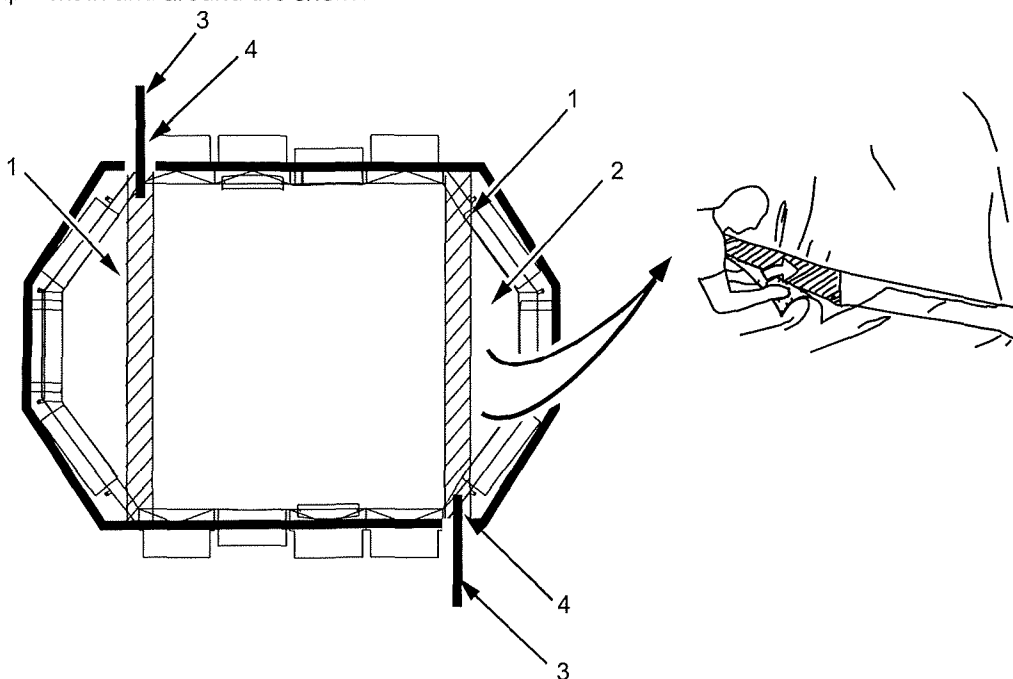


Figure 18 MX Shelter Power Cable Arrangement

END OF TASK

OPTIONAL PROCEDURE – Your system may or may not include the equipment described below.

Install Shelter Lighting

The shelter includes interior looped keepers capable of supporting hanging light sets. Typically, hanging lights have strap-mounted clips and can be daisy-chained together so that one cable is used for lighting the shelter.

- 1 Arrange shelter lighting fixtures (Figure 19, Item 2) on shelter floor
- 2 Starting with lighting fixture closest to the source power cable (Figure 19, Item 1), connect the male connector of first lighting fixture to female connector of power cable
- 3 Connect female connector of same lighting fixture to male connector of second lighting fixture
- 4 If available, connect additional lighting fixtures to second fixture
- 5 Turn on one or both light fixtures to verify correct operation
- 6 Lift first lighting fixture and connect clip (Figure 19, Item 4) to the looped keepers closest to power input cable
- 7 Slide strap locks (Figure 19, Item 3) up or down the straps to level lighting fixture at desired height
- 8 Lift second lighting fixture and stretch power cord from first lighting fixture to second lighting fixture
9. Connect second lighting fixture clip connectors to looped keepers at far end of shelter
10. Repeat procedure above for additional lighting fixtures

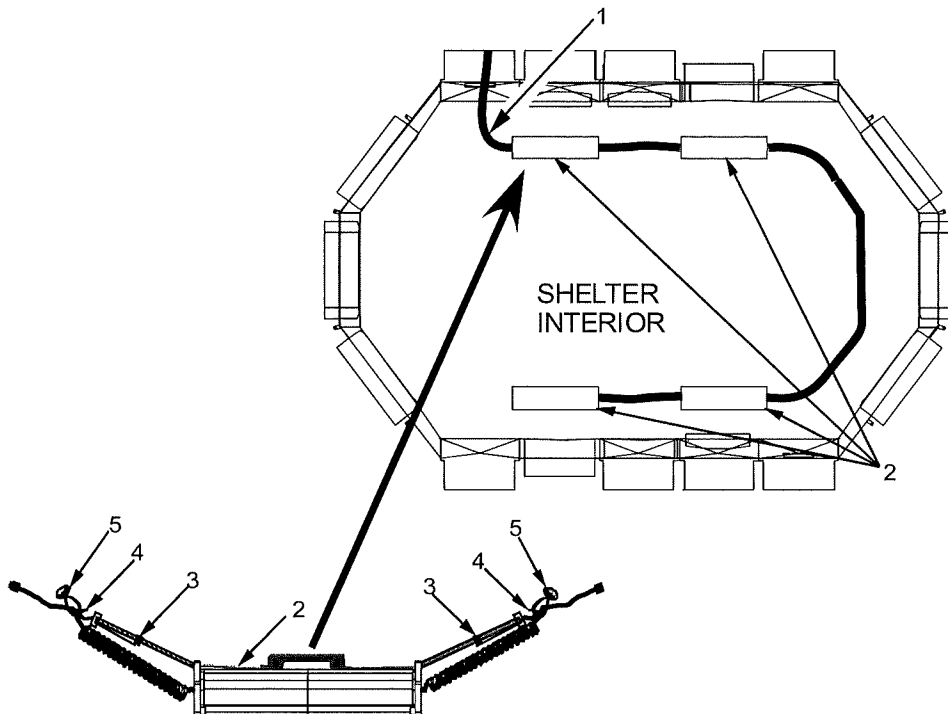


Figure 19 Typical Shelter Lighting Arrangement

END OF TASK

OPTIONAL PROCEDURE – Your system may or may not include the equipment described below.

Plenum Installation

The plenum distributes cooled air inside of the shelter more evenly. Note that a plenum is not used during shelter heating since hot air rises.

WARNING

The following steps require use of a ladder to reach the top interior of shelter. At least one team member should be assigned to secure ladder while another team member works above. Serious personal injury could result if ladder topples over.

- 1 Connect plenum (Figure 20, Item 1) to cooled air supply duct (top) (Figure 20, Item 2) and tighten plenum draw strap (Figure 20, Item 3) to secure in place.
- 2 Roll plenum out on floor from the duct towards the center and then towards the opposite corner of the shelter.
- 3 Lift plenum and secure mounting straps (Figure 20, Item 4) to looped keepers located in interior roof of shelter. Begin attaching the plenum straps to looped keepers at end closest to supply port and working towards opposite end of corner of shelter.
- 4 Verify that there are no kinks or physical obstructions along the length of the plenum once it is hung.

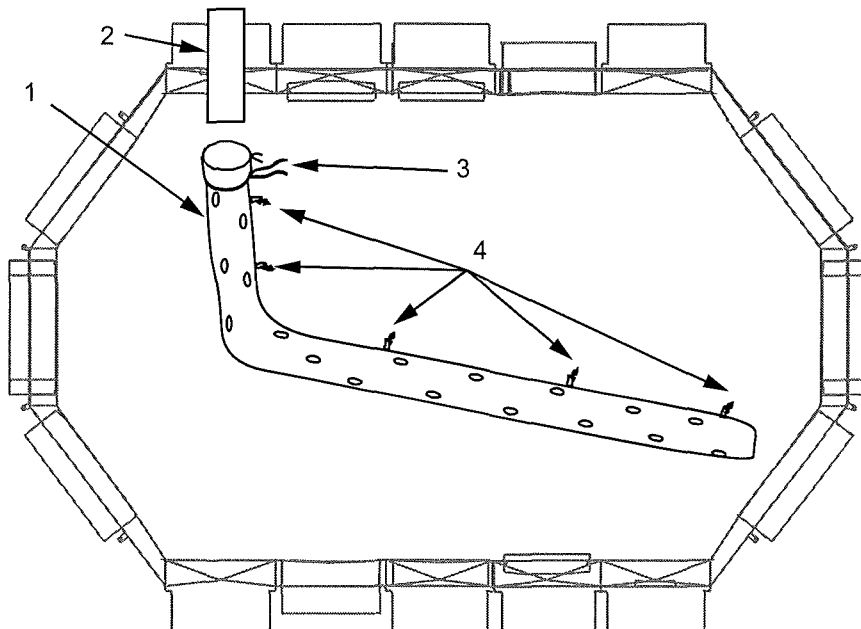


Figure 20 Install Shelter Plenum

END OF TASK

OPTIONAL PROCEDURE – Your system may or may not include the equipment described below.

Substituting Hard Door on End Cap Doorway

NOTE

A ladder or a step stool may be required to complete the following steps.

- 1 Remove the interior and exterior doors from the end cap (Figure 21, Items 1 and 2) where they are connected by opening hook and loop strip fastener starting at the bottom of one side and working up about halfway to the top
- 2 Grasp the exterior door fabric (Figure 21, Item 1) at the bottom and gently begin pulling fabric outwards and upwards, working from one side of the doorway, across the top, and down the opposite side to the bottom Repeat procedure for the interior door (Figure 21, Item 2) Roll up doors and stow in transport bag
- 3 Lift and place hard door sill (Figure 22, Item 4) in approximate position of shelter doorway
- 4 Connect inner and outer hard door sill ramps (Figure 22, Item 8) to the hard door sill (Figure 22, Item 4).

NOTE

Position hard door so that it opens outward

- 5 Lift hard door and fit both door frame tubes (Figure 22, Item 5) into sill anchor tubes (Figure 22, Item 6)
- 6 Secure hard door frame to hard door sill with bolts (Figure 22, Item 7) provided
- 7 Align the end cap black tab (Figure 22, Item 1) to the hard door interior connector center tab (Figure 22, Item 3)
- 8 Starting at the black tabs, join the hook and loop seam of the interior connector to the hook and loop flap on the interior end cap doorway Secure hook and loop seam on both sides of the hard door
- 9 Starting at the top center of the exterior connector, join the hook and loop seam to the hook and loop flap on the exterior end cap doorway Secure hook and loop seam on both sides of the hard door

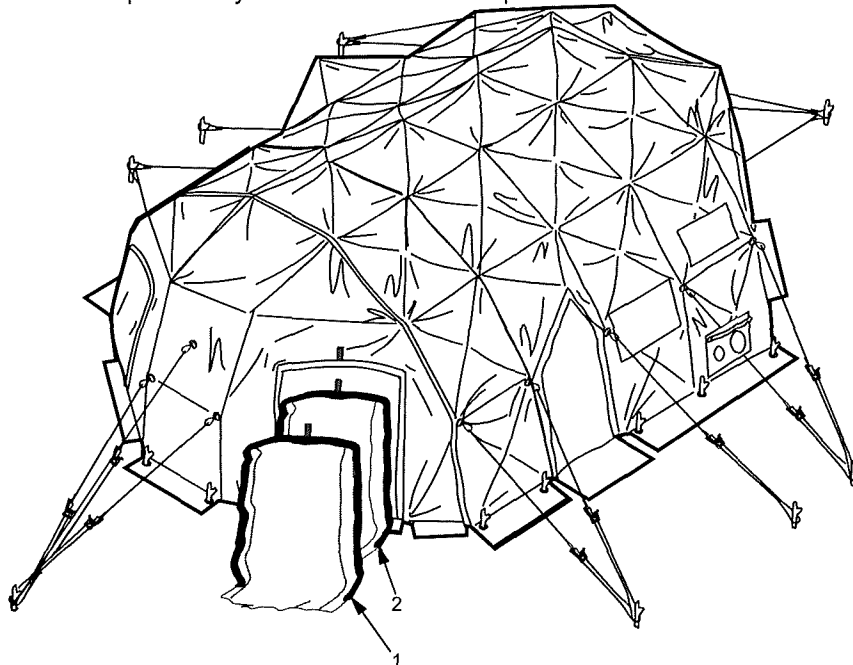


Figure 21 Removing Interior and Exterior End Cap Doors

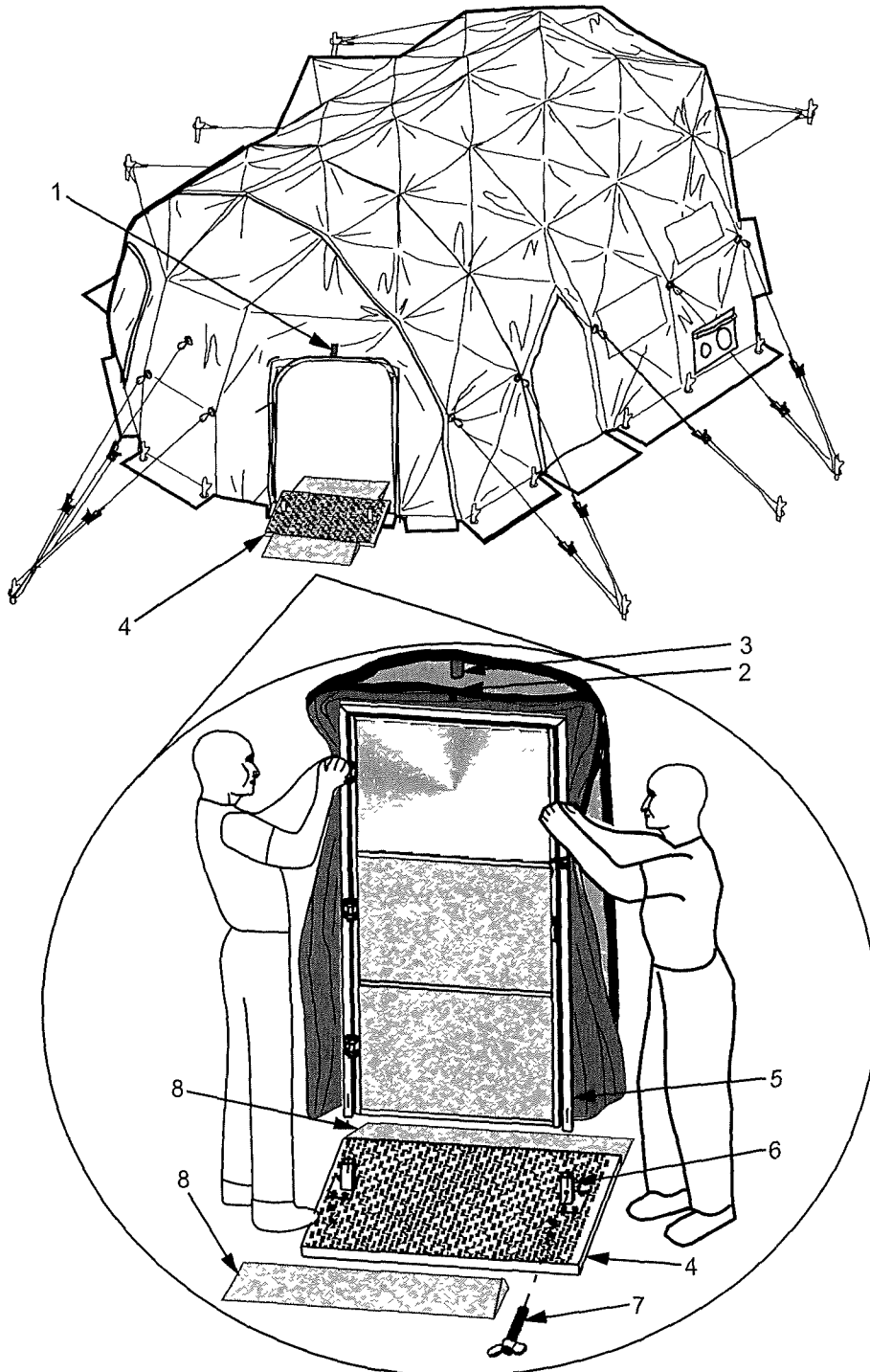


Figure 22 Installing Hard Door into End Cap

END OF TASK

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OPTIONAL PROCEDURE – Your system may or may not include the equipment described below.

Installing Maintenance Doors for the M and MX Shelter

WARNING

Measure the highest point of vehicle prior to moving vehicle inside shelter. Serious damage to equipment and personal injury could result.

The M/MX Shelter has two Maintenance Doors, one for each end of the main section of the shelter, so that vehicles can literally drive through the shelter. The Maintenance Doors are constructed so that one or both doors can be opened and closed with minimum time and effort. With the maintenance door fully opened, it measures 8.75 ft H x 11 ft W.

Each Maintenance Door consists of an exterior cover, two base brackets and a set of four rails which require field assembly. Each rail consists of seven individual components as shown in Figure 23.

The rails fit together as a "Socket and Post" assembly where the post of one rail fits into the socket of the next rail as shown in Figure 23.

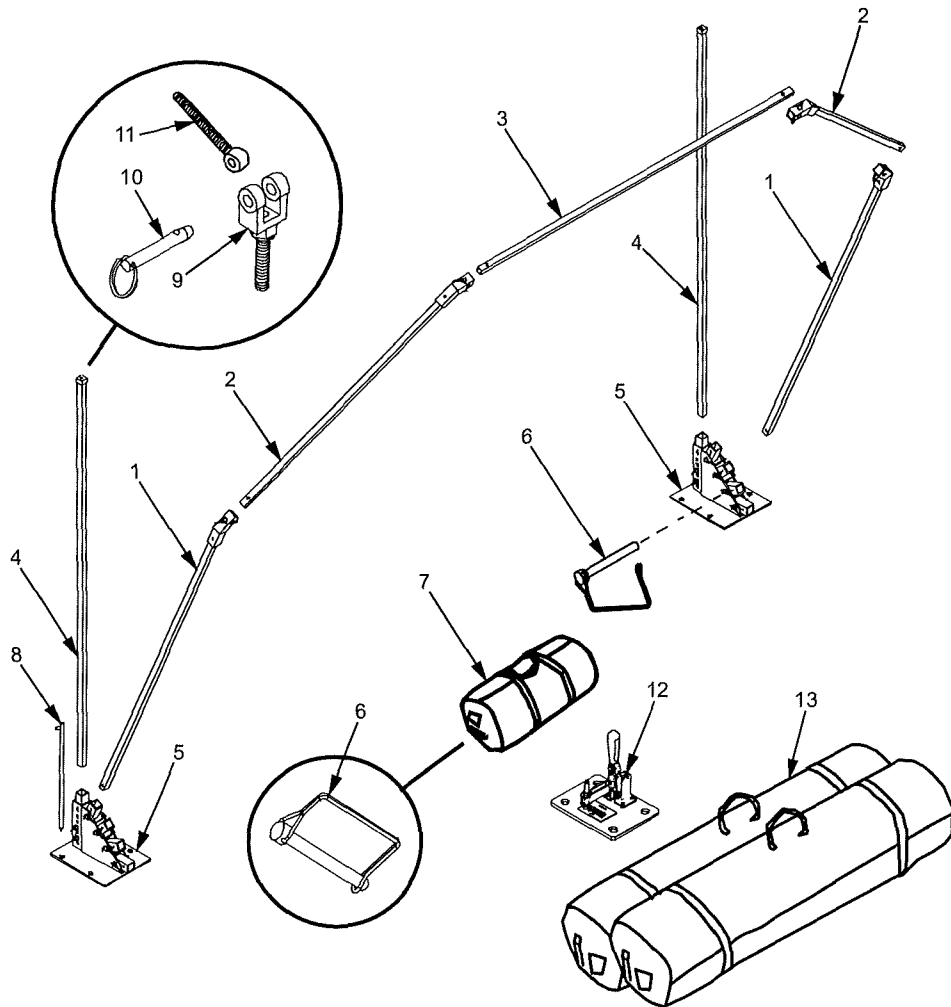


Figure 23. Exploded View of M/MX Maintenance Door Frame.

Maintenance Door Assembly Procedures**NOTE**

A minimum of three personnel are required for these procedures

The following steps require use of a ladder to reach interior ceiling of shelter
At least one team member should be assigned to secure ladder while another team member works above. Serious personal injury could result if ladder topples over.

All components of maintenance door frame items have a number stamped on them to enable assembly easier.

- 1 Setup main section of the shelter as described on page 0005-3 in this WP. Leave off end caps or, if on, remove end caps.
- 2 Layout the contents of one M/MX Maintenance Door Kit inside the main section of shelter. Verify that you have all components of kit.
- 3 Spread out maintenance door exterior cover outside one end of the main section of the shelter. Align the black tab (Figure 24, Item 1) on the main section of the shelter (Figure 24, Item 2) to the black tab (Figure 24, Item 3) at the center of the maintenance door exterior cover (Figure 24, Item 4).

NOTE

If the hook-and-loop seam is fastened beyond the sewn-in red tabs on the double hook connector strip, the maintenance door will not lift properly and damage can result in tearing the exterior cover.

- 4 Beginning at black tab on the maintenance door exterior cover, connect the hook-and-loop seam to the main shelter section of the shelter flap, working from the black tab outward to the red tabs sewn in each side of main shelter section hook-and-loop flap.
- 5 Ensure that all hook and loop seams are smooth in order to prevent leaks.

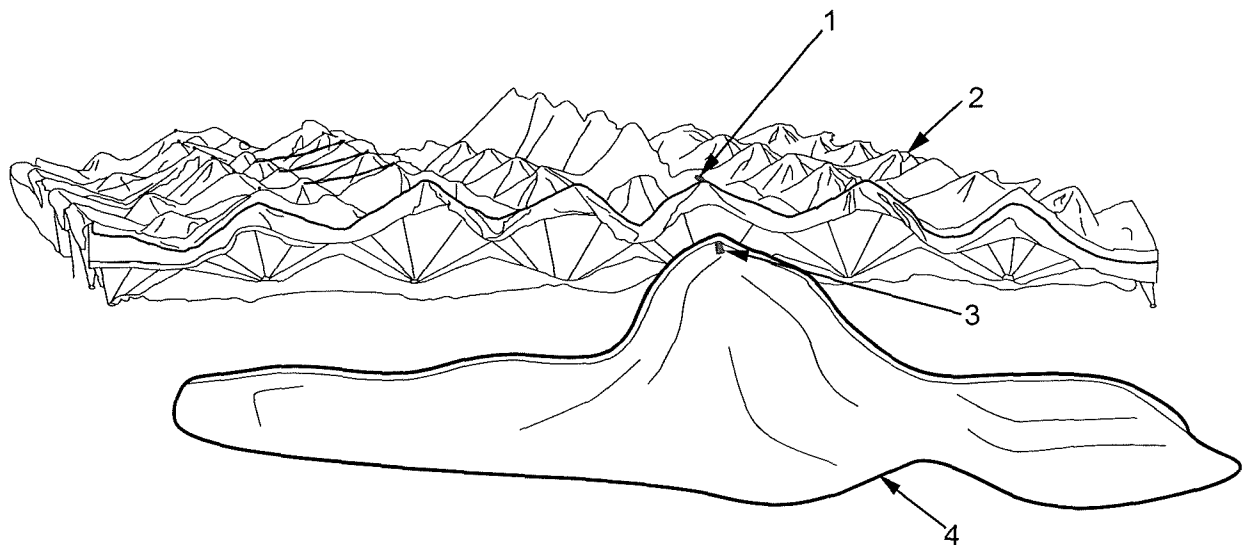


Figure 24 Attaching Maintenance Door Exterior Cover to Shelter

Maintenance Door Assembly Procedures - Continued

- 6 Locate and place two base brackets stamped with #1 and #4 (Figure 25, Item 4) on each side at the entrance of the maintenance door. Ensure the female tube opening side with the stamped #4 is facing towards the main section of the shelter
- 7 Locate and place two vertical support poles stamped with #4 (Figure 25, Item 7) on one end into each base bracket stamped with #4 (Figure 25, Item 4) and secure using two pins (Figure 25, Item 5)
- 8 Remove looped keeper (Figure 25, Item 9) from two positions where the maintenance door vertical support pole will connect to frame (not shown) and thread one eye bolt (Figure 25, Item 11) into each threaded hub (Figure 25, Item 8)
- 9 Join the vertical support pole to the shelter by aligning the eye bolt (Figure 25, Item 11) inside the clevis rod end (Figure 25, Item 12) and securing with the quick release pin (Figure 25, Item 10) You may need to adjust the placement of the vertical support pole pinned in the base bracket as instructed in step 7
- 10 Once the base bracket and vertical support pole has been installed, secure base bracket to the ground using four pin stakes (Figure 25, Item 6)
- 11 Repeat steps 8 through 10 for the installing the other vertical support pole
- 12 Locate and place center rail stamped with #3 (Figure 25, Item 3) on each male end in the center of work area
- 13 Locate and place two upper side rails stamped with #2 on male end and #3 on female end (Figure 25, Item 2) on each side of the center rail (Figure 25, Item 3)
- 14 Insert male end of center rail #3 (Figure 25, Item 3) into upper side rail female end stamped with #3 (Figure 25, Item 2) Secure both rails together using one pin (Figure 25, Item 5) Repeat step for other side
- 15 Locate and place two lower side rails stamped with #2 on female end and #1 on male end (Figure 25, Item 1) below each upper side rail (Figure 25, Item 2)
- 16 Insert male end of upper side rail #2 (Figure 25, Item 2) into lower side rail female end stamped with #2 (Figure 25, Item 1) Secure both rails together using one pin (Figure 25, Item 5) Repeat step for other side

NOTE

At least three team personnel are required to safely lift and move the completed frame rail assembly

- 17 Move the completed frame rail towards the outside of the shelter
- 18 Continue moving completed frame rail assembly towards the outside of the shelter pushing against the fabric of the maintenance door exterior cover
19. Lower the frame rail assembly post ends into the base brackets
- 20 Align the hole of the frame rail assembly post stamped with #1 into the uppermost hole stamped with #1 of the base bracket (Figure 25, Item 4)

NOTE

The assembly process should always start with securing the first frame rail to the uppermost hole in the base bracket and then each successive frame rail should be secured to the next lower hole in the base bracket

All mounting pins should always be assembled in the same direction

Maintenance Door Assembly Procedures - Continued

- 21 Insert pin (Figure 25, Item 5) through the flange of the base bracket (Figure 25, Item 4), through frame rail post (Figure 25, Item 1), and through the flange of the opposite side of the base bracket as shown in Figure 25
- 22 Repeat steps 12 through 21 for the remaining three frame rails to complete the maintenance door assembly

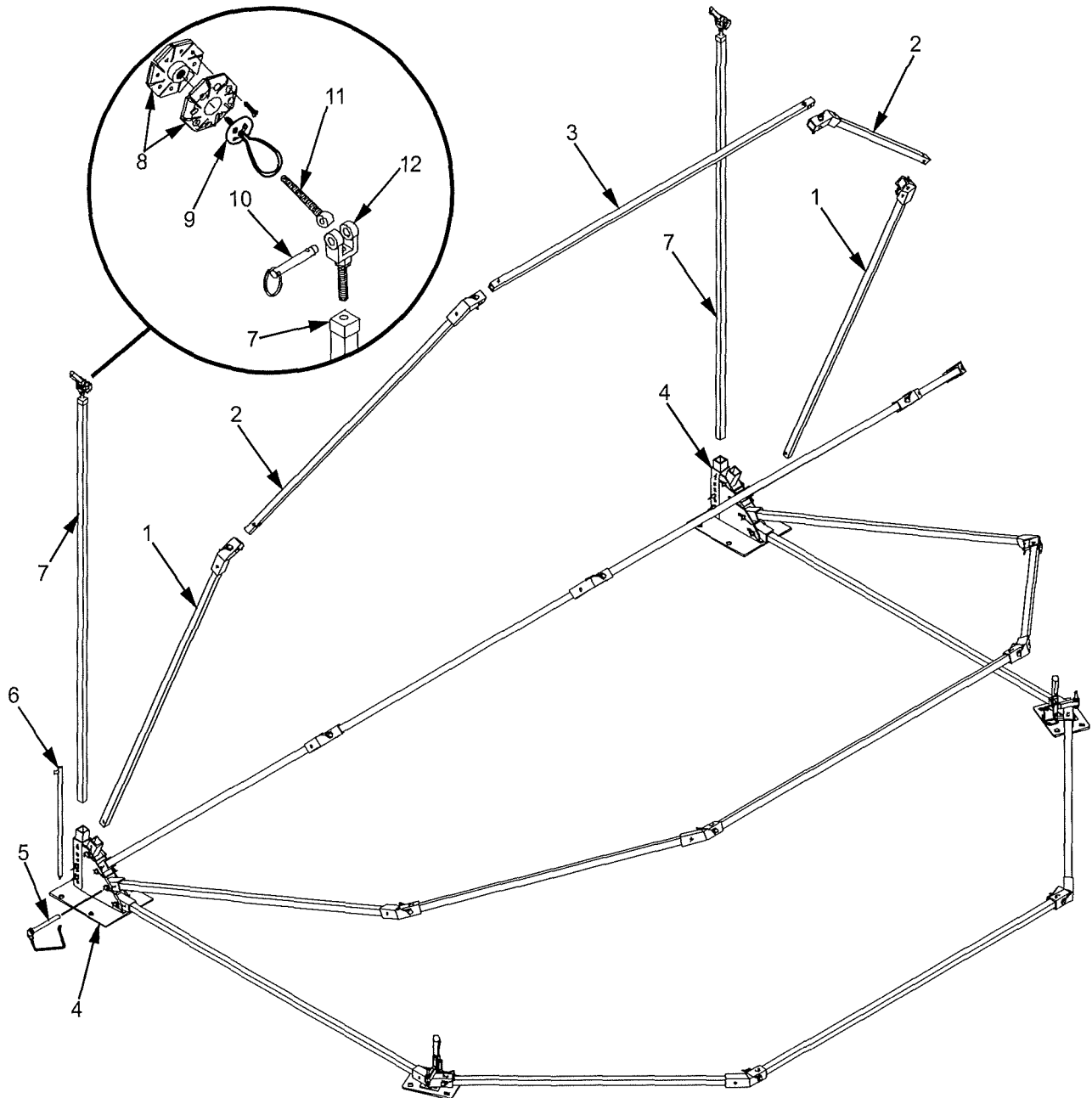


Figure 25 Assembly of the Maintenance Door Frame Rails

Maintenance Door Assembly Procedures - Continued**Attaching Maintenance Door Exterior Cover to Frame Rail Assembly****NOTE**

A minimum of three team personnel are required for this procedure

- 23 Push the maintenance door exterior cover outward over the assembled frame rails resting on the ground
- 24 Lift the first frame rail assembly (Figure 26, Item 3) by the corners. Raise the first frame rail assembly upward and begin working the maintenance door exterior cover over the frame rail assembly
- 25 Move the first frame rail assembly to the upper maintenance door exterior cover seam. The first frame rail should be at approximately at a 60 degree angle, as shown in Figure 26
- 26 Two team members should hold the first frame rail assembly in position while the third team member using a ladder, attaches the Velcro strips (Figure 26, Item 2) on the maintenance door exterior cover seam (Figure 26, Item 1) to the first frame rail assembly

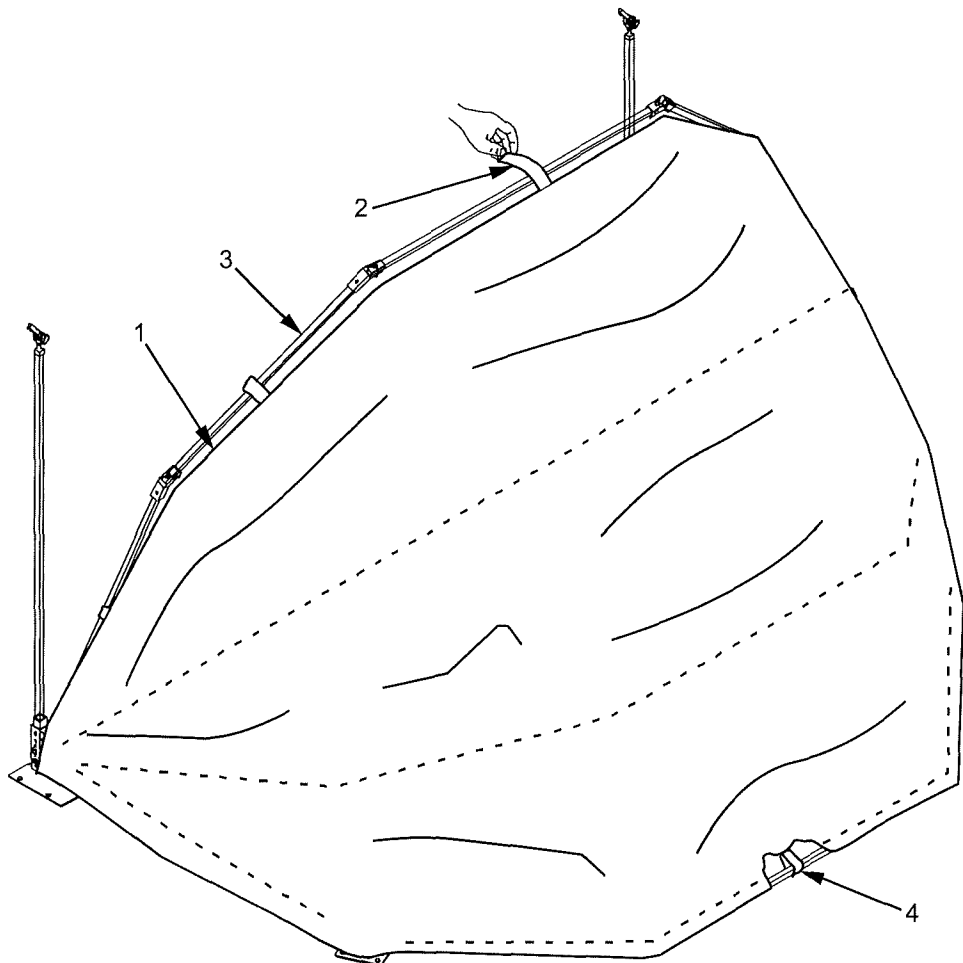


Figure 26 Attaching Maintenance Door Exterior Cover to Frame Rail Assembly

Maintenance Door Assembly Procedures - Continued

- 27 Once all Velcro strips are attached to the frame rail assembly, the two team members holding the frame rail assembly should slowly let go of the frame rail while the third team member on the ladder verifies none of the Velcro strips come loose
- 28 Check that material along the interior seams between the maintenance door exterior cover and shelter for any strain problems which may result in the Velcro seams coming undone
- 29 Repeat steps 25 through 28 for the second and third frame rail assemblies
- 30 Secure the maintenance door exterior cover to the ground frame rail assembly with the Velcro strips (Figure 26, Item 4) located along the bottom edge of the maintenance door exterior cover
- 31 When all frame rail assemblies are in position, they should appear as shown in Figure 27.

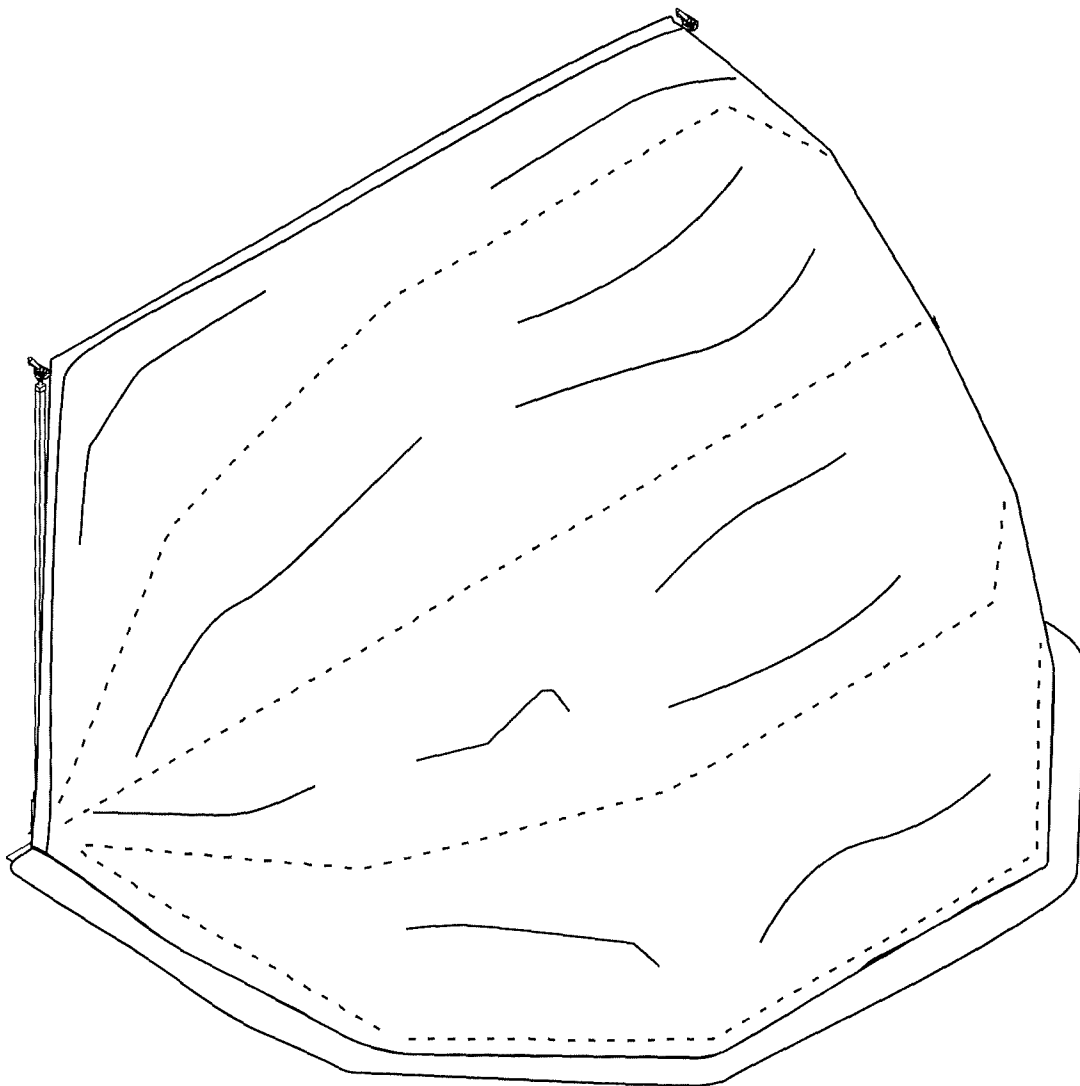


Figure 27 All Frame Rail Assemblies in Position

Maintenance Door Assembly Procedures - Continued

- 32 Locate and position two base clamp (Figure 28, Item 2) assemblies against the ground frame rail assembly in opposite corners as shown in Figure 28
- 33 Secure the base clamp assemblies (Figure 28, Item 2) to the ground using stakes (Figure 28, Item 3)
- 34 Secure the clamp on the base clamp assembly to the ground frame rail assembly

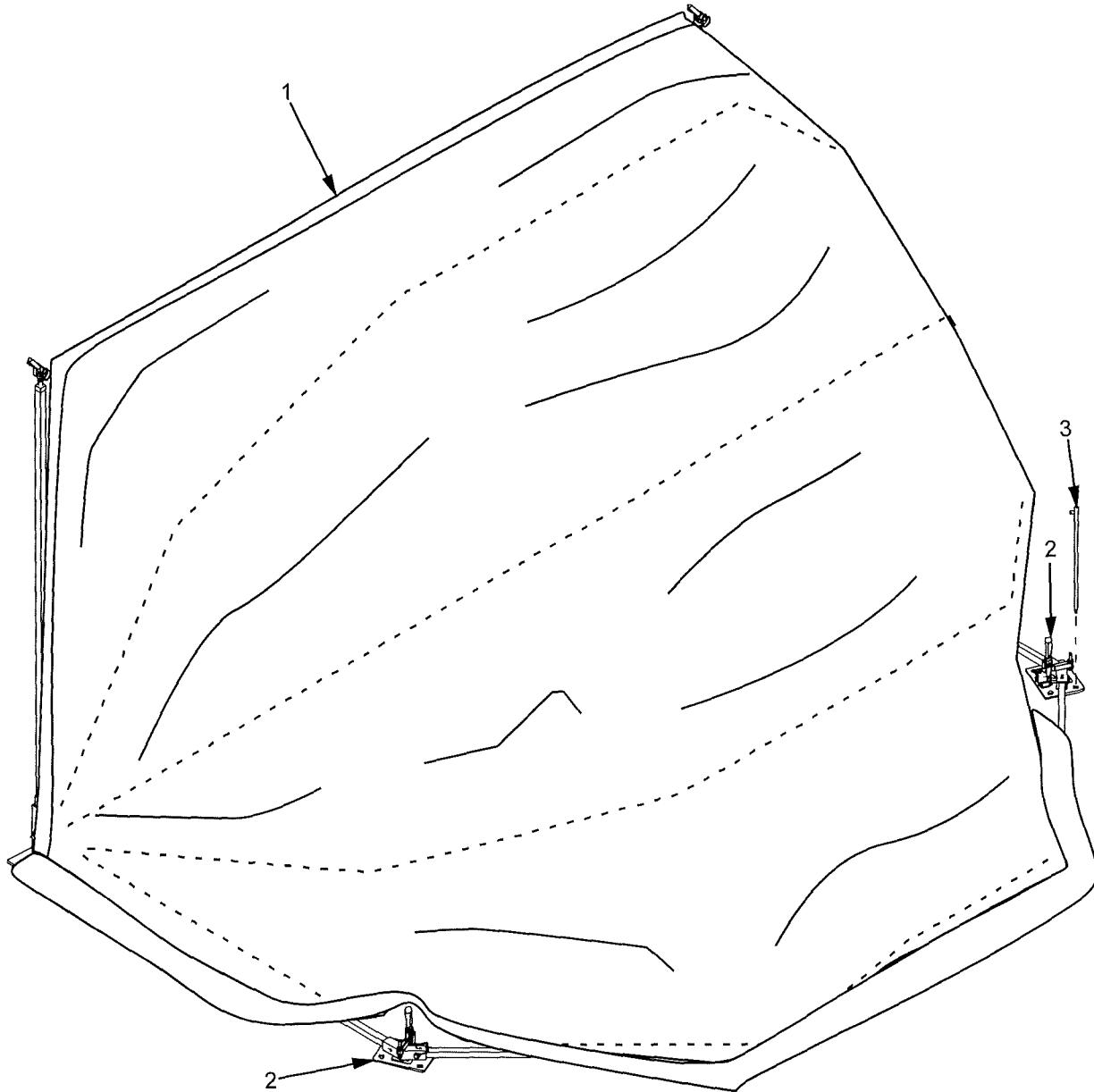


Figure 28. Positioning Base Clamp Assemblies

END OF TASK

Opening and Closing Maintenance Doors**NOTE**

A minimum of two personnel are required for this procedure

This procedure is best performed from outside the shelter

- 1 Release the clamps on the both base clamp assemblies (Figure 29, Item 2)
- 2 Position one team member at each outer corner of the ground frame rail assembly Note, positioning a third team member in the outside center of the ground frame rail assembly is recommended, but not required.
- 3 In one even motion, have both personnel lift up the ground frame rail assembly as shown in Figure 29
- 4 Push the ground frame rail assembly all the way up so it is even with the vertical support pole as shown in Figure 29
- 5 If the maintenance door is to be left open for an extended period, loop the red maintenance door tether strap (Figure 29, Item 3) around both sides of the ground frame rail assembly
- 6 To close the maintenance door, reverse the above procedure

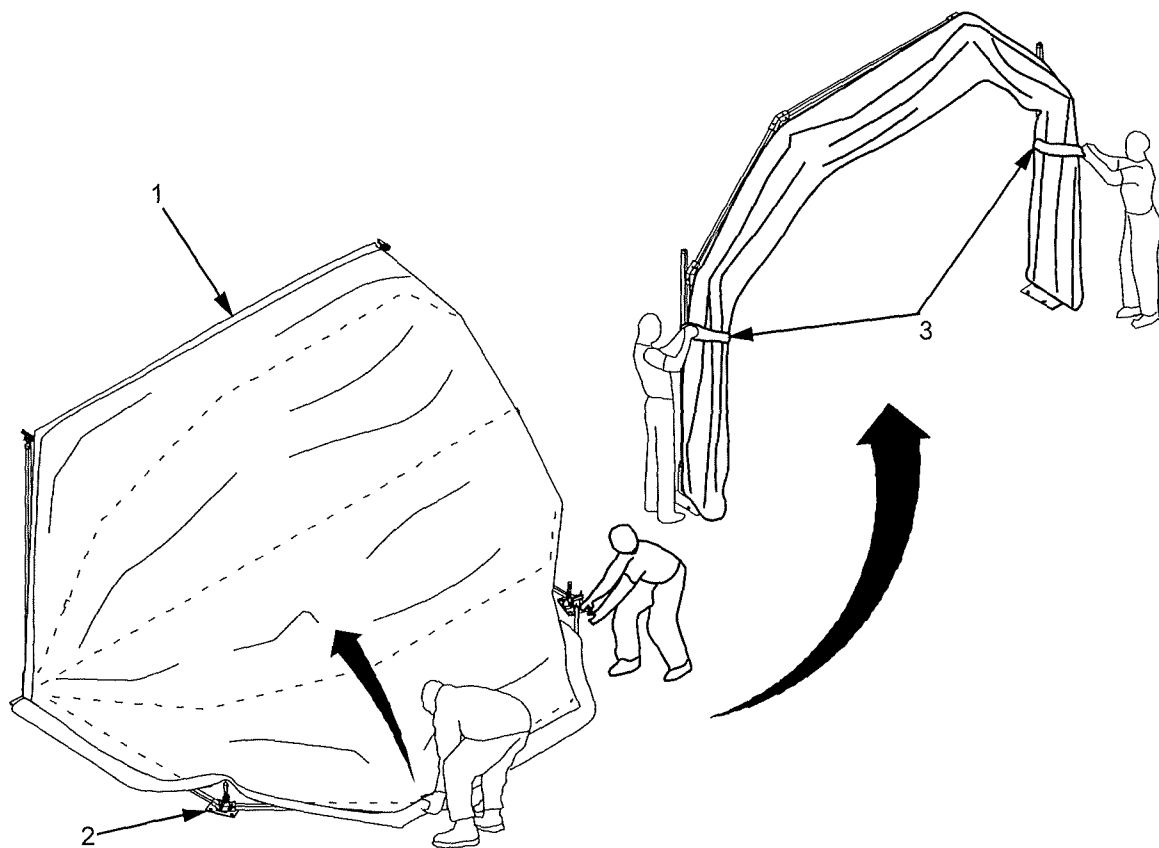


Figure 29 Maintenance Door Fully Opened

END OF TASK**TM: 1006412****0005-34****HDT Expeditionary Systems, Inc.**

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Disassembly Procedures for Maintenance Door**NOTE**

A minimum of three personnel are required for these procedures.

The following steps require use of a ladder to reach interior ceiling of shelter. At least one team member should be assigned to secure ladder while another team member works above. Serious personal injury could result if ladder topples over.

All components of maintenance door frame items have a number stamped on them to enable disassembly easier.

- 1 If the maintenance door is open, have two personnel support the maintenance door and release the maintenance door tether strap. Slowly lower the maintenance door to the ground.
- 2 If the maintenance door is closed, release the clamps on the both base clamp assemblies (Figure 28, Item 2).
- 3 Release the maintenance door exterior cover seam Velcro strips to the ground frame rail assembly located along the bottom edge of the maintenance door exterior cover.
- 4 Two team members should hold the third frame rail assembly in position while the third team member using a ladder detaches the Velcro strips securing the maintenance door exterior cover seam to the third frame rail assembly.
- 5 Once all Velcro strips have been released, two team members should slowly lower the third frame rail assembly to the ground.
- 6 Repeat steps 4 and 5 for the second and first frame rail assembly.

NOTE

The disassembly process should always start with removing the first frame rail assembly from the uppermost hole in the base bracket and then each successive frame rail should be removed from the next lower hole in the base bracket.

At least three team personnel are required to safely lift and move the completed frame rail assembly.

- 7 Remove pin (Figure 25, Item 5).
- 8 With two team members supporting the first frame rail assembly, the third team member should remove pin (Figure 25, Item 5) from flange of the base bracket (Figure 25, Item 4). Move the first frame rail assembly to the center of the main shelter area.
9. Repeat steps 7 and 8 for the second, third and ground frame rail assembly.
- 10 Disassemble each frame rail assembly by removing pins that secure the upper side rail #2 (Figure 25, Item 2) into lower side rail female end stamped with #2 (Figure 25, Item 1) and the center rail #3 (Figure 25, Item 3) into upper side rail female end stamped with #3 (Figure 25, Item 2). Repeat step for other side.
- 11 Repeat steps 10 and 11 for the remaining frame rail assemblies.

Maintenance Door Disassembly Procedures - Continued

- 12 Using a ladder, remove the quick release pin securing the vertical support pole to the shelter frame
- 13 Remove two pins securing the vertical support pole to the base bracket (Figure 25, Item 4) and move the vertical support pole from area
- 14 Repeat steps 12 and 13 for the removing the other vertical support pole
- 15 Remove eye bolt from each threaded hub (Figure 25, Item 11) and reinstall looped keeper Figure 25, Item 9)
- 16 Remove all stakes from base brackets and base clamp assemblies
- 17 Place all components of the each disassembled frame rail, vertical support pole and base brackets into transport bag
- 18 Strike shelter as described in this WP If striking entire Shelter, proceed to page 0005-48 If maintenance door is to be replaced by End Caps, see page 0005-6 for installation procedures
- 19 Release hook and loop seam connecting the maintenance door exterior cover to the main shelter Fold cover and place into transport bag

END OF TASK

OPTIONAL PROCEDURE – Your system may or may not include the equipment described below.

Information about Hard Flooring for M Series Shelters

The hard flooring described in the following procedure is to properly layout the hard floor

NOTE

This is an optional accessory which is not provided as standard equipment with the M Series Shelters. Refer to WP 0038, Additional Authorization List (AAL) for part numbers of the hard floor sheets

The hard floor represents the foundation of the entire shelter area. As such, care must be given at the outset to ensure that the foundation is properly marked, positioned, and set. To ensure minimal problems, ensure the site is clear of debris and is level.

There are two types of hard floor panels available: Standard sheets and Integrated Cable Management (ICM) sheets as described in WP 0038.

- Standard sheets are 4ft x 3.6ft x 2 inch high, with over-lapping traction arcs raised 1/8" above surface with 3/8" drain holes.
- Integrated cable management (ICM) sheets are 4ft x 3.6ft x 2 inch high, with over-lapping traction arcs raised 1/8" above surface with 3/8" drain holes. In addition, each sheet has two channels running length-wise and one across width, with a total of 12 access points where cables can be routed to the surface. The ICM sheets allow cable and wire to be distributed throughout the entire shelter with multiple access points. Channel covers snap into place to keep cable and wire secure and out of the way.

Laying Hard Floor Sheets

NOTE

The hard flooring is laid down *before* the shelter is erected. Usually the fabric floor supplied with the shelter is not used when using hard flooring.

The hard floor sheets have connectors on two sides of each sheet as shown in Figure 30 and are laid out in sequence as shown in Figure 31. Each sheet overlaps the interlock connectors of the adjoining sheet to secure the next adjoining sheet in place.

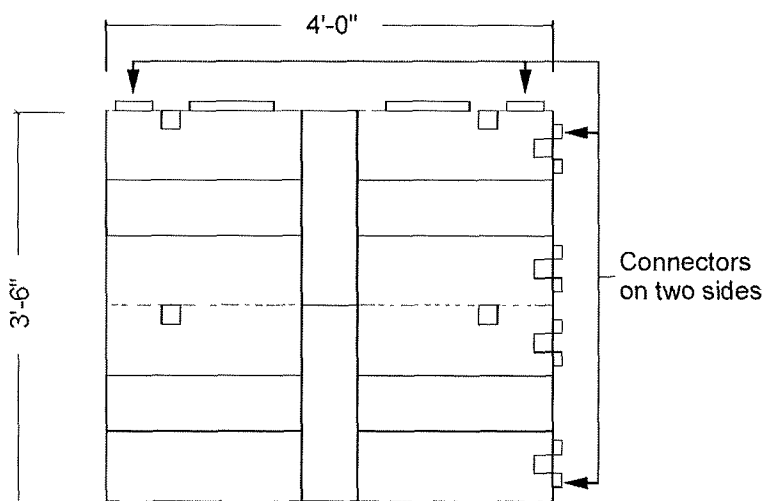


Figure 30 Hard Floor Connectors on Two Sides.

Laying Hard Floor Sheets - Continued

NOTE

Care must be taken to ensure that there is adequate space for the entire floor

- 1 Have the pallets containing hard floor sheets moved to their approximate install location
- 2 Orient and place the first flooring sheet in the top left corner of the cleared area
- 3 Align the next flooring sheet to the connector of the first flooring sheet Once aligned, apply pressure by stepping on floor to seat the connection between the two floor sheets

NOTE

Make sure you align the sheets using the correct dimensions (3' 6" side to 3' 6" side)

As floor sheets are added, ensure edges are flush and aligned

- 4 Continue adjoining floor sheets in sequence, row by row, as shown in Figure 31 See Figure 32, 33 and 34 for different shelter lay outs See Figure 35 for M/MX Shelter with Maintenance Door floor sheets lay out

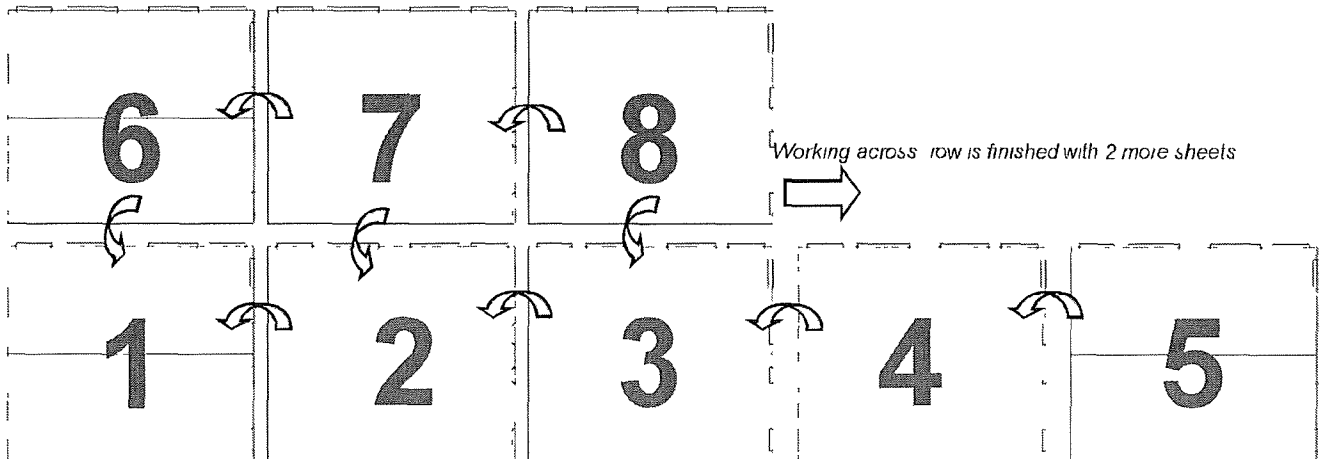
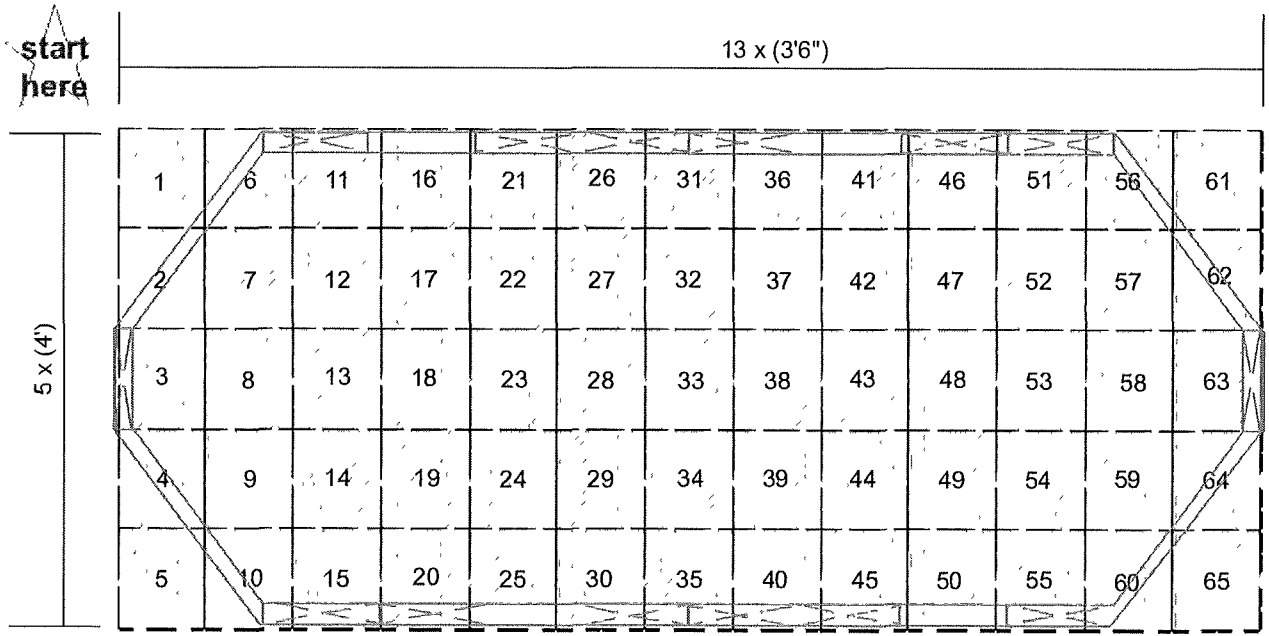


Figure 31 Adjoining Hard Floor Sheets in Sequence

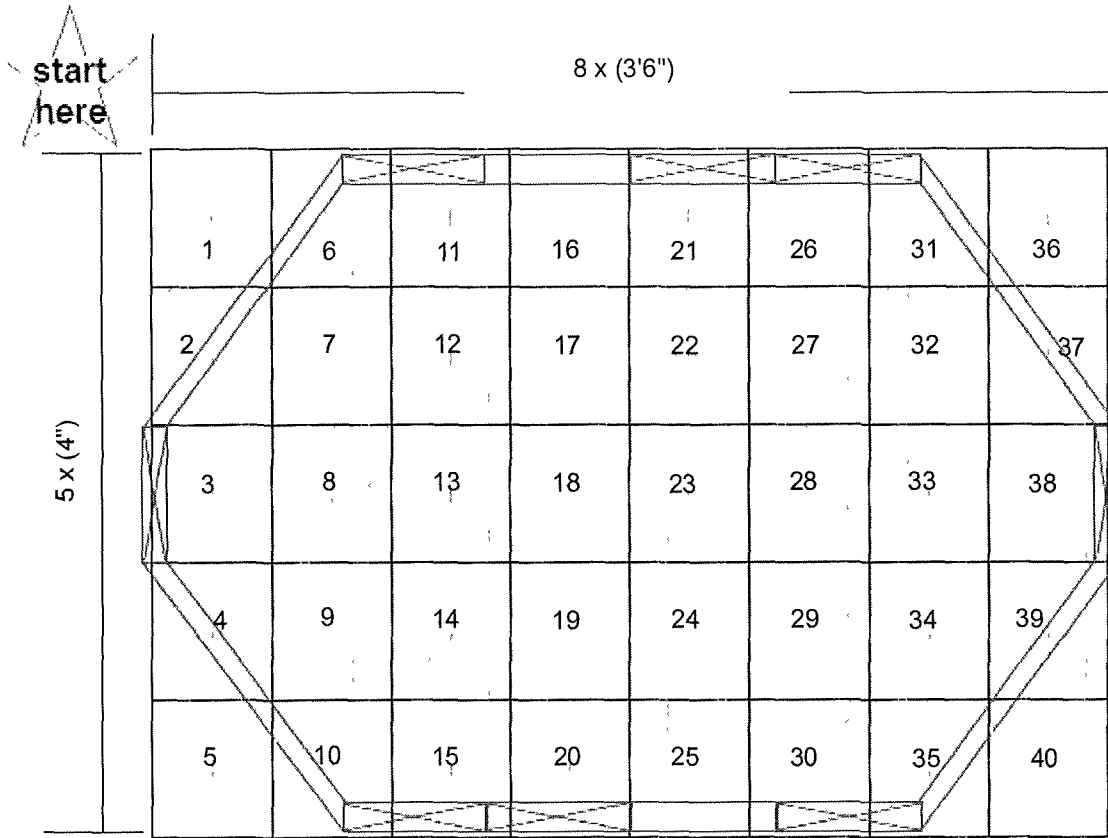
Laying Hard Floor Sheets - Continued



M System = 65 - 3 1/2' x 4' sheets

Figure 32 M Shelter Floor Sheets Lay Out

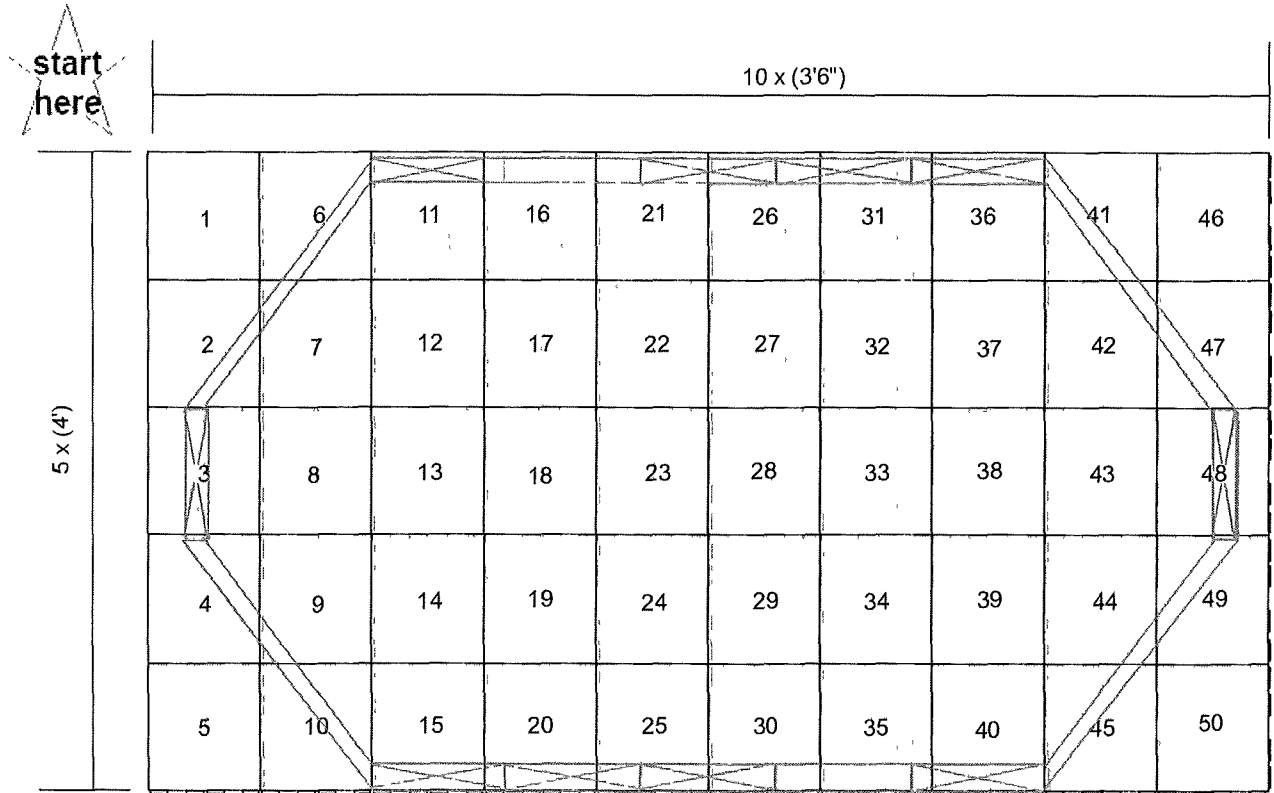
Laying Hard Floor Sheets – Continued



MX System = 40 - 3 1/2' x 4' sheets

Figure 33 MX Shelter Floor Sheets Lay Out

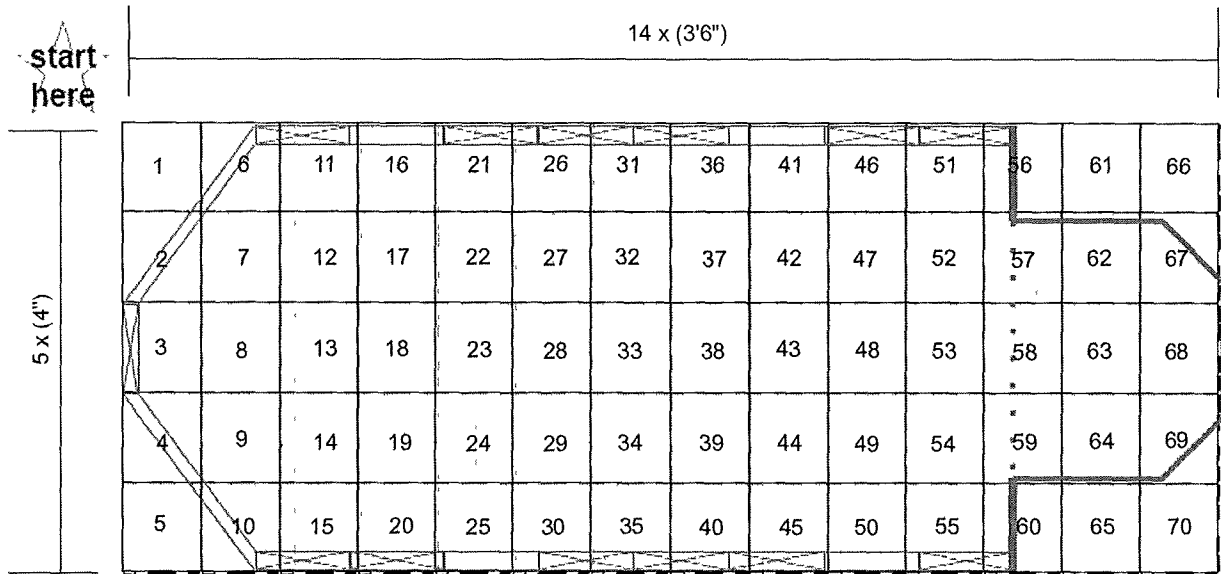
Laying Hard Floor Sheets – Continued



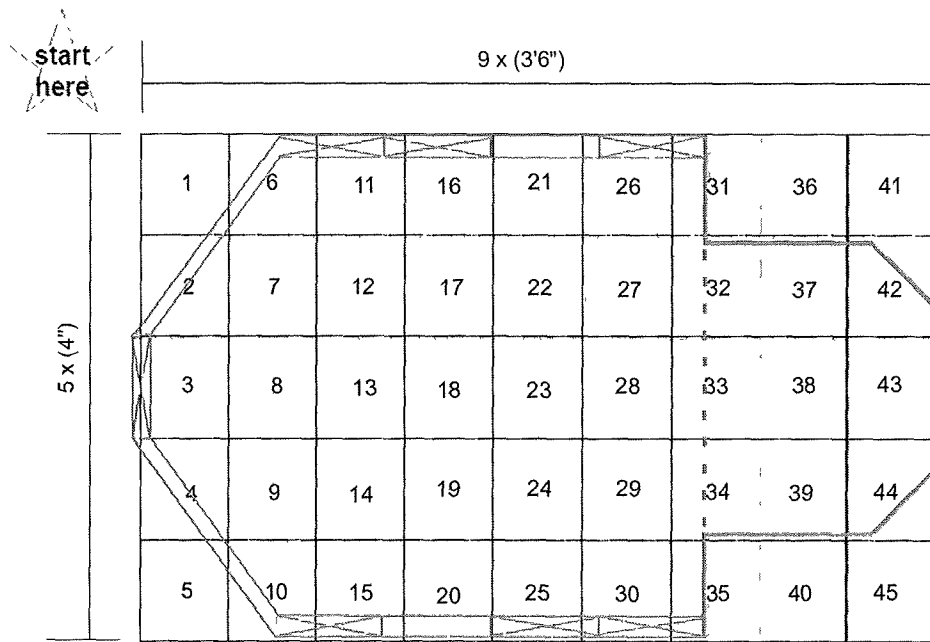
MX5 System = 50 - 3 1/2' x 4' sheets

Figure 34 MX5 Shelter Floor Sheets Lay Out

Laying Hard Floor Sheets – Continued



M Shelter w/Maintenance Door = 70 - 3 1/2' x 4' sheets



MX Shelter w/Maintenance Door = 45 - 3 1/2' x 4' sheets

Figure 35 M/MX Shelter with Maintenance Door Floor Sheets Lay Out

Laying Hard Floor Sheets – Continued

- 5 Continue to monitor panel alignment in both directions ensuring the outer edges are straight and flush as shown in Figure 36 until floor lay out is complete.

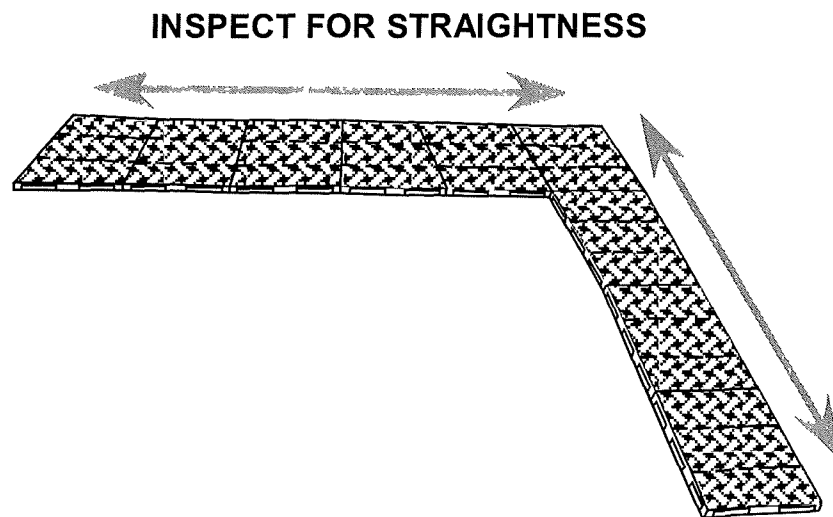


Figure 36. Inspect Floor for Straightness

- 6 Setup shelter as described in this WP

END OF TASK

OPTIONAL PROCEDURE – Your system may or may not include the equipment described below.

Enable EMI Shielding

Certain M Series shelters have Electro Magnetic Interference (EMI) shielding built into the inner shelter liner. For the EMI shielding to work, the inner liner must be connected to a suitable ground connection. The following procedure describes the necessary procedures.

Install Ground Strap and Connect to Ground Rods

Shelter is equipped with three-section grounding rod with drive stud and three bronze couplings. One 15 foot # 6 AWG ground wire is provided for grounding shelter to ground rod.

- 1 Locate EMI Grounding Kit

WARNING

Ground wire lead can be a protection trip hazard which can lead to serious injury. Arrange the Ground wire lead such that it is as far out of common path as possible.

- 2 Remove copper wire lead from Kit and stretch lead from lower corner of shelter near door (see Figure 37) to intended location of Ground Rod installation.
- 3 Open connector seam (Figure 37, Item 1) on shelter End Cap and place flat end of ground wire lead (Figure 31, Item 3) between the connector seam of the shelter Main body (Figure 37, Item 2).
- 4 Close connector seam ensuring that the EMI Ground remains secure inside the seam.

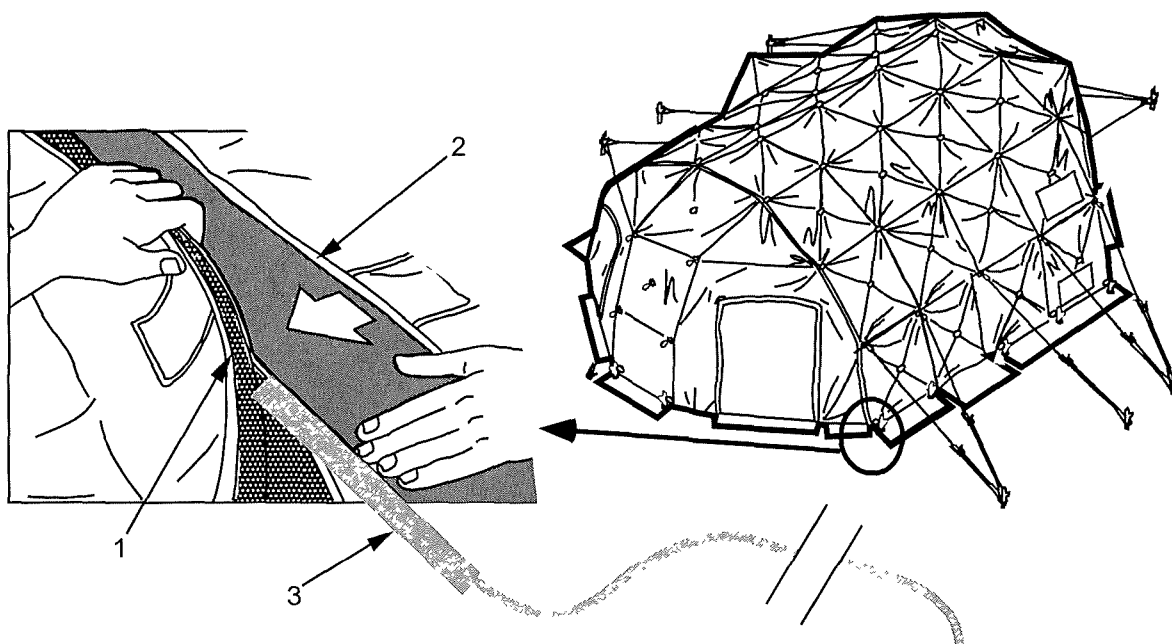


Figure 37 Connect Ground Wire Lead to Shelter and Stretch

Install Ground Rods

Shelter is equipped with three-section grounding rod with drive stud and three bronze couplings. One 15 foot # 6 AWG ground wire is provided for grounding shelter to ground rod.

- 1 Locate grounding rod sections
- 2 A sledge hammer is required to drive the stake into the ground

NOTE

In rocky areas where the grounding rod cannot be driven into the ground, dig a six inch trench and lay the grounding rod on its side

In very dry conditions, keep the ground wet where the grounding rod is located

- 3 Attach threaded collar (Figure 37, Item 6) to first section of ground rod (Figure 37, Item 5) Using sledge hammer, drive first section of ground rod into earth until top of rod is just above surface of hole. Use threaded collar to attach and drive in the two remaining ground rod sections
- 4 Connect ground wire (Figure 37, Item 2) to grounding rod assembly with threaded collar/bolt (Figure 37, Item 6)

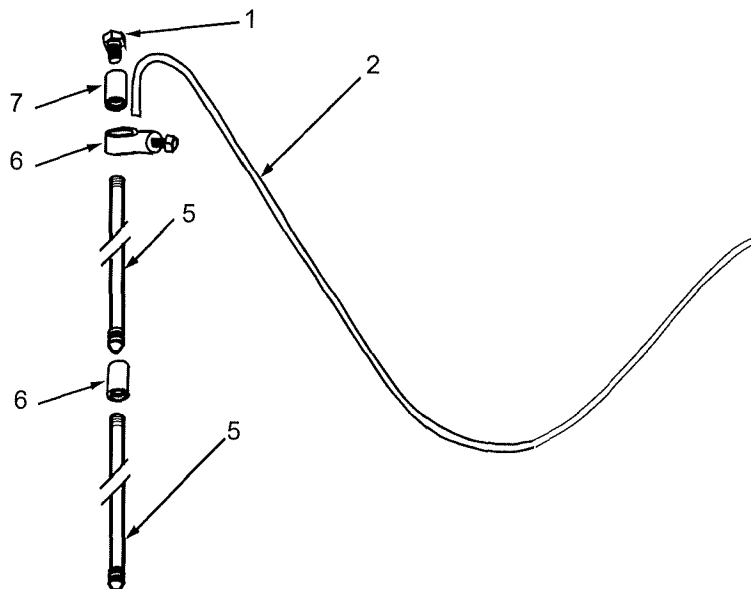


Figure 37 Install Ground Rod.

PREPARE TO STRIKE THE SHELTER**Remove Lighting from Shelter**

- 1 Ensure that all power sources to shelter have been set to OFF position
- 2 Disconnect power cables that run from lighting fixture to lighting fixture and to power source
- 3 Loosen mounting straps and disconnect clips from looped keepers. Lower lighting fixtures one at a time until all lighting fixtures have been removed
- 4 Store power cables and lighting fixtures in appropriate transport bag(s) and remove from immediate work area

END OF TASK**Disconnect Power Cables from Shelter**

- 1 If power source has not been completely shut down, ensure that appropriate circuit breakers on power source are in the OFF position
- 2 Remove power cables routed through shelter and cable sleeve located in shelter interior and exterior covers next to lower ECU duct port
- 3 Roll up any power cable(s) and store power cables in appropriate transport bags and remove from the immediate work area

END OF TASK**Disconnect ECU Ducts from Shelter**

- 1 Remove air ducts from supply and return duct ports of shelter
- 2 Compress air ducts and return to transport bags.
- 3 Set transport bags outside of immediate work area
- 4 Close shelter supply and return port covers

END OF TASK**Remove (Optional) Plenum from Shelter**

- 1 Loosen and untie plenum draw strap from ECU supply port
- 2 Loosen plenum mounting straps and disconnect clips from looped keepers located in interior roof of shelter. Begin removing plenum mounting straps at the furthest end of the supply port and working towards supply port
- 3 Fold neatly and return to transport bag

END OF TASK

PREPARE TO STRIKE THE SHELTER - CONTINUED**Remove (Optional) Hard Door from Shelter End Cap**

- 1 Remove bolts securing hard door frame to hard door sill
- 2 Unfasten end cap interior and exterior hook and loop seam from hard door interior and exterior hook and loop seam half way up from the ground.
- 3 Lift hard door frame out of hard door sill and slide door sill away from door.
- 4 Unfasten completely all fabric from end cap connectors and hard door connectors Remove hard door
- 5 Unroll and reattach both fabric end cap doors Leave both doors unzipped for striking of the shelter

END OF TASK**SHELTER TEAR DOWN****Remove Floor from Shelter**

- 1 Remove stakes securing staking plates in corners of secondary side of shelter
- 2 Disconnect floor from shelter by starting on secondary side of shelter and detaching the hook-and-loop strip on floor from the hook-and-loop seam on shelter working in opposite directions to complete one side
- 3 Detach the hook-and-loop strip on floor from the hook-and-loop seam on both end cap covers and faceplates
- 4 Complete all remaining hook-and-loop strips on floor from the hook-and-loop seams on shelter
- 5 Fold floor ends in and remove floor from shelter
- 6 Fold floor into quarters lengthwise and remove floor from immediate work area

END OF TASK

Shelter Preparation

- 1 Unroll doorways if they have been set in the open position (see Figure 37) Leave zippers open
- 2 Unzip all doorways so that the fabric doors hang loose and are not secured to the side of the shelter
- 3 Close all interior and exterior windows by unrolling the fabric windows and securing the hook-and-loop fasteners

NOTE

For continuation of the MX and MX5 shelter preparation, skip steps 4 - 6

Steps 4 – 6 only pertain to the M Shelter in removing the seam reinforcement strip attached to both main shelter section interior cover

- 4 Start at ground level and unfasten both sides of the main shelter section interior cover hook and loop connector flap as you are pulling the seam reinforcement strip out and away
5. Fold seam reinforcement strip, pack into transport bag and remove from the immediate work area
- 6 Start at ground level and unfasten the center main shelter section exterior cover hook-and-loop connector strips from both sides of the center line Only loosen the connector about $\frac{3}{4}$ of the way up the length
- 7 Start at ground level and unfasten main section interior to end cap interior hook-and-loop connector strips on both sides of end caps.
- 8 Start at ground level and unfasten main section exterior to end cap exterior hook-and-loop connector strips on both sides of end caps Only loosen the connector about $\frac{3}{4}$ of the way up the length

Shelter Preparation - Continued

Figure 37 Unroll Doorways

WARNING

Do not enter the shelter once the wind lines and ground stakes are removed. The shelter could collapse and cause serious injury.

- 9 Remove all wind lines and ground stakes, pack in transport bag(s), and remove from the immediate work area.

END OF TASK**Lowering the Shelter****NOTE**

A minimum of four personnel are required to perform the following steps for lowering the MX and MX5 Shelter.

A minimum of eight personnel are required to perform the following steps for lowering the M Shelter.

- 1 Position four to eight team personnel (Figure 38, Item 1) in a square pattern along long sides of the shelter perimeter. Proper position is indicated by four ground flaps marked with "TO STRIKE, LIFT HERE"
2. Position one team member (Figure 38, Item 2) at each end cap. Proper position is between the doors.
- 3 Have all team personnel reach below the ground flap, under shelter exterior cover, and locate the bottom lifting hubs.

WARNING

Grip shelter bottom at the outer hubs - never grip the struts. As struts fold in, hands and fingers can become pinched between struts.

- 4 At command of the team leader, all team members lift shelter approximately six inches off ground and step backwards in one unified movement as indicated in Figure 38. The center of shelter will come down to ground level.

Lowering the Shelter - Continued

- 5 Complete detaching both end cap hook-and-loop seams from the center section. The end caps will be separated from the main section in the next procedure.

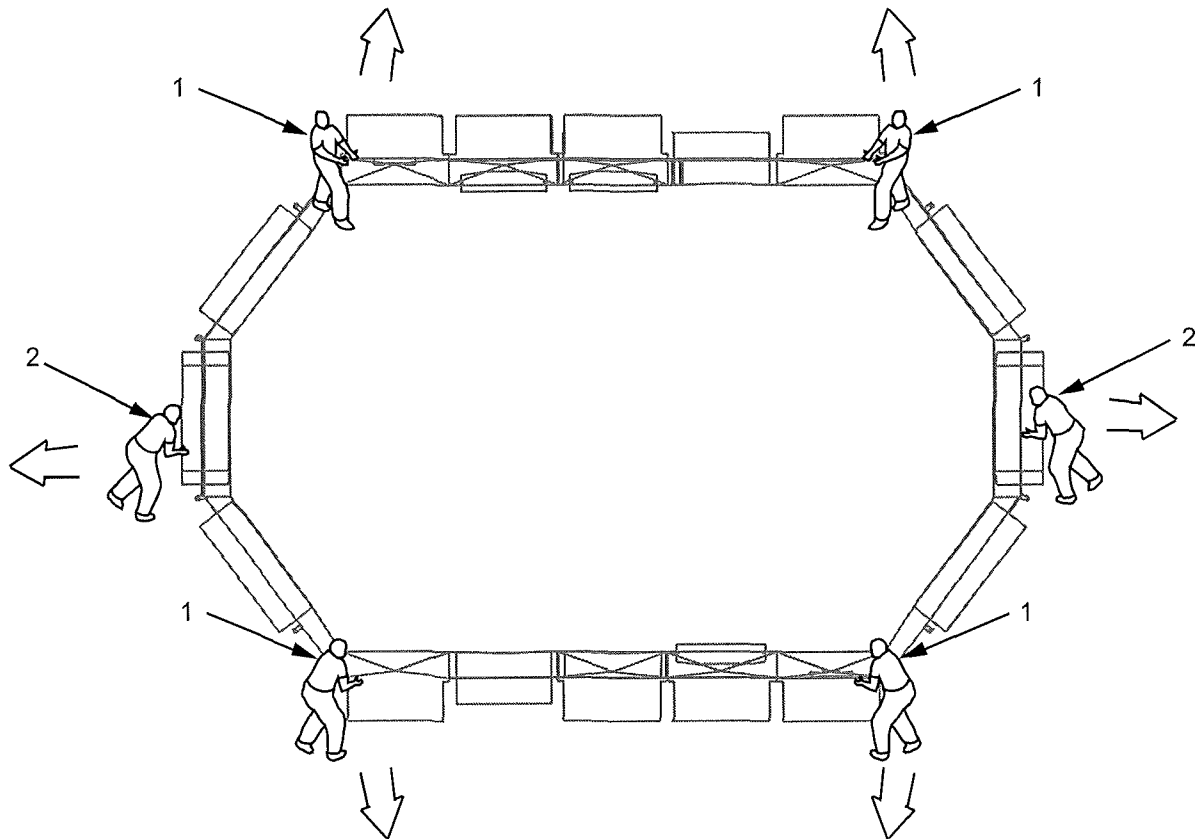


Figure 38 Grip Shelter by Bottom Hubs, Lift, and Step Back

END OF TASK

SYSTEM PACKING AND LOADING**Pack the End Caps****NOTE**

Ensure that both end cap doors on each end cap are unzipped

- 1 Remove pin holding red hub to white hub and lift end cap clear of center of shelter
2. Replace pin into pin stud
- 3 Starting with exterior, roll left and right sides of end cap cover towards frame and secure to center hub with hook-and-loop strap
4. Roll interior left and right sides of end cap cover towards frame and secure to center hub with hook-and-loop strap
- 5 Compress end cap by lifting upwards at hubs and walking towards each other
- 6 Place one cinch strap around top of end cap and tighten
- 7 Place second cinch strap around bottom of end cap and tighten
- 8 Pull transport bag over upright end cap Flip end cap bag over and close transport bag with drawstring
- 9 Repeat same procedure for second end cap
- 10 Place both bagged end caps out of immediate work area

END OF TASK**Packing Main Shelter**

- 1 Position all hands under exterior cover on upper portion of strut
- 2 At command of the team leader, all team members lift shelter upward in one motion and walk forward, compressing the shelter
- 3 Push inwards until main section is approximately 4/5 of way compressed
- 4 Inspect compressed shelter section to make sure no wind lines are caught in any struts
- 5 Compress shelter the rest of the way
- 6 Retrieve cinch straps from transport bag.
- 7 Place one cinch belt around top of compressed shelter and tighten See Figure 39
- 8 Invert compressed shelter so that white side is facing up
- 9 Push cover in between struts so that all interior looped keepers are exposed
- 10 Push against shelter from all directions to compress further
- 11 Cinch second strap around compressed shelter and tighten.

Packing Main Shelter – Continued

- 12 Invert shelter so exterior side (green or tan) is facing up
13. Check and retighten cinch straps around compressed shelter as necessary



Figure 39 Secure First Cinch Strap

- 14, Place shelter floor on a suitable flat surface
- 15 Place buckle end of cinch strap under floor, about five inches in
- 16 Lay shelter on one side and position at one end of folded floor
17. Retighten cinch strap (on shelter) as necessary
- 18 Roll shelter up into floor as shown in Figure 40
- 19 Compress shelter as it is rolled up
- 20 Secure cinch straps around floor and shelter
- 21 Stand white side of shelter upright

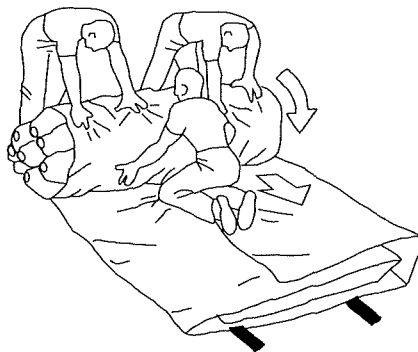


Figure 40 Roll Up Shelter With Floor

Packing Main Shelter – Continued

- 22 Remove push poles and repair kit from transport bag
- 23 Place Transport Bag over shelter
- 24 Push shelter over with the instruction panel (exterior section of transport bag) down
- 25 Replace push poles and repair kit in transport bag
- 26 Pull rope to close end of transport bag and secure bag with a knot
- 27 Fasten two belts on the transport bag. The shelter is now secure and ready for loading onto appropriate transport or for storage.

END OF TASK**END OF WORK PACKAGE**

**OPERATOR INSTRUCTIONS
M SERIES SHELTERS
OPERATION UNDER UNUSUAL CONDITIONS**

INITIAL SETUP:

Personnel Required
Two

References
WP 0005

GENERAL

This work package covers operating the M Series Shelters in arctic, tropical, and desert climates

UNUSUAL ENVIRONMENT/WEATHER**Arctic Climates**

Sub zero temperatures and climatic conditions associated with cold weather affect the efficient operation of the equipment. Keep equipment as dry as possible. After the equipment has been exposed to the cold and is moved into a warm environment, moisture will collect on the shelter inner and outer surfaces. Dry the inner and outer surfaces whenever possible.

Heating the Shelter in Arctic Climates

- a Verify that the Air Supply and Return ducts are secured to their respective ports on the shelter as described in WP 0005 (Connect Ducts to Shelter)

NOTE

Refer to the Operation Manual of the Heater being used

- b Adjust any Damper Plates on the ECU Return port that may reduce the speed of the air flowing into and through the Return Port. Typical Dampers have four positions:

Open	Position for normal air cooling operation
1/3	Position for heating air in mildly cold conditions (minimal heat needed)
2/3	Position for heating air in cold conditions (nominal heat needed)
Closed	Position for heating air in extreme cold conditions.

END OF TASK**Buildup of Snow on the Shelter****CAUTION**

The shelter should be stricken if it is to be left unattended for an extended period when there is a possibility of inclement weather. Serious damage to the shelter may result.

To prevent damage to shelter due to heavy snow or freezing rain, the roof must be checked periodically for rain puddles or ice/snow accumulation. This can be accomplished by

- 1 Shaking the exterior cover from the outside of the shelter
2. Place a push pole between the interior and exterior covers and gently tapping the exterior cover until the shelter is cleared of the snow or ice accumulation
- 3 During adverse weather conditions, routinely check and verify the security of the wind lines, stakes, and keepers.

END OF TASK

Installing OPTIONAL Snow Load Kit

NOTE

The Snow Load Kit described in the following instructions is an optional accessory which is not provided as standard equipment with M Series Shelters. Refer to WP 0038, Additional Authorized Items List (AAL) for part numbers for M/MX/MX5 Shelters.

Snow Load Kit for the M/MX5 Shelter consists of four arches per kit. Snow Load Kit for the MX Shelter consists of three arches per kit.

This procedure is shown being performed on an M Series Shelter erected and secured (see WP 0005) and one Snow Load Kit (4 arches)

- 1 Place Snow Load Kit transport bag (Figure 1, Item 9) in the center of the shelter and empty the contents onto the shelter floor
- 2 Each bag consists of one complete arch that attaches to the inner shelter frame to provide the necessary support (See Figure 1 for the individual components to assemble one complete arch and Table 1 for a complete list of individual components)

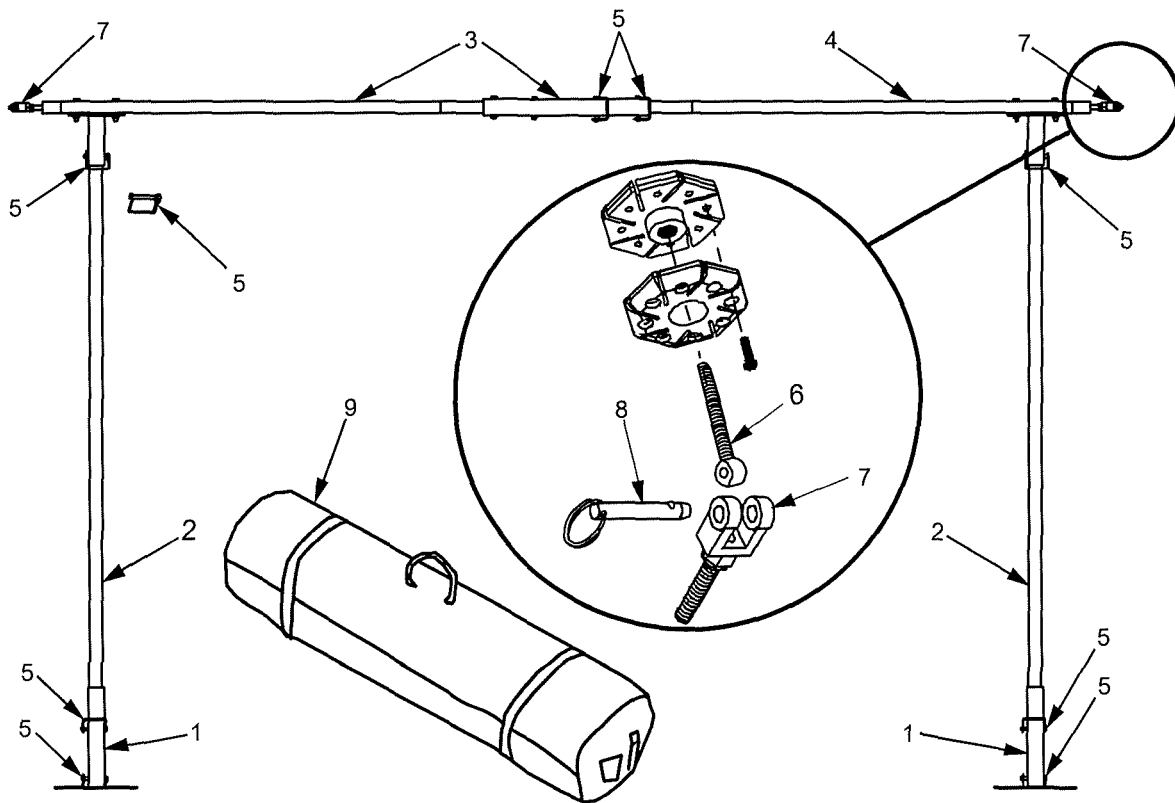


Figure 1 One Complete Snow Load Arch for M Series Shelter

Table 1 One Complete Snow Load Arch for M Series Shelter

ITEM No.	ITEM NAME	QTY PER ARCH
1	Bottom Section	2
2	Middle Section	2
3	Top Section, Female	1
4	Top Section, Male	1
5	Snap Pins	8
6	Eye Bolts	2
7	Clevis Rod Ends	2
8	Quick Release Pins	2
9	Bag, Transport	1

Installing OPTIONAL Snow Load Kit - Continued

- 3 Start to build one complete arch by joining the two bottom sections (Figure 1, Item 1) to the two middle sections (Figure 1, Item 2) Secure the joined sections with Snap Pins (Figure 1, Item 5)
- 4 Join one of the arch sides assembled in step 3 to the top female section, (Figure 1, Item 3) and secure with one snap pin (Figure 1, Item 5)
- 5 Join the top male section (Figure 1, Item 4) to top female section (Figure 1, Item 3) and secure with two snap pins (Figure 1, Item 5)
- 6 Join the second arch side assembled in step 3 to the top male section (Figure 1, Item 3) and secure with one snap pin (Figure 1, Item 5)
7. Thread one clevis rod end (Figure 1, Item 7) into each end of top section assembled in step 4 and 5.

WARNING

The following steps require use of a ladder to reach interior ceiling of shelter At least one crew should be assigned to secure ladder while another crew member works above. Serious personal injury could result if ladder topples over

- 8 Remove looped keeper (Figure 2, Item 6) from two positions where snow load arch will connect to frame (not shown) and thread one eye bolt (Figure 2, Item 1) into each threaded hub (Figure 2, Item 2)
- 9 Join the completed snow load arch assembly to the shelter by aligning the eye bolt (Figure 2, Item 1) inside the clevis rod end (Figure 2, Item 3) and securing with the quick release pin (Figure 2, Item 4).
- 10 Repeat steps 3 through 9 for the remaining arch assemblies

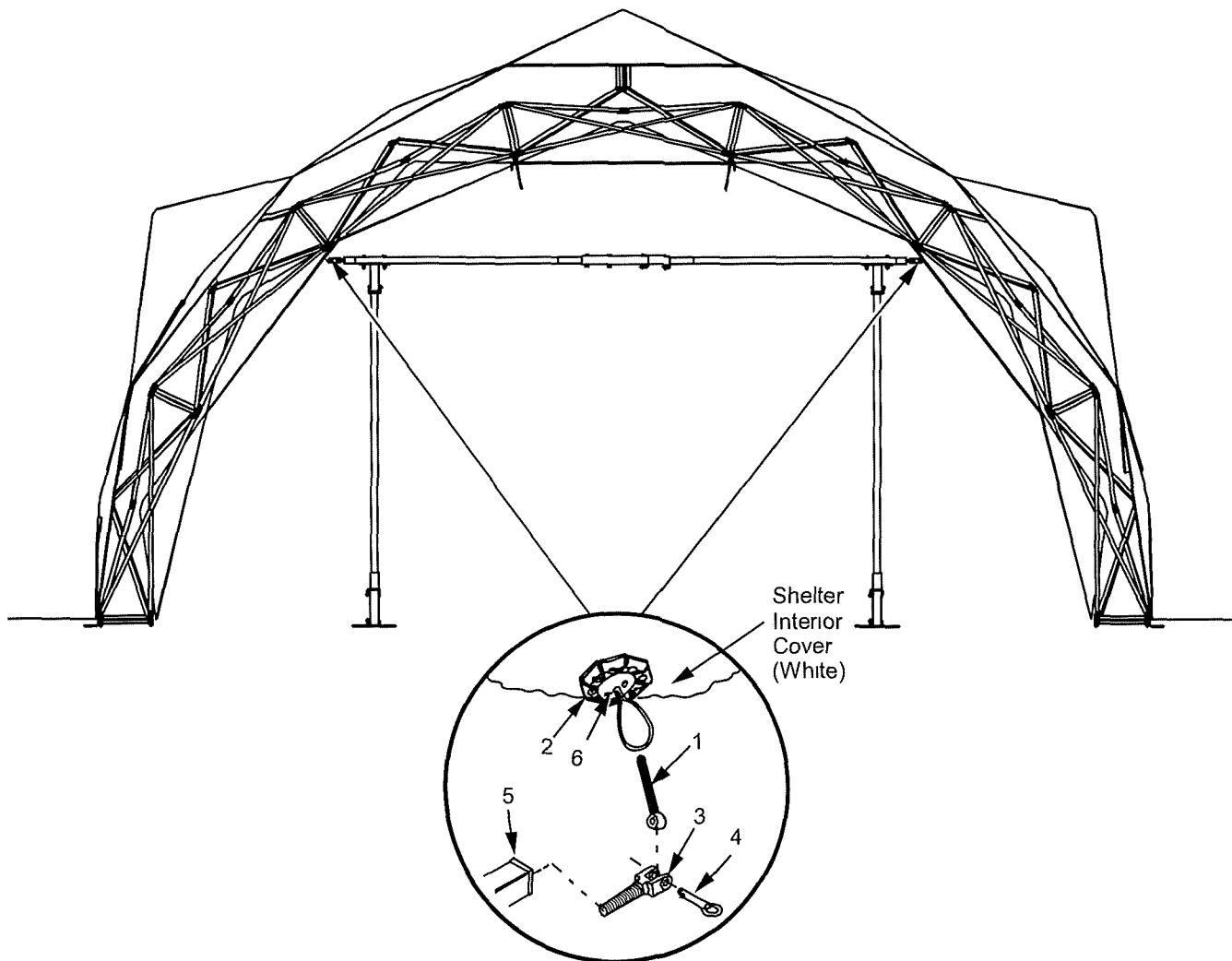


Figure 2 Secure Snow Load Arch to M Series Shelter

END OF TASK

Operation in Tropical Climates**NOTE**

Leaving the shelter inactive for long periods during rainy or humid conditions can cause problems. Fungus may develop in or on equipment within the shelter as well as in shelter component storage bags. Frequent inspections and cleaning are necessary to maintain operational readiness of the shelter.

High relative humidity can cause condensation to form on surfaces within the shelter whenever the temperature of the unit is lower than the surrounding air. To minimize this condition, provide as much ventilation as possible. Dry the appropriate surfaces.

Desert Climates

Operating the shelter in dusty or sandy areas requires frequent cleaning of interior and exterior surfaces.

- 1 Frequently check shelter air intake/exhaust ports. If air intake/exhaust ports become clogged and inoperable, remove all ducts and clean.

Shelters completing operation in dusty, sandy areas must be cleaned and serviced by service maintenance as soon as possible.

INTERIM CHEMICAL, BIOLOGICAL, RADIOLOGICAL AND NUCLEAR (CBRN) DECONTAMINATION PROCEDURES

Contaminants are CBRN agents that have been formulated to kill or to incapacitate human beings.

General Guidance**NOTE**

Shelter items rendered inoperable due to contamination do not need to be decontaminated and are to be discarded.

The shelter is mission-critical. The system is compatible for use by Soldiers in Mission Oriented Protective Posture (MOPP) 4. Operators, using onboard equipment, must be able to conduct immediate decontamination within 15 minutes, operational decontamination using onboard or crew-served equipment within six hours, and thorough decontamination when mission allows reconstitution.

Immediate Decontamination (Equipment Only)

Per FM 3-5, operator spray-down/wipe-down should be done within 15 minutes. Operators use the M100 Sorbent Decontamination System (SDS) or the onboard M11/M13 decontamination apparatus to decontaminate surfaces that they must touch or contact to operate the equipment. Radiological contamination in the form of dust particles may be wiped, scraped, or brushed off.

Implementation. Decontamination of every surface that must be touched to operate the shelter is handled in accordance with FM 3-5. The same procedures and actions are used for each item of equipment.

Likely Results. Systems incapable of withstanding decontamination are to be replaced. The shelter operational capabilities and ease of maintenance become degraded but not destroyed. The remaining contaminated systems continue with the decontamination process.

Operational Decontamination**NOTE**

In the event that a system vital to the operational integrity of shelter is contaminated but unlikely to survive the operational decontamination wash-down and contamination does not either hinder the operational ability of the system or pose a significant risk to the operators, operational decontamination should be delayed until such time as a replacement system is available

Per FM 3-5, equipment wash-down should be performed within six hours of being contaminated when the mission does not permit a thorough decontamination. This process removes gross contamination and limits its spread.

Implementation. Every contaminated surface is washed down. The same procedures and actions are used for each item of equipment.

Likely Results. Under operational decontamination procedures, every contaminated system that was adequately and immediately decontaminated survives operational decontamination.

Thorough Decontamination**NOTE**

In the event that a system vital to the operational integrity of the shelter is contaminated but unlikely to survive the Detailed Equipment Decontamination (DED) and contamination does not either hinder the operational ability of the system or pose a significant risk to the operators, operational decontamination should be delayed until such time as a replacement system is available.

Per FM 3-5, DED restores items so they can be used without MOPP gear. Normally, DED is conducted as part of a reconstitution or during breaks in combat operations. This operation requires support from a chemical decontamination unit.

Implementation. The chemical decontamination unit conducts a DED when the tactical situation permits. The same procedures and actions are used for each item of equipment.

Likely Results. Under thorough decontamination procedures, every system that was adequately and operationally decontaminated survives thorough decontamination.

RADIOACTIVE DECONTAMINATION PROCEDURES**NOTE**

The following is only a brief guideline. Complete information may be found in DA PAM 700-48. Obtain assistance from medical personnel if decontamination of eyes, ears, nose, or mouth is necessary.

General

Commanders must appoint a Radiation Safety Officer/Radiation Protection Officer/Radiation Protection Staff Officer/ Radiation Control Officer (RSO/RPO/RPSO/RCO) at the appropriate unit level. Personnel handling Radiologically Contaminated Equipment (RCE) incur a risk of exposure to and contamination from radioactive materials. Proper radiation safety oversight is essential to minimize personnel exposure potential and to ensure proper follow-up after the incident is over. In addition to the precautions outlined in this pamphlet, personnel handling RCE ensure trained personnel conduct radiation safety monitoring. Such monitoring includes as a minimum, surveys of personnel and equipment used and bioassays to document any exposure by RCE handler.

General Decontamination Procedure

The specific decontamination methods and procedures selected for use in particular circumstances depend on the type, extent, and location of the contamination. However, the general approach to decontamination outlined below applies to most situations.

- 1 Always perform decontamination under the direction of radiation safety personnel.
- 2 Control access to contaminated areas.
- 3 Provide protection, including appropriate clothing, for workers.
- 4 Evaluate what is to be decontaminated.
- 5 Obtain necessary equipment and materials.
- 6 Survey all items to be released to an unrestricted area.
- 7 Begin with the mildest decontamination method and progress to harsher, more abrasive, or caustic methods as required.
- 8 Work from the outside of the contaminated area to the inside.
- 9 Isolate all clean areas from contaminated areas. Cover clean areas adjacent to those being decontaminated with taped down paper, plastic, or other disposable material to prevent recontamination.
- 10 Minimize the generation of contaminated liquids and airborne radioactivity during the work. Collect and treat as contaminated waste all liquids generated and materials used during decontamination operations.
- 11 Survey items between major steps in the decontamination process.
- 12 Continue decontamination until contamination levels are reduced per DA PAM 700-48.
- 13 Document the completion of decontamination, including the name of the individual performing the final survey, the date, and the survey results. Utilize DA Forms 7399-R, 7400, and 7401. These forms are available on the Army Electronic Library CD-ROM and the USAPA website.

END OF TASK

Personnel Decontamination

Before external decontamination of an individual is begun, the following steps should be taken to help establish priorities for decontamination and follow-up effort.

- 1 Observe any physical effects on the contaminated person (i.e , bleeding, irregular breathing, burns, or shock)
- 2 Assess the extent of any injuries Medical treatment of injuries takes priority over decontamination
- 3 Determine the extent and magnitude of contamination using personnel survey techniques
- 4 Document survey results on DA Form 7399.
- 5 Remove contaminated clothing, place it in a plastic bag, and hold it for further disposition
- 6 Obtain assistance from medical personnel if decontamination of eyes, ears, nose, or mouth is necessary
- 7 Personnel should be decontaminated as quickly as possible using the least drastic means necessary
- 8 Decontamination methods should begin with mild methods, which should be continued as long as they are effective, and progress to harsher methods only as required.
- 9 Extreme care should be taken to prevent the spread of contamination to any skin or body opening
- 10 All liquids generated and materials used during decontamination should be collected and treated as contaminated waste
- 11 Personnel performing the decontamination should take all necessary precautions to protect themselves
- 12 Cool or lukewarm water should be used for all washing and rinsing Hot water causes the skin pores to open, driving contamination deeper into the skin Cold water closes the pores, trapping contamination in the skin

END OF TASK

Specific Personnel Decontamination Methods**NOTE**

In all cases of personnel contamination, the RPO must be consulted. If ingestion or inhalation of radioactive material is suspected, bioassays should be performed.

1. Thorough washing with nonabrasive soap and lukewarm water is the best general method of decontaminating the hands and other parts of the body. If the contaminant is localized, it is often more practical to mask off the affected area and cleanse with swabs rather than risk the danger of spreading the contaminant by general washing. Organic solvents must be avoided as decontaminating agents because they may increase the probability of the radioactive materials penetrating through the pores of the skin. Special attention must be given to the areas between the fingers and around the nails. The outer edges of the hands are easily contaminated and must not be neglected in the washing.
2. After repeated washings, the skin may tend to chap. To avoid this, apply lanolin or hand cream and then continue to wash. If repeated washing with soap and water is unsuccessful in the personnel decontamination, the individual should be referred to the local medical officer for application of the more drastic chemical decontamination.
3. In the event several individuals have become contaminated or the contamination on an individual is not localized to a small portion of the body, the following decontamination procedure is recommended.
 - a. Place individual in a lukewarm shower.
 - b. Using a mild soap, individual should cover entire body with lather.
 - c. While still covered with lather, individual should step out of shower.
 - d. Sprinkle a heavy coat of mild soap flakes all over lathered individual (purpose of lather is to cause soap flakes to adhere to person).
 - e. Using hands, the contaminated individual rubs the soap flakes on the body into a paste.

NOTE

It is necessary for the contaminated individual to rub body surfaces with their hands while rinsing in order to remove soap paste. Soap paste remains on those areas that have not been thoroughly washed. Although a soft cloth may be used, a brush may not. Particular attention should be given to hairy portions of the body.

- f. The contaminated individual returns to shower and rinses soap off the body by starting at the top and working downward.
- g. When the individual has rinsed to the point that the individual no longer feel slimy and while still under shower, the individual should be examined by an assistant for traces of soap. The presence of soap indicates which areas of the body have not been decontaminated.
- h. After removing all traces of soap, the individual should leave the shower and dry the body.
- i. After drying off, the individual must be monitored. If still contaminated, repeat above procedures. In the event residual contamination is localized, repeat decontamination procedures to those areas still showing contamination.

END OF TASK

Equipment and Material Decontamination**NOTE**

Contaminated soil around accident and water runoff should be scraped up and containerized for removal as radioactive waste

Materials that cannot be easily or cost-effectively decontaminated should be evaluated for possible disposal as radioactive waste. Porous items (e.g., wood, paper, cloth), intricately designed equipment, and items of low replacement cost tend to fall in this category. If decontamination of equipment and/or materials is required, many cleaning, abrasive, chemical, and electrochemical methods are available. Listed here are a few of the simpler and least costly methods. These methods should be repeated until surveys indicate the need for harsher methods. Under no circumstances is dry sweeping of radioactive contamination allowed. Appropriate Personal Protection Equipment (PPE) must be worn.

- Place masking, adhesive, friction, or duct tape over the contaminated area, remove. When removed, discard as radioactive waste.
- Use vacuum-cleaning techniques with a conventional wet or dry vacuum cleaner modified to include a High-Efficiency Particulate Air (HEPA) filter on the exhaust. Dispose of bag or collection container as radioactive waste. Respiratory protection must be used. **If a HEPA filter is not available, do not vacuum.**
- Wipe or wet mop using a decontaminating agent or detergents and hot water.

END OF TASK**JAMMING AND ELECTRONIC COUNTERMEASURES (ECM) PROCEDURE**

The M Series Shelters itself is not subject to jamming but the equipment used within may be

END OF WORK PACKAGE

**OPERATOR INSTRUCTIONS
M SERIES SHELTERS
EMERGENCY SHUTDOWN PROCEDURES**

INITIAL SETUP:

Personnel Required
Four

Equipment Condition
Shelter Deployed

References
WP 0004

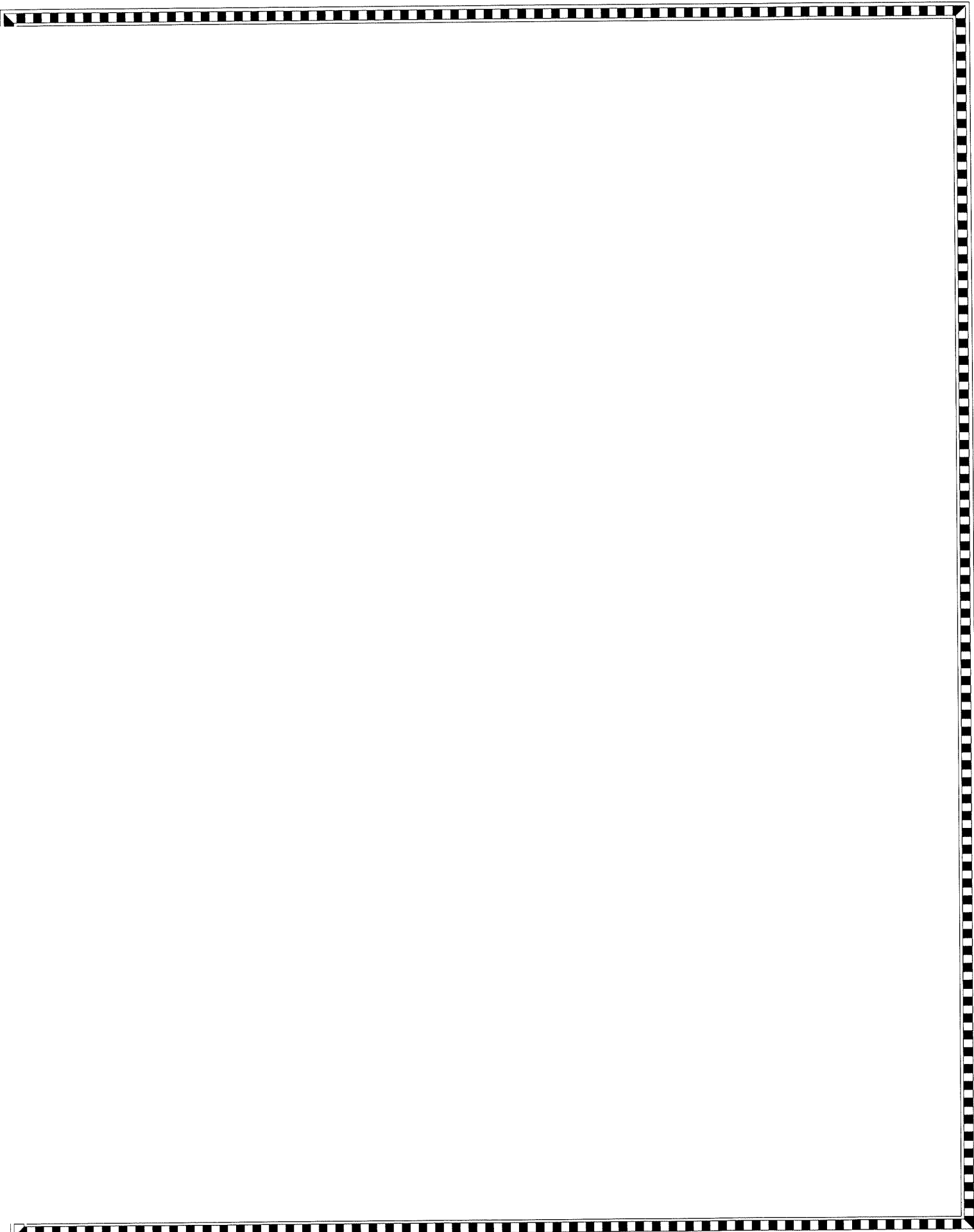
GENERAL

This work package contains procedures for the emergency striking of the various pieces of equipment associated with the shelter. Refer to Description and Use of Operator Controls, Indicators, and Connectors (WP 0004) for more information about the location and function of controls, indicators, and connectors.

EMERGENCY STRIKE PROCEDURES

Follow the steps described on the Quick Strike Instruction Panels sewn onto the inner shelter liner and on the shelter transport bag.

END OF WORK PACKAGE



**OPERATOR INSTRUCTIONS
M SERIES SHELTERS
DECAL AND LABEL GUIDE**

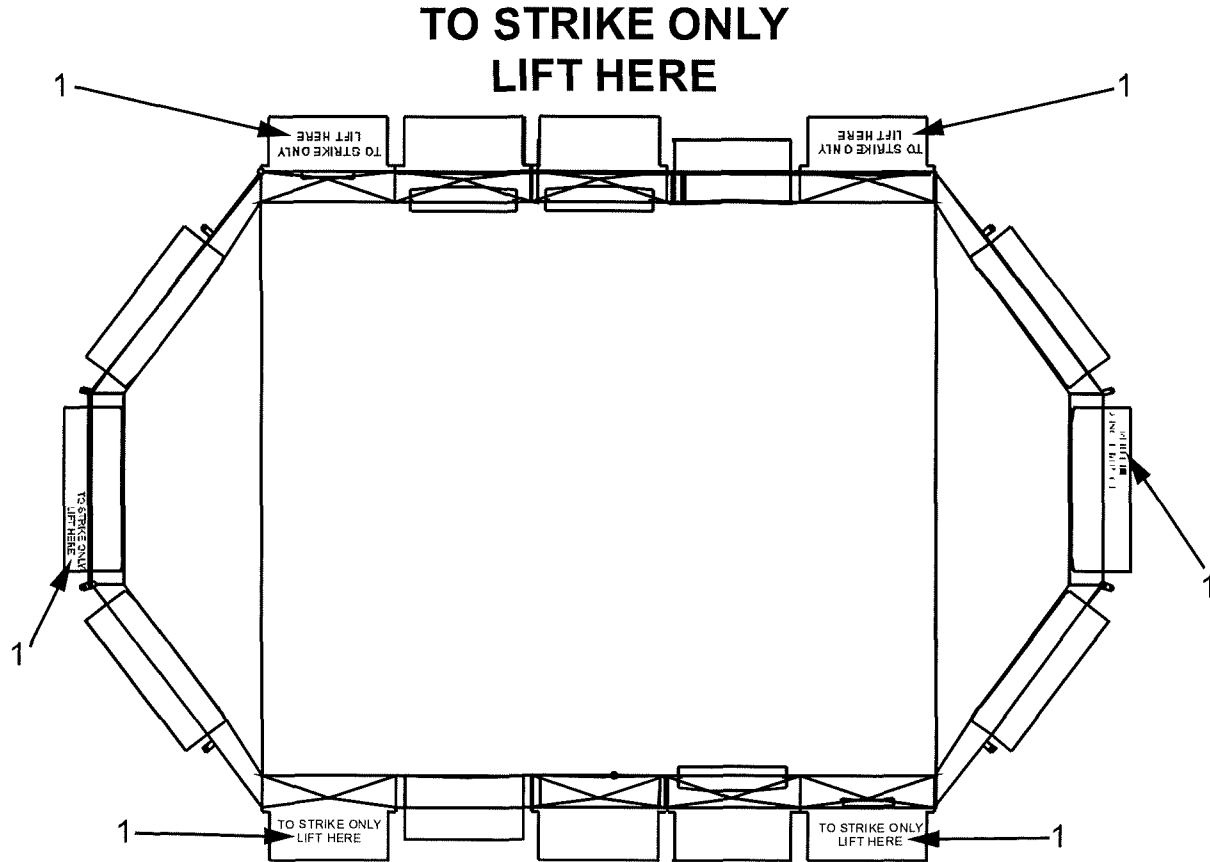


Figure 1 Location and Description of Decals /Stencils on Shelter

Table 1 Identification and Description of Decals/Stencils on Shelter

LABEL	DESCRIPTION
1	Stencil – Black lettering on outer fabric (green or tan) Identifies proper place to lift shelter to strike

OFF LOADING SHELTER BAGS			ON LOADING SHELTER BAGS		
YES	YES	NO	YES	YES	NO
<p>DRASH MX SERIES SET UP PROCEDURE</p> <p>1. Unzip the shelter and lay it out on a flat surface. Remove the stakes and place them in a separate bag.</p> 			<p>DRASH MX SERIES TAKE DOWN PROCEDURE</p> <p>1. Remove the stakes from the shelter. The stakes should be placed in a separate bag.</p> 		
<p>2. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 			<p>2. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 		
<p>3. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 			<p>3. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 		
<p>4. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 			<p>4. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 		
<p>5. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 			<p>5. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 		
<p>6. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 			<p>6. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 		
<p>7. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 			<p>7. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 		
<p>8. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 			<p>8. Lay out the shelter on a flat surface. Remove the stakes and place them in a separate bag.</p> 		
<p>DRASH</p>			<p>WARRANTY REGISTRATION www.drash.com/warranty 1-877-GO-DRASH</p>		
					

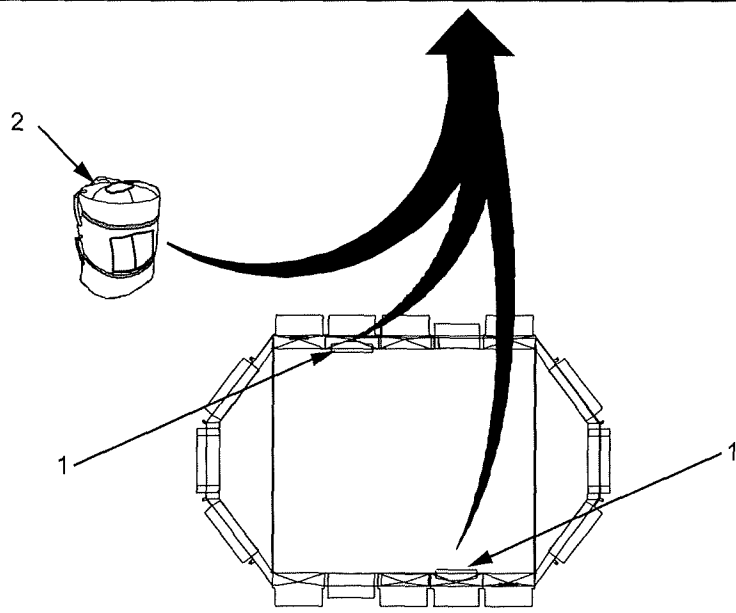


Figure 2 Quick Setup/Strike Instruction Plate

Table 2 Quick Setup/Strike Instruction Plate

LABEL	DESCRIPTION
1	Instruction Panel – Black lettering on brown fabric panel Quick Erect and Strike Procedures with warranty info on the interior of shelter
2	Instruction Panel – Black lettering on brown fabric panel Quick Erect and Strike Procedures with warranty info on the interior of shelter

END OF WORK PACKAGE

**OPERATOR INSTRUCTIONS
M SERIES SHELTERS
EQUIPMENT LOADING PLAN**

SCOPE

The following illustration and table assists in identifying proper equipment packaging for the M Series Shelters to be ready to re-deploy.

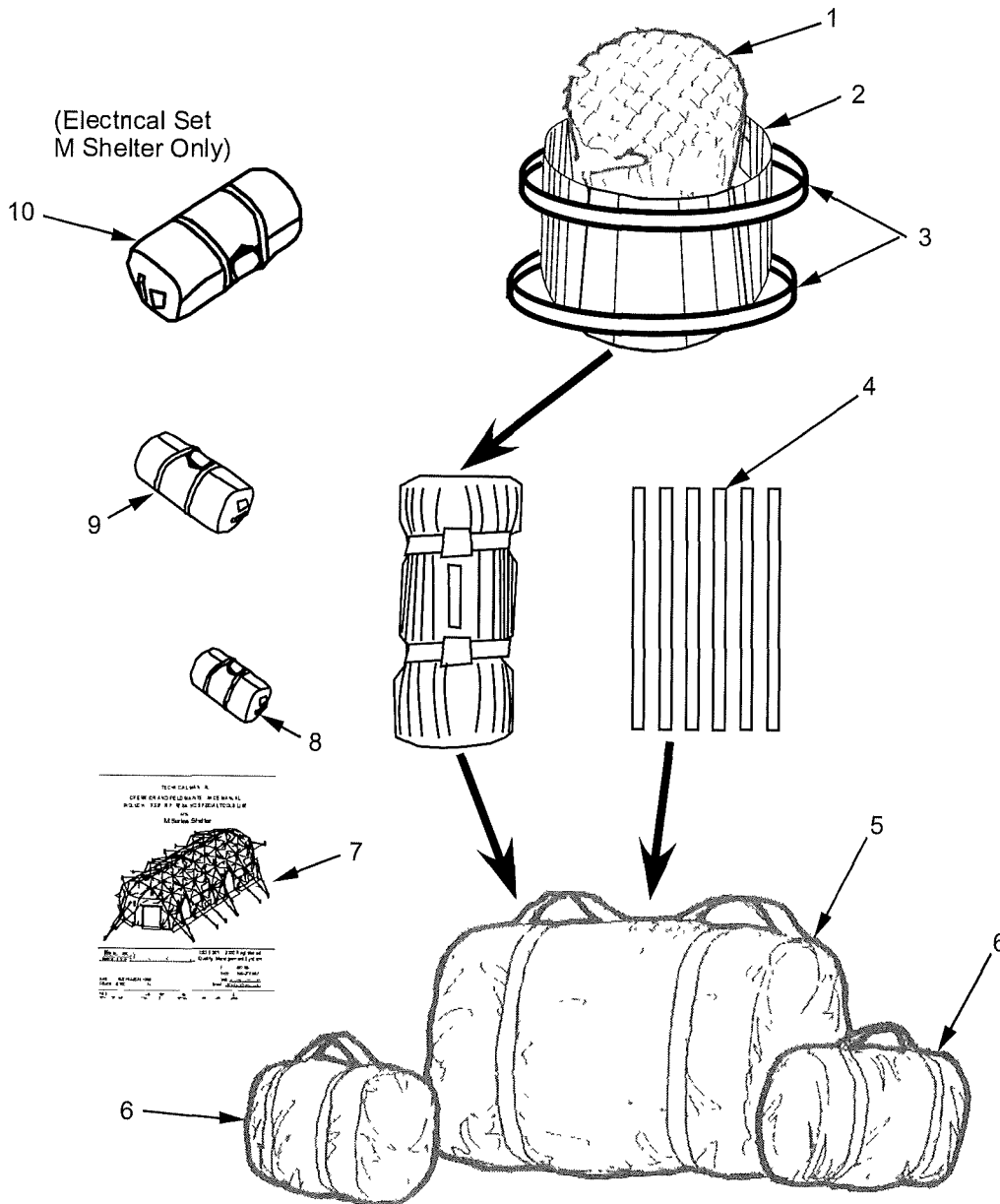


Figure 1 M Series Shelter Load Plan

Table 1 M Series Shelter Transport Contents

ITEM NO.	ITEM NAME	QUANTITY
1	Main Shelter Section MX/MX5 Shelter M Shelter	1 2
2	Floor	1
3	Cinch Straps	3
4	Push Poles MX/MX5 Shelter M Shelter	4 6
5	Bag, Shelter Transport MX/MX5 Shelter M Shelter	1 2
6	Shelter End Caps w/Bag	2
7	Technical Manual	1
8	Repair Kit	1
9	Stake Set MX/MX5 Shelter M Shelter	1 2
10	Electrical Shelter Kit, (M Shelter Only)	1

END OF WORK PACKAGE

CHAPTER 3

OPERATOR TROUBLESHOOTING PROCEDURES
FOR

M SERIES SHELTERS

**OPERATOR TROUBLESHOOTING PROCEDURES
M SERIES SHELTERS
OPERATOR TROUBLESHOOTING INDEX**

GENERAL

This WP contains a troubleshooting index of conditions/indications that may develop during maintenance or operation. Maintenance is limited to those failures that may be repaired at the operator level. The troubleshooting index identifies the condition/indication, which is followed by a column that identifies the work package and page(s) where operator level troubleshooting procedure(s) may be found (in the form of an inspection), followed by simple corrective actions which may be done by the operator. These inspections and corrective actions should be performed in the order listed. The index is provided to assist in the quick location of a problem. The manual cannot list all conditions/indications that may occur. If a condition/indication is encountered that is not listed or that cannot be corrected by the corrective actions provided, notify the supervisor.

TROUBLESHOOTING INDEX

The troubleshooting index assists the operator after a fault occurs. When a fault occurs, carefully inspect the equipment for fault indications to determine the best condition/indication to follow. The most important step in troubleshooting is recognizing the conditions/indications and combination of conditions/indications. Use the corrective action for a given condition/indication in the order of appearance. If the first repair attempt is unsuccessful, proceed to the next recommended corrective action to resolve the problem. If a fault is encountered that is not listed or that cannot be corrected by the corrective actions provided, notify the supervisor.

Except for the equipment in Table 1, refer to appropriate technical manual(s) for any remoted equipment. Table 1 is provided as a tool to maintain equipment in good operating condition and ready for its primary mission.

Table 1. Operator Troubleshooting Index

ITEM	CONDITION/INDICATION	WP
SHELTER		
1	Shelter will not spread while on ground	0011-2
2	Shelter will not erect	0011-2
3	Shelter will not stay erected ..	0011-2
4	Shelter, end caps or shelter doors leak	0011-2
5	Keepers coming out while erected	0011-2
6	Shelter has unusual shape when erected	0011-2
7	Shelter binds when coming down	0011-3
8	Shelter will not collapse completely when on ground ...	0011-3
9	Shelter shakes excessively	0011-3

END OF WORK PACKAGE

**OPERATOR TROUBLESHOOTING PROCEDURES
M SERIES SHELTERS
SHELTER TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Personnel Required**

Two

ReferencesWP 0004, WP 0005,
WP 0015

TROUBLESHOOTING PROCEDURES

This work package contains general information for troubleshooting the shelter by operator-level qualified personnel. This work package provides a systematic approach to locating and correcting malfunctions of the shelter. Each section is arranged according to the condition/indication of a problem. The manual cannot identify all malfunctions that may occur. If a malfunction is encountered that is not listed or that cannot be corrected by the corrective actions provided, contact your supervisor.

WARNING

Special caution must be taken during troubleshooting since protective covers and safety devices may be removed or disabled to gain access and make tests.

High voltage and amperage may be present inside the shelter at electrical connections. Ensure that all switches and circuit breakers have been de-energized prior to performing any shelter troubleshooting procedures.

Voltage sources, in addition to being an electrical shock hazard, may also potentially produce serious burns. Care should be exercised when using hand tools around exposed power connectors, never letting the tool bridge two terminals. Failure to observe this warning can result in serious injury or death.

If a circuit breaker does not stay in ON position when energized, DO NOT attempt to energize repeatedly. That could create an overload situation hazardous to personnel and equipment. Instead, investigate and identify cause of problem. Correct situation before attempting to energize breaker again.

Table 1 Operator Troubleshooting – Shelter

ITEM	CONDITION/INDICATION	CORRECTIVE ACTION
1	Shelter will not spread while on ground	Shelter fabric is binding Check all fabric and release from binding point Clear ground area as necessary Broken hub Contact Maintainer Maintenance Broken strut Field repair strut (WP 0015) Strut pair pulled out of hub Contact Maintainer Maintenance.
2	Shelter will not erect	Check all fabric and release from binding point Bottom hubs are catching on ground obstruction Clear ground area as necessary Broken hub Contact Maintainer Maintenance Broken strut Field repair strut (WP 0015) Strut pair pulled out of hub Contact Maintainer Maintenance Check sides of shelter/end cap are not binding on ground Contact Maintainer Maintenance
3	Shelter will not stay erected	Shelter was not lifted to fully erect position (WP 0005) Check shelter is properly staked in (WP 0004, WP 0005)
4	Shelter, end caps or shelter doors leak	Check all Velcro seams to ensure that they are properly secured IAW setup procedures Repair tear in fabric using field repair kit (WP 0015). If tear is greater than 10", contact Maintainer Maintenance
5	Keepers coming out while erected	Tighten keeper using keeper tool from field repair kit Retighten all keepers before erecting shelter Periodically check keepers during extended operation If keeper will not tighten due to damaged hub, contact Maintainer Maintenance
6	Shelter has unusual shape when erected	Check for broken hubs or strut pairs Field repair strut if possible (WP 0015) Contact Maintainer Maintenance

Table 1 Operator Troubleshooting – Shelter – Continued

ITEM	CONDITION/INDICATION	CORRECTIVE ACTION
7	Shelter binds when coming down	Check that nothing was left between interior and exterior covers Check that all ground stakes have been removed. Check that all wind lines are removed Check for broken hubs or strut pairs. Check that there are no obstructions present. Contact Maintainer Maintenance.
8	Shelter will not collapse completely when on ground	Check that there are no obstructions present. Check for broken hubs or strut pairs Contact Maintainer Maintenance
9	Shelter shakes excessively	Check that wind lines are properly installed Check that wind lines are properly tightened Check that shelter has been staked down in accordance with set-up procedures (WP 0004, WP 0005)

END OF TASK

END OF WORK PACKAGE

CHAPTER 4

OPERATOR MAINTENANCE INSTRUCTIONS

FOR

M SERIES SHELTERS

**OPERATOR MAINTENANCE INSTRUCTIONS
M SERIES SHELTERS
SERVICE UPON RECEIPT**

INITIAL SETUP:

Personnel Required
Two

References
WP 0005, WP 0014

GENERAL

The following procedures are required to be performed by the operator in order to prepare the shelter and its contents for use

SITING

To ensure minimal problems with set-up of shelter and good operation of equipment being used inside the shelter, ensure area is

- Dry
- Level with adequate room for shelter, system grounding, and all other associated equipment
- Free of items (trees, buildings, or other structures) that would impede set-up of M Series Shelters or cause physical interference for, shelter, system grounding, and all other associated equipment
- Free of items (e g , towers, power lines, radar, trees, buildings,) that would cause interference with electronic equipment being used inside of shelter

SHELTER REQUIREMENTS

The shelter footprint varies from shelter to shelter for proper deployment footprint see WP 0005

SERVICE UPON RECEIPT

Inspect each system component for damage incurred during shipment. If any damage is visible, notify supervisor Report the damage on DD Form 361, Transportation Discrepancy Report. Check the equipment against the packing slip to see if the shipment is complete Report all discrepancies in accordance with applicable service instructions.

Once all covers are removed, inspect the shelter and each piece of shelter equipment Inspect all connectors, cables, and loose pieces of equipment Refer to Operator PMCS (WP 0014) before placing the equipment into service

INSTALLATION INSTRUCTIONS

The shelter may require some assembly depending upon the mode of operation To setup the shelter in a fixed position, refer to WP 0005 for setup and installation procedures

PRELIMINARY SERVICING OF EQUIPMENT

Perform all Operator PMCS for the shelter as listed in WP 0014

PRELIMINARY CHECKS AND ADJUSTMENT OF EQUIPMENT

There are no preliminary checks and adjustment of this equipment Before placing the shelter into service, ensure all Operator PMCS (WP 0014) have been performed

END OF WORK PACKAGE

**OPERATOR MAINTENANCE INSTRUCTIONS
M SERIES SHELTERS
PMCS INTRODUCTION**

GENERAL

This work package provides data necessary to keep the M Series Shelters operational ready. PMCS are performed to keep the shelter in operational condition. The checks are performed to find, correct, and report problems. Operating maintenance personnel are required to perform the tasks as indicated in Operator PMCS (WP 0014). PMCS are performed by crew members each time the equipment is operated.

WARNINGS AND CAUTIONS

Special attention should be paid to the WARNINGS and CAUTIONS appearing in the operator PMCS table. A WARNING means someone could be injured. A CAUTION means equipment could be damaged.

EXPLANATION OF TABLE ENTRIES

Item Number - Numbers in this column are for reference. When completing DA Form 2404/DA Form 5988E (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers appear in the order in which the checks/services are performed for the interval listed.

Interval - This column indicates when a procedure must be performed (i.e., Before, During, or After an operation).

Item to Be Checked or Serviced - This column provides the item that is to be checked or serviced.

Procedure - This column describes the procedure that must be followed to ensure that the equipment is capable of performing its intended mission.

Equipment Not Ready/Available If - This column lists conditions that make the M Series Shelters not fully mission capable. If the problem can be fixed using the troubleshooting procedures and/or maintenance procedures in this manual, do so. If not, document the items not able to be fixed on DA Form 2404 for operator maintenance. For further information on how to use this form, see DA PAM 750-8. Be sure to observe and annotate all special circumstances that appear/occur.

NOTE

If the equipment must be kept in continuous operation, only perform those procedures that will not disturb operation. Complete checks and services when the equipment is shut down.

END OF WORK PACKAGE

Table 1 Operator Preventive Maintenance Checks and Services – Continued

ITEM NO.	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
2	Before	Shelter	1 Inspect shelter covers (interior and exterior) for punctures, tears, separated seams, or other visible damage Repair if necessary using field repair kit (WP 0015) 2 Inspect doors (interior and exterior) for punctures, tears, separated seams, or other visible damage Repair if necessary using field repair kit (WP 0015) 3 Inspect all visible struts for breaks, cracks, or other visible damage Repair if necessary using field repair kit (WP 0015) 4 Inspect all visible hubs and hub extensions for breaks, cracks, or displacement 5 Inspect cinch belts for cuts, fraying, or other visible damage	Shelter will not stay erected
3	Before	Shelter, Roof and Sides	1 Inspect covers (interior and exterior) for punctures, tears, separated seams, or other visible damage Repair if necessary using field repair kit (WP 0015) 2 Inspect all visible struts for breaks, cracks, or other visible damage Repair if necessary using field repair kit (WP 0015) 3. Inspect riser struts for breaks, cracks, or other visible damage	Shelter will not stay erected

END OF WORK PACKAGE

**OPERATOR MAINTENANCE INSTRUCTIONS
M SERIES SHELTERS
OPERATOR MAINTENANCE – SHELTER REPAIR USING FIELD REPAIR KIT**

GENERAL

This work package provides information needed by the Operator when performing the following maintenance procedures on the M Series Shelters

- Keeper - removal/replacement (using field repair kit)
- Shelter - strut repair (using field repair kit)
- Shelter - cover repair (using field repair kit)

KEEPER- REMOVAL/REPLACEMENT (USING FIELD REPAIR KIT)

INITIAL SETUP:**Tools and Special Tools**

Field repair kit (WP 0029)

Personnel Required

One

Materials/Parts

Keeper (WP 0029, Items 5, 9 - 11)

Equipment ConditionShelter is unpacked and spread out

NOTE

The following procedure can be used to replace keepers on the entire shelter

REMOVAL

- 1 Identify damaged keeper (Figure 1, Items 1 or 2)

NOTE

The field repair kit is supplied with the shelter

- 2 Using spanner wrench (provided in the field repair kit), loosen keeper (Figure 1, Items 1 and 2) and remove from hub (Figure 1, Item 4)

END OF TASK**REPLACEMENT**

1. Retrieve a replacement keeper (Figure 1, Items 1 and 2) from the field repair kit. Inspect to ensure O-ring is present around base and that O-ring is not damaged

CAUTION

NEVER use thread-locking additive on keepers. This will damage the threads and prevent the keeper from being removed

NOTE

Inspect threads of hub (Figure 1, Item 4) and keeper (Figure 1, Items 1 and 2) to insure they are not damaged. If damaged, contact Maintainer Maintenance to replace hub. Keeper should screw in easily. If keeper (Figure 1, Items 1 and 2) will not screw in by hand, check to make sure that keeper (Figure 1, Items 1 and 2) is straight and that cross-threading did not occur.

When performing the following step, ensure all seams of shelter are aligned. Fabric reinforced circles around keepers should not be twisted.

- 2 Screw new keeper (Figure 1, Items 1 and 2) through shelter cover (Figure 1, Item 3) into the hub (Figure 1, Item 4) by hand until snug.

CAUTION

When performing the following step, do not over tighten. This could damage the threads and prevent the keeper from being removed

- 3 Use the spanner wrench (WP 0029, Item 2), tighten one-quarter turn past hand tight

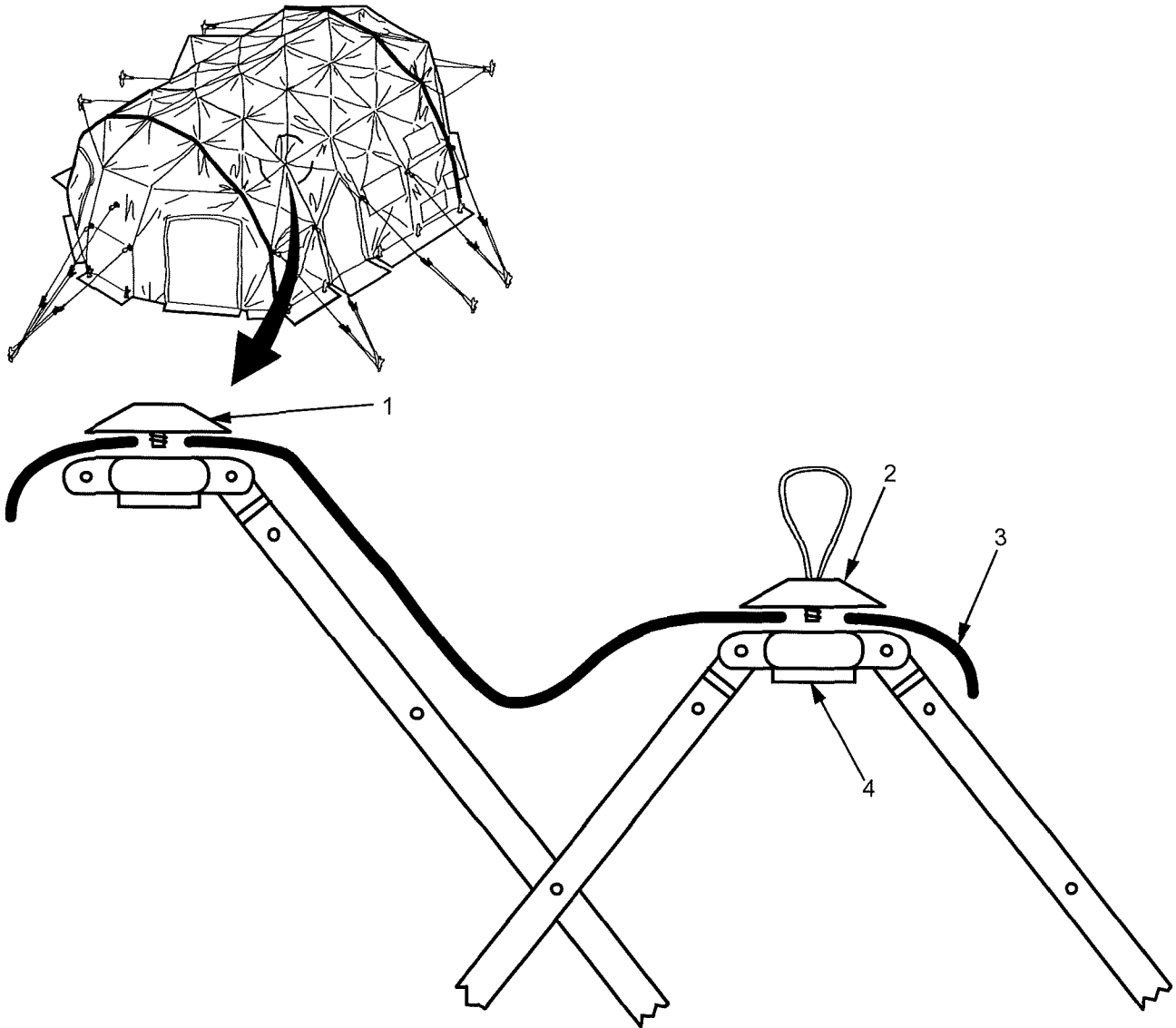


Figure 1. Shelter Keepers Removal/Replacement

END OF TASK

SHELTER – STRUT REPAIR (USING FIELD REPAIR KIT)

INITIAL SETUP:**Tools and Special Tools**

Field repair kit (WP 0029)

Personnel Required

Two

Materials/Parts

Duct tape (WP 0029, Item 1)

Repair Sleeve (WP 0029, Item 8)

Equipment Condition

Shelter is unpacked and spread out

NOTE

The following procedure can be used to repair struts for both the main shelter section and end caps.

If fractured strut(s) is found during shelter inspection, remove only the exterior cover required to gain access to damaged strut

REPAIR

- 1 If necessary, remove keepers as described in this WP
- 2 Peel back exterior cover to gain access to damaged strut (Figure 2, Item 1)
- 3 Using hack saw (provided with field repair kit) trim off 1/2" from each end of damaged strut (Figure 2, Item 1)

NOTE

The field repair kit is supplied with the shelter

- 5 Retrieve repair sleeve (Figure 2, Item 2) from field repair kit
- 5 Slide the repair sleeve (Figure 2, Item 2) over damaged strut (Figure 2, Item 1), keeping damaged strut (Figure 2, Item 1) centered in repair sleeve (Figure 2, Item 2)

NOTE

Tape one end ONLY of the repair sleeve (Figure 2, Item 2) with the duct tape (Figure 2, Item 3) This will allow broken strut (Figure 2, Item 1) to telescope within the repair sleeve (Figure 2, Item 2) and maintain its critical length

- 6 Wrap tape around end of broken strut (Figure 2, Item 1) that is closest to the center hinge (Figure 2, Item 4) This will ensure repair sleeve (Figure 2, Item 2) does not slide into and bind the hinge
- 7 Replace shelter cover
- 8 Tighten all keepers as described in this WP

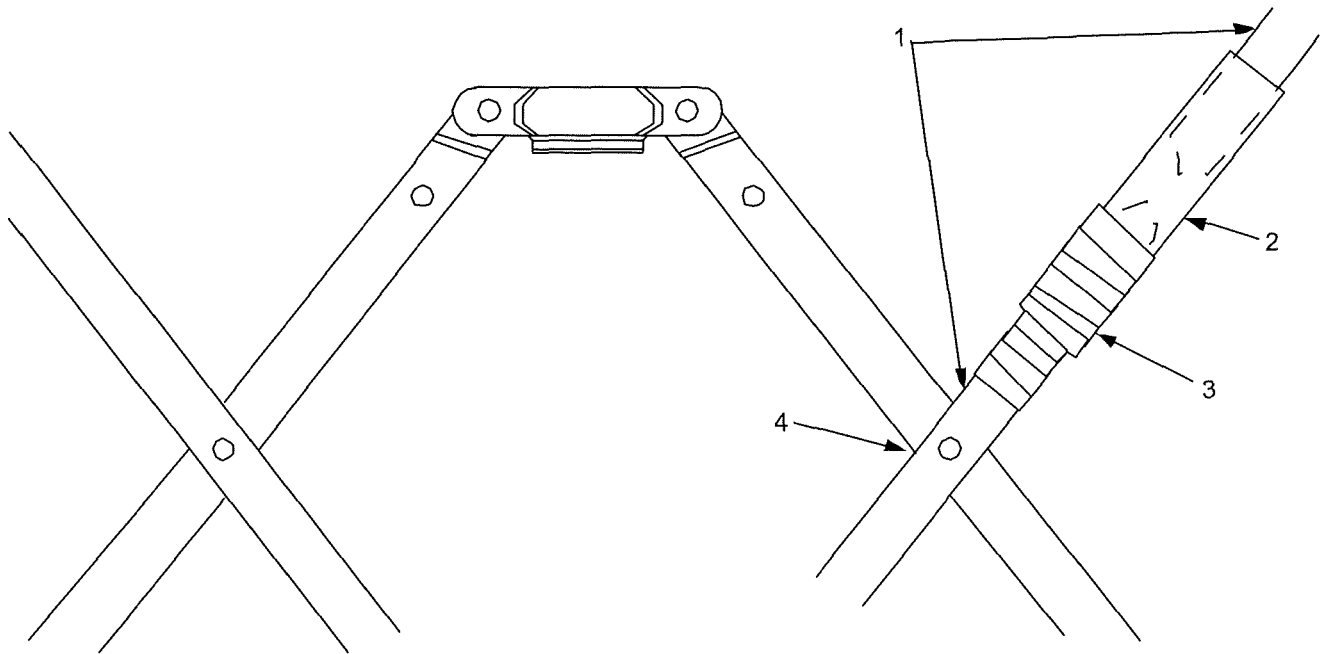


Figure 2 Field Repair of Shelter Strut

END OF TASK

SHELTER - COVER REPAIR (USING FIELD REPAIR KIT)

INITIAL SETUP:**Tools and Special Tools**

Field repair kit (WP 0029)

Equipment Condition

Shelter is unpacked and spread out

Personnel RequiredTwo

NOTE

The field repair kit is supplied with the shelter

Field repair kit is intended to repair a hole or tear in a shelter cover 10" in size or less

The following procedure can be used to repair the main shelter section, end cap and doors

REPAIR

- 1 Examine the damaged area of the interior and exterior covers (Figure 3, Item 1).
- 2 If necessary, remove only those keepers necessary to peel back the exterior or interior cover (Figure 3, Item 1) to reach the hole or tear (Figure 3, Item 2)

NOTE

When performing the following steps

- Allow approximately 1/4" extra on all sides
- If patching a small hole or tear, cut the patch into a circle
- If the tear or hole is too large cut the patch into an oval shape

- 3 Choose matching color self-adhering patch material (Figure 3, Item 3) from the repair kit Using scissors cut enough self-adhering patch material (Figure 3, Item 3) to cover the hole or tear
- 4 Peel backing off of self-adhering patch material (Figure 3, Item 3) and align with hole or tear (Figure 3, Item 2)
- 5 Press self-adhering patch material (Figure 3, Item 3) firmly over hole or tear (Figure 3, Item 2), smoothing away any air bubbles Patch will be secured immediately
6. If necessary, replace cover and tighten all keepers as described in this WP

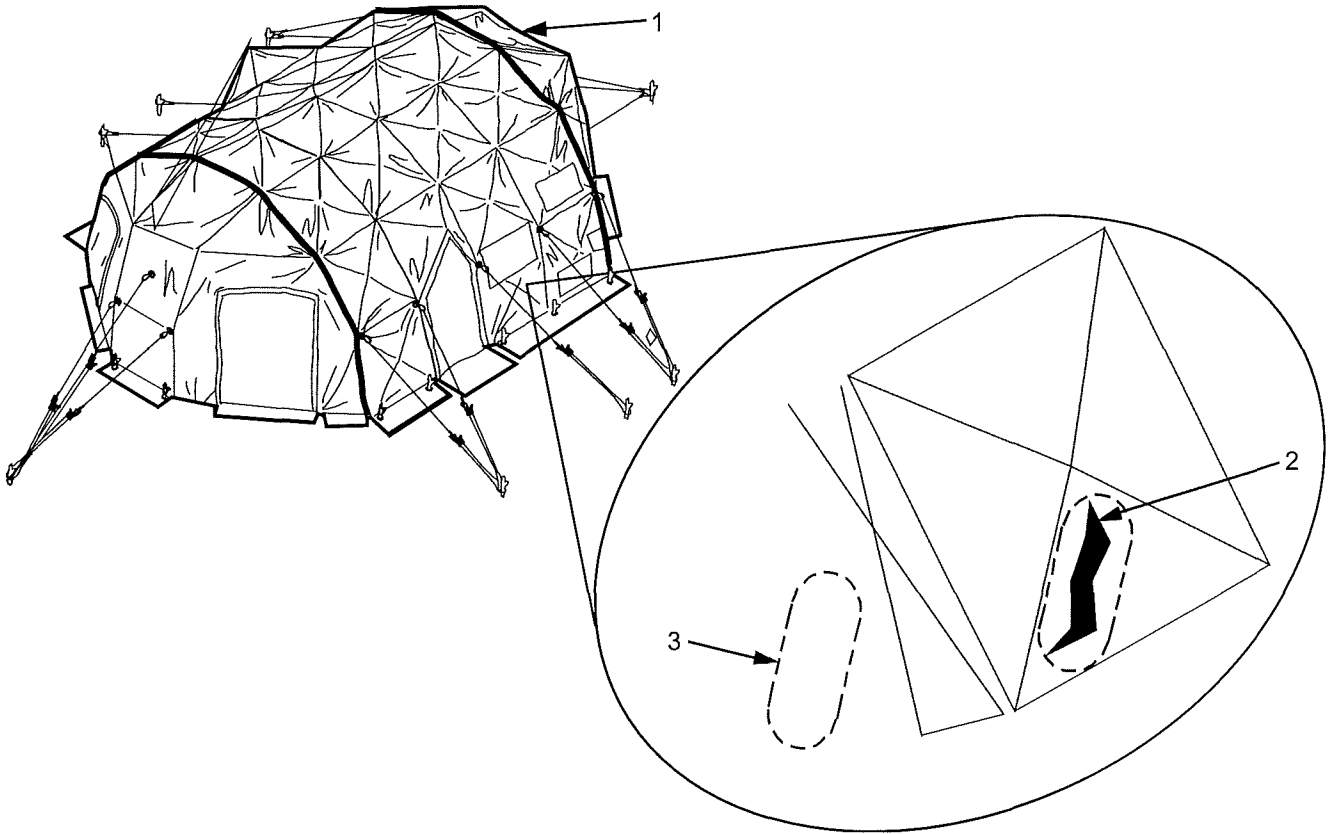


Figure 3 Repair of Shelter Cover

END OF TASK

END OF WORK PACKAGE

CHAPTER 5

MAINTAINER TROUBLESHOOTING PROCEDURES

FOR

M SERIES SHELTERS

MAINTAINER TROUBLESHOOTING PROCEDURES
M SERIES SHELTERS
MAINTAINER TROUBLESHOOTING INDEX

GENERAL

This WP contains a troubleshooting index of conditions/indications that may develop during maintenance or operation. Maintenance is limited to those failures that may be repaired at the maintainer level. The troubleshooting index identifies the condition/indication, which is followed by a column that identifies the work package and page(s) where maintainer level troubleshooting procedure(s) may be found (in the form of an inspection), followed by simple corrective actions which may be done by the maintainer level. These inspections and corrective actions should be performed in the order listed. The index is provided to assist in the quick location of a problem. The manual cannot list all conditions/indications that may occur. If a condition/indication is encountered that is not listed or that cannot be corrected by the corrective actions provided, notify the supervisor.

TROUBLESHOOTING INDEX

The troubleshooting index assists the operator after a fault occurs. When a fault occurs, carefully inspect the equipment for fault indications to determine the best condition/indication to follow. The most important step in troubleshooting is recognizing the conditions/indications and combination of conditions/indications. Use the corrective action for a given condition/indication in the order of appearance. If the first repair attempt is unsuccessful, proceed to the next recommended corrective action to resolve the problem. If a fault is encountered that is not listed or that cannot be corrected by the corrective actions provided, notify the supervisor.

Table 1 Maintainer Troubleshooting Index

Table with 3 columns: ITEM, CONDITION/INDICATION, and WP. It lists 7 items related to shelter conditions and their corresponding work packages (WP).

END OF WORK PACKAGE

**MAINTAINER TROUBLESHOOTING PROCEDURES
M SERIES SHELTERS
MAINTAINER TROUBLESHOOTING PROCEDURES**

INITIAL SETUP:**Tools and Special Tools**

General Mechanic's Tool Kit
(WP 0036, Table 2)
Field Repair Kit (WP 0029)

References

WP 0022

Personnel Required

Two

TROUBLESHOOTING PROCEDURES

This work package contains general information for troubleshooting of the shelter by maintainer-level qualified personnel. This work package provides a systematic approach to locating and correcting malfunctions of the shelter. Each section is arranged according to the condition/indication of a problem. The manual cannot identify all malfunctions that may occur. If a malfunction is encountered that is not listed or that cannot be corrected by the corrective actions provided, contact your supervisor.

WARNING

Special caution must be taken during troubleshooting since protective covers and safety devices may be removed or disabled to gain access and make tests.

High voltage and amperage may be present at electrical connections within the shelter. Ensure that all switches and circuit breakers have been de-energized prior to performing any procedures.

Voltage sources, in addition to being an electrical shock hazard, may also potentially produce serious burns. Care should be exercised when using hand tools around exposed power connectors, never letting the tool bridge two terminals. Failure to observe this warning can result in serious injury or death.

If a circuit breaker does not stay in ON position when energized, DO NOT attempt to energize repeatedly. That could create an overload situation hazardous to personnel and equipment. Instead, investigate and identify cause of problem. Correct situation before attempting to energize breaker again.

Table 1 Maintainer Troubleshooting – Shelter

ITEM	CONDITION/INDICATION	POSSIBLE MALFUNCTION	CORRECTIVE ACTION
1	Shelter will not spread while on ground	Hub broken	Replace hub (WP 0022).
		Broken strut pair	Replace strut pair (WP 0022)
		Strut pair pulled out of hub	Open hub and inspect hub for damage Replace strut/hub (WP 0022)
2	Shelter will not erect	Hub broken	Replace hub (WP 0022)
		Broken strut pair	Replace strut pair (WP 0022)
		Strut pair pulled out of hub	Open hub and inspect hub for damage Replace strut/hub (WP 0022).
3	Shelter, end cap or shelter door leaks	Fabric torn	If tear is greater then 10", replace (WP 0022)
4	Keepers coming out while erected	Keepers are not tight	Inspect hub assembly If hub is unserviceable, replace (WP 0022)
5	Shelter has unusual shape when erected	Hub broken	Replace hub (WP 0022)
		Broken strut pair	Replace strut pair (WP 0022)
6	Shelter binds when coming down	Hub broken	Replace hub (WP 0022)
		Broken strut pair	Replace strut pair (WP 0022)
		Strut pair pulled out of hub.	Open hub and inspect hub for damage Replace strut (WP 0022)
7	Shelter will not collapse completely when on ground	Hub broken	Replace hub (WP 0022)
		Broken strut pair	Replace strut pair (WP 0022)
		Strut pair pulled out of hub	Open hub and inspect hub for damage Replace strut/hub (WP 0022).

END OF WORK PACKAGE

CHAPTER 6

MAINTAINER MAINTENANCE INSTRUCTIONS
FOR

M SERIES SHELTERS

**MAINTAINER MAINTENANCE INSTRUCTIONS
M SERIES SHELTER
SERVICE UPON RECEIPT**

INITIAL SETUP:**Tools and Special Tools**

General Mechanic's Tool Kit (WP 0036, Table 2)

ReferencesWP 0002, WP 0005, WP 0014,
WP 0020, WP 0022**Personnel Required**

Two to Four

GENERAL

The following procedures are required to be performed by Maintainer level maintenance in order to prepare the M Series Shelters for use

SITING

For minimal problems with set-up and operation of the shelter and equipment being used, ensure area is

- Dry
- Level with adequate room for shelter, system grounding, and all other associated equipment
- Free of items (trees, buildings, or other structures) that would impede set-up or cause physical interference for the shelter and all other associated equipment
- Free of items (e.g., towers, power lines, radar, trees, buildings,) that would cause interference with electronic equipment being used inside of shelter

SHELTER REQUIREMENTS

The shelter footprint varies from shelter to shelter for proper deployment footprint see WP0005

SERVICE UPON RECEIPT

Inspect system components for damage incurred during shipment. If any damage is visible, notify supervisor. Report the damage on DD Form 361, Transportation Discrepancy Report. Check the equipment against the packing slip to see if the shipment is complete. Report all discrepancies in accordance with applicable service instructions.

Once all covers are removed, inspect each piece of shelter equipment for damage incurred during shipment.

INSTALLATION INSTRUCTIONS

The shelter requires some assembly depending on the mode of operation. To setup the M Series Shelters in a fixed mode of operation, refer to WP 0005 for setup procedures.

PRELIMINARY SERVICING OF EQUIPMENT**WARNING**

When working on the shelter, do not operate electric equipment if floors, ceiling or walls of the individual enclosure show evidence of water intrusion. Electrical shock can cause personnel injury or death

Do not apply power if grounding is not connected. Electrical shock can cause personnel injury or death

The M Series Shelters is an expandable shelter. Care must be taken in the removal and replacement of this equipment from the transport vehicles to avoid damage. Maintainer PMCS for the M Series Shelters is in WP 0020. For Maintainer level removal and replacement procedures of components and assemblies refer to WP 0022.

Once the M Series Shelters has been placed into service, the following maintenance should be performed on a daily basis:

- Check wind line tensions
- Check ground stake tensions
- Check interior and exterior fabric for rips or tears

PRELIMINARY CHECK AND ADJUSTMENTS OF EQUIPMENT

Before placing the equipment into service, ensure that all Operator PMCS (WP 0014) and Maintainer PMCS (WP 0020) have been performed.

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE INSTRUCTIONS
M SERIES SHELTERS
PMCS INTRODUCTION**

GENERAL

This work package provides data necessary to keep the shelter operational ready. PMCS are performed to keep the shelter in operational condition. The checks are used to find, correct, and report problems. Maintenance personnel are required to perform the tasks as indicated in Maintainer PMCS (WP 0020). PMCS are performed by crew members (WP 0014) each time the equipment is operated.

WARNINGS AND CAUTIONS

Special attention should be paid to the WARNINGS and CAUTIONS appearing in the PMCS table. A WARNING means someone could be injured. A CAUTION means equipment could be damaged.

EXPLANATION OF TABLE ENTRIES

Item Number - Numbers in this column are for reference. When completing DA Form 2404/DA Form 5988E (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers appear in the order in which the checks/services are performed for the interval listed.

Interval - This column indicates when a procedure must be performed (i.e., Before, During, or After an operation).

Item to Be Checked or Serviced - This column provides the item that is to be checked or serviced.

Procedure - This column describes the procedure that must be followed to ensure that the equipment is capable of performing its intended mission.

Equipment Not Ready/Available If - This column lists conditions that make the M Series Shelters not fully mission capable. If the problem can be fixed using the troubleshooting procedures and/or maintenance procedures in this manual, do so. If not, document the items not able to be fixed on DA Form 2404 for the next level of maintenance. For further information on how to use this form, see DA PAM 750-8. Be sure to observe and annotate all special circumstances that appear/occur.

NOTE

If the equipment must be kept in continuous operation, only perform those procedures that will not disturb operation. Complete checks and services when the equipment is shut down.

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE INSTRUCTIONS
M SERIES SHELTERS
PMCS**

INITIAL SETUP:

Tools and Special Tools

Shelter Repair Kit (WP 0029)

References

WP 0022

Personnel Required

Two

Table 1. Maintainer Preventive Maintenance Checks and Services

ITEM NO	INTERVAL	ITEM TO BE CHECKED OR SERVICED	PROCEDURE	EQUIPMENT NOT READY/ AVAILABLE IF:
1	Monthly	Shelter	<p style="text-align: center;">NOTE</p> <p>Refer to WP 0022 for Maintainer procedures applicable to the shelter</p> <p>1. Check interior and exterior covers and doors for excessive wear, cracks, or other damage Repair as necessary</p> <p>2. Check for missing/damaged hubs, struts, risers and other support components Repair/replace as necessary</p> <p>3. Check wind lines for excessive wear or damage. Repair/replace as necessary.</p>	<p>Damaged beyond repair</p> <p>Hubs, struts, risers missing or damaged beyond repair</p> <p>Wind lines frayed, missing or damaged beyond repair</p>

END OF WORK PACKAGE

**MAINTAINER MAINTENANCE INSTRUCTIONS
M SERIES SHELTERS
SHELTER MAINTAINER MAINTENANCE**

GENERAL

This work package provides information on the removal and replacement of shelter components. It consists of

- Shelter cover removal/replacement
- ✓ EMI Liner repair (using field repair kit)
- ✓ Exterior Cover repair (using field repair kit)
- ✓ Exterior Cover removal/replacement

- Shelter strut removal/replacement
- Shelter main hub removal/replacement

WARNING

High voltage and amperage may be present inside the shelter at electrical connections. Do not disconnect lamp with power applied. To prevent serious injury to personnel or damage to equipment ensure item is de-energized before performing the following procedures.

NOTE

Observe all CAUTIONS and WARNINGS when performing removal and replacement procedures.

SHELTER – EMI LINER REPAIR (USING FIELD REPAIR KIT)

INITIAL SETUP:**Tools and Special Tools**

Field repair kit

Personnel RequiredTOC Operator/Maintainer,
MOS 14J (1-4)**Materials/Parts**

Field repair kit

Equipment Condition

Shelter is fully erected

REPAIR
NOTE

The field repair kit is supplied with the shelter

Field repair kit is intended to repair a hole or tear in shelter EMI Liner 10" in size or less

The following procedure can be used to repair the EMI Liner inside the main shelter section, end caps, and doors

- 1 Examine the damaged area of the EMI Liner (Figure 1, Item 1)
- 2 If necessary, remove only those keepers necessary to peel back the EMI Liner and the exterior cover (Figure 1, Item 1) to reach the hole or tear (Figure 1, Item 2)

NOTE

When performing the following steps

- Allow approximately 1/4" extra on all sides
- If patching a small hole or tear, cut the patch into a circle
- If the tear or hole is too large, cut the patch into an oval shape

- 3 Choose white EMI patch material (Figure 1, Item 1) from the repair kit Using scissor to cut enough patch material (Figure 1, Item 1) to cover the hole or tear
- 4 Choose white adhesive patch material (figure 1, Item 2) from the repair kit Peel backing from self-adhering patch material (Figure 1, Item 2) and align with hole or tear (Figure 1, Item 2)
- 5 Place EMI patch material over adhesive patch material so that border of adhesive material is evenly exposed all around the patch material
- 5 Press combined patch material firmly over hole or tear (Figure 1, Item 3), smoothing away any air bubbles Patch will be secured immediately
- 6 If necessary, replace cover and tighten all keepers as described in this WP

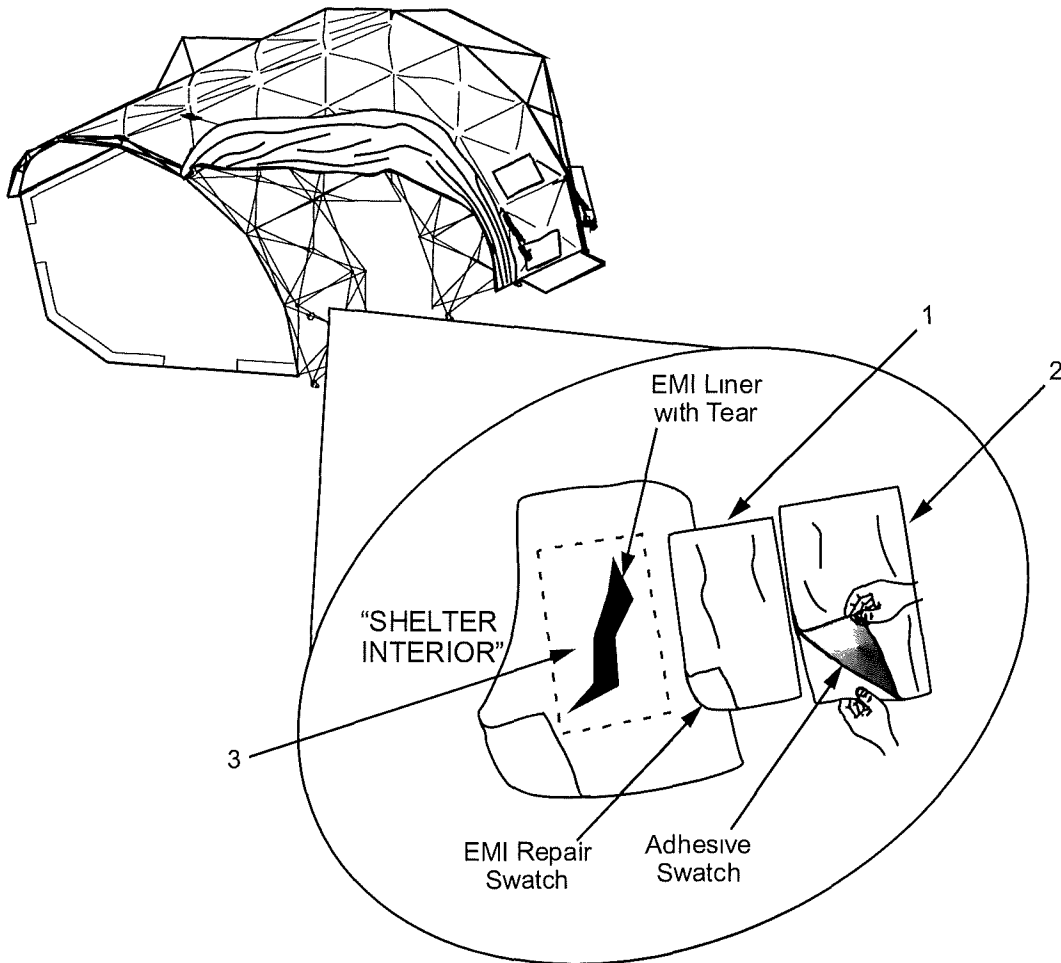


Figure 1 Repair of EMI Liner using Shelter Repair Kit.

END OF TASK

SHELTER COVER REMOVAL/REPLACEMENT

Tools and Special Tools

General Mechanic's Tool Kit
(WP 0036, Table 2)
Field Repair Kit (WP 0029)

Personnel Required

Two

References

WP 0005

Materials/Parts

Strut

Equipment Condition

Shelter is unpacked and spread out

Personnel Required

Four

REMOVAL

- 1 If necessary, strike the shelter (WP 0005)
- 2 Spread shelter (Figure 1, Item 1) out to full extension so that cover being replaced is face up

CAUTION

When performing the following step, do not step on struts Struts could become damaged or break due to weight

NOTE

When performing the following step, inspect all keepers for damage (stripped threads, broken or frayed loop, remember to keep track of which keepers went into which holes Looped keepers must be returned to proper location(s)

- 3 Using spanner wrench, remove and retain all keepers (Figure 1, Item 2)
- 4 Roll cover (Figure 1, Item 3) off of frame (Figure 1, Item 4)

NOTE

If removing both interior and exterior covers, continue with steps 5 and 6

- 5 Compress the frame (Figure 1, Item 4)
- 6 Flip the shelter (Figure 1, Item 1) over Repeat steps 2 through 4

END OF TASK

REPLACEMENT**CAUTION**

Do not step on struts. Struts could become damaged or break due to weight

- 1 Spread the frame (Figure 1, Item 1) out completely.
- 2 Using door sections for alignment, spread cover (Figure 1, Item 3) over frame (Figure 1, Item 1)

CAUTION

NEVER use a thread-locking additive on the keepers. This will damage the threads and prevent the keeper from being removed at a later time for repairs.

NOTE

Place the keepers back into their original positions to ensure the proper placement of the looped keepers

Keepers will screw in easily. If a keeper will not screw in by hand, check to make sure the keeper is straight, and check the threads in the hub (Figure 1, Item 6) to insure they are not damaged. If damaged, replace with a new hub.

- 3 Install keeper (Figure 1, Item 2) through cover (Figure 1, Item 3) located at center of bottom sides
- 4 Roll cover (Figure 1, Item 3) (from sides) into center of frame (Figure 1, Item 4). Cover should now be in a double roll, attached at each end to the appropriate stake plated hub.
- 5 Working from already attached hubs (Figure 1, Item 5), attach keepers (Figure 1, Item 2) in line with two previously attached hubs (Figure 1, Item 5). This should result in the center of the cover attached to the frame.
- 6 Unroll cover (Figure 1, Item 3) over until next set of hubs (Figure 1, Item 5) are present. Align holes with frame (Figure 1, Item 4).
- 7 Install keepers (Figure 1, Item 2) and attach to hubs (Figure 1, Item 5).
- 8 Repeat until all keepers (Figure 1, Item 2) are installed, being mindful of proper locations of looped keepers (Figure 1, Item 2).
- 9 Compress the shelter frame (Figure 1, Item 4) 4/5th of the way.
- 10 Using spanner wrench, tighten all keepers (Figure 1, Item 2).

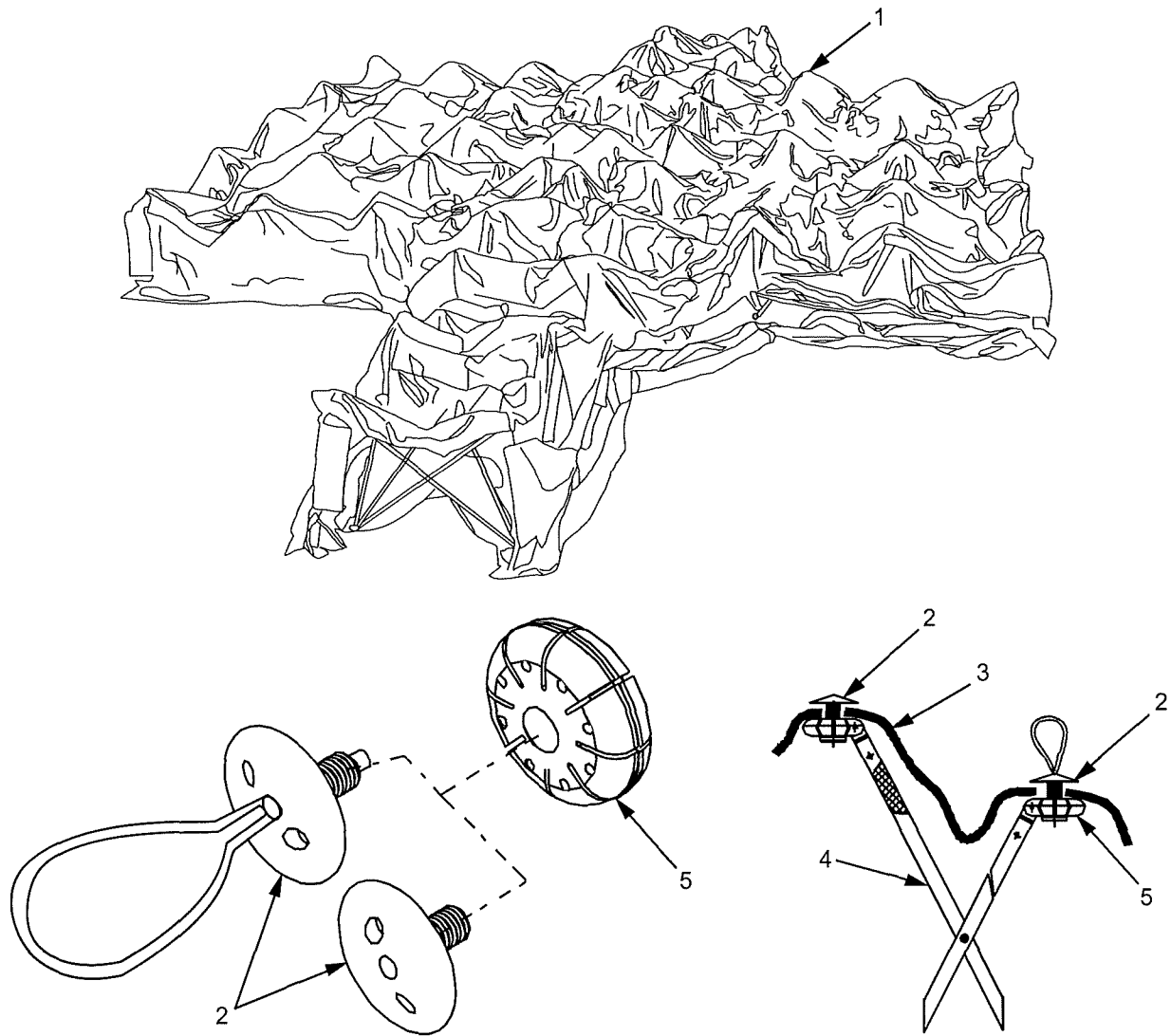


Figure 1 Shelter Cover(s) Removal/Replacement

END OF TASK

SHELTER STRUT PAIR REMOVAL/REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General Mechanic's Tool Kit
(WP 0036, Table 2)
Field Repair Kit (WP 0029)

Personnel Required

One

References

WP 0005

Materials/Parts

Strut

Equipment Condition

Shelter is unpacked and spread out

NOTE

This repair procedure can be accomplished in all weather conditions.

REMOVAL

- 1 If shelter is setup, strike the shelter (WP 0005)
- 2 Identify broken strut pair (Figure 2, Item 4) and associated interior and exterior hubs (Figure 2, Item 3)
- 3 Contract frame until tension on strut(s) are reduced

NOTE

Strut pairs (Figure 2, Item 2) are attached to four hubs, one at each end
Both interior and exterior covers will have to be unattached from hubs as
is necessary to access broken strut pair.

Work on one strut/hub connection at a time to prevent confusion

- 4 Using spanner wrench, remove keepers (Figure 2, Item 5) holding cover (Figure 2, Item 4) to the affected hubs (Figure 2, Item 3)
- 5 Remove and retain eight screws (Figure 2, Item 6) from hub (Figure 2, Item 3) that secure broken strut (Figure 2, Item 2)

NOTE

When performing the following step, be observant of strut positions in
hub. Mark the hubs at broken strut positions

- 6 Remove top of hub (Figure 2, Item 3A)
- 7 Remove damaged strut (Figure 2, Item 2) from hub (Figure 2, Item 3B), replace top of hub (Figure 2, Item 3A) and secure with eight screws (Figure 2, Item 6).
- 8 Remove damaged strut (Figure 2, Item 2) from second hub on this side of shelter, being observant of position in hub.
- 9 Contract frame and flip shelter, perform steps 4 – 8 on this side of shelter to remove entire broken strut pair

END OF TASK

REPLACEMENT**CAUTION**

Placing the strut in backwards or upside down can prevent the shelter from erecting or cause other struts to break

NOTE

Place new strut alongside old strut and verify the strut being replaced is correct type and color

- 1 Remove and retain eight screws (Figure 2, Item 6) from hub (Figure 2, Item 3) that will secure new strut (Figure 2, Item 2)
- 2 Position and install strut (Figure 2, Item 2) hinge rod into hub bottom (Figure 2, Item 3B)

NOTE

If multiple struts are in hub, ensure that all struts are securely seated

- 3 Install top of hub (Figure 2, Item 3A) and secure with eight screws (Figure 2, Item 6)
- 4 Remove and retain eight screws (Figure 2, Item 6) from second hub (Figure 2, Item 3) on this side of shelter that will secure new strut (Figure 2, Item 2)
- 5 Position and install strut (Figure 2, Item 2) hinge rod into hub bottom (Figure 2, Item 3B)
- 6 Install top of hub (Figure 2, Item 3A) and secure with eight screws (Figure 2, Item 6)
- 7 Contract frame and flip shelter, perform steps 1 – 6 on this side of shelter to complete replacement of strut pair
- 8 Verify proper assembly, erect shelter as described in WP 0005

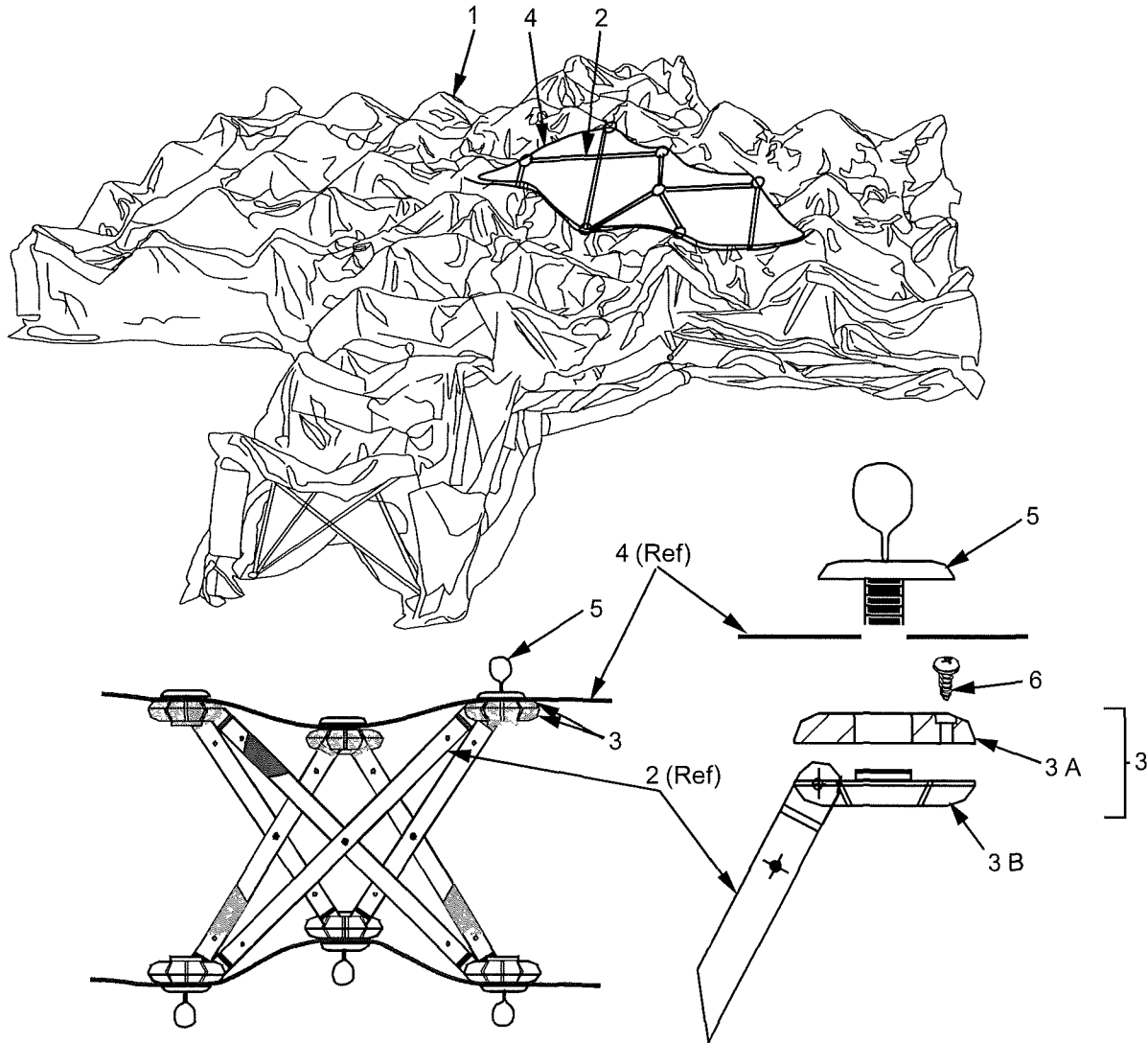


Figure 2 Shelter Struts Removal/Replacement

END OF TASK

SHELTER HUB REMOVAL/REPLACEMENT

INITIAL SETUP:**Tools and Special Tools**

General Mechanic's Tool Kit
(WP 0036, Table 2)
Field Repair Kit (WP 0029)

References

WP 0005

Equipment Condition

Shelter is unpacked and spread out

Materials/Parts

Hub

Personnel Required

One

REMOVAL

- 1 If necessary, strike the shelter (WP 0005)
- 2 Spread shelter out to full extension

CAUTION

When performing the following step, do not step on struts. Struts could become damaged or break due to weight.

NOTE

When performing the following step, inspect all keepers for damage (stripped threads, broken or frayed loop, remember to keep track of which keepers went into which holes). Looped keepers must be returned to proper location(s).

- 3 Using spanner wrench, remove and retain keepers (Figure 3, Item 5) from damaged area
4. Remove cover off of damaged area
- 5 Identify broken main hub(s) (Figure 3, Item 3) and associated strut(s) (Figure 3, Item 2)
- 6 Remove and retain eight screws (Figure 3, Item 6) from damaged main hub (Figure 3, Item 3)
Remove hub top (Figure 3, Item 3A)
- 7 Annotate location(s) of struts (Figure 3, Item 3) inside of lower main hub (Figure 3, Item 3B)

END OF TASK

REPLACEMENT

- 1 Remove struts (Figure 3, Item 2) from base of main hub (Figure 3, Item 3B) one at a time and place into base of new main hub (Figure 3, Item 3B)
- 2 Place main hub top (Figure 3, Item 3A) onto bottom half of main hub (Figure 3, Item 3B) and secure using eight screws (Figure 3, Item 6).
- 3 Repeat steps until all broken/damaged main hubs (Figure 3, Item 3) are replaced
- 4 Re-assemble shelter and install all removed keepers (Figure 3, Item 5)
- 5 Verify proper assembly, erect shelter as described in WP 0005

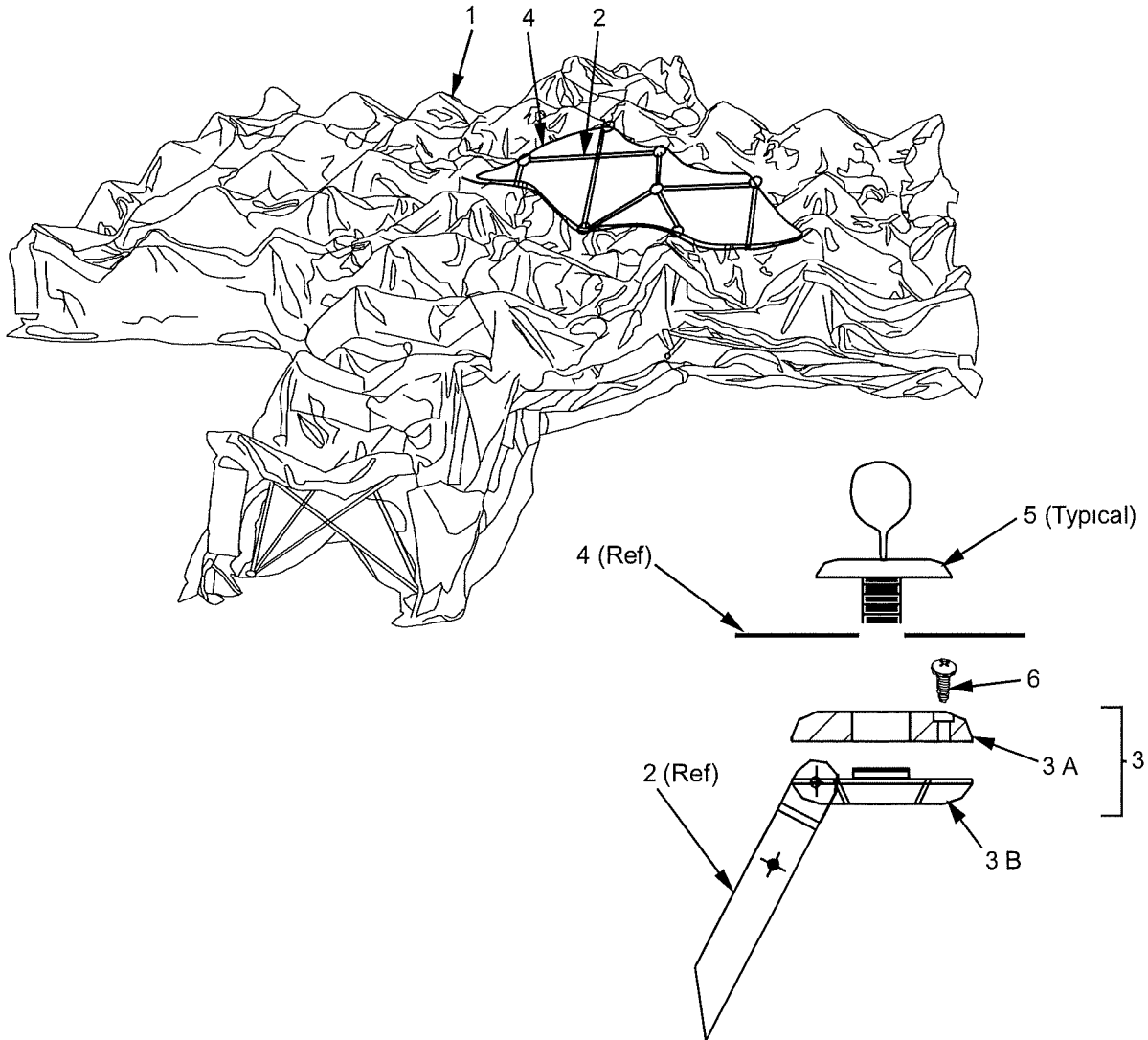


Figure 3 Shelter Main Hub(s) Removal/Replacement

END OF TASK

END OF WORK PACKAGE

CHAPTER 7
PARTS INFORMATION
FOR
M Series Shelters

**PARTS INFORMATION
M SERIES SHELTERS
RPSTL INTRODUCTION**

INTRODUCTION

SCOPE

This RPSTL lists and authorizes spares and repair parts, special tools; special test, measurement, and diagnostic equipment (TMDE), and other special support equipment required for performance of the field maintenance of the M Series Shelter. 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 by this RPSTL for use in the performance of maintenance. 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 separately in their own functional group and work package. 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 Work packages containing lists of special tools, special TMDE, and special support equipment authorized by this RPSTL (as indicated by Basis of Issue (BOI) information in the DESCRIPTION AND USABLE ON CODE (UOC) column). Tools that are components of common tool sets and/or Class VII are not listed.

3. Cross-Reference Indexes Work Packages There are two cross-reference indexes work packages in this RPSTL: the National Stock Number (NSN) Index work package, and the Part Number (P/N) Index work package. The National Stock Number Index work package refers you to the figure and item number. The Part Number Index work package refers you to the figure and item number.

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

ITEM NO (Column (1)) Indicates the number used to identify 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 4 subentries, one for each service

Table 1. SMR Code Explanation.

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

* 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 follows

<u>Source Code</u>	<u>Application/Explanation</u>
PA	
PB	NOTE
PC	
PD	Items coded PC are subject to deterioration
PE	
PF	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
PG	
PH	
PR	
PZ	
KD	Items with these codes are not to be requested/requisitioned individually
KF	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
KB	
MO-Made at service/AMC level	Items with these codes are not to be requisitioned/requested individually
MF-Made at field/ASB level	
MH-Made at below depot/sustainment level	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 higher level, order the item from the higher level of maintenance
ML-Made at SRA/TASMG	
MD-Made at depot	
AO-Assembled by service/AMC level	Items with these codes are not to be requested/requisitioned individually
AF-Assembled by field/ASB level	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
AG-Navy only	
AH-Assembled by below depot sustainment level	
AL-Assembled by SRA/TASMG	
AD-Assembled by depot	
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 the manufacturer's part number
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 codes 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

- C - Field (Service) level/AMC maintenance can remove, replace, and use the item
- F - Field/ASB maintenance can remove, replace, and use the item
- H - Below Depot Sustainment maintenance can remove, replace, and use the item
- L - Specialized repair activity/TASMG can remove, replace, and use the item
- 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

- C - Field (Service)/AMC is the lowest level that can do complete repair of the item
- F - Field/ASB 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

Maintenance

Code Application/Explanation

- L - Specialized repair activity /TASMG (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
- K - Complete repair is done at contractor facility
- Z - Nonrepairable 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

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:

Recoverability

Code Application/Explanation

- Z - Nonrepairable item When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code
- C - Repairable item When uneconomically repairable, condemn and dispose of the item at the service/AMC level
- G Repairable item Condemn and dispose of afloat or ashore intermediate levels (Navy only)
- F - Repairable item When uneconomically repairable, condemn and dispose of the item at the field level/ASB
- H - Repairable item When uneconomically repairable, condemn and dispose of the item at the below depot sustainment level
- D - Repairable item When beyond lower level repair capability, return to depot Condemnation and disposal of item are not authorized below depot level
- L - Repairable item Condemnation and disposal not authorized below Specialized Repair Activity (SRA) or theater aviation sustainment maintenance group (TASMG)
- 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
- K - Repairable 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 from 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 number 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 electrostatic 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. NSN's 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

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 Usable On Codes are not used in this publication

Associated Publications The publication listed below pertains to the DRASH M Series Shelters

<u>Part Number</u>	<u>Short Title</u>
TM: 1006412	Operation & Maintenance w/RPSTL

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 in (enter applicable TM number)

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

HOW TO LOCATE REPAIR PARTS**1. When NSNs or Part Numbers Are Not Known**

First Using the table of contents, determine the assembly group to which the item belongs This is necessary since the work packages are prepared for assembly groups and subassembly groups, and lists are divided into the same groups

Second Find the figure covering the functional group or subfunctional group to which the item belongs

Third Identify the item on the figure and note the number(s)

Fourth 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

2. When NSN Is Known.

First If you have the NSN, 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

Second Turn to the figure and locate the item number Verify that the item is the one you are looking for

3. When Part Number Is Known

First If you have the part number and not the NSN, look in the PART NUMBER column of the part number index work package Identify the figure and item number

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

ABBREVIATIONS

Not Applicable

END OF WORK PACKAGE

**PARTS INFORMATION
REPAIR PARTS LIST
M SERIES SHELTERS**

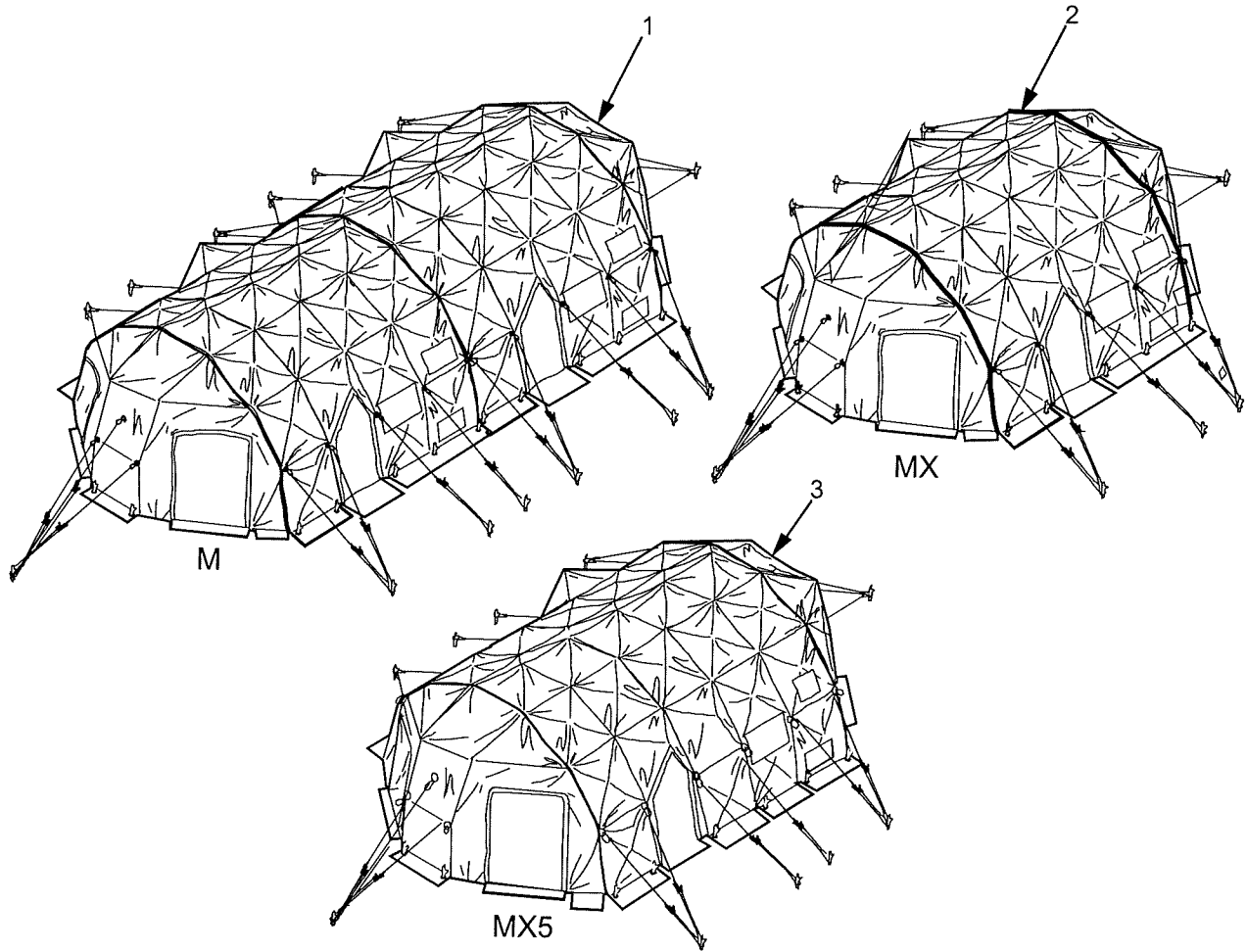


Figure 1 M Series Shelters

NOTE: Side door on available on EMI models

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION	(7) QTY
					FIGURE 1 M SERIES SHELTERS	
1	XBFZZ	8340-01-533-1654	0WFM3	MA100100	SHELTER,M,GREEN (SEE FIGURE 2 FOR BREAKDOWN)	1
1	XBFZZ	8340-01-533-1653	0WFM3	MA100500	SHELTER,M,TAN (SEE FIGURE 2 FOR BREAKDOWN)	1
1	XBFZZ		0WFM3	SH201- 0928G	SHELTER,M,EMI,GREEN (SEE FIGURE 2 FOR BREAKDOWN)	1
1	XBFZZ		0WFM3	1012763	SHELTER,M,EMI,TAN (SEE FIGURE 2 FOR BREAKDOWN)	1
2	XBFZZ	8340-01-538-1822	0WFM3	MXA2000G	SHELTER,MX,GREEN (SEE FIGURE 3 FOR BREAKDOWN)	1
2	XBFZZ	8340-01-538-1823	0WFM3	MXA2000T	SHELTER,MX,TAN (SEE FIGURE 3 FOR BREAKDOWN)	1
2	XBFZZ		0WFM3	1009325	SHELTER,MX,EMI,GREEN (SEE FIGURE 3 FOR BREAKDOWN)	1
2	XBFZZ		0WFM3	1009324	SHELTER,MX,EMI,TAN (SEE FIGURE 3 FOR BREAKDOWN)	1
3	XBFZZ	8340-01-540-7566	0WFM3	SH201- 0601G	SHELTER,MX5,GREEN (SEE FIGURE 4 FOR BREAKDOWN)	1
3	XBFZZ	8340-01-540-7592	0WFM3	SH201- 0601T	SHELTER,MX5,TAN (SEE FIGURE 4 FOR BREAKDOWN)	1
3	XBFZZ		0WFM3	SH201- 0938G	SHELTER,MX5,EMI,GREEN (SEE FIGURE 4 FOR BREAKDOWN)	1
3	XBFZZ		0WFM3	SH201- 0938T	SHELTER,MX5,EMI,TAN (SEE FIGURE 4 FOR BREAKDOWN)	1
					END OF FIGURE	

END OF WORK PACKAGE

PARTS INFORMATION
M SERIES SHELTERS
SHELTER, M, MA100100 GREEN, MA100500 TAN
SHELTER, M, EMI, SH201-0928G GREEN, SH201-0928T TAN

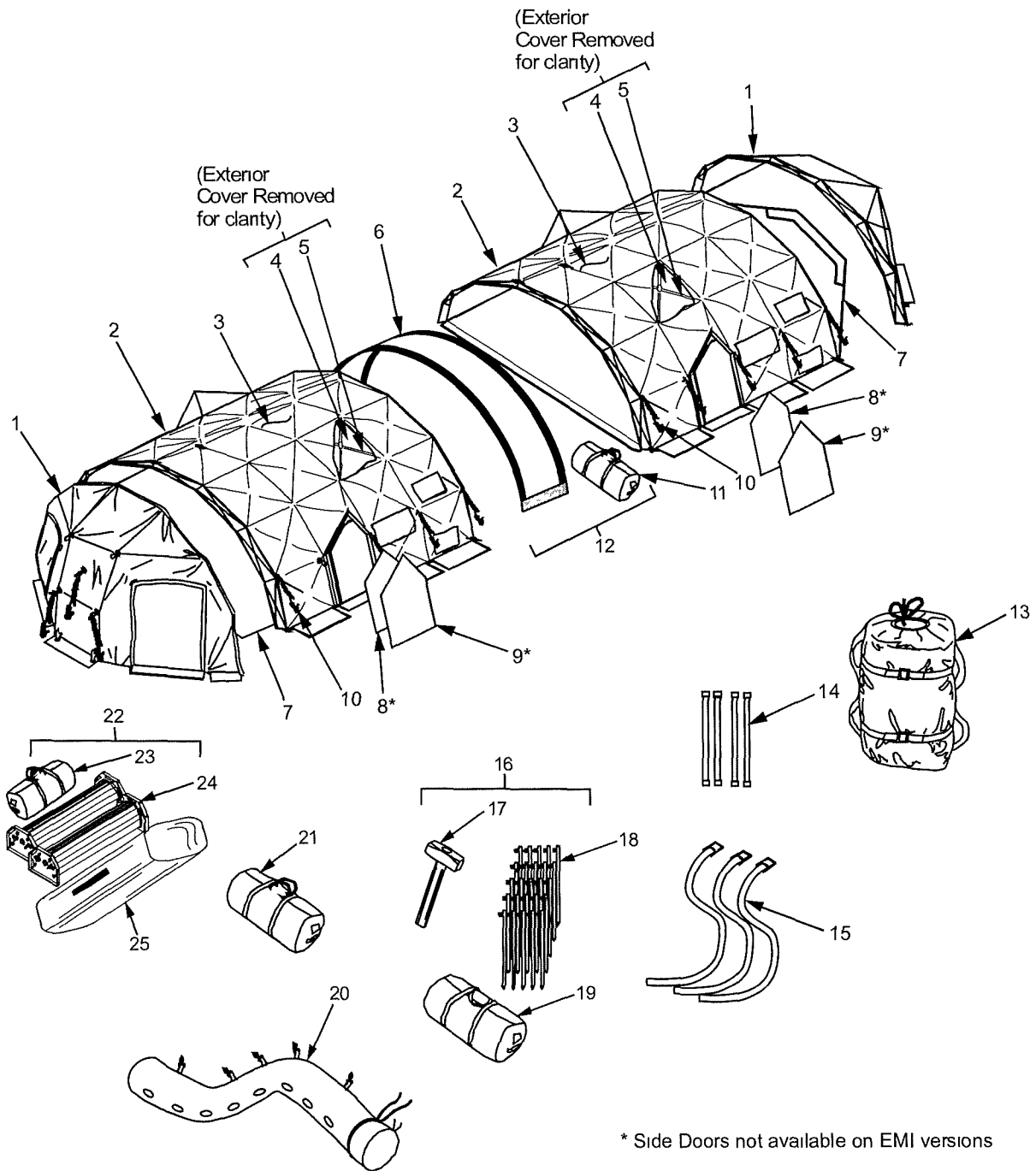


Figure 2 Shelter, M, MA100100 Green, MA100500 Tan,
 Shelter, M, EMI, SH201-0928G (Green), SH201-0928T (Tan) (sheet 1 of 3)

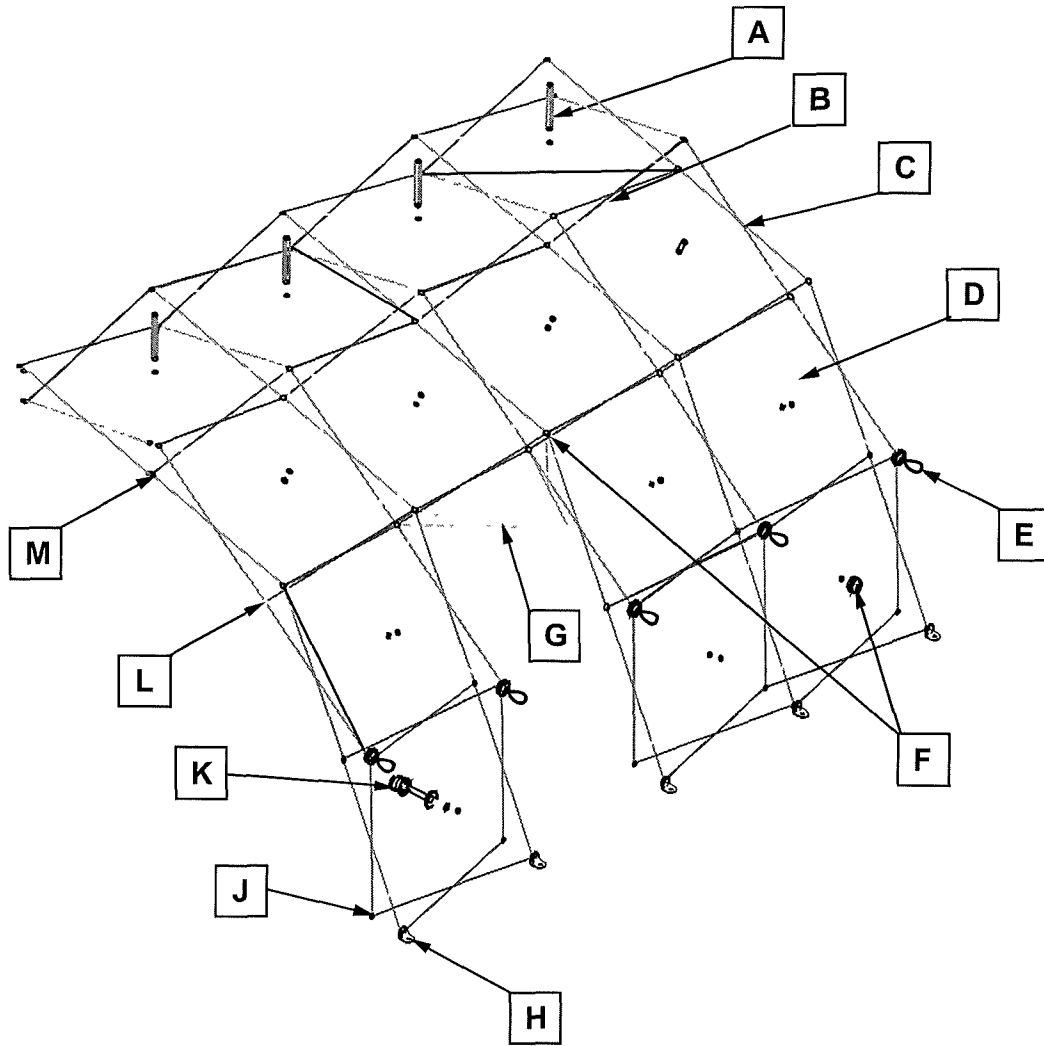


Figure 2 Shelter, M, MA100100 Green, MA100500 Tan,
Shelter, M, EMI, SH201-0928G (Green), SH201-0928T (Tan) (sheet 2 of 3)

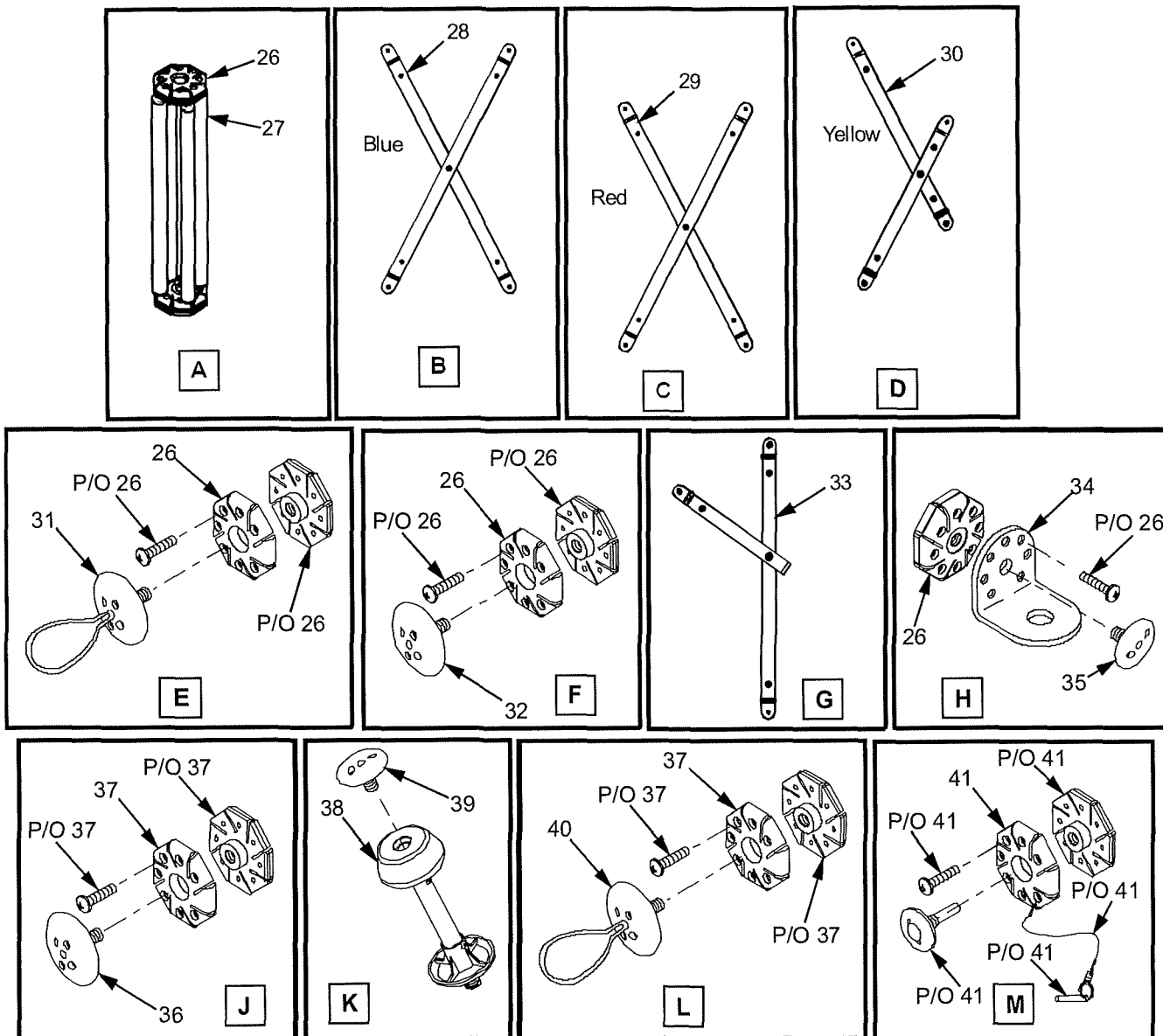


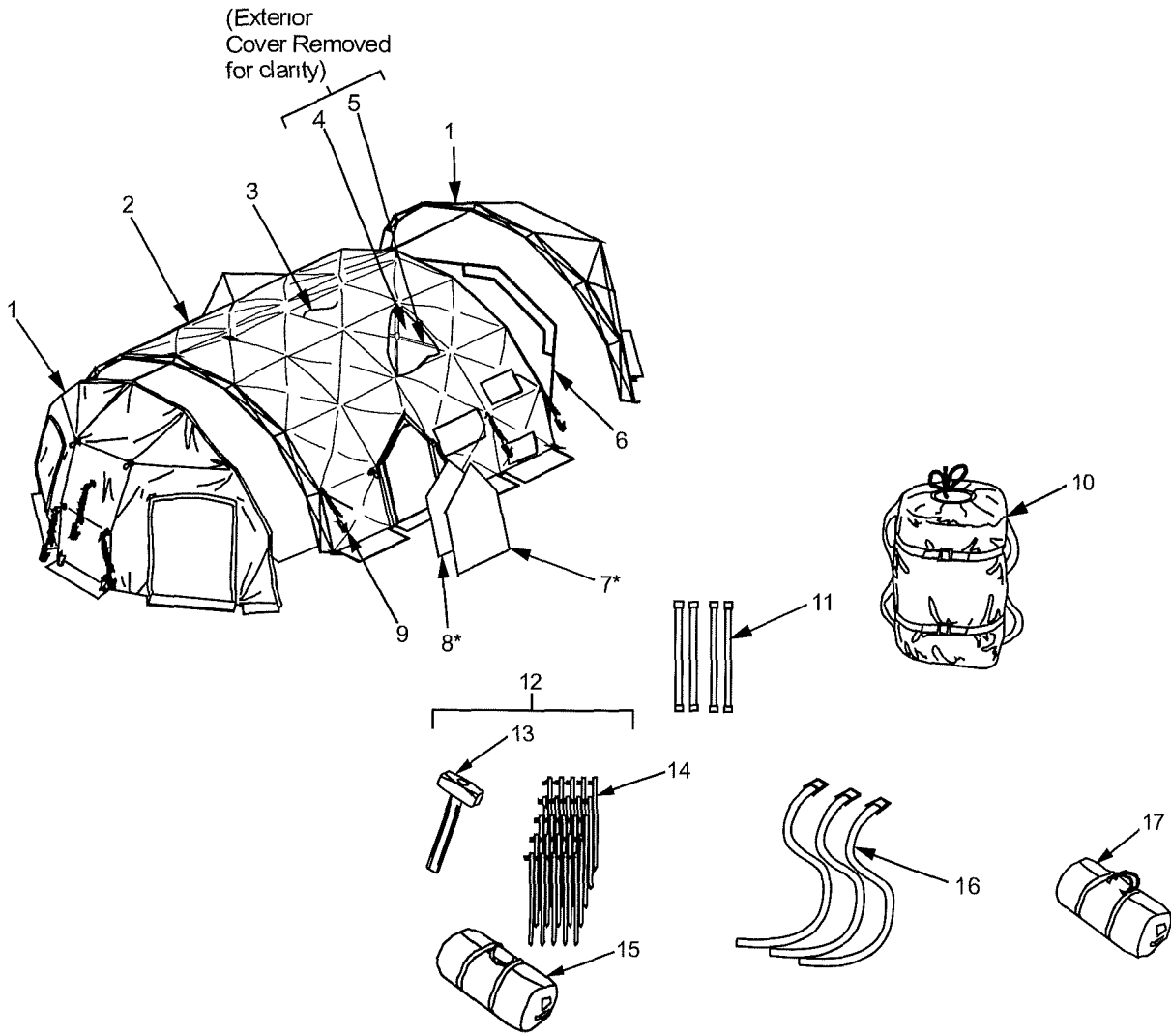
Figure 2 Shelter, M, MA100100 Green, MA100500 Tan, Shelter, M, EMI, SH201-0928G (Green), SH201-0928T (Tan) (sheet 3 of 3)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION	(7) QTY
Figure 2 Shelter, M, MA100100 Green, MA100500 Tan, Shelter, M, EMI, SH201-0928G (Green), SH201-0928T (Tan)						
1	PACZZ	8340-01-589-9512	0WFM3	MXA2020G	END CAP, MX, GREEN (SEE FIGURE 5 FOR BREAKDOWN) ..	2
1	PACZZ	8340-01-589-9518	0WFM3	MXA2020T	END CAP, MX, TAN (SEE FIGURE 5 FOR BREAKDOWN) ..	2
			0WFM3	SH201-0903G	END CAP, MX, EMI, GREEN ..	2
			0WFM3	1014134	END CAP, MX, EMI, TAN.	2
2	PACZZ		0WFM3	1003770	SECTION, MX FOR M SYSTEM, GREEN.	2
2	PACZZ		0WFM3	1003772	SECTION, MX FOR M SYSTEM, TAN	2
2	PACZZ		0WFM3	1012764	SECTION, MX, EMI, FOR M SYSTEM, TAN... ..	2
2	PACZZ		0WFM3	NA	SECTION, MX EMI, FOR M SYSTEM, GREEN	2
3	PACZZ	8340-01-590-3548	0WFM3	MXA2005G	COVER, EXTERIOR, REPLACEMENT, GREEN	1
3	PACZZ	8340-01-590-4018	0WFM3	MXA2005T	COVER, EXTERIOR, REPLACEMENT, TAN	1
4	PACZZ	8340-01-590-4280	0WFM3	MXA2010W	COVER, INTERIOR, REPLACEMENT	1
4	PACZZ		0WFM3	SH502-0601	COVER, INTERIOR, EMI REPLACEMENT	1
5	PACZZ		0WFM3	MXA2015G	FRAME, SHELTER, GREEN ..	1
5	PACZZ		0WFM3	MXA2015T	FRAME, SHELTER, TAN ..	1
6	PACZZ	8340-01-584-9991	0WFM3	MS200320	SEAM REINFORCEMENT, M/MX-M/MX	1
7	PACZZ		0WFM3	1003771	FLOOR, MX FOR M SYSTEM ..	1
7	PACZZ		0WFM3	1014143	FLOOR, MX FOR M SYSTEM w/EMI . .	1
8	PACZZ	8340-01-571-9444	0WFM3	MA100310	DOOR, SIDE, M/MX, INTERIOR .	2
9	PACZZ	8340-01-572-0624	0WFM3	MA100130	DOOR, SIDE, M/MX, EXTERIOR, GREEN	2
9	PACZZ	8340-01-571-6456	0WFM3	MA100530	DOOR, SIDE, M/MX, EXTERIOR, TAN	2
10	PACZZ	4020-01-570-4924	0WFM3	A602050	WINDLINE ASSEMBLY, 12'	10
11	PACZZ	8340-01-589-9618	0WFM3	MA100160	BAG, SMALL, BROWN ..	1
12	PACZZ	8340-01-540-0855	0WFM3	MXA1056	SEAM REINFORCEMENT ASSEMBLY	1
13	PACZZ	8340-01-553-0054	0WFM3	MXA2040B	SHELTER TRANSPORT BAG ..	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION	(7) QTY
14	PACZZ	5340-01-558-7299	0WFM3	A602650	PUSH POLE	4
15	PACZZ	5340-01-558-9644	0WFM3	A600250	BELT,SHELTER,LARGE,BLACK	3
16	PACZZ	8340-01-584-3979	0WFM3	MA100760	STAKE SET	2
17	PACZZ		0WFM3	A600650	HAMMER,3LBS	1
18	PACZZ	8340-01-571-6274	0WFM3	A601250	PIN,STAKE,18"	25
19	PACZZ		0WFM3	MA100165	BAG,STAKE,BROWN	1
20	PACZZ	8340-01-590-4344	0WFM3	MXA3015	PLENUM	1
21	PACZZ	8340-01-556-7416	0WFM3	MA100735	SHELTER REPAIR KIT,GREEN (SEE FIGURE 6 FOR BREAKDOWN)	1
21	PACZZ	5410-01-570-4998	0WFM3	MA100740	SHELTER REPAIR KIT,TAN (SEE FIGURE 6 FOR BREAKDOWN)	1
21	PACZZ		0WFM3	SH533-0603G	SHELTER REPAIR KIT,EMI,GREEN (SEE FIGURE 6 FOR BREAKDOWN)	1
21	PACZZ		0WFM3	SH533-0603T	SHELTER REPAIR KIT,EMI,TAN (SEE FIGURE 6 FOR BREAKDOWN)	1
22	PACZZ		0WFM3	H300064	DRASHLITE SET (4 LIGHTS)	1
23	PACZZ		0WFM3	T2-95217	ELECTRICAL SET,M SHELTER	1
24	PACZZ	6210-01-552-7802	0WFM3	H300000	DRASHLITE,120V/60HZ	4
25	PACZZ		0WFM3	H300047	BAG,DRASHLITE,GREEN	2
26	PACZZ	5340-01-558-8820	0WFM3	SH410-0201G	HUB ASSEMBLY,M/MX,GREEN	70
26	PACZZ	3010-01-558-7646	0WFM3	SH410-0201T	HUB ASSEMBLY,M/MX,TAN	70
27	PACZZ	8340-01-572-0876	0WFM3	MF300160	STRUT ASSEMBLY,RISER,M/MX	16
28	PACZZ	8340-01-571-6673	0WFM3	MF300130	A SIDE PAIR,M/MX,BLUE	28
29	PACZZ	8340-01-572-0722	0WFM3	MF300140	B SIDE PAIR,M/MX,RED	35
30	PACZZ	8340-01-571-7030	0WFM3	MF300150	B SUB PAIR,M/MX,YELLOW	96
31	PACZZ	5340-01-558-9652	0WFM3	JA201005	KEEPER,LOOPED,J,GREEN	10
31	PACZZ	5340-01-558-9289	0WFM3	JA201000	KEEPER,LOOPED,J,TAN	10

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION	(7) QTY
32	PACZZ	5340-01-558-7288	0WFM3	JA200881	KEEPER,J,W/O-RING,GREEN	46
32	PACZZ	5340-01-558-8533	0WFM3	JA200901	KEEPER,J,W/O-RING,TAN	46
33	PACZZ	8340-01-571-9659	0WFM3	MF300200	CANOPY PAIR,M/MX	4
34	PACZZ	5340-01-553-1413	0WFM3	MA100720	BRACKET,STAKING,EXTERIOR,M	10
35	PACZZ	5340-01-558-8890	0WFM3	A601651	KEEPER,S/XB,W/O-RING,GREEN	10
35	PACZZ	5365-01-558-6149	0WFM3	A601661	KEEPER,S/XB,W/O-RING,TAN.	10
36	PACZZ	5340-01-558-7288	0WFM3	JA200921	KEEPER,J,W/O-RING,WHITE	10
37	PACZZ	5340-01-558-9807	0WFM3	SH410-0201W	HUB ASSEMBLY,WHITE	64
38	PACZZ	5340-01-558-8848	0WFM3	F329905	HUB EXTENSION,SHORT	24
39	PACZZ	5340-01-558-7292	0WFM3	A601681	KEEPER,S/XB,W/O-RING,WHITE	24
40	PACZZ	5340-01-558-7324	0WFM3	JA200980	KEEPER,LOOPED,J,WHITE	26
41	PACZZ	5340-01-570-4415	0WFM3	SH410-0202	HUB ASSEMBLY W/PIN,MX	4
END OF FIGURE						

**PARTS INFORMATION
M SERIES SHELTERS
SHELTER, MX, MXA2000G, MXA2000T
SHELTER, MX, EMI, 1009325 (GREEN), 1009324 (TAN)**



* Side door not available with EMI versions

Figure 3 Shelter, MX, MXA2000G, MXA2000T,
Shelter, MX, EMI, 1009325 (Green), 1009324 (Tan) (sheet 1 of 3)

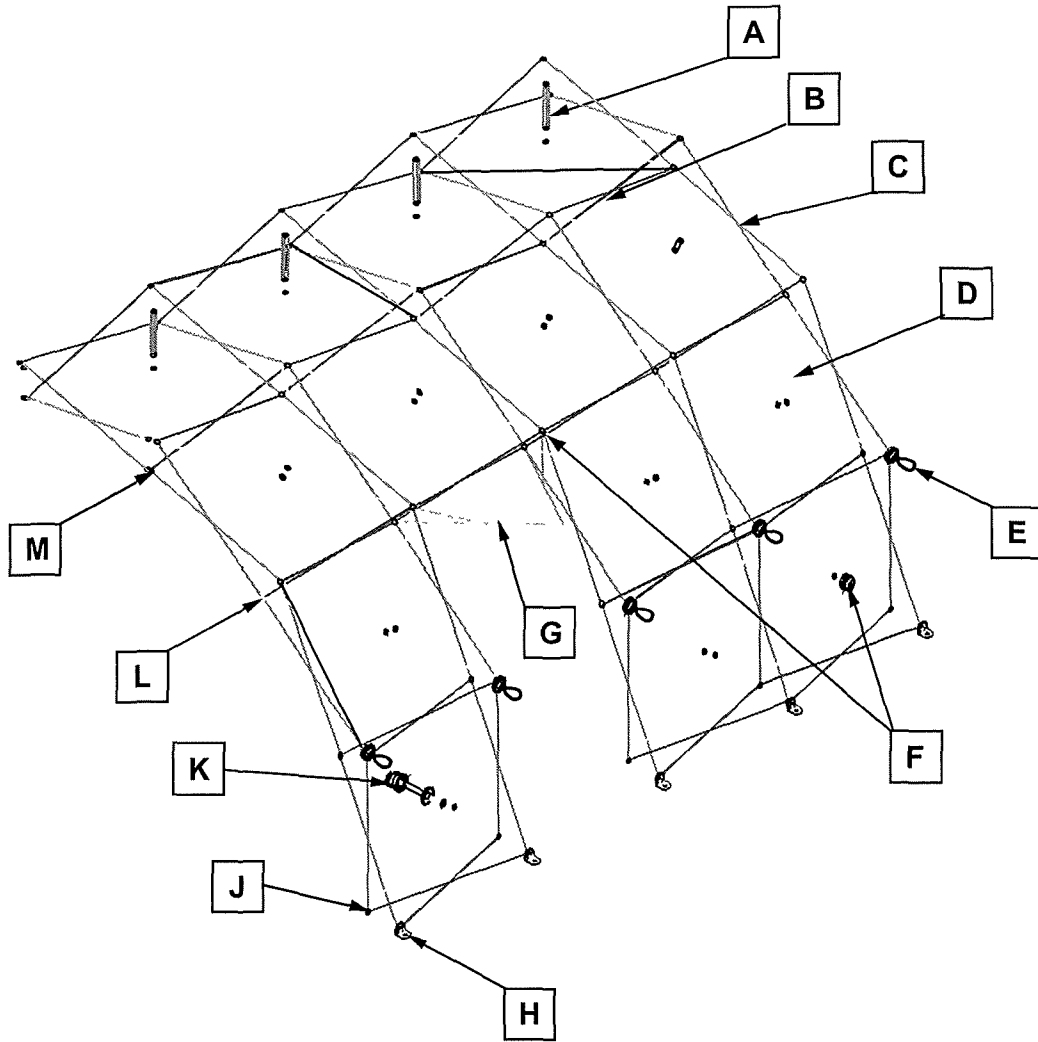


Figure 3 Shelter, MX, MXA2000G, MXA2000T,
Shelter, MX, EMI, 1009325 (Green), 1009324 (Tan) (sheet 2 of 3)

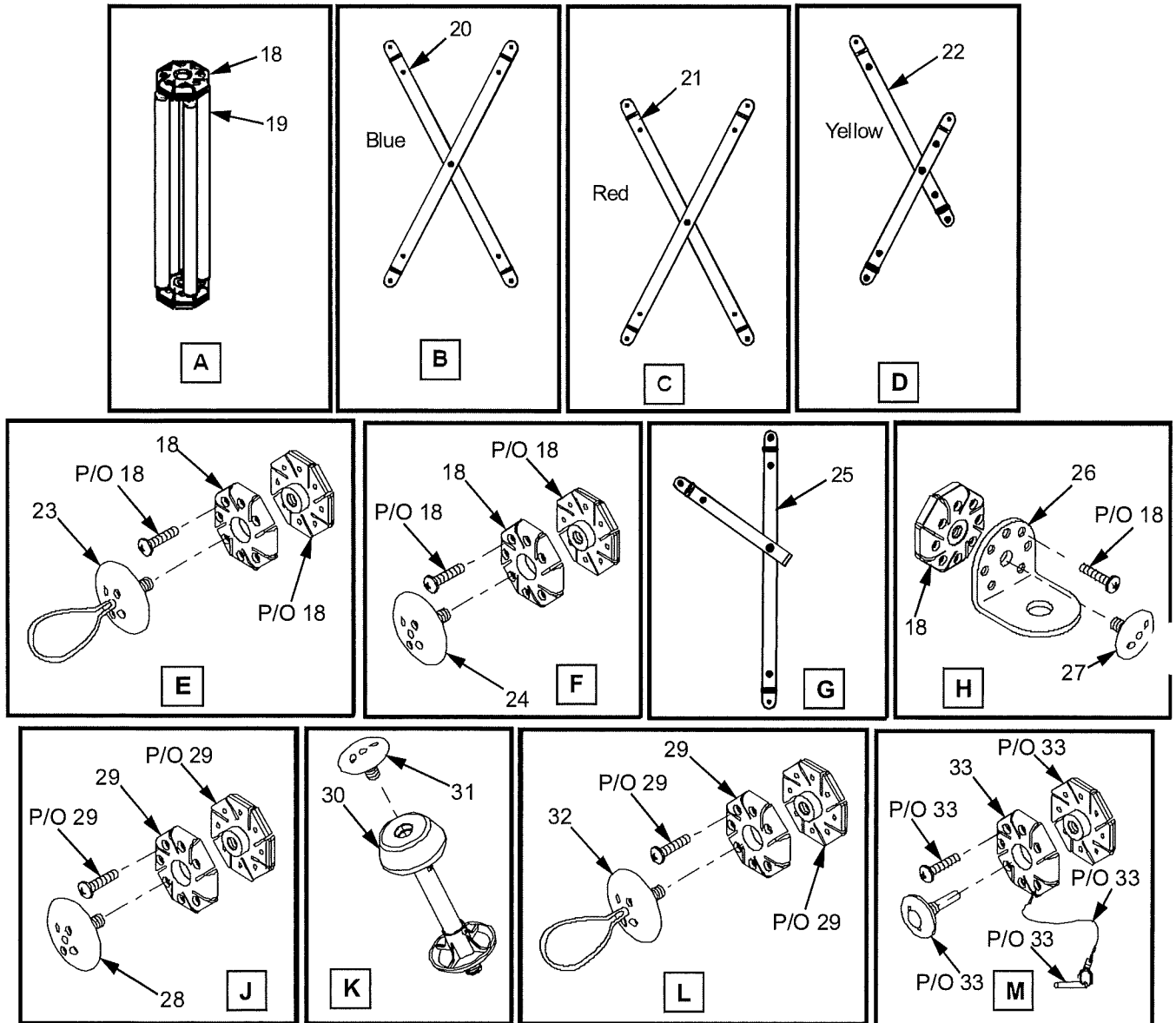


Figure 3 Shelter, MX, MXA2000G, MXA2000T,
Shelter, MX, EMI, 1009325 (Green), 1009324 (Tan) (sheet 3 of 3)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION	(7) QTY
					FIGURE 3 SHELTER, MX, MXA2000G, MXA2000T, SHELTER, MX, EMI, 1009325 (GREEN), 1009324 (TAN)	
1	PACZZ	8340-01-589-9512	0WFM3	MXA2020G	END CAP, MX, GREEN (SEE FIGURE 5 FOR BREAKDOWN)	2
1	PACZZ	8340-01-589-9518	0WFM3	MXA2020T	END CAP, MX, TAN (SEE FIGURE 5 FOR BREAKDOWN)	2
2	PACZZ		0WFM3	MXA2035G	SECTION FOR MX SHELTER, GREEN	1
2	PACZZ		0WFM3	MXA2035T	SECTION FOR MX SHELTER, TAN	1
3	PACZZ	8340-01-590-3548	0WFM3	MXA2005G	COVER, EXTERIOR, REPLACEM ENT, GREEN	1
3	PACZZ	8340-01-590-4018	0WFM3	MXA2005T	COVER, EXTERIOR, REPLACEM ENT, TAN	1
4	PACZZ	8340-01-590-4280	0WFM3	MXA2010W	COVER, INTERIOR, REPLACEME NT	1
4	PACZZ		0WFM3	SH502-0601	COVER, INTERIOR, EMI REPLACEMENT	1
5	PACZZ		0WFM3	MXA2015G	FRAME, SHELTER, GREEN	1
5	PACZZ		0WFM3	MXA2015T	FRAME, SHELTER, TAN	1
6	PACZZ	8340-01-571-6948	0WFM3	MXA2025F	FLOOR, MX	1
7	PACZZ	8340-01-572-0624	0WFM3	MA100130	DOOR, SIDE, M/MX, EXTERIOR, GREEN	2
7	PACZZ	8340-01-571-6456	0WFM3	MA100530	DOOR, SIDE, M/MX, EXTERIOR, T AN	2
8	PACZZ	8340-01-571-9444	0WFM3	MA100310	DOOR, SIDE, M/MX, INTERIOR	2
9	PACZZ	4020-01-570-4924	0WFM3	A602050	WINDLINE ASSEMBLY, 12'	10
10	PACZZ	8340-01-553-0054	0WFM3	MXA2040B	SHELTER TRANSPORT BAG	1
11	PACZZ	5340-01-558-7299	0WFM3	A602650	PUSH POLE	4
12	PACZZ	8340-01-584-3979	0WFM3	MA100760	STAKE SET	1
13	PACZZ		0WFM3	A600650	HAMMER, 3LBS	1
14	PACZZ	8340-01-571-6274	0WFM3	A601250	PIN, STAKE, 18"	25
15	PACZZ		0WFM3	MA100165	BAG, STAKE, BROWN	1
16	PACZZ	5340-01-558-9644	0WFM3	A600250	BELT, SHELTER, LARGE, BLACK	3
17	PACZZ	8340-01-556-7416	0WFM3	MA100735	SHELTER REPAIR KIT, GREEN (SEE FIGURE 6 FOR BREAKDOWN)	1
17	PACZZ	5410-01-570-4998	0WFM3	MA100740	SHELTER REPAIR KIT, TAN (SEE FIGURE 6 FOR BREAKDOWN)	1

(1) ITE NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION	(7) QTY
17	PACZZ		0WFM3	SH533-0603G	SHELTER REPAIR KIT,EMI,GREEN (SEE FIGURE 6 FOR BREAKDOWN)	1
17	PACZZ		0WFM3	SH533-0603T	SHELTER REPAIR KIT,EMI,TAN (SEE FIGURE 6 FOR BREAKDOWN)	1
18	PACZZ	5340-01-558-8820	0WFM3	SH410-0201G	HUB ASSEMBLY,M/MX,GREEN	70
18	PACZZ	3010-01-558-7646	0WFM3	SH410-0201T	HUB ASSEMBLY,M/MX,TAN	70
19	PACZZ	8340-01-572-0876	0WFM3	MF300160	STRUT ASSEMBLY,RISER,M/MX	16
20	PACZZ	8340-01-571-6673	0WFM3	MF300130	A SIDE PAIR,M/MX,BLUE	28
21	PACZZ	8340-01-572-0722	0WFM3	MF300140	B SIDE PAIR,M/MX,RED	35
22	PACZZ	8340-01-571-7030	0WFM3	MF300150	B SUB PAIR,M/MX,YELLOW	96
23	PACZZ	5340-01-558-9652	0WFM3	JA201005	KEEPER,LOOPED,J,GREEN	10
23	PACZZ	5340-01-558-9289	0WFM3	JA201000	KEEPER,LOOPED,J,TAN	10
24	PACZZ	5340-01-558-7288	0WFM3	JA200881	KEEPER,J,W/O-RING,GREEN	46
24	PACZZ	5340-01-558-8533	0WFM3	JA200901	KEEPER,J,W/O-RING,TAN	46
25	PACZZ	8340-01-571-9659	0WFM3	MF300200	CANOPY PAIR,M/MX	4
26	PACZZ	5340-01-553-1413	0WFM3	MA100720	BRACKET,STAKING,EXTERIOR, M	10
27	PACZZ	5340-01-558-8890	0WFM3	A601651	KEEPER,S/XB,W/O- RING,GREEN	10
27	PACZZ	5365-01-558-6149	0WFM3	A601661	KEEPER,S/XB,W/O-RING,TAN	10
28	PACZZ	5340-01-558-7288	0WFM3	JA200921	KEEPER,J,W/O-RING,WHITE	10
29	PACZZ	5340-01-558-9807	0WFM3	SH410-0201W	HUB ASSEMBLY,WHITE	64
30	PACZZ	5340-01-558-8848	0WFM3	F329905	HUB EXTENSION,SHORT	24
31	PACZZ	5340-01-558-7292	0WFM3	A601681	KEEPER,S/XB,W/O- RING,WHITE	24
32	PACZZ	5340-01-558-7324	0WFM3	JA200980	KEEPER,LOOPED,J,WHITE	26
33	PACZZ	5340-01-570-4415	0WFM3	SH410-0202	HUB ASSEMBLY W/PIN,MX	4
END OF FIGURE						

**PARTS INFORMATION
M SERIES SHELTERS
SHELTER, MX5, SH201-0601G GREEN, SH201-0601T TAN**

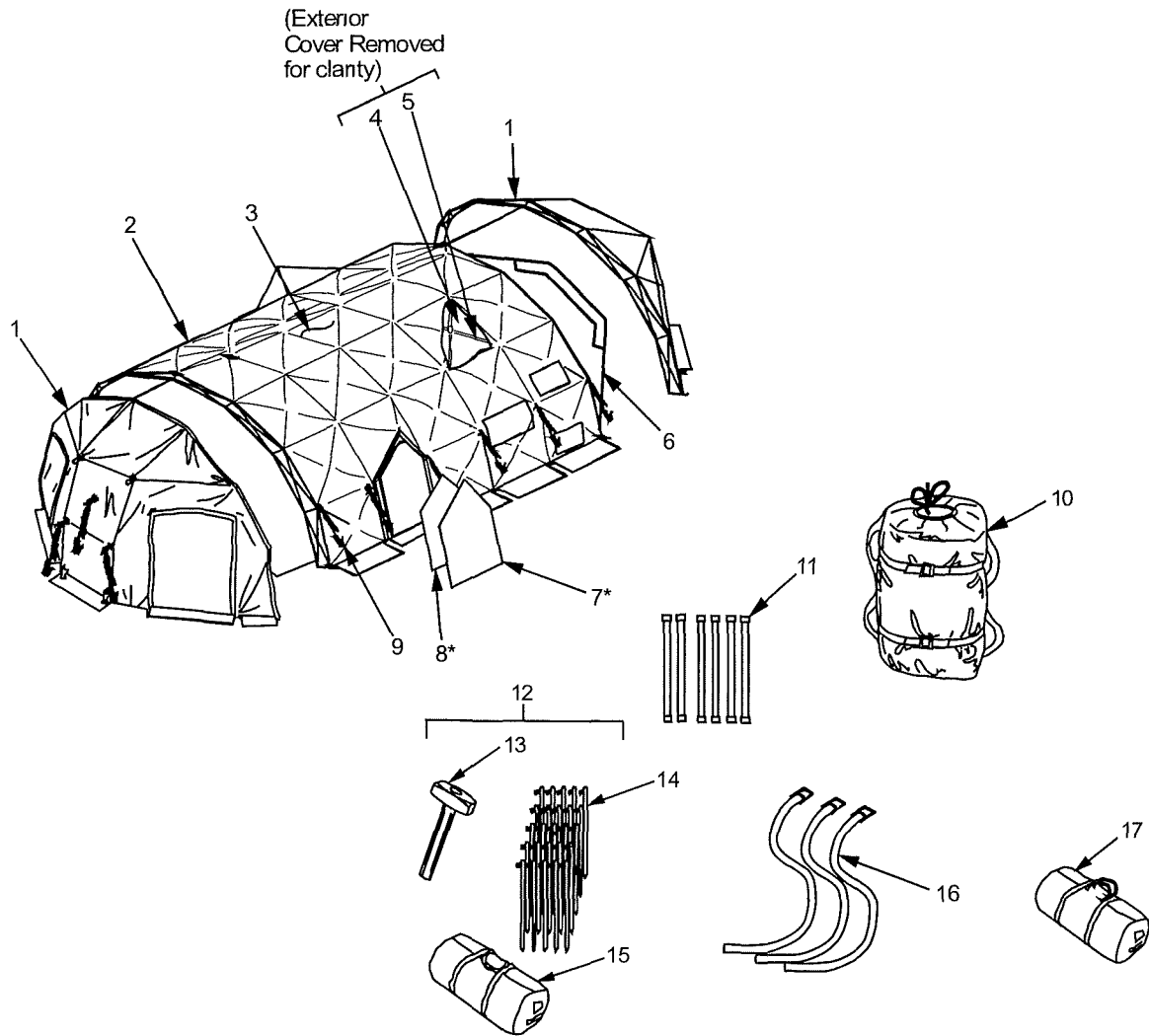


Figure 4 Shelter, MX5, SH201-0601G, SH201-0601T
 Shelter, MX5, EMI, SH201-0938G (Green), SH201-0938T (Tan) (sheet 1 of 3).

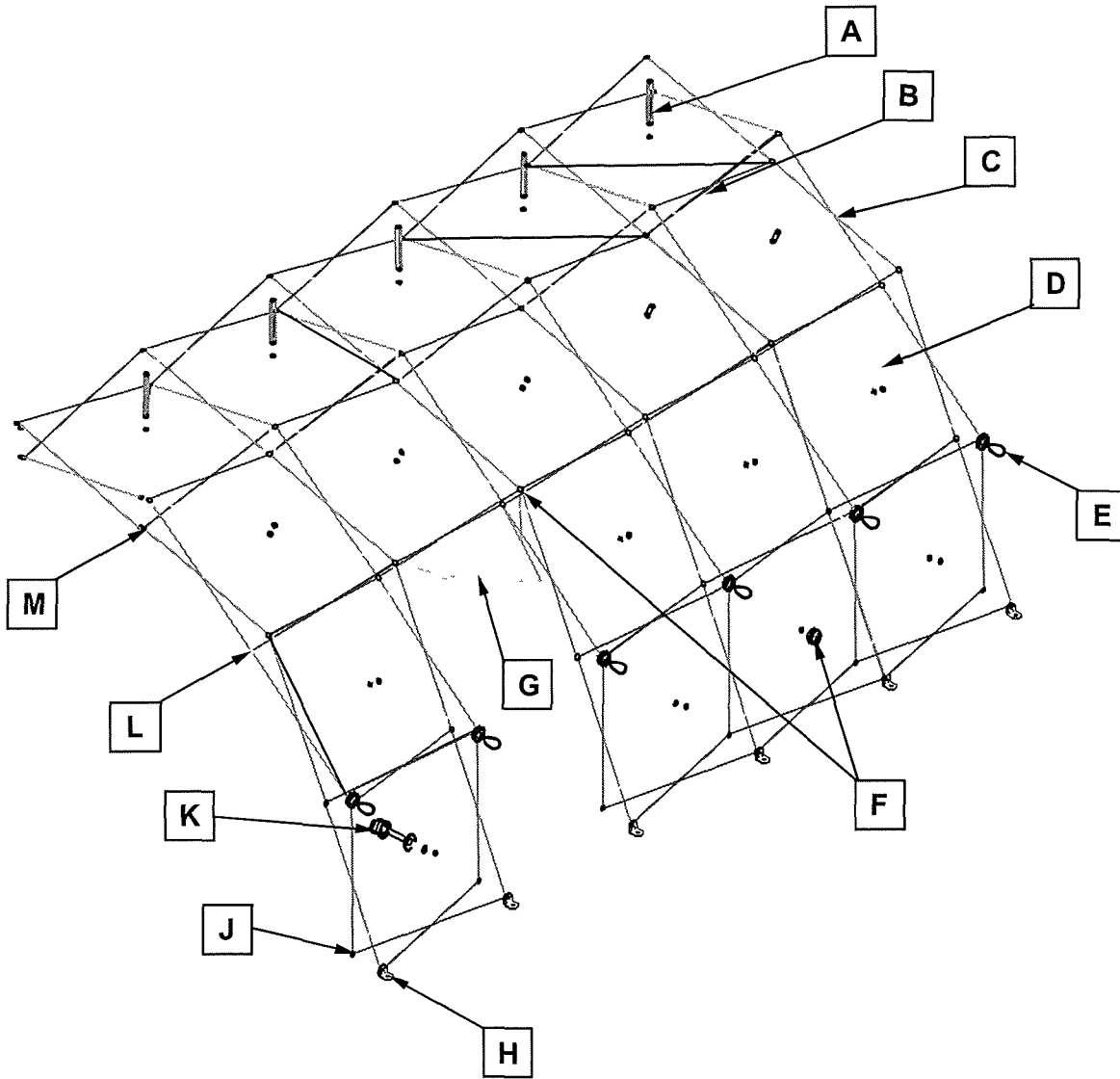


Figure 4 Shelter, MX5, SH201-0601G, SH201-0601T (Sheet 2 of 3)

Figure 4 Shelter, MX5, SH201-0601G, SH201-0601T
Shelter, MX5, EMI, SH201-0938G (Green), SH201-0938T (Tan) (sheet 2 of 3)

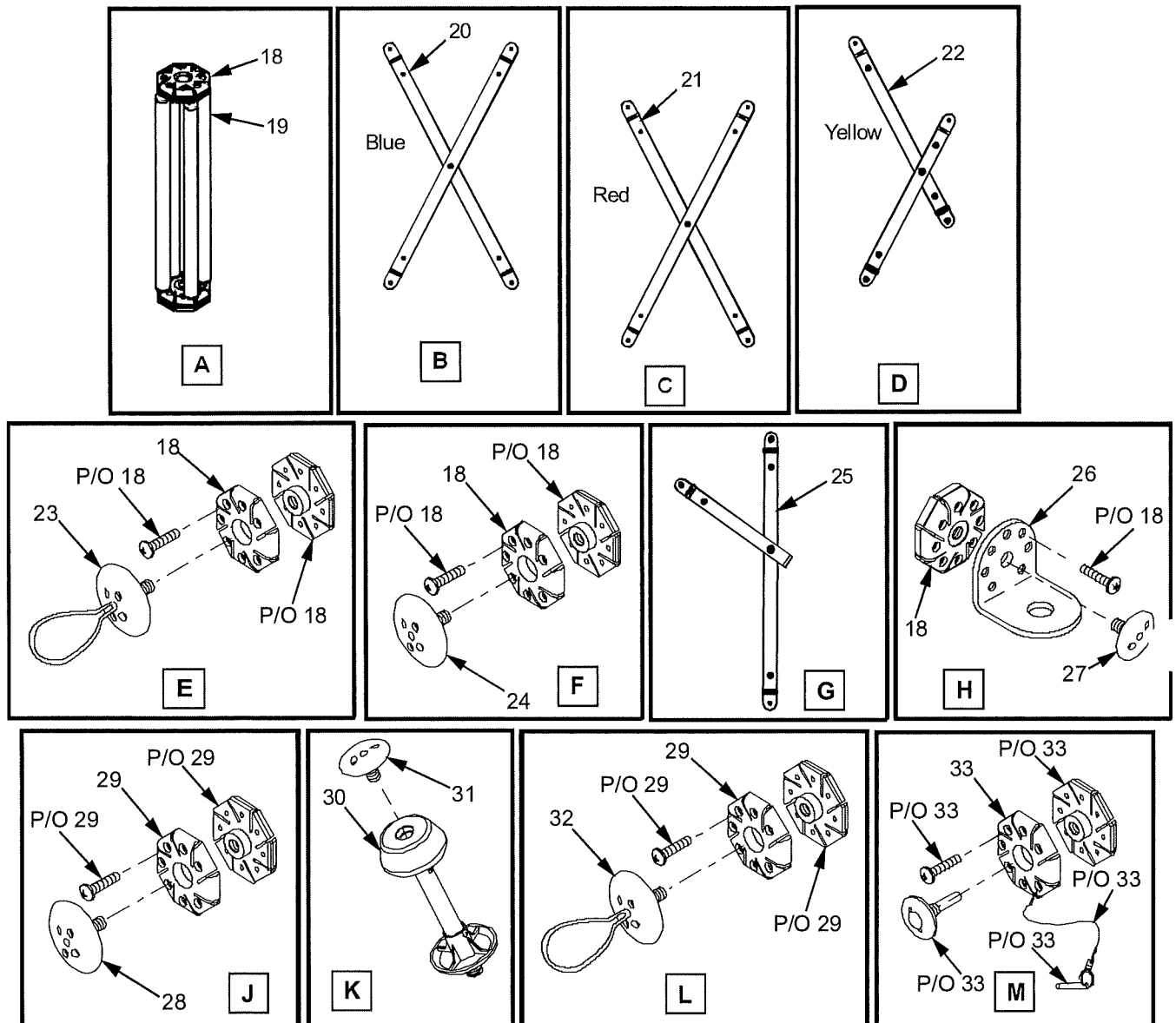


Figure 4 Shelter, MX5, SH201-0601G, SH201-0601T
 Shelter, MX5, EMI, SH201-0938G (Green), SH201-0938T (Tan) (sheet 3 of 3)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
Figure 4 Shelter, MX5, SH201-0601G, SH201-0601T Shelter, MX5, EMI, SH201-0938G (Green), SH201-0938T (Tan)						
1	PACZZ	8340-01-589-9512	OWFM3	MXA2020G	END CAP,MX,GREEN (SEE FIGURE 5 FOR BREAKDOWN)	2
1	PACZZ	8340-01-589-9518	OWFM3	MXA2020T	END CAP, MX, TAN (SEE FIGURE 5 FOR BREAKDOWN)	2
2	PACZZ		OWFM3	SH201-0602G	SECTION,MX5 SHELTER, GREEN	2
2	PACZZ		OWFM3	SH201-0602T	SECTION,MX5 SHELTER, TAN	2
3	PACZZ	8340-01-590-6195	OWFM3	SH500-0601G	COVER,EXTERIOR,REPLACEMENT GREEN	1
3	PACZZ	8340-01-590-6196	OWFM3	SH500-0601T	COVER,EXTERIOR,REPLACEMENT TAN	1
4	PACZZ	8340-01-590-6194	OWFM3	SH502-0603	COVER,INTERIOR,REPLACEMENT	1
5	PACZZ	8340-01-590-6193	OWFM3	SH400-0601G	FRAME,SHELTER, GREEN	1
5	PACZZ	8340-01-590-1435	OWFM3	SH400-0601T	FRAME,SHELTER, TAN	1
6	PACZZ	8340-01-590-7289	OWFM3	SH530-0601	FLOOR,MX5	1
6	PACZZ	8340-01-590-7289	OWFM3	SH530-0608	FLOOR,MX5, EMI, NO SIDE DOOR	1
7	PACZZ	8340-01-572-0624	OWFM3	MA100130	DOOR,SIDE,M/MX,EXTERIOR, GREEN	2
7	PACZZ	8340-01-571-6456	OWFM3	MA100530	DOOR,SIDE,M/MX,EXTERIOR, TAN	2
8	PACZZ	8340-01-571-9444	OWFM3	MA100310	DOOR,SIDE,M/MX,INTERIOR	2
9	PACZZ	4020-01-570-4924	OWFM3	A602050	WINDLINE ASSEMBLY, 12'	12
10	PACZZ	8340-01-553-0054	OWFM3	MXA2040B	SHELTER TRANSPORT BAG	1
11	PACZZ	5340-01-558-7299	OWFM3	A602650	PUSH POLE	6
12	PACZZ	8340-01-584-3979	OWFM3	MA100760	STAKE SET	1
13	PACZZ		OWFM3	A600650	HAMMER,3LBS	1
14	PACZZ	8340-01-571-6274	OWFM3	A601250	PIN,STAKE,18"	25
15	PACZZ		OWFM3	MA100165	BAG,STAKE,BROWN	1
16	PACZZ	5340-01-558-9644	OWFM3	A600250	BELT,SHELTER,LARGE,BLACK	3
17	PACZZ	8340-01-556-7416	OWFM3	MA100735	SHELTER REPAIR KIT, GREEN (SEE FIGURE 6 FOR BREAKDOWN)	1
17	PACZZ	5410-01-570-4998	OWFM3	MA100740	SHELTER REPAIR KIT, TAN (SEE FIGURE 6 FOR BREAKDOWN)	1

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
18	PACZZ	5340-01-558-8820	0WFM3	SH410-0201G	HUB ASSEMBLY,M/MX,GREEN.	86
18	PACZZ	3010-01-558-7646	0WFM3	SH410-0201T	HUB ASSEMBLY,M/MX,TAN	86
19	PACZZ	8340-01-572-0876	0WFM3	MF300160	STRUT ASSEMBLY,RISER,M/MX	20
20	PACZZ	8340-01-571-6673	0WFM3	MF300130	A SIDE PAIR,M/MX,BLUE	36
21	PACZZ	8340-01-572-0722	0WFM3	MF300140	B SIDE PAIR,M/MX,RED	42
22	PACZZ	8340-01-571-7030	0WFM3	MF300150	B SUB PAIR,M/MX,YELLOW	124
23	PACZZ	5340-01-558-9652	0WFM3	JA201005	KEEPER,LOOPED,J,GREEN	12
23	PACZZ	5340-01-558-9289	0WFM3	JA201000	KEEPER,LOOPED,J,TAN	12
24	PACZZ	5340-01-558-7288	0WFM3	JA200881	KEEPER,J,W/O-RING,GREEN	57
24	PACZZ	5340-01-558-8533	0WFM3	JA200901	KEEPER,J,W/O-RING,TAN	57
25	PACZZ	8340-01-571-9659	0WFM3	MF300200	CANOPY PAIR,M/MX	4
26	PACZZ	5340-01-553-1413	0WFM3	MA100720	BRACKET,STAKING,EXTERIOR,M....	12
27	PACZZ	5340-01-558-8890	0WFM3	A601651	KEEPER,S/XB,W/O-RING,GREEN	12
27	PACZZ	5365-01-558-6149	0WFM3	A601661	KEEPER,S/XB,W/O-RING,TAN	12
28	PACZZ	5340-01-558-7288	0WFM3	JA200921	KEEPER,J,W/O-RING,WHITE.	12
29	PACZZ	5340-01-558-9807	0WFM3	SH410-0201W	HUB ASSEMBLY,WHITE	79
30	PACZZ	5340-01-558-8848	0WFM3	F329905	HUB EXTENSION,SHORT	30
31	PACZZ	5340-01-558-7292	0WFM3	A601681	KEEPER,S/XB,W/O-RING,WHITE .	30
32	PACZZ	5340-01-558-7324	0WFM3	JA200980	KEEPER,LOOPED,J,WHITE	33
33	PACZZ	5340-01-570-4415	0WFM3	SH410-0202	HUB ASSEMBLY W/PIN,MX	4
END OF FIGURE						

PARTS INFORMATION

M Series Shelters

END CAP, MX, MXA2020G GREEN, MXA2020T TAN

END CAP, MX, EMI, SH201-0903G GREEN, 1014134 TAN

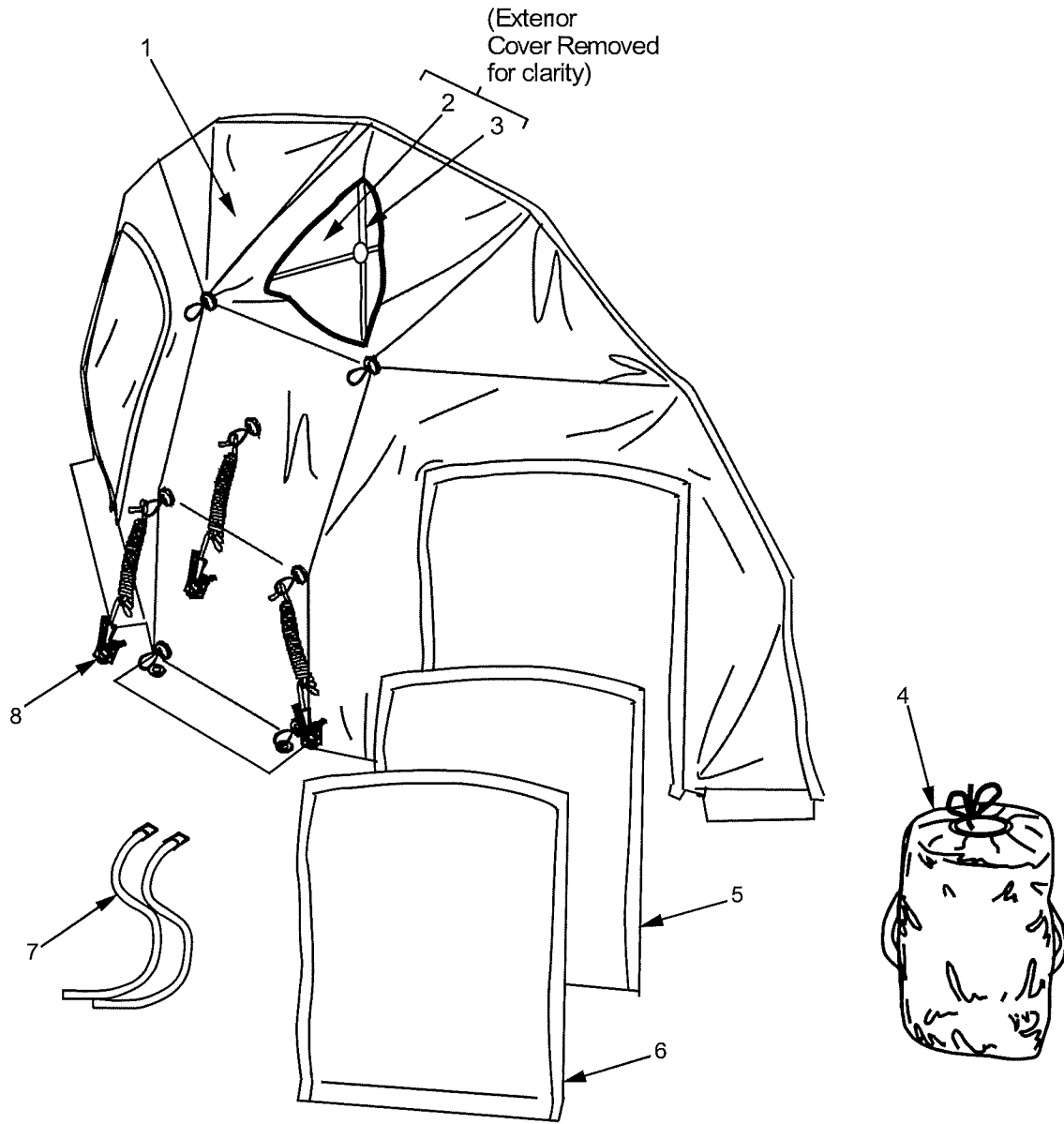


Figure 5 End Cap, MXA2020G Green, MXA2020T Tan
End Cap, MX, EMI, SH201-0903G GREEN, 1014134 TAN (Sheet 1 of 3)

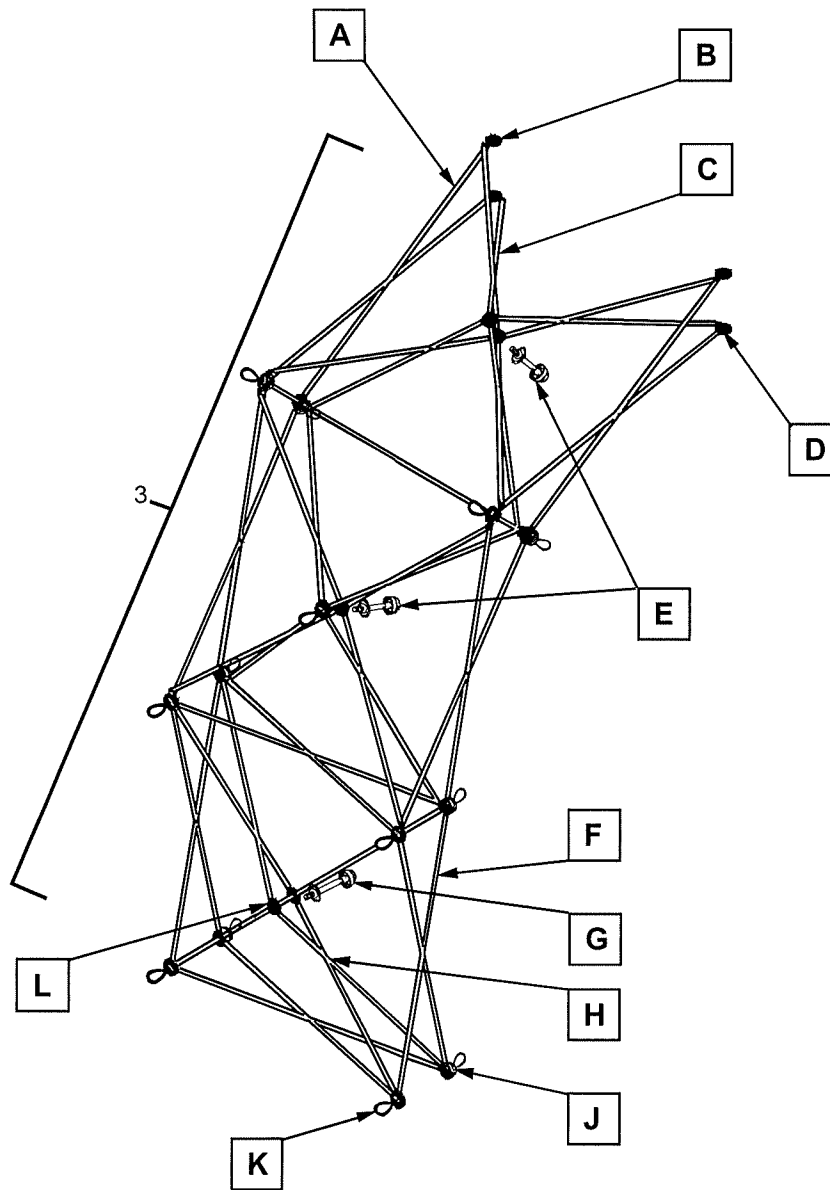


Figure 5 End Cap, MXA2020G Green, MXA2020T Tan
End Cap, MX, EMI, SH201-0903G GREEN, 1014134 TAN (Sheet 2 of 3)

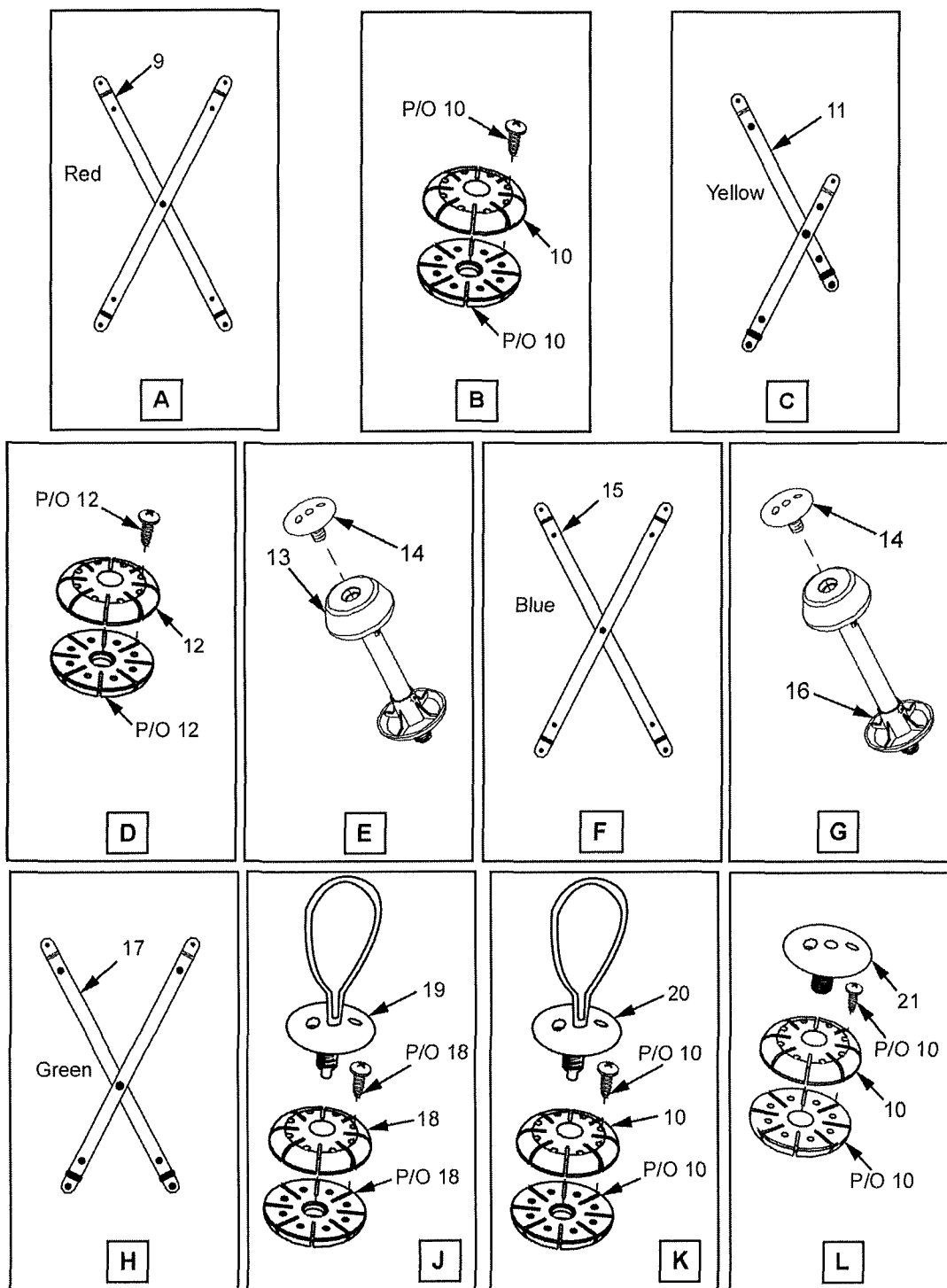


Figure 5 End Cap, MXA2020G Green, MXA2020T Tan
End Cap, MX, EMI, SH201-0903G GREEN, 1014134 TAN (Sheet 3 of 3)

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
			Figure 5	End Cap, MXA2020G Green, MXA2020T Tan		
				End Cap, MX, EMI, SH201-0903G GREEN, 1014134 TAN		
1	PACZZ	8340-01-572-0658	0WFM3	MXS1015G	COVER,EXTERIOR,REPLACEMENT, GREEN	1
1	PACZZ	8340-01-571-8798	0WFM3	MXS1015T	COVER,EXTERIOR,REPLACEMENT, TAN	1
2	PACZZ	8340-01-571-6878	0WFM3	MXS1015W	COVER,INTERIOR,REPLACEMENT	1
2	PACZZ		0WFM3	1014135	COVER,INTERIOR,EMI, REPLACEMENT	1
3	PACZZ		0WFM3	MXA2016G	FRAME,SHELTER	1
3	PACZZ	8340-01-590-6188	0WFM3	MXA2016T	FRAME,SHELTER	1
4	PACZZ	8340-01-589-9473	0WFM3	MXA2045B	END CAP TRANSPORT BAG	1
5	PACZZ	8340-01-571-9776	0WFM3	MXS1020W	DOOR,END CAP,INTERIOR,MX	2
5	PACZZ		0WFM3	1014136	DOOR,END CAP,INTERIOR,MX, EMI	2
6	PACZZ	8340-01-572-0505	0WFM3	MXS1020G	DOOR,END CAP,EXTERIOR,MX, GREEN	2
6	PACZZ	8340-01-571-6458	0WFM3	MXS1020T	DOOR,END CAP,EXTERIOR,MX,TAN	2
7	PACZZ	8340-01-557-7589	0WFM3	A600280	BELT,END CAP,GREEN	2
8	PACZZ	4020-01-570-4924	0WFM3	A602050	WINDLINE ASSEMBLY,12'	3
9	PACZZ	8340-01-571-9552	0WFM3	F329631	B SIDE PAIR,XB,RED	4
10	PACZZ	5340-01-558-8752	0WFM3	SH410-0001G	HUB ASSEMBLY,GREEN	11
10	PACZZ	5340-01-558-8512	0WFM3	SH410-0001T	HUB ASSEMBLY,TAN	11
11	PACZZ	8340-01-571-6590	0WFM3	F329781	B SUB PAIR,XB,YELLOW	8
12	PACZZ	5340-01-155-9666	0WFM3	SH410-0401R	HUB ASSEMBLY,RED	2
13	PACZZ	5340-01-558-8848	0WFM3	F329905	HUB,EXTENSION,SHORT	2
14	PACZZ	5340-01-558-7292	0WFM3	A601681	KEEPER,S/XB,W/O-RING,WHITE	3
15	PACZZ	8340-01-571-9871	0WFM3	F329601	A SIDE PAIR,XB,BLUE	5
16	PACZZ	5340-01-558-8873	0WFM3	F329908	HUB EXTENSION,LONG	1
17	PACZZ	8340-01-571-9857	0WFM3	F329751	A SUB PAIR,XB,GREEN	4
18	PACZZ	5340-01-558-8758	0WFM3	SH410-0001W	HUB ASSEMBLY,WHITE	9
19	PACZZ	5340-01-558-7313	0WFM3	A601680	KEEPER,LOOPED,S/XB, W/O-RING,WHITE	6
20	PACZZ	5340-01-558-9677	0WFM3	A601650	KEEPER,LOOPED,S/XB, W/O-RING,GREEN	7
20	PACZZ	5340-01-558-9133	0WFM3	A601660	KEEPER,LOOPED,S/XB, W/O-RING,TAN	7
21	PACZZ	5340-01-558-8890	0WFM3	A601651	KEEPED,S/XB,W/O-RING,GREEN	2
21	PACZZ	5365-01-558-6149	0WFM3	A601661	KEEPED,S/XB,W/O-RING,TAN	2
END OF FIGURE						

**PARTS INFORMATION
M SERIES SHELTERS**

**SHELTER REPAIR KIT M/MX, MA100735 GREEN, MA100740 TAN
SHELTER REPAIR KIT M/MX w/EMI, SH533-0603G GREEN, SH533-0603T TAN**

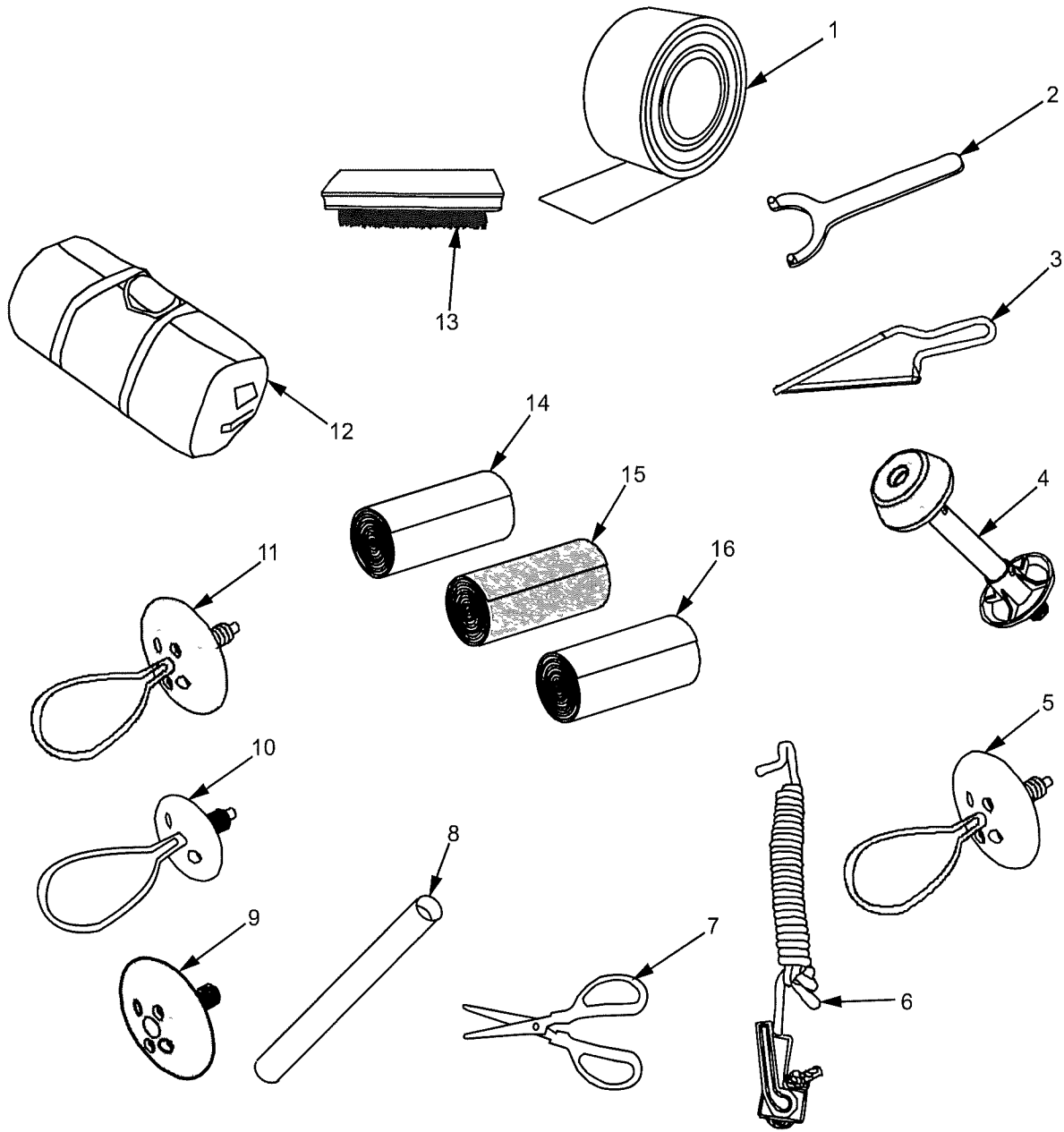


Figure 6 Shelter Repair Kit. MA100735 Green, MA100740 Tan
 Shelter Repair Kit, EMI SH533-0603G Green, SH533-0601T Tan.

(1) ITEM NO.	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODE (UOC)	(7) QTY
FIGURE 6 SHELTER REPAIR KIT, MA100735 GREEN, MA100740 TAN SHELTER REPAIR KIT, EMI SH533-0603G GREEN, SH533-0601T TAN						
1	PACZZ		0WFM3	A601350	TAPE, DUCT, GREEN ROLL .	1
1	PACZZ		0WFM3	A601360	TAPE, DUCT, TAN ROLL .	1
2	PACZZ		0WFM3	A601150	WRENCH, SPANNER, 3/16"	1
3	PACZZ		0WFM3	A601451	HACKSAW, MINI .	1
4	PACZZ	5340-01-558-8848	0WFM3	F329905	EXTENSION HUB, SHORT	2
5	PACZZ	5340-01-558-7324	0WFM3	JA200980	KEEPER, LOOPED, J, WHITE . . .	2
6	PACZZ	4020-01-570-4924	0WFM3	A602050	WINDLINE ASSEMBLY	1
7	PACZZ		0WFM3	A601050	SCISSORS, BLUNT, 4" ..	1
8	PACZZ		0WFM3	SH410-1703	SLEEVE, REPAIR, M/MX	5
9	PACZZ	5340-01-558-7288	0WFM3	JA200881	KEEPER, J, W/O-RING, GREEN	1
9	PACZZ	5340-01-558-8533	0WFM3	JA200901	KEEPER, J, W/O-RING, TAN .	1
10	PACZZ	5340-01-558-7313	0WFM3	A601680	KEEPER, LOOPED, W/O-RING, WHITE	2
11	PACZZ	5340-01-558-9652	0WFM3	JA201005	KEEPER, LOOPED, J, GREEN	1
11	PACZZ	5340-01-558-9289	0WFM3	JA201000	KEEPER, LOOPED, J, TAN ..	1
12	PACZZ	8340-01-589-9626	0WFM3	MA100175	BAG, REPAIR KIT, W/POUCH, BROWN	1
13	PACZZ		0WFM3	SH903-9000	BRUSH, SCRUB	1
14	PACZZ		0WFM3	SH903-0021W	FABRIC, ADHESIVE, XYTEX, 8"W, WHITE	6
15	PACZZ		0WFM3	SH903-0021G	FABRIC, ADHESIVE, XYTEX, 8"W, GREEN .	6
15	PACZZ		0WFM3	SH903-0021T	FABRIC, ADHESIVE, XYTEX, 8"W, TAN .	6
16	PACZZ		0WFM3	1014138	FABRIC, EMI, SPECIAL, WHITE .	6
END OF FIGURE						

**PARTS INFORMATION
M SERIES SHELTERS
NATIONAL STOCK NUMBER INDEX**

STOCK NUMBER	FIGURE	ITEM
3010-01-558-7646	FIG 2	26
3010-01-558-7646	FIG 3	18
3010-01-558-7646	FIG 4	18
4020-01-570-4924	FIG 2	10
4020-01-570-4924	FIG 3	9
4020-01-570-4924	FIG 4	9
4020-01-570-4924	FIG 5	8
4020-01-570-4924	FIG 6	6
5340-01-155-9666	FIG 5	12
5340-01-553-1413	FIG 2	34
5340-01-553-1413	FIG 3	26
5340-01-553-1413	FIG 4	26
5340-01-558-7288	FIG 2	32
5340-01-558-7288	FIG 3	24
5340-01-558-7288	FIG 4	24
5340-01-558-7288	FIG 6	9
5340-01-558-7288	FIG 2	36
5340-01-558-7288	FIG 3	28
5340-01-558-7288	FIG 4	28
5340-01-558-7292	FIG 2	39
5340-01-558-7292	FIG 3	31
5340-01-558-7292	FIG 4	31
5340-01-558-7292	FIG 5	14
5340-01-558-7299	FIG 2	14
5340-01-558-7299	FIG 3	11
5340-01-558-7299	Fig 4	11
5340-01-558-7313	FIG 5	19
5340-01-558-7313	FIG 6	10
5340-01-558-7324	FIG 2	40
5340-01-558-7324	FIG 3	32
5340-01-558-7324	FIG 4	32
5340-01-558-7324	FIG 6	5
5340-01-558-8512	FIG 5	10
5340-01-558-8533	FIG 2	32
5340-01-558-8533	FIG 3	24
5340-01-558-8533	FIG 4	24
5340-01-558-8533	FIG 6	9
5340-01-558-8752	FIG 5	10
5340-01-558-8758	FIG 5	18
5340-01-558-8820	FIG 2	26
5340-01-558-8820	FIG 3	18

STOCK NUMBER	FIGURE	ITEM
5340-01-558-8820	FIG 4	18
5340-01-558-8848	FIG 2	38
5340-01-558-8848	FIG 3	30
5340-01-558-8848	FIG 4	30
5340-01-558-8848	FIG 5	13
5340-01-558-8848	FIG 6	4
5340-01-558-8873	FIG 5	16
5340-01-558-8890	FIG 2	35
5340-01-558-8890	FIG 3	27
5340-01-558-8890	FIG 4	27
5340-01-558-8890	FIG 5	21
5340-01-558-9133	FIG 5	20
5340-01-558-9289	FIG 2	31
5340-01-558-9289	FIG 3	23
5340-01-558-9289	FIG 4	23
5340-01-558-9289	FIG 6	11
5340-01-558-9644	FIG 2	15
5340-01-558-9644	FIG 3	16
5340-01-558-9644	FIG 4	16
5340-01-558-9652	FIG 2	31
5340-01-558-9652	FIG 3	23
5340-01-558-9652	FIG 4	23
5340-01-558-9652	FIG 6	11
5340-01-558-9677	FIG 5	20
5340-01-558-9807	FIG 2	37
5340-01-558-9807	FIG 3	29
5340-01-558-9807	FIG 4	29
5340-01-570-4415	FIG 2	41
5340-01-570-4415	FIG 3	33
5340-01-570-4415	FIG 4	33
5365-01-558-6149	FIG 2	35
5365-01-558-6149	FIG 3	27
5365-01-558-6149	FIG 4	27
5365-01-558-6149	FIG 5	19
5410-01-570-4998	FIG 2	21
5410-01-570-4998	FIG 3	17
5410-01-570-4998	FIG 4	17
6210-01-552-7802	FIG 2	24
8340-01-533-1653	FIG 1	1
8340-01-533-1654	FIG 1	1
8340-01-538-1822	FIG 1	2

**PARTS INFORMATION
M SERIES SHELTERS
PART NUMBER INDEX**

PART NUMBER	FIGURE	ITEM
1003770	FIG 2	2
1003771	FIG 2	7
1003772	FIG 2	2
A600250	FIG 2	15
A600250	FIG 3	16
A600250	FIG 4	16
A600280	FIG 5	7
A600650	FIG 2	17
A600650	FIG 3	13
A600650	FIG 4	13
A601050	FIG 6	7
A601150	FIG 6	2
A601250	FIG 2	18
A601250	FIG 3	14
A601250	FIG 4	14
A601350	FIG 6	1
A601360	FIG 6	1
A601451	FIG 6	3
A601650	FIG 5	20
A601651	FIG 2	35
A601651	FIG 3	27
A601651	FIG 4	27
A601651	FIG 5	21
A601660	FIG 5	20
A601661	FIG 2	35
A601661	FIG 3	27
A601661	FIG 4	27
A601661	FIG 5	21
A601680	FIG 5	19
A601680	FIG 6	10
A601681	FIG 2	39
A601681	FIG 3	31
A601681	FIG 4	31
A601681	FIG 5	14
A602050	FIG 2	10
A602050	FIG 3	9
A602050	FIG 4	9
A602050	FIG 5	8
A602050	FIG 6	6
A602650	FIG 2	14
A602650	FIG 3	11
A602650	FIG 4	11

PART NUMBER	FIGURE	ITEM
F329601	FIG 5	15
F329631	FIG 5	9
F329751	FIG 5	17
F329781	FIG 5	11
F329905	FIG 2	38
F329905	FIG 3	30
F329905	FIG 4	30
F329905	FIG 5	13
F329905	FIG 6	4
F329908	FIG 5	16
H300000	FIG 2	24
H300047	FIG 2	25
H300064	FIG 2	22
JA200881	FIG 2	32
JA200881	FIG 3	24
JA200881	FIG 4	24
JA200881	FIG 6	9
JA200901	FIG 2	32
JA200901	FIG 3	24
JA200901	FIG 4	24
JA200901	FIG 6	9
JA200921	FIG 2	36
JA200921	FIG 3	28
JA200921	FIG 4	28
JA200980	FIG 2	40
JA200980	FIG 3	32
JA200980	FIG 4	32
JA200980	FIG 6	5
JA201000	FIG 2	31
JA201000	FIG 3	23
JA201000	FIG 4	23
JA201000	FIG 6	11
JA201005	FIG 2	31
JA201005	FIG 3	23
JA201005	FIG 4	23
JA201005	FIG 6	11
MA100100	FIG 1	1
MA100130	FIG 2	8
MA100130	FIG 3	7
MA100130	FIG 4	7
MA100160	FIG 2	11
MA100165	FIG 2	19

PART NUMBER	FIGURE	ITEM
MA100165	FIG 3	15
MA100165	FIG 4	15
MA100175	FIG 6	12
MA100310	FIG 2	9
MA100310	FIG 3	8
MA100310	FIG 4	8
MA100500	FIG 1	1
MA100530	FIG 2	8
MA100530	FIG 3	7
MA100530	FIG 4	7
MA100720	FIG 2	34
MA100720	FIG 3	26
MA100720	FIG 4	26
MA100735	FIG 2	21
MA100735	FIG 3	17
MA100735	FIG 4	17
MA100740	FIG 2	21
MA100740	FIG 3	17
MA100740	FIG 4	17
MA100760	FIG 2	16
MA100760	FIG 3	12
MA100760	FIG 4	12
MF300130	FIG 2	28
MF300130	FIG 3	20
MF300130	FIG 4	20
MF300140	FIG 2	29
MF300140	FIG 3	21
MF300140	FIG 4	21
MF300150	FIG 2	30
MF300150	FIG 3	22
MF300150	FIG 4	22
MF300160	FIG 2	27
MF300160	FIG 3	19
MF300160	FIG 4	19
MF300200	FIG 2	33
MF300200	FIG 3	25
MF300200	FIG 4	25
MS200320	FIG 2	6
MXA1056	FIG 2	12
MXA2000G	FIG 1	2
MXA2000T	FIG 1	2
MXA2005G	FIG 2	3
MXA2005G	FIG 3	3
MXA2005T	FIG 2	3
MXA2005T	FIG 3	3
MXA2010W	FIG 2	4

PART NUMBER	FIGURE	ITEM
MXA2010W	FIG 3	4
MXA2015G	FIG 2	5
MXA2015G	FIG 3	5
MXA2015T	FIG 2	5
MXA2015T	FIG 3	5
MXA2016G	FIG 5	3
MXA2016T	FIG 5	3
MXA2020G	FIG 2	1
MXA2020G	FIG 3	1
MXA2020G	FIG 4	1
MXA2020T	FIG 2	1
MXA2020T	FIG 3	1
MXA2020T	FIG 4	1
MXA2025F	FIG 3	6
MXA2035G	FIG 3	2
MXA2035T	FIG 3	2
MXA2040B	FIG 2	13
MXA2040B	FIG 3	10
MXA2040B	FIG 4	10
MXA2045B	FIG 5	4
MXA3015	FIG 2	20
MXS1015G	FIG 5	1
MXS1015T	FIG 5	1
MXS1015W	FIG 5	2
MXS1020G	FIG 5	6
MXS1020T	FIG 5	6
MXS1020W	FIG 5	5
SH201-0601G	FIG 1	3
SH201-0601T	FIG 1	3
SH201-0602G	FIG 4	2
SH201-0602T	FIG 4	2
SH400-0601G	FIG 4	5
SH400-0601T	FIG 4	5
SH410-0001G	FIG 5	10
SH410-0001T	FIG 5	10
SH410-0001W	FIG 5	18
SH410-0201G	FIG 2	26
SH410-0201G	FIG 3	18
SH410-0201G	FIG 4	18
SH410-0201T	FIG 2	26
SH410-0201T	FIG 3	18
SH410-0201T	FIG 4	18
SH410-0201W	FIG 2	37
SH410-0201W	FIG 3	29
SH410-0201W	FIG 4	29
SH410-0202	FIG 2	41

PART NUMBER	FIGURE	ITEM
SH410-0202	FIG 3	33
SH410-0202	FIG 4	33
SH410-0401R	FIG 5	12
SH410-1703	FIG 6	8
SH500-0601G	FIG 4	3
SH500-0601T	FIG 4	3
SH502-0603	FIG 4	4

PART NUMBER	FIGURE	ITEM
SH530-0601	FIG 4	6
SH903-0021G	FIG 6	15
SH903-0021T	FIG 6	15
SH903-0021W	FIG 6	14
SH903-9000	FIG 6	13
T2-95217	FIG 2	23

END OF WORK PACKAGE

CHAPTER 8

**DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE
FOR**

M SERIES SHELTERS

**DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE
M SERIES SHELTERS
GENERAL INFORMATION**

SCOPE

This work package is for guidance of those whose duty it is to render inoperable or destroy equipment which is in imminent danger of capture by an enemy

AUTHORIZATION

Only division or higher commanders have the authority to order destruction of equipment. They may however, delegate this authority to subordinate commanders when the situation demands it.

REPORTING DESTRUCTION

Destruction of equipment will be reported through command channels.

METHODS OF DESTRUCTION

Choose methods of destruction which will cause such damage that it will be impossible to restore the equipment to a usable condition within the combat zone. The following methods of destruction may be used separately or in combination, depending on the type of equipment and the degree to which each method is used.

Self-Destruction

Built-in self-destruction devices should be set off even if the major item containing equipment with self-destruction devices is to be destroyed. These devices should be permitted to do their work at least partially before incendiaries or explosives (especially the latter) are set off. Currently, the M Series Shelters contains no built-in self-destruction devices.

Improper Operation

Cutting the fabric liners, removing shelter stakes, and cutting wind lines are examples of improper operation. This method of destruction has a limited application to the M Series Shelters.

Fire

Starting a fire inside the M Series Shelters is particularly useful in destroying the shelter as well as predominantly nonmetallic components such as transistors, diodes, resistors, capacitors, switches, and printed circuit boards. Fires should be lit after setting off explosives and/or completing mechanical destruction. Fires within partially closed cabinets tend to be less effective than open fires, since a closed area does not allow sufficient oxygen necessary for an intense flame. Heat sources which do not require an air supply, such as thermite-based devices or incendiary grenades, are not subject to this limitation. The use of fire is associated with numerous hazards, including the possibility of disclosing positions which are under enemy visual or infrared surveillance.

Weapons Fire

The use of small weapons fire is less desirable and of minimum value in destroying the M Series Shelters. Concentrated automatic weapons fire should be directed and raked horizontally across the M Series Shelters to cut the frame and fabrics into pieces.

Demolition (Explosives)

Explosives refer to TNT, plastic explosives, as well as fragmentation grenades. Explosives are most effective against structures and components which are too heavy or too strong to be easily demolished by mechanical means. The use of explosives has the disadvantage of possible disclosure of position when enemy forces are using sound-ranging-type equipment.

Mechanical Destruction

Mechanical destruction includes smashing shelter frame components, bending chassis or sub chassis, slashing fabric, or any similar action. Dropping a weight on equipment and throwing lightweight equipment over a cliff are also examples of mechanical destructions. Sledges, hammers, axes or heavy tools are examples of the implements which can be used. Mechanical destruction should be completed before fires are lit.

Use of Natural Surroundings

The disposal or denial to the enemy of equipment may be accomplished in the field by taking advantage of the natural surroundings and environment.

Submergence of equipment and repair parts under water (lakes, ponds, streams, etc), concealment by hiding material in caves or, preferably burial can be used effectively. Where the surrounding area does not lend itself to such disposal, widely dispersed scattering of material, preferably, into heavy underbrush, can serve as a denial or delaying measure in the event the area is recaptured.

CLASSIFIED EQUIPMENT

Classified equipment must be destroyed to such a degree as to prevent duplication by, or revealing means of operation or function to the enemy.

ASSOCIATED CLASSIFIED DOCUMENTS

Any classified documents, notes, instructions, or other written material pertaining to function, operation, maintenance, or employment, including drawings or parts lists, must be destroyed in a manner to render them useless to the enemy.

END OF WORK PACKAGE

**DESTRUCTION OF EQUIPMENT TO PREVENT ENEMY USE
M SERIES SHELTERS
DESTRUCTION PROCEDURES**

SCOPE

This work package is for guidance of those whose duty it is to render inoperable or destroy the M Series Shelters which is in imminent danger of capture by an enemy

METHOD OF DESTRUCTION

Command decision, according to the tactical situation will determine when the using organization is to destroy a shelter. A destruction plan will be prepared by the using organization, unless one was prepared by a higher authority. For general vehicle destruction procedures, refer to TM 750-244-6, Procedures for Destruction of Tank Automotive Equipment to Prevent Enemy Use (U S Army Tank-Automotive and Artillery Command)

EQUIPMENT DESTRUCTION PROCEDURES

The following procedures should be followed when time does not permit critical equipment to be destroyed individually.

Demolition/Explosives**WARNING**

Personnel should stand clear of area being destroyed by weapons fire. Always use a weapon of a caliber sufficient to ensure enough penetration to achieve the desired damage and to eliminate the possibility of ricochet. Personnel unfamiliar with explosives should not set or detonate explosives.

The use of explosives has the disadvantage of possible disclosure of position.

The shelter can be destroyed using incendiary grenades, several rounds of properly aimed weapons fire, or a sufficient amount of explosives. When placing explosives, they should be placed within and under the shelter frame.

Use incendiary grenade by pulling pin and placing directly under any section of the shelter frame.

Fire

Fires should be started after setting off explosives. Gasoline, kerosene, diesel, or oil may be used to destroy the shelter and accessories.

END OF WORK PACKAGE

CHAPTER 9
SUPPORTING INFORMATION
FOR
M SERIES SHELTERS

**SUPPORTING INFORMATION
M SERIES SHELTERS
REFERENCES**

SCOPE

This work package lists all field manuals, forms, military standards, technical manuals, and miscellaneous publications referenced in this manual

FIELD MANUALS

- FM 3-5 NBC Decontamination
- FM 4-25 11 First Aid

GOVERNMENT PUBLICATIONS

- AR 25-2 Information Assurance
- AR 700-138 Army Logistics Readiness and Sustainability
- DA Form 2028 Recommended Changes to Publications and Blank Forms
- DA Forms 2404 and 5988E Equipment Inspection and Maintenance Worksheet
- DA Form 7399 Survey/Decontamination Record
- DA Form 7399-R Survey/Decontamination Record
- DA Form 7400 Record of Area/Equipment Survey
- DA Form 7401 Radioactive Commodity Report
- DA PAM 700-48 Handling Procedures for Equipment Contaminated with Depleted Uranium or Radioactive Commodities
- DA PAM 750-8 The Army Maintenance Management System (TAMMS) Users Manual
- DA PAM 738-751 Functional Users Manual for the Army Maintenance Management System - Aviation (TAMMS-A)
- DD Form 361 Transportation Discrepancy Report
- SF 368 Product Quality Deficiency Report

TECHNICAL BULLETINS

TB MED 507 Heat Stress Control and Heat Casualty Management

TECHNICAL MANUALS

TM 750-244-2. Procedures for Destruction of Electronic Material to Prevent Enemy Use

TM 750-244-6 Procedures for Destruction of Tank Automotive Equipment to Prevent Enemy Use (US Army Tank-Automotive Command)

END OF WORK PACKAGE

**SUPPORTING INFORMATION
M SERIES SHELTERS
MAC INTRODUCTION**

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

The 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 sub columns, Crew (C), and Maintainer (F)

Sustainment – includes two sub columns, Below Depot (H) and Depot (D)

The maintenance to be performed below depot and in the field 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 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:
 - 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 measurements. 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 emplacing, 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 Source, Maintenance and Recoverability (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

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 a 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 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

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

**SUPPORTING INFORMATION
M SERIES SHELTERS
MAINTENANCE ALLOCATION CHART (MAC)**

Table 1 MAC for M Series Shelters

(1) GROUP NUMBER	(2) COMPONENT/ ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL				(5) TOOLS AND TEST EQUIPMENT REF CODE	(6) REMARKS CODE
			FIELD		SUSTAINMENT			
			CREW	MAINTAINER	BELOW DEPOT	DEPOT		
			C	F	H	D		
	M SERIES SHELTERS	INSPECT	0 20				A	
		REPAIR	0 50				E	
		REPLACE		0 70				
		REPAIR		0 70		1	D	
		REPAIR			*	1	D/F	

Table 2. Tools and Test Equipment for M Series Shelters

TOOL OR TEST EQUIPMENT REF. CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL STOCK NUMBER	TOOL NUMBER
1	F	TOOL KIT, GENERAL MECHANIC'S	5180-01-483- 0249	12B470000-1

Table 3 Remarks for M Series Shelters

REMARKS CODE	REMARKS
A	Visual inspection of assembly and components for damage, loose or missing hardware
B	Inspect shelter for proper frame-to-ground connection
C	Preventive Maintenance Checks and Services (PMCS)
D	Repair by replacement of assemblies, subassemblies, and components
E	Repair at crew level limited to emergency repairs using items in repair kit
F	Sustainment Maintenance performed by Field Service Representatives or Depot Maintenance Teams

END OF WORK PACKAGE

**SUPPORTING INFORMATION
M SERIES SHELTERS
COMPONENTS OF END ITEM (COEI)**

INTRODUCTION**Scope**

This work package list COEI for the M Series Shelters to help you inventory items for safe and efficient operation of the equipment

General

Components of End Item (COEI) This list is for information purposes only and is not authority to requisition replacements. These items are part of the shelter. 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.

Explanation of Columns in the COEI List

Column (1) Illus Number Gives you the number of the item illustrated

Column (2) National Stock Number (NSN) Identifies the stock number of the item to be used for requisitioning purposes

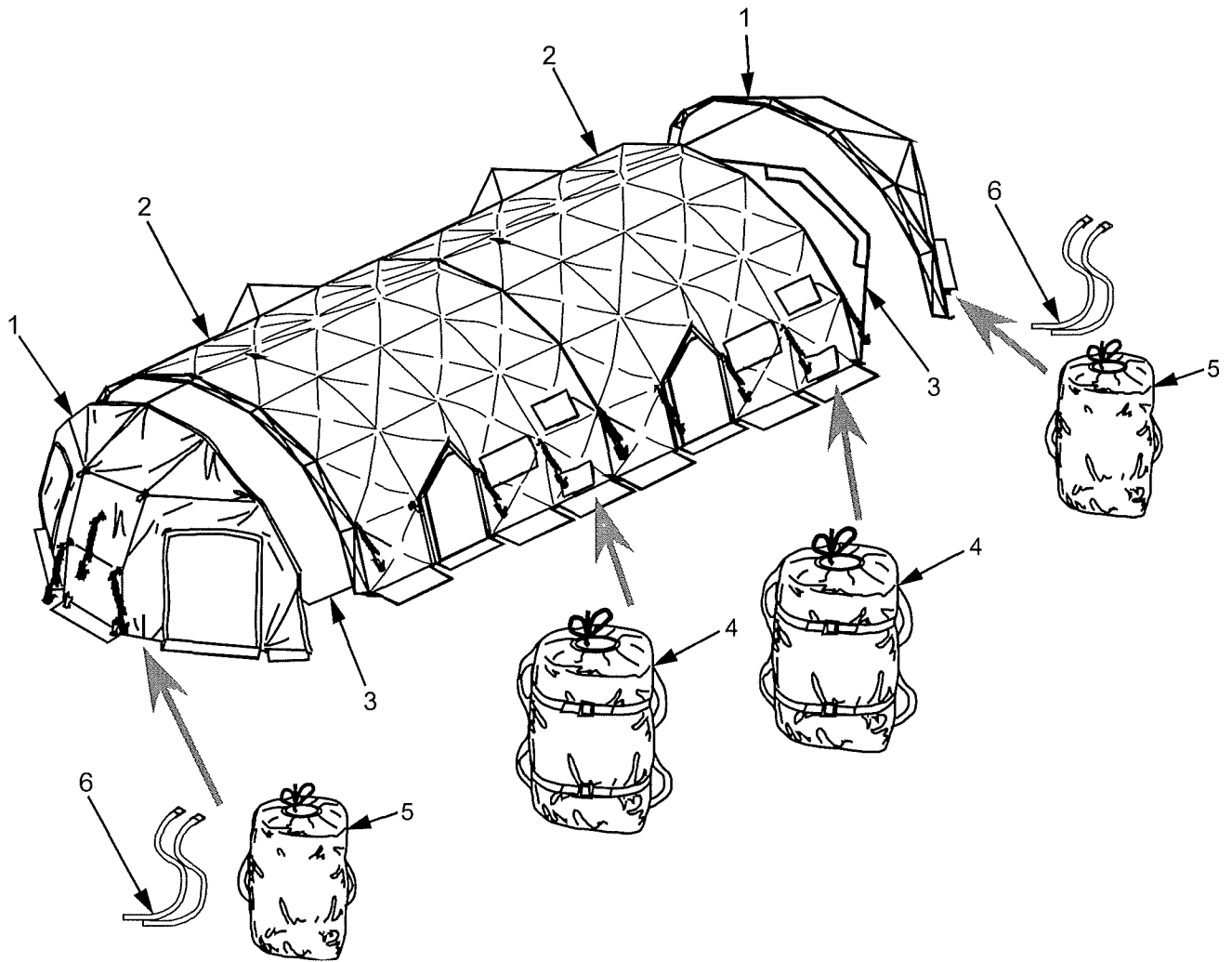
Column (3) Description, Part Number/(CAGEC) Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The stowage location of COEI is also included in this column. The last line below the description is the part number and the Commercial and Government Entity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

COMPONENTS OF END ITEM



* Side doors not available in EMI versions

Figure 1 Components of End Item for M Shelter (Sheet 1 of 2)

COMPONENTS OF END ITEM - Continued

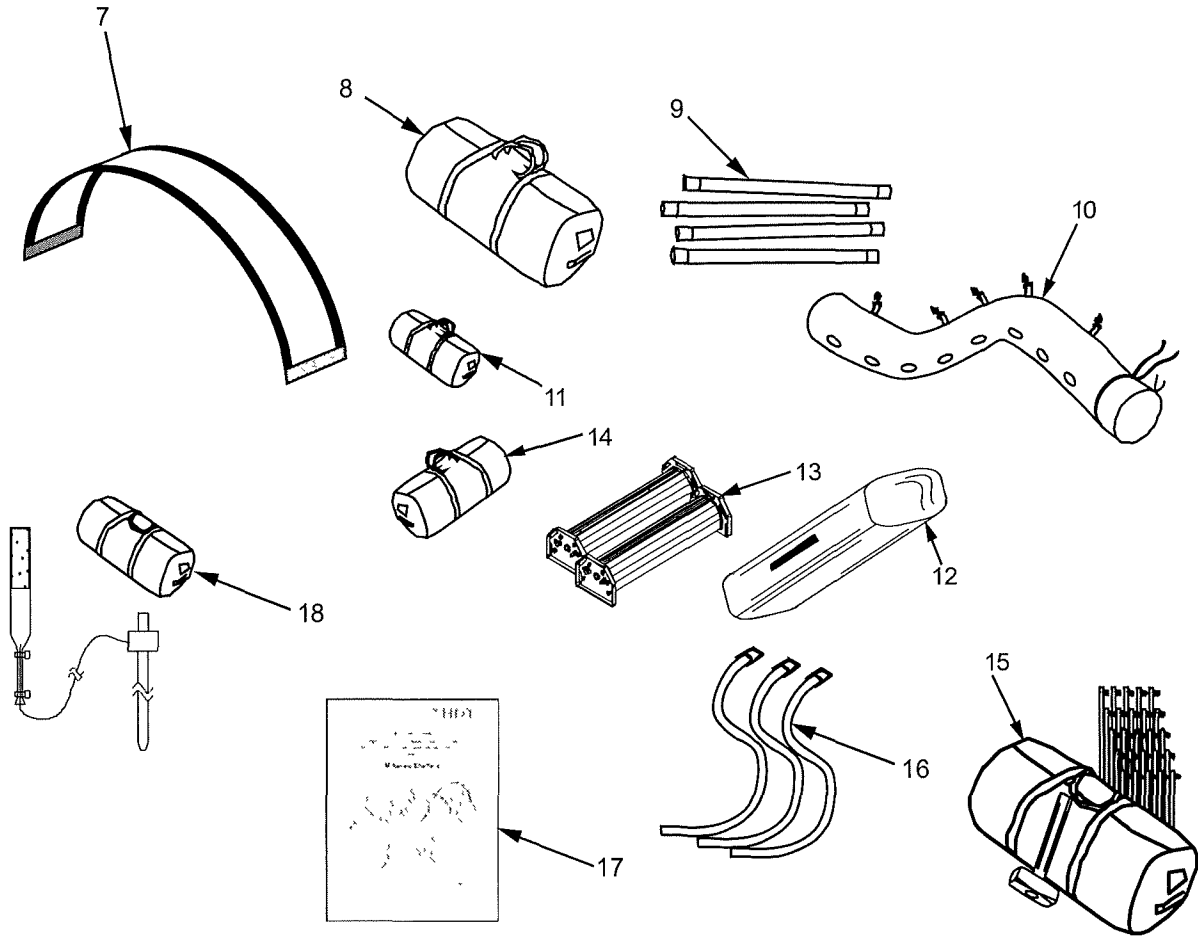


Figure 1 Components of End Item for M Shelter (Sheet 2 of 2)

COMPONENTS OF END ITEM – Continued

Table 1 Components of End Item for M Shelter

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) U/I	(5) QTY RQR
1	8340-01-589-9512	END CAP,MX,GREEN MXA2020G,(0WFM3)	EA	2
1	8340-01-589-9518	END CAP,MX,TAN MXA2020T,(0WFM3)	EA	2
1		END CAP,MX, EMI,GREEN SH201-0903G,(0WFM3)	EA	2
1		END CAP,MX, EMI,TAN 1014134,(0WFM3)	EA	2
2		SECTION,MX FOR M SHELTER,GREEN 1003770,(0WFM3)	EA	2
2		SECTION,MX FOR M SHELTER,TAN 1003772,(0WFM3)	EA	2
2		SECTION,MX, EMI, FOR M SHELTER,TAN 1012764,(0WFM3)	EA	2
2		SECTION,MX, EMI, FOR M SHELTER,GREEN NA,(0WFM3)	EA	2
3		FLOOR,MX FOR M SHELTER 1003771,(0WFM3)	EA	1
3		FLOOR,MX FOR M SHELTER w/WMI 1010348,(0WFM3)	EA	1
4	8340-01-553-0054	BAG,SHELTER TRANSPORT MXA2040B,(0WFM3)	EA	1
5	8340-01-589-9473	BAG,END CAP TRANSPORT MXA2045B,(0WFM3)	EA	1
6	8340-01-557-7589	BELT,END CAP,GREEN A600280,(0WFM3)	EA	2
7	8340-01-584-9991	SEAM REINFORCEMENT,M/MX-M/MX MS200320,(0WFM3)	EA	1
8	8340-01-556-7416	SHELTER REPAIR KIT,M/MX,GREEN MA100735,(0WFM3)	EA	1
8	5410-01-570-4998	SHELTER REPAIR KIT,M/MX,TAN MA100740,(0WFM3)	EA	1
8		SHELTER REPAIR KIT,M/MX,EMI, GREEN SH533-0603G,(0WFM3)	EA	1

TM: 1006412

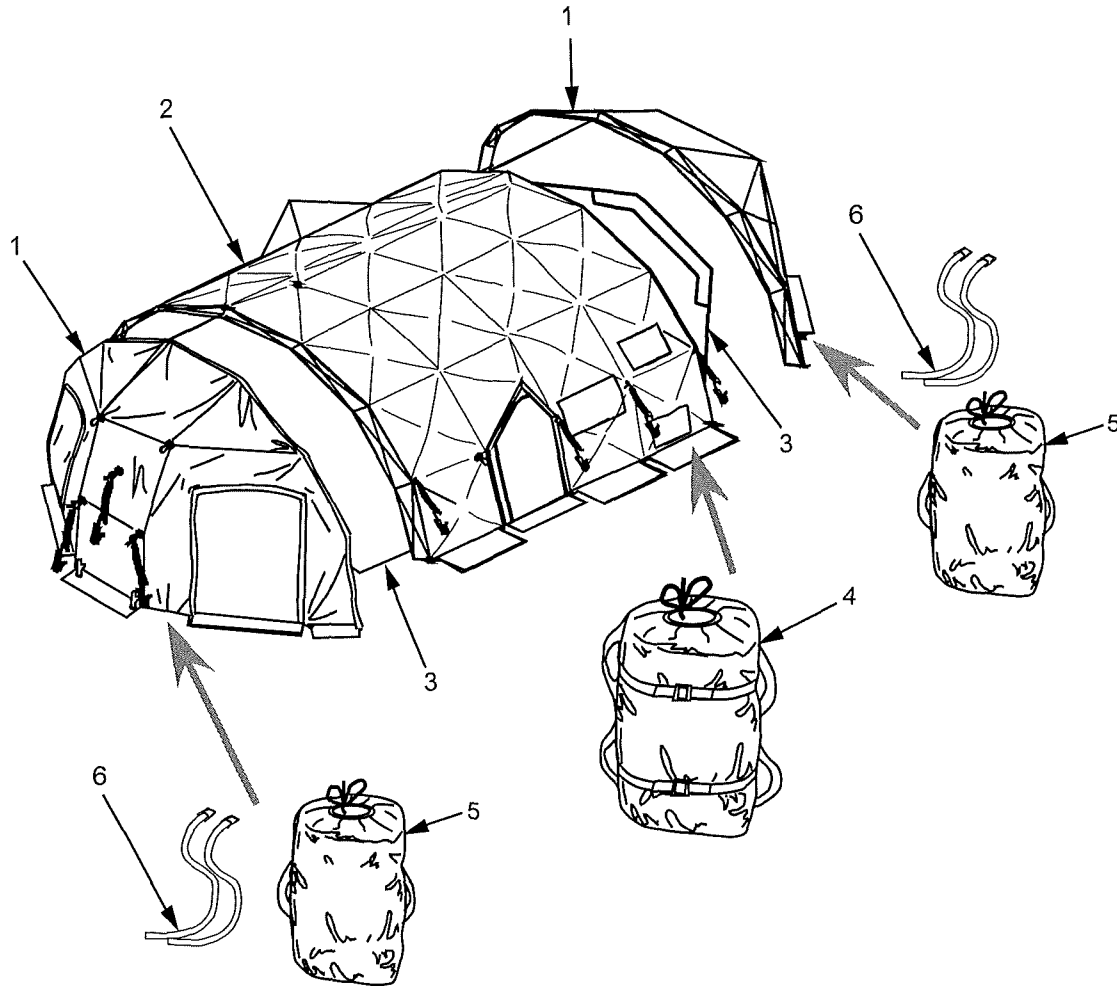
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(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) U/I	(5) QTY RQR
8		SHELTER REPAIR KIT,M/MX,EMI, TAN SH533-0603T,(0WFM3)	EA	1
9	5340-01-558-7299	PUSH POLE A602650,(0WFM3)	EA	4
10	8340-01-590-4344	PLENUM MXA3015,(0WFM3)	EA	1
11	8340-01-589-9618	BAG,SMALL,BROWN MA100160,(0WFM3)	EA	1
12		BAG,DRASHLITE,GREEN H300047,(0WFM3)	EA	2
13	6210-01-552-7802	DRASHLITE,120V/60HZ H300000,(0WFM3)	EA	4
14		ELECTRICAL SET,M SHELTER T2-95217,(0WFM3)	EA	1
15	8340-01-584-3979	STAKE SET,18"L,STEEL,25 PC MA100760,(0WFM3)	EA	2
16	5340-01-558-9644	BELT,SHELTER,LARGE,BLACK A600250,(0WFM3)	EA	3
17		TECHNICAL MANUAL 1006412,(0WFM3)	EA	1
18		KIT, GROUNDING, EMI SHELTER ONLY 1008082 (0WFM3)	EA	1

COMPONENTS OF END ITEM – Continued



* Side doors not available in EMI versions

Figure 2 Components of End Item for MX Shelter (Sheet 1 of 2)

COMPONENTS OF END ITEM – Continued

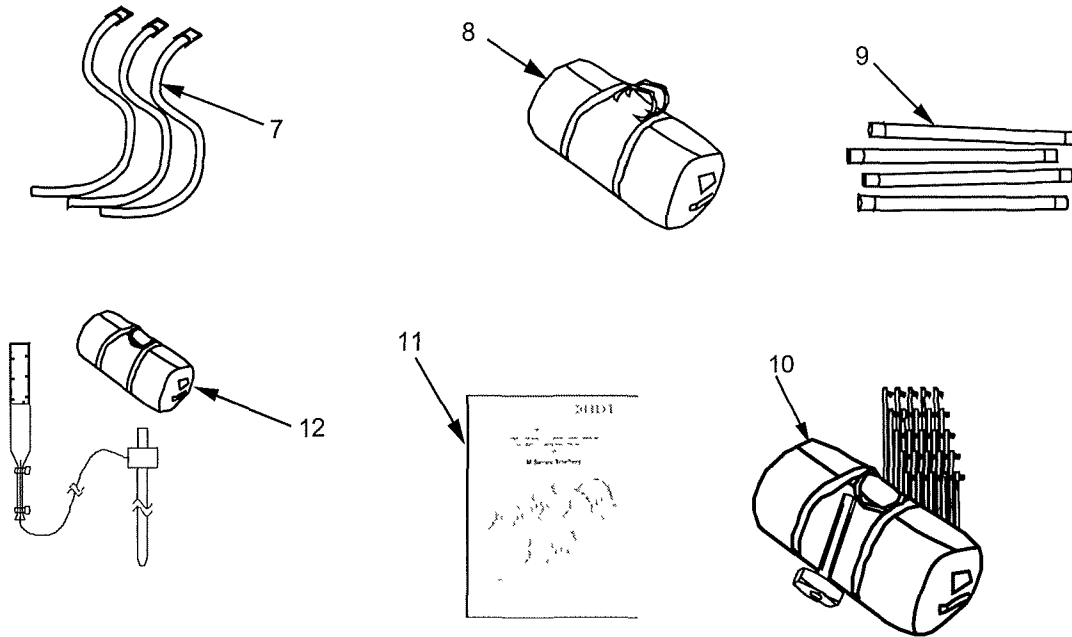


Figure 2 Components of End Item for MX Shelter (Sheet 2 of 2)

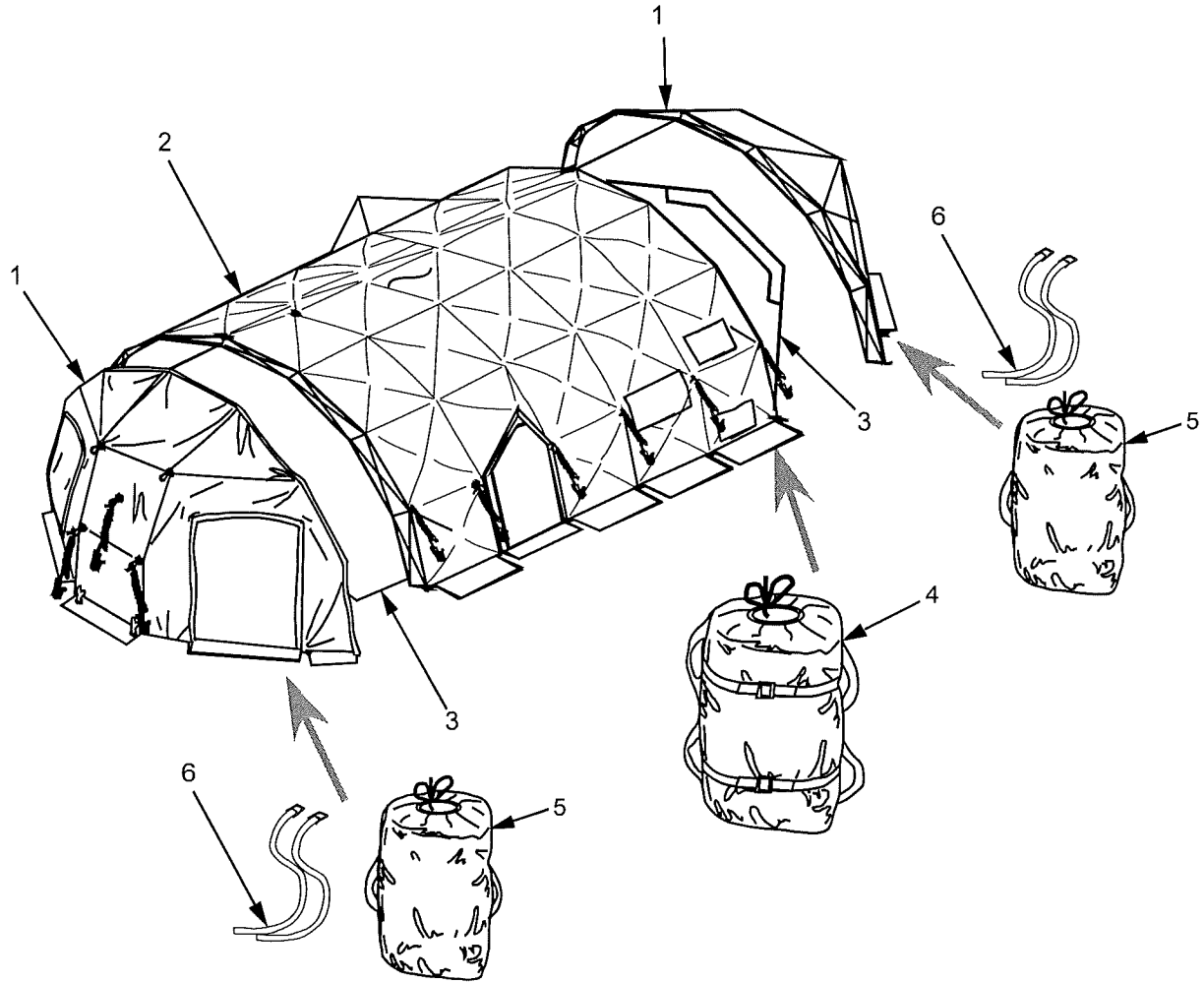
COMPONENTS OF END ITEM – Continued

Table 2 Components of End Item for MX Shelter

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) U/I	(5) QTY RQR
1	8340-01-589-9512	END CAP,MX,GREEN MXA2020G,(0WFM3)	EA	2
1	8340-01-589-9518	END CAP,MX,TAN MXA2020T,(0WFM3)	EA	2
1		END CAP,MX,EMI,GREEN SH201-0903G,(0WFM3)	EA	2
1		END CAP,MX,EMI,TAN SH201-0903T,(0WFM3)	EA	2
2		SECTION,MX SHELTER,GREEN MXA2035G,(0WFM3)	EA	1
2		SECTION,MX SHELTER,TAN MXA2035T,(0WFM3)	EA	1
2		SECTION,MX, EMI, FOR MX SHELTER,TAN SH201-0902T,(0WFM3)	EA	2
2		SECTION,MX, EMI, FOR MX SHELTER,GREEN SH201-0902G,(0WFM3)	EA	2
3	8340-01-571-6948	FLOOR,MX SHELTER MXA2025F,(0WFM3)	EA	1
3		FLOOR,MX SHELTER 1014143,(0WFM3)	EA	1
4	8340-01-553-0054	BAG,SHELTER TRANSPORT MXA2040B,(0WFM3)	EA	1
5	8340-01-589-9473	BAG,END CAP TRANSPORT MXA2045B,(0WFM3)	EA	1
6	8340-01-557-7589	BELT,END CAP,GREEN A600280,(0WFM3)	EA	2
7	5340-01-558-9644	BELT,SHELTER,LARGE,BLACK A600250,(0WFM3)	EA	3
8	8340-01-556-7416	SHELTER REPAIR KIT,M/MX,GREEN MA100735,(0WFM3)	EA	1
8	5410-01-570-4998	SHELTER REPAIR KIT,M/MX,TAN		

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) U/I	(5) QTY RQR
		MA100740,(0WFM3)	EA	1
9	5340-01-558-7299	PUSH POLE A602650,(0WFM3)	EA	4
10	8340-01-584-3979	STAKE SET,18"L,STEEL,25 PC MA100760,(0WFM3)	EA	1
11		TECHNICAL MANUAL 1006412,(0WFM3)	EA	1
12		KIT, GROUNDING, EMI SHELTER ONLY 1008082 (0WFM3)	EA	1

COMPONENTS OF END ITEM – Continued



* Side doors not available in EMI versions

Figure 3 Components of End Item for MX5 Shelter (Sheet 1 of 2).

COMPONENTS OF END ITEM – Continued

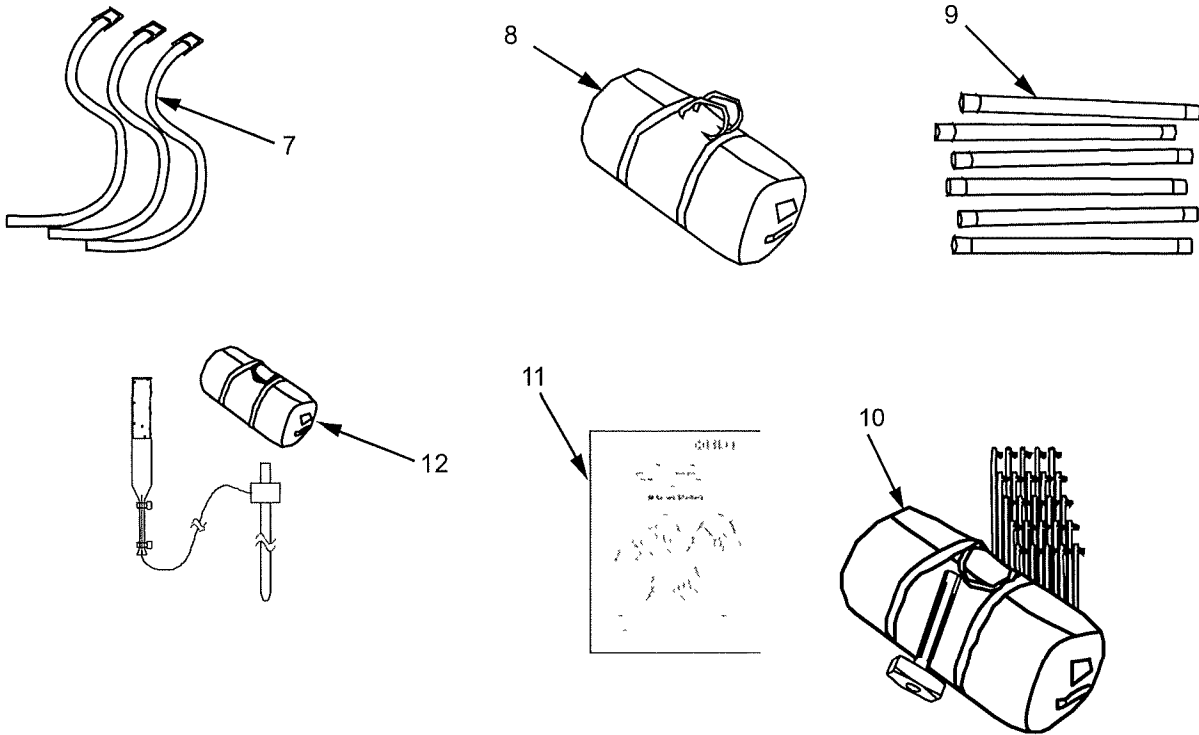


Figure 3 Components of End Item for MX5 Shelter (Sheet 2 of 2)

COMPONENTS OF END ITEM – Continued

Table 3 Components of End Item for MX5 Shelter

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) U/I	(5) QTY RQR
1	8340-01-589-9512	END CAP,MX,GREEN MXA2020G,(OWFM3)	EA	2
1	8340-01-589-9518	END CAP,MX,TAN MXA2020T,(OWFM3)	EA	2
1		END CAP,MX, EMI, GREEN SH201-0903G,(OWFM3)	EA	2
1		END CAP,MX, EMI,TAN 1014134,(OWFM3)	EA	2
2		SECTION,MX5 SHELTER, GREEN SH201-0602G,(OWFM3)	EA	1
2		SECTION,MX5 SHELTER, TAN SH201-0602T,(OWFM3)	EA	1
2		SECTION,MX FOR M SHELTER,EMI, GREEN SH201-0928T,(OWFM3)	EA	2
2		SECTION,MX FOR M SHELTER, EMI,TAN SH201-0928G,(OWFM3)	EA	2
3	8340-01-590-7289	FLOOR,MX5 SHELTER SH530-0601,(OWFM3)	EA	1
4		BAG,SHELTER TRANSPORT SH530-0608,(OWFM3)	EA	1
5	8340-01-589-9473	BAG,END CAP TRANSPORT MXA2045B,(OWFM3)	EA	1
6	8340-01-557-7589	BELT,END CAP, GREEN A600280,(OWFM3)	EA	2
7	5340-01-558-9644	BELT,SHELTER,LARGE, BLACK A600250,(OWFM3)	EA	3
8	8340-01-556-7416	SHELTER REPAIR KIT,M/MX, GREEN MA100735,(OWFM3)	EA	1
8	5410-01-570-4998	SHELTER REPAIR KIT,M/MX,TAN MA100740,(OWFM3)	EA	1
8		SHELTER REPAIR KIT,M/MX,EMI, GREEN SH533-0603G,(OWFM3)	EA	1
8		SHELTER REPAIR KIT,M/MX,EMI, TAN SH533-0603T,(OWFM3)	EA	1

(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION, PART NUMBER/(CAGEC)	(4) U/I	(5) QTY RQR
9	5340-01-558-7299	PUSH POLE A602650,(0WFM3)	EA	6
10	8340-01-584-3979	STAKE SET,18"L,STEEL,25 PC MA100760,(0WFM3)	EA	1
11		TECHNICAL MANUAL 1006412,(0WFM3)	EA	1
12		KIT, GROUNDING, EMI SHELTER ONLY 1008082 (0WFM3)	EA	1

END OF WORK PACKAGE

**SUPPORTING INFORMATION
M SERIES SHELTERS
ADDITIONAL AUTHORIZATION LIST (AAL)**

INTRODUCTION

Scope

This work package lists additional items you are authorized for the support of the M Series Shelters

General

This list identifies items that do not have to accompany the M Series Shelters and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA

Explanation of Columns in the AAL

Column (1) National Stock Number (NSN) - Identifies the stock number of the item to be used for requisitioning purposes

Column (2) Description, Part Number/(CAGEC) - Identifies the Federal item name (in all capital letters) followed by a minimum description when needed. The last line below the description is the part number and the Commercial and Government Entity Code (CAGEC) (in parentheses)

Column (3) Usable on Code - When applicable, gives you a code if the item you need is not the same for different models of equipment

Column (4) Unit of Issue (U/I) - Indicates the physical measurement or count of the item as issued per the National Stock Number shown in column (1)

Column (5) Qty Recm - Indicates the quantity recommended

ADDITIONAL AUTHORIZED LIST ITEMS

Table 1 Additional Authorized List

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION, PART NUMBER/(CAGEC)	(3) U/I	(4) QTY RECM
	SNOW KIT SET,M/MX5 SHELTER,FOUR ARCHES SH533-0601,(0WFM3)	KT	1
	SNOW KIT SET,MX SHELTER,THREE ARCHES SH533-0602,(0WFM3)	KT	1
	HARD DOOR ASSEMBLY 1009319,(0WFM3)	EA	1

Table 1 Additional Authorized List – Continued

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION, PART NUMBER/(CAGEC)	(3) U/I	(4) QTY RECM
8340-01-538-1814	SPARE PARTS KIT,M/MX,GREEN MA100755G,(0WFM3)	KT	1
8340-01-538-1812	SPARE PARTS KIT,M/MX,TAN MA100755T,(0WFM3)	KT	1
	MAINTENANCE DOOR,M/MX SHELTER,GREEN SH201-0614G,(0WFM3)	EA	1
	MAINTENACE DOOR,M/MX SHELTER,TAN SH201-0614T,(0WFM3)	EA	1
	FLOORING,STANDARD,TAN M SHELTER 1000454,(0WFM3)	EA	65
	FLOORING,ICM,TAN,M SHELTER 1000453,(0WFM3)	EA	65
	FLOORING,STANDARD,TAN MX SHELTER 1000454,(0WFM3)	EA	40
	FLOORING,ICM,TAN,MX SHELTER 1000453,(0WFM3)	EA	40
	FLOORING,STANDARD,TAN MX5 SHELTER 1000454,(0WFM3)	EA	50
	FLOORING,ICM,TAN,MX5 SHELTER 1000453,(0WFM3)	EA	50

END OF WORK PACKAGE

**SUPPORTING INFORMATION
M SERIES SHELTERS
EXPENDABLE AND DURABLE ITEMS LIST**

INTRODUCTION

Scope

This work package lists expendable and durable items that you will need to operate and maintain the M Series Shelters. This list is for information only and is not authority to requisition the listed items.

Explanation of Columns in the Expendable/Durable Items List

Column (1) Item Number: This number is assigned to the entry in the list and is referenced in the narrative instructions to identify the item (e.g., "Use duct tape (WP 0029, Item 1)").

Column (2) Level: This column identifies the lowest level of maintenance that requires the listed item (C = Operator/Crew, F = Maintainer).

Column (3) National Stock Number (NSN): This is the NSN assigned to the item which you can use to requisition it.

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) Unit of Issue (U/I): Indicates the physical measurement or count of an item, such as gallon, dozen, gross, etc.

EXPENDABLE AND DURABLE ITEMS LIST

Table 1. Expendable and Durable Items List

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/(CAGEC)	(5) U/I
1	C		DUCT TAPE,(GREEN) 2 INCH X 10 YARDS ^{1, 2} A601350,(OWFM3)	RO
2	C		DUCT TAPE,(TAN) 2 INCH X 12 YARDS ^{1, 2} A601360,(OWFM3)	RO
3	C		FABRIC,SELF-ADHESIVE,GREEN ^{1, 2} SH903-0021G,(OWFM3)	EA
4	C		FABRIC,SELF-ADHESIVE,TAN ^{1, 2} SH903-0021T,(OWFM3)	EA
5	C		FABRIC,SELF-ADHESIVE,WHITE ^{1, 2} SH903-0021W,(OWFM3)	EA

Table 1 Expendable and Durable Items List – Continued

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER (NSN)	(4) ITEM NAME, DESCRIPTION, PART NUMBER/(CAGEC)	(5) U/I
6	C		BRUSH,SCRUB ^{1,2} SH903-9000,(OWFM3)	EA
7	C		HACKSAW,MINI ^{1,2} A601451,(OWFM3)	EA

NOTE

- 1 This item is part of Shelter Repair Kit p/n MA100735, Green (WP 0029)
- 2 This item is part of Shelter Repair Kit p/n MA100740, Tan (WP 0029)

END OF WORK PACKAGE

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS					Use Part II (<i>reverse</i>) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM)	DATE
TO: (<i>Forward to proponent of publication or form</i>) (<i>Include ZIP Code</i>) HDT Expeditionary Systems, Inc Technical Publications Group 5855 Endeavor Way Tanner, AL 35671 Phone 256 774 1563, Fax 256 774 1567					FROM: (<i>Activity and location</i>) (<i>Include ZIP Code</i>) Jane Q. Doe, SFC 1234 Any Street Anytown, AL 34565	
PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS						
PUBLICATION/FORM NUMBER					DATE	TITLE
TM 1006412						Operator and Field Maintenance Manual for M Series Shelters
ITEM	PAGE	PARA-GRAPH	LINE	FIGURE	TABLE	RECOMMENDED CHANGES AND REASON
1	WP0005 PG3		2			Test or Corrective Action column should identify a different WP number

EXAMPLE

TYPED NAME, GRADE OR TITLE Jane Q Doe, SFC	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION 123-4567	SIGNATURE
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HDT FORM 2028, 09 SEP 08

TO (Forward to proponent of publication or form) (Include ZIP Code)	FROM: (Activity and location) (Include ZIP Code)	DATE
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PART II- REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS

PUBLICATION/FORM NUMBER TM 1006412	DATE	TITLE Operator and Field Maintenance Manual for M Series Shelters
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PAGE NO	COLM NO	LINE NO	NATIONAL STOCK NUMBER	REFERENCE NO	FIGURE NO	ITEM NO	TOTAL NO OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

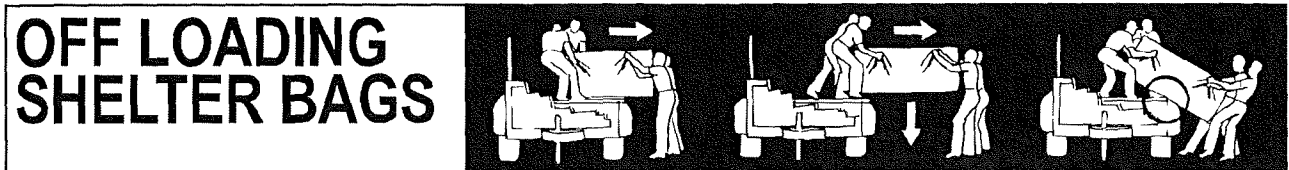
EXAMPLE

PART III - REMARKS (Faint text describing the section's purpose)

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TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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QUICK START PROCEDURES



OFF LOADING SHELTER BAGS

YES Lift and slide shelter off trailer bed keeping it parallel to ground

YES When off trailer bed, lower shelter parallel to ground

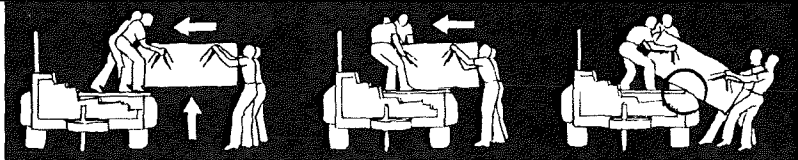
NO Do not rock shelter at midpoint when off loading. This will cause damage to struts.

DRASH[®] MX SERIES SET UP PROCEDURE

<p>1 Unbag MX Shelter, stand upright, remove fastening belt, and remove floor from main bundle. Place Floor out of the way.</p>		<p>2 Lift main shelter, upward of hubs and step back in unison. Place End Caps at opposite ends of Shelter and spread out. Do not pull back without lifting.</p> <ul style="list-style-type: none"> • Grip shelter only at the Hubs • Never grip struts 	
<p>3 Locate Red Flags. Reach under to locate 4 Push Point Hubs with red flags. Push up only on these 4 Hubs until the 4 Push Poles are supporting the entire shelter. All Poles must be moved inward to next Hub with Red flag by moving two opposite poles at a time.</p>		<p>4 Secure one End Cap at a time to main shelter by lifting End Cap and placing RED colored Hub onto pin protruding from White colored Hub on main shelter body. Insert Pin to secure Red Hub to White Hub (Inset). THE RED HUBS MUST GO OVER THE WHITE HUBS.</p>	
<p>5 Secure Exterior End Cap fabric to the main Shelter by matching the RED tab in the center of the End Cap exterior fabric to the BROWN tab in the center of Shelter. Join Velcro seams together, working from center outwards until reaching the grommet in Velcro on each side. Secure the underside seam first and then the outer seam. Secure Interior End Cap fabric in same manner.</p>		<p>6 Lift Shelter with Push Poles until all walls are vertical. Shelter is completely erect when Staking Plates attached to the exterior Hubs are lying flat on ground (see inset).</p>	
<p>7 (A) Install two windlines per side. (B) Install four ground stakes on one side only. (C) Secure all End Cap Velcro seams (interior and exterior). (D) Secure floor along entire length of Shelter.</p>	<p>1. LAY INTERIOR FLOOR FIRST</p> <p>2. STAKE SHELTER INTO GROUND</p>	<p>8 Complete securing the entire Shelter to the ground with the remaining Ground Stakes and wind lines.</p>	

QUICK START PROCEDURES

ON LOADING SHELTER BAGS



YES Lift and slide shelter onto trailer, keeping it parallel

YES Continue loading parallel to ground

NO Never load by rocking shelter up onto loading surface. This will damage struts

DRASH MX SERIES TAKE DOWN PROCEDURE

1

- Empty shelter.
- Close window flaps.
- Tie all doors back in open position.
- Remove interior floor
- Remove wind lines and stakes.
- Open end wall to grommet

2 Distribute personnel as shown at each corner of the shelter.

3 Locate lifting hubs as indicated by stencils.

4 In unison and in one swift motion, lift the shelter up and out to strike. Emphasize the uniform lifting first.

5

- Grip shelter at the hubs (inset) Never grip struts.
- Lift upwards at hubs and walk towards each other.
- Avoid stepping on fabric

6

- Invert Shelter.
- Carefully push liner between struts so that all keepers are exposed
- Compress and cinch interior belt.
- Fold floor into quarters

7

- Lay shelter on its side on top of floor.
- Roll shelter as shown compressing shelter as you roll.
- Stand white side up
- Cinch with belt and bag.

8 Shelter packed and ready for transport.

