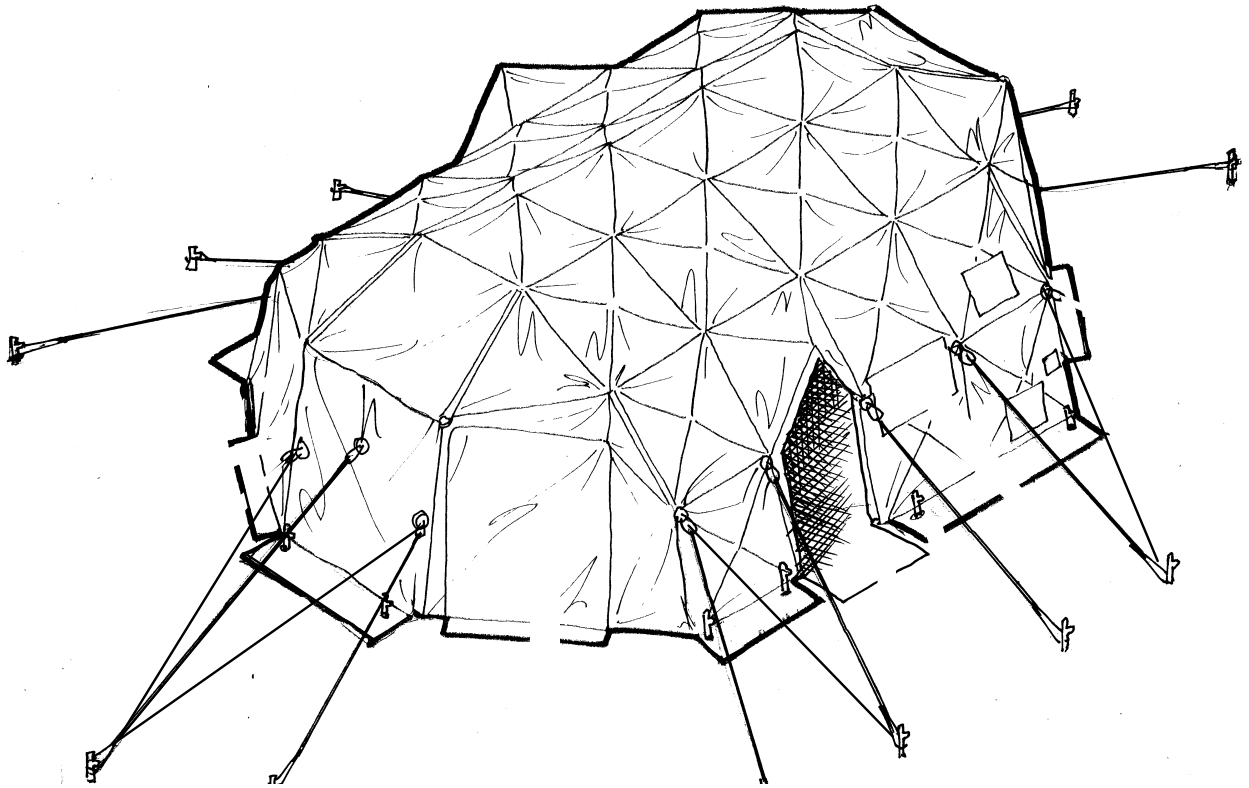
DRASH®

# MX SERIES SHELTER



# OPERATION & MAINTENANCE MANUAL

**WARNING: Failure to follow the operating procedures described in this manual may result in damage to the equipment and are not covered under warranty. Please read before proceeding.**

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DHS SYSTEMS LLC

**ISO 9001: 2000 Registered Quality Management System**

DHS MANUAL NUMBER: 95335-01
Issued – 04 MAR, 2008

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# Revision History

| Date | Revision | Description |
|---|---|---|
| 01 NOV 06 | 95340-00 | Original Issue. |
| 03 MAR 08 | 95335-01 | Revise Part Number. Add Repair Parts List (RPSTL) |
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# WARNING SUMMARY

This Warning Summary explains the use of general safety Note, Caution, and Warning notices present in this Technical Manual that must be understood and applied during the operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel.

## Equipment Specific Safety Issues

### General

The cautions and warnings point out known conditions that are potentially hazardous. However, no manual can cover every possible situation. If in doubt, contact DHS.

Service and repair procedures not covered in this manual should be performed only by authorized DHS technicians.

### General Precautions

REMEMBER SAFETY FIRST. If unsure of the instructions or proper operating procedures, contact DHS before continuing.

This manual emphasizes the safety precautions necessary during the operation and maintenance of the M Series Shelter. Each section uses caution and warning messages for both the safety of the operator as well as the durability of the equipment. If any of the cautions or warnings is not readily understood, contact DHS before proceeding.

When an abnormal condition is observed and procedures in the manual do not specifically describe the condition, all operations should be stopped and DHS Systems should be immediately contacted for assistance.

**DHS SYSTEMS LLC Contact Information**

**Phone**: 800-977-3647
**FAX**: 845-365-2114
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### Qualified Personnel

A qualified person is one who is familiar with this manual, the operation of the M Series Shelter and the hazards involved in its operation and maintenance and who has been certified by the DHS SYSTEMS LLC Training program.

This manual is not intended to be a substitute for proper training. DHS SYSTEMS LLC strongly recommends that operators receive training directly from DHS SYSTEMS LLC.



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# Warning Boxes

## Warning Box Words & Icons

Warning Boxes are provided throughout this Technical Manual and are used to call attention to various details about either the equipment that are important enough to separate from the normal operating descriptions and/or procedures or a safety-related situation that the operator must be aware of. The appearance of the basic Warning Box is shown in Figure a. There are generally four information points provided by each Warning Box that follow a defined pattern. Figure a defines the positions of the information points.

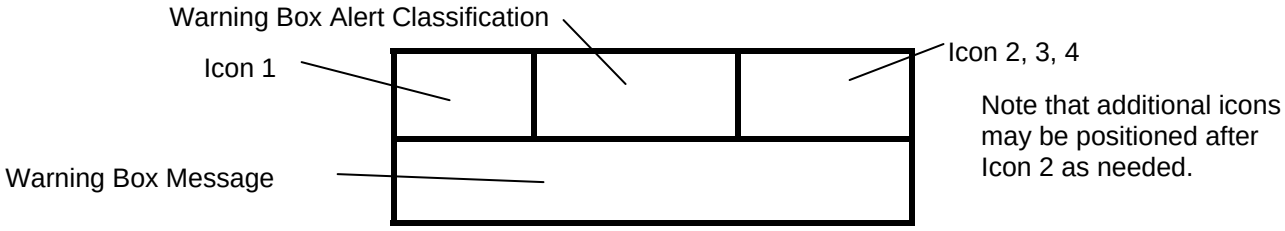


**Figure a - Warning Box Definition**

### Icon 1:

Icon 1 is the primary indication of the contents of the Warning Box. The Icon is meant to visually alert the reader to the level of importance of the Warning.

### Icons 2, 3, 4:

The icons that appear to the right of the Warning Box Classification provide a secondary indication of the contents of the Information Box. The position is labeled Icon 2, 3, 4 in Figure a (above) because there may be multiple types of alerts associated with the warning. The types of Icons found in Icon Box 2 are as follows:

When Icon 2 is the same as Icon 1, it means that there is no further specific information about the type of Alert.

If Icon 2 is different than the icon shown in Icon Box 1, it means that there is more specific information available about the type of Alert. An example of an Warning Box where there would be two different Icons shown in Icon Box 1 and Icon Box 2 would be that of a burn hazard. In this case, Icon Box 1 will show an Icon representing a burn hazard. If the burn hazard was created by a particular substance such as gasoline, Icon Box 2 would be an Icon indicating a Flammable Fluid.

In certain instances, additional icons will appear after Icon #2. These icons will either enhance the definition of the warning or they will indicate the presence of additional hazards that may exist either because of the original condition or in addition to the original condition.

## Warning Box Alert Classifications

The Warning Box Alert Classification is an indication of the level of importance of the Warning Box. The various levels of Alert Types are defined below, from the most important (Danger) to items of lesser importance.

**Danger:** Danger refers to immediate hazards that will result in severe personal injury or death.

**Warning:** Warning refers to a hazard or unsafe method or practice that may result in severe personal injury or death.

**Caution:** Caution refers to a hazard or unsafe method or practice that may result in personal injury or equipment damage.

**Note:** Note refers to an important feature that the operator should be aware of for maximum operating efficiency of the equipment.

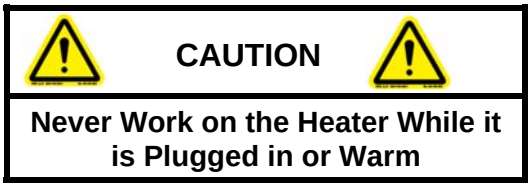


**Figure b - Example of a Generic Warning**



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## Common Warning Symbols Definitions

The following symbols are commonly used to indicate that a task requires precautionary measures be understood and practiced during the execution of the task.

| Icon | Definition | Notes |
|---|---|---|
|  | CAUTION<br>The exclamation point is intended to alert the user to the presence of important operating and/or maintenance (servicing) information in the literature accompanying the product. | |
|  | PRESENCE OF ELECTRICITY<br>The lightning bolt is intended to alert the user to the presence of electricity. The electricity can be directly related to the specific operation or it can be in the area of the operation. | This icon is typically used with another, more specific, icon that identifies the nature of the warning. |
|  | HAZARDOUS VOLTAGE<br>The lightning bolt and human figure is intended to alert the user to the presence of voltages that can serious or fatal shock to a person. | |
|  | EXPLOSION<br>The explosion is intended to alert the user to the possibility that something associated with or in the area of the particular operation presents the risk of an explosion. | This icon is typically used with another, more specific, icon that identifies the nature of the warning. |
|  | EXPLOSION<br>The explosion with a face is intended to alert the user that a particular operation or task exposes the individual(s) to a risk of explosion within close proximity to the immediate work location. | This icon is more specific than the previous EXPLOSION icon. |
|  | HOT SURFACE<br>The open flame and heat lines are a generic icon to alert the user that there is or could be an exposed source of flame in the immediate vicinity of the particular operation. | This icon is not the same as the FLAMMABLE icon described below. |
|  | HOT SURFACE w/BURN HAZARD<br>The radiating surface with a hand alerts the user to the risk that there is or could be a potential for being burned by contact with a surface. | Hot surfaces are not always associated with a flame. An engine exhaust pipe is one example of a hot surface with no flame. |



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| Icon | Definition | Notes |
|---|---|---|
|  | FLAMMABLE<br>The large open flame indicates that the associated operation involves working with fluids and/or gases that are flammable. | Burning gases and liquids can cause severe burns.<br>Keep ignition sources away. |
|  | LIFTING HAZARD<br>The image of a person lifting a box indicates that the object in question is particularly heavy and presents a risk of back injury if not lifted properly or with assistance. | Other warnings that use this same icon include:<br>HEAVY OBJECT<br>TWO-PERSON LIFT |
|  | HAND ENTANGLEMENT<br>The image of a hand being trapped between two rollers indicates that there is a risk of a hand being trapped and possibly injured by one or more pieces of moving machinery. | |
|  | PINCH POINT<br>The image of a hand being crushed between two objects indicates that the particular piece of equipment or the particular operation presents the possibility that a hand or other part of the body can be pinched during the task. | |
|  | STOP<br>The uplifted hand within a red circle indicates that the person should stop and identify all possible risks and hazards associated with the particular operation before proceeding. Failure to observe this warning can lead to serious problems and the risk of injury or death. | Other warnings that use this same icon include:<br>STAY CLEAR |
|  | HAZARDOUS GASSES<br>The image of a person inhaling gasses is intended to alert the user to the possible presence or release of gasses in the immediate area that can be harmful if inhaled. | |
|  | FIRE EXTINGUISHER<br>The image of a fire extinguisher indicates that the person should have an extinguisher ready or be aware of the location of the nearest fire extinguisher during a particular operation or task. | |
|  | FIRST AID<br>The cross in a circle is the international standard icon for a first aid kit. When used within an Operation & Maintenance Technical Manual, the First Aid icon indicates that the person should be aware of the location of such a kit. | |



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# 1. SHELTER AND END CAP SETUP

Open the shelter transport bag (Figure 1, Item #4) and remove the shelter repair kit (Figure 1, Item #3), push poles (Figure 1, Item #2), and the cinched shelter (Figure 1, Item #1) as shown in.

Unwrap the Floor (not shown) from the shelter bundle (Figure 1, Item #1) and remove the floor from the immediate area for later use.

Orient the entire shelter so that the exterior side is facing up and the white side is facing down.

Place the shelter so that the long side of the shelter is parallel with the end cap bags. Proper alignment will reduce the possibility of having to reposition the shelter later.

**NOTE**

Stow all straps in the transport bag as soon as they are removed. The straps are required to compress the main shelter body enough to fit in the transport bag.

Remove the shelter cinch straps and place them in the transport bag to prevent loss. The shelter repair kit should also be returned to transport bag.

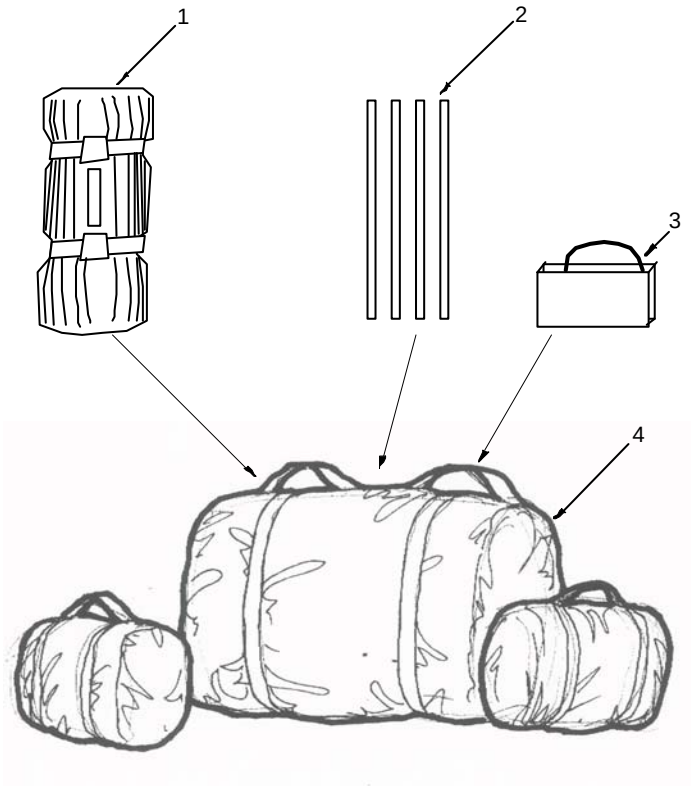


Figure 1 Contents of Transport Bag.



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## Expand the Shelter

**CAUTION**

This procedure requires four personnel and one Team Leader (spotter) for erection of the shelter.

Position four personnel about the shelter (Figure 2 , Item #1).

Locate the outermost exterior lifting hubs (Figure 2 , Item #2). These are the hubs with the coated steel wire looped keepers. The outermost exterior lifting hubs and the top of the struts are the only places from which the shelter should be lifted.

**CAUTION**

DO NOT LIFT THE SHELTER BY THE STRUTS.

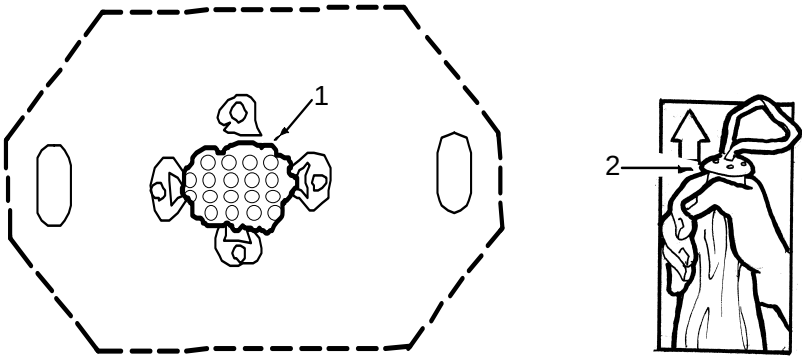


Figure 2. Position Personnel and Exterior Lifting Hubs (inset).

Check that the wind lines are not snagged on any hubs (Figure 2, Item #2). Snagged wind lines may prevent the shelter from spreading.

With both hands, grasp the lifting hubs (Figure 2, Item #2).

On the Team Leader's command, lift the shelter (Figure 2 , Item #1) off the ground, take two short steps backward, and put the shelter down.

If any resistance felt by any team member, immediately yell "STOP", identify the restriction, and correct it.

Continue to lift, step back, and spread the Shelter as shown in Figure 3.

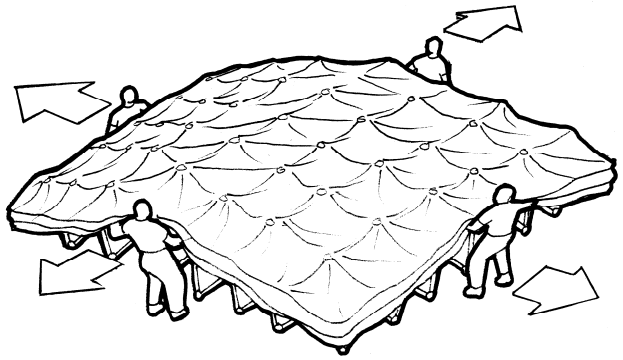

Figure 3. Lift and Spread the Shelter.

At maximum spread, the shelter will resist any further expansion.



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## Prepare to Raise Shelter

There are two Red Flags (Figure 4, Item #1) located at each end of the shelter body (total of four red flags) that are associated with each of the four initial lifting points that will be used to raise the shelter. One push pole will be placed simultaneously under each of these lifting points.

**NOTE**

Raising the shelter is performed in two stages: Lift to waist height and lift to full height. Both procedures require four personnel to raise the shelter and one team leader.

Distribute the four push poles to the work crew (Figure 1, Item #2).

Look under the cover and locate the four Red Flags on the interior cover (two Red Flags per end).

Reach under the cover to locate each of the four keepers associated with the red flags. These are the keepers from which the crew will lift the center section to waist height.

Each member of the crew should place one hand on the flagged keeper while holding the push pole in their other hand.

**WARNING**

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

On command ("Ready to lift to pole height…Lift"), each crew member should simultaneously lift the shelter with one hand and place their respective push poles against their respective keeper with the red flag.

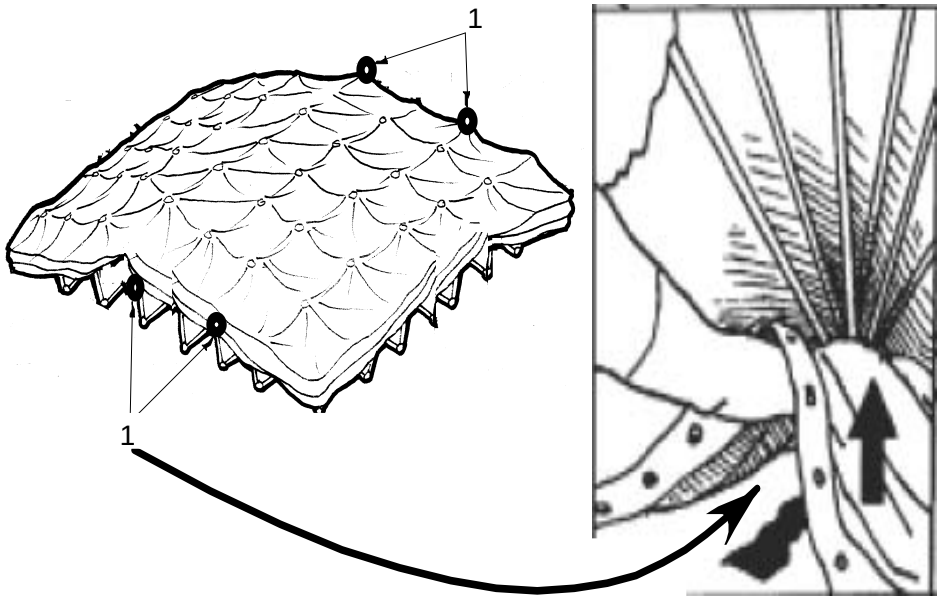


Figure 4. Red Flag Locations.

As quickly as possible, all crew members must lift their end of the shelter and place one end of the push pole underneath the red flagged keeper and until their push pole will fit vertically between the ground and the keeper.

All four crew members should slowly lower the shelter until the four push poles (Figure 5, Item #1) are supporting the entire shelter as shown in the Figure 5 Inset.



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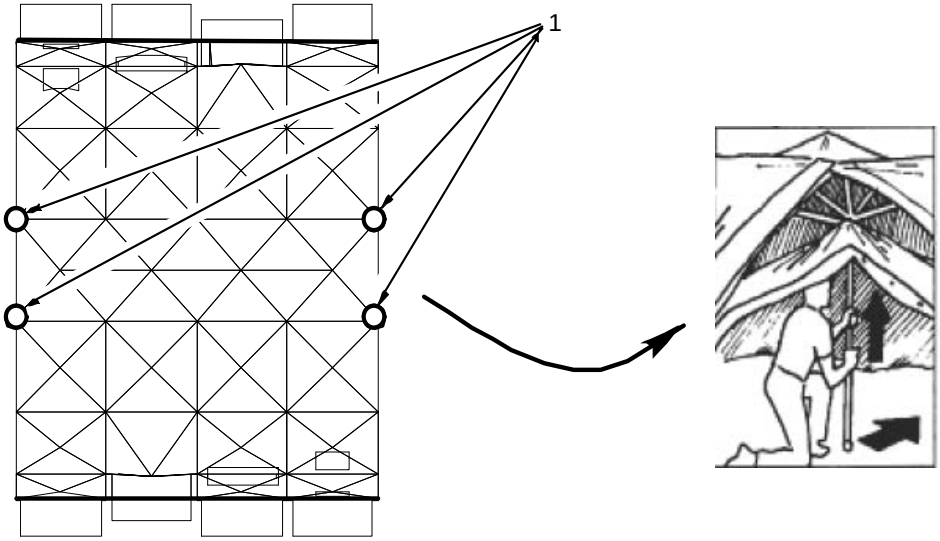


Figure 5. Shelter Resting on Four Push Poles.

There are an additional four red flags inside the shelter which are the structural lifting points from which the shelter will be raised to full height. The crew must move their respective push poles into the shelter from the resting keeper to the lifting keeper.

**WARNING**

Two crew members are required to always hold the shelter when it is resting on the four 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. Personal injury and damage to the shelter could result.

Identify the four red flagged keepers (Figure 6, Item #2) that are approximately four feet inside the shelter from the outer flagged keepers.

Instruct the two diagonally opposed crew members to remove their push poles and move inwards to the next red flagged keepers and place their push poles in a vertical position to support the shelter.

Instruct the remaining two crew members to advance their push poles to the inner red flag positions.

The center section of the shelter should now be standing at waist height without any assistance.

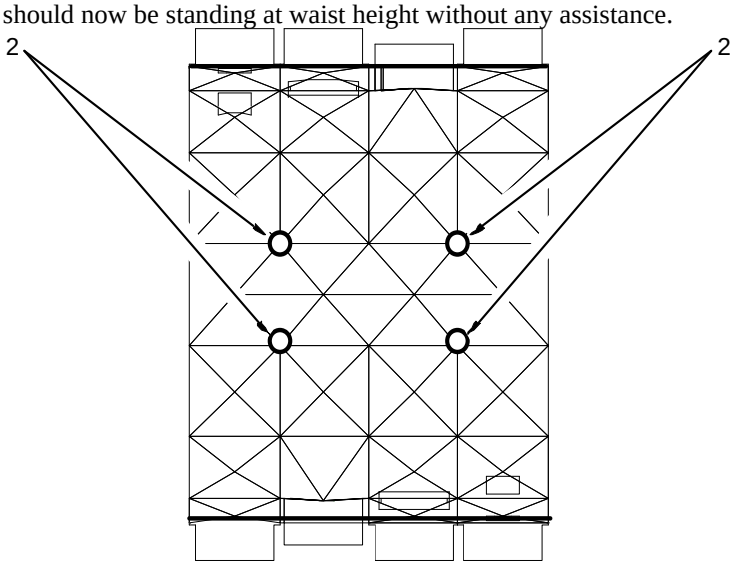


Figure 6. Position of Additional Red Flagged Keepers.



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### Unpack, Position, and Attach the End Caps to Shelter Body

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

Remove the end caps from their transport bags.

**NOTE**

Stow all straps in the transport bag as soon as they are removed. The straps are required to compress the main shelter body enough to fit in their respective transport bags.

Remove the cargo straps from the end caps and stow in their transport bags.

Expand the end caps.

Orient each end cap so that the red hubs are pointed towards the mounting pins on the center section.

Unroll the two cover sides of each end cap.

Align the end caps (Figure 7, Item #1) to the two open ends of the main shelter (Figure 7, Item #2).

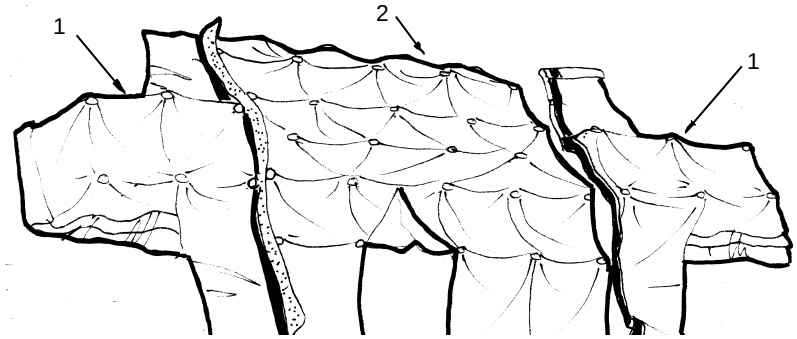


Figure 7. Position End Caps Next to Main Shelter.

**WARNING**

Two crew members are required to always hold the shelter when it is resting on the four 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. Personal injury and damage to the shelter could result.

Secure one end cap (Figure 8, Item #1) at a time to one end of the shelter (Figure 8, Item #2) by lifting the end cap and placing the red end cap hub (Figure 8, Item #3) onto the pin protruding from the white colored hub (Figure 8, Item #4) on the shelter.

Insert the pin (Figure 8, Item #5) to secure the red hub to the white hub.

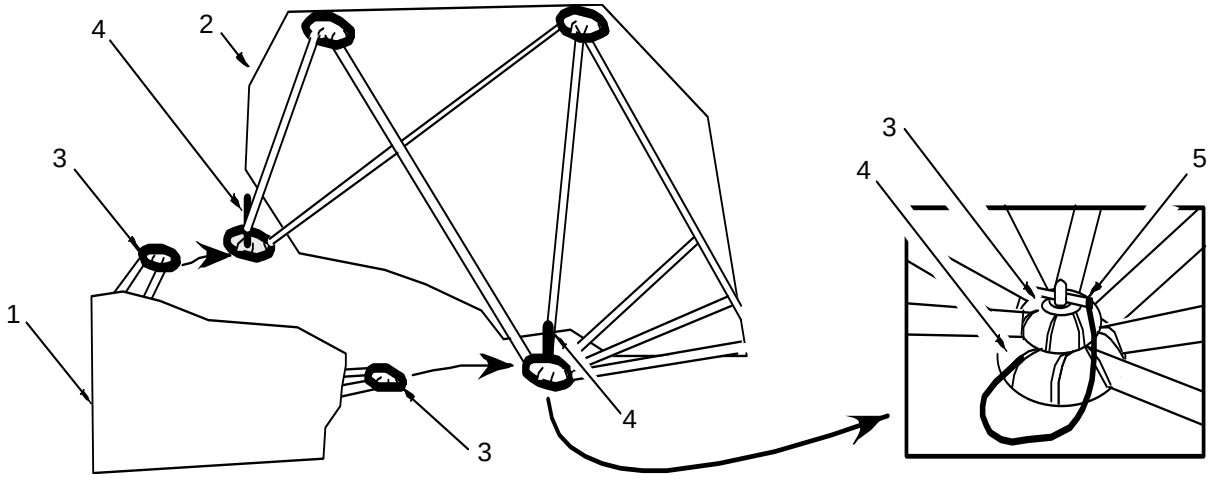


Figure 8. Secure the End Cap Frame to Shelter Frame.



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Locate the black tabs sewn into the centers of both the exterior covers of the center section (Figure 9, Item #7) and the end caps (Figure 9, Item #6).

Beginning at the black tab on the end cap, join the end cap Velcro seam to the black tab on the Velcro flap on the main body, working from the center outwards to the edge of the end cap frame.

**NOTE**

If the Velcro is fastened beyond the grommets, the shelter will not lift properly and internal struts could break.
If grommets are missing, attach the Velcro seam to where they can be reached once the shelter is standing upright (between second and third hub on each side).

Locate the red tabs sewn into the centers of both the interior covers of the center section and end caps.

Beginning at the red tab, connect the Velcro seam to the flap, working from the red tab outward to the grommet sewn into the seam on the center section Velcro flap.

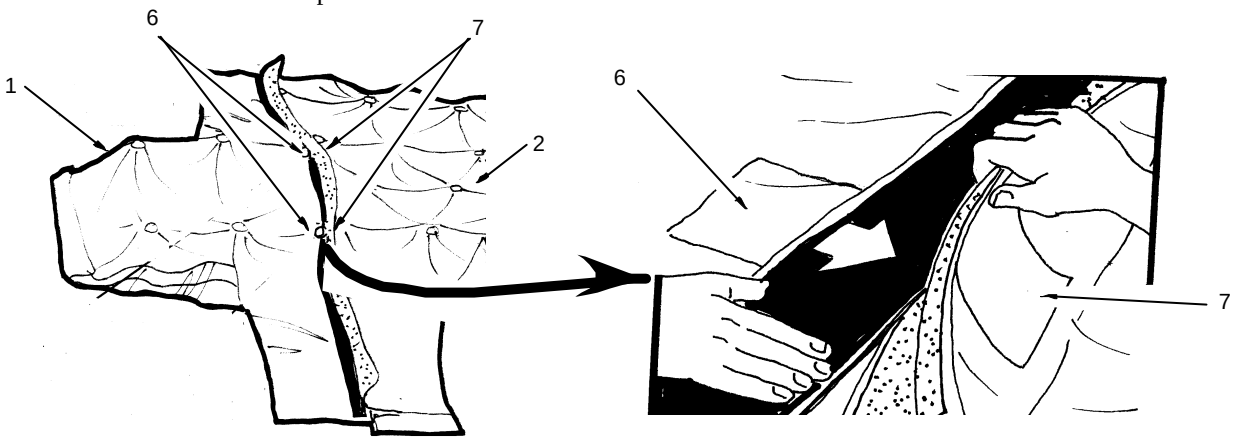


Figure 9. Secure End Cap Cover to Shelter Cover.

Continue attaching the Velcro seam on the exterior covers until you reach the grommet sewn into the Velcro seam.

Ensure that the Velcro seam is smooth in order to prevent leaks.

If not already opened, unzip the doors on the end caps to allow access for the push poles.

Repeat the above steps for the opposite end section.



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## Final Lift to Full Height

**CAUTION**

If setting up during high winds, position additional personnel on windward side along the length of the shelter. Have personnel hold at least two wind lines on the windward side while the shelter is being raised.
Never lift on a keeper that does not have a red flag. Damage to the frame could result.
Prior to the final lift all personnel should check that the doors are not caught on any hubs or between the struts. Cover that is snagged will prevent the shelter from easily lifting to full height.

Lift each end cap off the ground slightly and move it in towards the center section about one foot.

The four crew members must now return to their push poles (Figure 10, Item #2) and grasp the bottom of the poles in order to lift the shelter to full height.

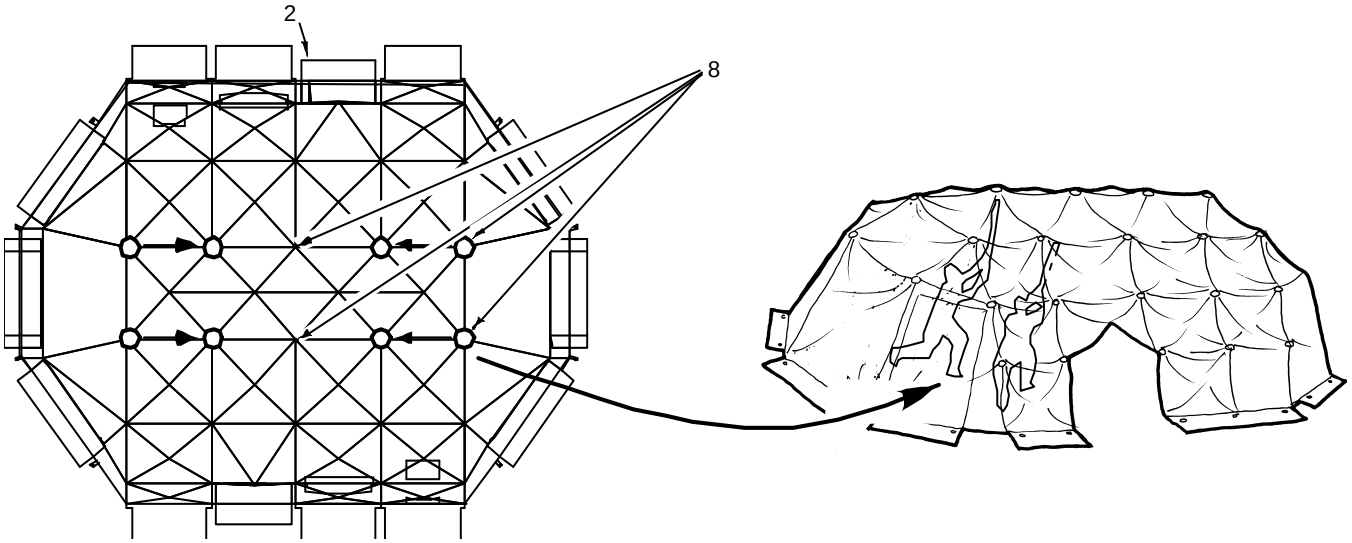


Figure 10. Personnel Positioned for Final Lift.

**CAUTION**

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

On command ("Ready to lift?…Lift"), all personnel should evenly and in a coordinated effort, Lift the shelter until the side walls come to a vertical position and the shelter is self supporting.

Inspect the hubs with the staking plates attached at the doors and the ends to make sure the hubs are in a vertical position. If necessary, place your foot against the hub and push it into position.

Finish securing both end caps to the center section by attaching the Velcro strips.

The Shelter should now be fully erect as shown in Figure 11.

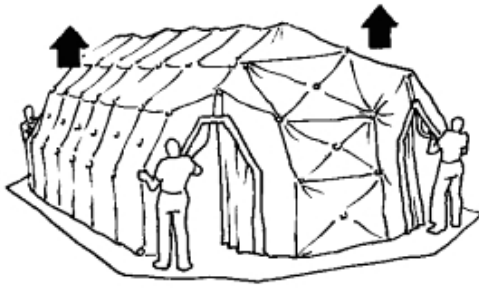

Figure 11. Shelter in Erected Position.

**NOTE**

If the shelter is in the desired location, move to "Install the Floor" procedure.



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## Repositioning the Shelter

If the shelter requires repositioning, there are two methods of moving the shelter so that it is positioned correctly:

**NOTE**

Four people and a Team Leader (spotter) are required for either of these procedures.

### Method 1 – Using Push Poles

Use the push poles to lift on the interior keepers identified by the red flags (Figure 6, Item #2) until the shelter is off the ground.

Move the shelter so that it is positioned correctly.

Stop immediately if the bottom of any wall drags on the ground.

The team leader should observe the movement of the shelter to guide it into the proper position.

Return push poles (Figure 1, Item #3) to the Transport Bag (Figure 1, Item #4). Ensure all cinch belts and the Repair Kit are also in the bag. Stow the Transport Bag so that it is available for packing and storing.

### Method 2 – Using Arms & Hands

For small adjustments, position personnel in the doorways so that they are aligned with the long wall.

Place one hand on the exterior lifting hub in Figure 12 with a wind line and the other hand on the corresponding interior lifting hub in Figure 12.

All four personnel should lift the wall in unison and move the shelter into the correct position.

**NOTE**

Make sure that the end or side walls do not angle inward beyond a vertical position**.** The spotter should alert personnel if the walls are no longer vertical during movement of the Shelter.

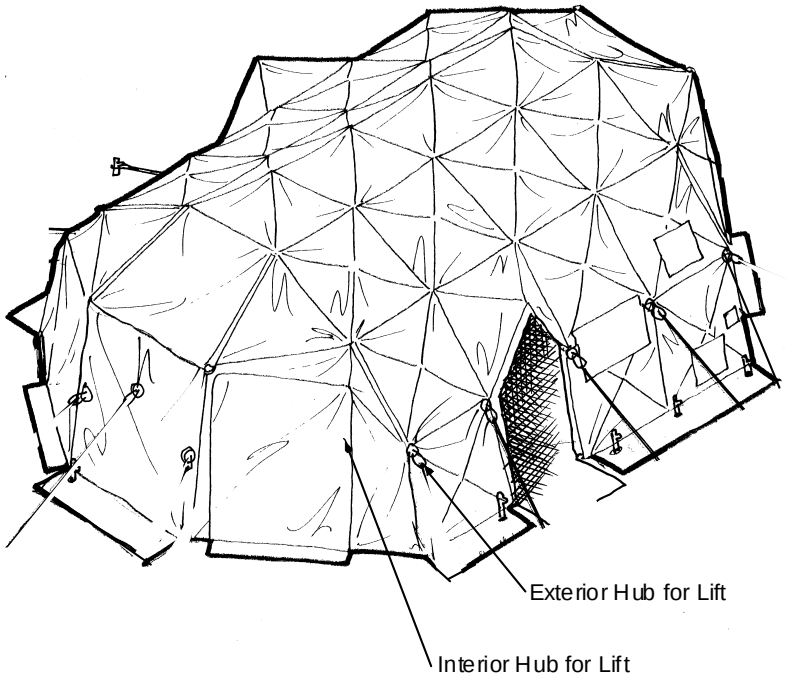


Figure 12. Shelter Lift Locations.



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## Secure the Shelter

**WARNING**

Start by placing four stakes in each of the stake plates around the perimeter to ensure that the shelter is adequately secured. Failure to do this could result in personal injury and or damage to the shelter.

All wind lines and ground stakes must be utilized, especially during inclement weather conditions. During adverse weather conditions, periodically check the wind lines and stakes to ensure that they are properly secured.

Fully unravel all wind lines and stake them down four to five feet from the shelter. Secure two wind lines to each stake (see Figure 13 for example).

Secure the shelter by installing the ground stakes (Figure 13 , Items 1 & 3) and deploying the wind lines (Figure 13, Item 2).

Use the cam-lock tensioner on the wind lines to tighten each wind line.

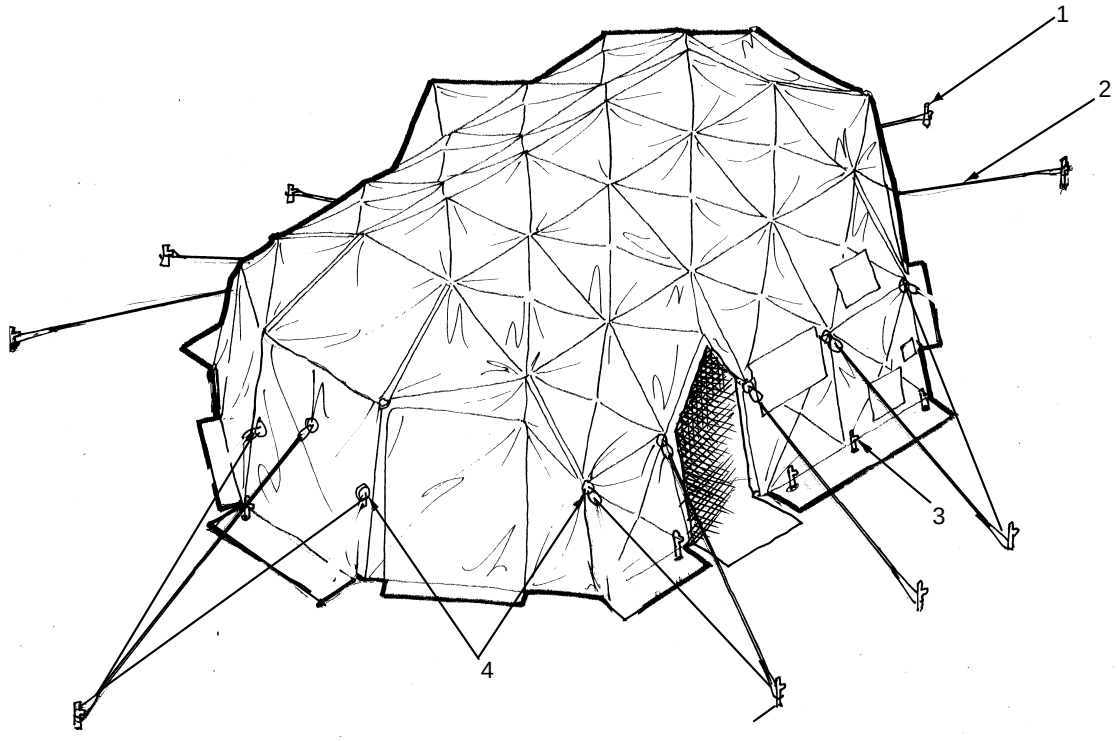


Figure 13. Shelter Installation Complete.



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## Install the Floor

Prepare to install the shelter floor by ensuring that all inner flaps are pulled in and are laying flat with the Velcro fastener strip facing up.

Identify which of the shelter side doors will be used as the primary door.

Place the floor inside the shelter.

Center the door flap on the floor to the shelter side door.

Check the fit of the floor with respect to the shelter.

Using two personnel, start on the same side at one door and work in the opposite direction as shown in Figure 14.

Complete joining the floor to one side of the shelter.

Pull the floor tight to remove any slack or bumps.

Repeat steps 9 through 11 to complete the floor installation.

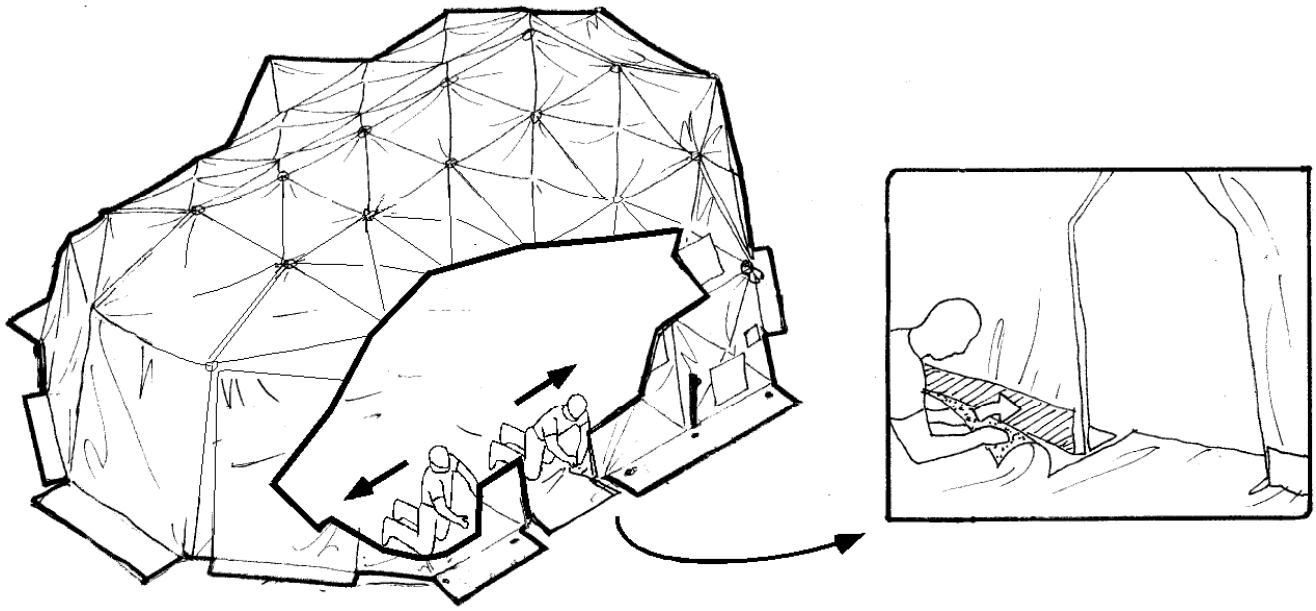

Figure 14. Attach Floor to Shelter.



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SYSTEM TEAR DOWN

If used, disconnect all cables to and from the PDU and remove from the immediate work area.

If used, take down the DRASHLites, pack in their transport bags, and remove from the immediate work area.

Remove any and all additional equipment or accessories from inside the interior.

Tie back all doorways in the open position (see Figure 15).

Remove the ECU ducts from the shelter duct ports and from the ECU ports.

Place the ECU ducts in their transport bags and remove from the immediate work area.

Place the ECU baffle in the closed position and replace the ECU port covers.

Remove the ground cable from the ground rods and from the trailer ground lug.

Place the ground rods in their clips on the trailer deck between the ECU and Genset enclosure.

Disconnect the ECU power cable and coil it on the trailer deck between the ECU and the Genset enclosure.

Detach the shelter floor by unfastening the Velcro strips (see Figure 14).

Fold the floor ends in.

Remove the floor from the shelter and fold into quarters lengthwise.

Remove the floor from the immediate wok area.

Close all interior and exterior windows.

Figure 15. Tie Back Doorways

Start at ground level and unfasten the interior Velcro connector strips on both sides of the end caps.

Repeat the previous procedure for the exterior Velcro connector strip on both sides of the end caps up to the frame.

**CAUTION**

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

Remove all wind lines and ground stakes (see Figure 13).



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## Lowering the Shelter

Lift the bottom of each end cap and pull backwards about one foot and place them on the ground to allow them to collapse properly.

Position four personnel in a square pattern around the shelter perimeter. The proper position for each person is indicated by four out ground flaps marked with "TO STRIKE, LIFT HERE".

Locate the lifting hub under the shelter exterior cover above the ground flap.

**CAUTION**

Grip the shelter at the keepers - never grip the struts – as shown in Figure 16. As the struts fold in, hands and fingers can become pinched between the struts.

At the command of the team leader, lift the shelter approximately six inches off the ground and step backwards in one unified movement. The center of the shelter will come down to ground level.

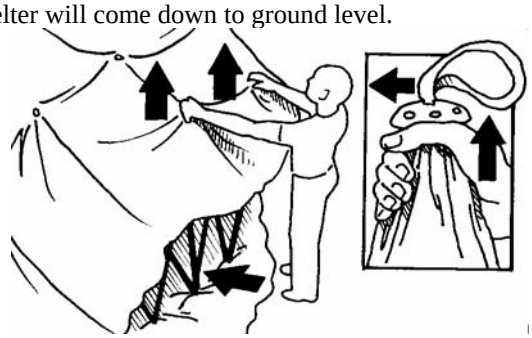

Figure 16. Grip Shelter by the Hubs.

Complete detaching the end cap Velcro seams on both sides.

**NOTE**

Ensure that the end caps doors are unzipped.

Remove the lock pin holding the red hub to the white hub and lift the end cap clear of the center of the shelter.

Replace the locking pin into the locking pin stud.

Starting with the exterior side, roll the end cap door towards the frame.

Secure the rolled door to the center cover with a Velcro strap.

Flip the end cap over so that the white side is up.

Compress the end cap by lifting upwards at the hubs and walking towards each other.

Place one cinch belt around the top of the end cap and tighten.

Place the second cinch belt around the bottom of the end cap and tighten.

Pull the transport bag over the upright end cap.

Flip the end cap bag over and close the transport bag with the drawstring.

Repeat the same procedure for the second end cap.

Place both bagged end caps near the trailer but of the immediate work area.



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## Packing the Main Shelter

Position all hands under the exterior cover on the upper portion of the strut.

Have all personnel lift upward in one motion and walk towards the center of the main shelter section.

Move inwards until the main section is approximately 4/5 of the way compressed.

Inspect the compressed shelter section to make sure no wind lines are caught in any struts.

Compress the shelter the rest of the way.

Retrieve the cinch belts from the transport bag.

Place one cinch belt around the top of the compressed shelter and tighten.

Invert the compressed shelter so that the white side is facing up.

Push the cover in between the struts so that all interior looped keepers are exposed.

Push against the shelter from all directions to compress it further.

Cinch the second belt around the compressed shelter as shown in Figure 17.

Invert shelter so exterior side (green or tan) is facing up.

Check and retighten the cinch belts around the compressed shelter as necessary.

Figure 17 Secure First Cinch Strap.

Place the shelter floor on a suitable flat surface.

Place the buckle end of the cinch belt under the floor, about five inches in.

Lay the shelter on one side and position it at one end of the folded floor.

Retighten the cinch belts as necessary.

Roll the shelter up into the floor as shown in Figure 18.

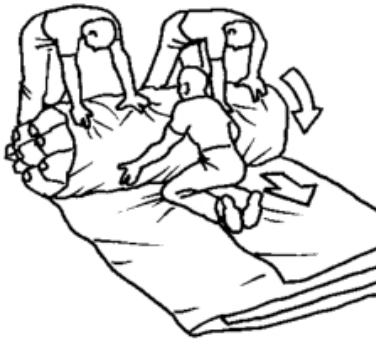

Figure 18. Roll Up Shelter with Floor.

Compress the shelter as it is rolled up.

Secure the cinch belts around the floor and shelter.

Stand the white side of the shelter upright.

Remove the push poles and repair kit from the transport bag.

Place the Transport Bag over the shelter.

Push the shelter over with the instruction panel (exterior section of transport bag) down.

Pull the rope to close the end of the transport bag and secure bag with a knot.

Fasten the two belts on the transport bag.

The shelter is now secure and ready for loading onto the trailer.



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# 2. FIELD MAINTENANCE OF THE SHELTER

Before initiating repair to any Shelter, identify the nature of the problem. Most repairs can be made with the standard Field Repair Kit, included with the Shelter. Each kit contains the following components:

| | |
|---|---|
| Duct Tape, 1 Roll | Strut Repair Sleeves, 5 |
| Spanner Wrench, 1 | Exterior Looped Keeper, 1 |
| Tube Cutter, 1 | Interior Looped Keeper, 2 |
| 1 oz Adhesive, 1 Tube | Exterior Keeper, 1 |
| Wind Line, 1 | Exterior Swatch Repair Fabric, 1 |
| 4” Scissors, 1 | Interior Swatch Repair Fabric, 1 |

## Repair of Shelter Struts

Fractured struts are repaired as follows:

1. After identifying the fractured strut or struts, assess whether the exterior cover needs to be removed to reach the fracture. If it is necessary to remove the exterior cover, use the spanner wrench and remove only those keepers necessary to peel back the cover to reach the fractured strut or struts.
2. Locate the tube cutter.
3. Place the strut between the cutter wheel and the rollers and bring the cutter wheel in contact with the strut by turning the feed wheel.
4. Turn the feed wheel an additional one half turn for the first cut.
5. Revolve the cutter wheel around the strut slowly until the cut is complete.
6. Trim off one half inch from each damaged side.
7. Retrieve a repair sleeve.
8. Slide a repair sleeve over the broken strut. Keep the break centered in the repair sleeve.
9. Tape **ONLY** one end of the repair sleeve with the duct tape. This will allow the other broken end to telescope within the sleeve and maintain its critical length (see Figure 2-1).
10. Replace the liner.
11. Insert the keeper and turn by hand until snug.
12. Use the spanner wrench to tighten one-quarter turn past hand tight. **Do not tighten excessively.**
13. All sewn seams should be aligned and fabric reinforced circles around keepers should not be twisted.

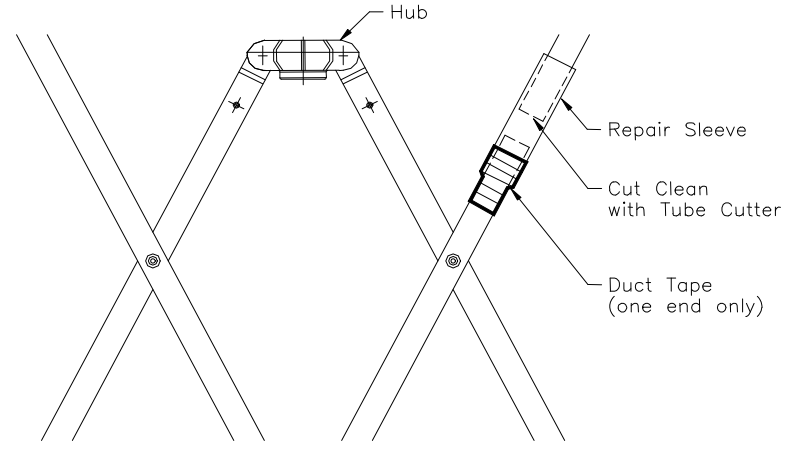


**Figure 2-1 - Repairing Shelter Struts**



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## Replacement of Shelter Strut Pairs

**NOTE**

**REPLACING ONE OR MORE STRUT PAIRS REQUIRES THE ACQUISITION OF A SPARE PARTS KIT CONTAINING THE PARTS LISTED ON THE RIGHT.**

**CONTENTS OF SPARE PARTS KIT**

| | |
|---|---|
| **5 ea Interior Looped Keepers** | **1 ea Ratchet Screwdriver** |
| **5 ea Exterior Looped Keepers** | **2 ea A Side Pair/Blue** |
| **5 ea Exterior Keepers** | **4 ea B Side Pair/Red** |
| **2 ea Interior Hub Set** | **2 ea A Sub Pair/Green** |
| **2 ea Exterior Hub Set** | **4 ea B Sub Pair/Yellow** |
| **50 ea Screws** | **1 ea Spanner Wrench** |

If a strut pair(s) is damaged, strike the Shelter and effect repairs as follows: (refer to Figure 2-2, page 2-3.

Identify the damaged strut pair.

Use a spanner wrench to remove keepers from the exterior cover. Work only in the area where the damaged struts are located (see Figure 2-2, **Frame 1**).

Use the ratchet screwdriver to loosen all screws from both exterior hubs where the damaged strut pair is connected. **Do not remove damaged strut pair from hubs at this time** (see Figure 2-2, **Frame 2**).

Determine the color code on the damaged strut pair. The color code plug may be located on any one of the four ends of the pair. Select the same color-coded strut pair from the spare parts kit.

Orient the replacement strut pair so that it is identical to the damaged pair.

Place the replacement pair next to the damaged strut pair making certain that both color coded plugs and scissor pins match exactly (see Figure 2-2, **Frame 3**).

When the replacement pair is properly positioned, remove the ends of the damaged strut pair from exterior hubs and insert replacement strut pair (see Figure 2-2, **Frame 4**).

After replacement pair is in placed, tighten the screws on the exterior hubs so that it is again secured (see Figure 2-2, **Frame 5**).

Replace the liner.

Insert the keeper and tighten by hand until snug. Use the spanner wrench to tighten one-quarter turn past hand tight. **Do not over-tighten.** All seams should be aligned and the fabric reinforced circles around the keepers should not be twisted (see Figure 2-2, **Frame 6**).

Compress and invert the Shelter.

Repeat steps 1 and 2 on the interior liner and interior hubs.

Remove the damaged strut pair from the hub and lift out from the frame.

Replace the strut pair and tighten the screws on the hub so that it is again secure.

Repeat step 9.



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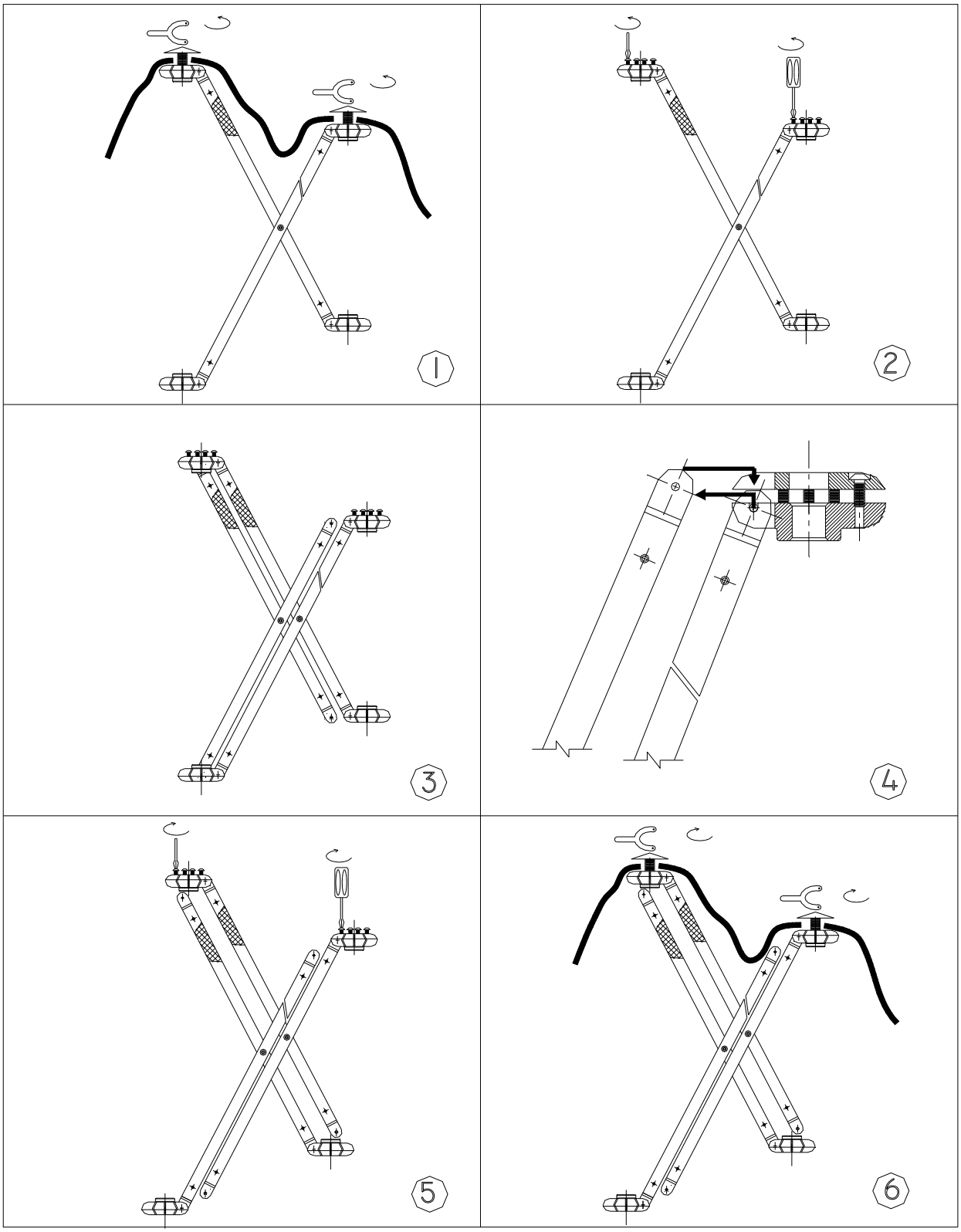


**Figure 2-2 - Strut Pair Replacement Frames**



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## Repair of Shelter Liner

This repair procedure can be accomplished in any weather condition.

1. Cut enough fabric to cover the tear or hole, with approximately ¼" extra on all sides.

   Apply a thin layer of adhesive to the reverse side of patch.

   Apply a tin layer of adhesive to the area around the tear or hole in the Shelter to which patch will be applied.

   Press the patch firmly over the tear.

   Smooth out any air bubbles from under the patch.

   The patch will be secure in three hours.

   Allow the patch to cure for 24 hours.

**NOTE**

**IF TIME DOES NOT ALLOW FOR THE ABOVE PROCEDURE, THE REPAIR CAN BE DONE ON A TEMPORARY BASIS USING DUCT TAPE.**

## Shelter Maintenance During Inclement Weather

To prevent damage to the 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.

   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.

**NOTE**

**THE SHELTER SHOULD BE STRICKEN IF IT IS TO BE LEFT UNATTENDED FOR AN EXTENDED PERIOD WHEN THERE IS A POSSIBILITY OF INCLEMENT WEATHER.**

During adverse weather conditions, routinely check and verify the security of the;

a) Wind lines
b) Stakes
c) Keepers

## Cleaning the Shelter & Accessories

Proper maintenance of the Shelter requires that it be cleaned after every field exercise. To clean the Shelter;

1. Brush off all excess dirt/debris with a soft bristle brush.

   Using a cloth, sponge or mop, the shelter can be manually cleaned using a mixture of warm water and mild household detergent.

   Remove grease, oil, or other heavy stains by scrubbing with Simple Green® or equivalent.

   Rinse with clean water.

   Allow the Shelter to dry completely before repackaging.

**NOTE**

**A POWER WASHER MAY BE USED AT LOW PRESSURE WITH WARM WATER. USE GOOD JUDGMENT AND CAUTION REGARDING WATER PRESSURE AND TEMPERATURE.**

**WARNING**

**DO NOT USE SOLVENTS TO CLEAN THE SHELTER.**

**THEY WILL DISSOLVE THE PROTECTIVE COATING ON THE FABRIC.**



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# CHAPTER 7

# PARTS INFORMATION
# FOR
# MX SERIES SHELTER

**PARTS INFORMATION**
**MX SERIES SHELTER**
**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 MX 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 alphanumerical sequence, with the parts in each group listed in ascending alphanumeric sequence, with the parts in each groups 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 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:

**Table 1. SMR Code Explanation.**

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

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

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

| Source Code | Application/Explanation |
|---|---|
| | **NOTE**<br>Items coded PC are subject to deterioration. |
| PA<br>PB<br>PC<br>PD<br>PE<br>PF<br>PG<br>PH<br>PR<br>PZ | 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 3rd position of the SMR code. |
| KD<br>KF<br>KB | Items with these codes are not to be requested/requisitioned individually. They are part of a kit which is authorized to the maintenance level indicated in the 3rd position of the SMR code. The complete kit must be requisitioned and applied. |
| MO-Made at unit/AMC level<br>MF–Made at DS/ASB level<br>MH-Made at sustainment level<br>ML-Made at SRA/TASMG<br>MD-Made at depot<br>ML–Made at SRA<br>MD–Made at depot | Items with these codes are not to be requisitioned/requested individually. They must be made from bulk material which is identified by the part number in the DESCRIPTION AND USABLE ON CODE (UOC) column and listed in the bulk material group work package of the RPSTL.. If the item is authorized to you by the 3rd 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. |
| AO–Assembled by unit/AVUM level<br>AF–Assembled by DS/AVIM level<br>AH–Assembled by GS level<br>AL–Assembled by SRA/TASMG<br>AD–Assembled by depot | Items with these codes are not to be requested/requisitioned individually. The parts that make up the assembled item must be requisitioned or fabricated and assembled at the level of maintenance indicated by the source code. If the 3rd 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. |
| 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. |

**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 |
|---|---|
| O* - | Unit level/AVIM maintenance can remove, replace, and use the item. |
| F - | Direct Support/AVUM maintenance can remove, replace, and use the item. |
| H - | General Support maintenance can remove, replace, and use the item. |
| L - | Specialized repair activity can remove, replace, and use the item. |
| K - | Contractor facility can remove, replace, and use the item. |
| Z - | Item 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 |
|---|---|
| O - | Unit/AVUM is the lowest level that can do complete repair of the item. |
| F - | Direct Support/AVIM is the lowest level that can do complete repair of the item. |
| H - | General Support is the lowest level that can do complete repair of the item. |
| L - | Specialized repair activity /TASMG 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. |

| Maintenance Code | Application/Explanation |
|---|---|
| Z - | Nonreparable. 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 - | Nonreparable item. When unserviceable, condemn and dispose of the item at the level of maintenance shown in the third position of the SMR code. |
| O - | Reparable item. When uneconomically reparable, condemn and dispose of the item at the unit level. |
| F - | Reparable item. When uneconomically reparable, condemn and dispose of the item at the direct support level. |
| H - | Reparable item. When uneconomically reparable, condemn and dispose of the item at the general support level. |
| D - | Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal of item are not authorized below depot level. |
| L - | Reparable item. Condemnation and disposal not authorized below Specialized Repair Activity (SRA). |
| A - | Item requires special handling or condemnation procedures because of specific reasons (such as precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions. |
| K - | Reparable item. Condemnation and disposal to be performed at contractor facility. |

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

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

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

**NOTE**

When you use an NSN to requisition an item. the item you receive may have a different part number 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 the quantity indicates that the quantity is variable and quantity may change from application to application.

**EXPLANATION OF CROSS-REFERENCE INDEXES WORK PACKAGES FORMAT AND COLUMNS**

1. National Stock Number (NSN) Index Work Package. NSNs in this index are listed in the 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. The UOC appears in the lower left corner of the Description Column heading. Usable on codes are shown as "UOC: ..." in the Description Column (justified left) on the first line under the applicable item/nomenclature. Uncoded items are applicable to all models.

Associated Publications. The publication listed below pertains to the MX Shelter.

| Publication | Short Title |
|---|---|
| TM95335 | MX Shelter Operation & Maintenance Manual |

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.

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 work package 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

# PARTS INFORMATION
# M SERIES SHELTER
# REPAIR PARTS LIST
# TENT, MXA2000G/MXA2000T

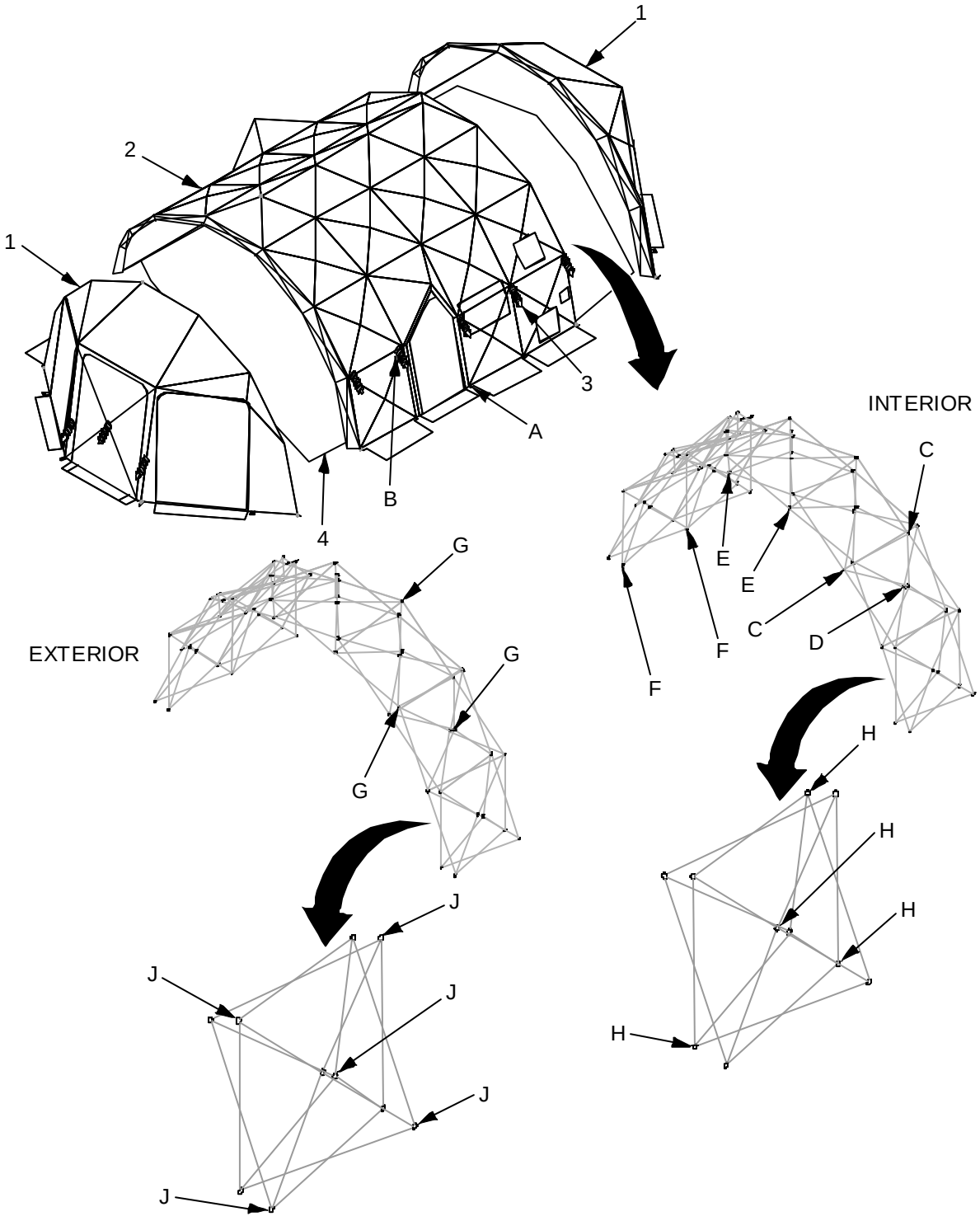


Figure 18. Tent, MXA2000G/MXA2000T (Sheet 1 of 3)

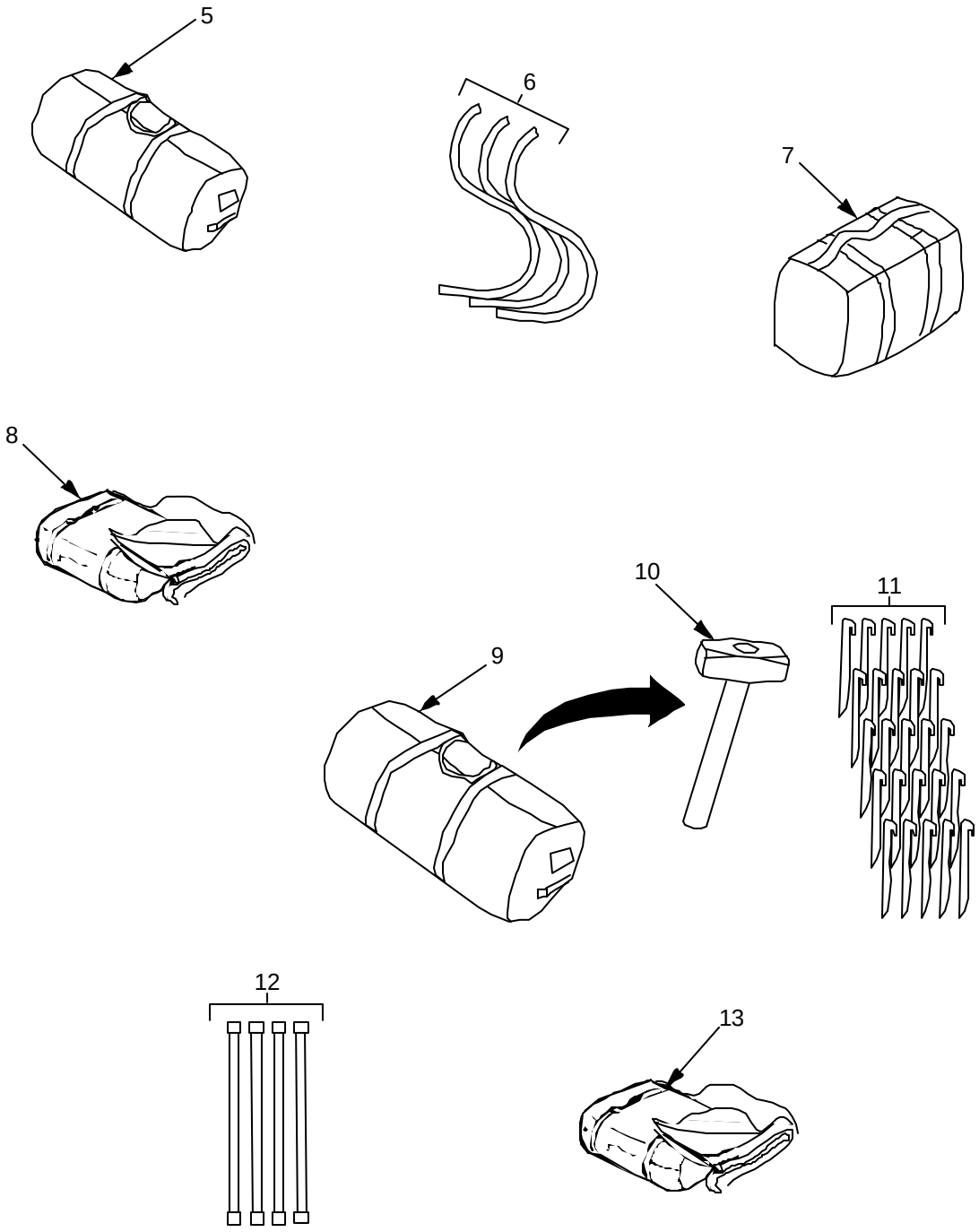


Figure 18. Tent, MXA2000G/MXA2000T (Sheet 2 of 3)

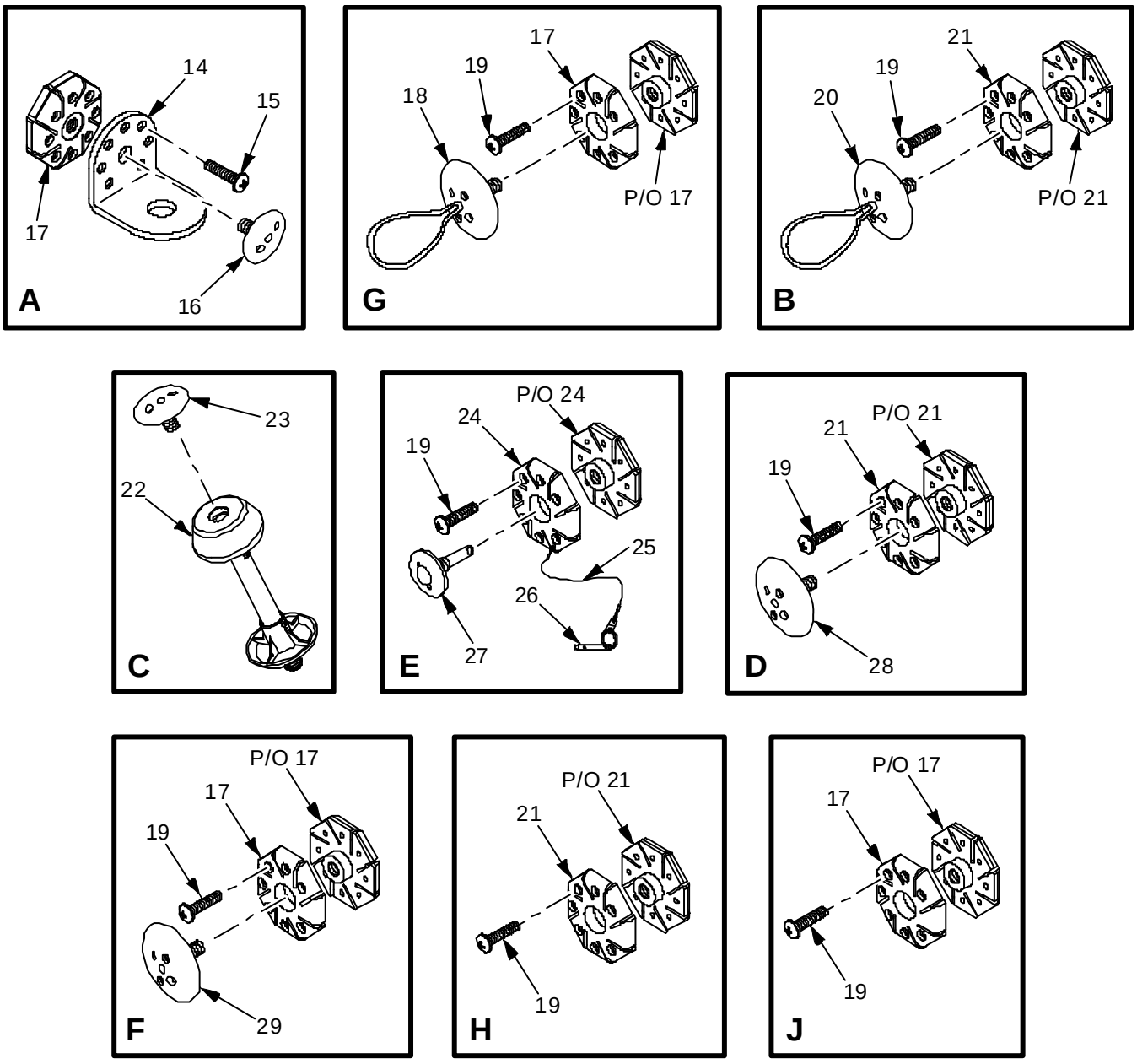


Figure 18. Tent, MXA2000G/MXA2000T (Sheet 3 of 3)

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY. |
|---|---|---|---|---|---|---|
| | | | | | GROUP 0104<br><br>FIGURE 18 TENT MXA2000G/MXA2000T | |
| 1 | XBOOO | | 0WFM3 | MXA2020G | TENT,END CAP (SEE FIGURE 19 FOR BREAKDOWN)<br>UOC: 89W | 2 |
| 1 | XBOOO | | 0WFM3 | MXA2020T | TENT,END CAP (SEE FIGURE 19 FOR BREAKDOWN)<br>UOC: 89X | 2 |
| 2 | XBOOO | | 0WFM3 | MXA2035G | TENT,ROOF AND SIDES (SEE FIGURE 20 FOR BREAKDOWN)<br>UOC: 89W | 1 |
| 2 | XBOOO | | 0WFM3 | MXA2035T | TENT,ROOF AND SIDES (SEE FIGURE 20 FOR BREAKDOWN)<br>UOC: 89X | 1 |
| 3 | PAOZZ | | 0WFM3 | A602050 | LINE,TENT | 16 |
| 4 | PAOZZ | | 0WFM3 | MXA2025F | TENT FLOOR | 1 |
| 5 | PAOZZ | | 0WFM3 | MA100735 | TENT COMPONENT KIT, GREEN<br>(SEE EXPENDABLE ITEMS LIST FOR CONTENTS)<br>UOC: 89W | 1 |
| 5 | PAOZZ | | 0WFM3 | MA100740 | TENT COMPONENT KIT,TAN<br>(SEE EXPENDABLE ITEMS LIST FOR CONTENTS)<br>UOC: 89X | 1 |
| 6 | PAOZZ | | 0WFM3 | A600250 | CINCH BELT,TENT | 3 |
| 7 | XBOZZ | 8340-01-553-0054 | 0WFM3 | MXA2040B | CASE,TENT | 1 |
| 8 | PAOZZ | | 0WFM3 | MXA1054G | CONNECTOR,END CAP<br>UOC: 89W | 4 |
| 8 | PAOZZ | | 0WFM3 | MXA1054T | CONNECTOR,END CAP<br>UOC: 89X | 4 |
| 9 | PAOZZ | | 0WFM3 | MA100165 | TENT STAKE BAG | 1 |
| 10 | PAOZZ | 5120-01-399-9252 | 1CV05 | 1434G | HAMMER,HAND | 1 |
| 11 | PAOZZ | | 0WFM3 | A601250 | STAKE PIN,STEEL | 25 |
| 12 | PAOZZ | | 0WFM3 | 50011 | PUSH POLE,TENT | 4 |
| 13 | PAOZZ | 8340-01-540-7490 | 0WFM3 | MXA1055G | PASSAGEWAY,TENT<br>UOC: 89W | 1 |
| 13 | PAOZZ | 8340-01-540-7495 | 0WFM3 | MXA1055T | PASSAGEWAY,TENT<br>UOC: 89X | 1 |

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY. |
|---|---|---|---|---|---|---|
| 14 | PAOZZ | 5340-01-553-1413 | 0WFM3 | MA100720 | BRACKET,MOUNTING | 10 |
| 15 | PAOZZ | 5305-01-553-0673 | 1KDE3 | 25K100MX81 | SCREW,MACHINE | 70 |
| 16 | PAOZZ | | 0WFM3 | A601651 | KEEPER (J),PLAIN,GREEN<br>UOC: 89W | 10 |
| 16 | PAOZZ | | 0WFM3 | A601661 | KEEPER (J),PLAIN,TAN<br>UOC: 89X | 10 |
| 17 | PAOZZ | | 0WFM3 | SH410-0201G | HUB AND KEEPER,MAIN, GREEN<br>UOC: 89W | 70 |
| 17 | PAOZZ | | 0WFM3 | SH410-0201T | HUB AND KEEPER,MAIN,TAN<br>UOC: 89X | 70 |
| 18 | PAOZZ | | 0WFM3 | JA201005 | KEEPER (J), LOOPED,GREEN<br>UOC: 89W | 10 |
| 18 | PAOZZ | | 0WFM3 | JA201000 | KEEPER (J),LOOPED,TAN<br>UOC: 89X | 10 |
| 19 | PAOZZ | | IKDE3 | 25K75MX71 | SCREW,MACHINE | 1,104 |
| 20 | PAOZZ | | 0WFM3 | JA200980 | KEEPER (J),LOOPED,WHITE | 26 |
| 21 | PAOZZ | | 0WFM3 | SH410-0201W | HUB AND KEEPER,MAIN, WHITE | 64 |
| 22 | PAOZZ | | 0WFM3 | F329905 | HUB,SHORT,END CAP | 24 |
| 23 | PAOZZ | | 0WFM3 | A601681 | KEEPER,PLAIN,WHITE | 24 |
| 24 | PAOZZ | | 0WFM3 | SH410-0202 | HUB,MAIN W/PIN,WHITE | 4 |
| 25 | PAOZZ | 4020-01-553-0415 | 0WFM3 | T270923 | CORD ASSEMBLY,FIBROUS | 4 |
| 26 | PAOZZ | 5315-01-552-8301 | 0WFM3 | A600115 | PIN,QUICK RELEASE | 4 |
| 27 | PAOZZ | | 0WFM3 | A600116 | KEEPER,MX TO END CAP | 4 |
| 28 | PAOZZ | | 0WFM3 | JA200921 | KEEPER (J),PLAIN,WHITE | 10 |
| 29 | PAOZZ | | 0WFM3 | JA200881 | KEEPER (J),PLAIN,GREEN<br>UOC: 89W | 46 |
| 29 | PAOZZ | | 0WFM3 | JA200901 | KEEPER (J),PLAIN,TAN<br>UOC: 89X | 46 |
| | | | | | END OF FIGURE | |

# PARTS INFORMATION
# M SERIES SHELTER
# REPAIR PARTS LIST
# TENT, END CAP, MXA2020G/MXA2020T

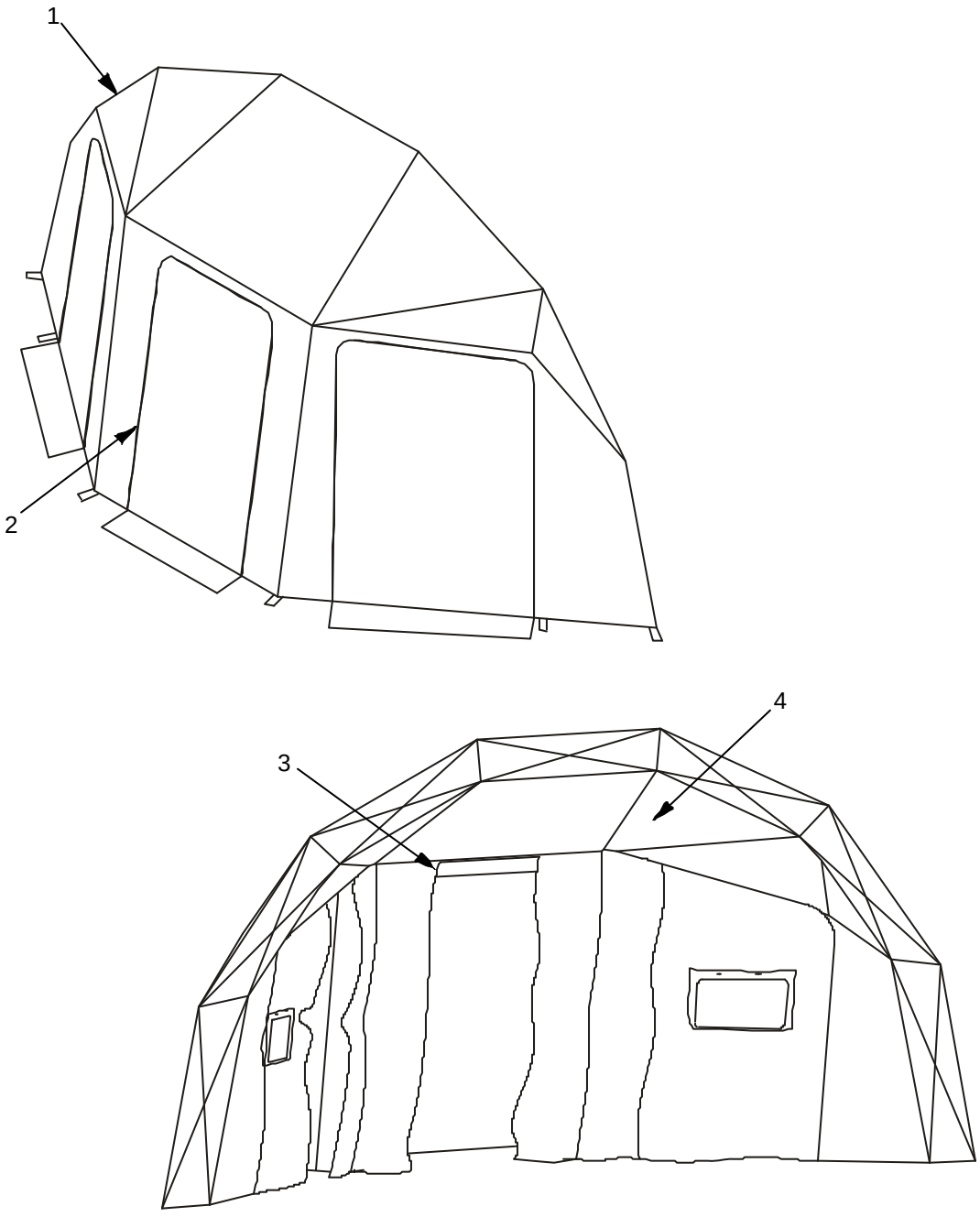


Figure 19. Tent, End Cap, MXA2020G/MXA2020T (Sheet 1 of 3)

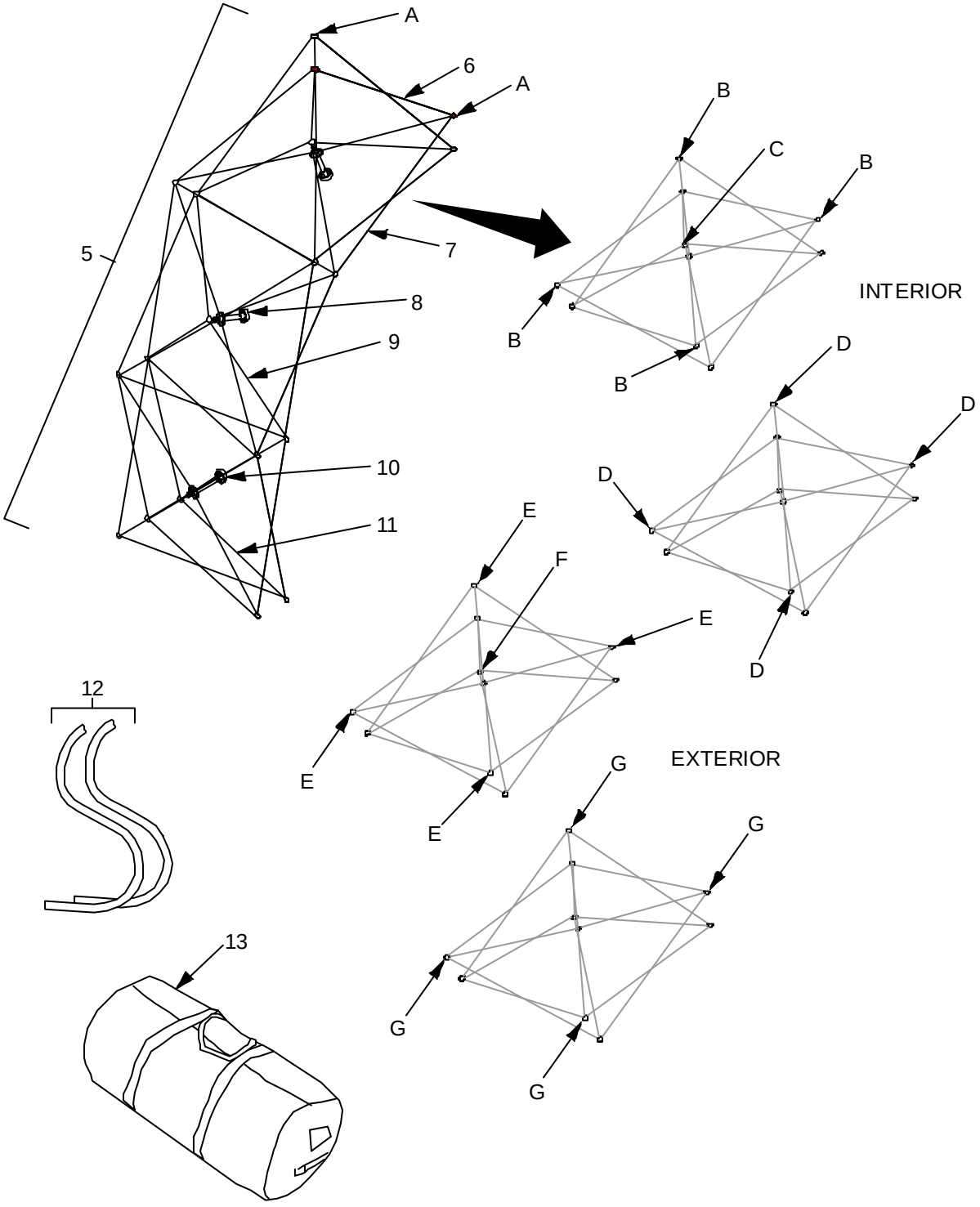


Figure 19. Tent, End Cap, MXA2020G/MXA2020T (Sheet 2 of 3)

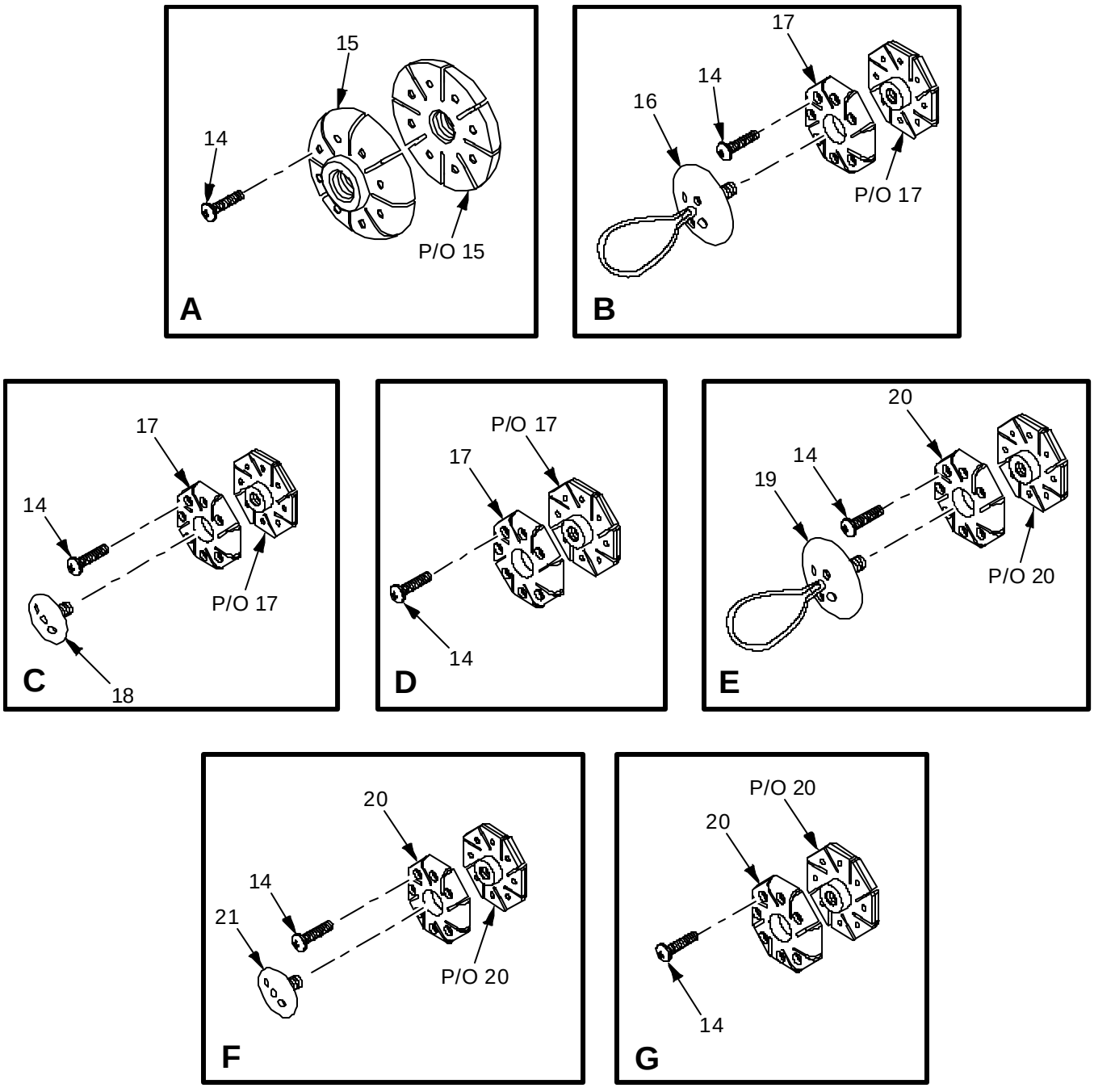


Figure 19. Tent, End Cap, MXA2020G/MXA2020T (Sheet 3 of 3)

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY. |
|---|---|---|---|---|---|---|
| | | | | | GROUP 010401 | |
| | | | | | FIGURE 19 TENT, END CAP MXA2020G/MXA2020T | |
| 1 | PAOZZ | | 0WFM3 | MXS1015G | COVER,EXTERIOR,END CAP, GREEN<br>UOC: 89W | 1 |
| 1 | PAOZZ | | 0WFM3 | MXS1015T | COVER,EXTERIOR,END CAP, TAN<br>UOC: 89X | 1 |
| 2 | PAOZZ | | 0WFM3 | MXS1020G | DOOR,EXTERIOR,END CAP<br>UOC: 89W | 2 |
| 2 | PAOZZ | | 0WFM3 | MXS1020T | DOOR,EXTERIOR,END CAP<br>UOC: 89X | 2 |
| 3 | PAOZZ | | 0WFM3 | MXS1020W | DOOR,INTERIOR END CAP | 2 |
| 4 | PAOZZ | | 0WMF3 | MXS1015W | COVER,INTERIOR, END CAP | 1 |
| 5 | XBOOO | | 0WMF3 | MXA2016 | TENT FRAME,END CAP | 2 |
| 6 | PAOZZ | | 0WFM3 | F329601 | STRUT,A-SIDE BLUE | 5 |
| 7 | PAOZZ | | 0WFM3 | F329631 | STRUT,B-SIDE RED | 4 |
| 8 | PAOZZ | | 0WFM3 | F329905 | HUB,SHORT,END CAP | 2 |
| 9 | PAOZZ | | 0WFM3 | F329781 | STRUT,B-SIDE YELLOW | 8 |
| 10 | PAOZZ | | 0WFM3 | F329908 | HUB,LONG,END CAP | 1 |
| 11 | PAOZZ | | 0WFM3 | F329751 | STRUT,A-SIDE GREEN | 4 |
| 12 | PAOZZ | | 0WFM3 | A600250 | CINCH BELT,TENT | 2 |
| 13 | PAOZZ | | 0WFM3 | MXA2045B | TRANSPORT BAG,END CAP | 1 |
| 14 | PAOZZ | 5305-01-552-8305 | 1KDE3 | 8D50TXP1 | SCREW,MACHINE | 192 |
| 15 | PAOZZ | | 0WFM3 | SH410-0401R | HUB,INTERIOR, RED | 2 |
| 16 | PAOZZ | | 0WFM3 | A601680 | KEEPER (J),LOOPED, WHITE | 6 |
| 17 | PAOZZ | | 0WFM3 | SH410-0001W | HUB,INTERIOR,WHITE | 9 |
| 18 | PAOZZ | | 0WFM3 | A601681 | KEEPER,PLAIN,WHITE | 3 |
| 19 | PAOZZ | | 0WFM3 | A601650 | KEEPER (J),LOOPED,GREEN<br>UOC: 89W | 7 |
| 19 | PAOZZ | | 0WFM3 | A601660 | KEEPER (J),LOOPED,TAN<br>UOC: 89X | 7 |
| 20 | PAOZZ | | 0WFM3 | SH410-0001G | HUB,EXTERIOR,GREEN<br>UOC: 89W | 11 |
| 20 | PAOZZ | | 0WFM3 | SH410-0001T | HUB,EXTERIOR,TAN<br>UOC: 89X | 11 |

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY. |
|---|---|---|---|---|---|---|
| 21 | PAOZZ | | 0WFM3 | A601651 | KEEPER (J),PLAIN,GREEN .....<br>UOC: 89W | 2 |
| 21 | PAOZZ | | 0WFM3 | A601661 | KEEPER (J),PLAIN,TAN .....<br>UOC: 89X | 2 |
| | | | | | END OF FIGURE | |

# PARTS INFORMATION
# M SERIES SHELTER
# REPAIR PARTS LIST
# TENT, ROOF AND SIDES, MXA2035G/MXA2035T

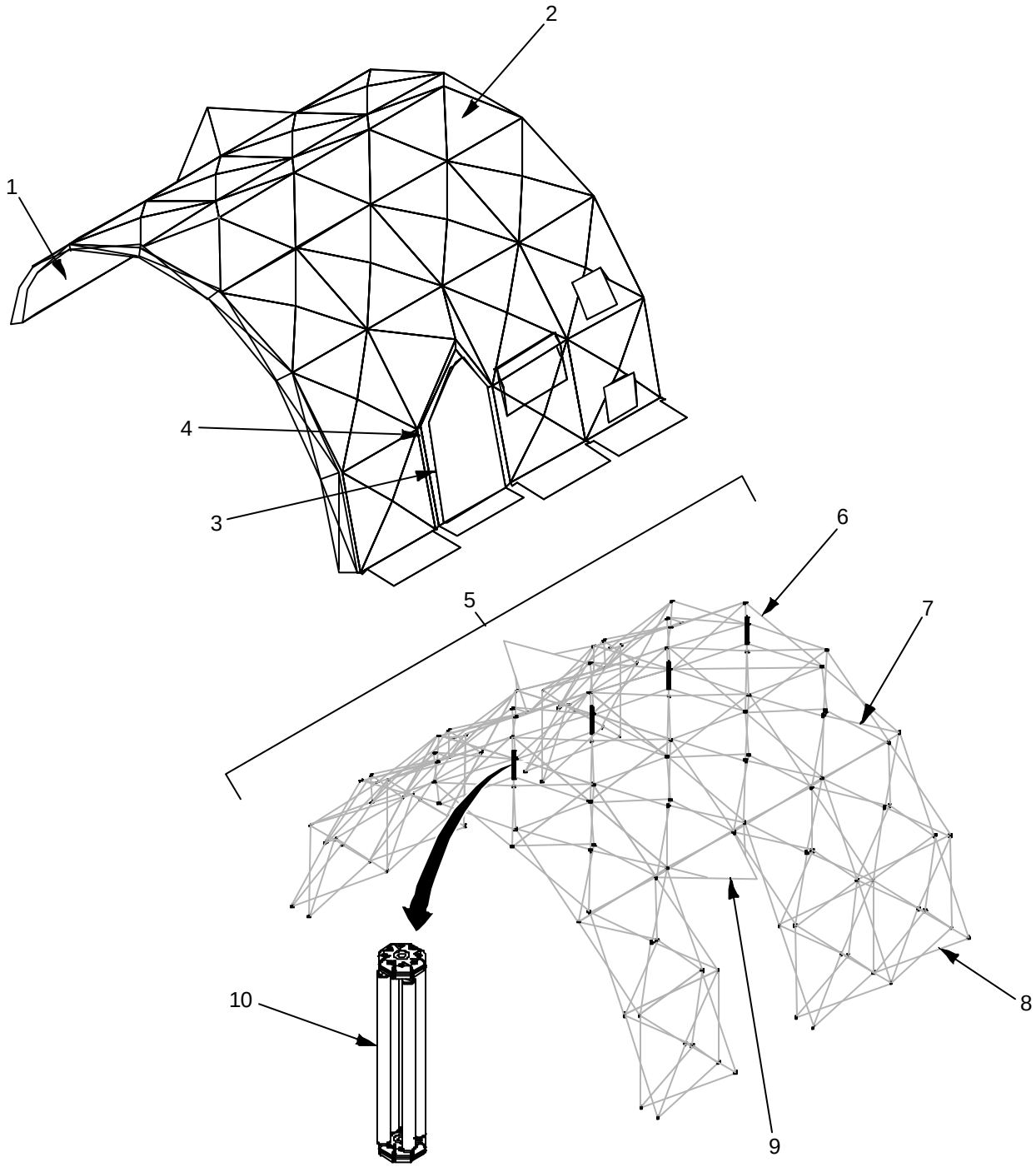


Figure 20. Tent, Roof and Sides, MXA2035G/MXA2035T

| (1) ITEM NO. | (2) SMR CODE | (3) NSN | (4) CAGEC | (5) PART NUMBER | (6) DESCRIPTION AND USABLE ON CODE (UOC) | (7) QTY. |
|---|---|---|---|---|---|---|
| | | | | | GROUP 010402 | |
| | | | | | FIGURE 20 TENT, ROOF AND SIDES MXA2035G/MXA2035T | |
| 1 | XBOZZ | | 0WFM3 | MXA2010W | COVER,INTERIOR | 1 |
| 2 | XBOZZ | | 0WFM3 | MXA2005G | COVER,EXTERIOR,GREEN<br>UOC: 89W | 1 |
| 2 | XBOZZ | | 0WFM3 | MXA2005T | COVER,EXTERIOR,TAN<br>UOC: 89X | 1 |
| 3 | PAOZZ | | 0WFM3 | MA100130 | SIDE DOOR,EXTERIOR, GREEN<br>UOC: 89W | 2 |
| 3 | PAOZZ | | 0WFM3 | MA100530 | SIDE DOOR,EXTERIOR,TAN<br>UOC: 89X | 2 |
| 4 | PAOZZ | | 0WFM3 | MA100310 | SIDE DOOR,INTERIOR,WHITE | 2 |
| 5 | XBOZZ | | 0WMF3 | MXA2015 | TENT FRAME,MAIN | 1 |
| 6 | PAOZZ | | 0WFM3 | MF300140 | STRUT,B-SIDE,RED | 37 |
| 7 | PAOZZ | | 0WFM3 | MF300150 | STRUT,B-SIDE,YELLOW | 96 |
| 8 | PAOZZ | | 0WFM3 | MF300130 | STRUT,A-SIDE,BLUE | 28 |
| 9 | PAOZZ | | 0WFM3 | MF300200 | STRUT,CANOPY | 4 |
| 10 | PAOZZ | | 0WFM3 | MF300160 | STRUT,RISER | 16 |
| | | | | | END OF FIGURE | |

## 3. WARRANTY

# DHS SYSTEMS LLC LIMITED WARRANTY

DHS Systems LLC warrants that all DRASH® (Deployable Rapid Assembly SHelter) products purchased hereunder will be free from defects in materials and workmanship. This warranty shall extend to the ultimate user as well as original equipment purchasers and shall be valid for the elapsed time beginning with the date of shipment according to the following schedule:

## WARRANTY SCHEDULE

### DRASH Shelters and Shelter Accessories: 60 Months

### DRASH UST Trailers and Trailer Accessories: 12 Months

### DRASH Heaters and Heater Accessories: 12 Months

### DRASH Power Distribution Unit (PDU): 12 Months

The liability of DHS Systems LLC under this warranty is limited to the repair or replacement of any defective part or component due to a material defect or substandard workmanship. Damage due to excessive wear and tear, improper use or carelessness is not covered under this limited warranty.

Furthermore, it should be understood that this warranty does not constitute a guarantee that the products under warranty identified in the Schedule above will function without following instructions, including reading of the Operators Manual, and following proper maintenance procedures as well as using reasonable care for the periods stated in the above Schedule. On-site repair without prior discussion and approval from DHS Systems may void the warranty.

Warranty claims must contain a detailed explanation of the defect and be supported by summary extracts of pertinent service and maintenance records if applicable. DHS Systems LLC shall have the right to examine the alleged defect and may require the claimant, at the claimant's expense, to return the product for such an examination. If DHS Systems' personnel are required to visit the claimant's site to confirm any alleged defect, all expenses for travel and accommodations may be charged to the claimant.

Any warranty claims must be filed with DHS Systems LLC within 90 days after the alleged defect has been identified. All claims must be mailed or faxed to the following:

*DHS SYSTEMS LLC*
*33 Kings Highway*
*Orangeburg, NY 10962-1802*
*Attn: Logistics*

Phone: 845-359-6066 Fax: 845-365-2114 email: drash@drash.com

DHS Warranty - GSA



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## 3.1 MX Series Shelter Warranty Registration Form

The product warranty is included with the shipping of your product (s). Additional copies of this manual on CD-ROM may be purchased for the price of $25.00. Please contact us for further information.

*DHS SYSTEMS LLC*
*33 Kings Highway*
*Orangeburg, NY 10962-1802*
*Attn: Logistics*
*Phone: 845-359-6066. Fax: 845-365-2114. Email: drash@drash.com*

To validate the Limited Warranty, you must register the equipment with DHS SYSTEMS LLC. Please fill in the information below, make a copy and mail to the above address, or fax to (845)-365-2114. If you have multiple units, you may list their VIN #, SSN #, and HSN # below.

**Warranty Registration**

| | |
|---|---|
| **Date:** | **Primary POC and Rank:** |
| **Company/Unit Name:** | **Secondary POC and Rank:** |
| **Address:** | **VIN# (Vehicle Identification Number)** |
| **Address:** | **SSN# (Shelter Serial Number)** |
| **City:** | **HSN# (Heater Serial Number)** |
| **State:** | **DHS Use Only:** |
| **Zip Code:** | |
| **Country:** | |
| **Phone#:** | |
| **Fax#:** | |
| **Email:** | |

| VIN# | SSN# | HSN# |
|---|---|---|
| | | |



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(fold)

Return Address:

Place
Stamp
Here

DHS Logistics
33 Kings Highway
Orangeburg, NY 10962

RE: Warranty Registration

(fold)



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## 3.2 MX Series Shelter Feedback Form

### RECOMMENDED CHANGE(S) TO EQUIPMENT MANUAL

| **FROM:** (PRINT YOUR UNIT'S CORRECT ADDRESS) | **DATE SUBMITTED:** |
|---|---|
| PUBLICATION TITLE<br>**MX Series Shelter Operation & Maintenance Manual** | PUBLICATION DATE<br>04 March 2008 |
| DHS Part: | MANUAL P/N:<br>**95335-01** |

| BE EXACT PIN-POINT WHERE IT IS | | | | **IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:** |
|---|---|---|---|---|
| PAGE NO | PARAGRAPH | FIGURE NO | TABLE NO | |
| | | | | |

| PRINTED NAME, GRADE OR TITLE, PHONE NUMBER, AND EMAIL ADDRESS | SIGN HERE |
|---|---|
| | |



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(fold)

Return Address:

Place
Stamp
Here

DHS Logistics
33 Kings Highway
Orangeburg, NY 10962

RE: Equipment Feedback Form

(fold)



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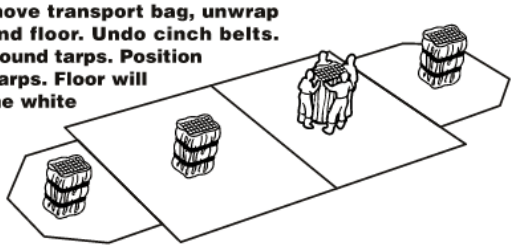
# QUICK START PROCEDURE

## MX SERIES SHELTER SET UP PROCEDURE

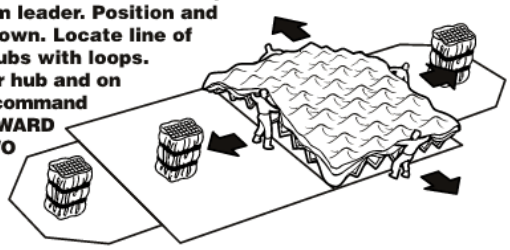
DRASH® M SERIES

# SET – UP PROCEDURES

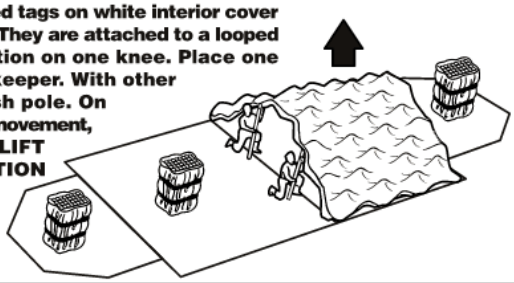
**1** M Series comes in two Ends and two Center Sections. Remove transport bag, unwrap ground tarp and floor. Undo cinch belts. Stake down ground tarps. Position shelters on ground tarps. Floor will be installed later. The white poles are for erecting shelter. Put cinch belts back into bag.



**2** Start with M Center Section. One person must be team leader. Position and center as shown. Locate line of outermost hubs with loops. Position hands under hub and on top part of strut. On command each person LIFT UPWARD AND WALK BACK TWO STEPS. Do not drag or pull. Repeat until further spread is not possible.

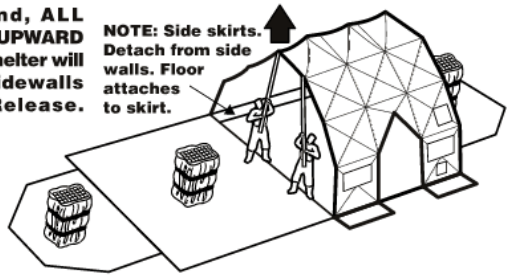


**3** Locate two red tags on white interior cover on each end. They are attached to a looped keeper. Position on one knee. Place one hand under keeper. With other hand hold white push pole. On command and in one movement, ALL FOUR PEOPLE LIFT UPWARD AND POSITION WHITE PUSH POLES UNDER KEEPERS. Let shelter rest on poles.

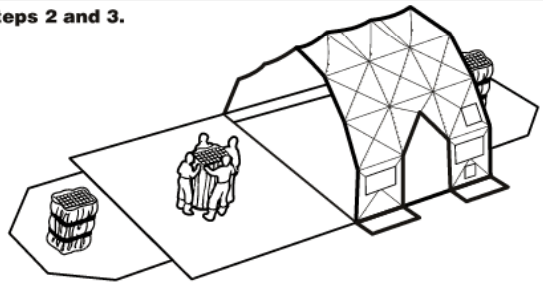


**4** On command, ALL FOUR PUSH UPWARD ON POLES. Shelter will go up and sidewalls will fall vertical. Release. Shelter is erected. Check sidewalls to make sure they are straight and vertical.

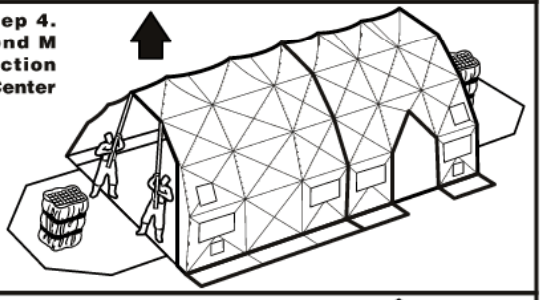
NOTE: Side skirts. Detach from side walls. Floor attaches to skirt.



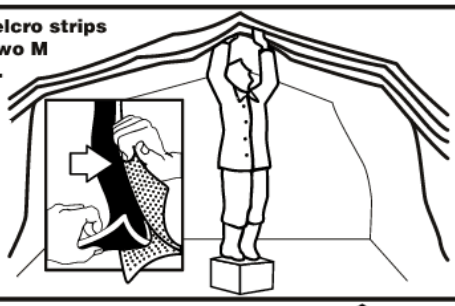
**5** Repeat steps 2 and 3.



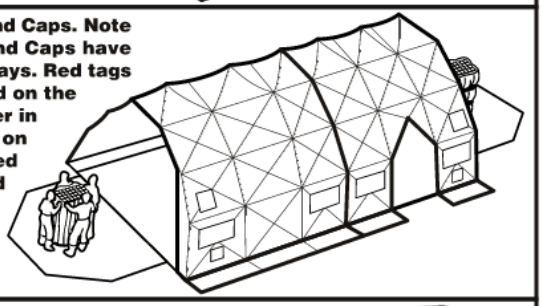
**6** Repeat step 4. Butt second M Center Section to first M Center Section for easy connection.



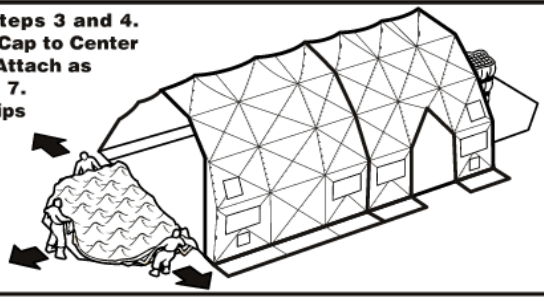
**7** Connect the Velcro strips to attach the two M Center Sections. First connect the exterior cover, then the interior cover.



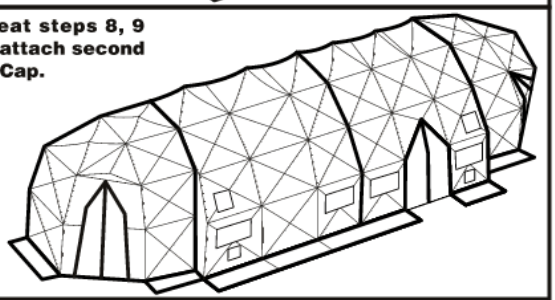
**8** Position End Caps. Note that the End Caps have two doorways. Red tags are located on the interior white cover in the doorways and on the flat or truncated end. The truncated end attaches to the M Center as shown.



**9** Repeat steps 3 and 4. Butt End Cap to Center Section. Attach as shown in 7. Follow Velcro strips and attach.



**10** Repeat steps 8, 9 and attach second End Cap.





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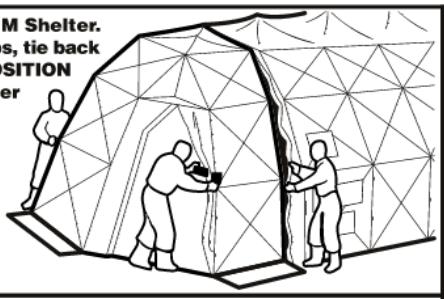
# MX SERIES SHELTER TAKE DOWN PROCEDURE

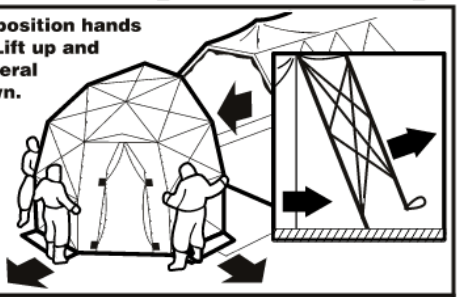
DRASH® M SERIES

# TAKE DOWN PROCEDURES

**1** Empty contents from M Shelter. Close ALL window flaps, tie back ALL doors to OPEN POSITION in End Caps and Center Sections. Remove interior floor from each component. Attach interior skirts to side Velcro strips on sidewalls. Remove ALL stakes on outside. Separate End Cap from M Center Section Velcro strip as shown.

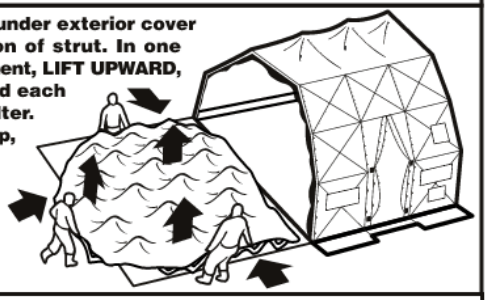


**2** Use 3 people and position hands on exterior hubs. Lift up and move End Cap several feet away as shown. Once in position, lift up and move exterior wall 6 inches out so exterior hub is off ground as shown in insert.

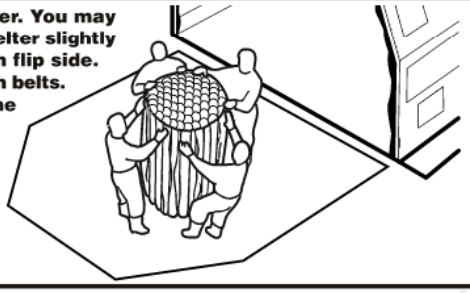


**3** Position people as shown. Locate lifting hub. It is marked "TO STRIKE LIFT HERE". Position one hand UNDER this exterior hub. In one unified movement LIFT UPWARD and BACK. Shelter will come down.

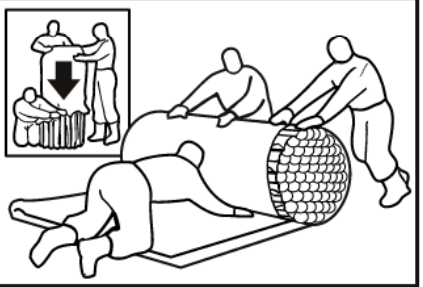
**4** Position hands under exterior cover on upper portion of strut. In one together movement, LIFT UPWARD, and walk toward each other compressing shelter. During compressing, stop, tuck fabric between hubs and struts. Insure that all hubs are visible. Do not step on fabric. Flip shelter over and tuck fabric.



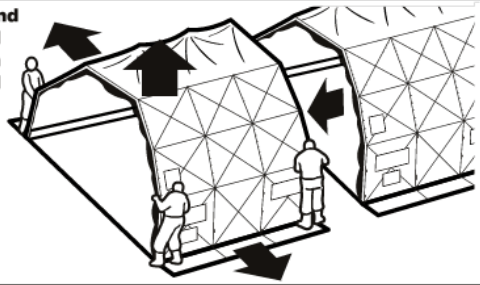
**5** Compress shelter. You may have to open shelter slightly to tuck fabric on flip side. Locate two cinch belts. Wrap around shelter. One belt on top portion and one on lower portion. Continue to compress and tighten cinch belts.



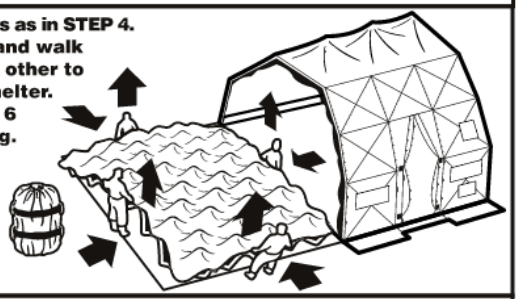
**6** Lay floor on top of ground tarp. Fold into thirds. Position cinched shelter on top of floor / ground tarp as shown. One person must tuck in as two roll shelter. This will compress shelter further. Use third belt and cinch packed shelter. Turn shelter vertical with WHITE Side up. Place bag over shelter as shown in insert.



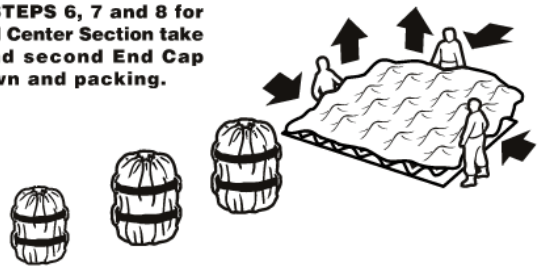
**7** Use 4 people and disconnect M Center Section as shown. All four drop down to position shown in STEP 3. Lift upward and back. Shelter will come down.



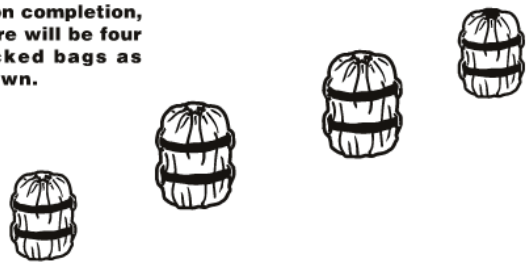
**8** Position hands as in STEP 4. Lift upward and walk toward each other to compress shelter. Follow STEPS 5 and 6 to complete packing. DO NOT DRAG.



**9** Repeat STEPS 6, 7 and 8 for second M Center Section take down and second End Cap take down and packing.



**10** Upon completion, there will be four packed bags as shown.





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