

Figure 3-10. Boat Folded over Engine Box

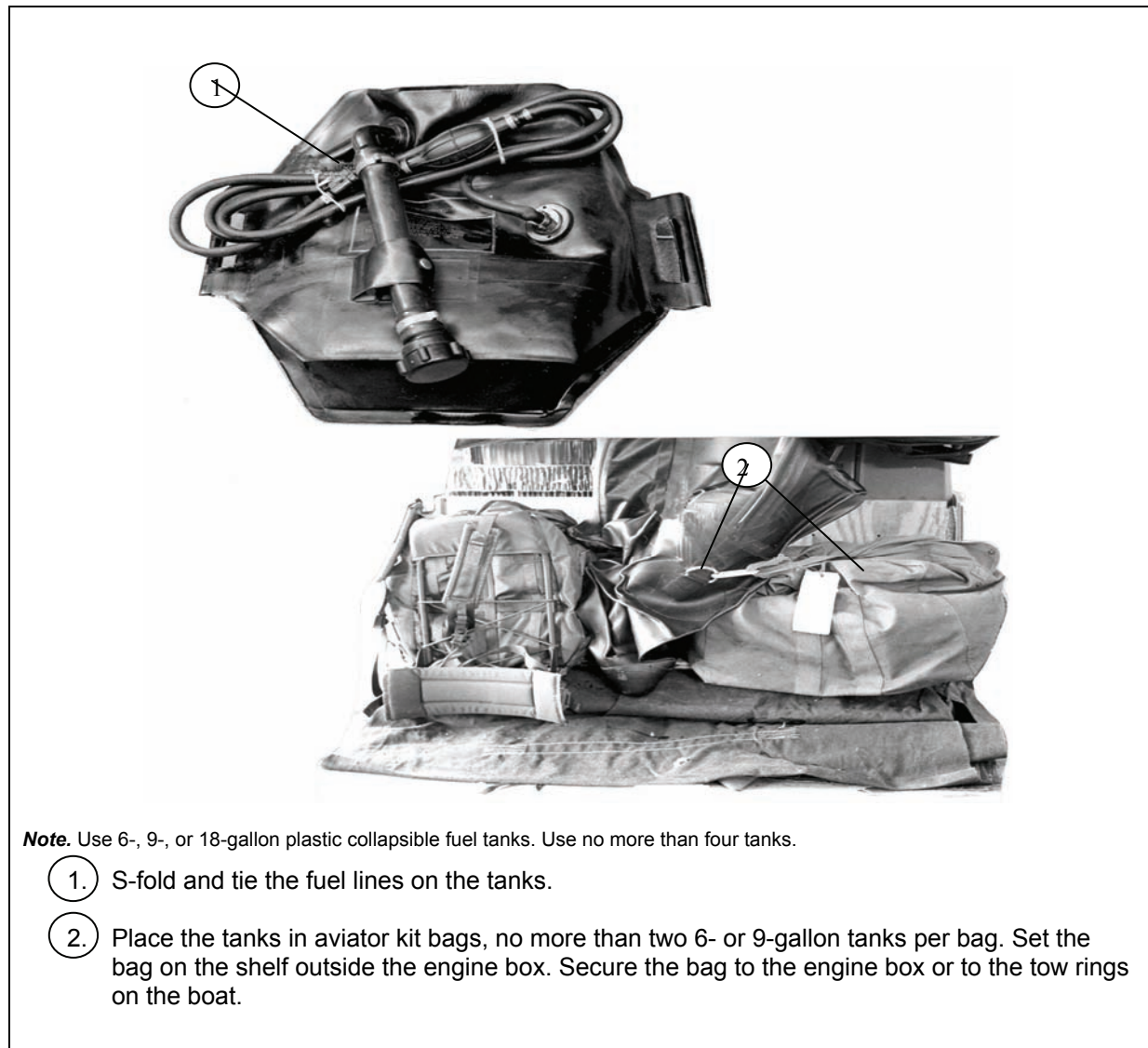


Figure 3-11. Fuel Tanks Stowed

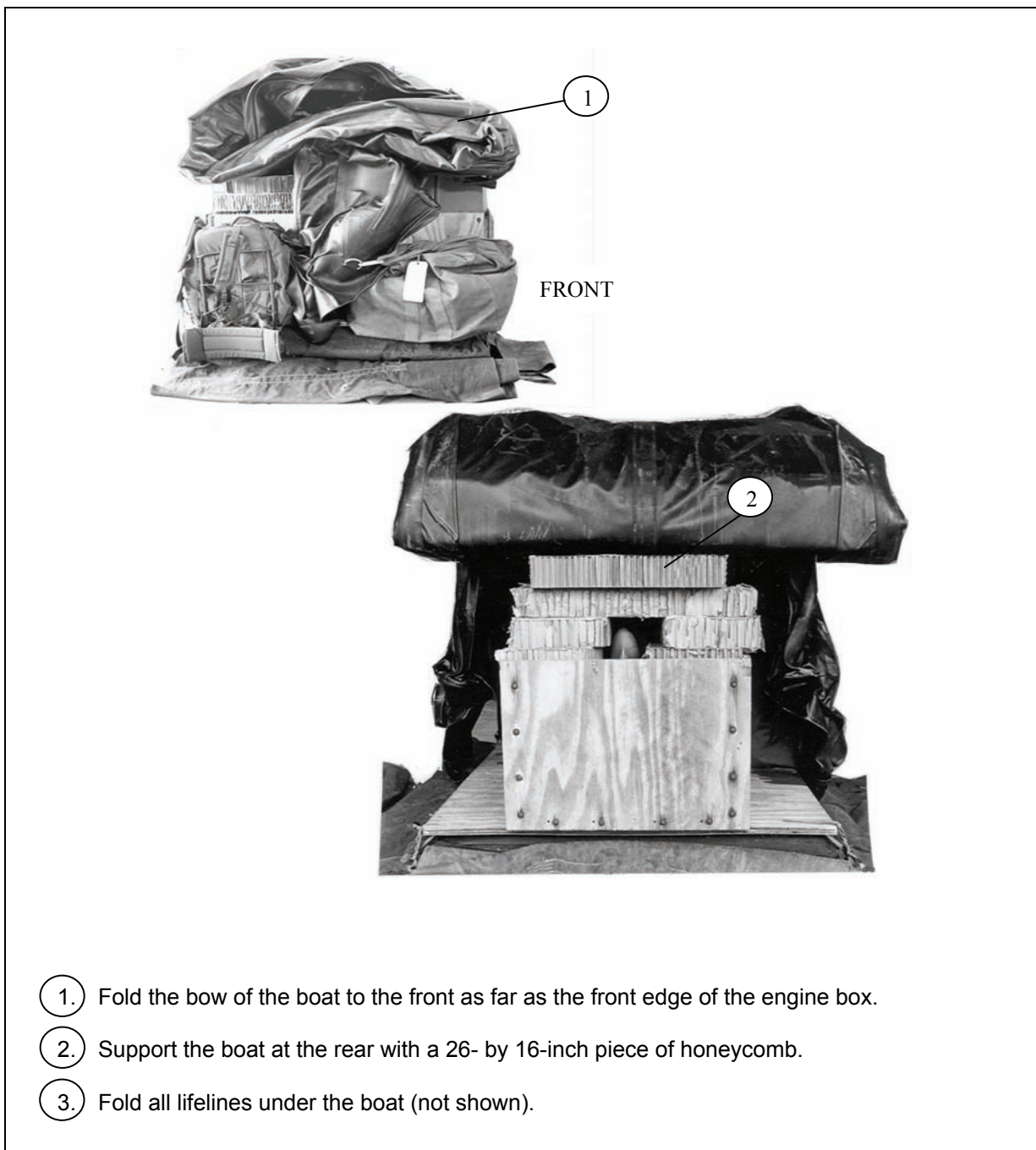


Figure 3-12. Fuel Tanks Stowed and Final Folds Made

SECURING A-22 CARGO BAG

3-8. Secure the A-22 cargo bag as shown in Figure 3-13.

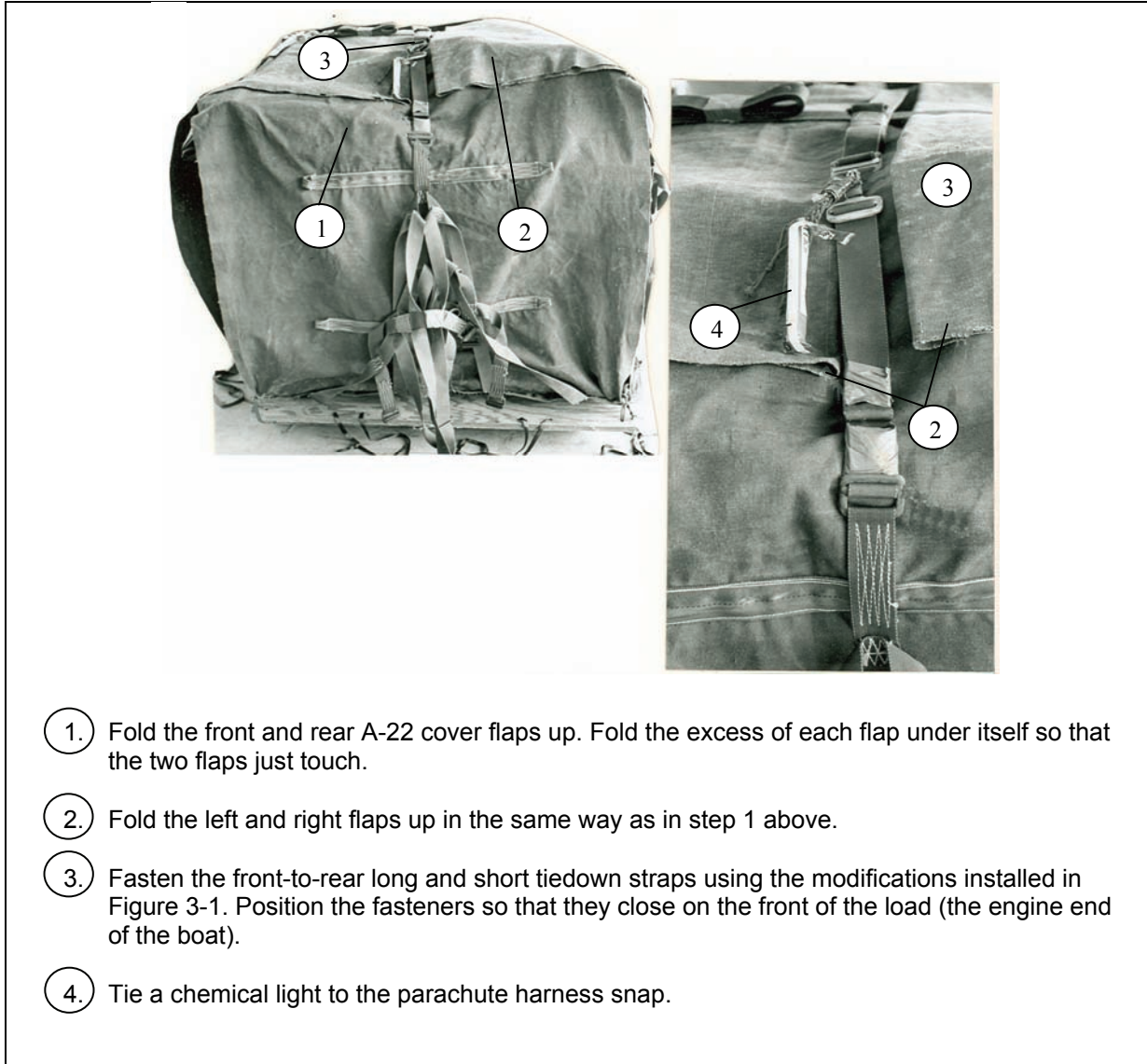
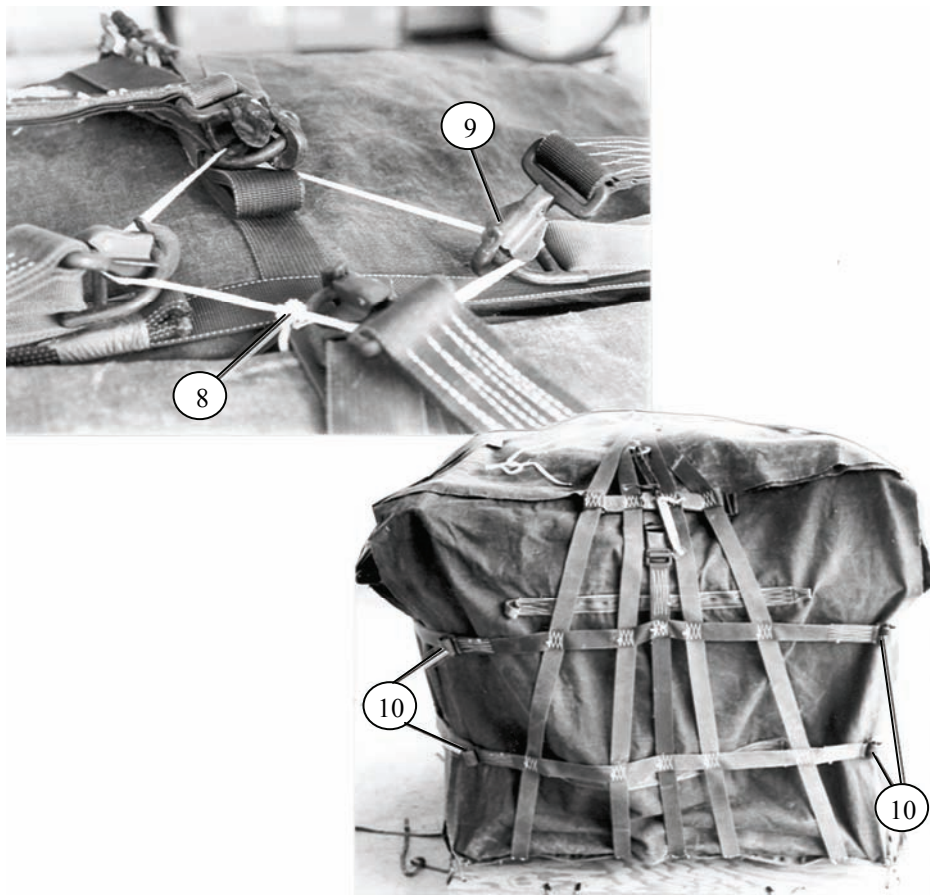


Figure 3-13. Cargo Bag Secured



5. Fasten the left to right, long and short tiedown straps using the modifications installed in Figure 3-1. Position the fasteners so that they close on the top left side of the load.
6. Tie a chemical light to the parachute harness snap.
7. Fold and tape any excess webbing.

Figure 3-13. A-22 Cargo Bag Secured (continued)



8. Bring all four support web assemblies to the top of the load. Tie all four together through the D-rings as shown using a length of Type I, ¼-inch cotton webbing tied in a square knot.
9. Install the adapter webs so that the connector snaps face inward.
10. Close the lower and middle lateral connector snaps loosely so that the bag flaps are held securely. Do **NOT** allow the lateral straps to touch the boat. Do not fasten the upper lateral straps. Fold them inward, and tape them to the support web assembly.

Figure 3-13. Cargo Bag Secured (continued)

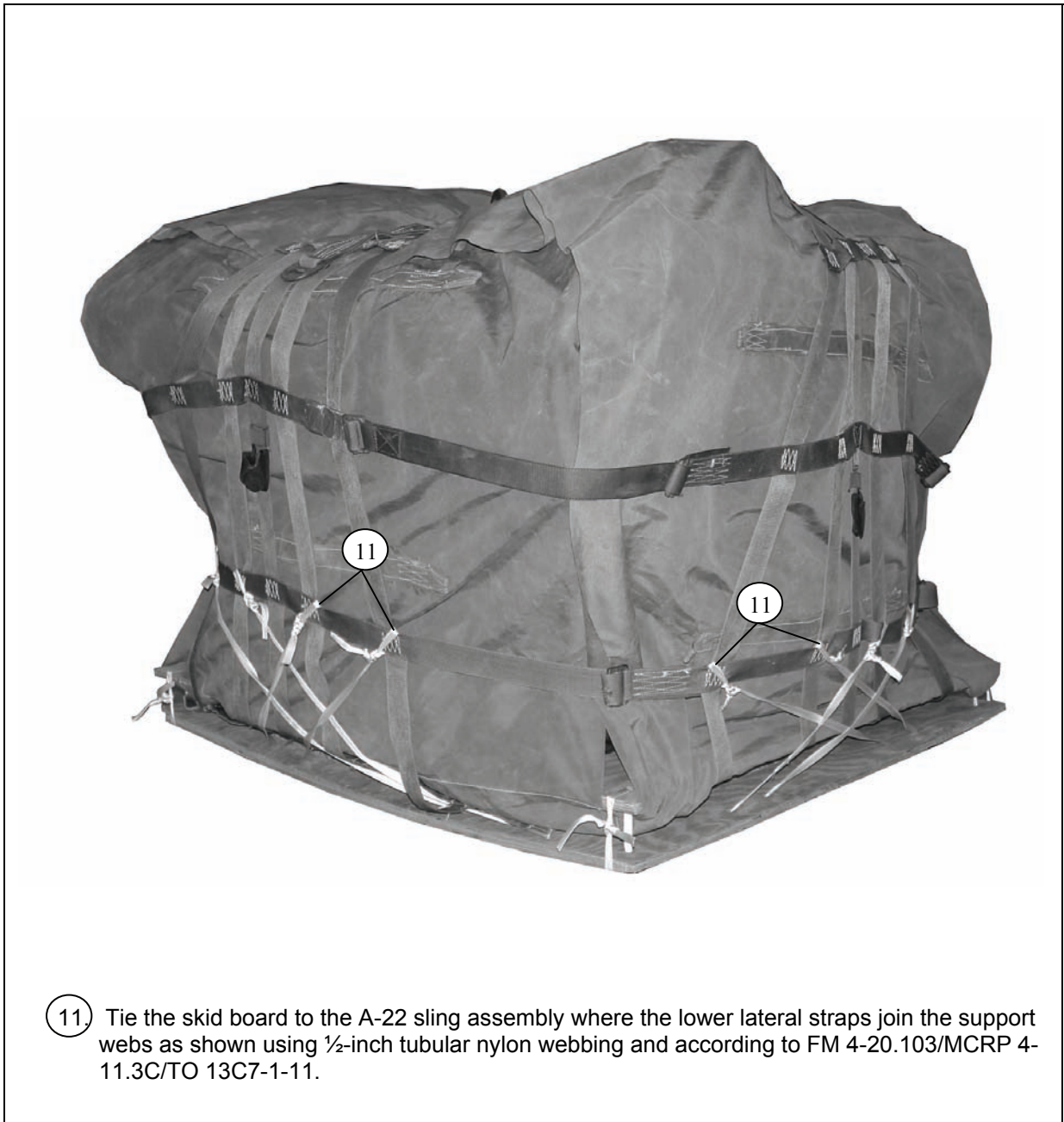


Figure 3-13. A-22 Cargo Bag Secured (continued)

MODIFYING TYPE IV LINK ASSEMBLY FOR USE WITH HYDRAULIC RELEASE

3-9. Modify the type IV link assembly as shown in Figures 3-14 through 3-17, if the hydraulic release is used on this load.

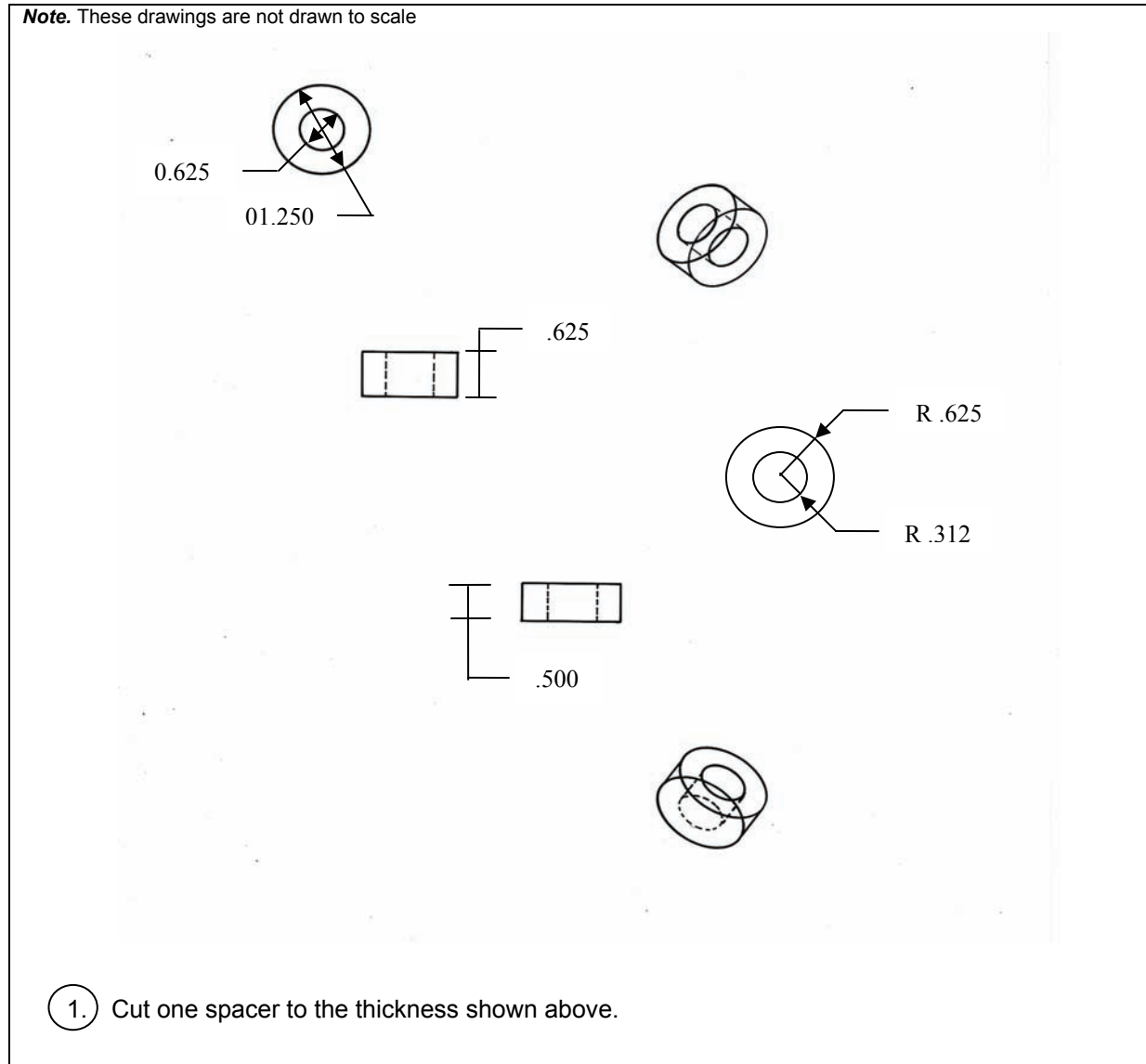
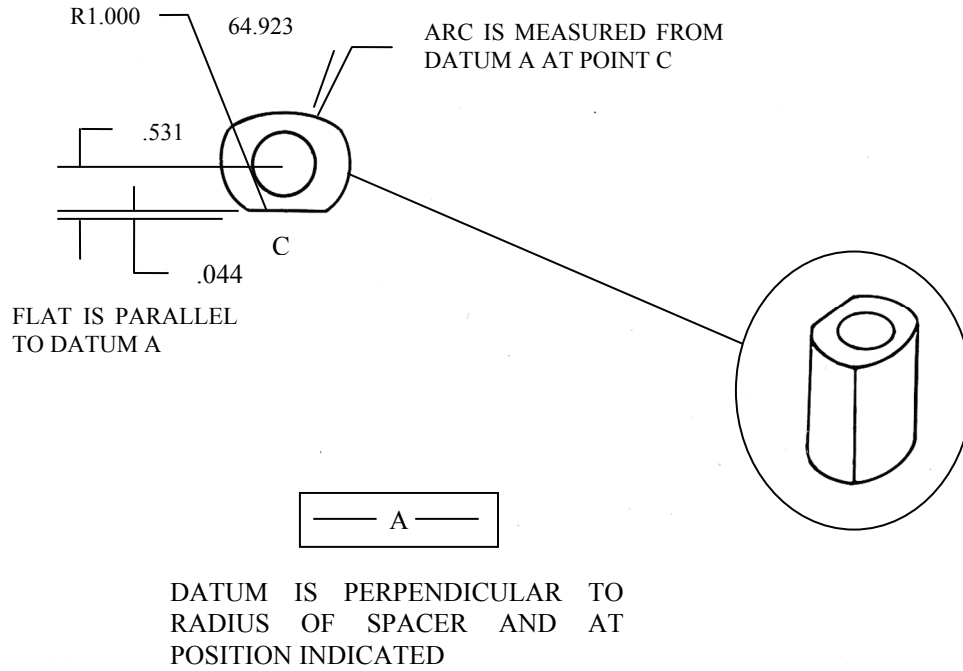


Figure 3-14. Spacer Modified for Release End of Link

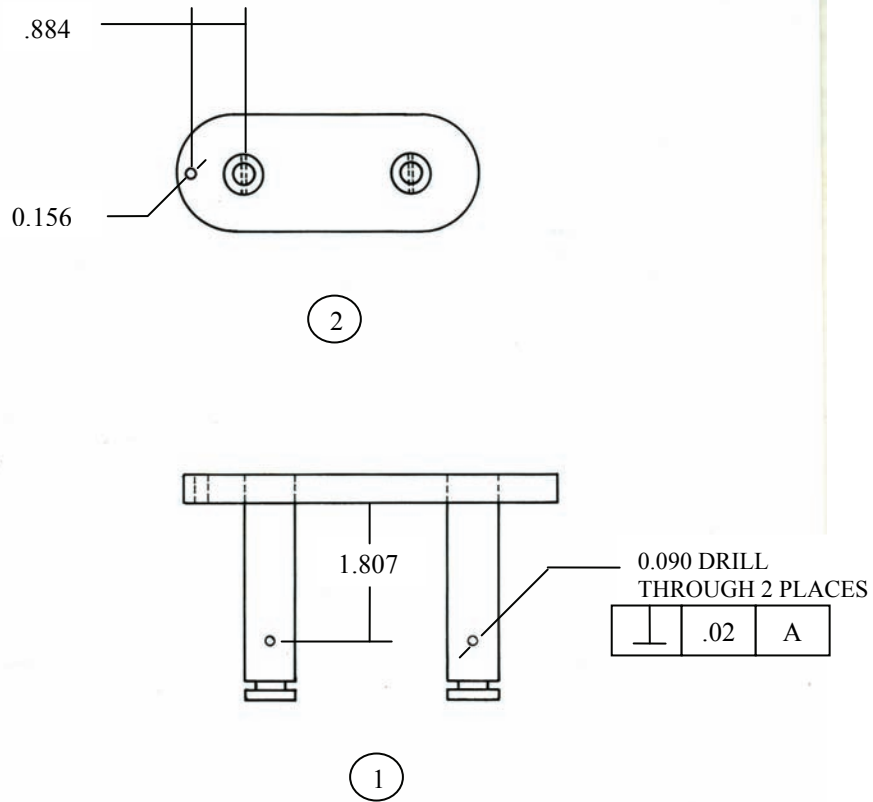
Note. These drawings are not drawn to scale.



1. Mill the other spacer to the specifications shown so that the D-rings on the A-22 adapter webs fit over the spacer.

Figure 3-15. Spacer Modified for Load End of Link

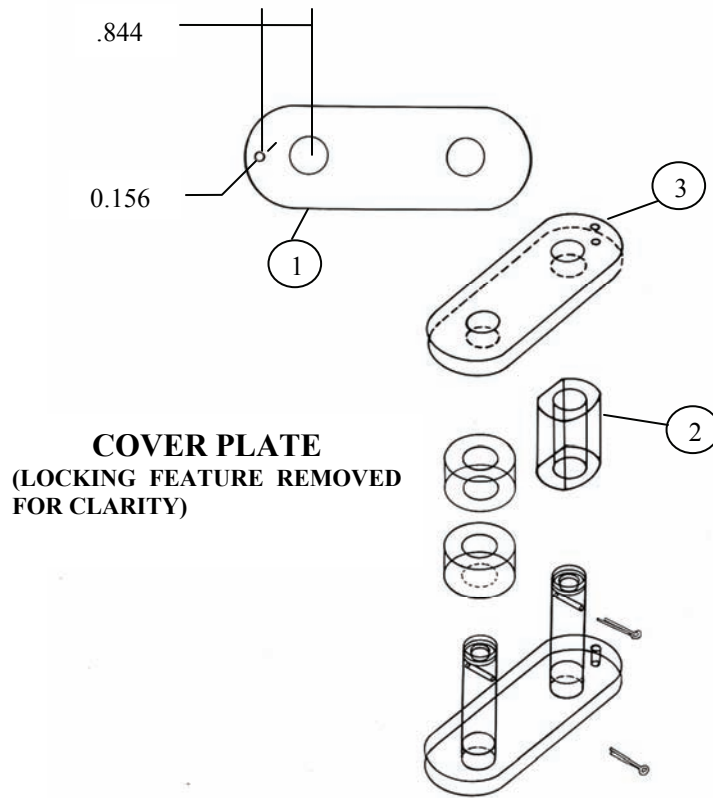
Note. These drawings are not drawn to scale.



1. Drill holes as shown in both sleeve pins of the link assembly.
2. Drill a hole in one end of the link assembly body as shown.

Figure 3-16. Link Assembly Body Modified

Note. These drawings are not drawn to scale.



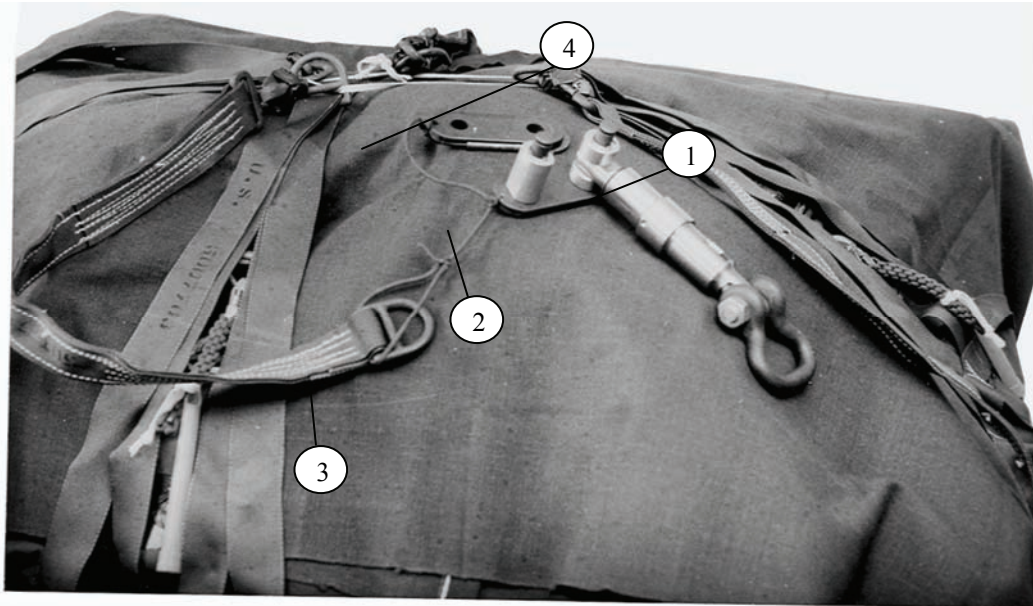
1. Drill a hole as shown in the closure end of the side plate.
2. Place the milled single spacer on the same end of the link assembly body as the drilled hole.
3. Assemble the link as shown. Place the side plate on the link assembly with the drilled hole at the same end as the milled spacer.

Figure 3-17. Side Plate Modified and Link Assembled

INSTALLING PARACHUTE RELEASE AND PARACHUTES

3-10. Install the automatic cargo parachute release as shown in Figure 3-18. Install two T-10 parachutes modified for cargo use as shown in Figures 3-19 through 3-21.

Note. Army units are not authorized to use the automatic cargo parachute release and must use the M-1 cargo parachute release. If parachutes other than the T-10 parachute are used, finish rigging the load according to FM 4-20.103/MCRP 4-11.3C/TO 13C7-1-11.



Note. Install the cargo release with the hydraulic cylinder section attached to the cargo slings and the release bolt to the 120-inch parachute risers.

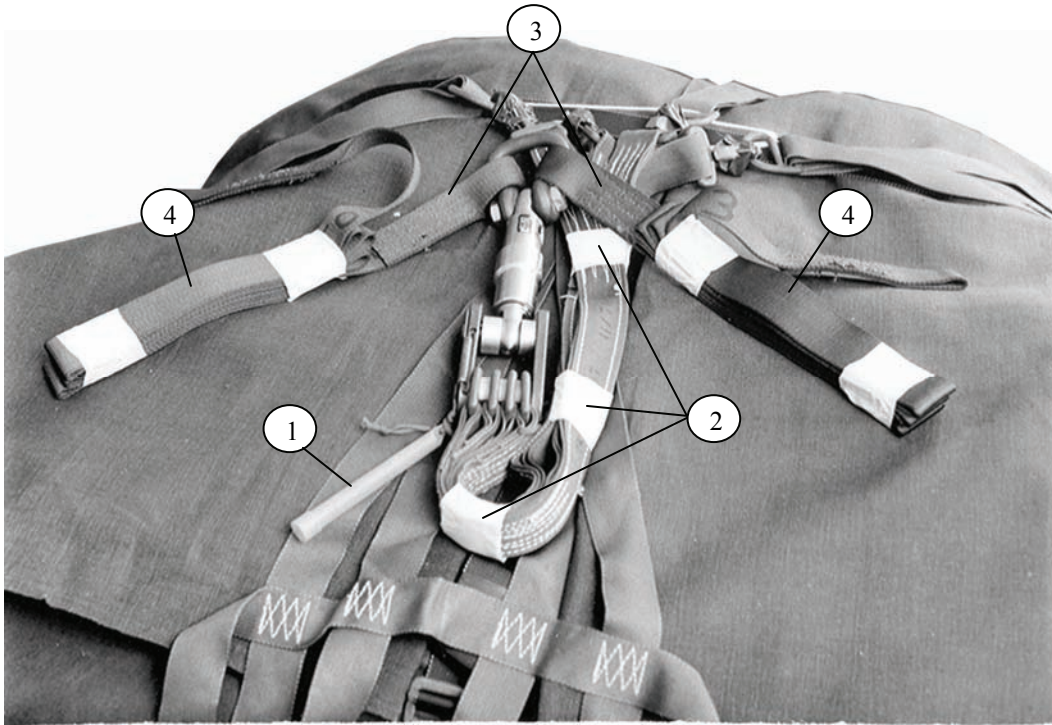
1. Install the automatic cargo parachute release to the split spacer side of the modified type IV connector link as described in paragraph 3-9.
2. Pass a suitable length of type III nylon cord through the hole in the baseplate of the type IV connector link, leaving 18 inches.
3. Pass the 18-inch end through the fabric loop in the front adapter web. Tie a loop as shown with a bowline knot with an overhand in the running end.
4. Tie the free end of the type III nylon cord to the drilled hole in the type IV link cover.

Figure 3-18. Release Installed



5. Place the D-rings of the adapter webs on the milled spacer of the type IV connector link in the following order: front, left, rear, right (clockwise or counterclockwise beginning with the front).
6. Install the cover plate on the type IV connector link, facing the drilled hole away from the release. Raise the adapter webs and make sure there are no twists in them.

Figure 3-18. Release Installed (continued)



1. Tie a chemical light to the type IV connector link with type I, 1/4-inch cotton webbing.
2. Tape the adapter webs together in three places with paper masking tape.
3. Attach two 120-inch connector straps to the bell portion of a small suspension clevis. Bolt the clevis to the release.
4. S-fold the riser extensions into 1-foot folds. Tape the folds in two places with paper masking tape.

Figure 3-19. Small Clevis and 120-inch Connector Straps Installed

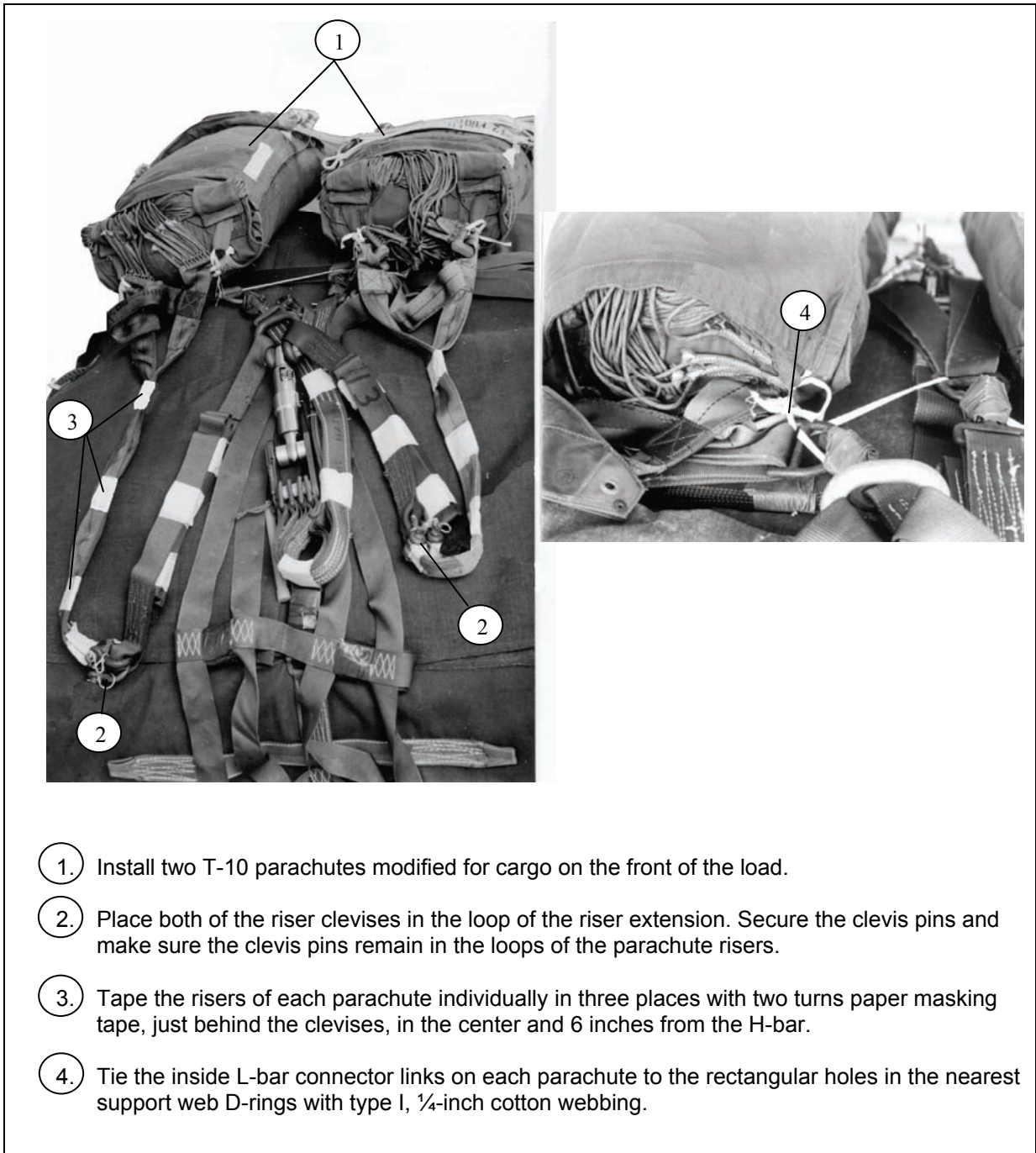


Figure 3-20. Riser Extensions and Parachutes Installed

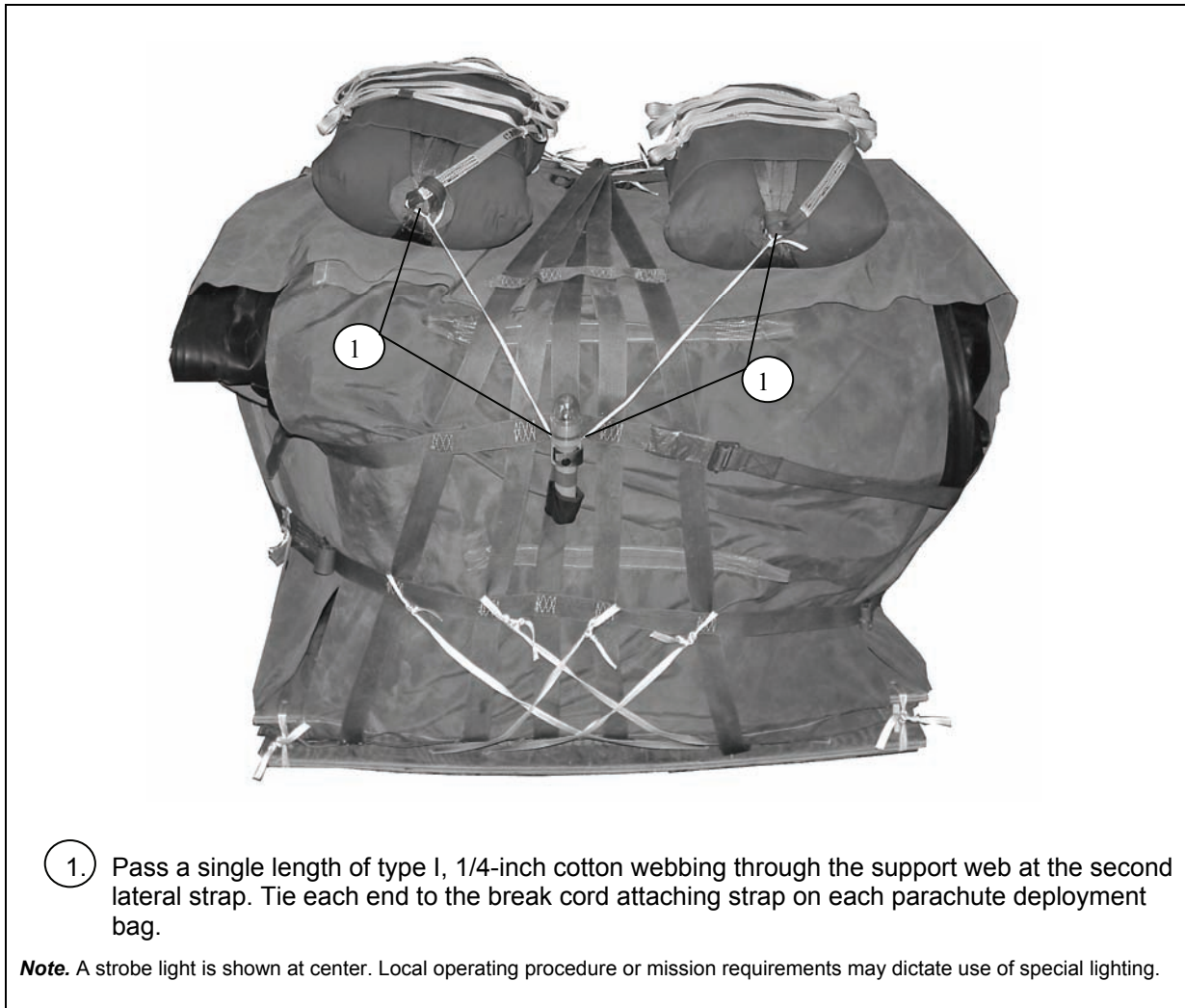
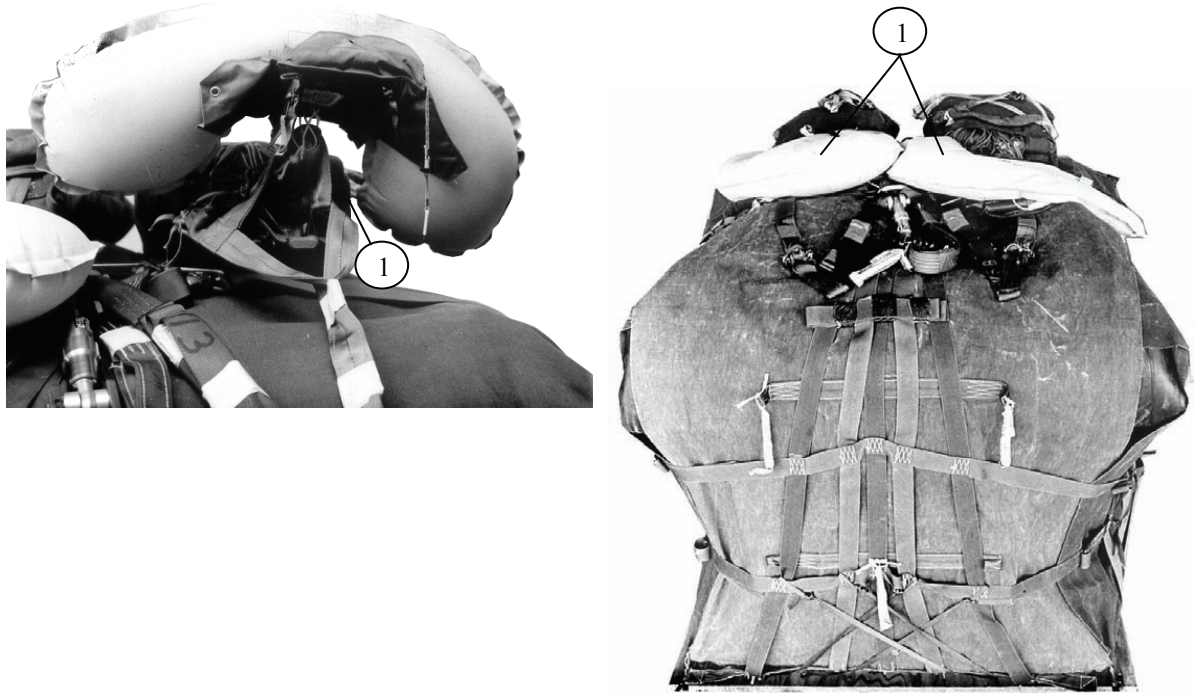


Figure 3-21. Parachutes Installed

INSTALLING FLOTATION DEVICES AND CHEMICAL LIGHTS (OPTIONAL)

3-11. Install flotation devices to aid in the recovery of parachutes for training drops as shown in Figure 3-22. Install chemical lights for night operations as shown in Figure 3-23.

Note. Flotation devices and chemical lights may not be required for operational drops.



1. Tie a flotation device to the H-bar of the riser harness of each parachute with type III nylon cord.

Figure 3-22. Flotation Devices Installed

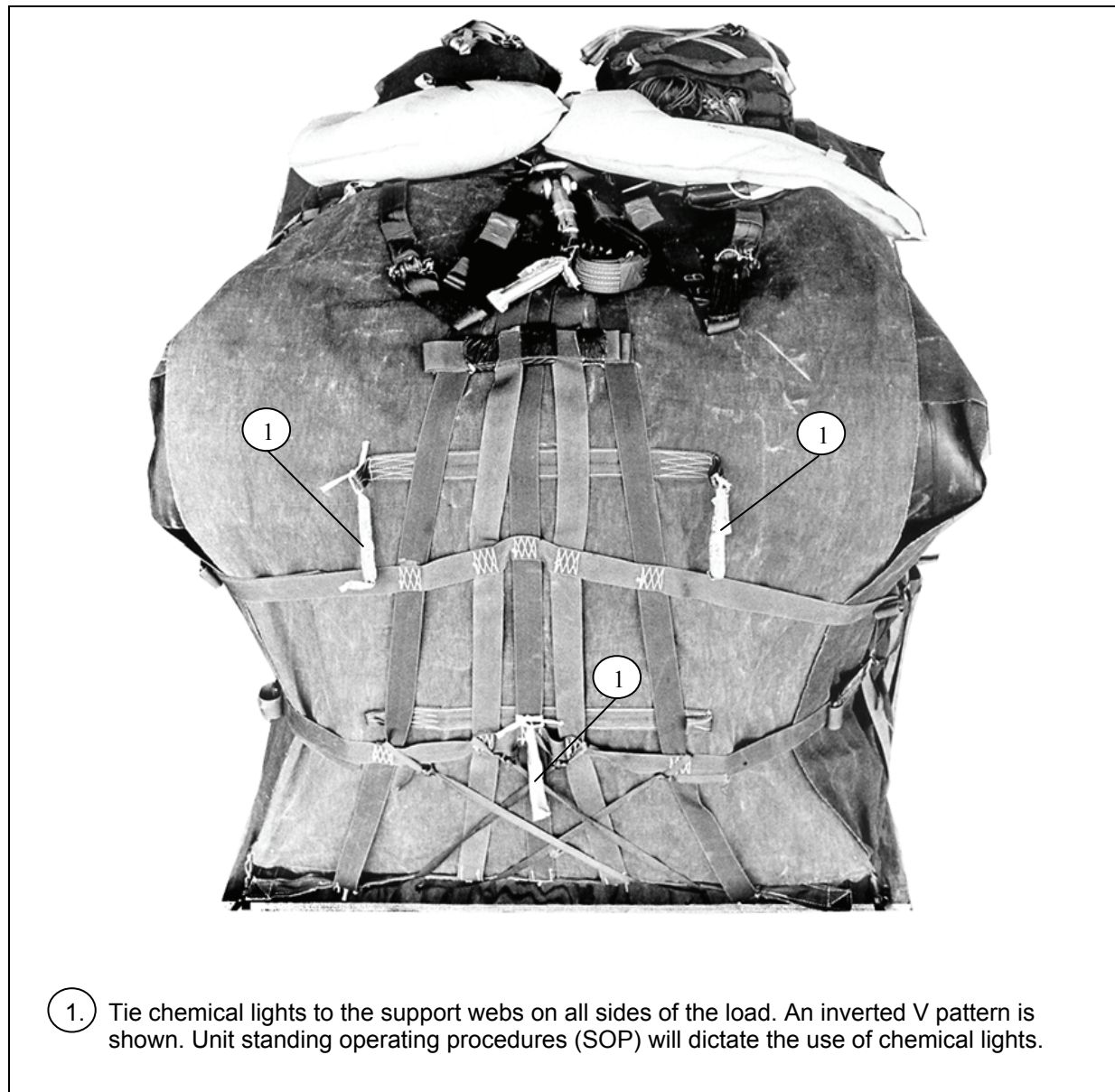


Figure 3-23. Chemical Lights Installed for Night Operations

MARKING RIGGED LOAD

3-12. Mark the rigged load according to FM 4-20.103/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-24.

CAUTION

Make the final rigger inspection required by FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 before the load leaves the rigging site.



Note. The load shown includes 10 gallons of fuel and no additional equipment.

Weight: Load shown	600 pounds
Maximum load allowed with two T-10 cargo parachutes.....	900 pounds
Height	56 inches
Width	51 inches
Length	51 inches

Figure 3-24. Zodiac F470U Boat Rigged in A-22 Bag for Low Velocity Airdrop

EQUIPMENT REQUIRED

3-13. The equipment required to rig the F470U boat in the A-22 cargo bag is listed in Table 3-1.

Table 3-1. Equipment Required for Rigging F470U Boat in A-22 Cargo Bag

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
7125-00-577-5858	Aluminum, angle, 90 degrees	As required
1670-00-587-3421	Bag, cargo, A-22	1
1670-00-568-0323	Band, rubber, parachute	As required
Local purchase	Bolt, 1/4- by 1 1/2- in, galvanized	136
No NSN	Charging yoke, SCUBA, w/dust cap	1
4030-00-360-0304	Clevis, suspension, 5/8-in (small)	1
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
No NSN	Cylinder, SCUBA, compressed air	1
No NSN	Disconnect, 1/4-in, stainless steel male, NPT	1
No NSN	Disconnect, 1/4-in, stainless steel male, NPT, w/safety detent	1
	Flotation device,	
4220-00-059-6061	LPU 3/P or	2
4220-00-657-2197	B7	2
8135-01-005-8974	Foam	2 sheets
5330-01-363-2634	Gasket, paper	4
No NSN	Hose, Zodiac, high pressure inflation	2
No NSN	Hose, rubber, 1/4-in diam, 60-in length, high pressure, 3000 psig, ...w/male and female threaded ends	1
No NSN	Lanyard, safety, braided stainless steel, w/clips	1
	Light, chemical, wand,	
6260-01-074-4229	Green	As required
6260-01-178-5559	Red	As required
1670-00-783-5988	Link assembly, type IV	1
No NSN	Mounting plate, single, SCUBA	1
Local purchase	Nut, hexagonal, 1/4-in, galvanized	136
1670-00-753-3928	Pad, energy-dissipating, honeycomb	2 sheets
1670-01-247-7151	Parachute, T-10B (modified for cargo)	2
5530-00-128-4981	Plywood, 3/4-in:	
	17- by 18-in	2
	17- by 51-in	2
	48- by 48-in	2
1670-01-310-2875	Release, automatic cargo parachute,	1
5340-00-875-1861	Snap, parachute harness	3
1670-00-925-7843	Static line, personnel, (T-10/Universal Static Line)	1
1670-00-738-5879	Strap, connector, extraction, 120-in	2
	Tape:	
7510-00-266-6710	Masking, 2-in	As required
7510-00-266-5016	PSA, cloth-backed, adhesive, 2-in	As required
4730-01-364-6035	Tube, tee, Zodiac	1
No NSN	Valve, SCUBA	1
1670-00-986-1139	V-ring, assembly	3
Local purchase	Washer, fender, 1 1/2-in, galvanized	272

Table 3-1. Equipment Required for Rigging F470U Boat in A-22 Cargo Bag (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8305-00-268-2411	Webbing: Cotton, type I, 1/4-in	As required
8305-00-082-5753	Nylon, tubular, 1/2-in	As required
8305-00-263-3591	Nylon, type VIII	As required

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Chapter 4

Rigging the Naval Special Warfare Rigid Inflatable Boat (NSW RIB) for Low-Velocity Airdrop

DESCRIPTION OF LOAD

4-1. The NSW RIB is a high-speed boat designed to be airdropped, and quickly recovered. It is rigged on a 21-foot Maritime Aerial Delivery System (MADS) platform. The platform separates from the boat during deployment, and drops with its own G-12 parachute. The platform is easily recoverable and reusable. The load requires four G-11 cargo parachutes. A water activated release system, with the M-2 release as a back-up, ensures separation of the parachutes when the boat strikes the surface of the water. The maximum rigged load weight is 20,640 pounds, including an accompanying load that can vary according to the mission. The boat is 100 inches high, 108 inches wide and 432 inches long.

CAUTION

This load differs greatly from conventional airdrop loads. Strict adherence to these procedures is critical.

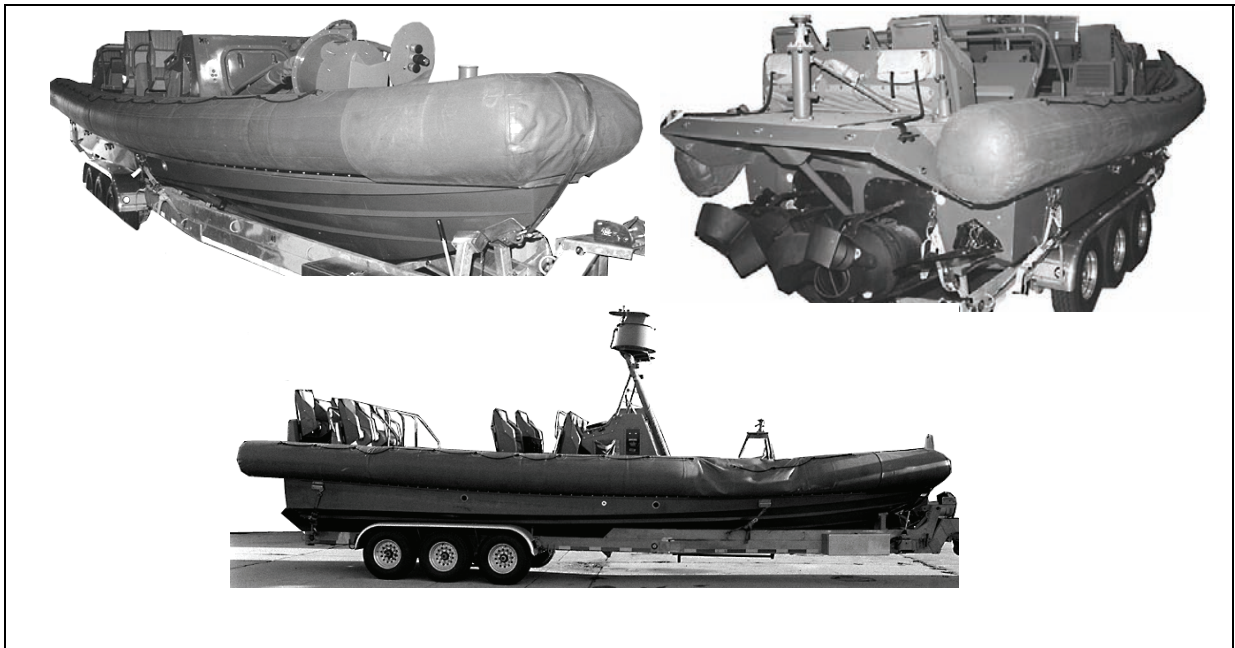


Figure 4-1. NSW RIB on its Trailer

PREPARING PLATFORM

- 4-2. Prepare a 21-foot MADS platform as shown in Figure 4-2.
- Prepare and inspect the 21-foot MADS platform as explained in the manufacturer's manual.
 - Install the emergency restraint clevises to the front of the platform as shown in Figure 4-3.
 - Install and test the platform release pulley assembly as shown in Figure 4-4.
 - Install the platform recovery parachute as shown in Figure 4-5.

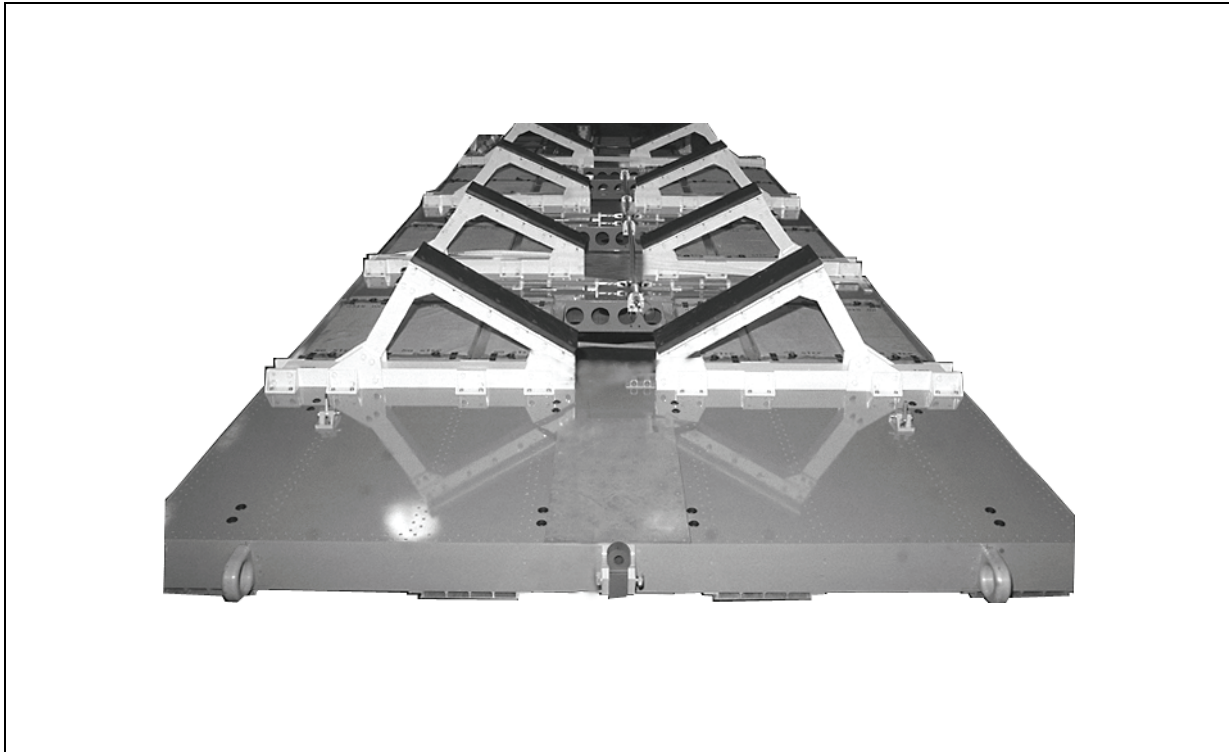
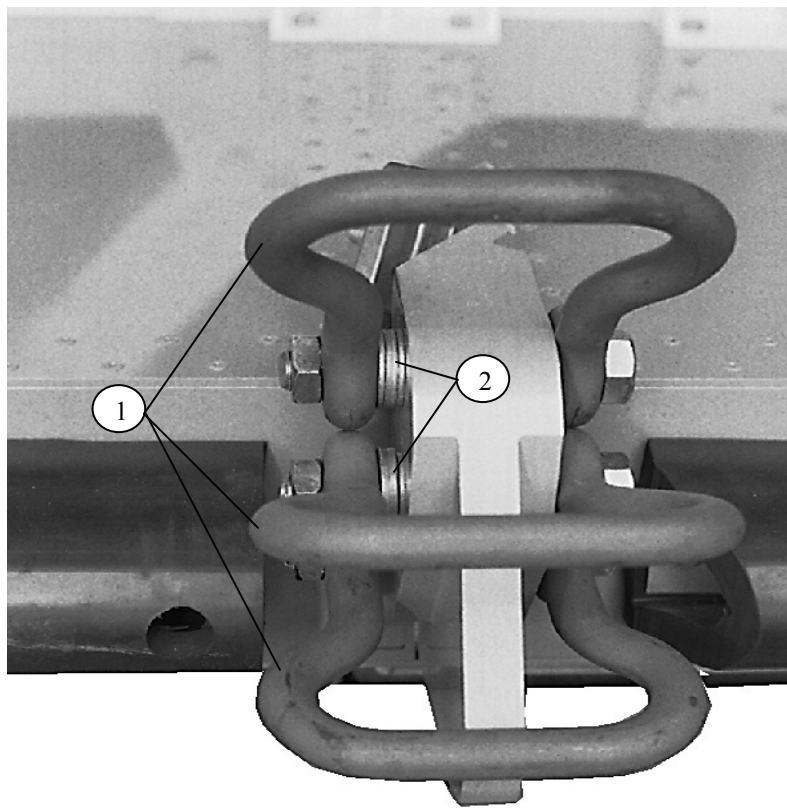


Figure 4-2. 21-Foot MADS Platform Prepared



1. Install a medium clevis assembly to each of the three holes in the links at the front of the platform.
2. Add washers to ensure a snug fit. Tighten the nuts just enough to allow the clevises to stay in the positions shown.

Figure 4-3. Emergency Restraint Clevises Installed

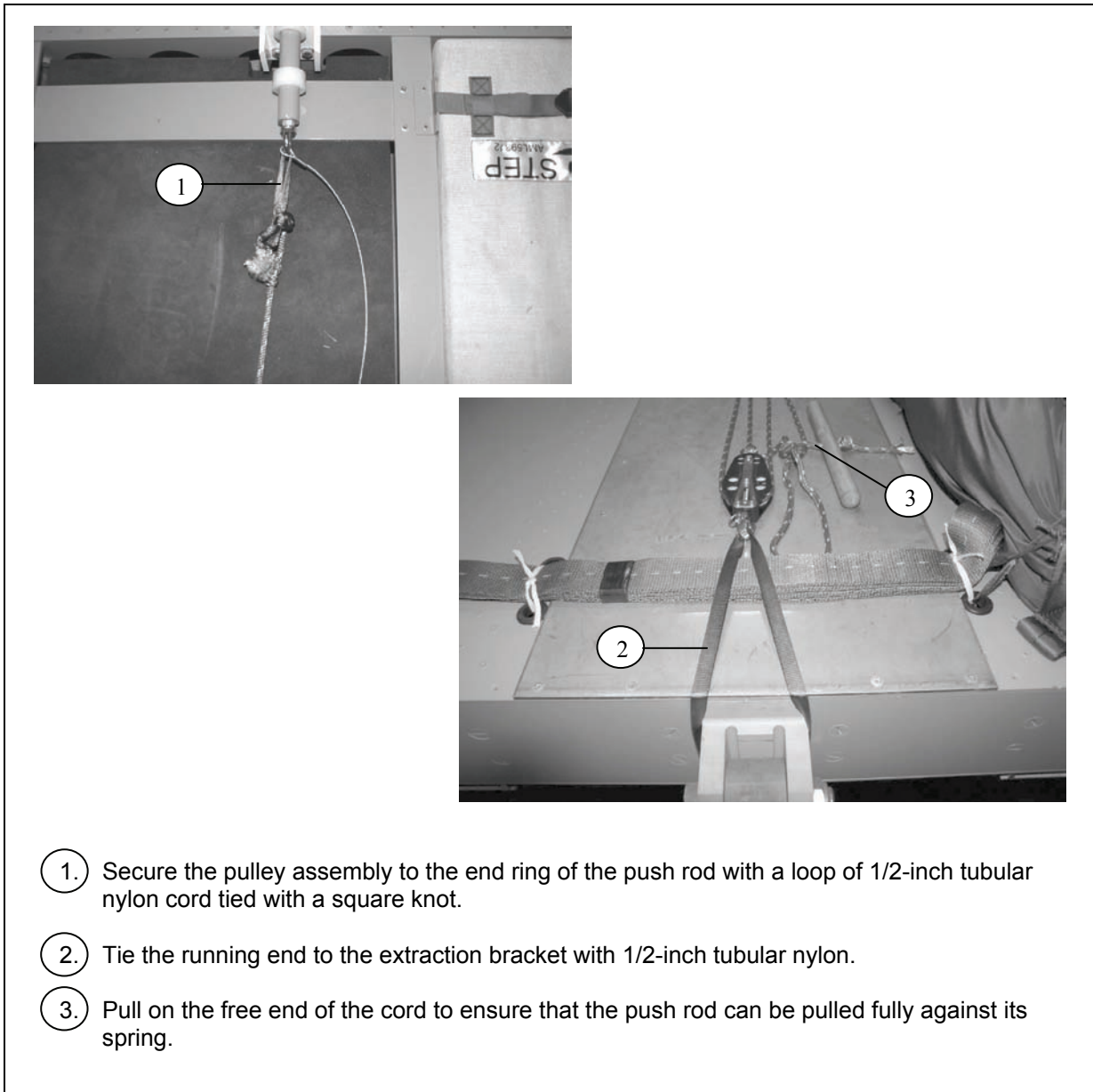


Figure 4-4. Platform Release Pulley Assembly Installed

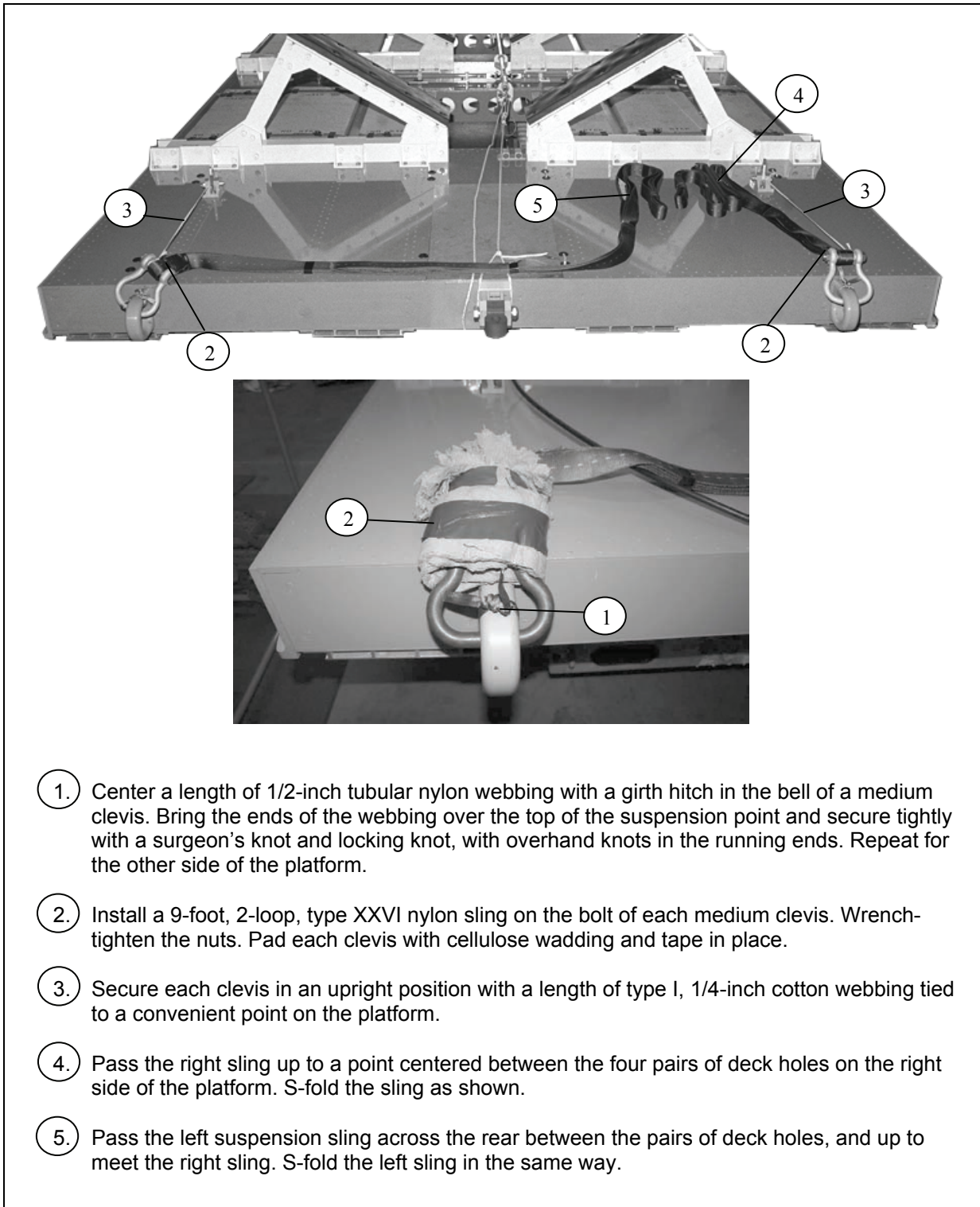


Figure 4-5. Platform Recovery Parachute and Slings Installed

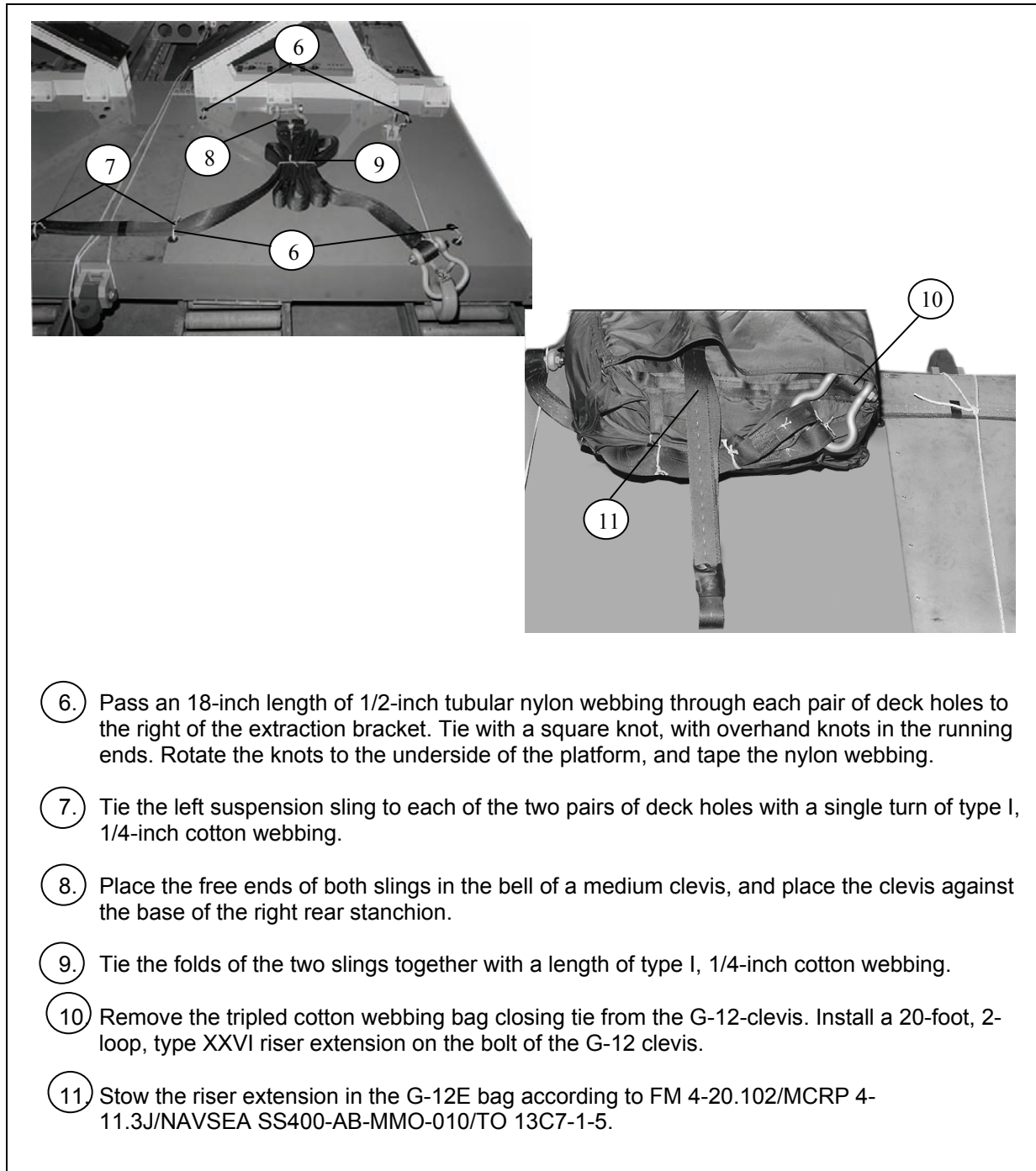
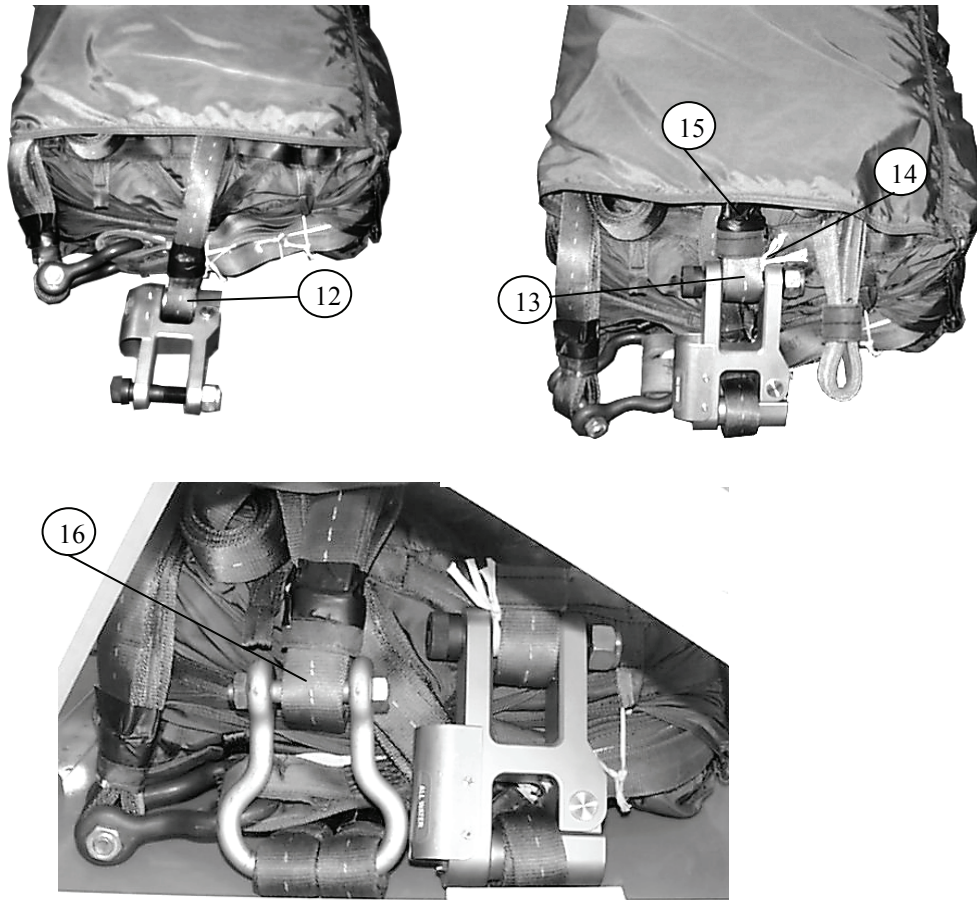
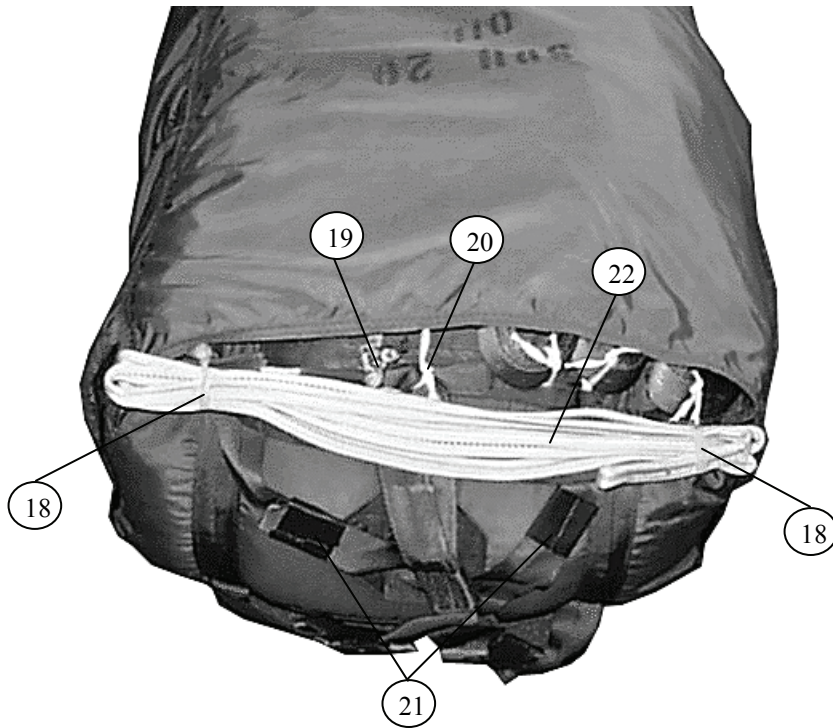


Figure 4-5. Platform Recovery Parachute and Slings Installed (continued)



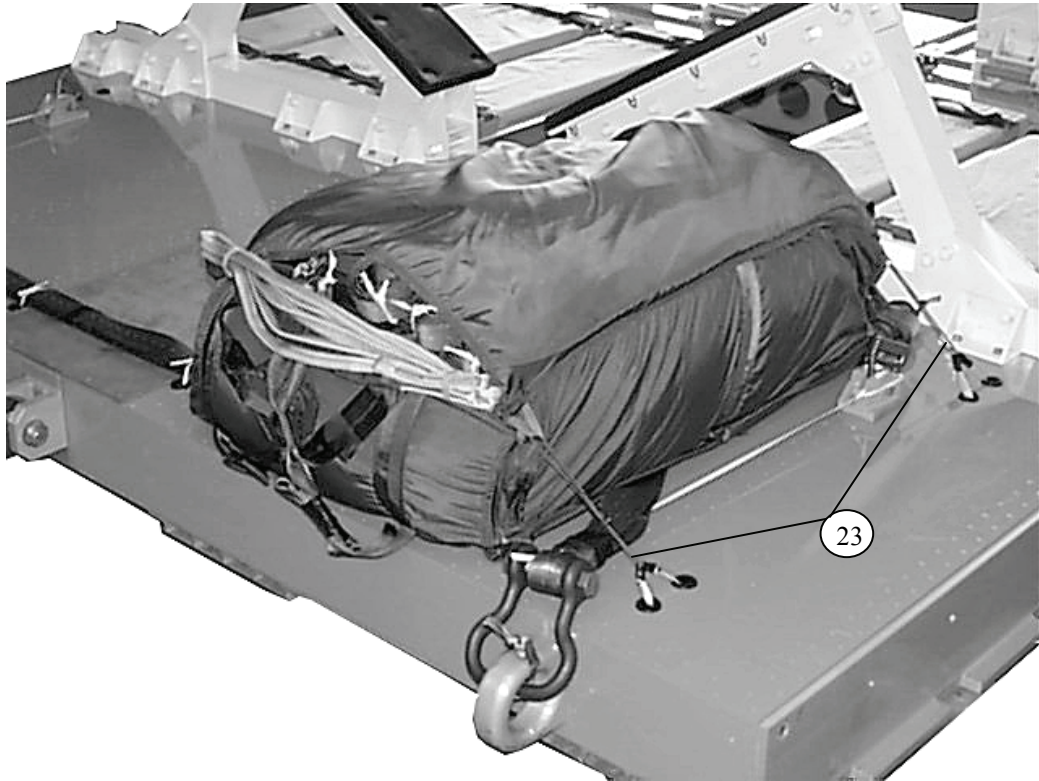
12. Inspect a water-activated parachute release (WAPR) according to the manufacturer's instructions. Attach the discharge end of the WAPR to the riser extension.
13. Attach a 3-foot, 2-loop, type XXVI nylon sling to the stationary bolt of the WAPR.
14. Safety the bolt of the WAPR to the G-12 bag stow bar with one turn single type I, 1/4-inch cotton webbing.
15. Fold the 3-foot sling in half and secure it with paper masking tape (not shown). Place the sling under the G-12 riser extension flap.
16. Turn the parachute so that the WAPR faces the front of the platform. Connect the free end of the 3-foot sling installed in step 13 to the clevis at the end of the platform suspension slings.

Figure 4-5. Platform Recovery Parachute and Slings Installed (continued)



- ①7. Remove the universal static line snap hook from a T-10 universal static line (not shown).
- ①8. Girth hitch two retainer bands to each end of the riser extension stow bar.
- ①9. Girth hitch the universal static line to the bridle loop of the G-12 cargo parachute.
- ②0. Safety the bridle loop to the riser extension stow bar with one turn single of type I, 1/4-inch cotton webbing.
- ②1. S-fold the excess bridle assembly and secure it with tape.
- ②2. S-fold the universal static line across the rear of the parachute, securing it with the retainer bands installed in step 18. Wrap the retainer bands twice around the static line.

Figure 4-5. Platform Recovery Parachute and Slings Installed (continued)

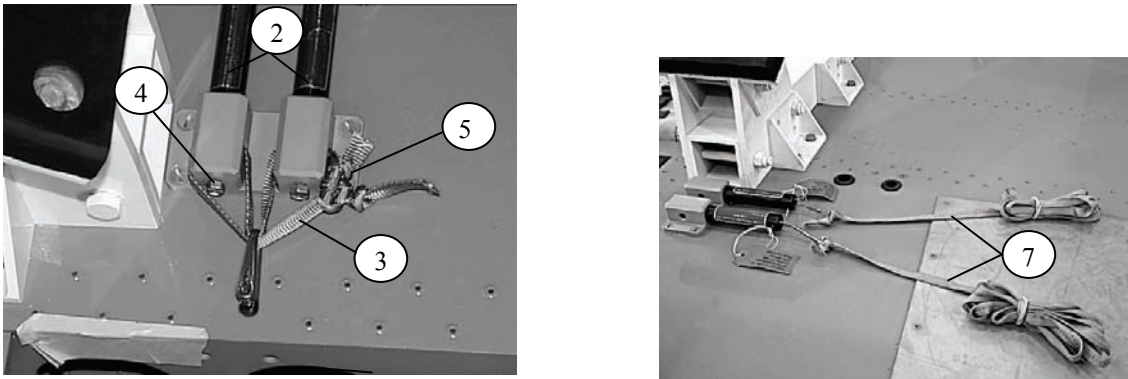


23. Place the G-12 parachute over the suspension slings, and align with the rear edge of the platform and the center deck holes as shown. Tie the corners of the G-12 deployment bag to the ties placed in step 6 with type III nylon cord with the core threads removed.

Figure 4-5. Platform Recovery Parachute and Slings Installed (continued)

INSTALLING THE PLATFORM RELEASE SYSTEM

4-3. Install the components of the platform release system as shown in Figures 4-6 and 4-7.



Note. This knot must be on the left forward end of the cutter brackets.

1. Put tension on the central push rod using the pulley assembly. Insert the T-pin through the push rod holes when the holes are aligned with the pin bracket. Connect the drawbar cable to the bolt end of the halyard shackle (Not shown).
2. Install two M-21 reefing line cutters in the cutter brackets. Ensure that the screws on the sides of the cutters are facing the deck of the platform. Ensure the cotter pins can be removed from the cutters once they are installed.
3. Route a length of 1/2-inch tubular nylon as follows:
 - Through the left cutter bracket
 - Through the bell end of the locking halyard shackle
 - Through the inside of the left cutter bracket, and out through the left side
 - Through right cutter bracket
 - Back through the bell end of the locking halyard shackle, and up to the other free end of the tie
4. Tighten the screws in the bottom ends of the cutter brackets.
5. Secure the running ends tightly with a surgeon's knot and locking knot, with an overhand knot in the running ends.
6. Disconnect the cable from the halyard shackle. Replace the shackle pin (not shown).
7. Install a 10-foot length of 1/2-inch tubular nylon webbing to each M-21 cutter arming cable with three alternating half hitches and overhand knots in the running ends. S-fold the excess and secure temporarily with retainer bands.
8. Remove tension on the central push rod using the pulley assembly. Ensure the T-pin is removed (not shown).

Figure 4-6. Cutters Installed

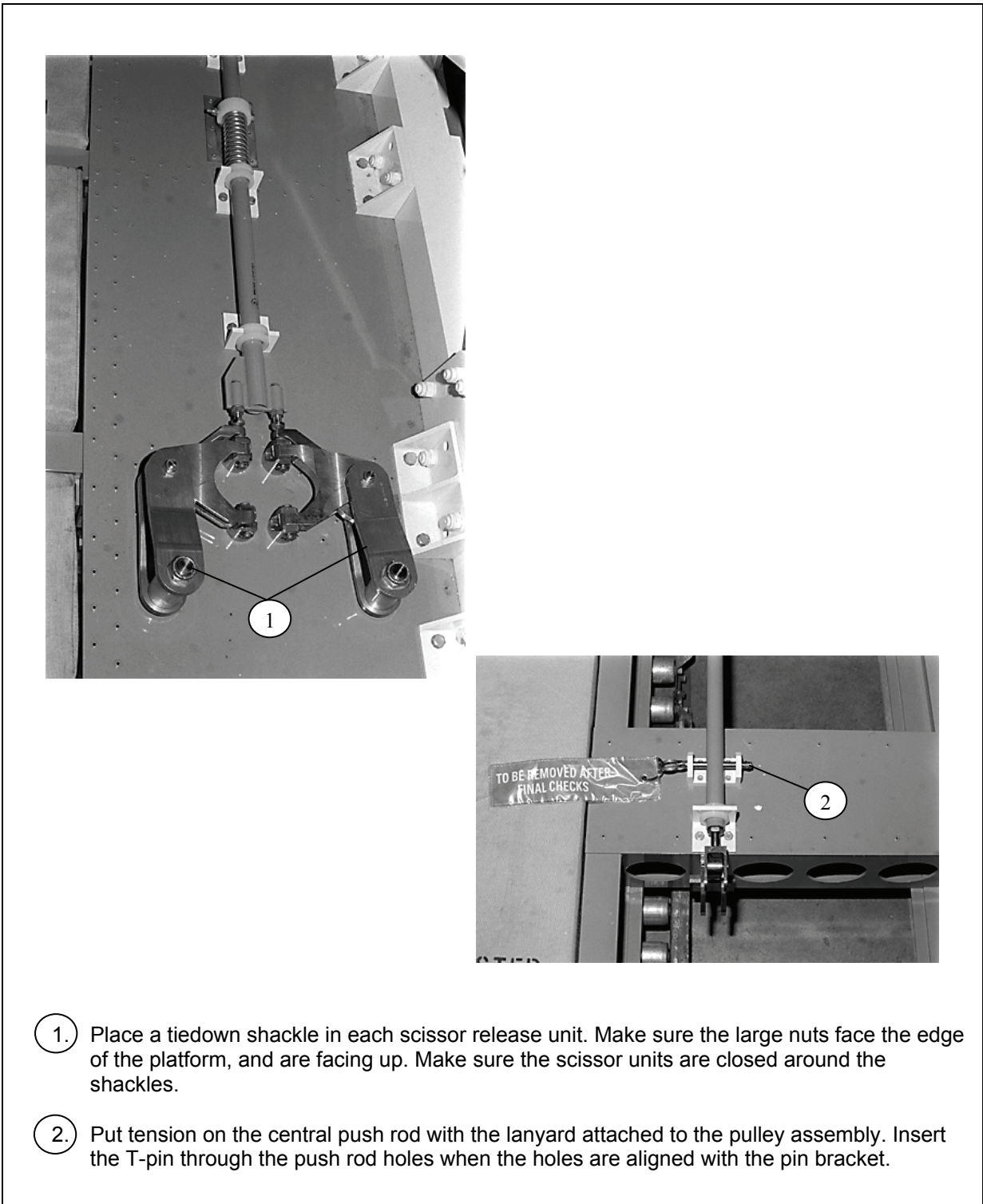
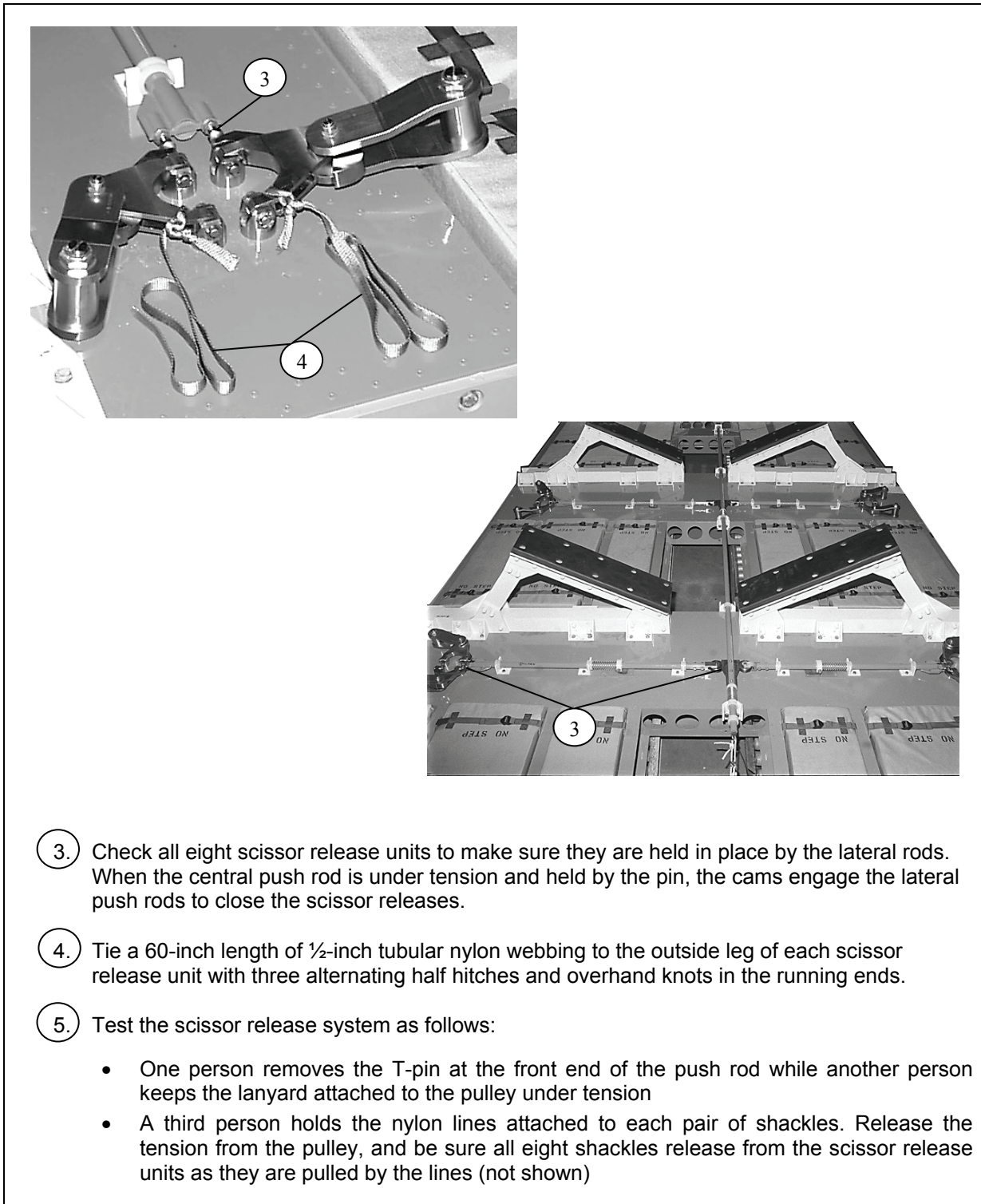


Figure 4-7. Scissor Release Units Prepared and Tested

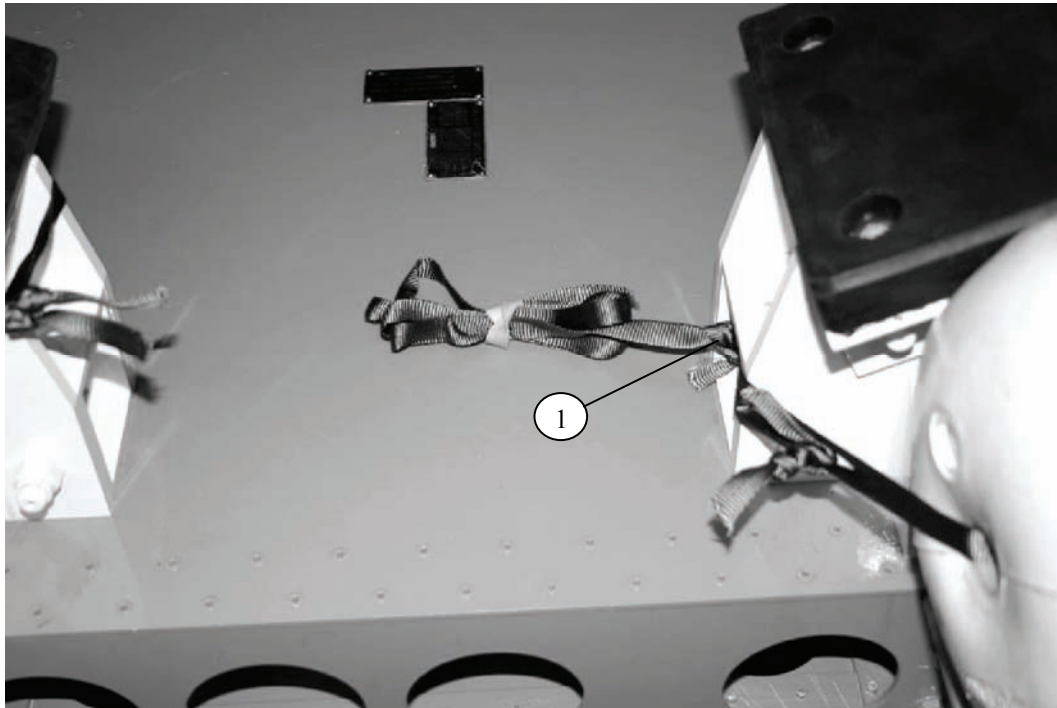


3. Check all eight scissor release units to make sure they are held in place by the lateral rods. When the central push rod is under tension and held by the pin, the cams engage the lateral push rods to close the scissor releases.
4. Tie a 60-inch length of ½-inch tubular nylon webbing to the outside leg of each scissor release unit with three alternating half hitches and overhand knots in the running ends.
5. Test the scissor release system as follows:
 - One person removes the T-pin at the front end of the push rod while another person keeps the lanyard attached to the pulley under tension
 - A third person holds the nylon lines attached to each pair of shackles. Release the tension from the pulley, and be sure all eight shackles release from the scissor release units as they are pulled by the lines (not shown)

Figure 4-7. Scissor Release Units Prepared and Tested (continued)

INSTALLING EXTRACTION FORCE TRANSFER COUPLING (EFTC)

4-4. Install the drop arm retaining line as shown in Figure 4-8. Inspect and prepare the EFTC and a 24-foot cable in accordance with FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 4-9.



1. Tie a 60-inch length of 1/2-inch tubular nylon webbing to the front right cradle bar with three alternating half hitches and overhand knots in the running ends. S-fold the excess and secure it temporarily with a rubber retainer band.

Figure 4-8. Drop Arm Retaining Line Installed