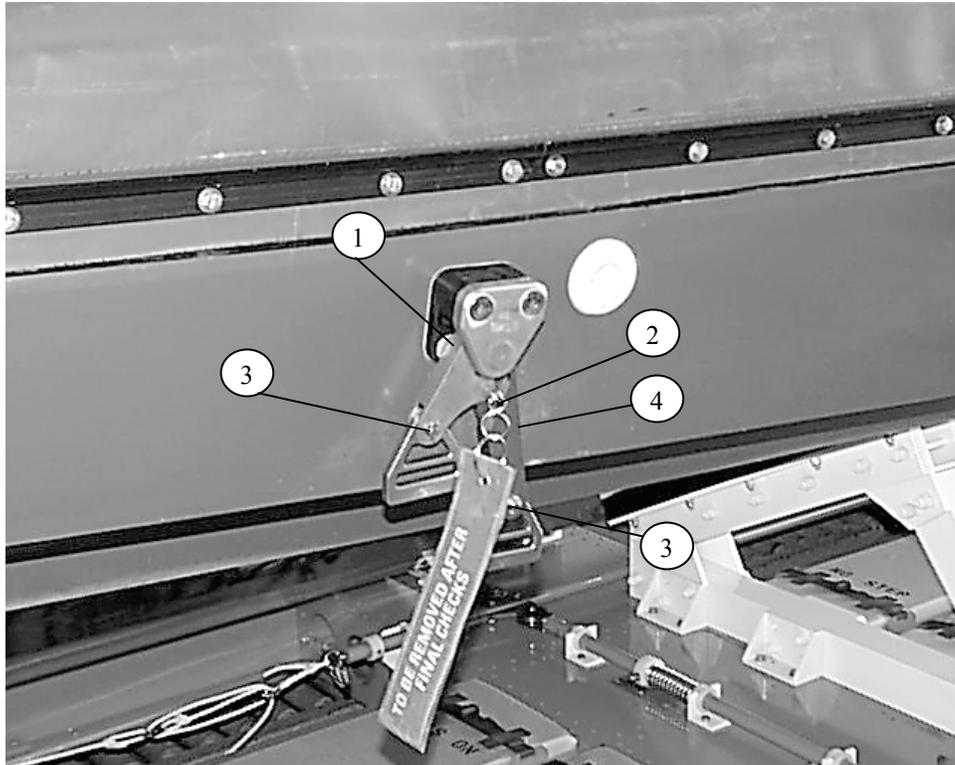


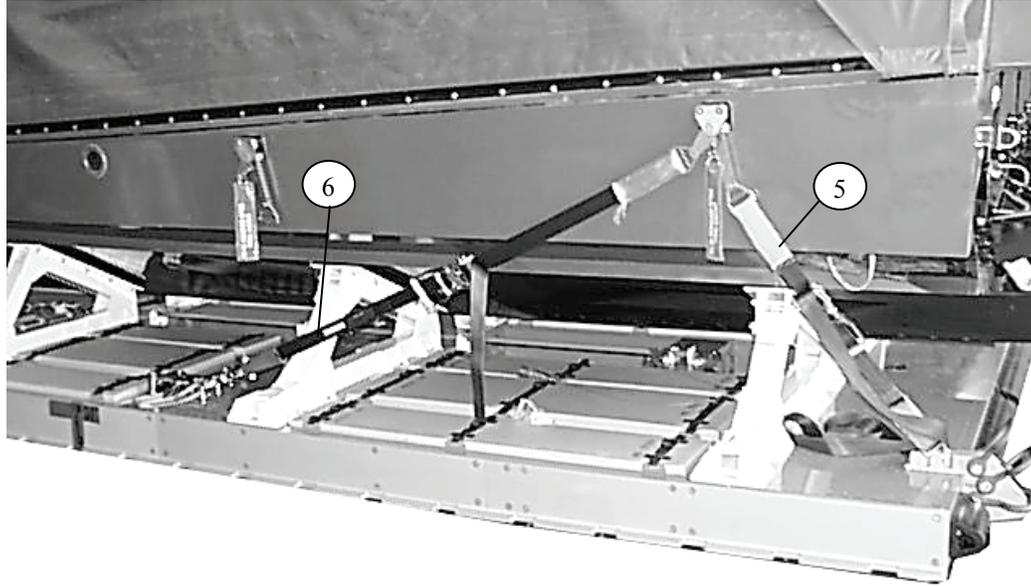
PREPARING AND TESTING THE NSW RIB RESTRAINT SYSTEM

4-16. Prepare the restraint system as shown in Figure 4-28. Prepare the restraint system for test fire as shown in Figure 4-29. Test fire the system as shown in Figure 4-30.



1. Install a release caliper assembly on each of the boat restraint provisions (four on each side).
2. Make sure the long arm faces the stem of the boat.
3. Make sure the cotter pin on each arm faces outward.
4. Secure each caliper assembly in place with the pin provided.

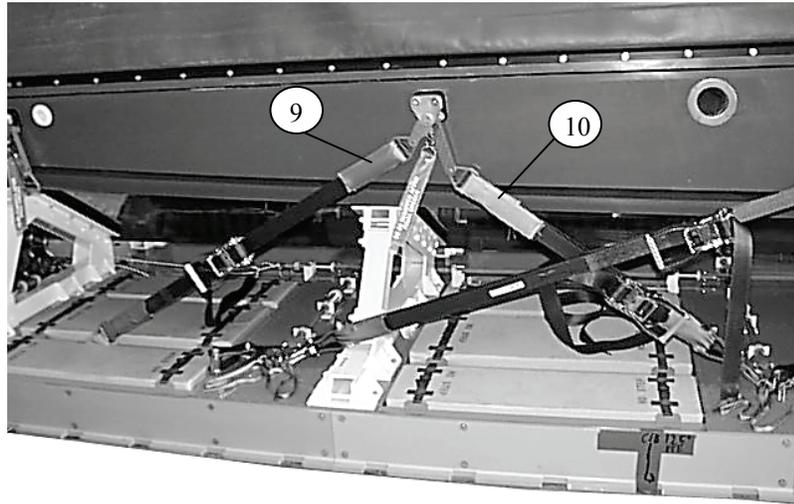
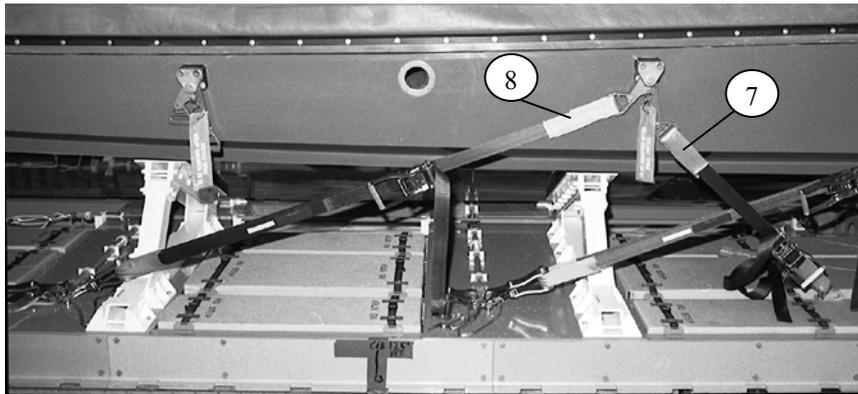
Figure 4-28. Restraint System Prepared



5. With the ratchet handle facing outboard, pass a lashing through the link on the emergency aft restraint bracket, and up through the long arm of the caliper release unit. Connect the lashing at the ratchet.
6. From outboard, pass the free end of the second lashing through the large diameter pin of the 1/2-inch shackle fitted to the scissor release unit. Pass the free end upward and inboard through the short arm of the caliper release unit. Connect the lashing at the ratchet.

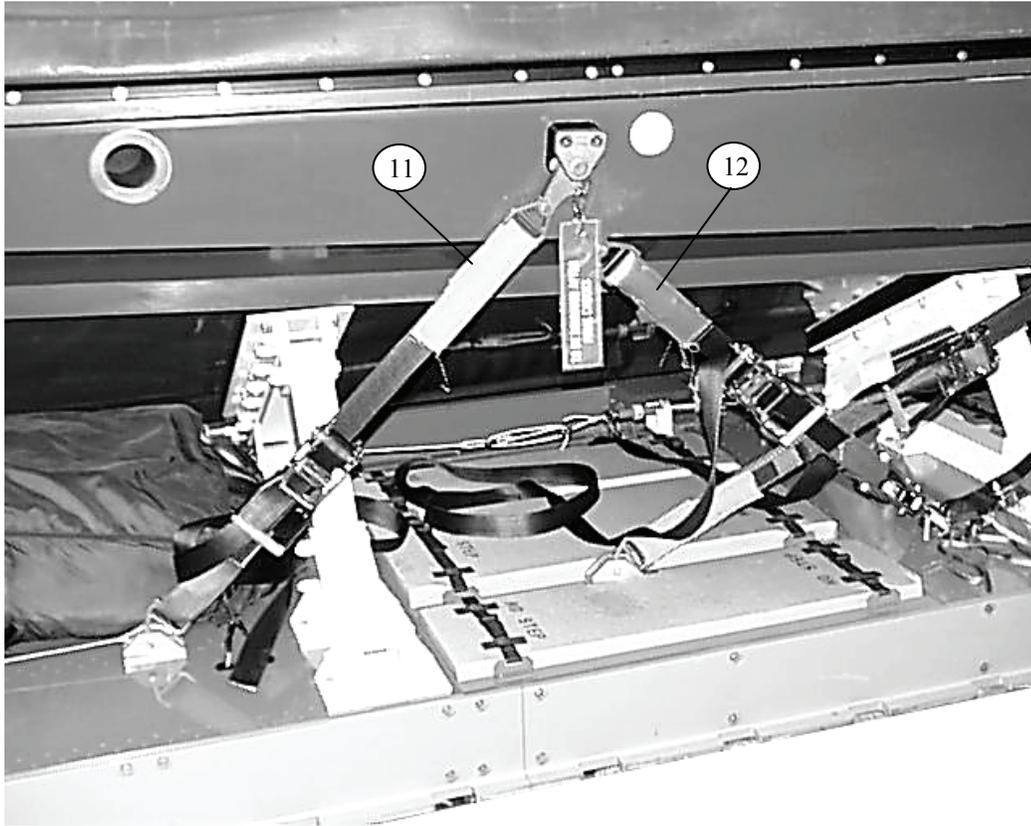
Note. Allow no twists in these lashings. Be sure that the protective sleeves on the lashings are positioned to protect them from metal contact. Do not tighten the lashings until all are installed.

Figure 4-28. Restraint System Prepared (continued)



7. With the ratchet handle facing outward, pass a lashing through the link between the first and second row of flotation devices, and up through the long arm of the caliper release unit. Connect the lashing at the ratchet.
8. From outboard, pass the free end of another lashing through the large diameter pin of the 1/2-inch shackle fitted to the second scissor release unit. Pass the free end upward and inboard through the short arm of the caliper release unit. Connect the lashing at the ratchet.
9. With the ratchet handle facing outward, pass a lashing through the link between the first and second row of flotation devices, and up through the short arm of the caliper release units. Connect the lashing at the ratchet.
10. From outboard, pass the free end of another lashing through the large-diameter pin of the 1/2-inch shackle fitted to the first scissor release unit. Pass the free end upward and inboard through the long arm of the caliper release unit. Connect the lashing at the ratchet.

Figure 4-28. Restraint System Prepared (continued)



- 11 With the ratchet handle facing outward, pass a lashing through the rearmost link, and up through the short arm of the caliper release unit. Connect the lashing at the ratchet.
- 12 From outboard, pass the free end of another lashing through the large-diameter pin of the 1/2-inch shackle fitted to the second scissor release unit. Pass the free end upward and inboard through the long arm of the caliper release unit. Connect the lashing at the ratchet.
- 13 Repeat steps 1 through 12 for the other side of the boat.

Note. Starting at the stern, tighten the lashings simultaneously on the port and starboard sides. Tighten no more than hand tight. Proper tension is applied to a pair of lashings attached to each caliper release assembly when the pin can be withdrawn and re-inserted easily. Do not secure excess lashing until test-firing is completed.

Figure 4-28. Restraint System Prepared (continued)

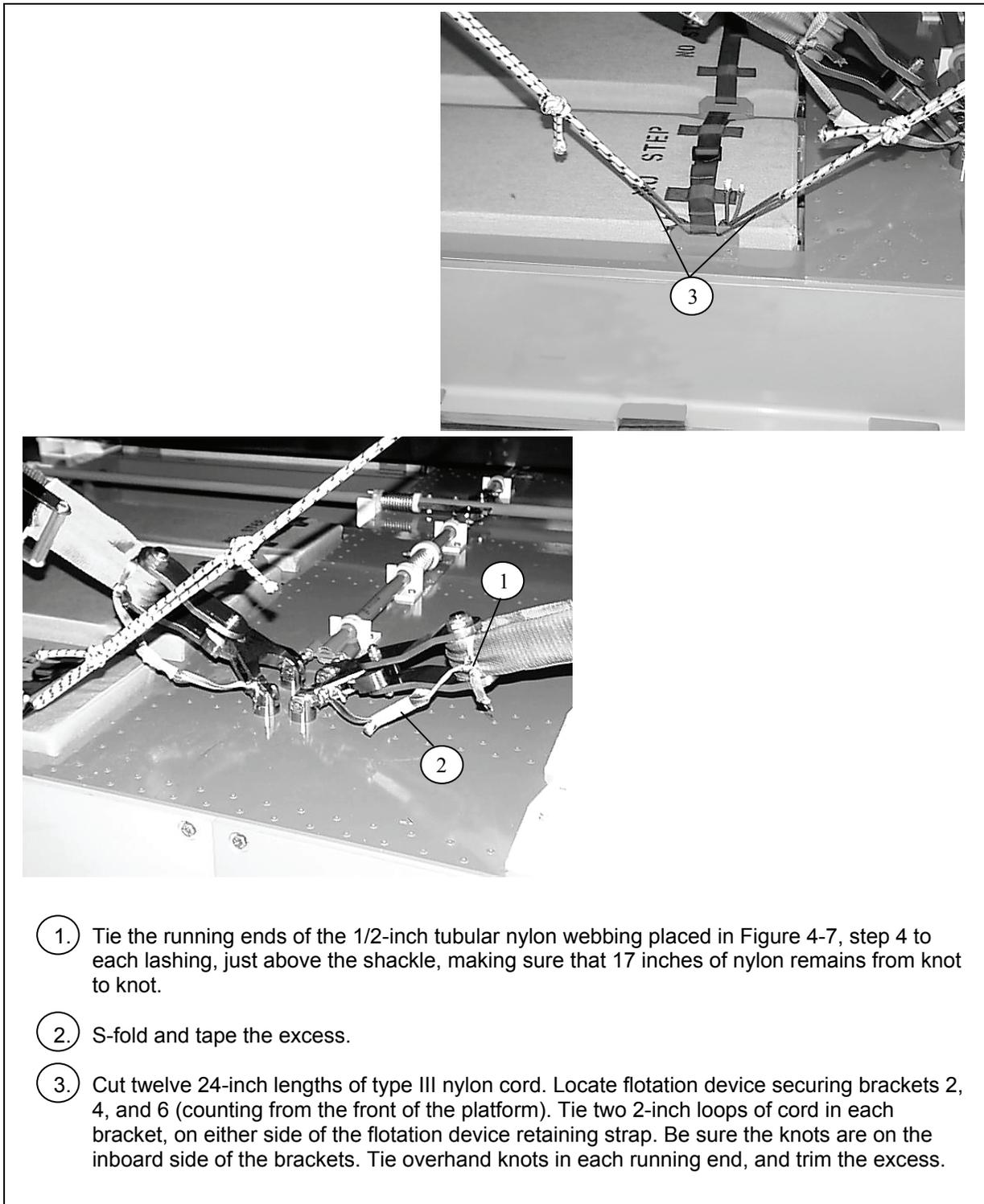


Figure 4-29. Restraint System Prepared for Test-Fire

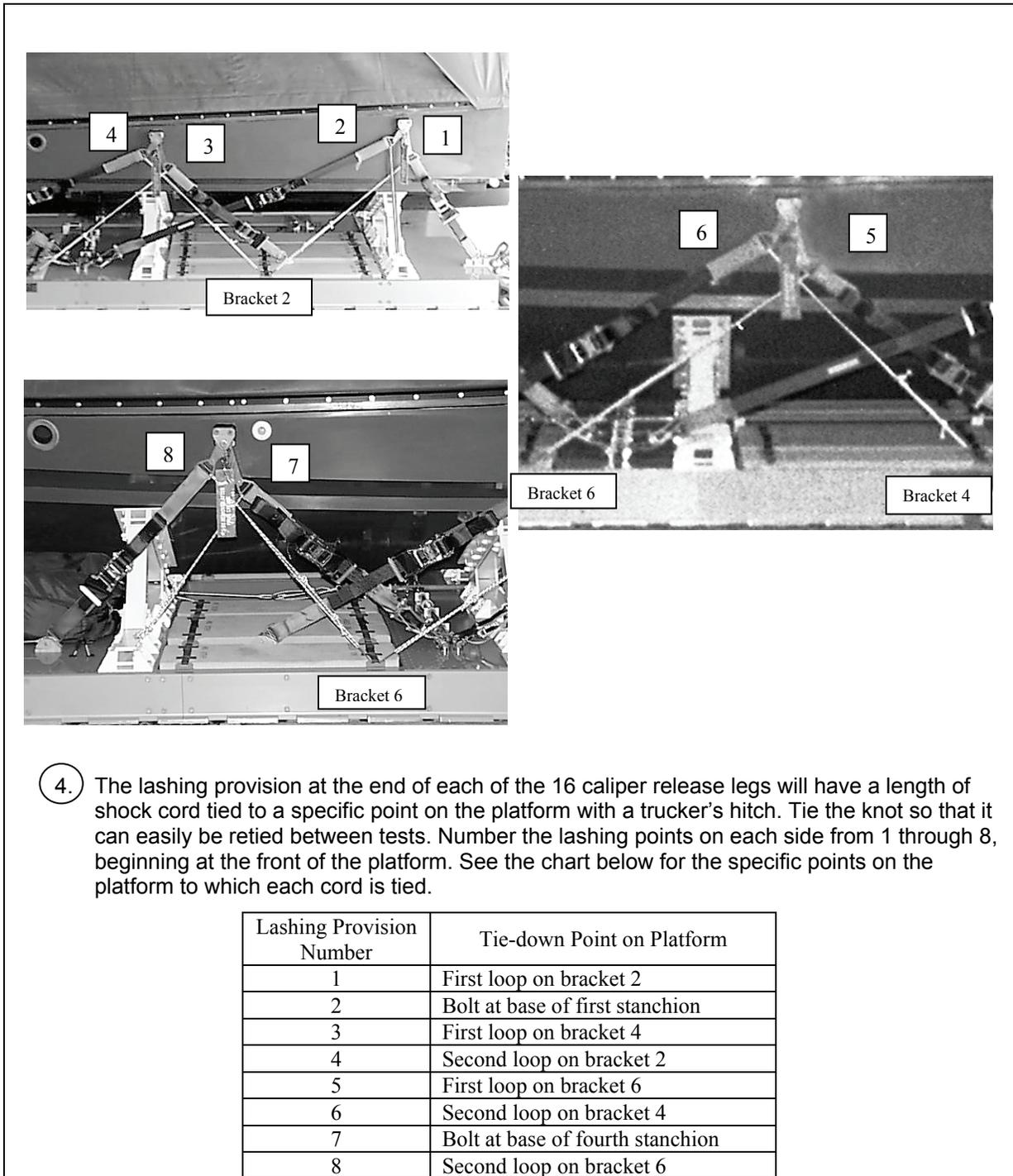
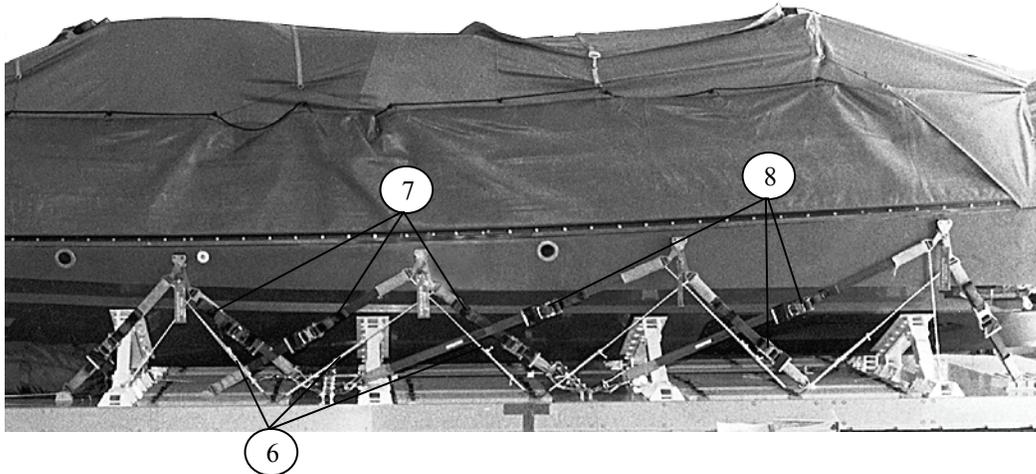


Figure 4-29. Restraint System Prepared for Test-Fire (continued)



1. Place honeycomb under each set of caliper releases to protect the platform components from damage. Be sure that the honeycomb does not interfere with the scissor release units (not shown).
2. Be sure that the push rod cable is disconnected from the halyard shackle before testing the system (See Figure 4-6) (not shown).
3. Remove all eight safety pins from the caliper releases. Exert enough force on the pulley rope to allow the push rod T-pin to be removed. Releasing the rope test fires the caliper releases. All caliper releases should release the lashings simultaneously (not shown).
4. Repeat the steps in Figures 4-28 and 4-29 to reset the system for the next test fire. Test fire as explained in steps 1 through 3 above.
5. Repeat step 4 for the third test fire.
6. Reset the restraint system for airdrop as in the previous steps. Secure the shock cord with three alternating half-hitches and overhand knots in the running ends. Trim and tape the ends.
7. Roll under excess lashing and tape it to the outboard ply (not to both plies).
8. Ensure all ratchet handles are locked in the closed position. Tape around the handle to the outboard play of the lashing (not to both plies).
9. Attach the wire cable connected to the drawbar to the locking halyard shackle, and be sure the shackle is in the locked position (not shown).
10. Remove the pulley assembly.

Figure 4-30. Caliper Releases Test-Fired and Reset

CONNECTING M-21 CUTTER ARMING WIRE LANYARDS

4-17. Connect the M-21 cutter arming wire lanyards to the deployment line as shown in Figure 4-31.

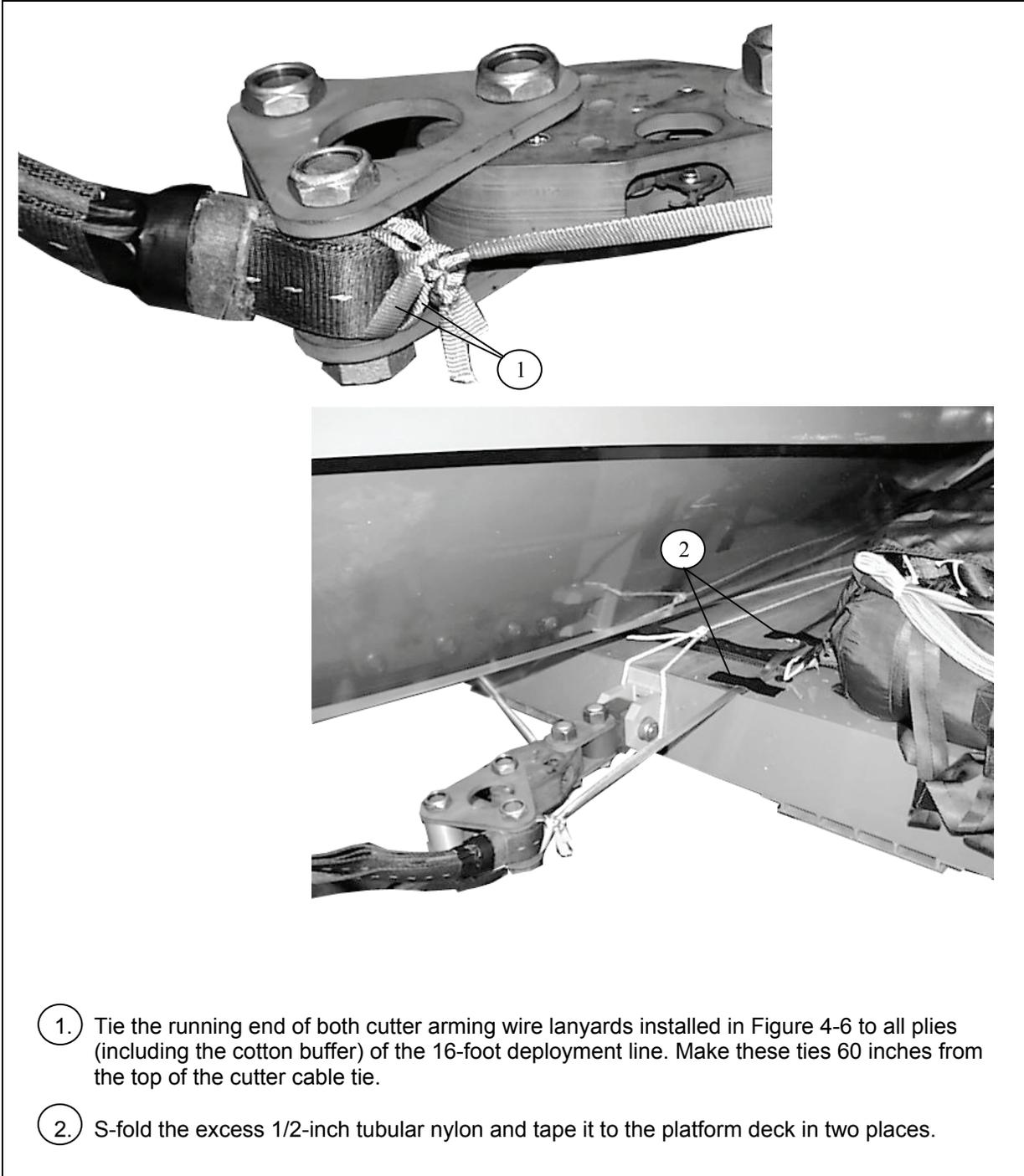


Figure 4-31. Cutter Arming Wire Lanyards Tied to Deployment Line

SECURING G-12E PARACHUTE STATIC LINE

4-18. Tie and tape the G-12E parachute static line as shown in Figure 4-32.

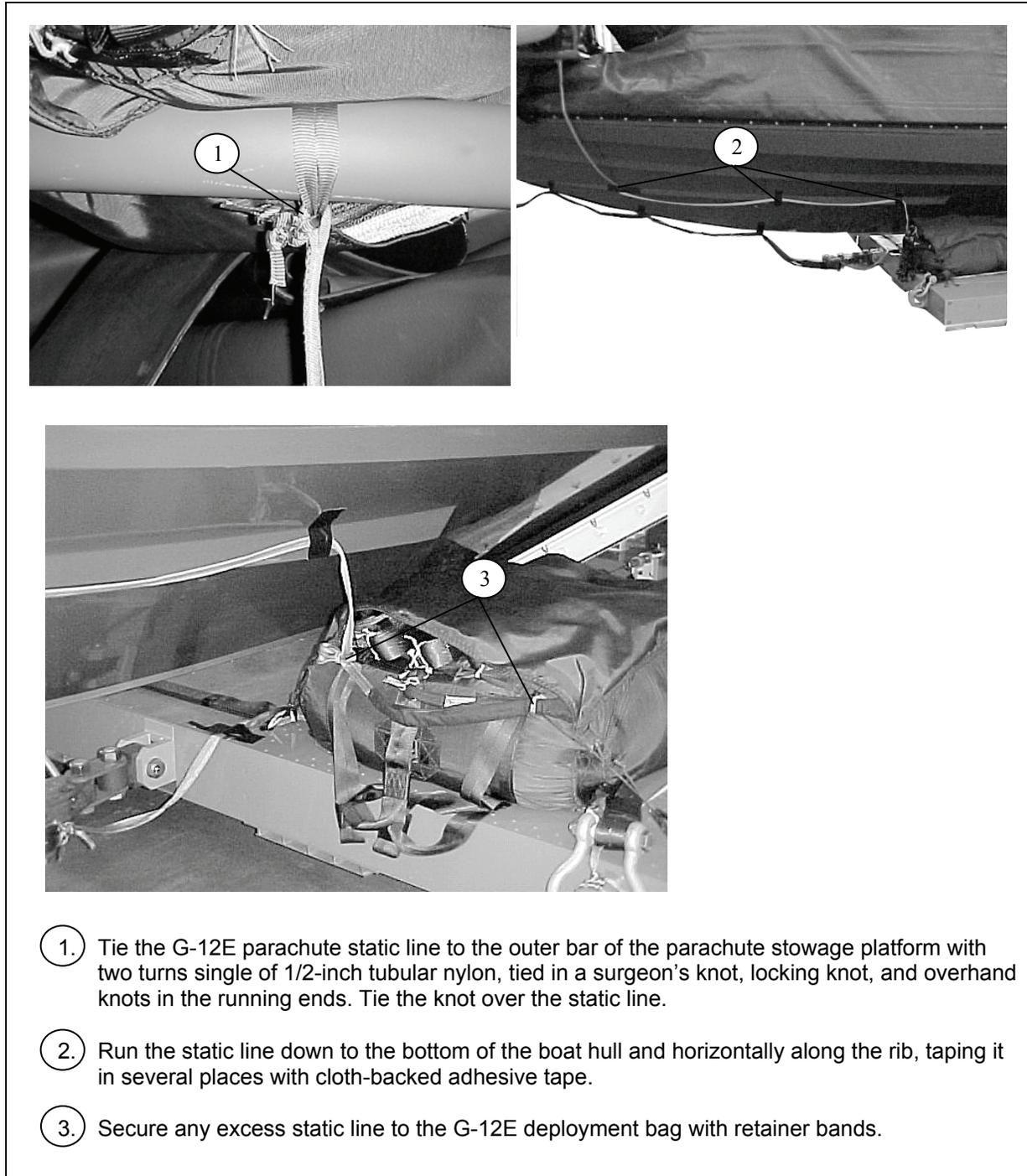


Figure 4-32. G-12E Parachute Static Line Secured

PLACING EXTRACTION PARACHUTES

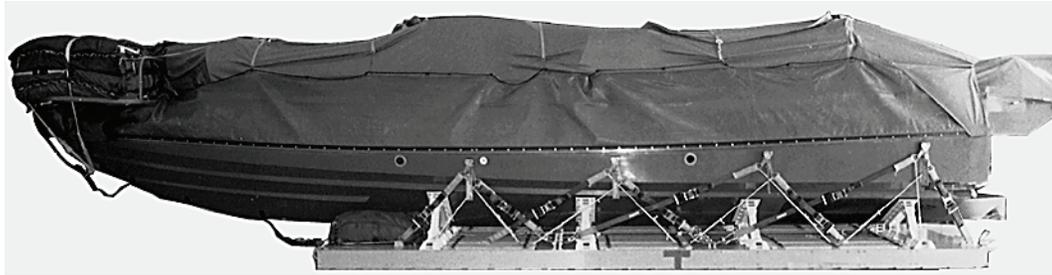
4-19. Select the extraction line and the extraction parachute needed using the extraction line requirements table in FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Place the extraction parachute and the extraction line on the load for installation in the aircraft.

MARKING THE RIGGED LOAD

4-20. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Complete the Shipper's Declaration for Dangerous Goods.

CAUTION

Make the final rigger inspection and all other inspections specified in this manual before the load leaves the rigging site.



Rigged Load Data

Weight: Load shown	18,500 pounds
Maximum.....	20,640 pounds
Height:.....	100 inches
Width:	108 inches
Length:	432 inches
Overhang: Front.....	42 inches
Rear	138 inches
CB (maximum distance allowable from the front edge of the platform).....	149.5 inches
Extraction System	EFTC

Figure 4-33. NSW RIB Rigged for Low-Velocity Airdrop

EQUIPMENT REQUIRED

4-21. Use the equipment listed in Table 4-1 to rig this load.

Table 4-1. Equipment Required for Rigging NSW Rib for Low-Velocity Airdrop

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
8040-00-273-8713	Adhesive paste, 1-gal	As required
1670-00-568-0323	Band, rubber, parachute	As required
4030-00-090-5354	Clevis, suspension, 1-in, large	5
4030-00-678-8562	3/4-in, medium	2
8305-00-926-1559	Cloth, muslin, type II, 36-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
8305-00-267-3114	Cord, elastic, .375, nat, type I	As required
1670-01-423-4103	Coupling, airdrop, extraction force transfer with cable, 24 ft Cover:	1
1670-00-360-0328	Clevis, large	1
1377-00-060-0885	Cutter, cartridge actuated, M-21	2
8305-00-958-3685	Felt, sheet, 1/2-in	As required
5340-00-040-8219	Knife, multi para release, strap webbing	2
1670-01-183-2678	Leaf, extraction line (line bag)	2
1670-01-064-4452	Line, drogue (for C-17) 60-ft (1-loop), type XXVI	1
1670-01-062-6313	Line extraction: For, C-130: 60-ft (3-loop), type XXVI	1
1670-01-107-7651	For, C-141: 140-ft (3-loop), type XXVI	1
1670-01-107-7651	140-ft (3-loop), type XXVI	1
1670-01-107-7651	For, C-17: 140-ft (3-loop), type XXVI	1
5306-00-435-8994	Link assembly: Two-point, 3 3/4-in Bolt, 1-in diam, 4-in long	1 (2)
5310-00-232-5165	Nut, 1-in, hexagonal	(2)
1670-00-003-1953	Plate, side, 3 3/4	(2)
5365-00-007-3414	Spacer, large	(2)
5306-00-435-8994	Two-point 5 1/2-in Bolt, 1-in diam, 4-in long	1 (2)
5310-00-232-5165	Nut, 1-in, hexagonal	(2)
1670-00-003-1954	Plate, side, 5 1/2	(2)
5965-00-007-3414	Spacer, large	(2)
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in	4 sheets
8135-00-160-7759	Paper, kraft, untreated	As required
1670-01-016-7841	Parachute: Cargo G-11B	4
1670-01-065-3755	Cargo G-12E	1
1670-00-040-8135	Cargo extraction, 28-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
No NSN	Platform, 21-ft, Maritime Aerial Delivery System	1
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	1 sheet

Table 4-1. Equipment Required for Rigging NSW Rib for Low-Velocity Airdrop (continued)

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
1670-01-097-8817 No NSN	Release, cargo parachute, M-2	1
	Release, cargo, parachute, Conax, water activated	5
	Sling, cargo airdrop	
	For suspension:	
1670-01-064-4453	20-ft (4-loop), type XXVI nylon webbing	4
	For deployment:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	4
7510-00-266-5016	Tape, adhesive, 2-in	As required
7510-00-266-6712	Tape, adhesive, masking	As required
	Thread:	
8310-01-279-6073	Cotton, ticket# 8/4, orange	As required
8310-00-917-3945	Cotton, ticket# 8/7, natural	As required
1670-00-725-1437	Tie-down, cargo, aircraft, CGU-1/B	4
5310-00-057-3463	Washer, flat, 3/4-in	50
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-268-2455	Nylon, tubular, 1-in	As required
8305-00-261-8585	Type VIII	As required

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Chapter 5

Rigging the Advanced Rescue Craft (ARC) on a Combat Expendable Platform (CEP)

SECTION I-RIGGING THE GP 800 ARC

DESCRIPTION OF LOAD

5-1. The GP 800 ARC shown in Figure 5-1 is rigged on a 48- by 87-inch combat expendable platform for low-velocity airdrop. This load can be rigged with or without a 20-man life raft and a rescue board, a rucksack, and an aid bag. The load requires one G-12E cargo parachute, a 15-foot cargo extraction parachute packed in a T-10 bag, and is only rigged with a hydraulic release.



Figure 5-1. GP 800 ARC

BUILDING THE COMBAT EXPENDABLE PLATFORM

5-2. Build the 48- by 87-inch combat expendable platform as shown in Figure 5-2.

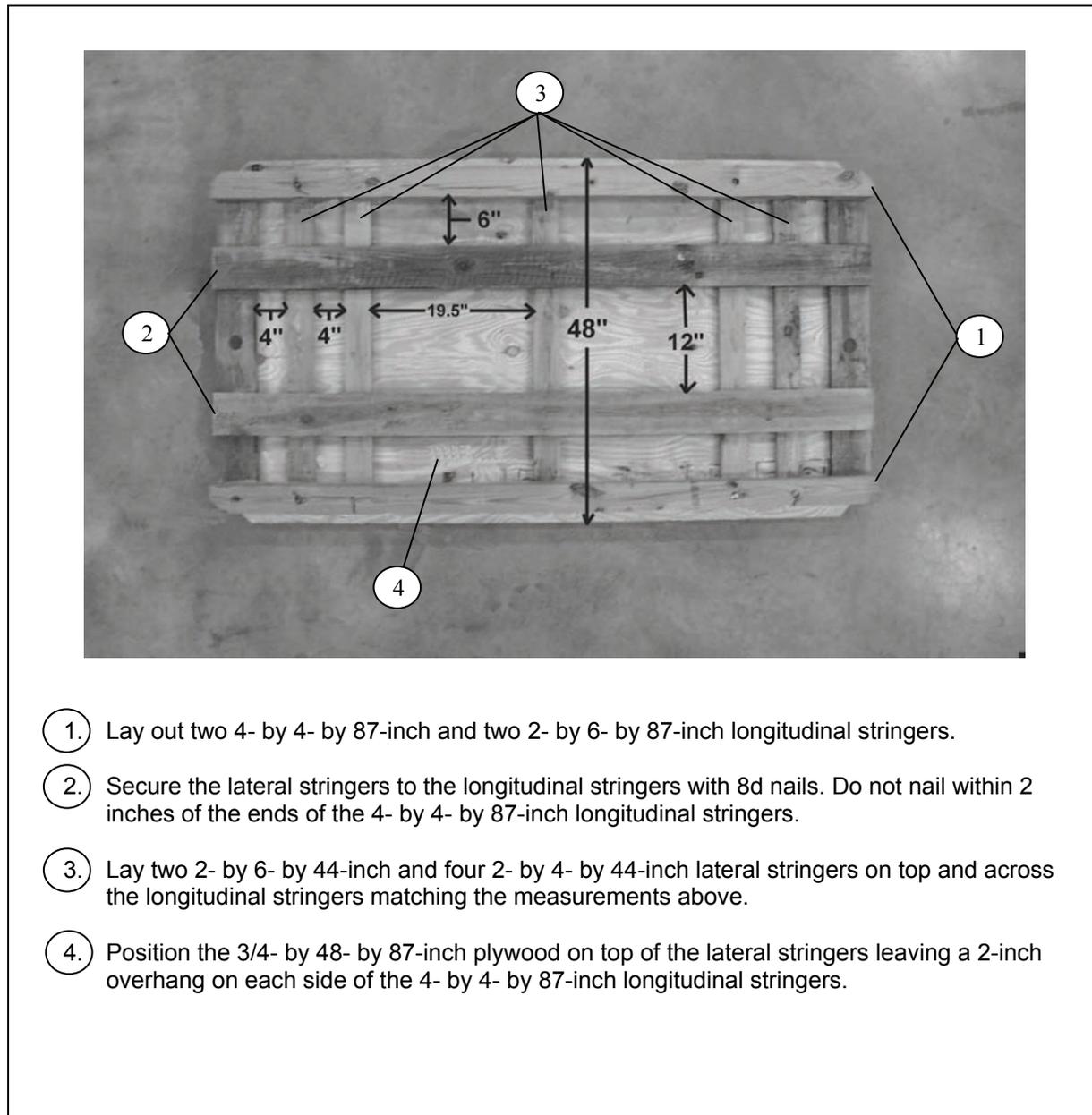


Figure 5-2. Combat Expendable Platform Built

1. Lay out two 4- by 4- by 87-inch and two 2- by 6- by 87-inch longitudinal stringers.
2. Secure the lateral stringers to the longitudinal stringers with 8d nails. Do not nail within 2 inches of the ends of the 4- by 4- by 87-inch longitudinal stringers.
3. Lay two 2- by 6- by 44-inch and four 2- by 4- by 44-inch lateral stringers on top and across the longitudinal stringers matching the measurements above.
4. Position the 3/4- by 48- by 87-inch plywood on top of the lateral stringers leaving a 2-inch overhang on each side of the 4- by 4- by 87-inch longitudinal stringers.

5. Cut the corners of the platform at a 45-degree angle to include the corners of the 4- by 4- by 87-inch longitudinal stringers. (not shown)
6. Turn the platform over and drill eight 3/4-inch holes for the carriage bolts. Ensure to drill again with a large enough drill bit in order to counter sink the bolt heads, washers, and nuts. (not shown)
7. Install the carriage bolts from bottom to top and trim the threaded ends at the nuts. File sharp edges. (not shown)
8. Drill a 2-inch hole centered on each end of the platform. (not shown)

Figure 5-2. Combat Expendable Platform Built (continued)

PREPARING THE PLATFORM

5-3. Prepare the 48- by 87-inch Combat Expendable Platform as shown in Figure 5-3.

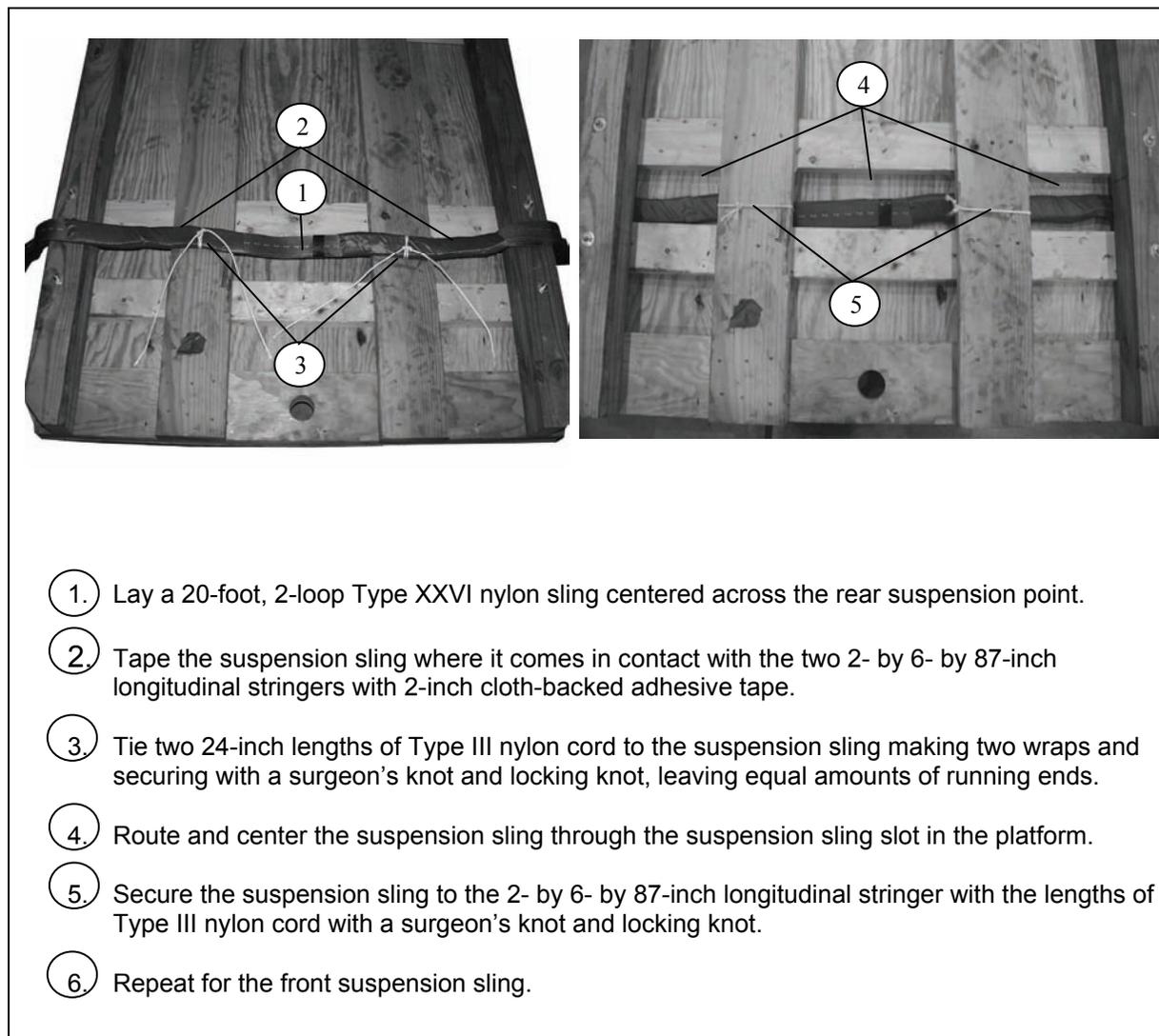


Figure 5-3. Platform Prepared

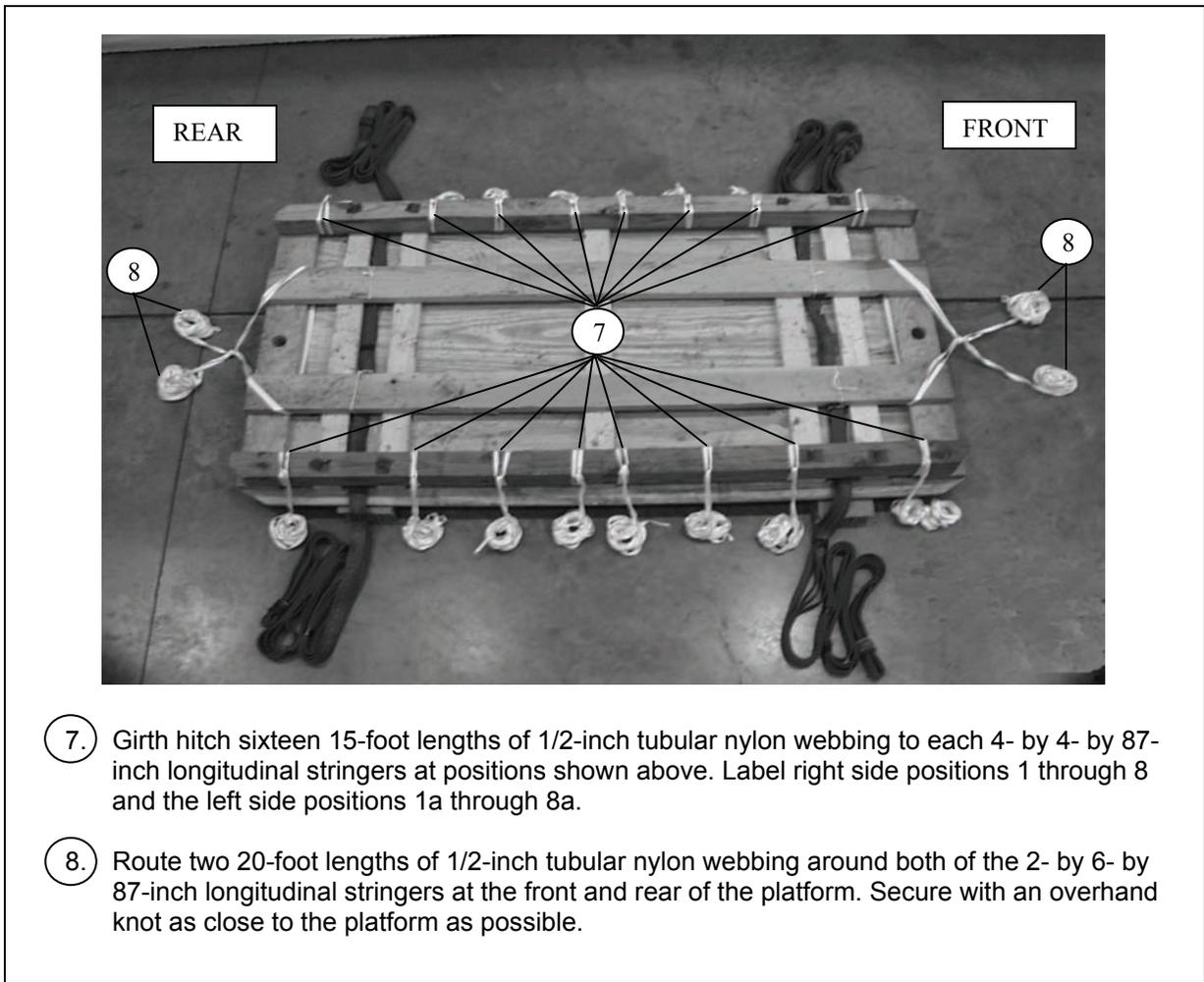


Figure 5-3. Platform Prepared (continued)

PREPARING AND POSITIONING HONEYCOMB

5-4. Prepare and position the honeycomb as shown in Figure 5-4.

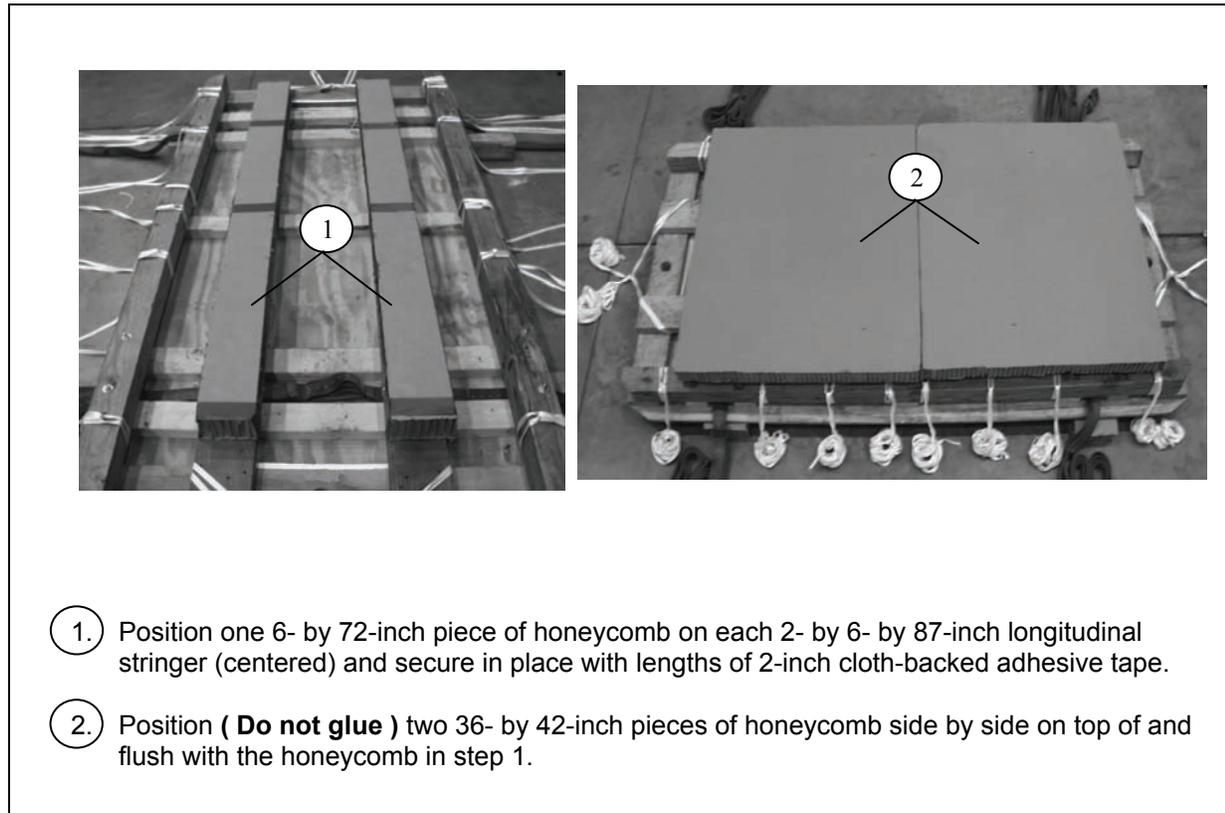
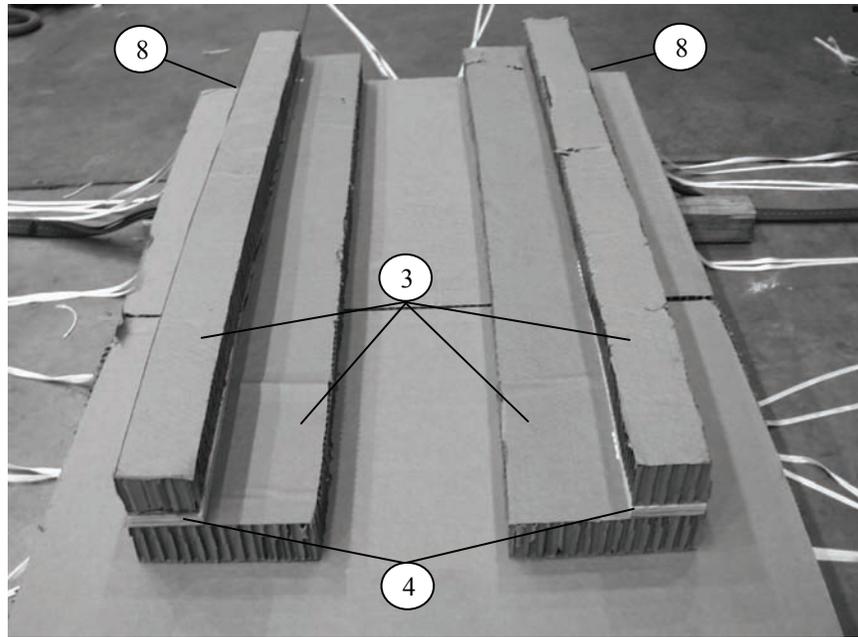


Figure 5-4. Honeycomb Positioned



3. Cut one piece of honeycomb 10- by 58-inches and one 4- by 58 inches.
4. Cut a piece of 3/4-inch plywood 4- by 24-inches.
5. Glue the 4- by 24-inch piece of plywood flush to one corner of the 10- by 58-inch piece of honeycomb (not shown).
6. Glue the 4- by 58-inch piece of honeycomb on top of the plywood and the 10- by 58-inch piece of honeycomb (not shown).
7. Stack 2 is cut the same as stack 1.
8. Position (**Do not glue**) stacks 1 and 2 flush with the front of the honeycomb in Figure 5-4 and 7 inches in from the sides. Ensure the end with the plywood piece is to the rear of the platform.

Note. Stacks 1 and 2 will have to be adjusted to the hull of the ARC.

Figure 5-4. Honeycomb Positioned (continued)

POSITIONING THE ARC

5-5. Position the ARC as shown in Figure 5-5.

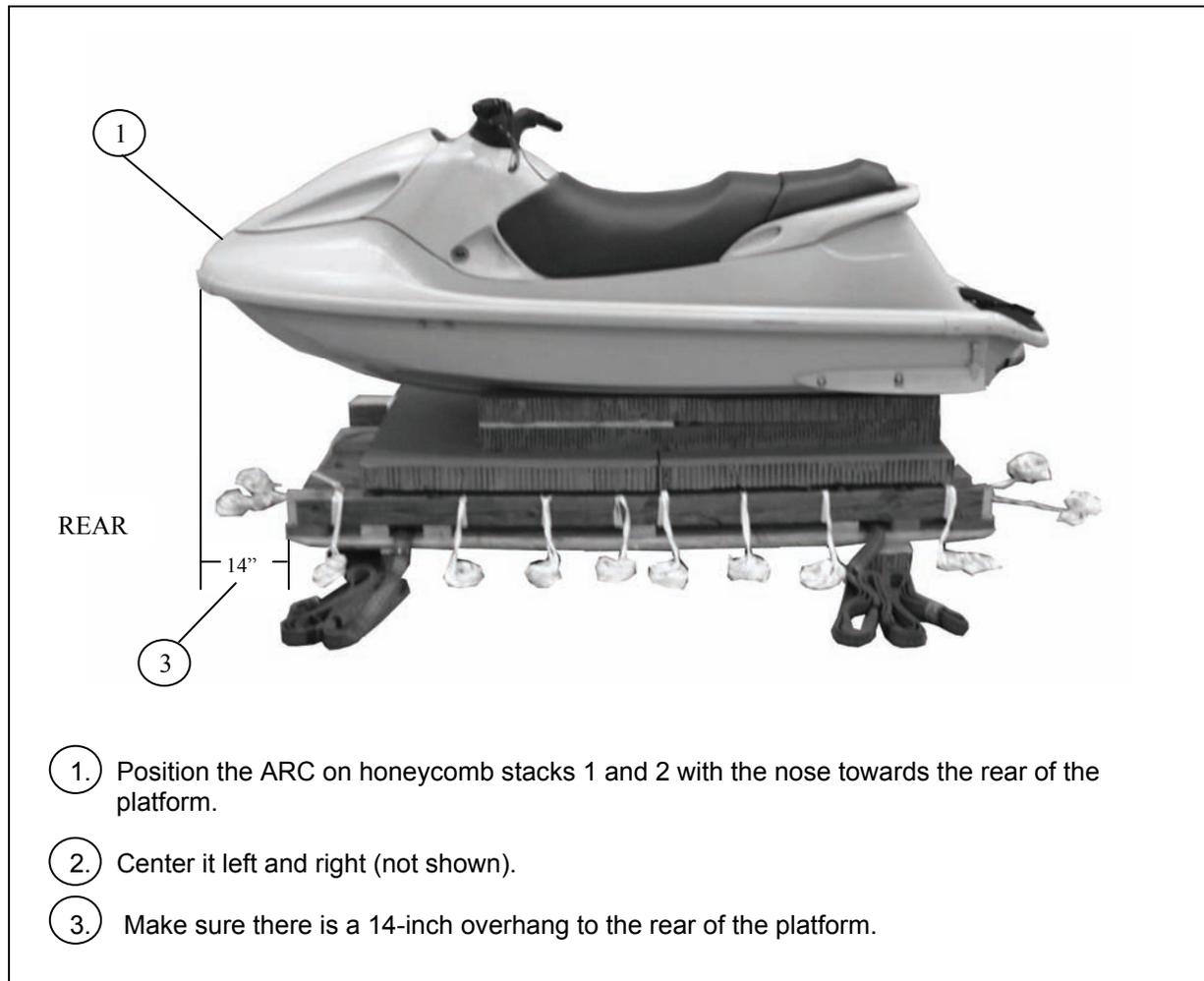


Figure 5-5. ARC Positioned

PREPARING THE ARC

5-6. Ensure the fuel tank is no more than $\frac{3}{4}$ full. Prepare as shown in Figure 5-6.

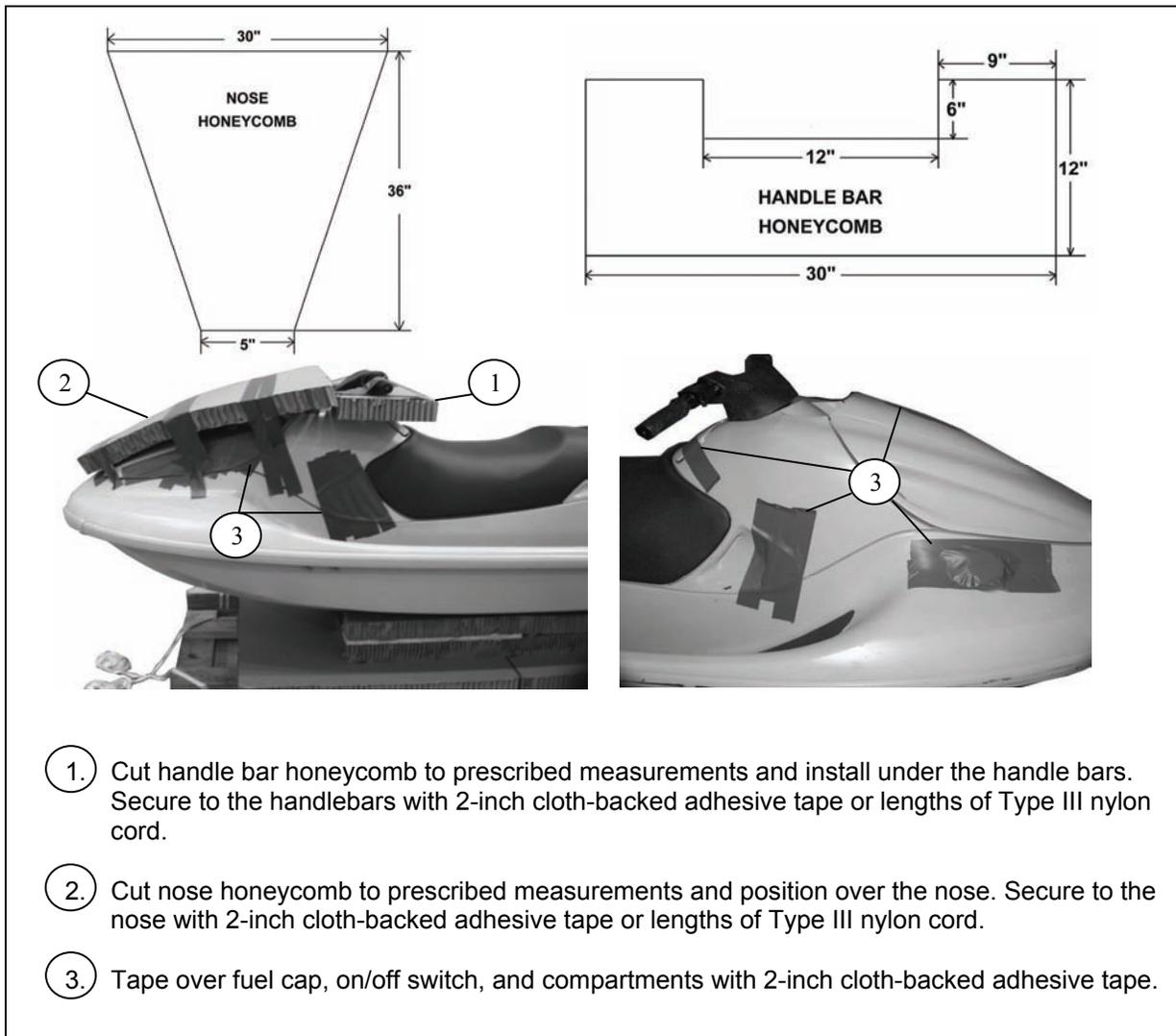


Figure 5-6. ARC Prepared

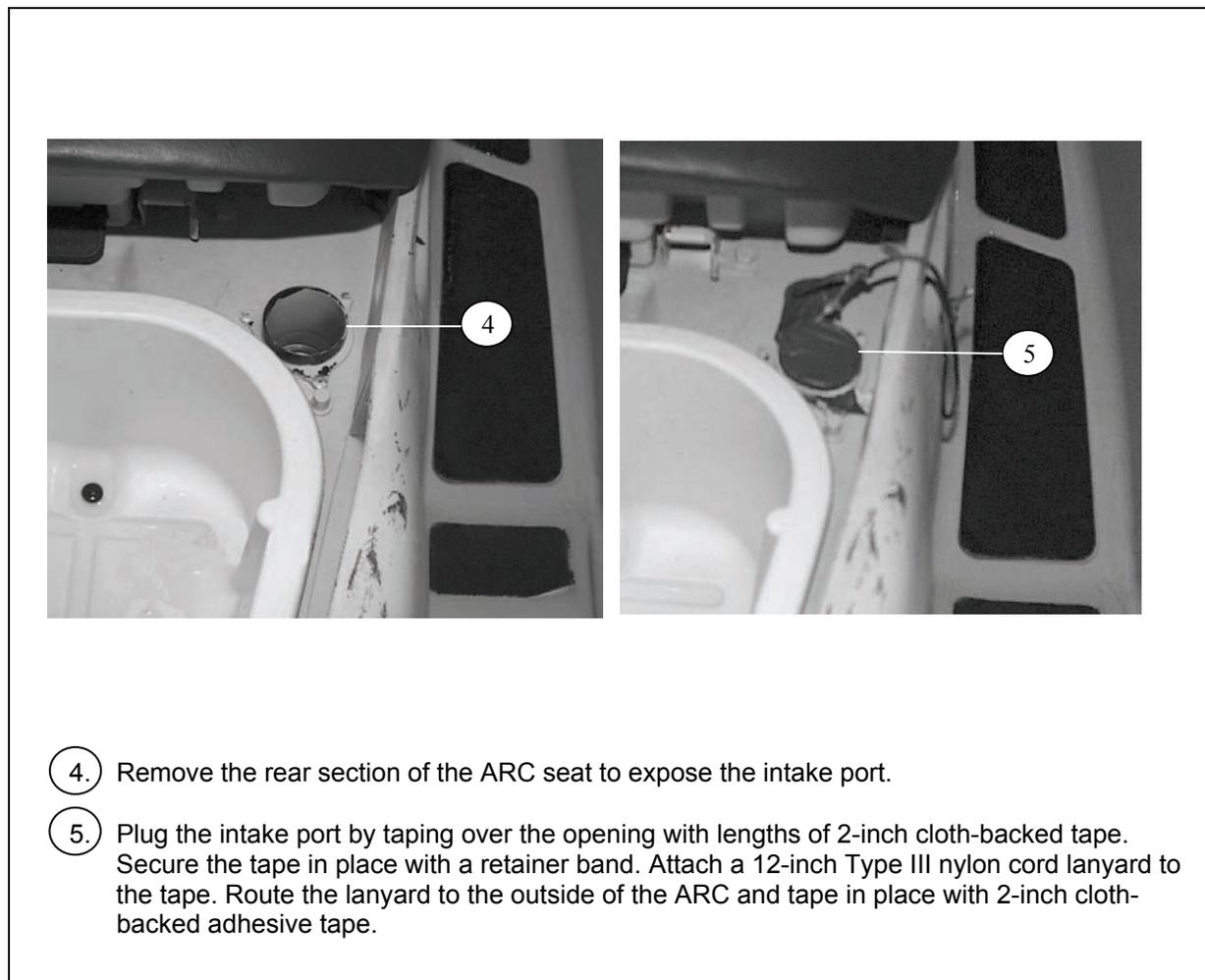
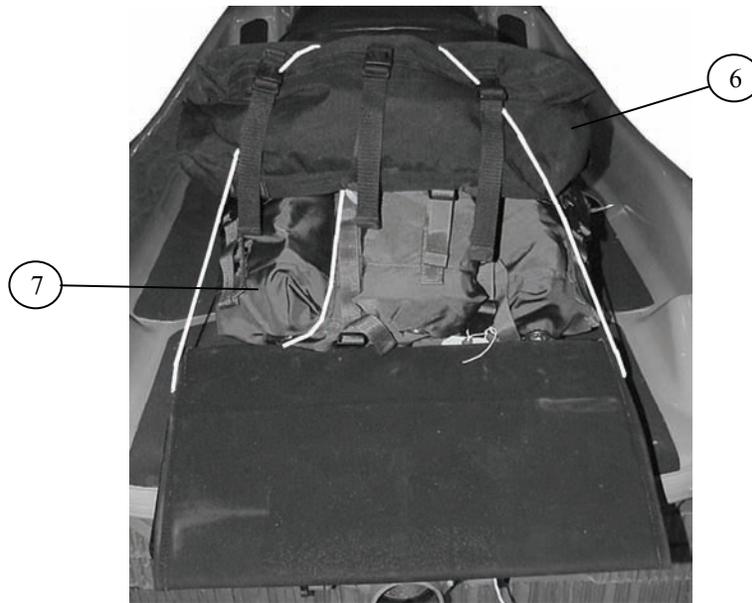


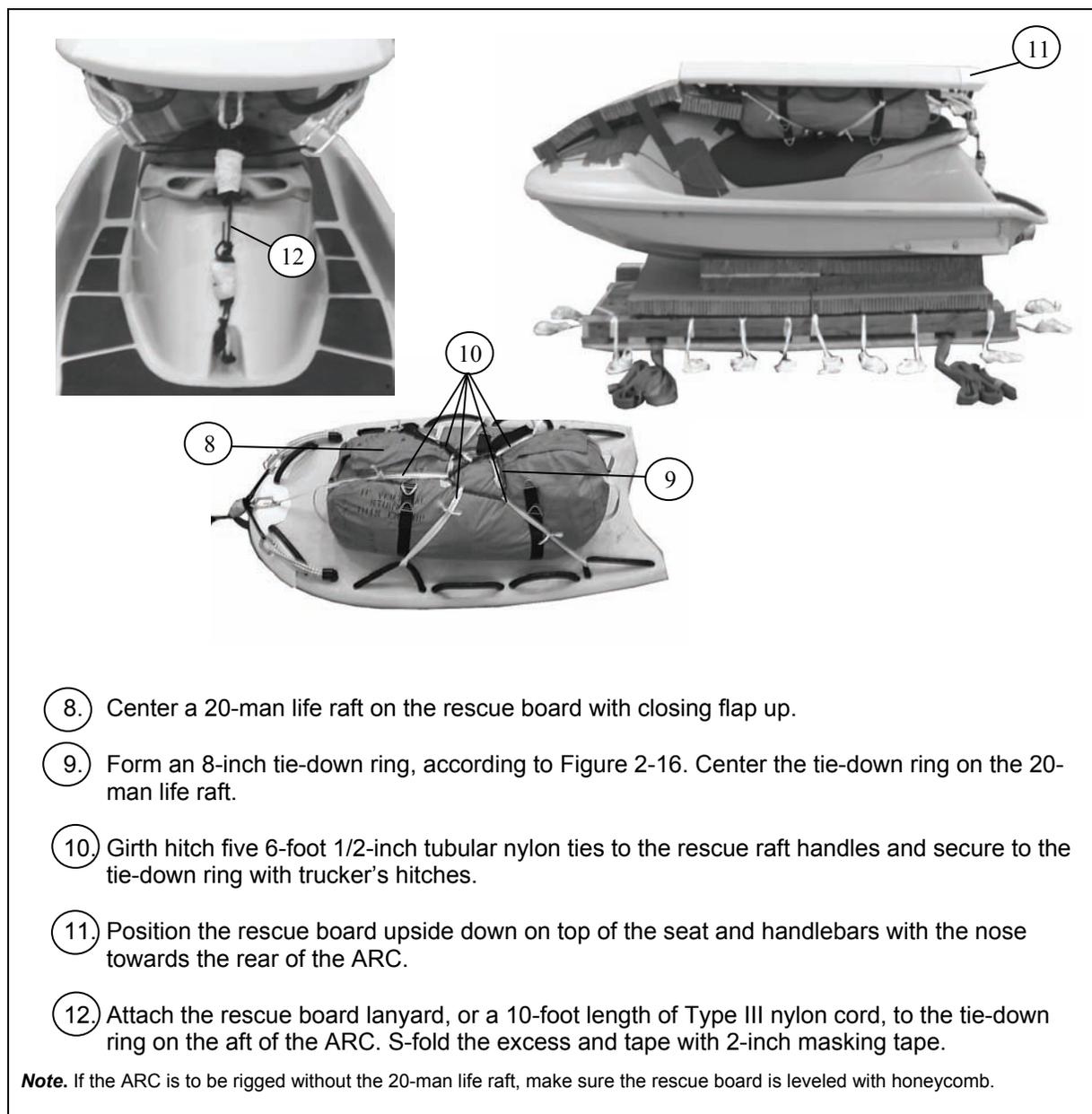
Figure 5-6. ARC Prepared (continued)

Note. If the rucksack and the first aid pack are to be rigged on the ARC use steps below.



- ⑥ Position the rucksack on the ARC behind the seat. Secure the rucksack to the rear handgrip and the tow ring with a length of Type III nylon cord.
- ⑦ Position the first aid pack on top of the rucksack and secure to the same locations with a length of Type III nylon cord.

Figure 5-6. ARC Prepared (continued)



8. Center a 20-man life raft on the rescue board with closing flap up.
9. Form an 8-inch tie-down ring, according to Figure 2-16. Center the tie-down ring on the 20-man life raft.
10. Girth hitch five 6-foot 1/2-inch tubular nylon ties to the rescue raft handles and secure to the tie-down ring with trucker's hitches.
11. Position the rescue board upside down on top of the seat and handlebars with the nose towards the rear of the ARC.
12. Attach the rescue board lanyard, or a 10-foot length of Type III nylon cord, to the tie-down ring on the aft of the ARC. S-fold the excess and tape with 2-inch masking tape.

Note. If the ARC is to be rigged without the 20-man life raft, make sure the rescue board is leveled with honeycomb.

Figure 5-6. ARC Prepared (continued)

LASHING THE ARC

5-7. Lash the ARC to the platform with two 6-foot, sixteen 15-foot, and four 20-foot lengths of 1/2-inch tubular nylon webbing as shown in Figure 5-7.

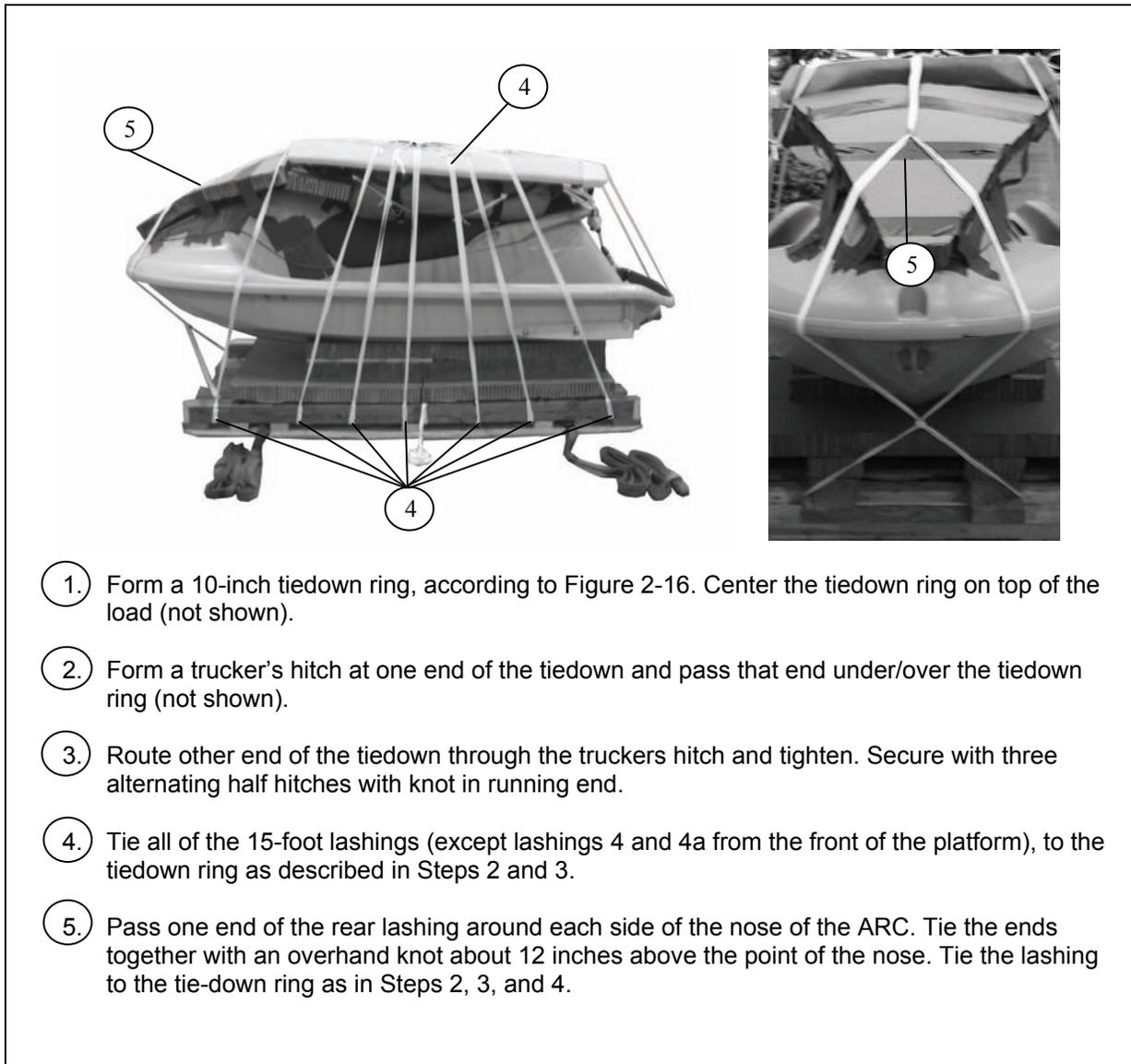


Figure 5-7. ARC Lashed to Platform

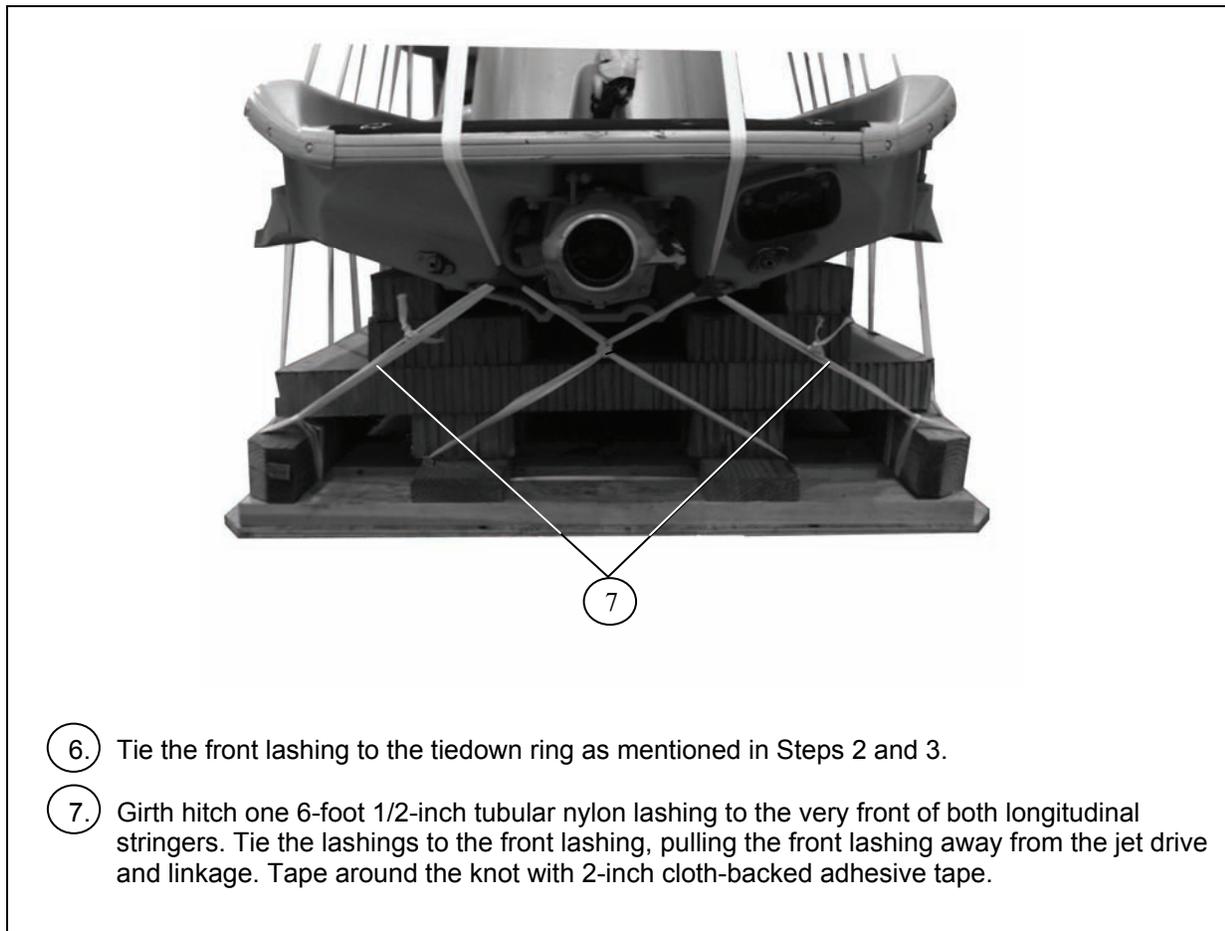


Figure 5-7. ARC Lashed to Platform (continued)

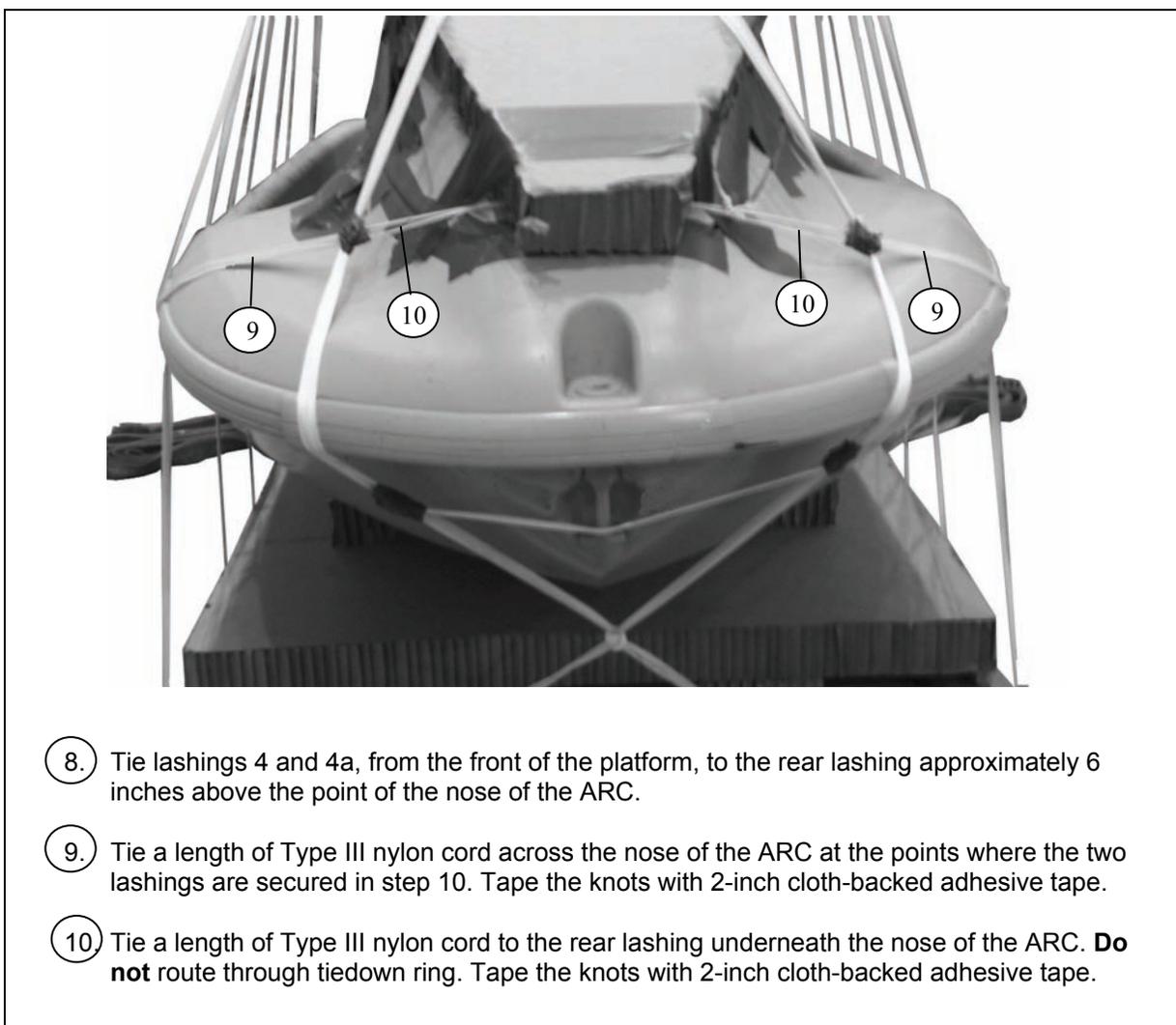


Figure 5-7. ARC Lashed to Platform (continued)

SAFETY TIEING SUSPENSION SLINGS

5-8. Safety tie the suspension slings as shown in Figure 5-8.

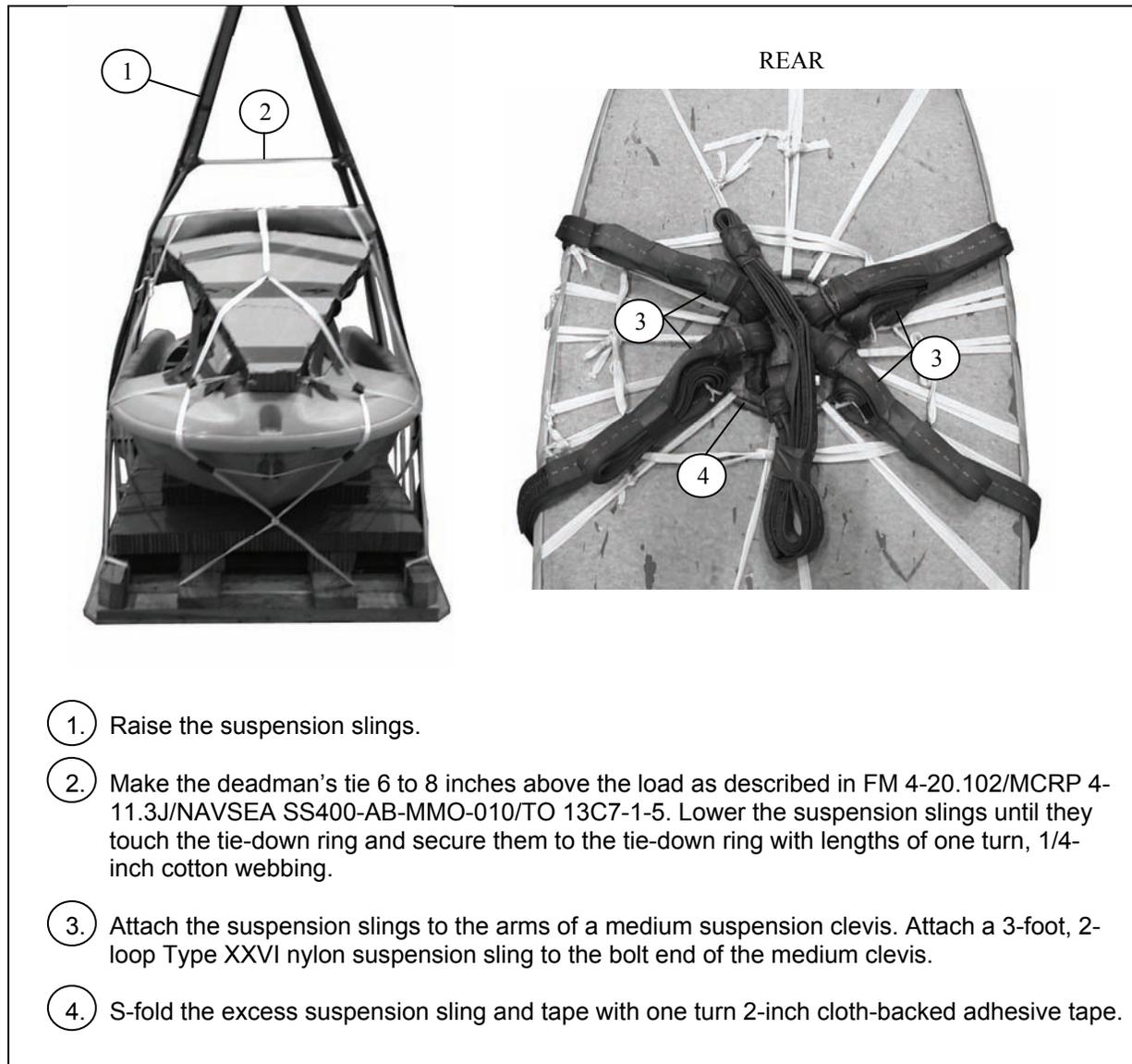


Figure 5-8. Suspension Slings Safetied

STOWING PARACHUTE

5-9. Stow the G-12E cargo parachute as shown in Figure 5-9.

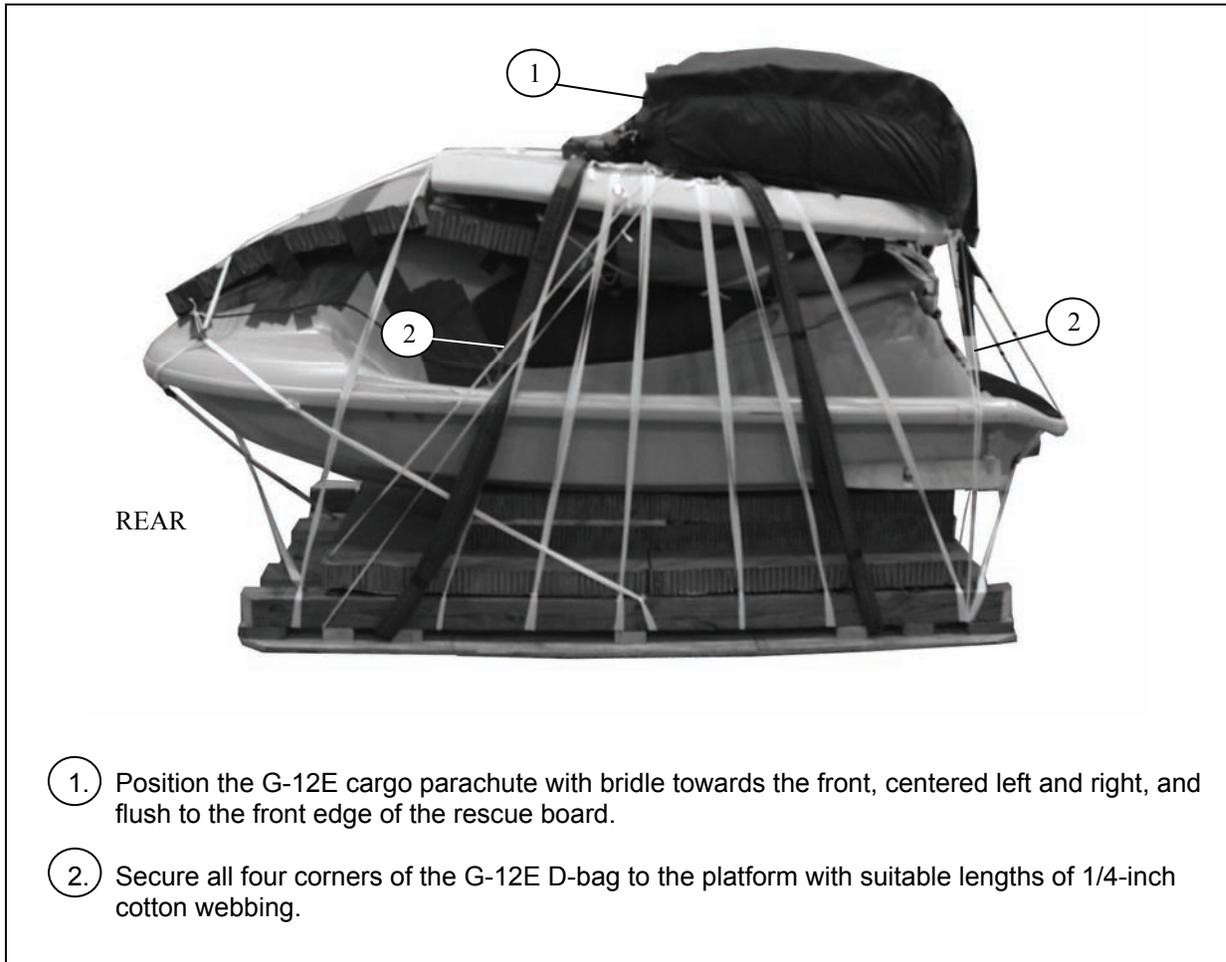


Figure 5-9. Cargo Parachute Positioned

INSTALLING THE AUTOMATIC CARGO PARACHUTE RELEASE

5-10. Install the automatic cargo parachute release as shown in Figure 5-10.

WARNING

The automatic cargo parachute release must be tested by the manufacturer's instructions prior to installation on the airdrop load.



1. Attach the running end of the 3-foot, 2-loop Type XXVI nylon suspension sling to the bottom release fitting shackle (small portion) with a small clevis. Tape the buffer with one turn 2-inch cloth-backed adhesive tape.
2. Attach one end of a 3-foot, 2-loop Type XXVI nylon riser extension to the main body section shackle with a small clevis. Attach the running end of the riser extension to the cargo parachute clevis. Tape the buffers with 2-inch cloth-backed adhesive tape.
3. Secure the small clevises of the release to a convenient point on the top of the load with lengths of one turn 1/4-inch cotton webbing.
4. Cut and remove the triple transportation tie on the cargo parachute clevis.

Figure 5-10. Automatic Cargo Parachute Release Installed

STOWING THE EXTRACTION PARACHUTE

5-11. Stow the 15-foot extraction parachute packed in a T-10 deployment bag as shown in Figure 5-11.

Note. For the 15-foot extraction parachute packing procedures refer to FM 10-500-77/TO 13C7-55-1, Chapter 3.



1. Attach a 9-foot, 2-loop Type XXVI nylon extraction line to the bell portion of a medium suspension clevis. Attach the bridle of the G-12E cargo parachute to the bolted end of the medium clevis. Secure the clevis to the riser extension stow bar of the cargo parachute with a length of one turn single 1/4-inch cotton webbing.
2. Attach the 36-inch adapter web of a 15-foot extraction parachute packed in a T-10 D-bag to the bell portion of a medium suspension clevis. Attach the running end of the 9-foot, 2-loop extraction line to the bolt end of the medium clevis. S-fold and tape the excess extraction line with one turn 2-inch cloth-backed adhesive tape.

Figure 5-11. Extraction Parachute Installed

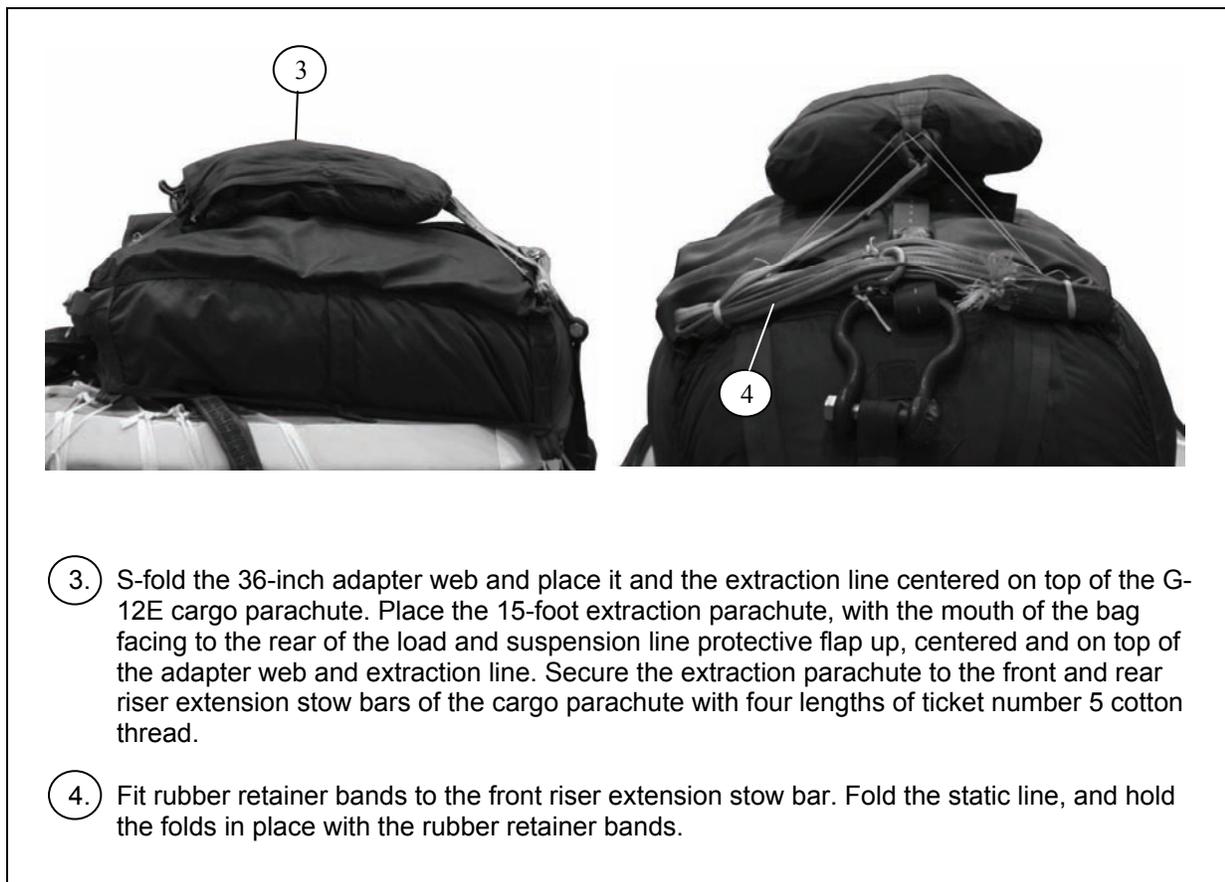


Figure 5-11. Extraction Parachute Installed (continued)

ATTACHING FLOTATION DEVICES FOR TRAINING LOADS

5-12. Use flotation devices on training loads to help recover equipment. Install flotation devices as shown in Figure 5-12.

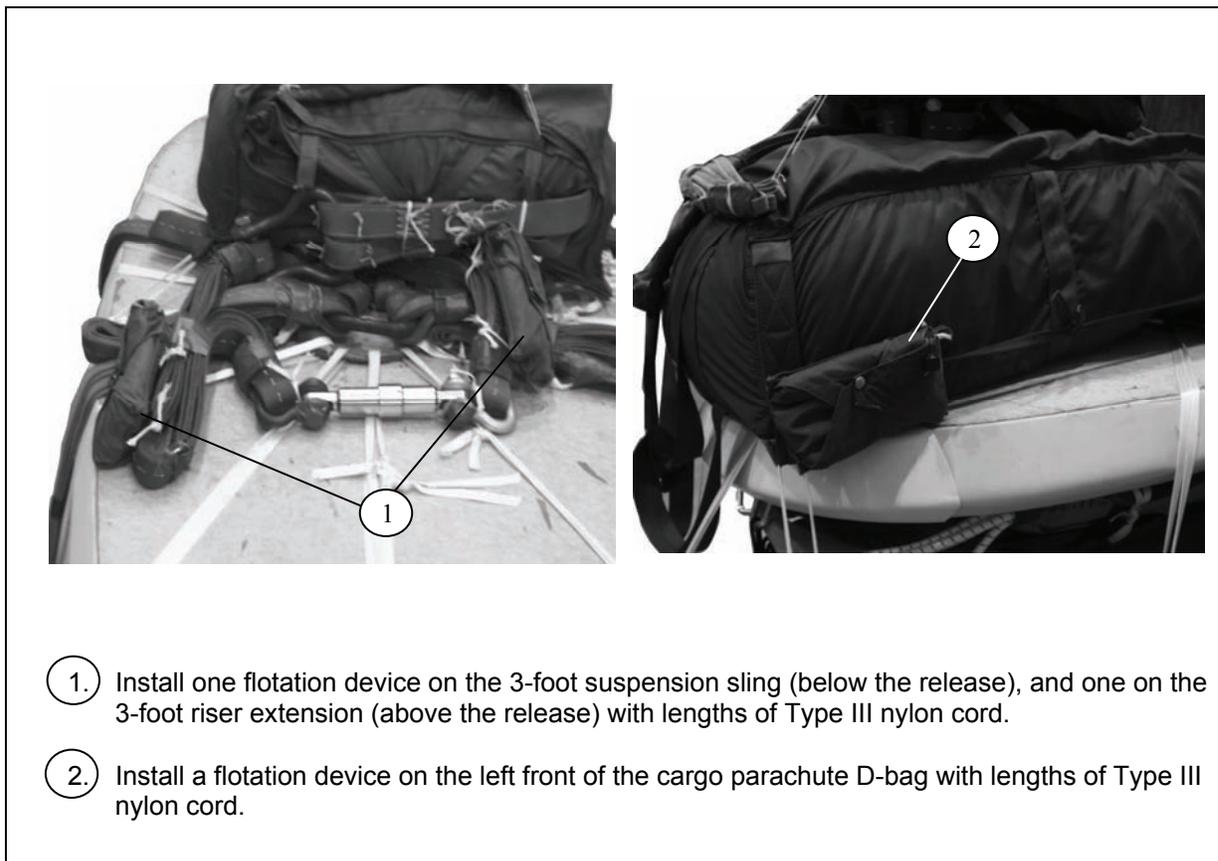


Figure 5-12. Flotation Devices Installed

MARKING THE RIGGED LOAD

5-13. Mark the rigged load according to FM 4-20.102/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 5-13. Complete the Shipper's Declaration for Dangerous Goods.

Note. Attach the load data tag on the rear of the ARC.



Rigged Load Data

Total Rigged Weight: Load shown	1,140 pounds
Height:	70 inches
Width:	48 inches
Length:	111.5 inches
Overhang: Front	10.5 inches
Rear	14 inches
CB (from the front edge of the platform).....	36.5 inches

Figure 5-13. The ARC Rigged on a Combat Expendable Platform

EQUIPMENT REQUIRED

5-14. Use the equipment listed in Table 5-1 to rig this load.

Table 5-1. Equipment Required for Rigging the GP 800 Advanced Rescue Craft

<i>National Stock Number</i>	<i>Item</i>	<i>Quantity</i>
5530-00-128-4981	Plywood: 3/4 x 48 x 96-inch plywood	1
5510-00-220-6146	2 x 4 x 44-inch lumber	5
5510-00-220-6148	2 x 6 x 44-inch lumber	2
	2 x 6 x 87-inch lumber	2
5510-00-220-6274	4 x 4 x 87-inch lumber	2
5315-00-010-4659	Nail, steel wire, common, 8D (or)	As required
Local purchase	1 1/2-inch Wood screw	As required
Local purchase	Bolt, Carriage, 3/8" Dia. 7" Long w/washer and nut	8
	Air Items:	
1670-01-062-6302	Line, 20-foot 2-loop Type XXVI	2
1670-01-062-6304	Line, 9-foot 2-loop Type XXVI	1
1670-01-062-6301	Line, 3-foot 2-loop Type XXVI	2
1670-01-678-8562	Clevis, Medium, Suspension	3
4030-00-360-0304	Clevis, Small 5/8-inch	2
4030-00-678-8560	Clevis, G-13	1
1670-01-065-3755	Parachute, Cargo G-12E	1
1670-01-063-3715	Parachute, Cargo 15-foot Extraction	1
1670-00-590-9909	D-bag, T-10 Personnel Parachute	1
1670-01-310-2875	Release, Automatic Cargo Parachute	1
4220-00-059-6061	Flotation Device, LPU-3/P	3
	Expendables:	
1670-00-753-3928	Pad, Energy Dissipating	3
8305-00-082-5752	Webbing, 1/2-inch Tubular Nylon	As required
4020-00-240-2146	Cord, Type III Nylon	As required
8305-00-268-2411	Webbing, 1/4-inch Cotton (80lb)	As required
8310-00-917-3945	Thread, Ticket 8/7 Cotton	As required
7510-00-266-5016	Tape, 2-inch Cloth-backed Adhesive	As required
7510-00-297-6655	Tape, 2-inch Masking	As required
1670-00-568-0323	Band, Rubber Retainer	As required

SECTION II-RIGGING THE XL1200 ARC

DESCRIPTION OF LOAD

5-15. The XL1200 ARC shown in Figure 5-14, is rigged on a 48- by 87-inch Combat Expendable Platform for low-velocity airdrop. This load can be rigged with or without a 20-man life raft, a rescue board, a rucksack, and an aid bag. The load requires one G-12E cargo parachute and a 15-foot cargo extraction parachute packed in a T-10 deployment bag.



Figure 5-14. XL1200 ARC

BUILDING THE COMBAT EXPENDABLE PLATFORM

5-16. Build a new 48- by 87-inch CEP or inspect and repair a used platform as shown in Figure 5-15.

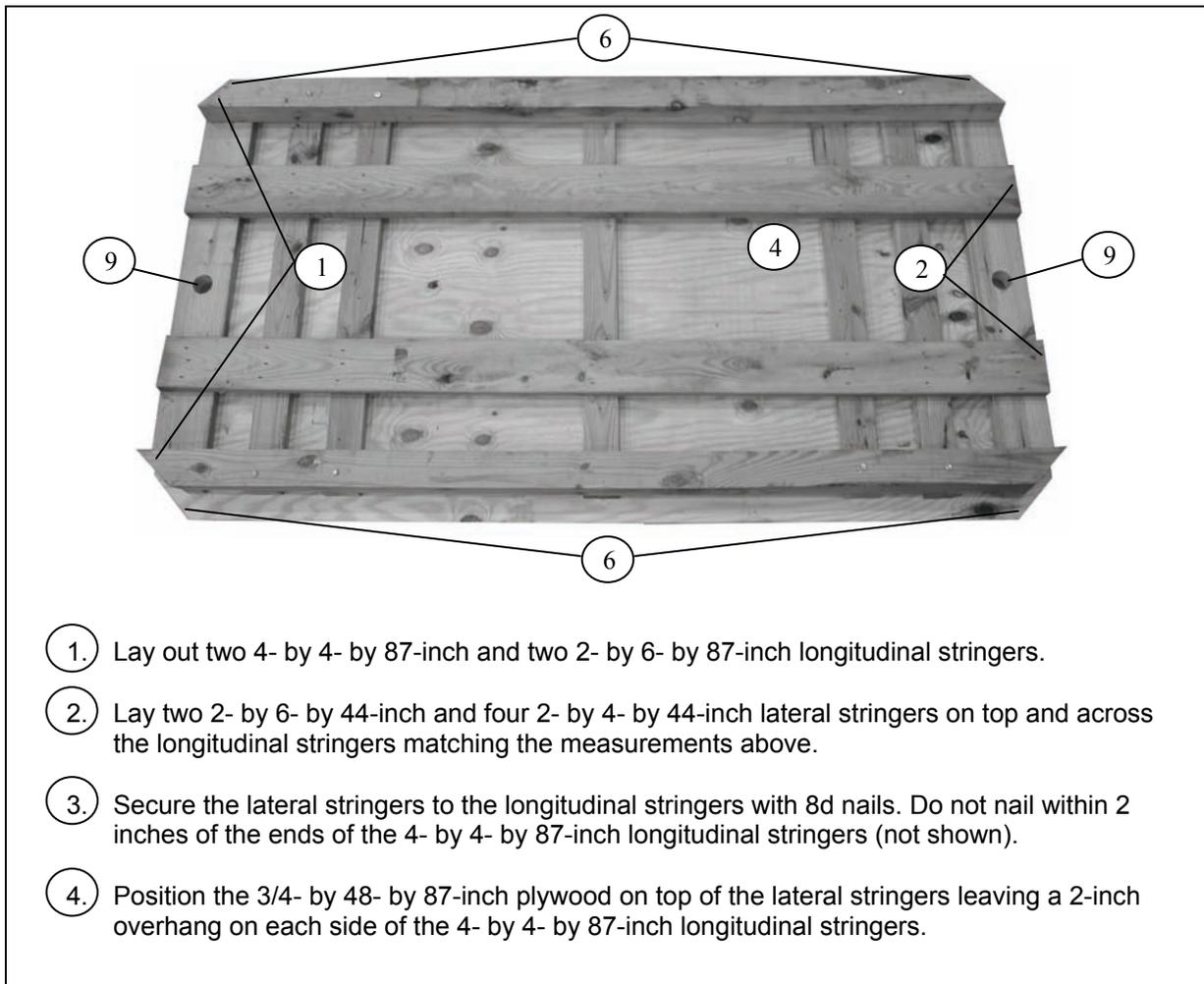


Figure 5-15. CEP Built

5. Secure the plywood to the lateral stringers with 8d nails at 6-inch intervals (not shown).
6. Cut the corners of the platform at a 45-degree angle to include the corners of the 4- by 4- by 87-inch longitudinal stringers.
7. Turn the platform over and drill eight 3/4-inch hole for the carriage bolts. Drill again with a large enough drill bit in order to counter sink the bolt heads, washers, and nuts (not shown).
8. Install the carriage bolts from bottom to top and trim the threaded ends at the nuts. File sharp edges (not shown).
9. Drill a 2-inch hole centered on each end of the platform.

Figure 5-15. Combat Expendable Platform Built (continued)