

**AIRDROP OF SUPPLIES AND EQUIPMENT:
RIGGING FORWARD AREA REFUELING
EQUIPMENT (FARE) AND ADVANCED
AVIATION FORWARD AREA REFUELING
SYSTEM (AAFARS)**



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DEPARTMENT OF THE ARMY
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Airdrop of Supplies and Equipment: Rigging Forward Area Refueling Equipment (FARE) and Advanced Aviation Forward Area Refueling System (AAFARS)

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Preface

This manual tells and shows how to prepare and rig the following configurations of the Forward Area Refueling Equipment (FARE) Systems, the 4-inch, 350-GPM Wheel-Mounted Pumping Assembly, and the Advanced Aviation Forward Area Refueling System (AAFARS) for low-velocity airdrop from a C-130, C-141, C-17, and C-5 aircraft.

User Information

The proponent of this publication is HQ TRADOC. You are encouraged to report any errors or omissions and to suggest ways of making this a better manual. Army personnel, send your comments on DA Form 2028 directly to:

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Introduction

This manual shows and tells how to rig the forward area refueling equipment (FARE), to include the rigging of hazardous material--gasoline, JP4, and diesel fuel. The FARE is rigged with the following:

Trailers. M101, M101A1, 3/4-ton, two-wheel trailers for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Two Fuel Drums. Two 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Seven Fuel Drums. Seven 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Vehicle. M998, 1 1/4-ton truck (HMMWV) for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

This manual shows and tells how to rig the 4-inch, 350 GPM wheel-mounted pumping assembly, to include the rigging of hazardous material-- gasoline, JP4, and diesel fuel. The 4-inch, 350-GPM wheel-mounted pumping assembly is rigged with the following:

Pumps and Separators. Two 4-inch, 350-GPM wheel-mounted pumping assemblies and two separators are rigged for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Three Fuel Drums. Three 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Four Fuel Drums. Four 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Five Fuel Drums. Five 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Six Fuel Drums. Six 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

This manual shows and tells how to rig the Advanced Aviation Forward Area Refueling System (AAFARS), to include the rigging of hazardous material-- gasoline, JP4, and diesel fuel. The AAFARS is rigged with the following:

Three Fuel Drums. Three 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Four Fuel Drums. Four 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Five Fuel Drums. Five 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Six Fuel Drums. Six 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

Seven Fuel Drums. Seven 500-gallon collapsible fuel drums for low-velocity airdrop from C-130, C-141, C-5, and C-17 aircraft.

The following conditions must be met when rigging these loads:

CAUTION:

There must be no more than 432 gallons of liquid in each drum when rigged for low-velocity airdrop. Do not pressurize drums with air.

Hazardous Material. When included as a part of these loads, fuel must be packaged, marked, and labeled as described in AFMAN(I) 24-204/TM 38-250.

Weight. Each drum of fuel **MUST** be weighed to learn its exact weight, as the drum has no gauge to measure the liquid content. For computing liquid weight per US gallon, 6 pounds are used for gasoline, 6.4 pounds for JP4 fuel, 6.7 pounds for JP8 fuel, and 6.68 pounds for diesel fuel. When empty, the drum weighs 250 pounds.

CAUTION:

Because the fuel drum is flexible, it will rebound upon ground impact and the lashings may be broken. This could free the drum and allow it to roll off the platform and create a possible hazard in the immediate area.

Manuals. A copy of this manual must be available to the joint airdrop inspectors during the before- and after-loading inspections.

NOTICE of EXCEPTION:

The procedures in this manual for installing the Suspension Sling Safety Ties may differ from those in FM 4-20.102/ NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. An exception to FM 4-20.102/ NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 is granted. The procedures in this manual **MUST** be followed.

Chapter 1

Rigging FARE For Low -Velocity Airdrop On Type V Platform

SECTION I - RIGGING FARE WITH TWO 500-GALLON FUEL DRUMS

DESCRIPTION OF LOAD

1-1. The Forward Area Refueling Equipment (FARE) is rigged on a 12-foot, type V platform with two G-11 cargo parachutes. There are two collapsible fuel drums as an accompanying load. When empty, each drum weighs 250 pounds. Each drum is filled with 432 gallons of liquid. Overall length is 162 inches. Width is 108 inches. Height is 70 inches. Center of balance is 72 inches

- Notes:**
1. For drums filled with a liquid other than gasoline, use Table 1-1 to recompute the weight.
 2. If the load varies from the one shown, the weight, height, CB, tipoff curve, and parachute requirements must be recomputed.
 3. Do not pressurize drums with air.

Table 1-1. Weight of Drum When Filled with Liquid

Fuel	Weight Per Gallon	Total Weight of Drum with 432 Gallons of Liquid
Gasoline	6 Pounds	2,842 Pounds
JP-4	6.4 Pounds	3,015 Pounds
JP-8	6.7 Pounds	3,145 Pounds
Diesel	6.68 Pounds	3,136 Pounds
Water	8.3 Pounds	3,835 Pounds

PREPARING PLATFORM

1-2. Prepare a 12-foot type V airdrop platform using four tandem links and 40 tie-down clevises as shown in Figure 1-1.

- Notes:**
1. The nose bumper may or may not be installed.
 2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.

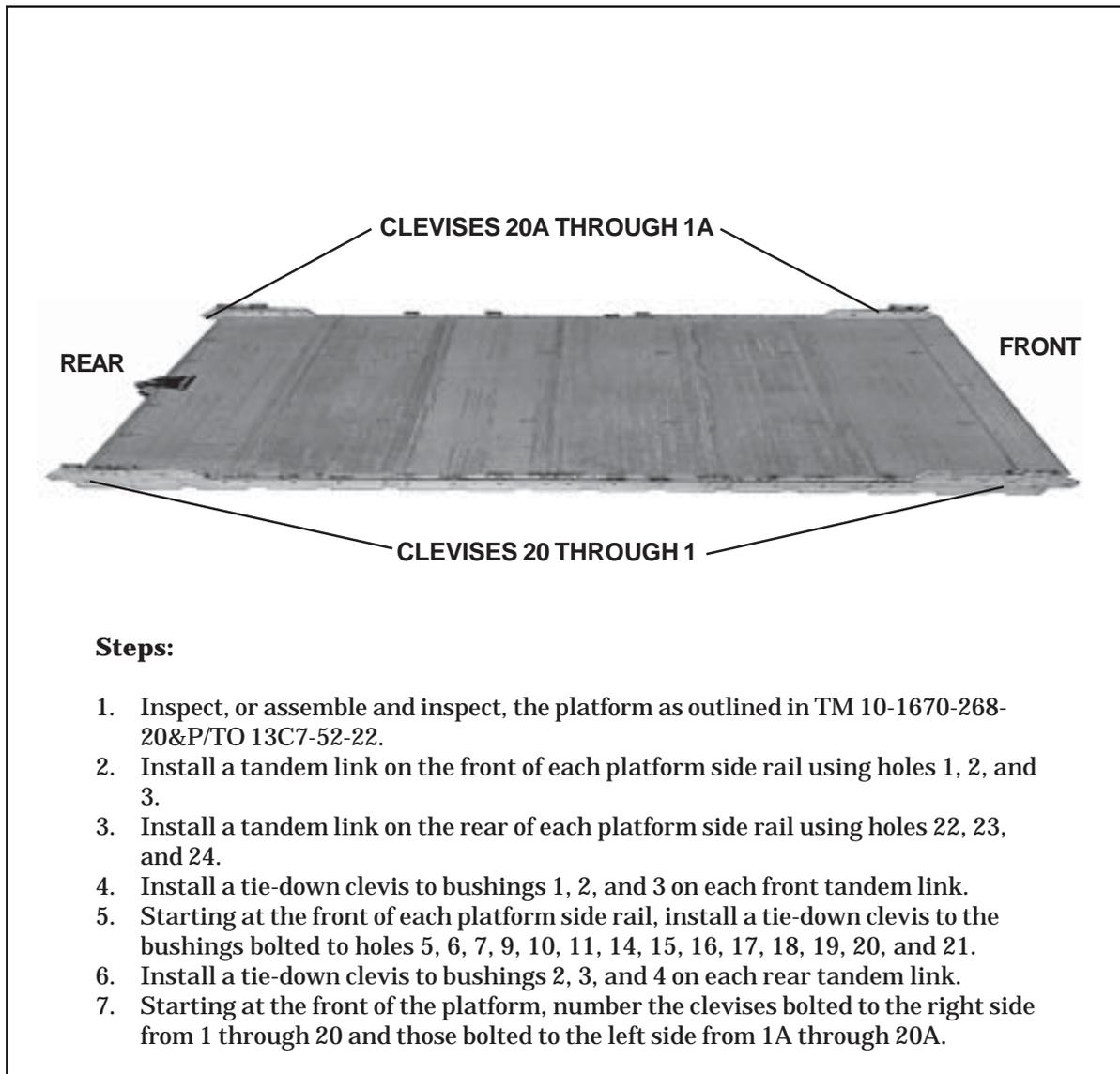


Figure 1-1. Platform Prepared

PREPARING HONEYCOMB

1-3. Place eight 96- by 36-inch pieces of honeycomb on the platform as shown in Figure 1-2.

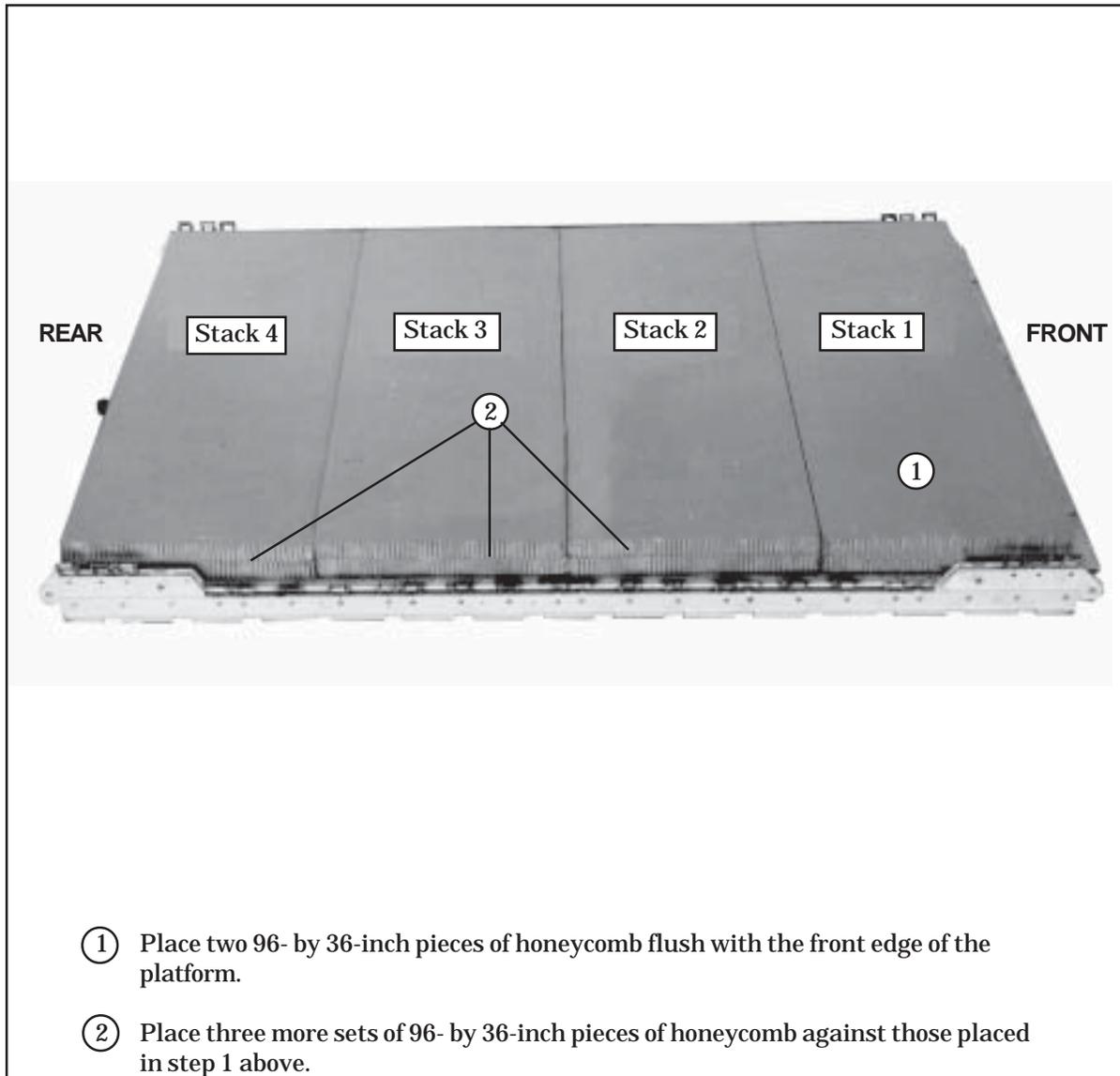


Figure 1-2. Honeycomb Placed on Platform

BUILDING CONTAINER FOR FARE

1-4. Build the container to stow the FARE as described below and as shown in Figure 1-3.

a. **BUILDING TOP.** Build the top for the container as shown in Figure 1-3.

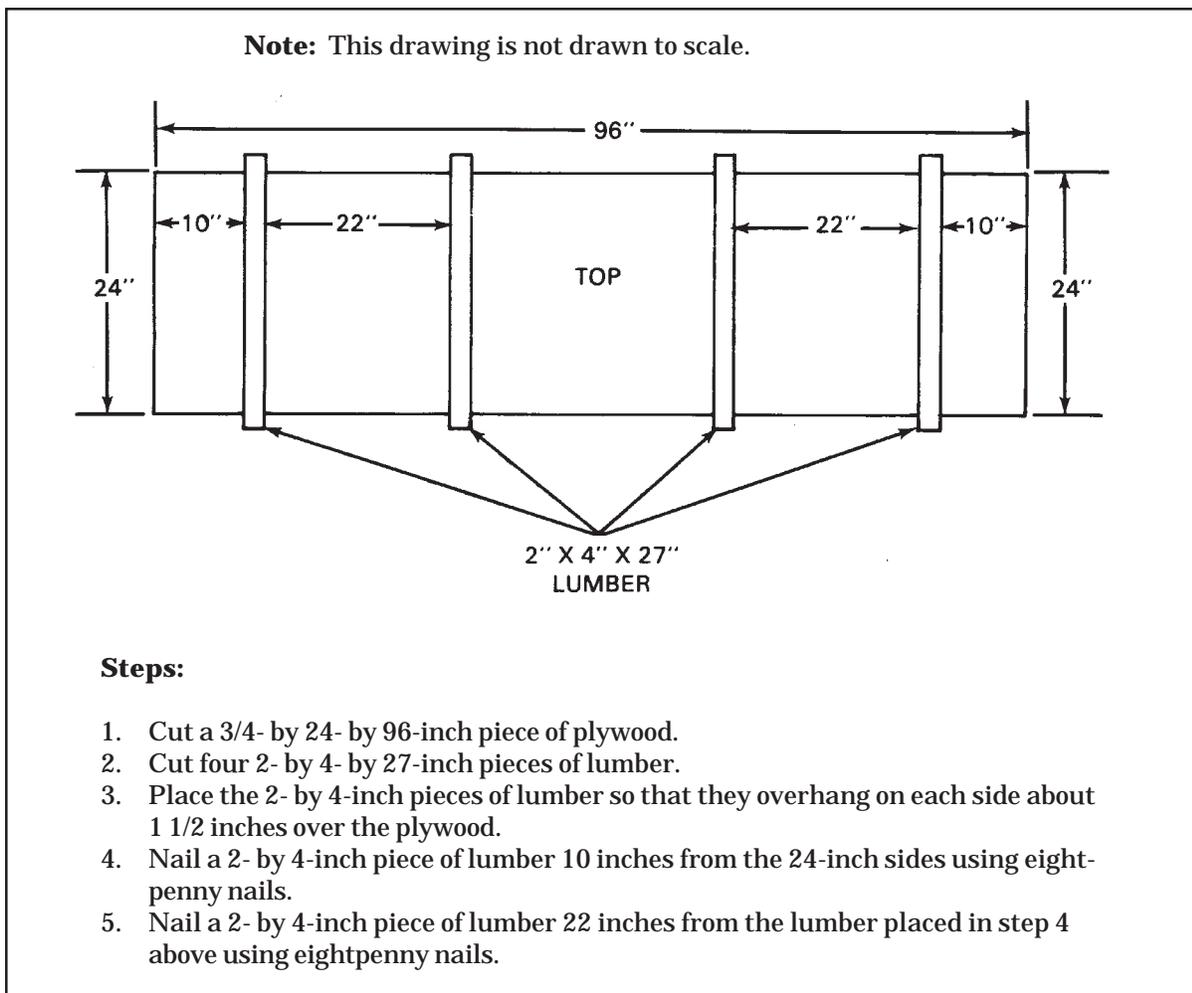


Figure 1-3. Top for FARE Container Built

- b. BUILDING SIDES.** Build the sides for the container as shown in Figure 1-4.

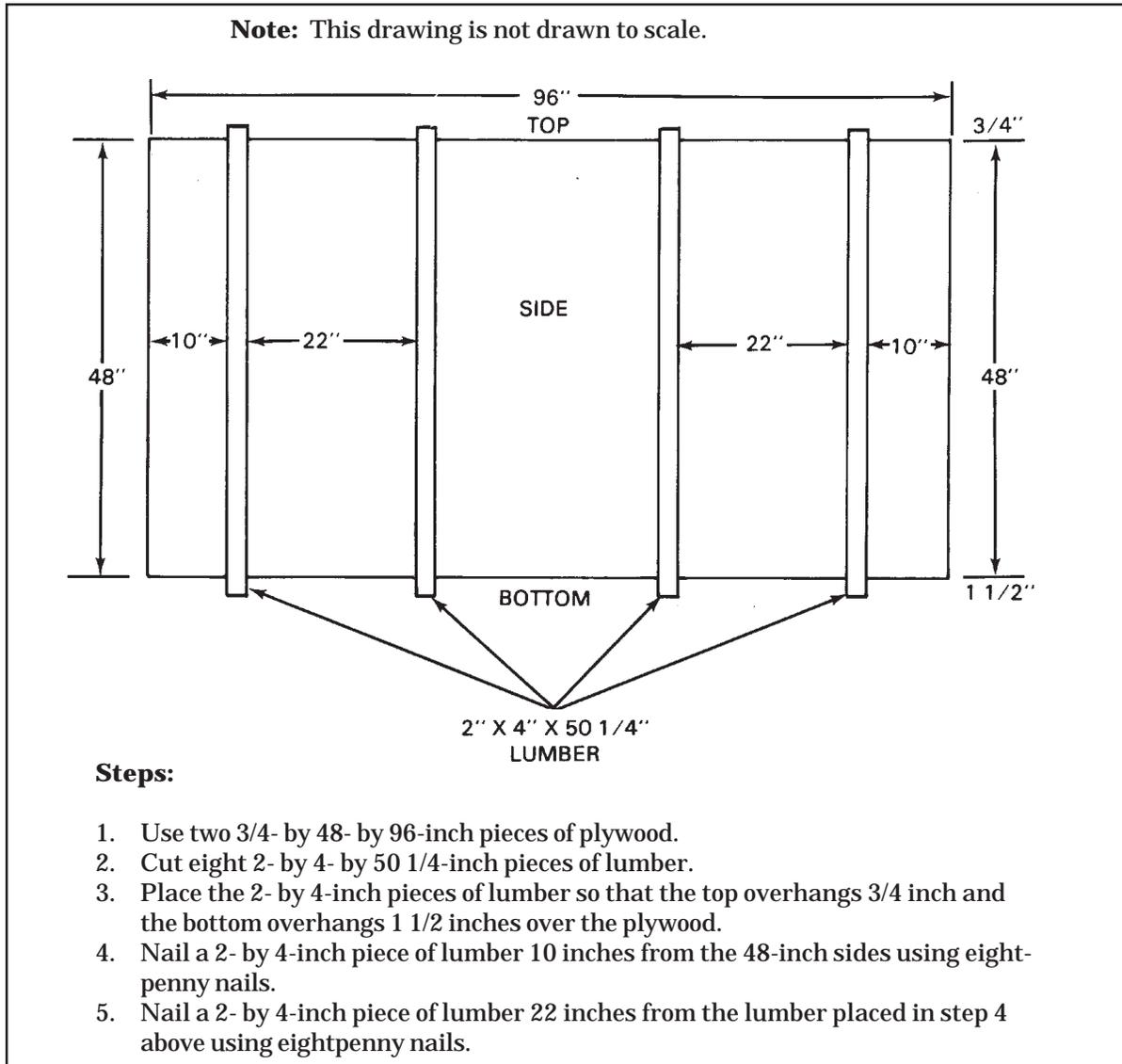


Figure 1-4. Sides for FARE Container Built

c. **BUILDING BOTTOM AND ENDS.** Build the bottom and ends for the container as shown in Figure 1-5.

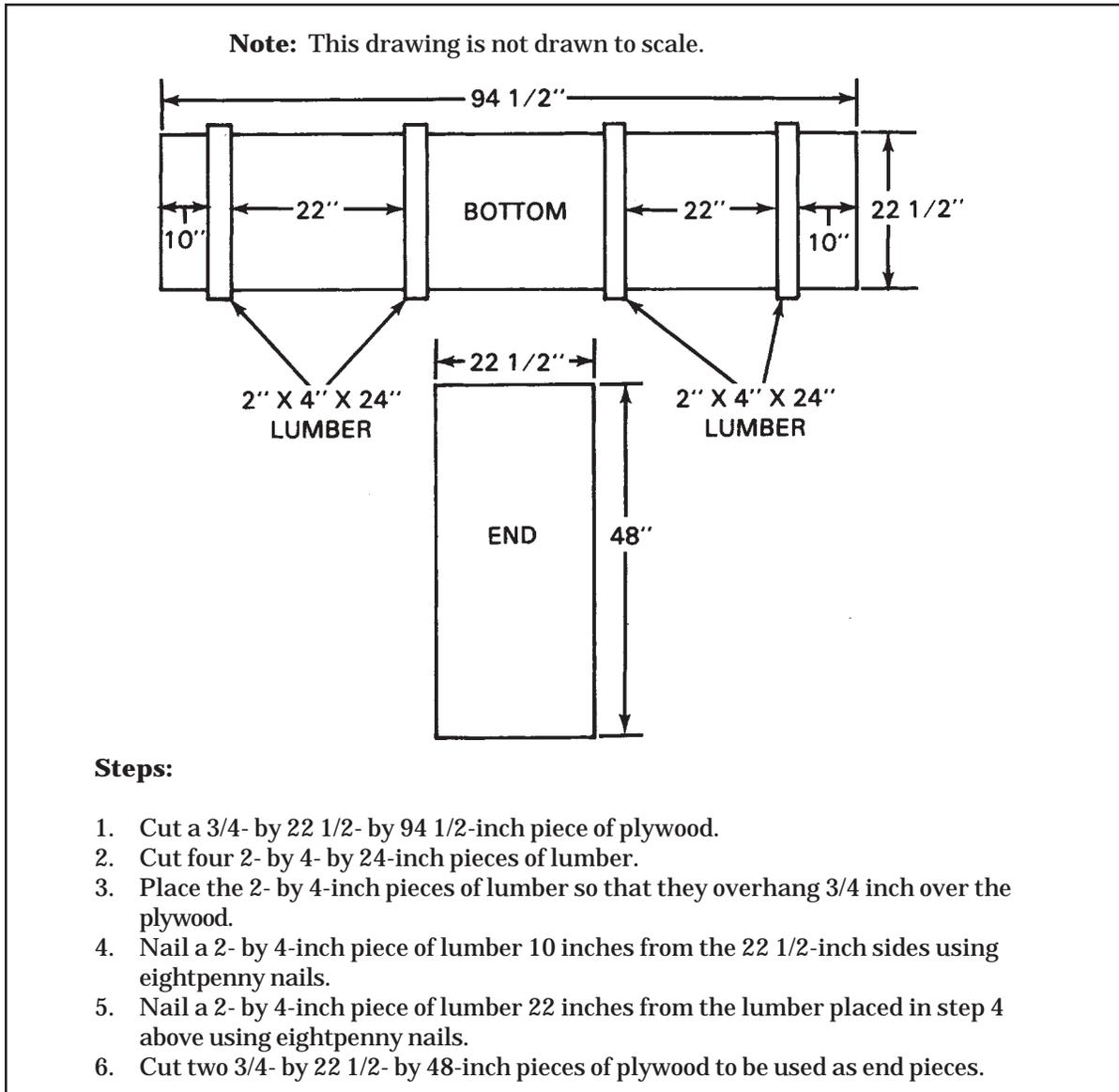


Figure 1-5. Bottom and Ends for FARE Container Built

- d. **ASSEMBLING CONTAINER.** Assemble the container for FARE as shown in Figure 1-6.

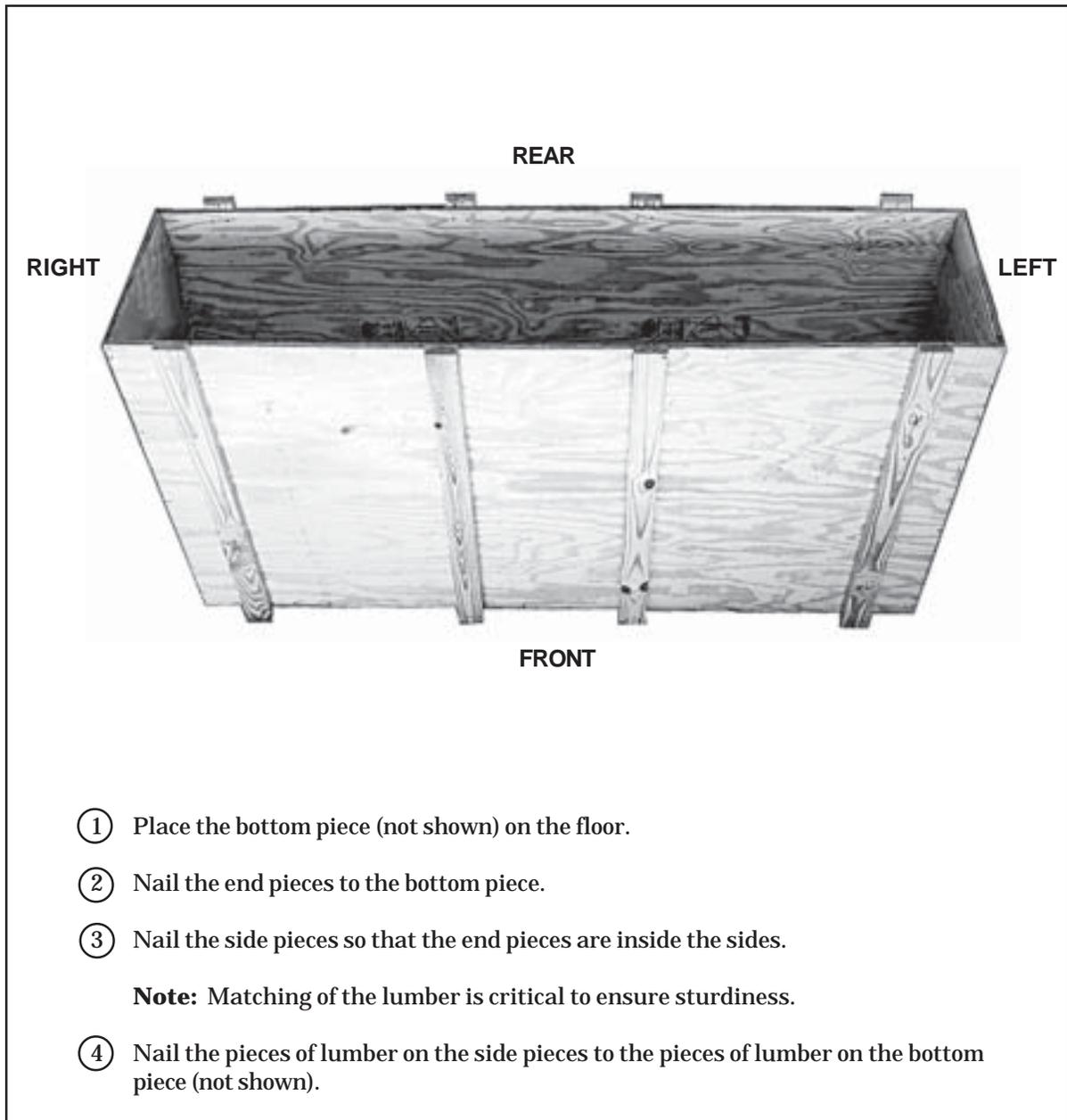


Figure 1-6. Container Assembled

PREPARING AND STOWING FARE IN CONTAINER

1-5. Prepare the components of the FARE and stow them in the container as described below.

- a. **PREPARING DISCHARGE HOSE FRAME ASSEMBLY.** Prepare the discharge hose frame assemblies, and stow them in the container as shown in Figure 1-7.

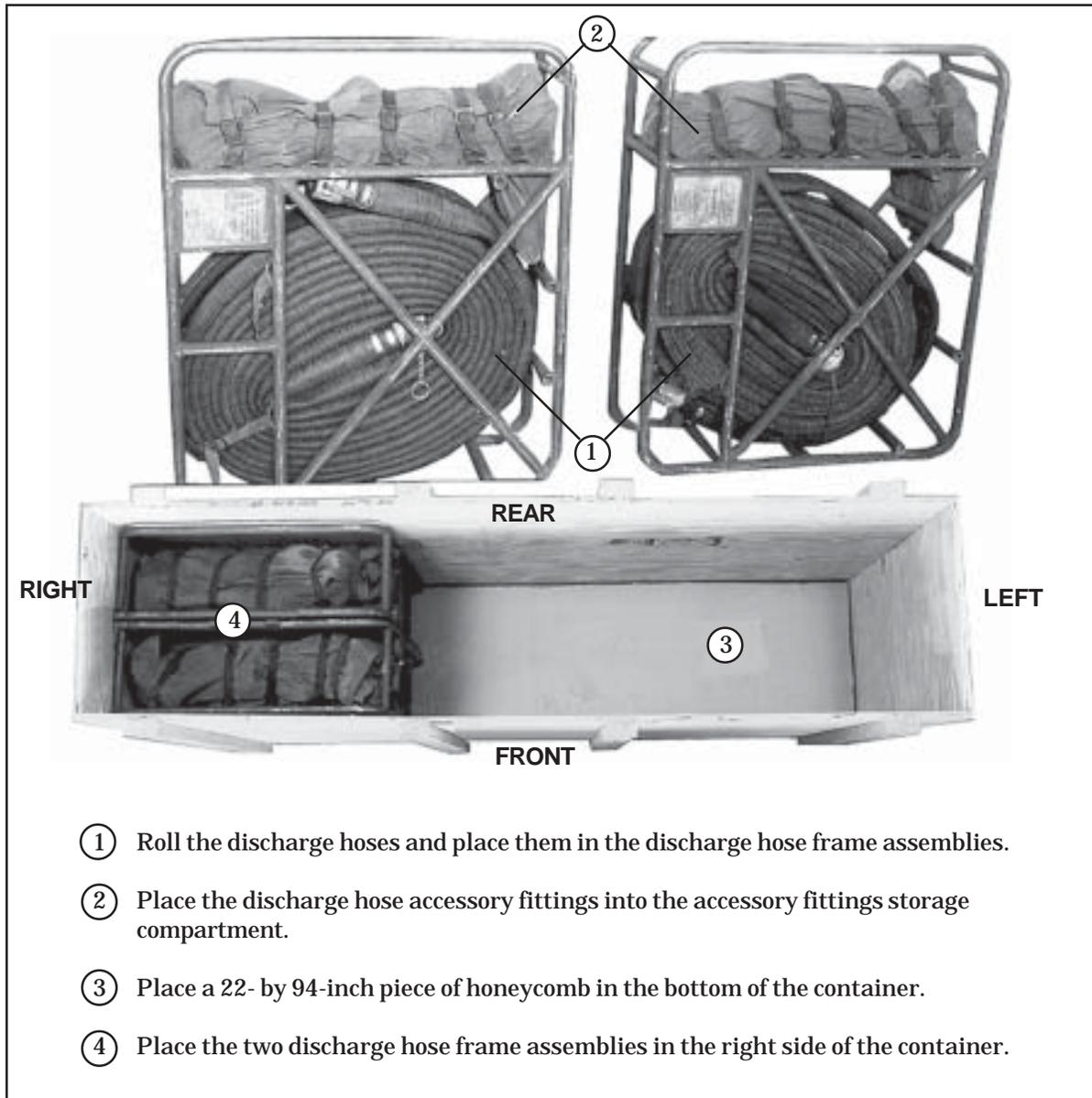


Figure 1-7. Discharge Hose Frame Assemblies Prepared and Stowed

b. PREPARING FILTER/SEPARATOR ASSEMBLY. Prepare the filter/ separator assembly and stow it in the container as shown in Figure 1-8.

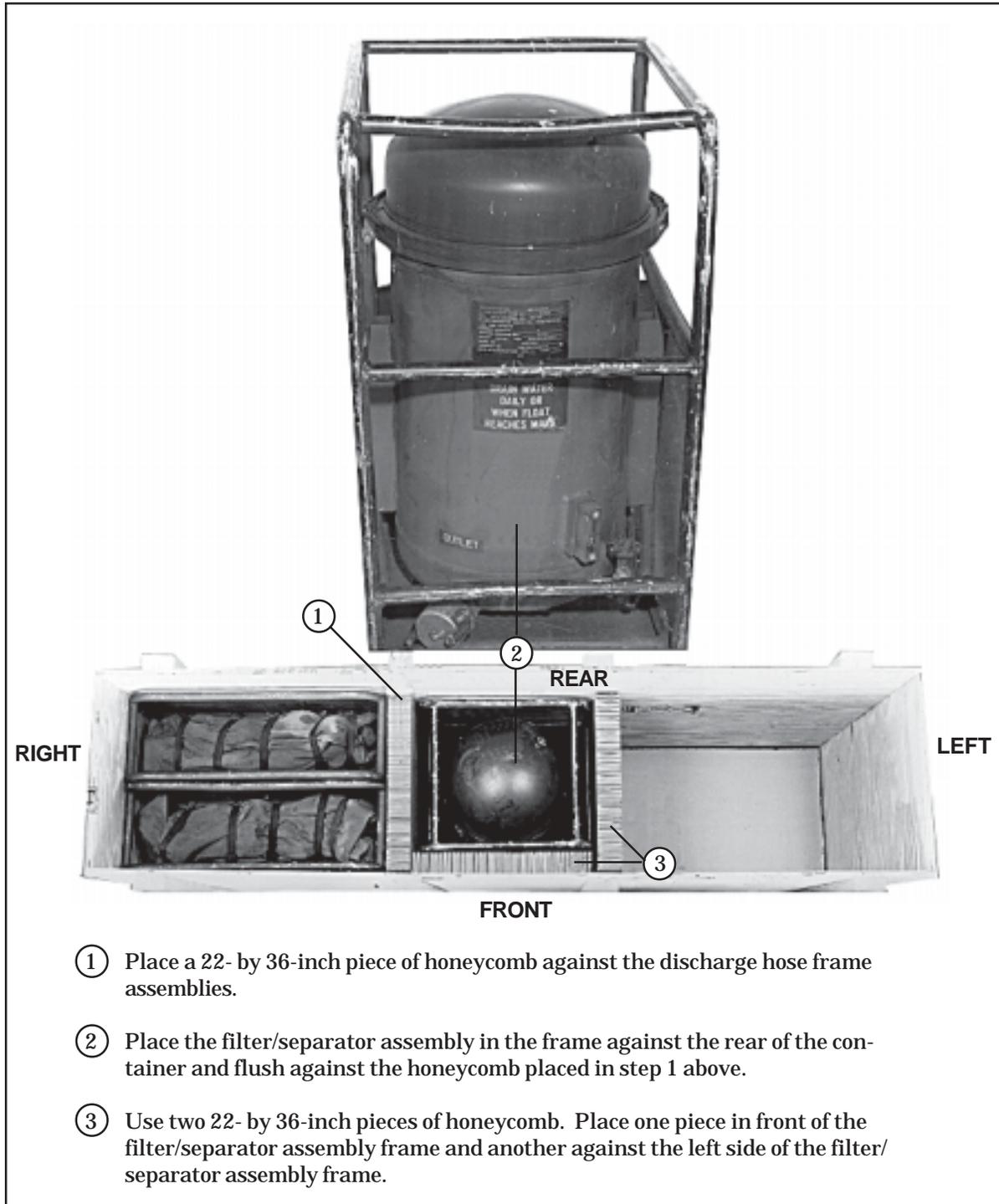
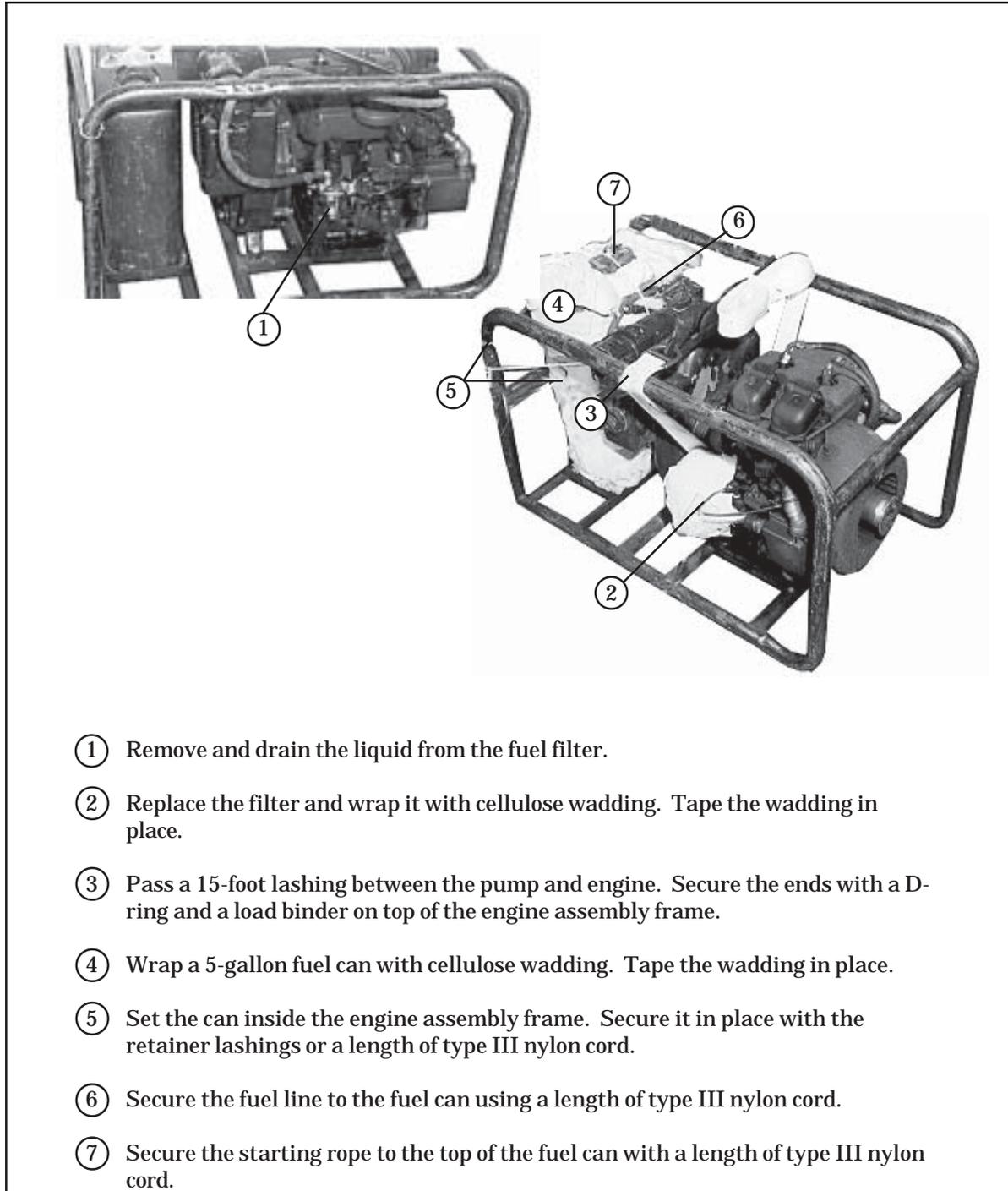


Figure 1-8. Filter/Separator Assembly Prepared and Stowed

c. PREPARING PUMP/ENGINE ASSEMBLY. Prepare the pump/engine assembly for stowing as shown in Figure 1-9 and stow it in the container as shown in Figure 1-10.



- ① Remove and drain the liquid from the fuel filter.
- ② Replace the filter and wrap it with cellulose wadding. Tape the wadding in place.
- ③ Pass a 15-foot lashing between the pump and engine. Secure the ends with a D-ring and a load binder on top of the engine assembly frame.
- ④ Wrap a 5-gallon fuel can with cellulose wadding. Tape the wadding in place.
- ⑤ Set the can inside the engine assembly frame. Secure it in place with the retainer lashings or a length of type III nylon cord.
- ⑥ Secure the fuel line to the fuel can using a length of type III nylon cord.
- ⑦ Secure the starting rope to the top of the fuel can with a length of type III nylon cord.

Figure 1-9. Pump/Engine Assembly Prepared

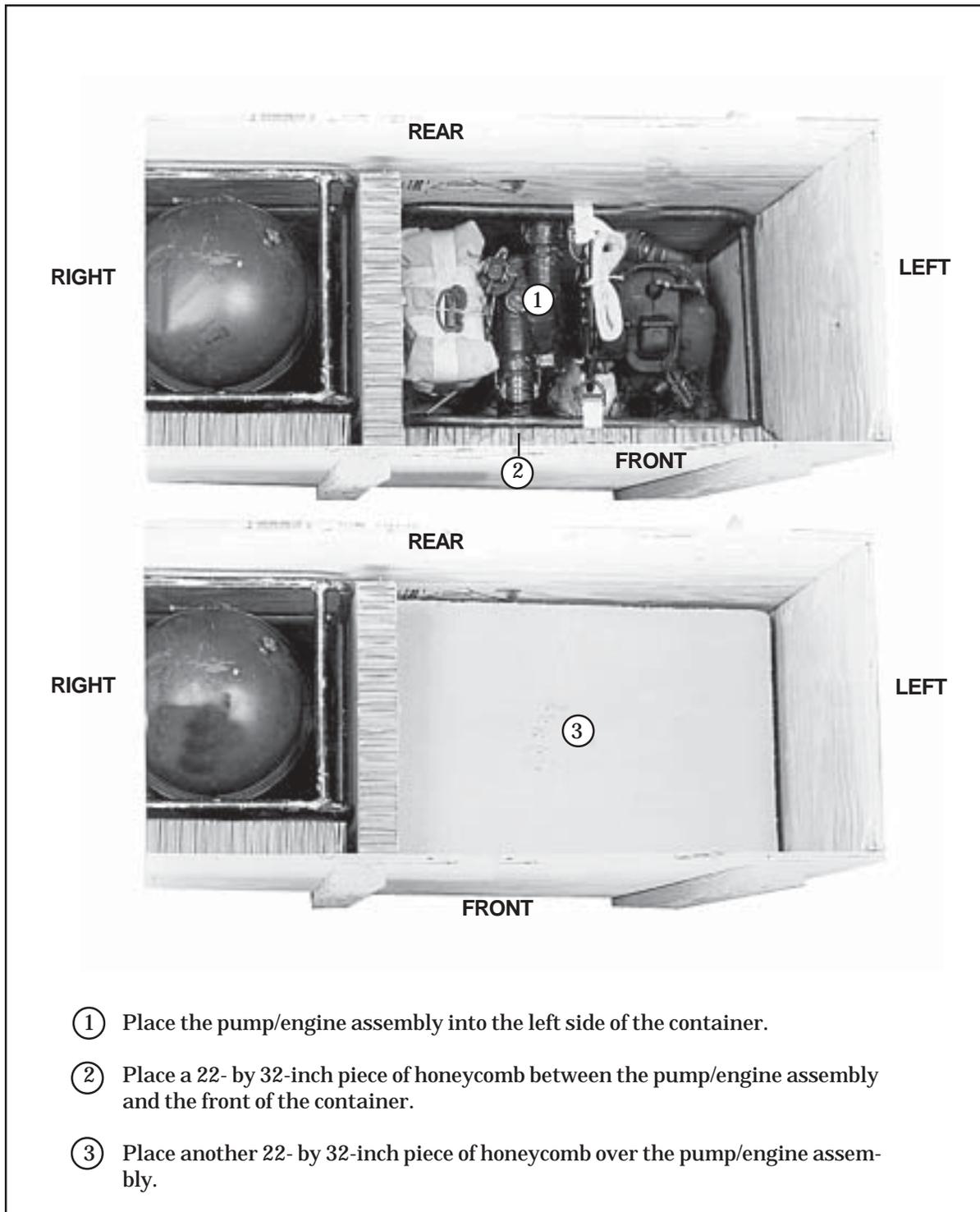


Figure 1-10. Pump/Engine Assembly Stowed

d. STOWING FIRE EXTINGUISHERS. Stow the fire extinguishers in the container as shown in Figure 1-11.

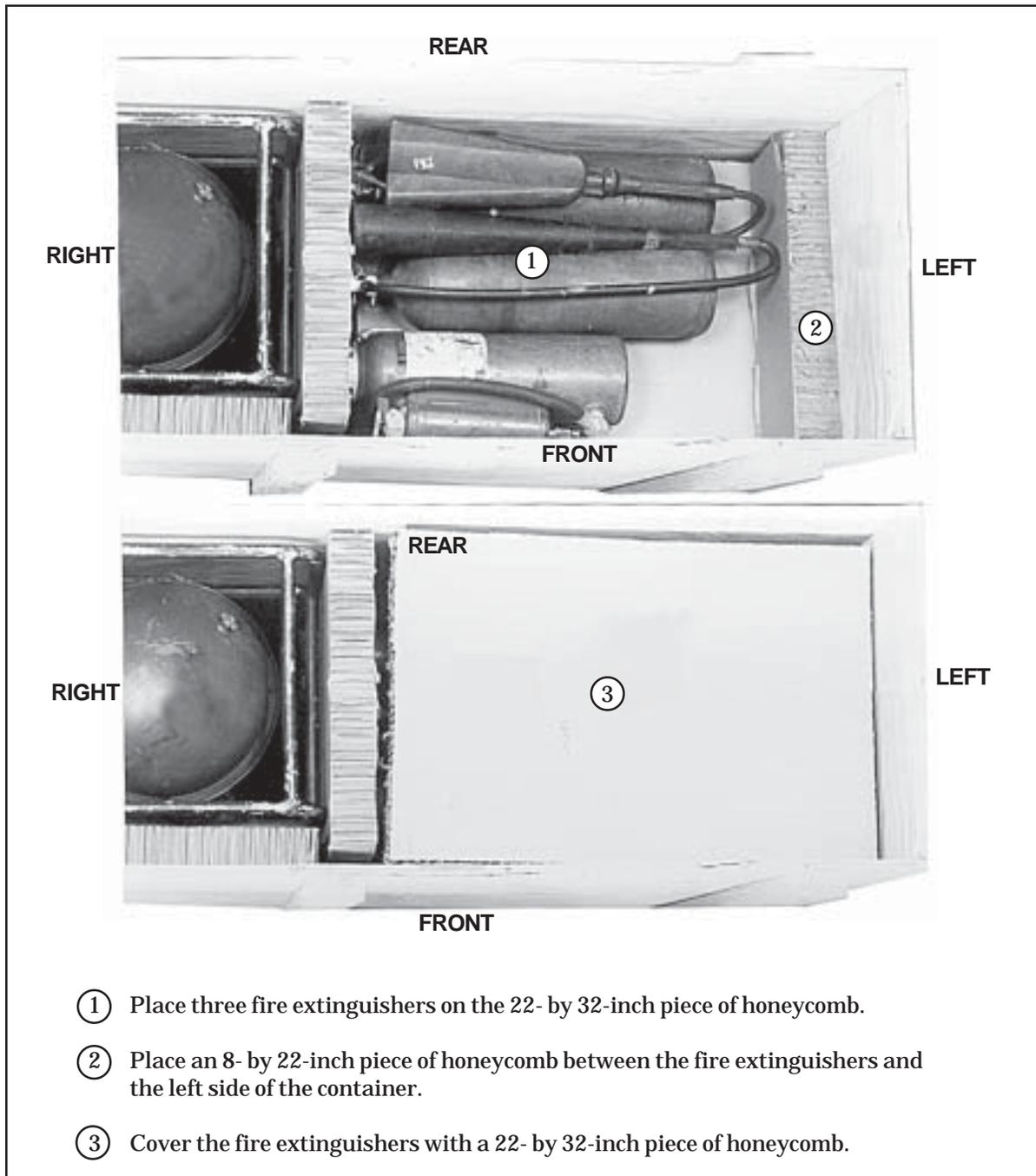


Figure 1-11. Fire Extinguishers Stowed

- e. **PREPARING AND STOWING GROUND RODS, SUCTION HOSES, AND SUCTION HOSE BAGS.** Prepare the ground rods, suction hoses, and suction hose bags for stowing. Stow the suction hose bags in the container as shown in Figure 1-12.

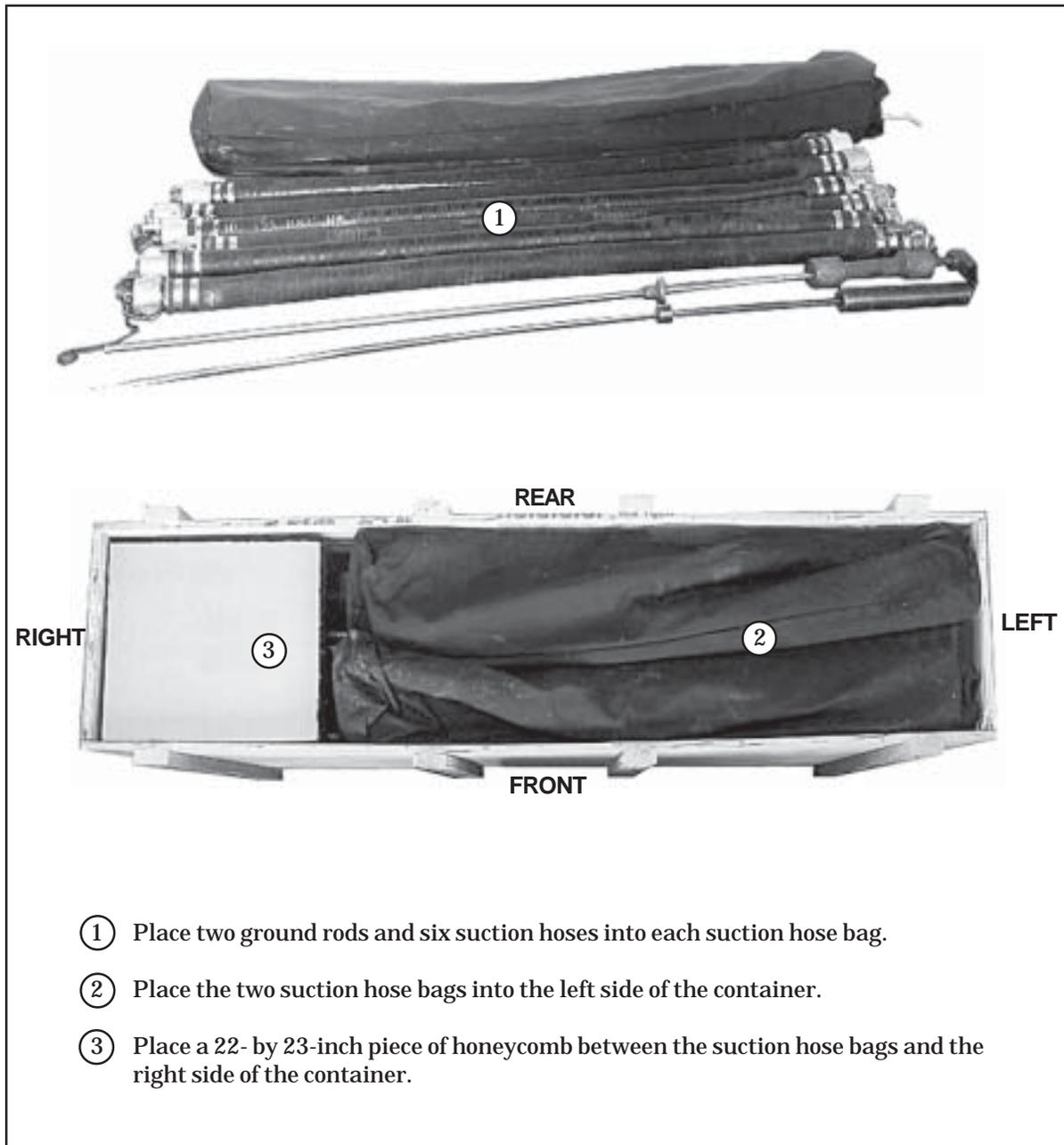


Figure 1-12. Ground Rods, Suction Hoses, and Bags Prepared and Stowed

SECURING CONTAINER

1-6. Use ten 15-foot tie-down assemblies to secure the container as shown in Figure 1-13.

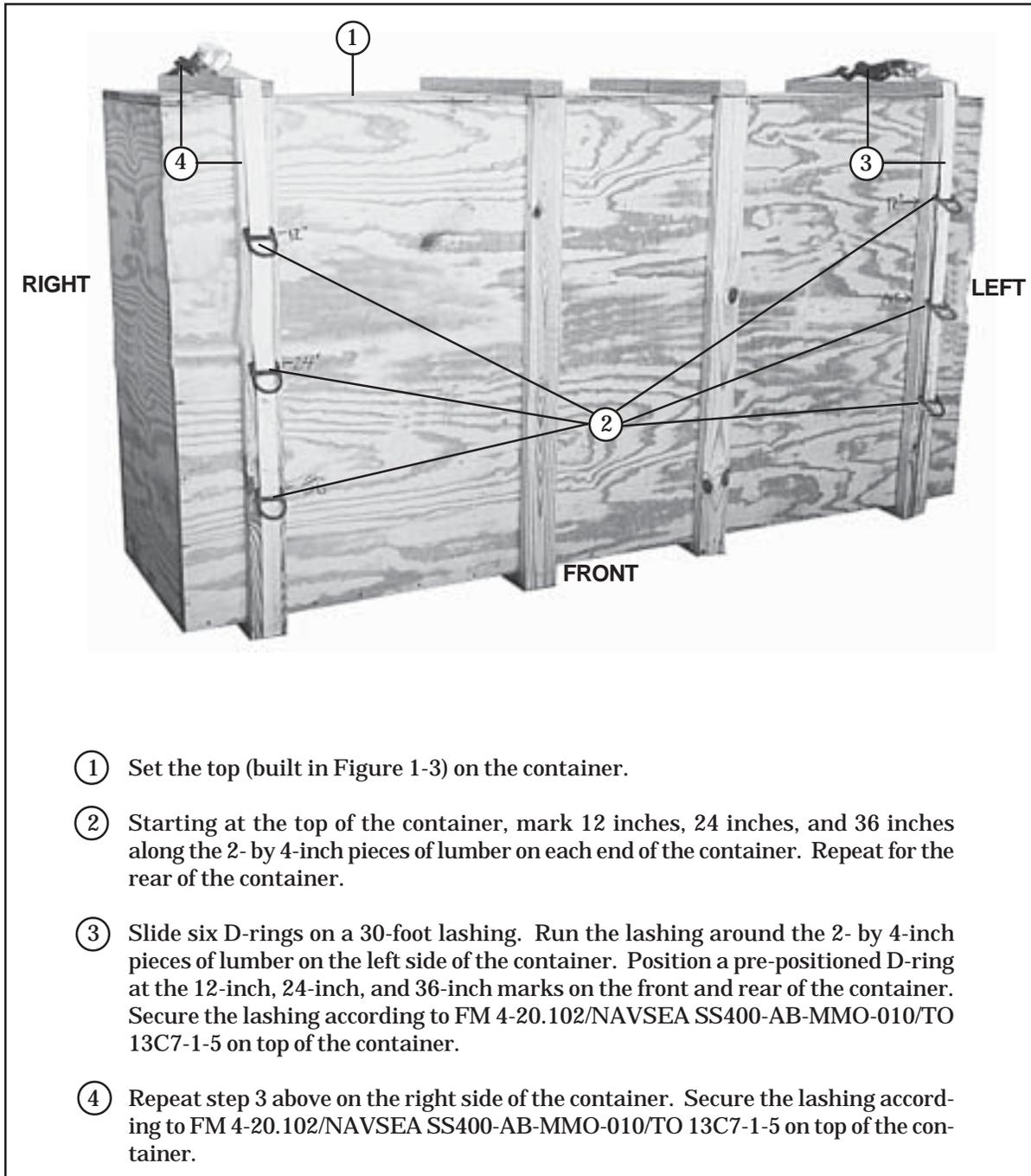


Figure 1-13. Container Secured

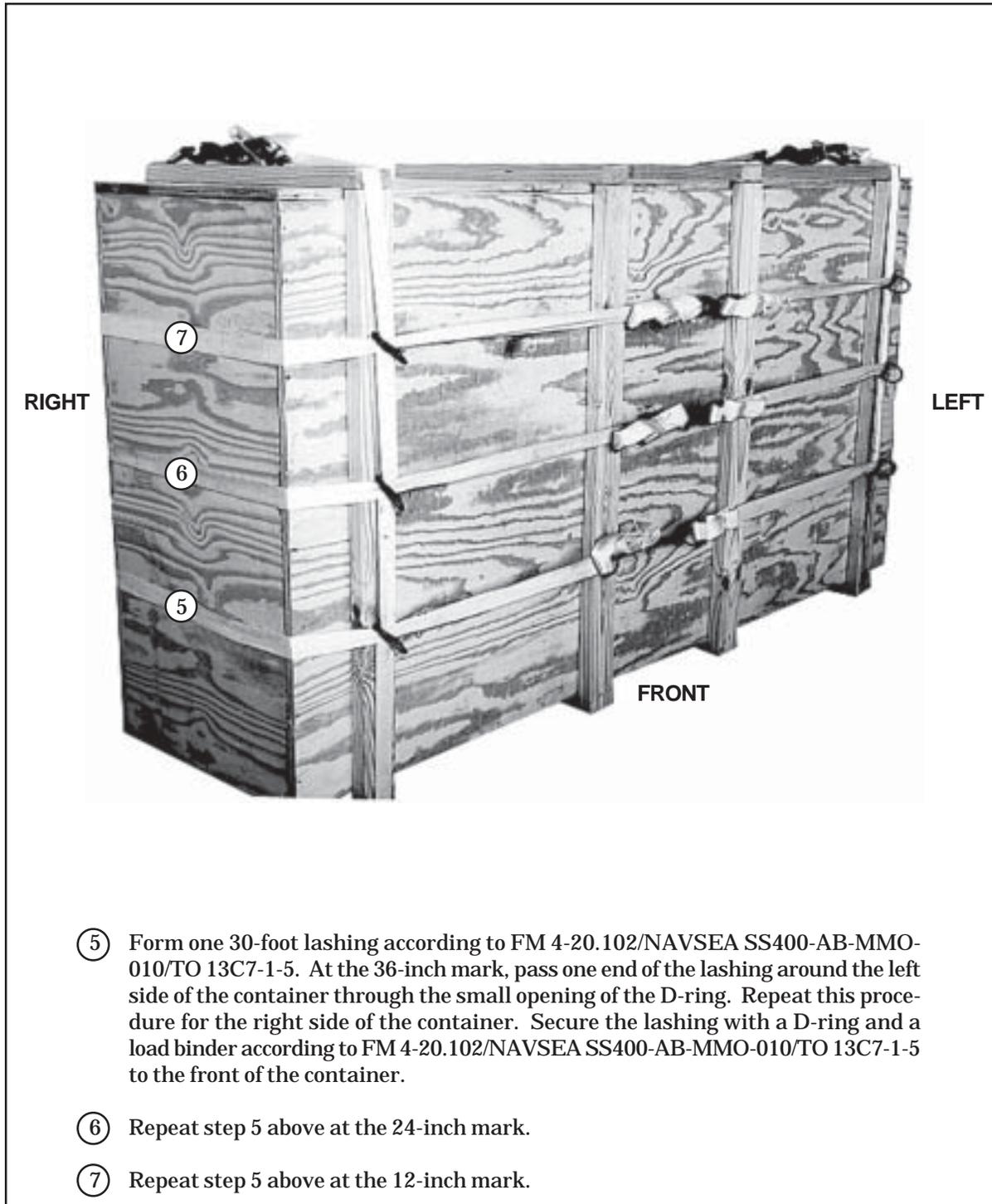


Figure 1-13. Container Secured (continued)

POSITIONING AND LASHING CONTAINER

1-7. Position the container and lash it to the platform as described below.

- a. **POSITIONING CONTAINER.** Position the container on the platform as shown in Figure 1-14.

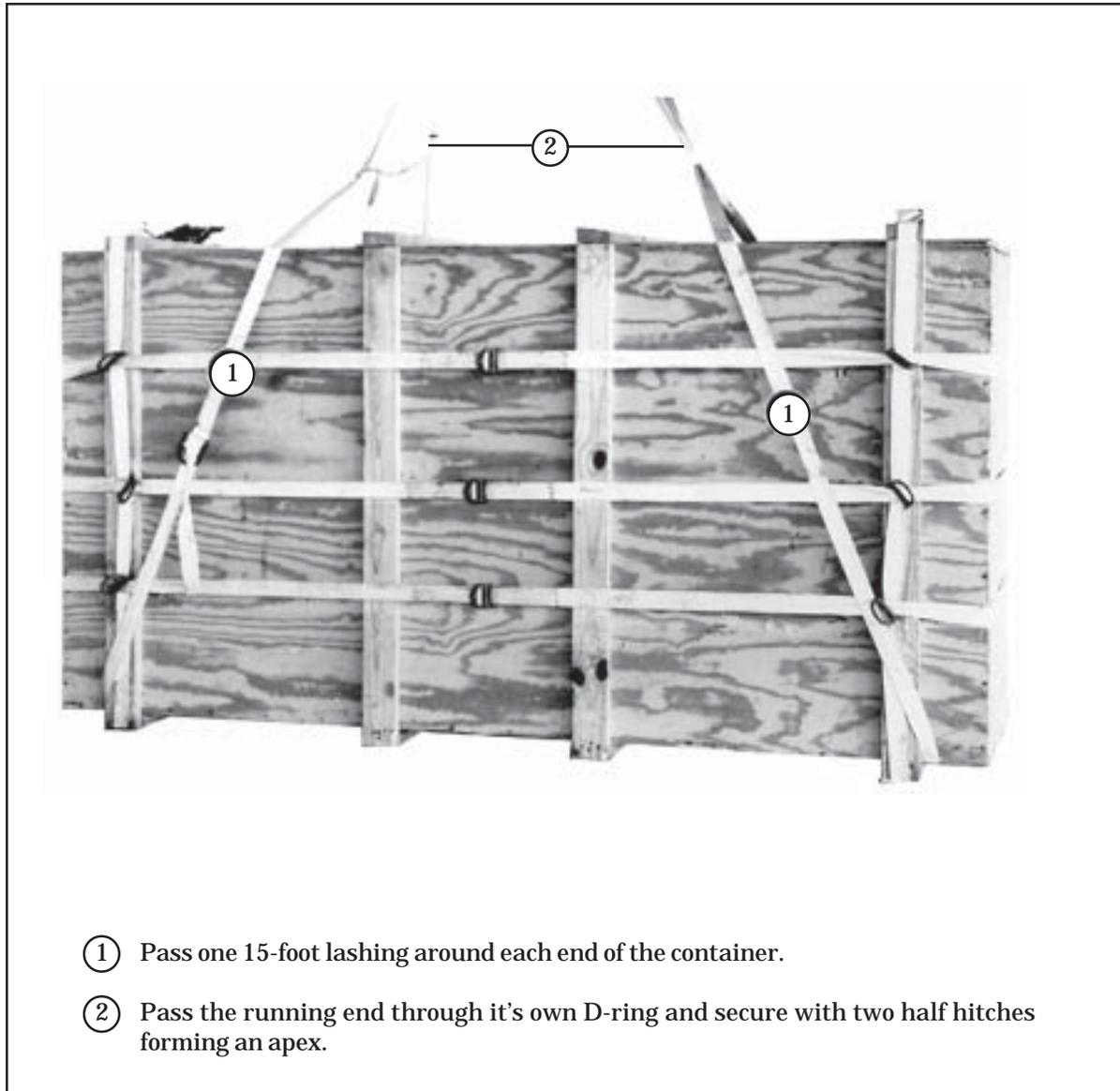


Figure 1-14. Container Positioned

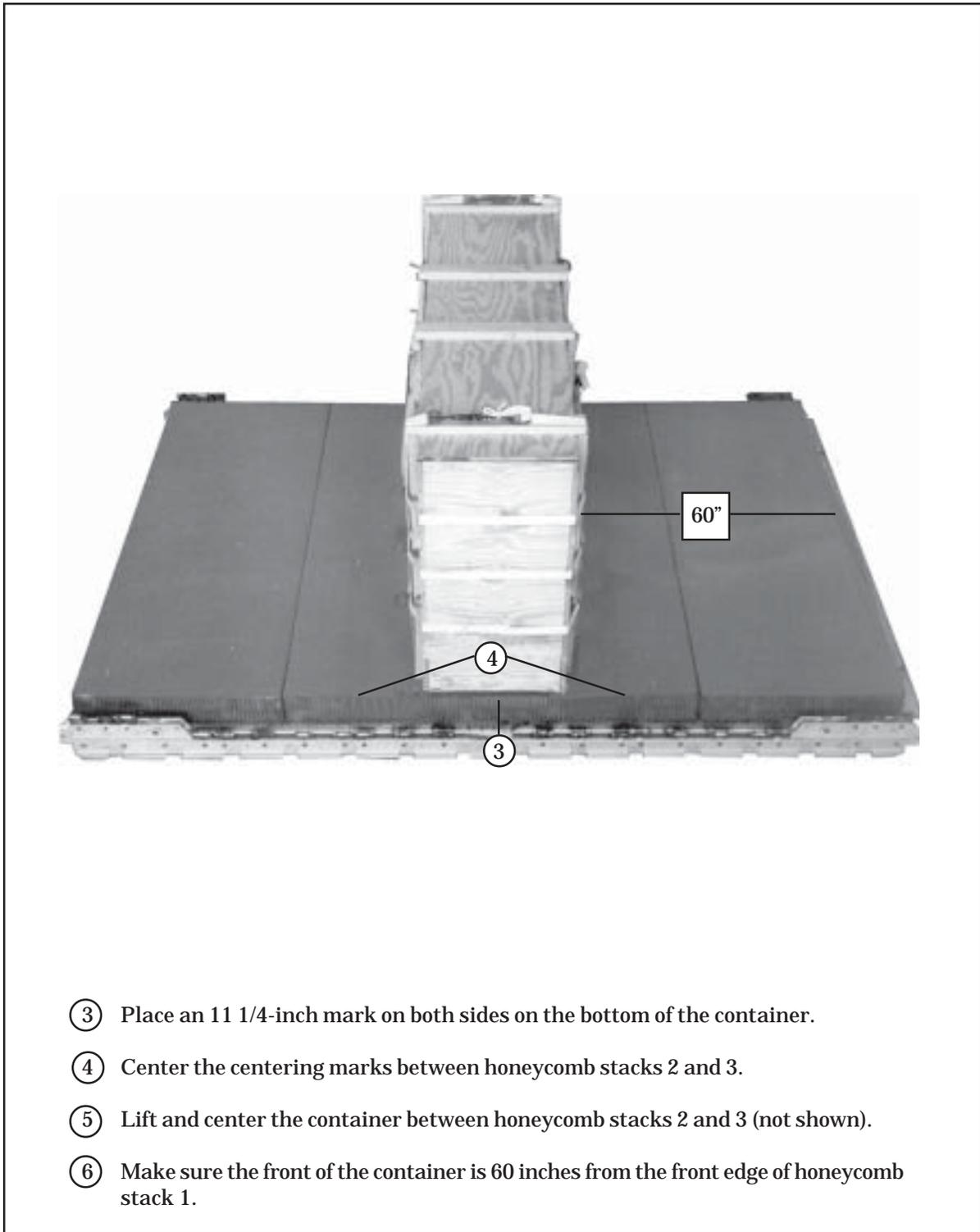


Figure 1-14. Container Positioned (continued)

- b. LASHING CONTAINER.** Use sixteen 15-foot tie-down assemblies to lash the container to the platform as outlined in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-15.

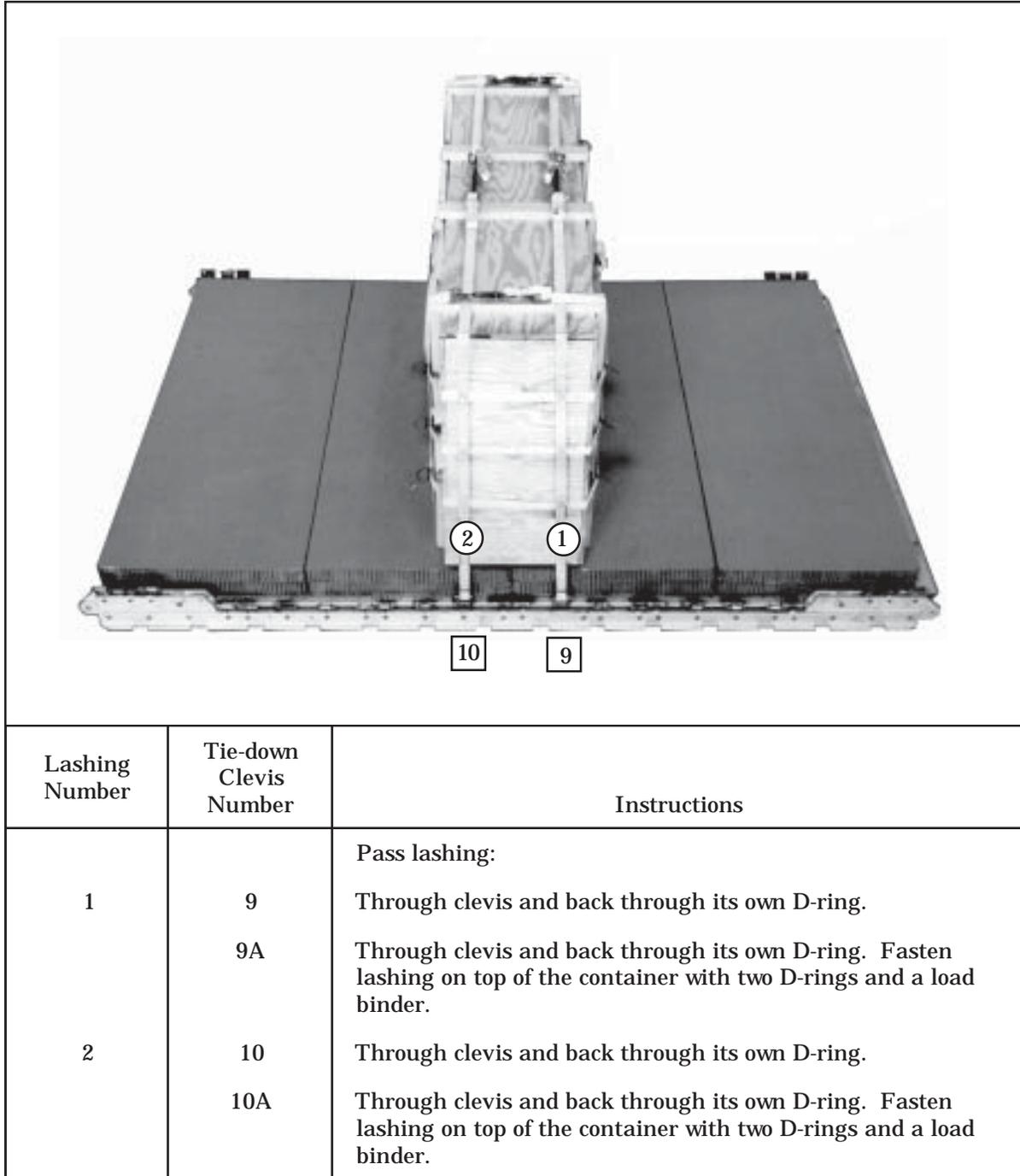
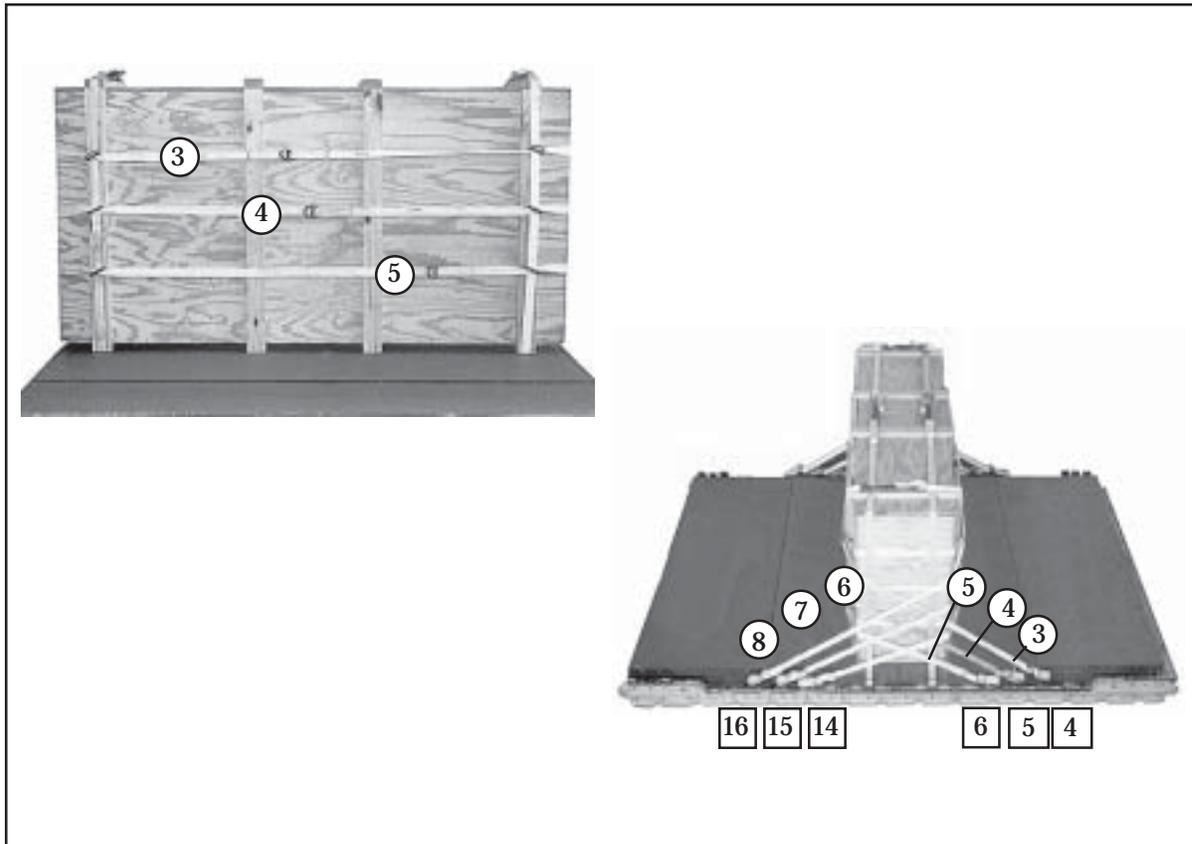


Figure 1-15. Container Lashed to Platform

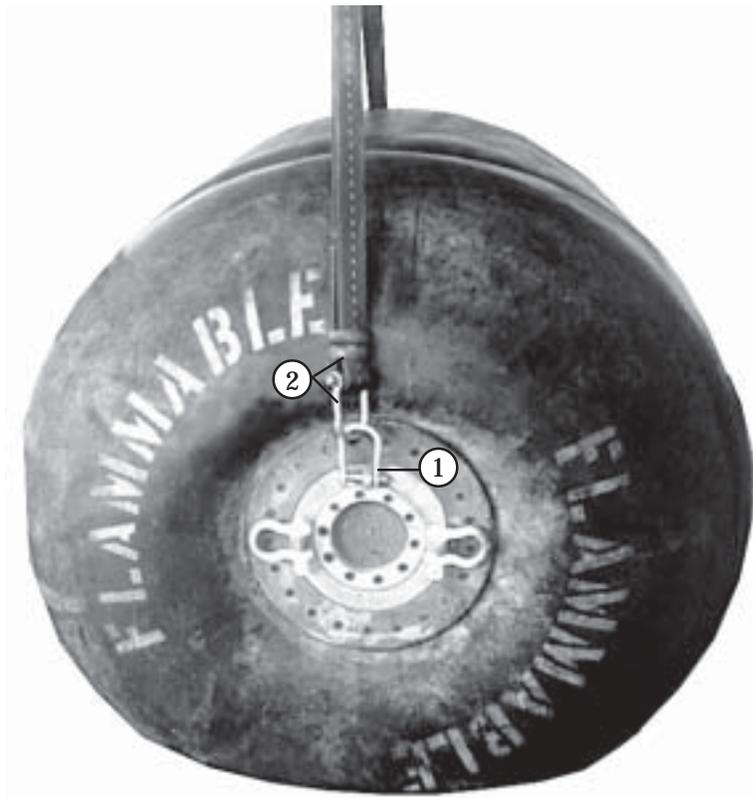


Lashing Number	Tie-down Clevis Number	Instructions
3	4 and 4A	Pass lashing: Around the rear of the container using the top row of D-rings.
4	5 and 5A	Around the rear of the container using the middle row of D-rings.
5	6 and 6A	Around the rear of the container using the bottom row of D-rings.
6	14 and 14A	Around the front of the container using the bottom row of D-rings.
7	15 and 15A	Around the front of the container using the middle row of D-rings.
8	16 and 16A	Around the front of the container using the top row of D-rings.

Figure 1-15. Container Lashed to Platform (continued)

ATTACHING LIFTING SLINGS

1-8. Attach the lifting slings to each fuel drum using four clevises and two 9-foot (2-loop), type XXVI nylon webbing slings as shown in Figure 1-16.



- ① Bolt a clevis to the center shackle of the swivel plate.
- ② Route a clevis through the center clevis bolted to the shackle. Bolt the clevis to a 9-foot sling.
- ③ Repeat steps 1 and 2 on the opposite side of the fuel drum and for the remaining fuel drum (not shown).

Figure 1-16. Lifting Slings Installed

PLACING AND LASHING FUEL DRUMS

1-9. Place and lash the fuel drums on the platform as described below.

- a. **FRONT FUEL DRUM.** Place the front fuel drum on the platform as shown in Figure 1-17. Lash the front fuel drum to the front of the platform as shown in Figure 1-18. Secure the ends of the lashings with a D-ring and a load binder according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

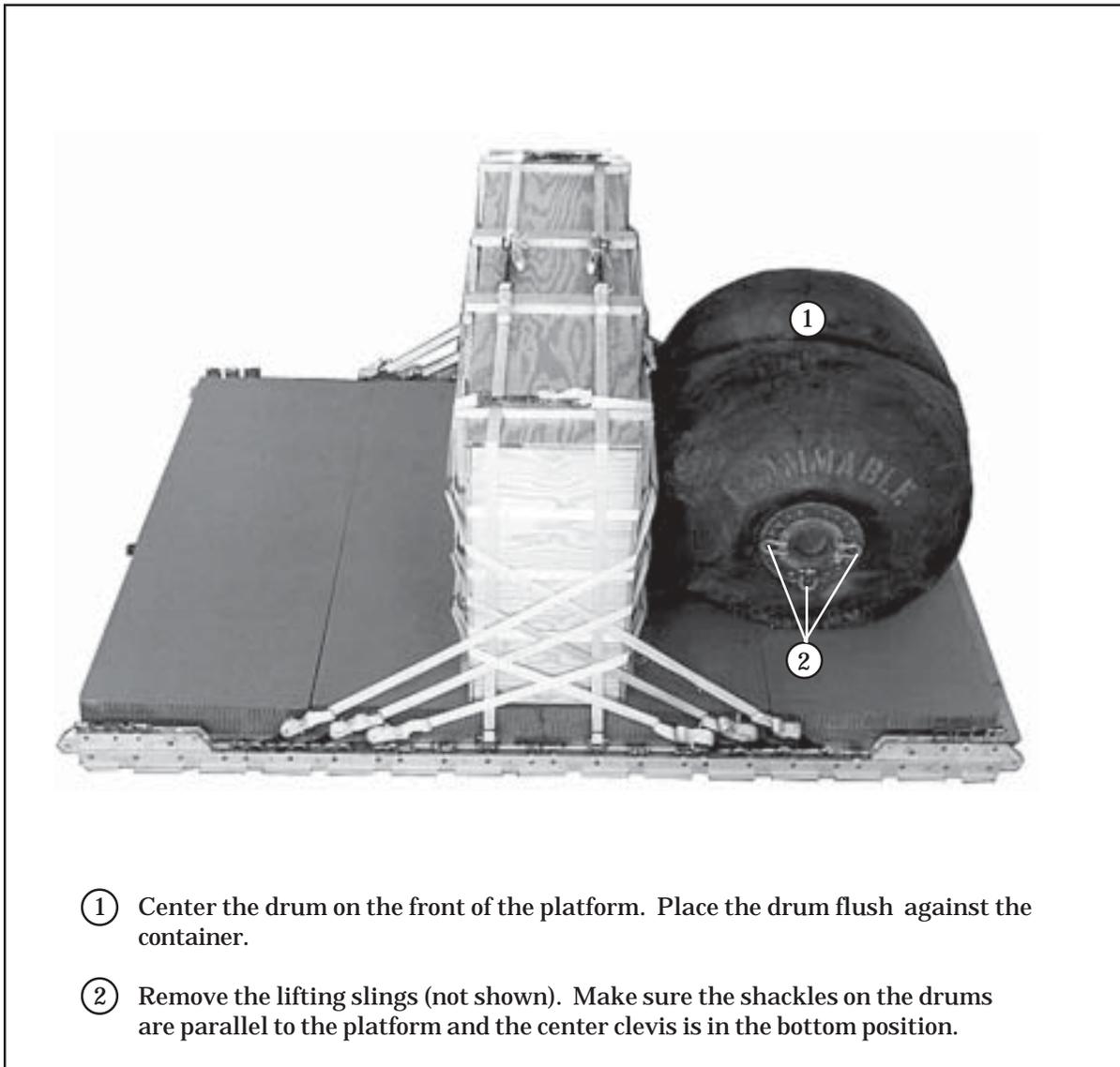
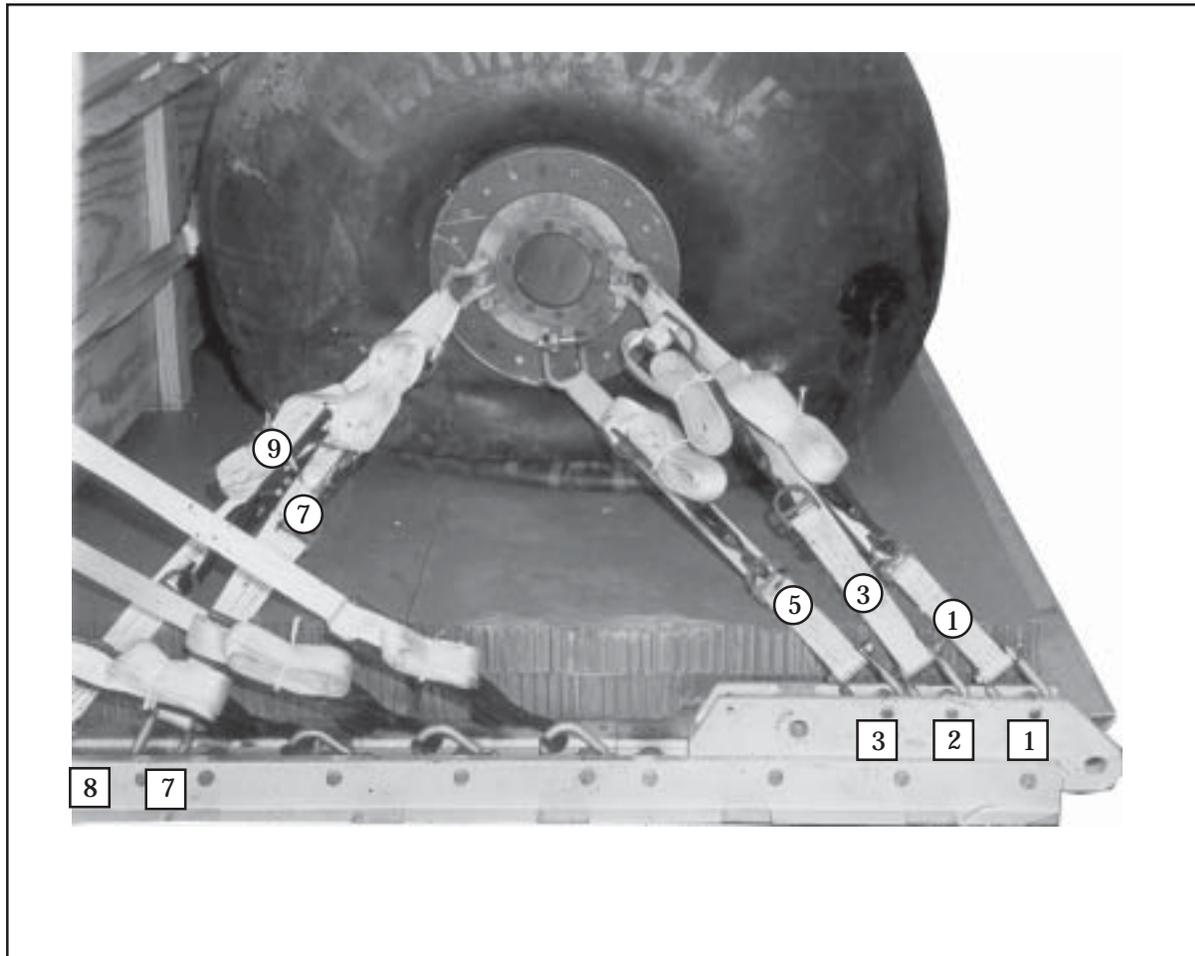


Figure 1-17. Front Fuel Drum Placed on Platform



Lashing Number	Tie-down Clevis Number	Instructions
		Pass lashing:
1	1	Through right front shackle.
2	1A	Through left front shackle.
3	2	Through right front shackle.
4	2A	Through left front shackle.
5	3	Through right center clevis.
6	3A	Through left center clevis.
7	7	Through right rear shackle.
8	7A	Through left rear shackle.
9	8	Through right rear shackle.
10	8A	Through left rear shackle.

Figure 1-18. Front Drum Lashed to Platform

- b. REAR FUEL DRUM.** Place the rear fuel drum on the platform as shown in Figure 1-19. Lash the rear fuel drum to the rear of the platform as shown in Figure 1-20. Secure the ends of the lashings with a D-ring and a load binder according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

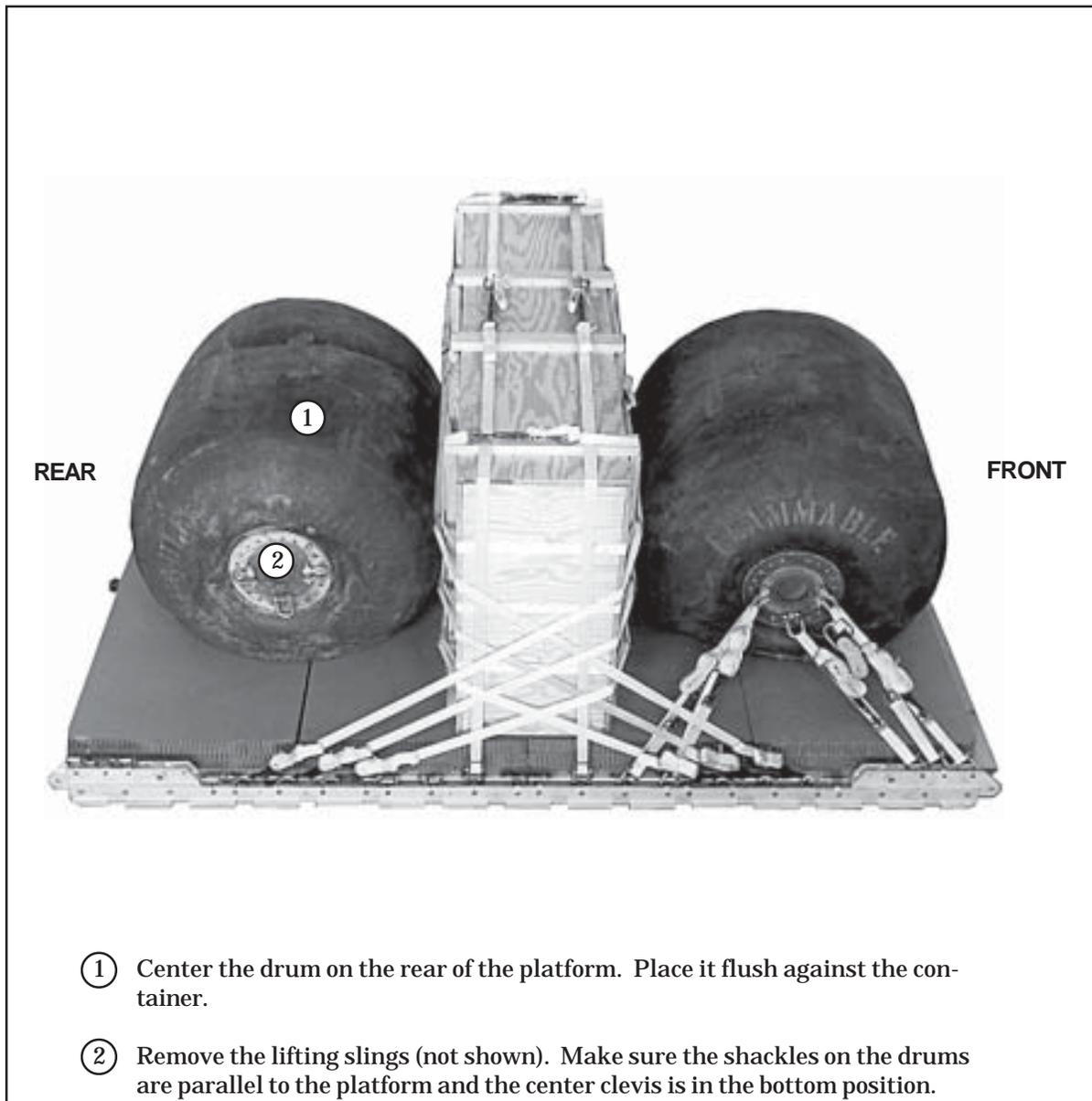
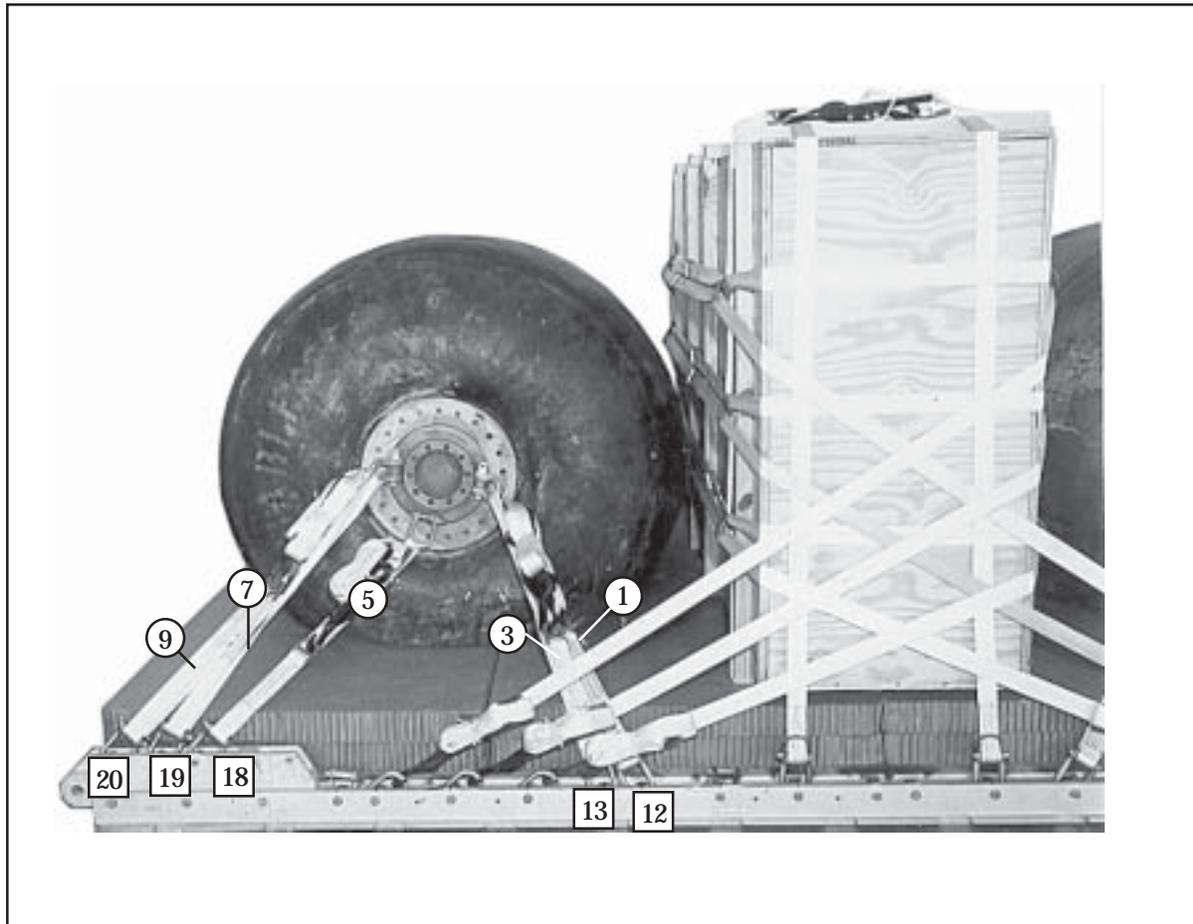


Figure 1-19. Rear Fuel Drum Placed on Platform



Lashing Number	Tie-down Clevis Number	Instructions
1	12	Pass lashing: Through right front shackle.
2	12A	Through left front shackle.
3	13	Through right front shackle.
4	13A	Through left front shackle.
5	18	Through right center clevis.
6	18A	Through left center clevis.
7	19	Through right rear shackle.
8	19A	Through left rear shackle.
9	20	Through right rear shackle.
10	20A	Through left rear shackle.

Figure 1-20. Rear Fuel Drum Lashed to Platform

INSTALLING SUSPENSION SLINGS

1-10. Install four large suspension clevises and four 12-foot (2-loop), type XXVI nylon webbing slings to the tandem links as shown in Figure 1-21.

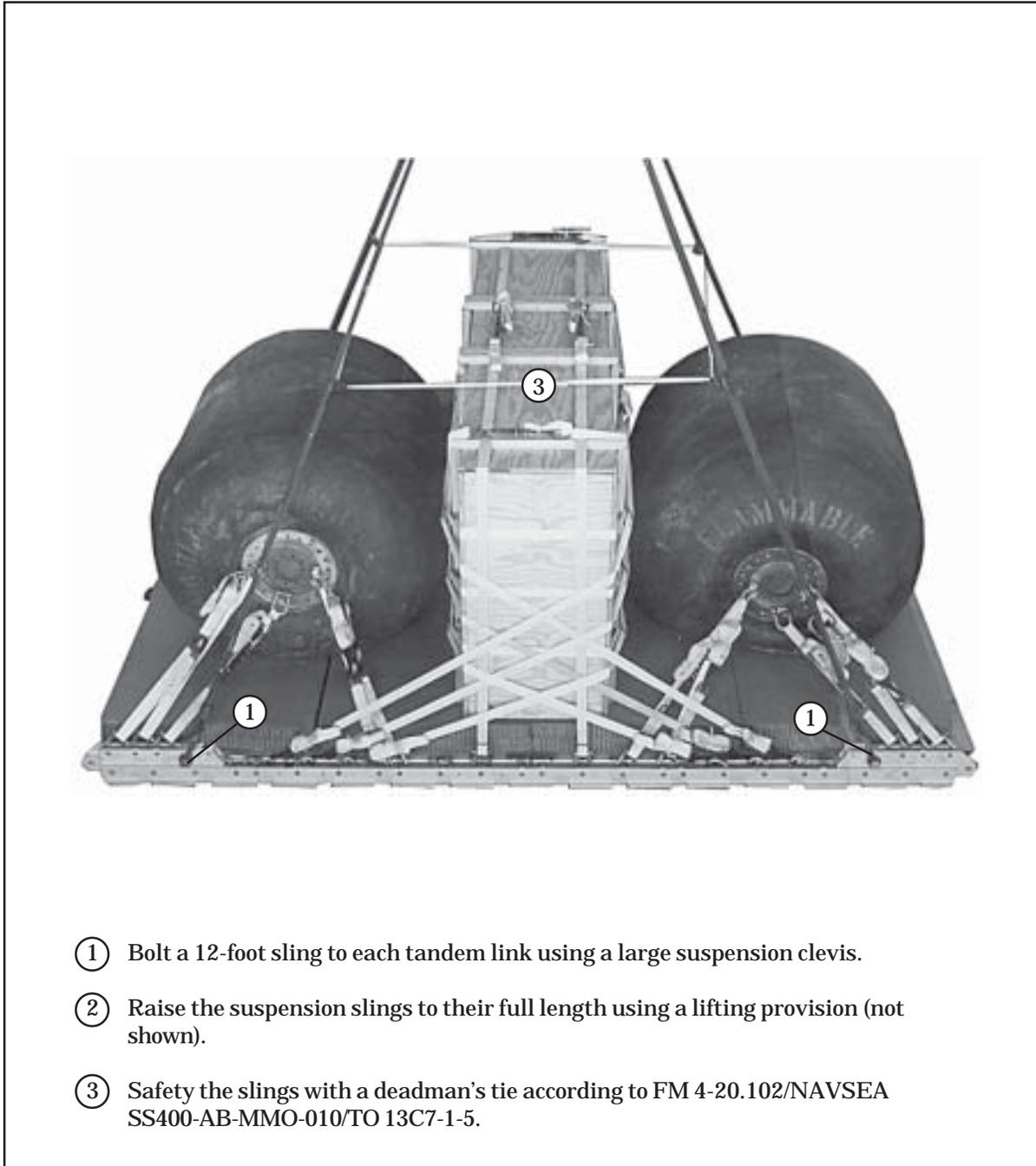


Figure 1-21. Suspension Slings Installed

STOWING CARGO PARACHUTES

1-11. Prepare, place, and restrain two G-11 cargo parachutes according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-22.

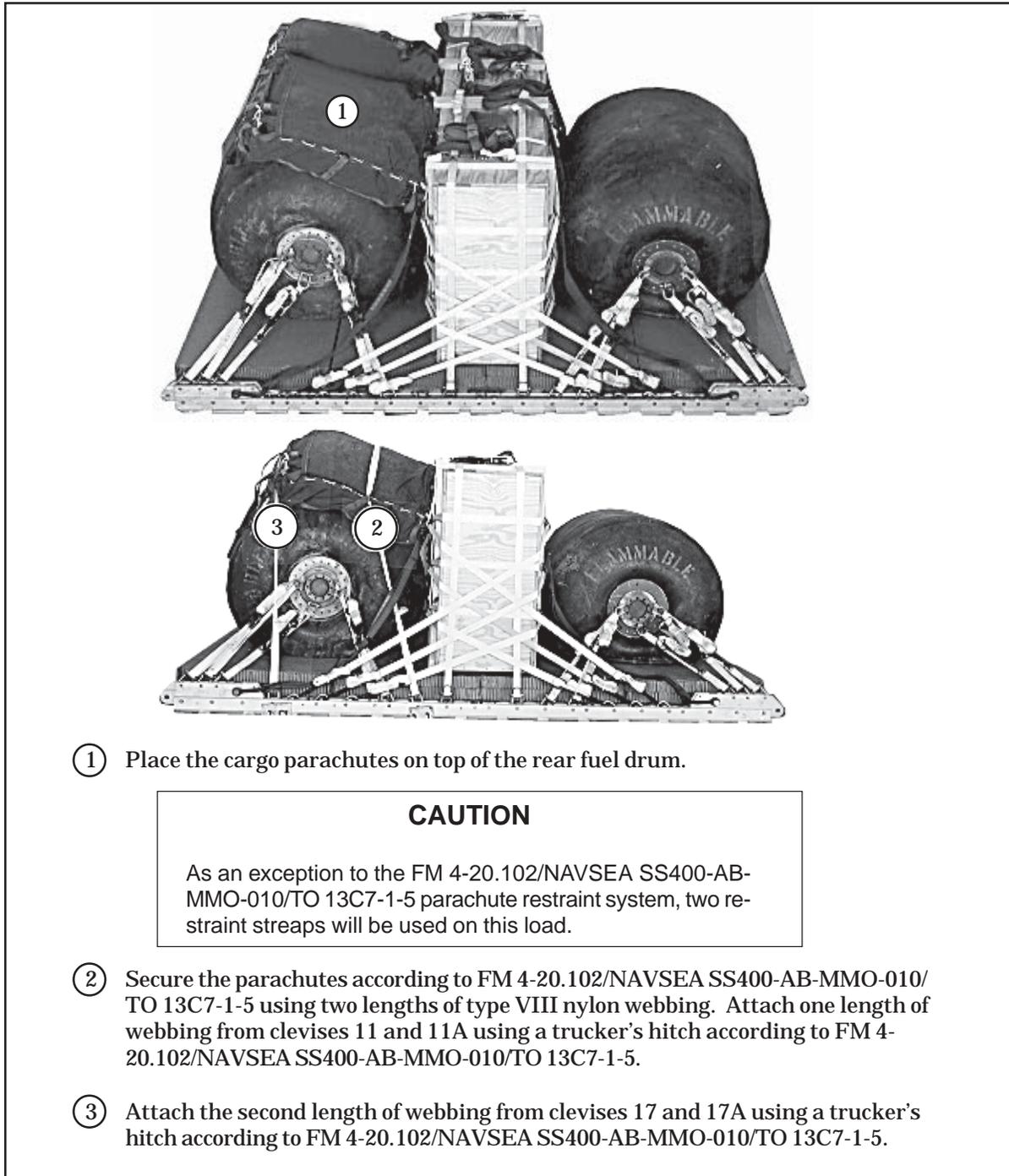
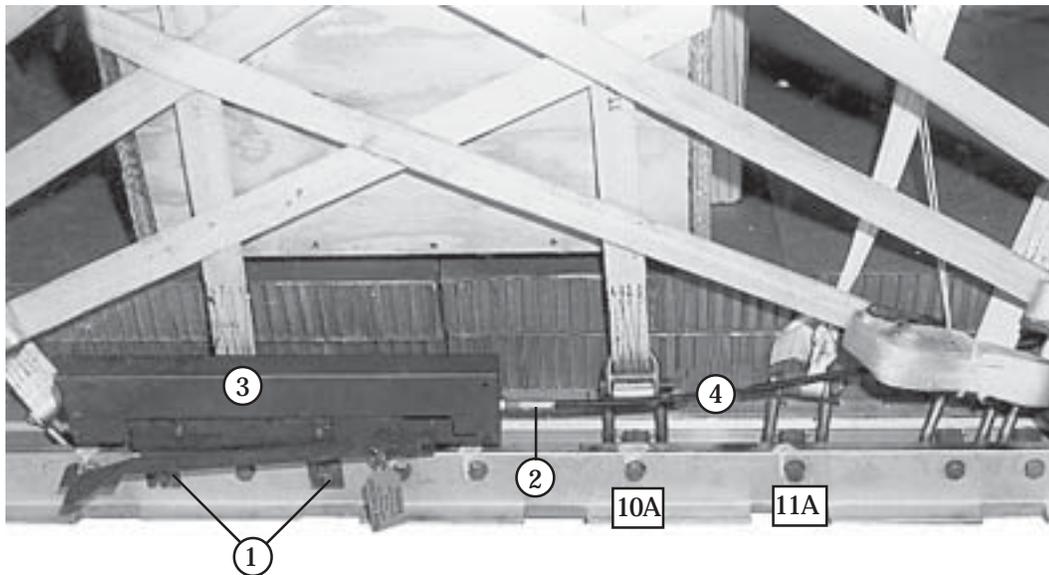


Figure 1-22. Cargo Parachutes Stowed

INSTALLING EXTRACTION SYSTEM

1-12. Install the Extraction Force Transfer Coupling (EFTC) extraction system according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-23.



- ① Install the actuator mounting brackets to the rear EFTC mounting holes on the left side rail.
- ② Install a 12-foot cable to the actuator assembly.
- ③ Attach the actuator assembly to the mounting brackets.
- ④ Route the cable from the actuator assembly between clevises 11A and 12A toward the rear of the platform.

Figure 1-23. Extraction System Installed

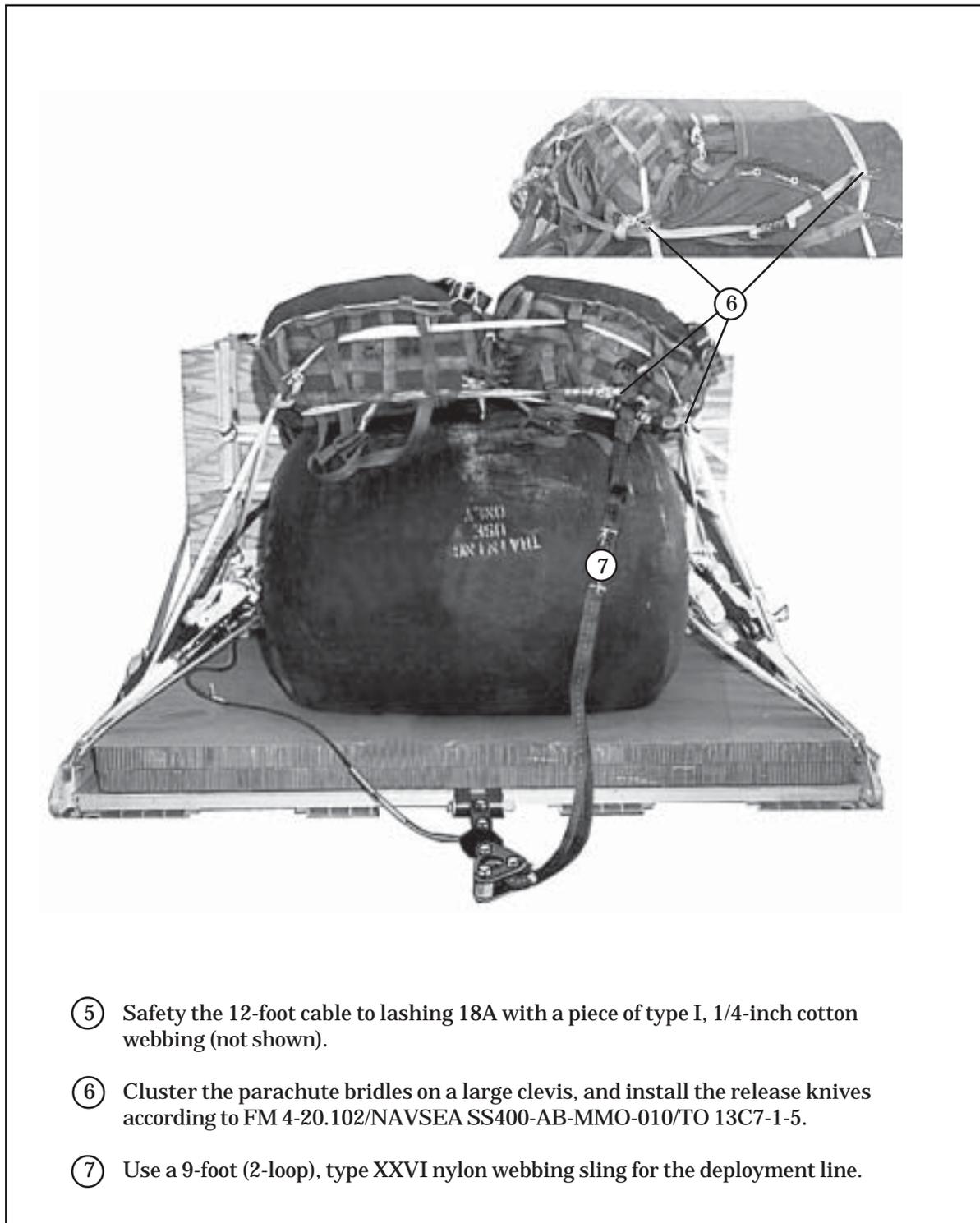


Figure 1-23. Extraction System Installed (continued)

INSTALLING PARACHUTE RELEASE SYSTEM

1-13. Prepare and attach an M-1 cargo parachute release according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-24.

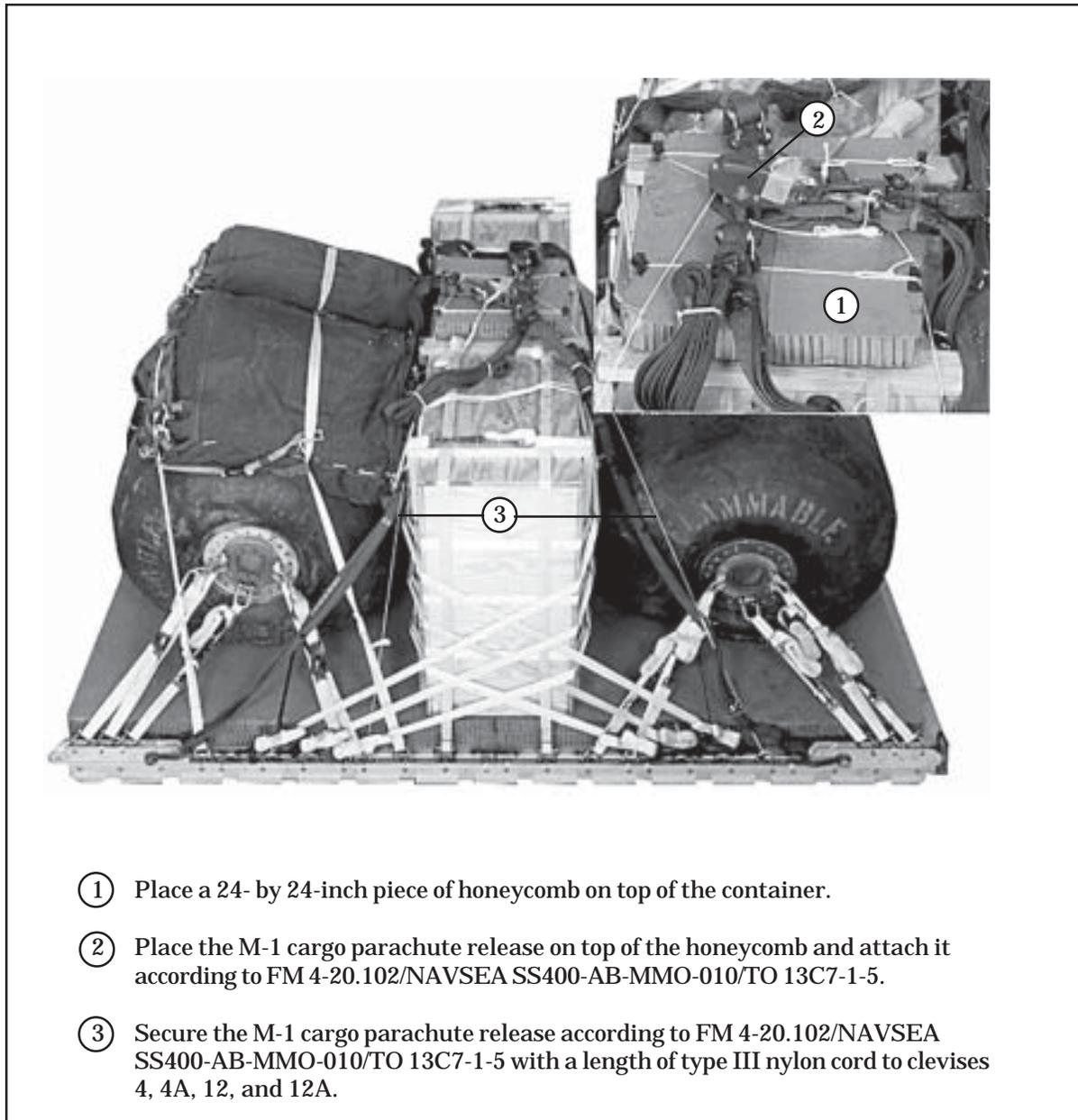


Figure 1-24. Parachute Release Attached

PLACING EXTRACTION PARACHUTE

1-14. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. Place the extraction parachute and extraction line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

1-15. Select and install the provisions for emergency aft restraints according to the emergency aft restraint requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

MARKING RIGGED LOAD

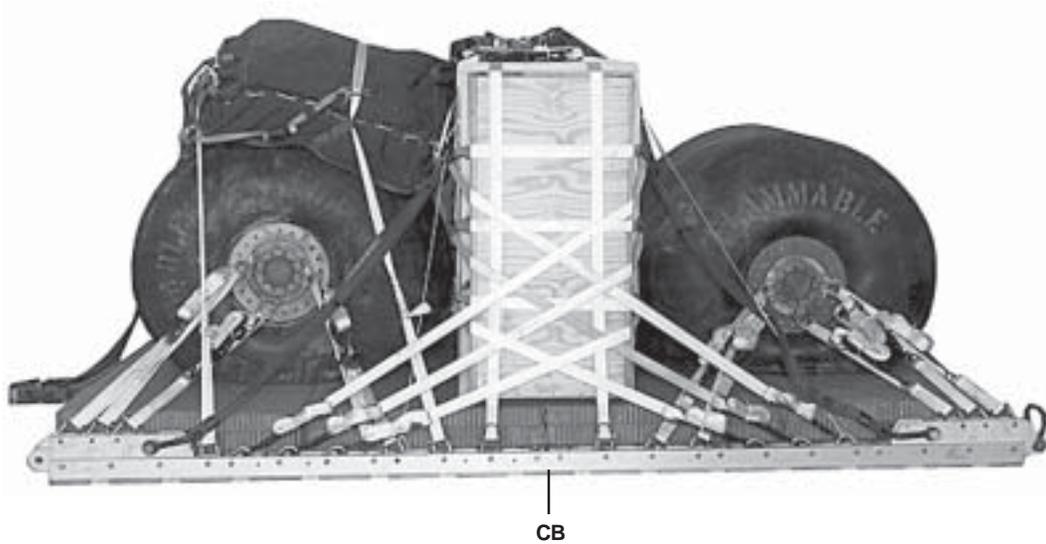
1-16. Mark the rigged load according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-25. Complete Shipper's Declaration for Dangerous Goods and affix to the load. If the load varies from the one shown, the weight, height, CB, tipoff curve, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

1-17. Use the equipment list in Table 1-2 to rig the load shown in Figure 1-25.

CAUTION:

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



RIGGED LOAD DATA

Weight	9,107 pounds
Maximum Weight	10,500 pounds
Height	70 inches
Width	108 inches
Overall Length	162 inches
Overhang: Front	0 inches
Rear (EFTC)	18 inches
Center of Balance (CB) (from front edge of platform)	72 inches
Extraction System	EFTC

Figure 1-25. FARE with Two 500-Gallon Fuel Drums Rigged for Low-Velocity Airdrop

Table 1-2 Equipment Required for Rigging FARE with Two 500-Gallon Fuel Drums for Low-Velocity Airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line bag (for DES)	1
4030-00-090-5354	Clevis, large	5
4030-00-678-8562	Clevis, medium	4
8305-00-880-8155	Cloth coated, green, 60-inch	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with cable, 12-ft	1
1670-00-360-0328	Cover, Clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	16
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-00-003-4391	Knife, parachute bag (for DES)	1
1670-01-183-2678	Leaf, extraction line (line bag)(add 2 for DES)	2
1670-01-064-4452	Line, drogue (for DES) 60-ft (1-loop), type XXVI	1
	Line, extraction:	1
1670-01-062-6313		1
1670-01-107-7651	For C-141: 140-ft (3-loop), type XXVI	
	For C-5:	1
1670-01-062-6313	60-ft, (3-loop), type XXVI and	1
1670-01-107-7651	140-ft (3-loop), type XXVI	
	For C-17:	1
1670-01-107-7651	140-ft (3-loop), type XXVI	
	Link Assembly: (double the quantity for DES)	
	Two-point:	1
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in, hexagonal	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
N/A	Link, tow release mechanized (H-Block) C-17 aircraft	1

Table 1-2 Equipment Required for Rigging FARE with Two 500-Gallon Fuel Drums for Low-Velocity Airdrop (continued)

National Stock Number	Item	Quantity
5510-00-220-6146	Lumber, 2- by 4-in: 24-inch 27-inch 50 1/4-inch	4 4 8
5315-00-010-4659	Nail, steel wire, 8d	As required
1670-00-753-3928	Pad, energy-dissipating (honeycomb) 3- by 36- by 96-in	11 sheets
1670-01-016-7841	Parachute: Cargo: G-11B	2
1670-01-063-3716	Cargo extraction: 22-ft	1
1670-01-063-3715	Drogue (for DES) 15-ft	1
1670-01-353-8425	Platform, airdrop, type V, 12-ft: Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(48)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link assembly (Multipurpose link)	(4)
5530-00-128-4981	Plywood, 3/4-in	3 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
1670-01-062-6303	Sling, cargo, airdrop For suspension: 12-ft (2-loop), type XXVI nylon webbing	4
1670-01-062-6303	For lifting: 12-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6304	For deployment: 9-ft (2-loop), type XXVI nylon webbing	1
1670-01-062-6302	For riser extension: 20-ft (2-loop), type XXVI nylon webbing	2
5340-00-040-8219	Strap, parachute release, multi-cut, comes w/ 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
7510-00-266-6710	Tape, masking, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-foot	55
8305-00-268-2411	Webbing: Cotton, 1/4-in, type I	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-263-3591	Type VIII	As required

SECTION II - RIGGING FARE IN AN M101 SERIES , 3/4-TON TRAILER

DESCRIPTION OF LOAD

1-18. The FARE, weighing 860 pounds, is stowed as an accompanying load in the M101 or M101A1, 3/4-ton trailer. This load is rigged for low-velocity airdrop on a 12-foot, type V platform. One G-11 cargo parachute is used for this load. The height of the trailer is 83 inches, reducible to 51-inches. It is 71 inches wide and 147 inches long. The trailer may have an additional 640 pounds stowed in it.

PREPARING PLATFORM

1-19. Prepare a 12-foot type V airdrop platform using four tandem links and 18 tie-down clevises as shown in Figure 1-26.

- Notes:**
1. The nose bumper may or may not be installed.
 2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.

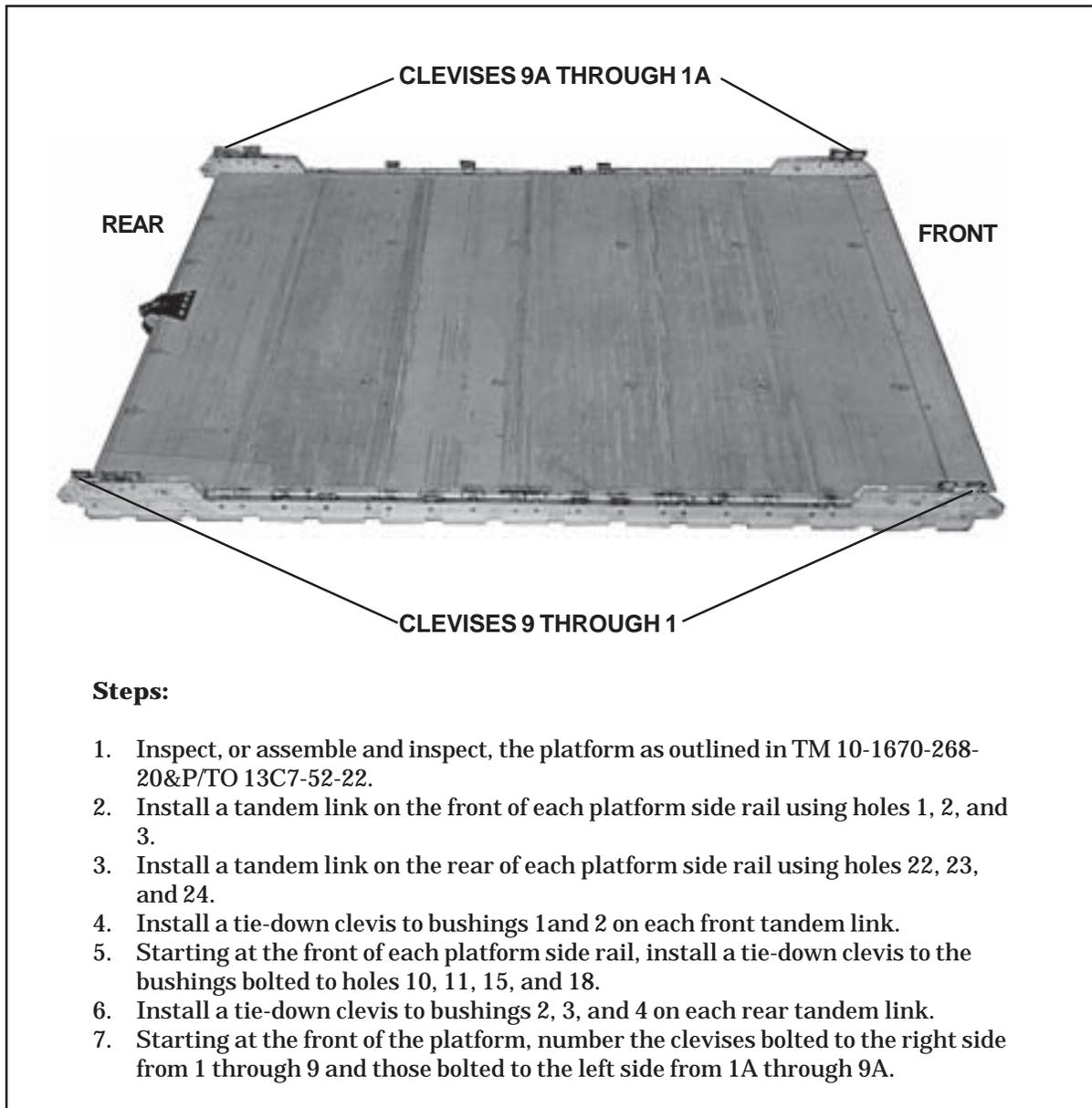


Figure 1-26. Platform Prepared

BUILDING AND PLACING HONEYCOMB STACKS

1-20. Build three honeycomb stacks using the material listed and shown in Figures 1-27, 1-28, and 1-29. Place the stacks on the platform as shown in Figures 1-30 and 1-31.

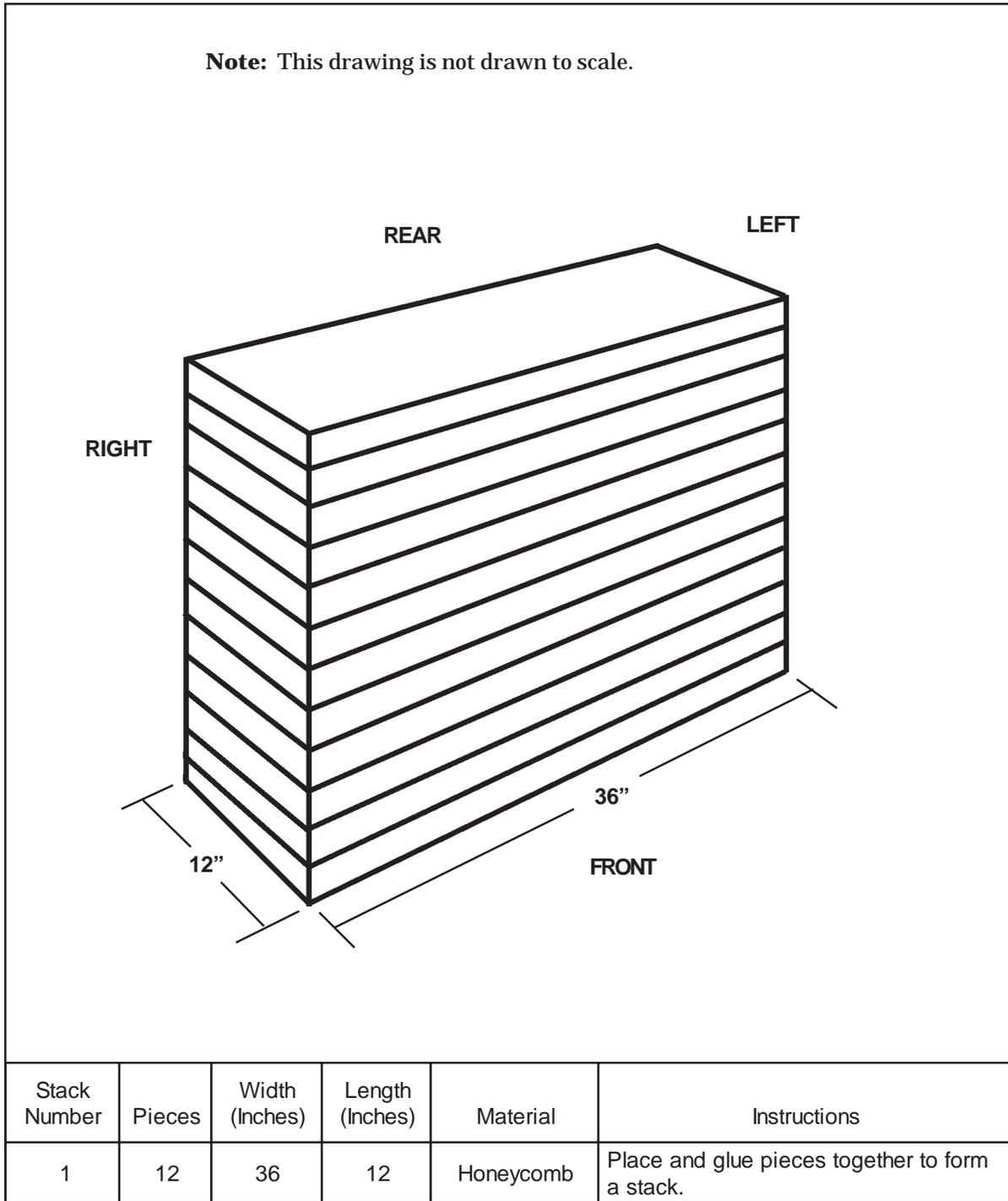


Figure 1-27. Stack 1 Prepared

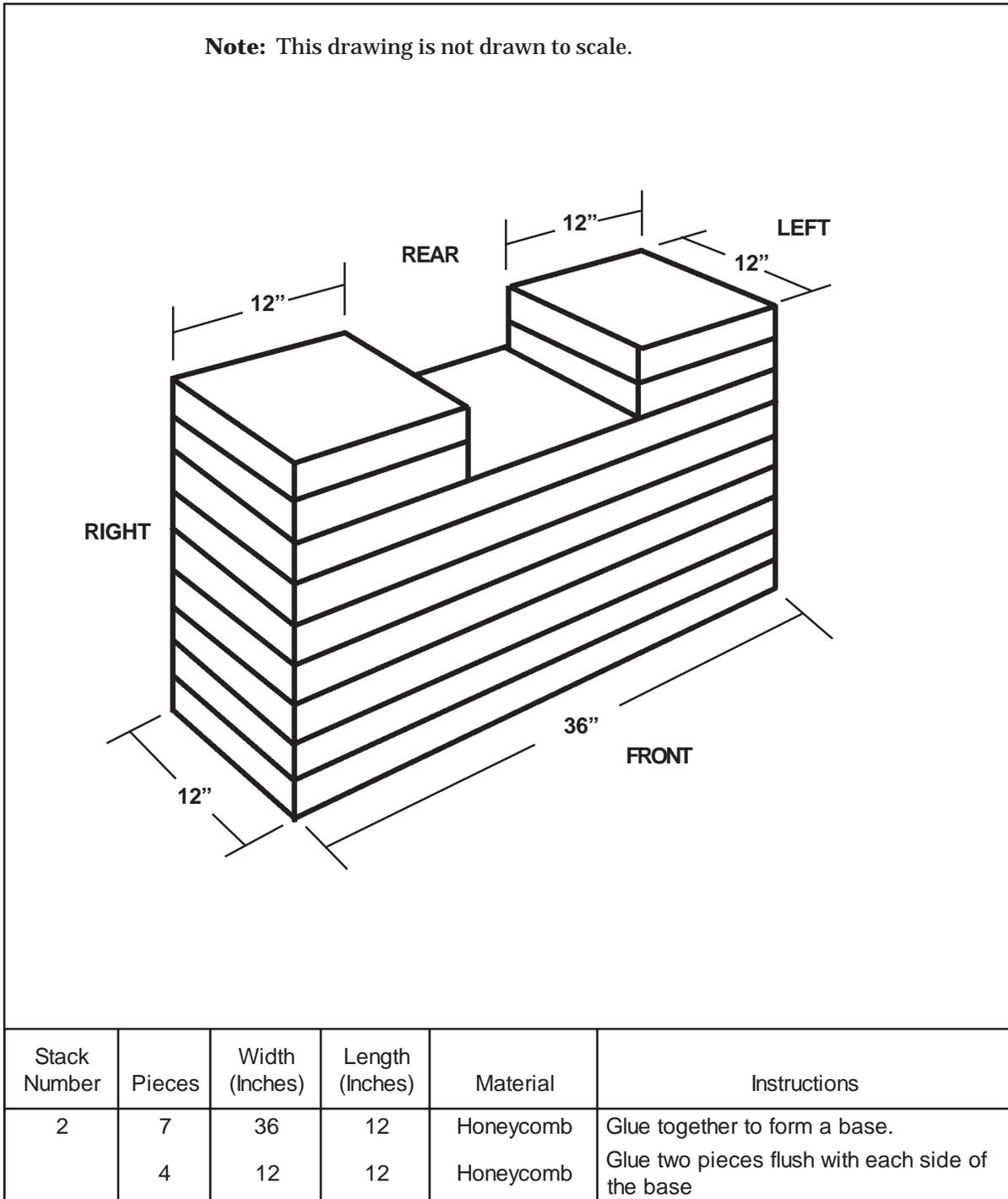


Figure 1-28. Stack 2 Prepared

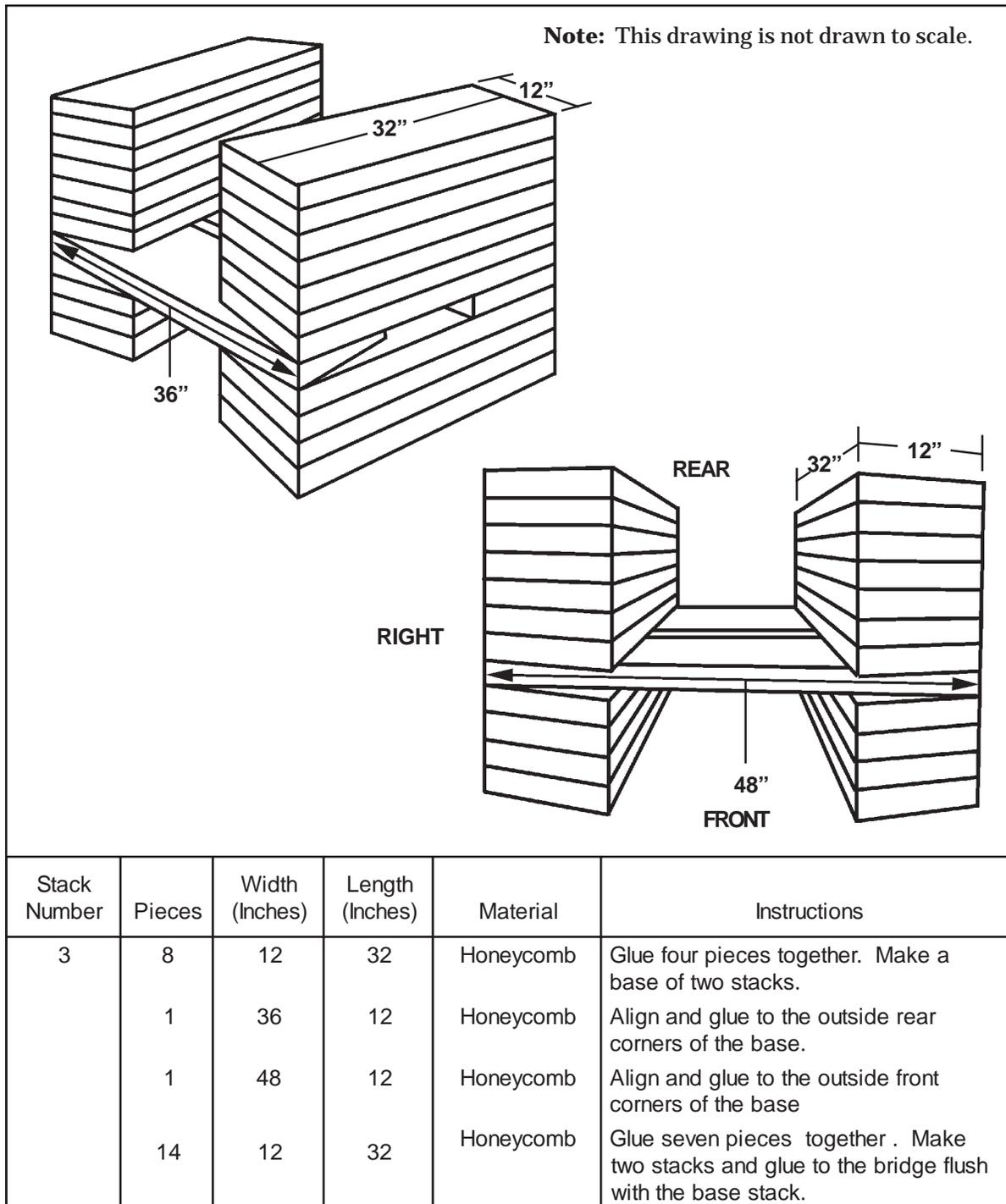
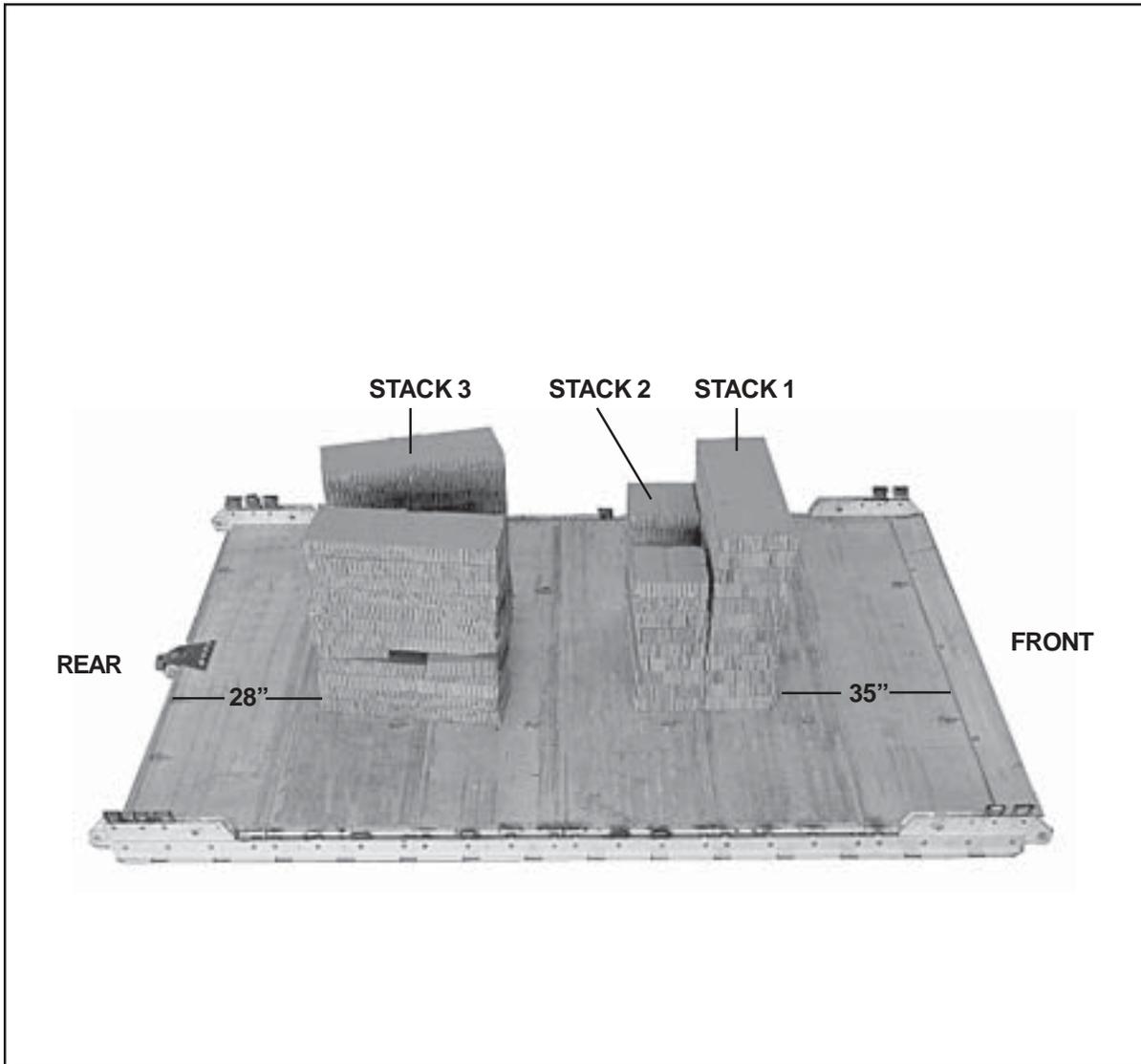


Figure 1-29. Stack 3 Prepared

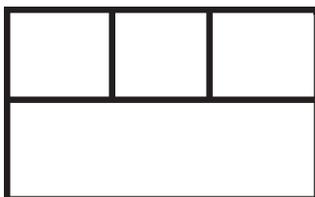
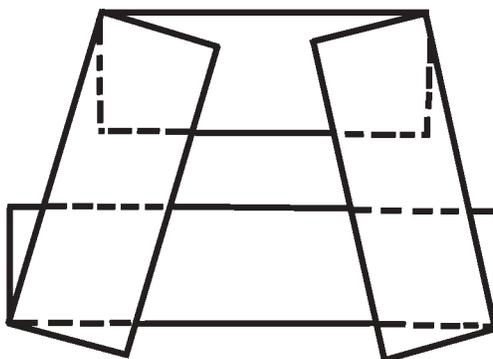


Stack Number	Position on Platform
1	Place Stack: Centered 35 inches from the front edge of the platform.
2	Centered flush against stack 1.
3	Centered with outside corner 28 inches from the rear of the platform.

Figure 1-30. Honeycomb Stacks Placed on Platform

Note: This drawing is not drawn to scale.

REAR



FRONT

Figure 1-31. Top View of Honeycomb Stacks Placed on Platform

PREPARING TRAILER

1-21. Prepare the trailer as described below.

- a. **REMOVING COMPONENTS.** Remove the components from the trailer as shown in Figure 1-32.

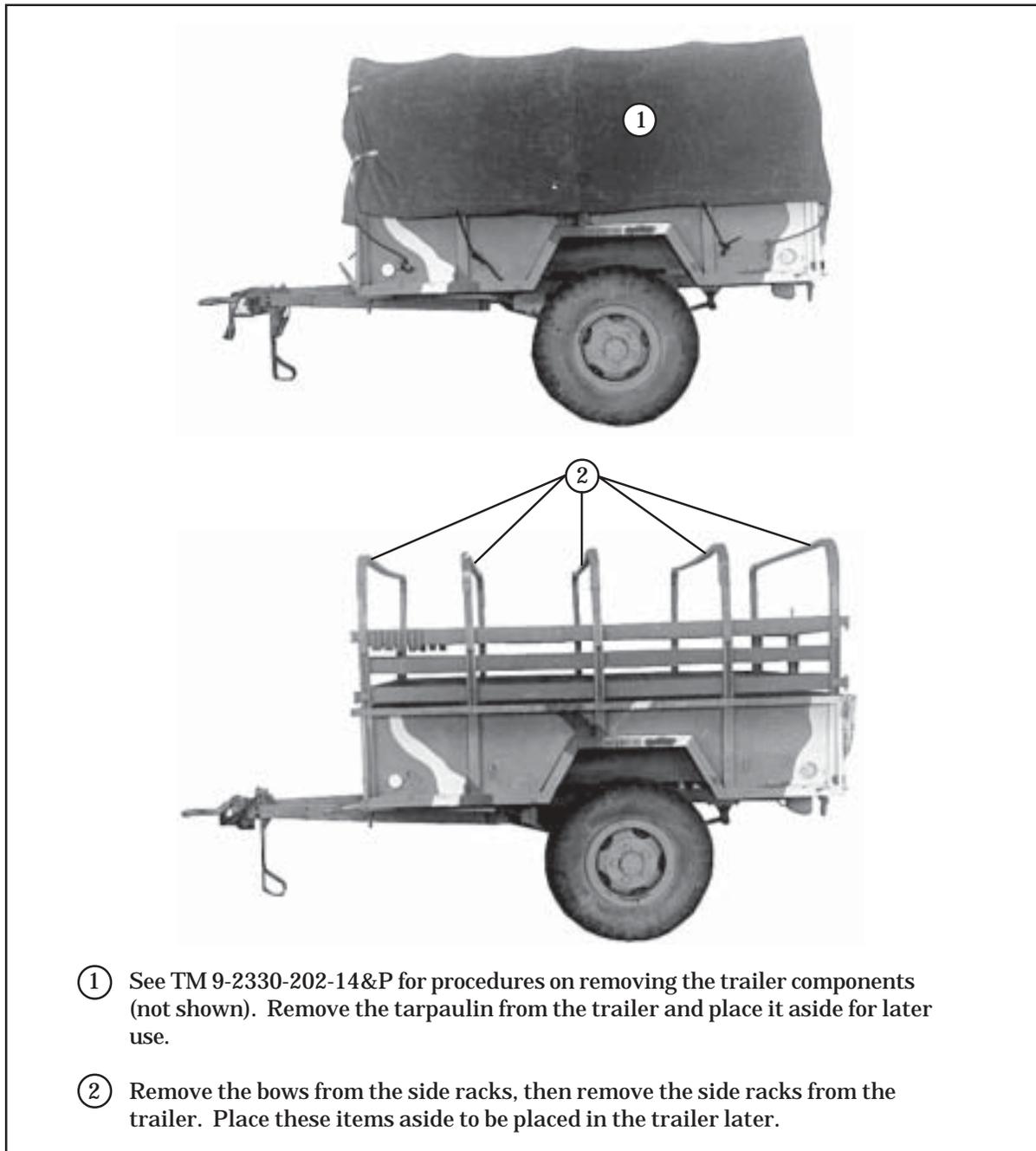
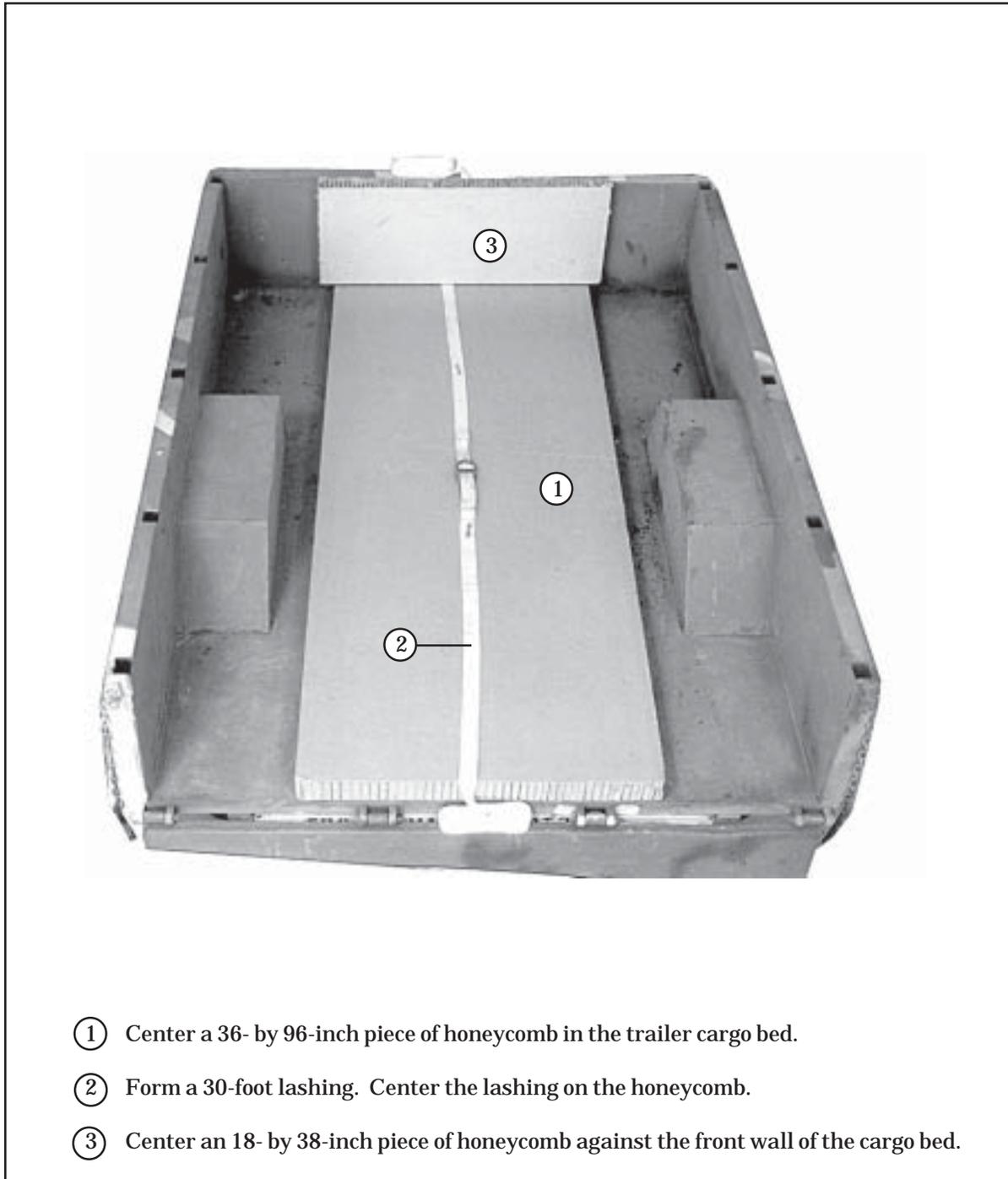


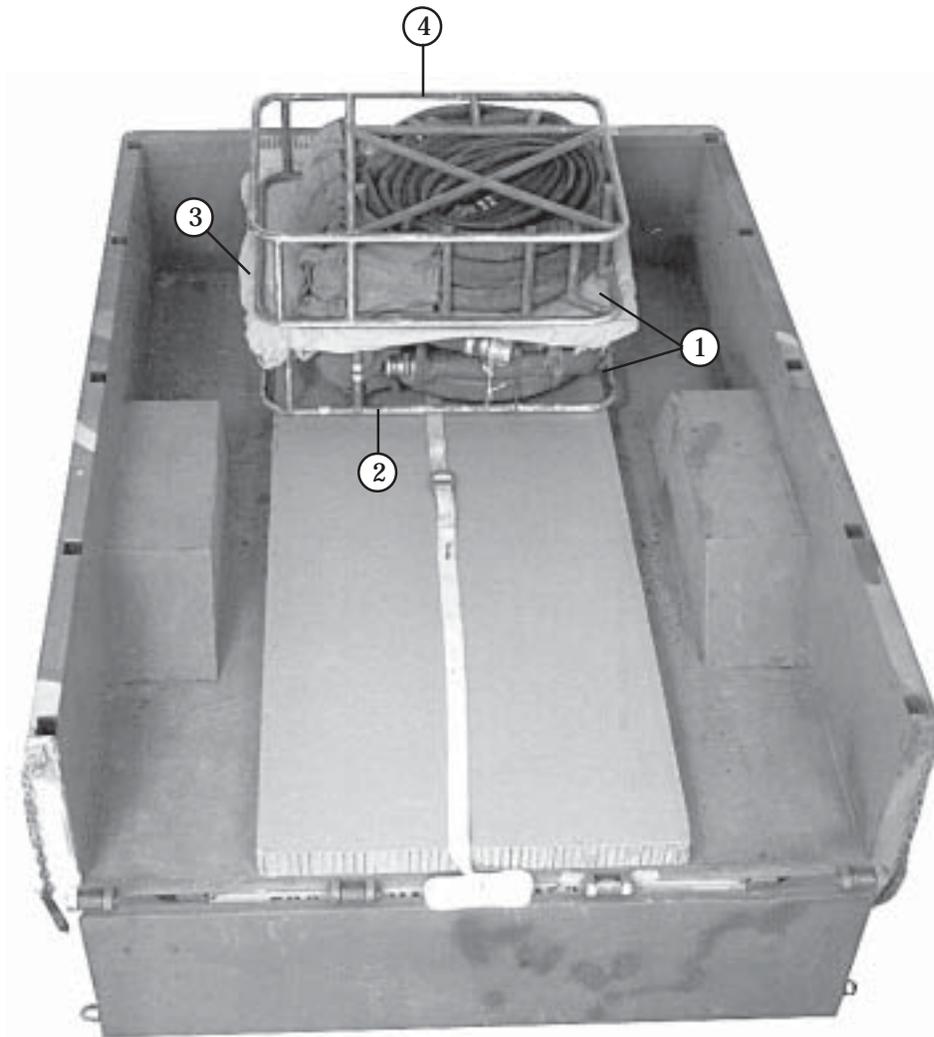
Figure 1-32. Trailer Components Removed

- b. PREPARING TRAILER BEFORE POSITIONING.** Prepare the trailer, and place the components of the FARE in the cargo bed as shown in Figures 1-33 through 1-41.



- ① Center a 36- by 96-inch piece of honeycomb in the trailer cargo bed.
- ② Form a 30-foot lashing. Center the lashing on the honeycomb.
- ③ Center an 18- by 38-inch piece of honeycomb against the front wall of the cargo bed.

Figure 1-33. Honeycomb Placed in Cargo Bed

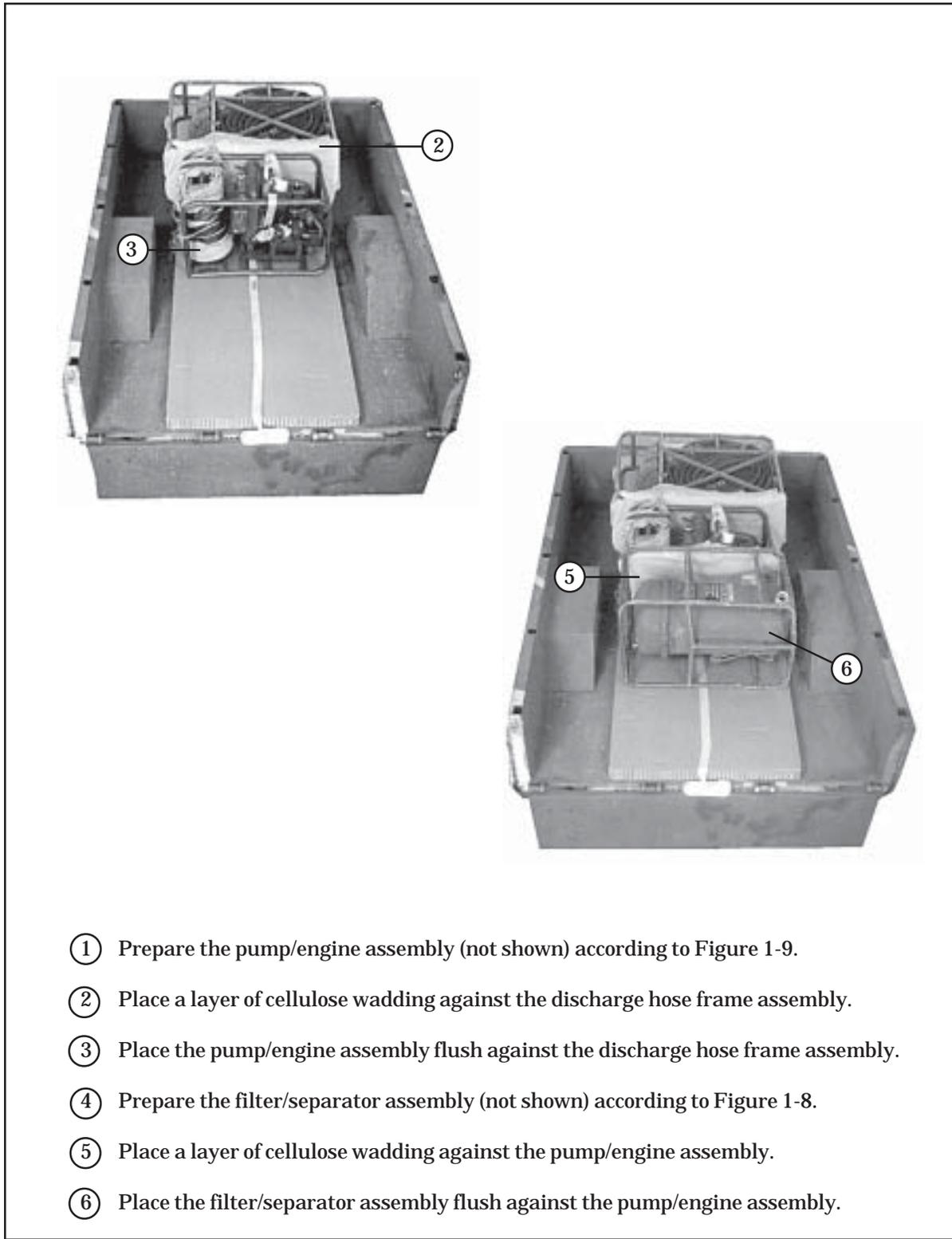


- ① Prepare the discharge hose frame assemblies as shown in Figure 1-7.

Note: Ensure the discharge hose accessory fittings placed in the accessory storage compartment are secured to the discharge hose frame.

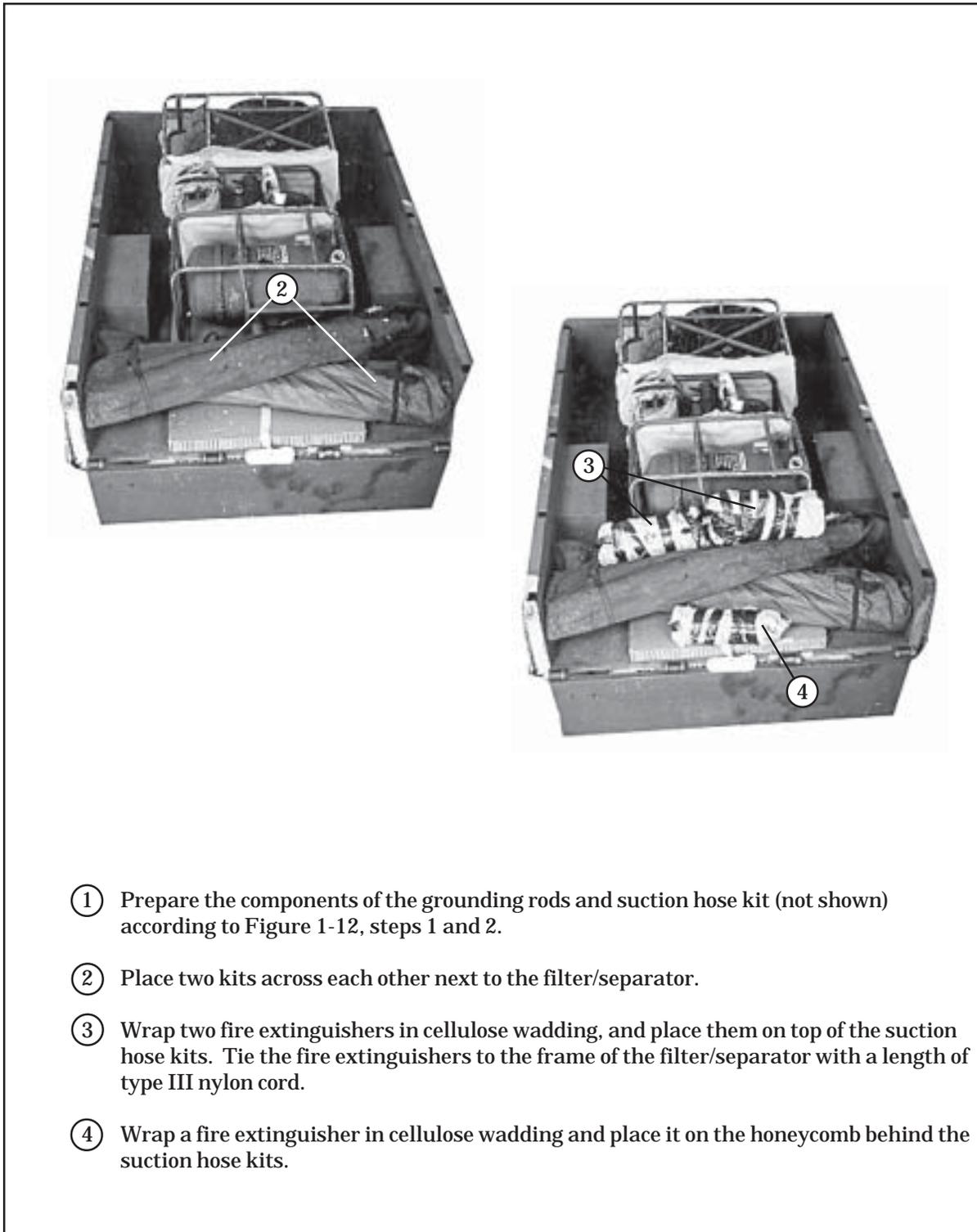
- ② Place a discharge hose assembly flush against the 18- by 38-inch piece of honeycomb.
- ③ Place a layer of cellulose wadding on top of the discharge hose frame assembly.
- ④ Place another discharge hose frame assembly on top of the cellulose wadding and flush against the 18- by 38-inch piece of honeycomb.

Figure 1-34. Discharge Hose Frame Assemblies Placed on Honeycomb



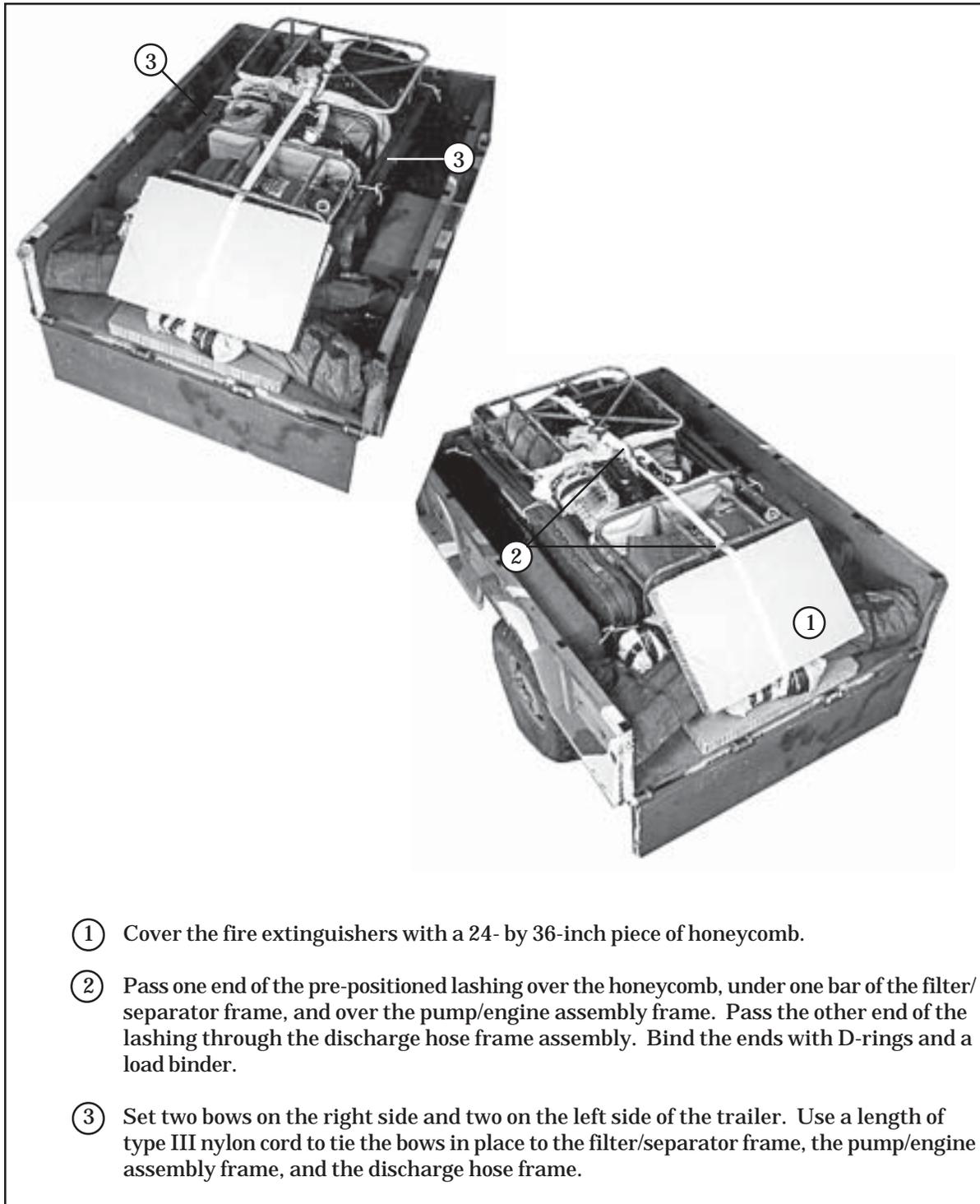
- ① Prepare the pump/engine assembly (not shown) according to Figure 1-9.
- ② Place a layer of cellulose wadding against the discharge hose frame assembly.
- ③ Place the pump/engine assembly flush against the discharge hose frame assembly.
- ④ Prepare the filter/separator assembly (not shown) according to Figure 1-8.
- ⑤ Place a layer of cellulose wadding against the pump/engine assembly.
- ⑥ Place the filter/separator assembly flush against the pump/engine assembly.

Figure 1-35. Pump/Engine Assembly Stowed



- ① Prepare the components of the grounding rods and suction hose kit (not shown) according to Figure 1-12, steps 1 and 2.
- ② Place two kits across each other next to the filter/separator.
- ③ Wrap two fire extinguishers in cellulose wadding, and place them on top of the suction hose kits. Tie the fire extinguishers to the frame of the filter/separator with a length of type III nylon cord.
- ④ Wrap a fire extinguisher in cellulose wadding and place it on the honeycomb behind the suction hose kits.

Figure 1-36. Ground Rods, Suction Hose Kits, and Fire Extinguisher Placed on Honeycomb



- ① Cover the fire extinguishers with a 24- by 36-inch piece of honeycomb.
- ② Pass one end of the pre-positioned lashing over the honeycomb, under one bar of the filter/separator frame, and over the pump/engine assembly frame. Pass the other end of the lashing through the discharge hose frame assembly. Bind the ends with D-rings and a load binder.
- ③ Set two bows on the right side and two on the left side of the trailer. Use a length of type III nylon cord to tie the bows in place to the filter/separator frame, the pump/engine assembly frame, and the discharge hose frame.

Figure 1-37. Lashing Secured and Bows Tied in Place

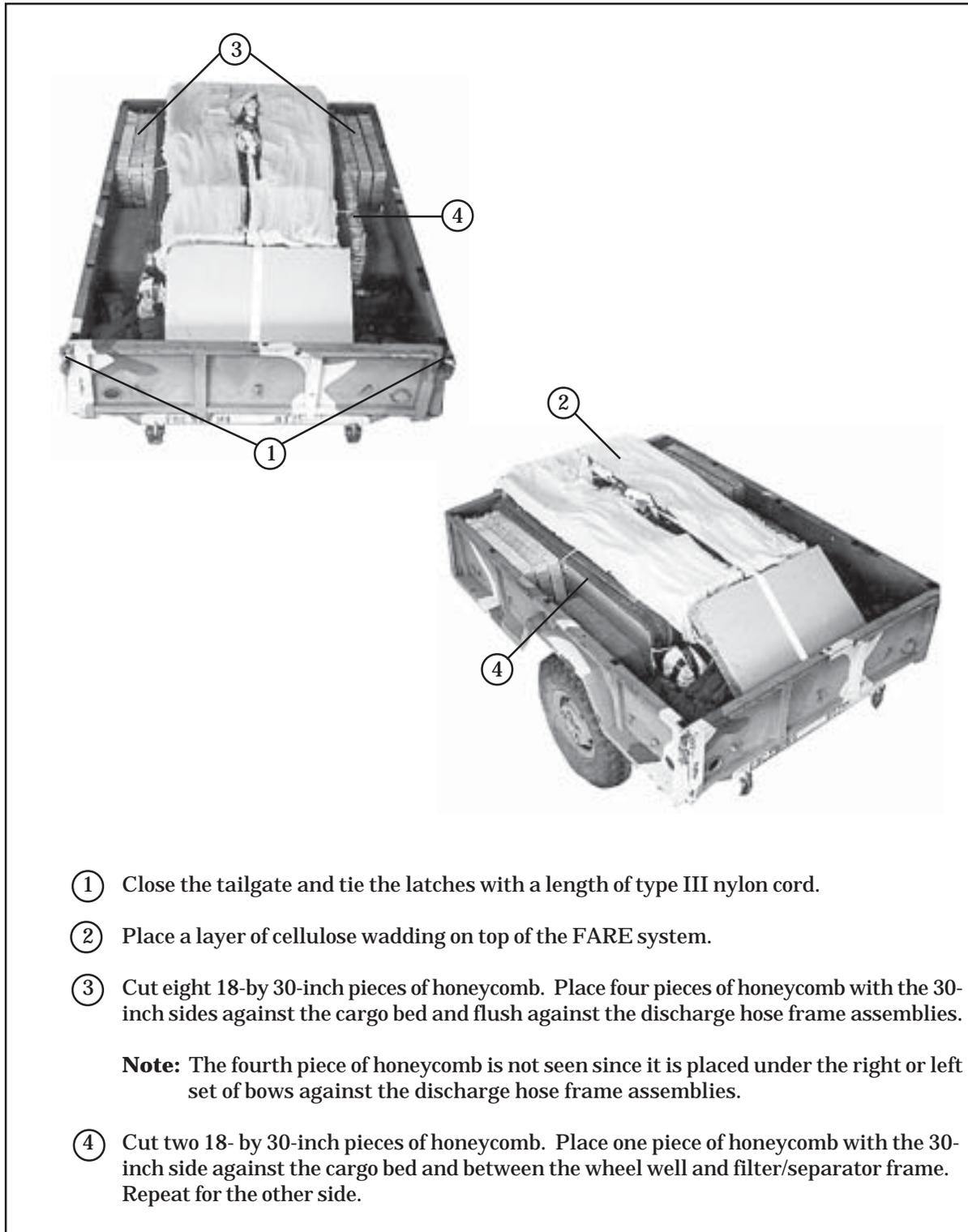


Figure 1-38. Tailgate Secured and Filler Honeycomb Placed in Cargo Bed

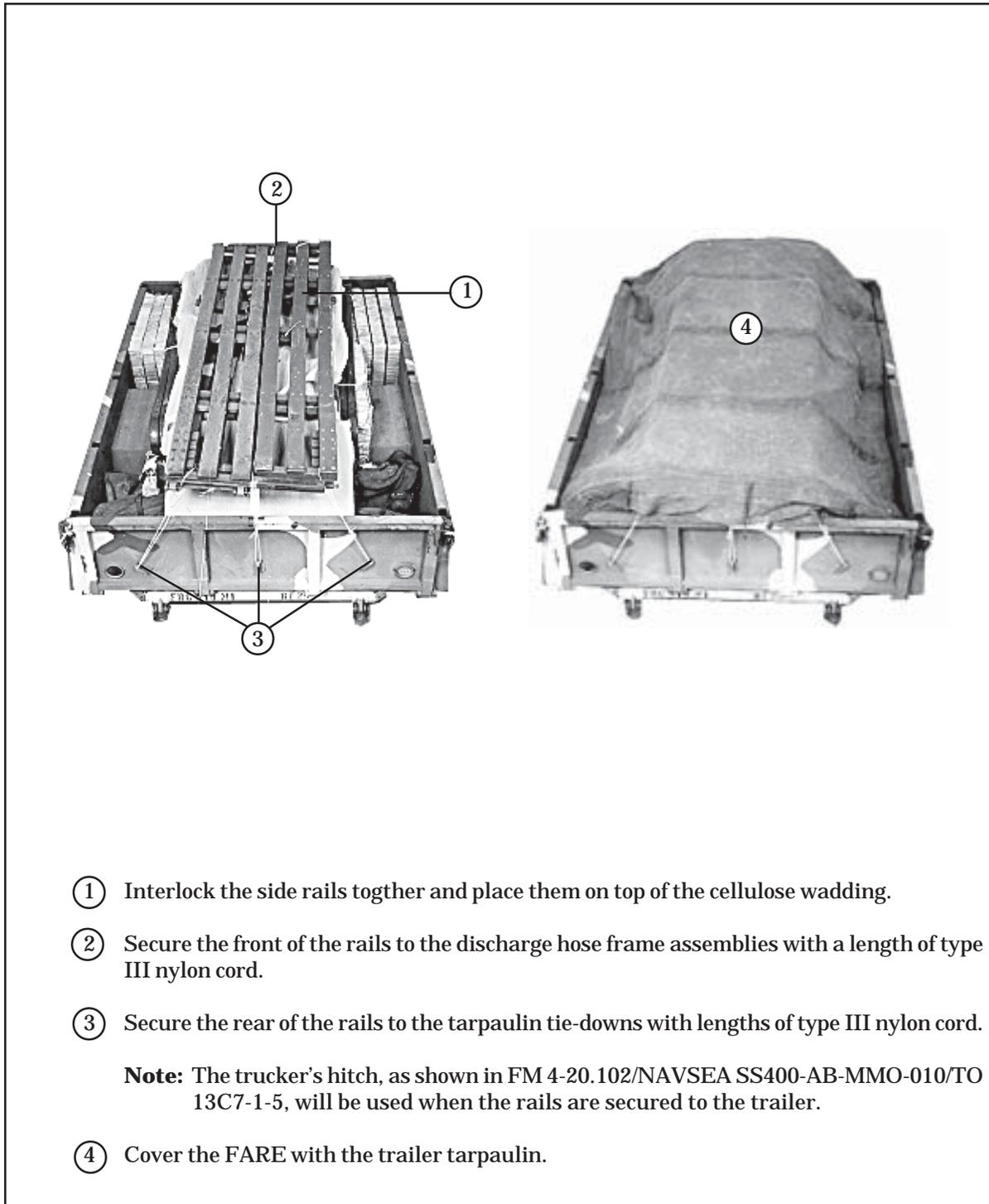


Figure 1-39. Side Rail and Tarpaulin Secured to Trailer

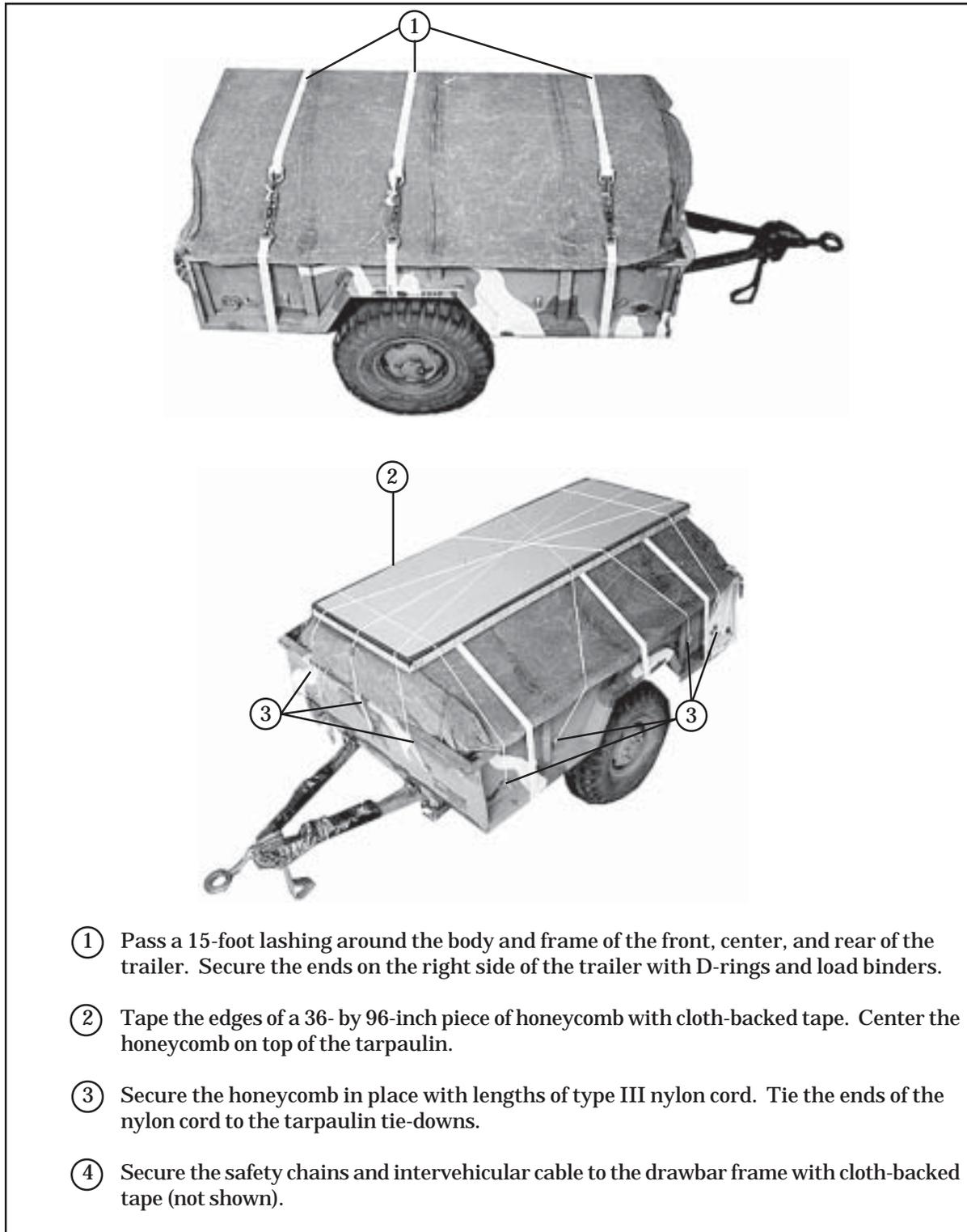
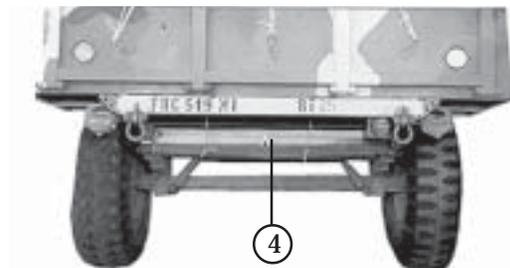
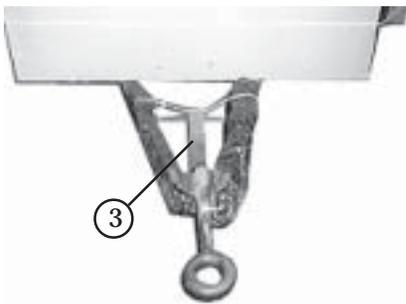
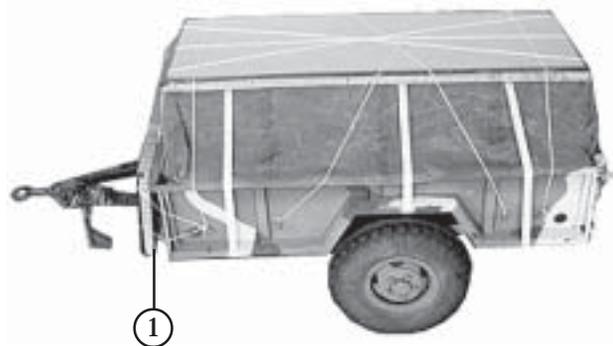
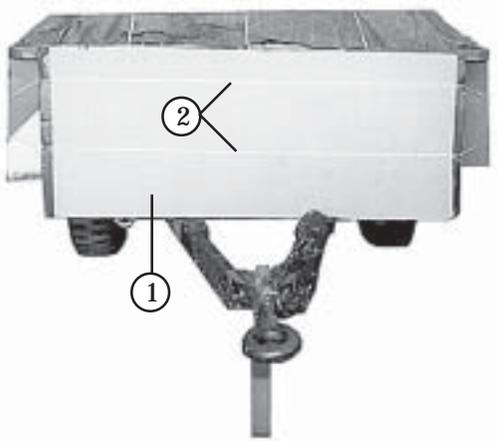


Figure 1-40. FARE Lashed to Trailer and Chains Secured

CAUTION

The brake must be in the off position before the honeycomb can be installed.



- ① Cut a 24- by 60-inch piece of honeycomb. Tape the 24-inch sides with cloth-backed tape. Place the honeycomb on the drawbar.
- ② Secure the honeycomb in place with two lengths of type III nylon cord. Tie the ends of the nylon cord to the tarpaulin tie-downs.
- ③ Secure the support stand in the UP position with a length of type III nylon cord. Make sure the locking pin is in the LOCK position.
- ④ Place two 2- by 12- by 46-inch pieces of lumber between the leaf springs and frame and against the shackle bolts. Tie the lumber to the frame with two lengths of type III nylon cord.

Figure 1-41. Support Stand and Leaf Springs Secured

POSITIONING TRAILER

1-22. Position the trailer on the honeycomb stacks using three medium suspension clevises, two 11-foot (2-loop), type XXVI nylon webbing slings, and one 12-foot (2-loop), type XXVI nylon webbing sling for lifting as shown in Figure 1-42.

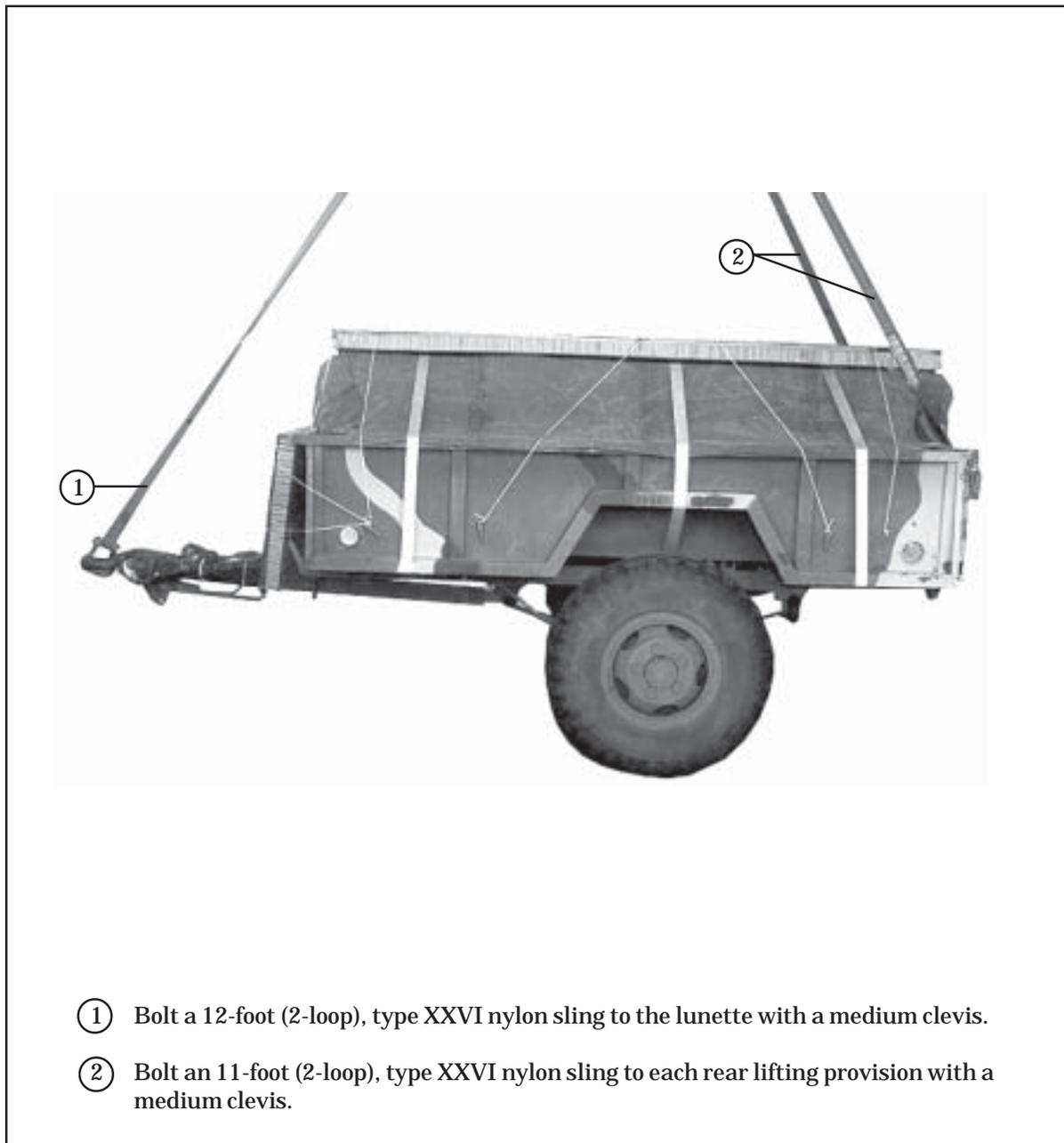
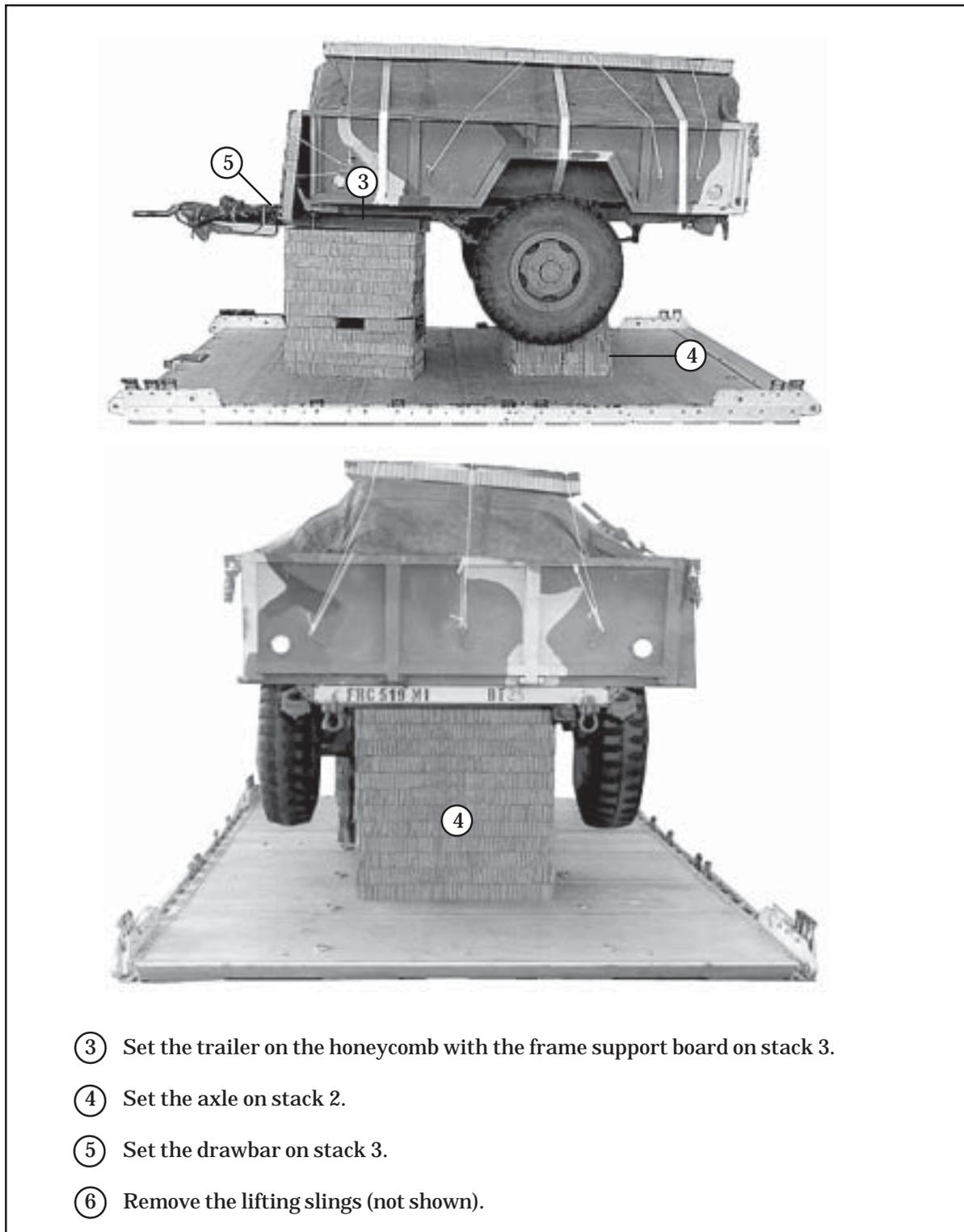


Figure 1-42. Trailer Positioned

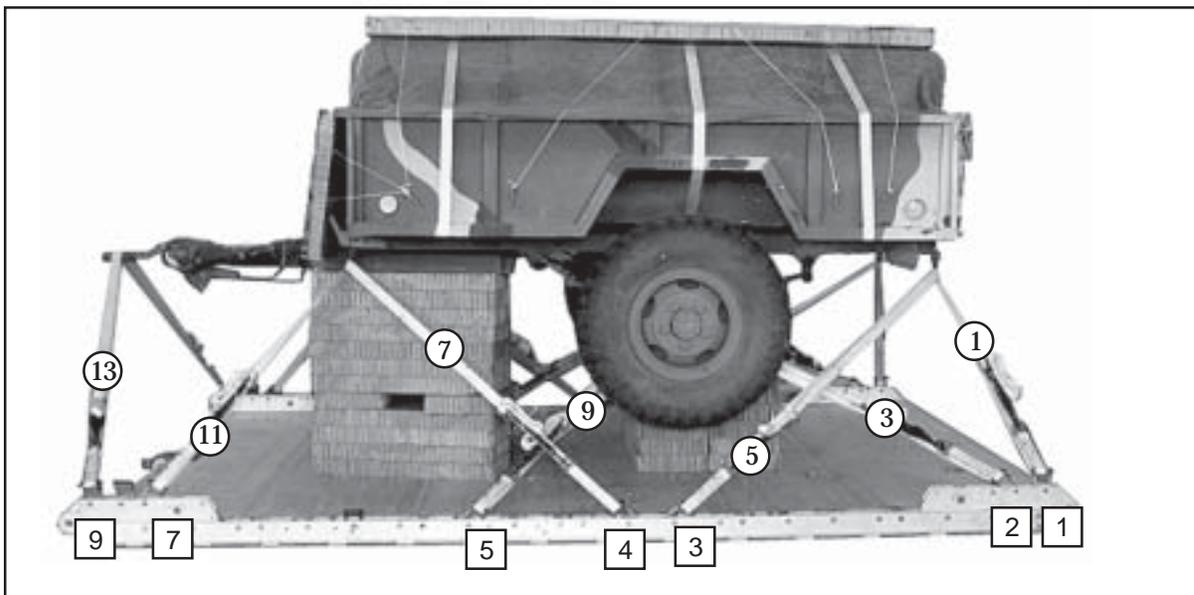


- ③ Set the trailer on the honeycomb with the frame support board on stack 3.
- ④ Set the axle on stack 2.
- ⑤ Set the drawbar on stack 3.
- ⑥ Remove the lifting slings (not shown).

Figure 1-42. Trailer Positioned (continued)

LASHING TRAILER

1-23. Lash the trailer to the platform using fourteen 15-foot tie-down assemblies according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-43.



Lashing Number	Tie-down Clevis Number	Instructions
1	1	Pass lashing:
2	1A	Through right rear lifting shackle.
3	2	Around left side of the axle.
4	2A	Around right side of the axle.
5	3	Through left rear lifting shackle.
6	3A	Through right rear lifting shackle
7	4	Through left front lifting shackle.
8	4A	Through right front lifting shackle.
9	5	Around left side of the axle.
10	5A	Around right side of the axle.
11	7	Through left front lifting shackle.
12	7A	Through right front lifting shackle.
13	9	Through the left side of the lunette.
14	9A	Through the right side of the lunette.

Figure 1-43. Trailer Lashed to Platform

INSTALLING SUSPENSION SLINGS

1-24. Using four large suspension clevises and four 16-foot (2-loop), type XXVI nylon webbing slings for suspension, bolt and safety the slings to the trailer as shown in Figure 1-44.

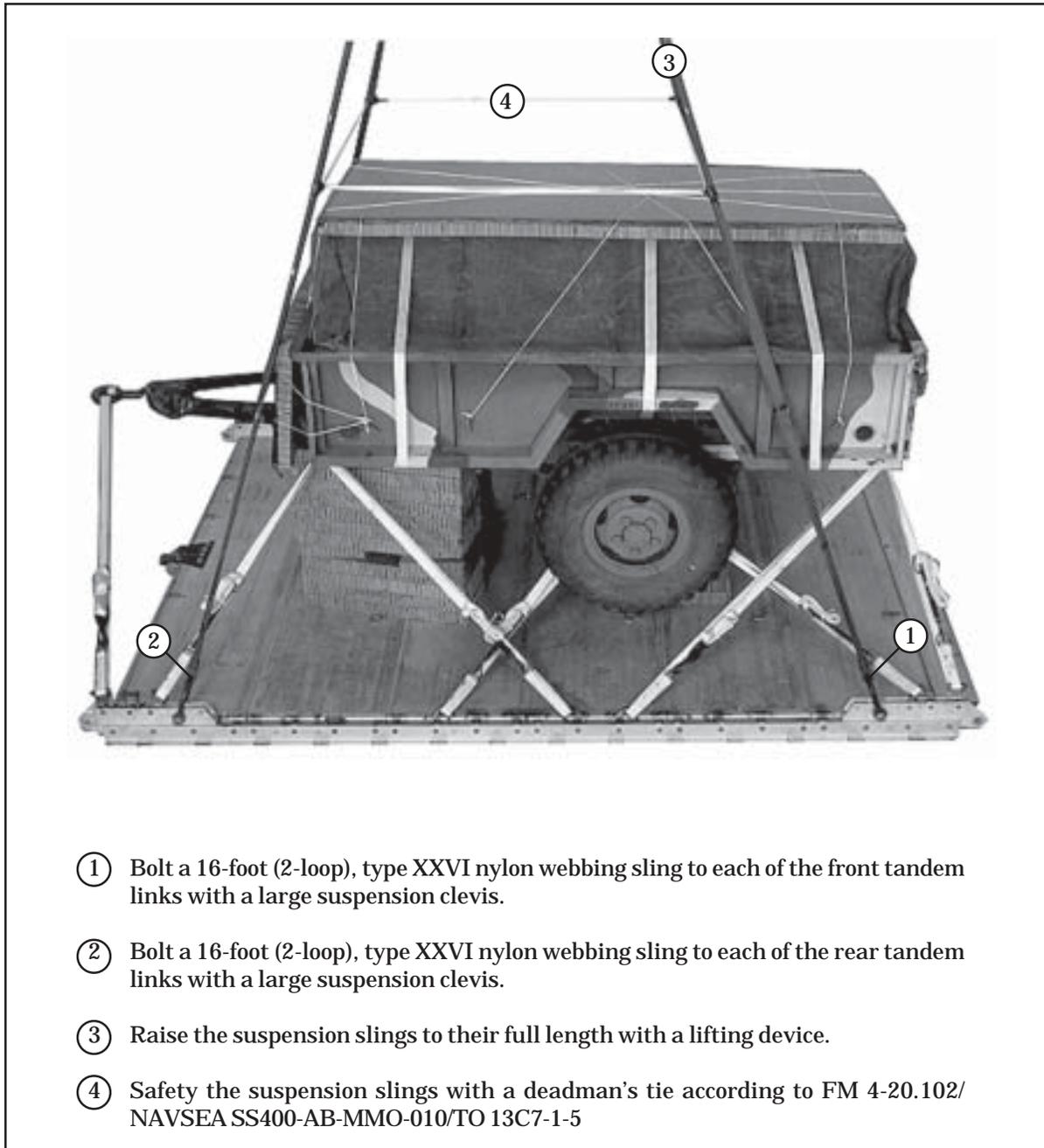
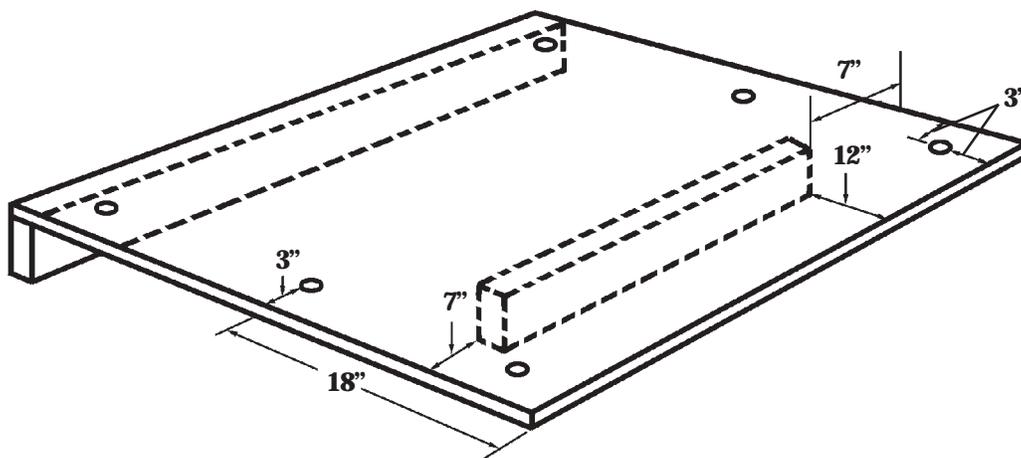


Figure 1-44. Suspension Slings Installed

BUILDING AND INSTALLING CARGO PARACHUTE STOWAGE PLATFORM

1-25. Build the parachute stowage platform using a 3/4- by 36- by 36-inch piece of plywood, a 2- by 4- by 36-inch piece of lumber, a 2- by 4- by 22-inch piece of lumber, and eightpenny nails as shown in Figure 1-45. Install the parachute stowage platform using 15-foot tie-down assemblies and as shown in Figure 1-46.

Notes: 1. This drawing is not drawn to scale.
2. The pieces of lumber are nailed to the underside of the plywood.

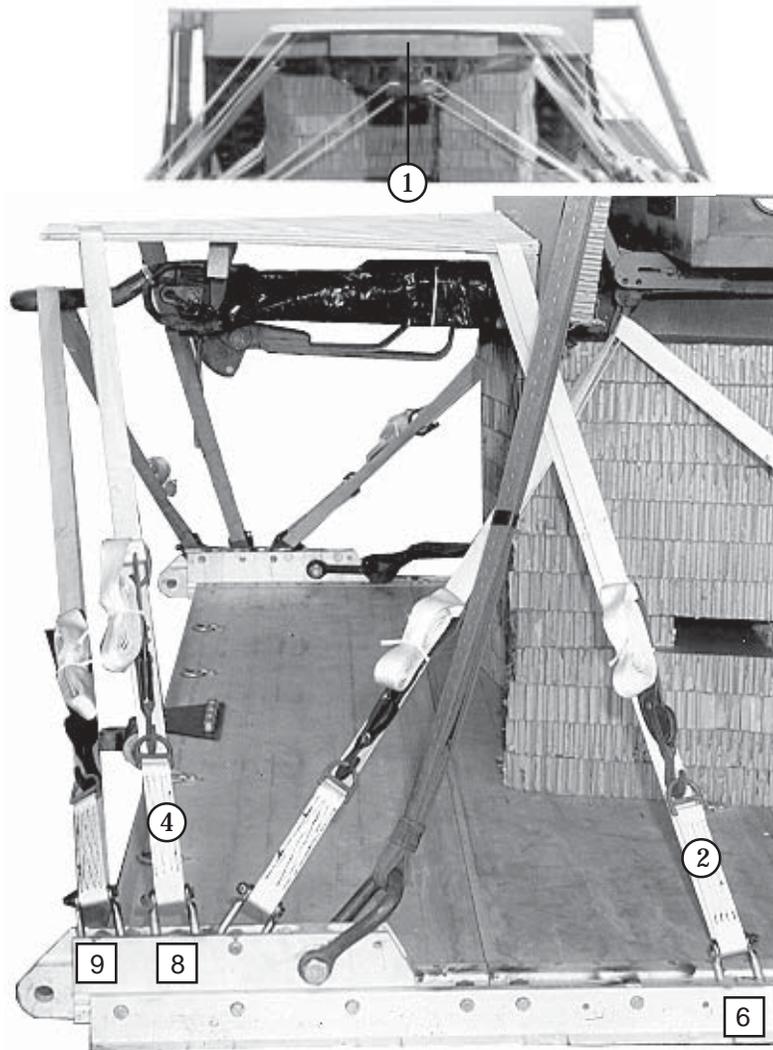


Steps:

1. Drill a 2-inch diameter hole 3 inches from each corner of the 3/4- by 36- by 36-inch plywood.
2. Drill a 2-inch diameter hole centered 3 inches from the sides of the plywood.
3. Place the 2- by 4- by 36-inch lumber on its 2 inch side. Place the lumber on the rear edge of the plywood. Use eightpenny nails to nail the lumber to the plywood.
4. Place the 2- by 4- by 22-inch lumber on its 2 inch side. Center the lumber 12 inches from the front edge of the plywood and 7 inches from each side. Use eightpenny nails to nail the lumber to the plywood.

Figure 1-45. Parachute Stowage Platform Built

Note: Do not tighten the lashing so tight that the plywood bows.



- ① Center the parachute stowage platform on the trailer drawbar.
- ② Pass a 15-foot lashing from clevis 6 up through the front hole in the parachute stowage platform. Secure the lashing with a D-ring and a load binder.
- ③ Repeat step 2 above for clevis 6A (not shown).
- ④ Pass a 15-foot lashing from clevis 8 up through the rear hole in the parachute stowage platform. Secure the lashing with a D-ring and a load binder.
- ⑤ Repeat step 4 above for clevis 8A (not shown).

Figure 1-46. Parachute Stowage Platform Installed

STOWING CARGO PARACHUTES

1-26. Stow one G-11 cargo parachute according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-47.

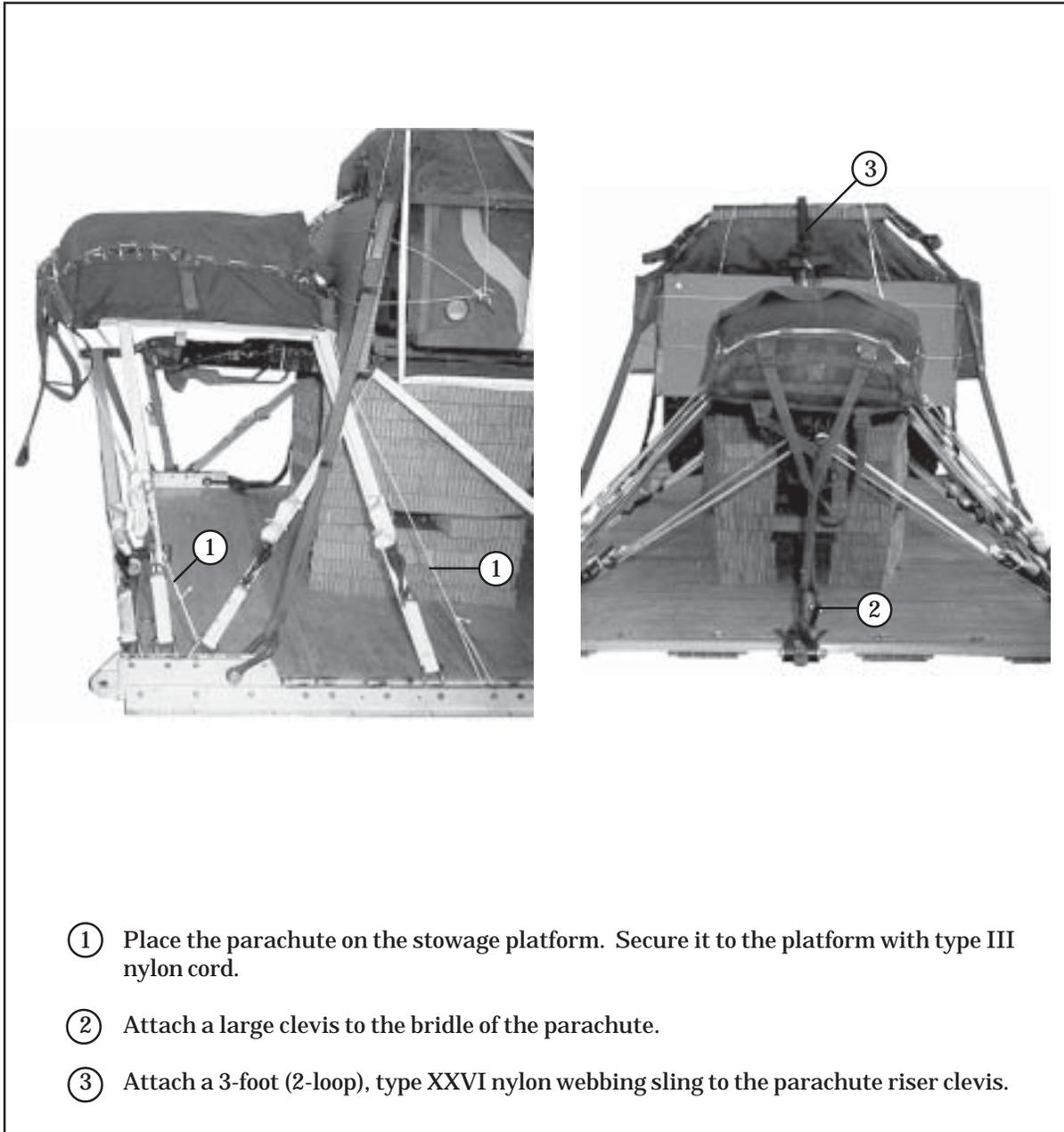


Figure 1-47. Cargo Parachute Stowed

INSTALLING EXTRACTION SYSTEM

1-27. Install the EFTC extraction system according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-48.

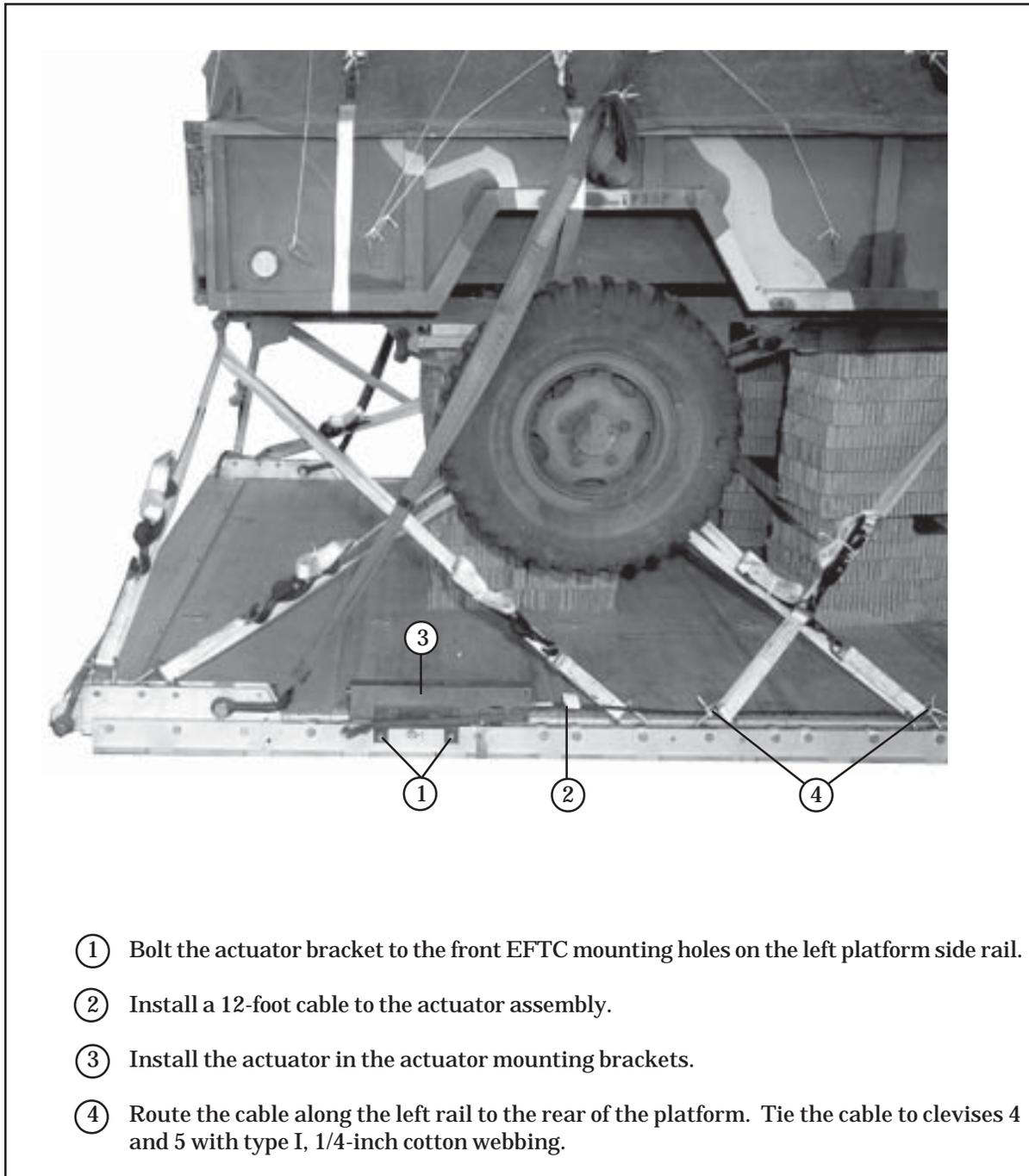


Figure 1-48. EFTC Installed

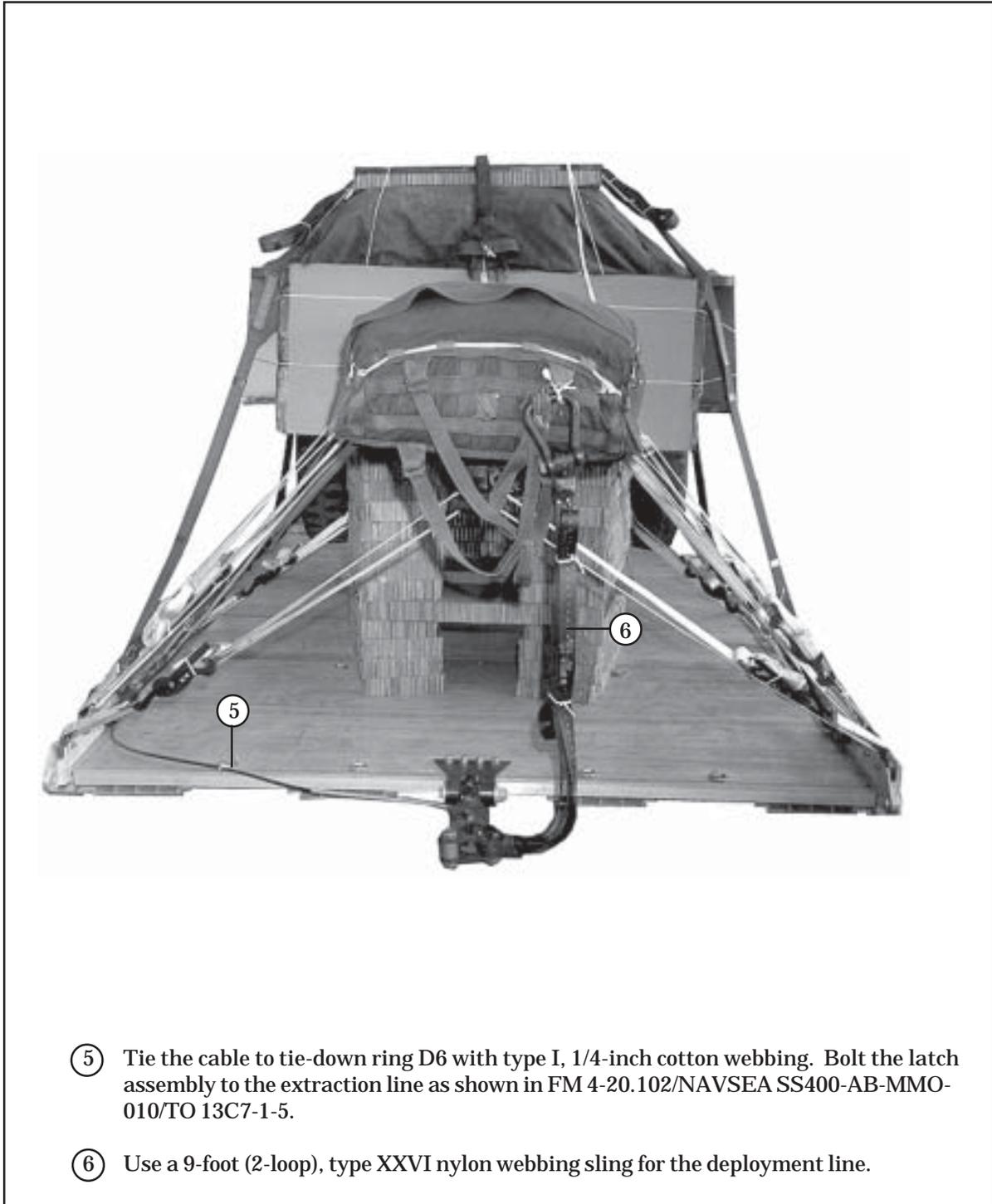


Figure 1-48. EFTC Installed (continued)

INSTALLING PARACHUTE RELEASE SYSTEM

1-28. Prepare and install the M-1 release assembly according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-49.

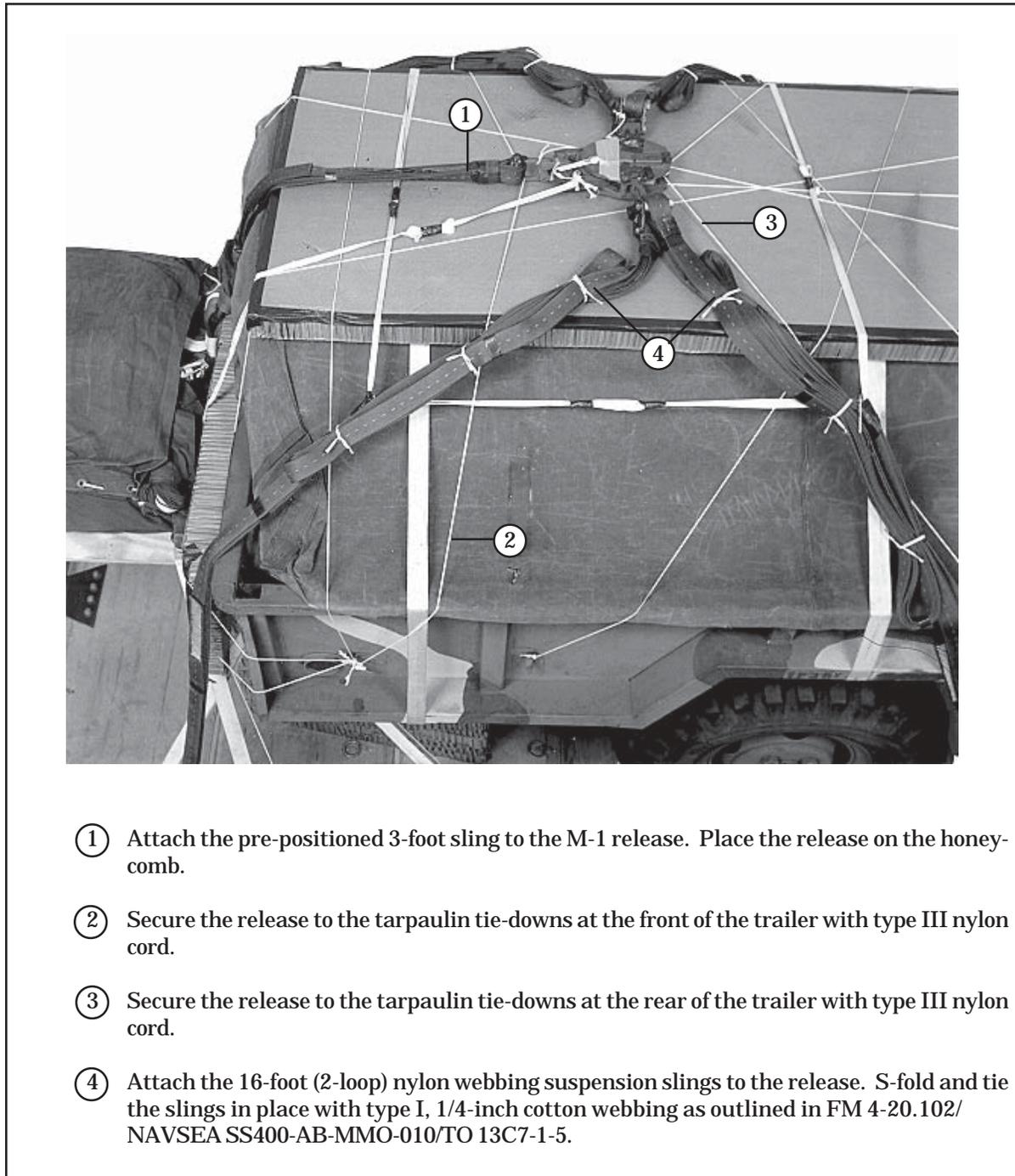


Figure 1-49. M-1 Cargo Parachute Release Installed

PLACING EXTRACTION PARACHUTE

1-29. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. Place the extraction parachute and extraction line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

1-30. Select and install the provisions for emergency aft restraints according to the emergency aft restraint requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

MARKING RIGGED LOAD

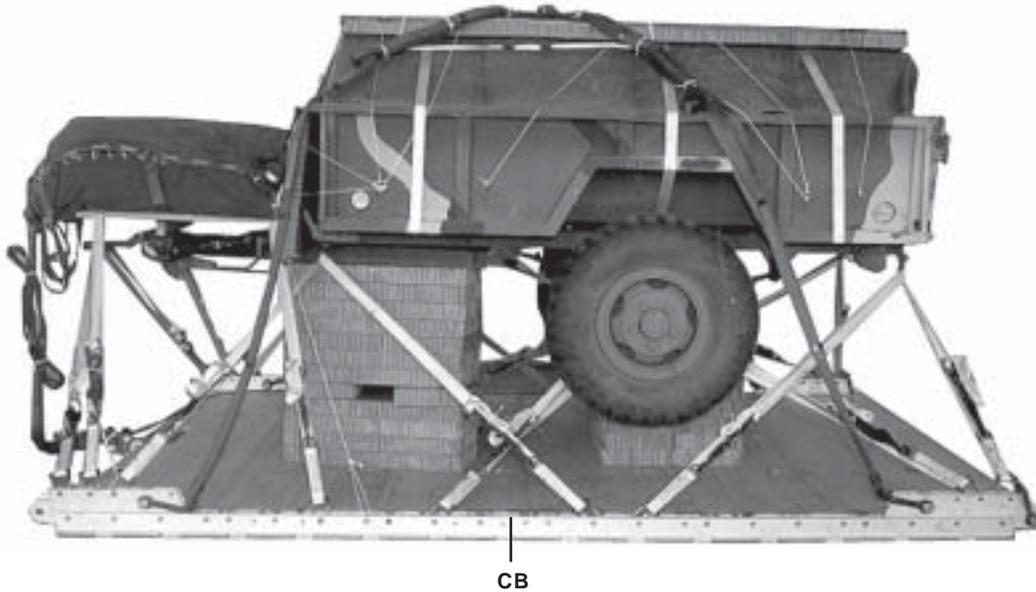
1-31. Mark the rigged load according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-50. Complete Shipper's Declaration for Dangerous Goods and affix to the load. If the load varies from the one shown, the weight, height, CB, tipoff curve, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

1-32. Use the equipment list in Table 1-3 to rig the load shown in Figure 1-50.

CAUTION:

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



RIGGED LOAD DATA

Weight	4,050 pounds
Maximum Weight	5,000 pounds
Height	83 inches
Width	108 inches
Overall Length	162 inches
Overhang: Front	0 inches
Rear (EFTC)	18 inches
Center of Balance (CB) (from front edge of platform)	72 1/2 inches
Extraction System	EFTC

Figure 1-50. FARE in an M101 Series, 3/4-Ton Trailer Rigged for Low-Velocity Airdrop

**Table 1-3. Equipment Required for Rigging FARE in an M101, 3/4-Ton Trailer
Low-Velocity Airdrop**

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line bag (for DES)	1
4030-00-090-5354	Clevis, large	5
4030-00-678-8562	Clevis, medium	2
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with cable, 12-ft	1
1670-00-360-0328	Cover: Clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	2
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-00-003-4391	Knife, parachute bag (for DES)	1
1670-01-183-2678	Leaf, extraction line (line bag)(add 1 for DES)	2
1670-01-064-4452	Line, drogue (for DES) 60-ft (1-loop), type XXVI	1
1670-01-064-4452	Line, extraction:	1
1670-01-107-7652	For C-141: 160-ft (1-loop), type XXVI	1
1670-01-107-7652	For C-5: 160-ft, (1-loop), type XXVI	1
1670-01-107-7652	For C-17: 160-ft (1-loop), type XXVI	1
1670-01-483-8259	Link, tow release mechanism (H-Block) C-17 aircraft	1
	Link Assembly: (double the quantity for DES)	
	Two-point:	1
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in, hexagonal	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
5510-00-220-6146	Lumber, 2- by 4-in:	
	22-inch	1
	36-inch	1
5510-00-220-6250	Lumber, 2- by 12- by 46-in	2
5315-00-010-4659	Nail, steel wire, 8d	As required

**Table 1-3. Equipment Required for Rigging FARE in an M101, 3/4-Ton Trailer
Low-Velocity Airdrop (continued)**

National Stock Number	Item	Quantity
1670-00-753-3928	Pad, energy-dissipating (honeycomb) 3- by 36- by 96-in	11 sheets
1670-01-016-7841	Parachute: Cargo: G-11B	1
1670-01-063-37165	Cargo extraction: 15-ft	1
1670-01-063-3715	Drogue (for DES) 15-ft	1
1670-01-353-8425	Platform, airdrop, type V, 12-ft: Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(44)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link assembly (Multipurpose link)	(4)
5530-00-128-4981	Plywood, 3/4-in	3 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
1670-01-063-7761	Sling, cargo, airdrop For suspension: 16-ft (2-loop), type XXVI nylon webbing	4
1670-01-063-7760	For lifting: 11-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	1
1670-01-062-6304	For deployment: 9-ft (2-loop), type XXVI nylon webbing	1
1670-01-062-63021	For riser extension: 3-ft (2-loop), type XXVI nylon webbing	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
7510-00-266-6710	Tape, masking, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-foot	23
8305-00-268-2411	Webbing: Cotton, 1/4-in, type I	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-263-3591	Type VIII	As required

SECTION III- RIGGING FARE IN AN M998 , 1 1/4-TON TRUCK (HMMWV)

DESCRIPTION OF LOAD

1-33. The M998, 1 1/4-ton truck is rigged on a 16-foot, type V airdrop platform for low-velocity airdrop. Except for the rigging procedures in this chapter, the truck is rigged according to FM 4-20.117/TO 13C7-1-111. The FARE is stowed in the cargo bed of the truck as an accompanying load. The FARE weighs 860 pounds. The completely rigged load requires two G-11 cargo parachutes. Required equipment is listed Table 1-4.

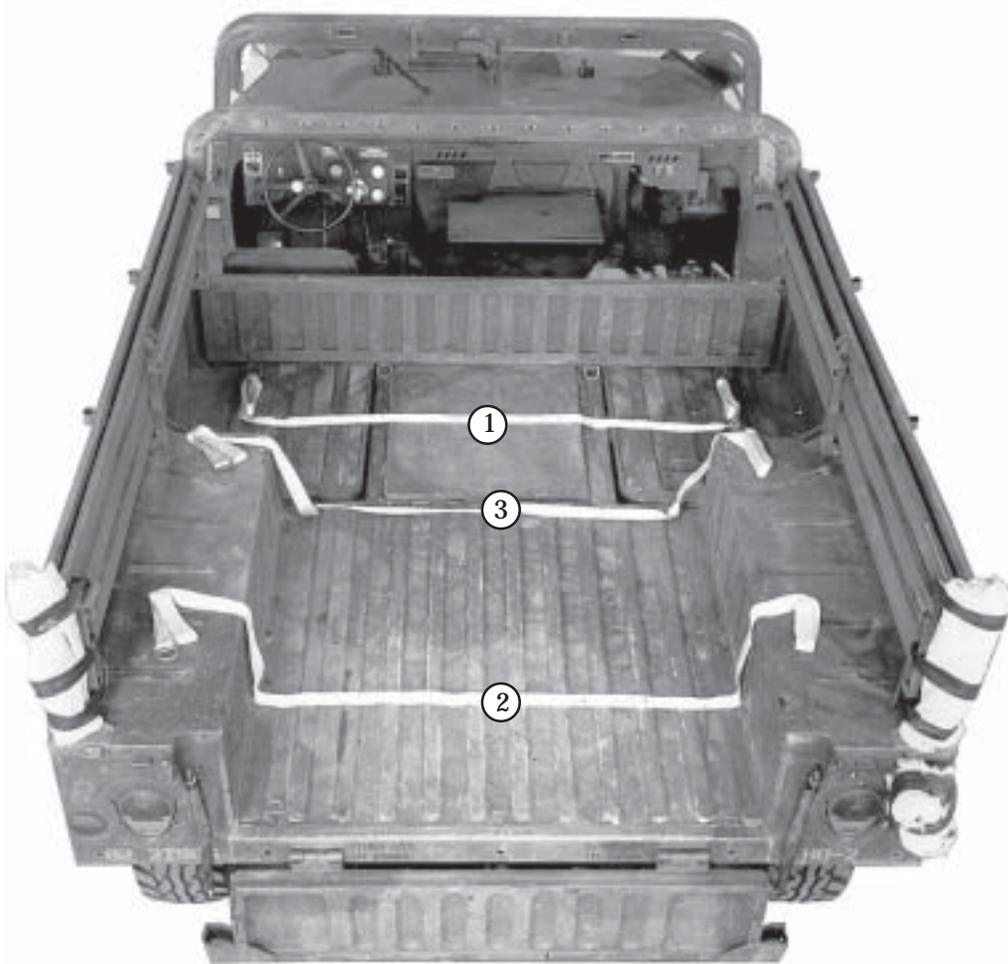
PREPARING PLATFORM AND TRUCK

1-34. Prepare the platform and the M998 truck according to FM 4-20.117/TO 13C7-1-111.

- Notes:**
1. The nose bumper may or may not be installed.
 2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.

PREPARING CARGO BED

1-35. Prepare the cargo bed of the M998 as shown in Figure 1-51.



- ① Lay a 15-foot lashing across the cargo bed 14 inches from the back of the seats.
- ② Lay a 15-foot lashing across the cargo bed 18 inches from the rear edge of the cargo bed.
- ③ Pass a 15-foot lashing through the center tie-down rings.

Figure 1-51. Cargo Bed Prepared

PLACING FARE IN CARGO BED

1-36. Place the FARE in the cargo bed of the M998 as shown in Figure 1-52.

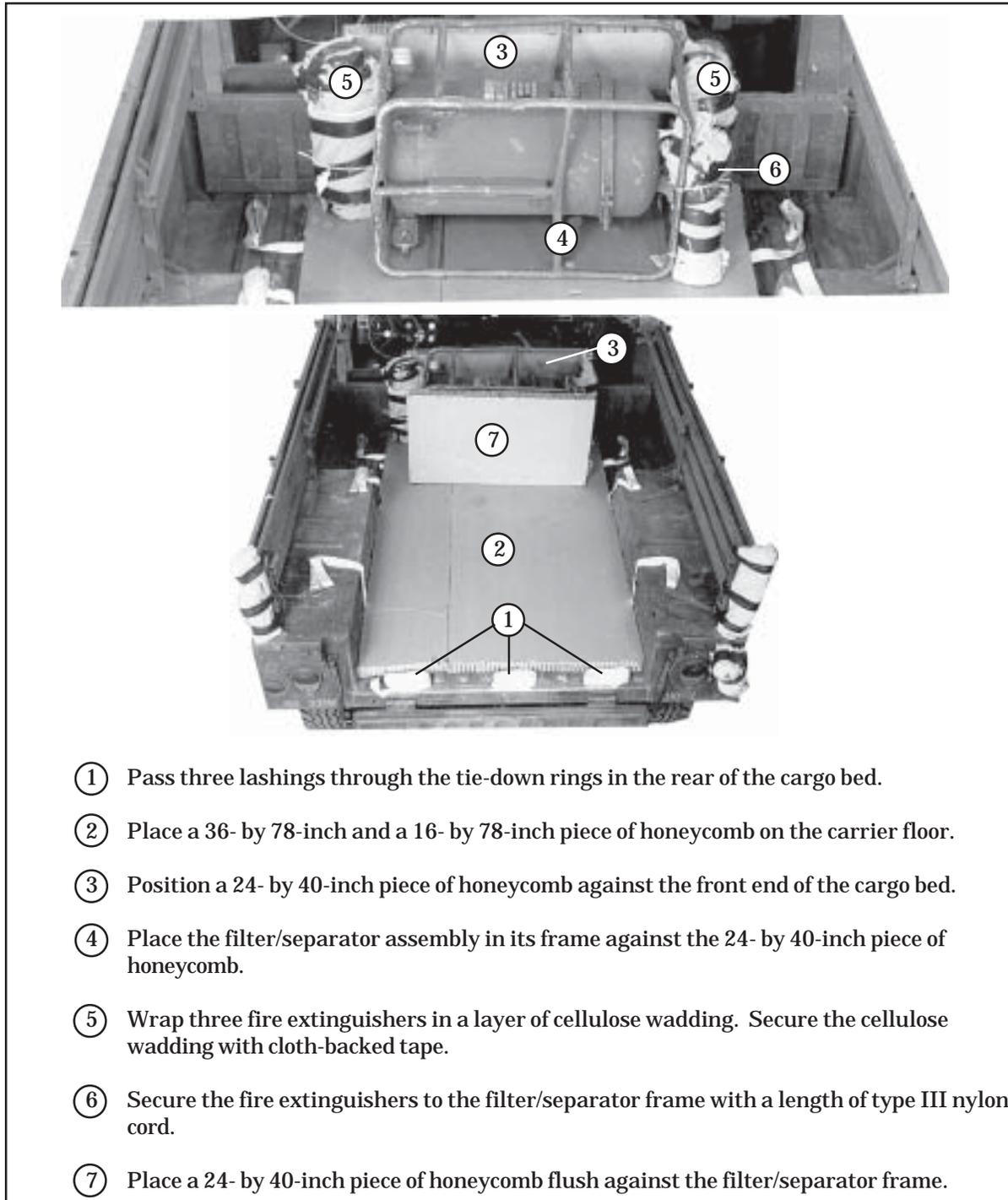
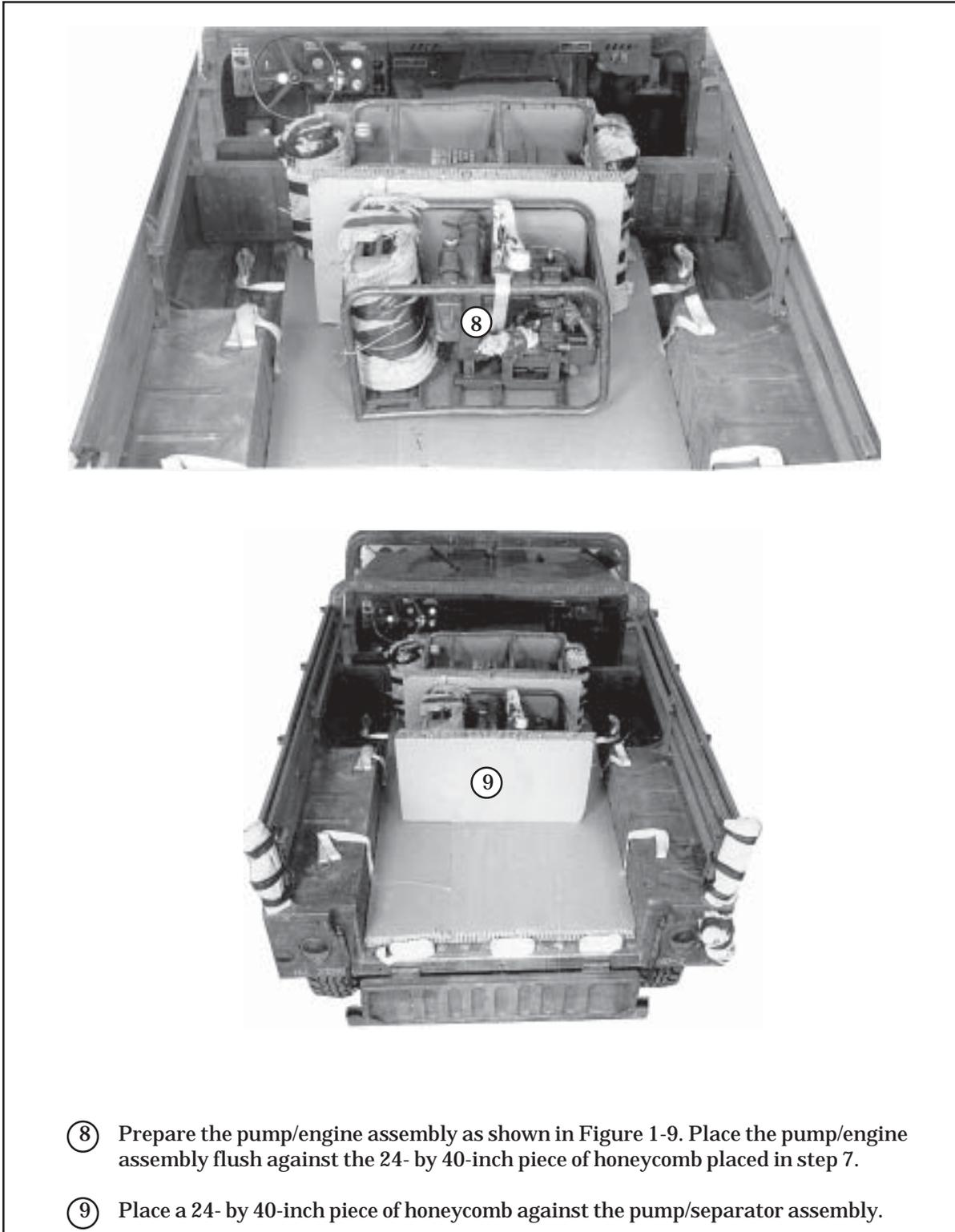
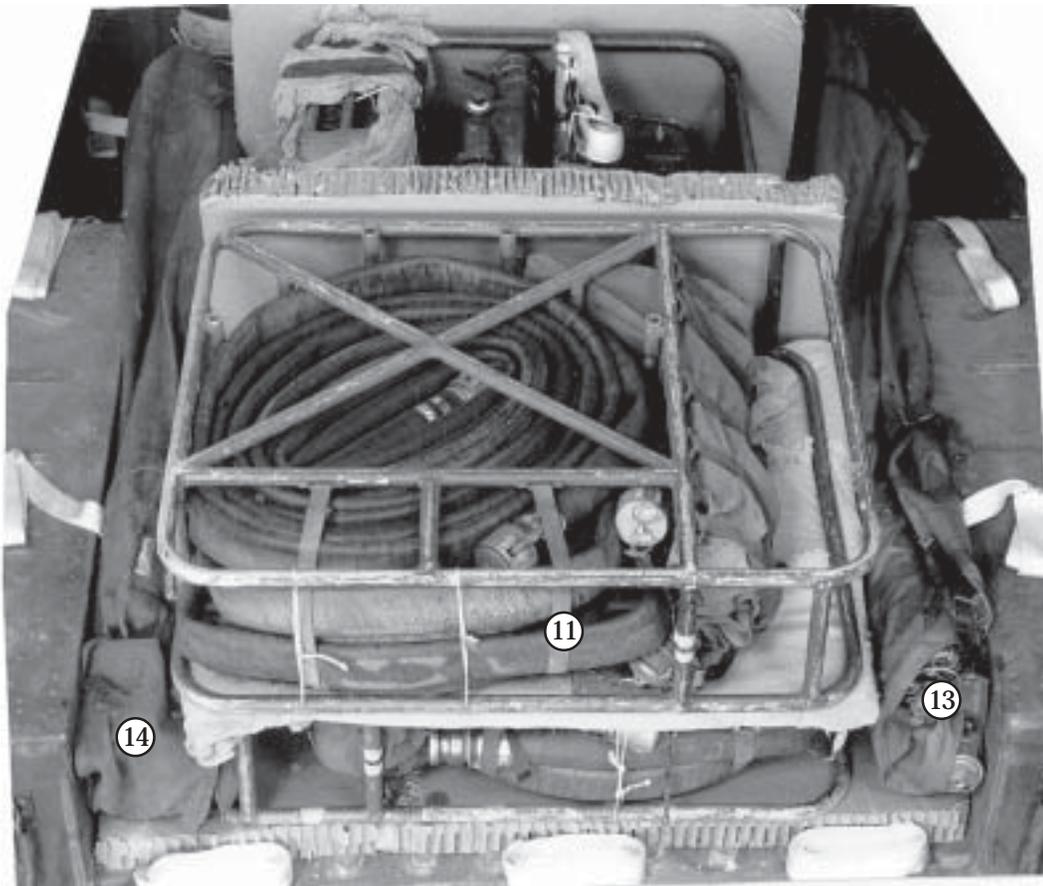


Figure 1-52. FARE Placed in Cargo Bed



- ⑧ Prepare the pump/engine assembly as shown in Figure 1-9. Place the pump/engine assembly flush against the 24- by 40-inch piece of honeycomb placed in step 7.
- ⑨ Place a 24- by 40-inch piece of honeycomb against the pump/separator assembly.

Figure 1-52. FARE Placed in Cargo Bed (continued)



⑩ Prepare the discharge hose assemblies as shown in Figure 1-7, steps 1 and 2.

⑪ Place one discharge hose frame assembly on the honeycomb in the cargo bed. Place a layer of cellulose wadding on top of the frame. Place another discharge hose frame assembly on top of the cellulose wadding.

Note: Ensure the discharge hose accessory fittings placed in the accessory storage compartment are secured to the discharge hose frame.

⑫ Prepare the ground rods and suction hoses as shown in Figure 1-12, steps 1 and 2.

⑬ Place a suction hose bag on the right side of the FARE on top of the honeycomb in the cargo bed.

⑭ Place a suction hose bag on the left side of the FARE on top of the honeycomb in the cargo bed.

Figure 1-52. FARE Placed in Cargo Bed (continued)

SECURING FARE

1-37 Secure the FARE in the cargo bed of the M998 using the pre-positioned lashings. Secure the lashings with D-rings and load binders according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-53.

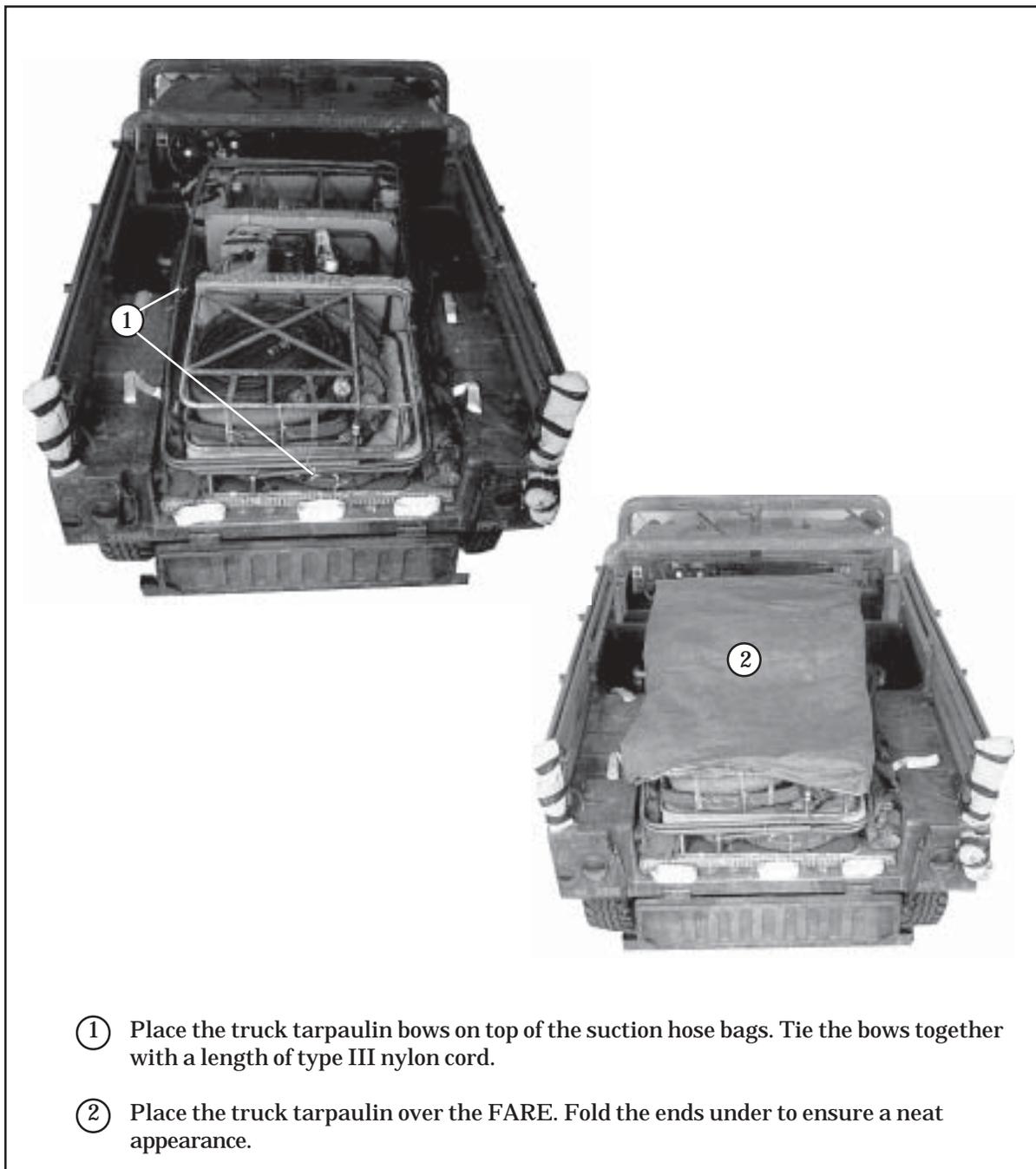
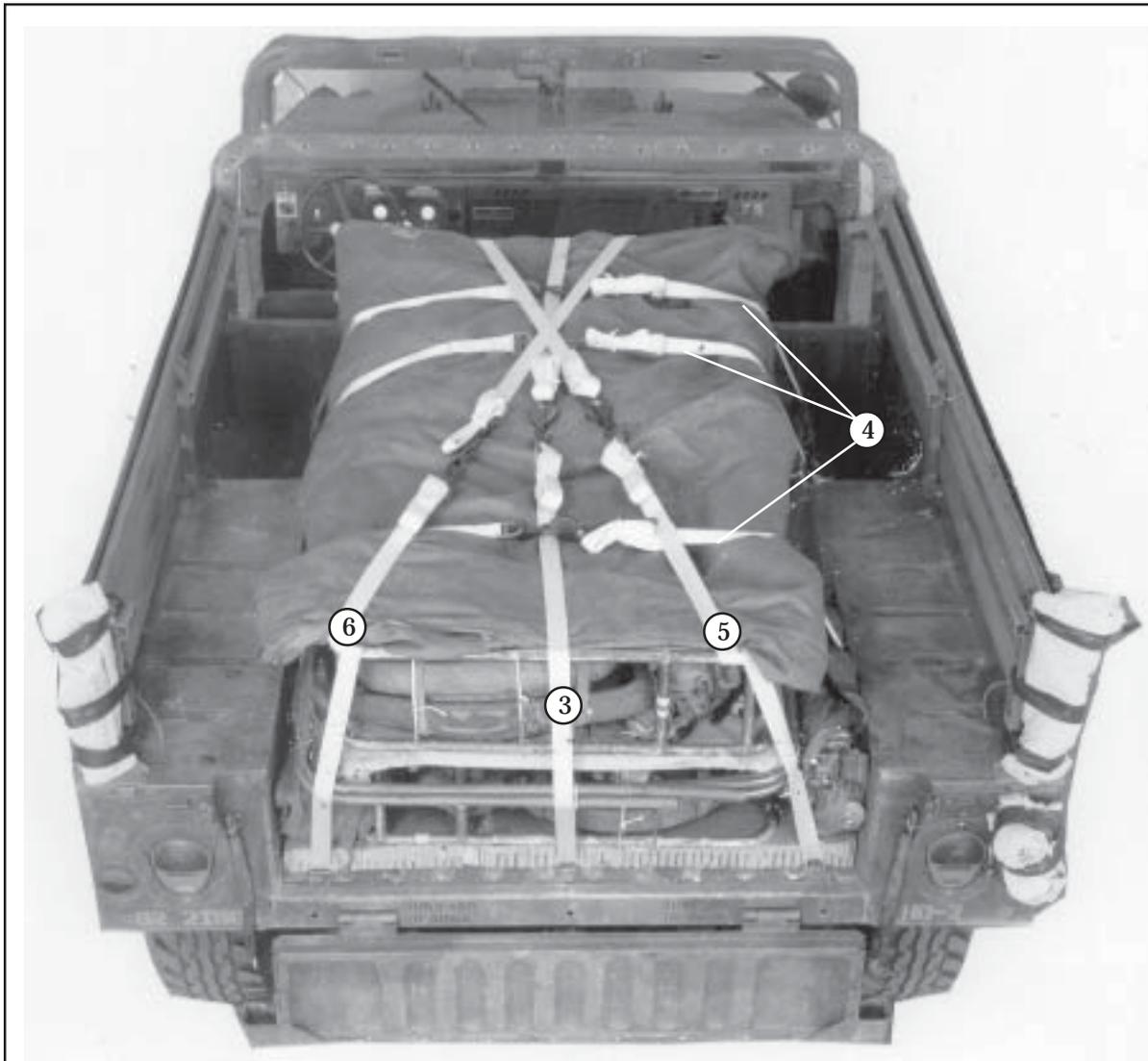


Figure 1-53. FARE Secured



- ③ Pass the end of the center lashing over the top of the tarpaulin, and secure the lashing in place.
- ④ Pass the ends of the three horizontal lashings over the top of the tarpaulin, and secure them in place.
- ⑤ Pass the right rear lashing over and around the discharge hose assembly to the top of the tarpaulin. Pass the left front lashing over the tarpaulin to meet the right rear lashing. Secure the lashing in place.
- ⑥ Pass the left rear lashing over and around the discharge hose assembly to the top of the tarpaulin. Pass the right front lashing over the tarpaulin to meet the left rear lashing. Secure the lashing in place.

Figure 1-53. FARE Secured (continued)

SECURING ACCESSORIES

1-38. Secure the accessories on the tarpaulin as shown in Figure 1-54.

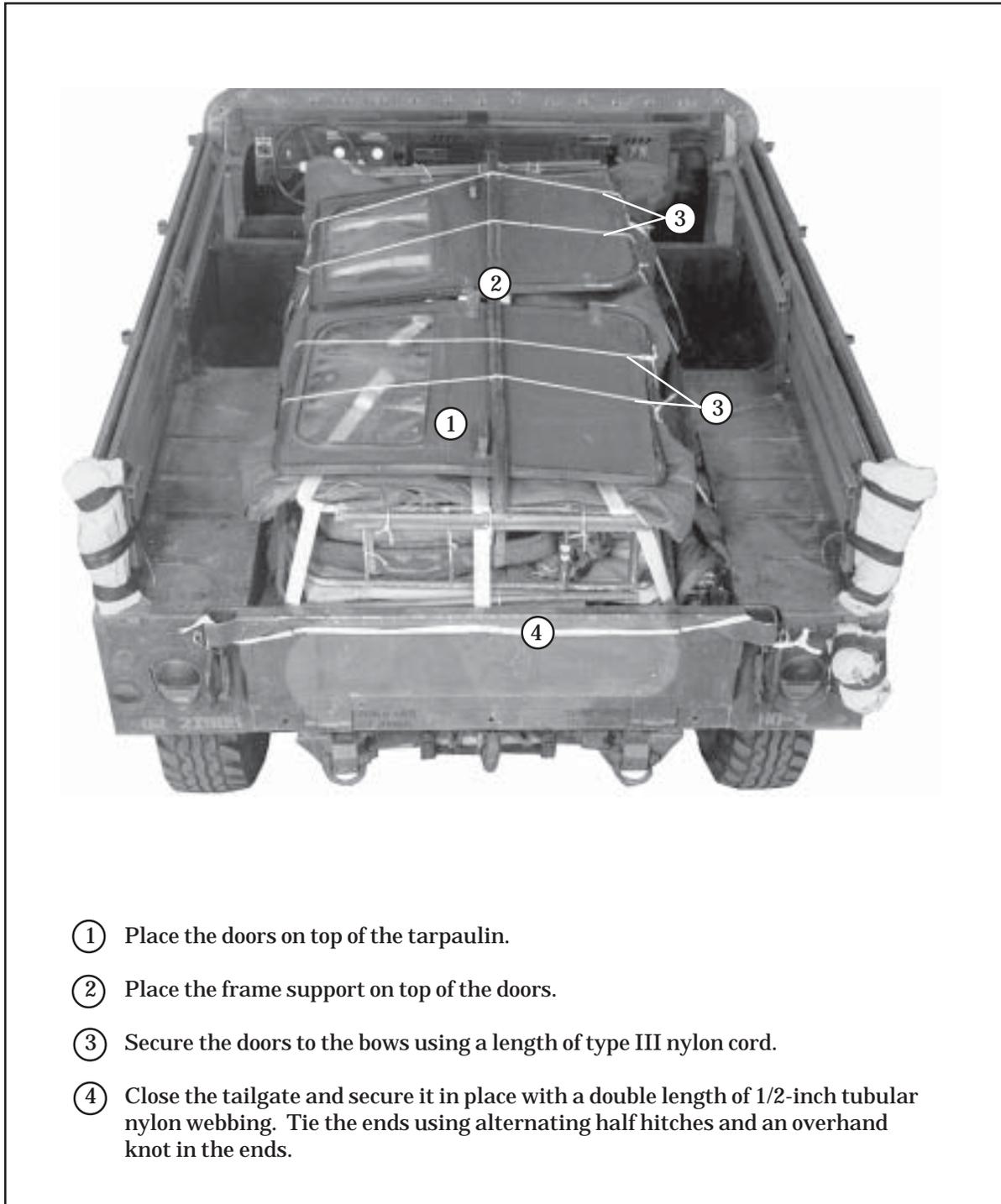


Figure 1-54. Accessories Secured

**Table 1-4. Equipment Required for Rigging FARE in an M998, 1 1/4-Ton Truck
Low-Velocity Airdrop**

National Stock Number	Item	Quantity
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
8135-00-664-6958	Cushioning material, packaging, cellulose	As required
1670-00-753-3928	Pad, energy-dissipating (honeycomb) 3- by 36- by 96-in	4 sheets
7510-00-266-5016	Tape, adhesive, 2-in	As required
7510-00-266-6710	Tape, masking, 2-in	As required
1670-00268-2411	Tie-down assembly, 15-ft	6
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-263-3591	Type VIII	As required

SECTION IV - RIGGING FARE WITH SEVEN 500-GALLON FUEL DRUMS ON A 32-FOOT PLATFORM

DESCRIPTION OF LOAD

1-39. Two containerized FARE and seven 500-gallon collapsible fuel drums are rigged on a 32-foot platform with six G-11 cargo parachutes. Each drum is filled with 432 gallons of fuel. Each containerized FARE weighs 1,230 pounds. Each gasoline-filled 500 gallon fuel drum weighs 2,842 pounds and is approximately 53-inches in length. The total weight of the seven gasoline-filled drums and the two containerized FARE is 22,354 pounds.

- Notes:**
1. For drums filled with a liquid other than gasoline, use Table 1-1 to recompute the weight.
 2. If the load varies from the one shown, the weight, height, CB, tipoff curve, and parachute requirements must be recomputed.
 3. This load may not be rigged using water due to load weight requirements.
 4. Do not pressurize drums with air.

PREPARING PLATFORM

1-40. Prepare a 32-foot airdrop platform using two tandem links, eight suspension brackets, and 82 tie-down clevises as shown in Figure 1-55.

- Notes:**
1. The nose bumper may or may not be installed.
 2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.

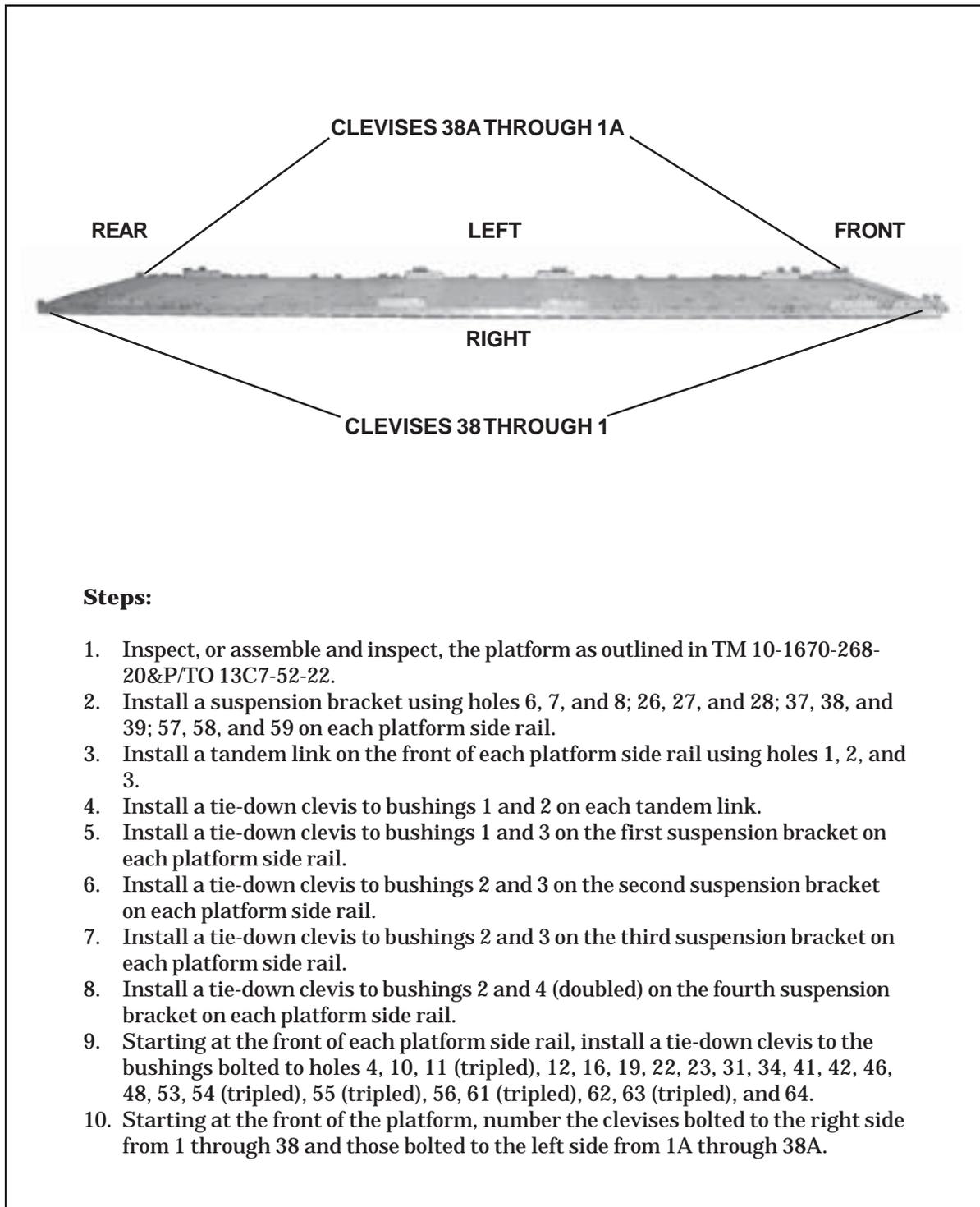


Figure 1-55. Platform Prepared

BUILDING AND POSITIONING HONEYCOMB

1-41. Position the base layers of honeycomb on the platform as shown in Figure 1-56. Build and position three honeycomb stacks on top of the base layers of honeycomb as shown in Figure 1-57.

Note: Do not glue the stacks of honeycomb to the platform.

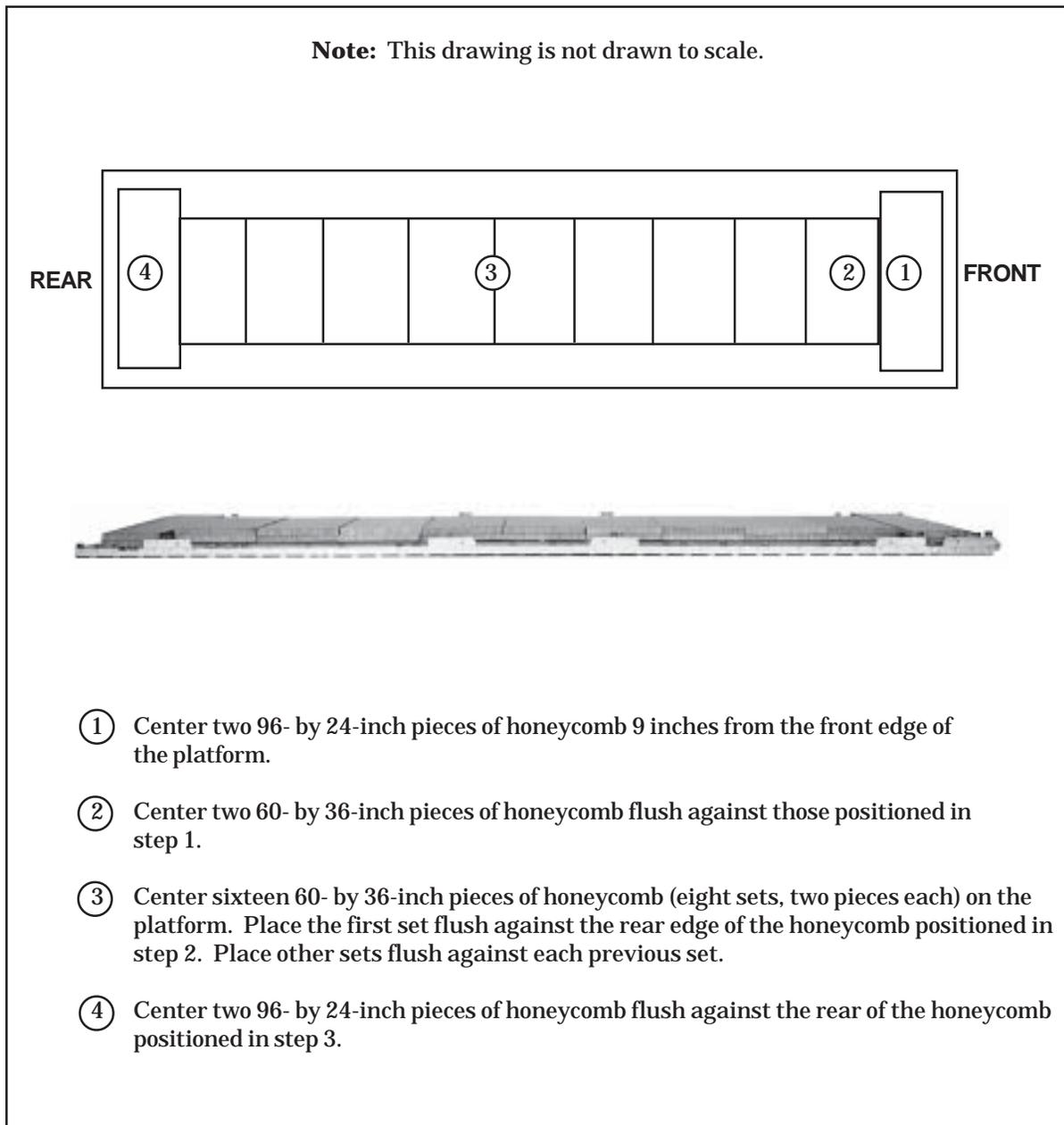
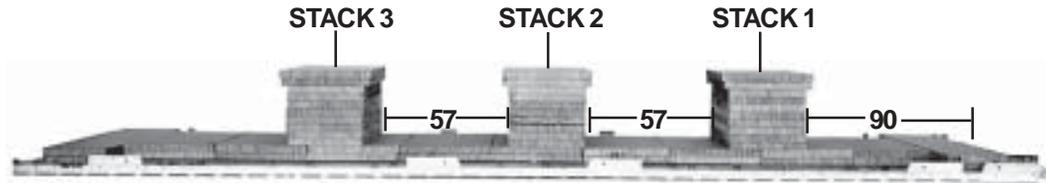


Figure 1-56. Base Layers Positioned

Note: All measurements are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	8	60	30	Honeycomb	Center and glue on top of base layers 90 inches from the front edge of the platform.
	1	60	34	Honeycomb	Center and glue on top of the base.
	1	60	36	Honeycomb	Center and glue on top of the 60- by 34-inch piece of honeycomb.
2	8	60	30	Honeycomb	Build stack according to stack 1.
	1	60	34	Honeycomb	Center stack 57 inches from the rear edge of stack 1.
	1	60	36	Honeycomb	
3	8	60	30	Honeycomb	Build stack according to stack 1.
	1	60	34	Honeycomb	Center stack 57 inches from the rear edge of stack 2.
	1	60	36	Honeycomb	

Figure 1-57. Honeycomb Stacks Prepared and Positioned

POSITIONING AND LASHING DRUMS

1-42. Before lifting, check each fuel drum and fittings for leaks and damage. Be sure each end of each fuel drum has two lifting shackles. Attach a 9-foot (2-loop), type XXVI nylon webbing sling to the fuel drum lifting shackle by adapting the procedures in paragraph 1-8 and as shown in Figure 1-16. Position the fuel drums as shown in Figure 1-58.

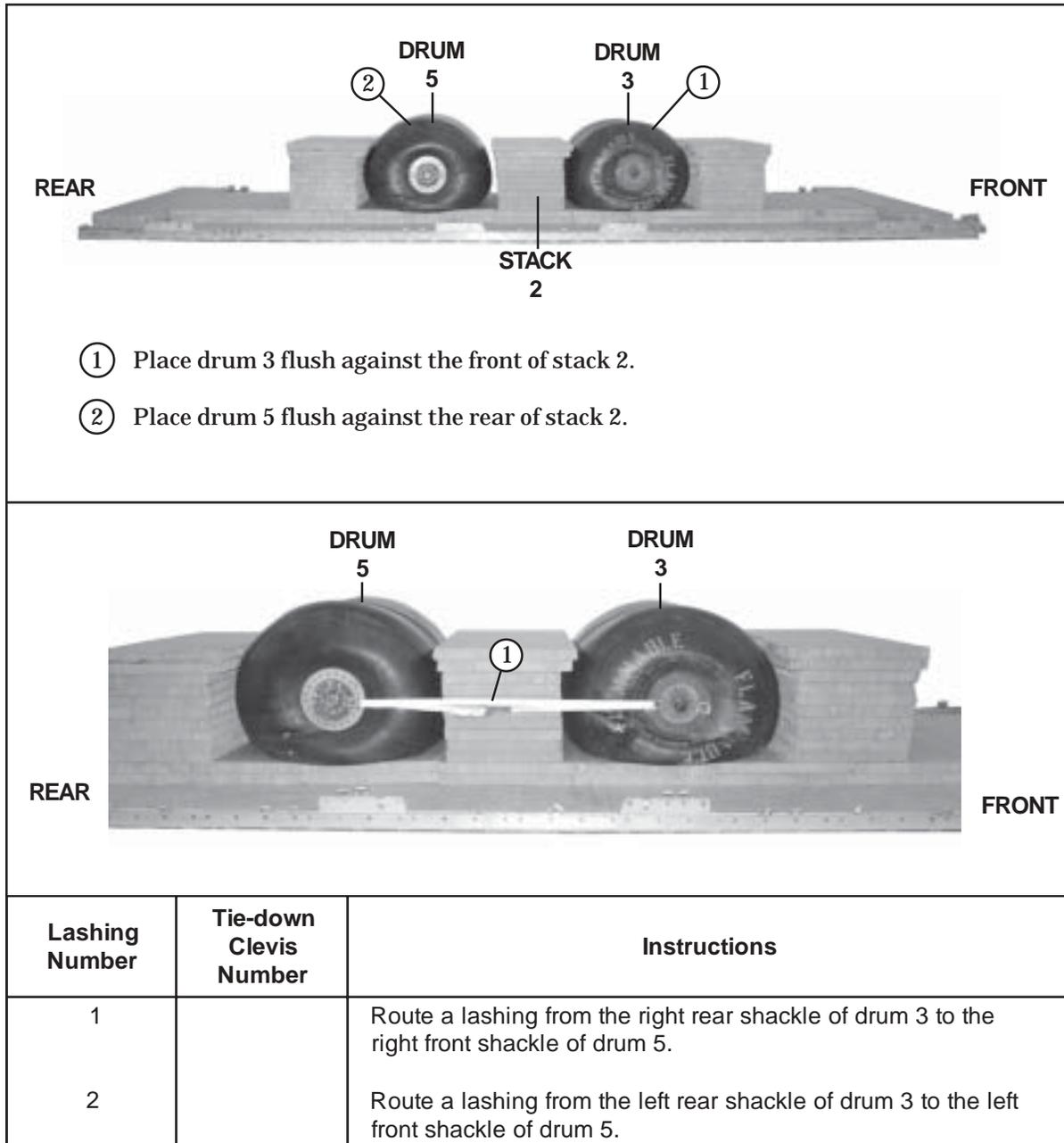
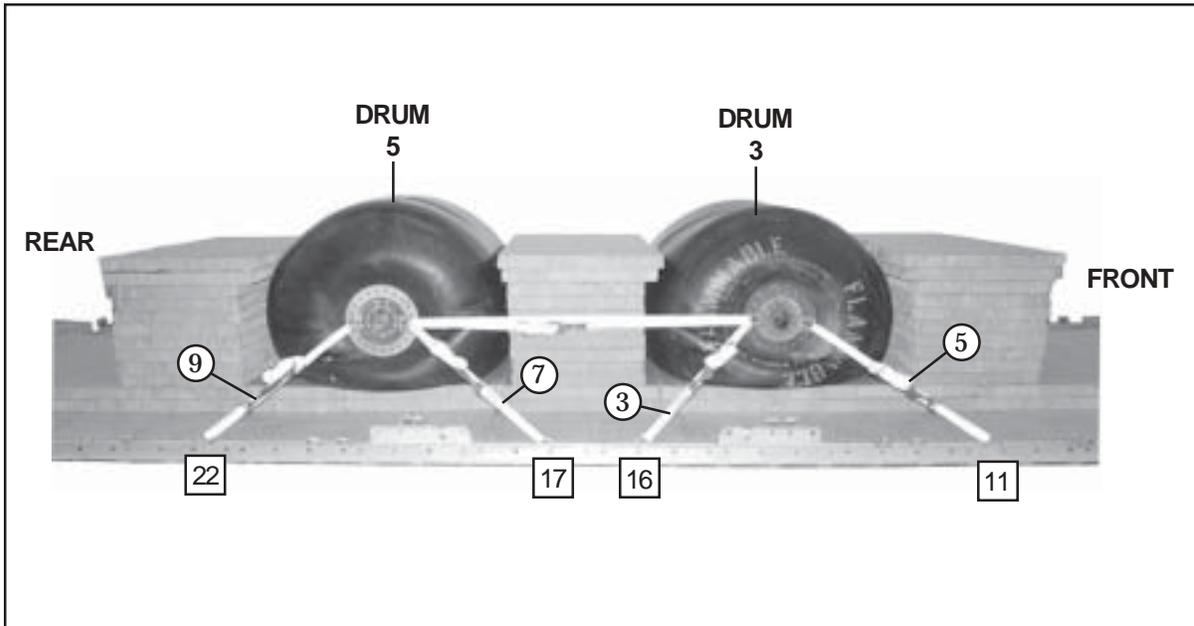
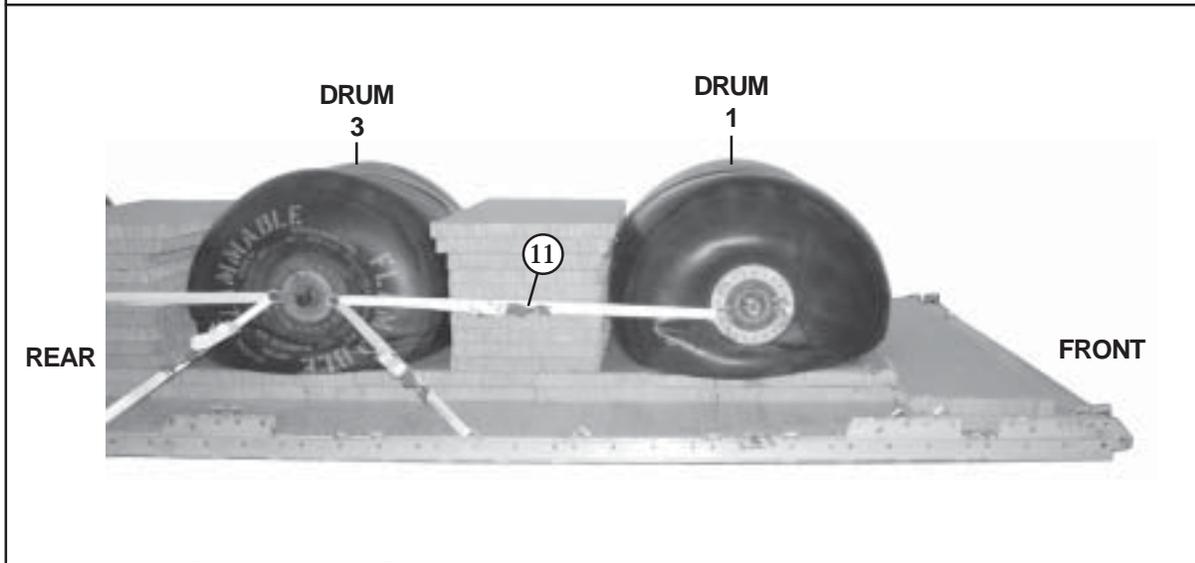
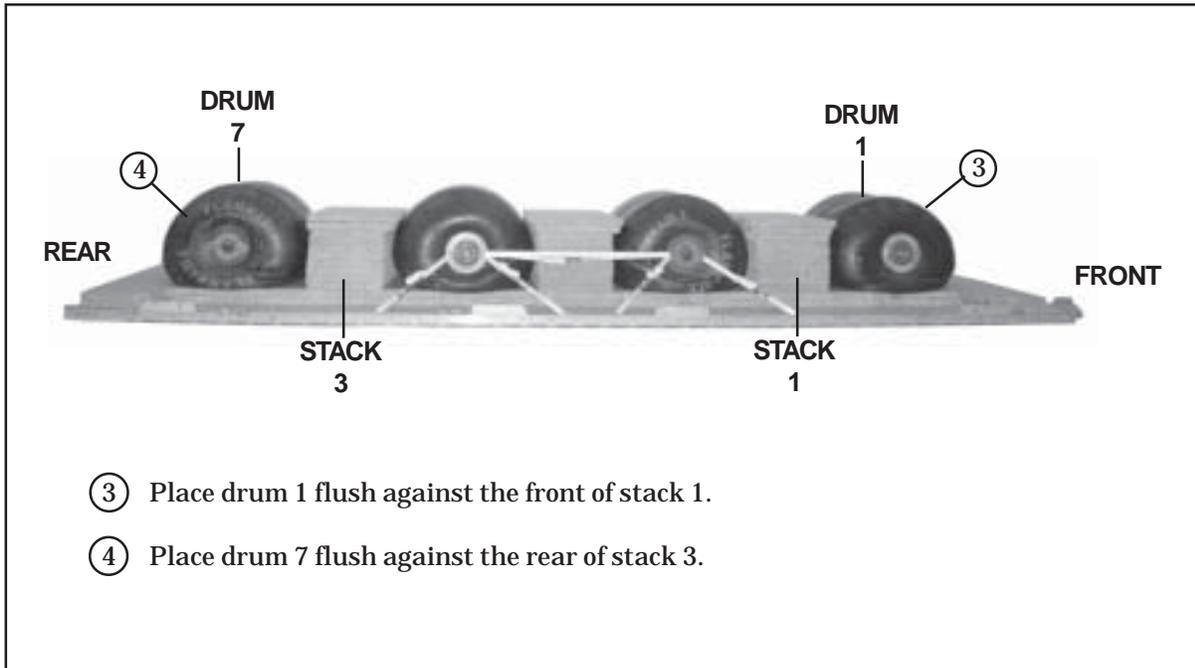


Figure 1-58. Fuel Drums Positioned and Lashed



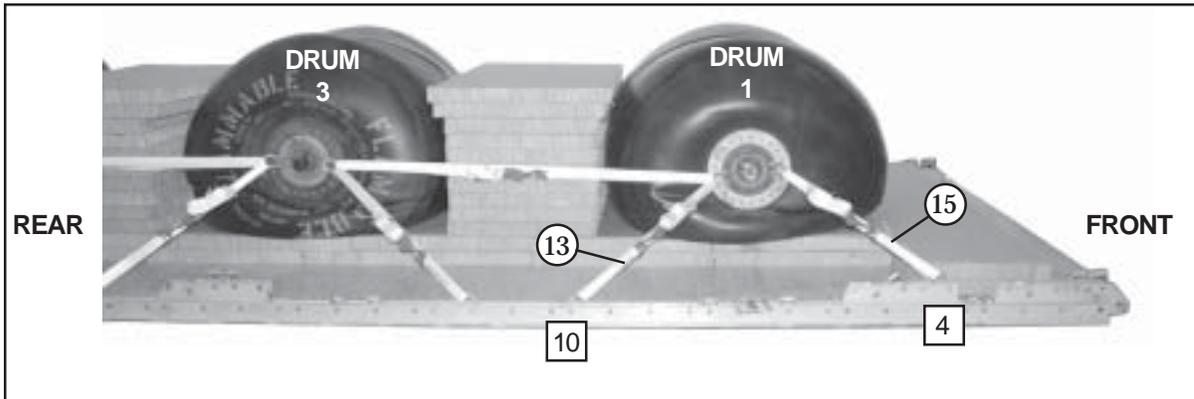
Lashing Number	Tie-down Clevis Number	Instructions
3	16	Route a lashing from clevis 16 to the right rear shackle of drum 3.
4	16A	Route a lashing from clevis 16A to the left rear shackle of drum 3.
5	11	Route a lashing from clevis 11 to the right front shackle of drum 3.
6	11A	Route a lashing from clevis 11A to the left front shackle of drum 3.
7	17	Route a lashing from clevis 17 to the right front shackle of drum 5.
8	17A	Route a lashing from clevis 17A to the left front shackle of drum 5.
9	22	Route a lashing from clevis 22 to the right rear shackle of drum 5.
10	22A	Route a lashing from clevis 22A to the left rear shackle of drum 5.

Figure 1-58. Fuel Drums Positioned and Lashed (Continued)

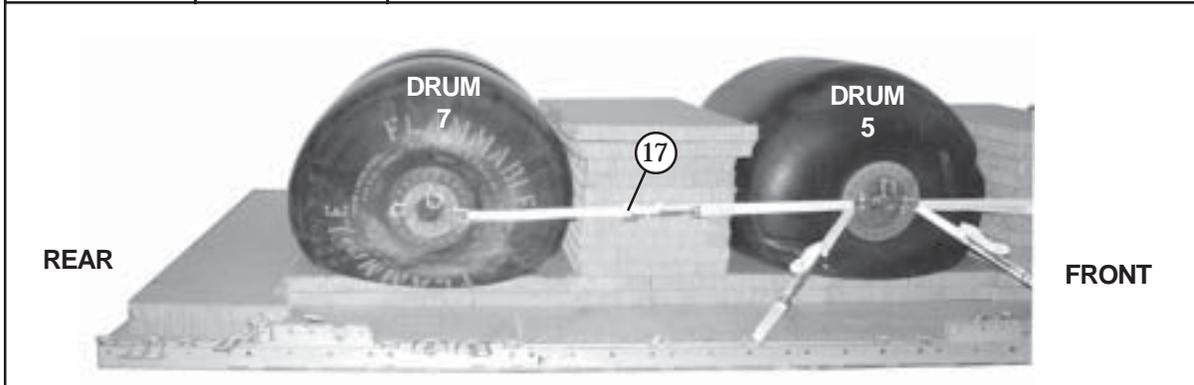


Lashing Number	Tie-down Clevis Number	Instructions
11		Route a lashing from the right rear shackle of drum 1 to the right front shackle of drum 3.
12		Route a lashing from the left rear shackle of drum 1 to the left front shackle of drum 3.

Figure 1-58. Fuel Drums Positioned and Lashed (Continued)



Lashing Number	Tie-down Clevis Number	Instructions
13	10	Route a lashing from clevis 10 to the right rear shackle of drum 1.
14	10A	Route a lashing from clevis 10A to the left rear shackle of drum 1.
15	4	Route a lashing from clevis 4 to the right front shackle of drum 1.
16	4A	Route a lashing from clevis 4A to the left front shackle of drum 1.



Lashing Number	Tie-down Clevis Number	Instructions
17		Route a lashing from the right rear shackle of drum 5 to the right front shackle of drum 7.
18		Route a lashing from the left rear shackle of drum 5 to the left front shackle of drum 7.

Figure 1-58. Fuel Drums Positioned and Lashed (Continued)

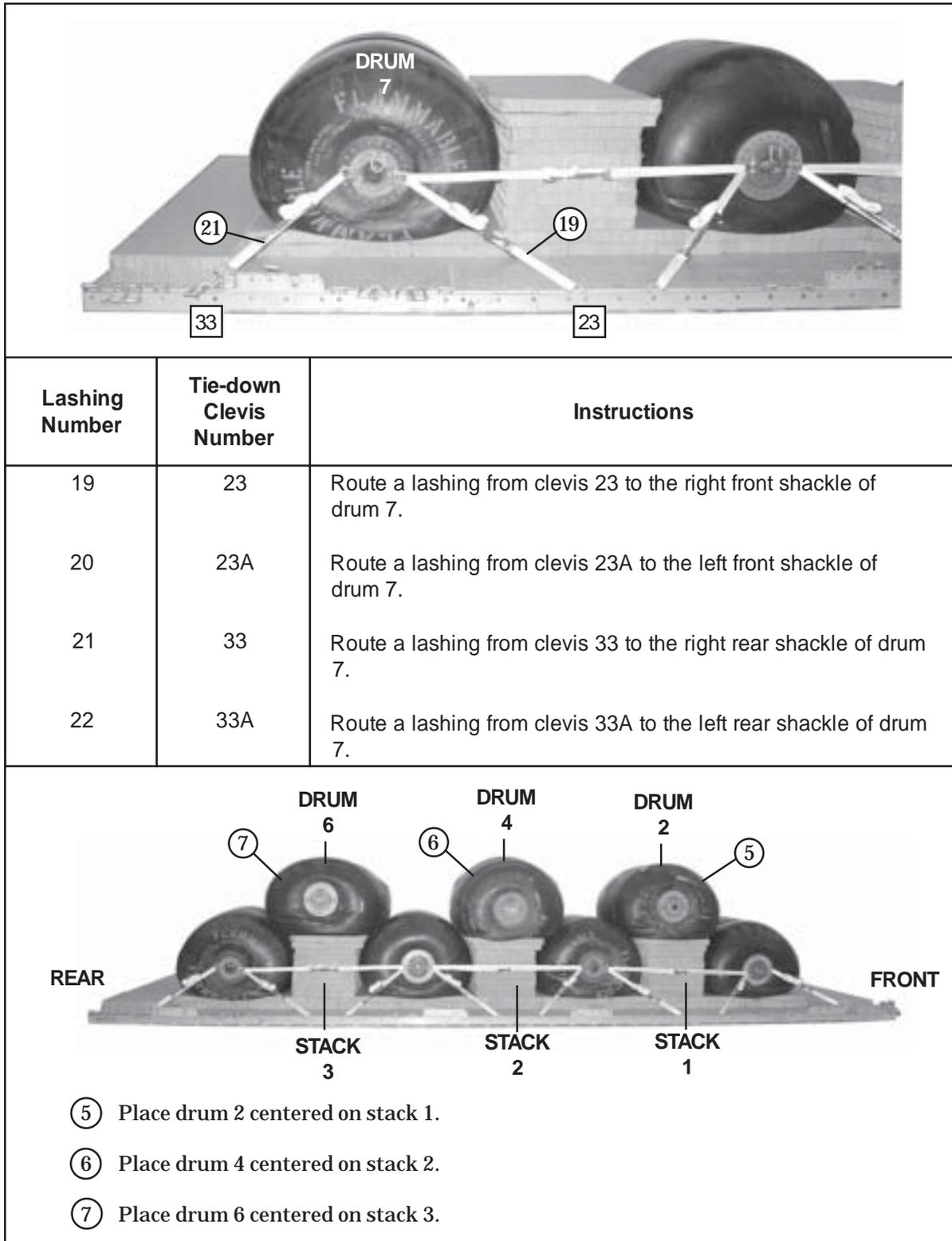
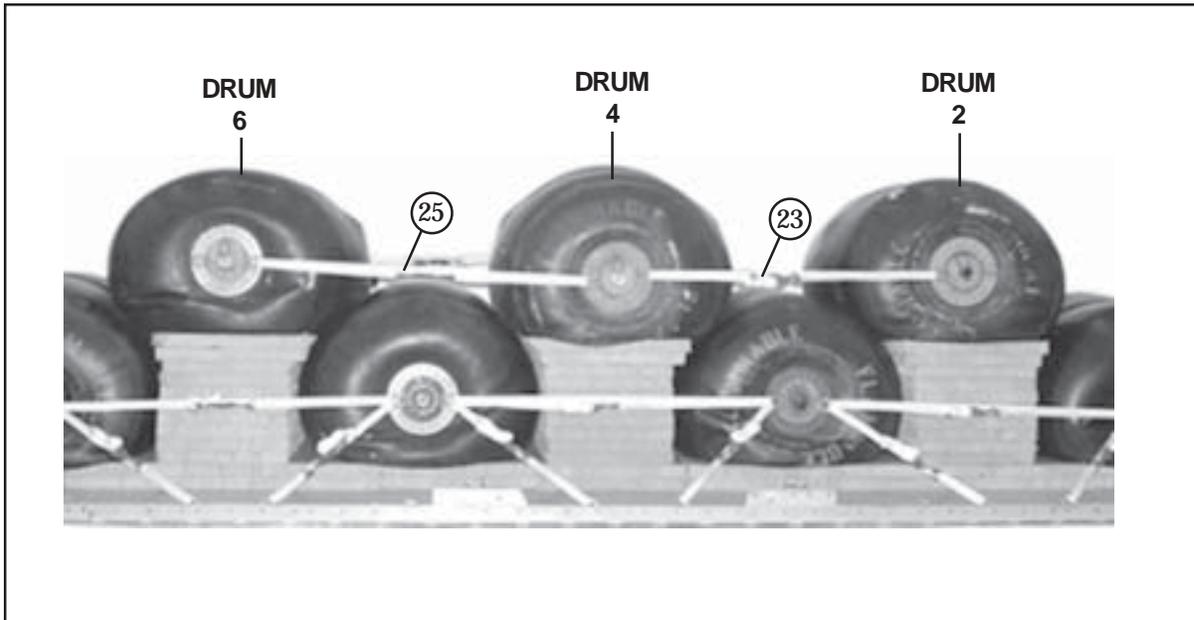
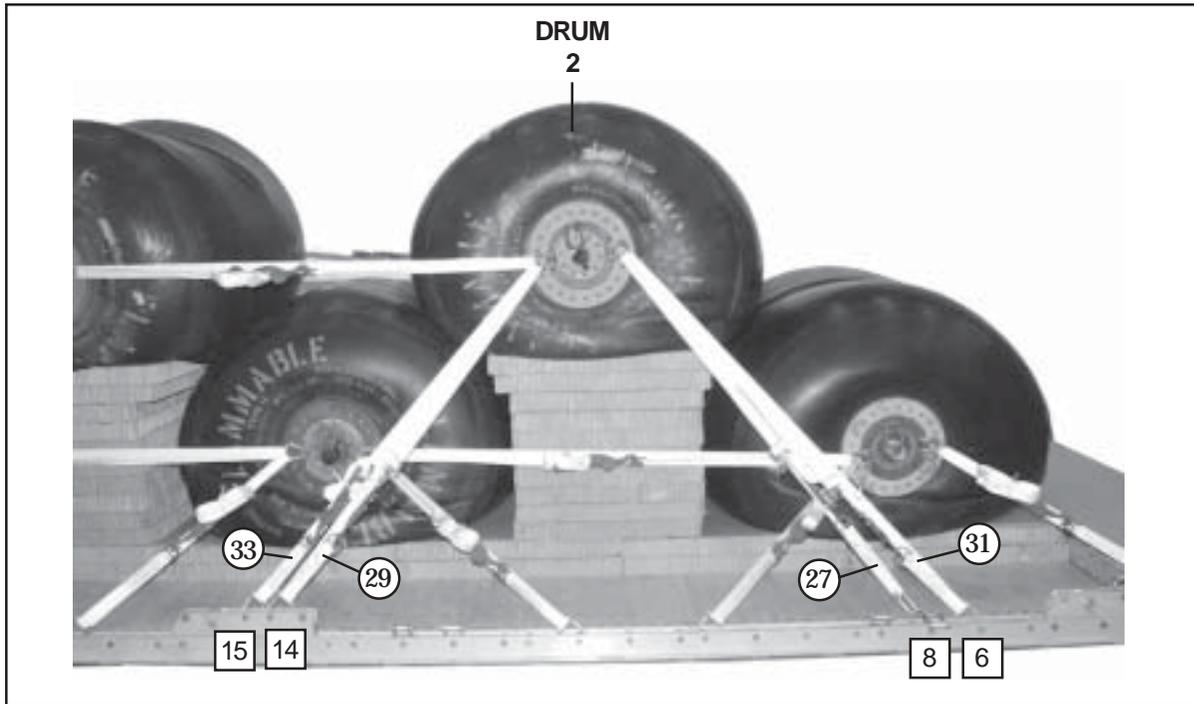


Figure 1-58. Fuel Drums Positioned and Lashed (Continued)



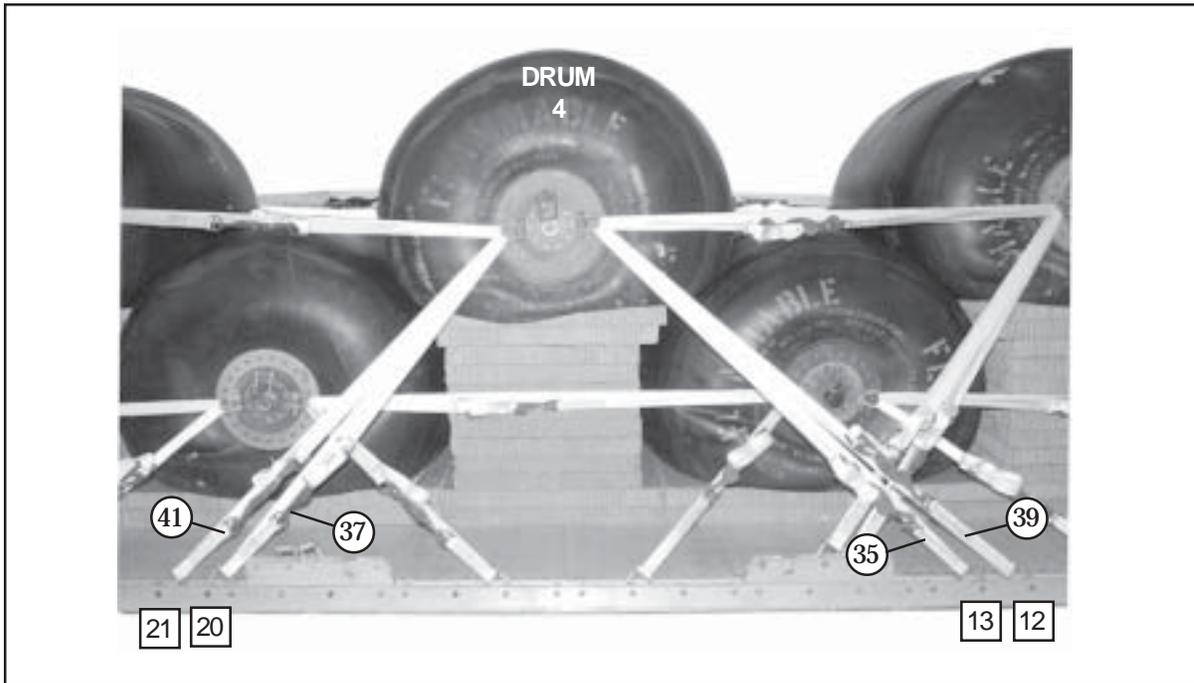
Lashing Number	Tie-down Clevis Number	Instructions
23		Route a lashing from the right rear shackle of drum 2 to the right front front shackle of drum 4.
24		Route a lashing from the left rear shackle of drum 2 to the left front front shackle of drum 4.
25		Route a lashing from the right rear shackle of drum 4 to the right front front shackle of drum 6.
26		Route a lashing from the left rear shackle of drum 4 to the left front front shackle of drum 6.

Figure 1-58. Fuel Drums Positioned and Lashed (Continued)



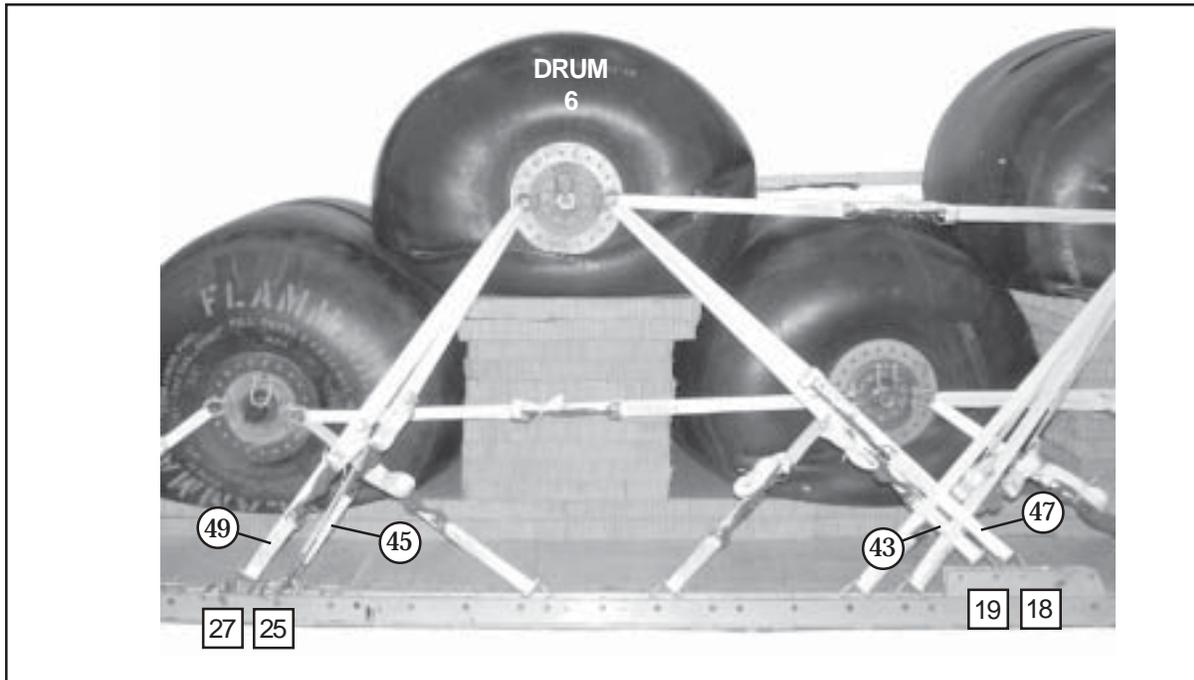
Lashing Number	Tie-down Clevis Number	Instructions
27	8	Route a lashing from clevis 8 to the right front shackle of drum 2.
28	8A	Route a lashing from clevis 8A to the left front shackle of drum 2.
29	14	Route a lashing from clevis 14 to the right front shackle of drum 2.
30	14A	Route a lashing from clevis 14A to the left front shackle of drum 2.
31	6	Route a lashing from clevis 6 to the right rear shackle of drum 2.
32	6A	Route a lashing from clevis 6A to the left rear shackle of drum 2.
33	15	Route a lashing from clevis 15 to the right rear shackle of drum 2.
34	15A	Route a lashing from clevis 15A to the left rear shackle of drum 2.

Figure 1-58. Fuel Drums Positioned and Lashed (Continued)



Lashing Number	Tie-down Clevis Number	Instructions
35	13	Route a lashing from clevis 13 to the right front shackle of drum 4.
36	13A	Route a lashing from clevis 13A to the left front shackle of drum 4.
37	20	Route a lashing from clevis 20 to the right front shackle of drum 4.
38	20A	Route a lashing from clevis 20A to the left front shackle of drum 4.
39	12	Route a lashing from clevis 12 to the right rear shackle of drum 4.
40	12A	Route a lashing from clevis 12 to the left rear shackle of drum 4.
41	21	Route a lashing from clevis 21 to the right rear shackle of drum 4.
42	21A	Route a lashing from clevis 21A to the left rear shackle of drum 4.

Figure 1-58. Fuel Drums Positioned and Lashed (Continued)



Lashing Number	Tie-down Clevis Number	Instructions
43	19	Route a lashing from clevis 19 to the right front shackle of drum 6.
44	19A	Route a lashing from clevis 19A to the left front shackle of drum 6.
45	25	Route a lashing from clevis 25 to the right front shackle of drum 6.
46	25A	Route a lashing from clevis 25A to the left front shackle of drum 6.
47	18	Route a lashing from clevis 18 to the right rear shackle of drum 6.
48	18A	Route a lashing from clevis 18A to the left rear shackle of drum 6.
49	27	Route a lashing from clevis 27 to the right rear shackle of drum 6.
50	27A	Route a lashing from clevis 27A to the left rear shackle of drum 6.

Figure 1-58. Fuel Drums Positioned and Lashed (Continued)

PREPARING FARE

1-43. Build two containers for the FARE according to paragraph 1-4. Prepare the components of the FARE and stow them in the containers according to paragraph 1-5. Secure the container as shown in Figure 1-59.

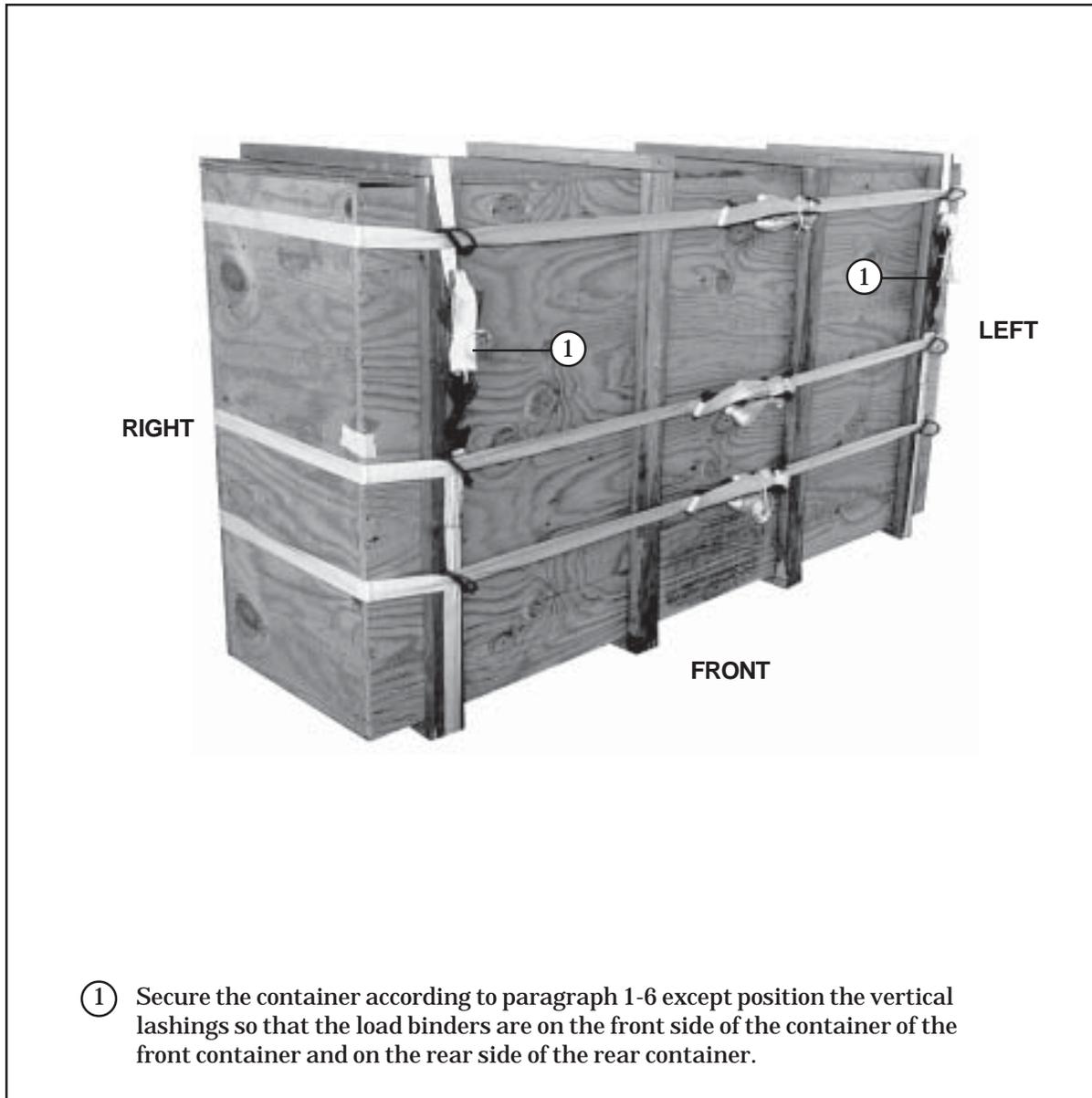


Figure 1-59. Container Secured

INSTALLING LIFTING SLINGS AND POSITIONING FARE CONTAINERS

1-44. Install lifting slings to the FARE containers as shown in Figure 1-14.
Position the FARE container as shown in Figure 1-60.

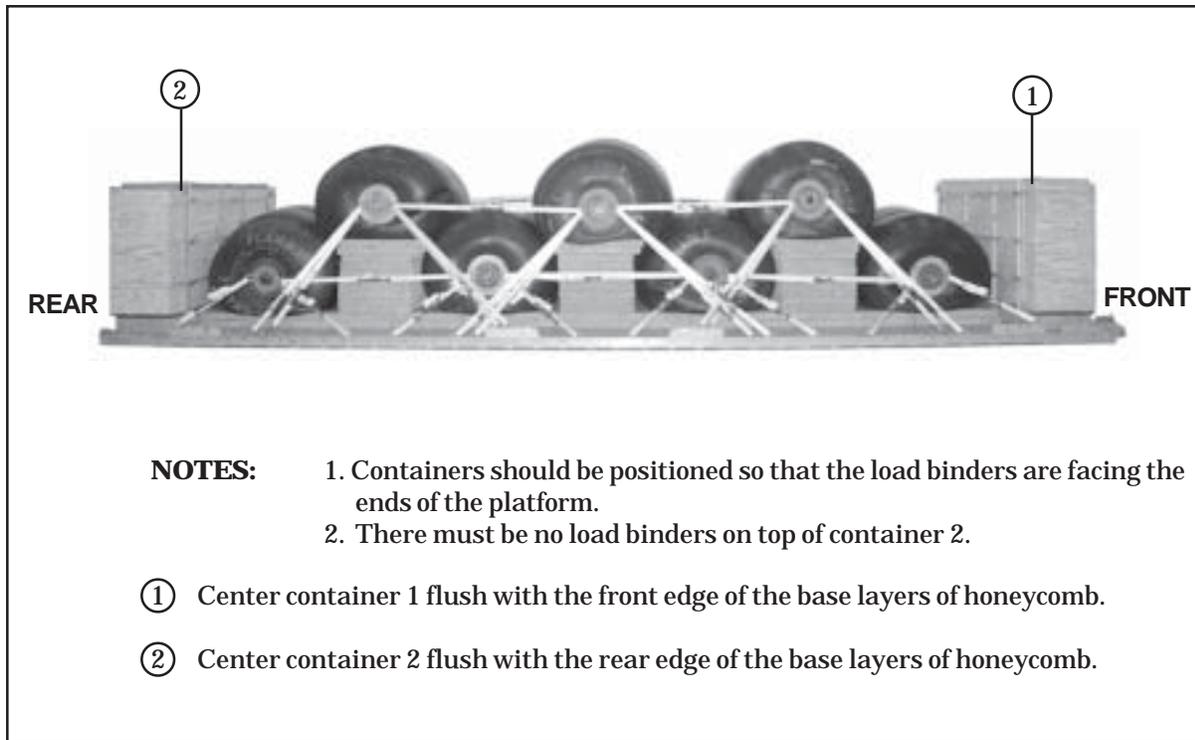
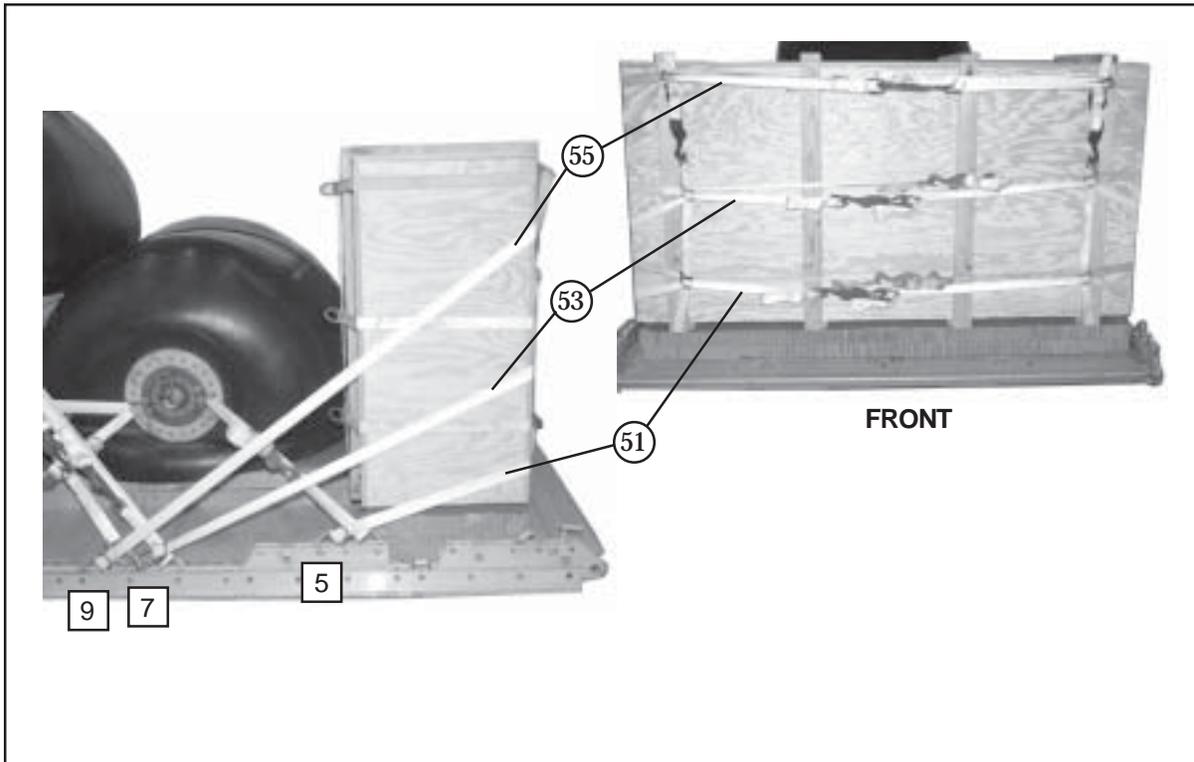


Figure 1-60. FARE Containers Positioned

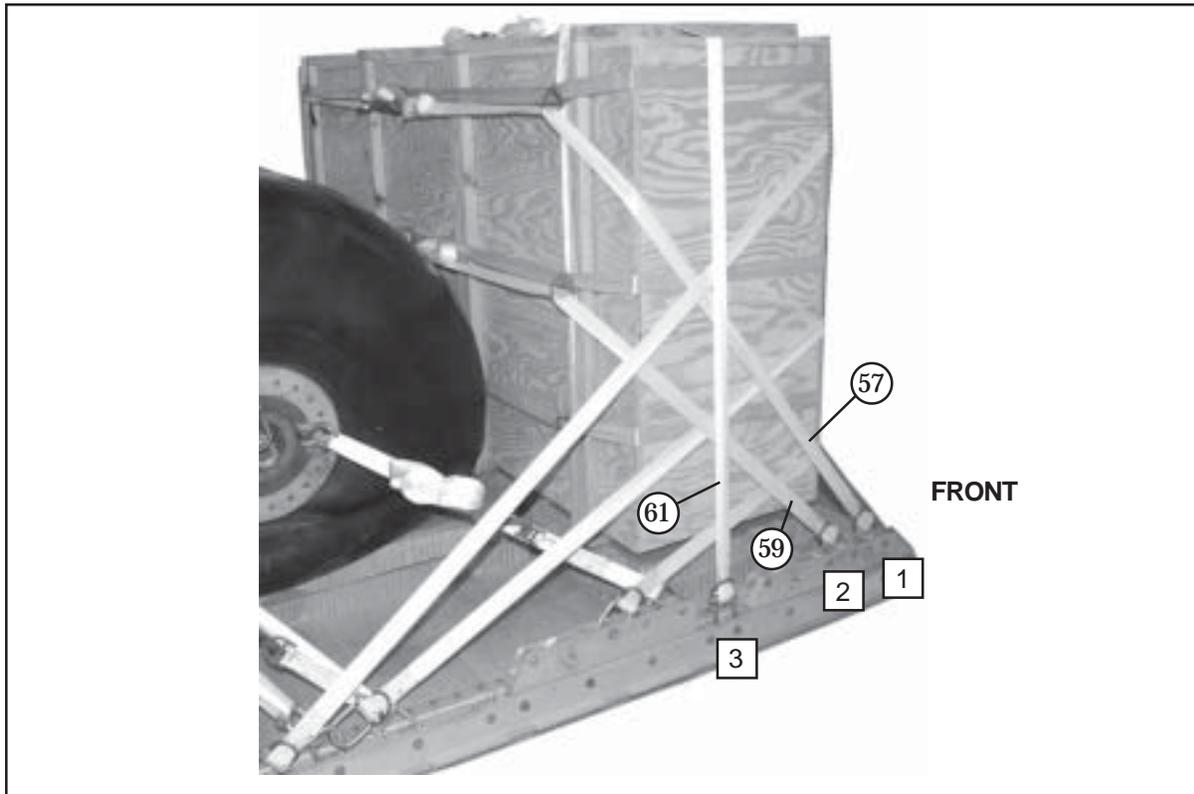
LASHING FARE CONTAINERS TO PLATFORM

1-45. Lash the FARE containers to the platform as shown in Figure 1-61.



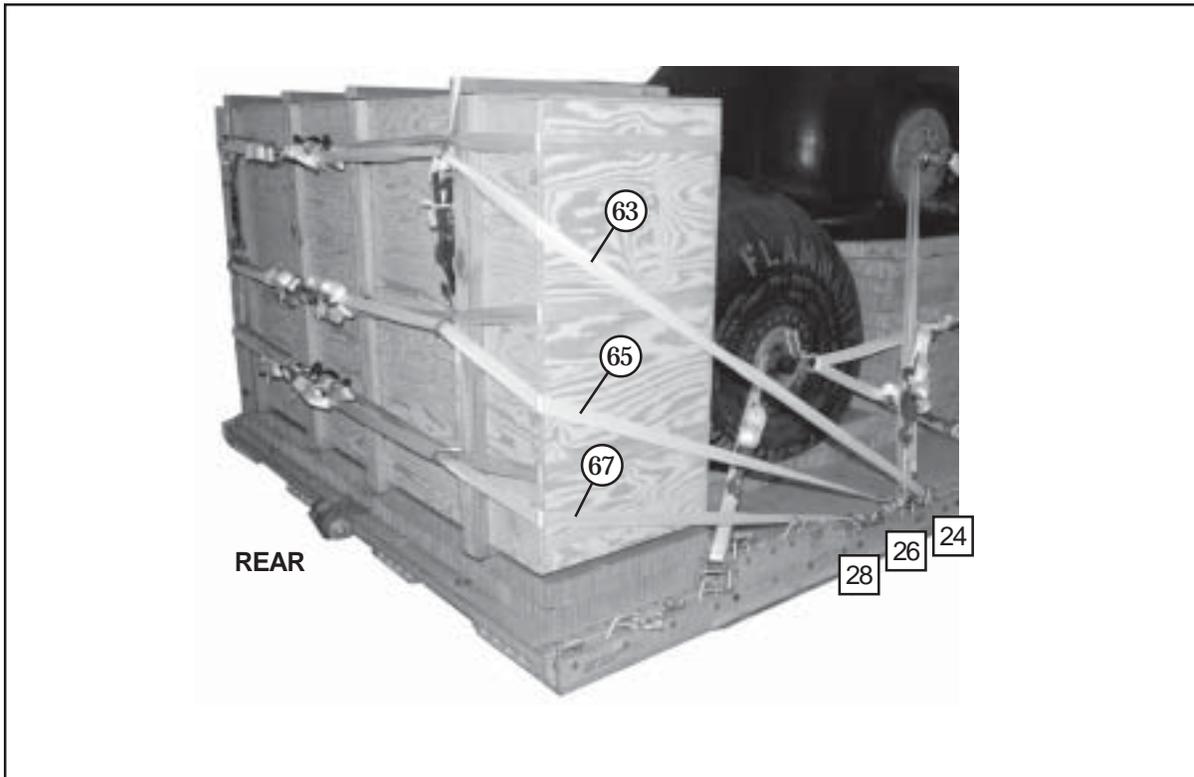
Lashing Number	Tie-down Clevis Number	Instructions
51	5	Route a lashing through it's own D-ring on clevis 5 and through the bottom rings on the front of container 1.
52	5A	Route a lashing through it's own D-ring on clevis 5A and through the bottom rings on the front of container 1. Bind lashing 51 to lashing 52 with two D-rings and a load binder.
53	7	Route a lashing through it's own D-ring on clevis 7 and through the middle rings on the front of container 1.
54	7A	Route a lashing through it's own D-ring on clevis 7A and through the middle rings on the front of container 1. Bind lashing 53 to lashing 54 with two D-rings and a load binder.
55	9	Route a lashing through it's own D-ring on clevis 9 and through the top rings on the front of container 1.
56	9A	Route a lashing through it's own D-ring on clevis 9A and through the top rings on the front of container 1. Bind lashing 55 to lashing 56 with two D-rings and a load binder.

Figure 1-61. FARE Containers Lashed



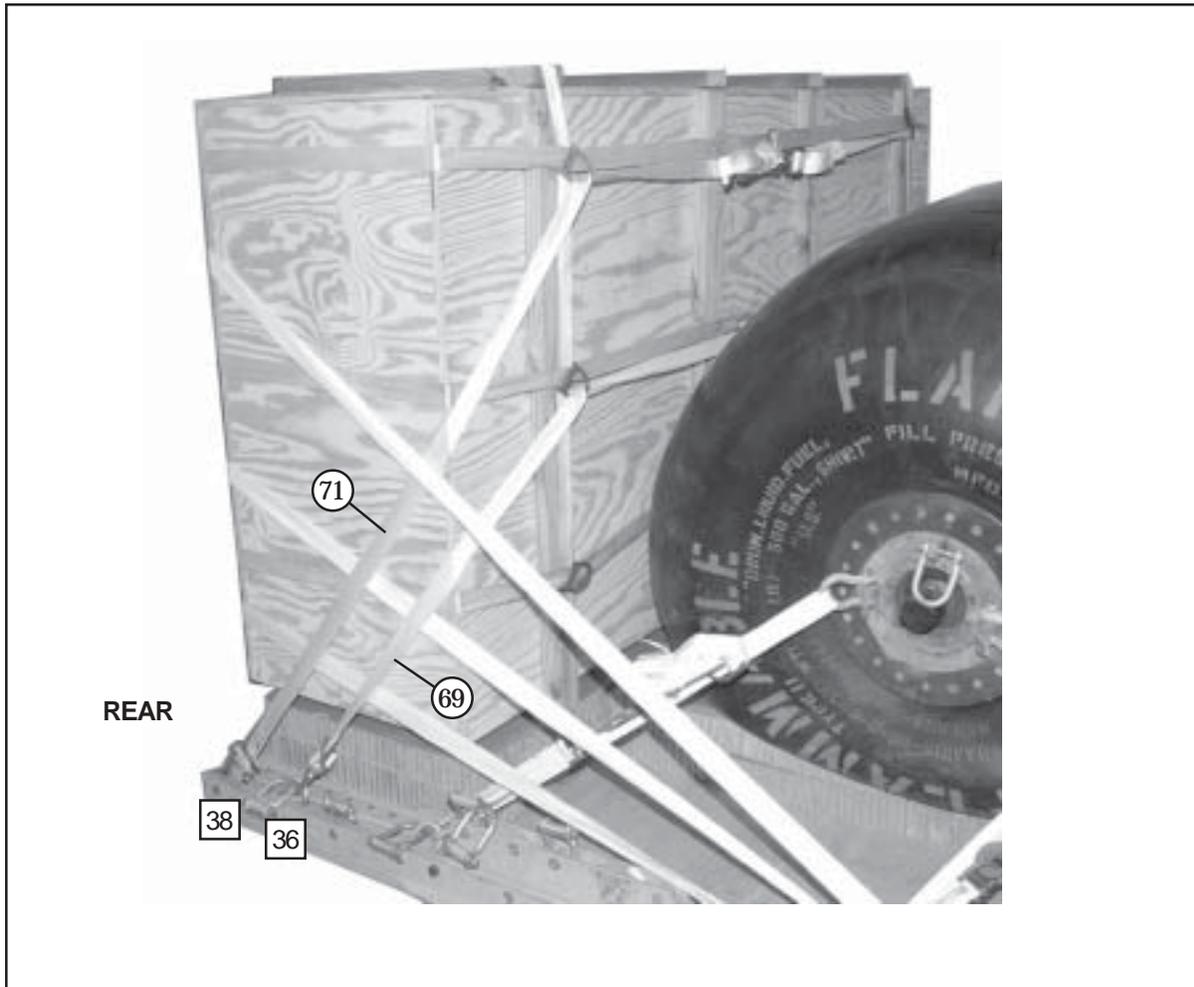
Lashing Number	Tie-down Clevis Number	Instructions
57	1	Route a lashing through it's own D-ring on clevis 1 and through the top rings on the rear of container 1.
58	1A	Route a lashing through it's own D-ring on clevis 1A and through the top rings on the rear of container 1. Bind lashing 57 to lashing 58 with two D-rings and a load binder.
59	2	Route a lashing through it's own D-ring on clevis 2 and through the middle rings on the rear of container 1.
60	2A	Route a lashing through it's own D-ring on clevis 2A and through the middle rings on the rear of container 1. Bind lashing 59 to lashing 60 with two D-rings and a load binder.
61	3	Route a lashing through it's own D-ring on clevis 3 and over the top of container 1.
62	3A	Route a lashing through it's own D-ring on clevis 3A and over the top of container 1. Bind lashing 61 to lashing 62 with two D-rings and a load binder.

Figure 1-61. FARE Containers Lashed (Continued)



Lashing Number	Tie-down Clevis Number	Instructions
63	24	Route a lashing through it's own D-ring on clevis 24 and through the top rings on the rear of container 2.
64	24A	Route a lashing through it's own D-ring on clevis 24A and through the top rings on the rear of container 2. Bind lashing 63 to lashing 64 with two D-rings and a load binder.
65	26	Route a lashing through it's own D-ring on clevis 26 and through the middle rings on the rear of container 2.
66	26A	Route a lashing through it's own D-ring on clevis 26A and through the middle rings on the rear of container 2. Bind lashing 65 to lashing 66 with two D-rings and a load binder.
67	28	Route a lashing through it's own D-ring on clevis 28 and through the bottom rings on the rear of container 2.
68	28A	Route a lashing through it's own D-ring on clevis 28A and through the bottom rings on the rear of container 2. Bind lashing 67 to lashing 68 with two D-rings and a load binder.

Figure 1-61. FARE Containers Lashed (Continued)



Lashing Number	Tie-down Clevis Number	Instructions
69	36	Route a lashing through it's own D-ring on clevis 36 and through the middle rings on the front of container 2.
70	36A	Route a lashing through it's own D-ring on clevis 36A and through the middle rings on the front of container 2. Bind lashing 69 to lashing 70 with two D-rings and a load binder.
71	38	Route a lashing through it's own D-ring on clevis 38 and through the top rings on the front of container 2.
72	38A	Route a lashing through it's own D-ring on clevis 38A and through the top rings on the front of container 2. Bind lashing 65 to lashing 66 with two D-rings and a load binder.

Figure 1-61. FARE Containers Lashed (Continued)

INSTALLING SUSPENSION SLINGS

1-46. Install suspension slings as shown in Figure 1-62.

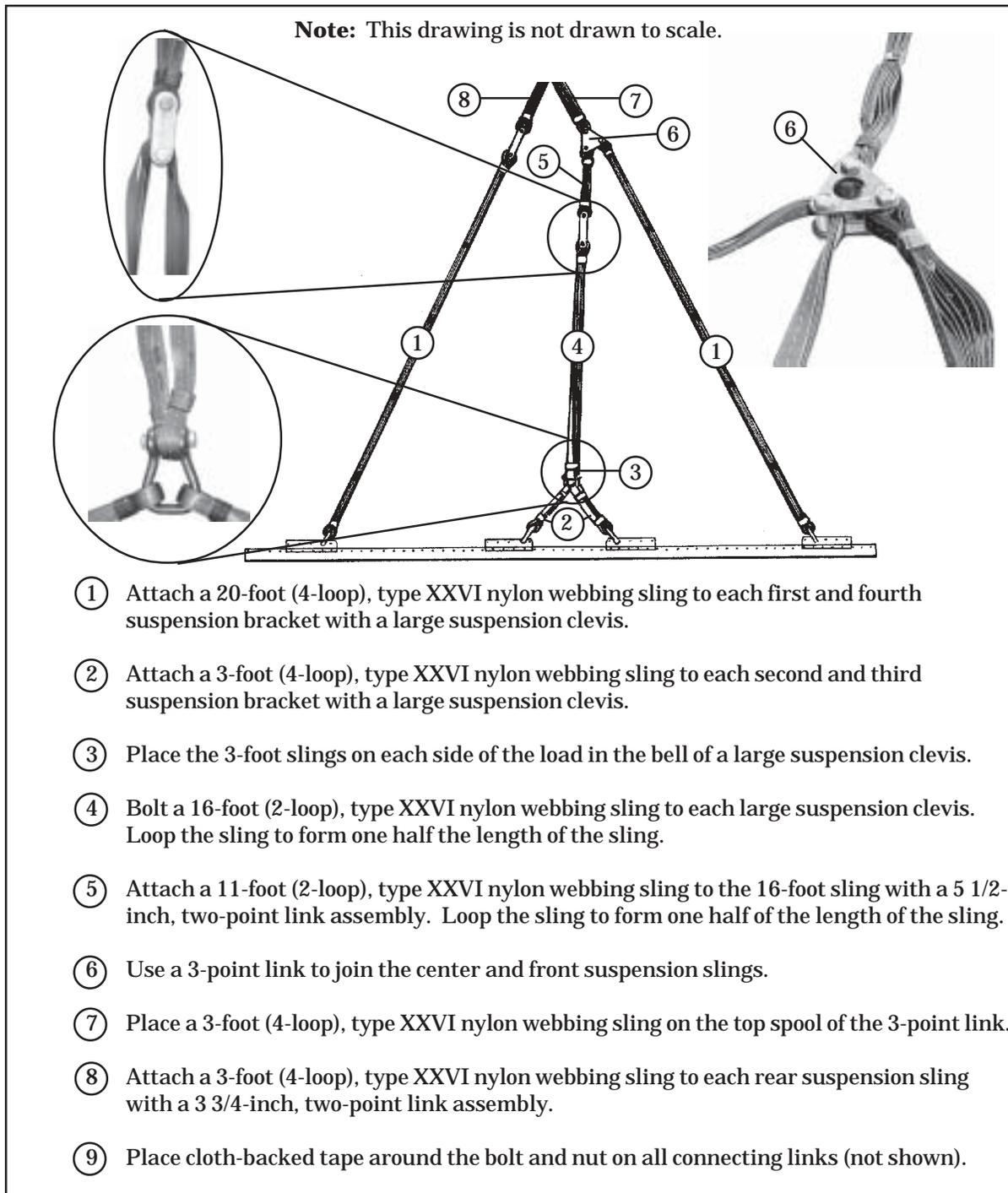


Figure 1-62. Suspension Slings Installed

SAFETY TIEING SUSPENSION SLINGS

1-47. Safety tie the suspension slings as shown in Figure 1-63. Refer to the Notice of Exception in the Introduction portion of this manual.



Figure 1-63. Suspension Slings Safety Tied

BUILDING AND INSTALLING CARGO PARACHUTE STOWAGE TRAY

1-48. Build the cargo parachute stowage tray as shown in Figure 1-64. Install the cargo parachute stowage tray as shown in Figure 1-65.

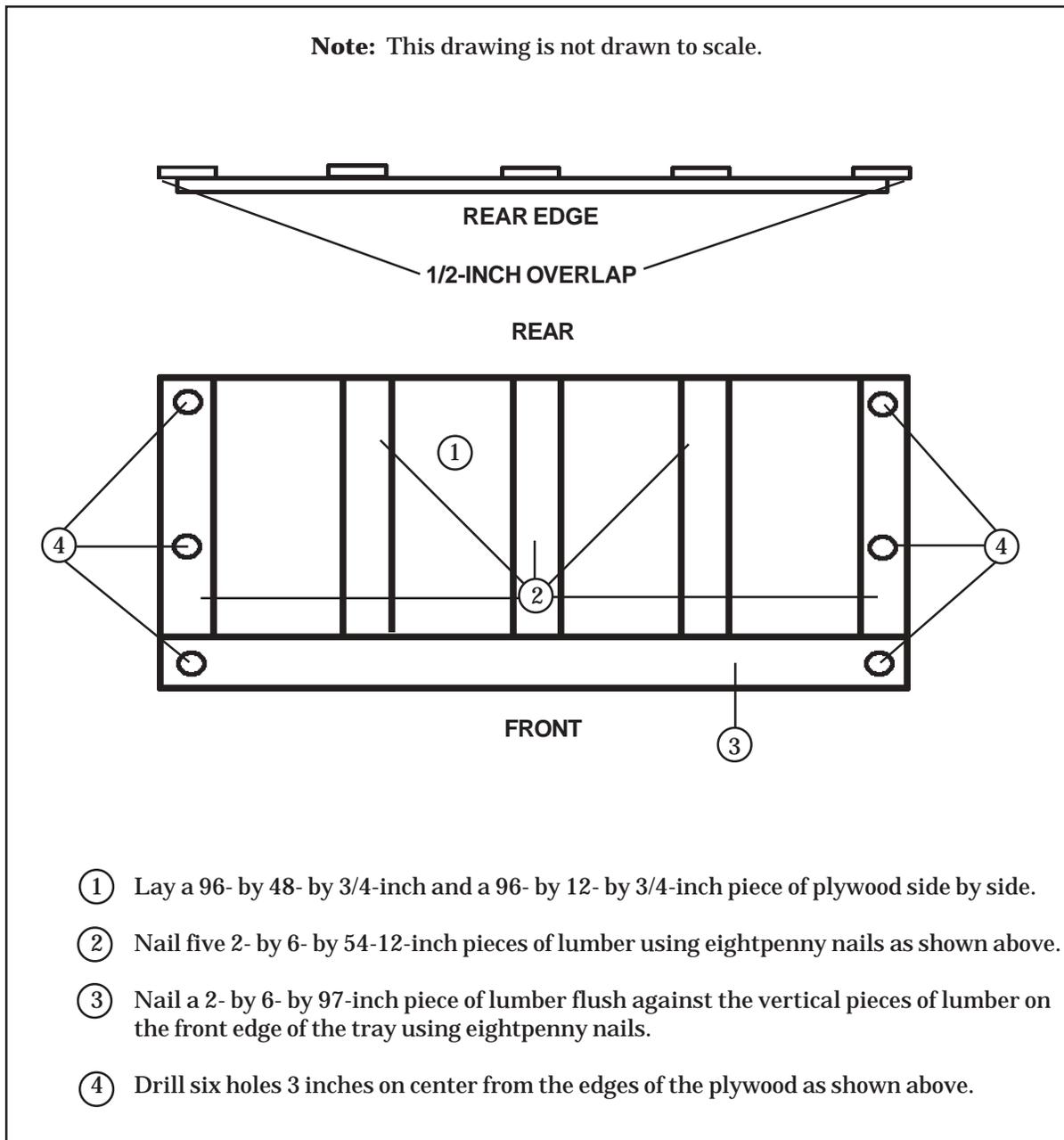
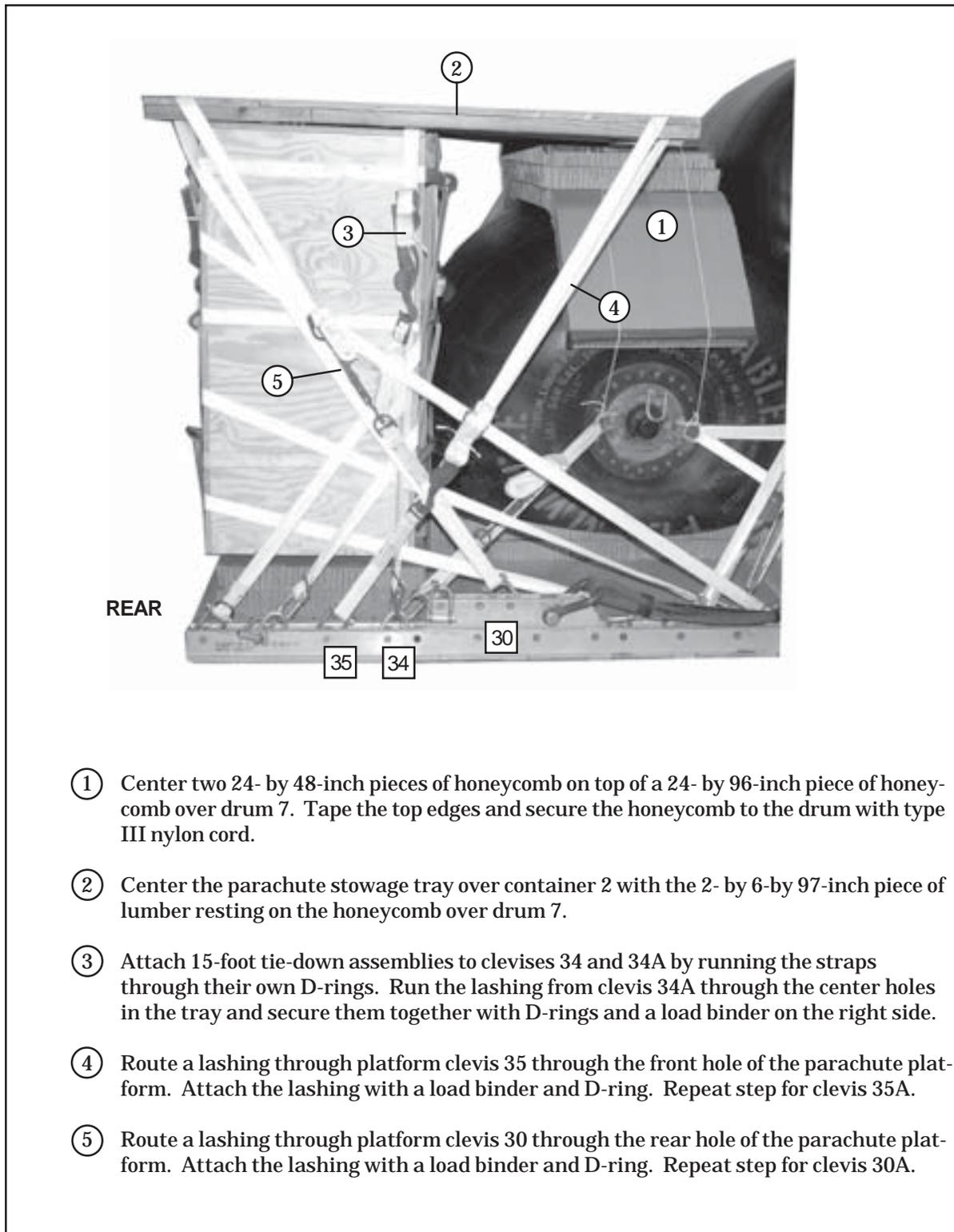


Figure 1-64. Cargo Parachute Stowage Tray Built



- ① Center two 24- by 48-inch pieces of honeycomb on top of a 24- by 96-inch piece of honeycomb over drum 7. Tape the top edges and secure the honeycomb to the drum with type III nylon cord.
- ② Center the parachute stowage tray over container 2 with the 2- by 6-by 97-inch piece of lumber resting on the honeycomb over drum 7.
- ③ Attach 15-foot tie-down assemblies to clevises 34 and 34A by running the straps through their own D-rings. Run the lashing from clevis 34A through the center holes in the tray and secure them together with D-rings and a load binder on the right side.
- ④ Route a lashing through platform clevis 35 through the front hole of the parachute platform. Attach the lashing with a load binder and D-ring. Repeat step for clevis 35A.
- ⑤ Route a lashing through platform clevis 30 through the rear hole of the parachute platform. Attach the lashing with a load binder and D-ring. Repeat step for clevis 30A.

Figure 1-65. Cargo Parachute Stowage Tray Installed

PREPARING AND STOWING CARGO PARACHUTES

1-49. Prepare, place, and restrain six G-11 cargo parachutes according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-66.

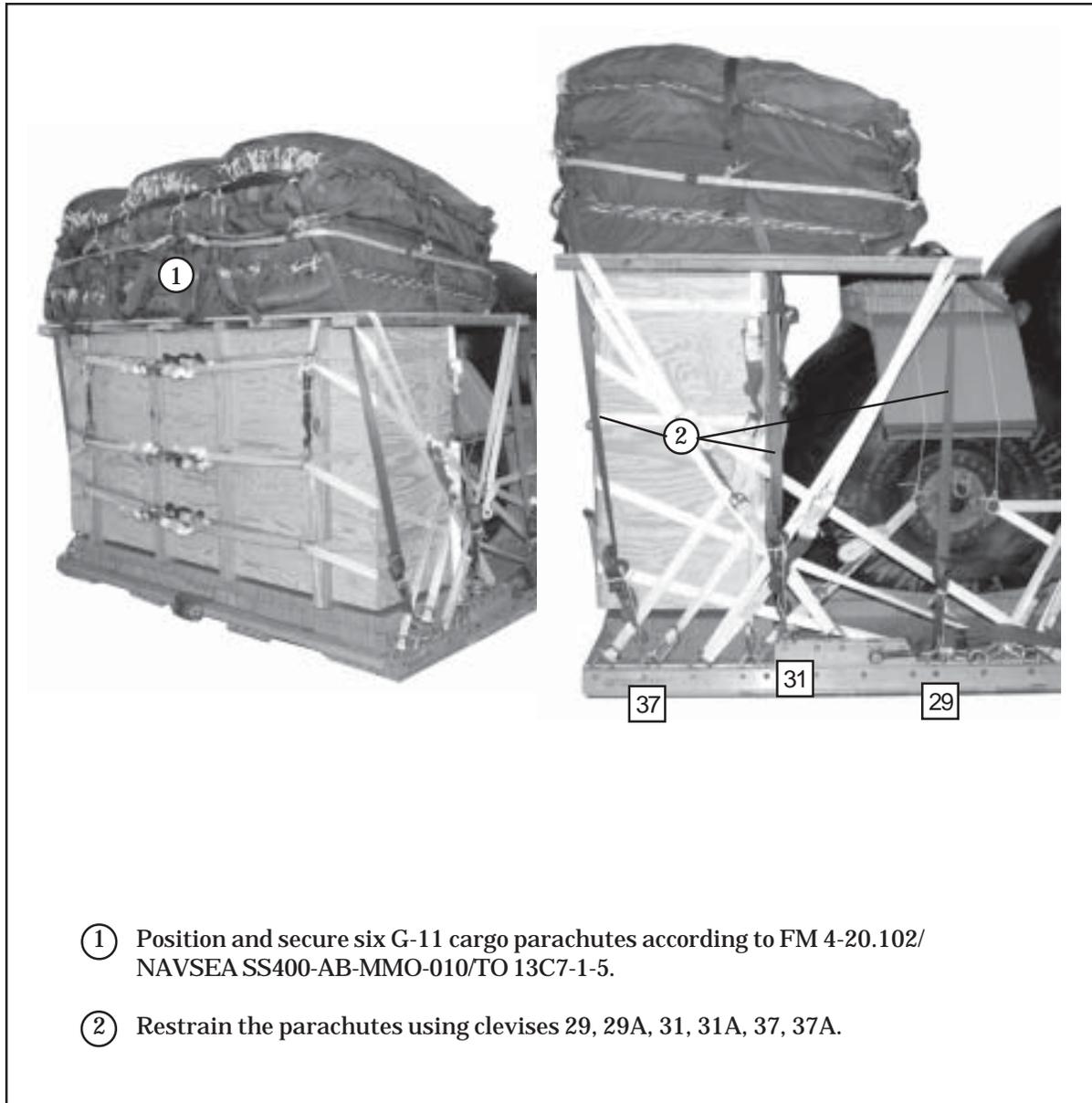


Figure 1-66. Cargo Parachute Stowed

INSTALLING THE EXTRACTION SYSTEM

1-50. Install the EFTC as shown in Figure 1-67.

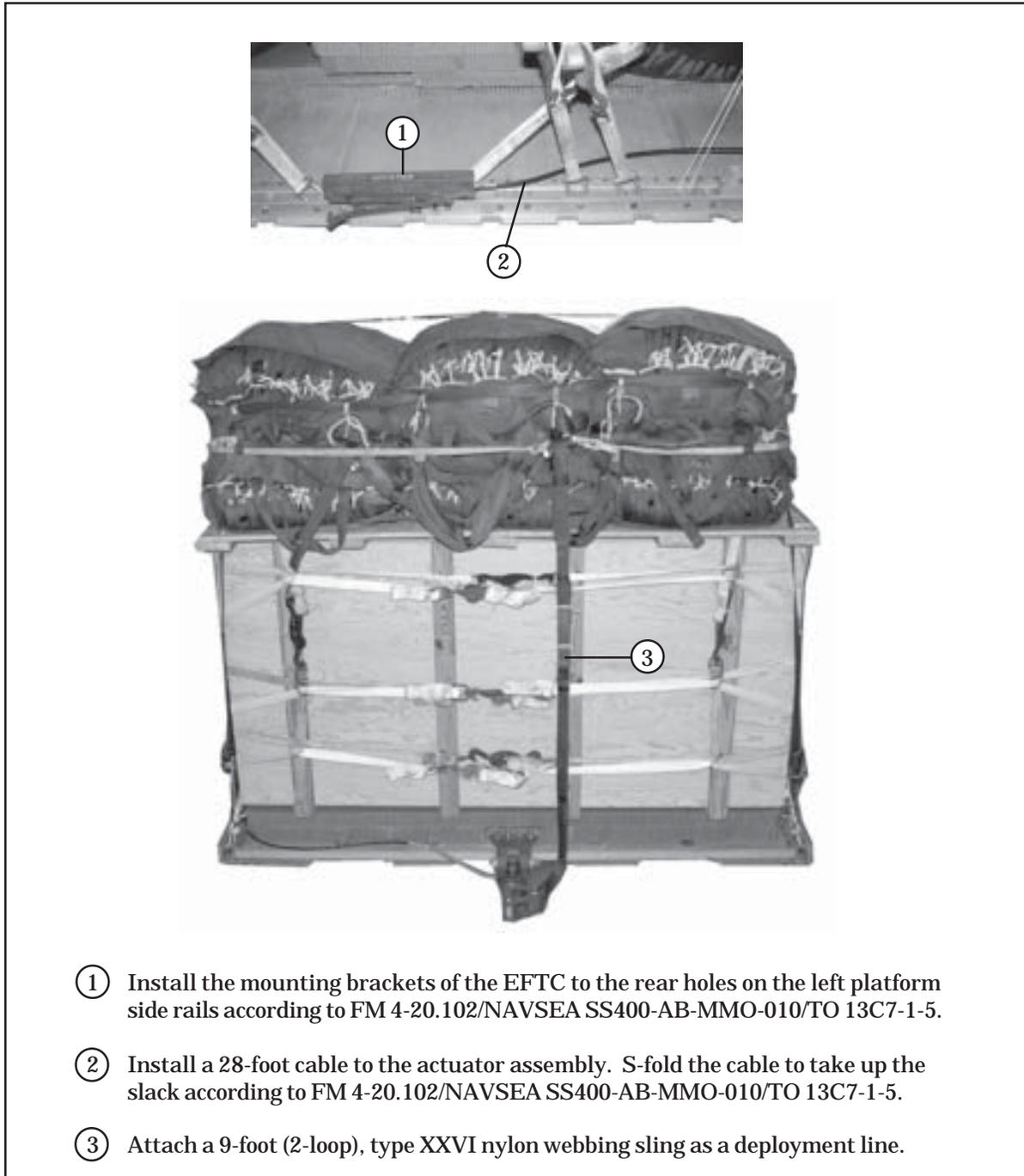
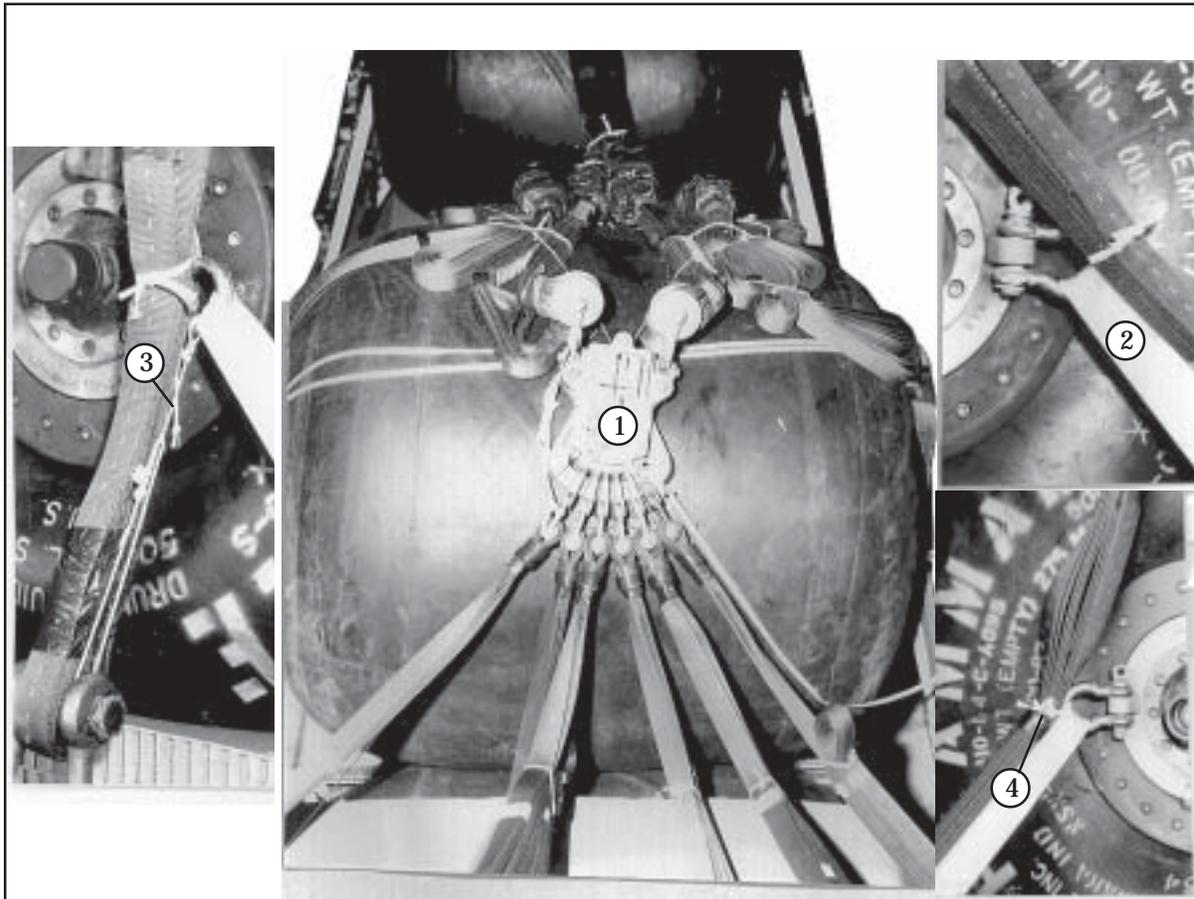


Figure 1-67. Extraction System Installed

INSTALLING PARACHUTE RELEASE SYSTEM

1-51. Install the M-2 cargo parachute release system according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-68.



- ① Install the M-2 cargo parachute release system according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- ② Tie the front suspension slings to the front shackle on drum 2 on each side using one turn double of type I, 1/4-inch cotton webbing.
- ③ Tie the center suspension slings to the front shackle on drum 4 on each side using one turn of type III nylon cord.
- ④ Tie the rear suspension slings to the rear shackle on drum 6 on each side using one turn double of type I, 1/4-inch cotton webbing.

Figure 1-68. M-2 Cargo Parachute Release System Installed

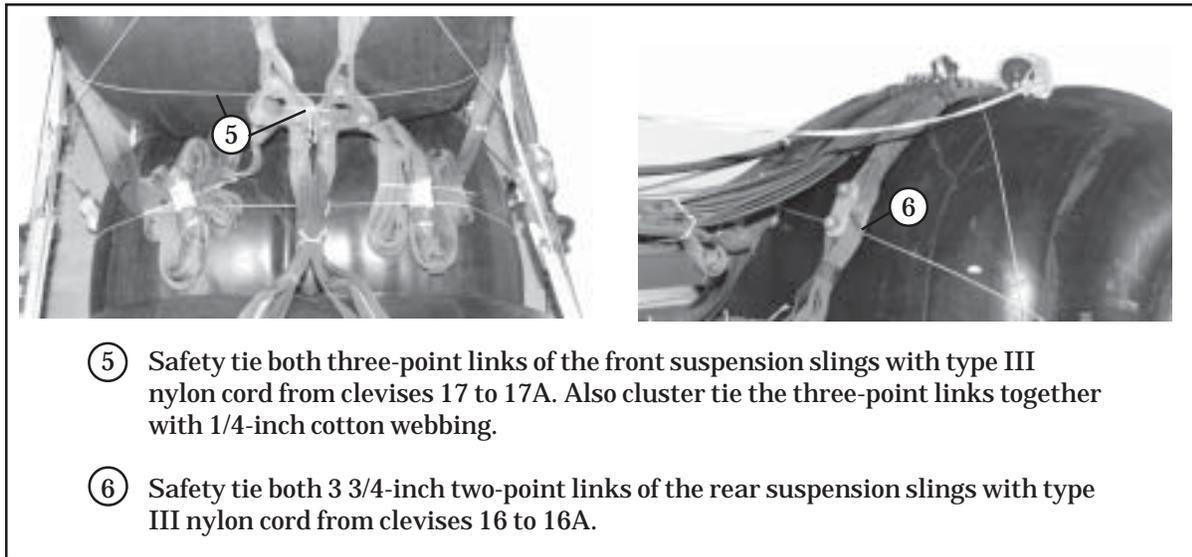


Figure 1-68. M-2 Cargo Parachute Release System Installed (Continued)

PLACING EXTRACTION PARACHUTE

1-52. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. Place the extraction parachute and extraction line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

1-53. Select and install the provisions for emergency aft restraints according to the emergency aft restraint requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

MARKING RIGGED LOAD

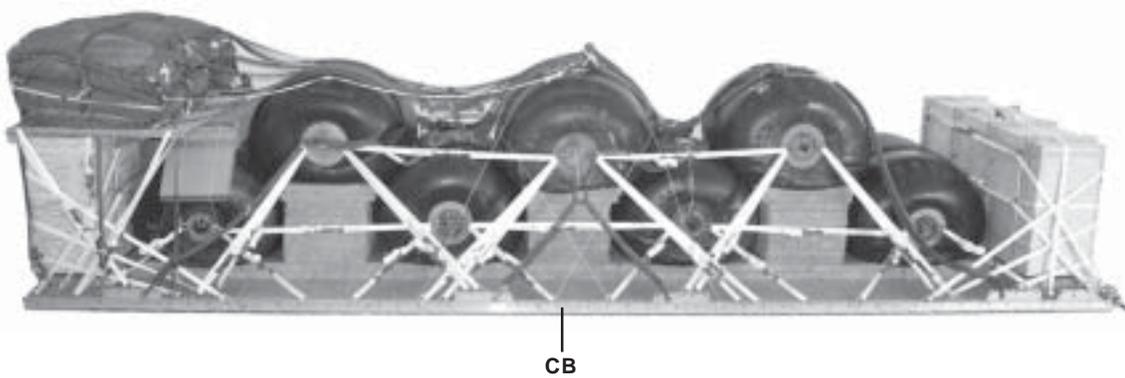
1-54. Mark the rigged load according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 1-69. Complete Shipper's Declaration for Dangerous Goods and affix to the load. If the load varies from the one shown, the weight, height, CB, tipoff curve, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

1-55. Use the equipment list in Table 1-5 to rig the load shown in Figure 1-69.

CAUTION:

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



RIGGED LOAD DATA

Weight	28,000 pounds
Maximum Weight	30,000 pounds
Height	95 inches
Width	108 inches
Overall Length	402 inches
Overhang: Front	0 inches
Rear (EFTC)	18 inches
Center of Balance (CB) (from front edge of platform)	202 inches
Extraction System	EFTC

Figure 1-69. FARE with Seven 500-Gallon Fuel Drums Rigged for Low-Velocity Airdrop

Table 1-5. Equipment Required for Rigging FARE with Seven 500-Gallon Fuel Drums for Low-Velocity Airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line bag (for DES)	1
4030-00-090-5354	Clevis, suspension: 1-in (large)	10
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with cable, 28-ft	1
1670-00-360-0328	Cover: Clevis, large	As required
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	24
1670-00-003-4391	Knife, miniature, cutter (for DES)	1
1670-01-183-2678	Leaf, extraction line (line bag)(add 2 for DES)	2
1670-01-062-6313	Line, drogue (for DES) 60-ft (3-loop), type XXVI	1
1670-01-064-4454	Line, extraction: For C-130: 60-ft (6-loop), type XXVI	1
1670-01-062-6312	For C-141: 120-ft (6-loop), type XXVI	
1670-01-062-6312	For C-5: 120-ft, (6-loop), type XXVI	
1670-01-064-4454	60-ft, (6-loop), type XXVI	1
1670-01-468-9178	For C-17: 140-ft (6-loop), type XXVI	1
1670-01-483-8259	Link, tow release mechanism (H-Block) C-17 aircraft	1
	Link Assembly:	
5306-00-435-8994		(8)
5310-00-232-5165	Nut, 1-in, hexagonal (add 2 for DES)	(8)
1670-00-003-1953	Plate, side, 3 3/4-in (add 2 for DES)	(4)
1670-00-003-1954	Plate, side, 5 1/2-in	(4)
5365-00-007-3414	Spacer, large (add 2 for DES)	(8)
1670-01-307-1055	Three-point	2
1670-00-006-2752	Four-point	1
5510-00-220-6146	Lumber, 2- by 4-in:	
	24-inch	8
	27-inch	8
	50 1/4-inch	16

Table 1-5. Equipment Required for Rigging FARE with Seven 500-Gallon Fuel Drums for Low-Velocity Airdrop (continued)

National Stock Number	Item	Quantity
1670-00-753-3928	Pad, energy-dissipating (honeycomb) 3- by 36- by 96-in	32 sheets
1670-01-016-7841	Parachute: Cargo: G-11C	6
1670-00-040-8135	Cargo extraction: 28-ft	2
1670-01-063-3715	Drogue (for DES) 15-ft	1
1670-01-353-8425	Platform, airdrop, type V, 32-ft: Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(76)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-247-2389	Bracket, suspension	(8)
1670-01-162-2381	Tandem link assembly (Multipurpose link)	(2)
5530-00-128-4981	Plywood, 3/4-in	3 sheets
1670-01-097-8817	Release, cargo parachute, M-2	1
1670-01-062-6306	Sling, cargo, airdrop For suspension: 3-ft (4-loop), type XXVI nylon webbing	8
1670-01-063-7760	11-ft (2-loop), type XXVI nylon webbing	2
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	2
1670-01-064-4453	20-ft (4-loop), type XXVI nylon webbing	4
1670-01-062-6304	For deployment: 9-ft (2-loop), type XXVI nylon webbing	1
1670-01-062-6311	For riser extension: 120-ft (2-loop), type XXVI nylon webbing	6
1670-01-062-6304	For lifting slings: 9-ft (2-loop), type XXVI nylon webbing	2
5340-00-040-8219	Strap, parachute release, multi-cut, comes w/ 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
7510-00-266-6710	Tape, masking, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-foot	96
8310-00-917-3945	Thread, Cotton, Ticket 8/7	As required
8305-00-268-2411	Webbing: Cotton, 1/4-in, type I	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-261-8584	Nylon, Type X	As required

Chapter 2

Rigging the 350-GPM Wheel-Mounted POL Pumping Assembly with Filter/ Separator

DESCRIPTION OF LOAD

2-1. The 4-inch, 350-GPM wheel-mounted POL pumping assembly with filter/separator (Figure 2-1) is rigged on a 16-foot type V platform for low-velocity airdrop with two G-11 cargo parachutes. It consists of two pumps, each weighing 2,100 pounds and two filter/separators each weighing 425 pounds. It is approximately 76 3/4 inches in height, 108 inches in width, and 215 inches in length with an overhang of 5 inches in the front and 18 inches in the rear. The total rigged weight is 7,880 pounds.

PREPARING PLATFORM

2-2. Prepare a 16-foot type V airdrop platform using two tandem links, four suspension brackets, and 16 tie-down clevises as shown in Figure 2-2.

- Notes:**
1. The nose bumper may or may not be installed.
 2. Measurements given in this section are from the front edge of the platform, NOT from the front edge of the nose bumper.

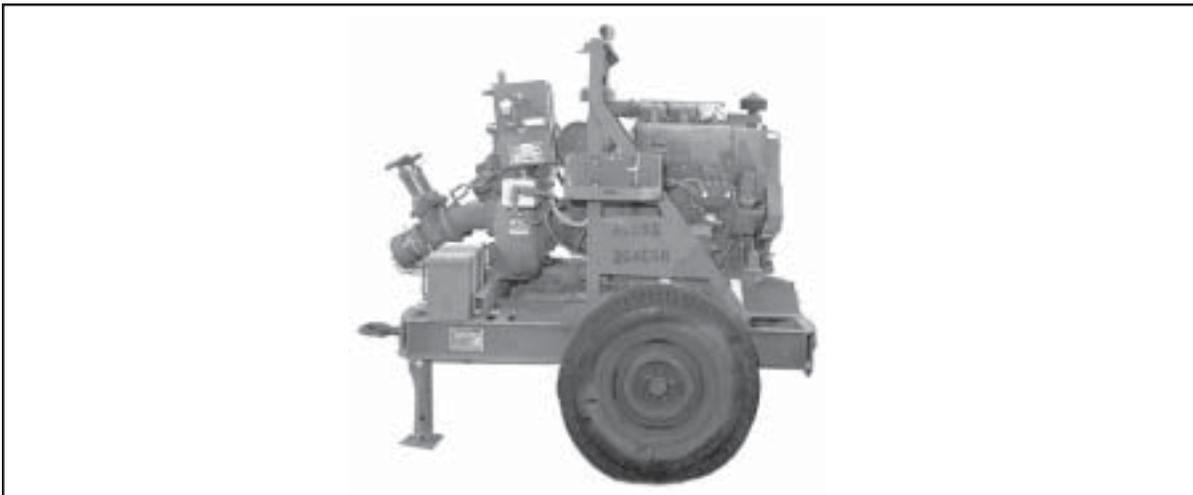


Figure 2-1. Pumping Assembly with Filter/Separator

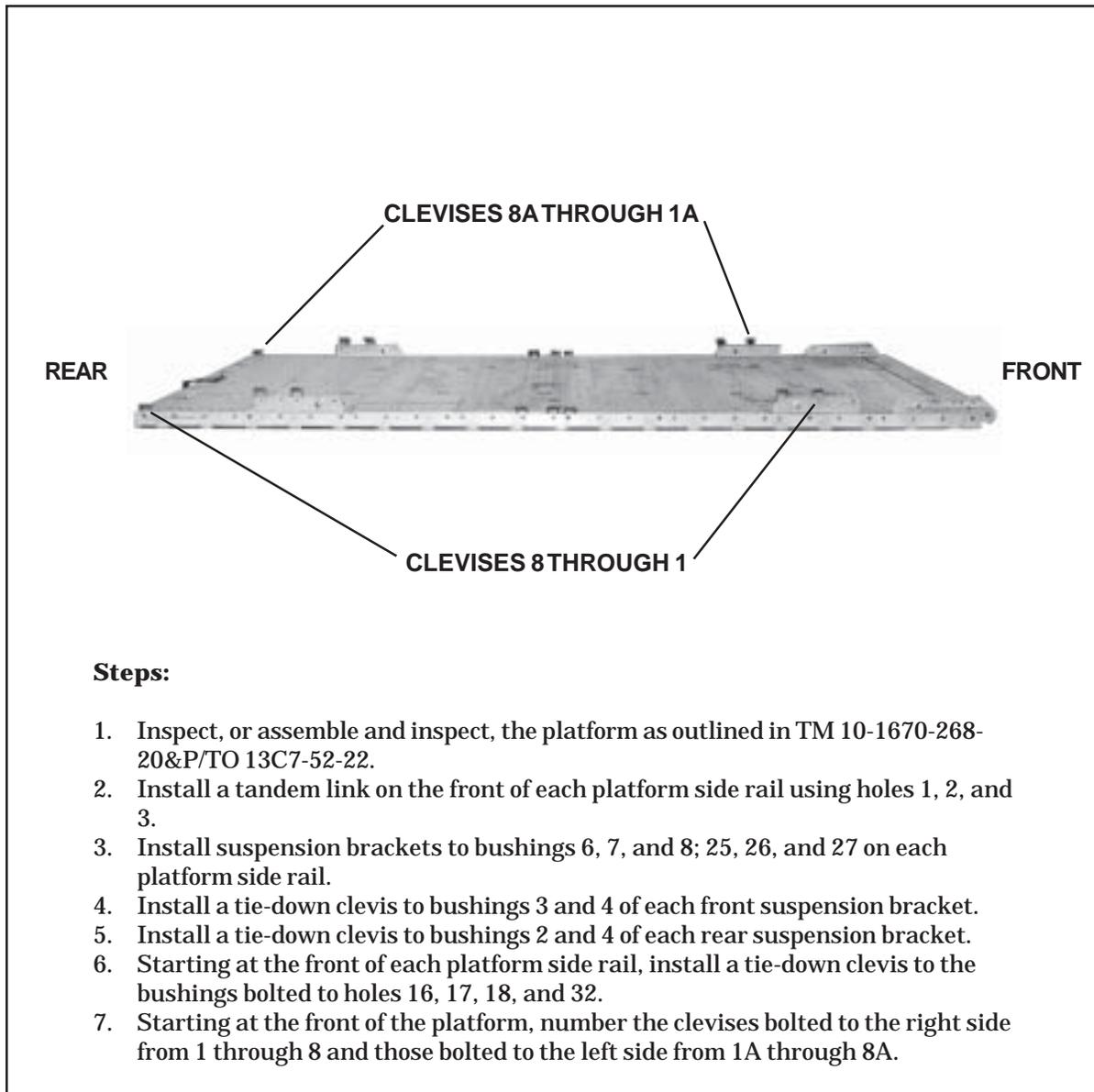


Figure 2-2. Platform Prepared

PREPARING HONEYCOMB

2-3. Build honeycomb stack as shown in Figures 2-3 through 2-6.

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1 & 4	1	51	16	Honeycomb	Form a base.
	2	16	16	Honeycomb	Glue one end on each side of the base.
	1	16	64	Honeycomb	Glue one end centered between the 16- by 16-inch pieces and flush with the front edge of the base.
	2	51	16	Honeycomb	Glue on base.
	2	51	16	Honeycomb	Notch the right and left front corner of each piece with an 8- by 8-inch cutout and glue to the base.
	2	23	16	Honeycomb	Notch one corner of each piece with an 8- by 8-inch cutout and glue one on the right and one on the left side of the base.
	2	4	7	3/4-in Plywood	Glue one piece on the right and left side of the base.
	2	14	4	3/4-in Plywood	Glue one piece on the right and left side of the base.

Figure 2-3. Honeycomb Stacks 1 and 4 Prepared

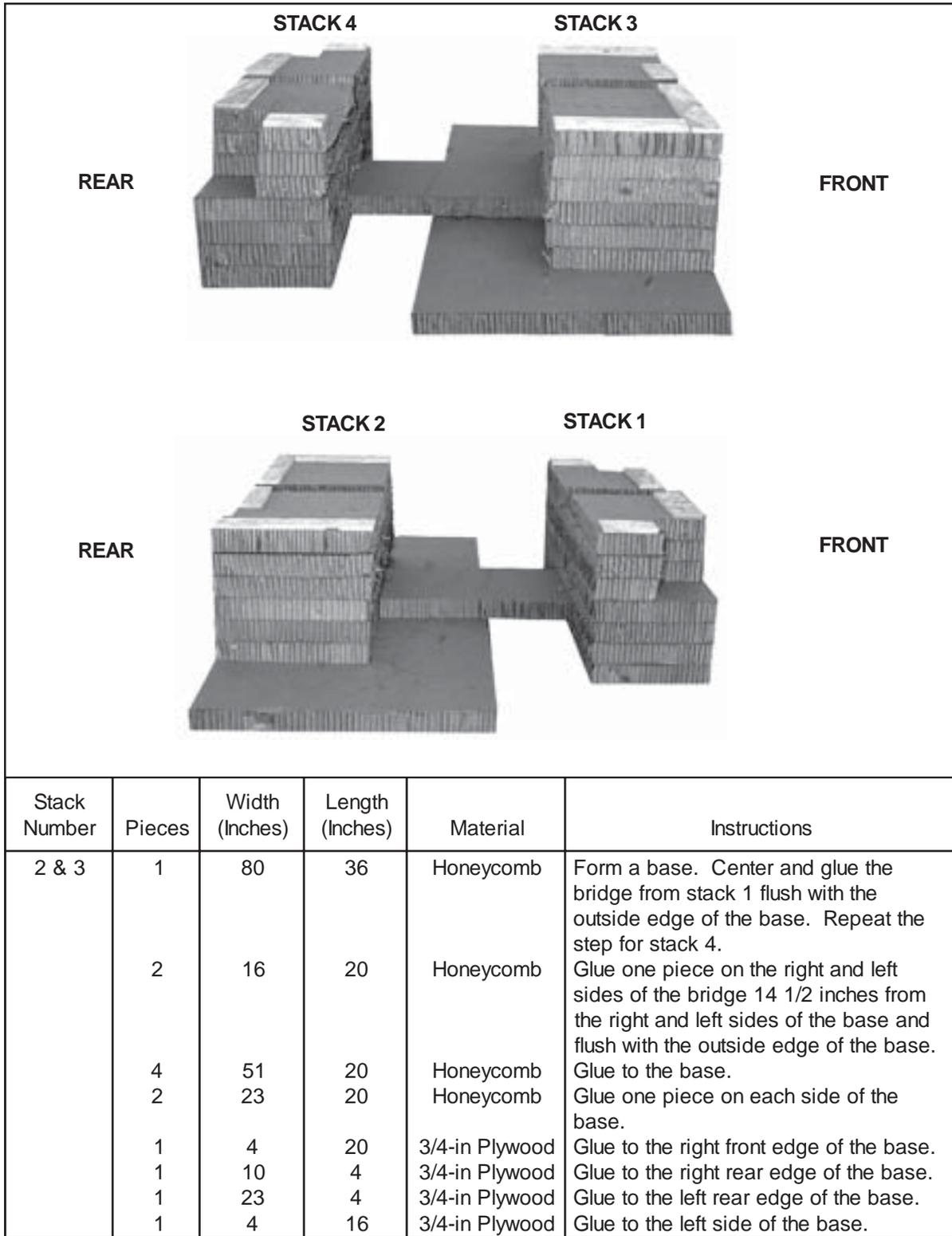


Figure 2-4. Honeycomb Stacks 2 and 3 Prepared

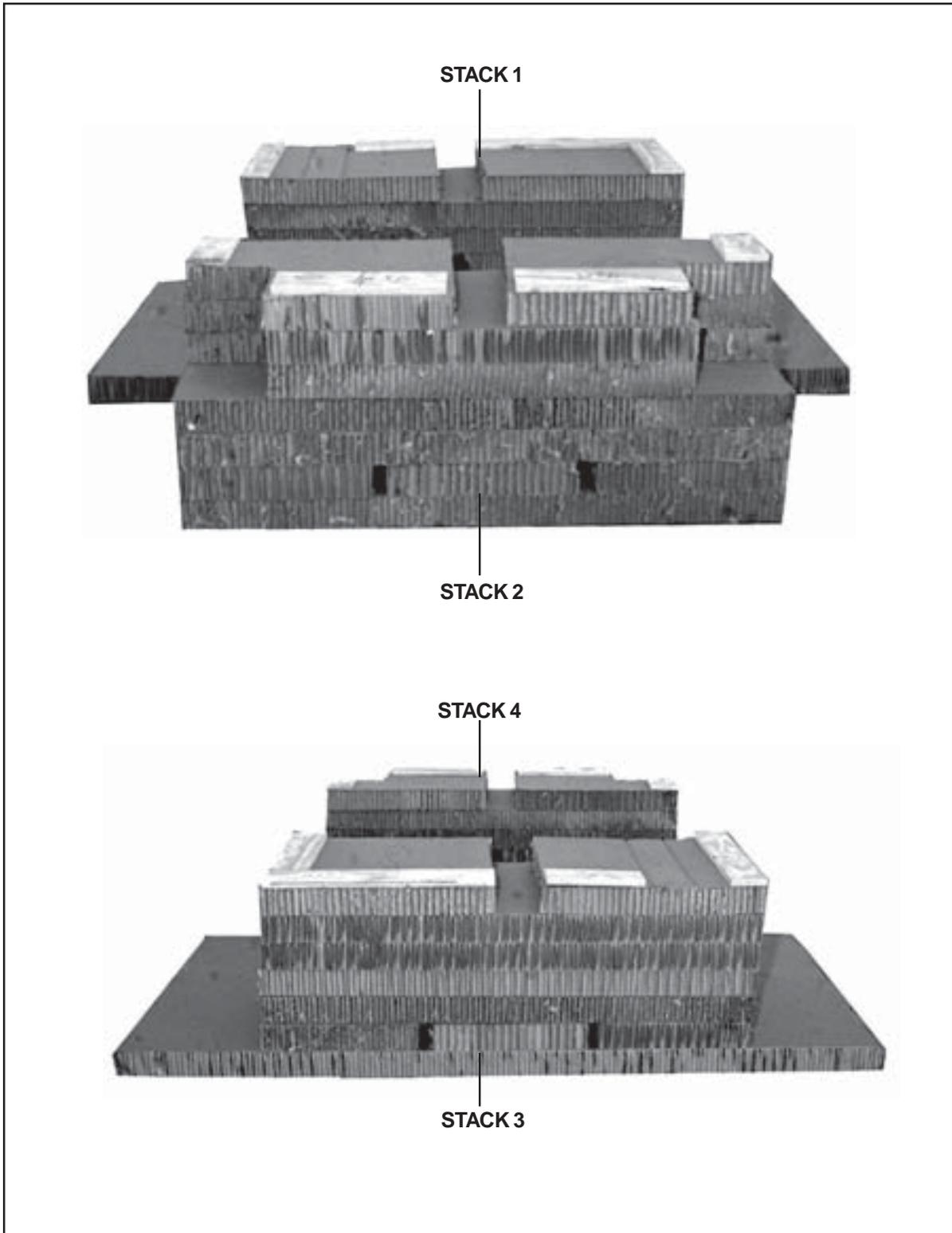
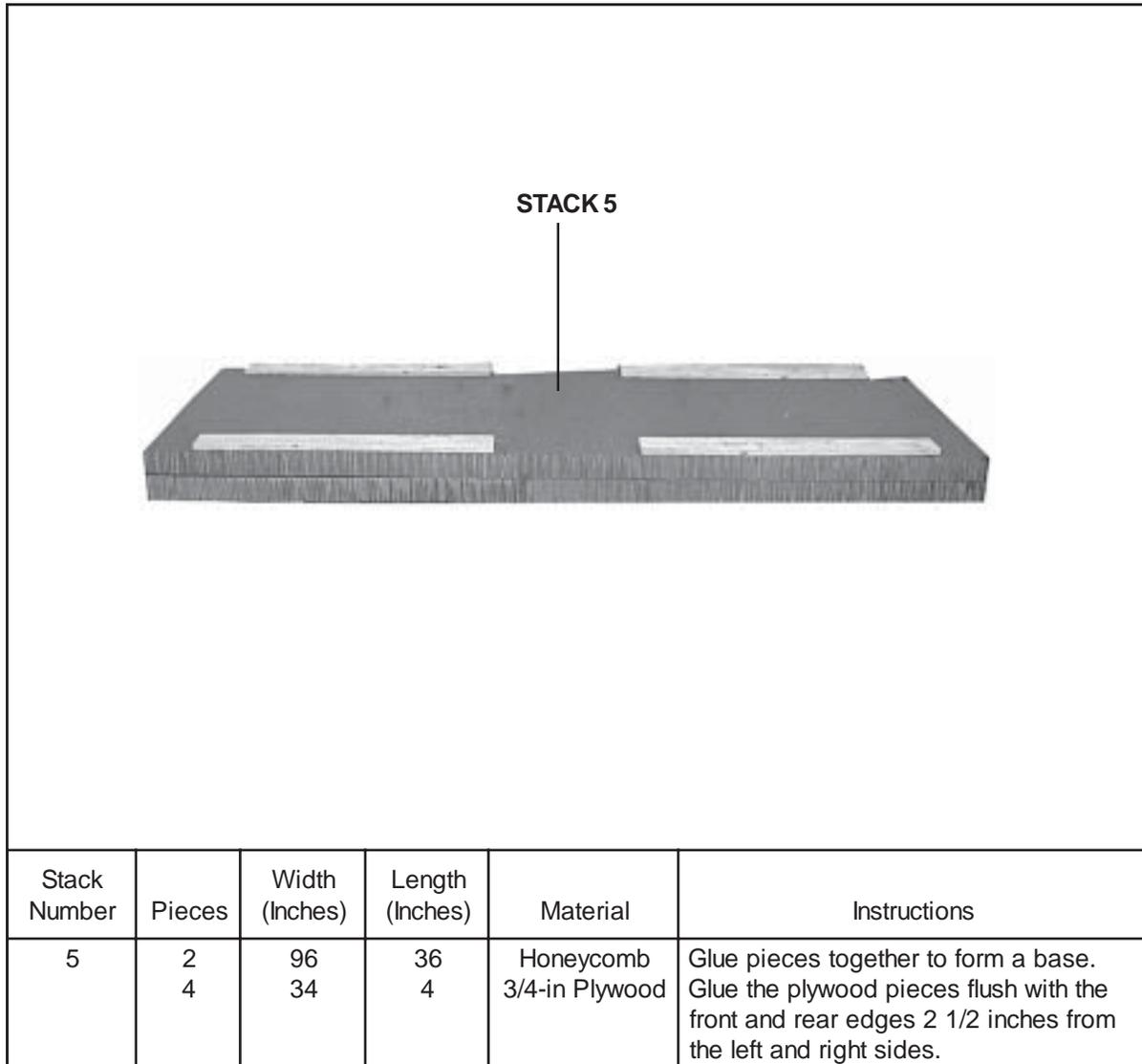


Figure 2-5. Honeycomb Stacks 1, 2, 3, and 4 Prepared



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
5	2 4	96 34	36 4	Honeycomb 3/4-in Plywood	Glue pieces together to form a base. Glue the plywood pieces flush with the front and rear edges 2 1/2 inches from the left and right sides.

Figure 2-6. Honeycomb Stack 5 Prepared

POSITIONING HONEYCOMB STACKS

2-4. Position honeycomb stacks as shown in Figure 2-7.

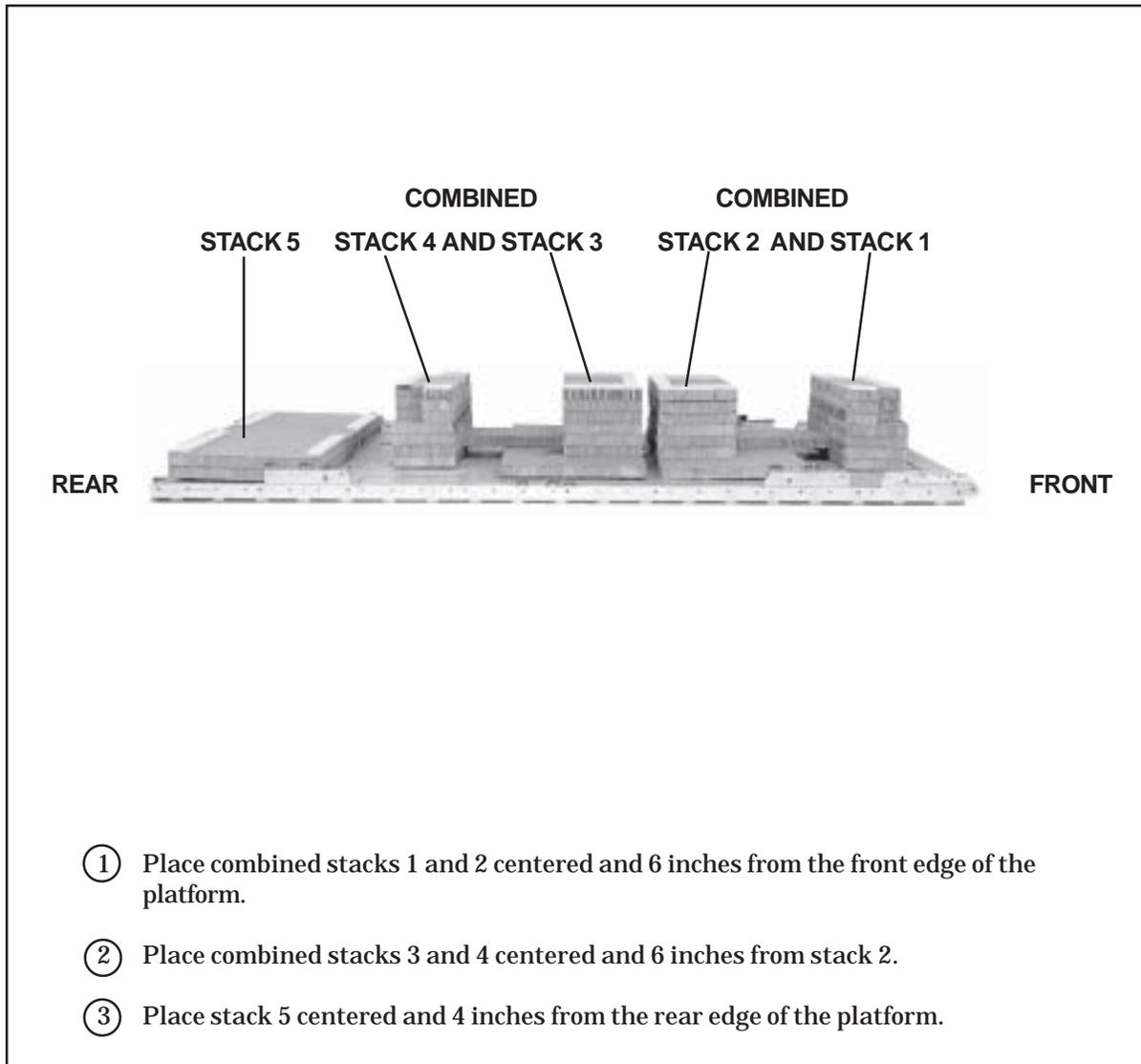
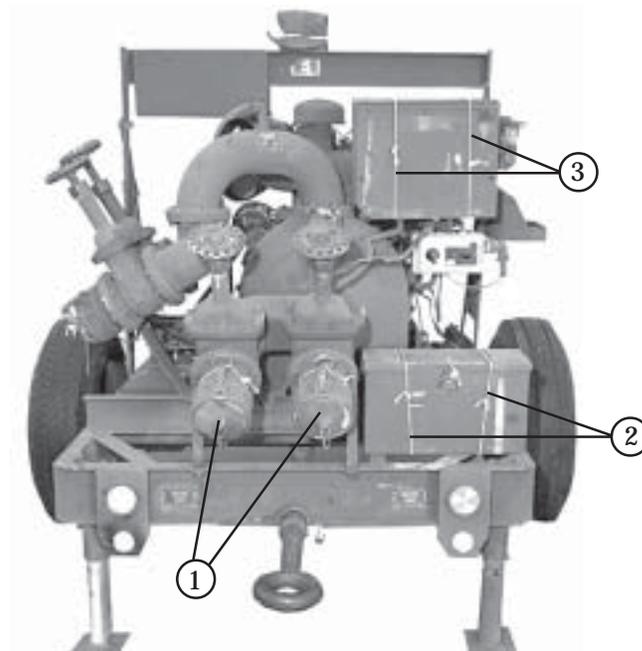


Figure 2-7. Honeycomb Stacks Positioned

PREPARING THE PUMP ASSEMBLY AND FILTER/SEPARATOR

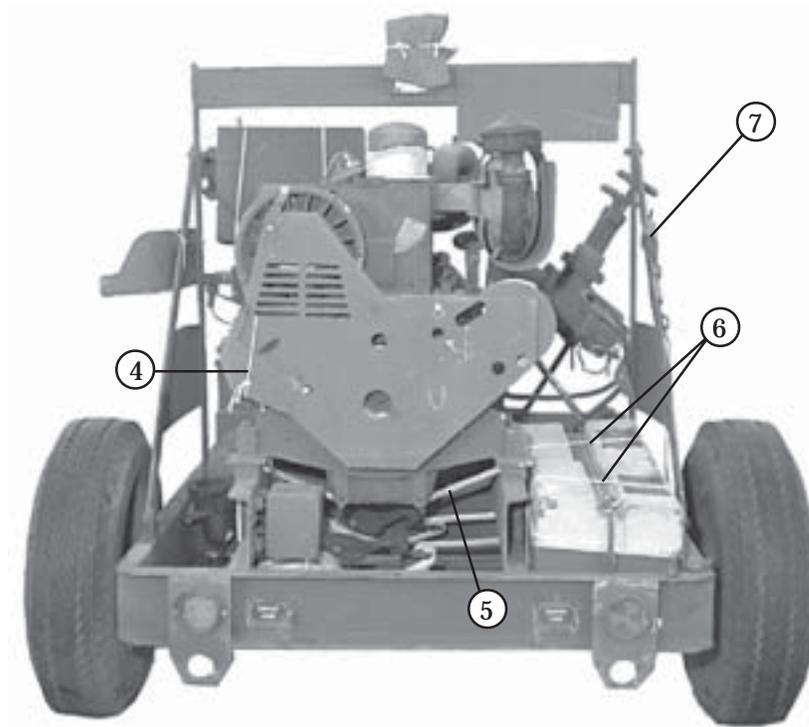
2-5. Prepare the pump assembly and filter/separator as shown in Figure 2-8.

Note: The fuel pump must be drained of all fuel and the filter/separator purged and ventilated.



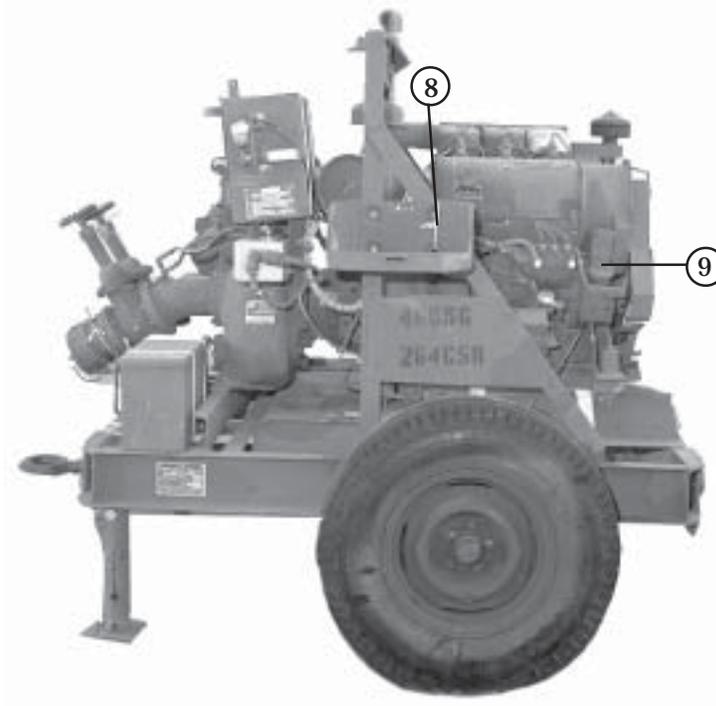
- ① Secure all fuel caps with type III nylon cord.
- ② Secure lid to storage box with type III nylon cord.
- ③ Secure cover to control panel with type III nylon cord.

Figure 2-8. Pump Assembly and Filter/Separator Prepared



- ④ Secure the starter/speed control box to the attaching bracket with type III nylon cord.
- ⑤ Support the engine by running two 15-foot lashings around the frame supports and under the oil pan. Space the lashings to the front and rear of the oil pan.
- ⑥ Remove the battery box lids and secure each battery to its own box with type III nylon cord. Replace the lids and secure in place with 1/2-inch tubular nylon webbing, going around both boxes and bottom supports.
- ⑦ Secure the ground rod in its holder with type III nylon cord.

Figure 2-8. Pump Assembly and Filter/Separator Prepared (continued)



⑧ Secure fuel can bracket to frame with type III nylon cord.

⑨ Tape oil cap in place with cloth-backed adhesive tape.

Figure 2-8. Pump Assembly and Filter/Separator Prepared (continued)

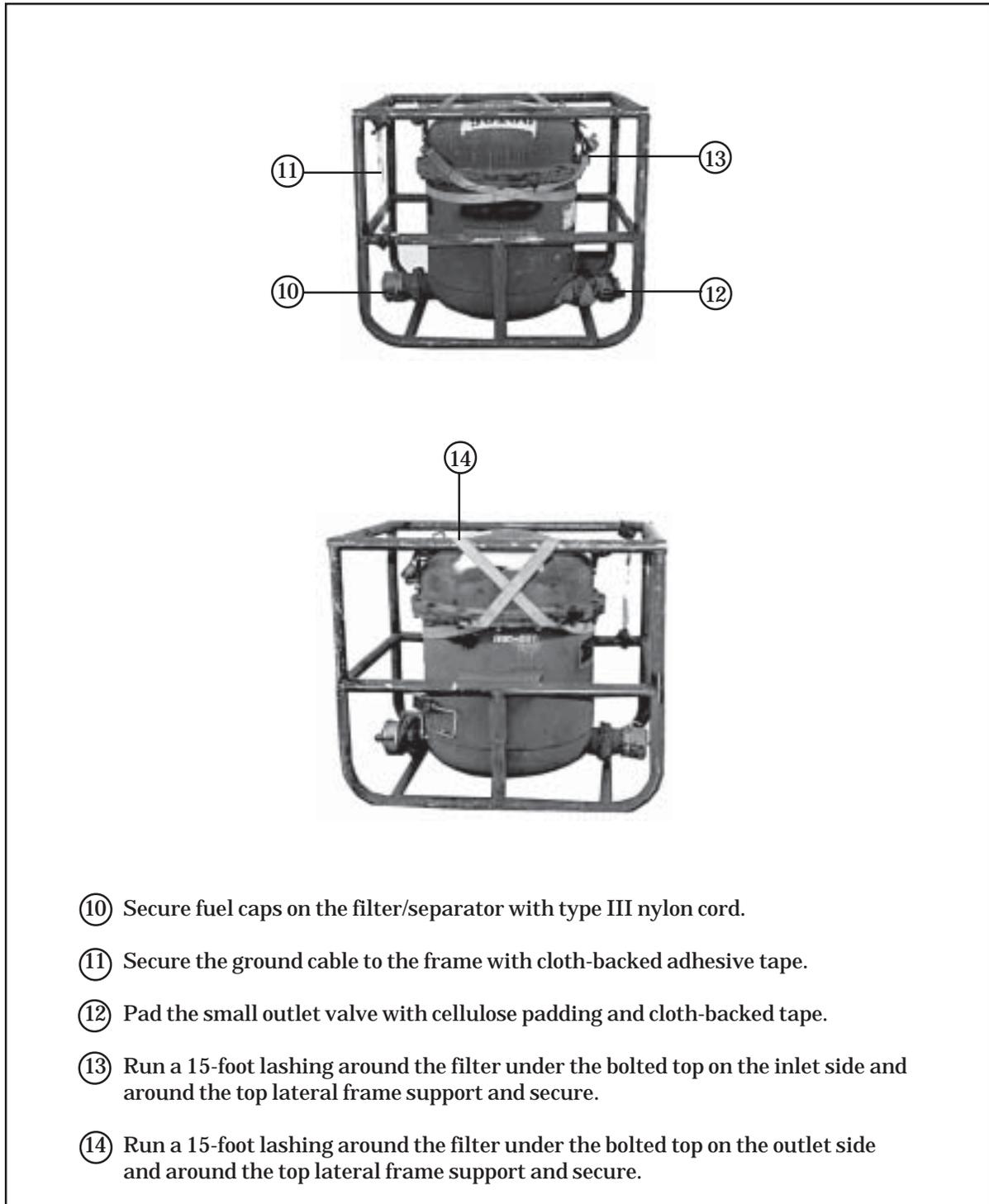


Figure 2-8. Pump Assembly and Filter/Separator Prepared (continued)

POSITIONING THE PUMP ASSEMBLY AND FILTER/SEPARATOR

2-6. Position the pump assembly and filter/separator as shown in Figure 2-9.

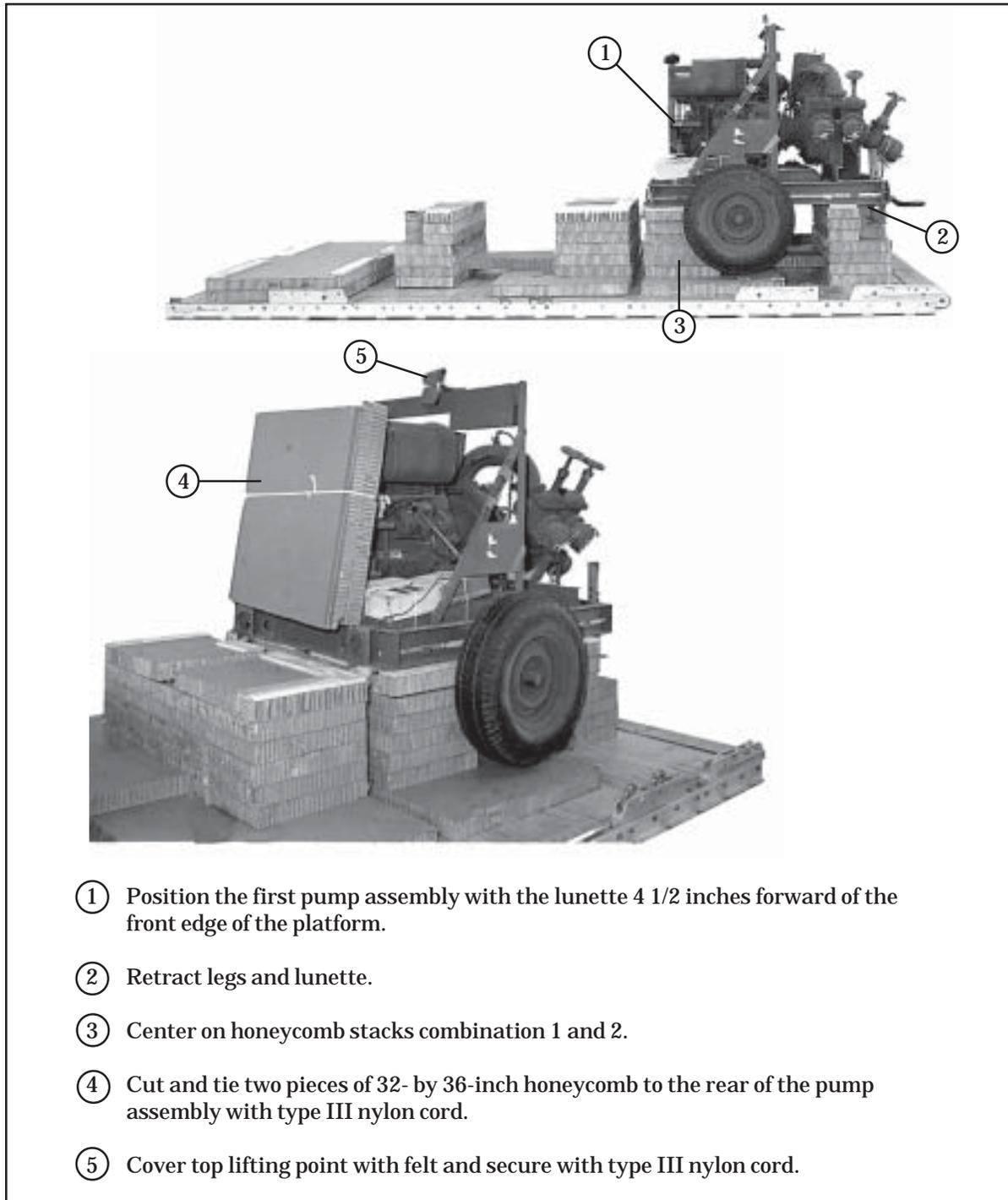


Figure 2-9. Pump Assembly and Filter/Separator Positioned

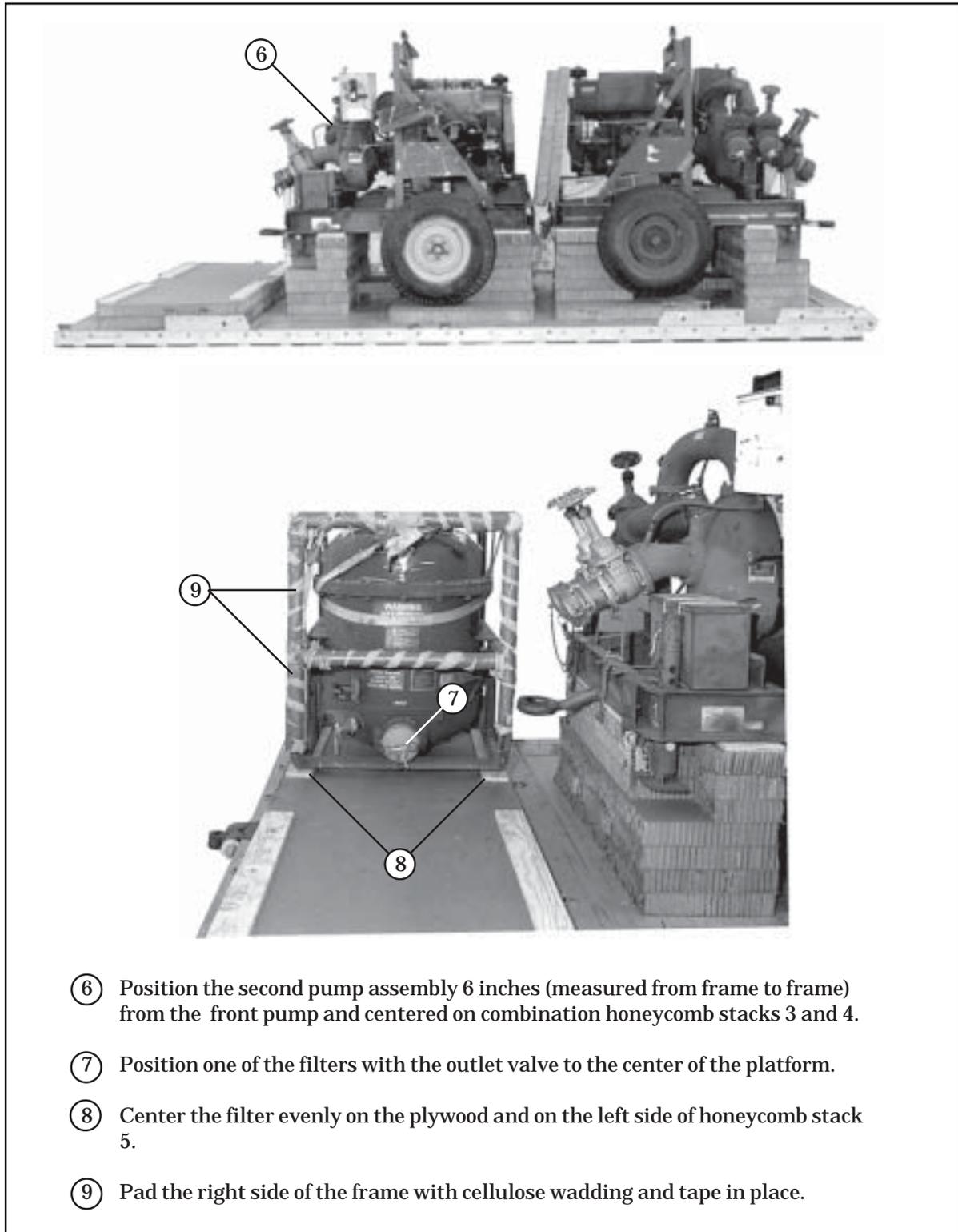
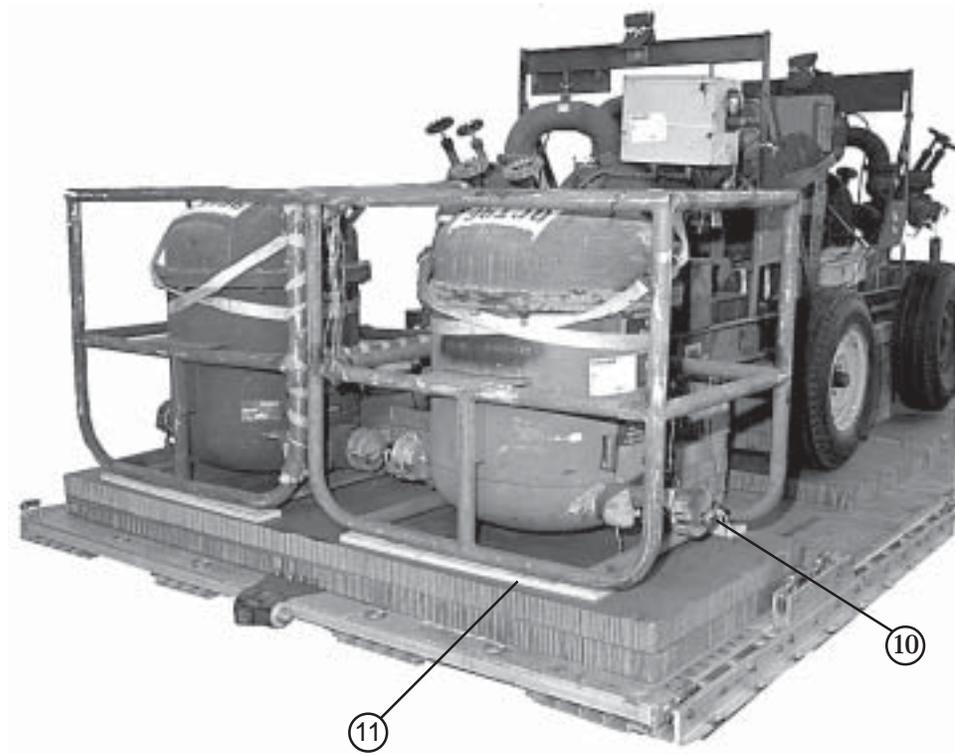


Figure 2-9. Pump Assembly and Filter/Separator Positioned (continued)

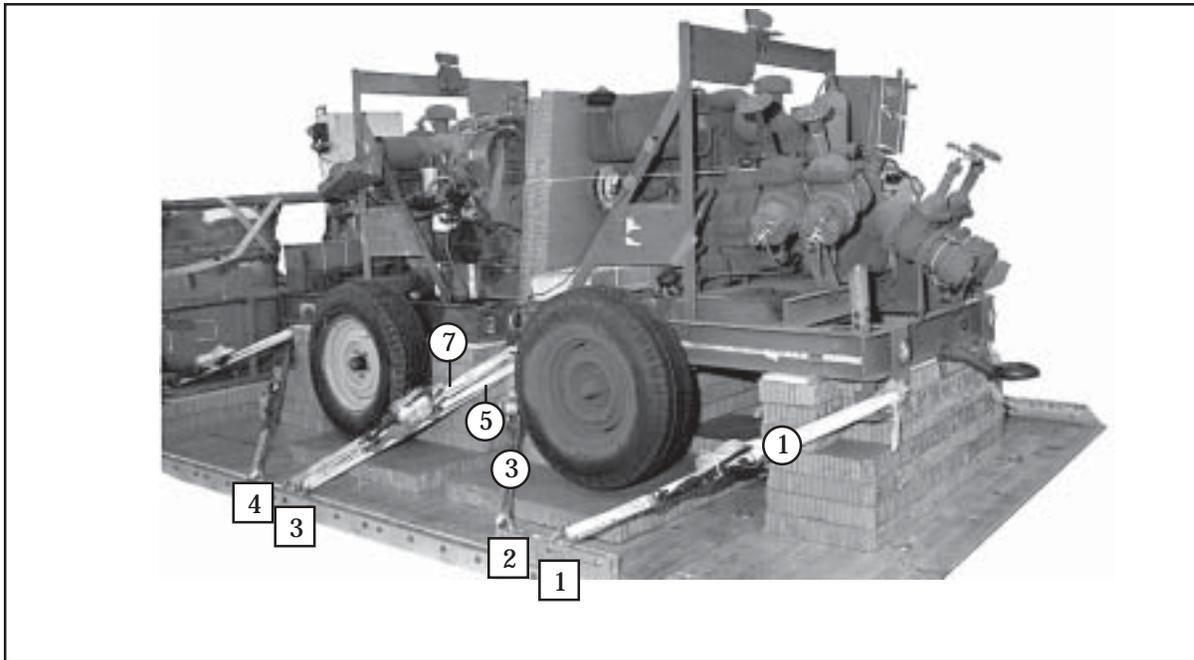


- ⑩ Position the second filter with the outlet valve facing to the right side of the platform.
- ⑪ Center the filter evenly on the plywood and on the right side of honeycomb stack 5.

Figure 2-9. Pump Assembly and Filter/Separator Positioned (continued)

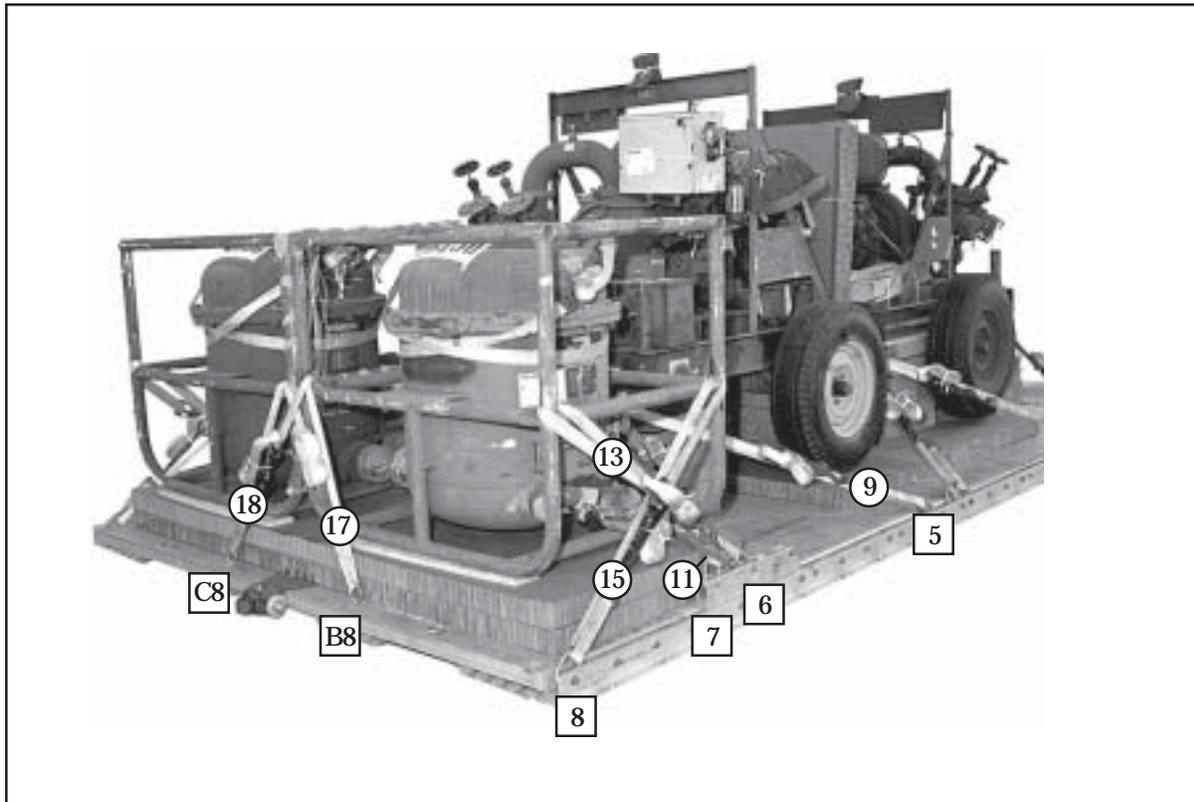
LASHING THE PUMP ASSEMBLY AND FILTER/SEPARATOR TO THE PLATFORM

2-7. Lash the pump assembly and filter/separator to the platform using eighteen 15-foot tie-down assemblies as shown in Figures 2-10 and 2-11.



Lashing Number	Tie-down Clevis Number	Instructions
1	1	Pass lashing: Through right front tie-down point on front pump assembly.
2	1A	Through left front tie-down point on front pump assembly.
3	2	Through right rear tie-down point on front pump assembly.
4	2A	Through left rear tie-down point on front pump assembly.
5	3	Through right rear tie-down point on front pump assembly.
6	3A	Through left rear tie-down point on front pump assembly.
7	4	Through left rear tie-down point on rear pump assembly.
8	4A	Through right rear tie-down point on rear pump assembly.

Figure 2-10. Lashings 1 Through 8 Installed



Lashing Number	Tie-down Clevis Number	Instructions
9	5	Pass lashing: Through left front tie-down point on rear pump assembly.
10	5A	Through right front tie-down point on rear pump assembly.
11	7	Through left front tie-down point on rear pump assembly.
12	7A	Through right front tie-down point on rear pump assembly.
13	6	Through and around right rear vertical frame.
14	6A	Through and around left rear vertical frame.
15	8	Through and around right front vertical frame.
16	8A	Through and around left front vertical frame.
17	B8	Through and around both rear center vertical frame.
18	C8	Through and around both rear center vertical frame.

Figure 2-11. Lashings 9 Through 18 Installed

CONSTRUCTING THE PARACHUTE STOWAGE TRAY AND LOAD COVER

2-8. Construct the parachute stowage tray and load cover as shown in Figure 2-12.

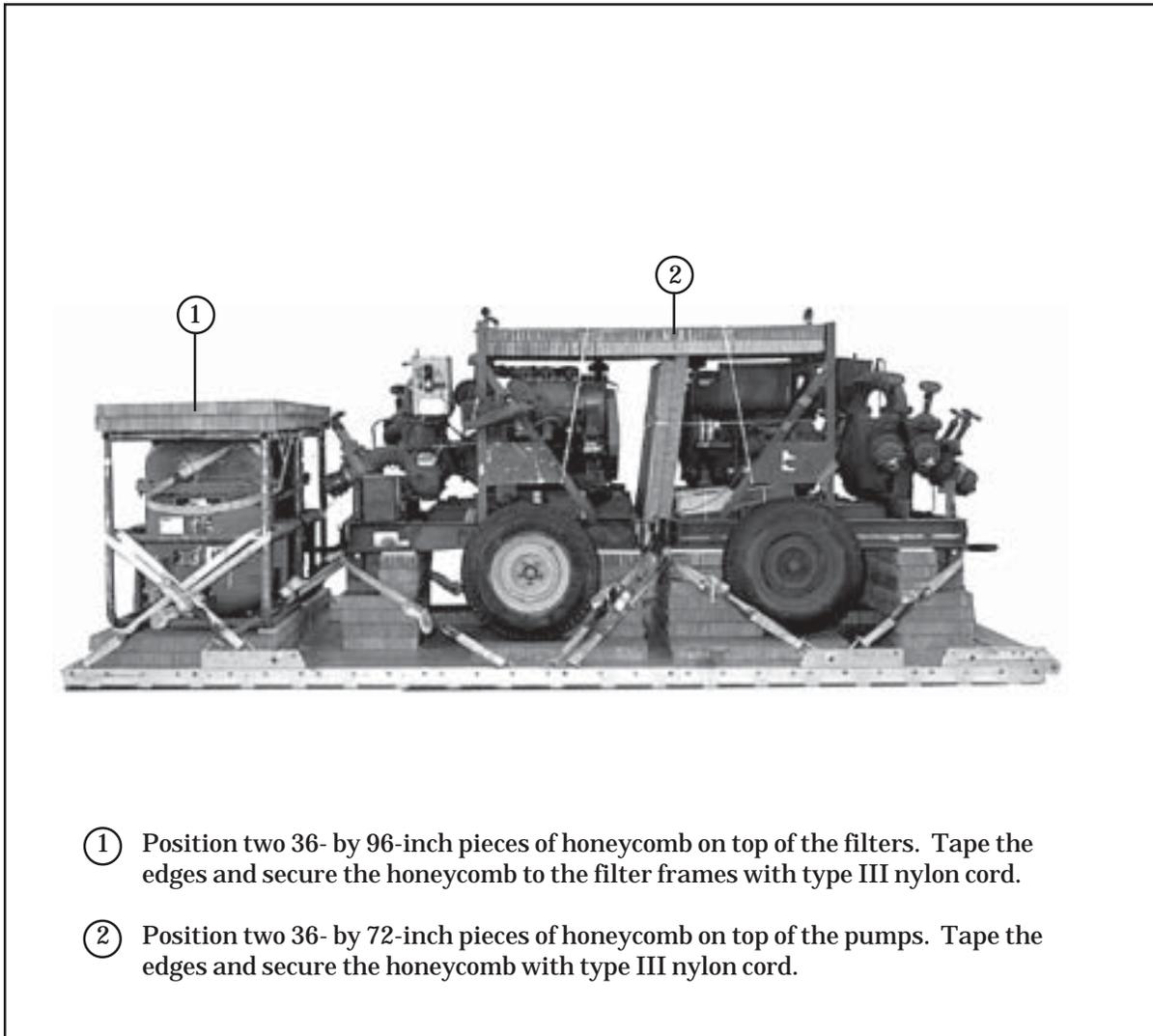
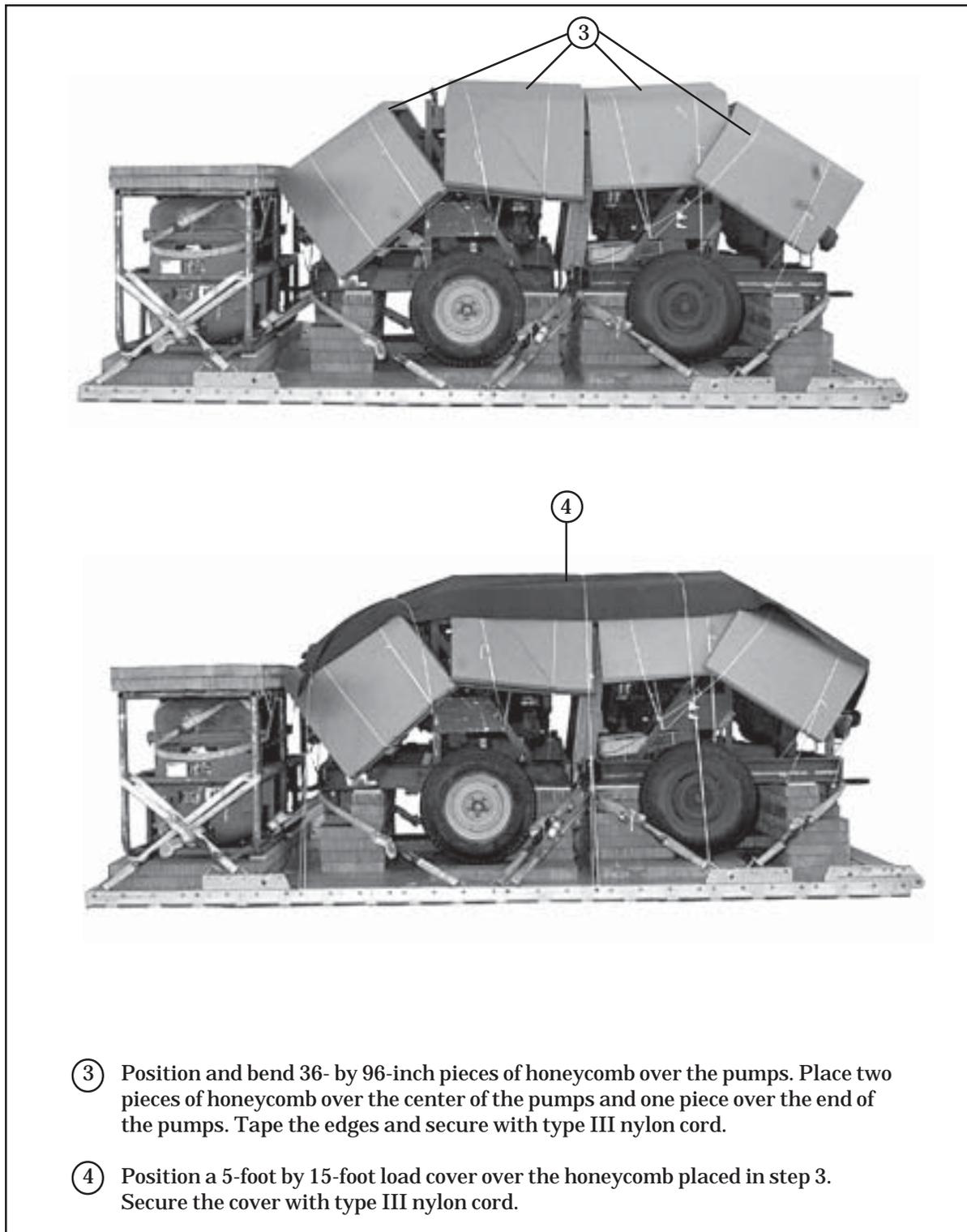


Figure 2-12. Parachute Stowage Tray and Load Cover Constructed



- ③ Position and bend 36- by 96-inch pieces of honeycomb over the pumps. Place two pieces of honeycomb over the center of the pumps and one piece over the end of the pumps. Tape the edges and secure with type III nylon cord.
- ④ Position a 5-foot by 15-foot load cover over the honeycomb placed in step 3. Secure the cover with type III nylon cord.

Figure 2-12. Parachute Stowage Tray and Load Cover Constructed (continued)

INSTALLING THE SUSPENSION SLINGS AND DEADMAN'S TIE

2-9. Install the suspension slings and deadman's tie as shown in Figure 2-13.

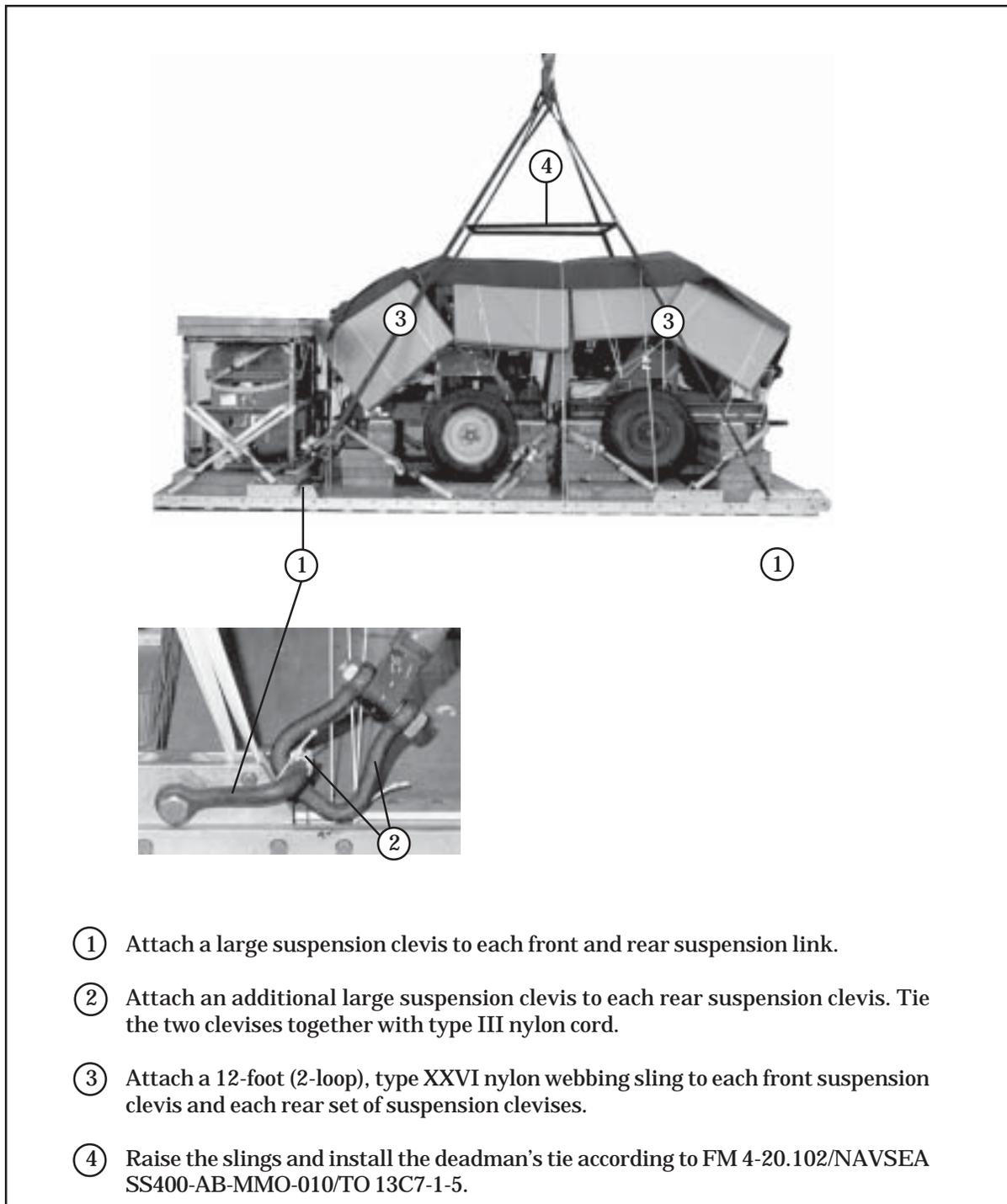


Figure 2-13. Suspension Slings and Deadman's Tie Installed

PREPARING, STOWING, AND RESTRAINING CARGO PARACHUTES

2-10. Prepare, stow, and restrain two G-11 cargo parachutes on the parachute stowage tray according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-14.

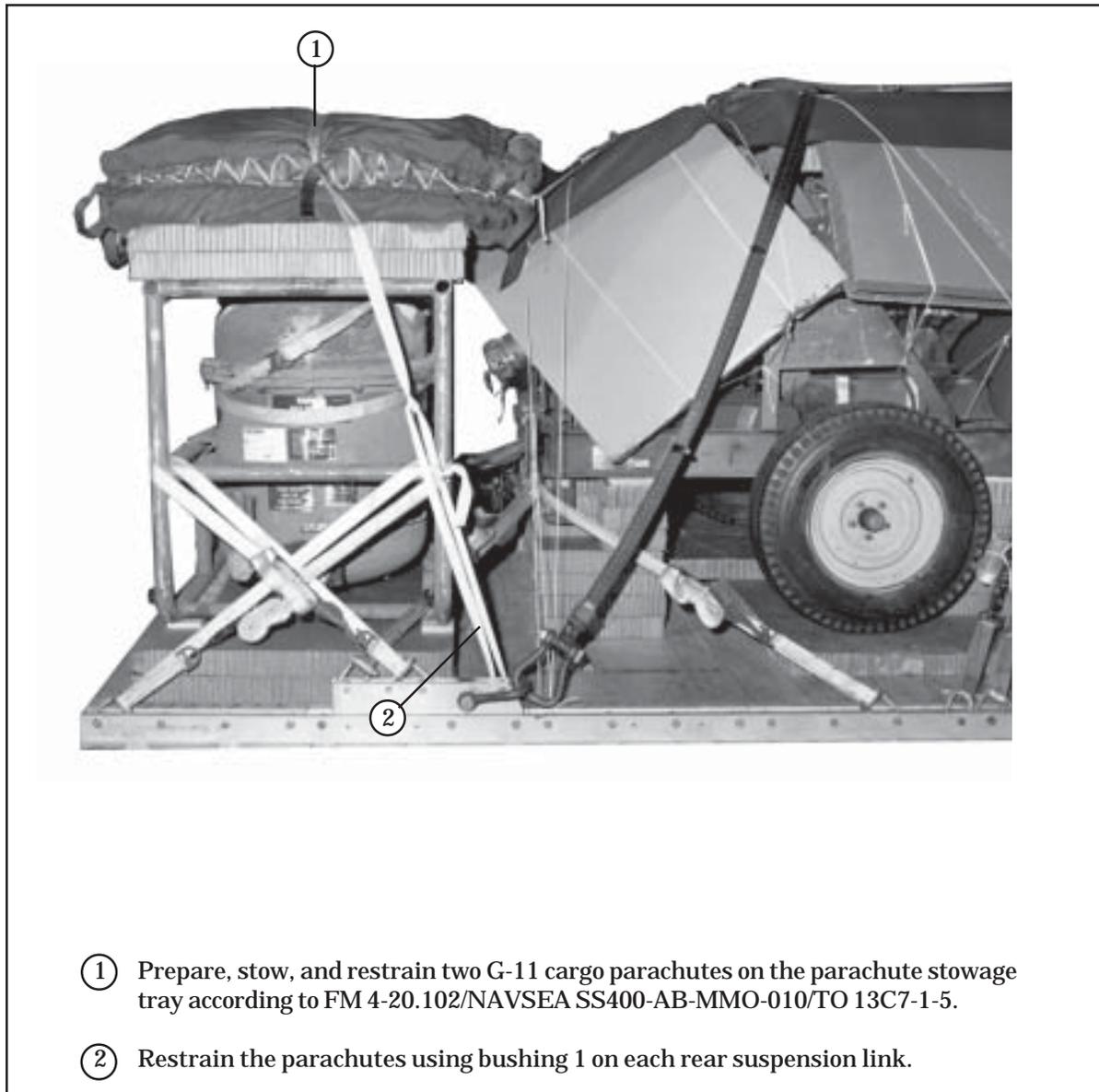
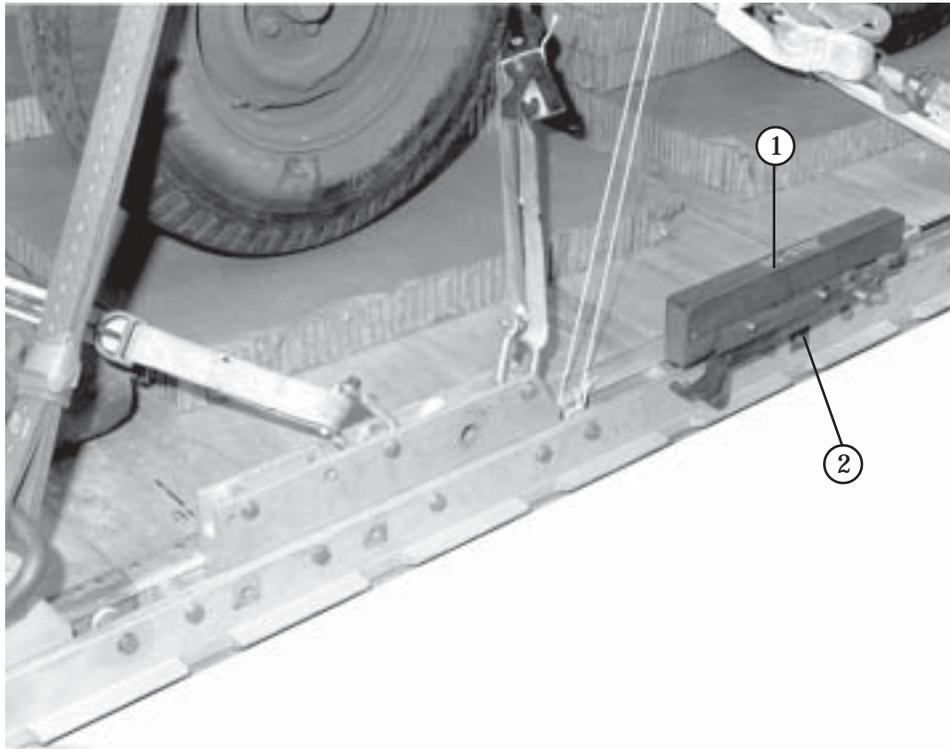


Figure 2-14. Cargo Parachutes Stowed

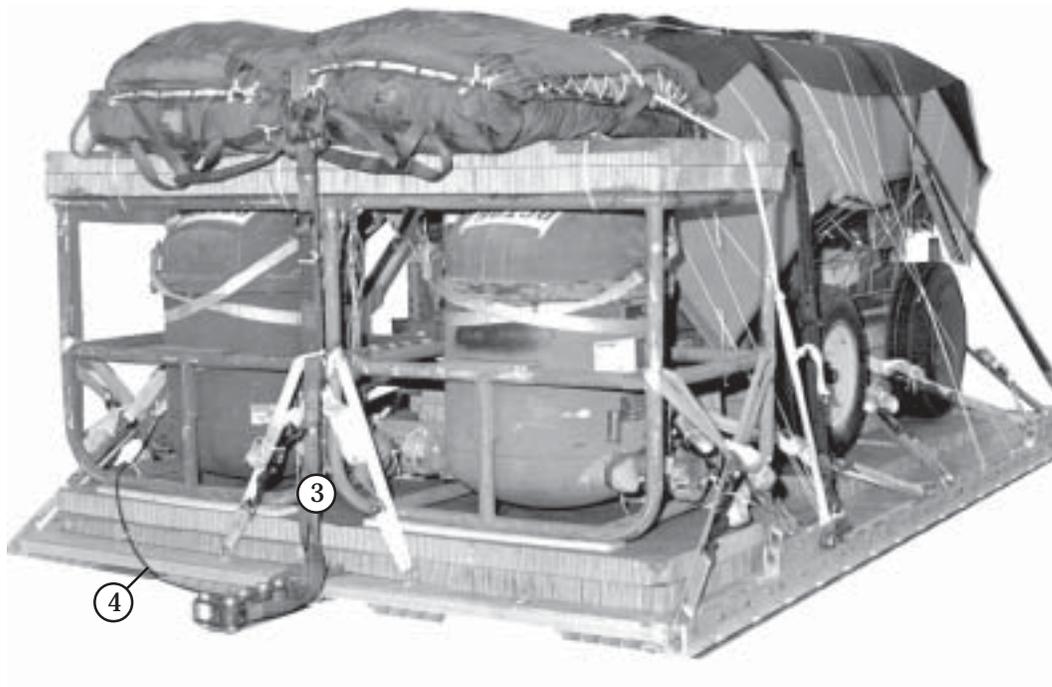
INSTALLING THE EXTRACTION SYSTEM

2-11. Install the components of the extraction force transfer coupling according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-15.



- ① Install the components of the EFTC according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.
- ② Install the EFTC actuator mounting brackets in the rear holes on the left platform side rail according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

Figure 2-15. Extraction System Installed



- ③ Attach a 9-foot (2-loop), type XXVI nylon webbing sling to be used as a deployment line.
- ④ Use a 16-foot EFTC cable and safety the cable to tie-down ring D-8 using one turn of type I, 1/4-inch cotton webbing.

Figure 2-15. Extraction System Installed (continued)

INSTALL PARACHUTE RELEASE SYSTEM

2-12. Install the M-1 parachute release system according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-16.

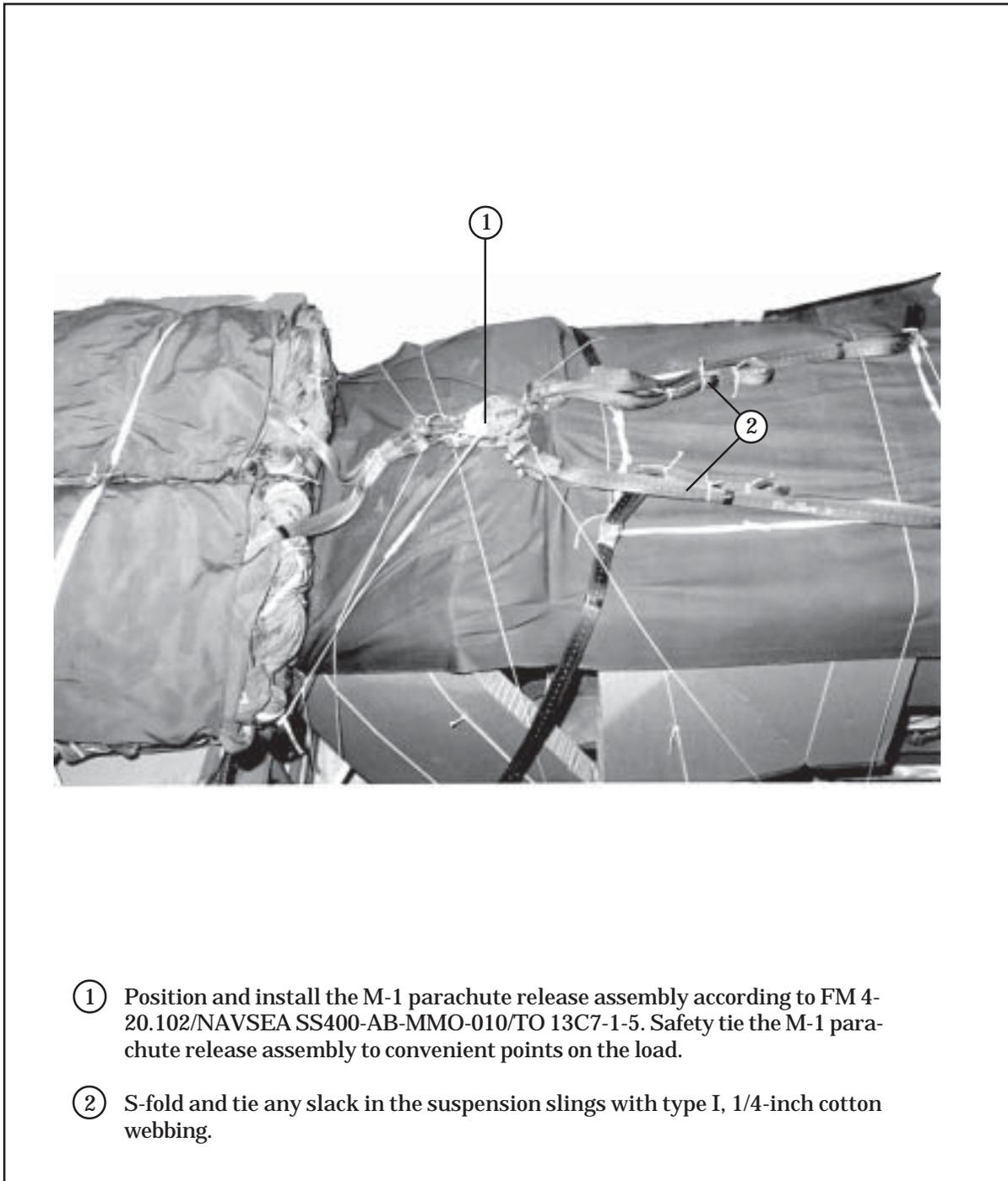


Figure 2-16. M-1 Cargo Parachute Release System Installed

PLACING EXTRACTION PARACHUTE

2-13. Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5. Rig the extraction line in an extraction line bag according to TM 10-1670-286-20/TO 13C5-2-41. Place the extraction parachute and extraction line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

2-14. Select and install the provisions for emergency aft restraints according to the emergency aft restraint requirements table in FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5.

MARKING RIGGED LOAD

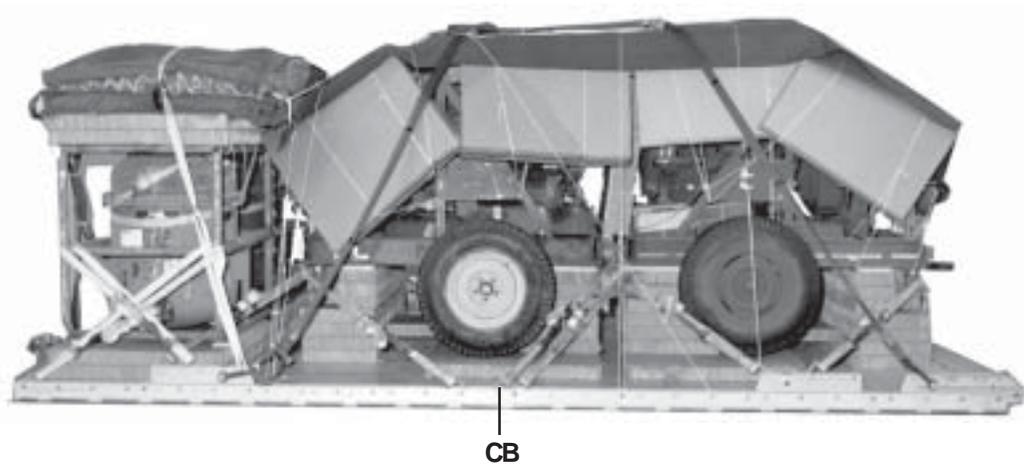
2-15. Mark the rigged load according to FM 4-20.102/NAVSEA SS400-AB-MMO-010/TO 13C7-1-5 and as shown in Figure 2-17. Complete Shipper's Declaration for Dangerous Goods and affix to the load. If the load varies from the one shown, the weight, height, CB, tipoff curve, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

2-16. Use the equipment list in Table 2-1 to rig the load shown in Figure 2-17.

CAUTION:

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



RIGGED LOAD DATA

Weight	7,880 pounds
Maximum Weight	10,000 pounds
Height	77 inches
Width	108 inches
Overall Length	214.5 inches
Overhang: Front (lunette on front pump)	4.5 inches
Rear (EFTC)	18 inches
Center of Balance (CB) (from front edge of platform)	100 inches
Extraction System	EFTC

Figure 2-17. 350-GPM Wheel-Mounted POL Pumping Assembly with Filter/Separator Rigged for Low-Velocity Airdrop

Table 2-1. Equipment Required for 350-GPM Wheel-Mounted POL Pumping Assembly with Filter/Separator

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line bag (for DES)	1
4030-00-090-5354	Clevis, large	7
4030-00-678-8562	Clevis, medium	6
8305-00-880-8155	Cloth, coated, 60-inch	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer with 16-ft cable	1
1670-00-360-0328	Cover, clevis, large	2
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy duty, 10,000-lb	68
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-00-003-4391	Knife, parachute bag (for DES)	1
1670-01-183-2678	Leaf, extraction line (line bag)(add 2 for DES)	2
1670-01-062-6313	Line, drogue (for DES): 60-foot (1-loop), type XXVI	1
1670-01-064-4452	Line extraction: For C-130: 60-ft (1-loop), type XXVI	1
1670-01-107-7651	For C-141, C-5, and C-17: 140-ft, (3-loop), type XXVI	1
1670-01-483-8259	Link, tow release mechanism (H-Block) C-17	1
5306-00-435-8994	Link assembly: Two point: (double the quantity for DES) Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in, hexagonal	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-753-3928	Pad, energy dissipating, honeycomb, 3-by 36- by 96-in	20

Table 2-1. Equipment Required for 350-GPM Wheel-Mounted POL Pumping Assembly with Filter/ Separator (continued)

National Stock Number	Item	Quantity
	Parachute:	
1670-01-016-7841	Cargo, G-11B	2
1670-01-063-3715	Drogue, 15-ft (for DES)	1
1670-01-063-3716	Extraction, 22-ft	1
	Platform, airdrop, type V, 16-ft:	
1670-01-353-8425	Bracket assembly, coupling	1
1670-01-162-2372	Clevis assembly, type V	16
1670-01-353-8424	Extraction bracket assembly	1
1670-01-247-2389	Bracket, suspension	4
1670-01-162-2389	Tandem link	2
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	1
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For suspension and lifting:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
1670-00-040-8219	Strap, parachute release	1
7510-00-266-5016	Tape, cloth back, adhesive	As required
7510-00-266-6710	Tape, masking, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	38
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
8305-00-082-5752	Nylon, yubular, 1/2-in	As required
8305-00-263-3591	Type VIII	As required