

CHAPTER 6

RIGGING FARE FOR LOW-VELOCITY AIRDROP ON A TYPE V PLATFORM

Section I

RIGGING FARE WITH TWO 500-GALLON FUEL DRUMS

6-1. Description of Load

The FARE with two 500-gallon fuel drums is rigged on a 12-foot, type V airdrop platform with three G-11A or two G-11B cargo parachutes. When empty, each drum weighs 250 pounds. Each drum is filled with 432 gallons of fuel. When filled, each drum is 62 inches long and 53 inches in diameter.

Note: For drums filled with a liquid other than gasoline, use Table 6-1 to recompute the weight.

6-2. Preparing Platform

Prepare a 12-foot, type V airdrop platform using four tandem links and 40 tie-down clevises as shown in Figure 6-1.

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.*

Table 6-1. Weight of drum when filled with fuel

Fuel	Weight Per Gallon	Total Weight of Drum with 432 Gallons of Fuel
Gasoline	6 pounds	2,842 pounds
JP-4	6.6 pounds	3,101 pounds
Diesel	6.68 pounds	3,136 pounds

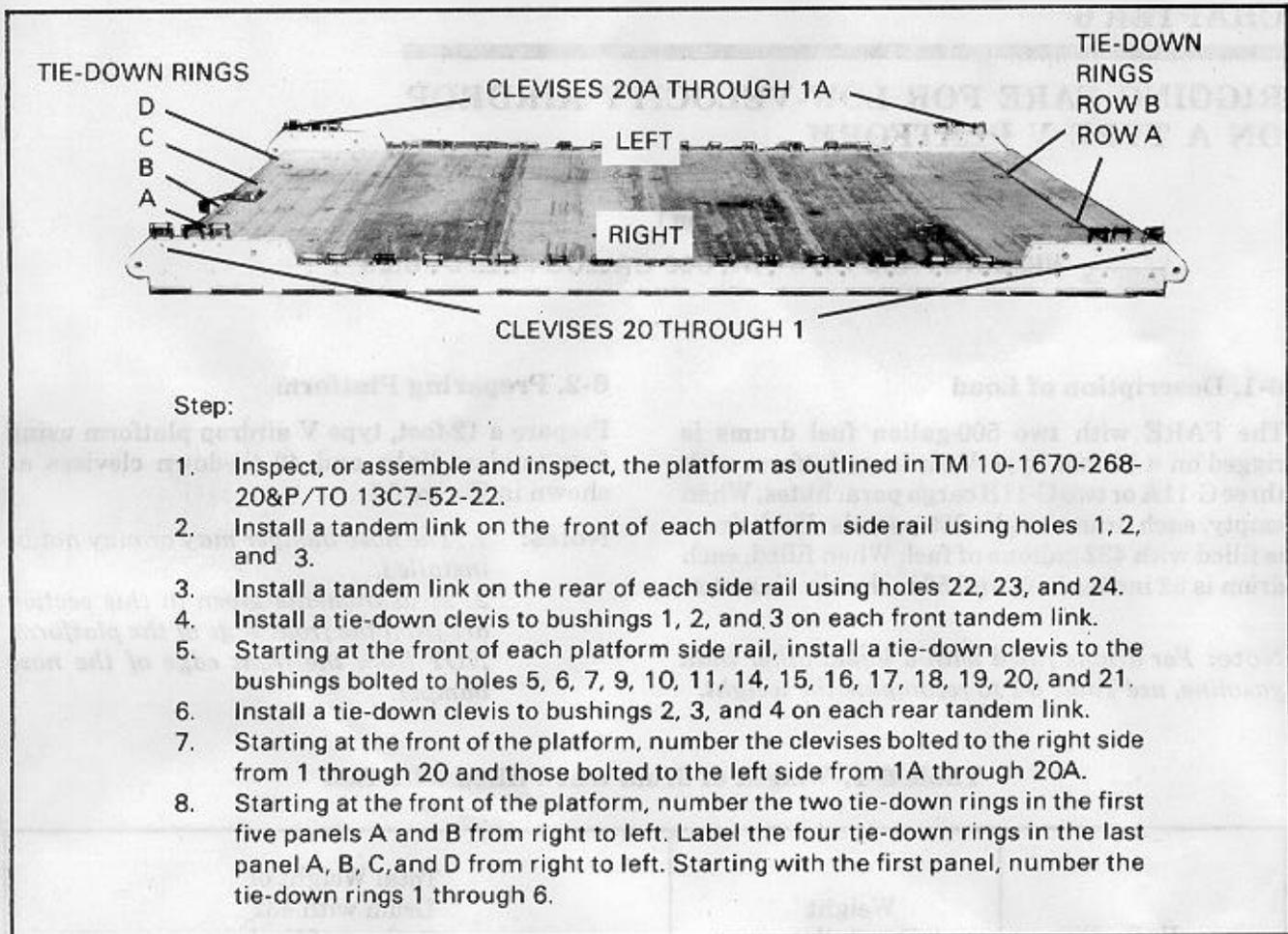
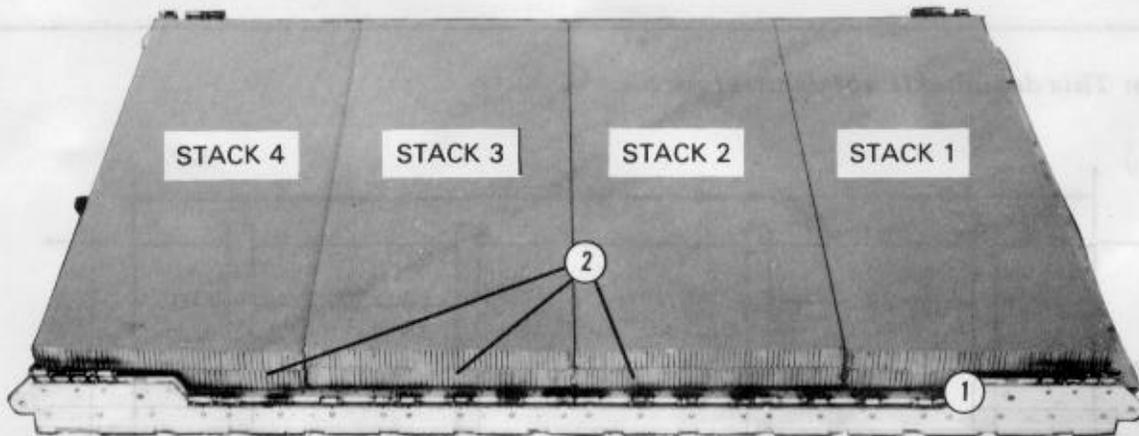


Figure 6-1. Platform prepared

6-3. Placing Honeycomb

Place eight 96- by 36-inch pieces of honeycomb on the platform as shown in Figure 6-2.

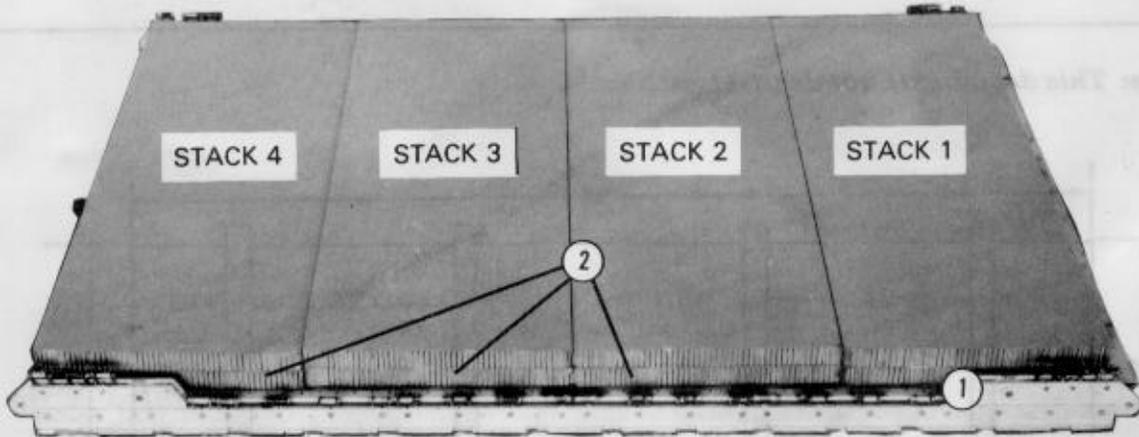


- ① Place two 96- by 36-inch pieces of honeycomb flush with the front edge of the platform.
- ② Place three more sets of 96- by 36-inch pieces of honeycomb against those placed in step 1 above.

Figure 6-2. Honeycomb placed on platform

6-3. Placing Honeycomb

Place eight 96- by 36-inch pieces of honeycomb on the platform as shown in Figure 6-2.



- ① Place two 96- by 36-inch pieces of honeycomb flush with the front edge of the platform.
- ② Place three more sets of 96- by 36-inch pieces of honeycomb against those placed in step 1 above.

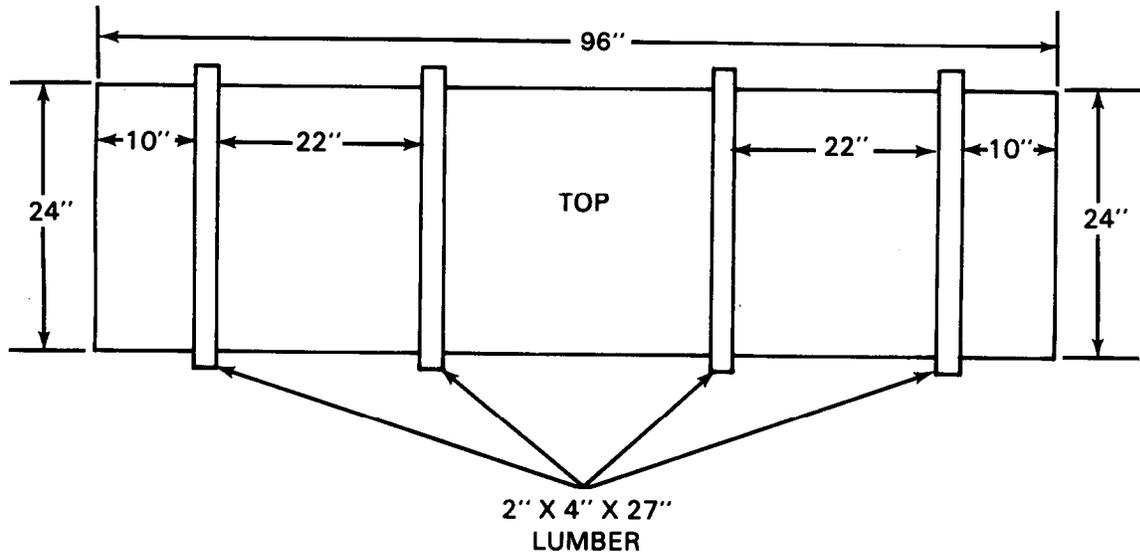
Figure 6-2. Honeycomb placed on platform

6-4. Building Container for FARE

Build the container to stow the FARE as described below.

a. Building Top. Build the top for the container as shown in Figure 6-3.

Note: *This drawing is not drawn to scale.*



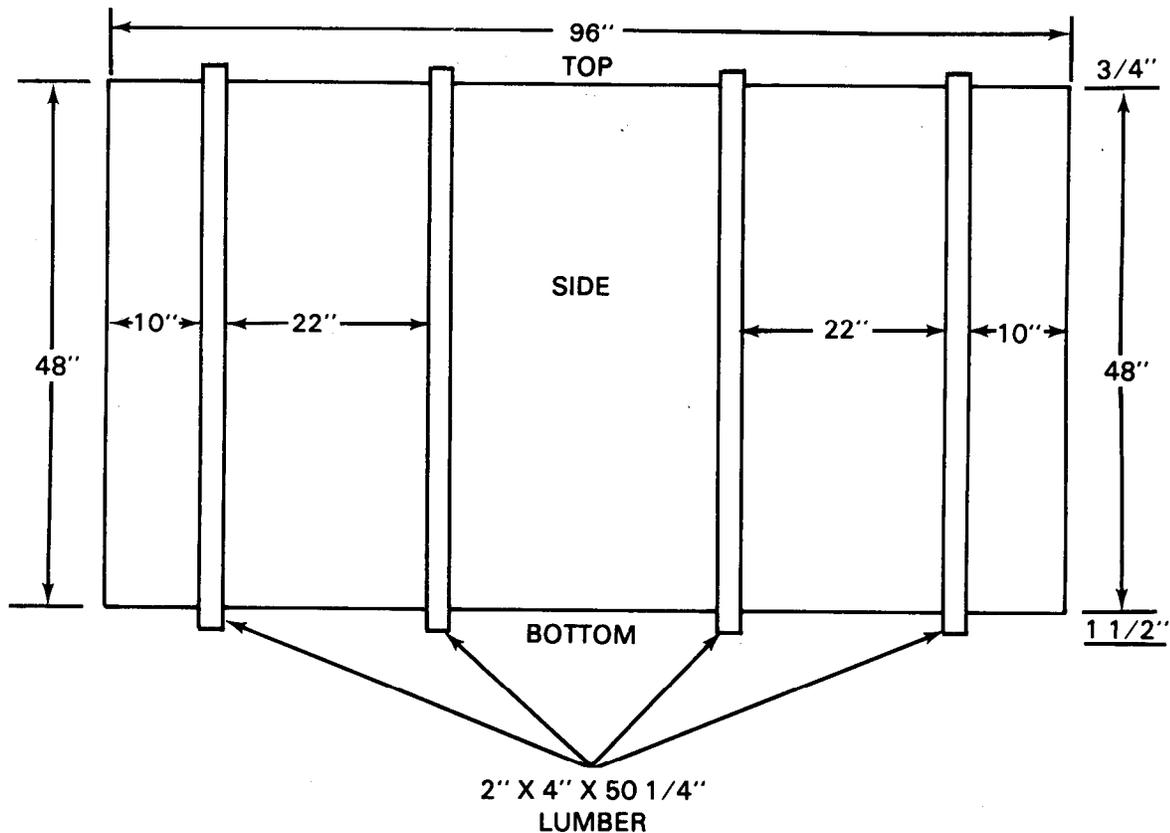
Step:

1. Cut a 3/4- by 24- by 96-inch piece of plywood.
2. Cut four 2- by 4- by 27-inch pieces of lumber.
3. Place the 2- by 4-inch pieces of lumber so that they overhang on each side about 1 1/2 inches over the plywood.
4. Nail a 2- by 4-inch piece of lumber 10 inches from the 24-inch sides using eightpenny nails.
5. Nail a 2- by 4-inch piece of lumber 22 inches from the lumber placed in step 4 above using eightpenny nails.

Figure 6-3. Top for FARE container built

b. *Building Sides.* Build the sides for the container as shown in Figure 6-4.

Note: *This drawing is not drawn to scale.*



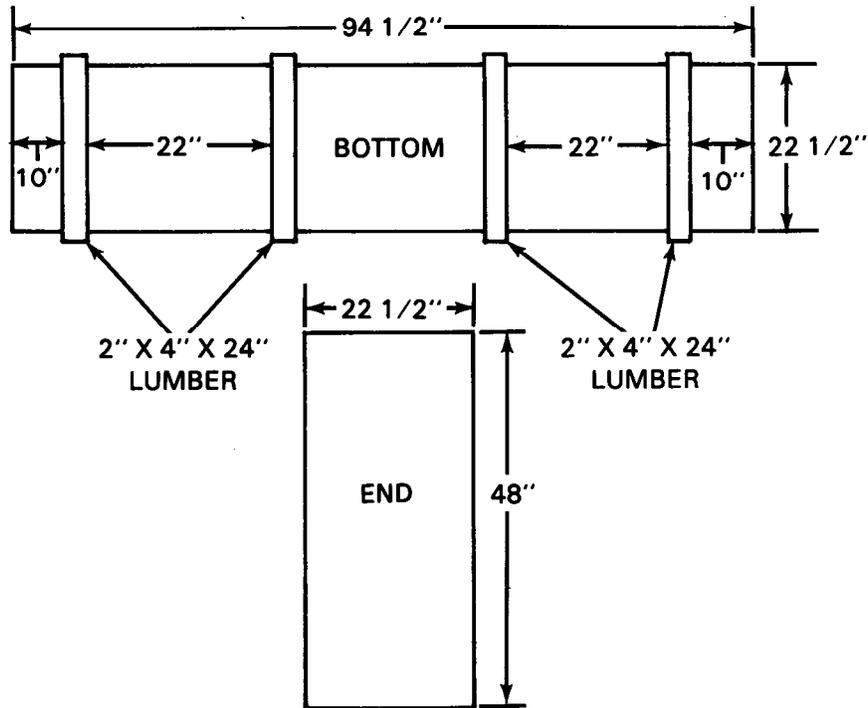
Step:

1. Use two 3/4- by 48- by 96-inch pieces of plywood.
2. Cut eight 2- by 4- by 50 1/4-inch pieces of lumber.
3. Place the 2- by 4-inch pieces of lumber so that the top overhangs 3/4 inch and the bottom overhangs 1 1/2 inches.
4. Nail a 2- by 4-inch piece of lumber 10 inches from the 48-inch sides using eightpenny nails.
5. Nail a 2- by 4-inch piece of lumber 22 inches from the lumber placed in step 4 above using eightpenny nails.

Figure 6-4. Sides for FARE container built

c. *Building Bottom and Ends.* Build the bottom and the ends for the container as shown in Figure 6-5.

Note: These drawings are not drawn to scale.

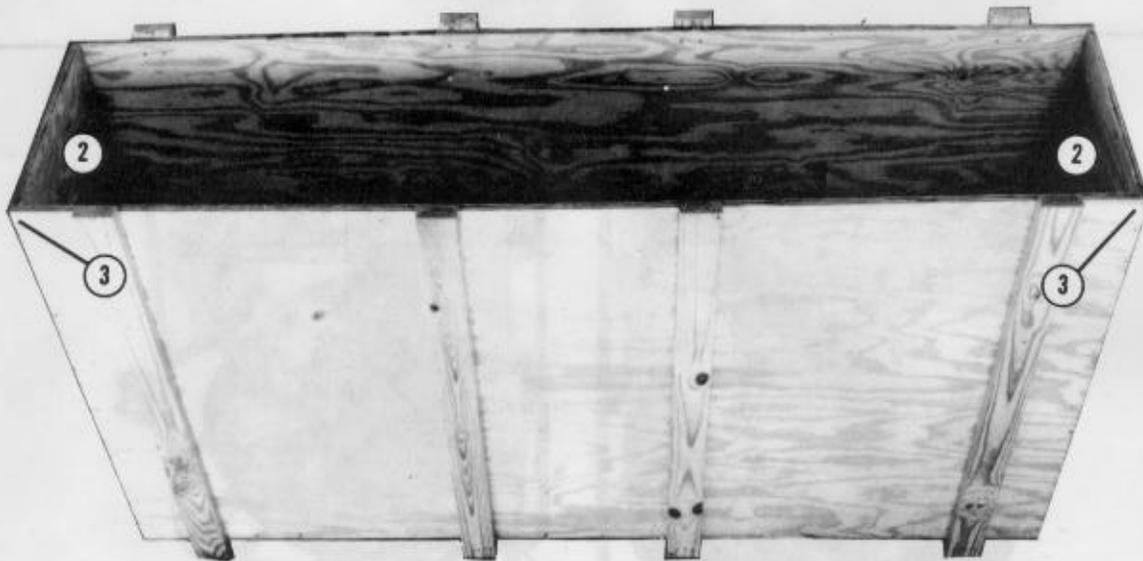


Step:

1. Cut a 3/4- by 22 1/2- by 94 1/2-inch piece of plywood.
2. Cut four 2- by 4- by 24-inch pieces of lumber.
3. Place the 2- by 4-inch pieces of lumber so that they overhang 3/4 inch over the plywood.
4. Nail a 2- by 4-inch piece of lumber 10 inches from the 22 1/2-inch sides using eightpenny nails.
5. Nail a 2- by 4-inch piece of lumber 22 inches from the lumber placed in step 4 above using eightpenny nails.
6. Cut two 3/4- by 22 1/2- by 48-inch pieces of plywood to be used as end pieces.

Figure 6-5. Bottom and ends for FARE container built

d. *Assembling Container.* Assemble the container for the FARE as shown in Figure 6-6.



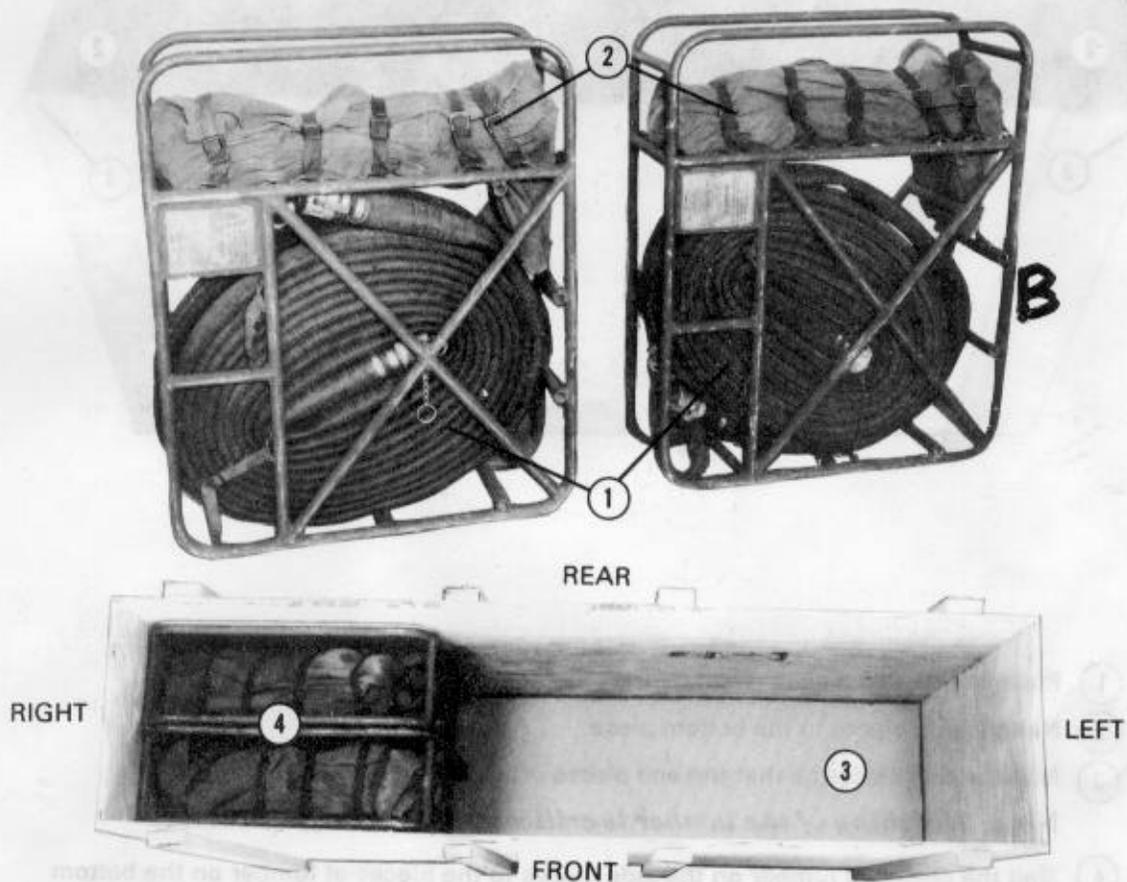
- ① Place the bottom piece (not shown) on the floor.
 - ② Nail the end pieces to the bottom piece.
 - ③ Nail the side pieces so that the end pieces are inside of the sides.
- Note: Matching of the lumber is critical to ensure sturdiness.**
- ④ Nail the pieces of lumber on the side pieces to the pieces of lumber on the bottom piece (not shown).

Figure 6-6. Container assembled

6-5. Preparing and Stowing FARE in Container

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

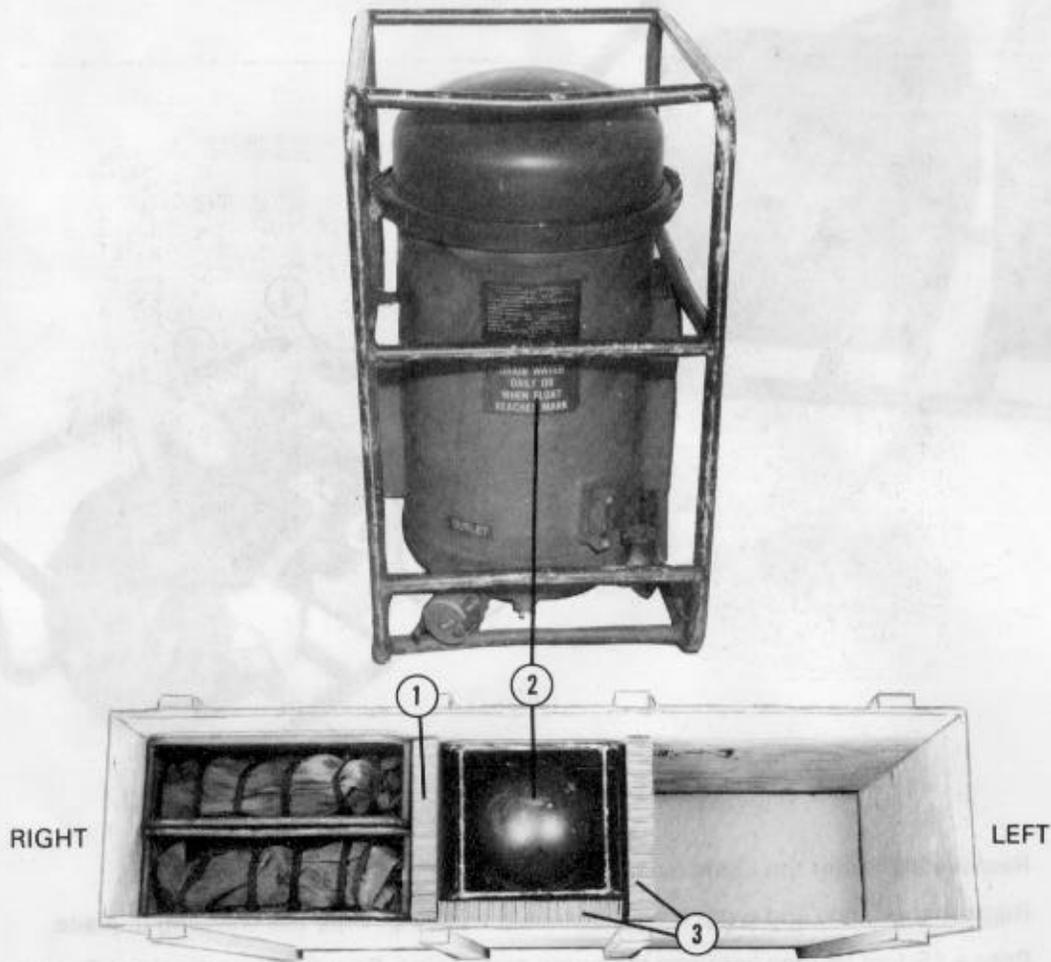
a. Preparing Discharge Hose Frame Assemblies. Prepare the discharge hose frame assemblies, and stow them in the container as shown in Figure 6-7.



- ① Roll the discharge hoses, and place them in the discharge hose frame assemblies.
- ② Place the discharge hose accessory fittings into the accessory fittings storage compartment.
- ③ Place a 22- by 94-inch piece of honeycomb in the bottom of the container.
- ④ Place the two discharge hose frame assemblies in the right side of the container.

Figure 6-7. Discharge hose frame assemblies prepared and stowed

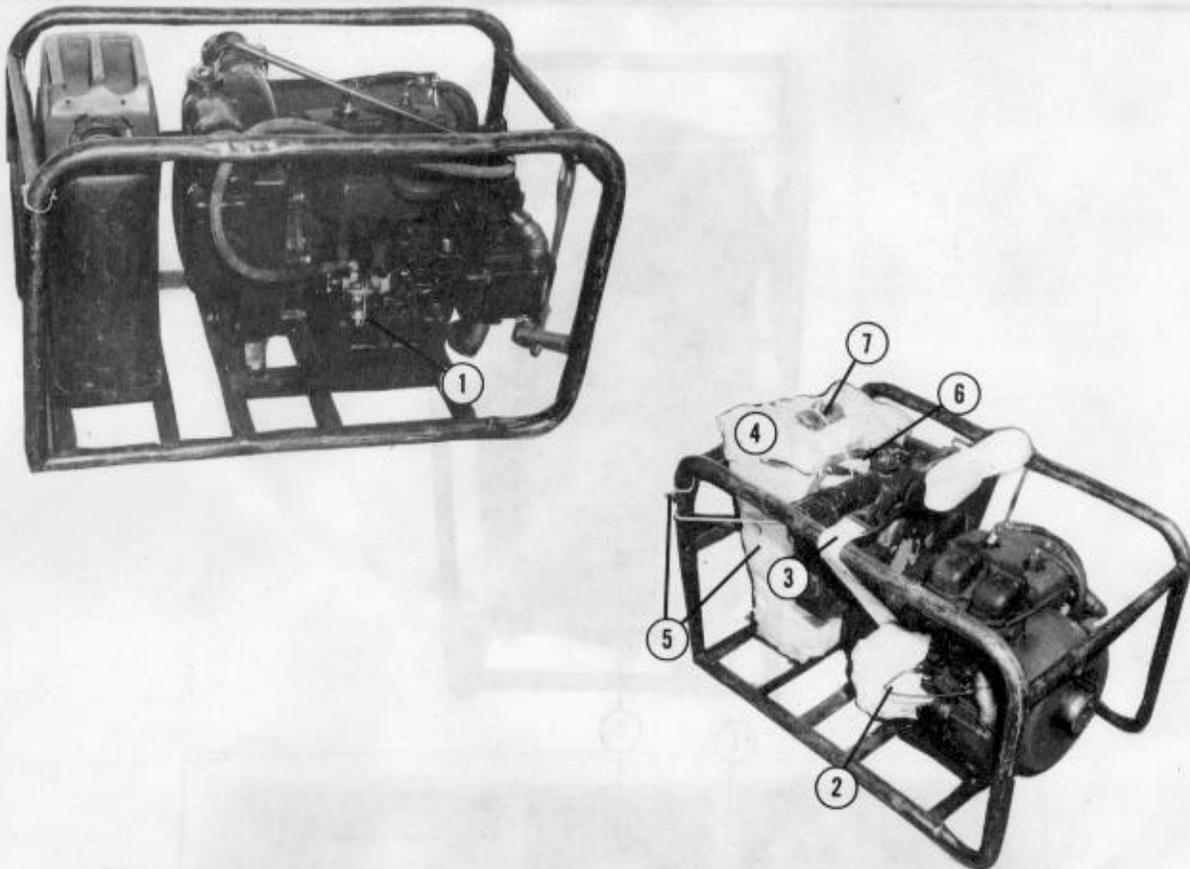
b. *Preparing Filter/Separator Assembly.* Prepare the filter/separator assembly, and stow it in the container as shown in Figure 6-8.



- ① Place a 22- by 36-inch piece of honeycomb against the discharge hose frame assemblies.
- ② Place the filter/separator assembly in the frame against the rear of the container and flush against the honeycomb placed in step 1 above.
- ③ Use two 22- by 36-inch pieces of honeycomb. Place one piece in front of the filter/separator assembly frame and another against the left side of the filter/separator assembly frame.

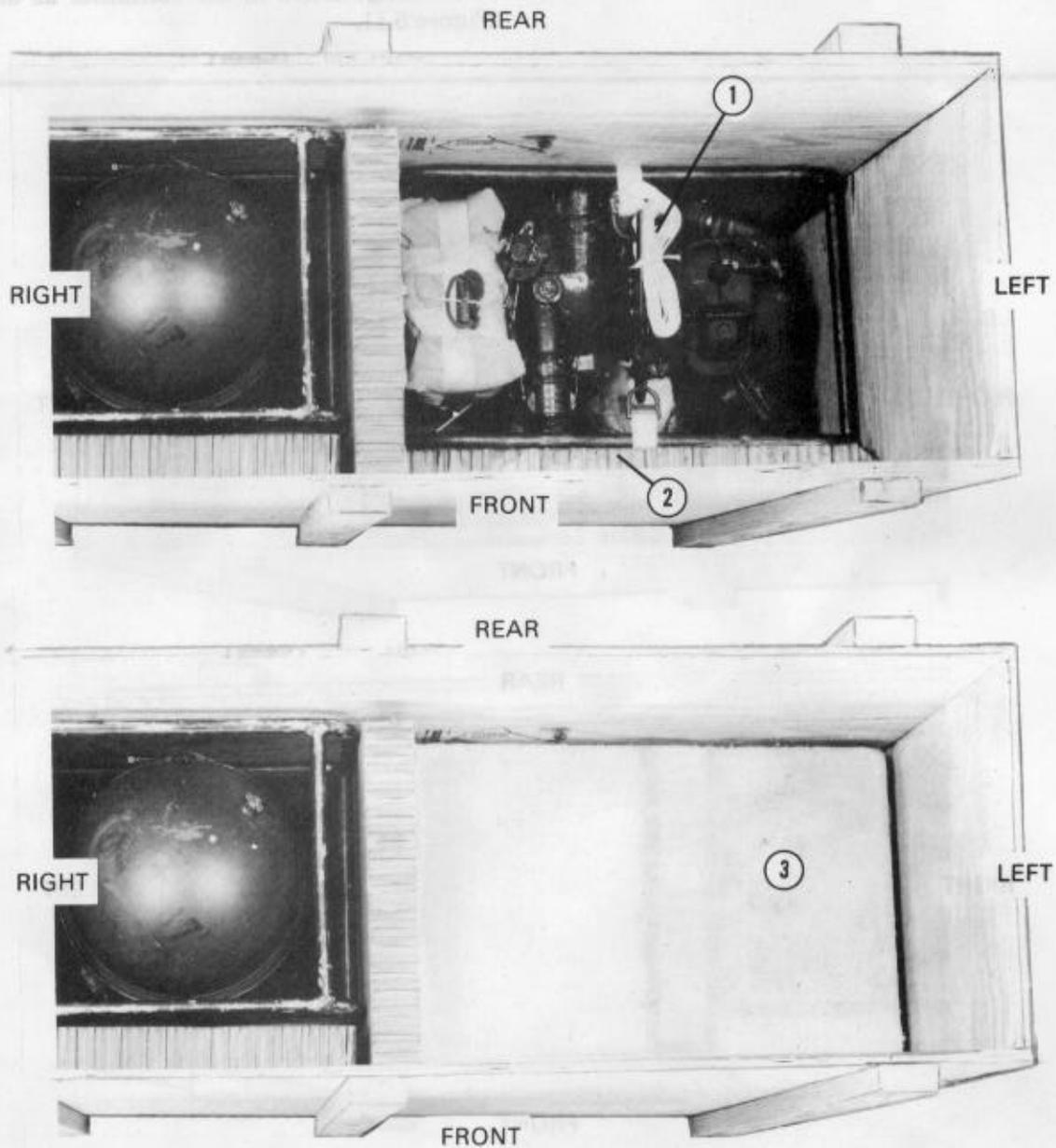
Figure 6-8. Filter/separator assembly prepared and stowed

c. *Preparing Pump/Engine Assembly.* Prepare the pump/engine assembly for stowing as shown in Figure 6-9, and stow it in the container as shown in Figure 6-10.



- 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.

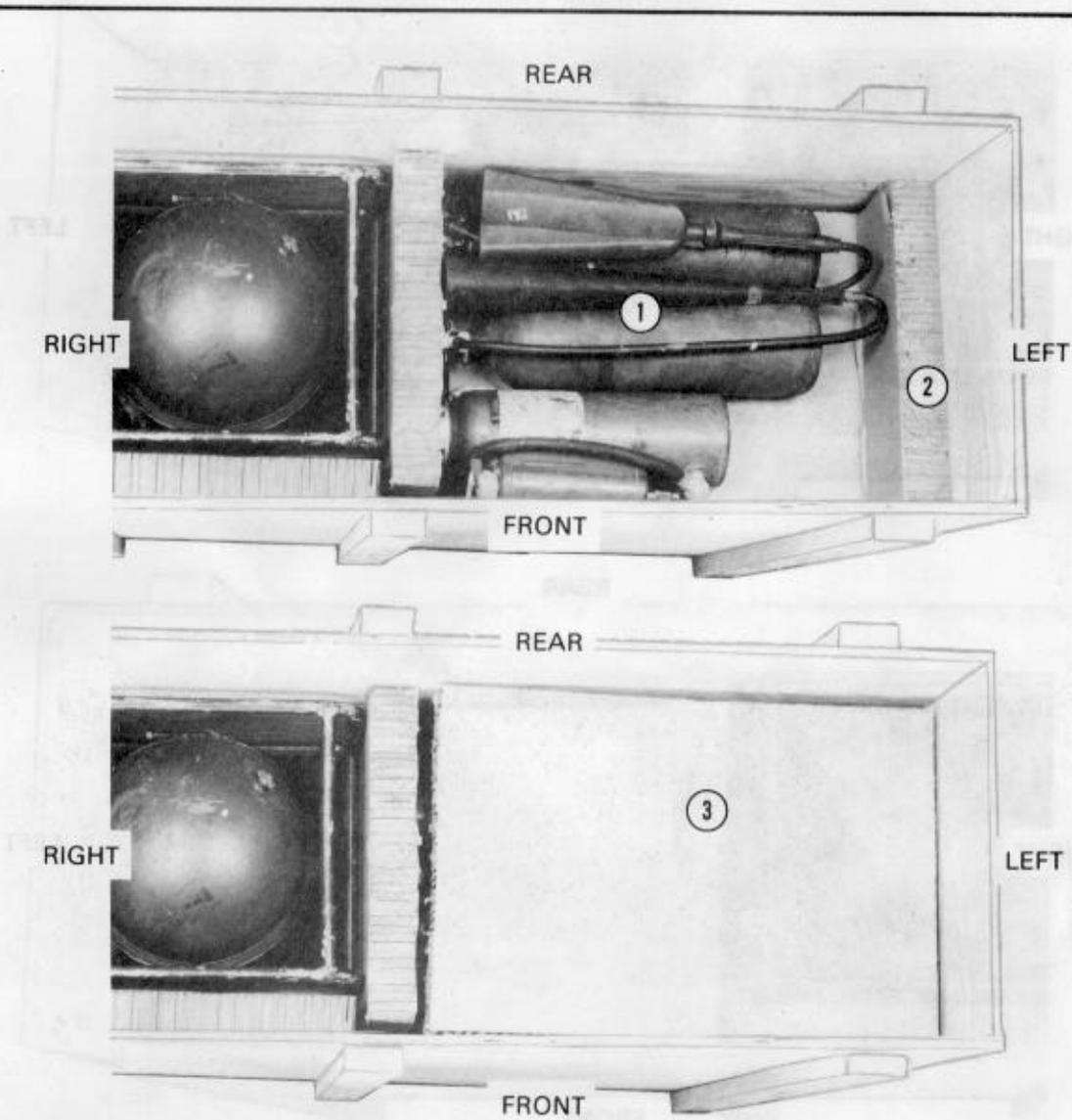
Figure 6-9. Pump/engine assembly prepared



- ① Place the pump/engine assembly into the left side of the container.
- ② Place a 22- by 32-inch piece of honeycomb between the pump/engine assembly and the front of the container.
- ③ Place another 22- by 32-inch piece of honeycomb over the pump/engine assembly.

Figure 6-10. Pump/engine assembly stowed

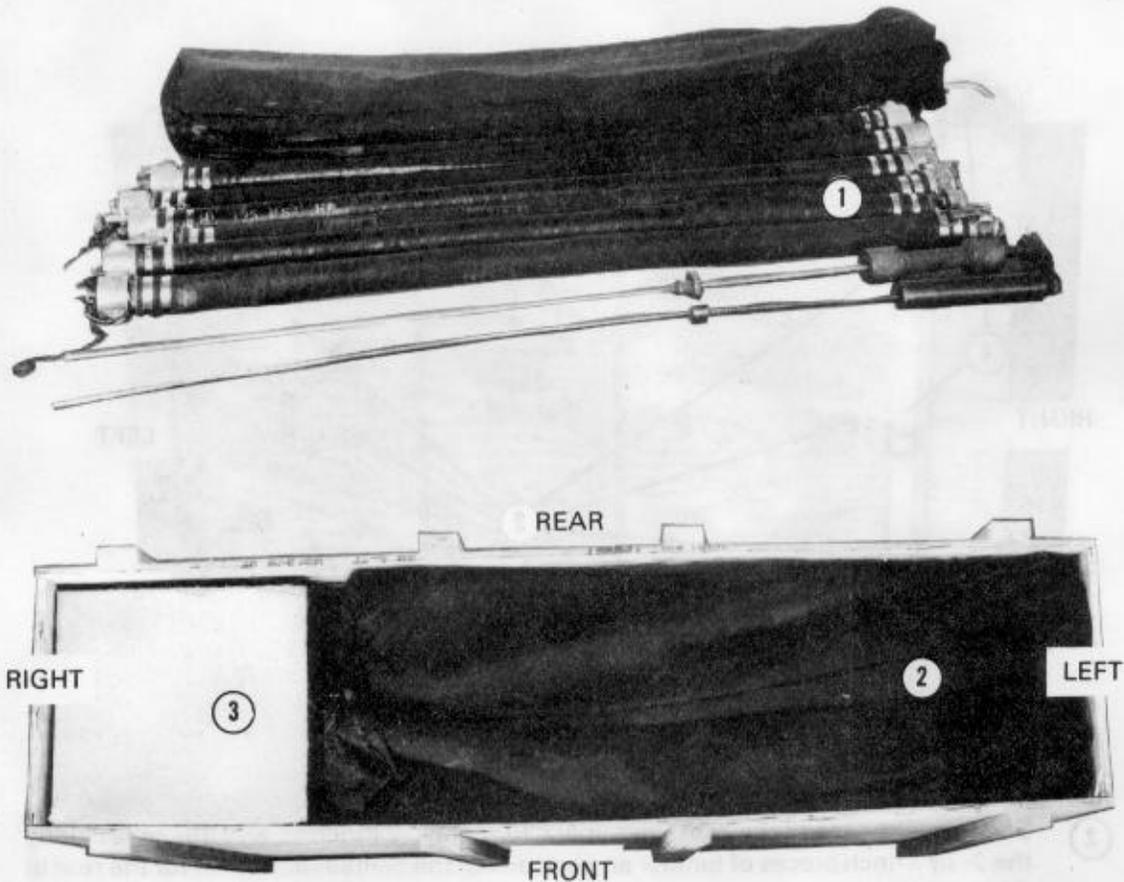
d. *Stowing Fire Extinguishers.* Stow the fire extinguishers in the container as shown in Figure 6-11.



- ① Place three fire extinguishers on the 22- by 32-inch piece of honeycomb.
- ② Place an 8- by 22-inch piece of honeycomb between the fire extinguishers and the left side of the container.
- ③ Cover the fire extinguishers with a 22- by 32-inch piece of honeycomb.

Figure 6-11. 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. Stow the suction hose bags in the container as shown in Figure 6-12.



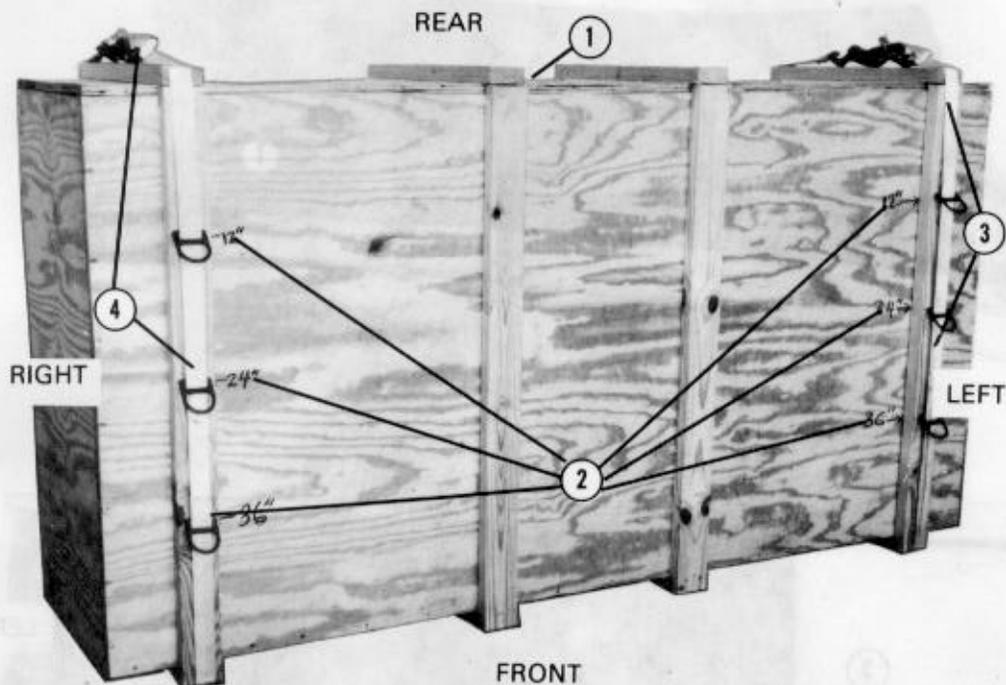
- ① Place two ground rods and six suction hoses into each suction hose bag.
- ② Place the two suction hose bags into the left side of the container.
- ③ Place a 22- by 23-inch piece of honeycomb between the suction hose bags and the right side of the container.

Figure 6-12. Ground rods, suction hoses, and bags prepared and stowed

6-6. Securing Container

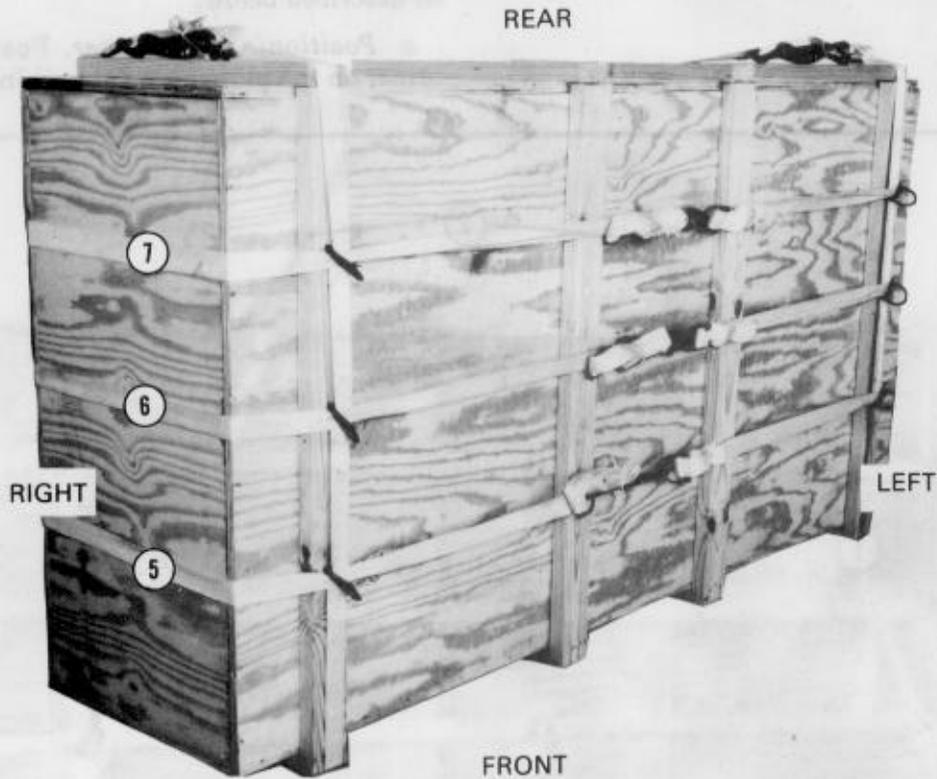
Use ten 15-foot tie-down assemblies to secure the container as shown in Figure 6-13.

Note: Fit all D-rings, and close the load binders as outlined in FM 10-500-2/TO 13C7-1-5.



- ① Set the top (Figure 6-3) on the container.
- ② Starting at the top of the container, mark 12 inches, 24 inches, and 36 inches along the 2- by 4-inch pieces of lumber on each end of the container. Repeat for the rear of the container.
- ③ Slide six D-rings on a 30-foot lashing. Run the lashing around the 2- by 4-inch pieces of lumber on the left side of the container. Position a pre-positioned D-ring at the 12-inch, 24-inch, and 36-inch marks on the front and rear of the container. Secure the lashing according to FM 10-500-2/TO 13C7-1-5 on top of the container.
- ④ Repeat step 3 above on the right side of the container. Secure the lashing according to FM 10-500-2/TO 13C7-1-5 on top of the container.

Figure 6-13. Container secured



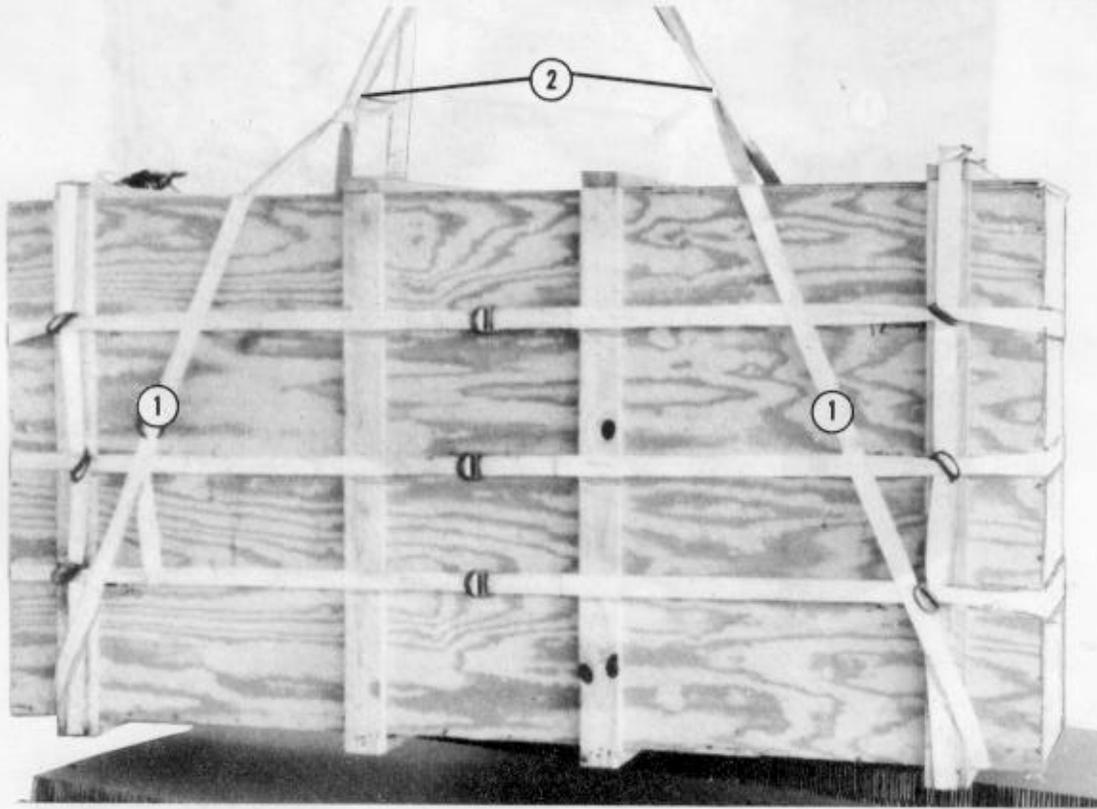
- ⑤ Form one 30-foot lashing according to FM 10-500-2/TO 13C7-1-5. At the 36-inch mark, pass one end of the lashing around the left side of the container through the small opening of the D-ring. Repeat this procedure for the right side of the container. Secure the lashing with a D-ring and a load binder according to FM 10-500-2/TO 13C7-1-5 to the front of the container.
- ⑥ Repeat step 5 above at the 24-inch mark.
- ⑦ Repeat step 5 above at the 12-inch mark.

Figure 6-13. Container secured (continued)

6-7. Positioning and Lashing Container

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

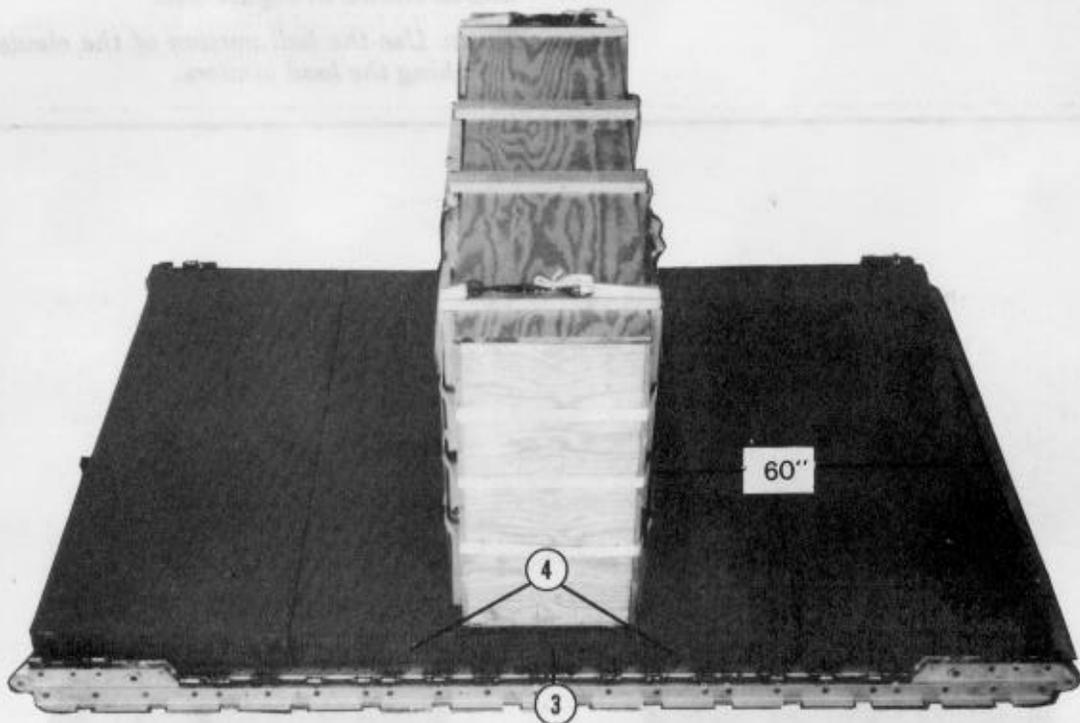
a. *Positioning Container.* Position the container on the platform as shown in Figure 6-14.



- ① Pass a 15-foot lashing around each end of the container. Secure the ends with a D-ring.
- ② Pass a 15-foot lashing (to act as an apex) through the two lashings in step 1 above. Secure the ends with a D-ring.

Note: *A crane inside the building may be used. However, any other method may be used if a crane is not available.*

Figure 6-14. Container positioned

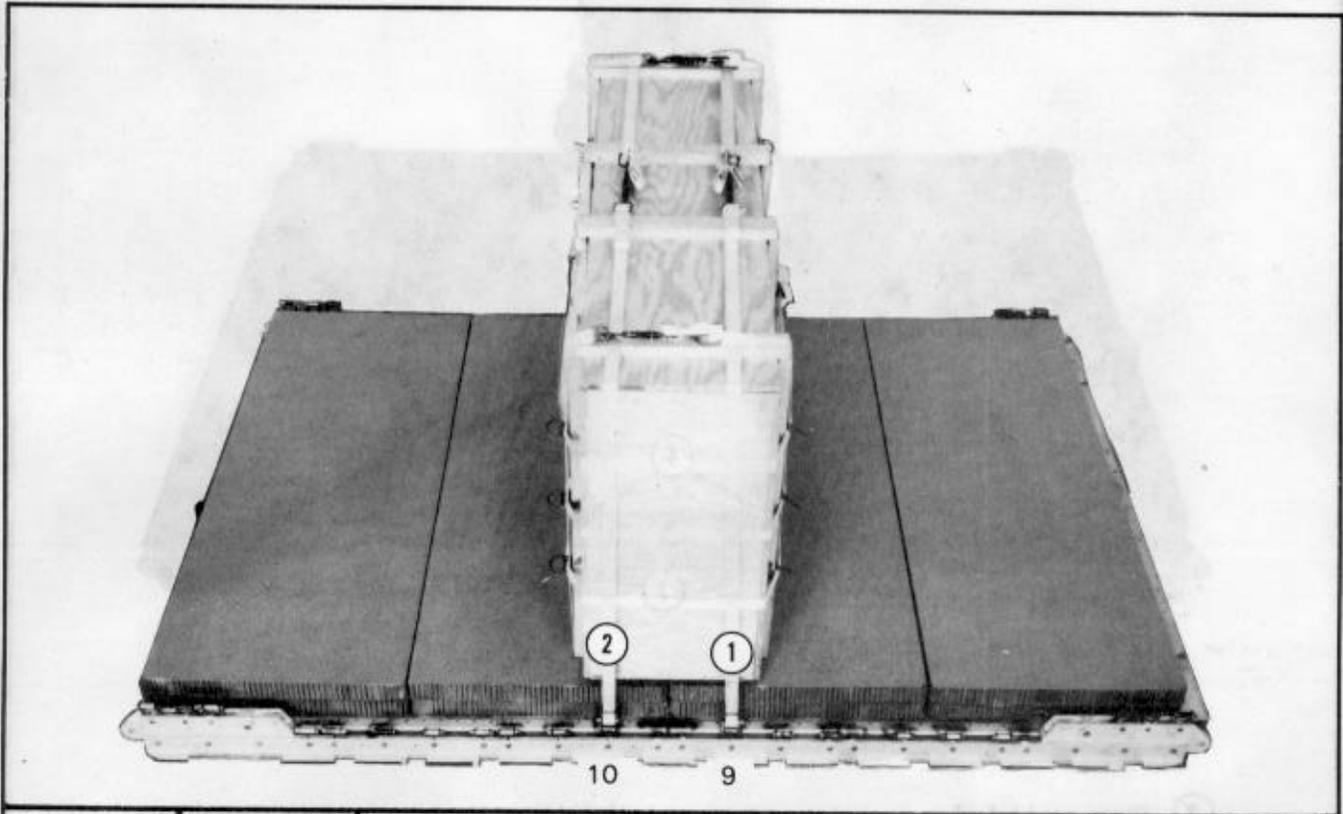


- ③ Place an 11 1/4-inch centering mark on both sides on the bottom of the container.
- ④ Center the centering marks between honeycomb stacks 2 and 3.
- ⑤ Lift and center the container between honeycomb stacks 2 and 3 (not shown).
- ⑥ Make sure the front of the container is 60 inches from the front edge of honeycomb stack 1.

Figure 6-14. Container positioned (continued)

b. Lashing Container. Use sixteen 15-foot tie-down assemblies to lash the container to the platform as outlined in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-15.

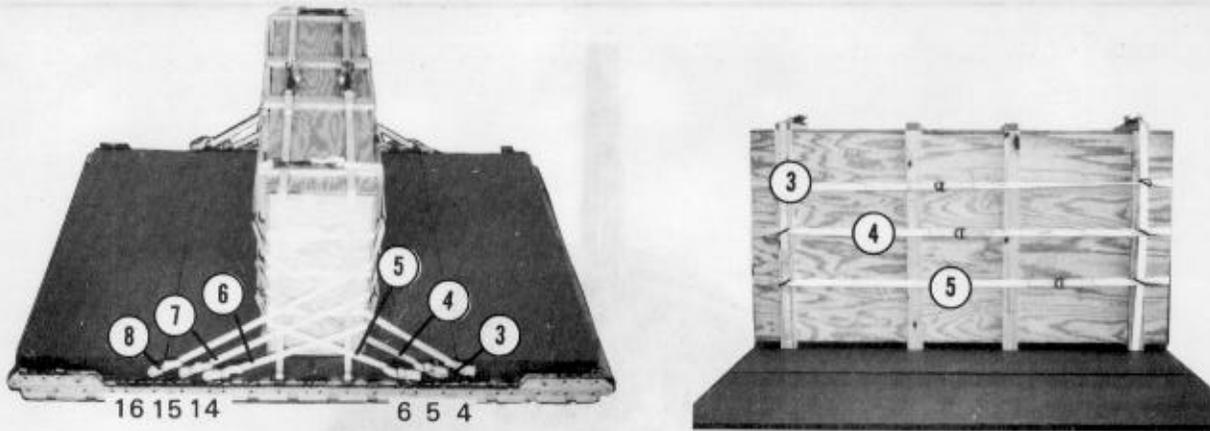
Note: Use the bell portion of the clevises when attaching the load binders.



Lashing Number	Tie-down Clevis Number	Instructions
1*	9 9A	Pass lashing: Through clevis and back through its own D-ring. Through clevis and back through its own D-ring. Fasten lashings on top of container with two D-rings and a load binder.
2*	10 10A	Through clevis and back through its own D-ring. Through clevis and back through its own D-ring. Fasten lashings on top of container with two D-rings and a load binder.

*30-foot lashing

Figure 6-15. Container lashed to platform

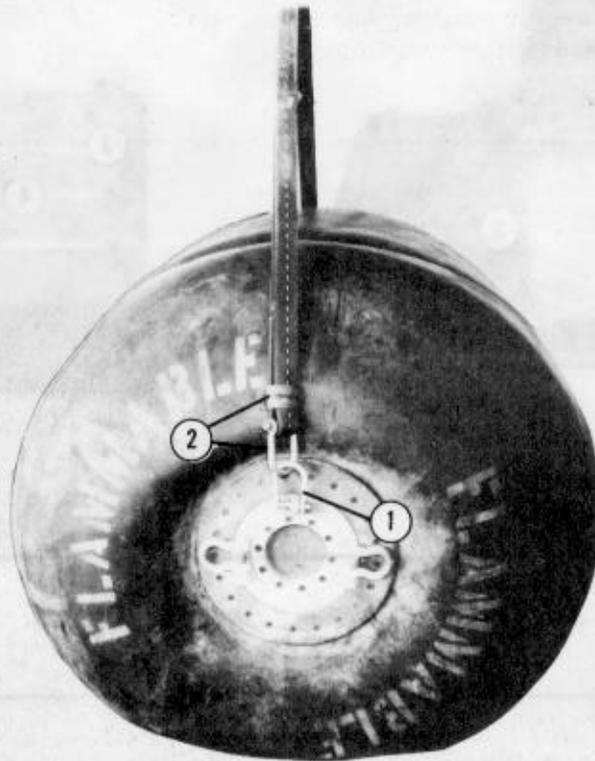


Lashing Number	Tie-down Clevis Number	Instructions
3*	4 and 4A	Pass lashing: Around the rear of the container using the top row of D-rings.
4*	5 and 5A	Around the rear of the container using the middle row of D-rings.
5*	6 and 6A	Around the rear of the container using the bottom row of D-rings.
6*	14 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.
*30-foot lashing		

Figure 6-15. Container lashed to platform (continued)

6-8. Attaching Lifting Slings

Attach the lifting slings to each fuel drum using four clevises and two 12-foot (2-loop), type XXVI nylon webbing slings as shown in Figure 6-16.



Note: *Make sure the drums and drum fittings are not leaking and that two shackles are on the swivel plate.*

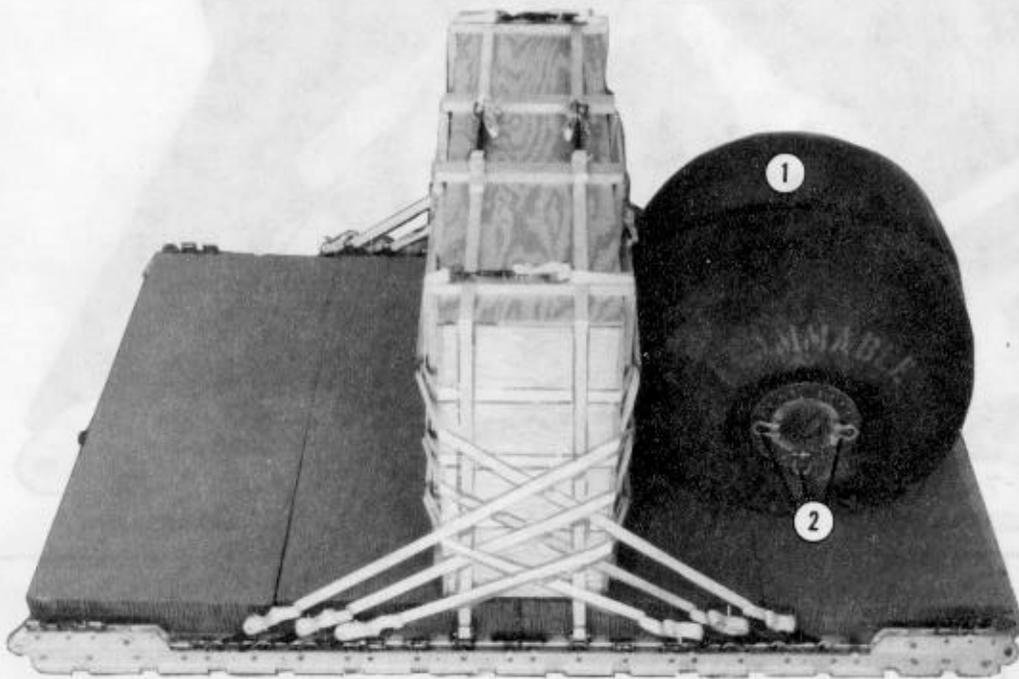
- ① Bolt a clevis to the center shackle of the swivel plate.
- ② Route a clevis through the center clevis bolted to the shackle. Bolt the clevis to a 12-foot sling.
- ③ Repeat steps 1 and 2 on the opposite side of the fuel drum and for the remaining fuel drum (not shown).

Figure 6-16. Lifting slings installed

6-9. Placing and Lashing Fuel Drums

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

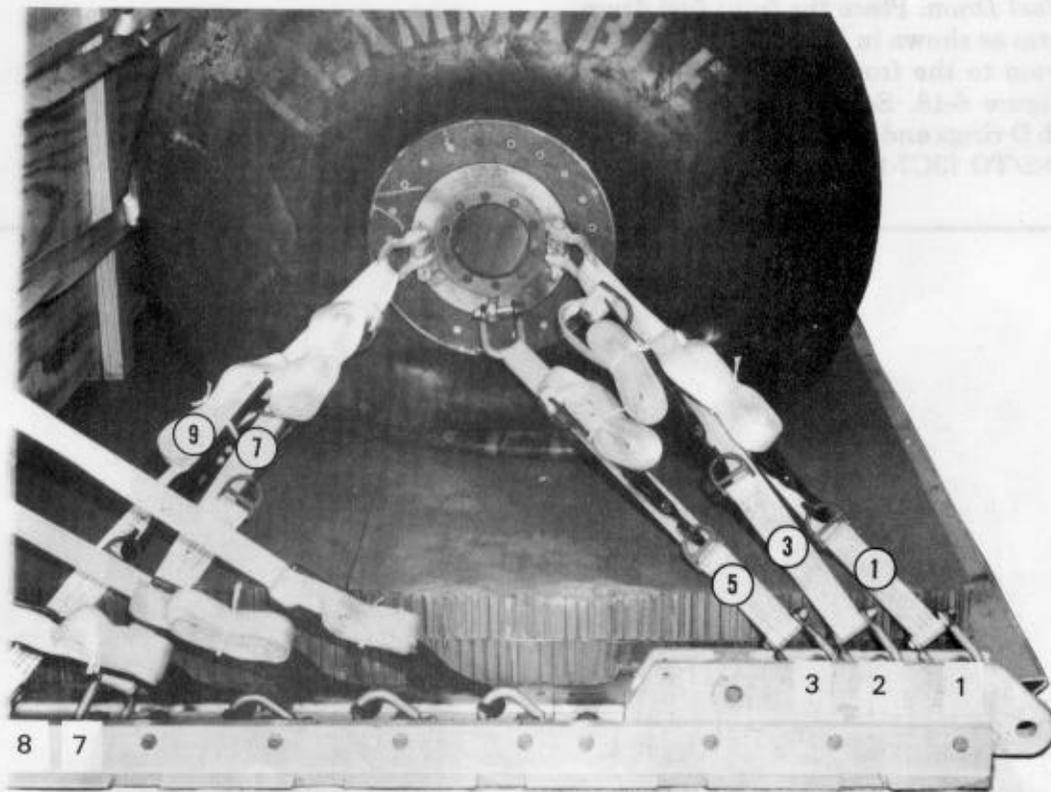
a. *Front Fuel Drum.* Place the front fuel drum on the platform as shown in Figure 6-17. Lash the front fuel drum to the front of the platform as shown in Figure 6-18. Secure the ends of the lashings with D-rings and a load binder according to FM 10-500-2/TO 13C7-1-5.



- ① Center the drum on the front of the platform. Place the drum flush against the container.
- ② Remove the lifting slings (not shown). Make sure the shackles on the drums are parallel to the platform and the center clevis is in the bottom position.

Figure 6-17. Front fuel drum placed on platform

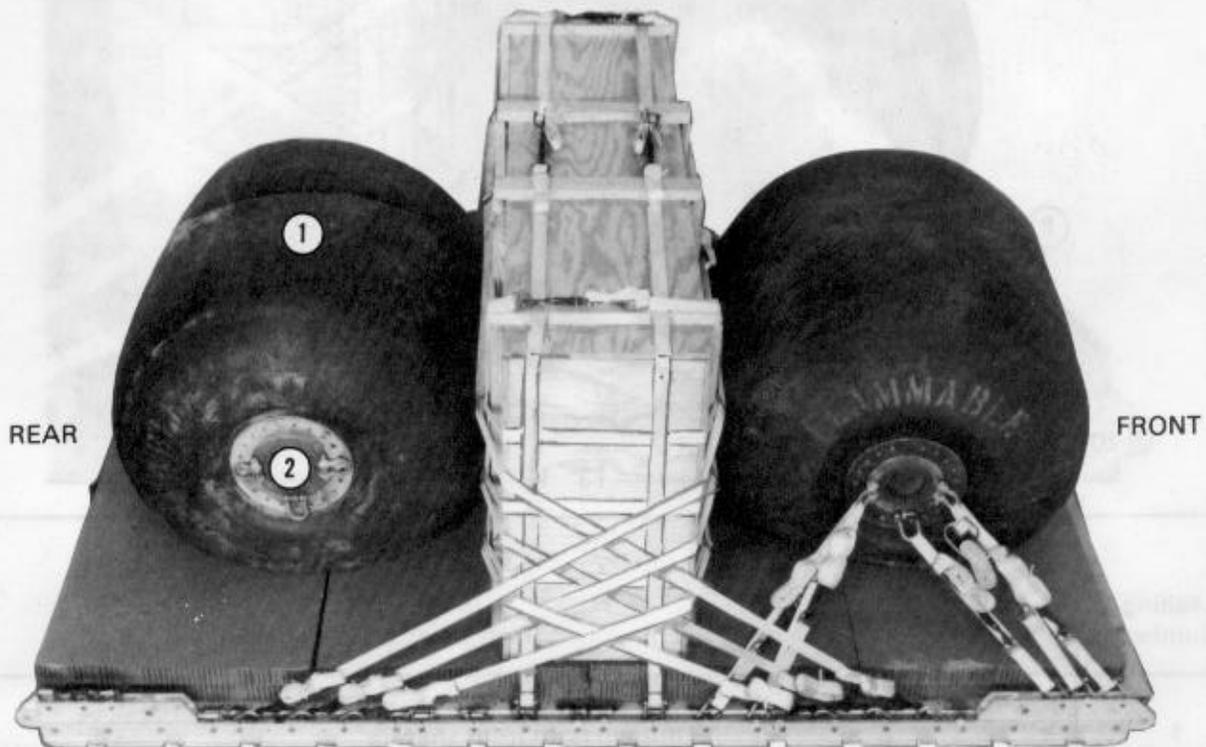
Note: Secure the ends of the lashings with D-rings and load binders as outlined in FM 10-500-2/TO 13C7-1-5.



Lashing Number	Tie-down Clevis Number	Instructions
1	1	Pass lashing: 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.

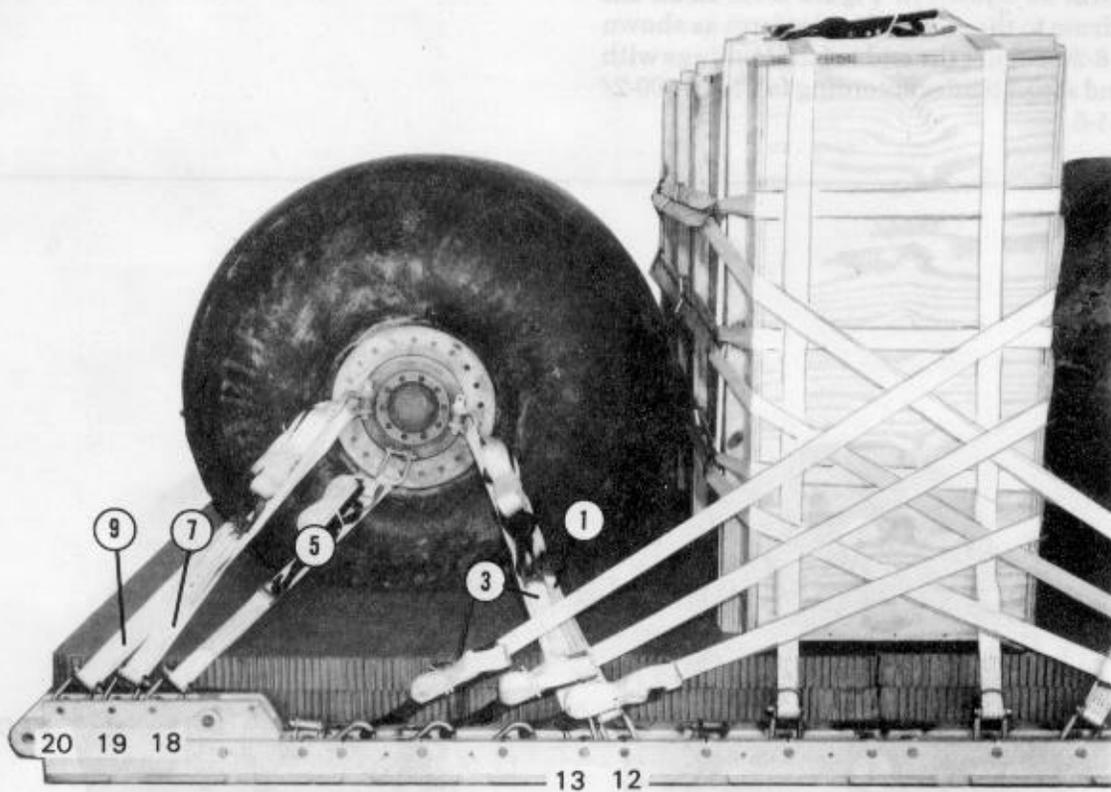
Figure 6-18. Front drum lashed to platform

b. *Rear Fuel Drum.* Place the rear fuel drum on the platform as shown in Figure 6-19. Lash the rear fuel drum to the rear of the platform as shown in Figure 6-20. Secure the ends of the lashings with D-rings and a load binder according to FM 10-500-2/TO 13C7-1-5.



- ① Center the drum on the rear of the platform. Place it flush against the container.
- ② Remove the lifting slings (not shown). Make sure the shackles on the drums are parallel to the platform and the center clevis is in the bottom position.

Figure 6-19. Rear fuel drum placed on platform

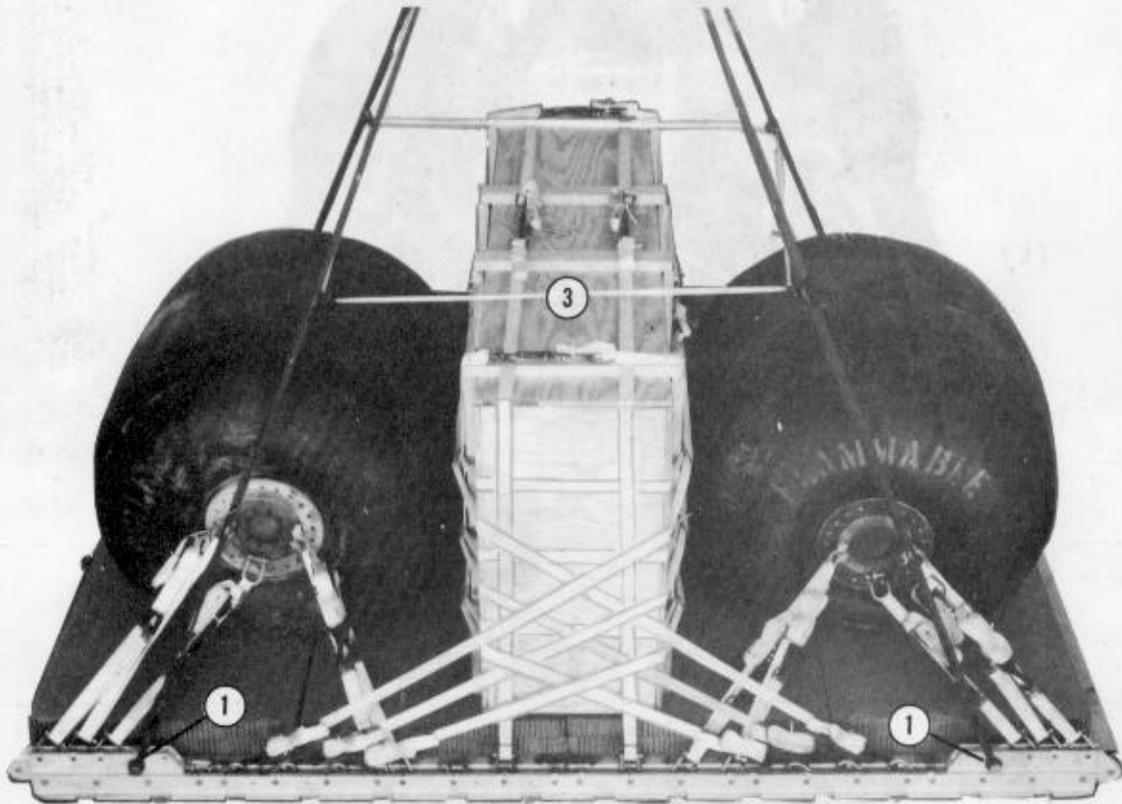


Lashing Number	Tie-down Clevis Number	Instructions
1	12	Pass lashing: Through right front shackle.
2	12A	Through left front shackle.
3	13	Through right front shackle.
4	13A	Through left front shackle.
5	18	Through right center clevis.
6	18A	Through left center clevis.
7	19	Through right rear shackle.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

Figure 6-20. Rear drum lashed to platform

6-10. Installing Suspension Slings

Install four large suspension clevises and four 12-foot (3-loop), type X or four 12-foot (2-loop), type XXVI nylon webbing slings to the tandem links as shown in Figure 6-21.

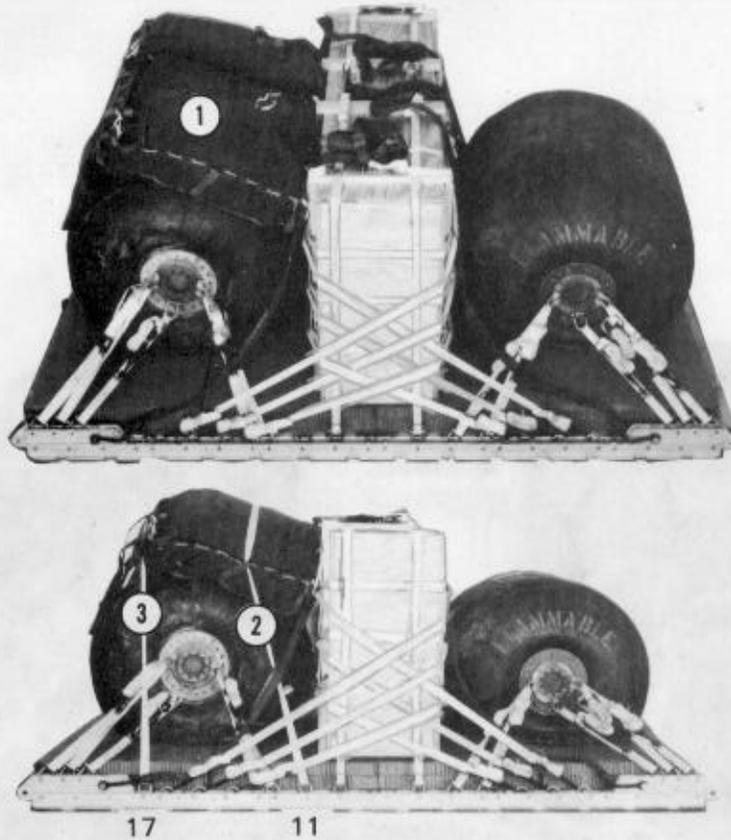


- ① Bolt a 12-foot sling to each tandem link using a large suspension clevis.
- ② Raise the suspension slings to their full length using a lifting provision (not shown).
- ③ Safety the slings with a deadman's tie according to FM 10-500-2/TO 13C7-1-5.

Figure 6-21. Suspension slings installed

6-11. Stowing Cargo Parachutes

Prepare, place, and restrain three G-11A or two G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-22.



- ① Place the cargo parachutes on top of the rear fuel drums.

CAUTION

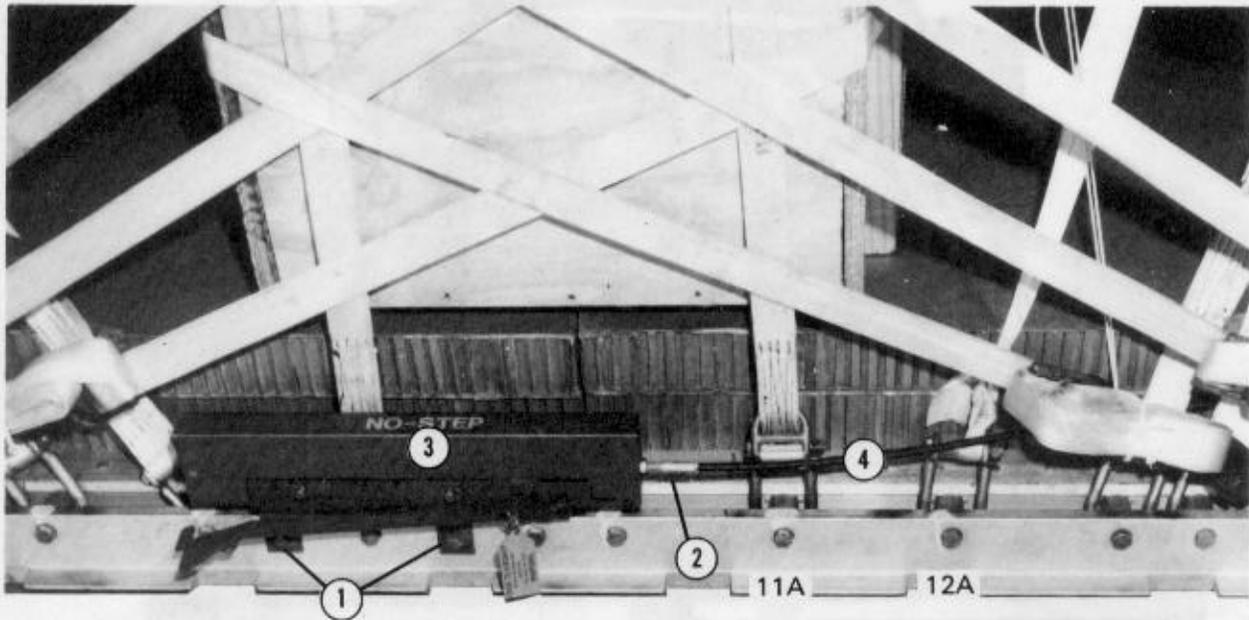
As an exception to the FM 10-500-2/TO 13C7-1-5 parachute restraint system, two restraints will be on this load.

- ② Secure the parachutes according to FM 10-500-2/TO 13C7-1-5 using two lengths of type VIII nylon webbing. Attach one length of webbing from clevises 11 and 11A using a trucker's hitch according to FM 10-500-2/TO 13C7-1-5.
- ③ Attach the second length of webbing according to FM 10-500-2/TO 13C7-1-5 from clevises 17 and 17A using a trucker's hitch according to FM 10-500-2/TO 13C7-1-5.

Figure 6-22. Cargo parachutes stowed

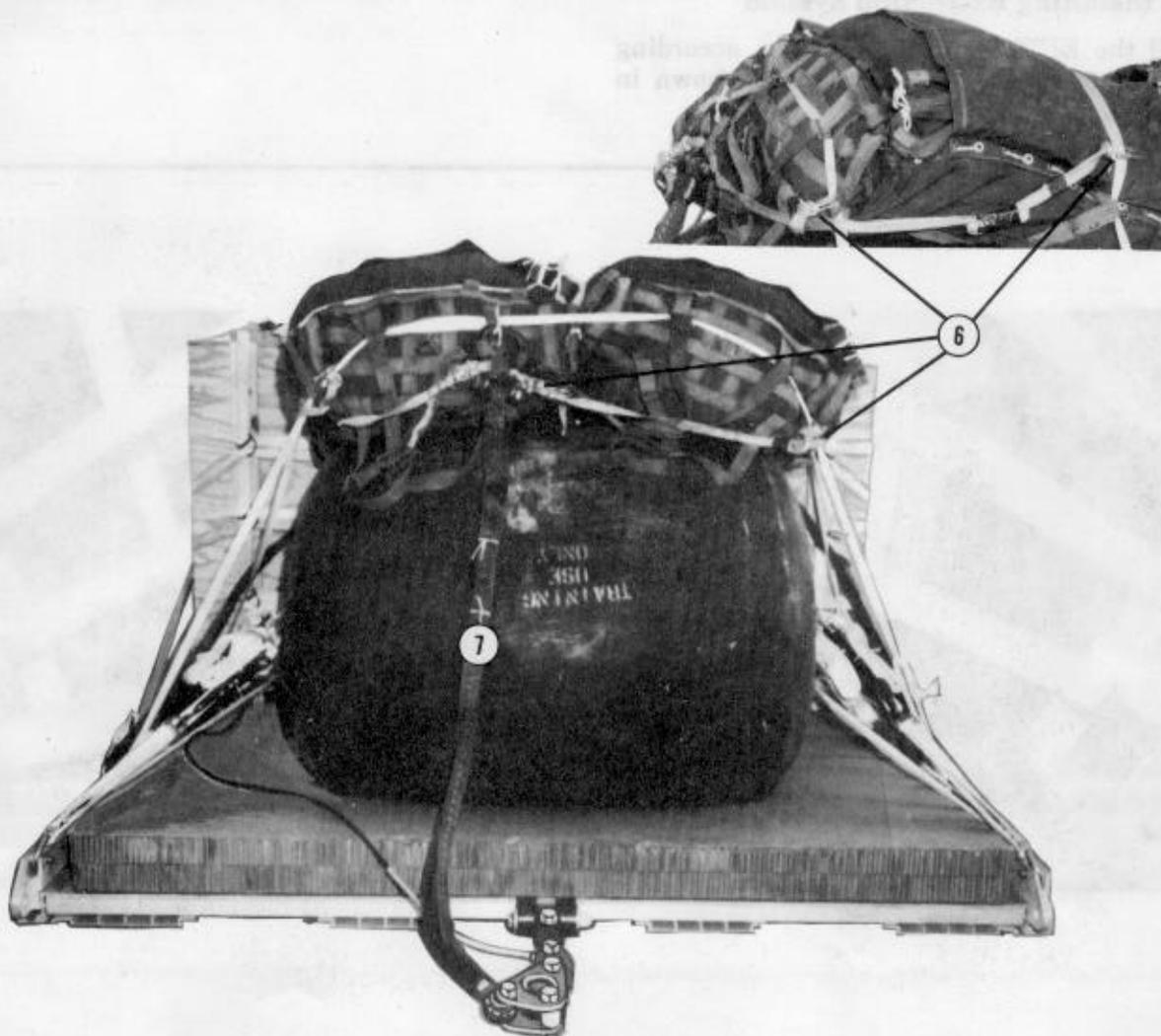
6-12. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-23.



- 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 6-23. Extraction system installed

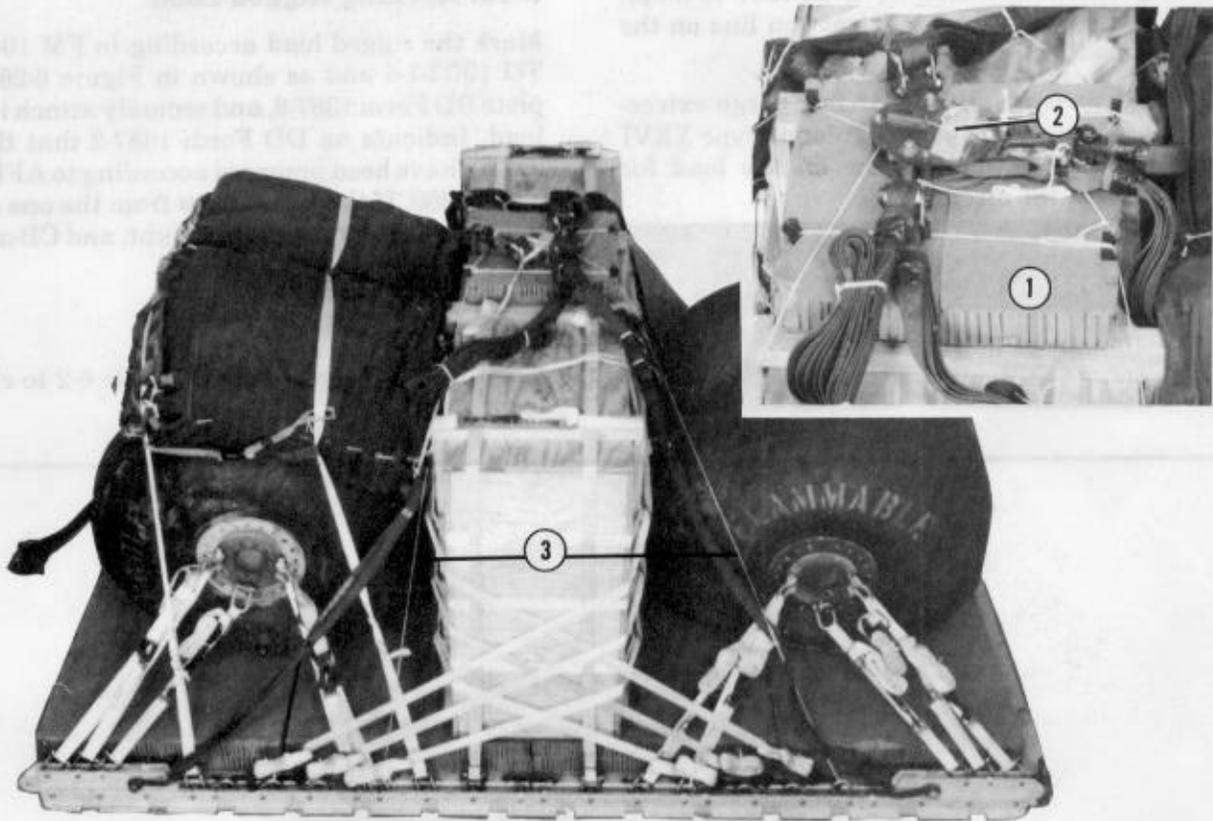


- ⑤ Safety the 12-foot cable to lashing 18A with a piece of type I, 1/4-inch cotton webbing. (not shown)
- ⑥ Cluster the parachutes with a large clevis, and install the release knives according to FM 10-500-2/TO 13C7-1-5.
- ⑦ Use a 9-foot (2-loop), type XXVI nylon webbing sling for the deployment line.

Figure 6-23. Extraction system installed (continued)

6-13. Installing Parachute Release System

Prepare and attach an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-24.



- ① Place a 24- by 24-inch piece of honeycomb on top of the container.
- ② Place the M-1 cargo parachute release on top of the honeycomb, and attach it according to FM 10-500-2/TO 13C7-1-5.
- ③ Secure the M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 with a length of type III nylon cord to clevises 4, 4A, 12, and 12A.

Figure 6-24. Parachute release attached

6-14. Positioning Extraction Parachute

Position the extraction parachute as described below.

a. *C-130 Aircraft.* Place a 22-foot cargo extraction parachute and a 60-foot (3-loop), type X nylon webbing extraction line or a 60-foot (3-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

b. *C-141 Aircraft.* Place a 15-foot cargo extraction parachute and a 160-foot (1-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

CAUTION

The extraction line will be a continuous 160-foot (1-loop), type XXVI nylon webbing extraction line. Shorter lines will not be used to form the 160-foot extraction line.

6-15. Installing Provisions for Emergency Restraints

Attach a medium clevis to each front tandem link as shown in Figure 6-25.

6-16. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-26. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the fuel drums have been prepared according to AFR 71-4/TM 38-250. If the load varies from the one shown in Figure 6-26, the weight, height, and CB must be recomputed.

6-17. Equipment Required

Use the equipment listed in Table 6-2 to rig this load.

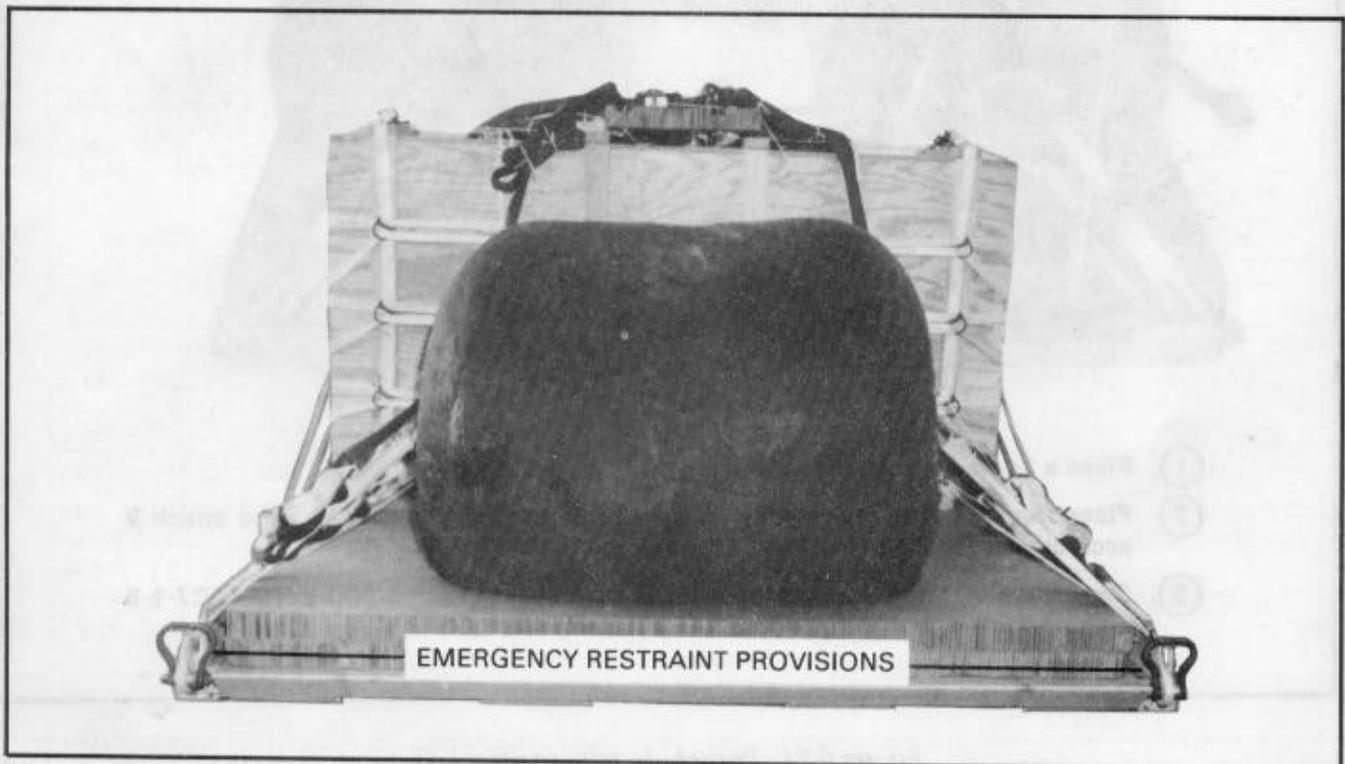
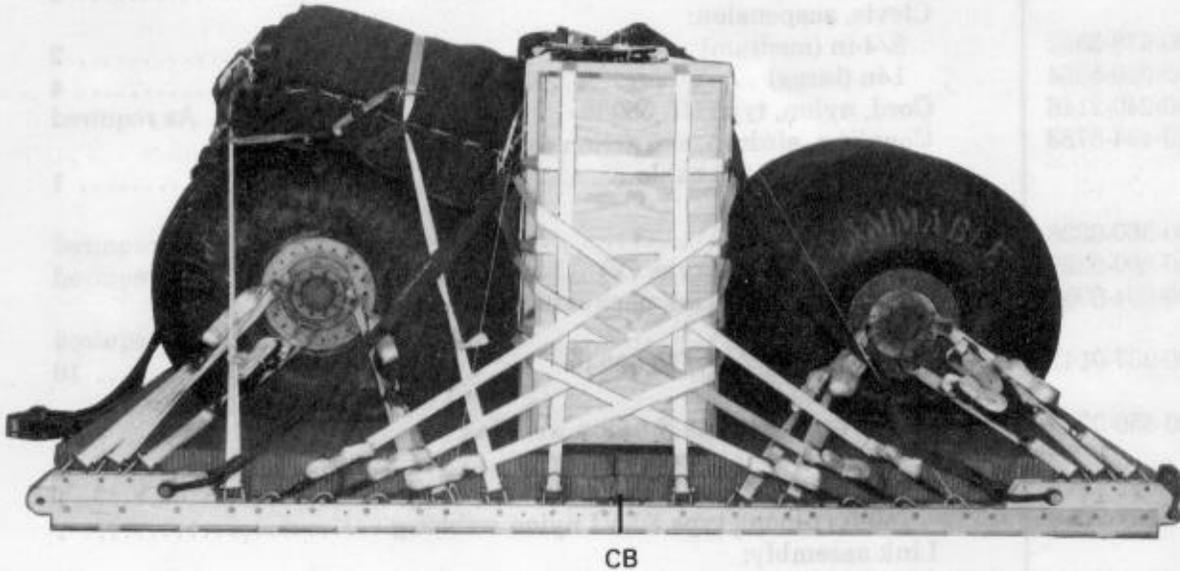


Figure 6-25. Provisions for emergency restraints installed

CAUTION

Make the final rigger inspection required by FM 10-500-2/TO 13C7-1-5 before the load leaves the rigging site.

**RIGGED LOAD DATA**

Weight:	Load shown	9,107 pounds
	Maximum load allowed	10,000 pounds
Height		70 inches
Width		108 inches
Length		167 inches
Overhang: Front		5 inches
	Rear	18 inches
CB (from front edge of platform)		72 inches
Extraction System		EFTC

Figure 6-26. FARE with two 500-gallon fuel drums rigged for low-velocity airdrop on a type V platform

Table 6-2. Equipment required for rigging FARE with two 500-gallon fuel drums for low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
3990-00-937-0272	Binder, load, 10,000-lb	5
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium)	2
4030-00-090-5354	1-in (large)	4
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer w 12-ft cable	1
	Cover:	
1670-00-360-0328	Clevis, large	As required
1670-00-360-0329	Link assembly (type IV)	As required
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	16
	Line, extraction:	
1670-00-856-0266	60-ft (3-loop), type X nylon webbing (Use w 22-ft parachute.) or	1
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	1
1670-01-107-7652	160-ft (1-loop), type XXVI nylon webbing	1
	Link assembly:	
	Two-point:	1
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in, hexagon	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-783-5988	Type IV	1
5510-00-220-6146	Lumber, 2- by 4-in:	
	24-in	4
	27-in	4
	50 1/4-in	8
5315-00-010-4659	Nail, steel wire, common, 8d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	11 sheets
	8- by 22-in	(1)
	22- by 23-in	(1)
	22- by 32-in	(3)
	22- by 36-in	(3)
	22- by 94-in	(1)
	24- by 24-in	(1)
	36- by 96-in	(8)

Table 6-2. Equipment required for rigging FARE with two 500-gallon fuel drums for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	Parachute:	
	Cargo:	
1670-00-269-1107	G-11A	3
1670-01-016-7841	G-11B	2
	Cargo extraction:	
1670-01-063-3715	15-ft (C-141)	1
1670-01-063-3716	22-ft (C-130)	1
	Platform, AD, type V, 12-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(44)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(4)
5530-00-128-4981	Plywood, 3/4-in:	
	22 1/2- by 48-in	(2)
	22 1/2- by 94 1/2-in	(1)
	24- by 96-in	(1)
	48- by 96-in	(2)
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop:	
	For deployment line:	
1670-00-823-5042	16-ft (3-loop), type X nylon webbing <u>or</u>	1
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	1
	For lifting and for suspension:	
1670-00-823-5041	12-ft (3-loop), type X nylon webbing <u>or</u>	4
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	4
	For riser extensions:	
1670-00-823-5043	20-ft (3-loop), type X nylon webbing <u>or</u>	1
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	1
1670-00-040-8219	Strap, parachute release, multicut comes w	
	3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	55
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in <u>or</u>	As required
8305-00-268-2453	1/2-in	As required
8305-00-261-8584	Type X <u>or</u>	As required
8303-00-260-6890	Type X	As required