CHAPTER 17

RIGGING MASS SUPPLY BOX ON A 20-FOOT, TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

17-1. Description of Load

Two mass supply boxes are rigged for low-velocity airdrop on a 20-foot, type V airdrop platform. Loads may include any bulk items of general supply that can be packed into the box without shifting of the load. FM 10-500-2/TO 13C7-1-5 shows weight limitations and parachute requirements.

17-2. Preparing Platform

Prepare a 20-foot, type V airdrop platform as described below.

a. ***Inspecting Platform.*** Inspect, or assemble and inspect, the 20-foot, type V airdrop platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.

Note:

If the platform must be assembled, install the suspension links when assembling the platform. See Figure 17-1 for the location of the suspension links.

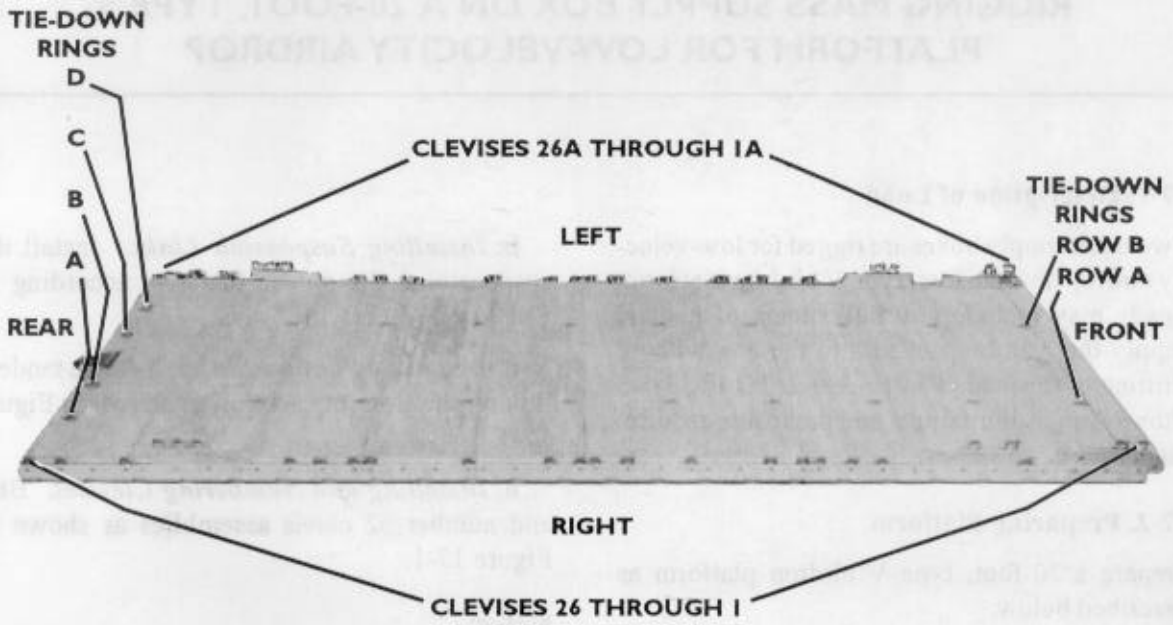
b. ***Installing Suspension Links.*** Install the suspension links on the platform according to FM 10-500-2/TO 13C7-1-5.

c. ***Installing Tandem Links.*** Install a tandem link on the front of each rail as shown in Figure 17-1.

d. ***Installing and Numbering Clevises.*** Bolt and number 52 clevis assemblies as shown in Figure 17-1.

Notes:

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



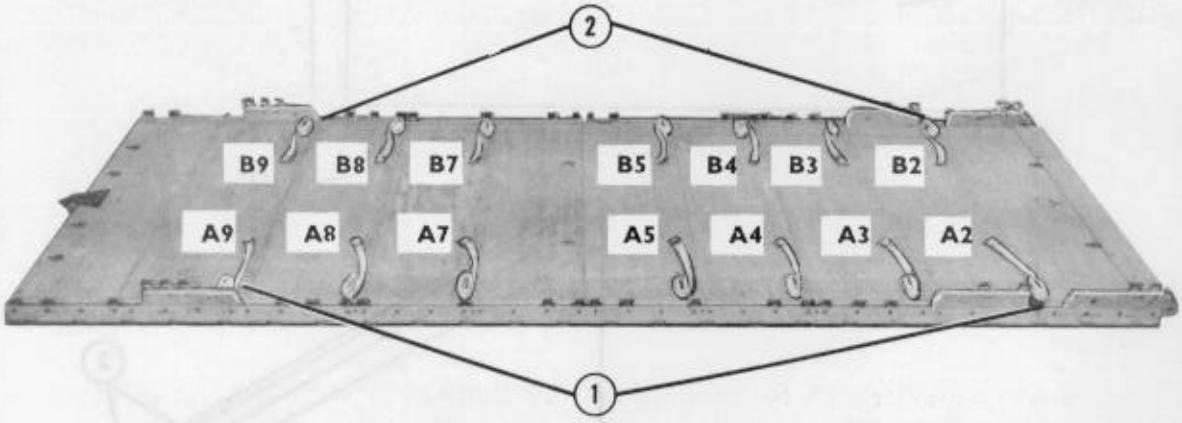
Step:

1. Install a suspension link in holes 6, 7, and 8 on each platform side rail. Face the flat end of the link to the front of the rail.
2. Install a suspension link in holes 33, 34, and 35 on each platform side rail. Face the flat end of the link to the rear of the rail.
3. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
4. Install clevises on bushings 1 and 2 on each front tandem link.
5. Install clevises on bushings 1 and 3 on the first suspension link on each side.
6. Install clevises on bushings 2, 3, and 4 on the second suspension link on each side.
7. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 5, 10, 11, 12, 13, 14, 17, 19, 20, 21, 22, 25, 28, 29, 30, 31, 37, 39, and 40.
8. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 26 and those bolted to the left side from 1A through 26A.
9. Label the tie-down rings according to FM 10-500-2/O 13C7-1-5.

Figure 17-1. Platform prepared

17-3. Placing Lashings on Platform

Pre-position fourteen 15-foot lashings through the tie-down rings on the platform as shown in Figure 17-2.



(1) Pass the end of a 15-foot lashing through tie-down ring A2 and through its own D-ring. Roll the free end neatly inside the rail. Repeat for tie-down rings A3, A4, A5, A7, A8, and A9.

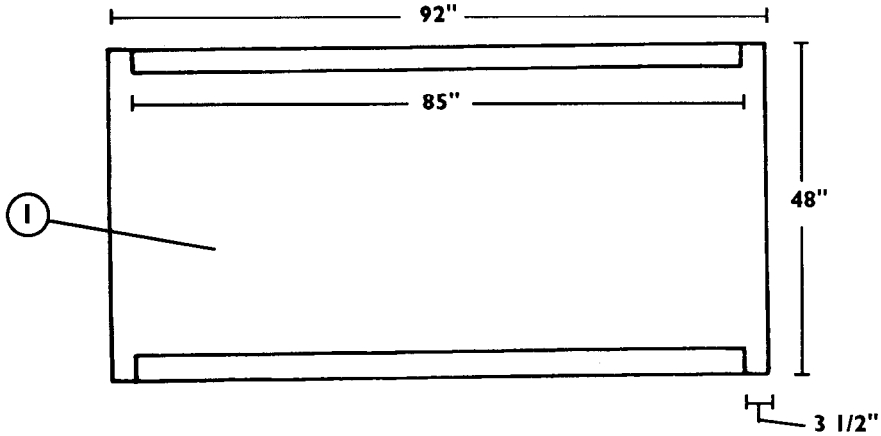
(2) Pass the end of a 15-foot lashing through tie-down ring B2 and through its own D-ring. Roll the free end neatly inside the rail. Repeat for tie-down rings B3, B4, B5, B7, B8, and B9.

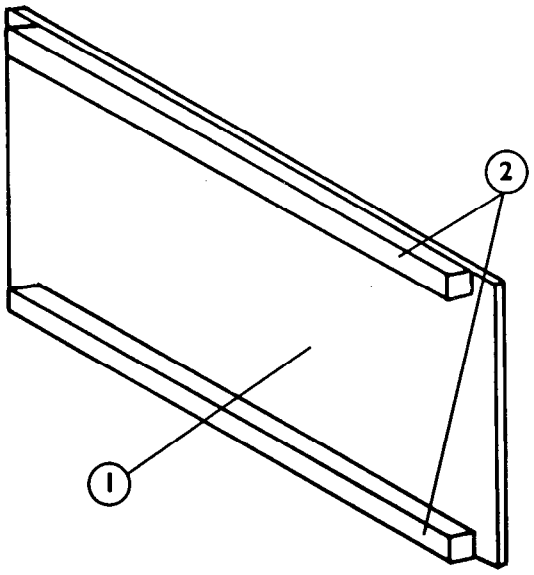
Figure 17-2. Lashings pre-positioned on platform

17-4. Constructing and Forming Storage Box Components

Construct the components of the storage boxes as shown in Figures 17-3, 17-4, and 17-5. Partially assemble the first box for loading as shown in Figure 17-6.

Notes: 1. These drawings are not drawn to scale.
2. Use 8d nails.



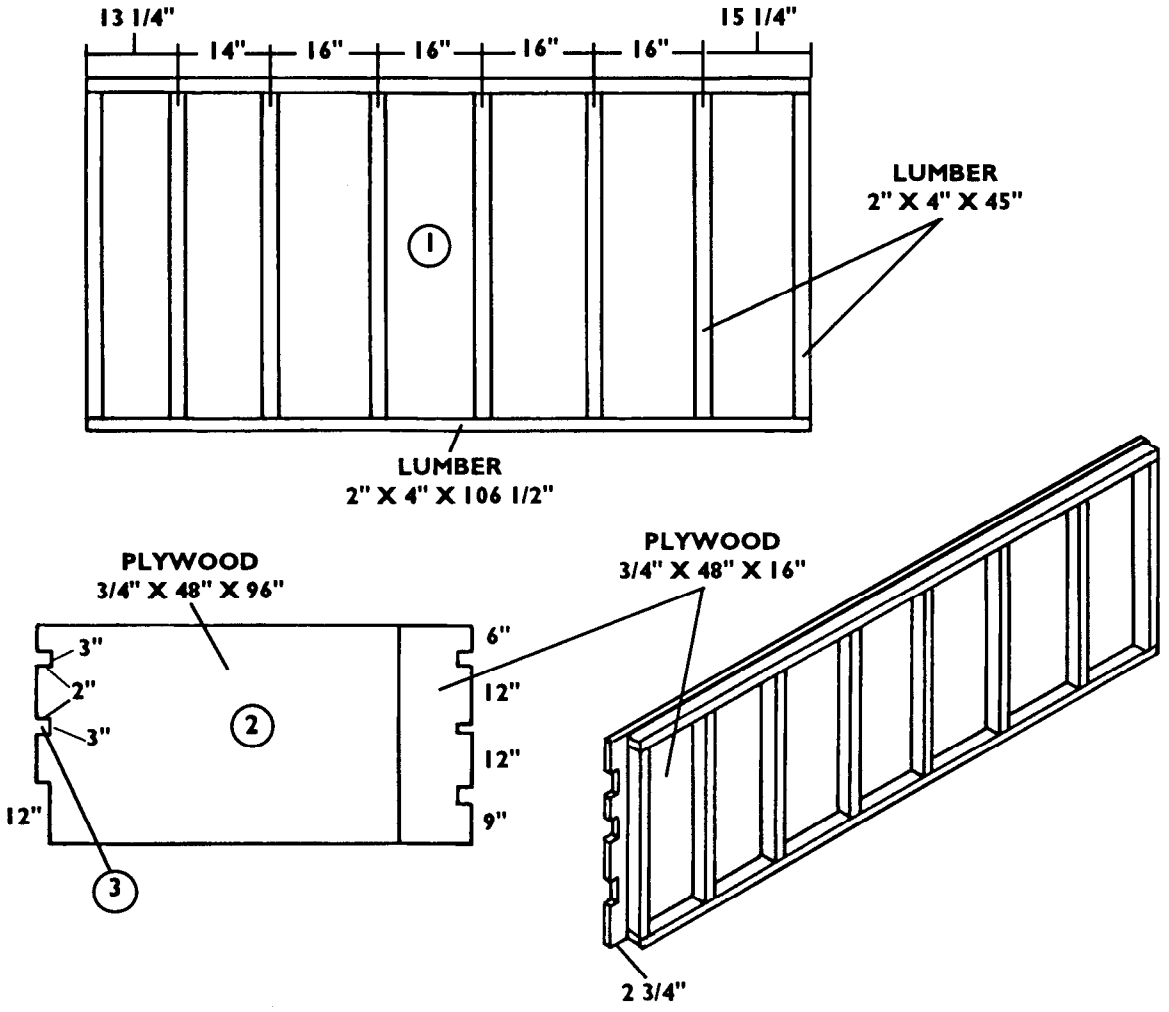


(1) Cut four 3/4- by 48- by 92-inch pieces of plywood.

(2) Nail a 2- by 4- by 85-inch piece of lumber along the top and bottom edges of each of the four end pieces with 8d nails as shown. Allow the plywood to extend past the lumber, 3 1/2 inches on each side.

Figure 17-3. Box ends constructed

Notes: 1. These drawings are not drawn to scale.
2. Use 8d nails.



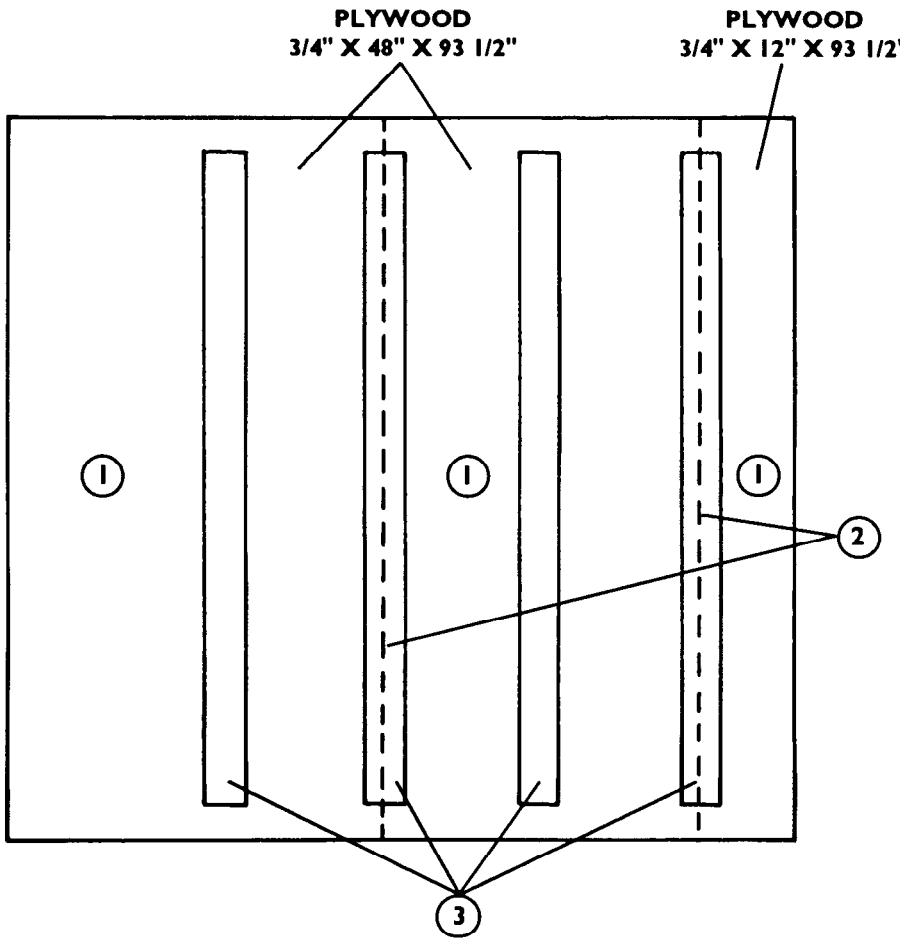
(1) Build a frame of 2- by 4-inch lumber as shown for each of the four box sides required. Space the upright pieces exactly as shown. Spacing is measured on center, except from the ends.

(2) Lay a full 3/4- by 48- by 96-inch sheet of plywood and a 3/4- by 16- by 48-inch piece of plywood, unfinished side down, over the frame made in step 1 so that the joint between the pieces is centered over the second upright from the left. Nail the plywood to the frame so that the edges are flush with the top and bottom of the frame, and the plywood extends past the frame 2 3/4 inches on each end.

(3) Make 2- by 3-inch cutouts as shown in each of the four sides. Face the 12-inch cutout to the right on two of the sides, and to the left on the other two.

Figure 17-4. Box sides constructed

Notes: 1. This drawing is not drawn to scale.
2. Use 8d nails.



(1) Cut two 3/4- by 48- by 93 1/2-inch pieces of plywood. In addition, cut a 3/4- by 12- by 93 1/2-inch piece of plywood.

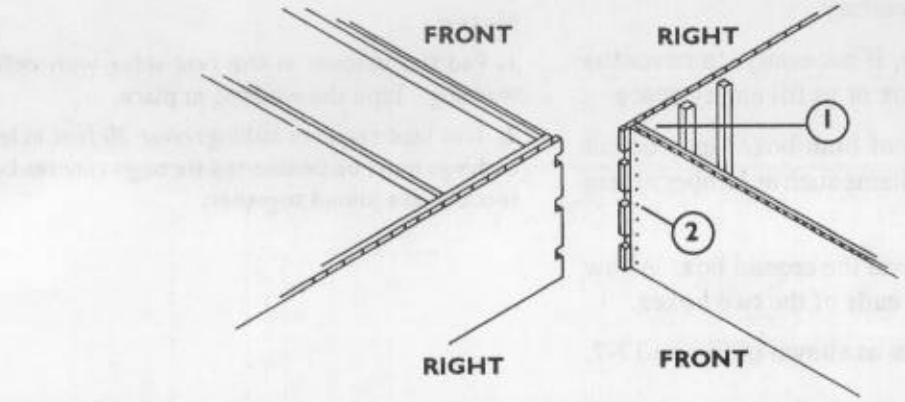
(2) Lay the pieces of plywood cut in step 1 together, finished side up, as shown.

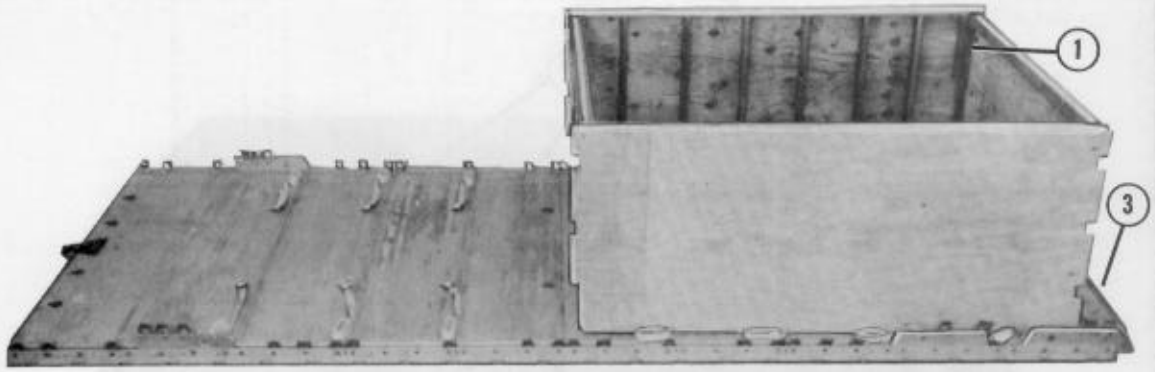
(3) Space four 2- by 4- by 85-inch pieces of lumber flat side down under the plywood as shown. Nail the plywood to the lumber.

(4) Repeat steps 1 through 3 to make the top for the second box (not shown).

Figure 17-5. Tops of boxes constructed

Note: This drawing is not drawn to scale.





(1) Assemble the box on the platform. Fit each end of the first box between the sides with the left and right of each end flush against the inside vertical lumber uprights on the sides.

(2) Nail the pieces of the box together with 8d nails through the ends of the box into the vertical lumber pieces in the sides.

(3) Be sure that the front end of the box is centered and 9 inches from the front edge of the platform.

Figure 17-6. Box partially assembled for loading

17-5. Loading and Closing the Boxes

Load and close the boxes as described below.

a. Use the tie-down rings inside the box to secure the load, if necessary.

b. Use honeycomb, if necessary, to cover the platform inside the box or to fill empty space.

c. The inside ends of both boxes may be cut out to allow for long items such as lumber or tent poles.

d. Assemble and load the second box. Allow 6 inches between the ends of the two boxes.

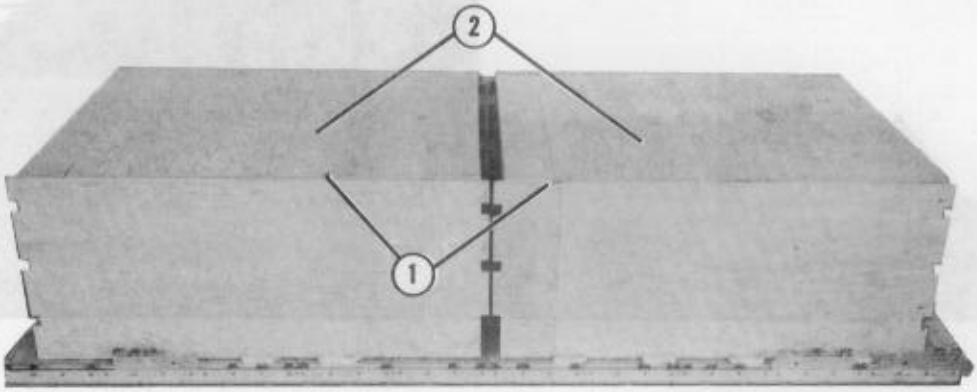
e. Close both boxes as shown in Figure 17-7.

17-6. Installing Lashings

Install the lashings and secure pre-positioned lashings as shown in Figures 17-8 through 17-15.

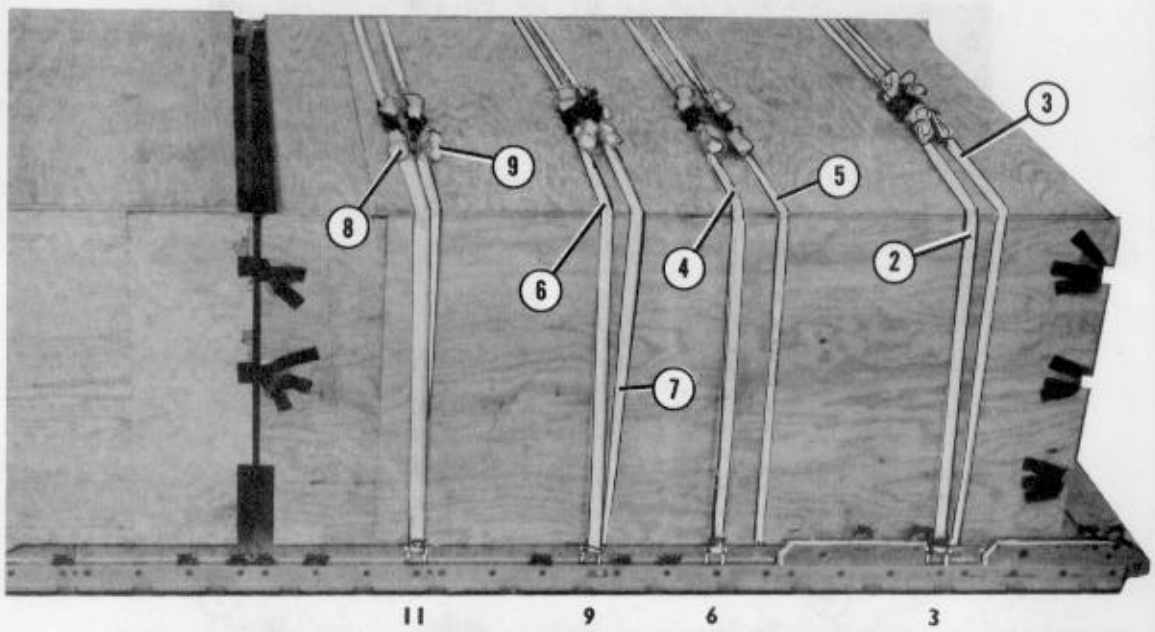
Notes:

1. Pad the cutouts in the box sides with cellulose wadding. Tape the wadding in place.
2. This load requires lashings over 30 feet in length. Lashings must be positioned through clevises before sections are joined together.



(1) Align the box tops with the lumber facing down.
(2) Nail the tops to the boxes with 8d nails.

Figure 17-7. Boxes closed



(1) Pass a 15-foot lashing through clevis 3 and through its own D-ring. Do the same for clevises 3A, 6, 6A, 9, 9A, 11, and 11A.

(2) Secure the pre-positioned lashing in tie-down ring B2 to the lashing in clevis 3 on top of the box with two D-rings and a load binder.

(3) Secure the pre-positioned lashing in tie-down ring A2 to the lashing in clevis 3A on top of the box with two D-rings and a load binder.

(4) Secure the pre-positioned lashing in tie-down ring B3 to the lashing in clevis 6 on top of the box with two D-rings and a load binder.

(5) Secure the pre-positioned lashing in tie-down ring A3 to the lashing in clevis 6A on top of the box with two D-rings and a load binder.

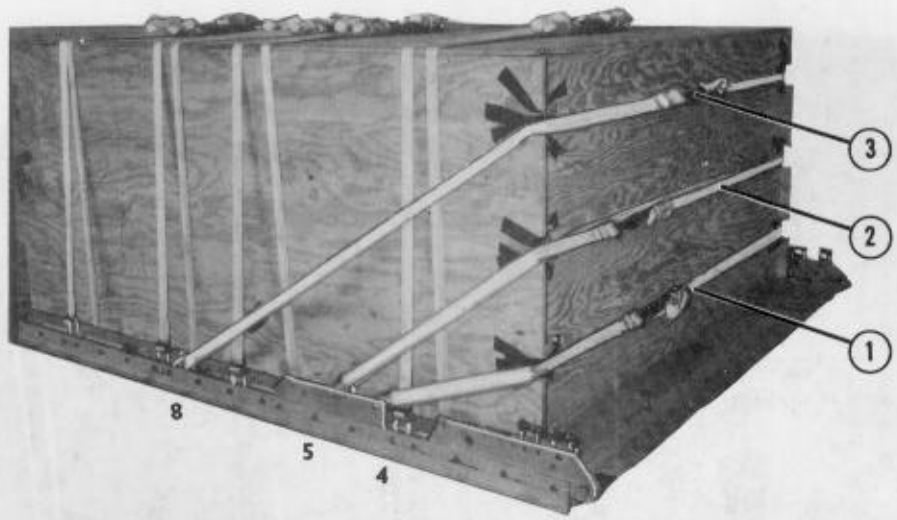
(6) Secure the pre-positioned lashing in tie-down ring B4 to the lashing in clevis 9 on top of the box with two D-rings and a load binder.

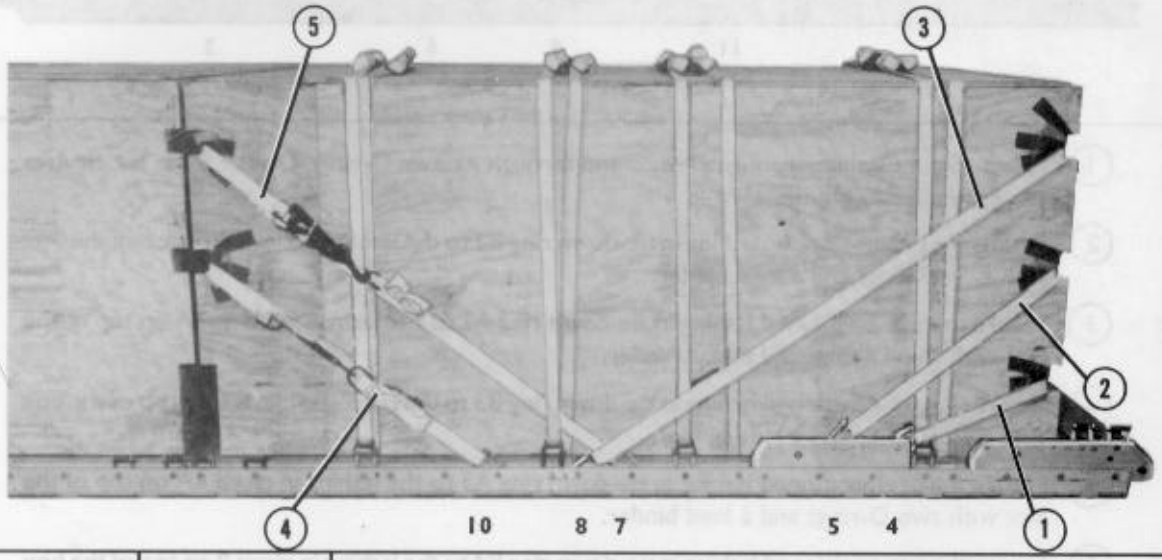
(7) Secure the pre-positioned lashing in tie-down ring A4 to the lashing n clevis 9A on top of the box with two D-rings and a load binder.

(8) Secure the pre-positioned lashing in tie-down ring B5 to the lashing in clevis 11 on top of the box with two D-rings and a load binder.

(9) Secure the pre-positioned lashing in tie-down ring A5 to the lashing in clevis 11A on top of the box with two D-rings and a load binder.

Figure 17-8. Pre-positioned lashings secured to lashings on platform rails



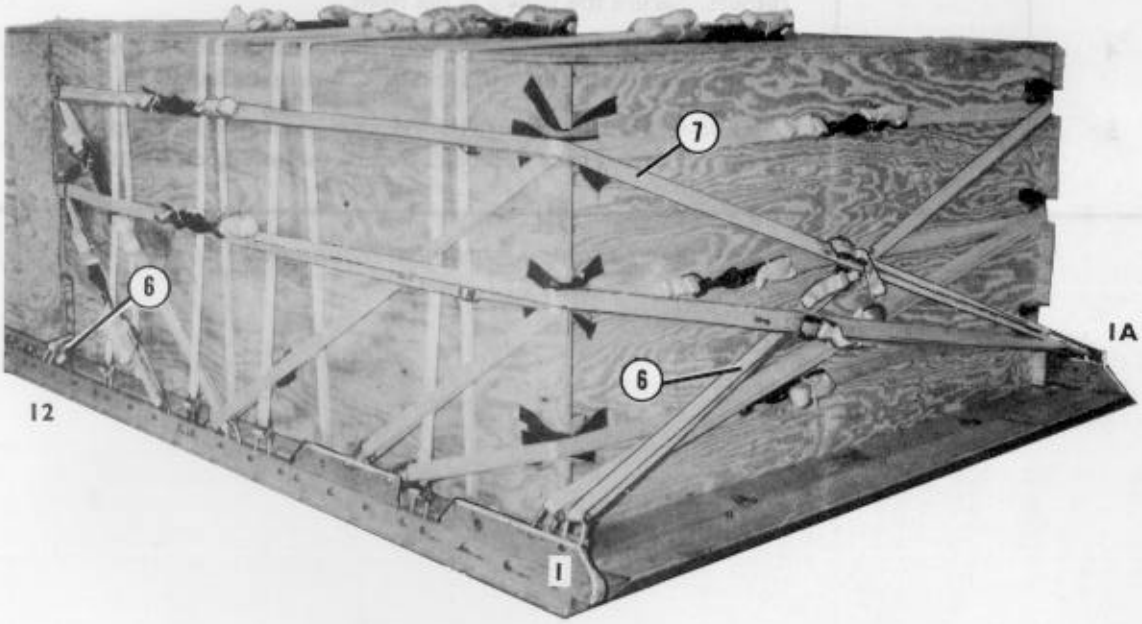


Lashing Number	Tie-Down Clevis Number	Instructions
1	4 and 4A	Pass a 30-foot lashing through both clevises and through the bottom front cutouts. Secure the lashing in the front.
2	5 and 5A	Pass a 30-foot lashing through both clevises and through the middle front cutouts. Secure the lashing in the front.

Figure 17-9. Lashings 1 through 5 installed

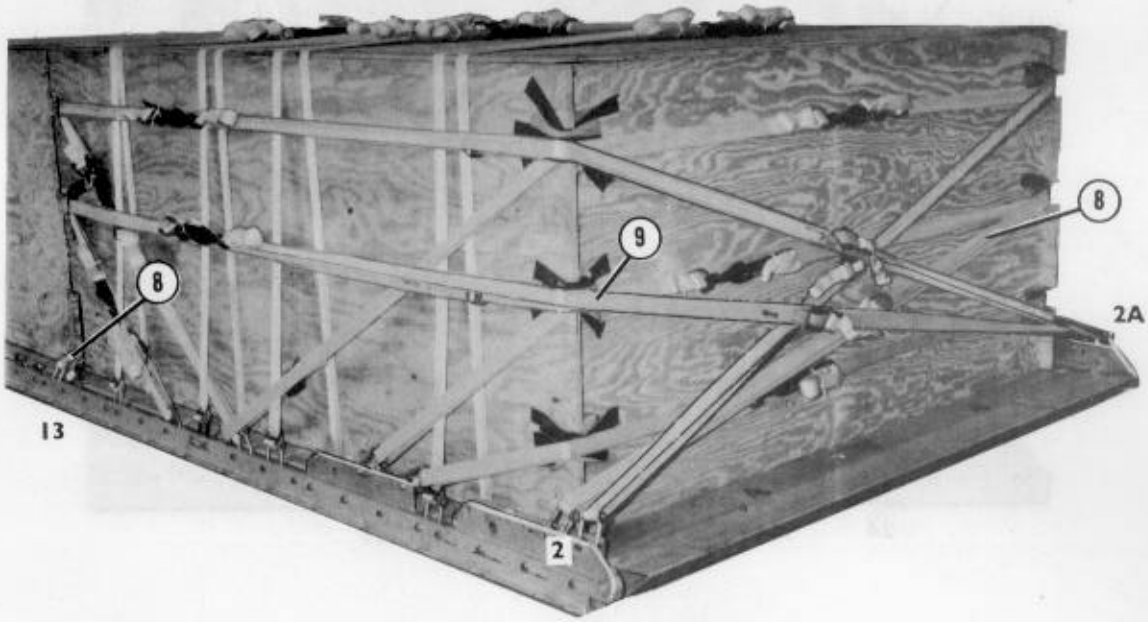
Lashing Number	Tie-Down Clevis Number	Instructions
3	8 and 8A	Pass a 45-foot lashing through both clevises and through the top front cutouts. Secure the lashing in the front.
4	10 and 10A	Pass a 45-foot lashing through both clevises and through the middle cutouts on the rear side of the first box. Secure the lashing on the side.
5	7 and 7A	Pass a 45-foot lashing through both clevises and through the top cutouts on the rear side of the first box. Secure the lashing on the side.

Figure 17-9. Lashings 1 through 5 installed (continued)



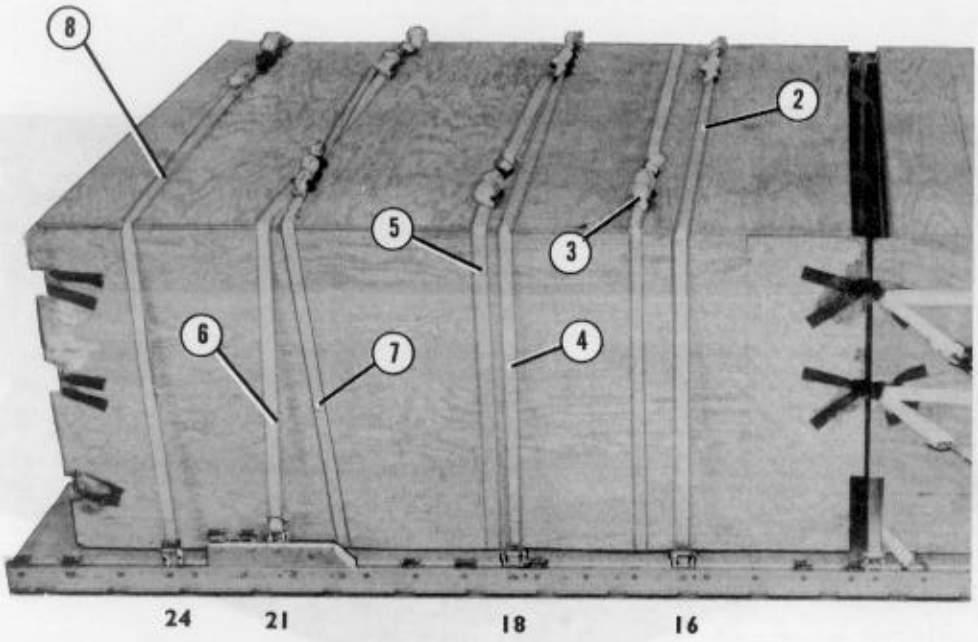
Lashing Number	Tie-Down Clevis Number	Instructions
6	1 and 12	Pass a 60-foot lashing through clevis 1, through the top cutout in the left side of the first box, and around the left side of the box. Pass the lashing through the top left cutout on the rear end of the first box and through clevis 12. Secure the lashing on the left side.
7	1A and 12A	Pass a 60-foot lashing through clevis 1A, through the top cutout in the right side of the first box, and around the right side of the box. Pass the lashing through the top right cutout on the rear end of the first box, and through clevis 12A. Secure the lashing on the right side.

Figure 17-10. Lashings 6 and 7 installed



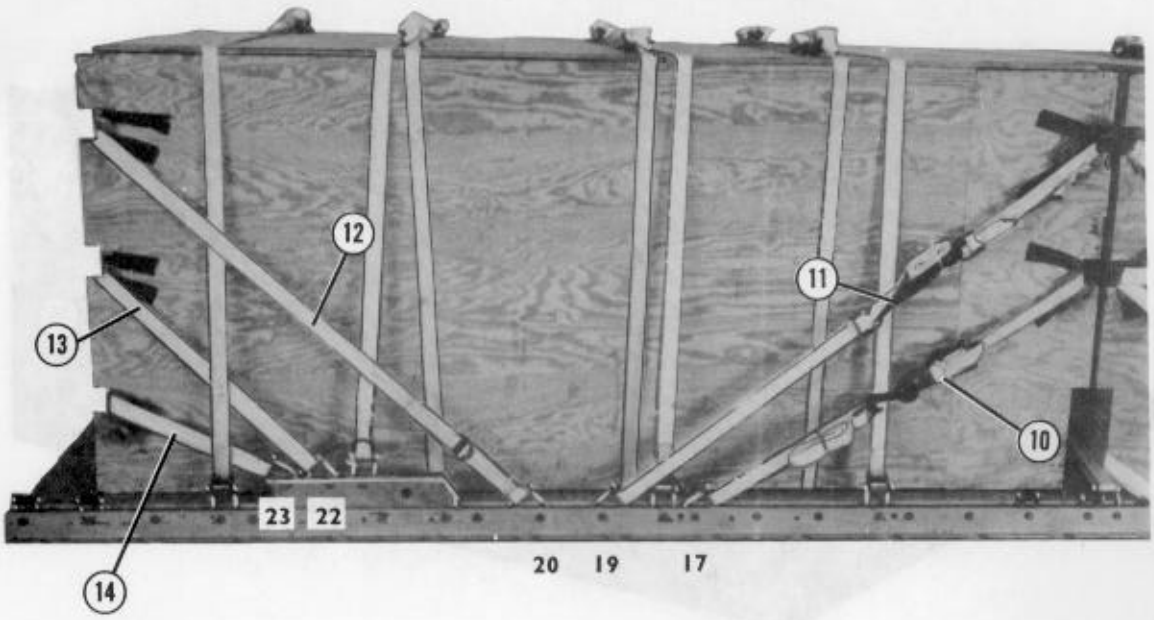
Lashing Number	Tie-Down Clevis Number	Instructions
8	2 and 13	Pass a 60-foot lashing through clevis 2, through the middle left cutout in the left side of the first box, and around the left side of the box. Pass the lashing through the middle left cutout on the rear end of the first box and through clevis 13. Secure the lashing on the left side.
9	2A and 13A	Pass a 60-foot lashing through clevis 2A, through the middle right cutout in the right side of the first box, and around the right side of the box. Pass the lashing through the middle right cutout on the rear end of the first box and through clevis 13A. Secure the lashing on the right side.

Figure 17-11 Lashings 8 and 9 installed



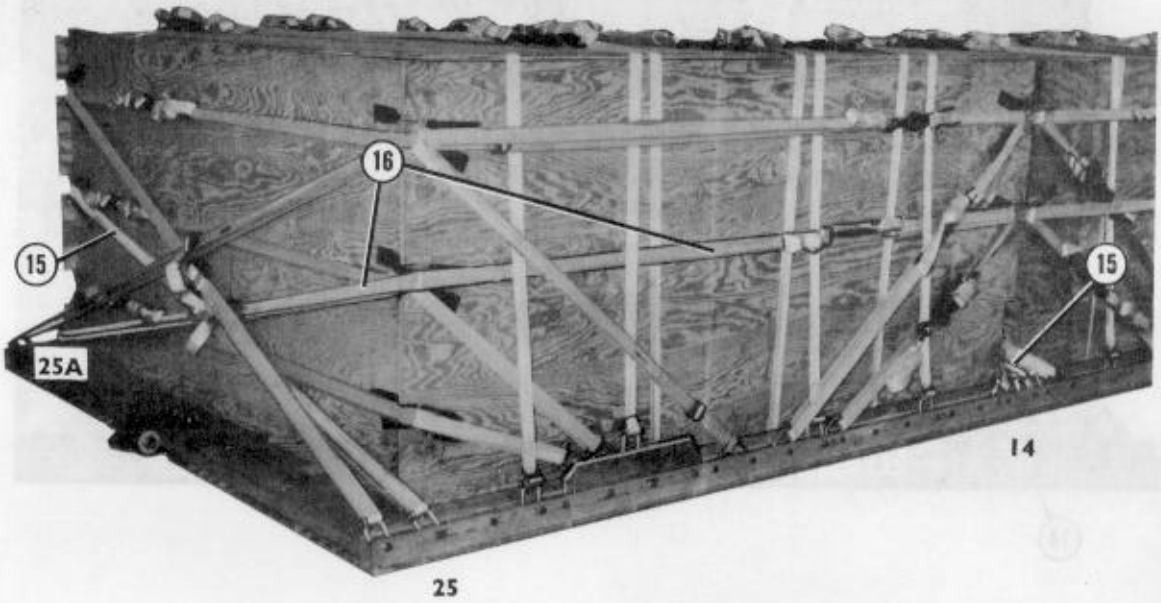
1. Pass a 15-foot lashing through clevis 16 and through its own D-ring. Do the same for clevis 16A, 18, 18A, 21, 21A, 24, and 24A.
2. Secure the pre-positioned lashing in tie-down ring B7 to the lashing in clevis 16 on top of the box with two D-rings and a load binder.
3. Secure the pre-positioned lashing in tie-down ring A7 to the lashing in clevis 16A on top of the box with two D-rings and a load binder.
4. Secure the pre-positioned lashing in tie-down ring B8 to the lashing in clevis 18 on top of the box with two D-rings and a load binder.
5. Secure the pre-positioned lashing in tie-down ring A8 to the lashing in clevis 18A on top of the box with two D-rings and a load binder.
6. Secure the pre-positioned lashing in tie-down ring B9 to the lashing in clevis 21 on top of the box with two D-rings and a load binder.
7. Secure the pre-positioned lashing in tie-down ring A9 to the lashing in clevis 21A on top of the box with two D-rings and a load binder.
8. Secure the lashings in clevises 24 and 24A together on top of the box with two D-rings and a load binder.

Figure 17-12. Pre-positioned lashings secured to lashings on platform rails



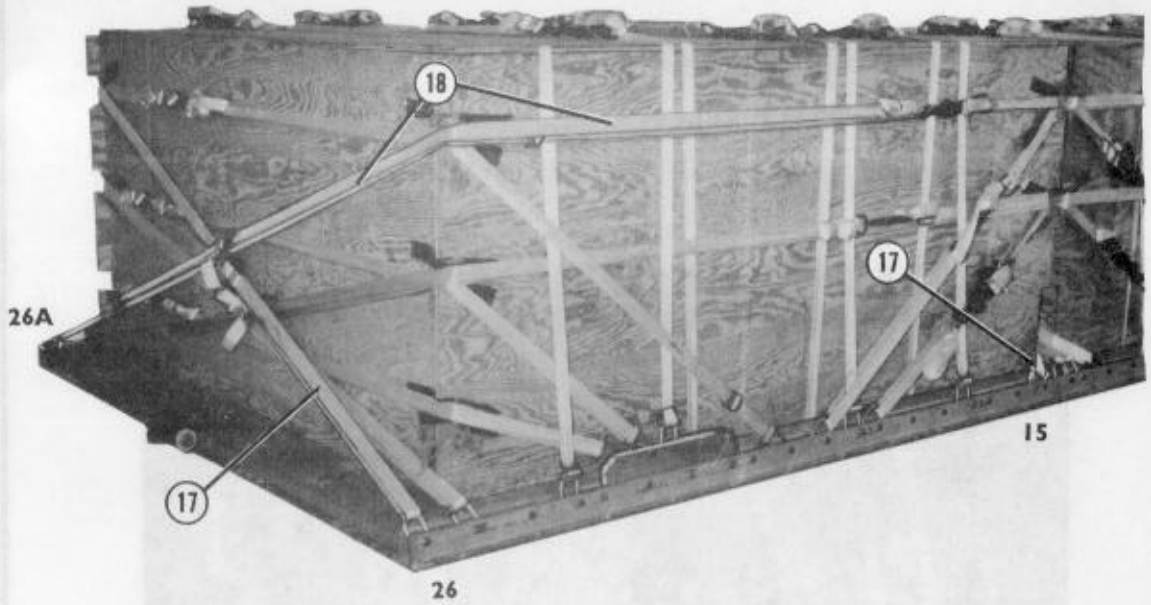
Lashing Number	Tie-Down Clevis Number	Instructions
10	17 and 17A	Pass a 30-foot lashing through both clevises and through the middle cutouts in the front end of the second box. Secure the lashing on the side.
11	19 and 19A	Pass a 45-foot lashing through both clevises and through the top cutouts in the front end of the second box. Secure the lashing on the side.
12	20 and 20A	Pass a 45-foot lashing through both clevises and through the top rear cutouts. Secure the lashing in the rear.
13	22 and 22A	Pass a 30-foot lashing through both clevises and through the middle rear cutouts. Secure the lashing in the rear.
14	23 and 23A	Pass a 30-foot lashing through both clevises and through the bottom rear cutouts. Secure the lashing in the rear.

Figure 17-13. Lashings 10 through 14 installed



Lashing Number	Tie-Down Clevis Number	Instructions
15	14 and 25	Pass a 60-foot lashing through clevis 14, through the middle cutout in the left side of the second box and around the left side of the box. Pass the lashing through the left middle cutout at the rear and through clevis 25. Secure the lashing in the rear.
16	14A and 25A	Pass a 60-foot lashing through clevis 14A, through the middle cutout in the right side of the second box, and around the right side of the box. Pass the lashing through the right middle cutout at the rear and through clevis 25A. Secure the lashing on the right side.

Figure 17-14. Lashings 15 and 16 installed

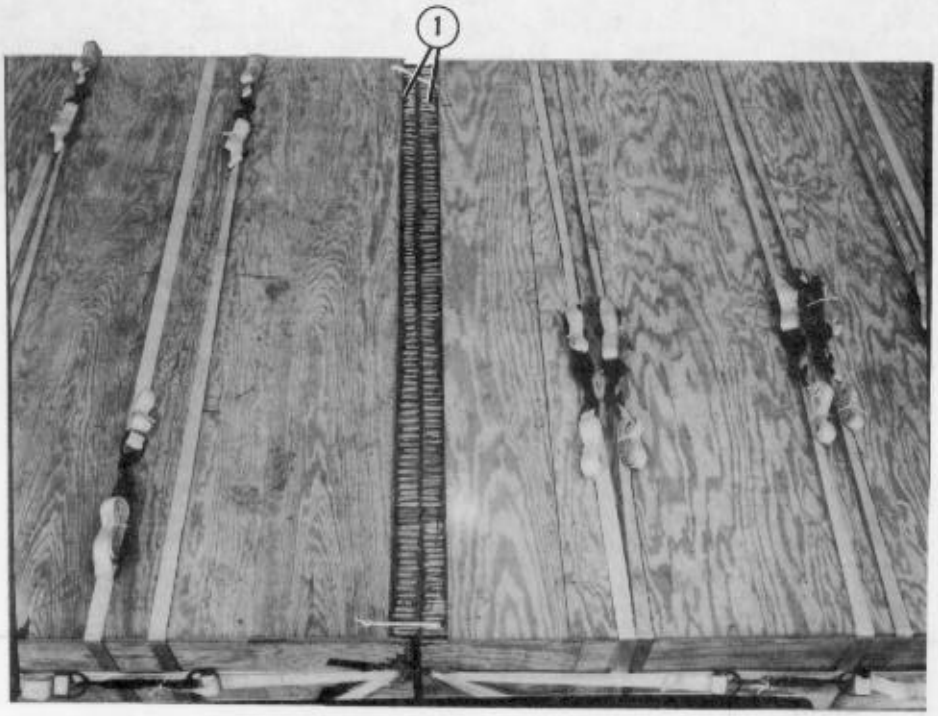


Lashing Number	Tie-Down Clevis Number	Instructions
17	15 and 26	Pass a 60-foot lashing through clevis 15, through the top cutout in the left side of the second box, and around the left side of the box. Pass the lashing through the top left rear cutout and through clevis 26. Secure the lashing in the rear.
18	15A and 26A	Pass a 60-foot lashing through clevis 15A, through the top cutout in the right side of the second box, and around the right side of the box. Pass the lashing through the top right rear cutout and through clevis 26A. Secure the lashing on the right side.

Figure 17-15. Lashings 17 and 18 installed

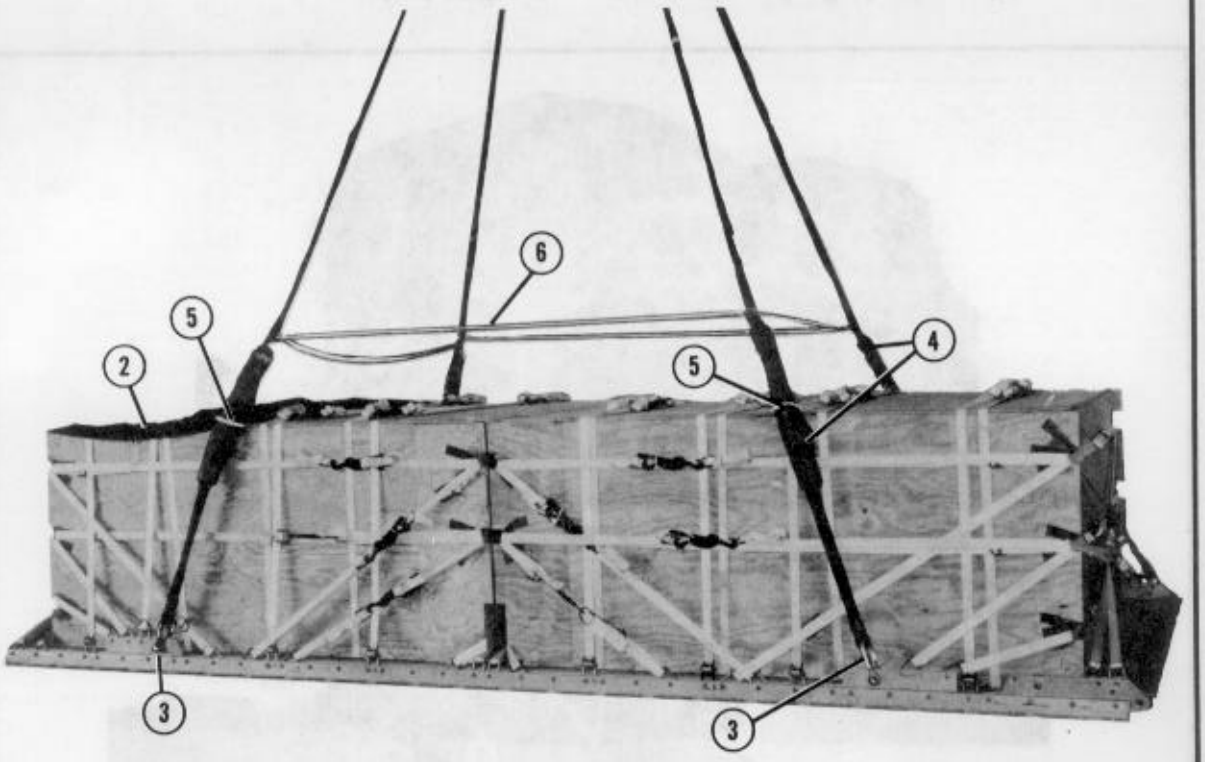
17-7. Installing Load Cover, Suspension Slings, and Deadman's Tie

Install the load cover, honeycomb buffers, suspension slings, and deadman's tie as shown in Figure 17-16.



(1) Slide two 6- by 92-inch pieces of honeycomb between the two boxes at the top. The honeycomb may be held in place by lengths of type III nylon cord tied around the honeycomb and through holes drilled in convenient locations on the boxes.

Figure 17-16. Load cover, suspension slings, and deadman's tie installed



(2) Cover the rear fourth of the load with a 60- by 96-inch piece of cotton duck cloth. Secure the cloth to adjacent lashings with type III nylon cord.

(3) Attach a 20-foot (4-loop), type XXVI nylon webbing sling to each suspension link with a large suspension clevis.

(4) Pull the suspension slings tight above the load. Pad each suspension sling 36 inches above the clevis with a 9- by 24-inch piece of felt. Tape the felt in place 2 inches past each end of the felt and in the center.

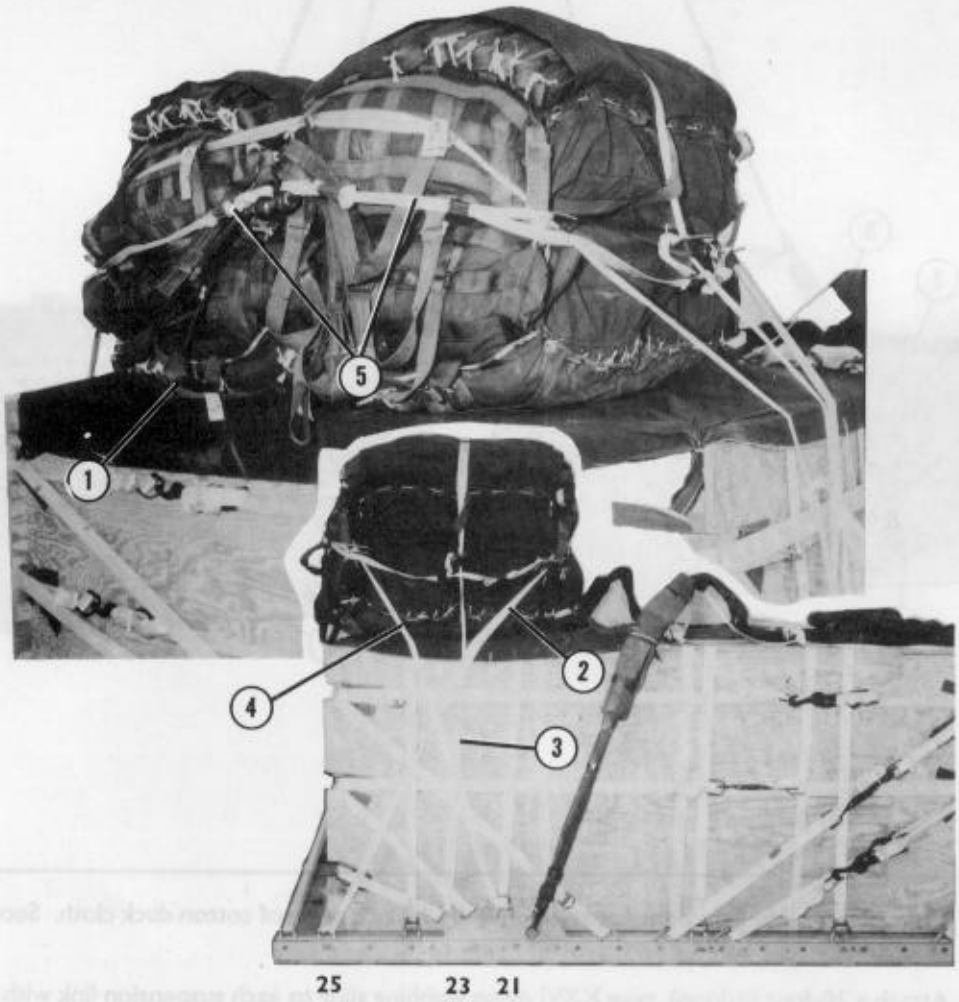
(5) Tie the front suspension slings together over the top of the load with a length of type III nylon cord. Tie the rear suspension slings together in the same way.

(6) Install the deadman's tie according to FM 10-500-2/TO 13C7-1-5.

Figure 17-16. Load cover, suspension slings, and deadman's tie installed (continued)

17-8. Installing Parachutes

Consult FM 10-500-2/TO 13C7-1-5 for the number of cargo parachutes required for the weight of this load. Four G-11B cargo parachutes are shown here. Install the cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 17-17.

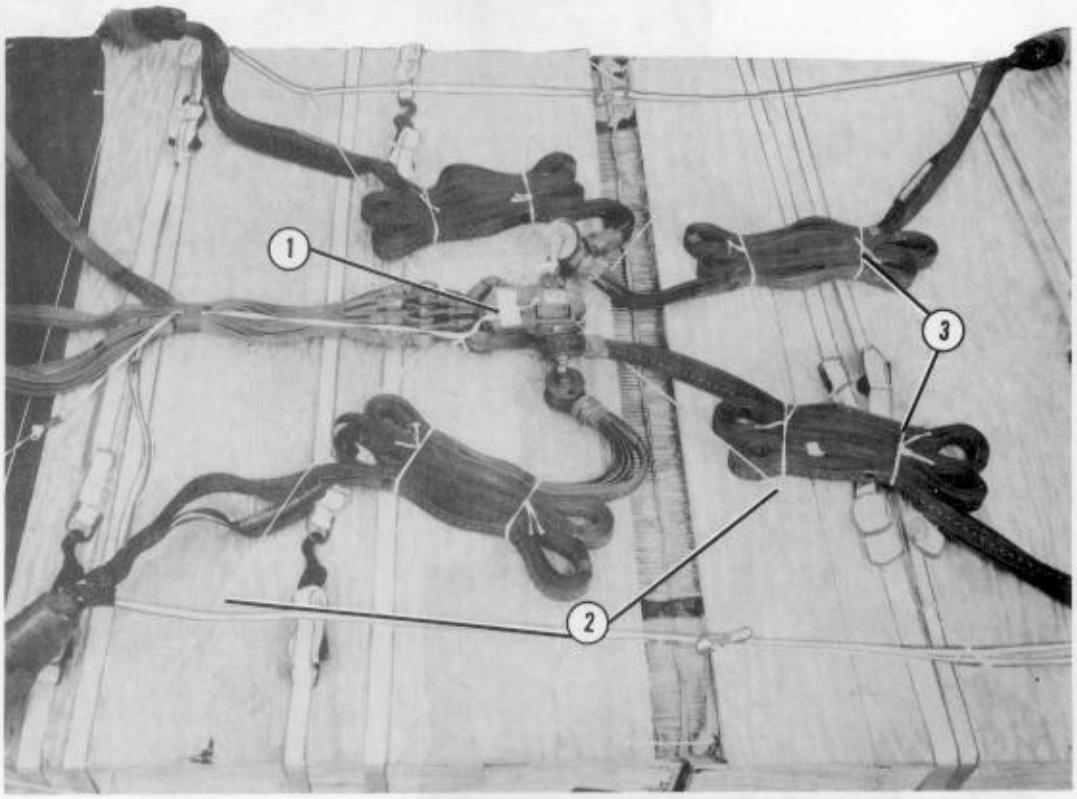


1. Install the cargo parachutes at the rear of the load.
2. Tie the front parachute restraint strap to clevises 25 and 25A.
3. Tie the center parachute restraint strap to clevises 23 and 23A.
4. Tie the rear parachute restraint strap to clevises 21 and 21A.
5. Install two multicut parachute release straps.

Figure 17-17. Four G-11B cargo parachutes installed

17-9. Installing Release System

Install and safety an M-2 cargo parachute release assembly as shown in Figure 17-18.



(1) Prepare and install an M-2 cargo parachute release assembly according to FM 10-500-2/ TO 13C7-1-5. Place the release assembly in front of the parachutes as shown.

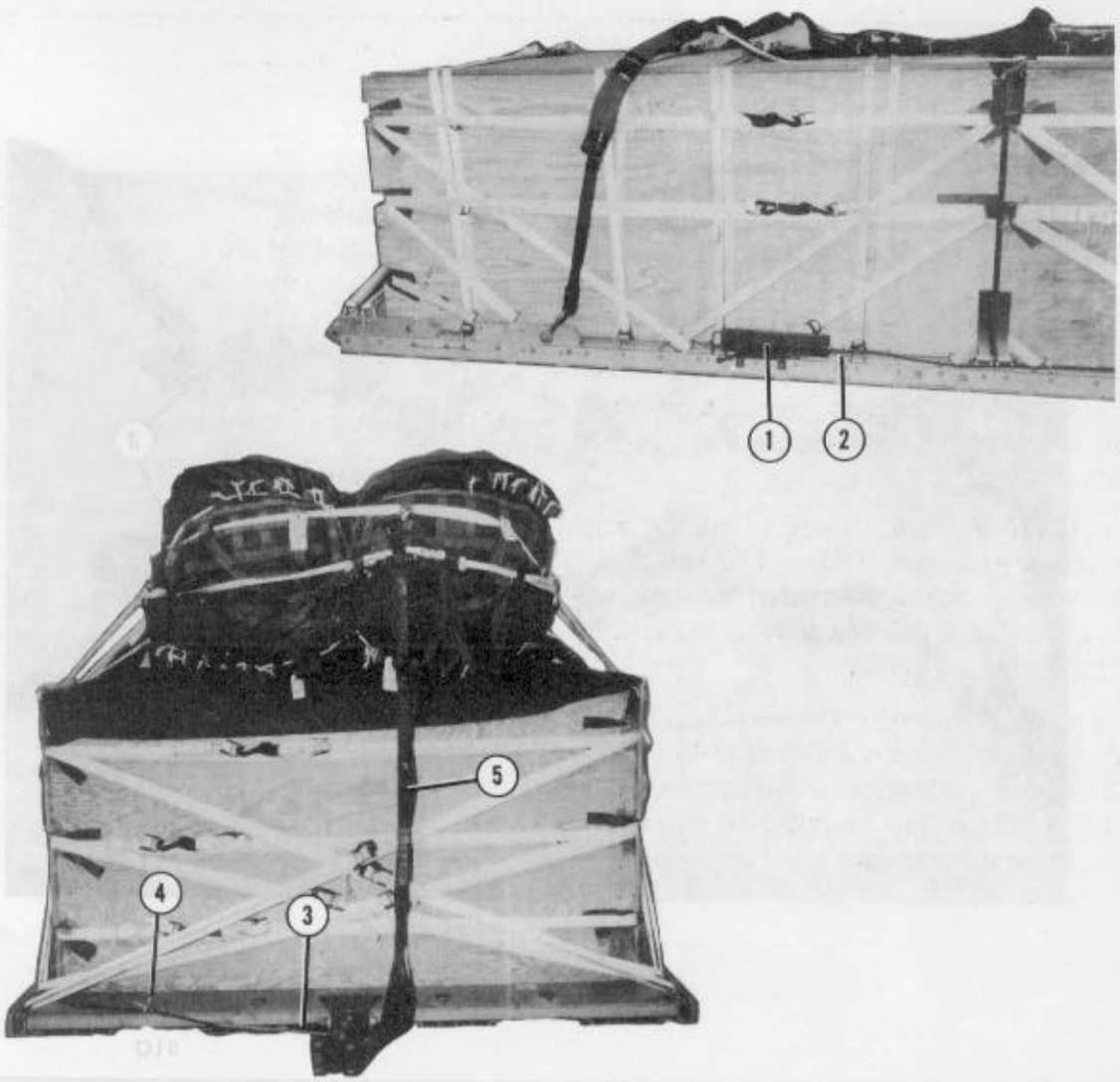
(2) Safety the release to convenient points on the load with type III nylon cord.

(3) S-fold and tie the slack in the suspension slings with type I, 1/4-inch cotton webbing.

Figure 17-18. Release assembly installed

17-10. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 17-19.



(1) Install the EFTA actuator brackets to the rear mounting holes on the left platform side rail.

(2) Attach a 20-foot release cable to the actuator. Install the actuator to the brackets and run the cable to the rear.

Figure 17-19. Extraction system installed

(3) Install the latch assembly to the extraction bracket. Attach the release cable to the latch assembly.

(4) Tie the cable to tie-down ring D10 with type I, 1/4-inch cotton webbing.

(5) Install a 12-foot (2-loop), type XXVI nylon webbing sling as the deployment line. S-fold the slack and tie the folds with type I, 1/4-inch cotton webbing.

Figure 17-19. Extraction system installed (continued)

17-11. Installing Provisions for Emergency Restraints

Select and install provisions for emergency restraints according to the emergency restraint requirements table in FM 10-500-2/ TO 13C7-1-5.

17-12. Placing Extraction Parachute

Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 10-500-2/TO 13C7-1-5.

Place the extraction parachute and extraction line on the load for installation in the aircraft.

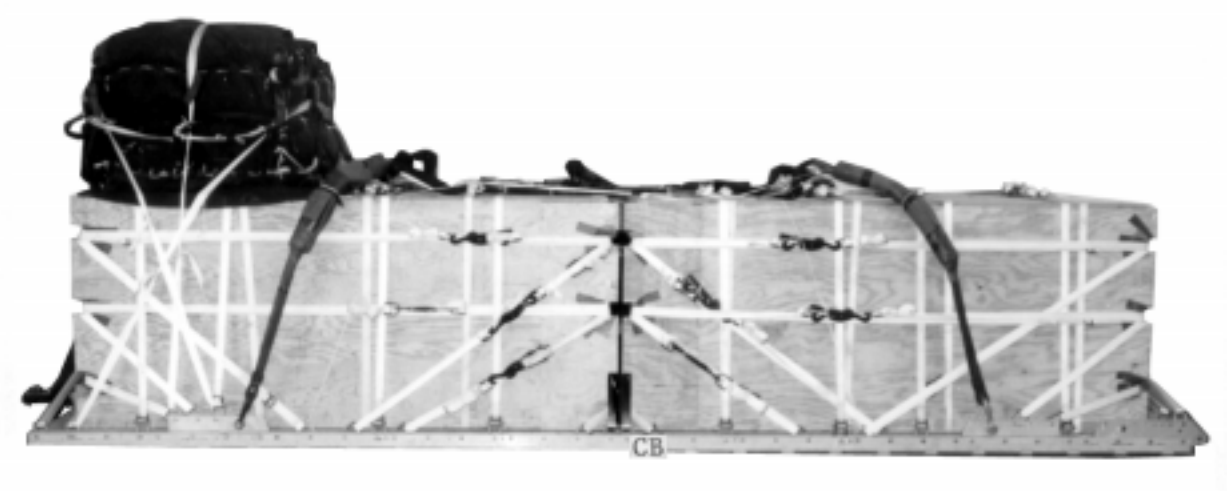
17-13. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 17-20.

17-14. Equipment Required

Use the equipment listed in Table 17-1 to rig the load shown.

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:	Minimum load allowed	6,300 pounds
	Maximum load allowed	21,500 pounds
Height		88 inches
Width		108 inches
Length		240 inches
Overhang:	Front	0 inches
	Rear	0 inches
CB (from front edge of platform)		126 inches
Extraction System (adds 18 inches to length of platform)		EFTC

Figure 17-20. Mass supply boxes rigged on a 20-foot platform for low-velocity airdrop

Table 17-1. Equipment required for rigging mass supply boxes on a 20-foot type V platform for low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive paste, 1-gal	As required
4030-00-090-5354	Clevis, suspension, 1-in (large)	7
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5787	Coupling, airdrop, extraction force transfer with cable, 20-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	12
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-01-183-2678	Leaf, extraction line (line bag)	2
	Line, drogue (for C-17)	
1670-01-062-6313	60-ft (3-loop), type XXVI	1
	Line, extraction	
1670-01-062-6313	For C-130: 60-ft (3-loop), type XXVI	1
1670-01-107-7651	For C-141: 140-ft (3-loop), type XXVI	1
	For C-5:	
1670-01-107-7651	140-ft (3-loop), type XXVI and	1
1670-01-062-6313	60-ft (3-loop), type XXVI	1
1670-01-107-7651	For C-17: 140-ft (3-loop), type XXVI	1
	Link assembly:	
1670-00-006-2752	Four-point	1
1670-00-783-5988	Type IV	12
	Two-point, 5 1/2-in	
5306-00-435-8994	Bolt, 1-in diam, 4 in long	2
5310-00-232-5165	Nut, 1-in, hexagonal	2
1670-00-003-1954	Plate, side, 5 1/2-in	2
5365-00-007-3414	Spacer, large	2
5510-00-220-6146	Lumber, 2- by 4- by:	
	45-in	
	85-in	
	106 1/2-in	8
5315-00-010-4657	Nail, steel wire, common, 6d	As required

Table 17-1. Equipment required for rigging mass supply boxes on a 20-foot type V platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in	1 sheet
	Parachute:	
1670-01-016-7841	Cargo, G-11B	4
1670-00-040-8135	Cargo extraction, 28-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
	Platform, airdrop, type V, 20-foot	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(52)
1670-01-353-8424	Extraction bracket assembly	(1)
1670-01-162-2381	Link, tandem, suspension link assembly	(4)
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	12 sheets
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo airdrop	
	For suspension:	
1670-01-064-4453	20-ft(4-loop), type XXVI nylon webbing	4
	For deployment:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-06-6302	20-ft (2-loop), type XXVI nylon webbing	12
5340-00-040-8219	Strap, parachute release, multi-cut, comes w/ 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	93
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-263-3591	Type VIII	As required