
Section II

RIGGING 155-MILLIMETER AMMUNITION

15-17. Description of Load

Ninety-six 155-millimeter projectiles and 72 powder canisters are rigged for low-velocity airdrop on a 16-foot, type V airdrop platform. All 155-millimeter ammunition packaged as shown and listed in FM 10-500-53/MCRP 4-3.8/TO 13C7-18-41, as certified for airdrop, may be rigged using these procedures. This load uses three G-11B cargo parachutes.

15-18. Preparing Platform

Prepare a 16-foot, type V airdrop platform as given below:

a. Inspecting Platform. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.

b. Installing Tandem Links. Install four tandem links as shown in Figure 15-14.

c. Attaching and Numbering Clevises. Attach and number 44 clevis assemblies as shown in Figure 15-14.

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.

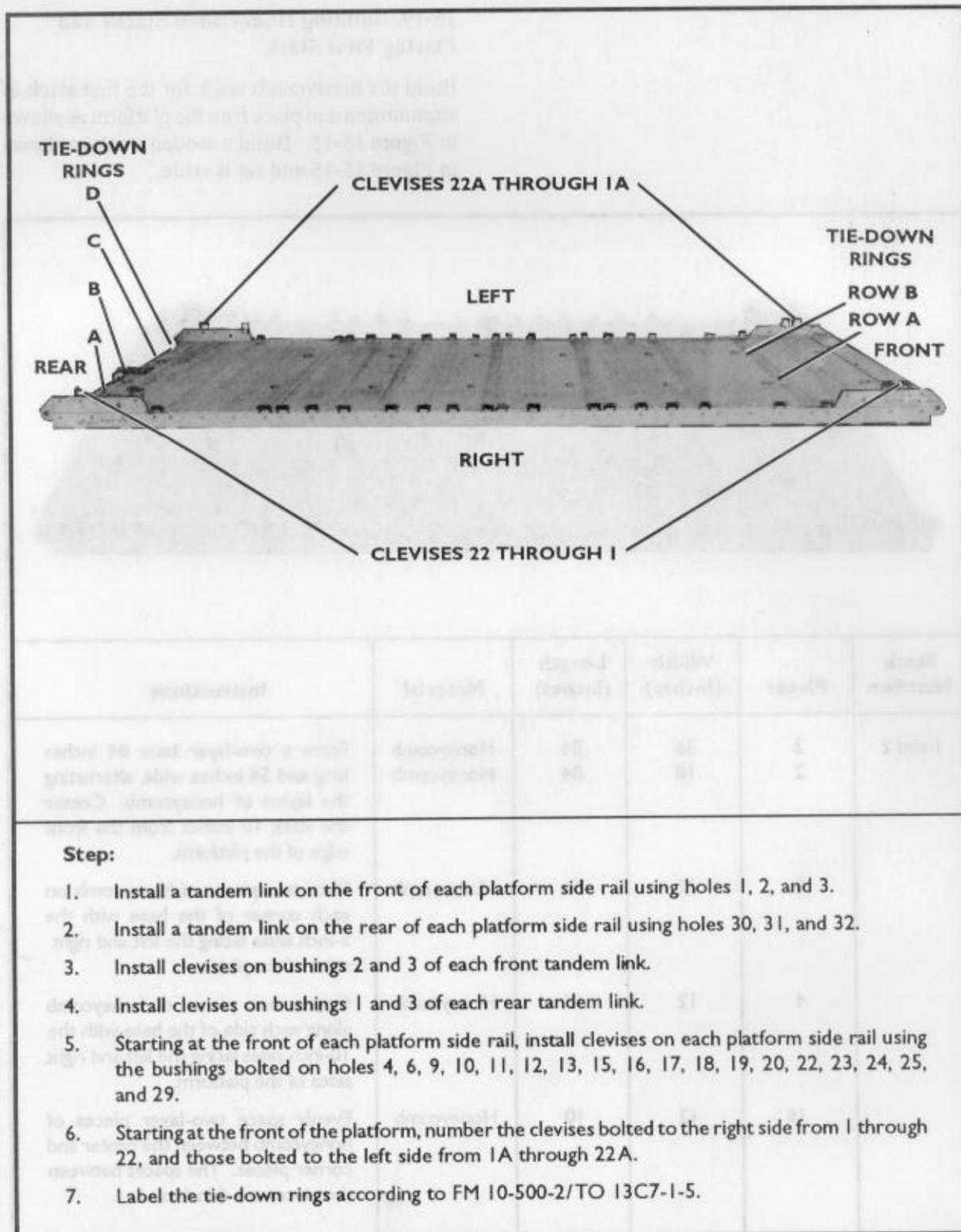
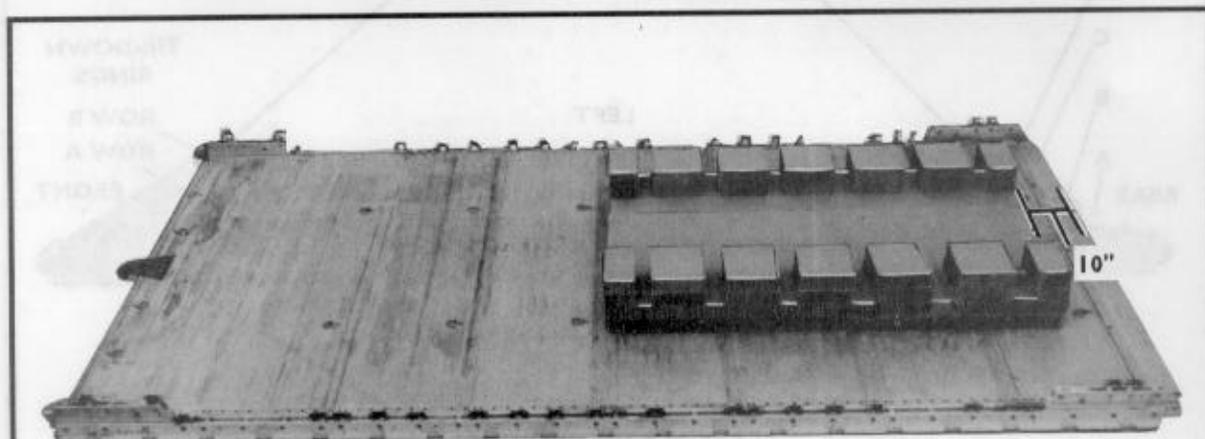


Figure 15-14. Platform prepared

15-19. Building Honeycomb Stacks and Placing First Stack

Build the honeycomb stack for the first stack of ammunition and place it on the platform as shown in Figure 15-15. Build a second stack as shown in Figure 15-15 and set it aside.

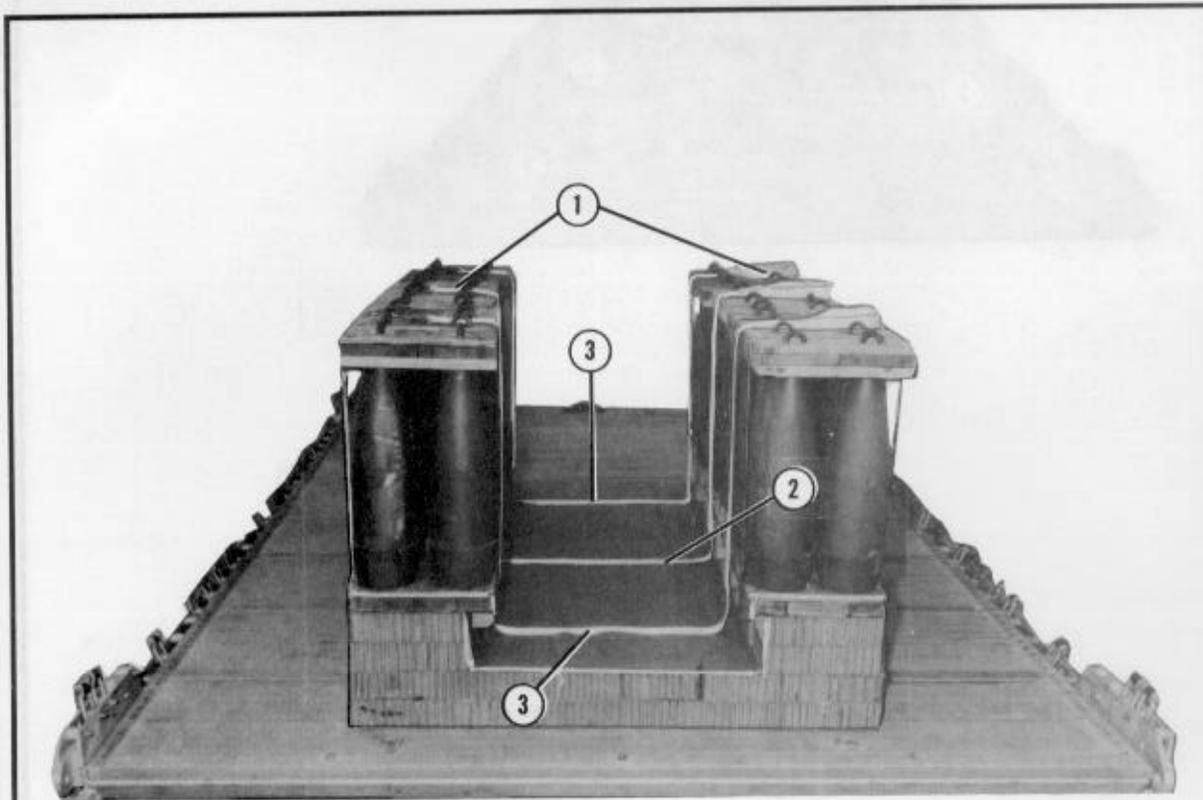


Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1 and 2	2	36	84	Honeycomb	Form a two-layer base 84 inches long and 54 inches wide, alternating the layers of honeycomb. Center the stack 10 inches from the front edge of the platform.
	2	18	84	Honeycomb	
	8	12	5	Honeycomb	
	4	12	10	Honeycomb	
	16	12	10	Honeycomb	Evenly space two-layer pieces of honeycomb between the center and corner pieces. The spaces between the pieces are 4 inches.

Figure 15-15. Honeycomb for first ammunition stack prepared and placed

15-20. Positioning and Securing First Ammunition Stack

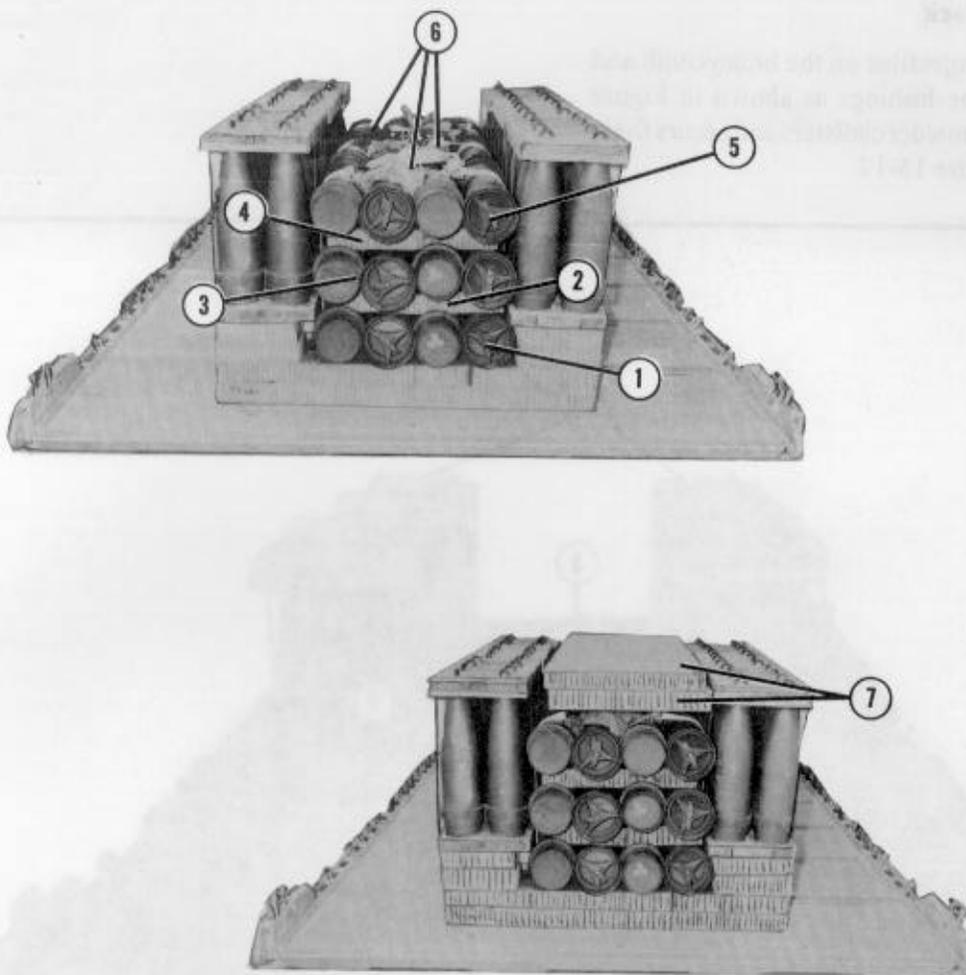
Set six sets of projectiles on the honeycomb and pre-position three lashings as shown in Figure 15-16. Stow 36 powder canisters and secure them as shown in Figure 15-17.



- ① Center four powder canisters on each of the pre-positioned lashings in Figure 15-18, steps 3 and 4. Adjust the ends of the canisters as shown.
- ② Place a 24-foot piece of honeycomb over each group of four canisters.
- ③ Place a second layer of 12 canisters over the honeycomb placed in step 2.
- ④ Place a second layer of three 24-foot pieces of honeycomb over the second layer of

- ① Set three bundles of projectiles flush on the honeycomb on each side. Fit the skids at the bottom of the bundles into the slots in the honeycomb stack.
- ② Center a 15-foot lashing on the base layer of honeycomb from left to right.
- ③ Place a 15-foot lashing 14 inches from each end of the stack in a left-to-right direction.

Figure 15-16. Projectiles placed on honeycomb and lashings pre-positioned



- ① Center four powder canisters on each of the pre-positioned lashings in Figure 15-16, steps 2 and 3. Alternate the ends of the canisters as shown.
- ② Place a 24- by 24-inch piece of honeycomb over each group of four canisters.
- ③ Place a second layer of 12 canisters over the honeycomb placed in step 2.
- ④ Place a second layer of three 24- by 24-inch pieces of honeycomb over the second layer of canisters.
- ⑤ Place a third layer of 12 canisters over the honeycomb placed in step 4.
- ⑥ Secure the three pre-positioned lashings over the canisters. Pad between the load binders and canisters with cellulose wadding.
- ⑦ Center two 28- by 84-inch pieces of honeycomb over the canisters.

Figure 15-17. Canisters stowed and secured

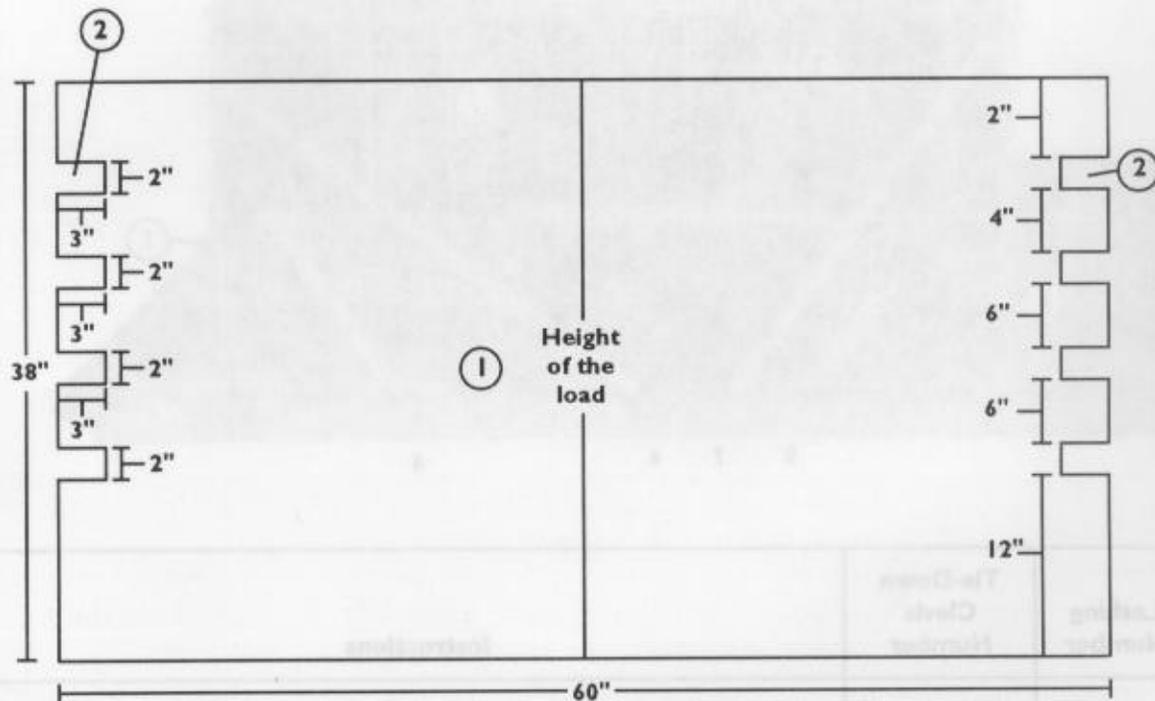
15-21. Constructing Endboards

Construct four endboards as shown in Figure 15-18.

CAUTION

The endboards must be the same height as the ends of the load.

Note: This drawing is not drawn to scale.

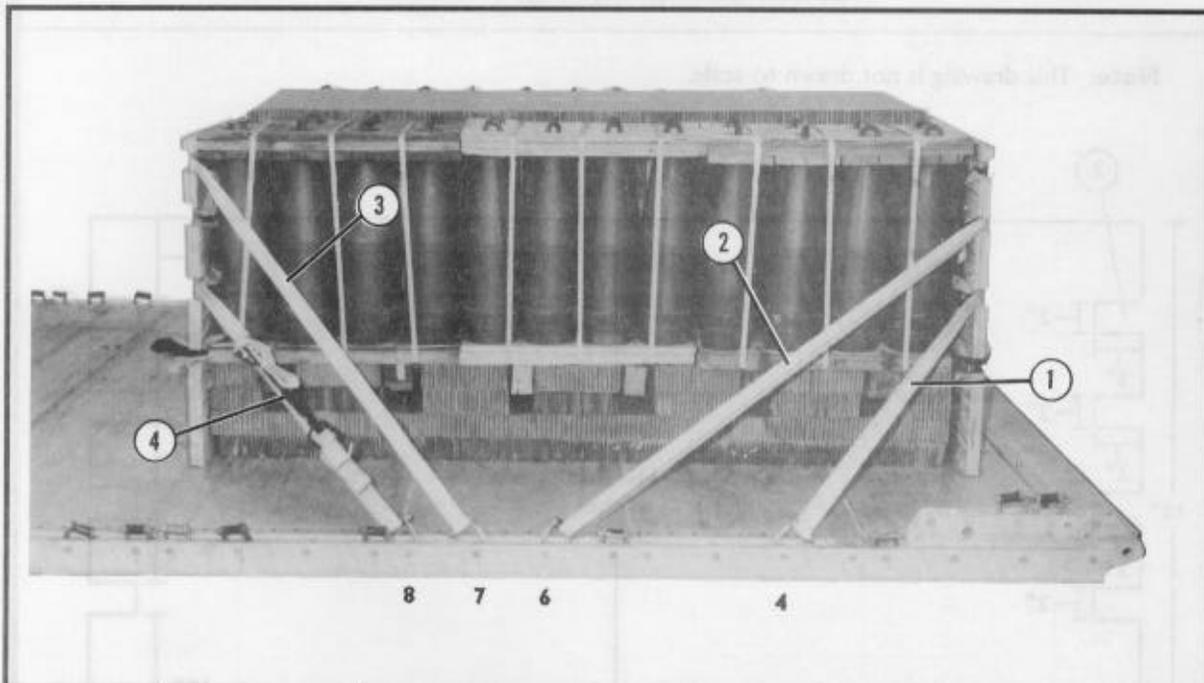


- ① Cut eight 3/4- by 60- by 38-inch pieces of plywood.
- ② Make 2- by 3-inch cutouts as shown.
- ③ Nail two pieces of plywood flush together with 6d nails to make four endboards. Pad the cutouts with cellulose wadding and tape (not shown).

Figure 15-18. Endboards for 155-millimeter ammunition constructed

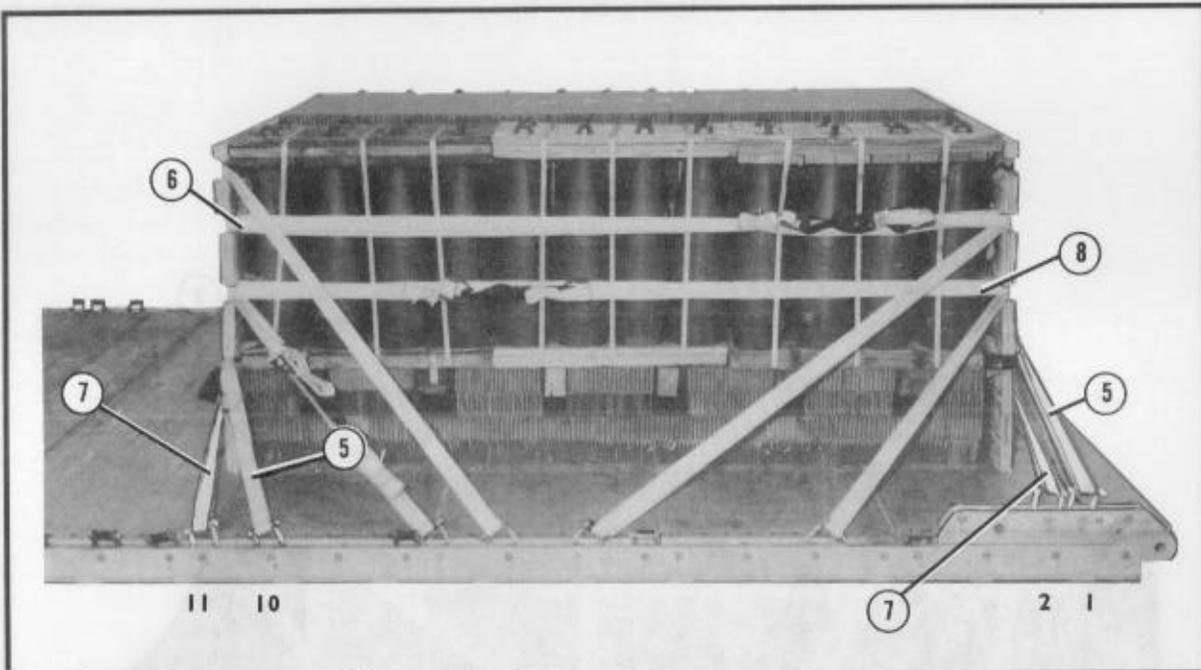
15-22. Lashing First Ammunition Stack and First and Second Endboards

Lash the load to the platform according to FM 10-500-2/TO 13C7-1-5 and as shown in Figures 15-19 and 15-20. Set an endboard against each end of the first ammunition stack. Lash the first and second endboards and the first ammunition stack to the platform as shown in Figure 15-19.



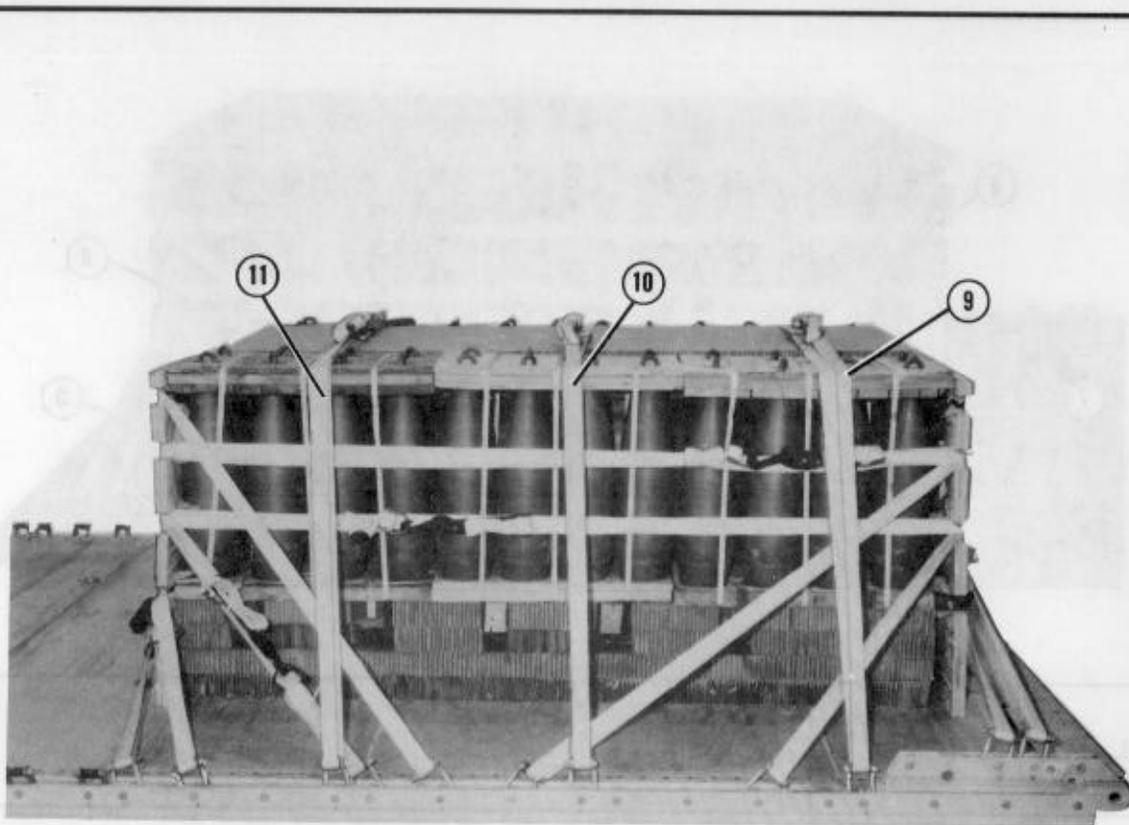
Lashing Number	Tie-Down Clevis Number	Instructions
1	4 and 4A	Pass a 30-foot lashing through both clevises and through the third cutouts from the top in the first endboard. Secure the lashing in front.
2	6 and 6A	Pass a 30-foot lashing through both clevises and through the second cutouts from the top in the first endboard. Secure the lashing in front.
3	7 and 7A	Pass a 30-foot lashing through both clevises and through the top cutouts in the second endboard. Secure the lashing on the left side.
4	8 and 8A	Pass a 30-foot lashing through both clevises and through the third cutouts from the top in the second endboard. Secure the lashing on the right side.

Figure 15-19. Lashings installed for first stack



Lashing Number	Tie-Down Clevis Number	Instructions
5	1 and 10	Pass a 30-foot lashing through clevis 1, through the second cutout from the top in the left side of the first endboard, and around the left side of the ammunition stack. Pass the lashing through the second cutout from the top in the left side of the second endboard and through clevis 10. Secure the lashing on the left side.
6	1A and 10A	Pass a 30-foot lashing through clevis 1A, through the second cutout from the top in the right side of the first endboard, and around the right side of the ammunition stack. Pass the lashing through the second cutout from the top in the right side of the second endboard and through clevis 10A. Secure the lashing on the right side.
7	2 and 11	Pass a 30-foot lashing through clevis 2, through the third cutout from the top in the left side of the first endboard, and around the left side of the ammunition stack. Pass the lashing through the third cutout from the top in the left side of the second endboard, and through clevis 11. Secure the lashing on the left side.
8	2A and 11A	Pass a 30-foot lashing through clevis 2A, through the third cutout from the top in the right side of the first endboard, and around the right side of the ammunition stack. Pass the lashing through the third cutout from the top in the right side of the second endboard, and through clevis 11A. Secure the lashing on the right side.

Figure 15-19. Lashings installed for first stack (continued)



Lashing Number	Tie-Down Clevis Number	Instructions
9	3 and 3A	Pass a 30-foot lashing through both clevises and over the top of the load. Secure the lashing on top.
10	5 and 5A	Pass a 30-foot lashing through both clevises and over the top of the load. Secure the lashing on top.
11	9 and 9A	Pass a 30-foot lashing through both clevises and over the top of the load. Secure the lashing on top.

Figure 15-19. Lashings installed for first stack (continued)

15-23. Positioning Second Ammunition Stack and Third and Fourth Endboards

Position and secure the second ammunition stack and its endboards as described below.

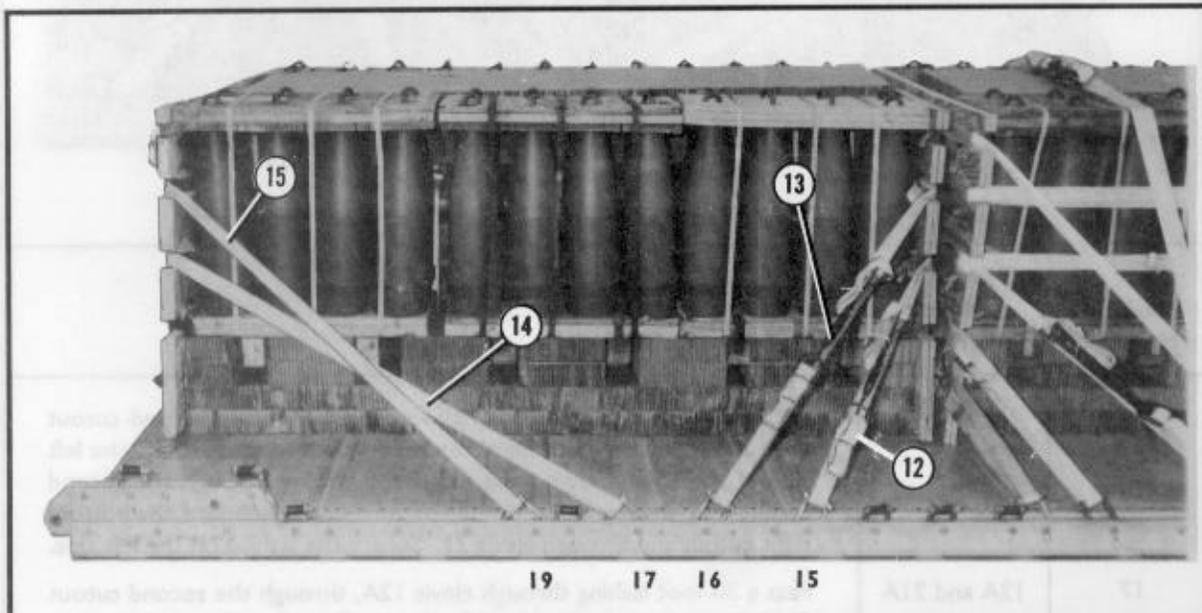
a. Center the honeycomb for the second ammunition stack 6 inches from the rear edge of the platform.

b. Stow and secure six sets of projectiles and 36 powder canisters on the honeycomb as shown in Figures 15-16 and 15-17.

c. Set an endboard against each end of the second ammunition stack.

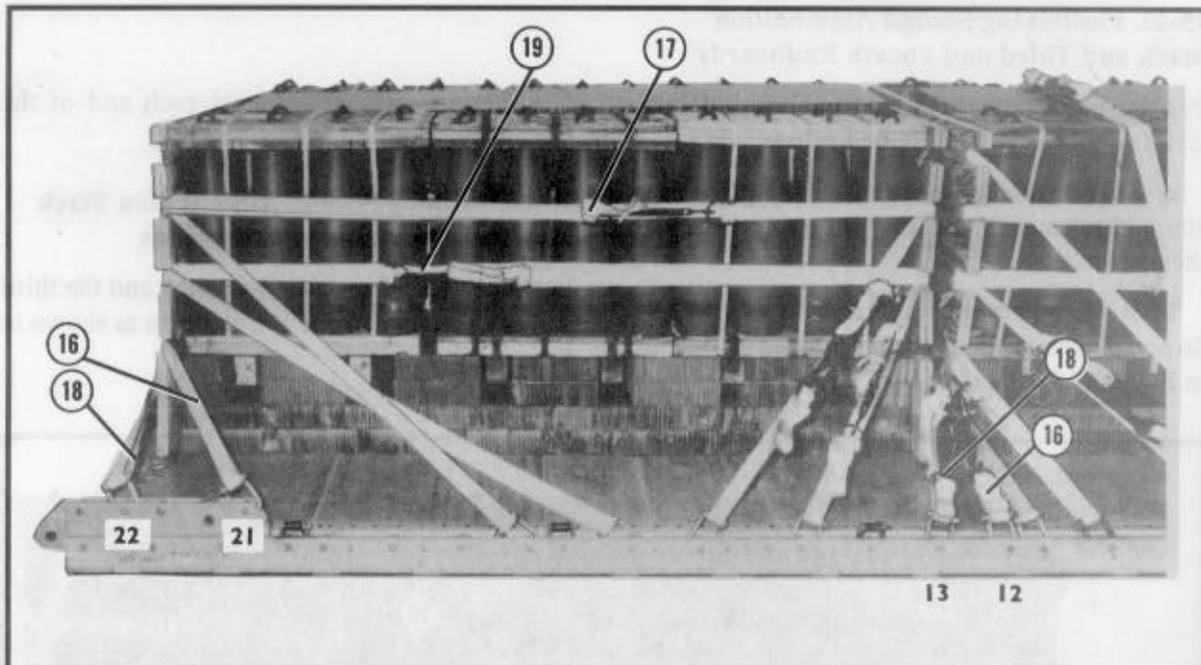
15-24. Lashing Second Ammunition Stack and Third and Fourth Endboards

Lash the second ammunition stack and the third and fourth endboards to the platform as shown in Figure 15-20.



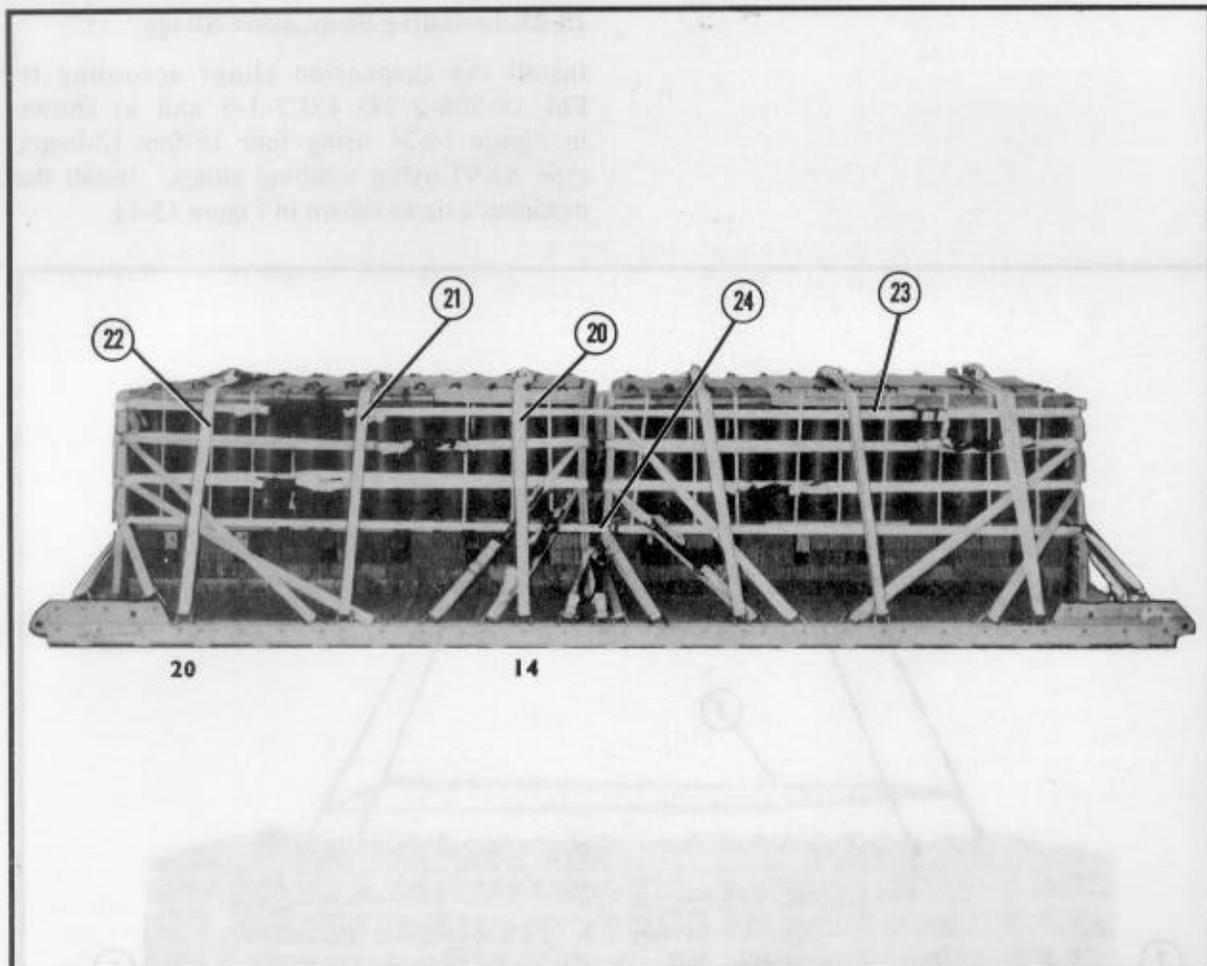
Lashing Number	Tie-Down Clevis Number	Instructions
12	15 and 15A	Pass a 30-foot lashing through both clevises and through the third cutouts from the top in the third endboard. Secure the lashing on the side.
13	16 and 16A	Pass a 30-foot lashing through both clevises and through the second cutouts from the top in the third endboard. Secure the lashing on the side.
14	17 and 17A	Pass a 30-foot lashing through both clevises and through the third cutouts from the top in the fourth endboard. Secure the lashing at the rear.
15	19 and 19A	Pass a 30-foot lashing through both clevises and through the second cutouts from the top in the fourth endboard. Secure the lashing at the rear.

Figure 15-20. Lashings installed for second stack



Lashing Number	Tie-Down Clevis Number	Instructions
16	12 and 21	Pass a 30-foot lashing through clevis 12, through the second cutout from the top in the left side of the first endboard, and around the left side of the ammunition stack. Pass the lashing through the second cutout from the top in the left side of the second endboard, the bottom right cutout and through clevis 21. Secure the lashing on the left side.
17	12A and 21A	Pass a 30-foot lashing through clevis 12A, through the second cutout from the top in the right side of the first endboard, and around the right side of the ammunition stack. Pass the lashing through the second cutout from the top in the right side of the second endboard, and through clevis 21A. Secure the lashing on the right side.
18	13 and 22	Pass a 30-foot lashing through clevis 13, through the third cutout from the top in the left side of the first endboard, and around the left side of the ammunition stack. Pass the lashing through the third cutout from the top in the left side of the second endboard and through clevis 22. Secure the lashing on the left side.
19	13A and 22A	Pass a 30-foot lashing through clevis 13A, through the third cutout from the top in the right side of the first endboard, and around the right side of the ammunition stack. Pass the lashing through the third cutout from the top in the right side of the second endboard and through clevis 22A. Secure the lashing on the right side.

Figure 15-20. Lashings installed for second stack (continued)

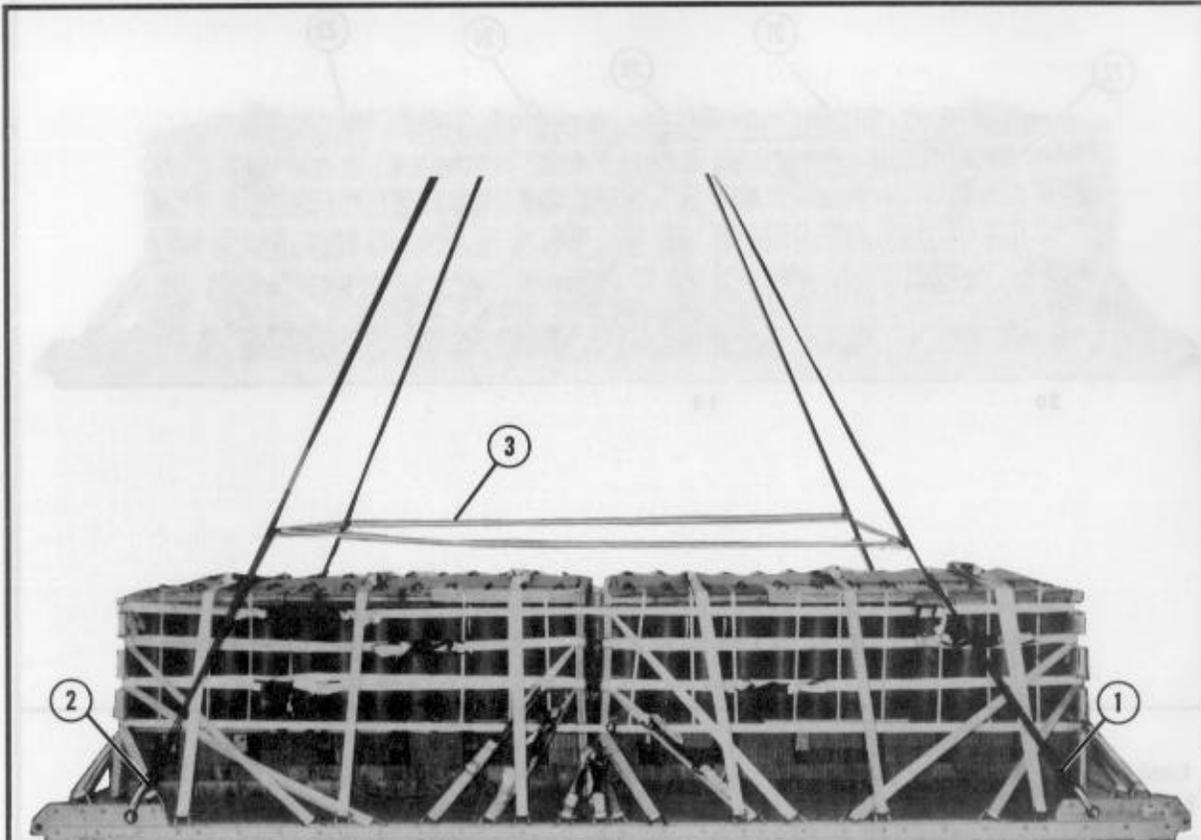


Lashing Number	Tie-Down Clevis Number	Instructions
20	14 and 14A	Pass a 30-foot lashing through both clevises and over the top of the load. Secure the lashing on top.
21	18 and 18A	Pass a 30-foot lashing through both clevises and over the top of the load. Secure the lashing on top.
22	20 and 20A	Pass a 30-foot lashing through both clevises and over the top of the load. Secure the lashing on top.
23		Pass a 45-foot lashing around the entire load through the top cutouts in all four endboards. Secure the lashing on the side.
24		Pass a 45-foot lashing around the entire load through the bottom cutouts in all four endboards. Secure the lashing on the side.

Figure 15-20. Lashings installed for second stack (continued)

15-25. Installing Suspension Slings

Install the suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-21 using four 16-foot (2-loop), type XXVI nylon webbing slings. Install the deadman's tie as shown in Figure 15-21.

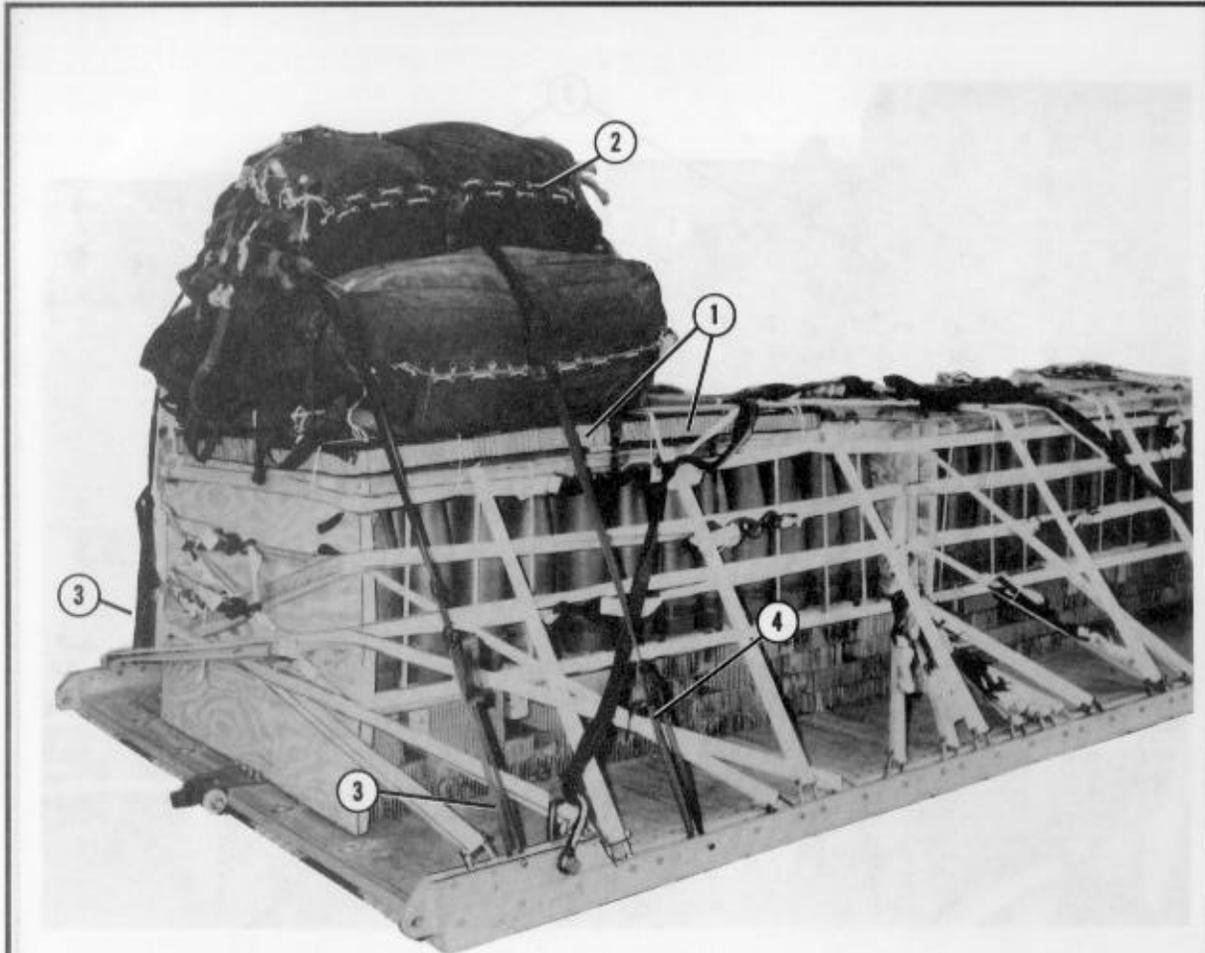


- ① Pass one end of a 16-foot suspension sling through the bell portion of a large suspension clevis. Bolt the clevis to the suspension hole of the right front tandem link.
- ② Install a 16-foot sling onto each tandem link in the same way.
- ③ Raise all four suspension slings. Make the deadman's tie according to FM 10-500-2/TO 13C7-1-5.

Figure 15-21. Suspension slings and deadman's tie installed

15-26. Installing Parachutes

Install and restrain three G-11B cargo parachutes as shown in Figure 15-22 and according to FM 10-500-2/TO 13C7-1-5.

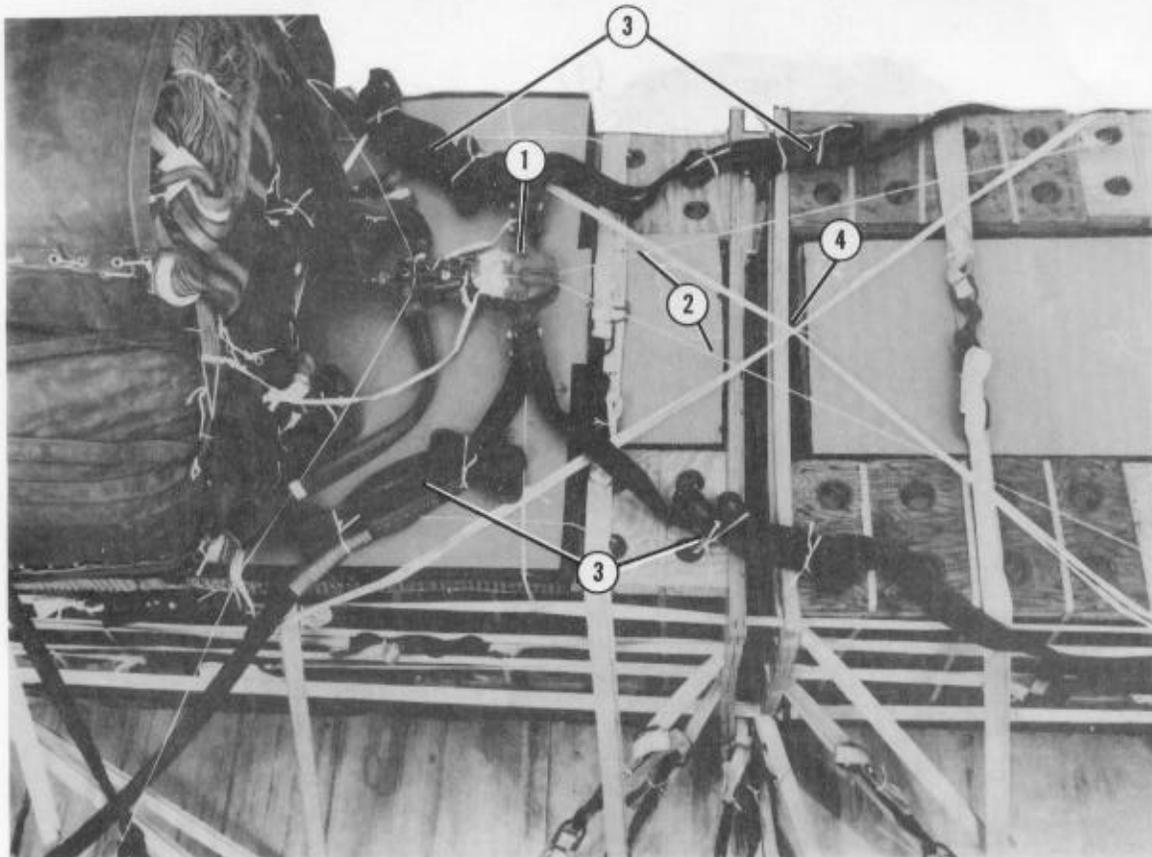


- ① Lay two 27- by 75-inch pieces of honeycomb side-by-side and flush with the rear edge of the ammunition stack. Tape the edges of the honeycomb and tie it to the load with type III nylon cord.
- ② Install three G-11B cargo parachutes on the honeycomb placed in step 1.
- ③ Install the rear parachute restraint to the second bushings on the rear tandem links.
- ④ Install the front parachute restraint to bushings 27 and 27A.

Figure 15-22. G-11B cargo parachutes installed

15-27. Installing Release System

Install and safety an M-1 cargo parachute release assembly as shown in Figure 15-23.



- ① Prepare and install an M-1 cargo parachute release assembly according to FM 10-500-2/TO 13C7-1-5. Place the release assembly on the honeycomb 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.
- ④ Tie the two side sections of the deadman's tie together in the center with a length of type I, 1/4-inch cotton webbing.

Figure 15-23. Release assembly installed

15-28. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 15-24.

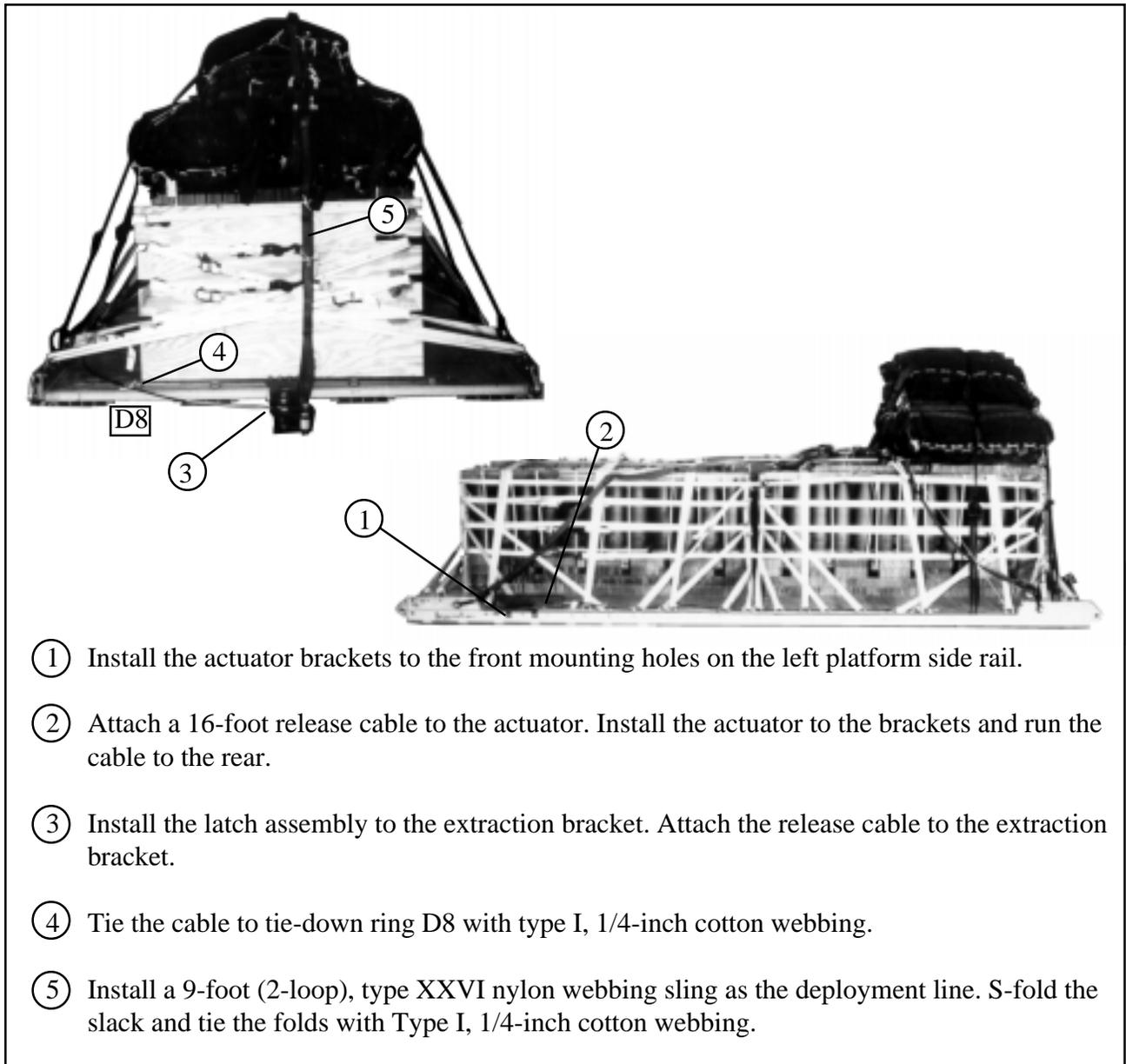


Figure 15-12. Extraction system installed

15-29. 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.

15-30. 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.

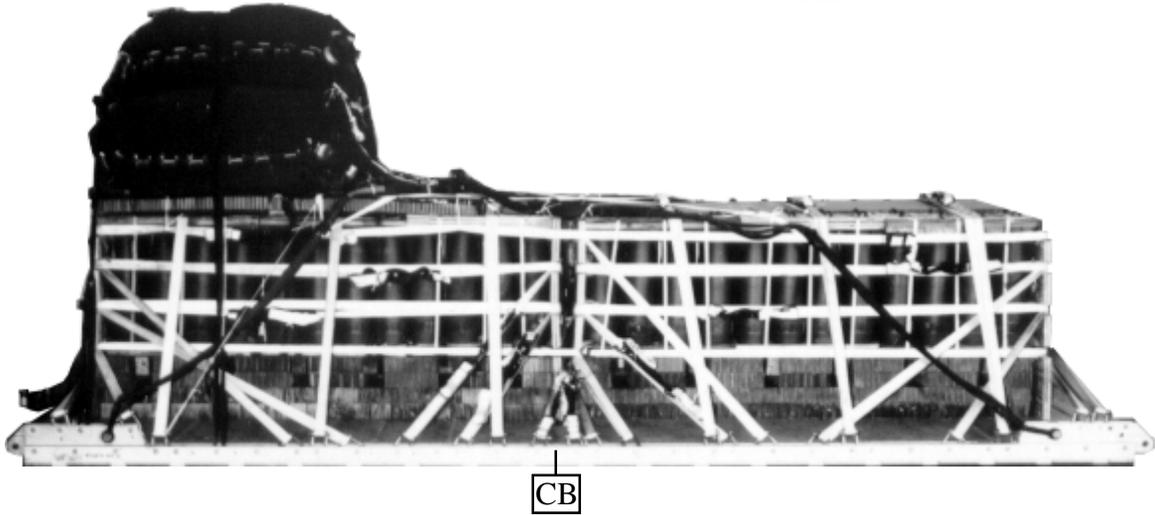
15-31. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-25. Complete Shipper's Declaration for Dangerous Goods and attach it to the load.

15-32. Equipment Required

Use the equipment listed in Table 15-2 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:	Load shown	13,300 pounds
Height		86 inches
Width		108 inches
Length		192 inches
Overhang:	Front	0 inches
	Rear	0 inches
CB (from front edge of platform)		101 inches
Extraction System (adds 18 inches to length of platform)		EFTC

Figure 15-25. 155-millimeter ammunition rigged on a 16-foot platform for low-velocity airdrop

Table 15-2. Equipment required for rigging 155-millimeter ammunition on a 16-foot 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
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer with cable, 16-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	9
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:	
1670-00-783-5988	Type IV	12
	Two-point, 3 3/4-in	
5306-00-435-8994	Bolt, 1-in diam, 4 in long	2
5310-00-232-5165	Nut, 1-in, hexagonal	2
1670-00-003-1953	Plate, side, 3 3/4-in	2
5365-00-007-3414	Spacer, large	2
5315-00-010-4657	Nail, steel wire, common, 6d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in	13 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	3
1670-00-063-3716	Cargo extraction, 22-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1

Table 15-2. Equipment required for rigging 155-millimeter ammunition on a 16-foot platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
	Platform, airdrop, type V, 16-foot	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(44)
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 60- by 38-in	8 sheets
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo airdrop	
	For suspension:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	9
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	56
	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