CHAPTER 15

RIGGING SUPPLY LOADS ON A 16-FOOT, TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

Section I
RIGGING 105-MILLIMETER AMMUNITION

15-1. Description of Load

Bulk supplies consisting of rations, equipment, gasoline, ammunition, or other items of general supply are rigged on a 16-foot, type V platform with G-11B cargo parachutes. One hundred and forty boxes of 105-millimeter ammunition are shown. All 105-millimeter ammunition packaged as shown and listed in FM 10-500-53/TO 13C7-18-41, as certified for low-velocity airdrop, may be rigged using these procedures. All loads will be platform suspended. Each load must weigh at least 5,040 pounds, including parachutes, but must not weigh more than 27,000 pounds, including parachutes. The rigged load may not be more than 100 inches high. Refer to FM 10-500-2/TO 13C7-1-5 for the weight limitations for the number of parachutes to be used.

15-2. Preparing Platform

Prepare a 16-foot, type V airdrop platform as described below.

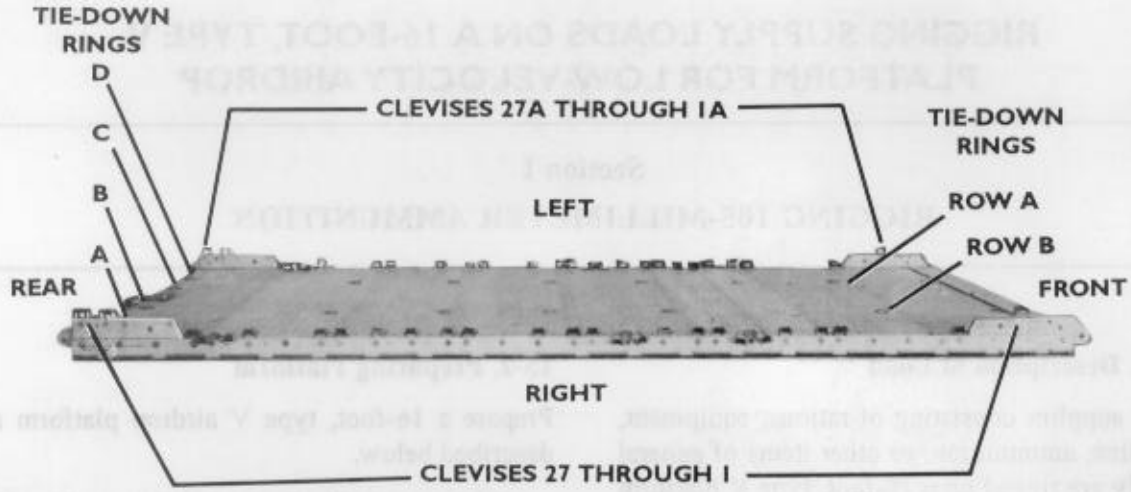
a. ***Inspecting Platform.*** Inspect, or assemble and inspect, the 16-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22.

b. ***Installing Tandem Links.*** Install tandem links on the front and rear of each rail as shown in Figure 15-1.

c. ***Installing and Numbering Clevises.*** Bolt and number 60 clevis assemblies as shown in Figure 15-1.

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 tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install a tandem link on the rear of each platform side rail using holes 30, 31, and 32.
3. Install a clevis on bushing 3 of each front tandem link.
4. Install clevises on bushings 3 and 4 of each rear tandem link.
5. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 4, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24, 25, 27, 28 and 29. Reverse the clevises on holes 11, 15, and 28. Install two clevises on each of the reversed clevises.
6. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 27, and those bolted to the left side from 1A through 27A.
7. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

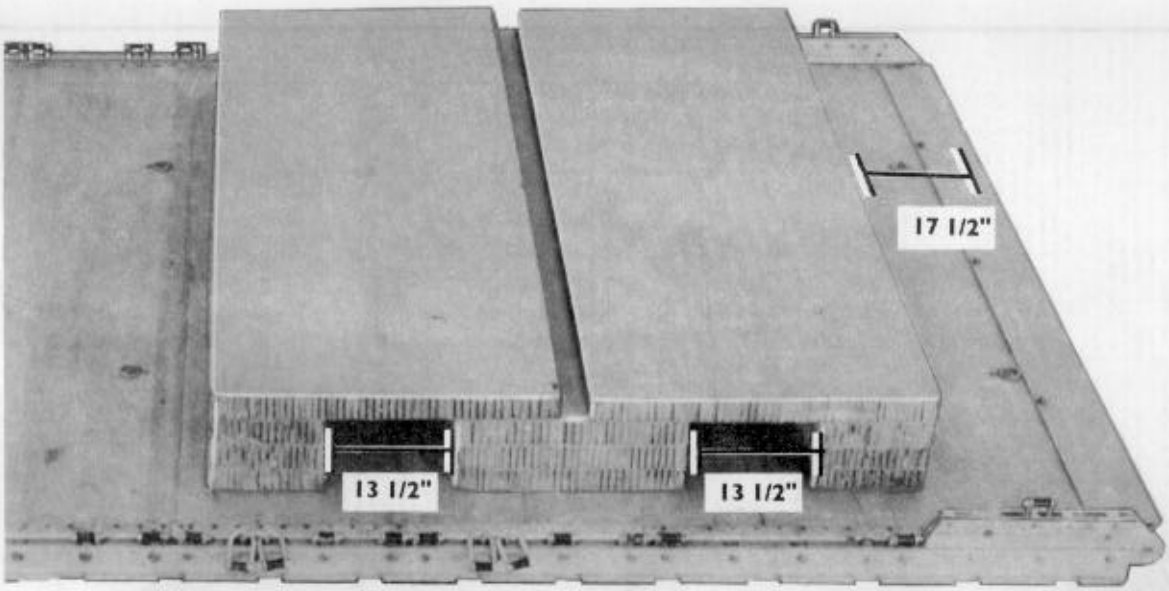
Figure 15-1. Platform prepared

15-3. 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 15-2. Build the stack for the second stack of ammunition as shown in Figure 15-2. Set the second honeycomb stack aside.

Note:

When rigging this load for airdrop on a drop zone with a ground elevation of 6,000 to 10,000 feet, add another layer of honeycomb to each stack. However, the height of the load cannot exceed 100 inches.

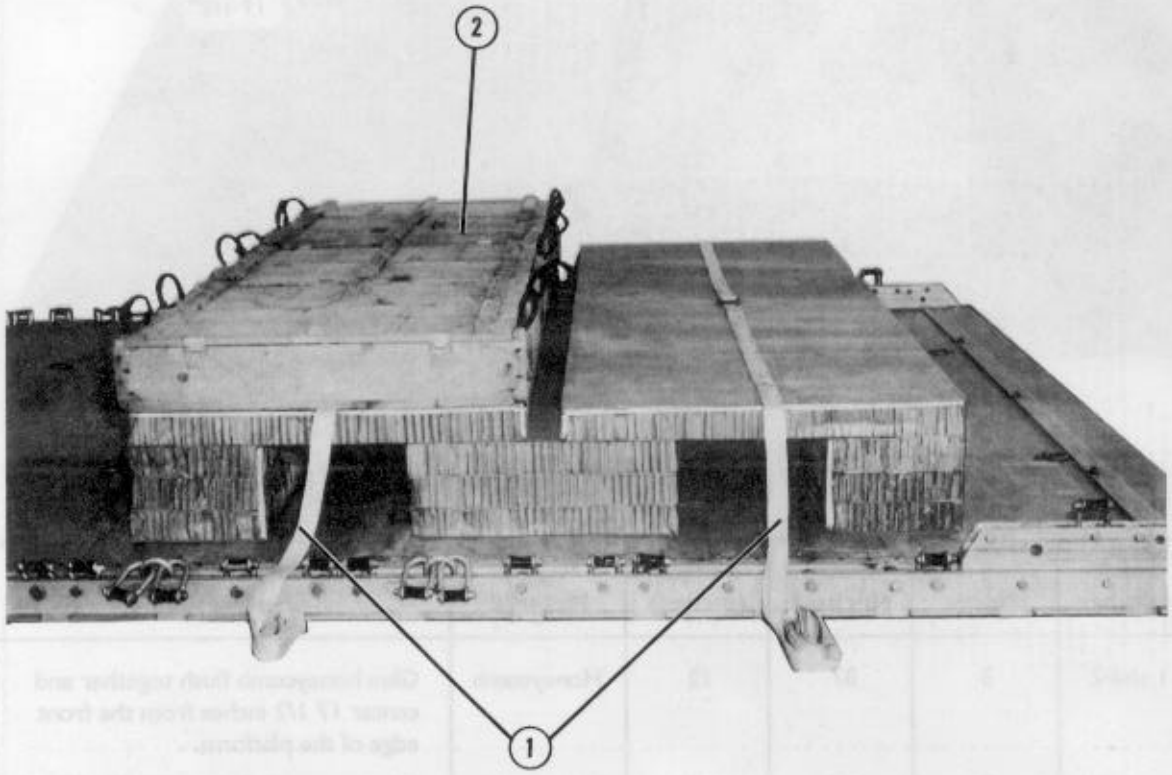


Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1 and 2	3	87	12	Honeycomb	Glue honeycomb flush together and center 17 1/2 inches from the front edge of the platform.
	3	87	24	Honeycomb	Glue honeycomb flush together and center 13 1/2 inches to the rear of the stack placed above.
	3	87	12	Honeycomb	Glue honeycomb flush together and center 13 1/2 inches to the rear of the stack placed above.
	2	87	36	Honeycomb	Glue one piece flush over the front edge, and glue one piece flush over the rear edge, leaving a 3-inch gap in the center.

Figure 15-2. Honeycomb for first ammunition stack prepared and placed

15-4. Positioning and Securing First Ammunition Stack

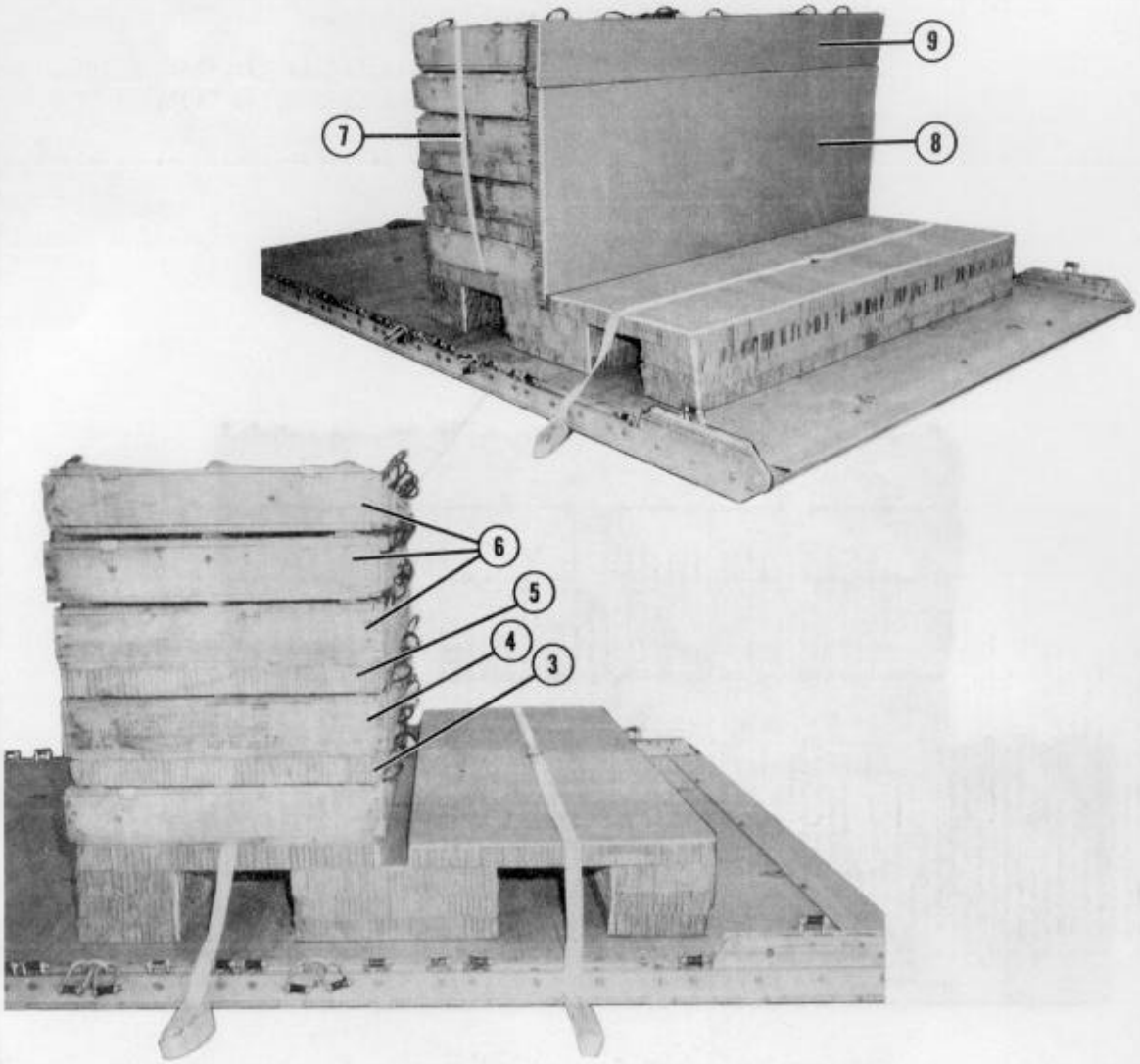
Position and secure the first stack of 105-millimeter ammunition as shown in Figure 15-3.



(1) Form two 30-foot lashings according to FM 10-500-2/TO 13C7-1-5. Center them over the honeycomb as shown.

(2) Place seven ammunition boxes on the rear side of stack 1. Let the boxes overhang the rear edge by 1 inch.

Figure 15-3. Ammunition positioned and secured



(3) Place a 36- by 87-inch piece of honeycomb over the boxes.

(4) Place seven ammunition boxes flush with the first layer of boxes.

(5) Place a 36- by 87-inch piece of honeycomb over the boxes placed in step 4.

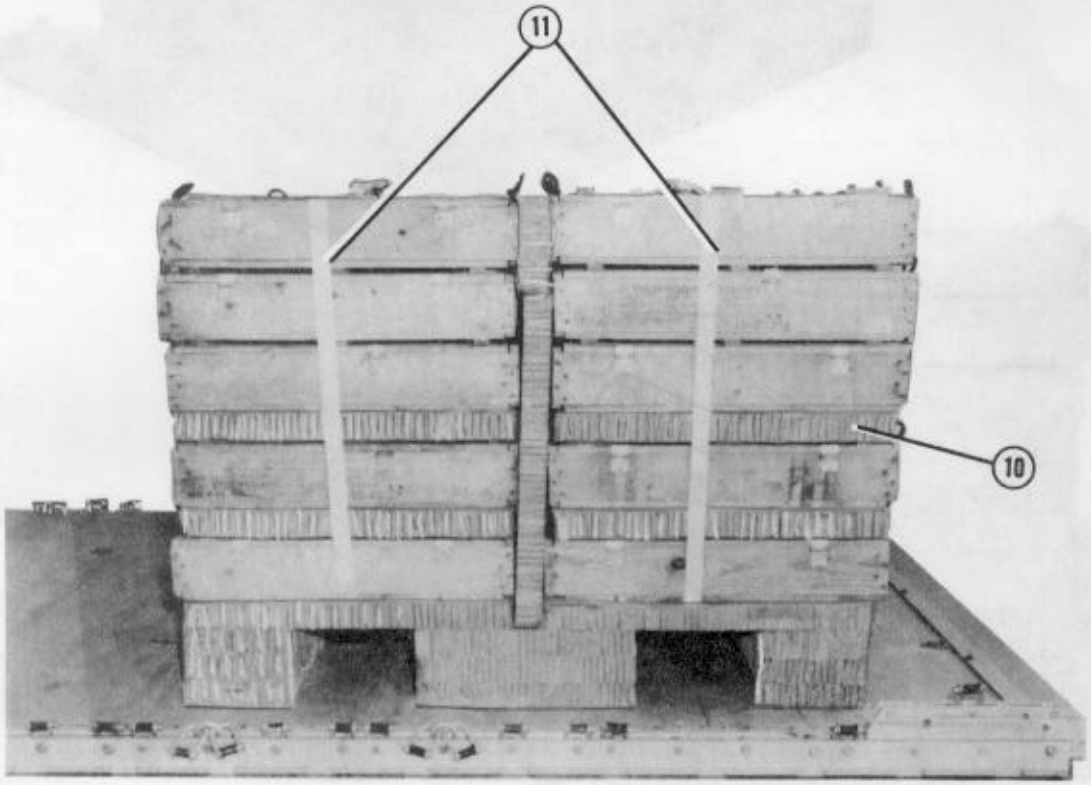
(6) Place three layers of boxes flush over the layers already placed.

(7) Secure the pre-positioned lashing over the boxes.

(8) Place a 36- by 87-inch piece of honeycomb on edge against the boxes. Fit the honeycomb into the 3-inch slot in the center of the honeycomb stack.

(9) Place a 10- by 87-inch piece of honeycomb on edge over the piece placed in step 8.

Figure 15-3. Ammunition positioned and secured (continued)



(10) Place 35 boxes of ammunition and two 36- by 87-inch pieces of honeycomb as described in steps 2 through 6 to complete stack 1.

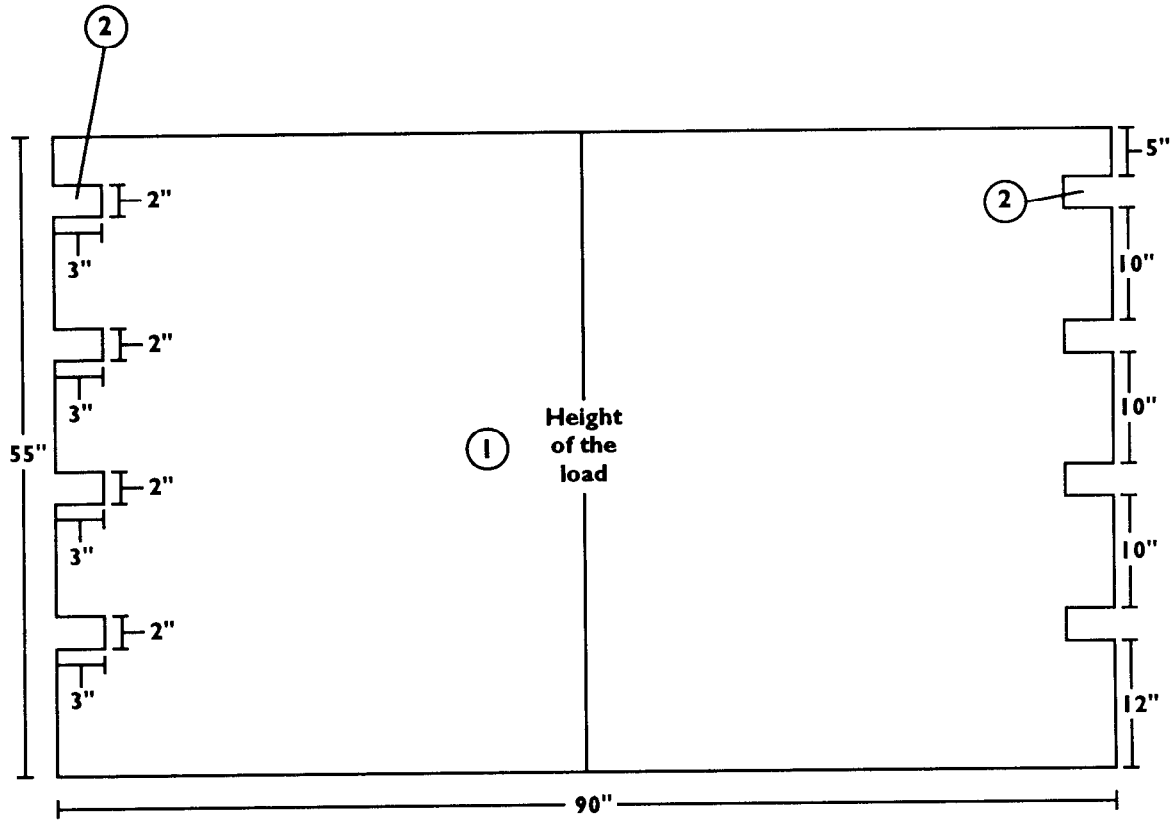
(11) Secure the pre-positioned lashing over the boxes.

Figure 15-3. Ammunition positioned and secured (continued)

15-5. Constructing and Placing Endboards

Construct four endboards and place them on the load as shown in Figure 15-4.

Note: This drawing is not drawn to scale.



1. Cut two 3/4- by 48- by 90-inch and two 3/4- by 7- by 90-inch pieces of plywood. Nail the four pieces flush together so that a single piece of 1 1/2- by 55- by 90-inches results.

   Note: On the endboard shown, the 7-inch piece is on the top. On the other side of the endboard shown, the 7-inch piece is at the bottom.

2. Make 2- by 3-inch cutouts as shown. Pad all cutouts with cellulose wadding and tape.

3. Place an endboard against the front of the boxes and place one against the rear. Tie them in place with a length of type III nylon cord (not shown).

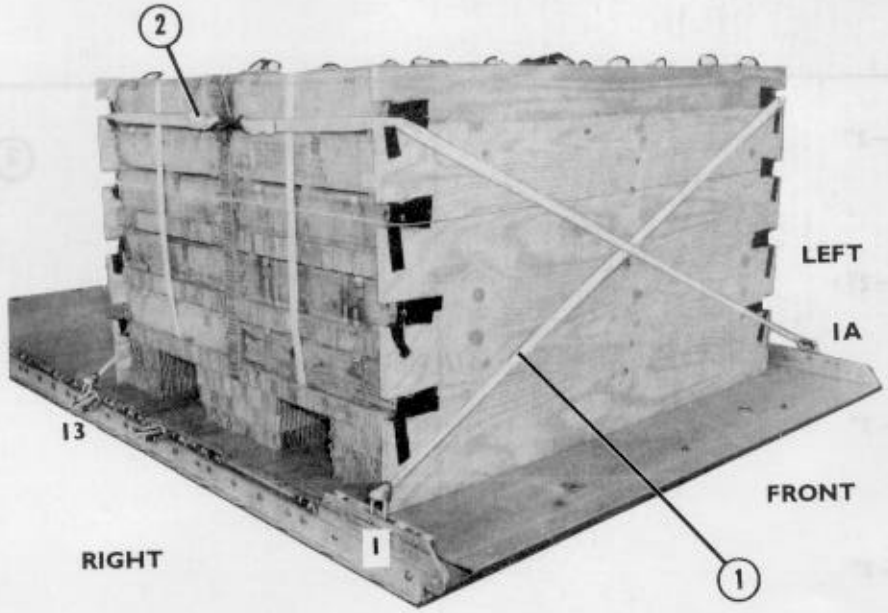
Figure 15-4. Endboards for 105-millimeter ammunition constructed

15-6. Installing Lashings on First Ammunition Stack

Lash the load to the platform according to FM 10-500-2/TO 13C7-1-5 and as shown in Figures 15-5 through 15-8. Lash the first stack to the platform as shown in Figure 15-5.

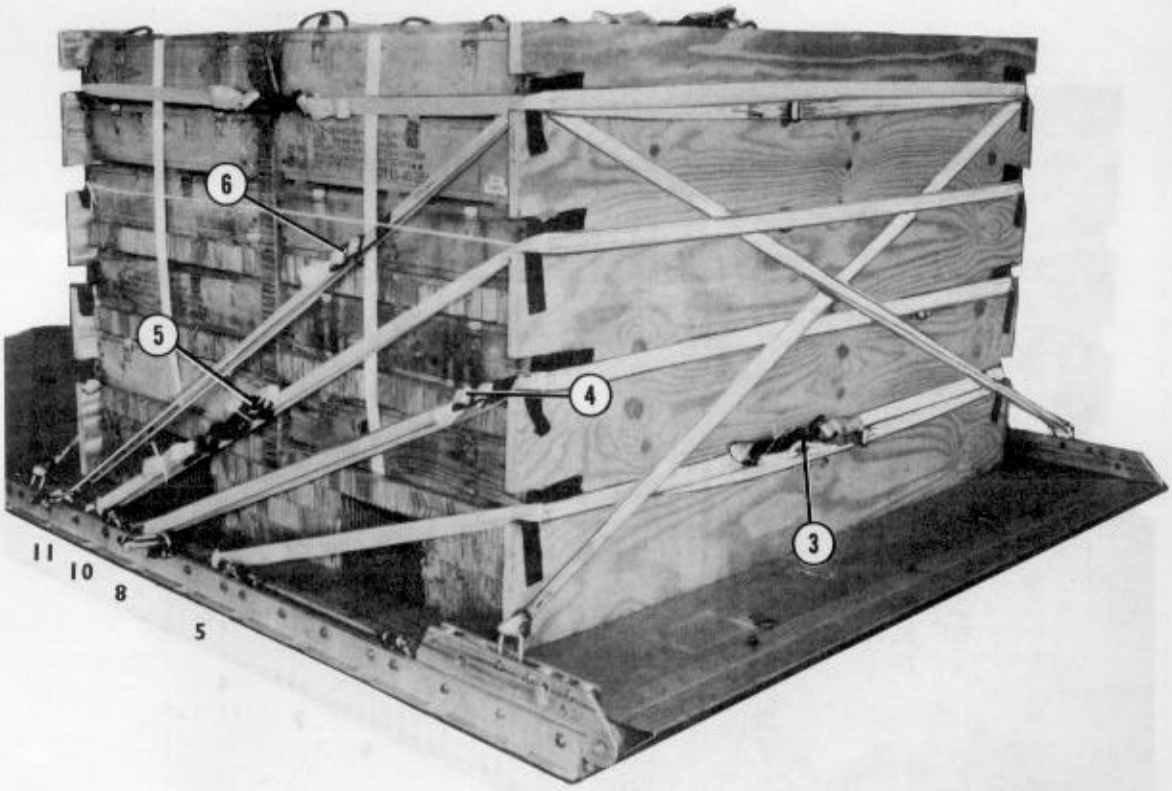
Note:

This load requires lashings of over 30 feet in length. Lashings must be positioned through clevises before sections are joined together.



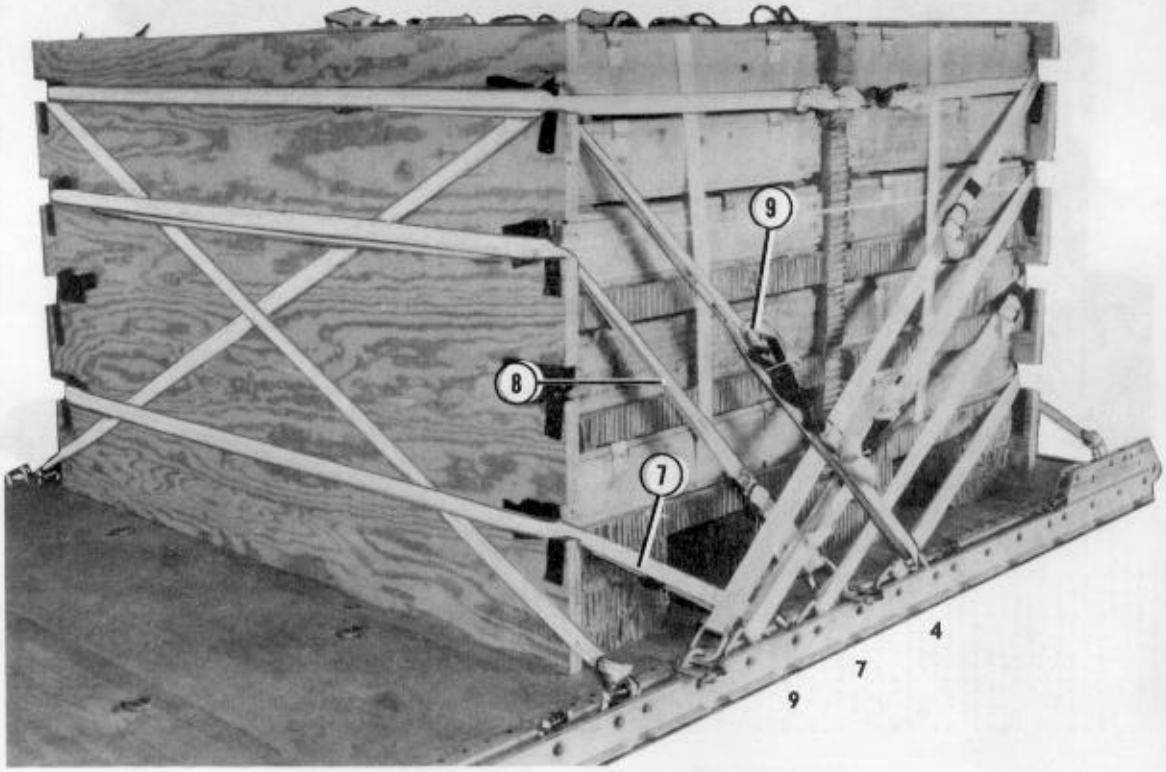
Lashing Number	Tie-Down Clevis Number	Instructions
1	1 and 13	Pass a 15-foot lashing through clevis 1 and through its own D-ring. Pass the lashing through the top left cutout in the front endboard. Pass a 15-foot lashing through clevis 13 and through its own D-ring. Pass the lashing through the top left cutout in the rear endboard. Secure the lashings on the left side.
2	1A and 13A	Pass a 15-foot lashing through clevis 1A and through its own D-ring. Pass the lashing through the top right cutout in the front endboard. Pass a 15-foot lashing through clevis 13A and through its own D-ring. Pass the lashing through the top right cutout in the rear endboard. Secure the lashings on the right side.

Figure 15-5. Lashings installed for first stack



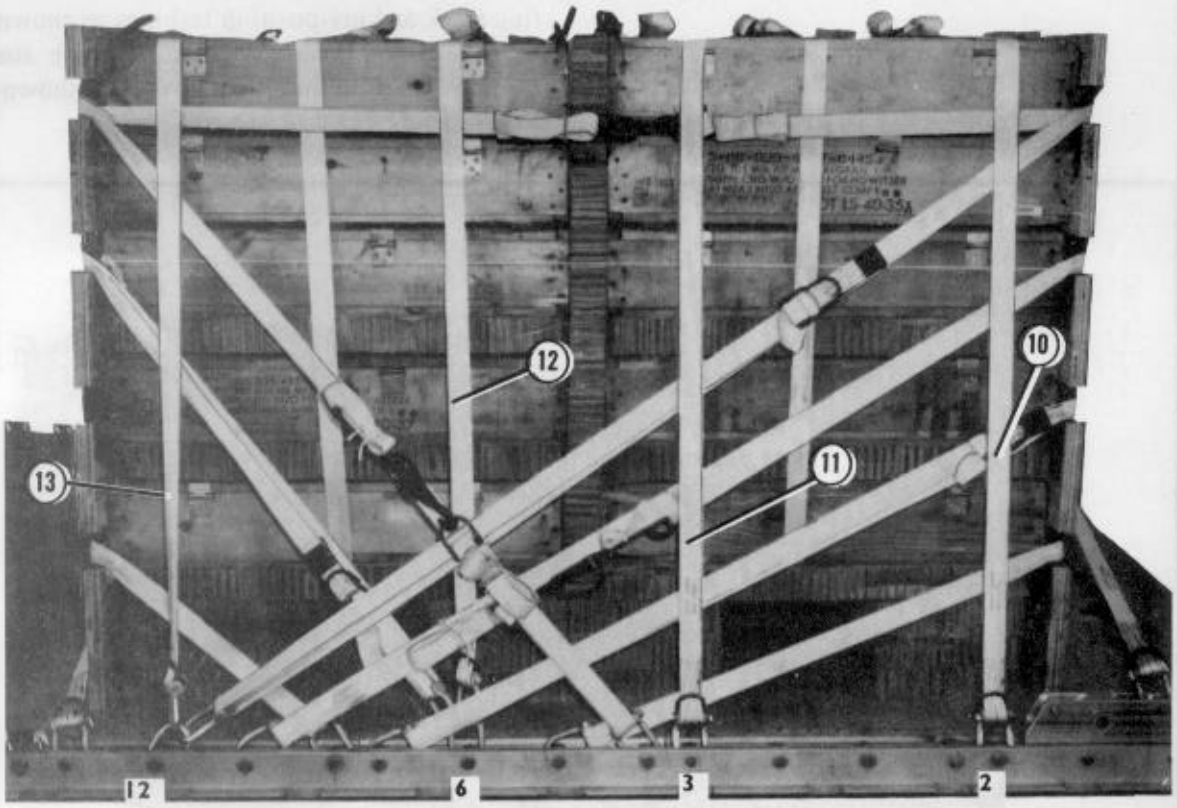
Lashing Number	Tie-Down Clevis Number	Instructions
3	5 and 5A	Pass a 30-foot lashing through both clevises and through the bottom cutouts in the front endboard. Secure the lashing in the front.
4	8 and 8A	Pass a 45-foot lashing through both clevises and through the second cutouts in the front endboard. Secure the lashing on the side.
5	10 and 10A	Pass a 45-foot lashing through both clevises and through the third cutouts in the front endboard. Secure the lashing on the side.
6	11 and 11A	Pass a 45-foot lashing through both clevises and through the top cutouts in the front endboard. Secure the lashing on the side.

Figure 15-5. Lashings installed for first stack (continued)



Lashing Number	Tie-Down Clevis Number	Instructions
7	9 and 9A	Pass a 30-foot lashing through both clevises and through the bottom cutouts in the rear endboard. Secure the lashing on the side.
8	7 and 7A	Pass a 45-foot lashing through both clevises and through the third cutouts from the bottom in the rear endboard. Secure the lashing on the side.
9	4 and 4A	Pass a 45-foot lashing through both clevises and through the upper cutouts in the rear endboard. Secure the lashing on the side.

Figure 15-5. Lashings installed for first stack (continued)

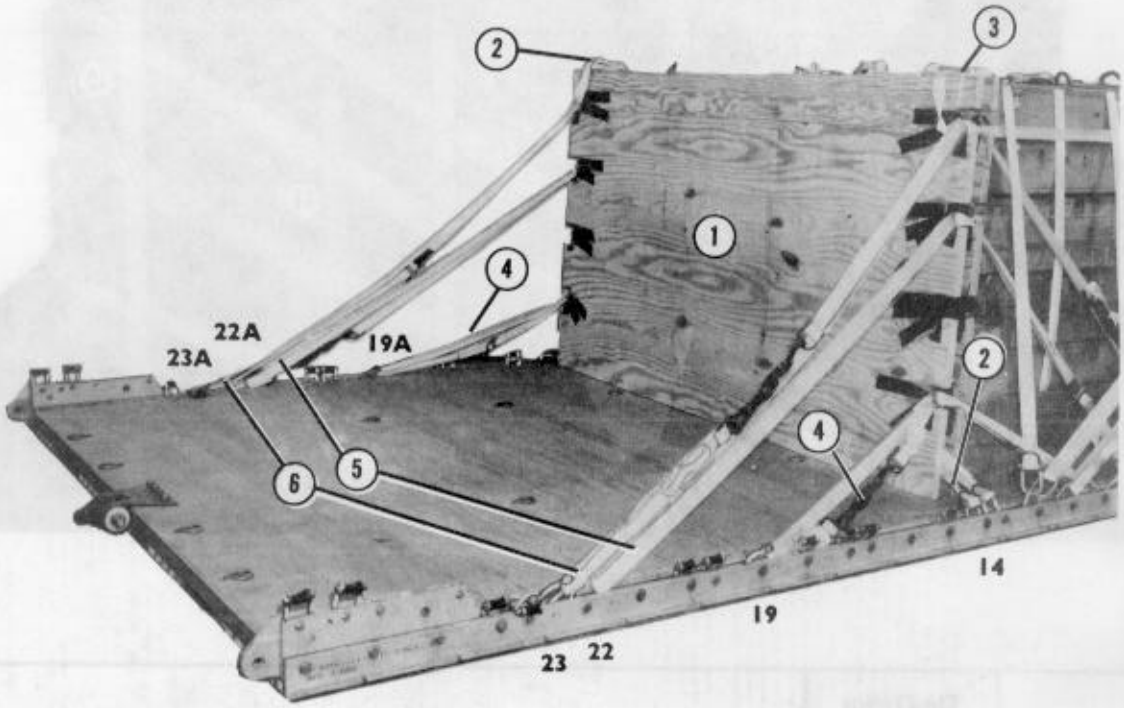


Lashing Number	Tie-Down Clevis Number	Instructions
10	2 and 2A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass both lashings over the load and secure them on top.
11	3 and 3A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass both lashings over the load and secure them on top.
12	6 and 6A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass both lashings over the load and secure them on top.
13	12 and 12A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass both lashings over the load and secure them on top.

Figure 15-5. Lashings installed for first stack (continued)

15-7. Positioning and Securing Second Ammunition Stack

Place the first endboard for the second ammunition stack and pre-position lashings as shown in Figure 15-6. Position the honeycomb stack, lashings, and ammunition boxes as shown in Figure 15-7.



1. Stand an endboard against the rear endboard of the first stack. Temporarily secure it to the rear endboard with type III nylon cord.
2. Pass a 15-foot lashing through clevis 14 and through its own D-ring. Pass the lashing through the top cutout on the left side of the endboard placed in step 1. Fold the free end and place it on top of the endboards.
3. Pass a 15-foot lashing through clevis 14A and through its own D-ring. Pass the lashing through the top cutout on the right side of the endboard placed in step 1. Fold the free end and place it on top of the endboards.

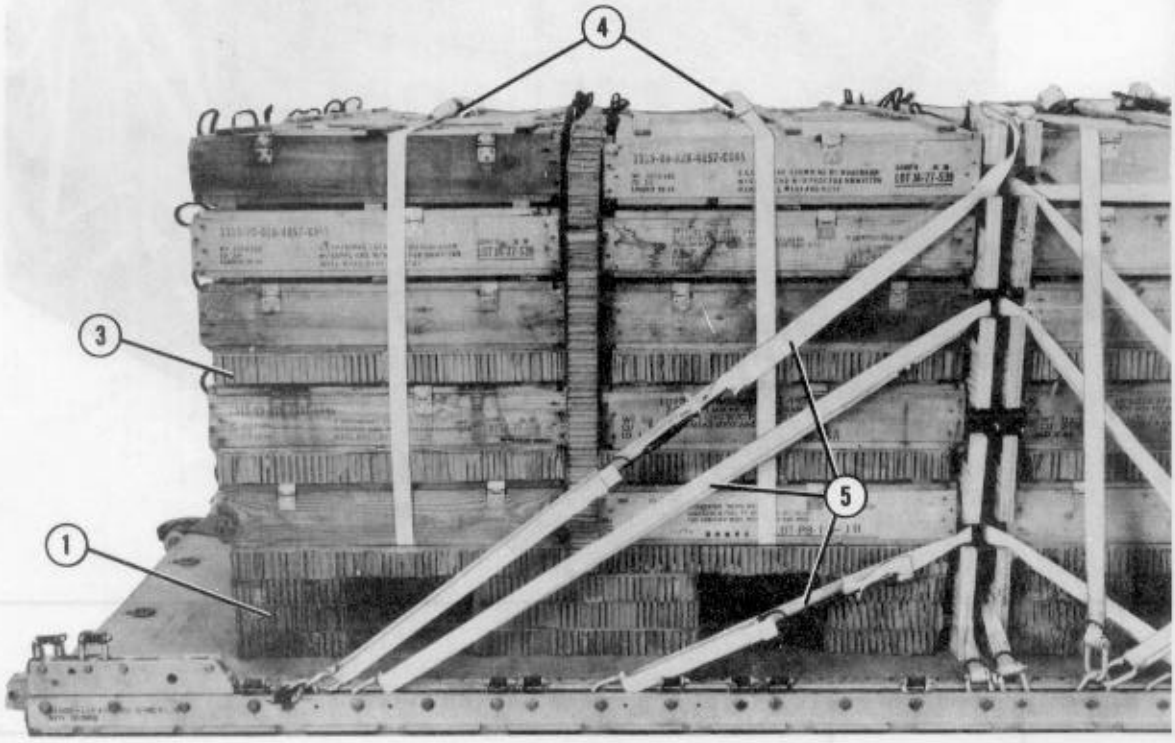
Figure 15-6. Endboard for second stack placed and lashings pre-positioned

(4) Pass a 30-foot lashing through clevises 19 and 19A and through the bottom slots of the endboard. Position the load binder on one side. Leave the load binder open.

(5) Pass a 45-foot lashing through clevis 22 and 22A and through the second slots from the top of the endboard. Position the load binder on one side. Leave the load binder open.

(6) Pass a 45-foot lashing through clevises 23 and 23A and through the top slots of the endboard. Position the load binder on one side. Leave the load binder open.

Figure 15-6. Endboard for second stack placed and lashings pre-positioned (continued)



(1) Center the second honeycomb stack 17 1/2-inches from the rear edge of the platform.

(2) Position two 30-foot lashings over the honeycomb as shown in Figure 15-3, step 1.

(3) Stack honeycomb and 70 ammunition boxes as shown for the first stack.

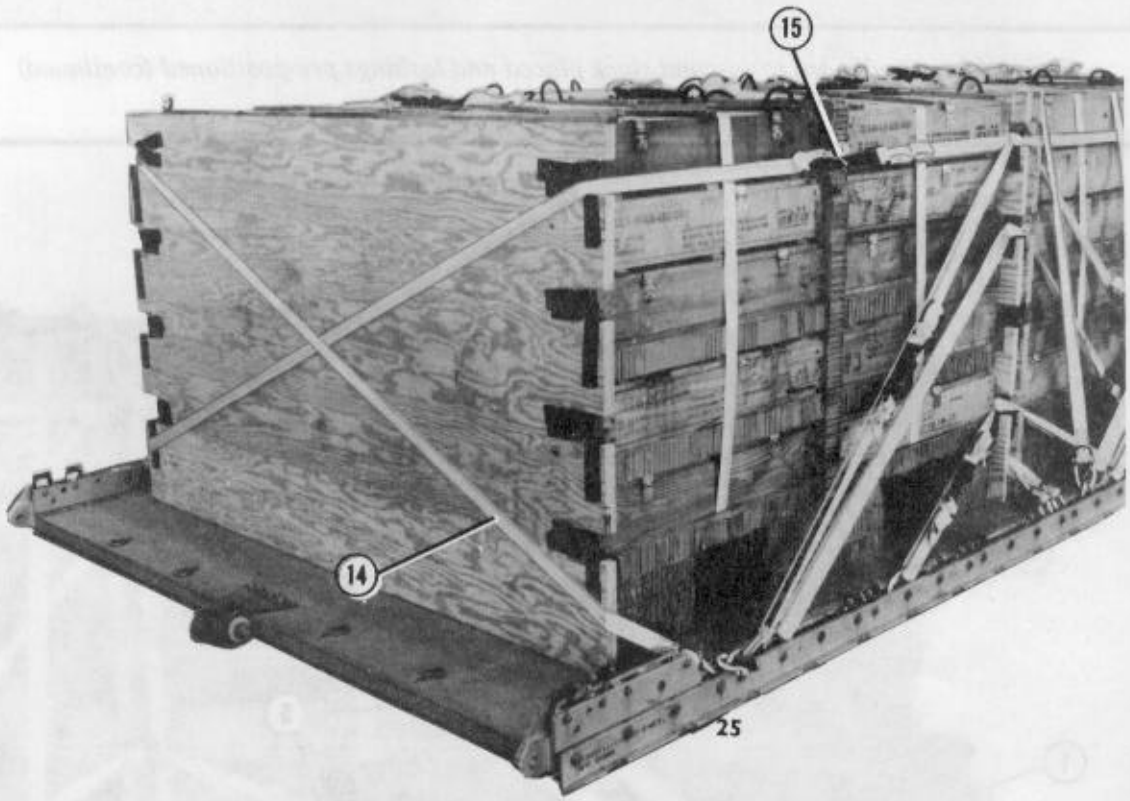
(4) Secure the lashings placed in step 2 over the boxes.

(5) Secure the load binders on the lashings placed in Figure 15-6, steps 4, 5, and 6.

Figure 15-7. Honeycomb, lashings, and ammunition placed for second stack

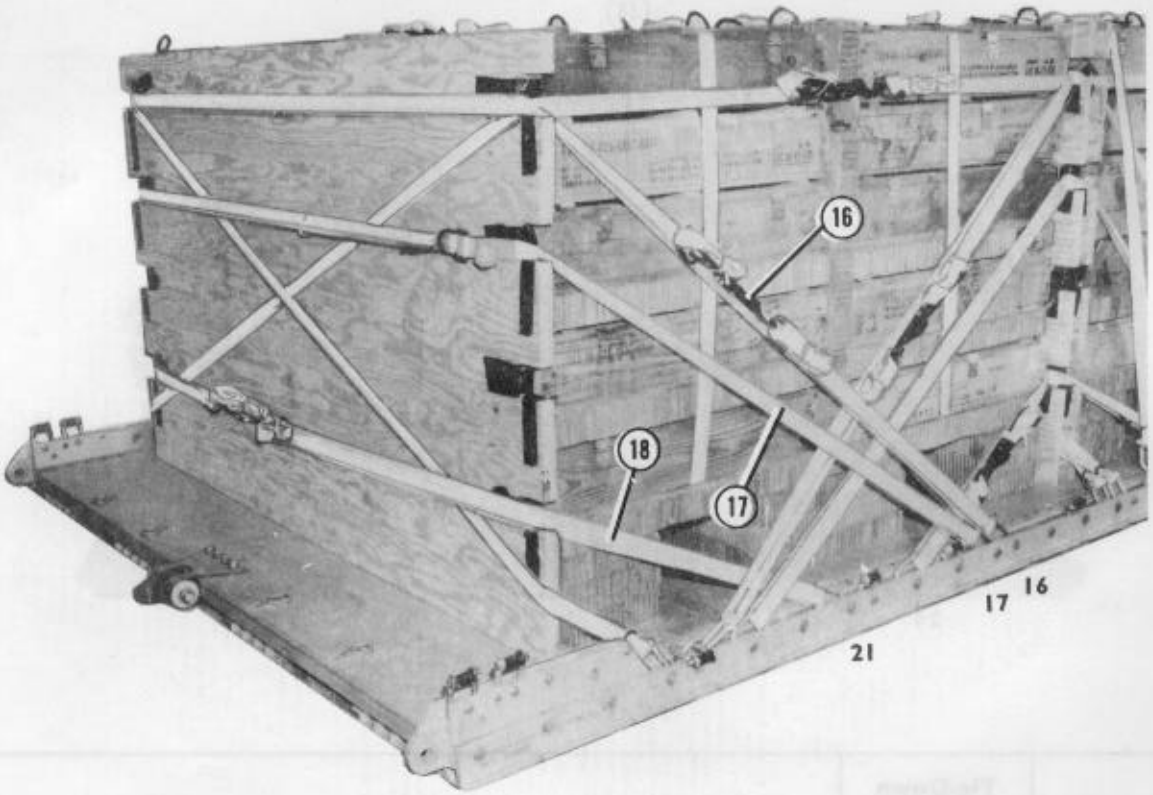
15-8. Installing Lashings on Second Ammunition Stack

Place the fourth endboard and lash the second ammunition stack to the platform as shown in Figure 15-8. Be sure that the pre-positioned lashings are taut and install additional lashings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-8.



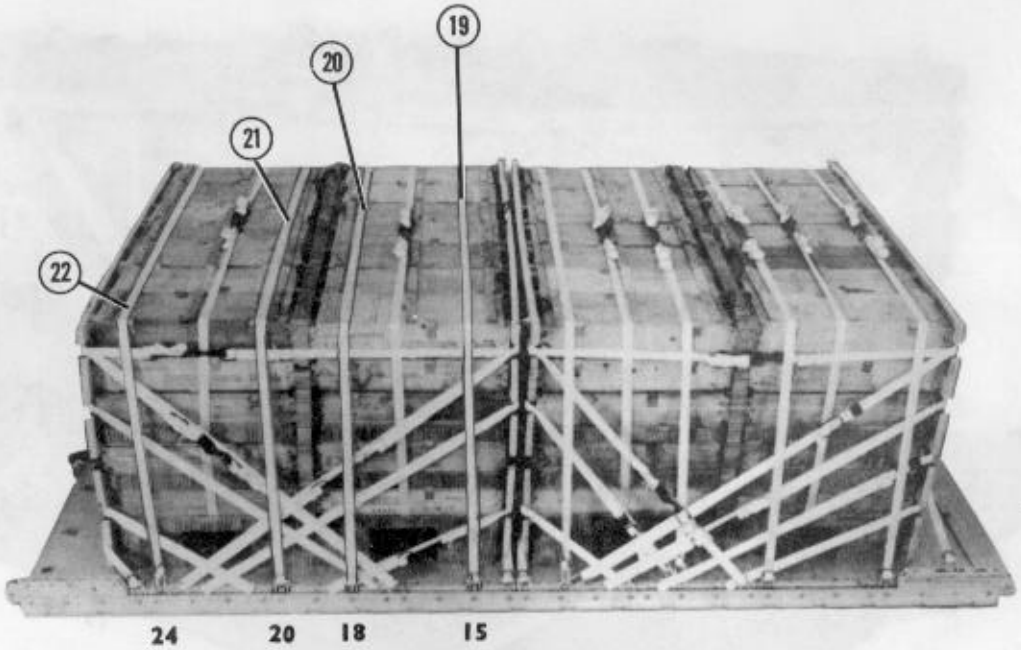
Lashing Number	Tie-Down Clevis Number	Instructions
14	14 and 25	Pass the pre-positioned lashing in Figure 15-6, step 2, around the left side of the stack. Pass a 15-foot lashing through clevis 25 and through its own D-ring. Pass the lashing through the top left cutout in the rear endboard. Secure the two lashings on the left side.
15	14A and 25A	Pass the pre-positioned lashing in Figure 15-6, step 3, around the right side of the stack. Pass a 15-foot lashing through clevis 25A and through its own D-ring. Pass the lashing through the top right cutout in the rear endboard. Secure the two lashings on the right side.

Figure 15-8. Lashings installed for second stack



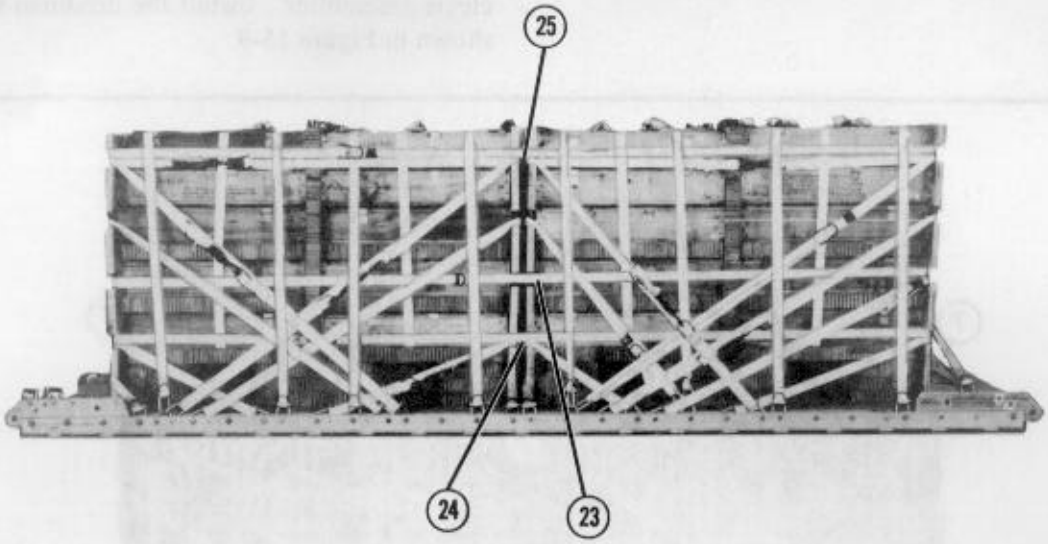
Lashing Number	Tie-Down Clevis Number	Instructions
16	16 and 16A	Pass a 45-foot lashing through both clevises and through the top cutouts in the rear endboard. Secure the lashing on the side.
17	17 and 17A	Pass a 45-foot lashing through both clevises and through the third cutouts from the bottom in the rear endboard. Secure the lashing on the side.
18	21 and 21A	Pass a 30-foot lashing through both clevises and through the bottom cutouts in the rear endboard. Secure the lashing at the rear.

Figure 15-8. Lashings installed for second stack (continued)



Lashing Number	Tie-Down Clevis Number	Instructions
19	15 and 15A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing on the right over the load, and secure it to the left lashing on the side.
20	18 and 18A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing on the right over the load, and secure it to the left lashing on the side.
21	20 and 20A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing on the right over the load, and secure it to the left lashing on the side.
22	24 and 24A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing on the right over the load, and secure it to the left lashing on the side.

Figure 15-8. Lashings installed for second stack (continued)



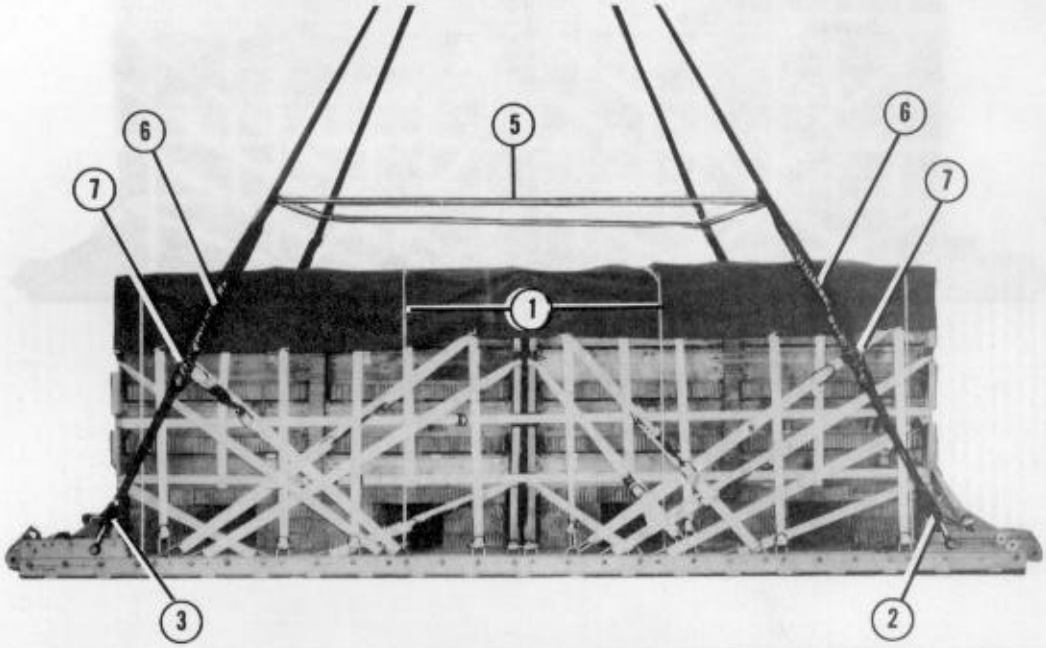
Lashing Number	Tie-Down Clevis Number	Instructions
23		Pass a 45-foot lashing around the load, through the second slots from the bottom of all four endboards.
24		Pass a 45-foot lashing around the load, through the bottom slots of all four endboards.
25		Pass a 45-foot lashing around the load, through the top slots of all four endboards.

Note: Secure the free ends of the lashings with two D-rings and a load binder.

Figure 15-8. Lashings installed for second stack (continued)

15-9. Installing Load Cover and Suspension Slings

Install the load cover as shown in Figure 15-9. Install the suspension slings as shown in Figure 15-9 using four 16-foot (4-loop), type XXVI nylon webbing slings and four large suspension clevis assemblies. Install the deadman's tie as shown in Figure 15-9.

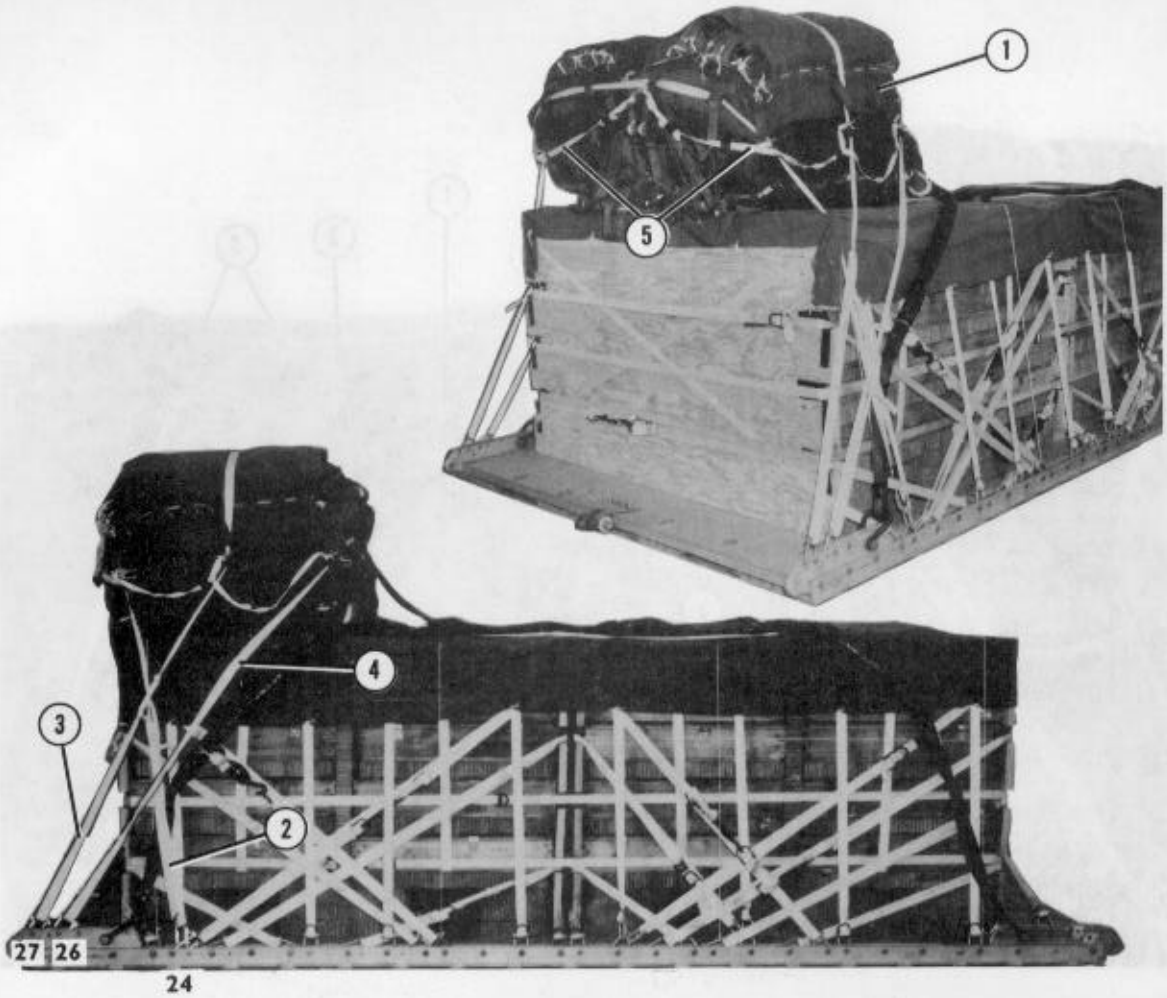


1. Cover the load with an 8- by 15-foot piece of cotton duck cloth. Secure the cover to the load with type III nylon cord.
2. Pass one end of a 16-foot suspension sling through the bell portion of a large suspension clevis. Bolt the clevis to the suspension hole of the right front tandem link.
3. Attach a suspension sling to the right rear tandem link as described in step 2.
4. Attach a suspension sling to each tandem link on the left rail as described above.
5. Make the deadman's tie according to FM 10-500-2/TO 13C7-1-5.
6. Pad the suspension slings with felt tied and taped in place 24 inches above the suspension clevises. Extend the tape 6 inches beyond the top and bottom of the felt.
7. Safety each suspension sling to an adjacent lashing with a length of type III nylon cord.

Figure 15-9. Load cover, suspension slings, and deadman's tie installed

15-10. Installing Parachutes

Compute parachute requirements for the load being rigged. Select the correct number of G-11B cargo parachutes. The load in Figure 15-10 shows four G-11B cargo parachutes. Install the parachutes as shown in Figure 15-10.

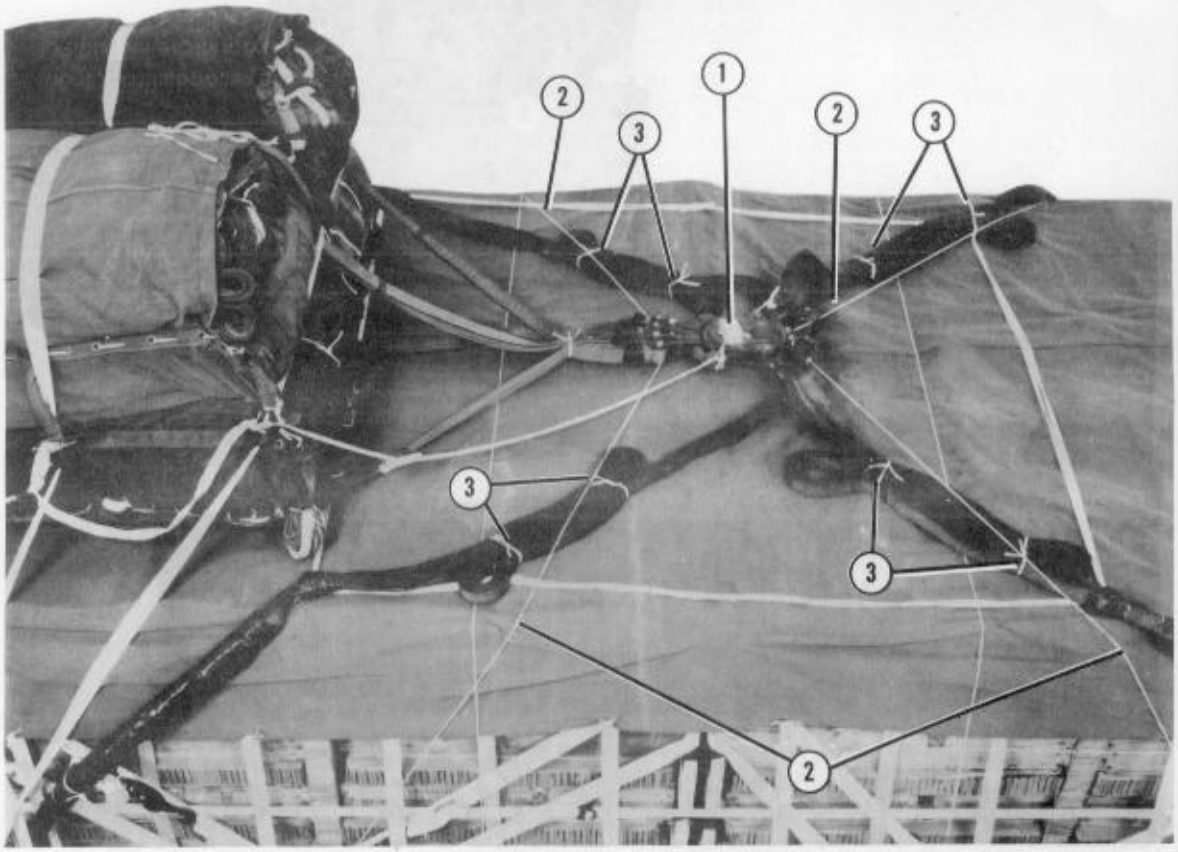


1. Install four G-11B cargo parachutes on the rear of the load according to FM 10-500-2/TO 13C7-1-5.
2. Install the rear parachute restraint to clevises 24 and 24A.
3. Install the center parachute restraint to clevises 27 and 27A.
4. Install the front parachute restraint to clevises 26 and 26A.
5. Install two parachute release straps according to FM 10-500-2/TO 13C7-1-5.

Figure 15-10. Four G-11B cargo parachutes installed

15-11. Installing Release System

Install and safety an M-2 cargo parachute release assembly as shown in Figure 15-11.



(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.

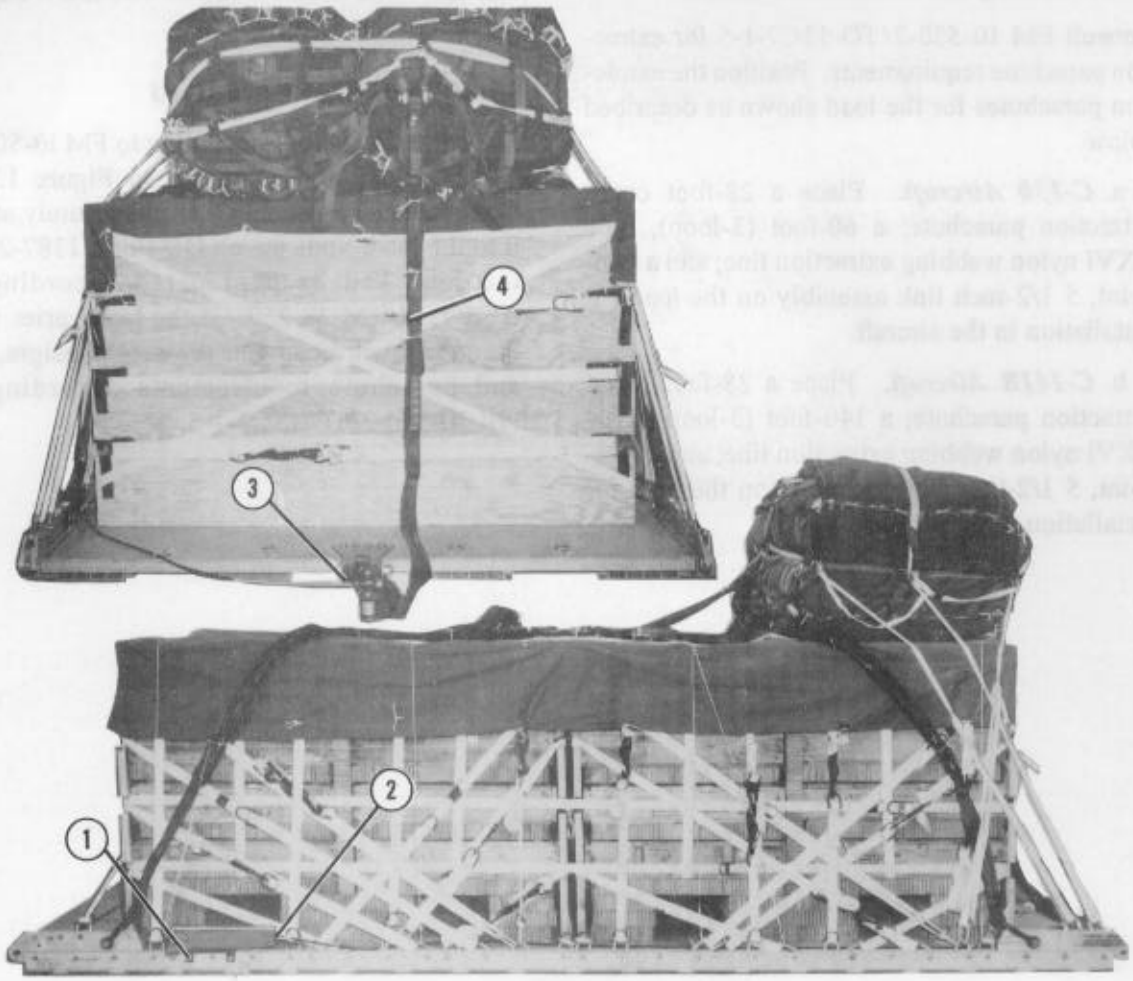
(2) Safety the release to convenient points on the load with type III nylon cord.

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

Figure 15-11. Release assembly installed

15-12. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-12.



1. Install the EFTA actuator brackets to the front mounting holes on the left platform rail.
2. Attach a 16-foot release cable to the actuator. Install the actuator to the brackets and run the cable toward the rear.
3. Install the latch assembly to the extraction bracket. Attach the release cable to the latch assembly.
4. 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 15-12. Extraction system installed

15-13. Installing Provisions for Emergency Restraints

Install provisions for emergency restraints according to FM 10-500-2/TO 13C7-1-5.

15-14. Placing Extraction Parachutes

Consult FM 10-550-2/TO 13C7-1-5 for extraction parachute requirements. Position the extraction parachutes for the load shown as described below.

a. ***C-130 Aircraft.*** Place a 28-foot cargo extraction parachute; a 60-foot (3-loop), type XXVI nylon webbing extraction line; and a two-point, 5 1/2-inch link assembly on the load for installation in the aircraft.

b. ***C-141B Aircraft.*** Place a 28-foot cargo extraction parachute; a 140-foot (3-loop), type XXVI nylon webbing extraction line; and a two-point, 5 1/2-inch link assembly on the load for installation in the aircraft.

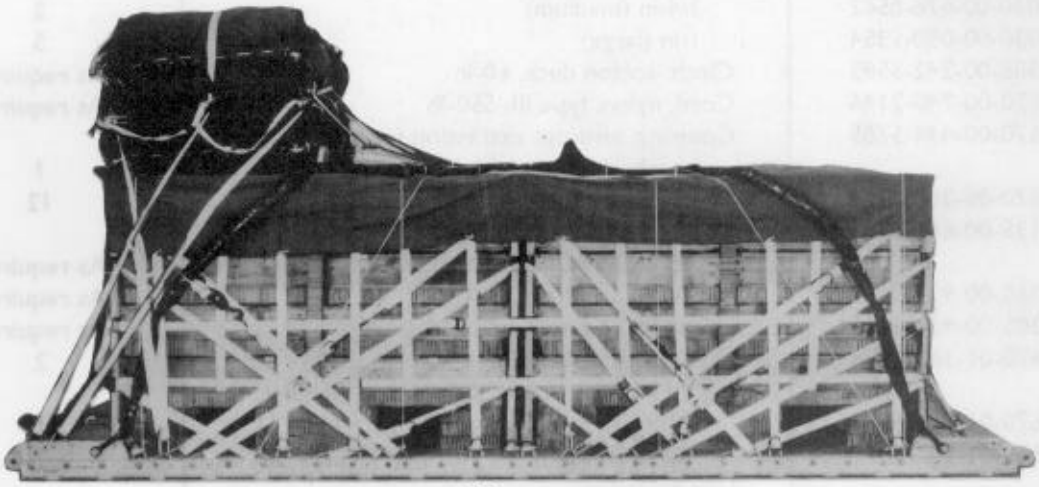
c. ***C-5 Aircraft.*** Place a 28-foot cargo extraction parachute and a two-point, 5 1/2-inch link assembly on the load for installation in the aircraft. See FM 10-500-2/TO 13C7-1-5 for extraction line requirements.

15-15. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-13. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the load had been prepared according to AFR 71-4/TM 38-250. If the load varies from the one shown, recompute the weight, height, CB, and parachute requirements according to FM 10-500-2/TO 13C7-1-5.

CAUTION

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



CB

RIGGED LOAD DATA

Weight:	Load shown	18,560 pounds
Height		97 1/2 inches
Width		108 inches
Length		192 inches
Overhang:	Front	0 inches
	Rear (parachute)	0 inches
CB (from front edge of platform)		106 inches
Extraction System (adds 18 inches to length of platform)		EFTC

Figure 15-13. Supply load rigged on a 16-foot, type V platform for low-velocity airdrop

15-16. Equipment Required

Use the equipment listed in Table 15-1 to rig the load shown.

Table 15-1. Equipment required for rigging typical supply loads on a 16-foot type V platform for low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium)	2
4030-00-090-5354	1-in (large)	5
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer w 16-ft cable	1
1670-00-360-0329	Cover, link assembly, type IV	12
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	As required
8305-00-958-3685	Felt sheet, 1/2-in	As required
1670-01-183-2678	Leaf, extraction line	2
	* Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-ft (3-loop) or	1
1670-01-107-7651	140-ft (3-loop)	1
	Link assembly:	
	Two-point, 5 1/2-in:	1
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in	(2)
1670-00-003-1954	Plate, side, 5 1/2-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-783-5988	Type IV	12
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:	20 1/2 sheets
	87- by 10-in	(2)
	87- by 12-in	(12)
	87- by 24-in	(6)
	87- by 36-in	(14)
1670-01-016-7841	Parachute, cargo, G-11B	4
	Parachute, cargo extraction:	
1670-01-063-3715	15-ft	1
1670-00-040-8135	28-ft	1

* Both extraction lines may be needed for C-5 aircraft.

Table 15-1. Equipment required for rigging typical supply loads on a 16-foot type V platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
	Platform, AD, type V, 16-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2385	Bumper, nose	(1)
1670-01-162-2372	Clevis assembly (type V)	(60)
1670-01-162-2381	Tandem link (multipurpose)	(4)
5530-00-128-4981	Plywood, 3/4-in:	10 sheets
	90- by 7-in	8
	90- by 48-in	8
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo, airdrop, type XXVI nylon webbing:	
	For deployment line:	
1670-01-062-6303	12-ft (2-loop)	1
	For suspension:	
1670-00-432-2507	16-ft (4-loop)	4
	For riser extension:	
1670-01-062-6302	20-ft (2-loop)	12
1670-00-040-8219	Strap, parachute release, multicut (comes w 3 knives)	2
7510-00-266-5016	Tape, adhesive, PSA, cloth back, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	76
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in, natural	As required
8305-00-263-3591	Type VIII	As required