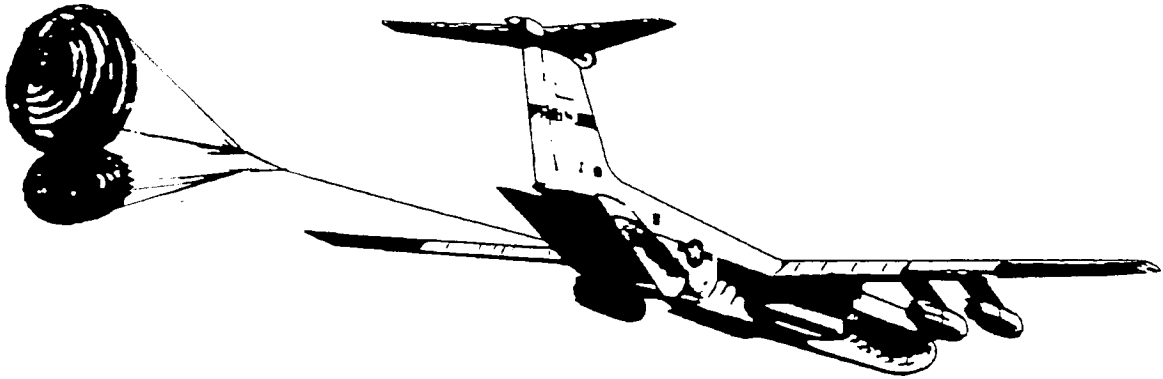


**ARMY FM 10-512
AIR FORCE TO 13C7-1-8**



**AIRDROP OF SUPPLIES AND EQUIPMENT:
RIGGING TYPICAL SUPPLY LOADS**



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**AIRDROP OF SUPPLIES AND EQUIPMENT:
RIGGING TYPICAL SUPPLY LOADS**

This change modifies the procedures for rigging typical mass supply loads for low-velocity airdrop on type V platforms. This change adds procedures rigging mass supplies for low-velocity airdrop using the Palletized Load System.

FM 10-512/TO 13C7-1-8, 31 August, 1979, is changed as follows:

1. New or changed material is identified by a vertical bar in the margin opposite the changed material.
2. File this transmittal sheet in front of the publication for reference purposes.
3. Remove old pages and insert new pages as indicated below:

Remove pages

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12-1 through 12-19
13-1 and 13-2
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15-21 through 15-26
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**AIRDROP OF SUPPLIES AND EQUIPMENT:
RIGGING TYPICAL SUPPLY LOADS**

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PREFACE

SCOPE

This manual tells and shows how to rig mass supply loads. Procedures are given for typical loads that can be contained by the methods shown. These procedures are meant as a guide, and may be adapted to specific loads. Procedures are also given for some specific ammunition loads. This manual is designed for all parachute riggers.

USER INFORMATION

The proponent for this publication is HQ TRADOC. You are encouraged to report any omissions and to suggest ways of making this a better manual.

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CHAPTER 1

INTRODUCTION

1-1. Description of Items

Bulk supplies consisting of rations, fuels, lubricants, ammunition, and various unit equipment can be rigged on standard airdrop platforms using the procedures given in this manual. Items packaged in containers or units of the same size, such as rations and ammunition are rigged using lashings and endboards. These procedures can be adapted for loads that are different from the specific ammunition loads shown. Some items are more easily rigged in A-22 containers. Items of varying and irregular size can be padded, secured, and contained in mass supply boxes on 12, 16, and 20-foot platforms. Additionally, items using endboards and A-22 containers are shown rigged using the Palletized Load System.

CAUTION

The load weights may vary from the loads shown. Be sure that each load is weighed, and the parachute requirements, CB, and tip-off curve computed.

1-2. Special Considerations

Special considerations for this manual are listed below.

a. The loads covered in this manual may include hazardous materials as defined in AFJMAN 24-204/TM 38-250. If included, the hazardous material must be packaged, marked, and labeled as required by AFJMAN 24-204/TM 38-250.

b. Only ammunition listed in FM 10-500-53/MCRP 4-3.8/TO 13C7-18-41 may be airdropped.

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

CHAPTER 11

**RIGGING SUPPLY LOADS ON AN 8-FOOT, TYPE V
PLATFORM FOR LOW-VELOCITY AIRDROP**

**Section I
RIGGING BULK SUPPLIES**

11-1. Description of Load

Bulk supplies consisting of rations, equipment, fuel, ammunition, or other items of general supply are rigged on an 8-foot type V airdrop platform with G-11 cargo parachutes. Items packaged or configured so that they can be restrained by endboards and lashings can be airdropped using these procedures. Modifications to the honeycomb, endboards, and lashings may be necessary to allow for items of different size and shape from those shown. For extraction purposes, the rigged load must weigh at least 2,520 pounds, but no more than 10,500 pounds.

11-2. Preparing Platform

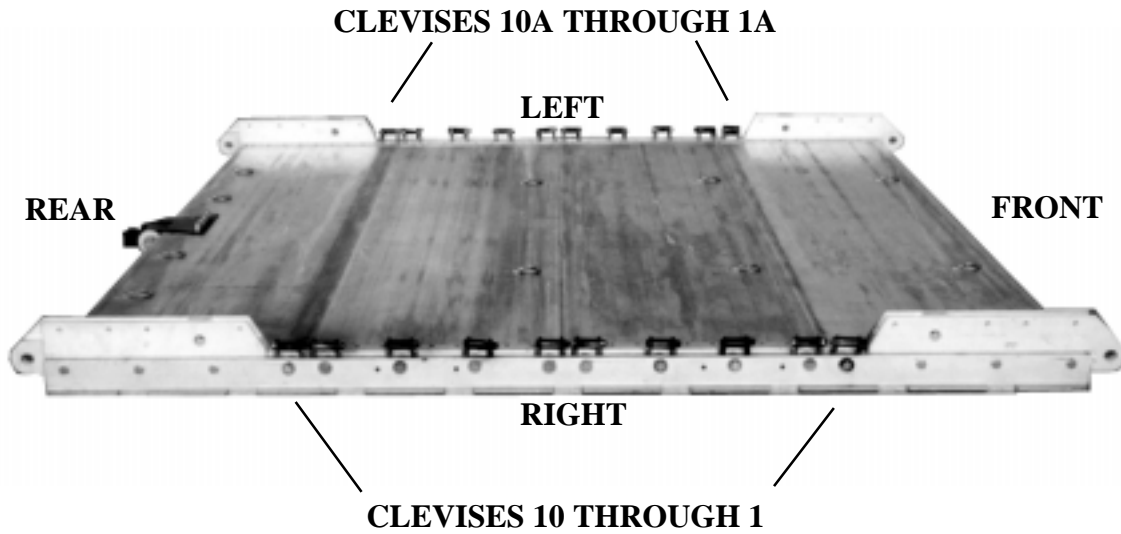
Prepare an 8-foot, type V airdrop platform as given below:

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 11-1.

c. Attaching and Numbering Clevises. Attach and number 20 clevis assemblies as shown in Figure 11-1.

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 14, 15, and 16.
3. Starting at the front of the platform, install clevises on each platform side rail using the bushings bolted on holes 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13.
4. Starting at the front of the platform, number the clevises bolted to the right side of the platform from 1 through 10, and those bolted to the left side from 1A through 10A.
5. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

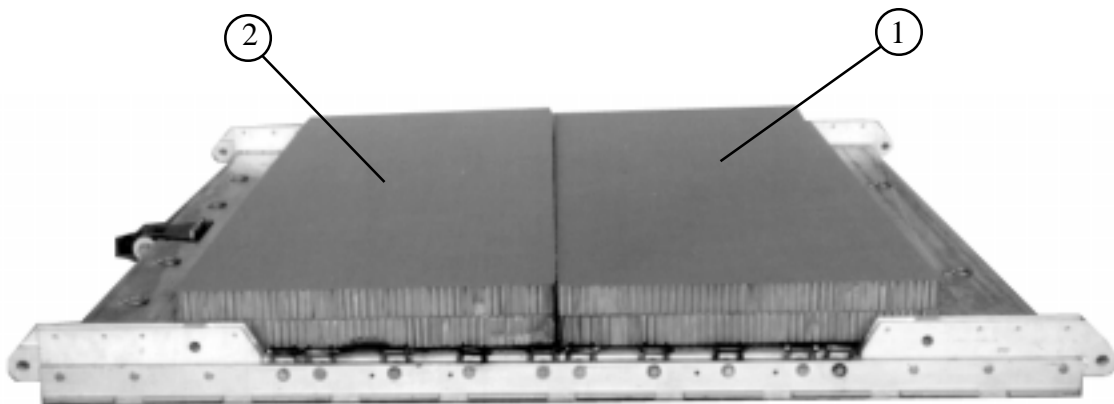
Figure 11-1. Platform prepared

11-3. Placing Honeycomb

Place the honeycomb on the platform as shown in Figure 11-2.

Notes:

- 1. When ammunition is dropped, two layers of honeycomb are required.**
- 2. When rigging this load for airdrop on a drop zone with ground elevation of 6,000 to 10,000 feet, add an additional layer of honeycomb.**
- 3. Adjust the dimensions of the honeycomb to fit the items being dropped.**
- 4. Do not cover the extraction bracket with honeycomb.**



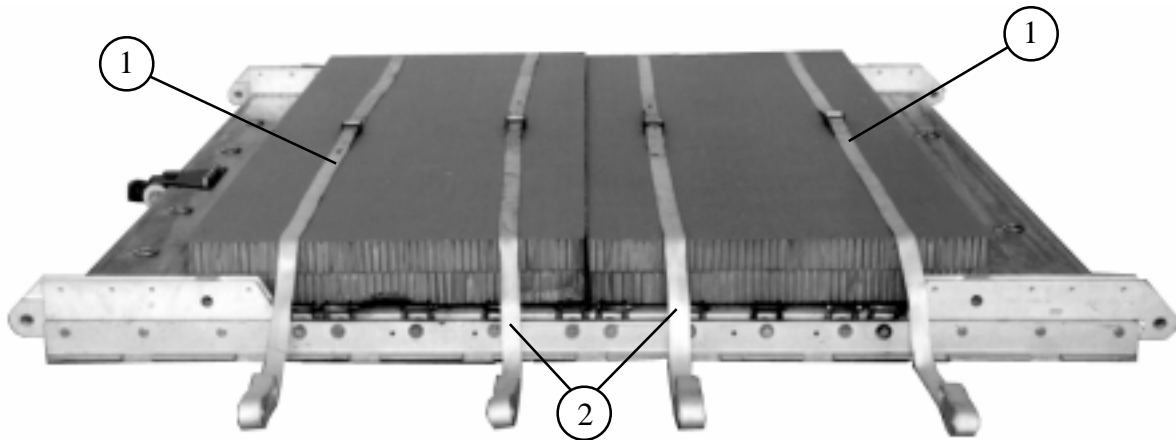
- ① Glue two full 36- by 96-inch sheets of honeycomb together. Center them 12 inches from the front edge of the platform.
- ② Make a stack as in step 1 above and place it flush against the stack placed in step 1.

Figure 11-2. Honeycomb placed

11-4. Positioning and Securing Load

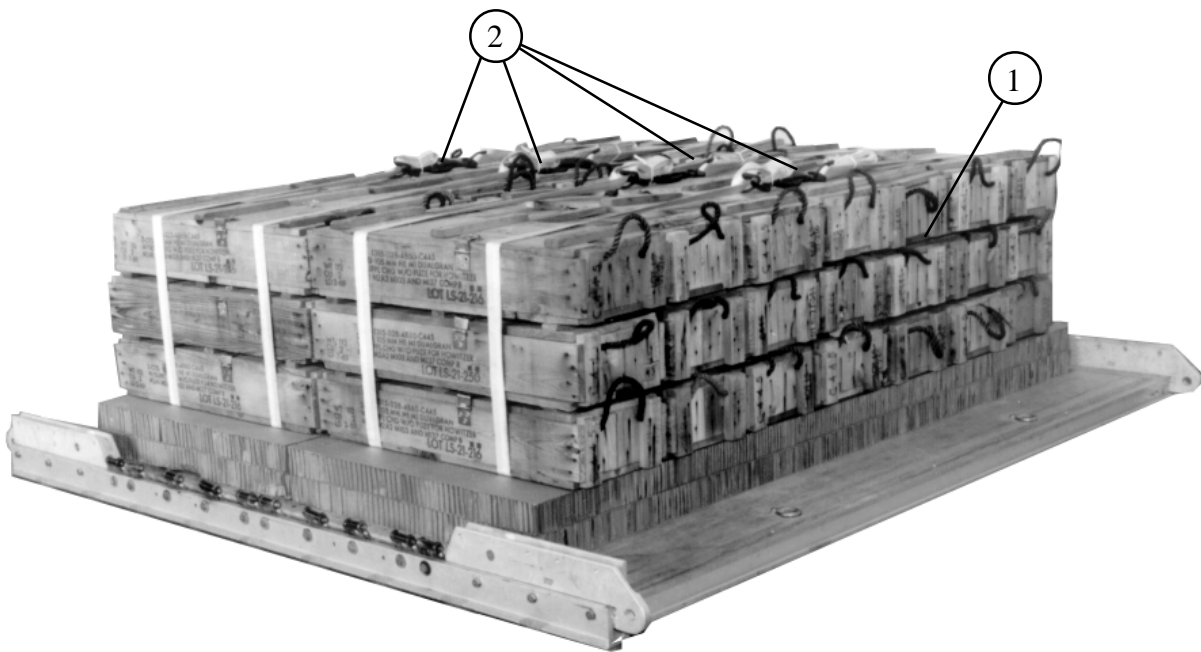
Place four 30-foot lashings on the honeycomb, place the load on the honeycomb, and secure the lashings as shown in Figure 11-3. Adapt the procedures shown for loads configured differently.

CAUTION
Only ammunition listed in FM 10-500-53/
MCRP No 4-3.8/TO 13C7-18-41 may be
airdropped. Hazardous material must be
packaged, marked, and labeled as required
by AFJMAN 24-204/TM 38-250.



- ① Form four 30-foot lashings according to FM 10-500-2/TO 13C7-1-5. Center a lashing across the honeycomb 6 inches from each end.
- ② Center two lashings on the joint in the honeycomb, 12 inches apart.

Figure 11-3. Load positioned and secured



- ③ Position the load on the honeycomb with the weight evenly distributed.
- ④ Pass both ends of each lashing to the top of the load. Secure each lashing with two D-rings and a load binder.

Note: Position the load binders so that they will be accessible for retightening and inspection when the load is fully rigged.

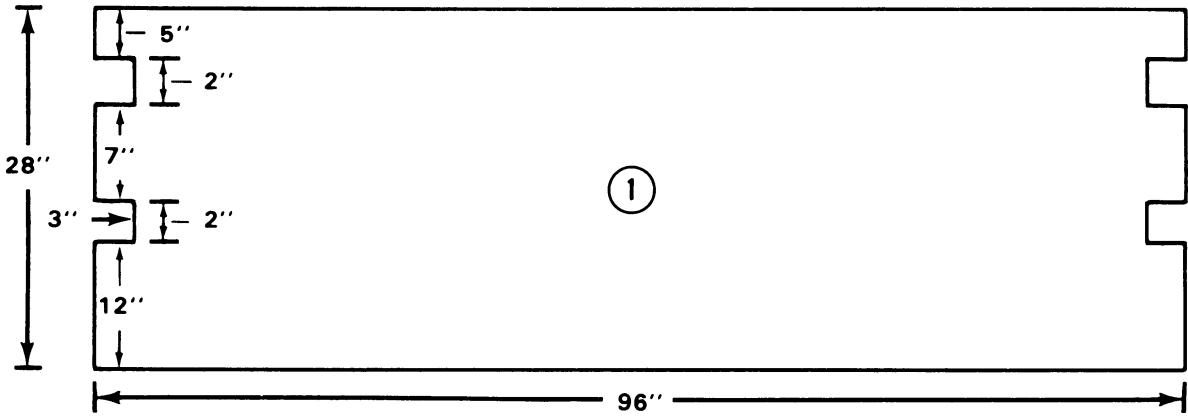
Figure 11-3. Load positioned and secured (continued)

11-5. Constructing and Installing Endboards

Construct the endboards and install them on the load as shown in Figure 11-4.

Notes:

- 1. This drawing is not to scale.**
- 2. The dimensions of the endboards will vary, depending on the load being rigged. The endboards must be even with the top of the load.**



The diagram shows a rectangular endboard with a total height of 28 inches and a total width of 96 inches. On the left side, there are three cutouts. The top cutout is 5 inches high and 3 inches wide. Below it is a 2-inch high section. The middle cutout is 7 inches high and 3 inches wide. Below it is another 2-inch high section. The bottom cutout is 12 inches high and 3 inches wide. A circled number 1 is placed in the center of the board.

- 1** Construct two endboards using one 3/4- by 28- by 96-inch piece of plywood for each endboard. Make cutouts as shown.
- 2** Tape the cutouts in the endboards to protect the lashings from sharp edges.

Figure 11-4. Endboards constructed and installed

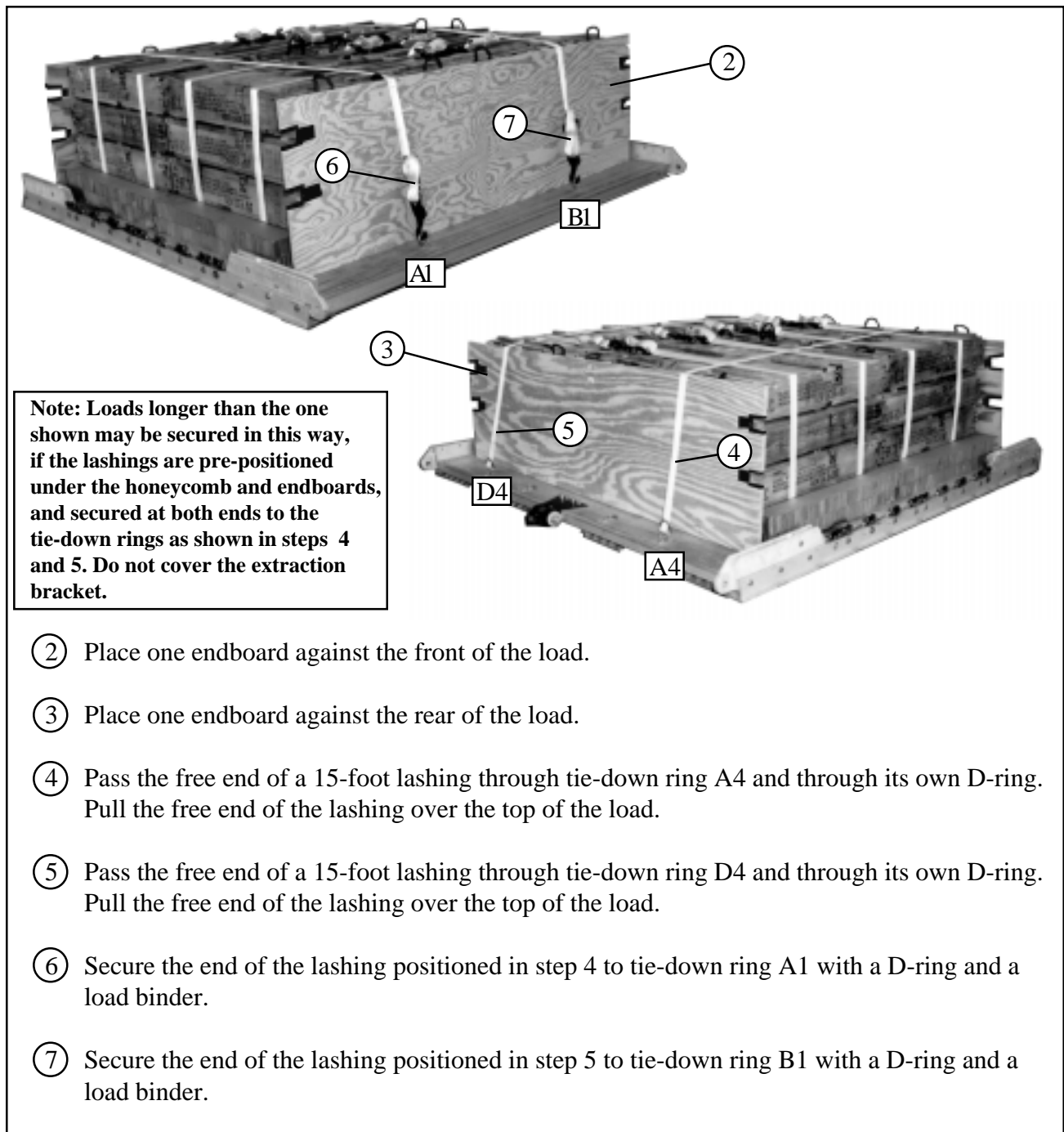
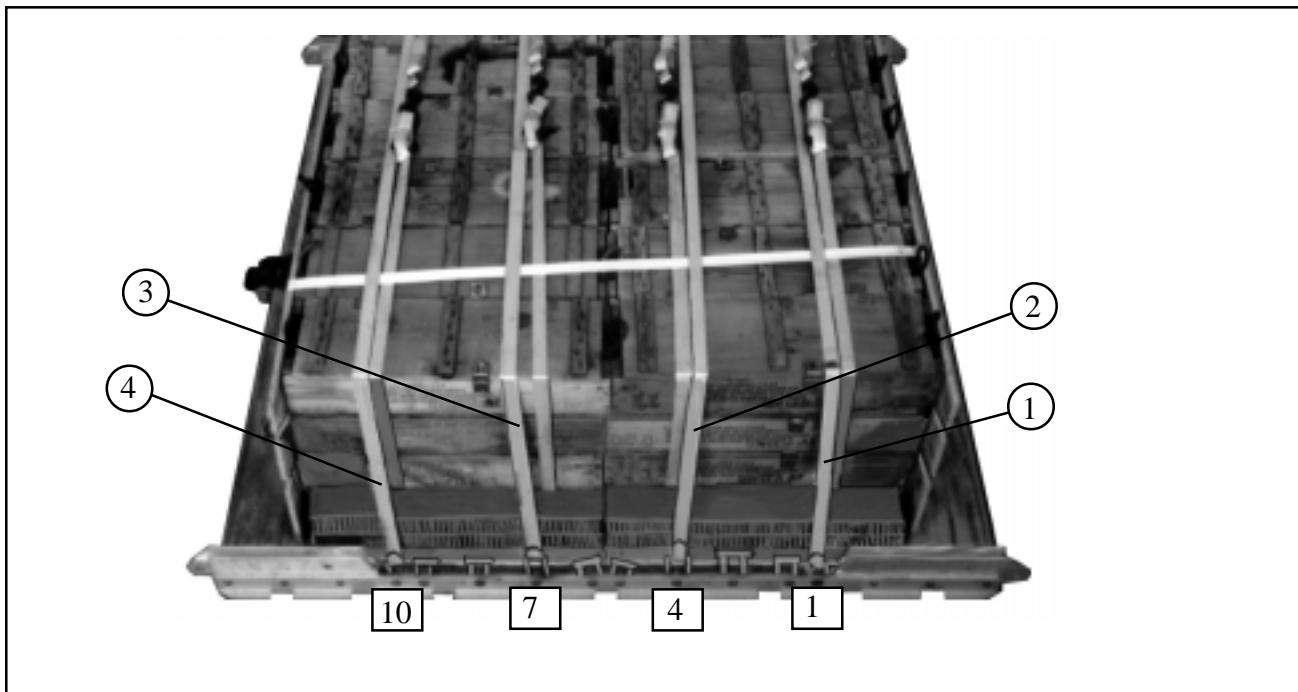


Figure 11-4. Endboards constructed and installed (continued)

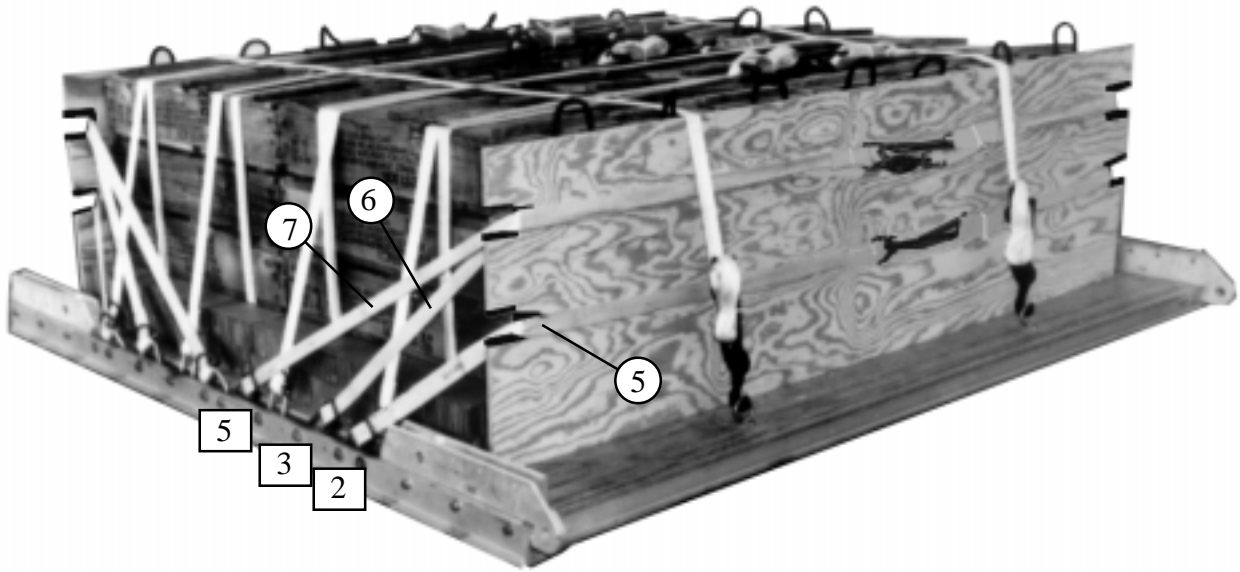
11-6. Installing Lashings

Lash the load to the platform using sixteen 15-foot lashings, sixteen D-rings, and ten load binders according to FM 10-500-2/TO 13C7-1-5, and as shown in Figures 11-5, 11-6, and 11-7.



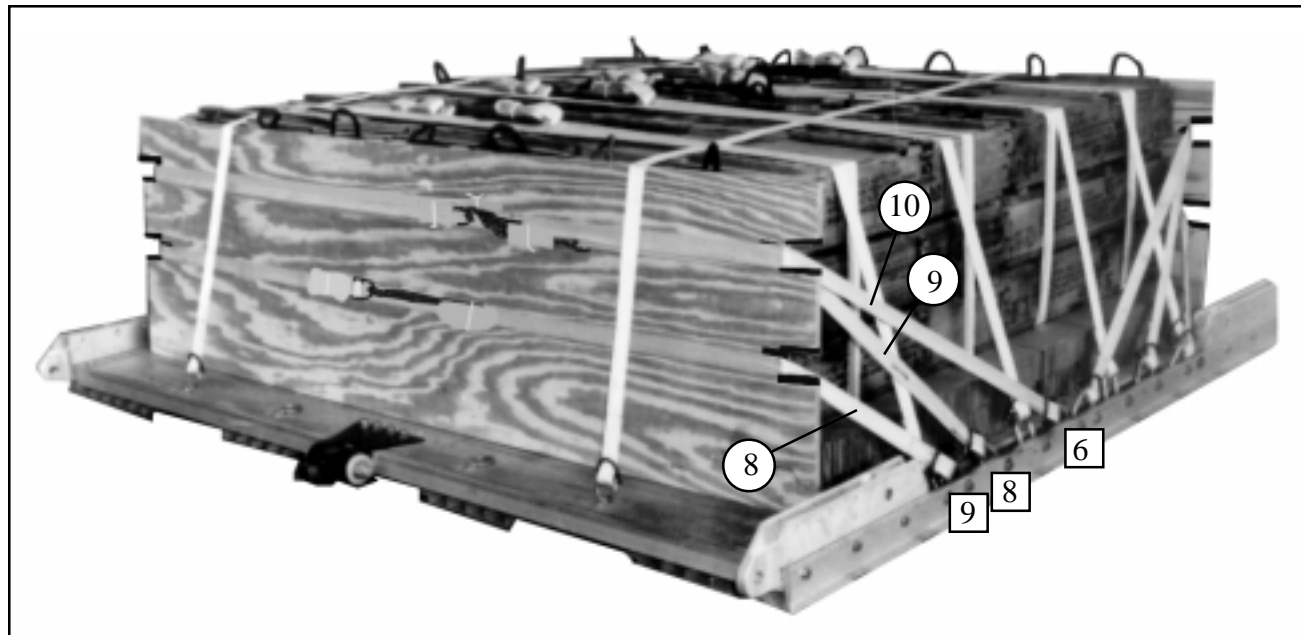
Lashing Number	Tie-down Clevis Numbers	Instructions
1	1 and 1A	Pass lashing: Through clevis 1 and through its own D-ring, over the top of the load, and to clevis 1A. Secure the lashing to clevis 1A with a D-ring and a load binder.
2	4 and 4A	Through clevis 4 and through its own D-ring, over the top of the load, and to clevis 4A. Secure the lashing to clevis 4A with a D-ring and a load binder.
3	7 and 7A	Through clevis 7 and through its own D-ring, over the top of the load, and to clevis 7A. Secure the lashing to clevis 7A with a D-ring and a load binder.
4	10 and 10A	Through clevis 10 and through its own D-ring, over the top of the load, and to clevis 10A. Secure the lashing to clevis 10A with a D-ring and a load binder.

Figure 11-5. Lashings 1 through 4 installed



Lashing Number	Tie-down Clevis Numbers	Instructions
5	2 and 2A	Pass lashing: Through clevis 2 and through its own D-ring, and through the lower cutout in the front endboard. Pass another lashing through clevis 2A and through its own D-ring, and through the lower cutout in the front endboard. Secure the lashings together in the middle of the front endboard with two D-rings and a load binder.
6	3 and 3A	Through clevis 3 and through its own D-ring, and through the upper cutout in the front endboard. Pass another lashing through clevis 3A and through its own D-ring, and through the upper cutout in the front endboard. Secure the lashings together in the middle of the front endboard with two D-rings and a load binder.
7	5 and 5A	Through clevis 5 and through its own D-ring, and through the upper cutout in the front endboard. Pass another lashing through clevis 5A and through its own D-ring, and through the upper cutout in the front endboard. Secure the lashings together in the middle of the front endboard with two D-rings and a load binder.

Figure 11-6. Lashings 5 through 7 installed

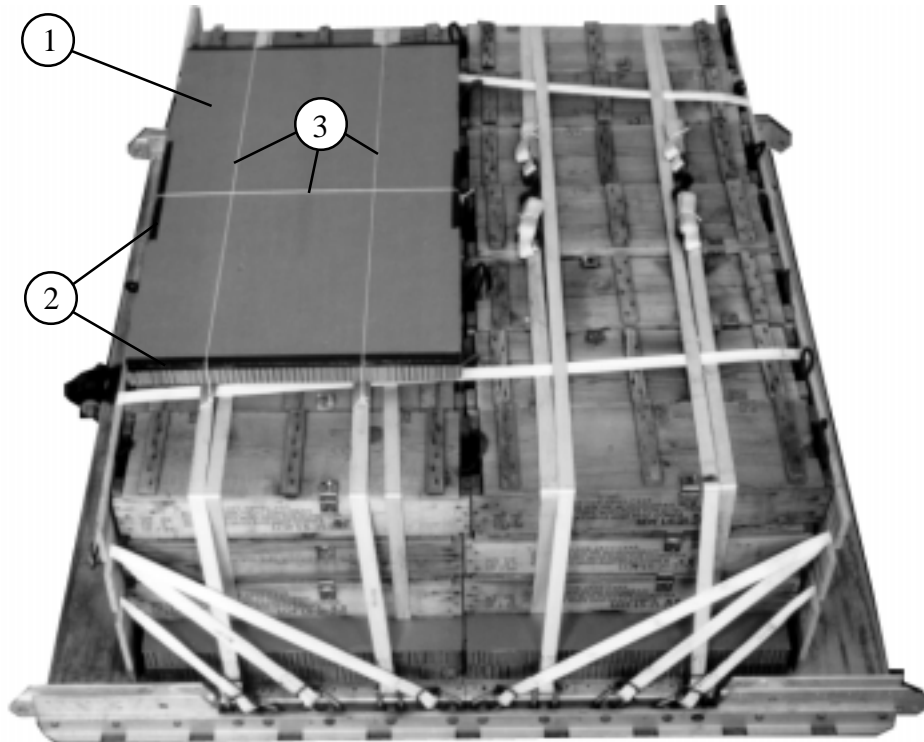


Lashing Number	Tie-down Clevis Numbers	Instructions
8	9 and 9A	Pass lashing: Through clevis 9 and through its own D-ring, and through the lower cutout in the rear endboard. Pass another lashing through clevis 9A and through its own D-ring, and through the lower cutout in the rear endboard. Secure the lashings together in the middle of the rear endboard with two D-rings and a load binder.
9	8 and 8A	Through clevis 8 and through its own D-ring, and through the upper cutout in the rear endboard. Pass another lashing through clevis 8A and through its own D-ring, and through the upper cutout in the rear endboard. Secure the lashings together in the middle of the rear endboard with two D-rings and a load binder.
10	6 and 6A	Through clevis 6 and through its own D-ring, and through the upper cutout in the rear endboard. Pass another lashing through clevis 6A and through its own D-ring, and through the upper cutout in the rear endboard. Secure the lashings together in the middle of the rear endboard with two D-rings and a load binder.

Figure 11-7. Lashings 8 through 10 installed

11-7. Installing Parachute Stowage Platform

Install the parachute stowage platform as shown in Figure 11-8.

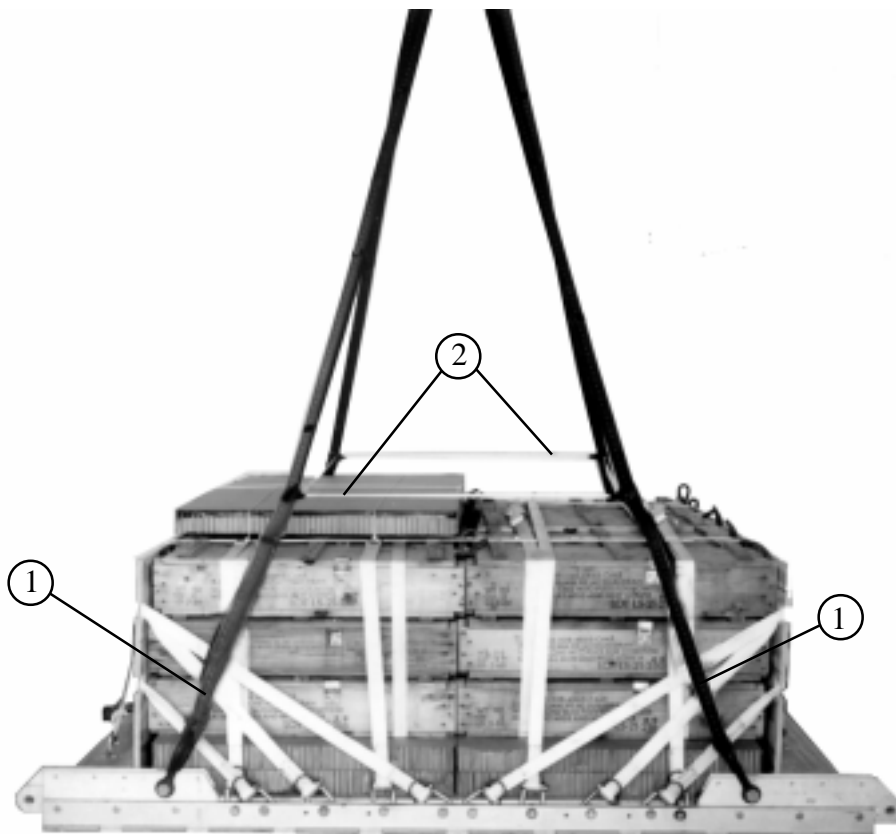


- ① Position a 60- by 36-inch piece of honeycomb along the rear endboard so that it is centered across the load and even with the rear endboard.
- ② Tape the edges of the honeycomb.
- ③ Tie the honeycomb to the nearest lashings with three lengths of type III nylon cord.

Figure 11-8. Parachute stowage platform installed

11-8. Installing Suspension Slings and Deadman's Tie

Install the suspension slings as shown in Figure 11-9 using four 11-foot (2-loop), type XXVI nylon webbing slings and four large suspension clevis assemblies. Install the deadman's tie as shown in Figure 11-9.



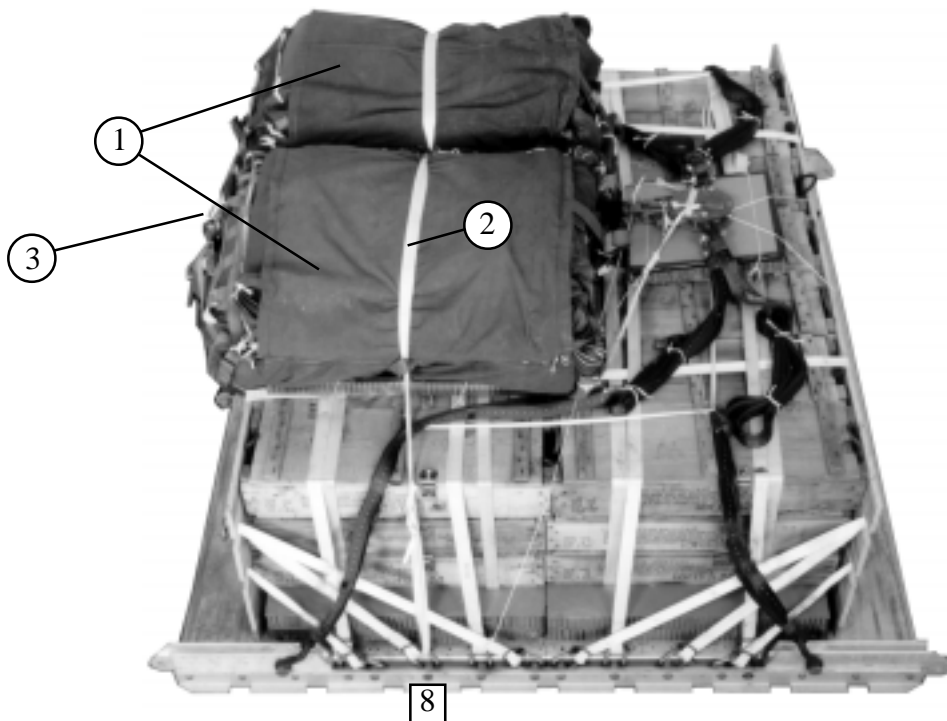
① Attach an 11-foot (2-loop), type XXVI nylon webbing sling to each tandem link with a large suspension clevis.

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

Figure 11-9. Suspension slings and deadman's tie installed

11-9. Installing Parachutes

Compute the parachute requirements for the load being rigged. The load shown requires two G-11B cargo parachutes. Install the parachutes as shown in Figure 11-10.

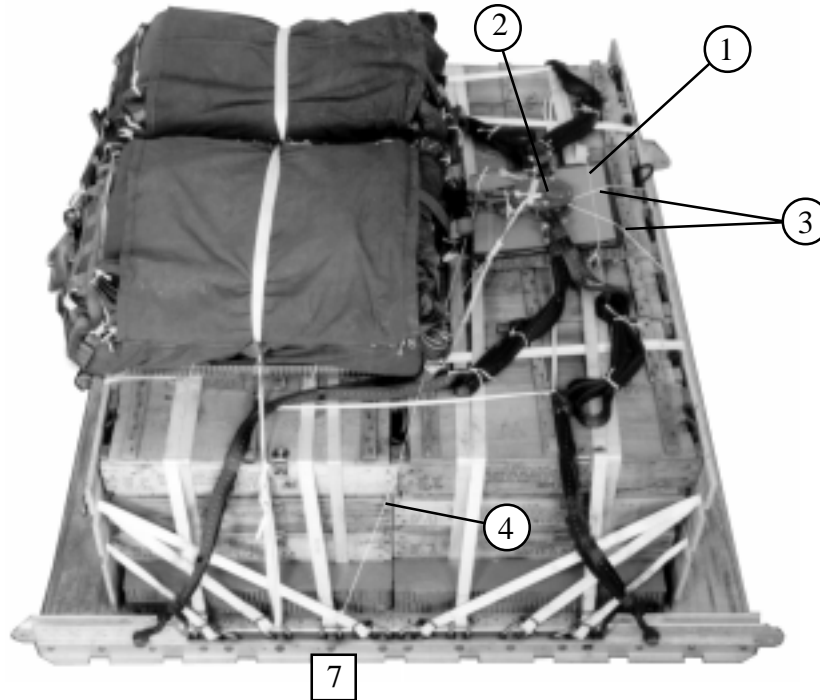


- ① Prepare two G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5. Place the parachutes on the parachute stowage platform.
- ② Restrain the parachutes according to FM 10-500-2/TO 13C7-1-5. Tie the type VIII nylon restraint strap to clevises 8 and 8A.
- ③ Install the parachute release strap according to FM 10-500-2/TO 13C7-1-5.

Figure 11-10. Cargo parachutes installed

11-10. Installing Release System

Prepare, install, and safety an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 11-11.



- ① Center an 18-by 20-inch piece of honeycomb between the front edge of the boxes and the parachutes. Tape the edges of the honeycomb and secure it to the load with two lengths of type III nylon cord.

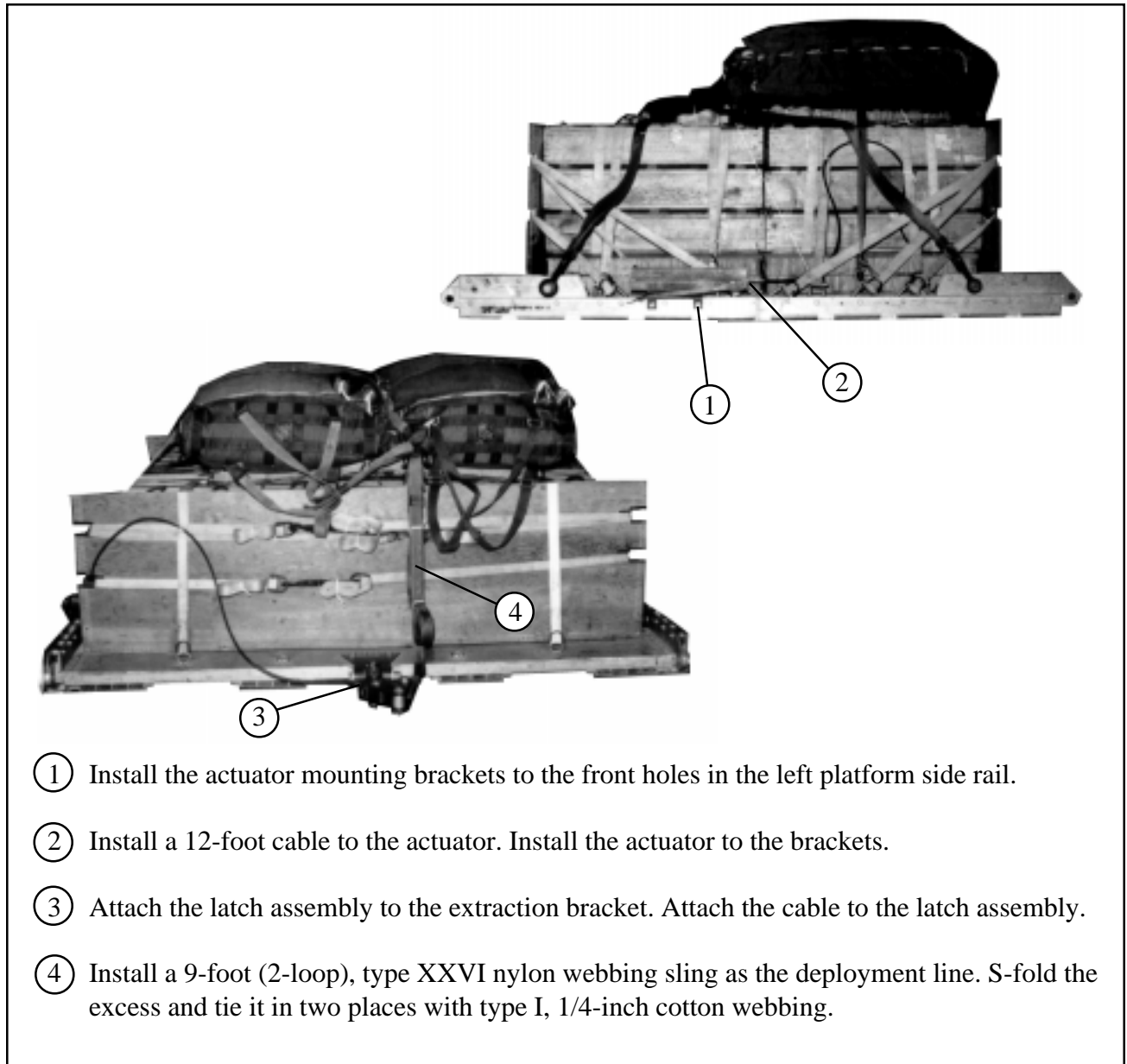
Note: Do not cover the deadman's tie with the release platform.

- ② Center the M-1 release on the honeycomb.
- ③ Secure the bottom of the release assembly to tie-down rings A1 and B1 with a length of type III nylon cord.
- ④ Secure the top of the release assembly to clevises 7 and 7A with a length of type III nylon cord.

Figure 11-11. M-1 release installed

11-11. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 11-12.



- ① Install the actuator mounting brackets to the front holes in the left platform side rail.
- ② Install a 12-foot cable to the actuator. Install the actuator to the brackets.
- ③ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.
- ④ Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line. S-fold the excess and tie it in two places with type I, 1/4-inch cotton webbing.

Figure 11-12. EFTC installed

11-12. Installing Provisions for Emergency Restraints

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

11-13. 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.

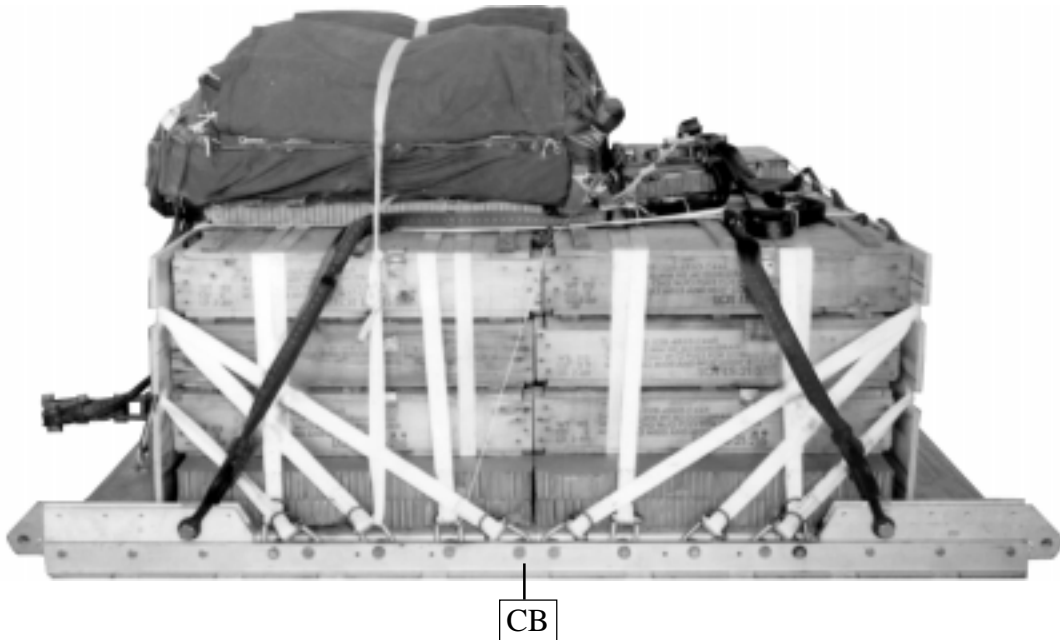
11-14. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 11-13. Complete the Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, tip-off curve, CB, and parachute requirements must be recomputed.

11-15. Equipment Required

Use the equipment listed in Table 11-1 to rig this load.

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	6,344 pounds
	Maximum	10,500 pounds
Height		56 inches
Width		108 inches
Length		119 inches
Overhang:	Front	0 inches
	Rear	0 inches
	CB (from front edge of platform)	50 inches
	Extraction System (adds 18 inches to length of platform)	EFTC

Figure 11-13. Bulk supply load rigged on an 8-foot platform for low-velocity airdrop

Table 11-1. Equipment required for rigging bulk supply load on an 8-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)	5
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with cable, 12-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	3
1670-01-183-2678	Leaf, extraction line (line bag)	2
	Line, drogue (for C-17)	
1670-01-064-4452	60-ft (1-loop), type XXVI	1
	Line, extraction	
1670-01-064-4452	For C-130: 60-ft (1-loop), type XXVI	1
1670-01-107-7652	For C-141: 160-ft (1-loop), type XXVI	1
1670-01-107-7652	For C-5: 160-ft (1-loop), type XXVI	1
1670-01-107-7652	For C-17: 160-ft (1-loop), type XXVI	1
	Link assembly:	
1670-00-783-5988	Type IV	3
	Two-point, 3 3/4-in (for C-17)	
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

Table 11-1. Equipment required for rigging bulk supply load on an 8-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	5 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	2
1670-01-063-3715	Cargo extraction, 28ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
	Platform, airdrop, type V, 12-foot	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(20)
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	2 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop	
	For suspension:	
1670-01-063-7760	11-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	2
1670-00-998-0116	Strap, parachute release, single	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	26
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-261-8585	Type VIII	As required

Section II
RIGGING BULK SUPPLIES in A-22 CARGO BAGS

11-16. Description of Load

Bulk supplies consisting of rations, equipment, fuel, ammunition, or other items of general supply are rigged on an 8-foot type V airdrop platform with G-11 cargo parachutes. Items packaged or configured so that they can be contained in A-22 cargo bags can be airdropped using these procedures. For extraction purposes, the rigged load must weigh at least 2,520 pounds, but no more than 9,500 pounds.

11-17. Preparing Platform

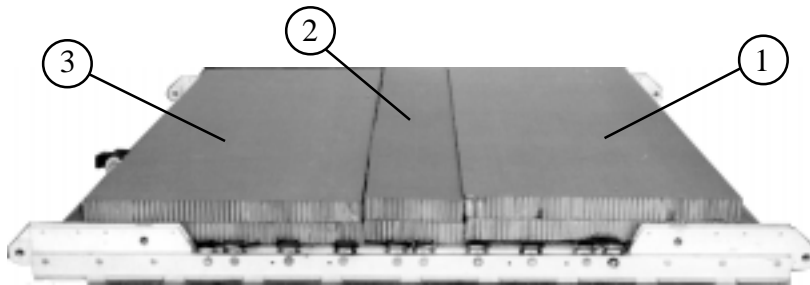
Prepare an 8-foot, type V airdrop platform as described in paragraph 11-2 and as shown in Figure 11-1.

11-18. Placing Honeycomb

Place the honeycomb on the platform as shown in Figure 11-14.

Notes:

- 1. When ammunition is dropped, two layers of honeycomb are required.**
- 2. When rigging this load for airdrop on a drop zone with ground elevation of 6,000 to 10,000 feet, add an additional layer of honeycomb.**



- ① Glue two full 36- by 96-inch sheets of honeycomb together. Center them 5 inches from the front edge of the platform.
- ② Glue two 96- by 13-inch pieces of honeycomb together. Center them to the rear of the honeycomb placed in step 1.
- ③ Make a stack as in step 1 above and place it flush against the stack placed in step 2.

Figure 11-14. Honeycomb placed

11-19. Stowing Load in A-22 Cargo Bags

Prepare, stow, and rig the load in four A-22 cargo bags according to FM 10-500-3/TO 13C7-1-11, paragraphs 9-5 through 9-7. Attach the suspension webs according to paragraph 9-8.

11-20. Positioning Load

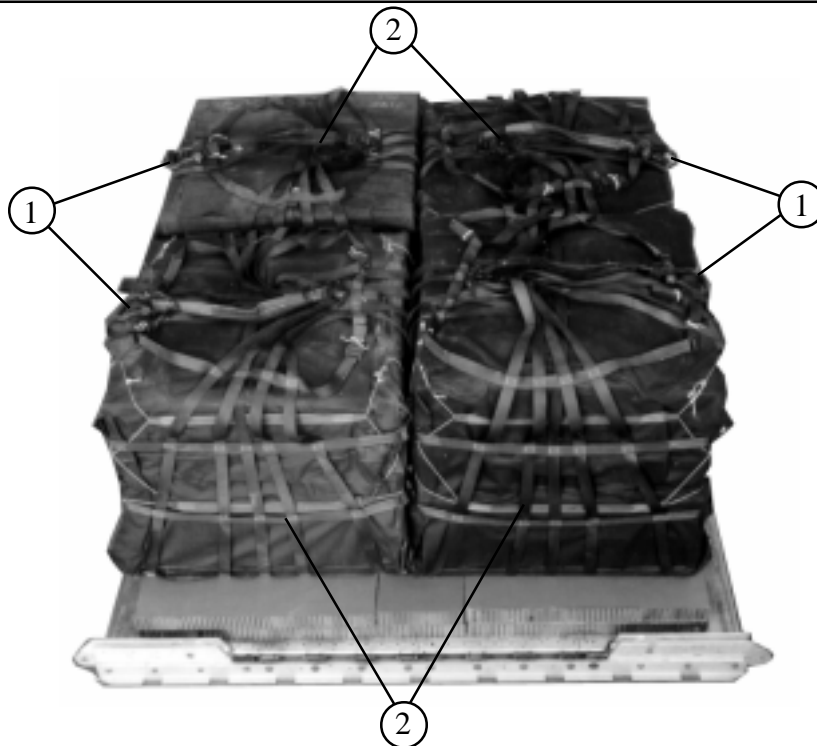
Position the four A-22 cargo bags on the honeycomb as shown in Figure 11-15.

11-21. Installing Lashings

Use twelve 15-foot tie-down assemblies to lash the load to the platform. Install the lashings according to FM 10-500-2/TO 13C7-1-5,

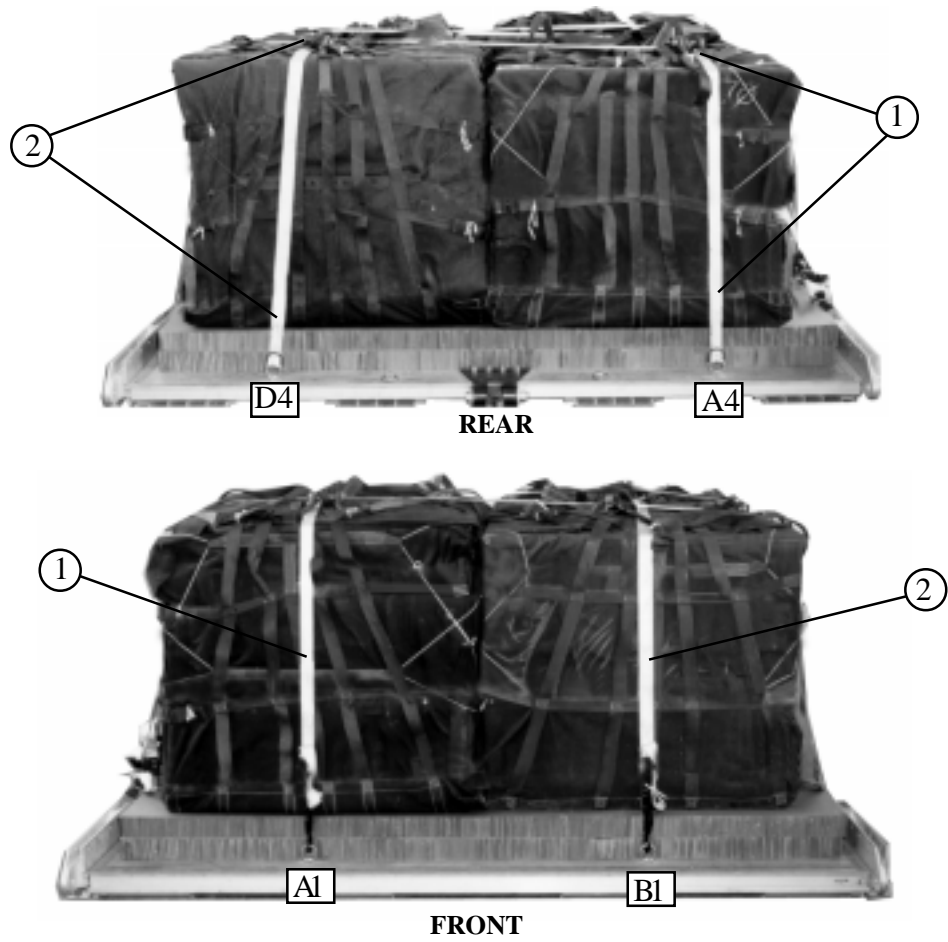
CAUTION

Only ammunition listed in FM 10-500-53/MCRP No 4-3.8/TO 13C7-18-41 may be airdropped. Hazardous material must be packaged, marked, and labeled as required by AFJMAN 24-204/TM 38-250.



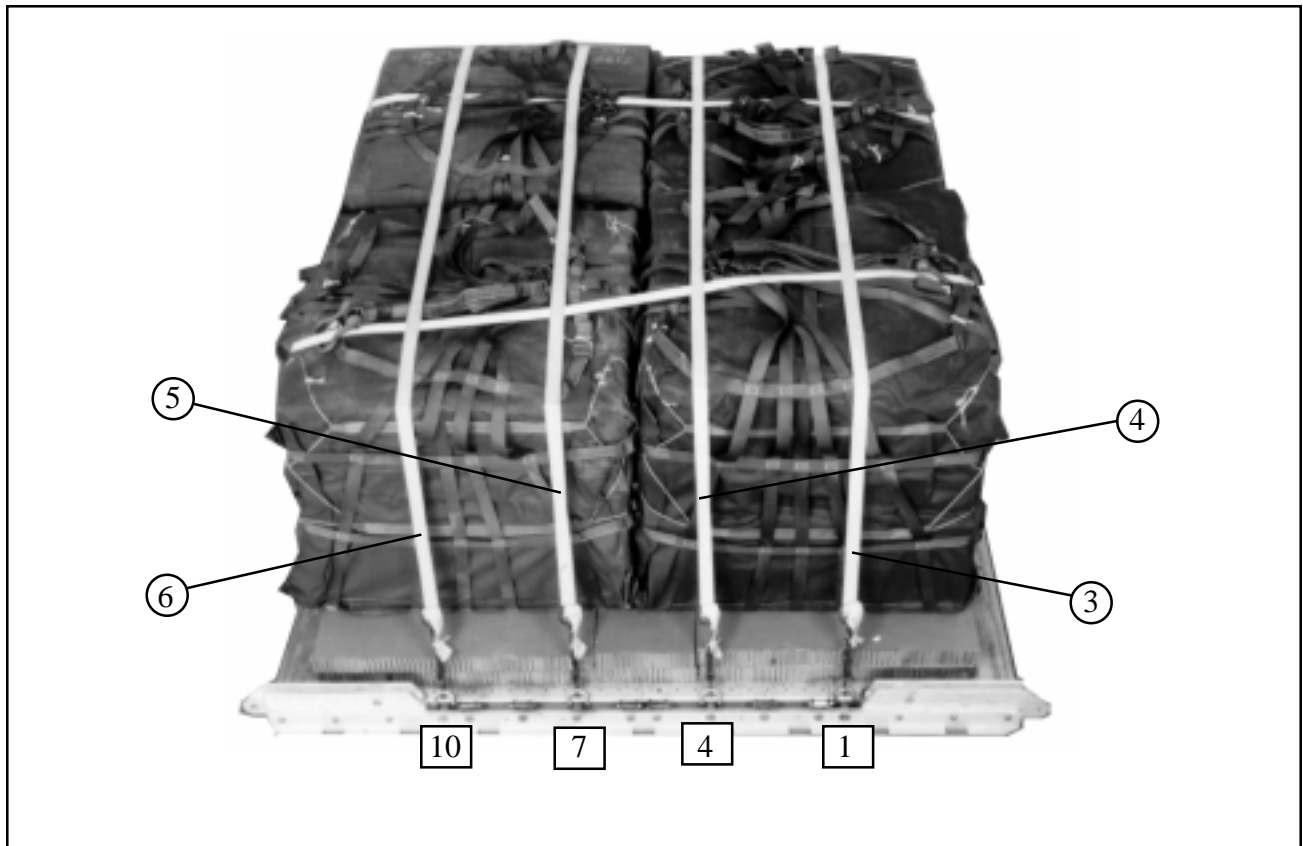
- ① Bolt a medium cargo suspension clevis to the suspension webs of each A-22 cargo bag to aid in derigging.
- ② Center four A-22 cargo bags on the honeycomb.

Figure 11-15. Load positioned



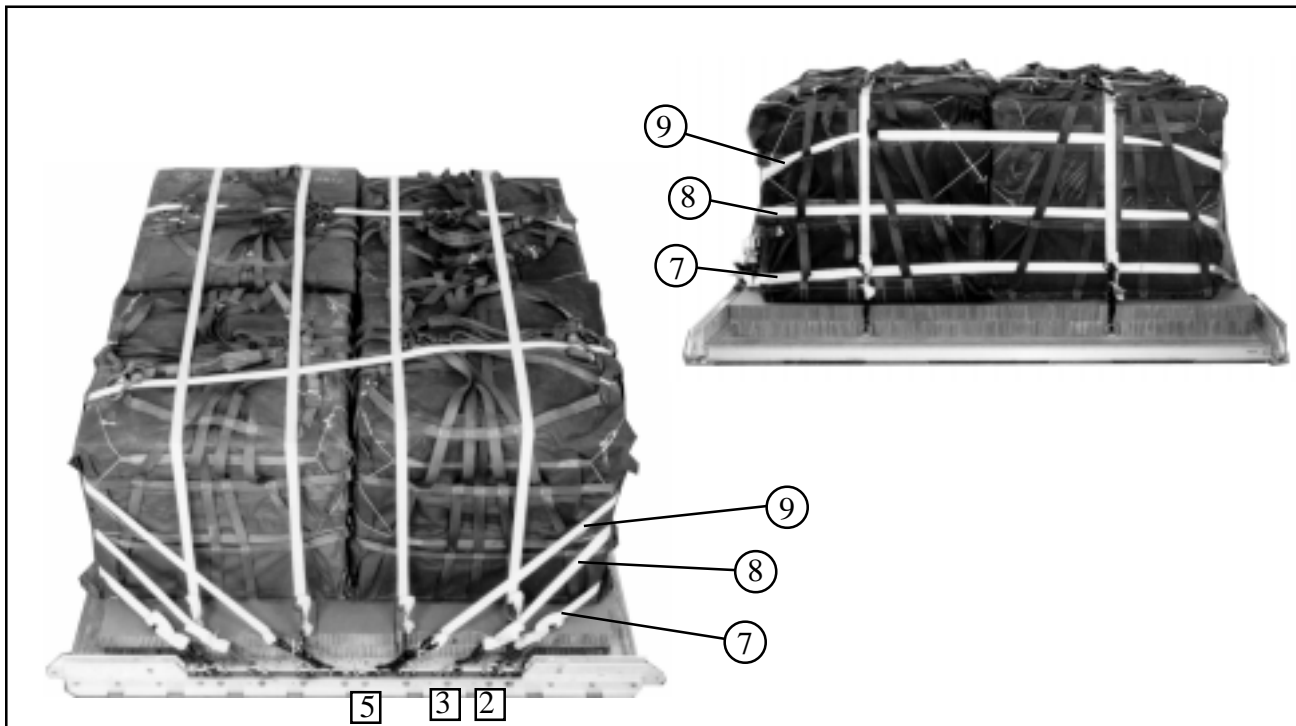
- ① Pass the free end of a 15-foot lashing through tie-down ring A4 and through its own D-ring. Pull the free end of the lashing over the top of the load, and through both of the suspension clevises on the right side. Secure the free end of the lashing to tie-down ring A1 with a D-ring and a load binder.
- ② Pass the free end of a 15-foot lashing through tie-down ring D4 and through its own D-ring. Pull the free end of the lashing over the top of the load, and through both of the suspension clevises on the left side. Secure the free end of the lashing to tie-down ring B1 with a D-ring and a load binder.

Figure 11-16. lashings 1 and 2 installed



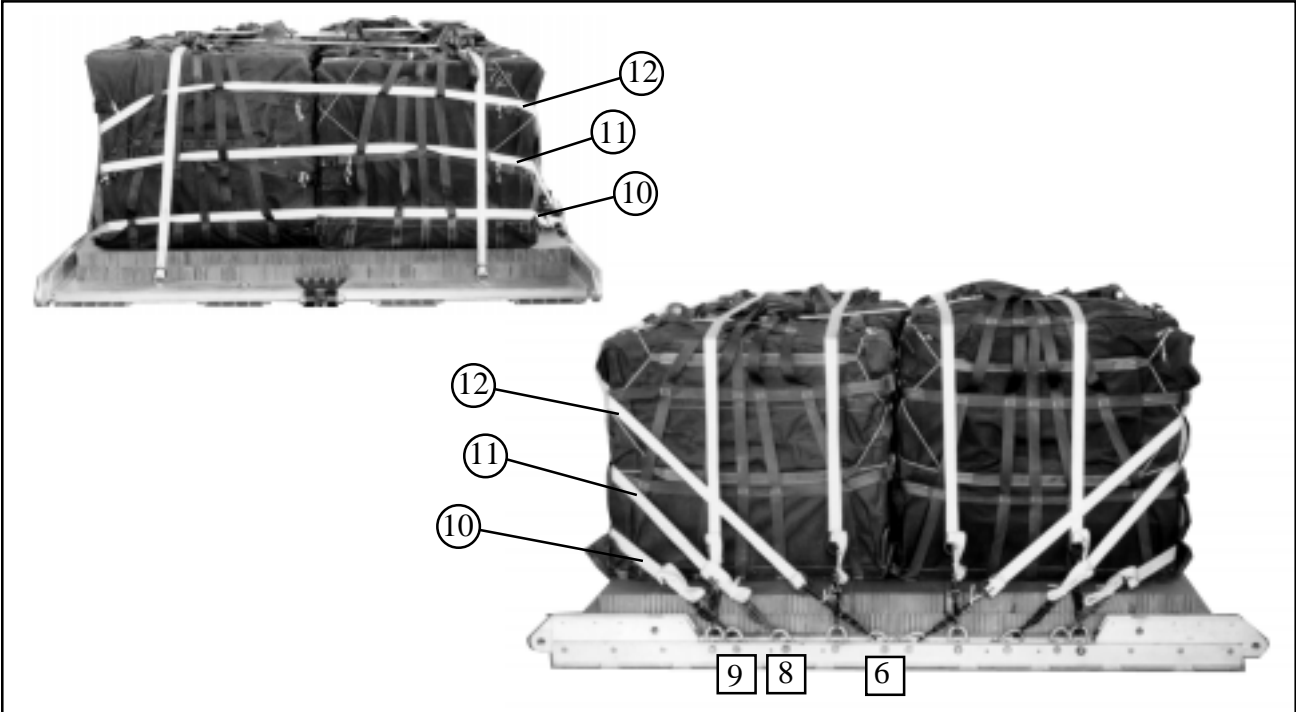
Lashing Number	Tie-down Clevis Numbers	Instructions
3	1 and 1A	Pass lashing: Through clevis 1A and through its own D-ring, over the top of the load, and to clevis 1. Secure the lashing to clevis 1 with a D-ring and a load binder.
4	4 and 4A	Through clevis 4A and through its own D-ring, over the top of the load, and to clevis 4. Secure the lashing to clevis 4 with a D-ring and a load binder.
5	7 and 7A	Through clevis 7A and through its own D-ring, over the top of the load, and to clevis 7. Secure the lashing to clevis 7 with a D-ring and a load binder.
6	10 and 10A	Through clevis 10A and through its own D-ring, over the top of the load, and to clevis 10. Secure the lashing to clevis 10 with a D-ring and a load binder.

Figure 11-17. Lashings 3 through 6 installed



Lashing Number	Tie-down Clevis Numbers	Instructions
7	2 and 2A	Pass lashing: Through clevis 2A and through its own D-ring. Pass the free end of the lashing around the front of the cargo bags and through the bag webbing just above the lowest lateral band. Secure the free end of the lashing to clevis 2 with a D-ring and a load binder.
8	3 and 3A	Through clevis 3A and through its own D-ring. Pass the free end of the lashing around the front of the cargo bags and through the bag webbing just above the next highest lateral band. Secure the free end of the lashing to clevis 3 with a D-ring and a load binder.
9	5 and 5A	Through clevis 5A and through its own D-ring. Pass the free end of the lashing around the front of the cargo bags and through the bag webbing just above the next highest lateral band. Secure the free end of the lashing to clevis 5 with a D-ring and a load binder.

Figure 11-18. Lashings 7 through 9 installed

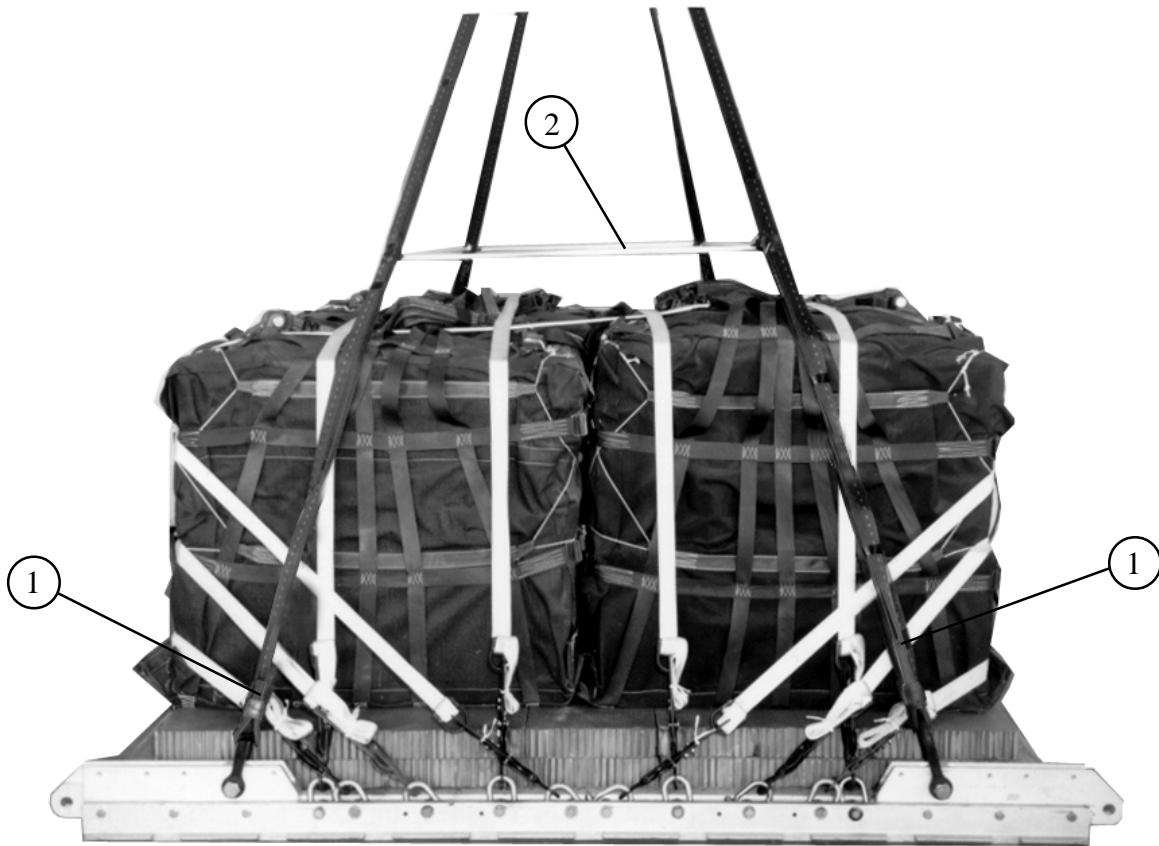


Lashing Number	Tie-down Clevis Numbers	Instructions
10	6 and 6A	Pass lashing: Through clevis 6A and through its own D-ring. Pass the free end of the lashing around the rear of the cargo bags and through the bag webbing just above the lowest lateral band. Secure the free end of the lashing to clevis 6 with a D-ring and a load binder.
11	8 and 8A	Through clevis 8A and through its own D-ring. Pass the free end of the lashing around the rear of the cargo bags and through the bag webbing just above the next highest lateral band. Secure the free end of the lashing to clevis 8 with a D-ring and a load binder.
12	9 and 9A	Through clevis 9A and through its own D-ring. Pass the free end of the lashing around the rear of the cargo bags and through the bag webbing just above the next highest lateral band. Secure the free end of the lashing to clevis 9 with a D-ring and a load binder.

Figure 11-19. Lashings 10 through 12 installed

11-22. Installing Suspension Slings and Deadman's Tie

Install the suspension slings as shown in Figure 11-20 using four 11-foot (2-loop), type XXVI nylon webbing slings and four large suspension clevis assemblies. Install the deadman's tie as shown in Figure 11-20.

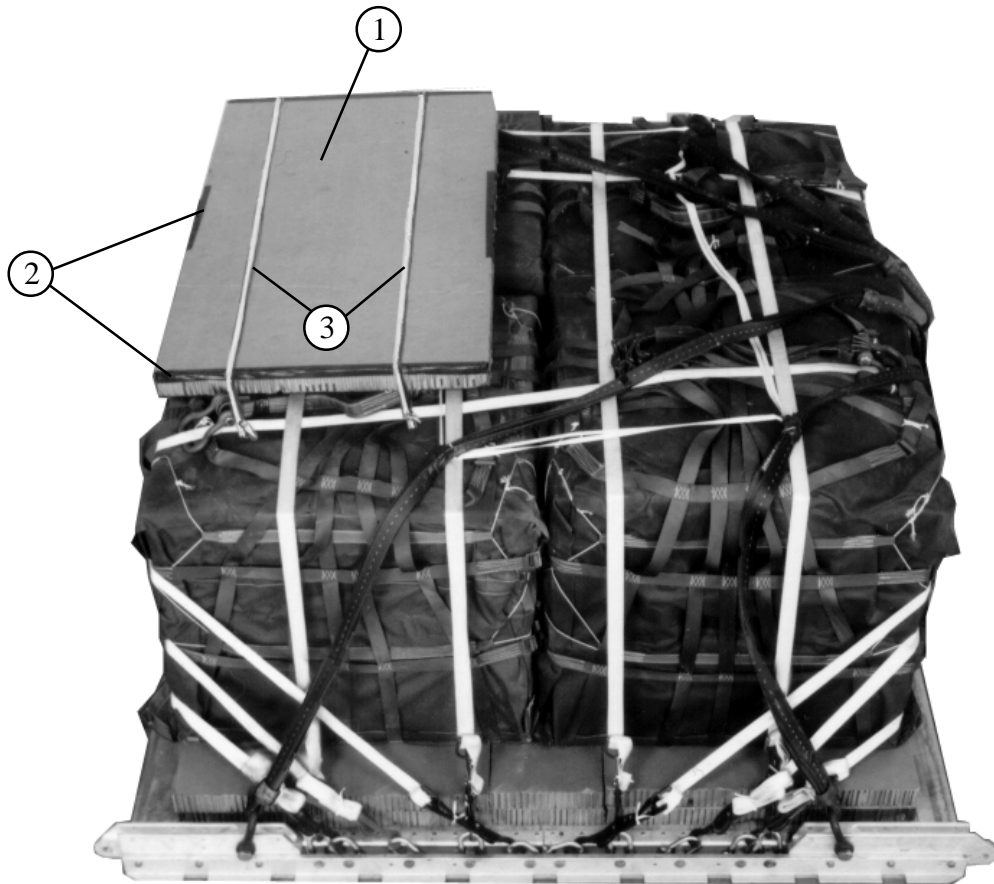


- ① Attach an 11-foot (2-loop), type XXVI nylon webbing sling to each tandem link with a large suspension clevis.
- ② Install the deadman's tie according to FM 10-500-2/TO 13C7-1-5.

Figure 11-20. Suspension slings and deadman's tie installed

11-23. Installing Parachute Stowage Platform

Install the parachute stowage platform as shown in Figure 11-21.

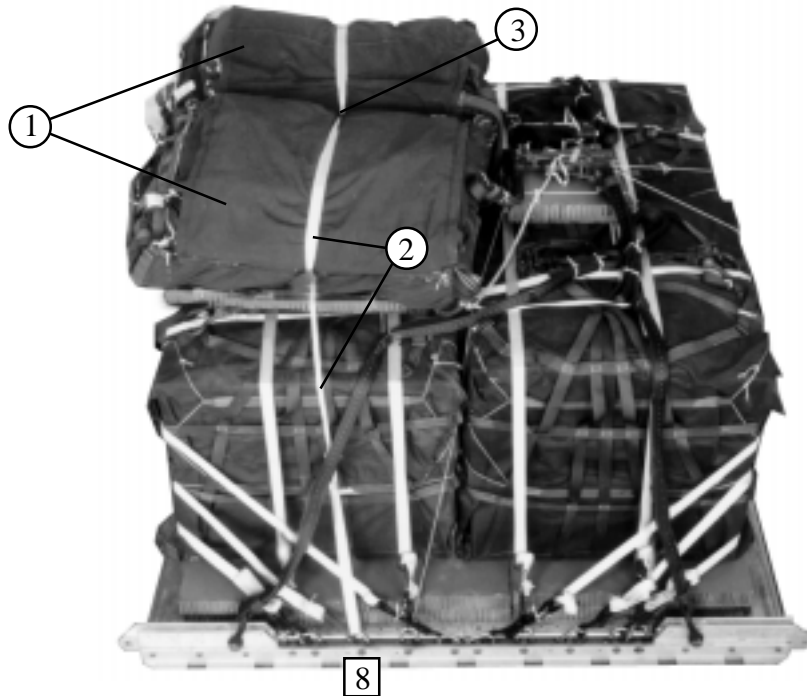


- ① Center a 60- by 36-inch piece of honeycomb along the rear edge of the cargo bags.
- ② Tape the edges of the honeycomb.
- ③ Tie the honeycomb to the nearest lashings with two lengths of type III nylon cord.

Figure 11-21. Parachute stowage platform installed

11-24. Installing Parachutes

Compute the parachute requirements for the load being rigged. The load shown requires two G-11 cargo parachutes. Prepare and install the parachutes according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 11-22.

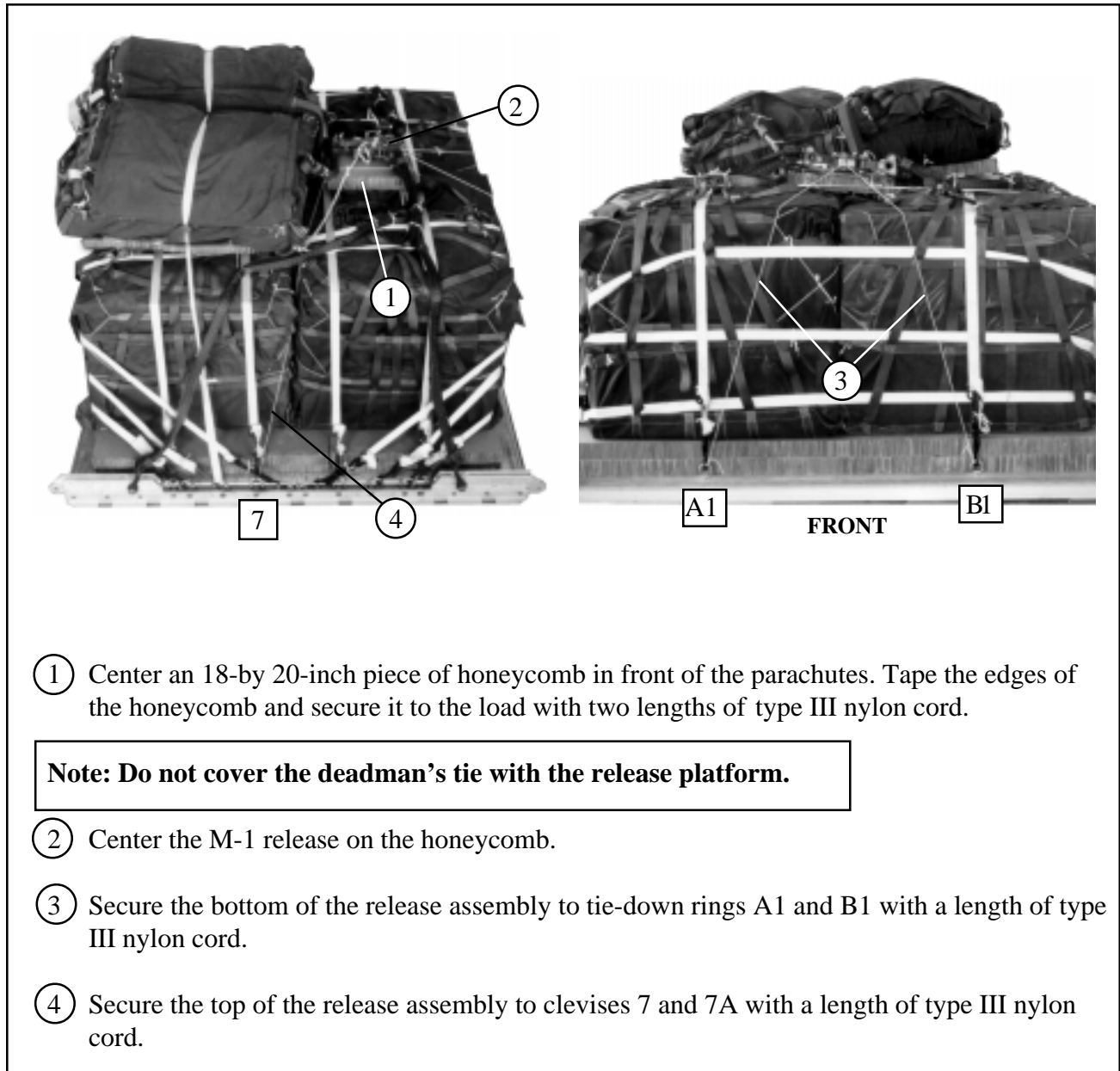


- ① Place two G-11 cargo parachutes on the parachute stowage platform.
- ② Restrain the parachutes with type VIII nylon webbing. Tie the restraint strap to clevises 8 and 8A.
- ③ Install the parachute release strap according to FM 10-500-2/TO 13C7-1-5.

Figure 11-22. Cargo parachutes installed

11-25. Installing Release System

Prepare, install, and safety an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 11-23.



- ① Center an 18-by 20-inch piece of honeycomb in front of the parachutes. Tape the edges of the honeycomb and secure it to the load with two lengths of type III nylon cord.

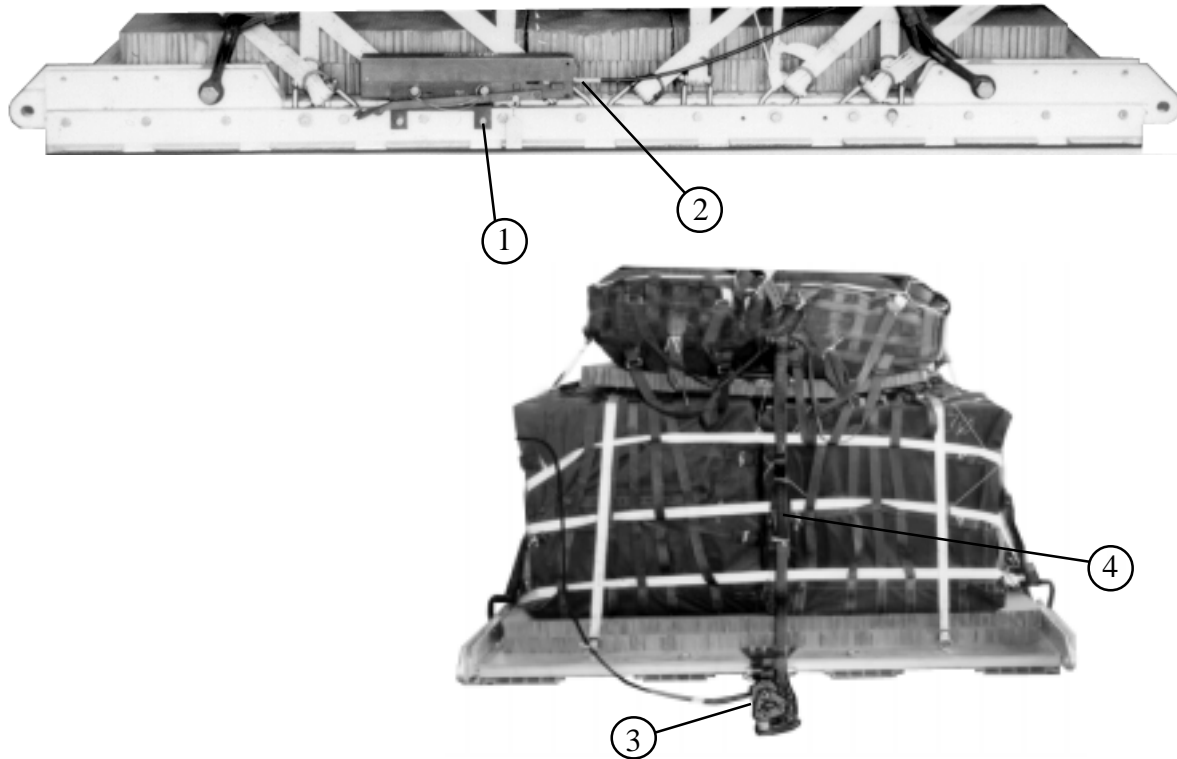
Note: Do not cover the deadman's tie with the release platform.

- ② Center the M-1 release on the honeycomb.
- ③ Secure the bottom of the release assembly to tie-down rings A1 and B1 with a length of type III nylon cord.
- ④ Secure the top of the release assembly to clevises 7 and 7A with a length of type III nylon cord.

Figure 11-23. M-1 release installed

11-26. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 11-24.



- ① Install the actuator mounting brackets to the front holes in the left platform side rail.
- ② Install a 12-foot cable to the actuator. Install the actuator to the brackets.
- ③ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.
- ④ Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line. S-fold the excess and tie it in two places with type I, 1/4-inch cotton webbing.

Figure 11-24. EFTC installed

11-27. Installing Provisions for Emergency Restraints

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

11-28. 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.

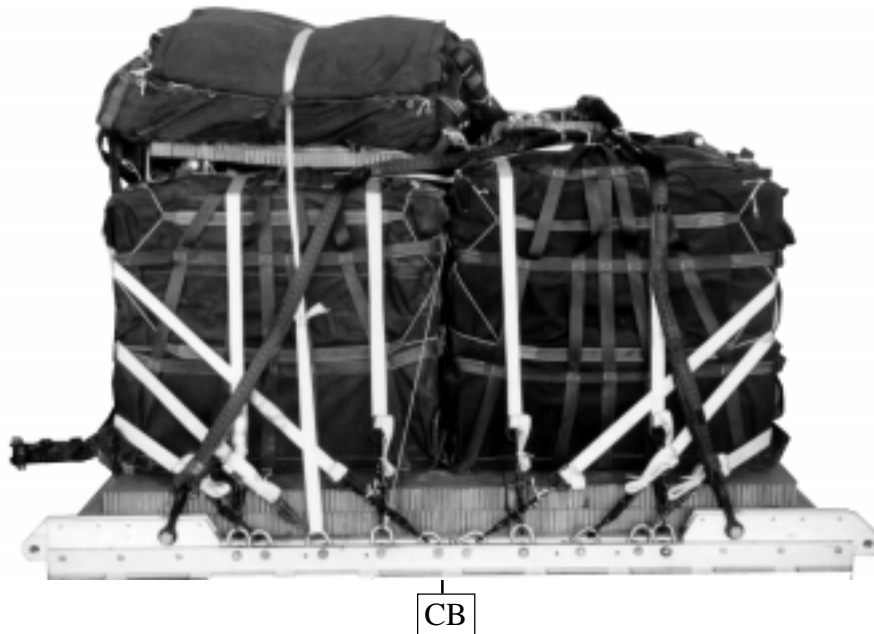
11-29. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 11-25. Complete the Shipper's Declaration for Dangerous Goods, and attach it to the load.

11-30. Equipment Required

Use the equipment listed in Table 11-2 to rig this load.

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	6,750 pounds
	Maximum	9,500 pounds
Height		71 inches
Width		108 inches
Length		119 inches
Overhang:	Front	0 inches
	Rear	0 inches
	CB (from front edge of platform)	50 inches
	Extraction System (adds 18 inches to length of platform)	EFTC

Figure 11-25. A-22 cargo bags rigged on an 8-foot platform for low-velocity airdrop

Table 11-2. Equipment required for rigging bulk supplies in A-22 cargo bags on an 8-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)	5
4030-00-678-8562	3/4-in, medium	4
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with cable, 12-ft	1
1670-00-360-0328	Cover: Clevis, large	1
1670-00-360-0329	Link, type IV	3
1670-01-183-2678	Leaf, extraction line (line bag)	2
1670-01-064-4452	Line, drogue (for C-17) 60-ft (1-loop), type XXVI	1
1670-01-064-4452	Line, extraction For C-130: 60-ft (1-loop), type XXVI	1
1670-01-107-7652	For C-141: 160-ft (1-loop), type XXVI	1
1670-01-107-7652	For C-5: 160-ft (1-loop), type XXVI	1
1670-01-107-7652	For C-17: 160-ft (1-loop), type XXVI	1
1670-00-783-5988	Link assembly: Type IV	3
5306-00-435-8994	Two-point, 3 3/4-in (for C-17) 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

Table 11-2. Equipment required for rigging bulk supplies in A-22 cargo bags on an 8-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	6 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	2
1670-01-063-3715	Cargo extraction, 15-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
	Platform, airdrop, type V, 8-ft	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(20)
1670-01-354-8424	Extraction bracket assembly	(1)
1670-01-162-2381	Link, tandem, suspension link assembly	(4)
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop	
	For suspension:	
1670-01-063-7760	11-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	2
1670-00-998-0116	Strap, parachute release, single	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	12
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-261-8585	Type VIII	As required

CHAPTER 12

**RIGGING SUPPLY LOADS ON A 12-FOOT, TYPE V
PLATFORM FOR LOW-VELOCITY AIRDROP**

12-1. Description of Load

Bulk supplies consisting of rations, equipment, fuel, ammunition, or other items of general supply are rigged on a 12-foot type V airdrop platform with G-11 cargo parachutes. Items packaged or configured so that they can be restrained by endboards and lashings can be airdropped using these procedures. Modifications to the honeycomb, endboards, and lashings may be necessary to allow for items of different size and shape from those shown. For extraction purposes, the rigged load must weigh at least 3,780 pounds, but no more than 16,250 pounds.

12-2. Preparing Platform

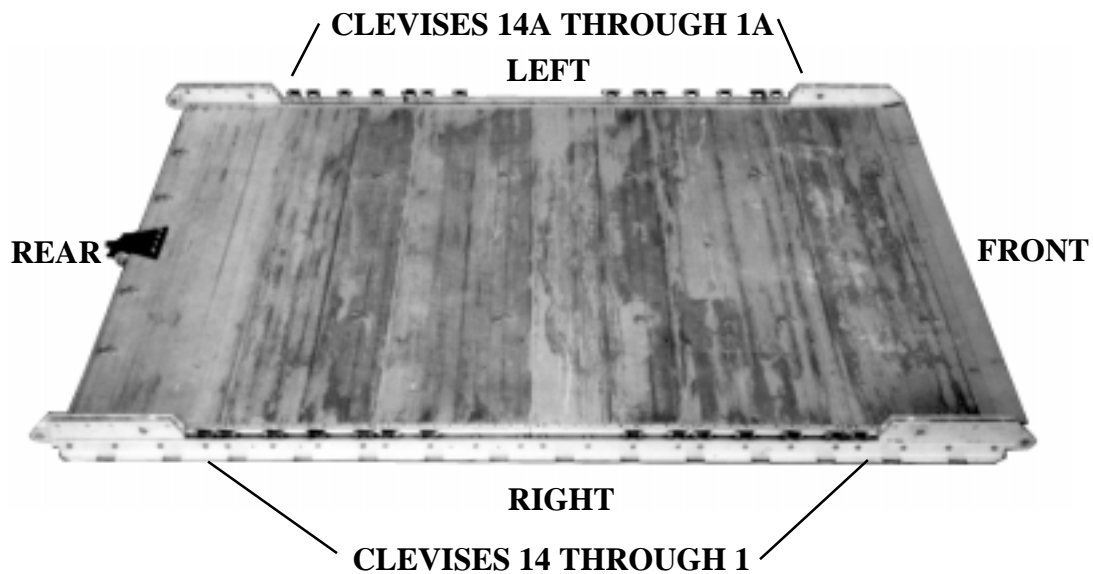
Prepare a 12-foot, type V airdrop platform as given below:

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 12-1.

c. Attaching and Numbering Clevises. Attach and number 28 clevis assemblies as shown in Figure 12-1.

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 22, 23, and 24.
3. Starting at the front of the platform, install clevises on each platform side rail using the bushings bolted on holes 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20 and 21.
4. Starting at the front of the platform, number the clevises bolted to the right side of the platform from 1 through 14, and those bolted to the left side from 1A through 14A.
5. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

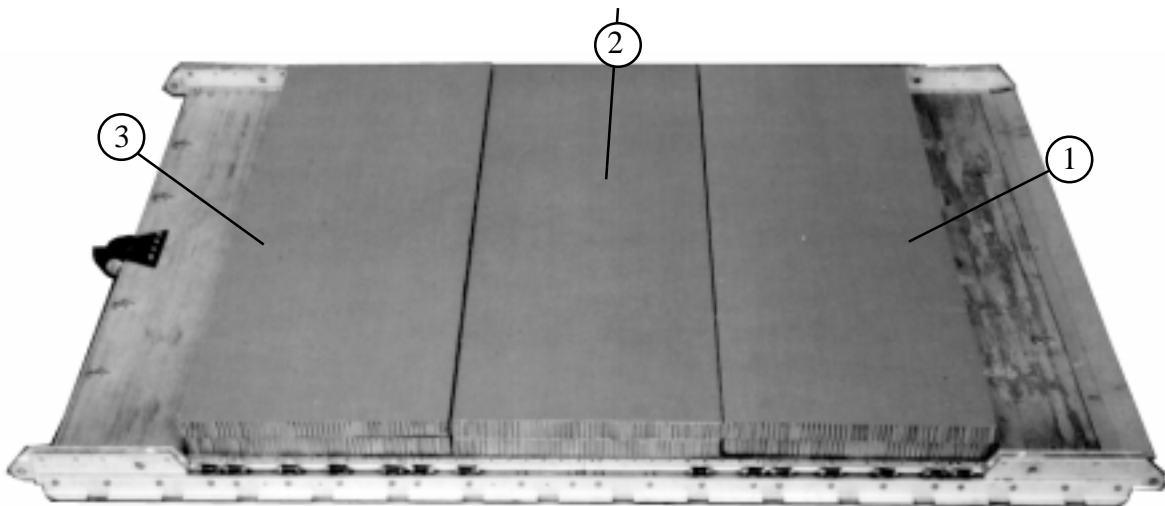
Figure 12-1. Platform prepared

12-3. Placing Honeycomb

Place the honeycomb on the platform as shown in Figure 12-2.

Notes:

- 1. When ammunition is dropped, two layers of honeycomb are required.**
- 2. When rigging this load for airdrop on a drop zone with ground elevation of 6,000 to 10,000 feet, add an additional layer of honeycomb.**
- 3. Adjust the dimensions of the honeycomb to fit the items being dropped.**
- 4. Do not cover the extraction bracket with honeycomb.**



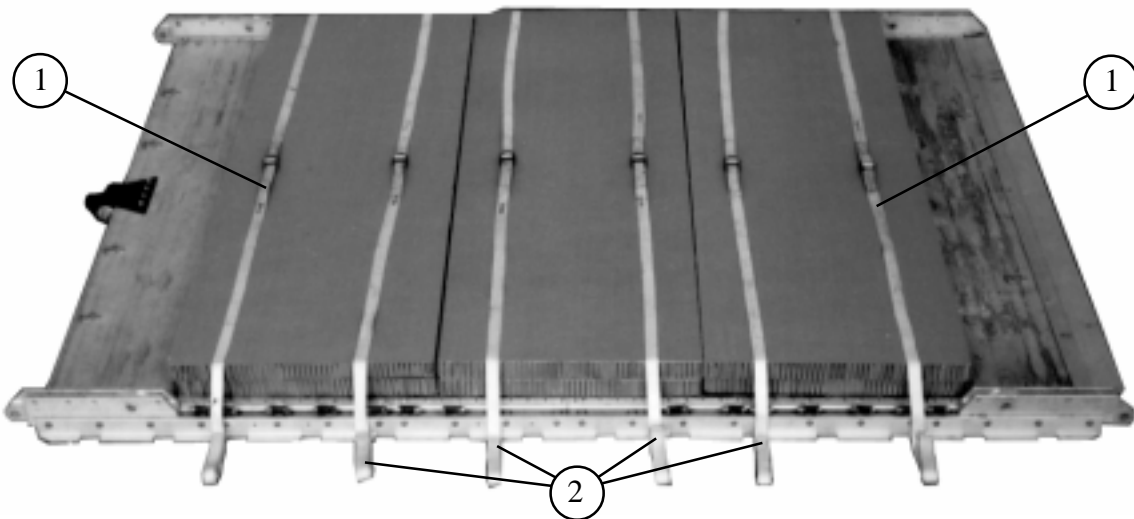
- ① Glue two full 36- by 96-inch sheets of honeycomb together. Center them 16 inches from the front edge of the platform.
- ② Make a stack as in step 1 above and place it flush against the stack placed in step 1.
- ③ Make a stack as in step 1 above and place it flush against the stack placed in step 2.

Figure 12-2. Honeycomb placed

12-4. Positioning and Securing Load

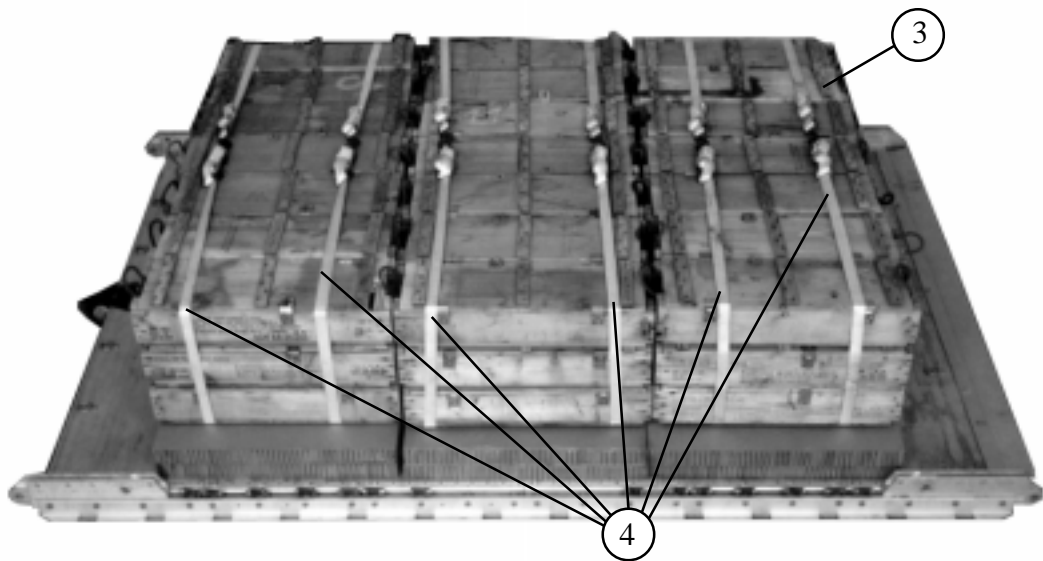
Place six 30-foot lashings on the honeycomb, place the load on the honeycomb, and secure the lashings as shown in Figure 12-3. Adapt the procedures shown for loads configured differently.

CAUTION
Only ammunition listed in FM 10-500-53/
MCRP No 4-3.8/TO 13C7-18-41 may be
airdropped. Hazardous material must be
packaged, marked, and labeled as required
by AFJMAN 24-204/TM 38-250.



- ① Form six 30-foot lashings according to FM 10-500-2/TO 13C7-1-5. Center a lashing across the honeycomb 6 inches from each end.
- ② Center two lashings on each joint in the honeycomb, 12 inches apart.

Figure 12-3. Load positioned and secured



- ③ Position the load centered on the honeycomb.
- ④ Pass both ends of each lashing to the top of the load. Secure each lashing with two D-rings and a load binder.

Note: Position the load binders so that they will be accessible for retightening and inspection when the load is fully rigged.

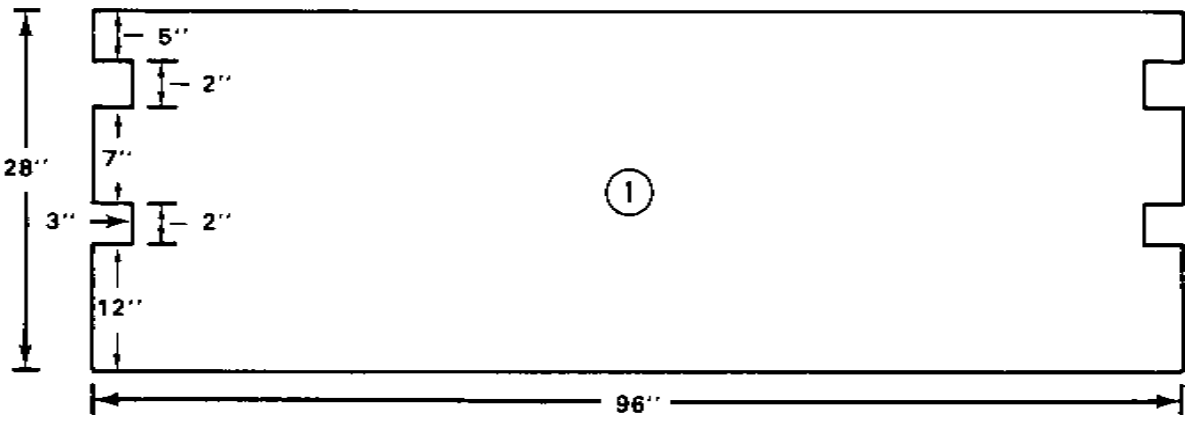
Figure 12-3. Load positioned and secured (continued)

12-5. Constructing and Installing Endboards

Construct the endboards and install them on the load as shown in Figure 12-4.

Notes:

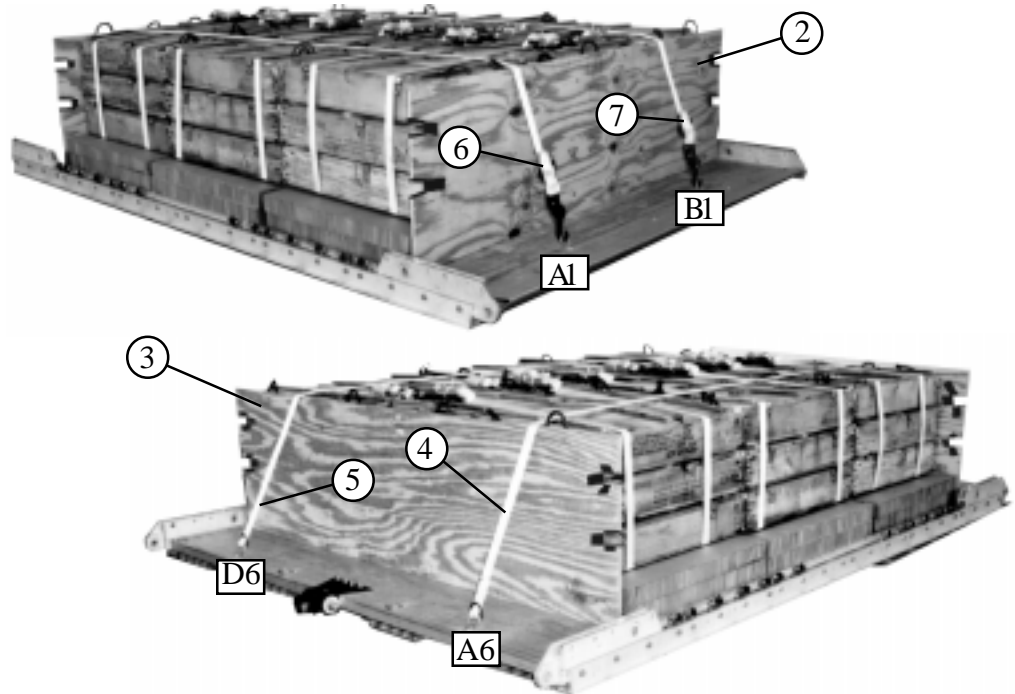
1. This drawing is not to scale.
2. The dimensions of the endboards will vary, depending on the load being rigged. The endboards must be even with the top of the load.



The diagram shows a rectangular endboard with a total height of 28 inches and a total width of 96 inches. On the left side, there are three cutouts. The top cutout is 5 inches wide and 2 inches high. The middle cutout is 7 inches wide and 2 inches high. The bottom cutout is 3 inches wide and 2 inches high. The bottom edge of the board is 12 inches from the bottom cutout. A circled number 1 is located in the center of the board.

- ① Construct two endboards using one 3/4- by 28- by 96-inch piece of plywood for each endboard. Make cutouts as shown.
- ② Tape the cutouts in the endboards to protect the lashings from sharp edges.

Figure 12-4. Endboards constructed and installed



- ② Place one endboard against the front of the load.
- ③ Place one endboard against the rear of the load.
- ④ Pass the free end of a 15-foot lashing through tie-down ring A6 and through its own D-ring. Pull the free end of the lashing over the top of the load.
- ⑤ Pass the free end of a 15-foot lashing through tie-down ring D6 and through its own D-ring. Pull the free end of the lashing over the top of the load.

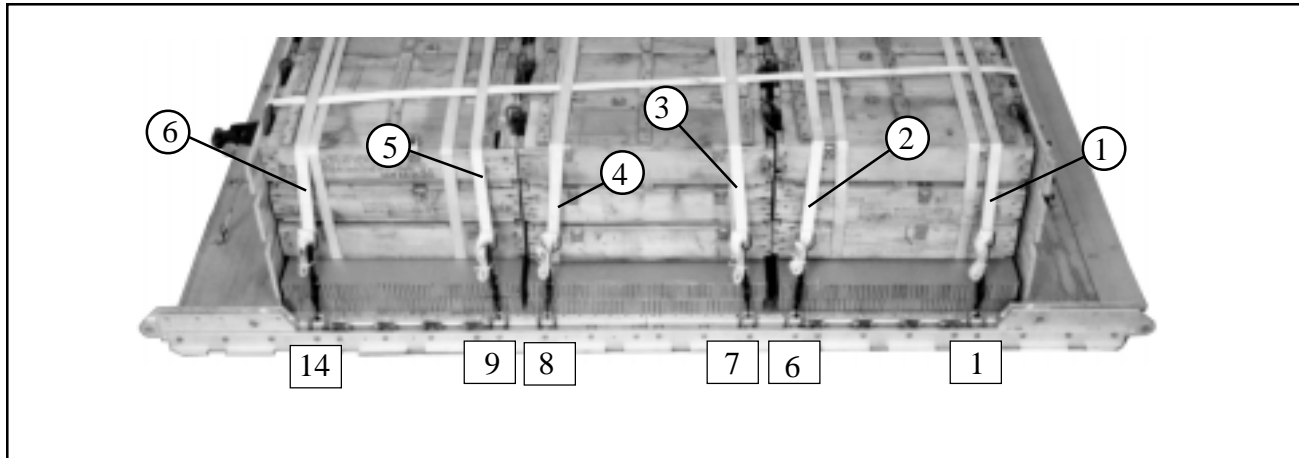
Note: If steps 4 and 5 require 30-foot lashings, secure each end to the tie-down rings with D-rings and load binders.

- ⑥ Secure the end of the lashing positioned in step 4 to tie-down ring A1 with a D-ring and a load binder.
- ⑦ Secure the end of the lashing positioned in step 5 to tie-down ring B1 with a D-ring and a load binder.

Figure 12-4. Endboards constructed and installed (continued)

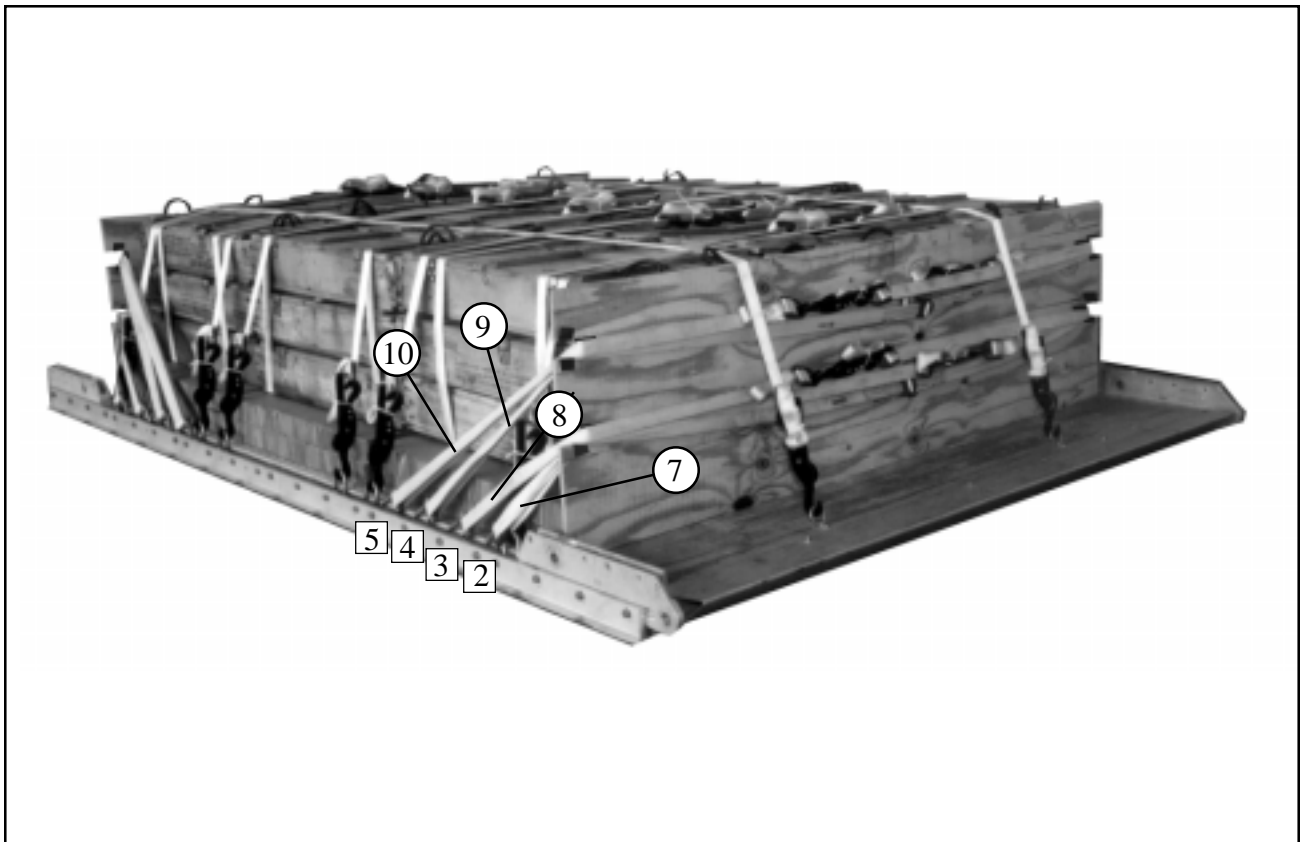
12-6. Installing Lashings

Lash the load to the platform using six 15-foot lashings, eight 30-foot lashings, 22 D-rings, and 14 load binders according to FM 10-500-2/TO 13C7-1-5, and as shown in Figures 12-5, 12-6, and 12-7.



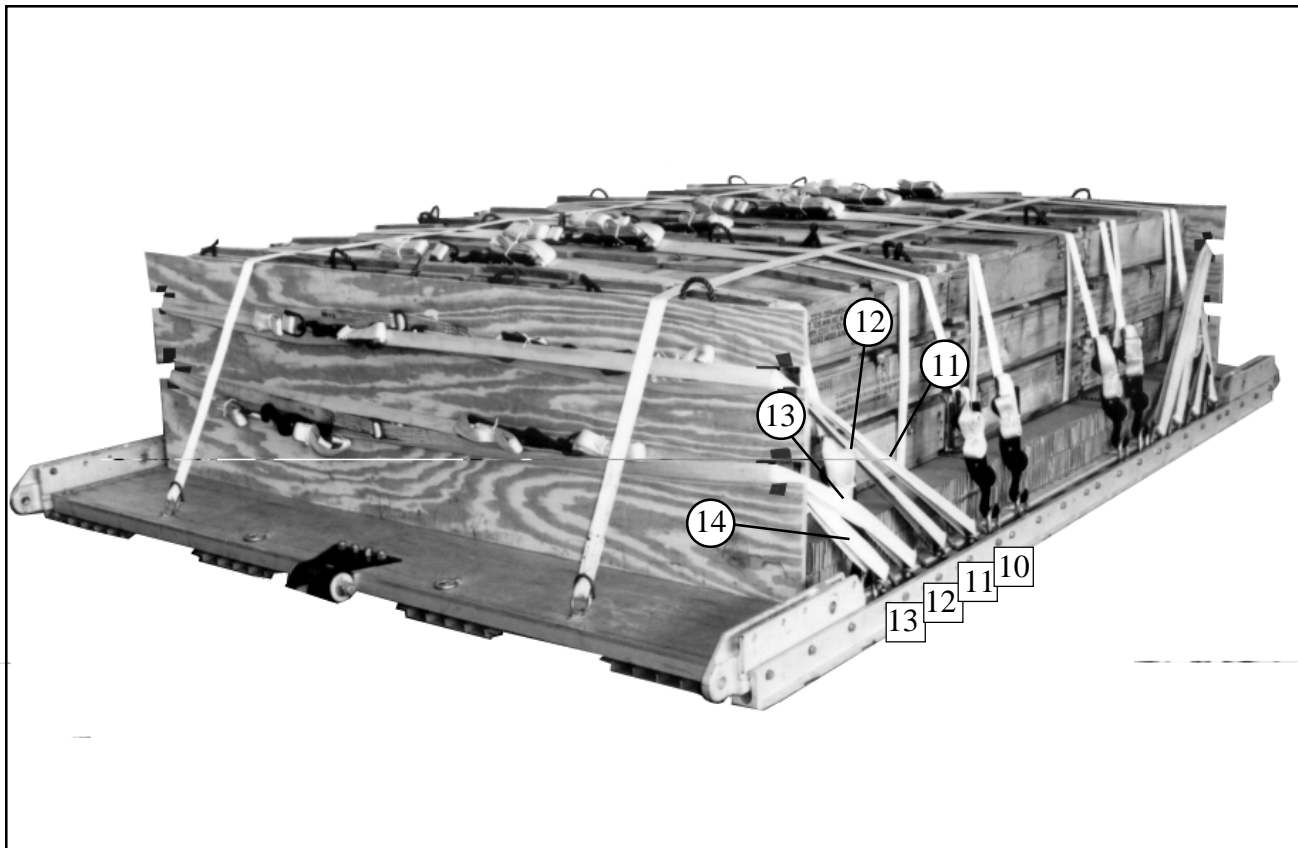
Lashing Number	Tie-down Clevis Numbers	Instructions
1	1 and 1A	Pass lashing: Through clevis 1A and through its own D-ring, over the top of the load, and to clevis 1. Secure the lashing to clevis 1 with a D-ring and a load binder.
2	6 and 6A	Through clevis 6A and through its own D-ring, over the top of the load, and to clevis 6. Secure the lashing to clevis 6 with a D-ring and a load binder.
3	7 and 7A	Through clevis 7A and through its own D-ring, over the top of the load, and to clevis 7. Secure the lashing to clevis 7 with a D-ring and a load binder.
4	8 and 8A	Through clevis 8A and through its own D-ring, over the top of the load, and to clevis 8. Secure the lashing to clevis 8 with a D-ring and a load binder.
5	9 and 9A	Through clevis 9A and through its own D-ring, over the top of the load, and to clevis 9. Secure the lashing to clevis 9 with a D-ring and a load binder.
6	14 and 14A	Through clevis 14A and through its own D-ring, over the top of the load, and to clevis 14. Secure the lashing to clevis 14 with a D-ring and a load binder.

Figure 12-5. Lashings 1 through 6 installed



Lashing Number	Tie-down Clevis Numbers	Instructions
7	2 and 2A	Pass a 30-foot lashing: Through clevis 2 and around the front endboard (through the lower cutouts), and through clevis 2A. Secure with two D-rings and a load binder.
8	3 and 3A	Through clevis 3 and around the front endboard (through the lower cutouts), and through clevis 3A. Secure with two D-rings and a load binder.
9	4 and 4A	Through clevis 4 and around the front endboard (through the upper cutouts), and through clevis 4A. Secure with two D-rings and a load binder.
10	5 and 5A	Through clevis 5 and around the front endboard (through the upper cutouts), and through clevis 5A. Secure with two D-rings and a load binder.

Figure 12-6. Lashings 7 through 10 installed



Lashing Number	Tie-down Clevis Numbers	Instructions
11	10 and 10A	Pass a 30-foot lashing: Through clevis 10, around the rear endboard (through the upper cutouts), and through clevis 10A. Secure with two D-rings and a load binder.
12	11 and 11A	Through clevis 11, around the rear endboard (through the upper cutouts), and through clevis 11A. Secure with two D-rings and a load binder.
13	12 and 12A	Through clevis 12, around the rear endboard (through the lower cutouts), and through clevis 12A. Secure with two D-rings and a load binder.
14	13 and 13A	Through clevis 13, around the rear endboard (through the lower cutouts), and through clevis 13A. Secure with two D-rings and a load binder.

Figure 12-7. Lashings 11 through 14 installed

12-7. Installing Suspension Slings and Deadman's Tie

Install the suspension slings as shown in Figure 12-8 using four 12-foot (2-loop), type XXVI nylon webbing slings and four large suspension clevis assemblies. Install the deadman's tie as shown in Figure 12-8.

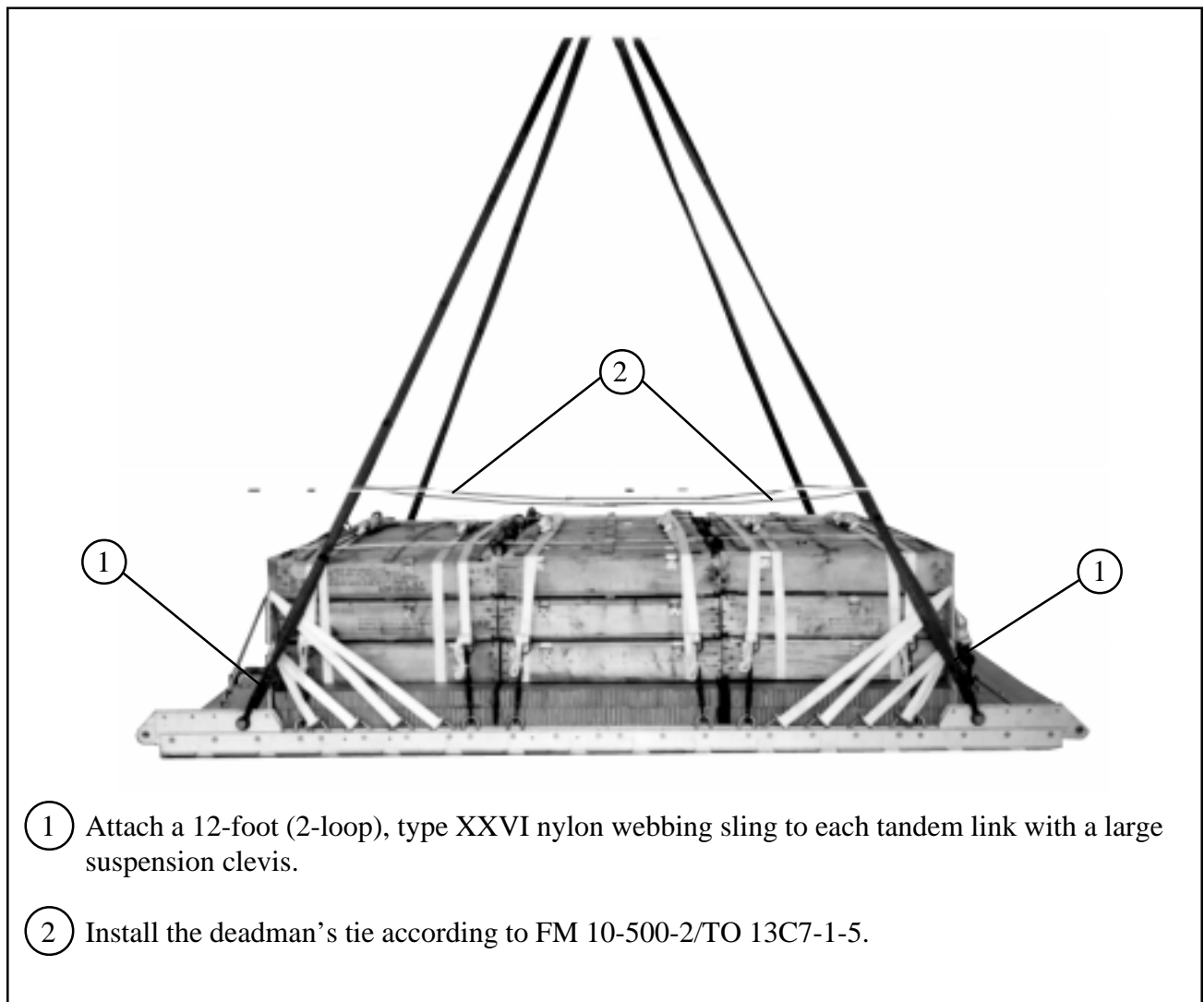
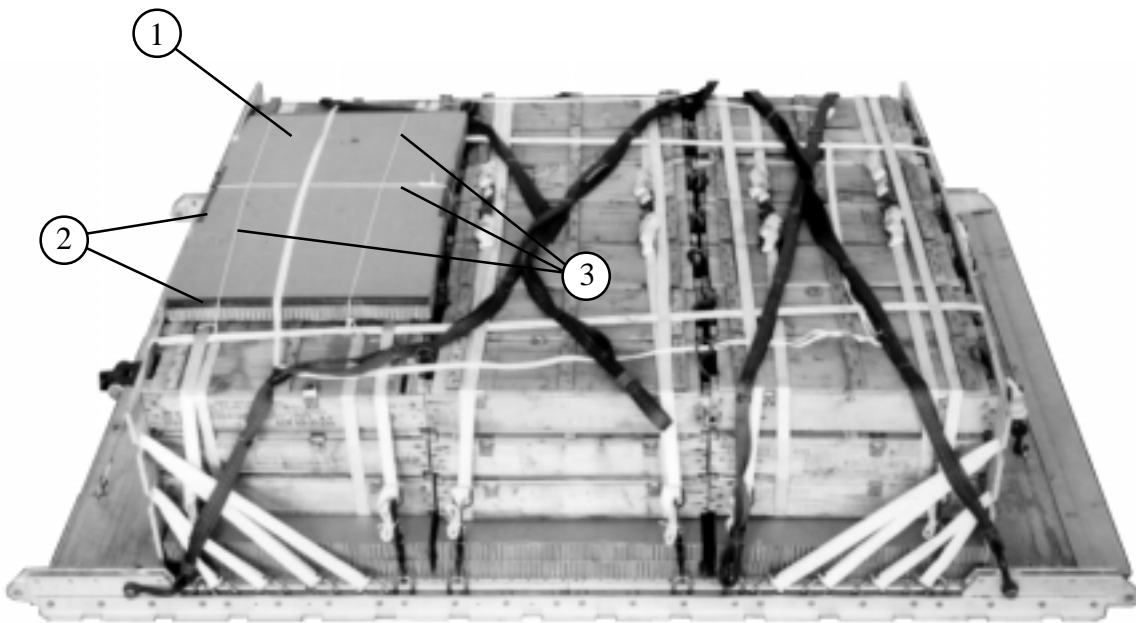


Figure 12-8. Suspension slings and deadman's tie installed

12-8. Installing Parachute Stowage Platform

Install the parachute stowage platform as shown in Figure 12-9.

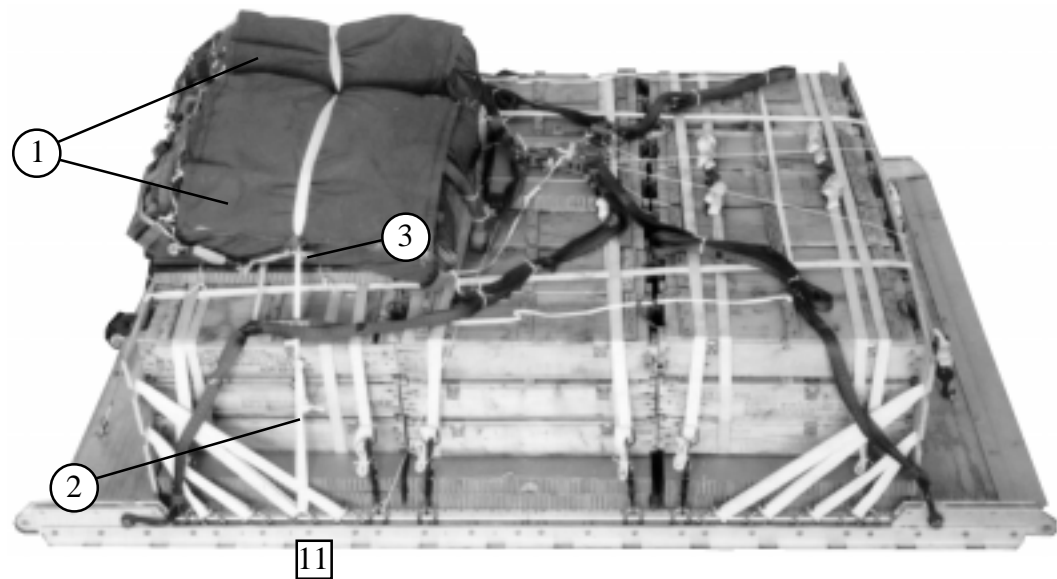


- ① Position a 60- by 36-inch piece of honeycomb so that it is centered across the load and even with the rear endboard. Place the deadman's tie over the honeycomb as shown.
- ② Tape the edges of the honeycomb.
- ③ Tie the honeycomb to the nearest lashings with three lengths of type III nylon cord.

Figure 12-9. Parachute stowage platform installed

12-9. Installing Parachutes

Compute the parachute requirements for the load being rigged. The load shown requires two G-11 cargo parachutes. Install the parachutes as shown in Figure 12-10.



- ① Prepare two G-11 cargo parachutes according to FM 10-500-2/TO 13C7-1-5. Place the parachutes on the parachute stowage platform.
- ② Restrain the parachutes according to FM 10-500-2/TO 13C7-1-5. Tie the type VIII nylon restraint strap to clevises 11 and 11A.
- ③ Install the parachute release strap according to FM 10-500-2/TO 13C7-1-5.

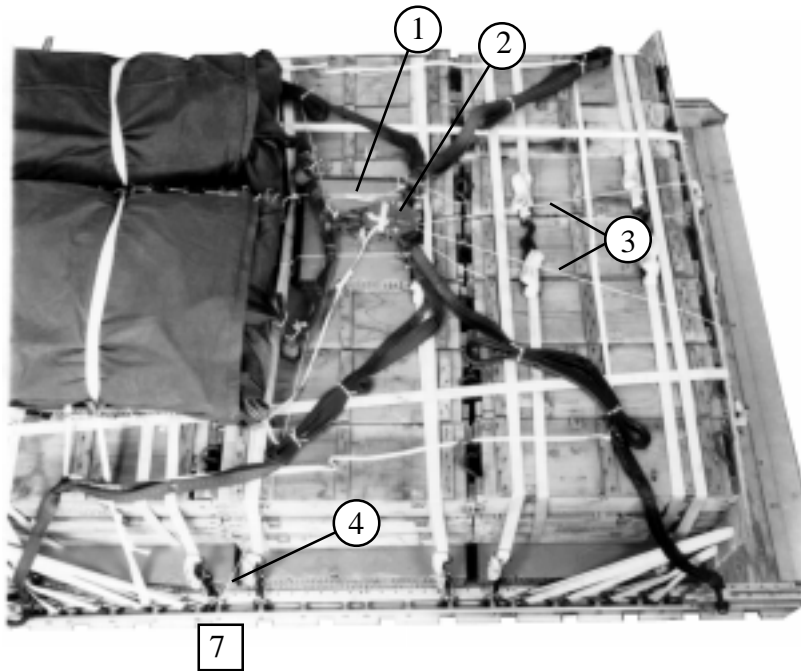
Note: The multicut release strap shown here is authorized by FM 10-500-2/TO 13C7-1-5. However, the single V-knife release strap may also be used.

Figure 12-10. Cargo parachutes installed

12-10. Installing Release System

Prepare, install, and safety an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 12-11.

Note: If the load requires four G-11B cargo parachutes, the M-2 cargo parachute release assembly is required.

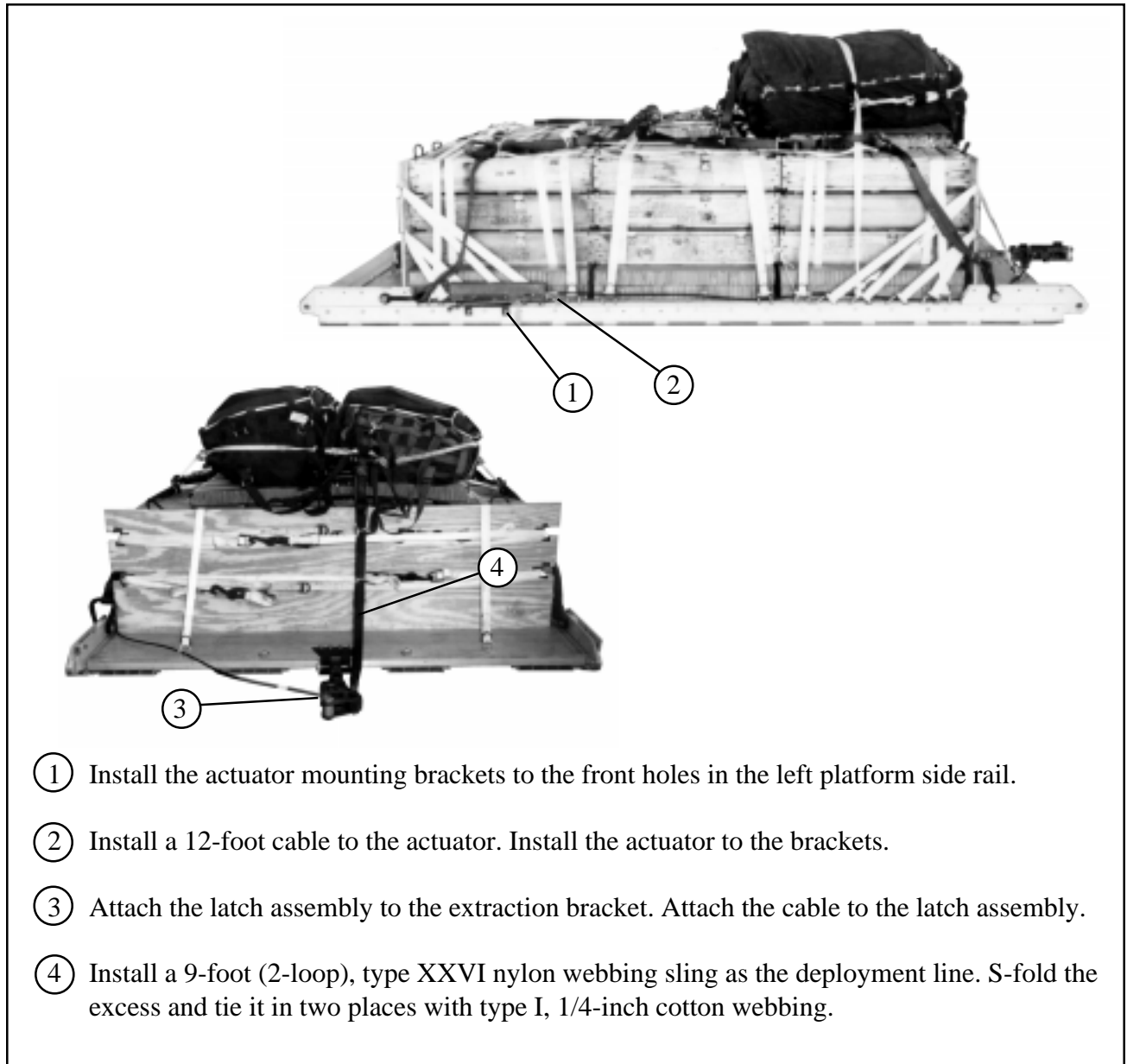


- ① Center an 18-by 20-inch piece of honeycomb in front of the parachutes. Tape the edges of the honeycomb and secure it to the load with two lengths of type III nylon cord.
- ② Center the M-1 release on the honeycomb.
- ③ Secure the bottom of the release assembly to tie-down rings A1 and B1 with a length of type III nylon cord.
- ④ Secure the top of the release assembly to clevises 7 and 7A with a length of type III nylon cord.

Figure 12-11. Release assembly installed

12-11. Installing Extraction System

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



- ① Install the actuator mounting brackets to the front holes in the left platform side rail.
- ② Install a 12-foot cable to the actuator. Install the actuator to the brackets.
- ③ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.
- ④ Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line. S-fold the excess and tie it in two places with type I, 1/4-inch cotton webbing.

Figure 12-12. EFTC installed

12-12. Installing Provisions for Emergency Restraints

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

12-13. 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.

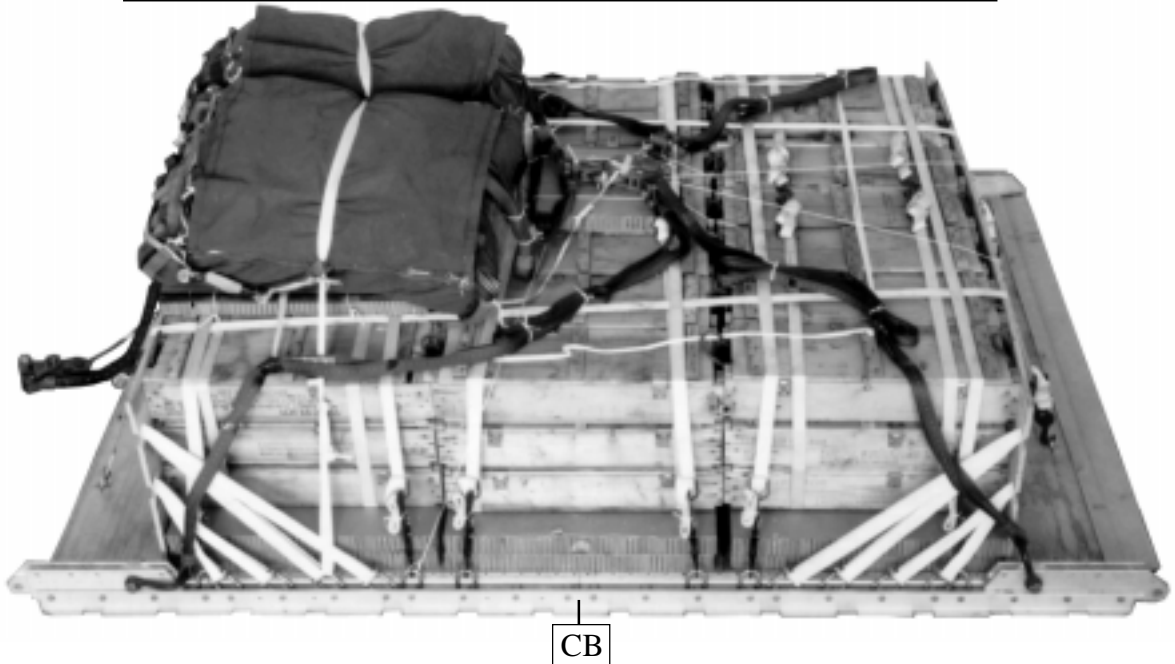
12-14. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 12-13. Complete the Shipper's Declaration for Dangerous Goods, and attach it to the load. If the load differs from the one shown, the weight, parachute requirements, CB, and tip-off curve must be recomputed.

12-15. Equipment Required

Use the equipment listed in Table 12-1 to rig this load.

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	8,904 pounds
	Maximum	16,250 pounds
Height		56 inches
Width		108 inches
Length		152 inches
Overhang:	Front	0 inches
	Rear	0 inches
	CB (from front edge of platform)	74 inches
	Extraction System (adds 18 inches to length of platform)	EFTC

Figure 12-13. Bulk supply load rigged on a 12-foot platform for low-velocity airdrop

Table 12-1. Equipment required for rigging bulk supply load on a 12-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)	5
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with cable, 12-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	3
1670-01-183-2678	Leaf, extraction line (line bag)	2
	Line, drogue (for C-17)	
1670-01-064-4452	60-ft (1-loop), type XXVI	1
	Line, extraction	
1670-01-062-6316	For C-130: 60-ft (3-loop), type XXVI	1
1670-01-107-7651	For C-141: 140-ft (3-loop), type XXVI	1
1670-01-107-7652	For C-5: 160-ft (1-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	3
	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

Table 12-1. Equipment required for rigging bulk supply load on a 12-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	7 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	2
1670-01-063-3716	Cargo extraction, 22-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
	Platform, airdrop, type V, 12-foot	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(28)
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	2 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop	
	For suspension:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	2
1670-00-998-0116	Strap, parachute release, single	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	36
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-261-8585	Type VIII	As required

C5, FM 10-512/TO 13C7-1-8

CHAPTER 13

**RIGGING FORWARD AREA SURGICAL TEAM EQUIPMENT ON A 12-FOOT,
TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP****13-1. Description of Load**

The FAST equipment is rigged as a bulk supply load on a 12-foot type V airdrop platform. These procedures may be used to rig other bulk supply loads consisting of rations, equipment, fuel, lubricants, ammunition or other items of general supply. As load weights can vary widely, the parachute requirements must be computed for each load. Each load must weigh at least 3,780 pounds, but not more than 12,750 pounds. These loads may not be more than 140 inches long, or 100 inches wide.

13-2. Preparing Platform

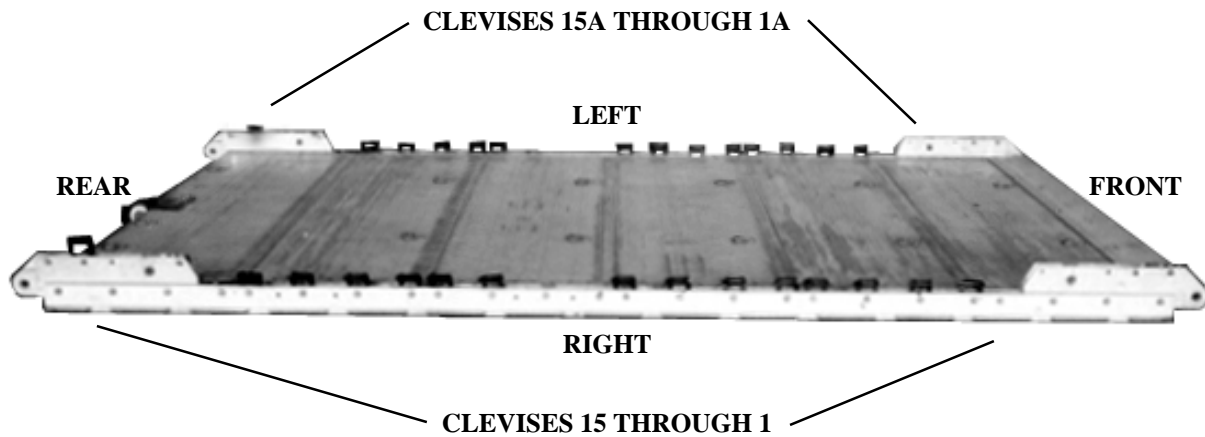
Prepare a 12-foot, type V airdrop platform as given below:

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 13-1.

c. Attaching and Numbering Clevises. Attach and number 30 clevis assemblies as shown in Figure 13-1.

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 22, 23, and 24.
3. Install a clevis on the third bushing of each rear tandem link.
3. Starting at the front of the platform, install clevises on each platform side rail using the bushings bolted on holes 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, and 20 .
4. Starting at the front of the platform, number the clevises bolted to the right side of the platform from 1 through 15, and those bolted to the left side from 1A through 15A.
5. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 13-1. Platform prepared

13-10. Installing Suspension Slings and Deadman's Tie

Install the suspension slings and deadman's tie according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 13-11.

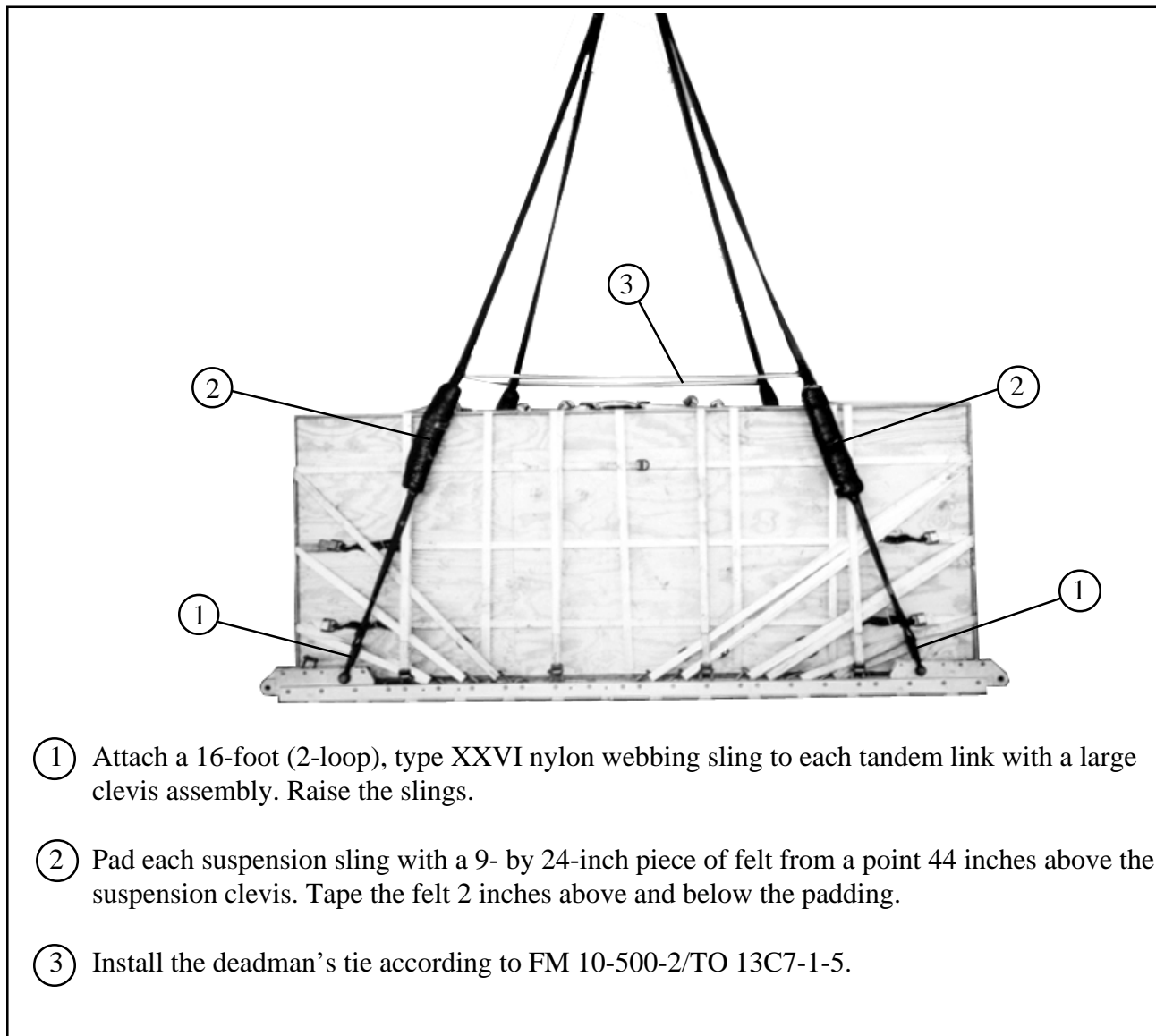
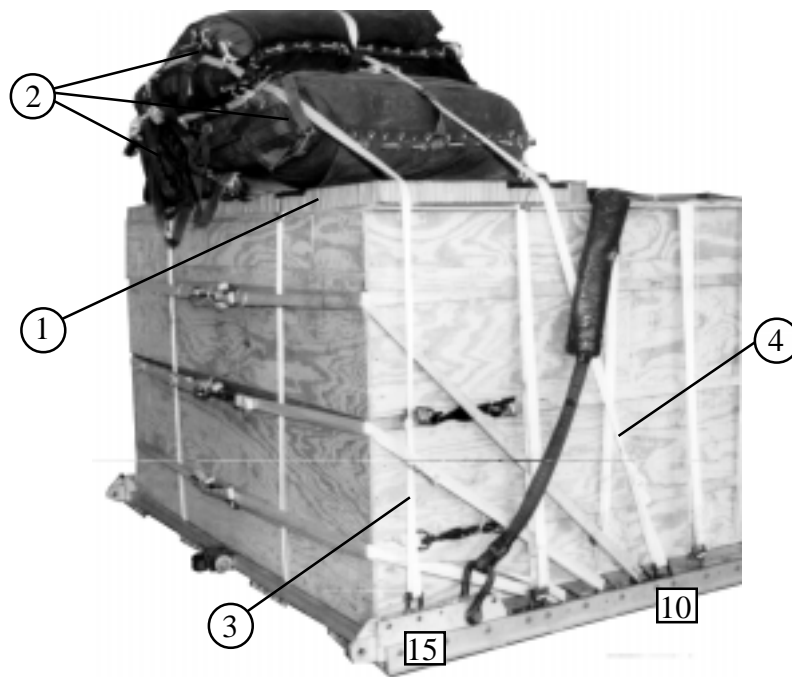


Figure 13-11. Suspension slings installed and safetied

13-11. Installing Parachutes

Compute the parachute requirements for the load being rigged. Select the correct number of G-11 cargo parachutes. The load in Figure 13-12 shows three G-11B cargo parachutes. Install the parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 13-12.

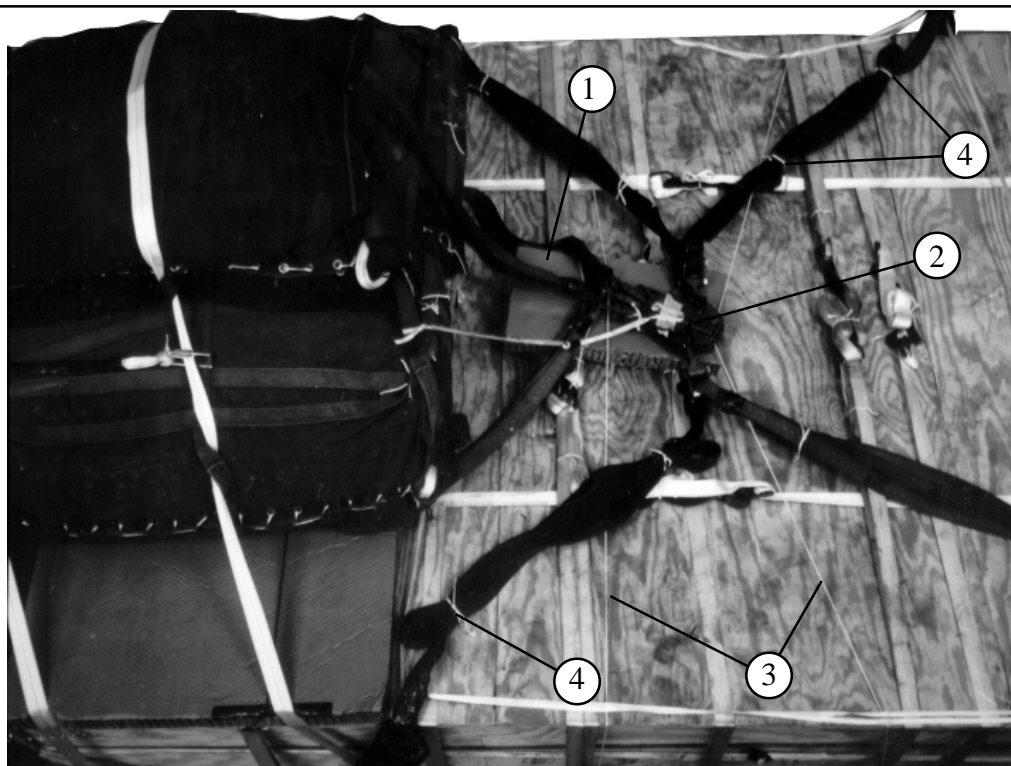


- ① Place a 96- by 36-inch piece of honeycomb at the rear of the load. Tie the honeycomb in place with type III nylon cord. Tape the honeycomb where the cord passes.
- ② Install three G-11B cargo parachutes on the honeycomb.
- ③ Tie the rear parachute restraint strap to clevises 15 and 15A.
- ④ Tie the front parachute restraint strap to clevises 10 and 10A.

Figure 13-12. Parachutes installed

13-12. Installing Release System

Prepare, install, and safety an M-1 cargo parachute release assembly according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 13-13.

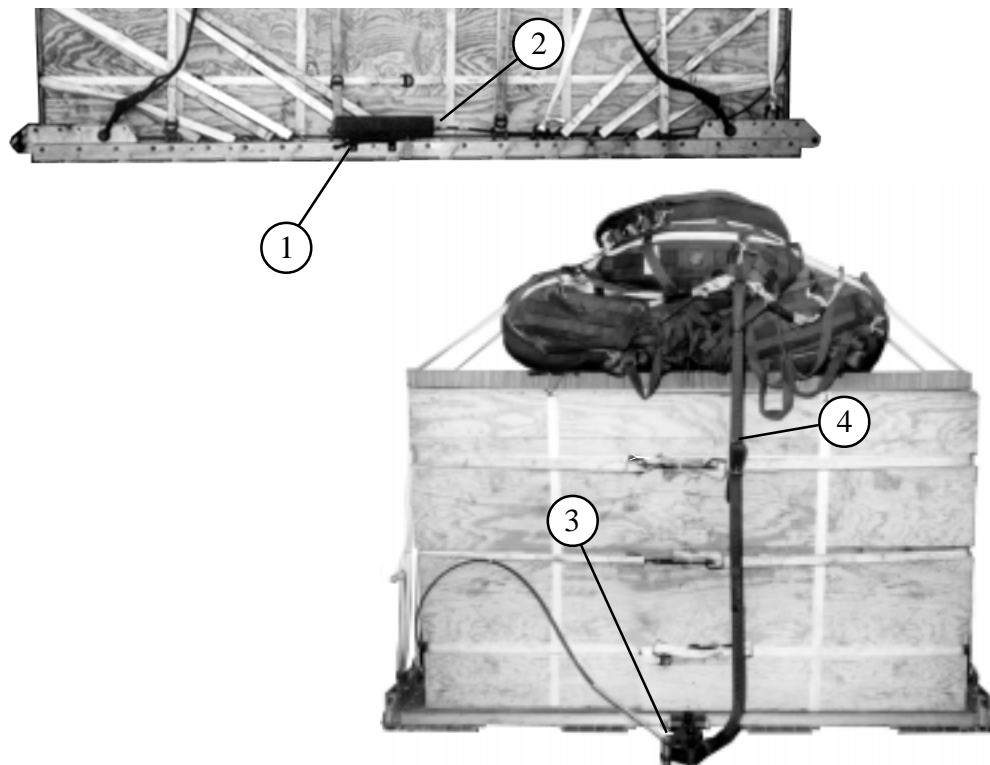


- ① Center a 12- by 24-inch piece of honeycomb 12 inches in front of the parachutes. Tie the honeycomb in place with a length of type III nylon cord.
- ② Place the M-1 release assembly on the honeycomb and attach the suspension slings and riser extensions.
- ③ Safety the top and bottom of the release to convenient points on the load with type III nylon cord.
- ④ S-fold the suspension slings and tie the folds with type I, 1/4-inch cotton webbing.

Figure 13-13. Release system installed

13-13. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 13-14.



- ① Install the actuator brackets to the rear mounting holes on the left platform side rail.
- ② Attach a 12-foot release cable to the actuator. Install the actuator to the brackets and run the cable to the rear.
- ③ Install the latch assembly to the extraction bracket. Attach the release cable to the extraction bracket.
- ④ Install a 9-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 13-14. Extraction system installed

13-14. 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.

13-15. Positioning 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.

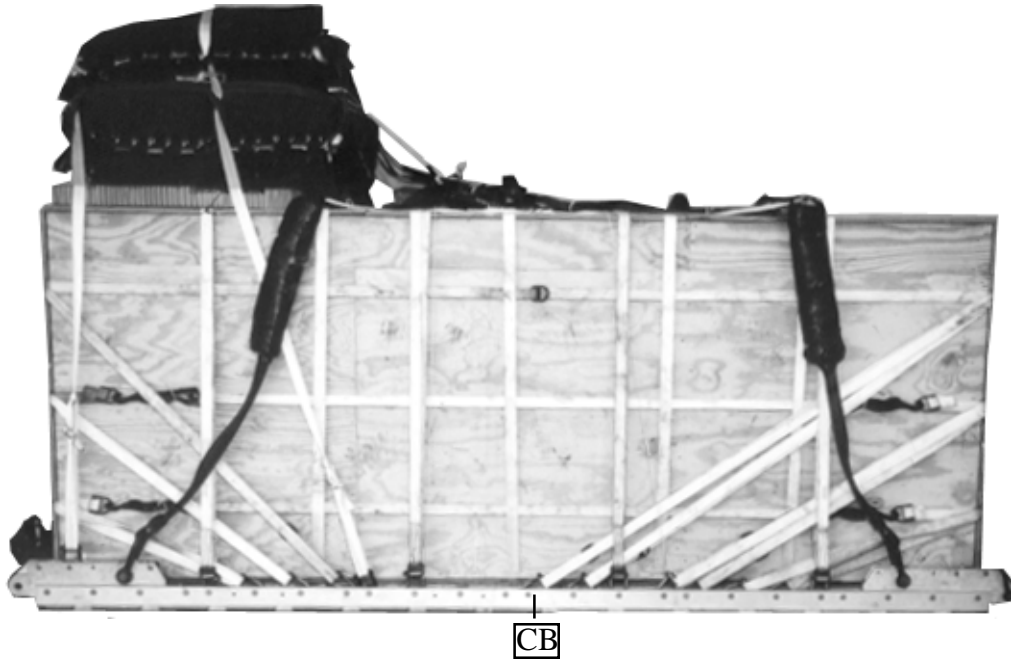
13-16. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 13-15.

13-17. Equipment Required

Use the equipment listed in Table 13-1 to rig this load.

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	12,000 pounds
	Maximum allowable	12,750 pounds
Height		92 inches
Width		108 inches
Length		168 inches
Overhang:	Front	0 inches
	Rear	0 inches
CB (from front edge of platform)		84 inches
Extraction System (adds 18 inches to length of platform)		EFTC

Figure 13-15. FAST equipment rigged on a 12-foot platform for low-velocity airdrop

Table 13-1. Equipment required for rigging FAST equipment on a 16-foot type V platform for low-velocity airdrop

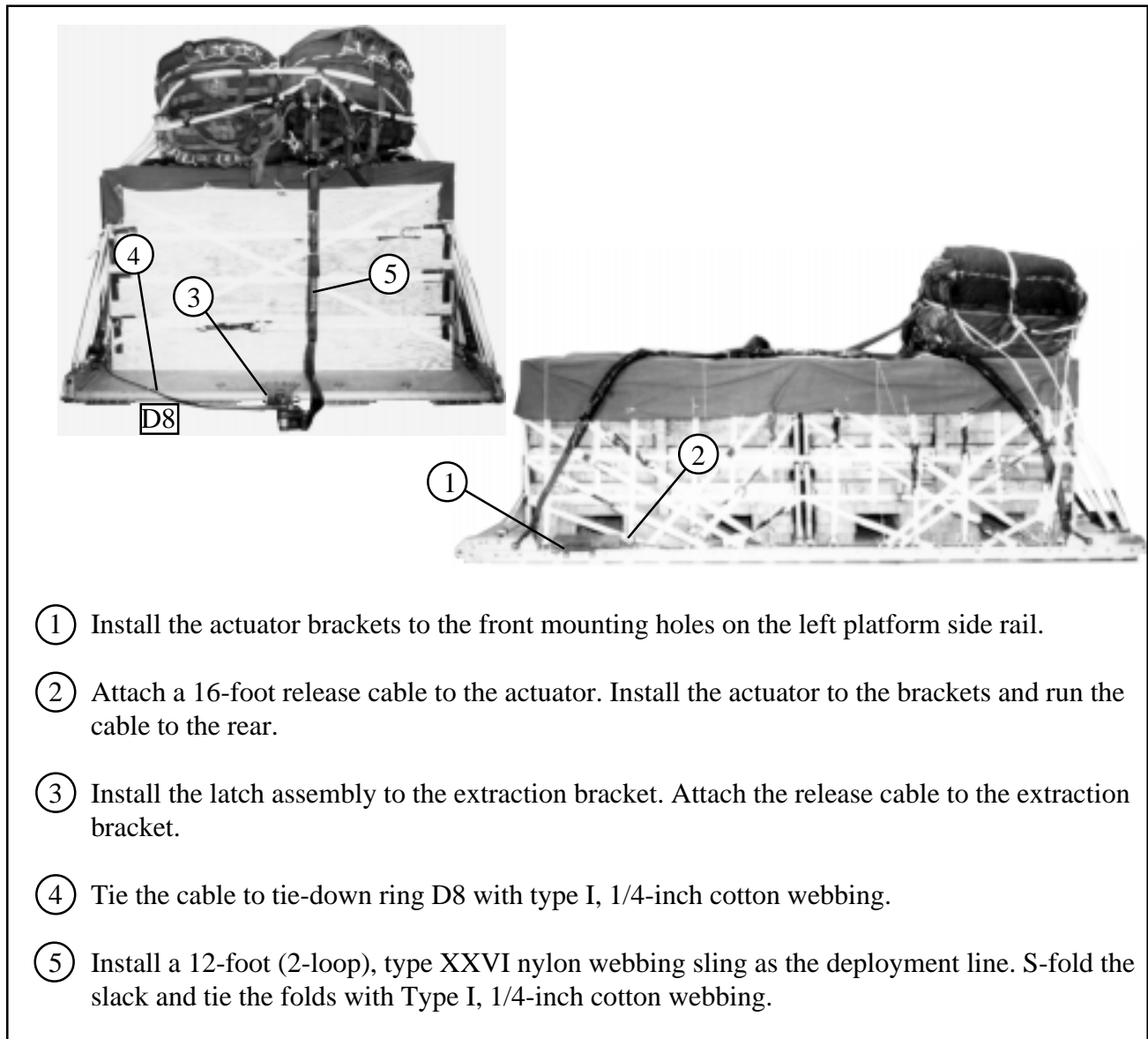
National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive paste, 1-gal	As required
4030-00-090-5354	Clevis, suspension, 1-in (large)	5
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with cable, 12-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	7
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)	
1670-01-064-4452	60-ft (1-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
1670-01-107-7652	For C-5: 160-ft (1-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	7
	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
5510-00-220-6146	Lumber, 2- by 4- by 60-in	14
5315-00-010-4659	Nail, steel wire, common, 8d	As required

Table 13-1. Equipment required for rigging FAST equipment on a 16-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	10 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	3
1670-01-063-3716	Cargo extraction, 22-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
	Platform, airdrop, type V, 12-foot	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(30)
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	8 sheets
1670-01-097-8816	Release, cargo parachute, M-1	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	6
5340-00-040-8219	Strap, parachute release, multicut	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	69
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-261-8585	Type VIII	As required

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 actuator brackets to the front mounting holes on the left platform side rail.
- ② Attach a 16-foot release cable to the actuator. Install the actuator to the brackets and run the cable to the rear.
- ③ Install the latch assembly to the extraction bracket. Attach the release cable to the extraction bracket.
- ④ Tie the cable to tie-down ring D8 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 15-12. Extraction system installed

15-13. 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.

15-14. 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.

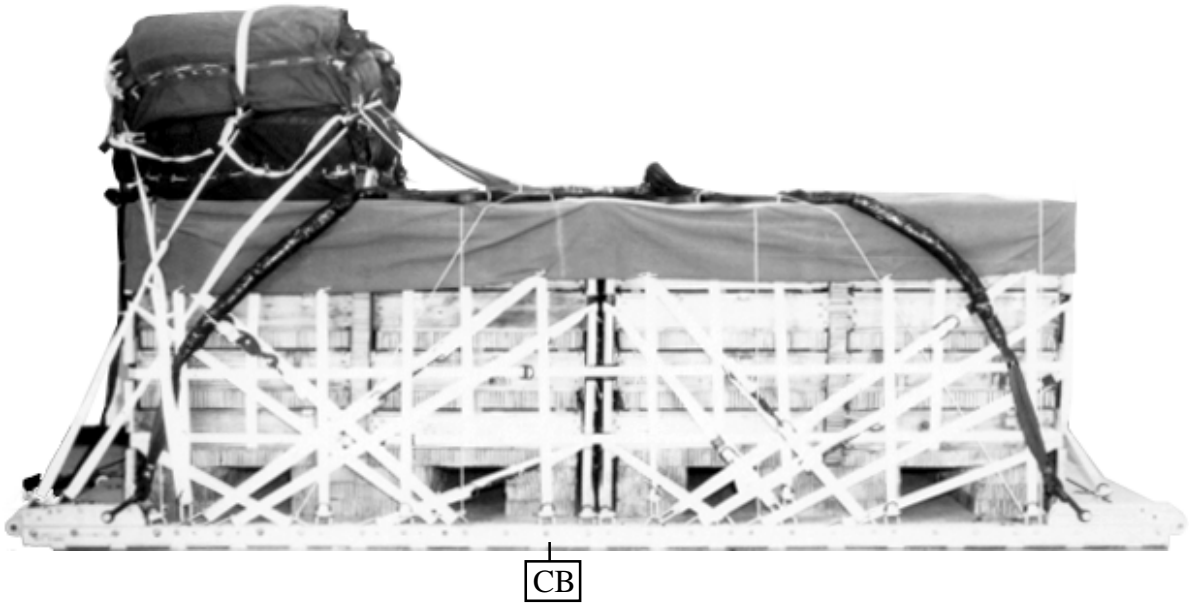
15-15. Marking Rigged Load

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

15-16. Equipment Required

Use the equipment listed in Table 15-1 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:		18,560 pounds
Height		97 1/2 inches
Width		108 inches
Length		192 inches
Overhang:	Front	0 inches
	Rear	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 platform for low-velocity airdrop

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

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
1670-00-434-5785	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	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
5315-00-010-4657	Nail, steel wire, common, 6d	As required

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

National Stock Number	Item	Quantity
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in	21 sheets
1670-01-016-7841	Parachute: Cargo, G-11B	4
1670-00-040-8135	Cargo extraction, 28-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
1670-01-353-8425	Platform, airdrop, type V, 16-foot Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(60)
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	10 sheets
1670-01-097-8817	Release, cargo parachute, M-2	1
1670-01-062-6308	Sling, cargo airdrop For suspension: 16-ft (4-loop), type XXVI nylon webbing	4
1670-01-062-6303	For deployment: 12-ft (2-loop), type XXVI nylon webbing	1
1670-01-062-6302	For riser extension: 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	76
8305-00-268-2411	Webbing: 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

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.

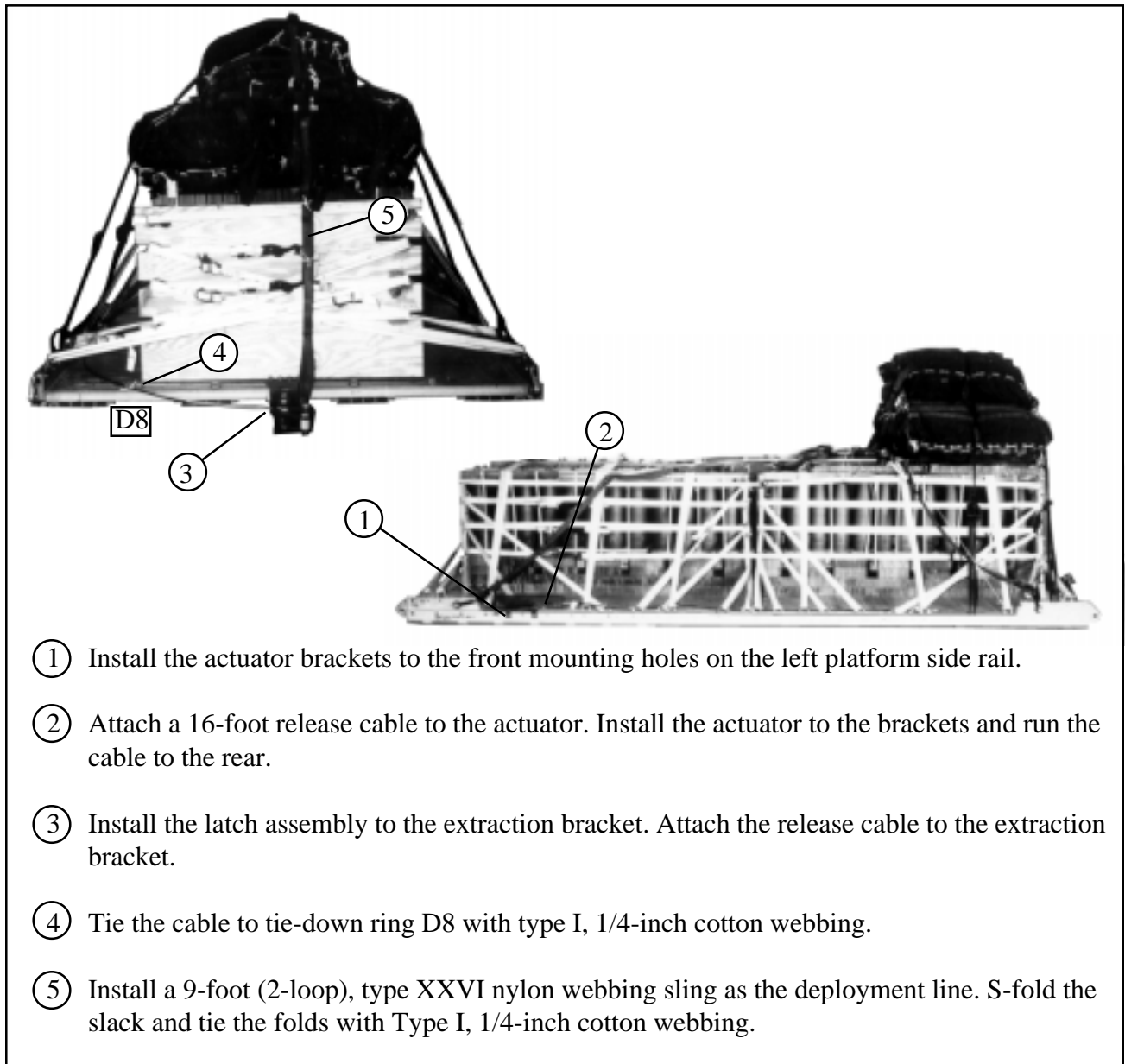
b. Installing Tandem Links. Install four tandem links as shown in Figure 15-14.

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.

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.



- ① Install the actuator brackets to the front mounting holes on the left platform side rail.
- ② Attach a 16-foot release cable to the actuator. Install the actuator to the brackets and run the cable to the rear.
- ③ Install the latch assembly to the extraction bracket. Attach the release cable to the extraction bracket.
- ④ Tie the cable to tie-down ring D8 with type I, 1/4-inch cotton webbing.
- ⑤ Install a 9-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

15-29. 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.

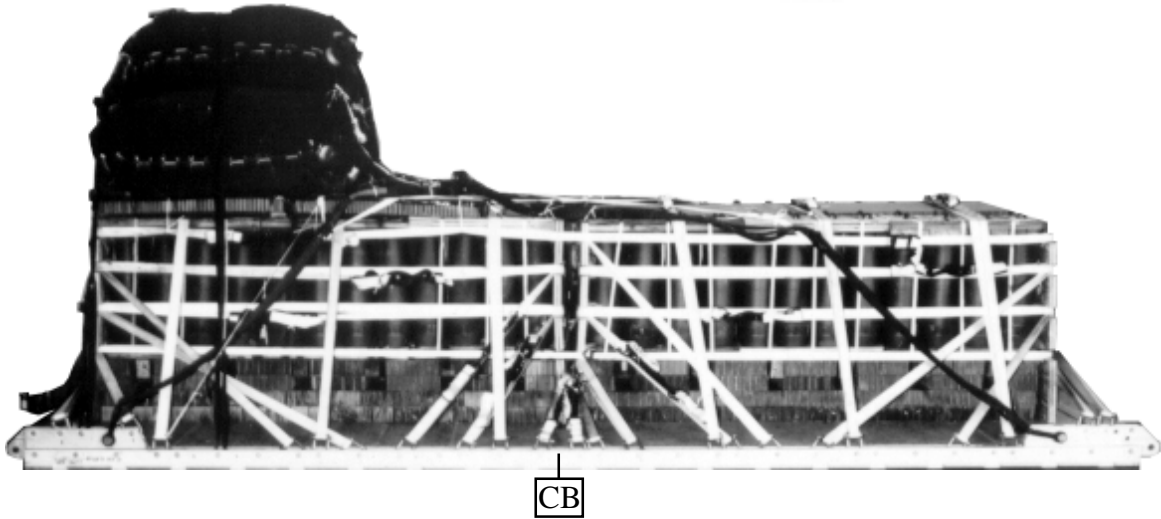
15-31. Marking Rigged Load

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

Section III

RIGGING 20-MILLIMETER AMMUNITION

15-33. Description of Load

Two hundred forty boxes of 20-millimeter ammunition are rigged for low-velocity airdrop on a 16-foot, type V platform. All 20-millimeter ammunition packaged as shown and listed in FM 10-500-53/MCRP No 4-3.8/TO 13C7-18-41, as certified for low-velocity airdrop, may be rigged using these procedures. This load uses five G-11C cargo parachutes.

15-34. 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 15-26.

c. Attaching and Numbering Clevises. Attach and number 72 clevis assemblies as shown in Figure 15-26.

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.

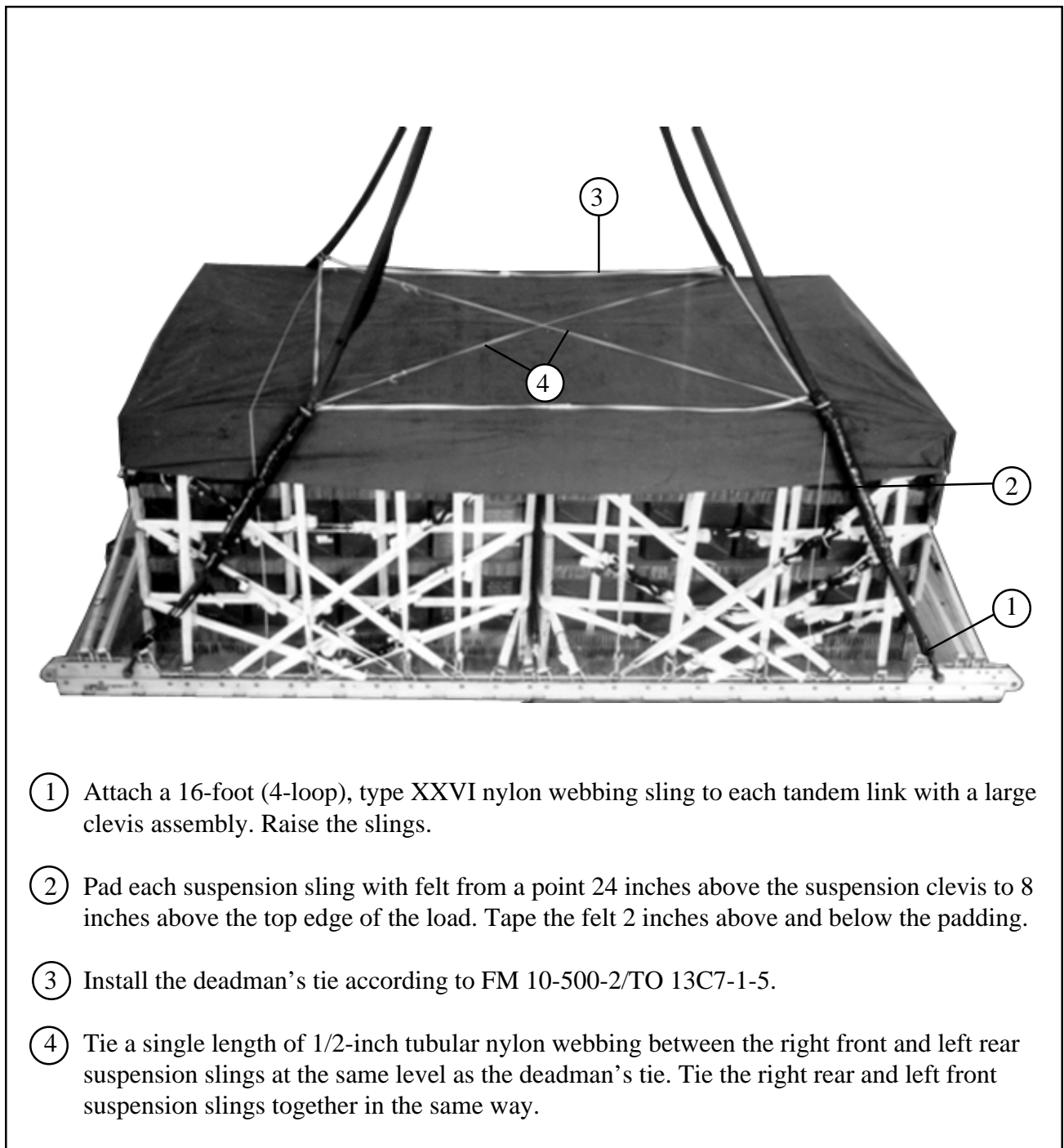


Figure 15-36. Suspension slings installed and safetied

15-42. Installing Parachutes

Install and restrain five G-11C cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-37.

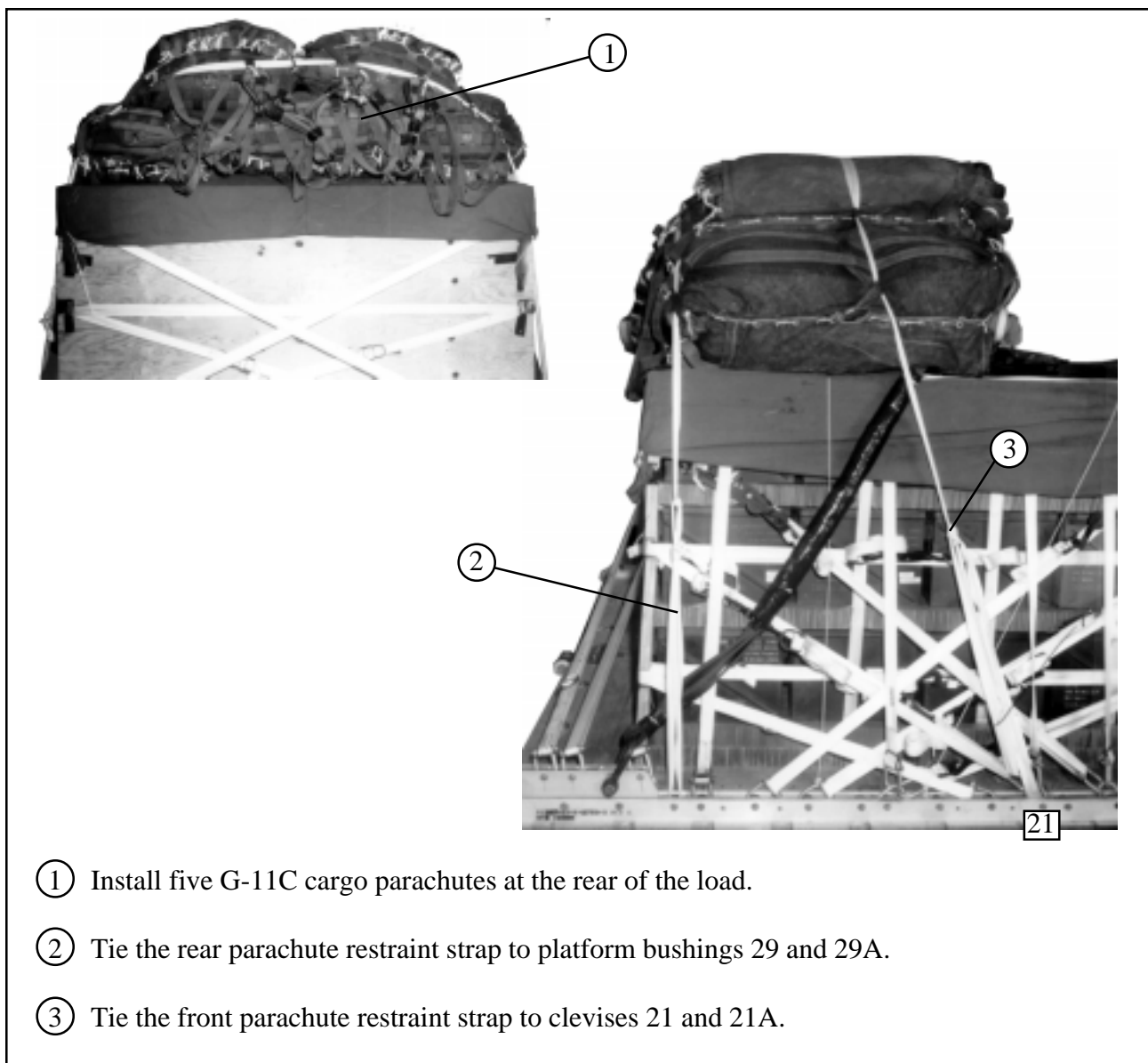
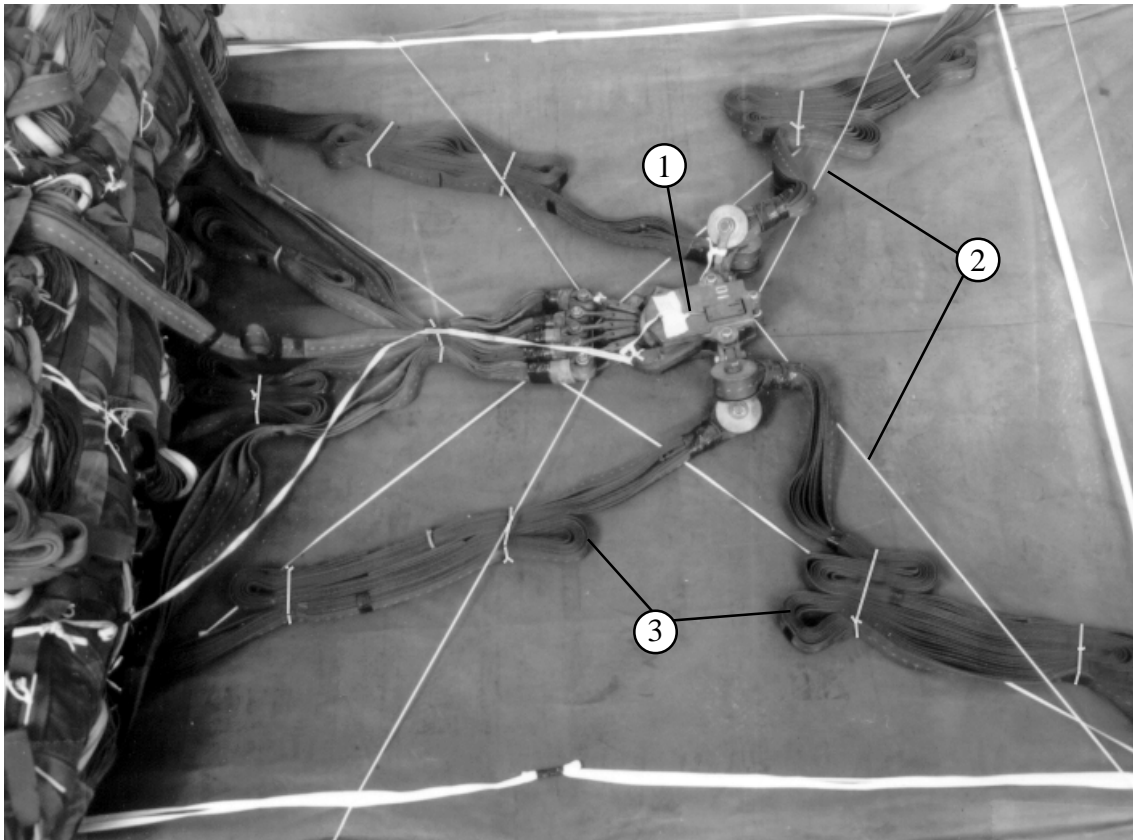


Figure 15-37. G-11 C cargo parachutes installed

15-43. Installing Release System

Install and safety an M-2 cargo parachute release assembly as shown in Figure 15-38.



- 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 15-38. Release assembly installed

15-44. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-39.

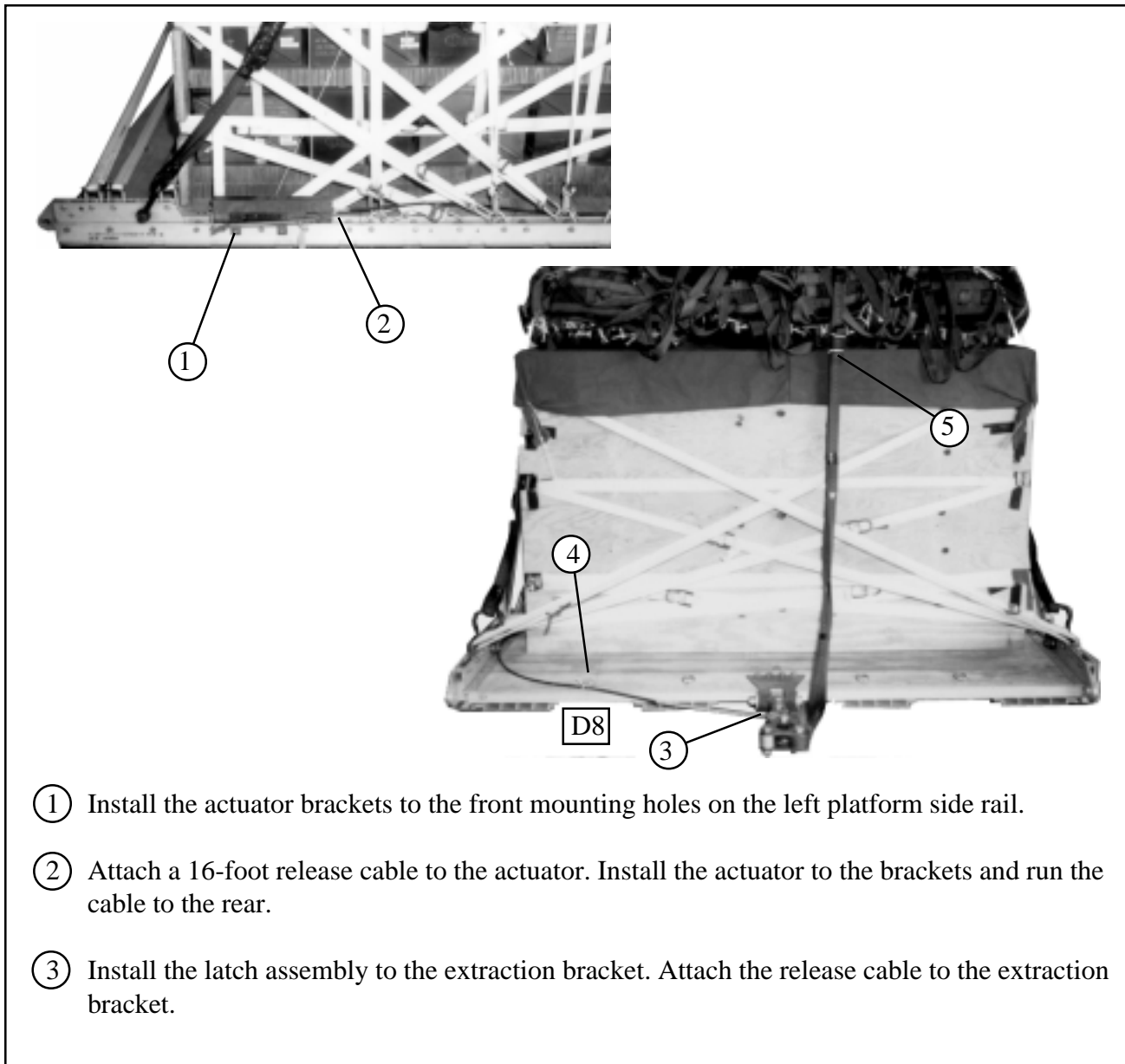


Figure 15-39. Extraction system installed

- ④ Tie the cable to tie-down ring D8 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 15-39. Extraction system installed (continued)

15-45. 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.

15-46. Placing Extraction Parachute

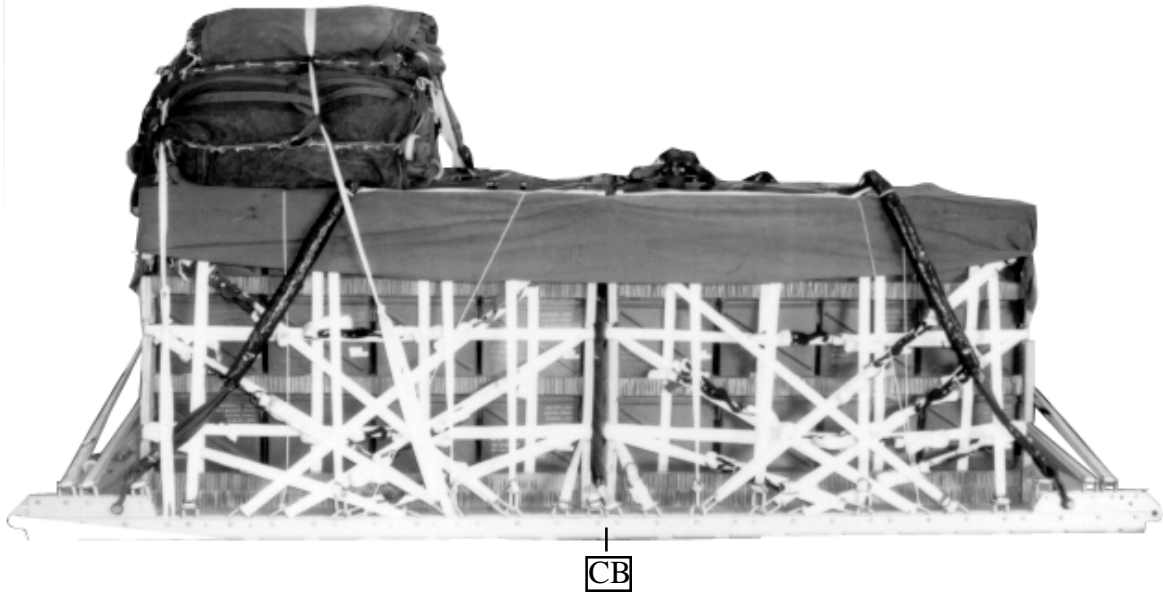
Select the extraction parachute and extraction

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.

15-47. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-40. Complete Shipper's Declaration for Dangerous Goods and attach it to the load.

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:		26,060 pounds
Height		92 inches
Width		108 inches
Length		192 inches
Overhang:	Front	0 inches
	Rear	0 inches
CB (from front edge of platform)		91 inches
Extraction System (adds 18 inches to length of platform)		EFTC

Figure 15-40. 20-millimeter ammunition rigged on a 16-foot platform for low-velocity airdrop

15-48. Equipment Required

Use the equipment listed in Table 15-3 to rig the load shown.

Table 15-3. Equipment required for rigging 20-millimeter ammunition on a 16-foot type V platform for low-velocity airdrop

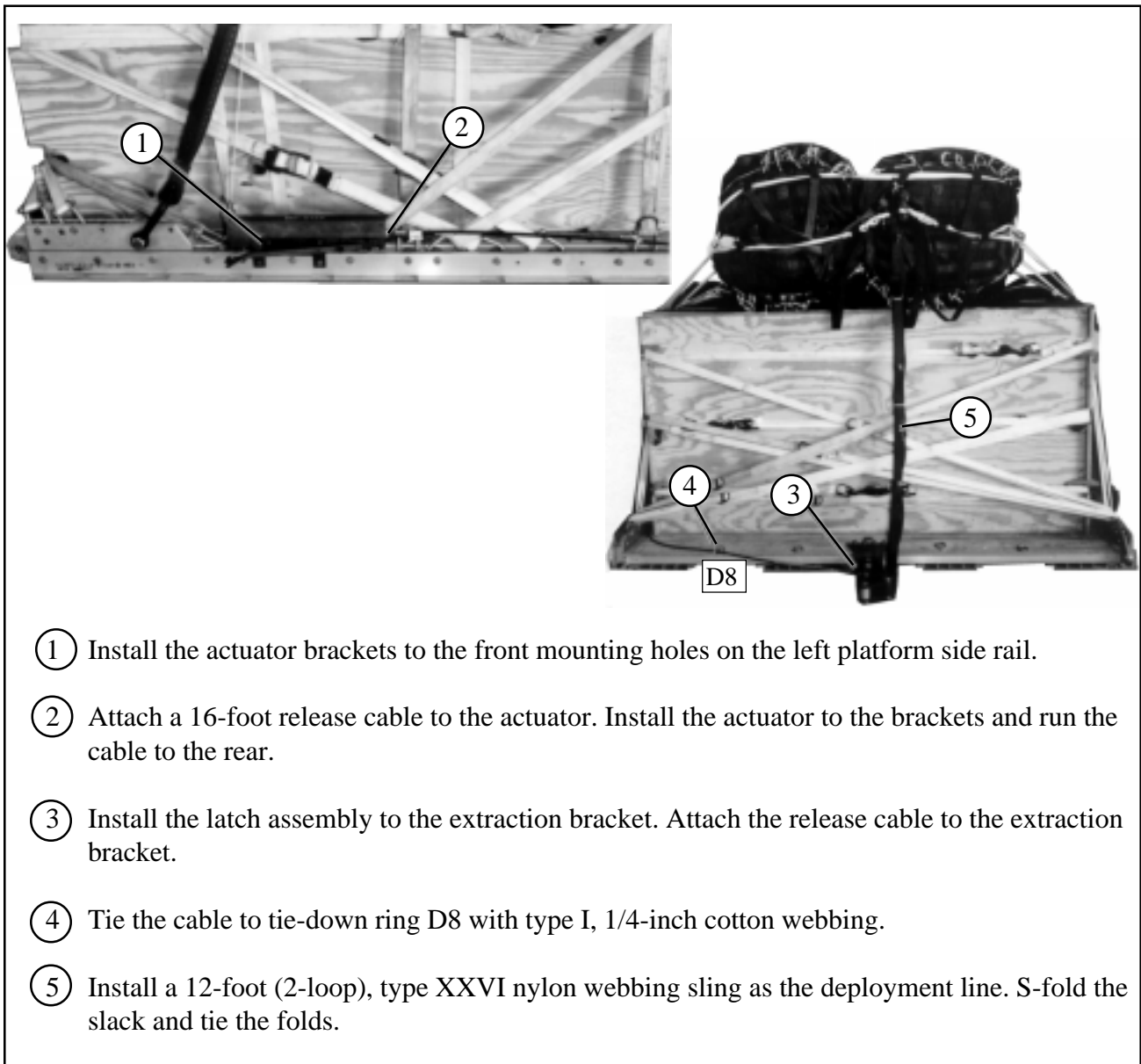
National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive paste, 1-gal	As required
4030-00-090-5354	Clevis, suspension, 1-in (large)	7
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer with cable, 16-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	21
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	21
	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
5315-00-010-4657	Nail, steel wire, common, 6d	As required

Table 15-3. Equipment required for rigging 20-millimeter ammunition on a 16-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	20 sheets
1670-01-016-7841	Parachute: Cargo, G-11C	5
1670-00-040-8135	Cargo extraction, 28-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
1670-01-353-8425	Platform, airdrop, type V, 16-foot Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(72)
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	10 sheets
1670-01-097-8817	Release, cargo parachute, M-2	1
1670-01-062-6308	Sling, cargo airdrop For suspension: 16-ft (4-loop), type XXVI nylon webbing	4
1670-01-062-6303	For deployment: 12-ft (2-loop), type XXVI nylon webbing	1
1670-01-062-6302	For riser extension: 20-ft (2-loop), type XXVI nylon webbing	5
No NSN	60-ft (2-loop), type XXVI nylon webbing	5
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	106
8305-00-268-2411	Webbing: 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

15-58. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-61.



- ① Install the actuator brackets to the front mounting holes on the left platform side rail.
- ② Attach a 16-foot release cable to the actuator. Install the actuator to the brackets and run the cable to the rear.
- ③ Install the latch assembly to the extraction bracket. Attach the release cable to the extraction bracket.
- ④ Tie the cable to tie-down ring D8 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.

Figure 15-61. Extraction system installed

15-59. 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.

15-60. 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.

15-61. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 15-62.

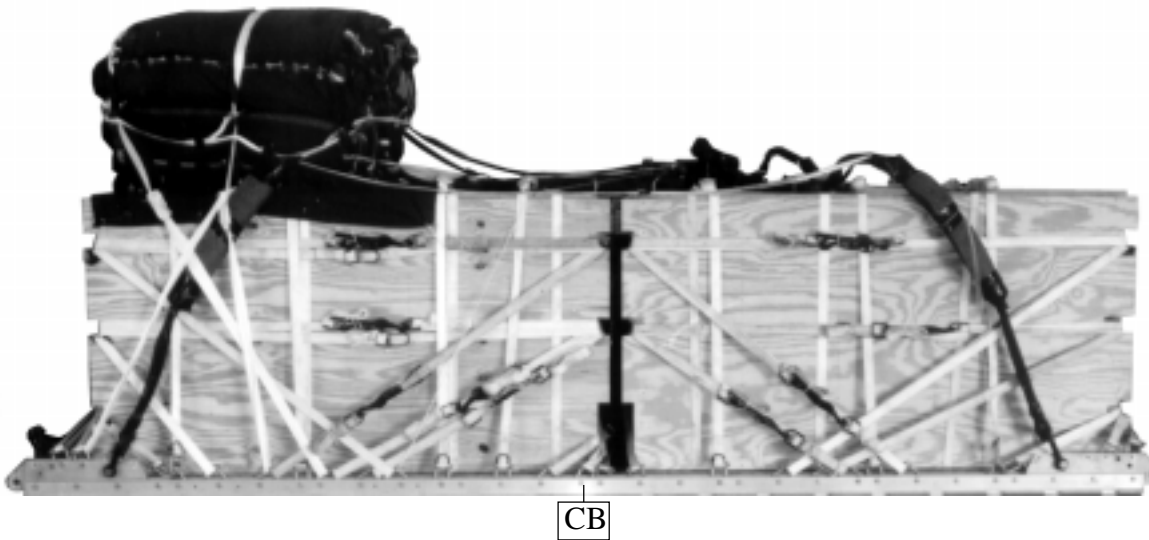
Note: If the load weight differs from the load shown, the parachute requirements, CB, and tip-off curve must be recomputed.

15-62. Equipment Required

Use the equipment listed in Table 15-4 to rig the load shown.

Note: Table does not include materials which may be needed to pad and restrain supplies inside the boxes.

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	5,040 pounds
	Maximum load allowed	21,000 pounds
Height		88 inches
Width		108 inches
Length		192 inches
Overhang:	Front	0 inches
	Rear	0 inches
CB (from front edge of platform)		97 inches
Extraction System (adds 18 inches to length of platform)		EFTC

Figure 15-62. Mass supply boxes rigged on a 16-foot platform for low-velocity airdrop

Table 15-4. Equipment required for rigging mass supply boxes 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
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
1670-00-434-5785	Coupling, airdrop, extraction force transfer with cable, 16-ft	1
	Cover:	
1670-00-360-0328		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	
	84 1/2-in	
	85-in	14
5315-00-010-4657	Nail, steel wire, common, 6d	As required

Table 15-4. Equipment required for rigging mass supply boxes on a 16-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, 16-foot	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(54)
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:	
1670-01-062-6308	16-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:	
1670-01-062-6302	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	86
	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

- 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.

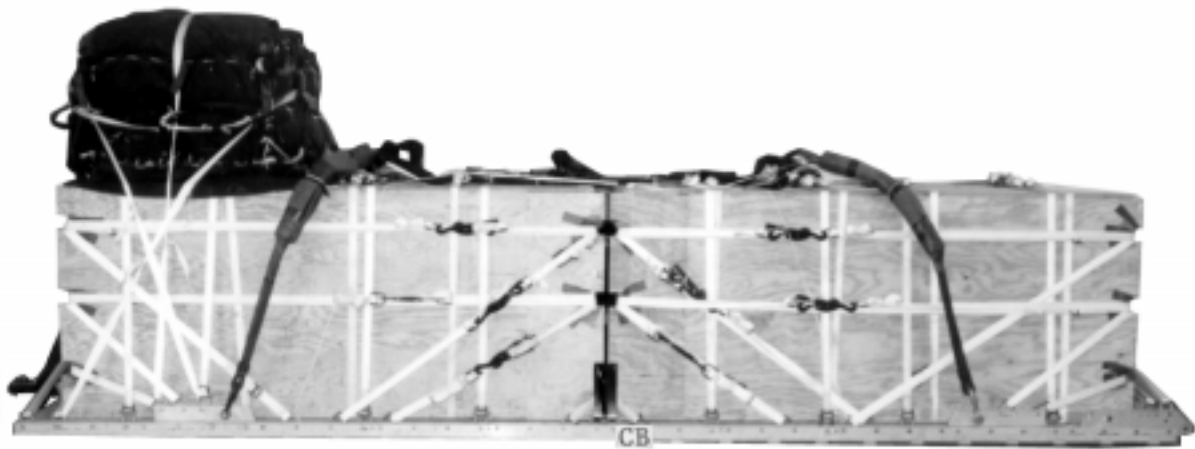
17-13. Marking Rigged Load

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
1670-01-016-7841	Parachute: Cargo, G-11B	4
1670-00-040-8135	Cargo extraction, 28-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
1670-01-353-8425	Platform, airdrop, type V, 20-foot 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
1670-01-064-4453	Sling, cargo airdrop For suspension: 20-ft(4-loop), type XXVI nylon webbing	4
1670-01-062-6303	For deployment: 12-ft (2-loop), type XXVI nylon webbing	1
1670-01-06-6302	For riser extension: 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
8305-00-268-2411	Webbing: 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

CHAPTER 18

**RIGGING PALLETIZED LOAD SYSTEM ON A 24-FOOT,
TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP**

Section I
RIGGING 105-MILLIMETER AMMUNITION

18-1. Description of Load

The Palletized Load System can be moved from the drop zone and transported on a specially designed truck. Bulk supplies are lashed to the pallet, giving the load integrity for transport. The pallet has swivel rings along the sides for lashing the load. The pallet and load are lashed to the airdrop platform for low-velocity airdrop. The load shown consists of 245 boxes of 105-millimeter ammunition. Adapt these procedures to rig other items of bulk supplies. Ammunition listed in FM 10-500-53/MCRP No 4-3.8/TO 13C7-18-41 and certified for low-velocity airdrop may be rigged using these procedures. The rigged load may not be more than 100 inches high. Refer to FM 10-500-2/TO 13C7-1-5 for parachute requirements.

18-2. Preparing Platform

Prepare a 24-foot, type V airdrop platform as given below:

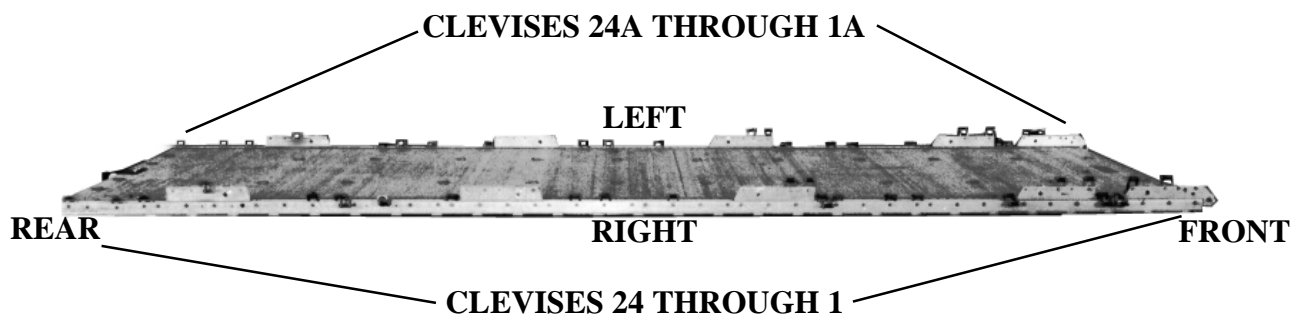
a. Inspecting Platform. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.

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

c. Installing Tandem Links. Install two tandem links as shown in Figure 18-1.

d. Attaching and Numbering Clevises. Attach and number 62 clevis assemblies as shown in Figure 18-1.

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:

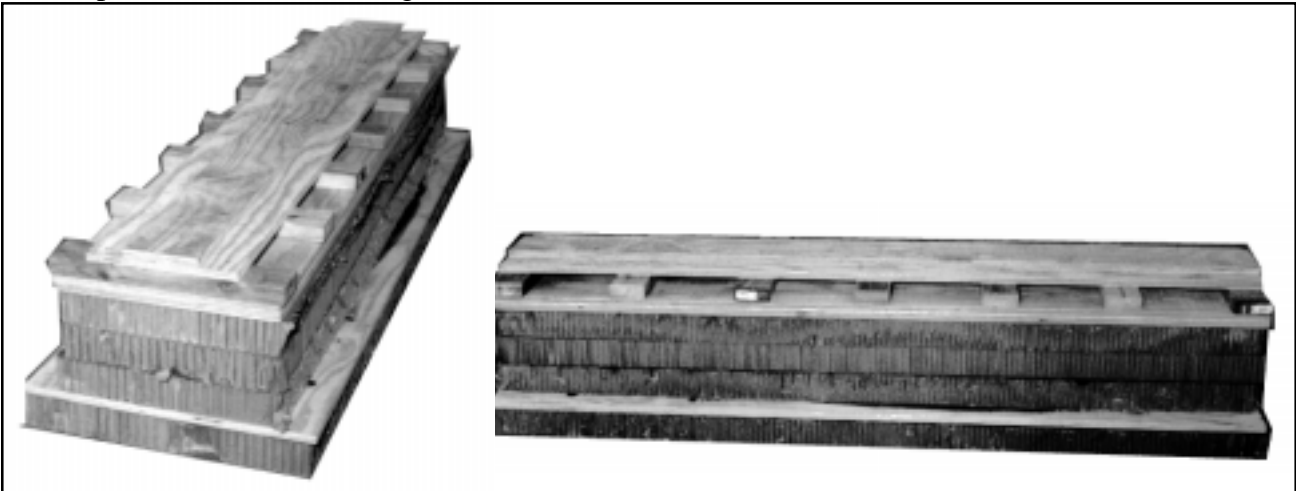
1. Install a suspension link in holes 18, 19, and 20 on each platform side rail.
2. Install a suspension link in holes 6, 7, and 8 on each platform side rail.
3. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
4. Install a suspension link in holes 29, 30, and 31 on each platform side rail.
5. Install a suspension link in holes 41, 42, and 43 on each platform side rail.
6. Install a clevis on bushings 3 and 4 of each front tandem link.
7. Install a clevis and one additional clevis on bushing 1 of each first suspension link.
8. Install a clevis on bushing 3 of each first suspension link.
9. Install clevises on bushings 1 and 2 of each second suspension link.
10. Install a clevis and one additional clevis on bushing 2 of each fourth suspension link.
11. Starting at the front of the platform, install clevises on each platform side rail using the bushings bolted on holes 4, 5, 9, 13, 14, 16, 17, 23, 26, 27, 32, 35, 37, 38, 45, 46, and 48.
12. Install one additional clevis on bushings 4, 5, 9, 17, 35, and 37 on each side of the platform.
13. Starting at the front of the platform, number the clevises bolted to the right side of the platform from 1 through 24, and those bolted to the left side from 1A through 24A.

Note: The eight additional clevises on each side of the platform function as bridge clevises. Do not number them apart from the clevises bolted on the platform rail bushings.

Figure 18-1. Platform prepared

18-3. Preparing and Positioning Honeycomb Stacks

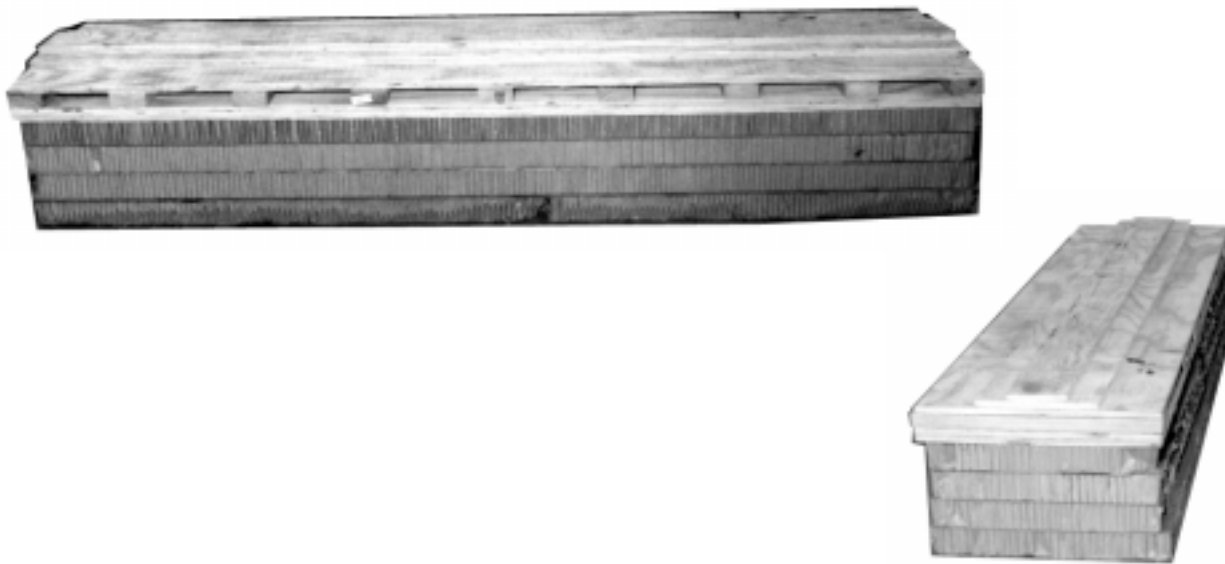
Prepare ten honeycomb stacks as shown in Figures 18-2 through 18-4. Position the stacks on the platform as shown in Figure 18-5.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1, 2, 5, and 6	1	24	76	Honeycomb	Glue plywood flush over honeycomb to form base.
	1	24	76	3/4-inch plywood	
	3	18	76	Honeycomb	Center and glue on base.
	2	18	76	3/4-inch plywood	Glue flush over honeycomb.
	7	18	*3 1/2	2- by 4-inch lumber	Nail one piece flush over each end of the plywood. Center a third piece between the ends. Space two pieces evenly between each end piece and the center piece.
	1	12	76	3/4-inch plywood	
	1	6	76	3/4-inch plywood	

* Two- by four-inch lumber is actually 3 1/2 inches wide.

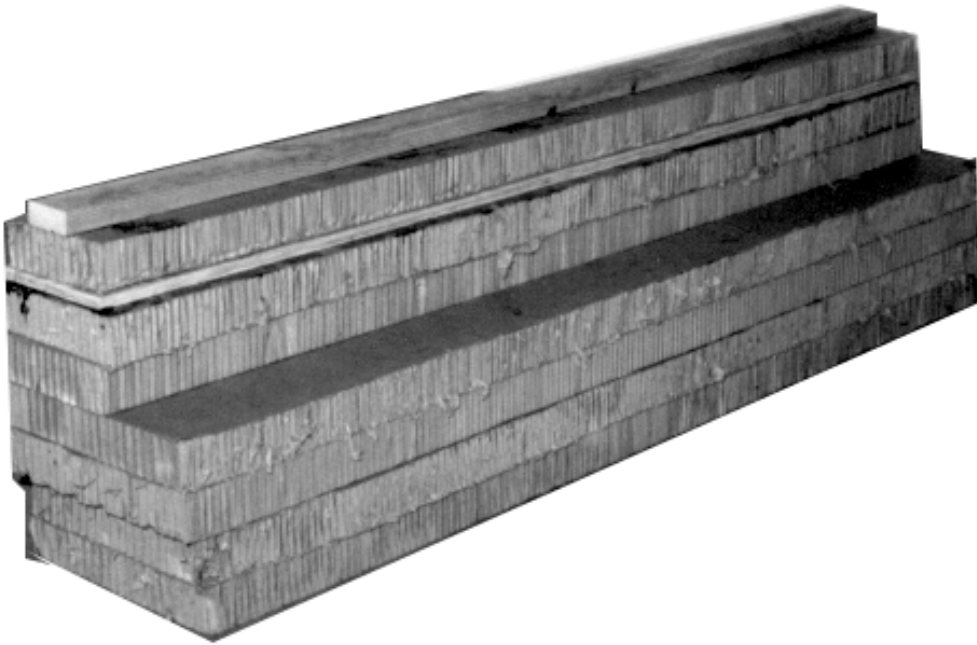
Figure 18-2. Stacks 1,2, 5, and 6 prepared



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3 and 4	4	24	96	Honeycomb	Glue flush to form base.
	2	24	96	3/4-inch plywood	Glue flush over honeycomb.
	9	24	*3 1/2	2- by 4-inch lumber	Nail one piece flush over each end of the plywood. Center a third piece between the ends. Space three pieces evenly between each end piece and the center piece.
	1	24	96	3/4-inch plywood	Center and nail over lumber.
	1	12	96	3/4-inch plywood	Center and nail over plywood.
	1	6	96	3/4-inch plywood	Center and nail over plywood.

* Two- by four-inch lumber is actually 3 1/2 inches wide.

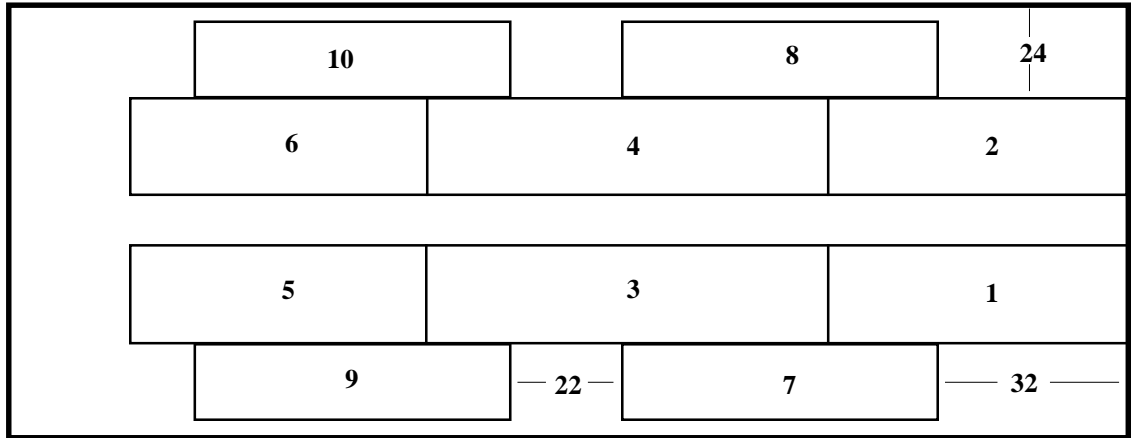
Figure 18-3. Stacks 3 and 4 prepared



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
7, 8, 9, and 10	4	16	84	Honeycomb	Glue flush to form base.
	2	9	84	Honeycomb	Glue flush on one side of base.
	1	9	84	3/4-inch plywood	Glue flush over honeycomb.
	1	9	84	Honeycomb	Glue flush over plywood.
	1	*3 1/2	84	2- by 4-inch lumber	Center and glue on honeycomb.

Figure 18-4. Stacks 7, 8, 9, and 10 prepared

Notes: 1. This drawing is not to scale.
 2. All dimensions are in inches.

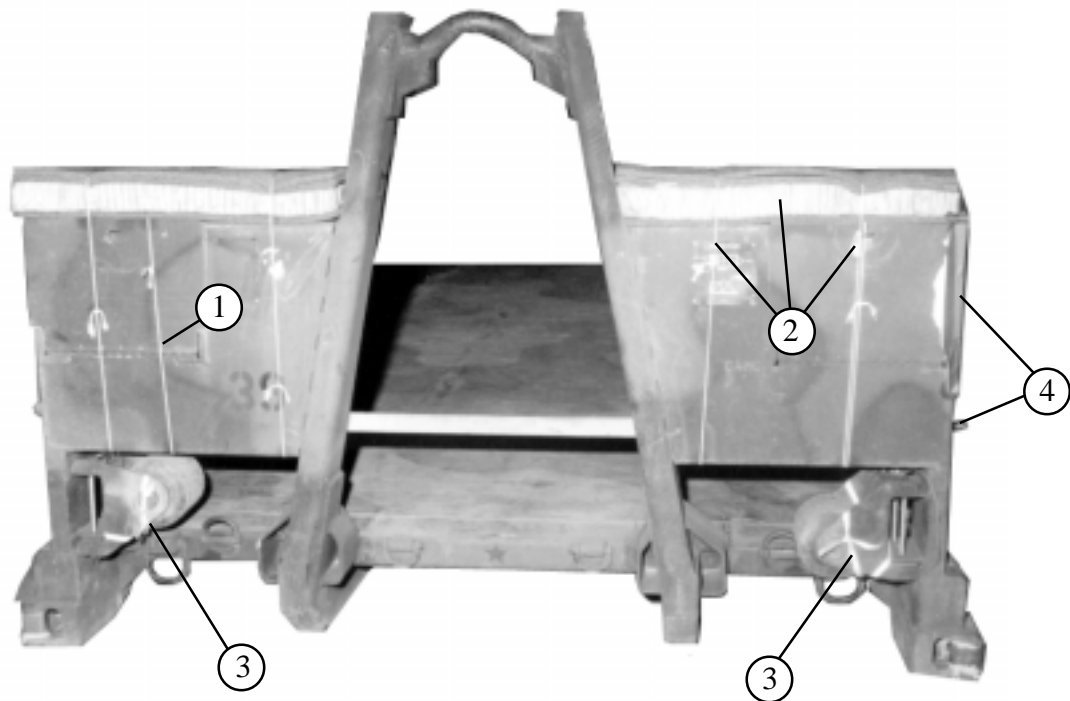


Stack Number	Position of Stack on Platform
1	Place stack: Flush with the front edge of the platform and 24 inches from the right inside platform edge.
2	Flush with the front edge of the platform and 24 inches from the left inside platform edge.
3	Against and aligned behind stack 1.
4	Against and aligned behind stack 2.
5	Against and aligned behind stack 3.
6	Against and aligned behind stack 4.
7	32 inches from the front edge of the platform and flush with the right sides of stacks 1 and 3.
8	32 inches from the front edge of the platform and flush with the left side of stacks 2 and 4.
9	22 inches to the rear of stack 7 and flush with the right side of stacks 3 and 5.
10	22 inches to the rear of stack 8 and flush the the left side of stacks 4 and 6.

Figure 18-5. Honeycomb stacks positioned on platform

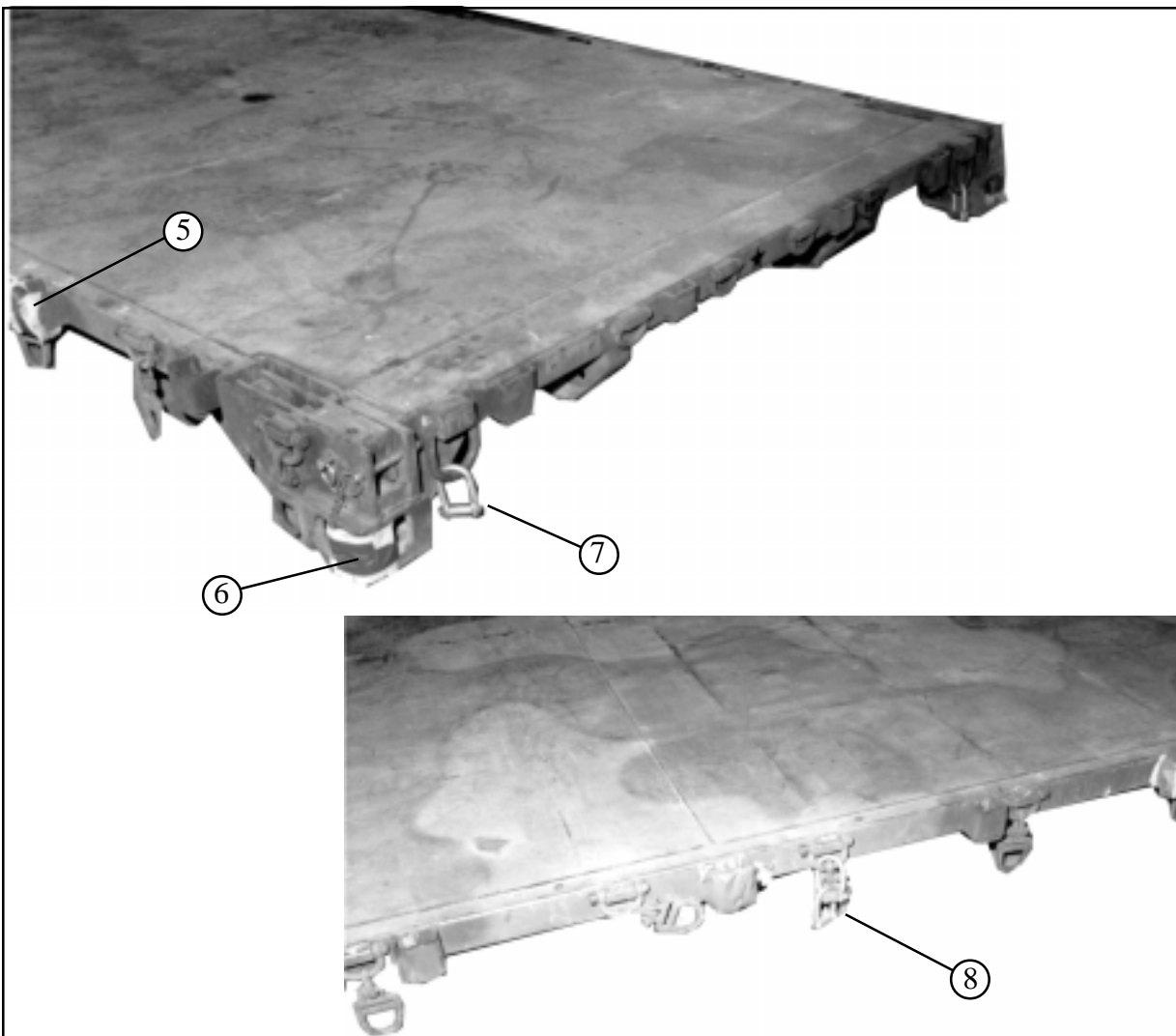
18-4. Preparing PLS Pallet

Prepare the pallet as shown in Figure 18-6.



- ① Tie the storage compartments on each side shut with type III nylon cord.
- ② Pad the top of each box area with a 7- by 30-inch piece of felt, a 7- by 30-inch piece of honeycomb, and two 7- by 30-inch pieces of felt. Tie the padding in place with two lengths of type III nylon cord.
- ③ Remove the wheels and secure them in place with the pins provided. Tie the wheels to their brackets with a length of 1/2-inch tubular nylon webbing.
- ④ Pad the fixtures on the outsides of the boxes with cellulose wadding and tape.

Figure 18-6. Pallet prepared



- ⑤ Pad the second stake bracket on each side with cellulose wadding and tape.
- ⑥ Pad all four corners of the pallet around the bottom holes with cellulose wadding and tape as shown.
- ⑦ Add a platform clevis to each of the large tie-down brackets at the rear of the PLS pallet.
- ⑧ Add two platform clevises to the sixth swivel ring bracket on each side of the PLS pallet.

Figure 18-6. Pallet prepared (continued)

18-5. Positioning PLS Pallet on Platform

Position the pallet on the platform and install the restraint lashings around the honeycomb stacks as shown in Figure 18-7.

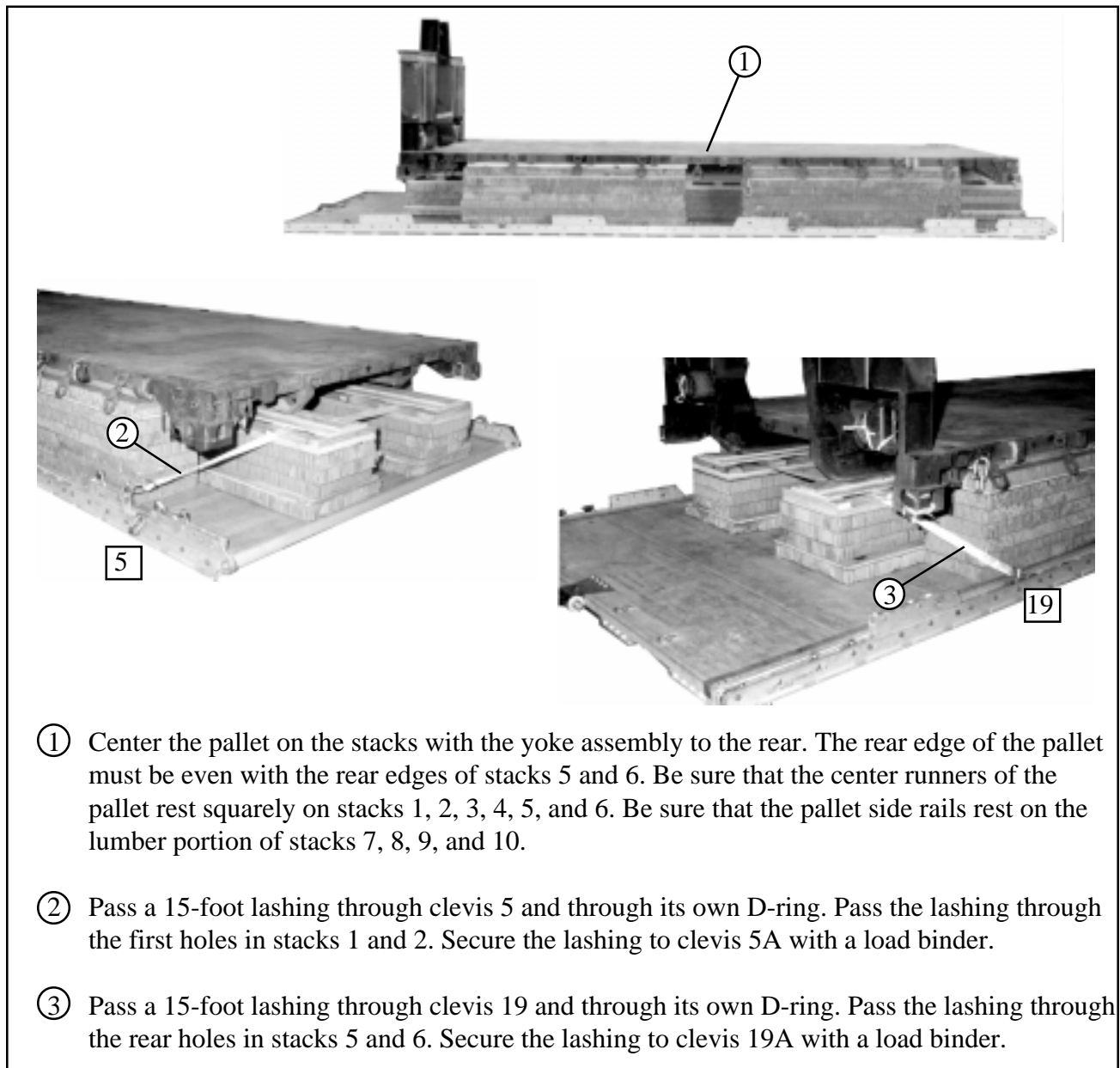
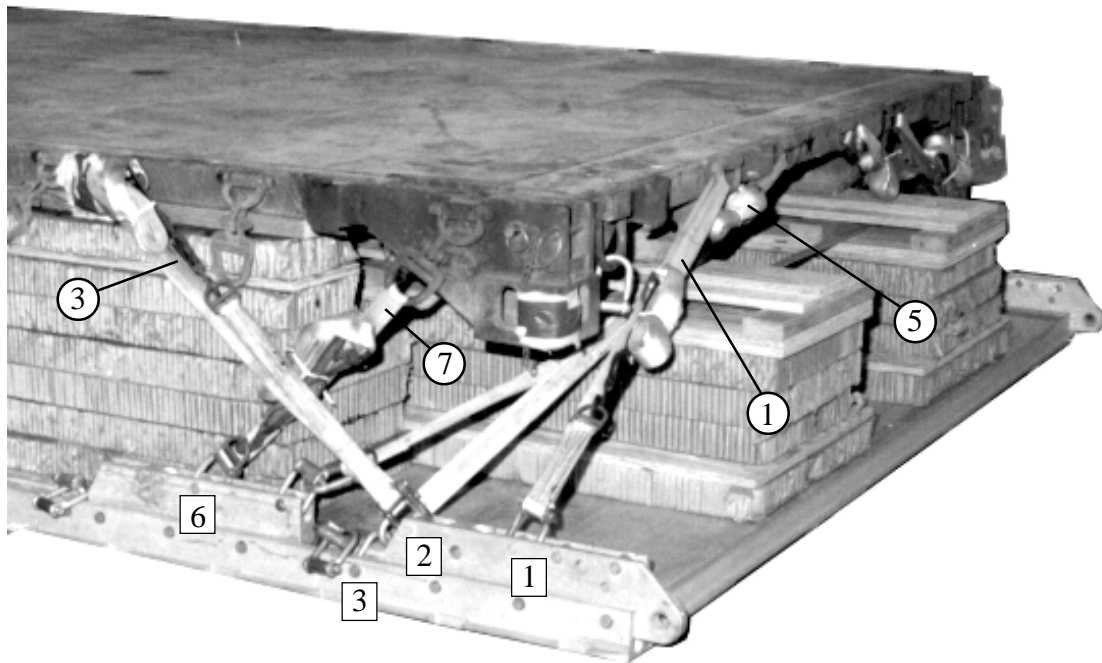


Figure 8-7. Pallet positioned and restraint lashing installed

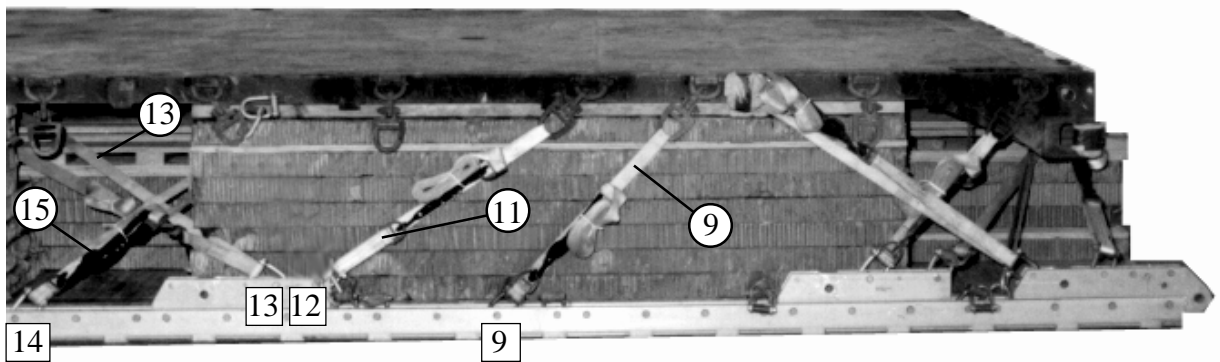
18.6 Lashing PLS Pallet to Platform

Lash the PLS pallet to the platform as shown in Figure 18-8.



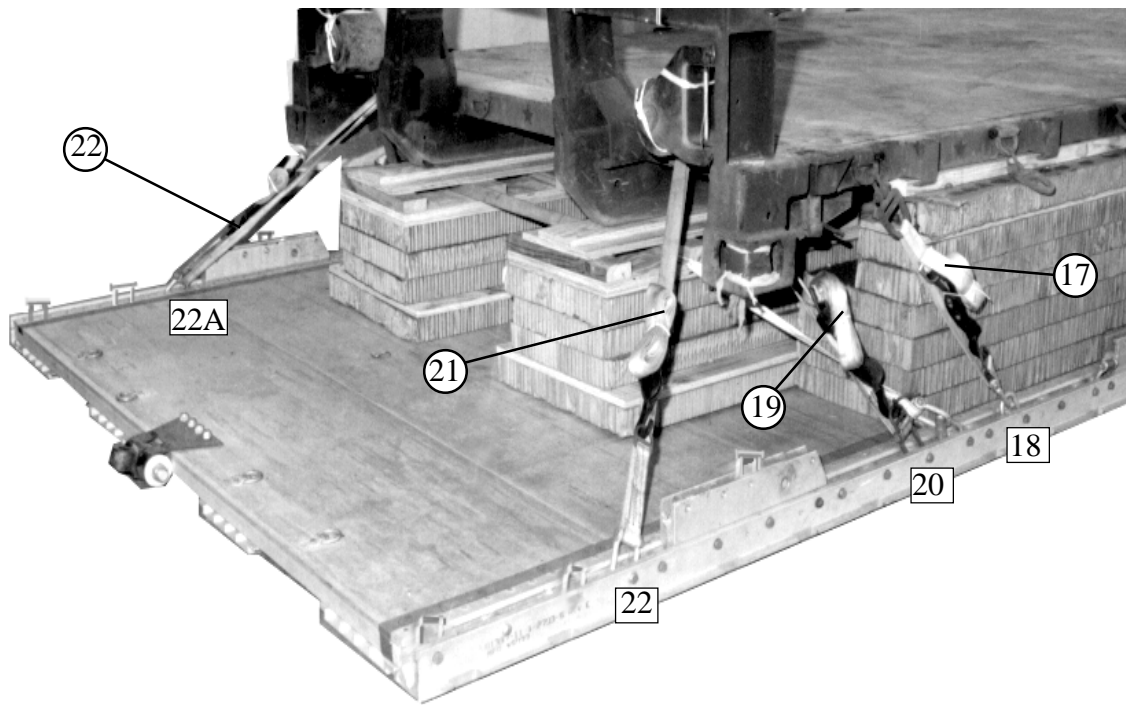
Lashing Number	Tie-down Clevis Number	Instructions
1	1	Pass lashing: Through the right front outside tie-down point.
2	1A	Through the left front outside tie-down point.
3	2	Through the second stake bracket.
4	2A	Through the second stake bracket.
5	3	Through the right front inside tie-down point.
6	3A	Through the left front inside tie-down point.
7	6	Through the first swivel ring.
8	6A	Through the first swivel ring.

Figure 18-8. Pallet lashed to platform



Lashing Number	Tie-down Clevis Number	Instructions
9	9	Pass lashing: Through the third swivel ring.
10	9A	Through the third swivel ring.
11	12	Through the fourth swivel ring.
12	12A	Through the fourth swivel ring.
13	13	Through the rear holes in the skid.
14	13A	Through the rear holes in the skid.
15	14	Through the front holes in the skid
16	14A	Through the front holes in the skid.

Figure 18-8. Pallet lashed to platform (continued)



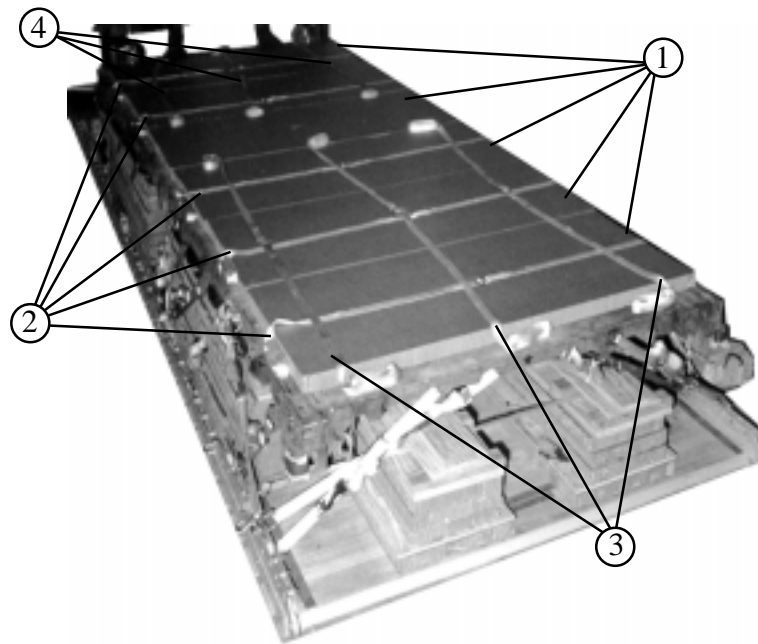
Lashing Number	Tie-down Clevis Number	Instructions
17	18	Pass lashing: Through the eleventh swivel ring.
18	18A	Through the eleventh swivel ring.
19	20	Through the right corner tie-down ring.
20	20A	Through the left corner tie-down ring.
21	22	Through the right outside tie-down point.
22	22A	Through the left outside tie-down point.

Figure 18-8. Pallet lashed to platform (continued)

18-7. Placing and Lashing the Load

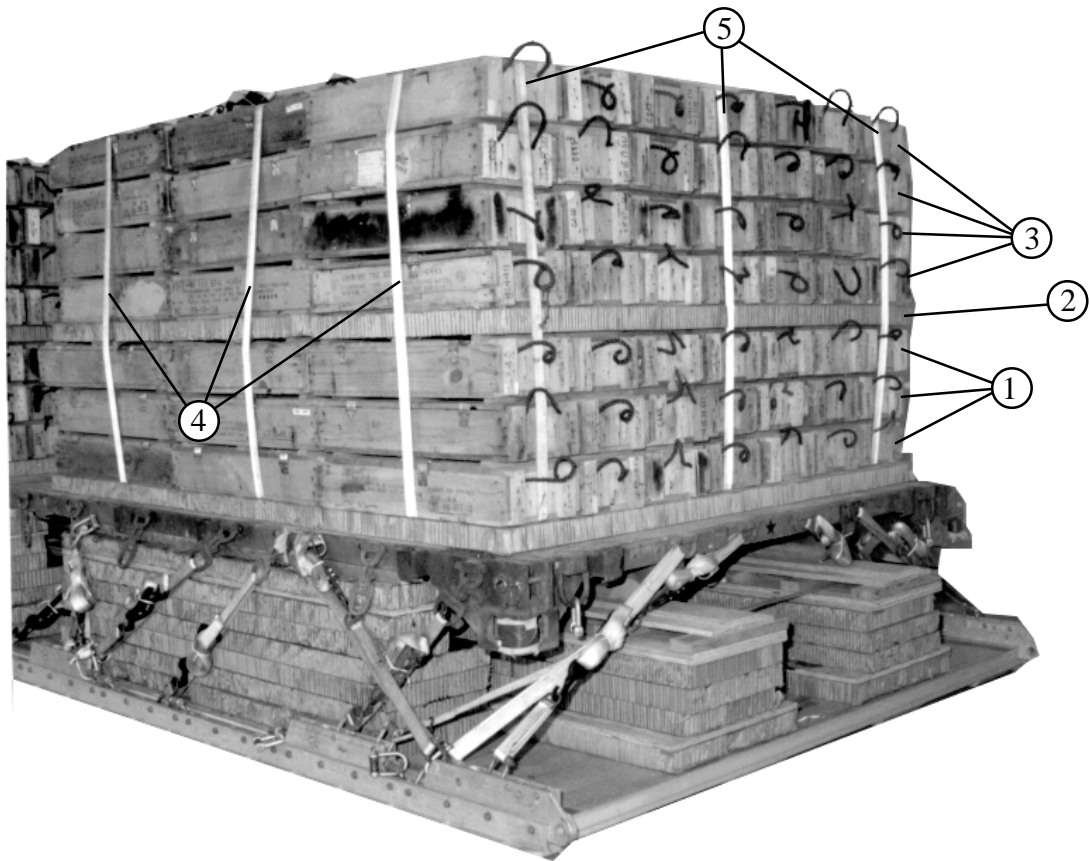
Place a layer of honeycomb and eleven 30-foot lashings on the pallet as shown in Figure 18-9. Place 245 boxes of 105-millimeter ammunition on the pallet and bind the boxes together with the lashings as shown in Figure 18-10. Construct four endboards as shown in Figure 18-11.

Secure the boxes and endboards to the front section of the pallet as shown in Figure 18-12. Secure the boxes and endboards to the rear section of the pallet as shown in Figure 8-13. Lash the load to the platform as shown in Figure 8-14.



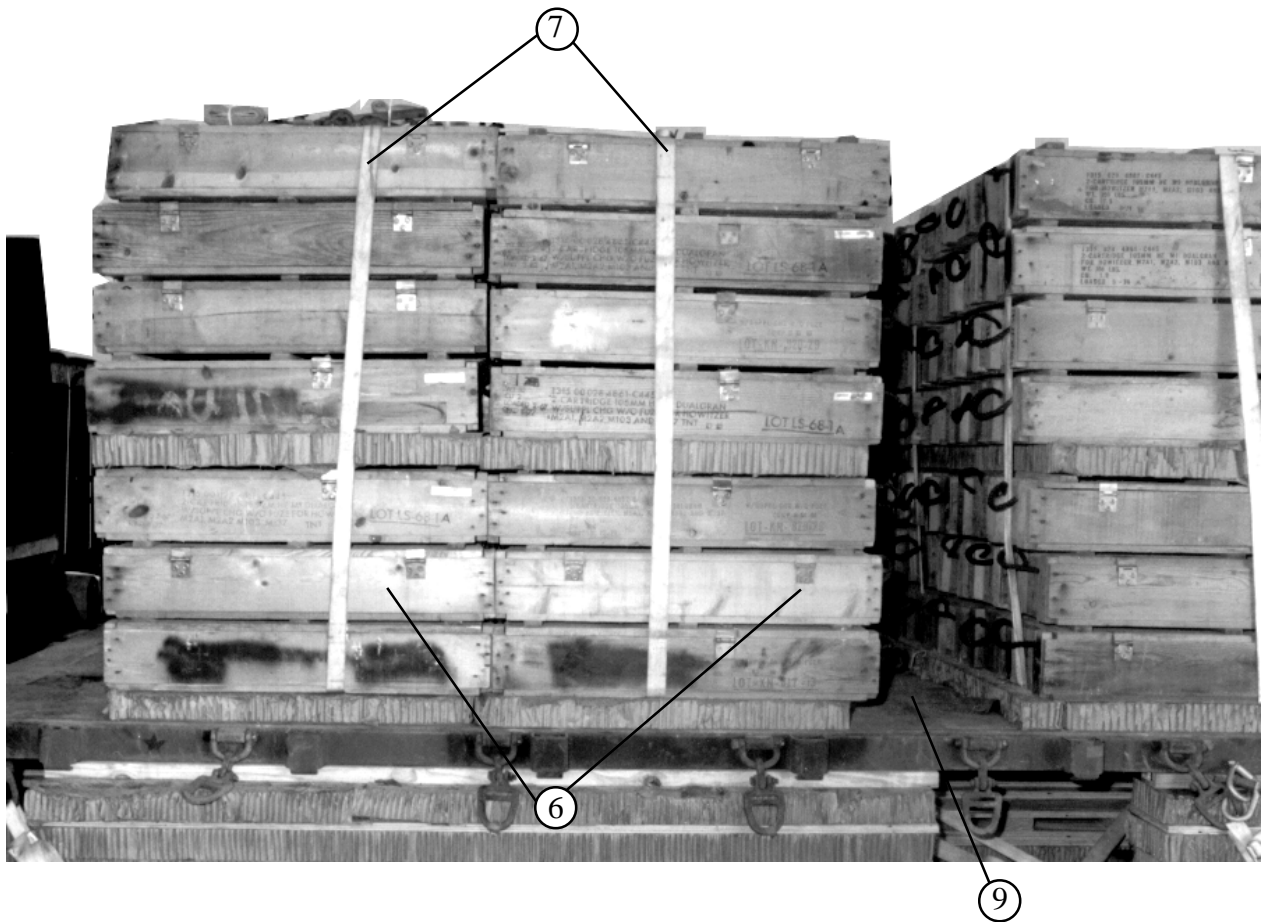
- ① Cover the pallet with five 96- by 36-inch pieces of honeycomb, beginning 4 1/2 inches from the front edge.
- ② Place and center five 30-foot lashings across the honeycomb at 18 inches, 54 inches, 90 inches, 124 inches, and 160 inches.
- ③ Center the D-rings of three 30-foot lashings on the second of the lashings placed in step 2. Center one of the lashings, and place the other two 7 inches from each side.
- ④ Center the D-rings of three 30-foot lashings between the fourth and fifth of the lashings placed in step 2. Center one of the lashings, and place the other two 7 inches from each side.

Figure 18-9. Honeycomb and lashings placed on the pallet



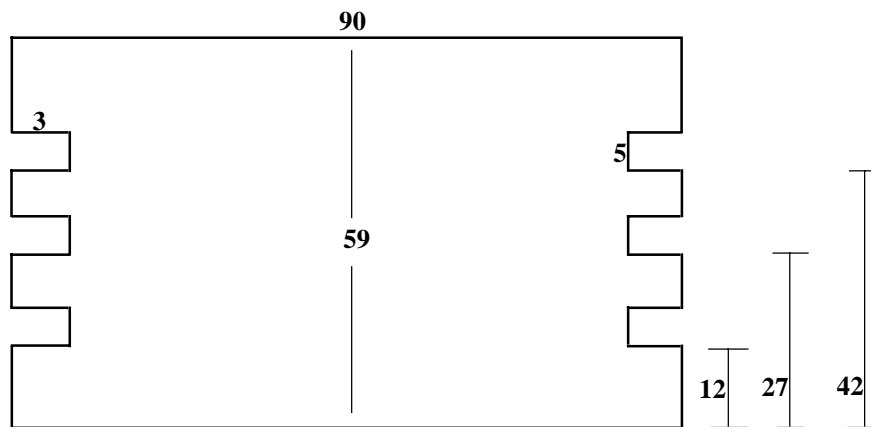
- ① Place 21 boxes (three rows of seven each) flush with the edges of the honeycomb. Place two more stacks of 21 each flush behind these.
- ② Cover the three layers of boxes with a layer of honeycomb.
- ③ Place four layers of boxes over the boxes and honeycomb placed in steps 1 and 2 above.
- ④ Fasten the three side-to-side lashings on top of the boxes.
- ⑤ Bring the center lashing up through the carrying handles of the middle boxes, and secure it on top of the load. Bring the side lashings up through the carrying handles of the end boxes, and secure them on top of the load.

Figure 18-10. Ammunition boxes placed on pallet



- ⑥ Beginning 16 inches from the front stack of boxes, place 98 boxes on the honeycomb in the same configuration as in steps 1 through 3.
- ⑦ Secure the two side-to-side lashings on top of the boxes.
- ⑧ Route and secure the three front-to-rear lashings in the same way as in step 5 (not shown).
- ⑨ Cut out the honeycomb between the two stacks of boxes to allow the endboards to rest on the pallet.

Figure 18-10. Ammunition boxes placed on pallet (continued)



Notes: 1. This drawing is not to scale.

2. For loads different from that shown in this section, make the endboards the same height as the load configuration.

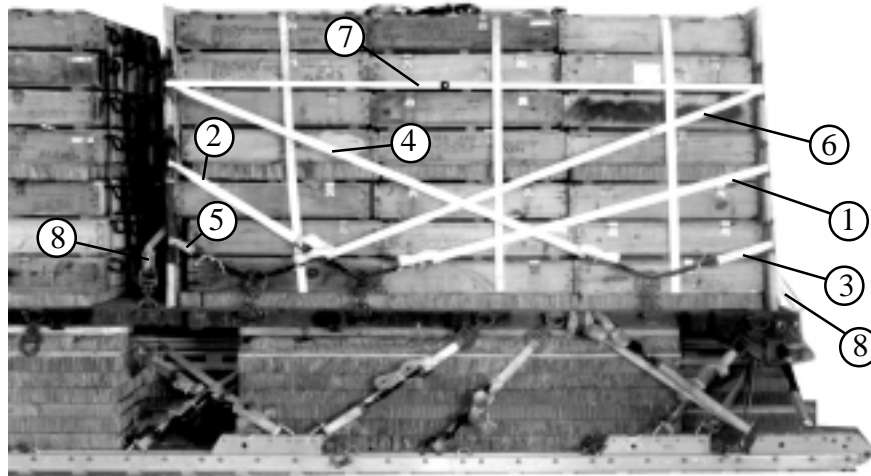
3. The instructions given are for one endboard. Four are required for this load.

4. All dimensions are given in inches.

Step:

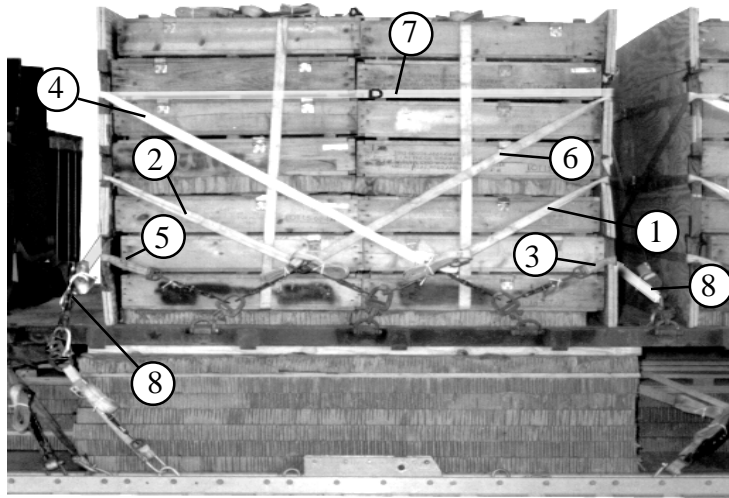
1. Cut two 3/4- by 48- by 90-inch and two 3/4- by 11- by 90-inch pieces of plywood. Nail the four pieces flush together so that a single 1 1/2- by 59- by 90-inch piece of plywood results. (The 11-inch piece will be at the top on one side, and at the bottom on the other side).
2. Make cutouts 5 inches wide and 3 inches deep. Tape the sharp edges of the cutouts.

Figure 18-11. Four endboards constructed



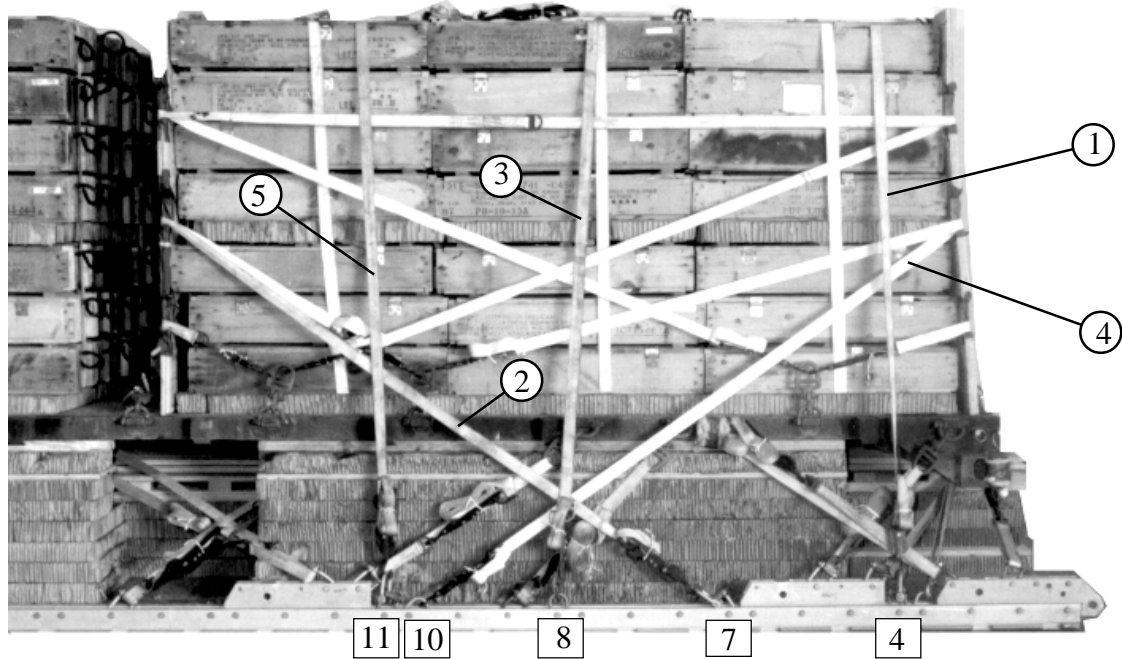
- ① Set an endboard against each end of the front stack of boxes. Center a 30-foot lashing on the front endboard and pass the free ends through the middle cutouts. Secure the ends to the fifth swivel rings with D-rings and load binders.
- ② Center a 30-foot lashing on the second endboard and pass the free ends through the middle cutouts. Secure the ends to the fifth swivel rings with D-rings and load binders.
- ③ Place a 15-foot lashing in the lower cutouts of the first endboard. Secure each end of the lashing to the second swivel rings with a load binder.
- ④ Center a 30-foot lashing on the second endboard and pass the free ends through the upper cutouts. Secure the ends to the second swivel rings with D-rings and load binders.
- ⑤ Place a 15-foot lashing in the lower cutouts of the second endboard. Secure each end of the lashing to the sixth swivel rings with a load binder.
- ⑥ Center a 30-foot lashing on the first endboard and pass the free ends through the upper cutouts. Secure the ends to the sixth swivel rings with D-rings and load binders.
- ⑦ Center a 30-foot lashing against the right side and pass the free ends through the upper cutouts in the right side of both endboards. Secure the ends to the left front clevis in the front tie-down point and to the seventh swivel ring on the left side with D-rings and load binders. Fasten the load binder to the platform clevis installed earlier.
- ⑧ Center a 30-foot lashing against the left side and pass the free ends through the upper cutouts in the left side of both endboards. Secure the ends to the right front clevis in the front tie-down point and to the seventh swivel ring on the right side with D-rings and load binders. Fasten the load binder to the platform clevis installed earlier.

Figure 18-12. Front boxes and endboards secured to pallet



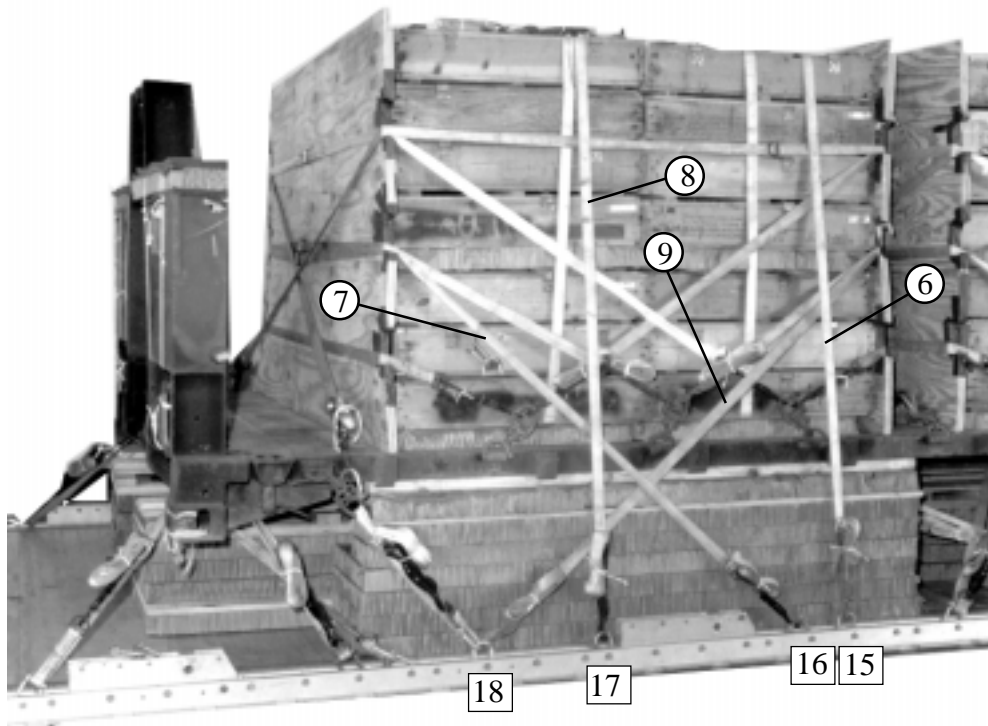
- ① Set an endboard against each end of the rear stack of boxes. Center a 30-foot lashing on the third endboard and pass the free ends through the middle cutouts. Secure the ends to the ninth swivel rings with D-rings and load binders.
- ② Center a 30-foot lashing on the fourth endboard and pass the free ends through the middle cutouts. Secure the ends to the ninth swivel rings with D-rings and load binders.
- ③ Place a 15-foot lashing in the lower cutouts of the third endboard. Secure the ends of the lashing to the eighth swivel rings with a load binder.
- ④ Center a 30-foot lashing on the fourth endboard and pass the free ends through the upper cutouts. Secure the ends to the eighth swivel rings with D-rings and load binders.
- ⑤ Place a 15-foot lashing in the lower cutouts of the fourth endboard. Secure the ends of the lashing to the tenth swivel rings with a load binder.
- ⑥ Center a 30-foot lashing on the third endboard and pass the free ends through the upper cutouts. Secure the ends to the tenth swivel rings with D-rings and load binders.
- ⑦ Center a 30-foot lashing against the right side and pass the free ends through the upper cutouts in the right side of both endboards. Secure the ends to the clevis on the eleventh swivel ring and to the seventh swivel ring on the left side with D-rings and load binders. Fasten the load binder to the remaining platform clevis installed earlier.
- ⑧ Center a 30-foot lashing against the left side and pass the free ends through the upper cutouts in the left side of both endboards. Secure the ends to the clevis on the eleventh swivel ring and to the seventh swivel ring on the right side with D-rings and load binders. Fasten the load binder to the remaining platform clevis installed earlier.

Figure 18-13. Rear boxes and endboards secured to pallet



Lashing Number	Tie-down Clevis Numbers	Instructions
1	4 and 4A	Pass 30-foot lashing: Over the load. Fit a D-ring to each free end, and secure to the clevises with load binders.
2	7 and 7A	Through the center cutouts in the second endboard. Fit a D-ring to each free end, and secure to the clevises with load binders.
3	8 and 8A	Over the load. Fit a D-ring to each free end, and secure to the clevises with load binders.
4	10 and 10A	Through the center cutouts in the first endboard. Fit a D-ring to each free end, and secure to the clevises with load binders.
5	11 and 11A	Over the load. Fit a D-ring to each free end, and secure to the clevises with load binders.

Figure 8-14. Load lashed to platform



Lashing Number	Tie-down Clevis Numbers	Instructions
6	15 and 15A	Pass 30-foot lashing: Over the load. Fit a D-ring to each free end, and secure to the clevises with load binders.
7	16 and 16A	Through the center cutouts in the fourth endboard. Fit a D-ring to each free end, and secure to the clevises with load binders.
8	17 and 17A	Over the load. Fit a D-ring to each free end, and secure to the clevises with load binders.
9	18 and 18A	Through the center cutouts in the third endboard. Fit a D-ring to each free end, and secure to the lower clevises with load binders.

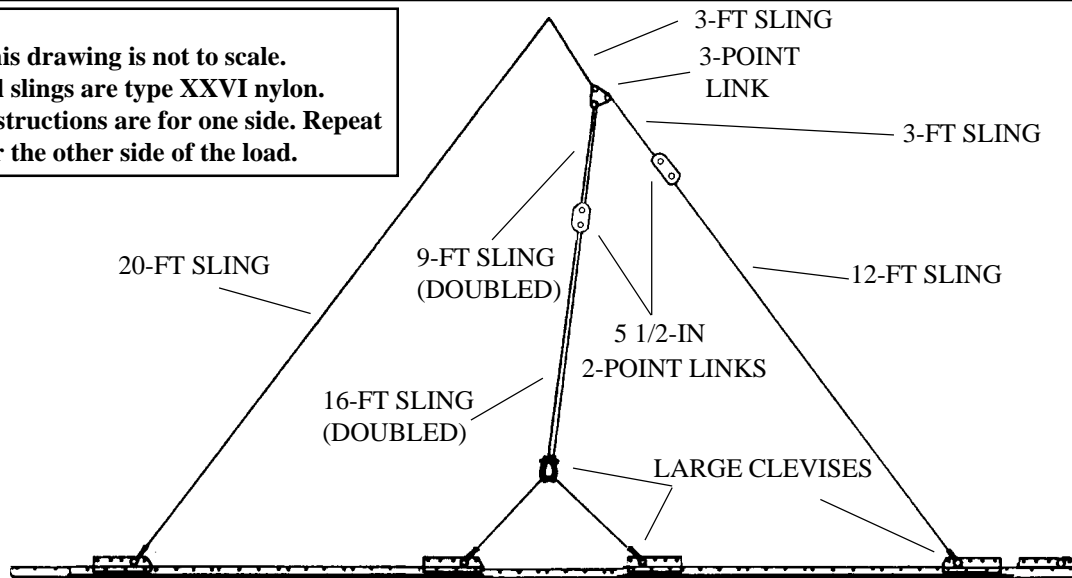
Figure 8-14. Load lashed to platform (continued)

18-8. Installing and Safetying Suspension Slings

Install the components of the centerline suspension system according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 18-15. Safety the suspension slings as shown in Figure 18-16.

Notes:

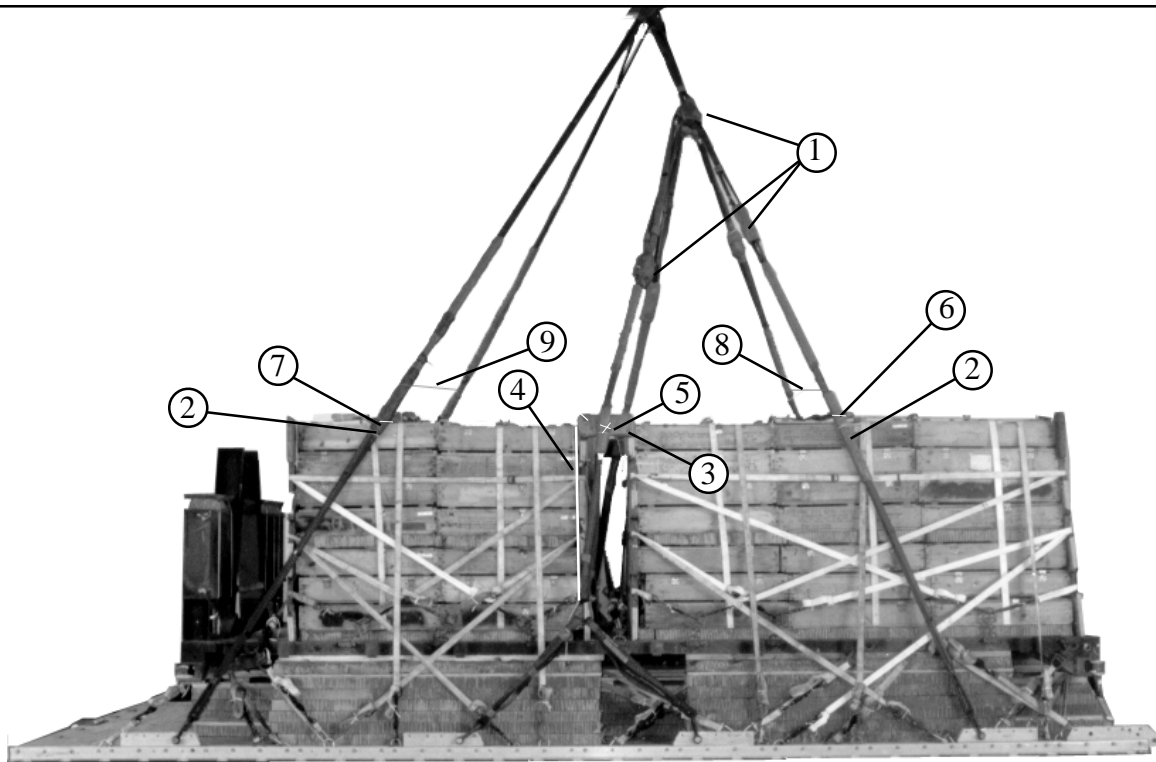
1. This drawing is not to scale.
2. All slings are type XXVI nylon.
3. Instructions are for one side of the load. Repeat for the other side of the load.



Step:

1. Place the end loop of a 12-foot (4-loop) sling in the bell of a large clevis. Bolt the clevis to the front suspension link. Connect the free end of the 12-foot sling to a 3-foot (4-loop) sling with a 5 1/2-inch two-point link.
2. Attach a 3-foot (4-loop) sling to each center suspension link with a large clevis. Place both 3-foot slings in the bell of a large clevis. Pass a 16-foot (2-loop) sling through one spool of a 5 1/2-inch two-point link. Place both ends of the 16-foot sling in the bolt of the large clevis.
3. Pass a 9-foot (2-loop) sling through a spool of a three-point link. Place both ends of the sling in the remaining spool of the two-point link used in step 2 above.
4. Bolt the 3-foot sling used in step 1 above to the three-point link so that the third spool points upward. Bolt a 3-foot (4-loop) sling to the upper spool of the three-point link.
5. Place the end loop of a 20-foot (4-loop) sling in the bell of a large clevis. Bolt the clevis to the rear suspension link.

Figure 18-15. Suspension slings installed

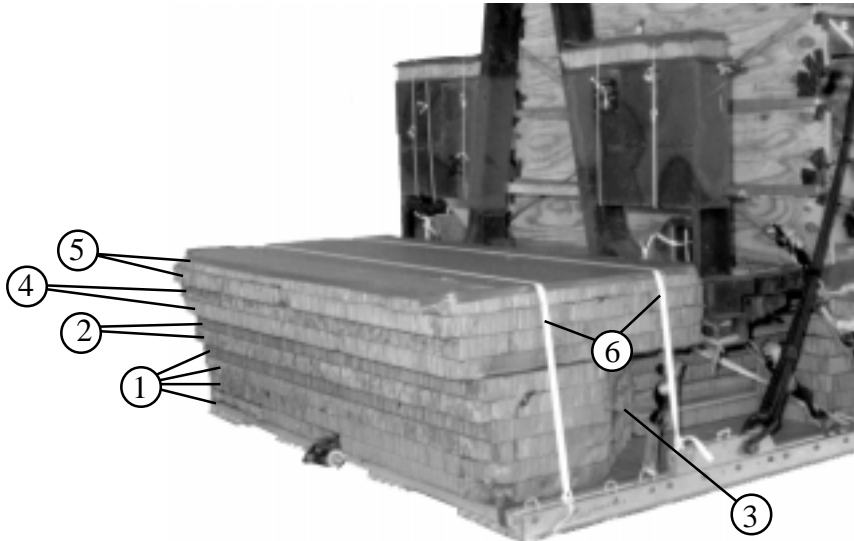


- ① Pad the two-point and three-point links with felt and tape. Raise the suspension slings.
- ② Pad the suspension slings where they pass over the corners of the load with felt and tape.
- ③ Measure and cut two pieces of 2- by 12-inch lumber long enough to bridge the gap between the endboards. Nail the lumber securely to the endboards flush with the top edges. Pad the lumber with cellulose wadding and tape.
- ④ Tie a length of type III nylon cord to the center clevis on one side. Pass the cord over the load, and tie it to the center clevis on the other side so that both clevises are supported.
- ⑤ Tie the center suspension slings to the padded lumber placed in step 3 above with type III nylon cord.
- ⑥ Tie the front suspension slings to each other over the load with a length of type III nylon cord.
- ⑦ Tie the rear suspension slings to each other over the load with a length of type III nylon cord.
- ⑧ Tie the front suspension slings to each other 12 inches above the load with 1/2-inch tubular nylon webbing.
- ⑨ Tie the rear suspension slings to each other 12 inches above the load with 1/2-inch tubular nylon webbing.

Figure 18-16. Suspension slings safetied

18-9. Building Parachute Stowage Platform

Build the parachute stowage platform as shown in Figure 18-17.

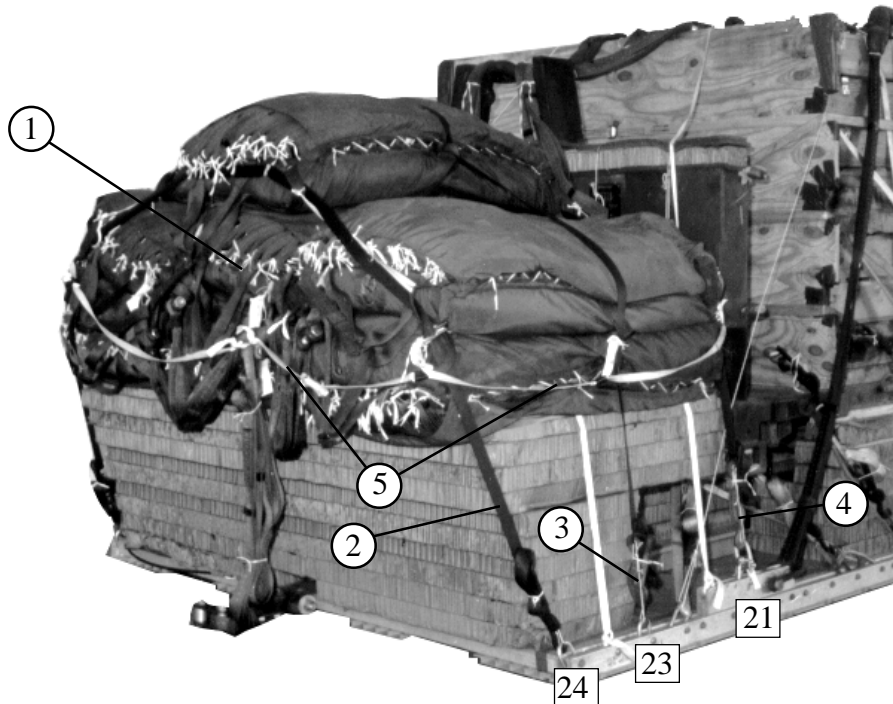


- ① Alternate and glue four 96- by 36-inch and four 96- by 6-inch pieces of honeycomb to form a four-layer base 96- by 42 inches.
- ② Alternate and glue two 96- by 36-inch and two 96- by 8-inch pieces of honeycomb to form two 96- by 44-inch pieces. Place these layers over the base and flush with the front edge.
- ③ Cut the front corners of the honeycomb placed in steps 1 and 2 above to allow for the lashings.
- ④ Alternate and glue two 96- by 36-inch and two 96- by 10-inch pieces of honeycomb to form two 96- by 46-inch pieces. Place these layers over the base and flush with the front edge.
- ⑤ Alternate and glue two 96- by 36-inch and two 96- by 12-inch pieces of honeycomb to form two 96- by 48-inch pieces. Place these layers over the base and flush with the front edge.
- ⑥ Secure the parachute stowage platform to the rails with a length of 1/2-inch tubular nylon webbing tied to the fourth bushing on each rear suspension link, and to bushing 47 on each side.

Figure 18-17. Parachute stowage platform built and placed

18-10. Installing Cargo Parachutes

Install seven G-11C cargo parachutes according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 18-18.

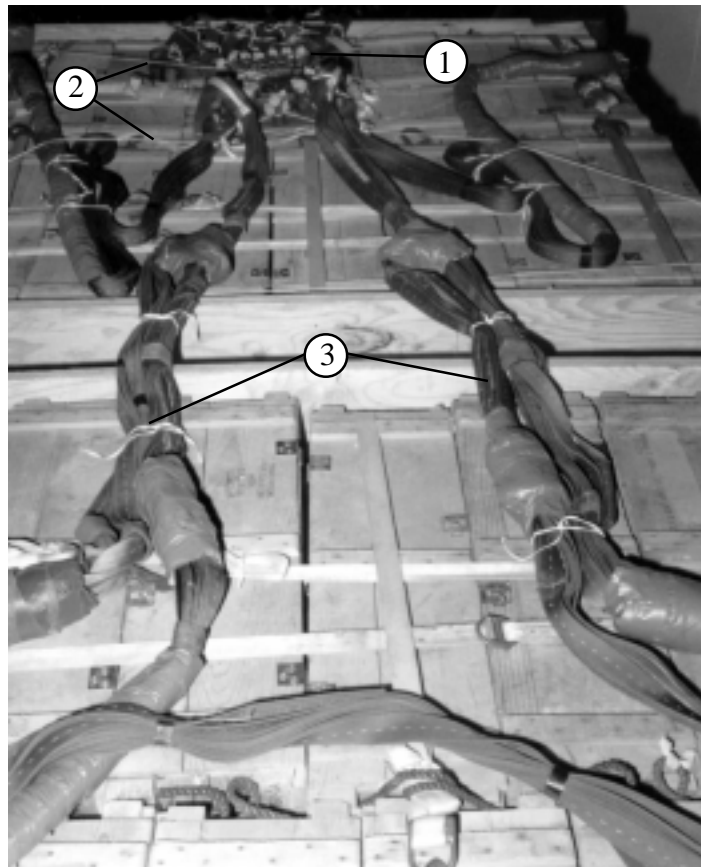


- ① Cluster seven G-11C cargo parachutes on the parachute stowage platform.
- ② Secure the rear restraint strap to clevises 24 and 24A with D-rings and load binders. Secure the load binders to the clevises with type III nylon cord.
- ③ Secure the center restraint strap to clevises 23 and 23A with D-rings and load binders. Secure the load binders to the clevises with type III nylon cord.
- ④ Secure the front restraint strap to clevises 21 and 21A with D-rings and load binders. Secure the load binders to the clevises with type III nylon cord.
- ⑤ Install the parachute release knives.

Figure 18-18. Cargo parachutes installed

18-11. Installing Parachute Release

Prepare and install an M-2 cargo parachute release as shown in Figure 18-19, and according to FM 10-500-2/TO 13C7-1-5.

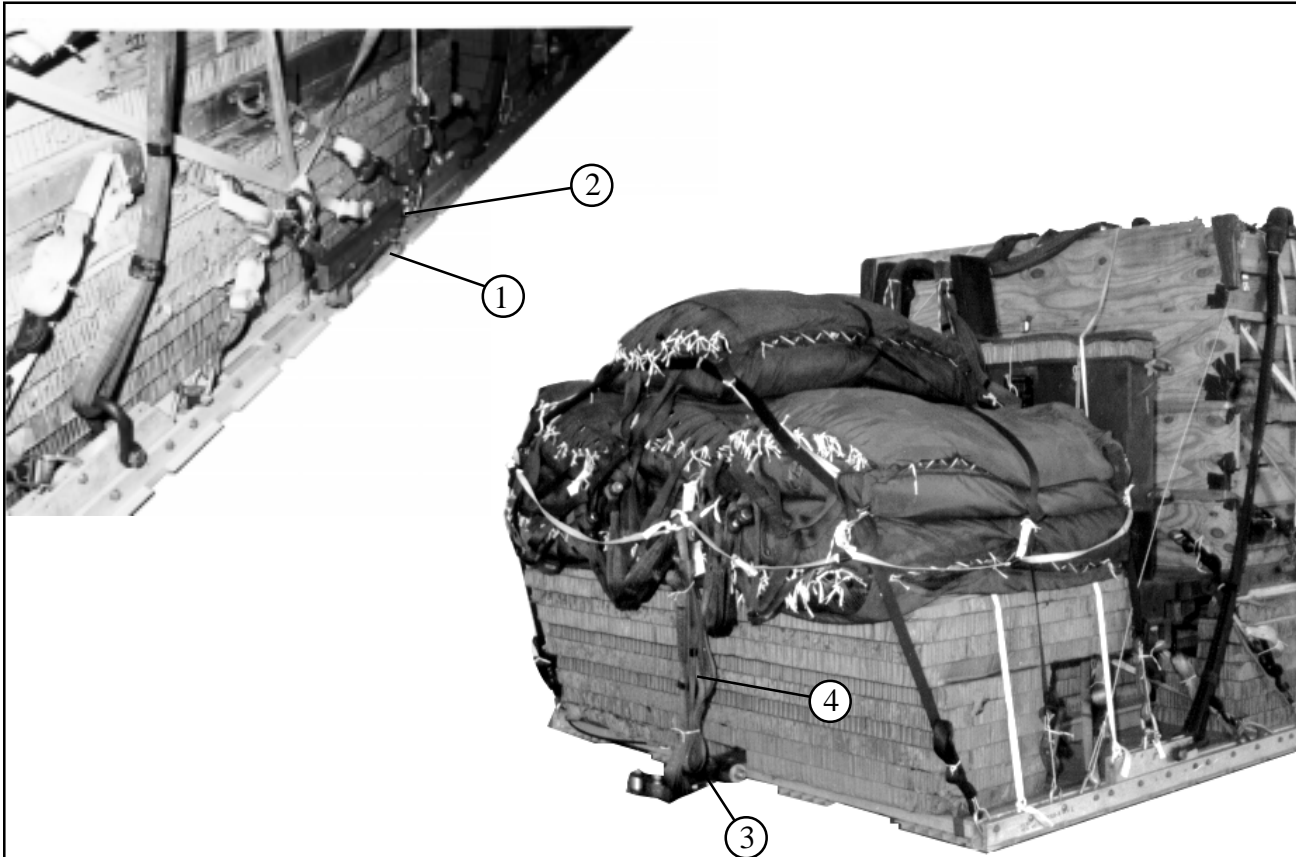


- ① Center a 24- by 36-inch piece of felt on top of the load with a 24-inch side against the fourth endboard. Place the M-2 release on the felt.
- ② Attach the suspension slings and riser extensions to the M-2 release. Secure the release to the load with type III nylon cord.
- ③ S-fold and tie any slack in the suspension slings with type I, 1/4-inch cotton webbing.

Figure 18-19. M-2 release installed

18-12. Installing Extraction System

Prepare and install the EFTC extraction system as shown in Figure 18-20, and according to FM 10-500-2/TO 13C7-1-5.



- ① Install the actuator mounting brackets to the rear holes in the left platform side rail.
- ② Install a 24-foot cable to the actuator. Install the actuator to the brackets.
- ③ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.
- ④ Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line. S-fold and tie the excess in two places with type I, 1/4-inch cotton webbing.

Figure 18-20. EFTC installed

18-13. Installing Provisions for Emergency Restraints

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

18-14. 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.

18-15. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 18-21. Complete Shipper's Declaration for Dangerous Goods and attach it to the load.

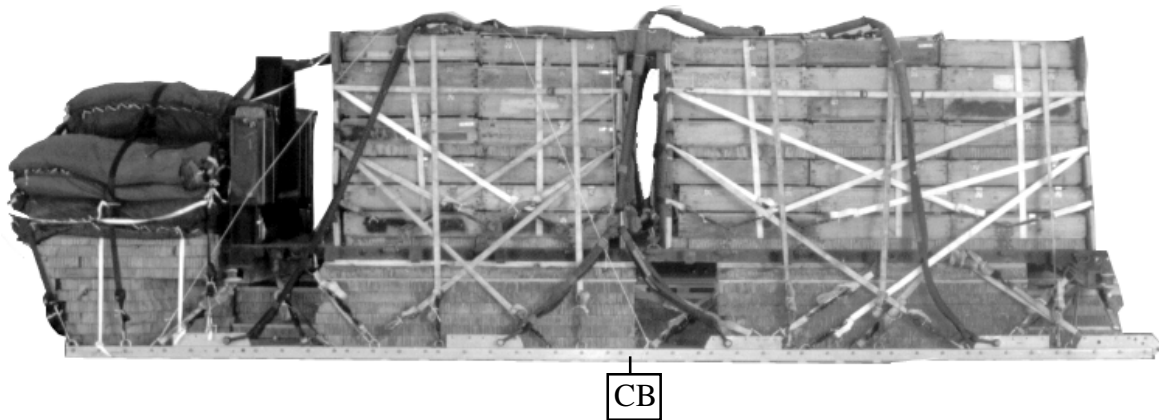
CAUTION

The load weight may vary from the one shown, depending upon the mass supplies being rigged. Be sure that the load is weighed, and the parachute requirements, CB, and tip-off curve recomputed.

18-16. Equipment Required

Use the equipment listed in Table 18-1 to rig this load.

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	33,343 pounds
Height		97 inches
Width		108 inches
Length		310 inches
Overhang:	Front	0 inches
	Rear	22 inches
CB (from front edge of platform)		132 inches
Extraction System (adds 18 inches to length of platform)		EFTC

Figure 18-21. PLS pallet with 105-millimeter ammunition rigged on a 24-foot platform for low-velocity airdrop

Table 18-1. Equipment required for rigging PLS with 105-millimeter ammunition on a 24-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)	14
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5782	Coupling, airdrop, extraction force transfer with cable, 24-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	8
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	
1670-01-064-4454	For C-130: 60-ft (6-loop), type XXVI	1
1670-01-062-6312	For C-141: 120-ft (6-loop), type XXVI	1
	For C-5:	
1670-01-062-6312	120-ft (6-loop), type XXVI and	1
1670-01-064-4454	60-ft (6-loop), type XXVI	1
No NSN	For C-17: 140-ft (6-loop), type XXVI	1
	Link assembly:	
1670-00-006-2752	Four-point	1
1670-01-307-0155	Three-point	2
1670-00-783-5988	Type IV	8
	Two-point, 5 1/2-in	
5306-00-435-8994	Bolt, 1-in diam, 4 in long	8
5310-00-232-5165	Nut, 1-in, hexagonal	8
1670-00-003-1954	Plate, side, 5 1/2-in	8
5365-00-007-3414	Spacer, large	8
	Lumber:	
5510-00-220-6146	2- by 4-in	As required
5510-00-220-6520	2- by 12-in	As required
5315-00-010-4659	Nail, steel wire, 8d	As required

Table 18-1. Equipment required for rigging PLS with 105-millimeter ammunition on a 24-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	46 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11C	7
1670-00-040-8135	Cargo extraction, 28-ft	2
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
	Platform, airdrop, type V, 24-foot	
1670-01-353-8425	Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(68)
1670-01-353-8424	Extraction bracket assembly	(1)
1670-01-162-2381	Link, tandem, suspension link assembly	(2)
1670-01-247-2389	Link, suspension bracket, type V	(8)
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	11 sheets
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo airdrop	
	For suspension:	
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	8
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6307	12-ft (4-loop), type XXVI nylon webbing	2
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	2
1670-01-064-4453	20-ft (4-loop), type XXVI nylon webbing	2
	For deployment:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6311	120-ft (2-loop), type XXVI nylon webbing	7
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	65
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-261-8584	Type X	As required

Section II

RIGGING A-22 CARGO BAGS

18-17. Description of Load

The Palletized Load System can be moved from the drop zone and transported on a specially designed truck. Bulk supplies are lashed to the pallet, giving the load integrity for transport. The pallet has swivel rings along the sides for lashing the load. The pallet is lashed to the airdrop platform for low-velocity airdrop. The load shown consists of eight A-22 cargo bags. Adapt these procedures to rig other items of bulk supplies. Ammunition listed in FM 10-500-53/MCRP No 4-3.8/TO 13C7-18-41 and certified for low-velocity airdrop may be rigged using these procedures. The rigged load may not be more than 100 inches high. Refer to FM 10-500-2/TO 13C7-1-5 for parachute requirements.

18-18. Preparing Platform

Prepare a 24-foot, type V airdrop platform as given below:

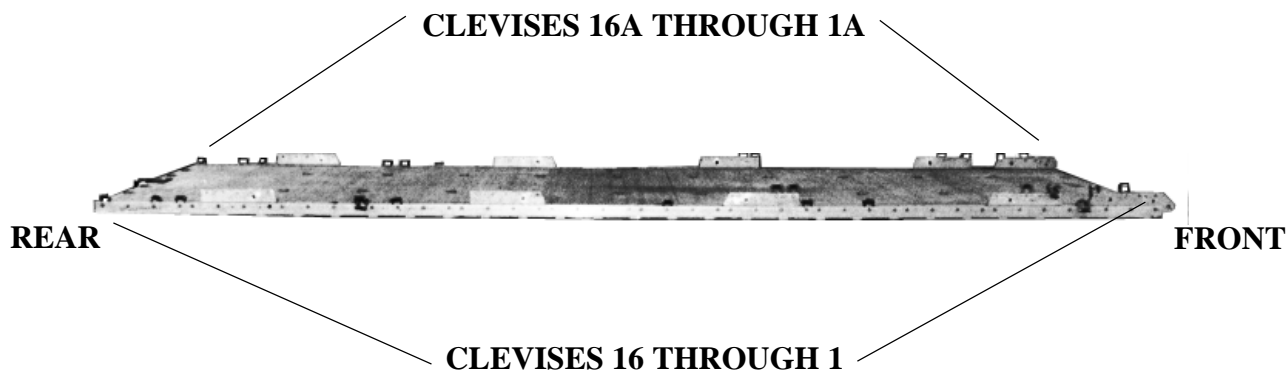
a. Inspecting Platform. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.

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

c. Installing Tandem Links. Install two tandem links as shown in Figure 18-22.

d. Attaching and Numbering Clevises. Attach and number 36 clevis assemblies as shown in Figure 18-22.

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:

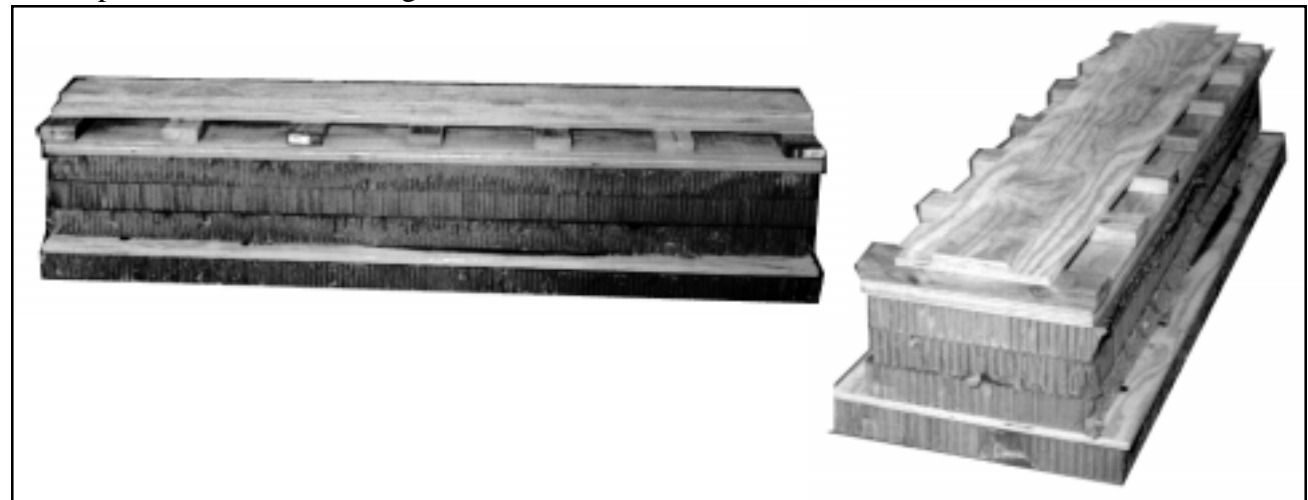
1. Install a suspension link in holes 18, 19, and 20 on each platform side rail.
2. Install a suspension link in holes 6, 7, and 8 on each platform side rail.
3. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
4. Install a suspension link in holes 29, 30, and 31 on each platform side rail.
5. Install a suspension link in holes 41, 42, and 43 on each platform side rail.
6. Install clevises on bushings 3 and 4 of each front tandem link.
7. Install clevises on bushings 1 and 3 of each first suspension link.
8. Install clevises on bushings 1 and 2 of each second suspension link.
9. Starting at the front of the platform, install clevises on each platform side rail using the bushings bolted on holes 4, 14, 17, 23, 35, 37, 38, 45, 46, and 48.
10. Install one additional clevis on bushings 4 and 37 on each side of the platform.
11. Starting at the front of the platform, number the clevises bolted to the right side of the platform from 1 through 16, and those bolted to the left side from 1A through 16A.

Note: The two additional clevises on each side of the platform function as bridge clevises. Do not number them apart from the clevises bolted on the platform rail bushings.

Figure 18-22. Platform prepared

18-19. Preparing and Positioning Honeycomb Stacks

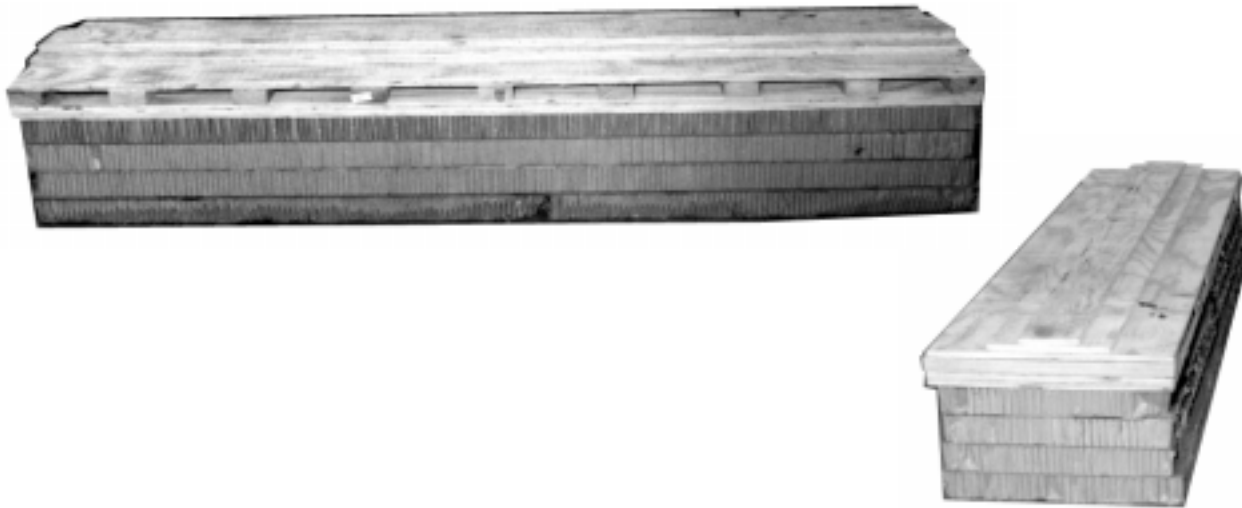
Prepare ten honeycomb stacks as shown in Figures 18-23 through 18-25. Position the stacks on the platform as shown in Figure 18-26.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1, 2, 5, and 6	1	24	76	Honeycomb	Glue plywood flush over honeycomb to form base.
	1	24	76	3/4-inch plywood	
	3	18	76	Honeycomb	Center and glue on base.
	2	18	76	3/4-inch plywood	Glue flush over honeycomb.
	7	18	*3 1/2	2- by 4-inch lumber	Nail one piece flush over each end of the plywood. Center a third piece between the ends. Space two pieces evenly between each end piece and the center piece.
	1	12	76	3/4-inch plywood	
	1	6	76	3/4-inch plywood	

* Two- by four-inch lumber is actually 3 1/2 inches wide.

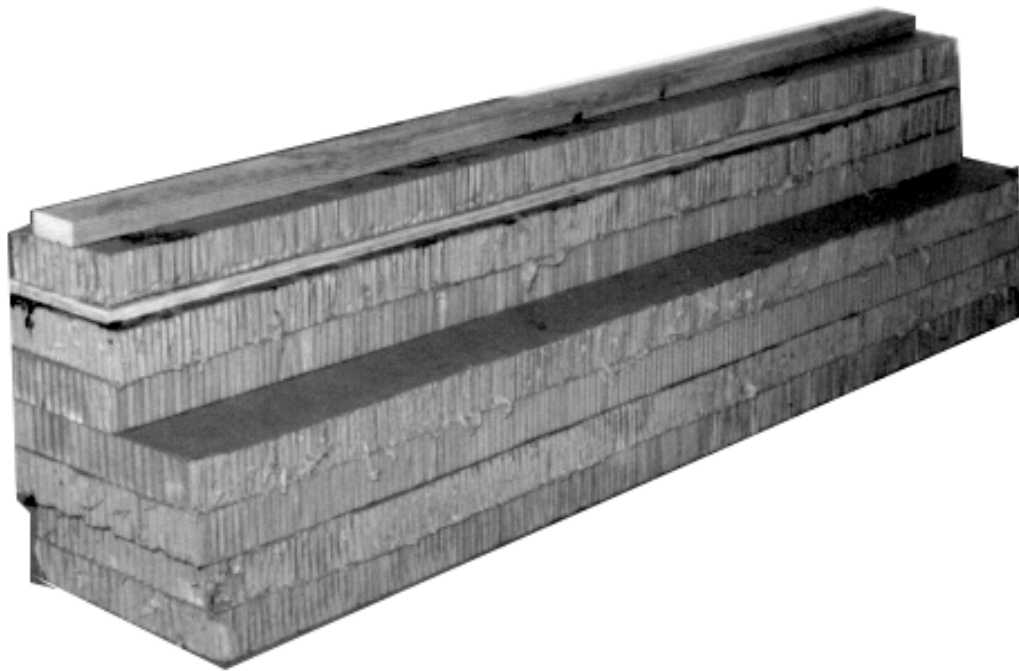
Figure 18-23. Stacks 1,2, 5, and 6 prepared



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3 and 4	4	24	96	Honeycomb	Glue flush to form base.
	2	24	96	3/4-inch plywood	Glue flush over honeycomb.
	9	24	*3 1/2	2- by 4-inch lumber	Nail one piece flush over each end of the plywood. Center a third piece between the ends. Space three pieces evenly between each end piece and the center piece.
	1	24	96	3/4-inch plywood	Center and nail over lumber.
	1	12	96	3/4-inch plywood	Center and nail over plywood.
	1	6	96	3/4-inch plywood	Center and nail over plywood.

* Two- by four-inch lumber is actually 3 1/2 inches wide.

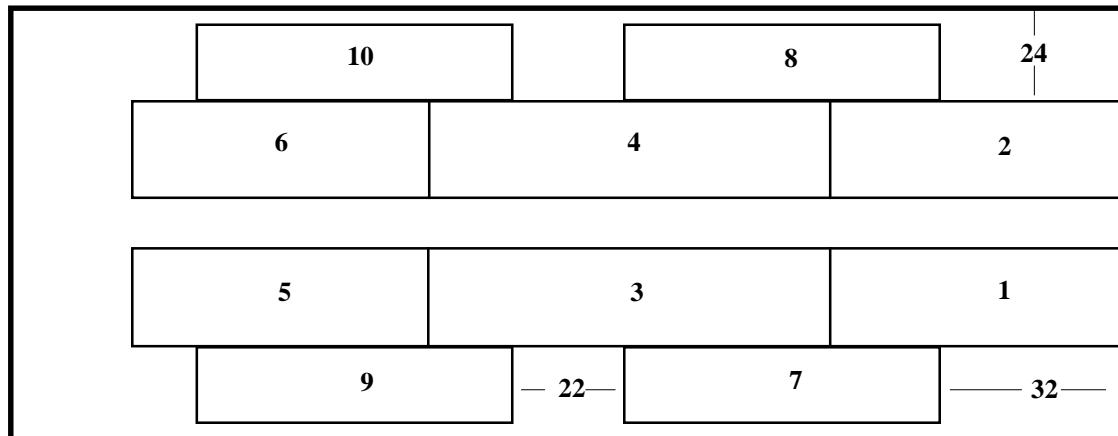
Figure 18-24. Stacks 3 and 4 prepared



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
7, 8, 9, and 10	4	16	84	Honeycomb	Glue flush to form base.
	2	9	84	Honeycomb	Glue flush on one side of base.
	1	9	84	3/4-inch plywood	Glue flush over honeycomb.
	1	9	84	Honeycomb	Glue flush over plywood.
	1	*3 1/2	84	2- by 4-inch lumber	Center and glue on honeycomb.

Figure 18-25. Stacks 7, 8, 9, and 10 prepared

Notes: 1. This drawing is not to scale.
 2. All dimensions are in inches.

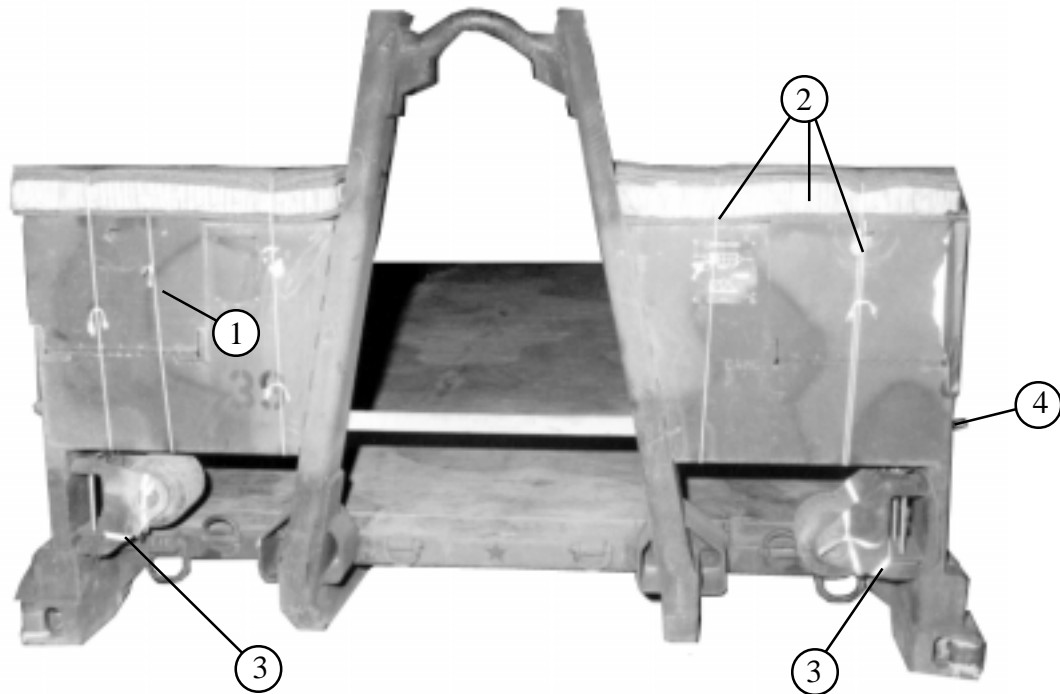


Stack Number	Position of Stack on Platform
1	Place stack: Flush with the front edge of the platform and 24 inches from the right inside platform edge.
2	Flush with the front edge of the platform and 24 inches from the left inside platform edge.
3	Against and aligned behind stack 1.
4	Against and aligned behind stack 2.
5	Against and aligned behind stack 3.
6	Against and aligned behind stack 4.
7	32 inches from the front edge of the platform and flush with the right sides of stacks 1 and 3.
8	32 inches from the front edge of the platform and flush with the left side of stacks 2 and 4.
9	22 inches to the rear of stack 7 and flush with the right side of stacks 3 and 5.
10	22 inches to the rear of stack 8 and flush with the left side of stacks 4 and 6.

Figure 18-26. Honeycomb stacks positioned on platform

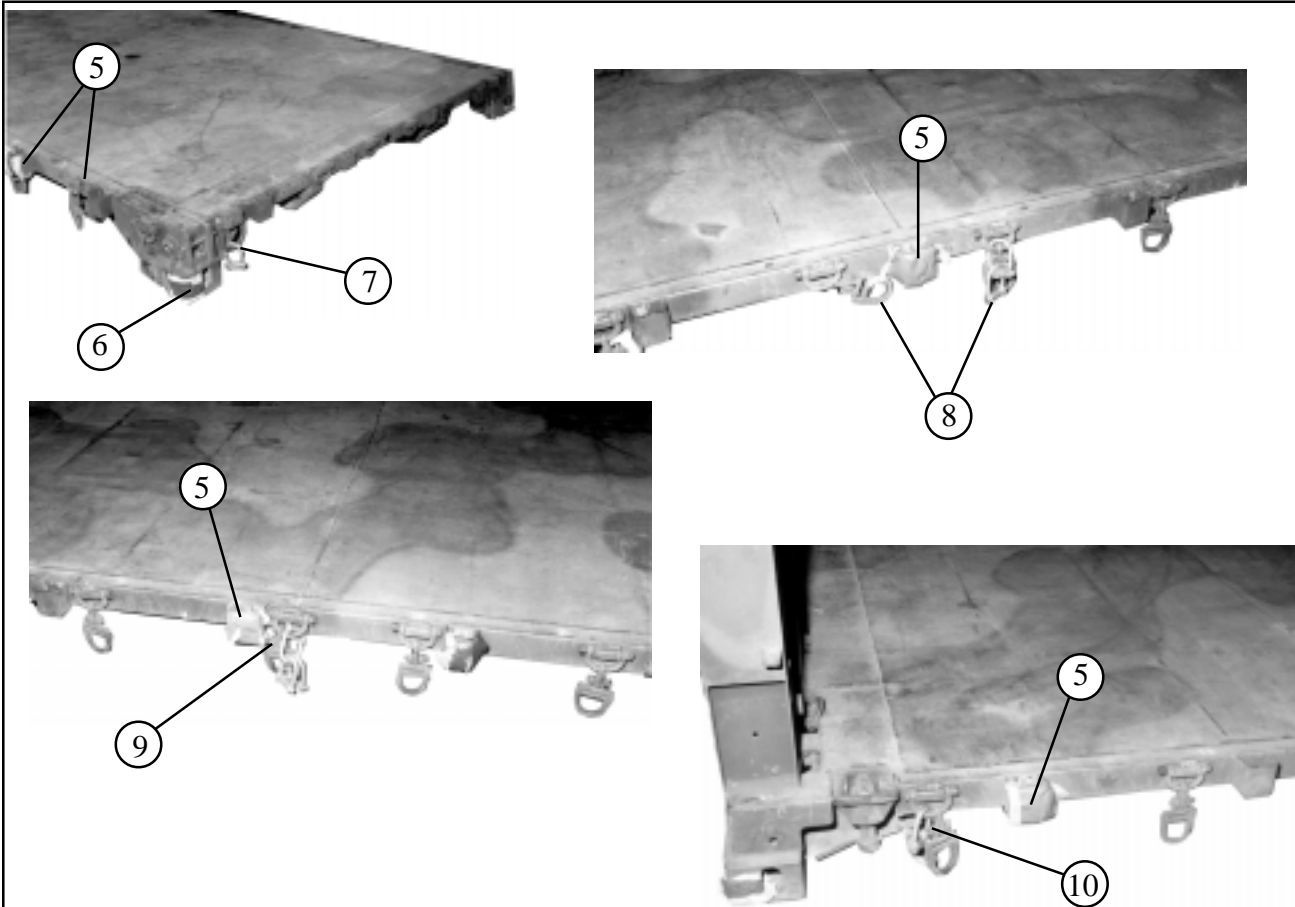
18-20. Preparing PLS Pallet

Prepare the pallet as shown in Figure 18-27.



- ① Tie the storage compartments on each side shut with type III nylon cord.
- ② Pad the top of each box area with a 7- by 30-inch piece of felt, a 7- by 30-inch piece of honeycomb, and two 7- by 30-inch pieces of felt. Tie the padding in place with two lengths of type III nylon cord.
- ③ Remove the wheels and secure them in place with the pins provided. Tie the wheels to their brackets with a length of 1/2-inch tubular nylon webbing.
- ④ Pad the fixtures on the outsides of the boxes with cellulose wadding and tape.

Figure 18-27. Pallet prepared

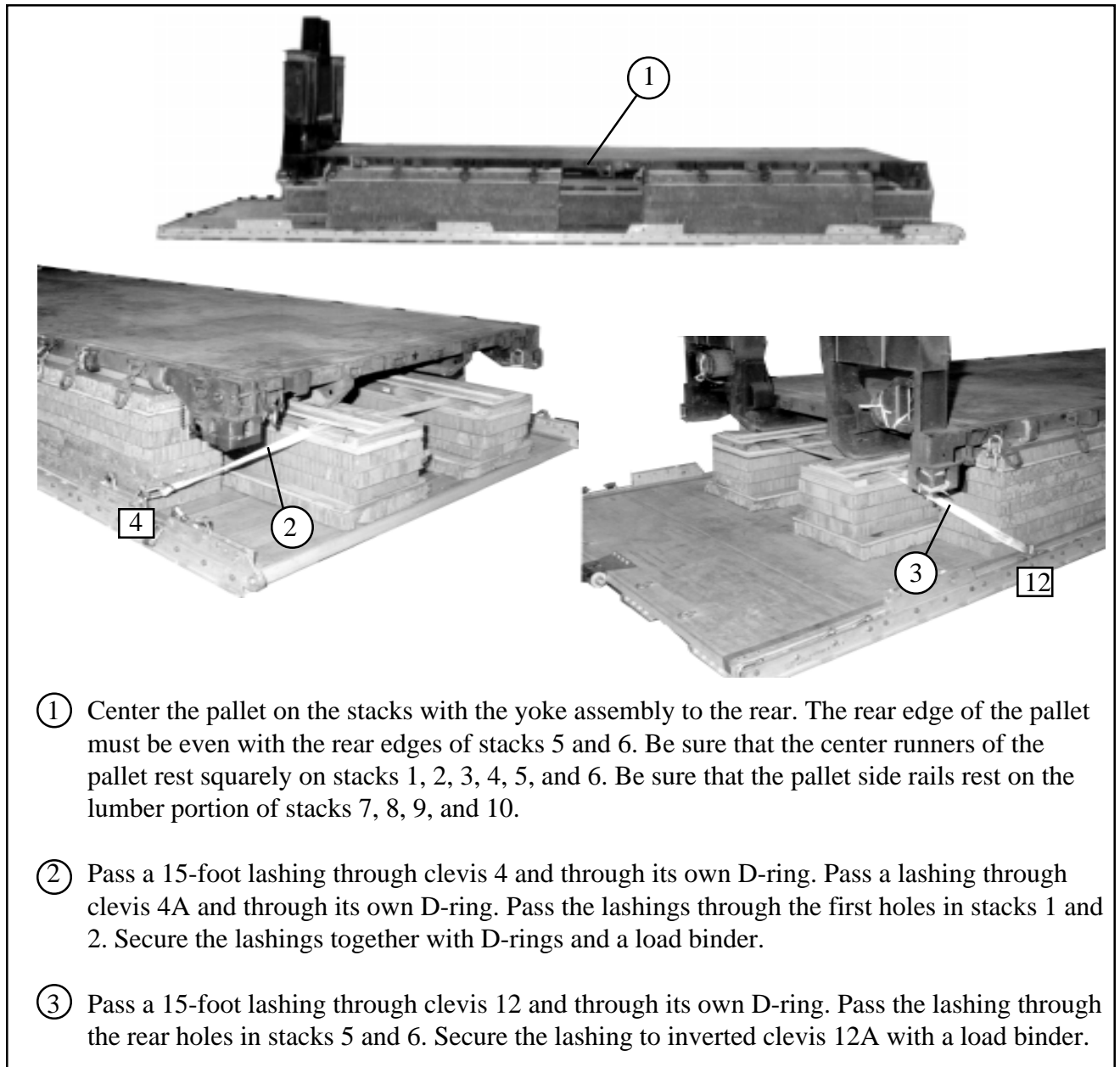


- ⑤ Pad the first, second, third, fifth, and ninth stake brackets on each side with cellulose wadding and tape.
- ⑥ Pad all four corners of the PLS pallet around the bottom holes with cellulose wadding and tape as shown.
- ⑦ Add a platform clevis to each of the large tie-down brackets at the rear of the PLS pallet.
- ⑧ Place two clevises on the bracket for the sixth swivel ring on each side. Tie the seventh swivel ring to the stake bracket with type I, 1/4-inch cotton webbing.
- ⑨ Add three platform clevises to the fourth swivel ring bracket on each side of the PLS pallet.
- ⑩ Add two clevises to the eleventh swivel ring bracket on each side of the PLS pallet.

Figure 18-27. Pallet prepared (continued)

18-21. Positioning Pallet on Platform

Position the pallet on the platform and install the restraint lashings around the honeycomb stacks as shown in Figure 18-28.

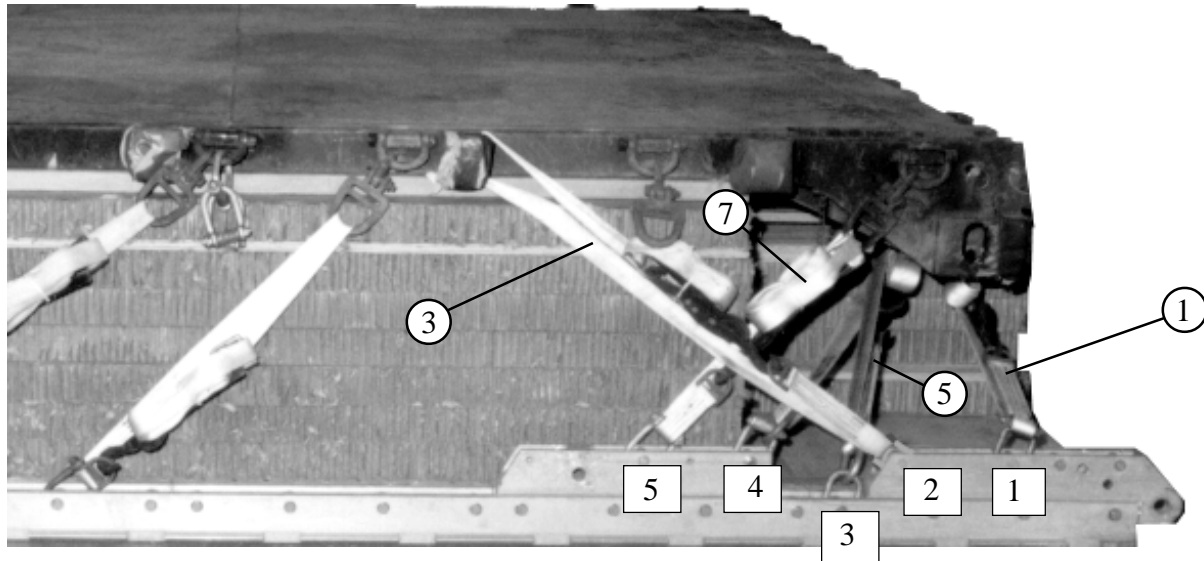


- ① Center the pallet on the stacks with the yoke assembly to the rear. The rear edge of the pallet must be even with the rear edges of stacks 5 and 6. Be sure that the center runners of the pallet rest squarely on stacks 1, 2, 3, 4, 5, and 6. Be sure that the pallet side rails rest on the lumber portion of stacks 7, 8, 9, and 10.
- ② Pass a 15-foot lashing through clevis 4 and through its own D-ring. Pass a lashing through clevis 4A and through its own D-ring. Pass the lashings through the first holes in stacks 1 and 2. Secure the lashings together with D-rings and a load binder.
- ③ Pass a 15-foot lashing through clevis 12 and through its own D-ring. Pass the lashing through the rear holes in stacks 5 and 6. Secure the lashing to inverted clevis 12A with a load binder.

Figure 8-28. Pallet positioned and restraint lashing installed

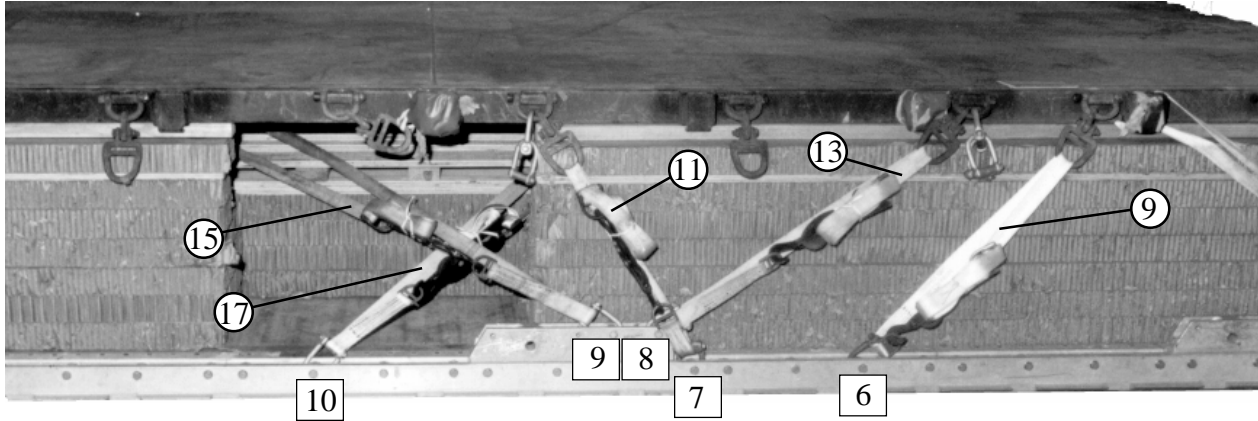
18-22. Lashing PLS Pallet to Platform

Lash the PLS pallet to the platform as shown in Figure 18-29.



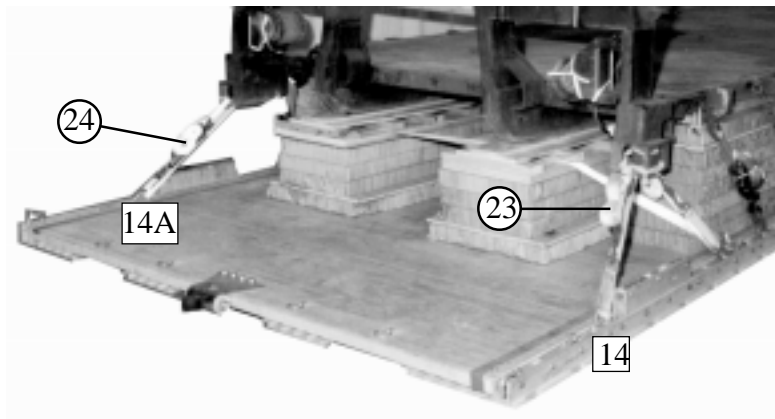
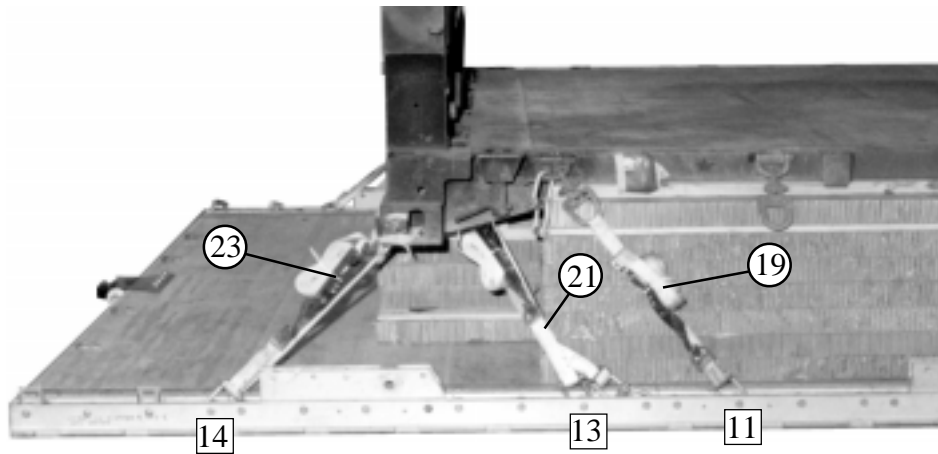
Lashing Number	Tie-down Clevis Number	Instructions
1	1	Pass lashing: Through the right front inside tie-down point.
2	1A	Through the left front inside tie-down point.
3	2	Through the second stake bracket.
4	2A	Through the second stake bracket.
5	3	Through the right front outside tie-down point.
6	3A	Through the left front outside tie-down point.
7	5	Through the first swivel ring.
8	5A	Through the first swivel ring.

Figure 18-29. Pallet lashed to platform



Lashing Number	Tie-down Clevis Number	Instructions
9	6	Pass lashing:
10	6A	Through the third swivel ring.
11	7	Through the third swivel ring.
12	7A	Through the sixth swivel ring.
13	8	Through the sixth swivel ring.
14	8A	Through the fourth swivel ring.
15	9	Through the fourth swivel ring.
16	9A	Through the rear holes in the skid.
17	10	Through the rear holes in the skid.
18	10A	Through the front holes in the skid.

Figure 18-29. Pallet lashed to platform (continued)



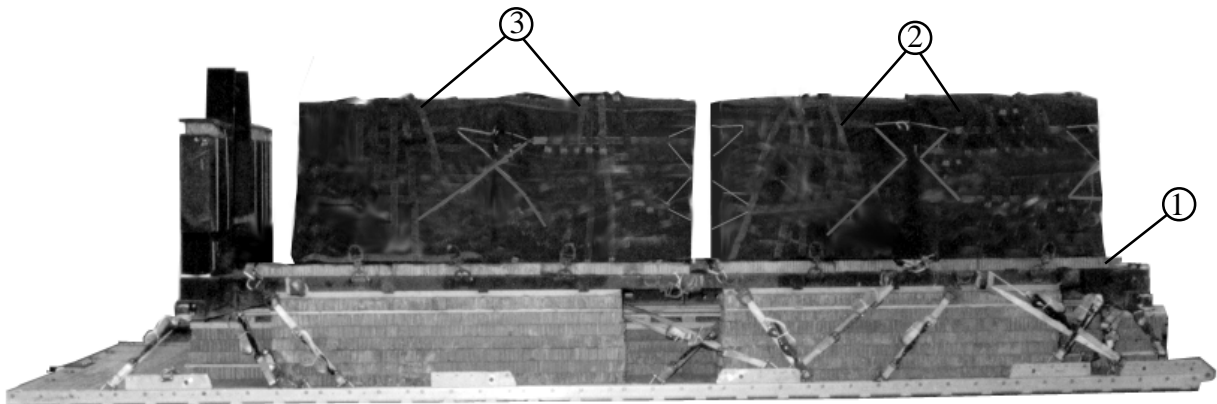
Lashing Number	Tie-down Clevis Number	Instructions
19	11	Pass lashing: Through the eleventh swivel ring.
20	11A	Through the eleventh swivel ring.
21	13	Through the right corner tie-down ring.
22	13A	Through the left corner tie-down ring.
23	14	Through the right corner hole.
24	14A	Through the left corner hole.

Figure 18-29. Pallet lashed to platform (continued)

18-23. Placing and Lashing the Load

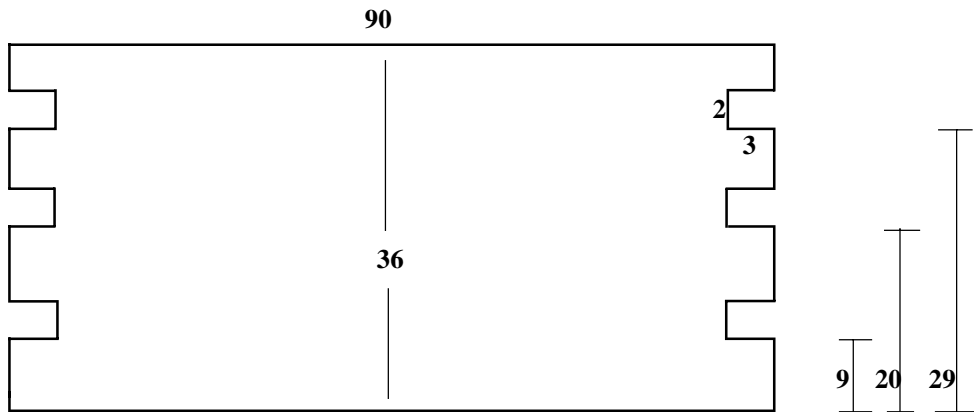
Cover the pallet with a layer of honeycomb and place eight A-22 containers on the pallet as shown in Figure 18-30. Construct four endboards as shown in Figure 18-31. Lash the

containers and endboards to the front section of the pallet as shown in Figure 18-32. Lash the containers and endboards to the rear section of the pallet as shown in Figure 8-33.



- ① Cover the pallet with 96- by 36-inch pieces of honeycomb, beginning 4 1/2 inches from the front edge. Space the third and fourth pieces 8 inches apart.
- ② Place four A-22 containers on the honeycomb, 8 inches from the front edge of the pallet. Allow space for the endboards to rest on the honeycomb.
- ③ Place four A-22 containers on the second section of honeycomb, at least 8 inches from the containers placed in step 2 above. Allow space for the endboards to rest on the honeycomb.

Figure 18-30. Honeycomb and A-22 containers placed on the pallet

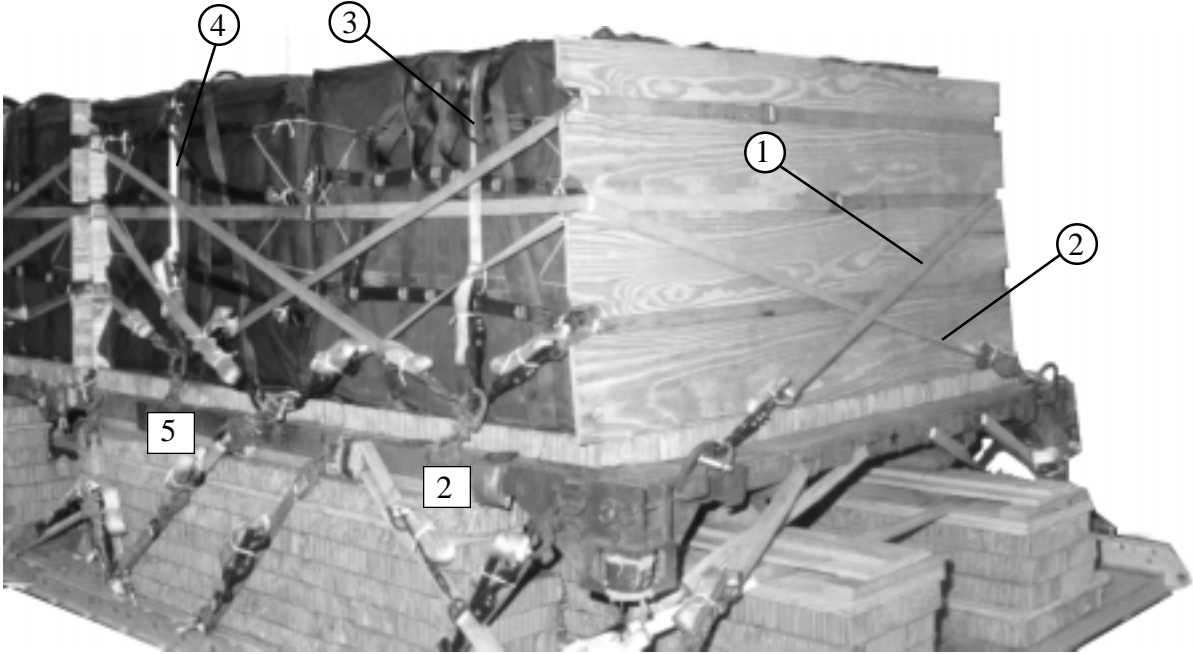


- Notes:**
1. For loads different from that shown in this section, make the endboards the same height as the load configuration.
 2. The instructions given are for one endboard. Four are required for this load.
 3. All dimensions are given in inches.
 4. This drawing is not to scale.

Step:

1. Cut four 90- by 36-inch pieces of 3/4-inch plywood.
2. Make 2- by 3-inch cutouts as shown. Tape the sharp edges of the cutouts.
3. Place an endboard against the front and rear of each of the two groups of containers (not shown).

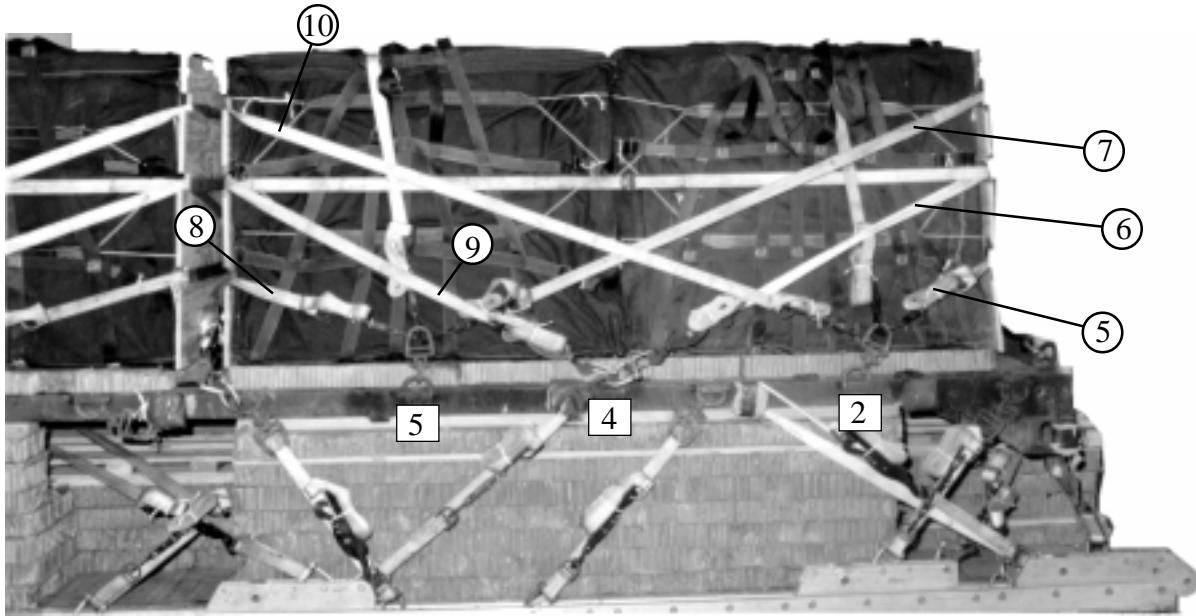
Figure 18-31. Four endboards constructed



Notes: 1. * denotes 30-foot lashing.
 2. Secure all lashings to the pallet with load binders.

Lashing Number	Pallet Ring Number	Instructions
*1		Run the lashing from the right front tie-down to the left middle cutout in the front endboard, and around the left side. Pass the lashing through the left middle cutout in the second endboard. Secure the lashing to the end clevis on the sixth pallet ring on the right side.
*2		Run the lashing from the left front tie-down to the right middle cutout in the front endboard, and around the right side. Pass the lashing through the right middle cutout in the second endboard. Secure the lashing to the end clevis on the sixth pallet ring on the left side.
3	2 and 2A	Run the lashing over the tops of the first two containers.
4	5 and 5A	Run the lashing over the tops of the second two containers.

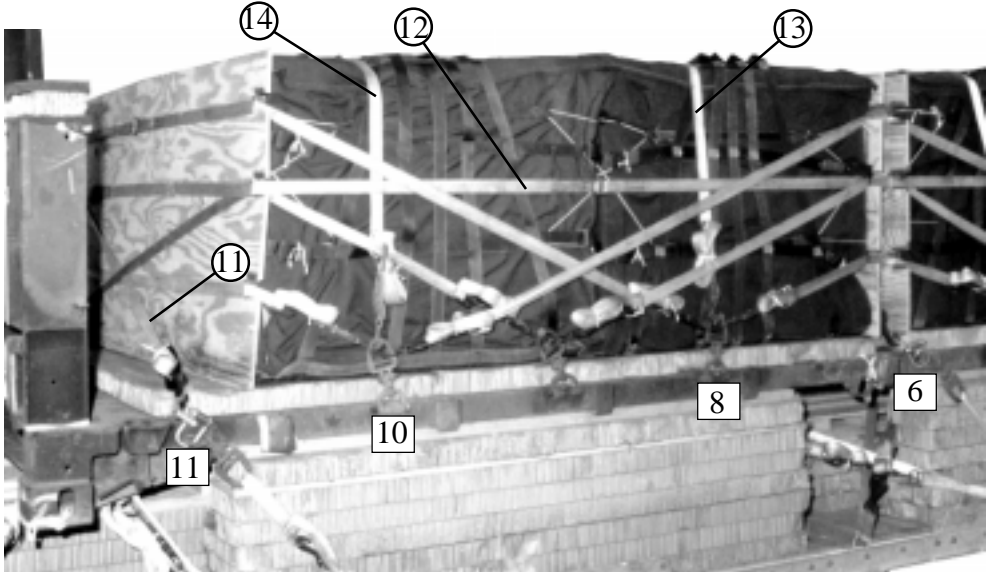
Figure 8-32 . First four containers lashed to pallet



**Notes: 1. * denotes 30-foot lashing.
 2. Secure all lashings to the pallet with load binders.**

Lashing Number	Pallet Ring Number	Instructions
5	2 and 2A	Run a lashing from the second pallet ring on each side through the lower cutouts in the first endboard.
*6	4 and 4A	Run a lashing from one of the end clevises on the fourth pallet ring on each side through the middle cutouts in the first endboard.
*7	5 and 5A	Run a lashing from the fifth pallet ring on both sides through the upper cutouts in the first endboard.
8	5 and 5A	Run a lashing from the fifth pallet ring on each side through the lower cutouts in the second endboard.
*9	4 and 4A	Run a lashing from the remaining end clevis on the fourth pallet ring on each side through the middle cutouts on the second endboard.
*10	2 and 2A	Run a lashing from the second pallet ring on each side through the upper cutouts in the second endboard.

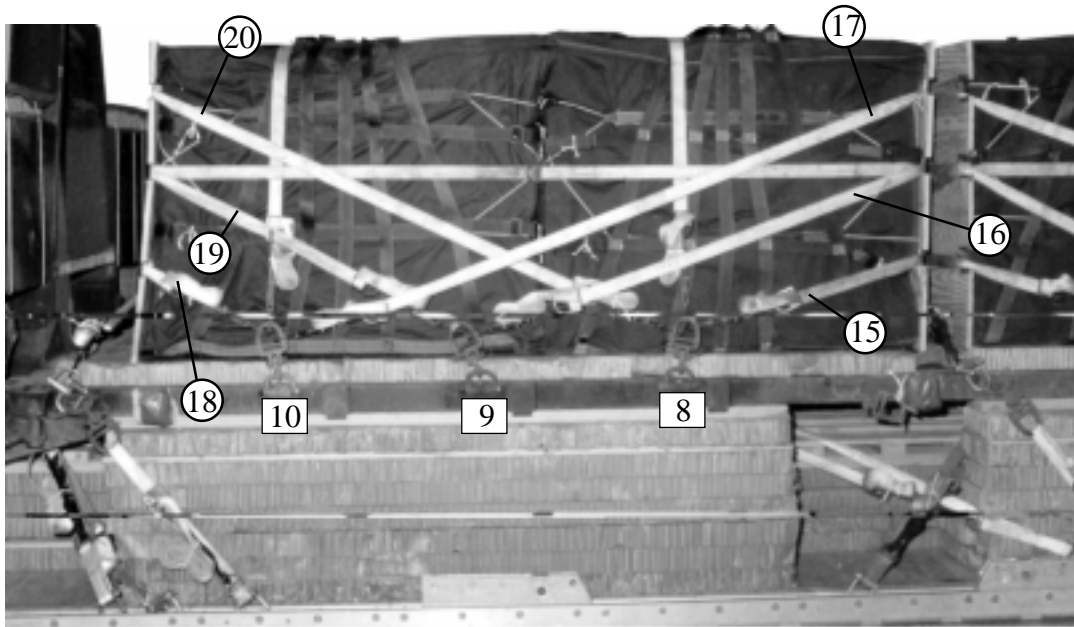
Figure 8-32 . First four containers lashed to pallet (continued)



- Notes:** 1. * denotes 30-foot lashing.
 2. Secure all lashings to the pallet with load binders.

Lashing Number	Pallet Ring Number	Instructions
*11	6 and 11	Run the lashing from the end clevis on the sixth pallet ring to the left middle cutout in the third endboard, and around the left side. Pass the lashing through the left middle cutout in the rear endboard. Secure the lashing to the end clevis on the eleventh pallet ring on the right side.
*12	6A and 11A	Run the lashing from the end clevis on the sixth pallet ring to the right middle cutout in the third endboard, and around the right side. Pass the lashing through the right middle cutout in the rear endboard. Secure the lashing to the end clevis on the eleventh pallet ring on the left side.
13	8 and 8A	Run the lashing over the tops of the first two containers.
14	10 and 10A	Run the lashing over the tops of the second two containers.

Figure 8-33. Second four containers lashed to pallet



Notes: 1. * denotes 30-foot lashing.
 2. Secure all lashings to the pallet with load binders.

Lashing Number	Pallet Ring Number	Instructions
15	8 and 8A	Run a lashing from the eighth pallet ring on each side through the lower cutouts in the third endboard.
*16	9 and 9A	Run a lashing from the ninth pallet ring on each side through the middle cutouts in the third endboard.
*17	10 and 10A	Run a lashing from the tenth pallet ring on both sides through the upper cutouts in the third endboard.
18	10 and 10A	Run a lashing from the tenth pallet ring on each side through the lower cutouts in the rear endboard.
*19	9 and 9A	Run a lashing from the ninth pallet ring on each side through the middle cutouts in the rear endboard.
*20	8 and 8A	Run a lashing from the eighth pallet ring on each side through the upper cutouts in the rear endboard.

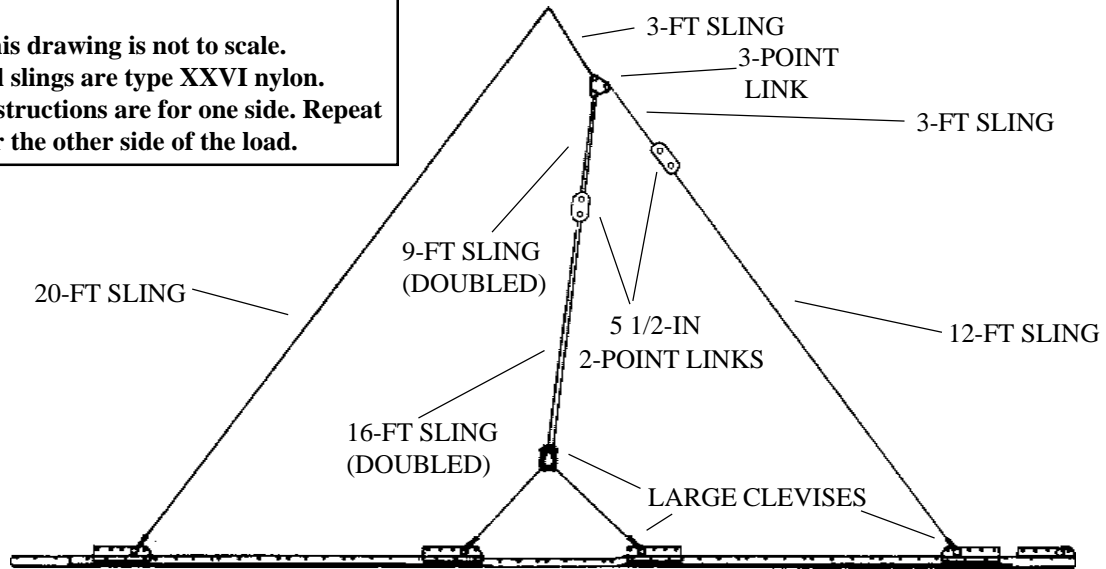
Figure 8-33. Second four containers lashed to pallet (continued)

18-24. Installing and Safetying Suspension Slings

Install the components of the centerline suspension system according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 18-34. Safety the suspension slings as shown in Figure 18-35.

Notes:

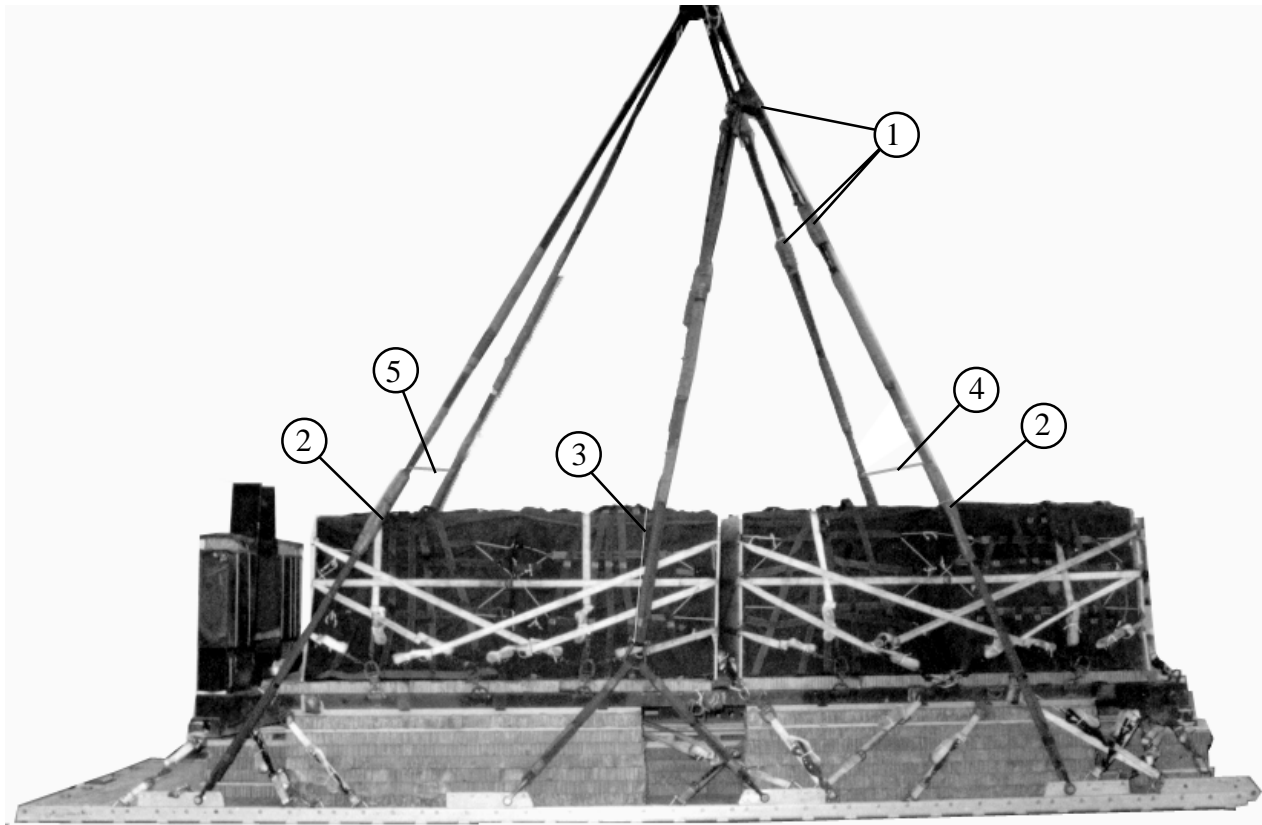
1. This drawing is not to scale.
2. All slings are type XXVI nylon.
3. Instructions are for one side of the load. Repeat for the other side of the load.



Step:

1. Place the end loop of a 12-foot (4-loop) sling in the bell of a large clevis. Bolt the clevis to the front suspension link. Connect the free end of the 12-foot sling to a 3-foot (4-loop) sling with a 5 1/2-inch two-point link.
2. Attach a 3-foot (4-loop) sling to each center suspension link with a large clevis. Place both 3-foot slings in the bell of a large clevis. Pass a 16-foot (2-loop) sling through one spool of a 5 1/2-inch two-point link. Place both ends of the 16-foot sling in the bolt of the large clevis.
3. Pass a 9-foot (2-loop) sling through a spool of a three-point link. Place both ends of the sling in the remaining spool of the two-point link used in step 2 above.
4. Bolt the 3-foot sling used in step 1 above to the three-point link so that the third spool points upward. Bolt a 3-foot (4-loop) sling to the upper spool of the three-point link.
5. Place the end loop of a 20-foot (4-loop) sling in the bell of a large clevis. Bolt the clevis to the rear suspension link.

Figure 18-34. Suspension slings installed



- ① Pad the two-point and three-point links with felt and tape. Raise the suspension slings.
- ② Pad the suspension slings where they pass over the corners of the load with felt and tape.
- ③ Tie a length of type III nylon cord to the center clevis on one side. Pass the cord over the load, and tie it to the center clevis on the other side so that both clevises are supported.
- ④ Tie the front suspension slings to each other 12 inches above the load with 1/2-inch tubular nylon webbing.
- ⑤ Tie the rear suspension slings to each other 12 inches above the load with 1/2-inch tubular nylon webbing.

Figure 18-35. Suspension slings safetied

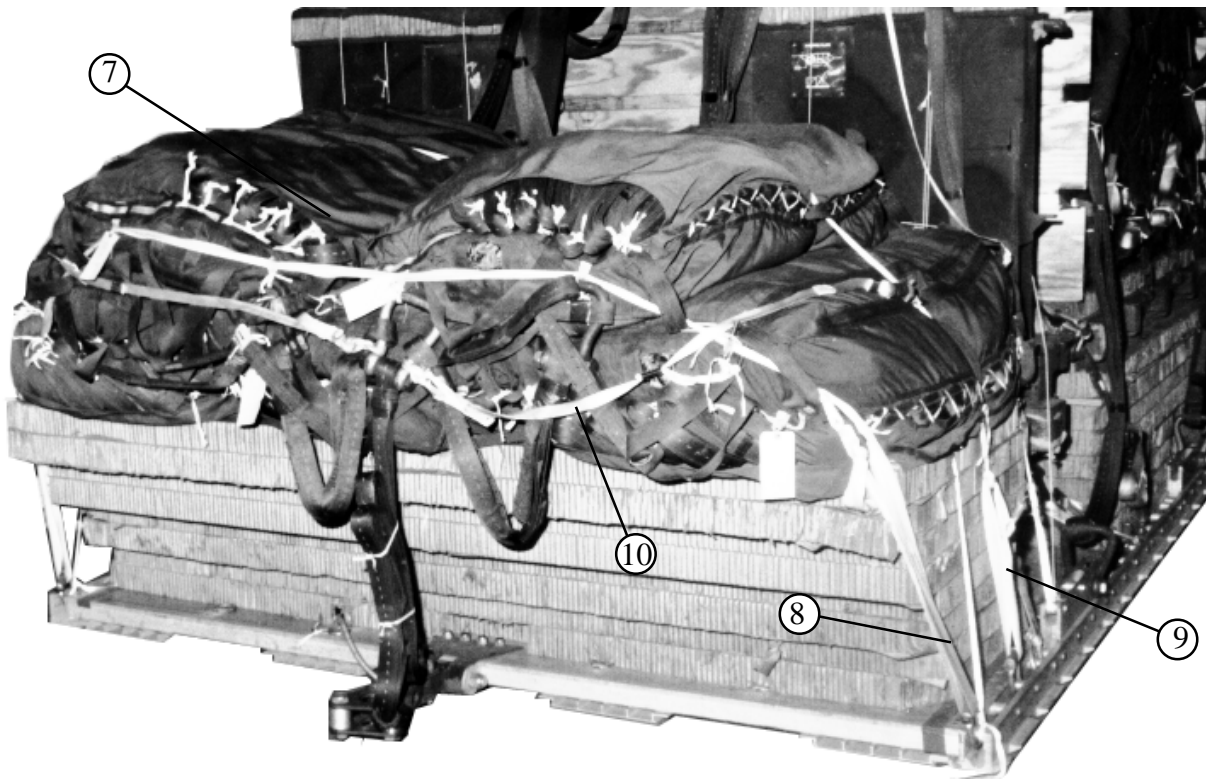
18-25. Building Parachute Stowage Platform and Installing Cargo Parachutes

Build the parachute stowage platform and install five G-11C cargo parachutes as shown in Figure 18-36.



- ① Alternate and glue two 96- by 36-inch and four 96- by 6-inch pieces of honeycomb to form a two-layer base 96- by 42 inches. Cut a channel in the bottom layer of honeycomb to accommodate the EFTC cable.
- ② Alternate and glue two 96- by 36-inch and two 96- by 8-inch pieces of honeycomb to form two 96- by 44-inch pieces. Place these layers over the base and flush with the front edge.
- ③ Alternate and glue two 96- by 36-inch and two 96- by 10-inch pieces of honeycomb to form two 96- by 46-inch pieces. Place these layers over the base and flush with the front edge.
- ④ Cut the front corners of the honeycomb placed in steps 1, 2 and 3 above to allow for the lashings.
- ⑤ Alternate and glue two 96- by 36-inch and two 96- by 12-inch pieces of honeycomb to form two 96- by 48-inch pieces. Place these layers over the base and flush with the front edge.
- ⑥ Secure the parachute stowage platform to the rails with a length of 1/2-inch tubular nylon webbing tied to the fourth bushing on each rear suspension link, and to bushing 48 on each side.

Figure 18-36. Parachute stowage platform built and cargo parachutes installed

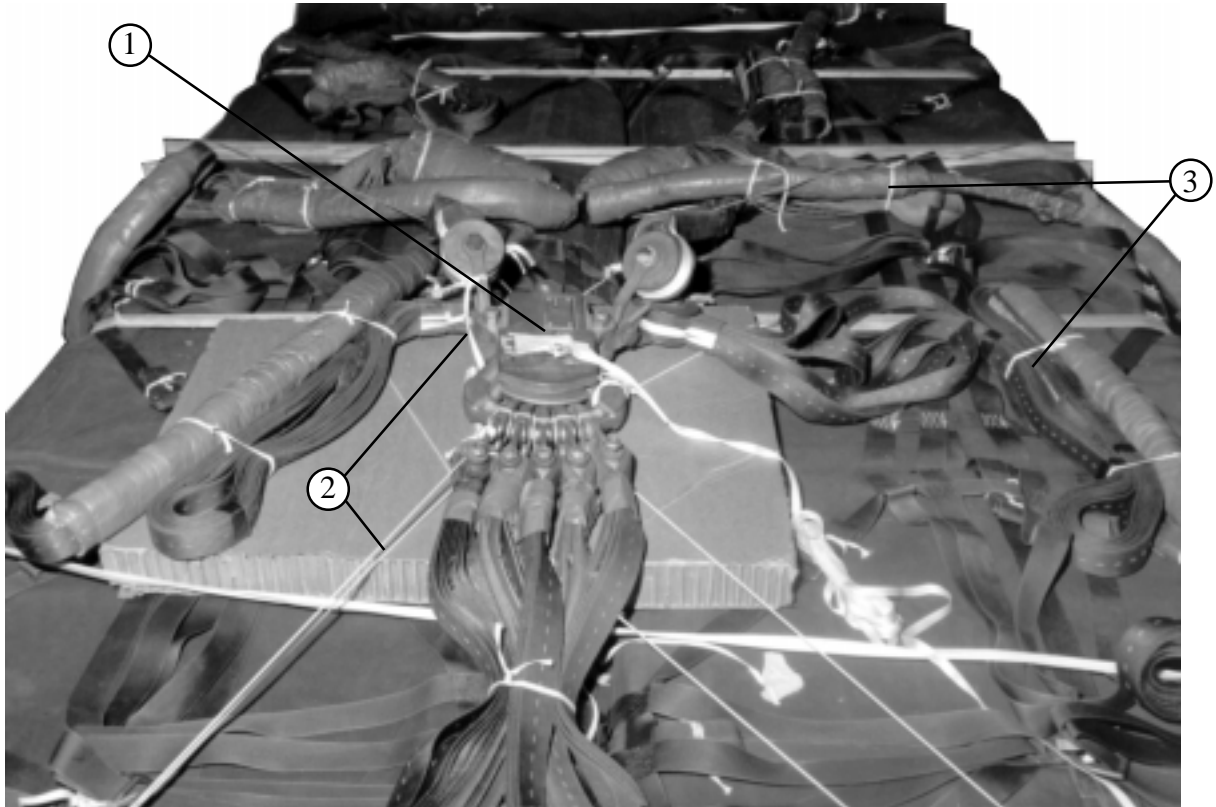


- ⑦ Cluster five G-11C cargo parachutes on the parachute stowage platform.
- ⑧ Tie the rear restraint strap to clevises 16 and 16A.
- ⑨ Tie the front restraint strap to clevises 15 and 15A.
- ⑩ Install the parachute release knives.

Figure 18-36. Parachute stowage platform built and cargo parachutes installed (continued)

18-26. Installing Parachute Release

Prepare and install an M-2 cargo parachute release as shown in Figure 18-37, and according to FM 10-500-2/TO 13C7-1-5.

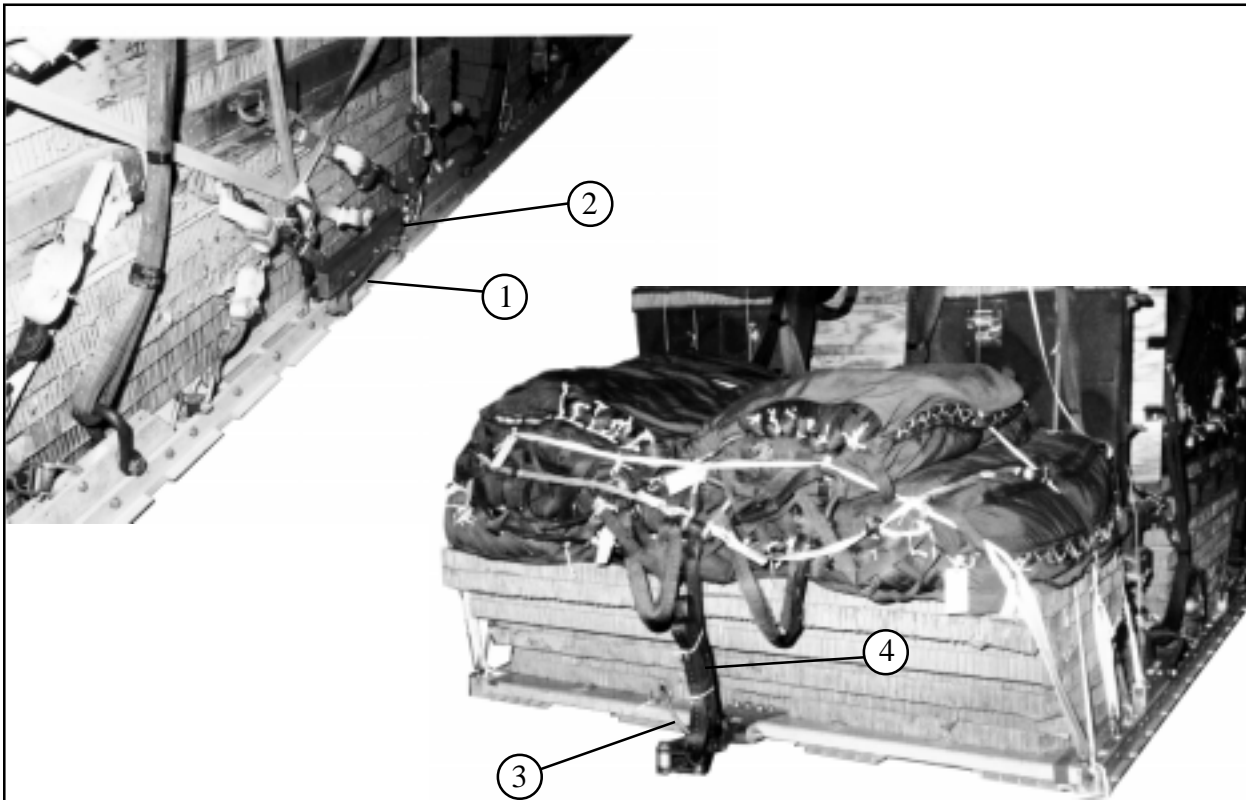


- ① Center a 36- by 24-inch piece of honeycomb on top of the load between the third and fourth endboards. Place the M-2 release on the honeycomb.
- ② Attach the suspension slings and riser extensions to the M-2 release. Secure the release to the load with type III nylon cord.
- ③ S-fold and tie any slack in the suspension slings with type I, 1/4-inch cotton webbing.

Figure 18-37. M-2 release installed

18-27. Installing Extraction System

Prepare and install the EFTC extraction system as shown in Figure 18-38, and according to FM 10-500-2/TO 13C7-1-5.



- ① Install the actuator mounting brackets to the rear holes in the left platform side rail.
- ② Install a 24-foot cable to the actuator. Install the actuator to the brackets.
- ③ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.
- ④ Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line. S-fold and tie the excess in two places with type I, 1/4-inch cotton webbing.

Figure 18-38. EFTC installed

18-28. Installing Provisions for Emergency Restraints

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

18-29. 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.

18-30. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 18-39.

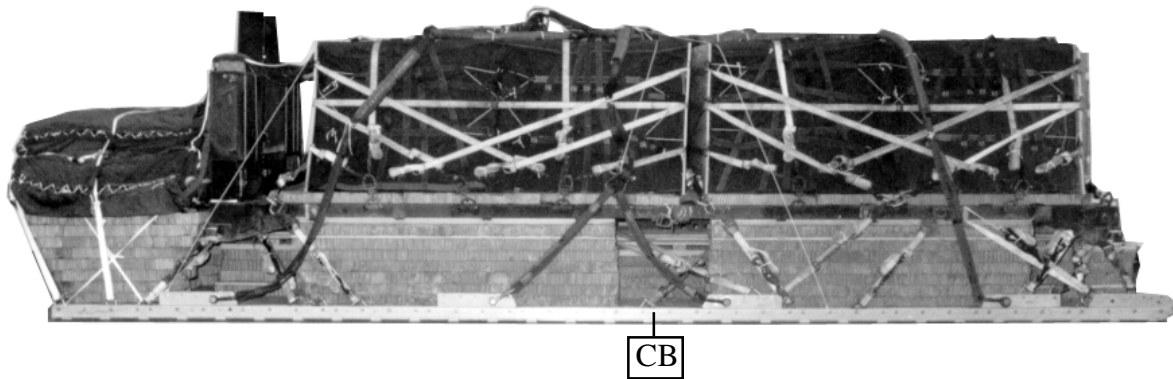
CAUTION

The load weight may vary from the one shown, depending upon the mass supplies being rigged. Be sure that the load is weighed, and the parachute requirements, CB, and tip-off curve recomputed.

18-31. Equipment Required

Use the equipment listed in Table 18-2 to rig this load.

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	24,278 pounds
Height		84 inches
Width		108 inches
Length		288 inches
Overhang:	Front	0 inches
	Rear	0 inches
CB (from front edge of platform)		137 inches
Extraction System (adds 18 inches to length of platform)		EFTC

Figure 18-39. PLS pallet with A-22 containers rigged on a 24-foot platform for low-velocity airdrop

Table 18-2. Equipment required for rigging PLS with A-22 containers on a 24-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)	14
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5782	Coupling, airdrop, extraction force transfer with cable, 24-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	6
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
1670-01-307-0155	Three-point	2
1670-00-783-5988	Type IV	6
	Two-point, 5 1/2-in	
5306-00-435-8994	Bolt, 1-in diam, 4 in long	10
5310-00-232-5165	Nut, 1-in, hexagonal	10
1670-00-003-1954	Plate, side, 5 1/2-in	10
5365-00-007-3414	Spacer, large	10
	Lumber:	
5510-00-220-6146	2- by 4-in	As required
5315-00-010-4659	Nail, steel wire, 8d	As required

Table 18-2. Equipment required for rigging PLS with A-22 containers on a 24-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	44 sheets
1670-01-016-7841	Parachute: Cargo, G-11C	5
1670-00-040-8135	Cargo extraction, 28-ft	1
1670-01-063-3715	Drogue, 15-ft (for C-17)	1
1670-01-353-8425	Platform, airdrop, type V, 24-foot Bracket assembly, coupling	(1)
1670-01-162-2372	Clevis assembly, type V	(48)
1670-01-353-8424	Extraction bracket assembly	(1)
1670-01-162-2381	Link, tandem, suspension link assembly	(2)
1670-01-247-2389	Link, suspension bracket, type V	(8)
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	7 sheets
1670-01-097-8817	Release, cargo parachute, M-2	1
1670-01-062-6306	Sling, cargo airdrop For suspension: 3-ft (4-loop), type XXVI nylon webbing	8
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6307	12-ft (4-loop), type XXVI nylon webbing	2
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	2
1670-01-064-4453	20-ft (4-loop), type XXVI nylon webbing	2
1670-01-062-6304	For deployment: 9-ft (2-loop), type XXVI nylon webbing	1
1670-01-06-6302	For riser extension: 20-ft (2-loop), type XXVI nylon webbing	5
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	5
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	52
8305-00-268-2411	Webbing: 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

GLOSSARY

ACB	attitude control bar	JAI	joint airdrop inspector
AD	airdrop	JP	jet propulsion
AFB	Air Force base	LAPE	low-altitude parachute extraction
AFJMAN	Air Force Joint Manual	LAPES	low-altitude parachute extraction system
AFR	Air Force regulation	lb	pound
AFTO	Air Force technical order	LV	low-velocity
ALC	Airlift Logistics Center	MCRP	Marine Corps Reference Publication
attn	attention	mm	millimeter
C	change	no	number
cap	capacity	NSN	national stock number
CB	center of balance	PEFTC	platform extraction force transfer coupling
chap	chapter	PLS	palletized load system
d	penny	psi	pounds per square inch
DA	Department of the Army	sec	second
DC	District of Columbia	SL/CS	static line/connector strap
DD	Department of Defense	TM	technical manual
diam	diameter	TO	technical order
EFTA	extraction force transfer actuator	TOW	tube-launched, optically tracked, wire-guided
EFTC	extraction force transfer coupling	TRADOC	US Army Training and Doctrine Command
FAST	Forward Area Surgical Team	US	United States
fig	figure	w	with
FM	field manual	yd	yard
ft	foot/feet		
gal	gallon		
HQ	headquarters		
in	inch		

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6 November 1989.

***AFJMAN24-204/TM 38-250 has superseded AFR 71-4/TM 38-250 (15 January 1988). Change 5 reflects this change. The basic manual still references the superseded publication. You may wish to make pen and ink changes to update the old reference citations accordingly.**

**TM 10-1670-279-23&P/
TO 13C5-27-2/
NAVAIR 13-1-28**

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**TM 10-1670-280-23&P/
TO 13C5-31-2/
NAVAIR 13-1-31**

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*** Shipper's Declaration
for Dangerous Goods**

Locally procured form

*** Shipper's Declaration for Dangerous Goods has superseded DD Form 1387-2 (February 1982.)
Change 1 reflects this change. The basic manual still references the superseded publication. You
may wish to make pen and ink changes to update the old reference citations accordingly.**

