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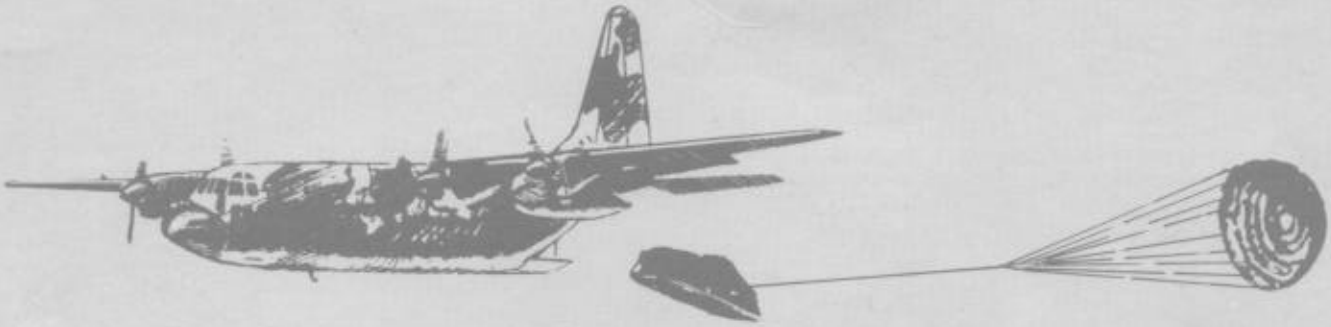
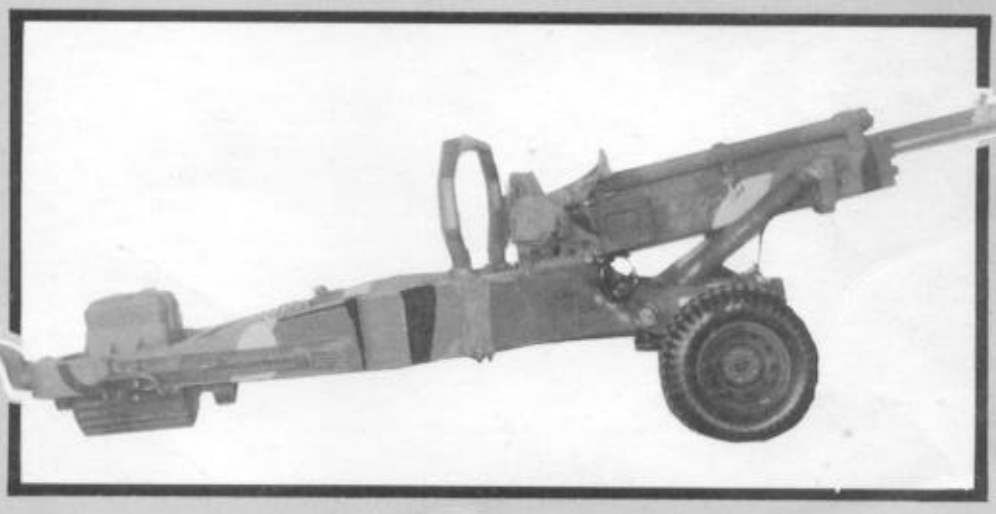


AIRDROP OF SUPPLIES AND EQUIPMENT:

RIGGING 105-MILLIMETER HOWITZERS



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Washington, DC, 29 April 1987

AIRDROP OF SUPPLIES AND EQUIPMENT
RIGGING 105-MILLIMETER HOWITZERS

TABLE OF CONTENTS

		Paragraph	Page
PREFACE			ix
CHAPTER 1	INTRODUCTION		
	Description of Items	1-1	1-1
	Special Considerations	1-2	1-1
CHAPTER 2	RIGGING M102 HOWITZER		
Section I	RIGGING HOWITZER FOR LOW-VELOCITY AIRDROP ON TYPE II PLATFORM		
	[redacted]	2-1	2-1
		2-2	2-1
		2-3	2-2
		2-4	2-2
		2-5	2-13
		2-6	2-16
		2-7	2-17
		2-8	2-17
		2-9	2-18
		2-10	2-19
		2-11	2-21
		2-12	2-23
		2-13	2-24

TYPE II PROCEDURES REMOVED

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*** This publication supersedes FM 10-519/TO 13C7-10-31, 31 October 1977.**

		Paragraph	Page
	TYPE II PROCEDURES REMOVED	2-14	2-24
		2-15	2-25
Section II	**RIGGING HOWITZER FOR LAPE AIRDROP ON LAPES PLATFORM**		
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	2-16	2-28
		2-17	2-28
		2-18	2-29
		2-19	2-33
		2-20	2-34
		2-21	2-36
		2-22	2-37
		2-23	2-37
		2-24	2-38
		2-25	2-39
		2-26	2-39
		2-27	2-40
CHAPTER 3	**RIGGING M102 HOWITZER ON TYPE V PLATFORM**		
Section I	**RIGGING HOWITZER WITH 17 BOXES OF AMMUNITION FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM**		
	Description of Load	3-1	3-1
	Preparing Platform	3-2	3-1
	Building and Placing Honeycomb Stacks	3-3	3-3
	Stowing Accompanying Load	3-4	3-6
	Preparing Howitzer	3-5	3-12
	Covering Load	3-6	3-15
	Stowing Collimator Box and Setting Howitzer on Platform	3-7	3-16
	Lashing Howitzer	3-8	3-18
	Installing Suspension Slings and Deadman's Tie	3-9	3-19
	Preparing Stowage Platform and Stowing Cargo Parachutes	3-10	3-20
	Installing Extraction System	3-11	3-22
	Installing Provisions for Emergency Restraints	3-12	3-24
	Installing Release System	3-13	3-24
	Placing Extraction Parachute	3-14	3-25
	Marking Rigged Load	3-15	3-26
	Equipment Required	3-16	3-27
Section II	**RIGGING HOWITZER WITH 23 BOXES OF AMMUNITION FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM**		
	Description of Load	3-17	3-29
	Preparing Platform	3-18	3-29
	Building and Placing Honeycomb Stacks	3-19	3-29
	Stowing Accompanying Load	3-20	3-29

		Paragraph	Page
	Preparing Howitzer and Equipment	3-21	3-33
	Covering Load	3-22	3-35
	Stowing Collimitor Box and Setting Howitzer on Platform	3-23	3-35
	Lashing Howitzer	3-24	3-35
	Installing Suspension Slings and Deadman's Tie	3-25	3-35
	Preparing Stowage Platform and Stowing Cargo Parachutes	3-26	3-35
	Installing Extraction System	3-27	3-37
	Installing Provisions for Emergency Restraints	3-28	3-40
	Installing Release System	3-29	3-40
	Placing Extraction Parachute	3-30	3-40
	Marking Rigged Load	3-31	3-40
	Equipment Required	3-32	3-42
Section III	**RIGGING HOWITZER FOR LAPE AIRDROP ON TYPE V PLATFORM**		
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	3-33	3-44
		3-34	3-44
		3-35	3-46
		3-36	3-53
		3-37	3-58
		3-38	3-59
		3-39	3-61
		3-40	3-62
		3-41	3-64
		3-42	3-64
		3-43	3-64
		3-44	3-66
CHAPTER 4	**RIGGING M102 HOWITZER WITH 1 1/4-TON HMMWV TRUCK AND ACCOMPANYING AMMUNITION**		
Section I	**RIGGING HOWITZER AND TRUCK FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM**		
	Description of Load	4-1	4-1
	Preparing Platform	4-2	4-1
	Stowing Accompanying Load on Platform	4-3	4-4
	Building and Placing Honeycomb Stacks	4-4	4-12
	Preparing Howitzer and Truck	4-5	4-16
	Stowing Howitzer Equipment and Ammunition in Truck and Installing Body Side Boards	4-6	4-18
	Setting Howitzer and Truck on Platform	4-7	4-26
	Lashing Howitzer and Truck	4-8	4-27
	Installing and Safetying Suspension Slings	4-9	4-30
	Preparing Stowage Platform and Stowing Cargo Parachutes	4-10	4-33

		Paragraph	Page
	Installing Extraction System	4-11	4-37
	Installing Provisions for Emergency Restraints	4-12	4-39
	Installing Release System	4-13	4-39
	Placing Extraction Parachute	4-14	4-40
	Marking Rigged Load	4-15	4-40
	Equipment Required	4-16	4-41
Section II	**RIGGING HOWITZER AND TRUCK FOR LAPE AIRDROP ON TYPE V PLATFORM**		
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	4-17	4-44
		4-18	4-44
		4-19	4-47
		4-20	4-52
		4-21	4-54
		4-22	4-55
		4-23	4-57
		4-24	4-58
		4-25	4-61
		4-26	4-64
		4-27	4-66
		4-28	4-66
		4-29	4-67
CHAPTER 5	**RIGGING M119 HOWITZER FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM**		
Section I	**RIGGING M119 HOWITZER AND ACCOMPANYING AMMUNITION**		
	Description of Load	5-1	5-1
	Preparing Platform	5-2	5-1
	Stowing Accompanying Load	5-3	5-3
	Building and Placing Honeycomb Stacks	5-4	5-8
	Preparing Howitzer	5-5	5-14
	Lifting and Positioning Howitzer	5-6	5-27
	Lashing Howitzer	5-7	5-28
	Stowing Additional Accompanying Load	5-8	5-30
	Installing Suspension Slings, Antitumble Slings, and Deadman's Tie	5-9	5-33
	Stowing Cargo Parachutes	5-10	5-37
	Installing Extraction System	5-11	5-39
	Installing Provisions for Emergency Restraints	5-12	5-39
	Installing Release System	5-13	5-41
	Placing Extraction Parachute	5-14	5-42
	Marking Rigged Load	5-15	5-42
	Equipment Required	5-16	5-44

		Paragraph	Page
Section II	RIGGING M119 HOWITZER, ACCOMPANYING AMMUNITION AND 81-MILLIMETER MORTAR		
	Description of Load	5-17	5-47
	Preparing Platform	5-18	5-47
	Stowing Accompanying Load	5-19	5-49
	Building and Placing Honeycomb Stacks	5-20	5-57
	Preparing Howitzer	5-21	5-58
	Lifting and Positioning Howitzer	5-22	5-58
	Lashing Howitzer	5-23	5-58
	Stowing Additional Accompanying Load	5-24	5-60
	Installing Suspension Slings, Antitumble Sling and Deadman's Tie	5-25	5-60
	Stowing Cargo Parachutes	5-26	5-60
	Installing Extraction System	5-27	5-62
	Installing Provisions for Emergency Restraints	5-28	5-62
	Installing Release System	5-29	5-62
	Placing Extraction Parachute	5-30	5-62
	Marking Rigged Load	5-31	5-62
	Equipment Required	5-32	5-63
CHAPTER 6	RIGGING M119 HOWITZER FOR LAPE AIRDROP ON TYPE V PLATFORM		
Section I	RIGGING M119 HOWITZER AND ACCOMPANYING AMMUNITION		
	[redacted]	6-1	6-1
		6-2	6-1
		6-3	6-3
		6-4	6-7
		6-5	6-7
		6-6	6-9
		6-7	6-9
		6-8	6-11
		6-9	6-11
		6-10	6-12
		6-11	6-13
		6-12	6-13
		6-13	6-14
Section II	RIGGING M119 HOWITZER, 81-MILLIMETER MORTAR AND ACCOMPANYING AMMUNITION		
	[redacted]	6-14	6-16
		6-15	6-16
		6-16	6-18

REMOVED: 95 MESSAGE TERMINATION OF LAPES

REMOVED: 95 MESSAGE TERMINATION OF LAPES

		Paragraph	Page
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	6-17	6-26
		6-18	6-26
		6-19	6-26
		6-20	6-26
		6-21	6-29
		6-22	6-29
		6-23	6-31
		6-24	6-31
		6-25	6-31
		6-26	6-32
CHAPTER 7	**RIGGING M119 HOWITZER WITH 1 1/4-TON M1037 HMMWV TRUCK AND ACCOMPANYING AMMUNITION**		
Section I	**RIGGING HOWITZER AND TRUCK FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM**		
	Description of Load	7-1	7-1
	Preparing Platform	7-2	7-1
	Stowing Accompanying Load on Platform	7-3	7-3
	Building and Placing Honeycomb Stacks and Placing Drive-Off Aids	7-4	7-7
	Preparing Howitzer and Truck	7-5	7-9
	Stowing Howitzer Equipment and Ammunition in Truck	7-6	7-10
	Setting Howitzer and Truck on Platform and Installing Drive-Off Aids on Truck	7-7	7-14
	Stowing Additional Accompanying Load	7-8	7-17
	Lashing Howitzer and Truck	7-9	7-18
	Covering Howitzer with Honeycomb	7-10	7-22
	Installing and Safetying Suspension Slings	7-11	7-23
	Preparing Stowage Platform and Stowing Cargo Parachutes	7-12	7-30
	Installing Extraction System	7-13	7-32
	Installing Release System	7-14	7-33
	Installing Provisions for Emergency Restraints	7-15	7-36
	Placing Extraction Parachutes	7-16	7-36
	Marking Rigged Load	7-17	7-36
	Equipment Required	7-18	7-38
Section II	**RIGGING HOWITZER AND TRUCK FOR LAPE AIRDROP ON TYPE V PLATFORM**		
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	7-19	7-41
		7-20	7-41
		7-21	7-43
		7-22	7-47
		7-23	7-48
		7-24	7-48

		Paragraph	Page
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	7-25	7-48
		7-26	7-50
		7-27	7-54
		7-28	7-55
		7-29	7-57
		7-30	7-59
		7-31	7-59
		7-32	7-60
CHAPTER 8	**RIGGING TWO M119 HOWITZERS FOR LOW-VELOCITY AIRDROP ON 20-FOOT TYPE V PLATFORM**		
Section I	**RIGGING HOWITZERS WITH EIGHTY-TWO BOXES OF AMMUNITION**		
	Description of Load	8-1	8-1
	Preparing Platform	8-2	8-1
	Stowing and Lashing First Group of Ammunition Boxes	8-3	8-3
	Stowing and Lashing Second Group of Ammunition Boxes	8-4	8-11
	Building and Placing Honeycomb Stacks	8-5	8-15
	Preparing Howitzers	8-6	8-21
	Placing Howitzers on Honeycomb Stacks, Lashing Howitzers, and Installing Protective Honeycomb	8-7	8-25
	Lashing Howitzers	8-8	8-28
	Installing Suspension Slings and Covering Load	8-9	8-34
	Preparing Storage Platform and Stowing Cargo Parachutes	8-10	8-35
	Installing Extraction System	8-11	8-42
	Installing Release System	8-12	8-48
	Installing Provisions for Emergency Restraints	8-13	8-43
	Placing Extraction Parachutes	8-14	8-44
	Marking Rigged Load	8-15	8-44
	Equipment Required	8-16	8-46
Section II	**RIGGING HOWITZERS WITH SIXTY-THREE BOXES OF AMMUNITION**		
	Description of Load	8-17	8-49
	Preparing Platform	8-18	8-49
	Stowing and Lashing First Group of Ammunition Boxes	8-19	8-51
	Stowing and Lashing Second Group of Ammunition Boxes	8-20	8-57
	Building and Placing Honeycomb Stacks	8-21	8-61
	Preparing Howitzers	8-22	8-67
	Placing Howitzers on Platform	8-23	8-67
	Lashing Howitzers	8-24	8-69
	Covering the Load	8-25	8-76
	Installing Suspension Slings	8-26	8-78

		Paragraph	Page
	Installing Cargo Parachutes	8-27	8-80
	Installing Extraction System	8-28	8-81
	Installing Release System	8-29	8-82
	Installing Provisions for Emergency Restraints	8-30	8-82
	Placing Extraction Parachutes	8-31	8-82
	Marking Rigged Load	8-32	8-82
	Equipment Required	8-33	8-84
Section III	RIGGING HOWITZERS WITH TWO 81-MILLIMETER MORTARS		
	Description of Load	8-34	8-87
	Preparing Platform	8-35	8-87
	Stowing and Lashing First Group of Ammunition Boxes	8-36	8-87
	Packaging and Securing Mortar Components	8-37	8-87
	Rigging Howitzers	8-38	8-87
	Marking Rigged Load	8-39	8-95
	Equipment Required	8-40	8-95
CHAPTER 9	RIGGING M101A1 HOWITZER FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM		
	Description of Load	9-1	9-1
	Preparing Platform	9-2	9-1
	Building and Placing Honeycomb Stacks	9-3	9-3
	Stowing Accompanying Load	9-4	9-5
	Preparing Howitzer	9-5	9-9
	Placing Howitzer on Platform	9-6	9-11
	Constructing Endboards and Lashing Rear Ammunition Stack to Platform	9-7	9-12
	Lashing Howitzer	9-8	9-16
	Installing Suspension Slings	9-9	9-18
	Stowing Cargo Parachutes	9-10	9-20
	Installing Extraction System	9-11	9-21
	Installing Release System	9-12	9-22
	Installing Provisions for Emergency Restraints	9-13	9-23
	Placing Extraction Parachutes	9-14	9-23
	Marking Rigged Load	9-15	9-23
	Equipment Required	9-16	9-25
GLOSSARY			Glossary-1
REFERENCES			References-1

PREFACE

SCOPE

This manual tells and shows how to rig the M102, M119 and M101A1 105-millimeter howitzers for a low-velocity airdrop from a C-130, C-141, or C-5 aircraft. Also included are procedures and equipment necessary to rig the M102 and M119 105-millimeter howitzers for a LAPE airdrop from a C-130 aircraft. This manual includes procedures and equipment for rigging the M102 and M119 105-millimeter howitzers with the 1 1/4-ton HMMWV truck as the prime mover on a 32-foot, type V airdrop platform for low-velocity airdrop from a C-130, C-141, or C-5 aircraft, and for a LAPE airdrop from C-130 aircraft. In addition, procedures are given for rigging two M119 105-millimeter howitzers on a single platform with two different ammunition loads and with two 81-millimeter mortars for a low-velocity airdrop from a C-130, C-141, or C-5 aircraft. This manual is designed for use by all parachute riggers.

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CHAPTER 1

INTRODUCTION

1-1. Description of Items

The descriptions and unrigged data for the items covered in this manual are provided below.

Note: All weights given are approximate.

a. The unrigged M102, 105-millimeter howitzer (mounted on an M31 carriage) with an M137E1 cannon tube and roll-over protection structure weighs 3,680 pounds. Its length is 256 inches, reducible to 206 inches. Its height is 68 inches, reducible to 62 inches. Its width is 91 inches with dual wheels and 75 inches with single wheels. The M102 howitzer in Figure 1-1 is equipped with single wheels. The rigging procedures for the howitzer with dual wheels are the same. The howitzers shown in Chapter 2, Section I and Chapter 3, Section II are rigged with 23 boxes of ammunition weighing 2,760 pounds. The howitzers shown in Chapter 2, Section II and Chapter 3, Section III are rigged with 34 boxes of ammunition weighing 4,080 pounds. The howitzer shown in Chapter 3, Section I, is rigged with 17 boxes of ammunition weighing 2,040 pounds. The howitzer shown in Chapter 4, Section I, is rigged with a 1 1/4-ton HMMWV truck as its prime mover and with 30 boxes of ammunition weighing 3,600 pounds. The howitzer shown in Chapter 4, Section II, is rigged with a 1 1/4-ton HMMWV truck as its prime mover and with 32 boxes of ammunition weighing 3,840 pounds.

b. The unrigged M119, 105-millimeter howitzer weighs 4,190 pounds. Its length is 240 inches, reducible to 192 inches. Its width is 70 inches. Its height is 94 inches, reducible to 54 inches. The howitzer shown in Chapter 5, Section I is rigged with 30 boxes of ammunition and 7 boxes of fuzes weighing 3,713 pounds. The howitzer shown in Section II has the same ammunition load and an 81-millimeter mortar weighing 350 pounds. Chapter 6 shows the same two configurations rigged for LAPE airdrop. The howitzers shown in Chapter 7 are rigged with 30 boxes of ammunition, 7 boxes of fuzes, and a 1 1/4-ton HMMWV truck. Two M119 howitzers are shown in Chapter 8 rigged with 82 boxes of ammunition on the same platform, as well as a lighter version of this load and a load which includes two 81-millimeter mortars.

c. The unrigged M101A1, 105-millimeter howitzer weighs 5,236 pounds. It is 236 inches long, 84 inches wide, and 62 inches high. Chapter 9 shows this howitzer rigged with 21 boxes of ammunition weighing 2,100 pounds.

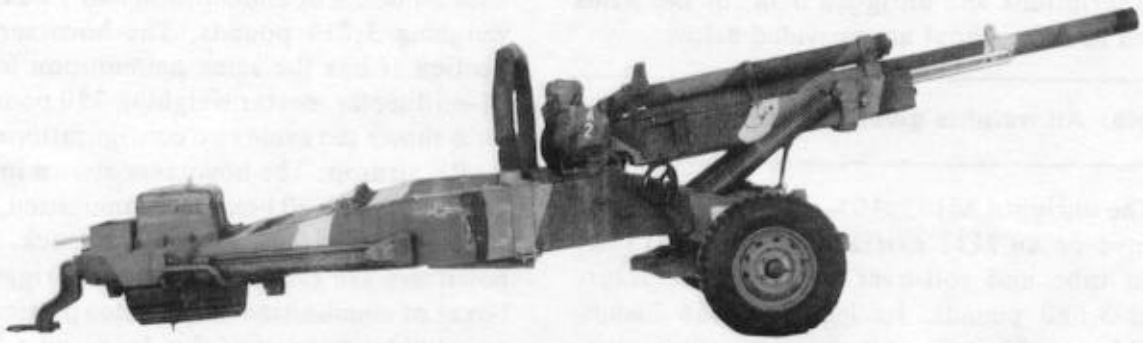
1-2. Special Considerations

Special considerations for this manual are described below.

a. The loads covered in this manual may include hazardous materials as defined in AFJMAN 24-240. If included, the hazardous materials must be packaged, marked, and labeled as required by AFJMAN 24-240.

CAUTION: Only ammunition listed FM 10-500-53/TO 13C7-18-41 may be airdropped.

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



M102

M119

Figure 1-1. M102 and M119, 105-millimeter howitzers

CHAPTER 3

RIGGING M102 HOWITZER ON TYPE V PLATFORM

Section I

RIGGING HOWITZER WITH 17 BOXES OF AMMUNITION FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM

3-1. Description of Load

The M102, 105-millimeter howitzer (line number K57392) mounted on an M31 carriage with an M137E1 cannon tube and roll-over protection structure is rigged on a 16-foot, type V airdrop platform. It may be airdropped with an accompanying load. The gun equipment and 17 boxes of ammunition are shown. This load requires two G-11A or G-11B cargo parachutes.

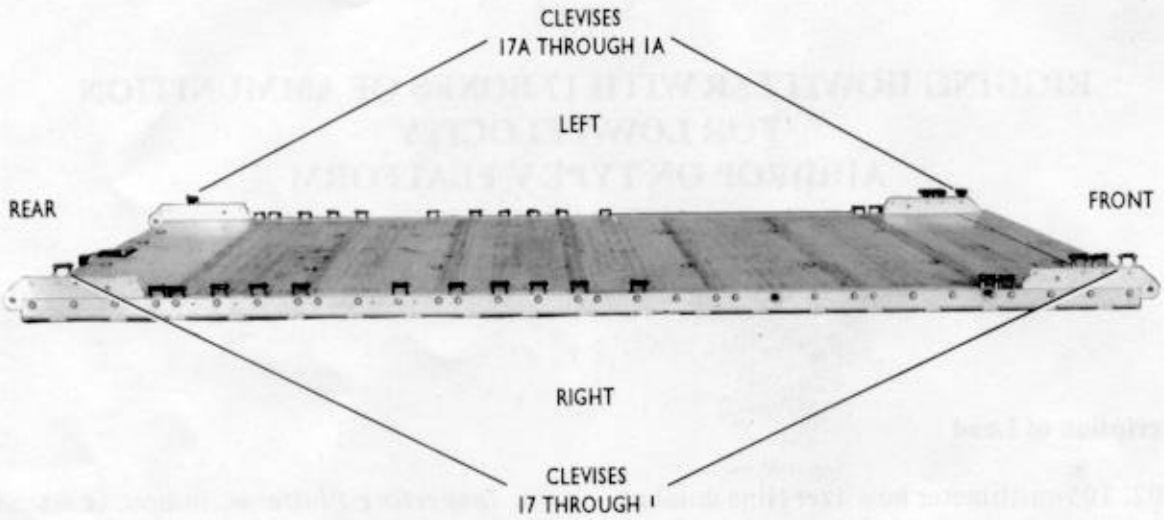
3-2. Preparing Platform

Prepare a 16-foot, type V airdrop platform as described 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 tandem links to the front and rear of each rail as shown in Figure 3-1.

c. Installing and Numbering Clevises. Bolt and number 34 clevis assemblies as shown in Figure 3-1.



Step:

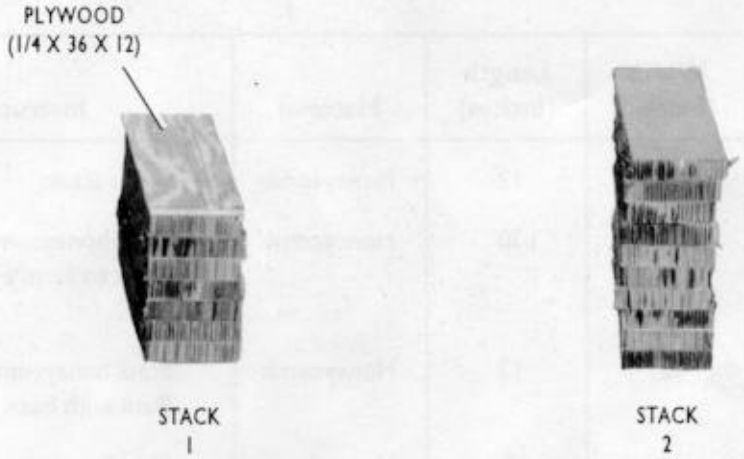
1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install clevises on bushings 1, 2, and 3 on each front tandem link.
3. Install a tandem link on the rear of each platform side rail using holes 30, 31, and 32.
4. Install a clevis on bushing 3 on each rear tandem link.
5. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 4, 5, 15, 17, 18, 19, 20, 22, 25, 26, 27, 28, and 29.
6. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 17 and those bolted to the left side from 1A through 17A.
7. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 3-1. Platform prepared

3-3. Building and Placing Honeycomb Stacks

Build the honeycomb stacks as shown in Figure 3-2. Place the stacks on the platform as shown in Figure 3-3.

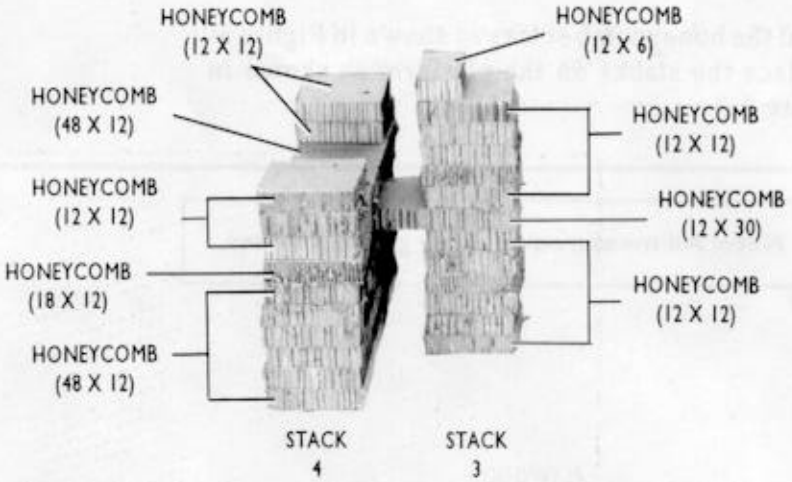
Note: All measurements are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	7	36	12	Honeycomb	Form stack.
	1	36	12	3/4-inch plywood	Place plywood flush on honeycomb stack.
2	10	36	12	Honeycomb	Form stack.

Figure 3-2. Honeycomb stacks 1 through 4 prepared

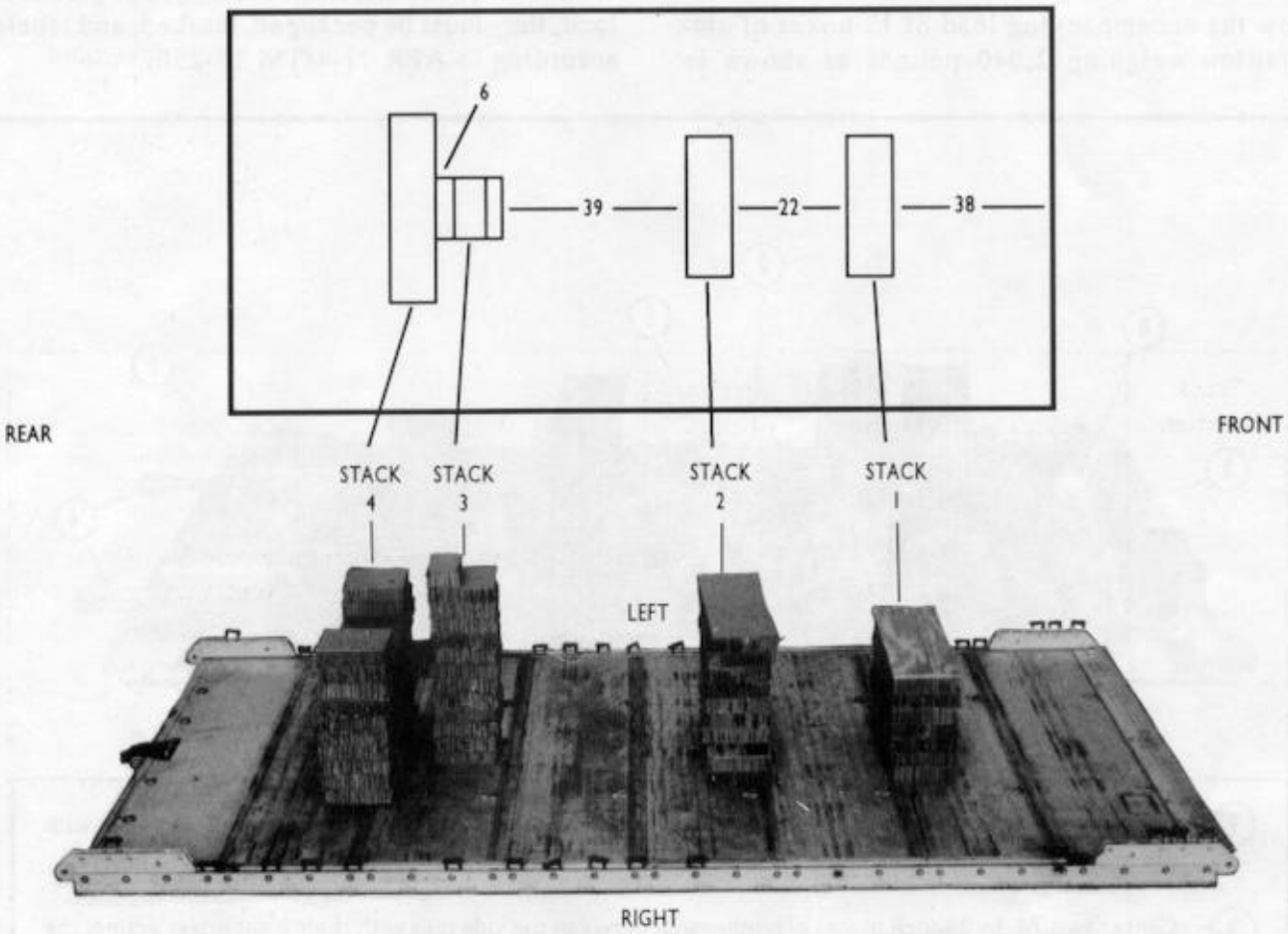
Note: All measurements are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3	6	12	12	Honeycomb	Form stack.
	1	12	30	Honeycomb	Place honeycomb flush on the stack to form a bridge to the rear.
	5	12	12	Honeycomb	Stack honeycomb over bridge, flush with base.
	1	12	6	Honeycomb	Place honeycomb on rear edge of stack.
4	6	48	12	Honeycomb	Form stack. Center honeycomb under the bridge from stack 3.
	2	18	12	Honeycomb	Place honeycomb one on each side of bridge and flush with stack.
	1	48	12	Honeycomb	Place honeycomb flush over bridge and adjacent pieces.
	4	12	12	Honeycomb	Place two pieces flush on each side of the stack.

Figure 3-2. Honeycomb stacks 1 through 4 prepared (continued)

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



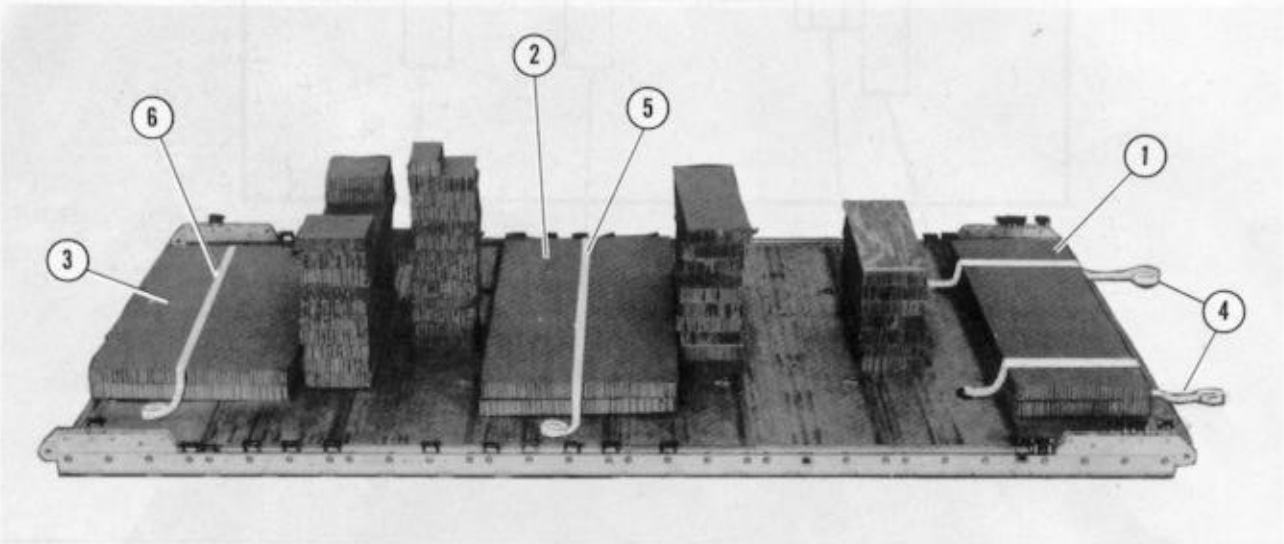
Stack Number	Position of Stack on Platform
	Place stack:
1	Centered 38 inches from front edge of platform.
2	Centered 22 inches from stack 1.
3	Centered 39 inches from stack 2.
4	Centered 6 inches from stack 3.

Figure 3-3. Honeycomb stacks placed on platform

3-4. Stowing Accompanying Load

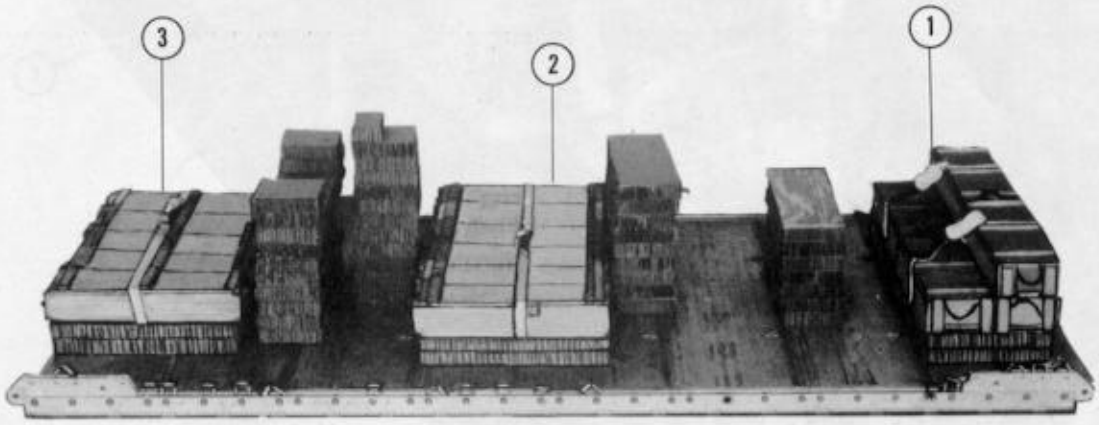
CAUTION: Only ammunition listed in FM 10-553/TO 13C7-18-41 may be airdropped.

Stow the accompanying load of 17 boxes of ammunition weighing 2,040 pounds as shown in Figures 3-4 through 3-9. Make sure the accompanying load meets the restrictions and requirements as outlined in FM 10-500-2/TO 13C7-1-5. When hazardous materials are rigged as part of the load, they must be packaged, marked, and labeled according to AFR 71-4/TM 38-250.



1. Center two 74- by 24-inch pieces of honeycomb between the side rails with their front edges flush with the front edge of the platform.
2. Center two 74- by 36-inch pieces of honeycomb between the side rails with their front edges against the rear edge of stack 2.
3. Center two 62- by 36-inch pieces of honeycomb between the side rails with their rear edges flush with the rear edge of the platform.
4. Lay two 15-foot lashings from front to rear on the front pieces of honeycomb.
5. Lay one 15-foot lashing from side to side on the middle pieces of honeycomb.
6. Lay one 15-foot lashing from side to side on the rear pieces of honeycomb.

Figure 3-4. Honeycomb and lashings placed on platform



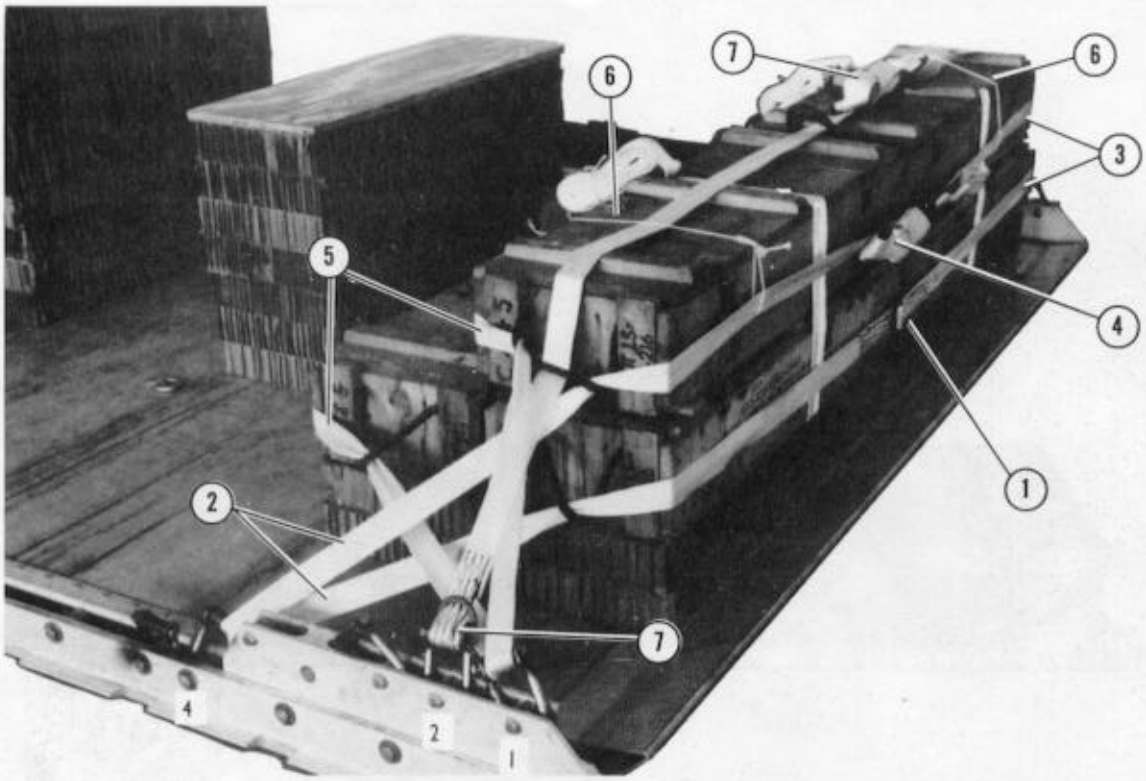
(1) Set four boxes of ammunition on top of the lashings and honeycomb on the front of the platform. Place two more boxes on top with their front edges aligned with the front boxes. Secure each lashing with a D-ring and a load binder.

Note: Two boxes of APERS rounds may be substituted for the two rear boxes of ammunition in this stack. This ammunition will extend past the honeycomb.

(2) Set six boxes of ammunition on the lashing and honeycomb in the middle of the platform. Secure the lashing with a D-ring and a load binder.

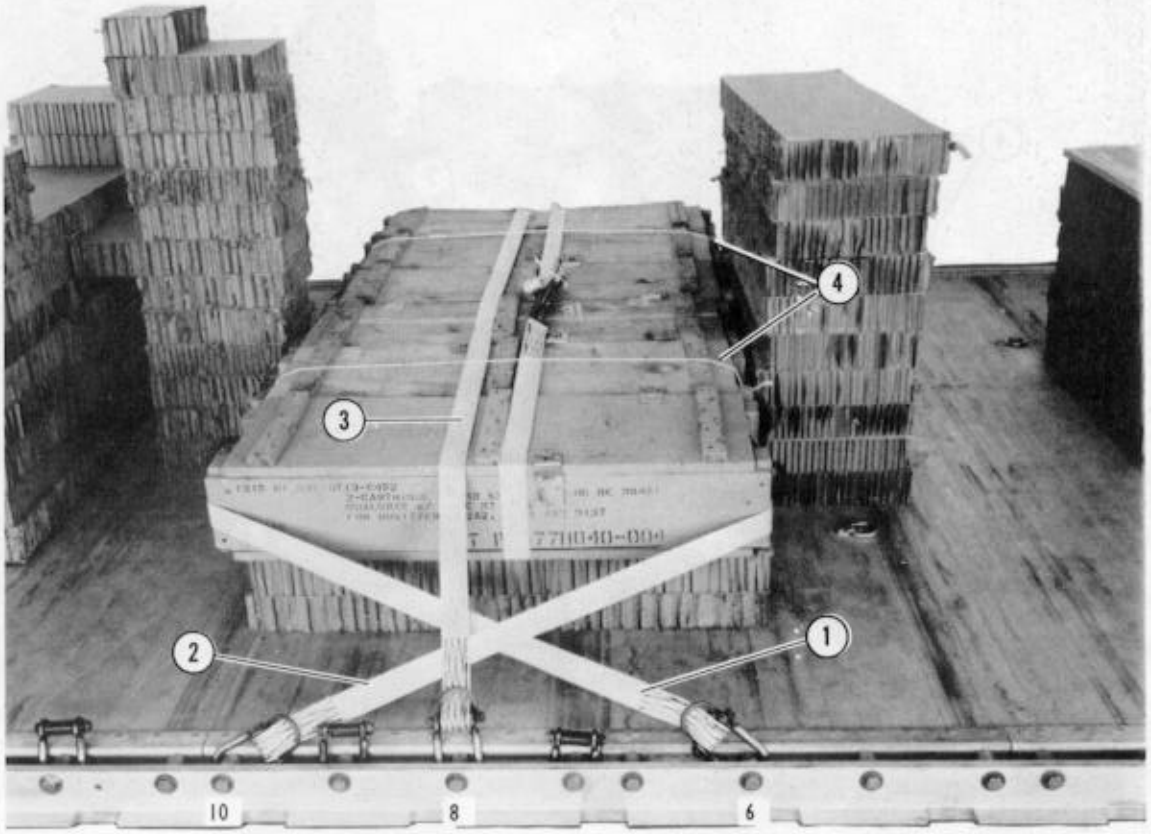
(3) Set five boxes of ammunition on the lashing and honeycomb on the rear of the platform. Secure the lashing with a D-ring and a load binder.

Figure 3-5. Boxes of ammunition secured with lashings



1. Form a 30-foot lashing according to FM 10-500-2/TO 13C7-1-5. Place the double D-rings at the center of the bottom boxes at the front of the platform.
2. Pass one end of the lashing through the handle of the bottom box, through clevis 4, up through the handle of the top box, and back to the center of the top boxes.
3. Pass the other end of the lashing to the other side of the load as in step 2, but using clevis 4A.
4. Secure the lashing with two D-rings and a load binder at the center of the top ammunition boxes.
5. Repeat steps 1 through 4, running a lashing around the rear of the boxes using clevises 1 and 1A.
6. Tie the lashings together with two lengths of type III nylon cord on the right and left sides of the load.
7. Pass the free end of a 15-foot lashing through clevis 2 and through its own D-ring. Pass the free end of a 15-foot lashing through clevis 2A and through its own D-ring. Pass each lashing through the handle of the top box and to the center of the boxes. Secure the lashings on top of the boxes with two D-rings and a load binder.

Figure 3-6. Boxes of ammunition lashed to front of platform



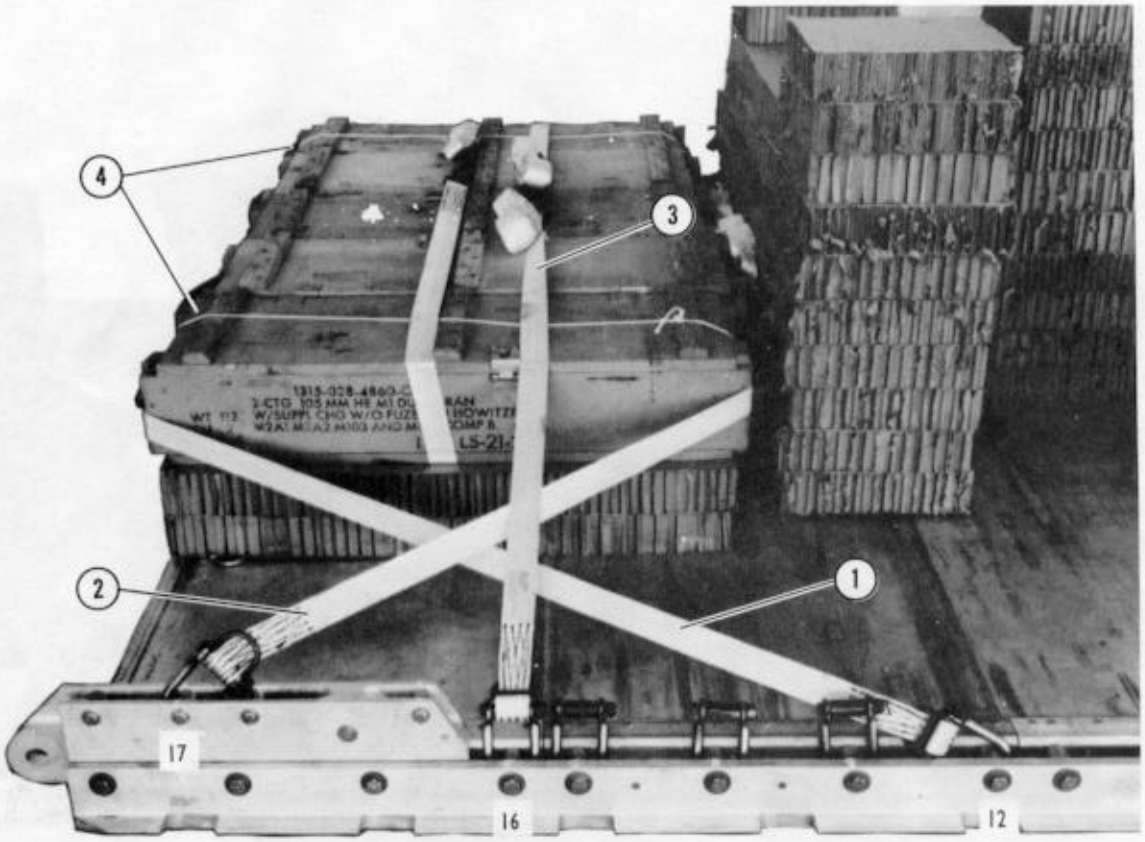
(1) Pass the free end of a 15-foot lashing through clevis 6 and through its own D-ring. Pull the lashing taut, and run it through the rear handles of the boxes. Fit a D-ring to the end of the lashing, and hook the D-ring to clevis 6A with a load binder.

(2) Pass the free end of a 15-foot lashing through clevis 10 and through its own D-ring. Pull the lashing taut, and run it through the front handles of the boxes. Fit a D-ring to the end of the lashing, and hook the D-ring to clevis 10A with a load binder.

(3) Pass the free end of a 15-foot lashing through clevis 8 and through its own D-ring. Pull the lashing over the tops of the boxes. Fit a D-ring to the end of the lashing, and hook the D-ring to clevis 8A with a load binder.

(4) Tie two lengths of type III nylon cord between the lashings on the ends of the boxes to keep the lashings in place.

Figure 3-7. Boxes of ammunition lashed to middle of platform



1. Pass the free end of a 15-foot lashing through clevis 12 and through its own D-ring. Pull the lashing taut, and run it through the rear handles of the boxes. Fit a D-ring to the end of the lashing, and hook the D-ring to clevis 12A with a load binder.

2. Pass the free end of a 15-foot lashing through clevis 17 and through its own D-ring. Run the free end of a 15-foot lashing through clevis 17A and through its own D-ring. Secure the lashings with two D-rings and a load binder.

3. Pass the free end of a 15-foot lashing through clevis 16 and through its own D-ring. Run the free end of a 15-foot lashing through clevis 16A and through its own D-ring. Secure the lashings with two D-rings and a load binder.

4. Tie two lengths of type III nylon cord between the lashings on the ends of the boxes to keep the lashings in place.

Figure 3-8. Boxes of ammunition lashed to rear of platform

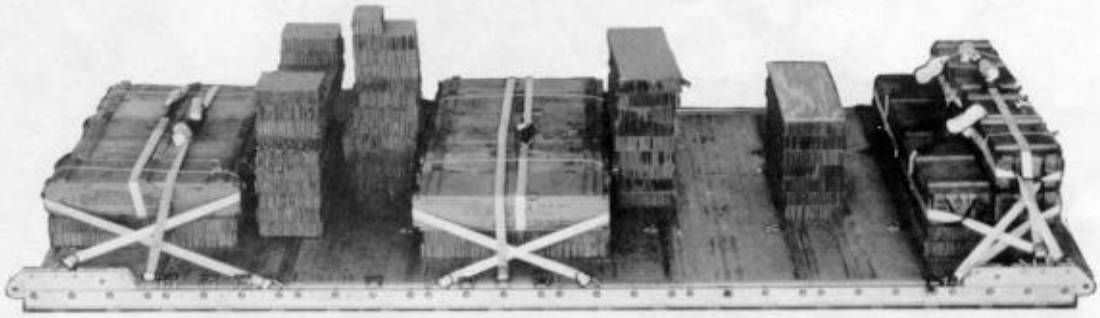


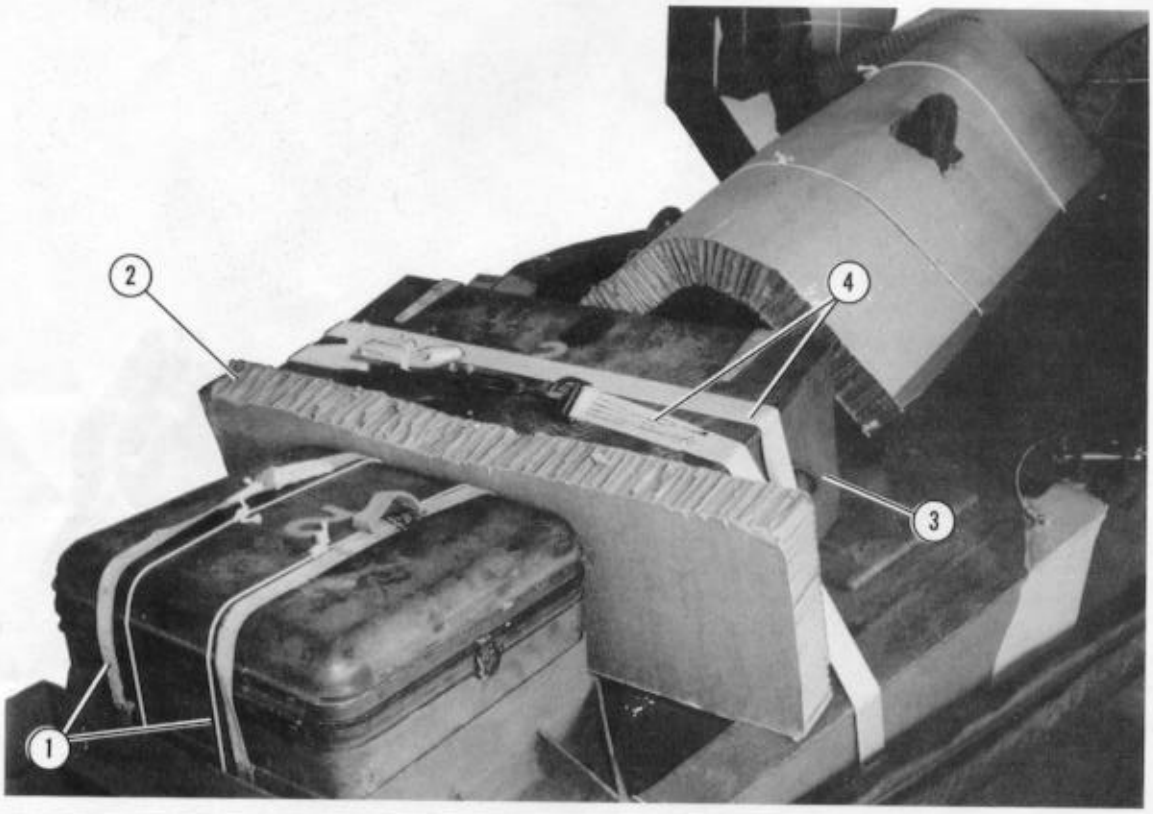
Figure 3-9. Seventeen boxes of ammunition lashed to the platform

3-5. Preparing Howitzer and Equipment

Prepare the howitzer as shown in Figures 3-10 and 3-11 and as described below. Construct the collimator box as shown in Figure 3-12.

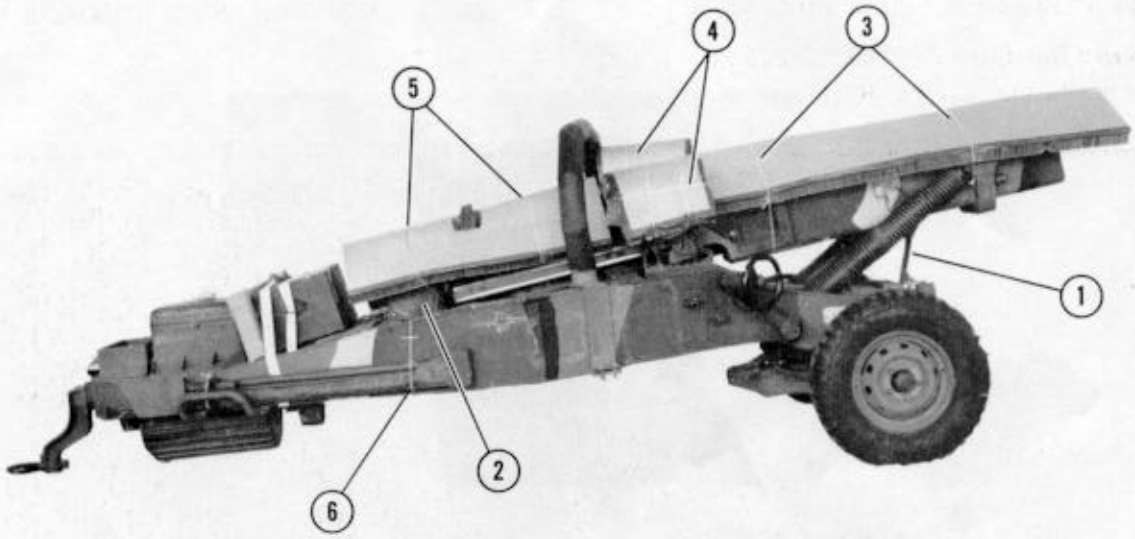
a. Stowing Equipment. Place the section tools and base plate anchoring stakes in the section chest.

b. Securing Rammer Staff. Secure the rammer staff assembly on the left side of the trails with its own securing strap. Safety it with type III nylon cord.



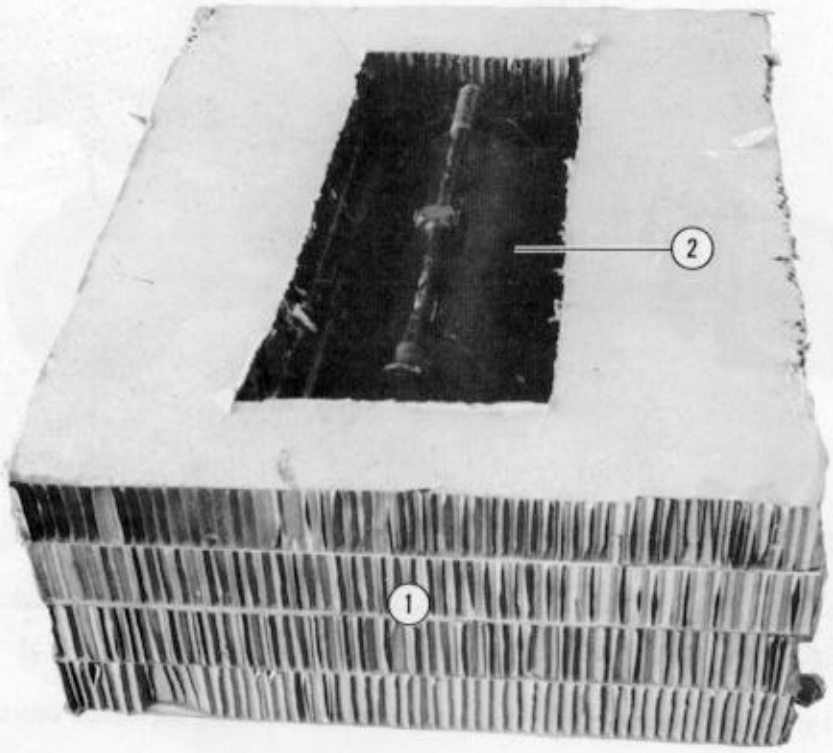
1. Fasten the straps on the sight case. Tie the case to the howitzer with two lengths of type III nylon cord.
2. Place a 12- by 36-inch piece of honeycomb in front of the sight case.
3. Set the section chest against the padded sight case.
4. Pass the ends of a 15-foot lashing down each side of the section chest, through the handles, around the trails, and back up through the handles. Secure the lashing on top of the chest with a D-ring and a load binder.

Figure 3-10. Sight case and section chest secured



1. Secure the gun in the out-of-battery position and lock the travel lock.
2. Cover the sights and breechblock with the cloth cover provided. Plug the muzzle with the plug provided.
3. Place a 36- by 96-inch sheet of honeycomb over the gun tube. Notch the honeycomb 5 inches deep at both rear corners to clear the sights. Tape the edges of the honeycomb. Use type III nylon cord to tie the honeycomb in place.
4. Bend an 18- by 24-inch piece of honeycomb over each sight. Tape the edges of the honeycomb. Tie the honeycomb in place with type III nylon cord.
5. Place a 36- by 48-inch piece of honeycomb over the breechblock. Make a 5- by 5-inch cutout to allow for the breech operator handle. Tape the edges of the honeycomb. Use two lengths of type III nylon cord to tie the honeycomb in place.
6. Secure the aiming stakes on the right side of the gun with type III nylon cord.
7. Pad each wheel support arm with cellulose wadding (not shown).

Figure 3-11. Howitzer prepared



(1) Cut five 27- by 36-inch pieces of honeycomb. Make an 11- by 27-inch cutout in the center of three of the pieces. Glue the three pieces with cutouts flush over a solid piece.

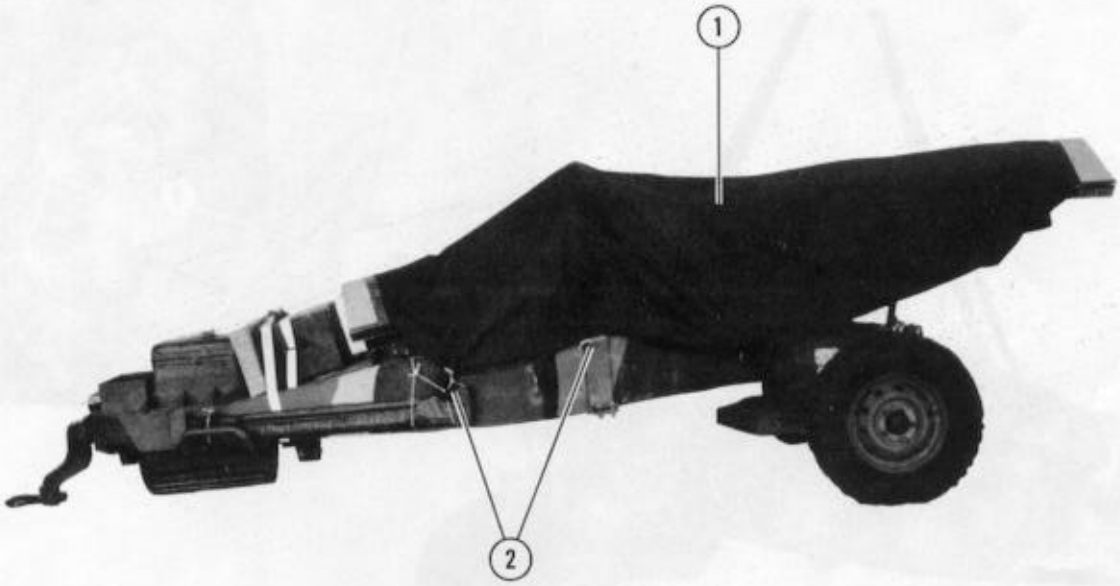
(2) Pad the collimator generously with cellulose wadding, and place it in the honeycomb box.

(3) Tie the remaining solid piece of honeycomb flush over the box with lengths of 1/2-inch tubular nylon webbing (not shown).

Figure 3-12. Collimator box constructed

3-6. Covering Load

Cover the load as shown in Figure 3-13.

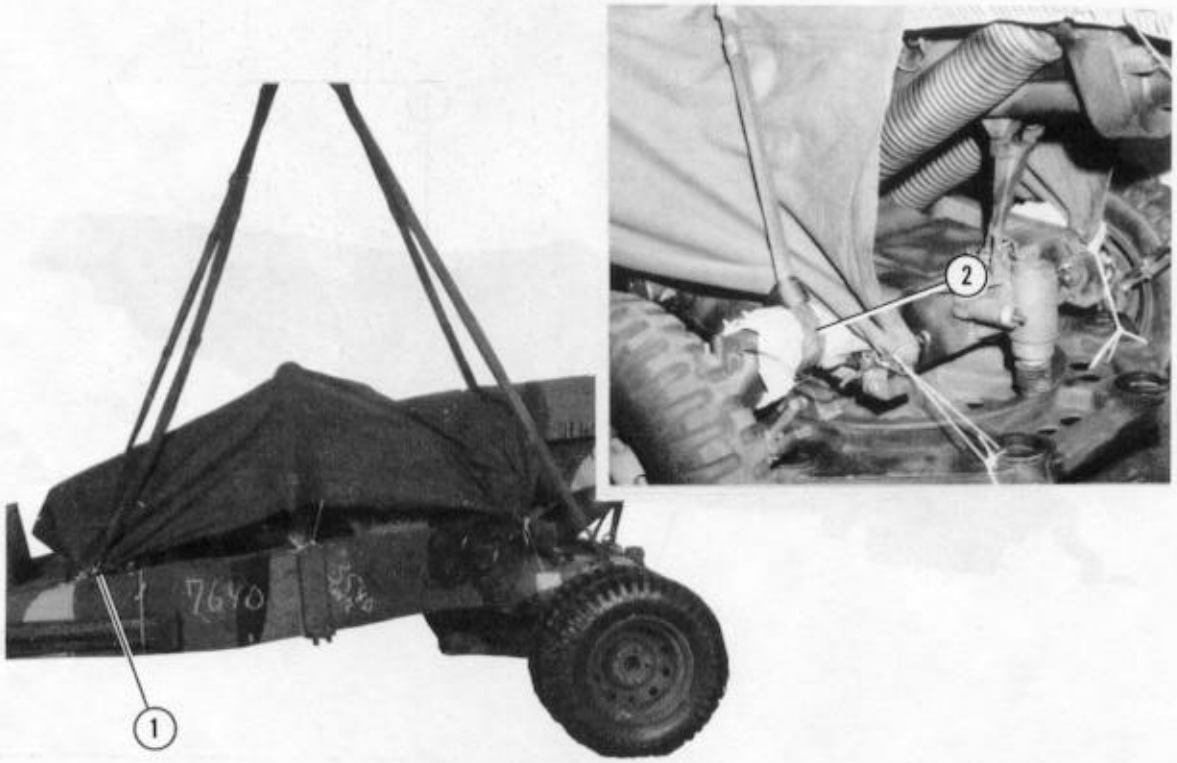


1. Cover the breech and gun tube with a 10- by 12-foot piece of cotton duck cloth.
2. Secure it to convenient points on the gun with type III nylon cord.

Figure 3-13. Load covered

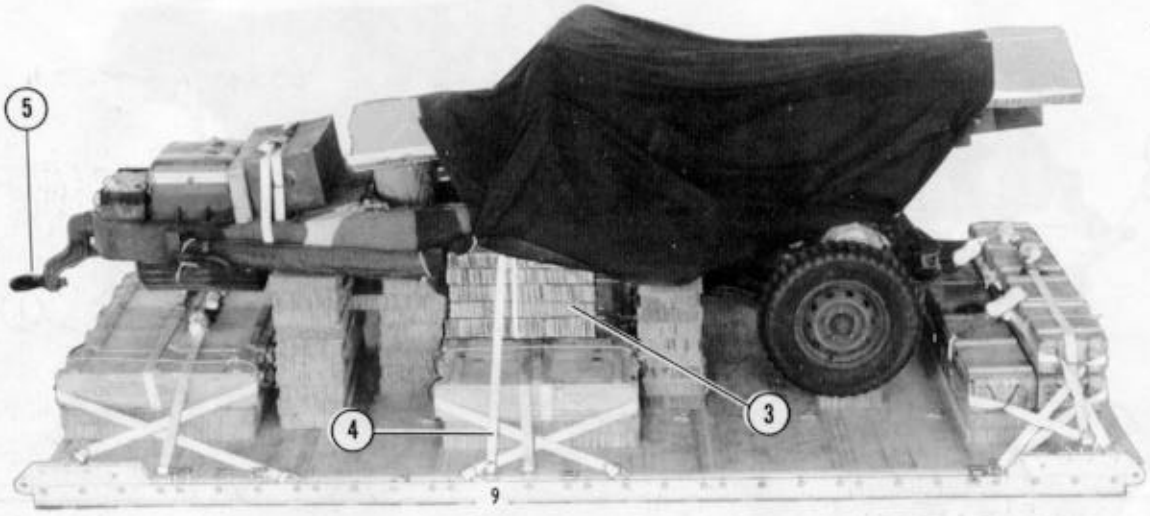
3-7. Stowing Collimator Box and Setting Howitzer on Platform

Stow the collimator box on the load, and set the howitzer on the platform as shown in Figure 3-14.



1. Attach a 9-foot (2-loop), type XXVI nylon sling to each lifting point on the gun trails. Safety the pin in the lifting point with type III nylon cord. Extend the slings upward to the crane hook.
2. Run an 11-foot (2-loop), type XXVI nylon sling around each wheel support arm and through its own loop. Extend the slings upward to the crane hook.

Figure 3-14. Collimator box stowed and howitzer set on platform



(3) Center the collimator box lengthwise on the middle stack of ammunition boxes flush against stack 3.

(4) Pass the free end of a 15-foot lashing through clevis 9 and through its own D-ring. Pull the lashing over the top of the collimator box. Fit a D-ring to the end of the lashing, and hook the D-ring to clevis 9A with a load binder.

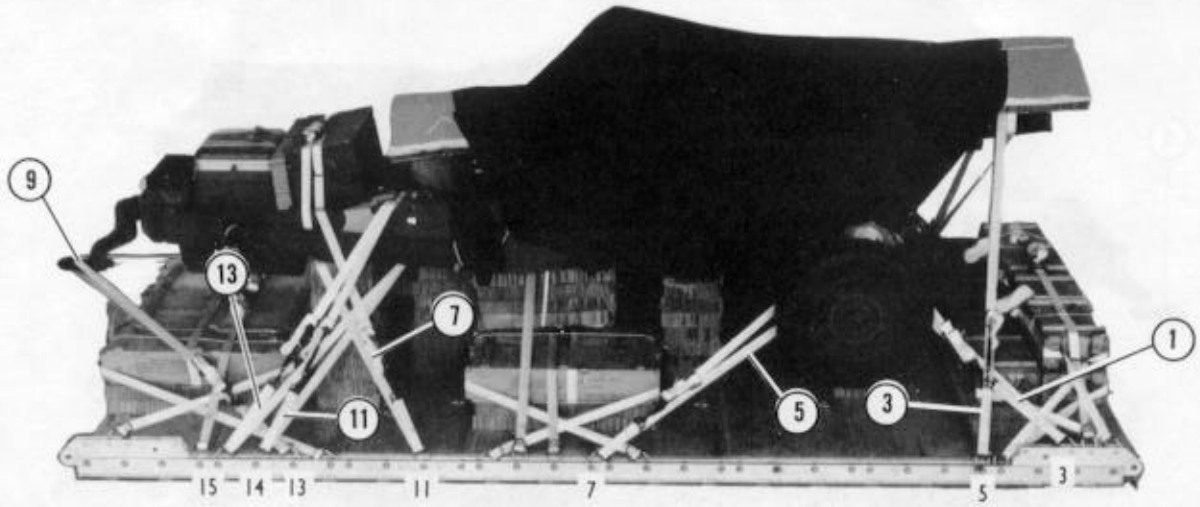
(5) Set the howitzer on the honeycomb stacks with the breechblock on stack 3 and the baseplate against stack 2. The lunette must overhang the rear of the platform 16 inches.

(6) Remove the lifting slings (not shown).

Figure 3-14. Collimator box stowed and howitzer set on platform (continued)

3-8. Lashing Howitzer

Lash the howitzer to the platform with fourteen 15-foot lashings as shown in Figure 3-15. Install and safety the lashings according to FM 10-500-2/TO 13C7-1-5.

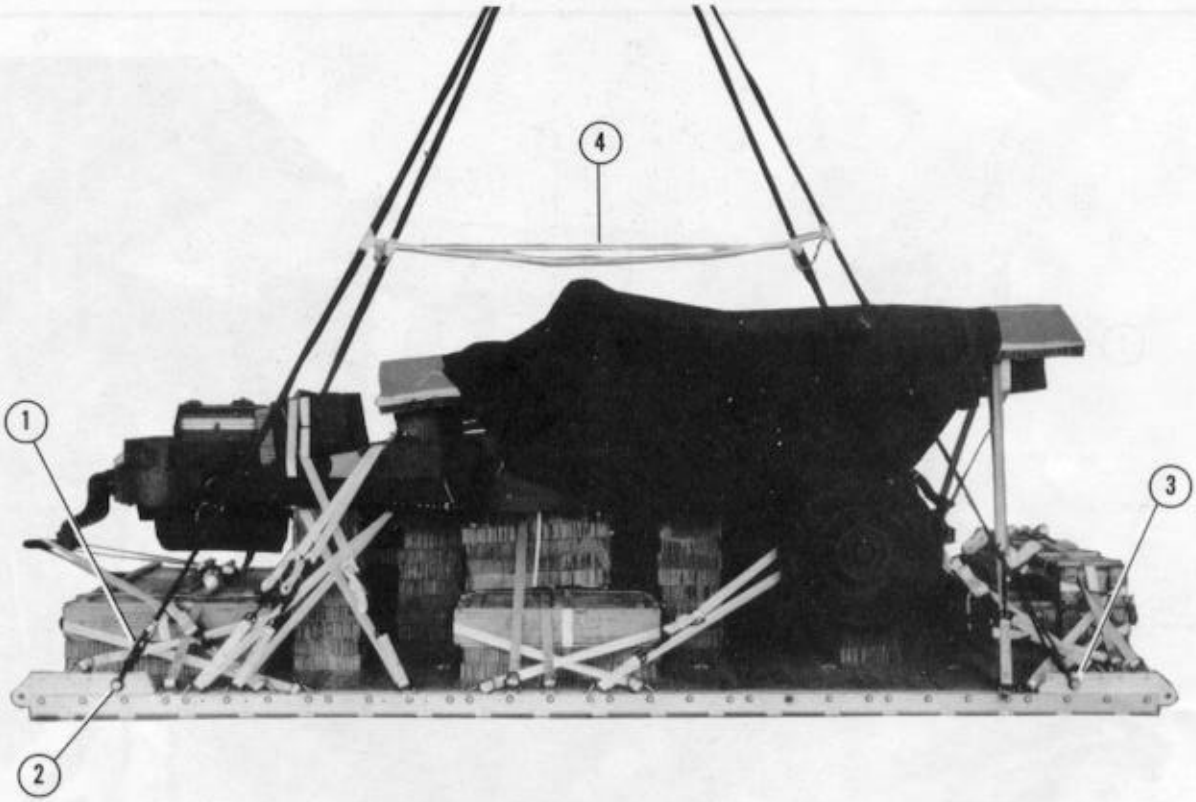


Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	3	Around right wheel support arm.
2	3A	Around left wheel support arm.
3	5	Under recoil rail assembly and around tube.
4	5A	Under recoil rail assembly and around tube.
5	7	Around right wheel support arm.
6	7A	Around left wheel support arm.
7	11	Around right trail.
8	11A	Around left trail.
9	13	Through lunette.
10	13A	Through lunette.
11	14	Around right trail.
12	14A	Around left trail.
13	15	Around right trail.
14	15A	Around left trail.

Figure 3-15. Lashings installed

3-9. 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 3-16.



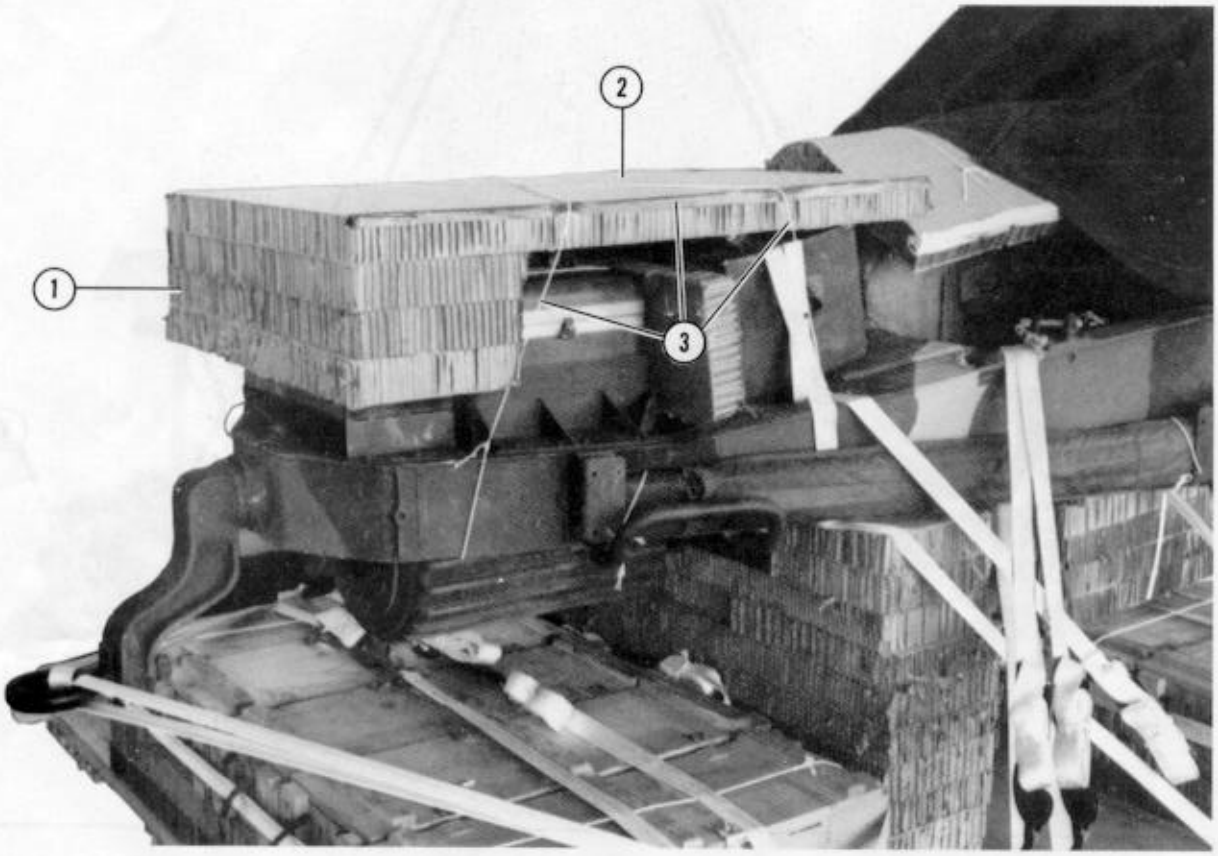
1. Place the bell portion of a large clevis onto the end loop of a 16- foot (2-loop), type XXVI suspension sling.
2. Bolt the clevis to a tandem link using the 1-inch hole in the top of the link.
3. Repeat steps 1 and 2 for the other three tandem links.
4. Extend the slings to a crane hook or other stationary point. Install the deadman's tie as outlined in FM 10-500-2/TO 13C7-1-5.

Figure 3-16. Suspension slings and deadman's tie installed

3-10. Preparing Stowage Platform and Stowing Cargo Parachutes

Prepare the stowage platform and stow the cargo parachutes as described below.

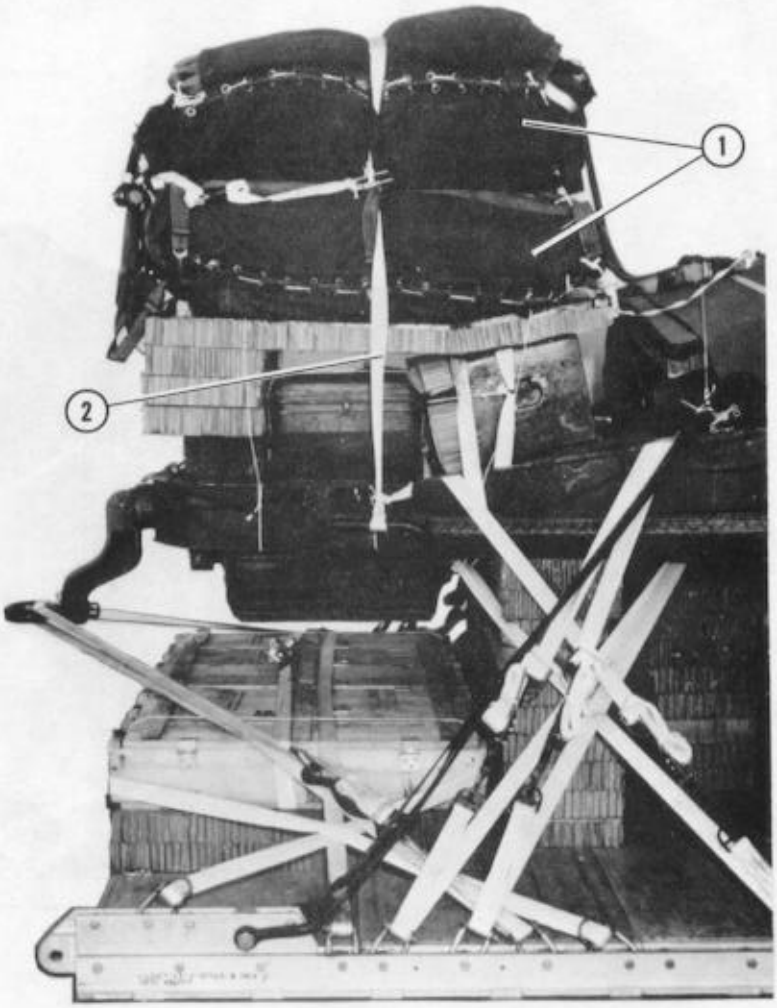
a. Preparing Stowage Platform. Prepare the cargo parachute stowage platform as shown in Figure 3-17.



1. Glue three 12- by 36-inch pieces of honeycomb flush with one 36-inch end of a 36- by 48-inch piece of honeycomb.
2. Center the stack on the rear of the trails with the long piece of honeycomb facing the front.
3. Tape the top 48-inch edges of the stack. Tie the stack to the trails with two lengths of type III nylon cord.

Figure 3-17. Stowage platform prepared and stowed

b. Stowing Parachutes. Prepare and stow two G-11A or G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-18.

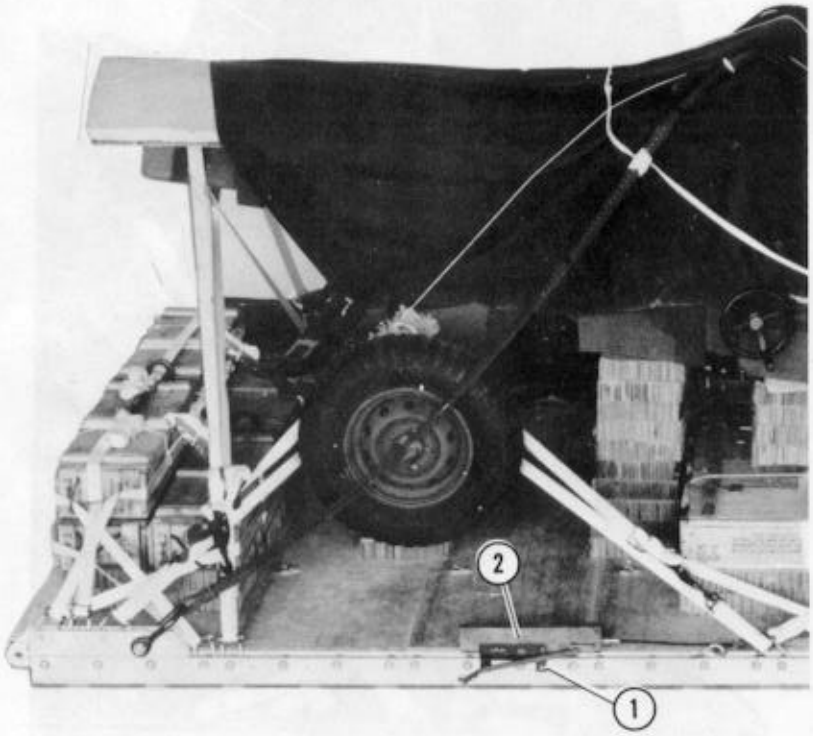


1. Stack two G-11A or G-11B cargo parachutes on the stowage platform. Install them on the load according to FM 10-500-2/TO 13C7-1-5.
2. Tie the restraint strap to the lifting handles on the trails.

Figure 3-18. Cargo parachutes stowed

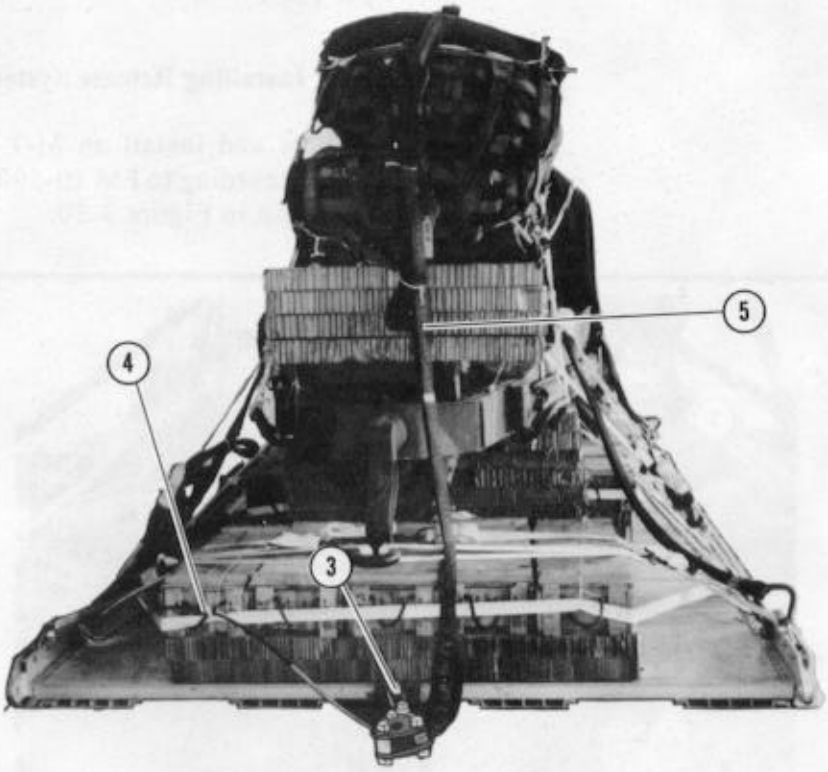
3-11. Installing Extraction System

Install the components of the EFTC system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-19.



1. Install the EFTC mounting brackets to the rear set of holes on the left platform side rail.
2. Install the actuator according to FM 10-500-2/TO 13C7-1-5.

Figure 3-19. EFTC installed



(3) Install the latch assembly and latch assembly adapter to the extraction bracket according to FM 10-500-2/TO 13C7-1-5.

(4) Install a 16-foot cable according to FM 10-500-2/TO 13C7-1-5. Tie it to the carrying handle on the first ammunition box at the rear of the load with 1/4-inch, type I cotton webbing.

(5) Install a 16-foot deployment sling on the load. Bolt it to the latch assembly. S-fold the slack, and tie the folds with 1/4-inch, type I cotton webbing.

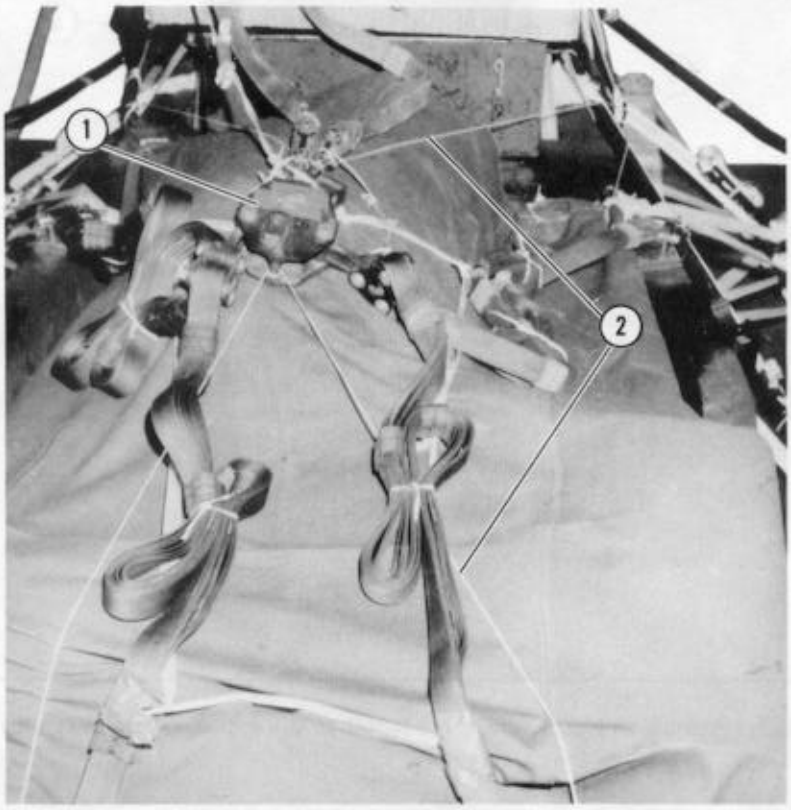
Figure 3-19. EFTC installed (continued)

3-12. Installing Provisions for Emergency Restraints

Install provisions for emergency restraints on the front of the platform according to FM 10-500-2/TO 13C7-1-5.

3-13. Installing Release System

Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-20.



(1) Prepare and install an M-1 cargo parachute release as described in FM 10-500-2/TO 13C7-1-5. Set the release on the load cover directly above the breechblock.

(2) Tie the release to convenient points on the load with two lengths of type III nylon cord.

Figure 3-20. M-1 release installed

3-14. Placing Extraction Parachute

Place the extraction parachute as described below.

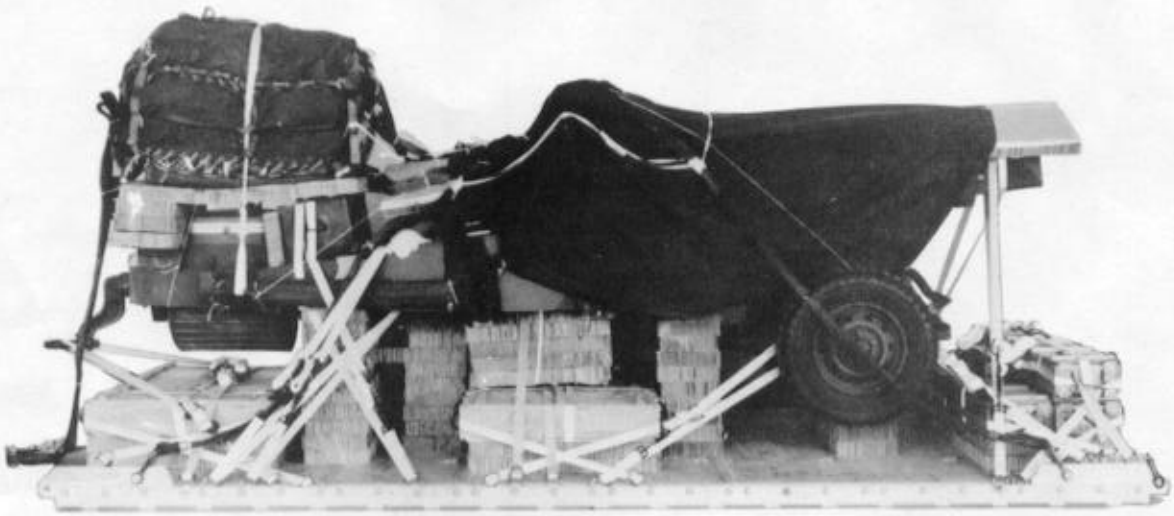
a. C-130 Aircraft. Place a 22-foot cargo extraction parachute and a 60-foot (3-loop), type XXVI nylon extraction line on the load for installation in the aircraft.

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

3-15. Marking Rigged Load

Mark the rigged load as described in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-21. If the accompanying load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

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



CB

RIGGED LOAD DATA

Weight:	Load shown	8,060 pounds
	Maximum load allowed	9,000 pounds
Height		90 1/2 inches
Width		108 inches
Length		216 inches
Overhang:	Front (nose bumper)	5 1/2 inches
	Rear (parachute)	19 inches
CB (from front edge of platform)		98 inches
Extraction system		EFTC

Figure 3-21. M102 howitzer rigged for low-velocity airdrop on a type V platform

3-16. Equipment Required

Use the equipment listed in Table 3-1 to rig this load. The equipment required for rigging the accompanying load is also included.

Table 3-1. Equipment required for rigging the M102 howitzer for low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium) (emergency restraint)	4
4030-00-090-5354	1-in (large)	6
8305-00-242-3593	Cloth, cotton duck, 60-in	8 yd
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer w 16-ft cable	1
1670-00-360-0328	Cover, clevis, large	2
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-ft (3-loop) or	1
1670-01-107-7652	160-ft (1-loop)	1
1670-00-783-5988	Link assembly, type IV	1
1670-00-753-3928	Pad,energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	10 sheets
	12- by 6-in	(1)
	12- by 12-in	(15)
	12- by 30-in	(1)
	12- by 48-in	(7)
	18- by 12-in	(2)
	18- by 24-in	(1)
	27- by 36-in	(5)
	36- by 12-in	(21)
	36- by 48-in	(2)
	36- by 96-in	(1)
	62- by 36-in	(2)
	74- by 24-in	(2)
	74- by 36-in	(2)
	Parachute:	
	Cargo:	
1670-00-269-1107	G-11A or	2
1670-01-016-7841	G-11B	2

Table 3-1. Equipment required for rigging the M102 howitzer for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	Cargo extraction:	
1670-00-052-1548	15-ft (for C-141) or	1
1670-01-063-3715	15-ft (for C-141)	1
1670-01-063-3716	22-ft (for C-130)	1
	Platform, AD, type V, 16-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	34
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(4)
5530-00-128-4981	Plywood, 3/4-in:	
	12- by 36-in	1 sheet
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop:	
	For deployment line:	
1670-00-823-5042	16-ft (3-loop), type X nylon webbing or	1
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	1
	For lifting:	
1670-00-753-3631	9-ft (3-loop), type X nylon webbing or	2
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
1670-00-823-5040	11-ft (3-loop), type X nylon webbing or	2
1670-01-063-7760	11-ft (2-loop), type XXVI nylon webbing	2
	For riser extension:	
1670-00-753-3794	20-ft (2-loop), type X nylon webbing or	2
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	2
	For suspension:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap parachute release, multicut comes w 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	34
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in	As required
8305-00-263-3591	Type VIII	As required

Section II

RIGGING HOWITZER WITH 23 BOXES OF AMMUNITION FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM

3-17. Description of Load

This load is rigged the same as the M102 howitzer in Section I, except for the addition of six ammunition boxes, the placement of the collimator, and the placement of the EFTC actuator bracket. This load requires two G-11B cargo parachutes.

3-18. Preparing Platform

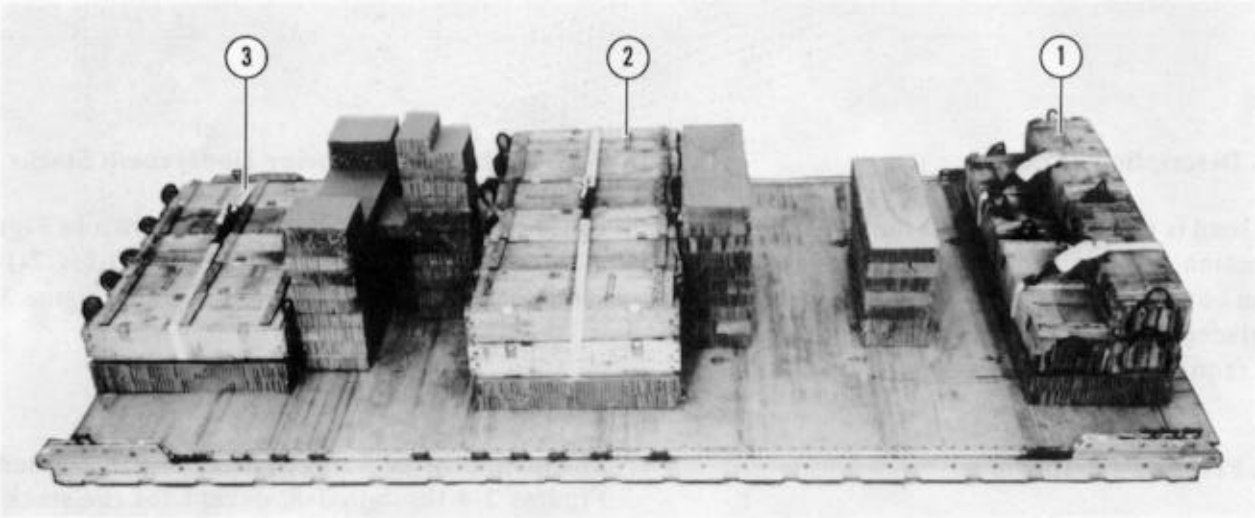
Prepare the platform as described in paragraph 3-2 and as shown in Figure 3-1.

3-19. Building and Placing Honeycomb Stacks

Build four honeycomb stacks as shown in Figure 3-2 and according to FM 10-500-2/TO 13C7-1-5. Place them on the platform as shown in Figure 3-3.

3-20. Stowing Accompanying Load

The ammunition is rigged as shown in Section I, Figures 3-4 through 3-8, except for the stack of ammunition in the middle of the platform. Stow the accompanying load of 23 boxes of ammunition weighing 2,760 pounds as shown in Figures 3-4, 3-6, 3-8, 3-22, 3-23, and 3-24.



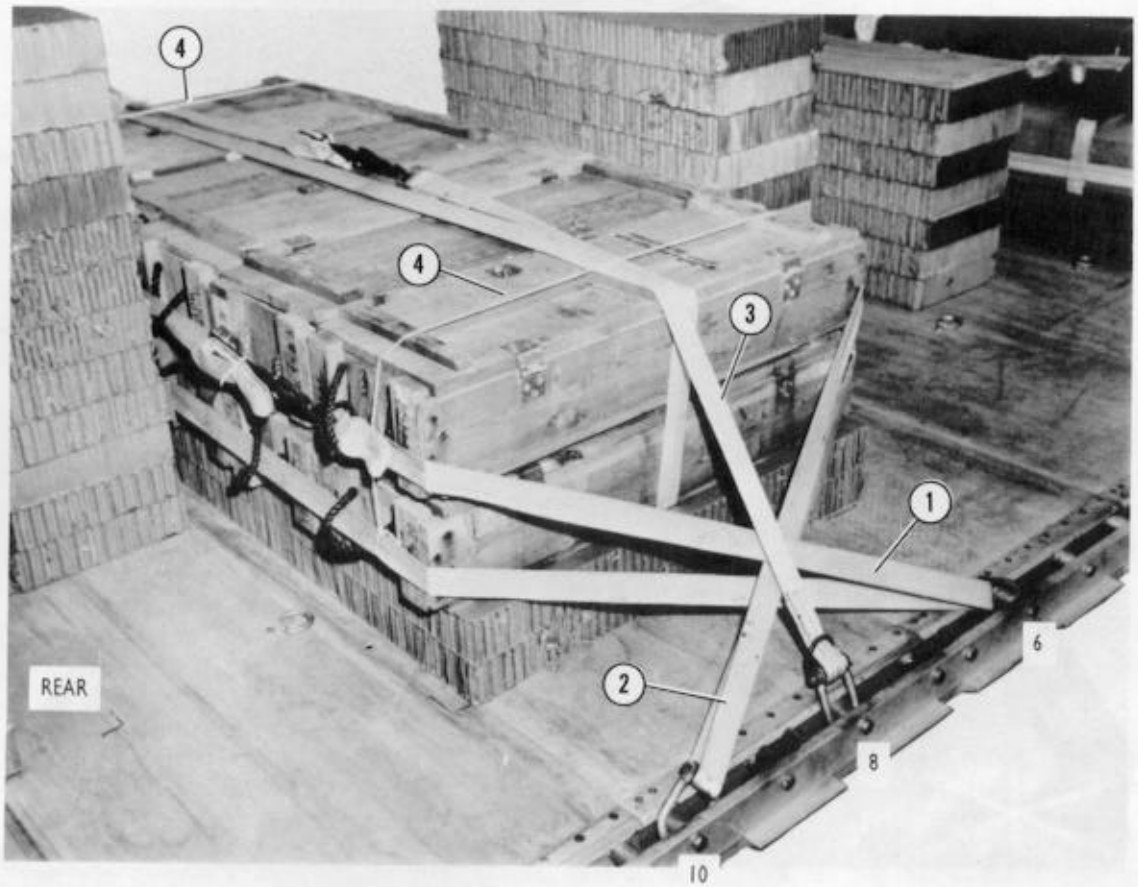
(1) Set four boxes of ammunition on top of the lashings and honeycomb on the front of the platform. Place two more boxes on top with their front edges aligned with the front boxes. Secure each lashing with a D-ring and a load binder.

Note: Two boxes of APERS or HERAP rounds may be substituted for the two rear boxes of ammunition in this stack. This ammunition will extend past the honeycomb.

(2) Set 12 boxes of ammunition on the lashing and honeycomb in the middle of the platform. Secure the lashing with a D-ring and a load binder.

(3) Set five boxes of ammunition on the lashing and honeycomb on the rear of the platform. Secure the lashing with a D-ring and a load binder.

Figure 3-22. Boxes of ammunition secured with lashings



(1) Form a 30-foot lashing according to FM 10-500-2/TO 13C7-1-5. Pass the ends of the lashing through the rear handles of the lower row of boxes, through clevises 6 and 6A, and through the rear handles of the upper row of boxes. Secure the lashing at the rear of the boxes with two D-rings and a load binder.

(2) Form a 30-foot lashing according to FM 10-500-2/TO 13C7-1-5. Pass the ends of the lashing through the front handles of the lower row of boxes, through clevises 10 and 10A, and through the front handles of the upper row of boxes. Secure the lashing at the front of the boxes with two D-rings and a load binder.

(3) Pass a 15-foot lashing through clevis 8 and through its own D-ring. Pull the lashing over the tops of the boxes. Fit a D-ring to the end of the lashing and secure the lashing to clevis 8A with a load binder.

(4) Tie two lengths of type III nylon cord between the lashings on the ends of the boxes to keep the lashings in place.

Figure 3-23. Boxes of ammunition lashed to middle of platform

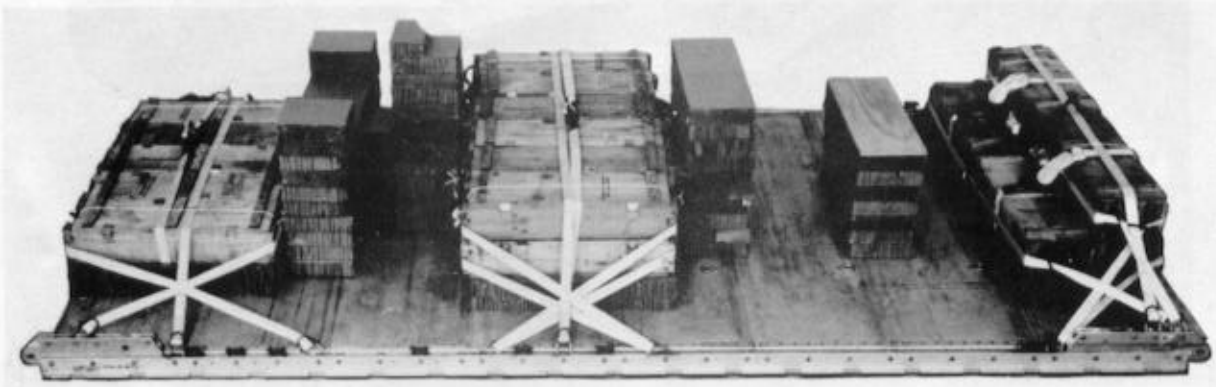
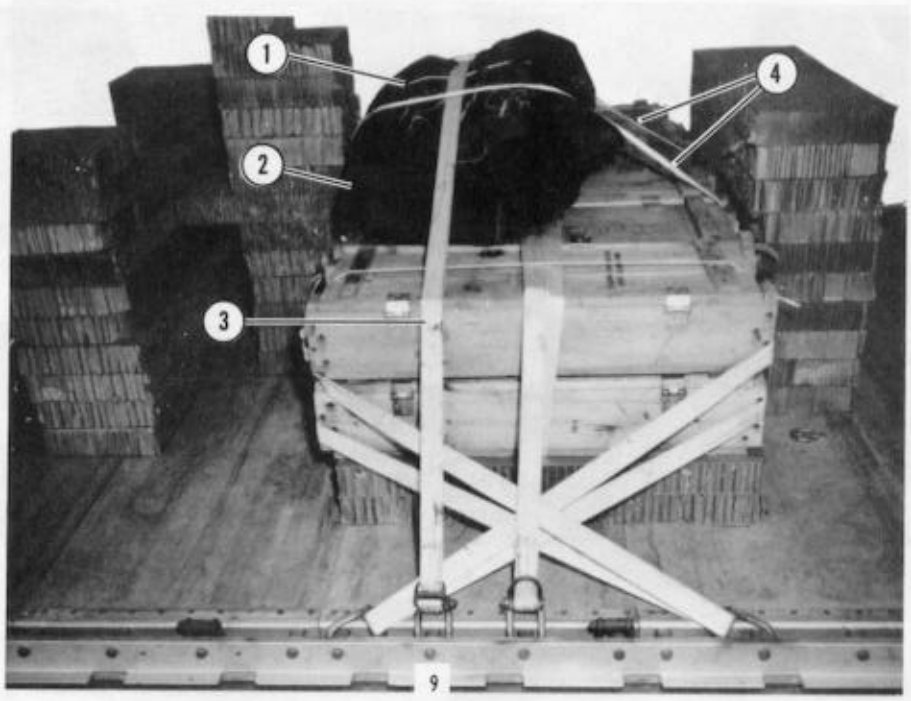


Figure 3-24. Twenty-three boxes of ammunition lashed to the platform

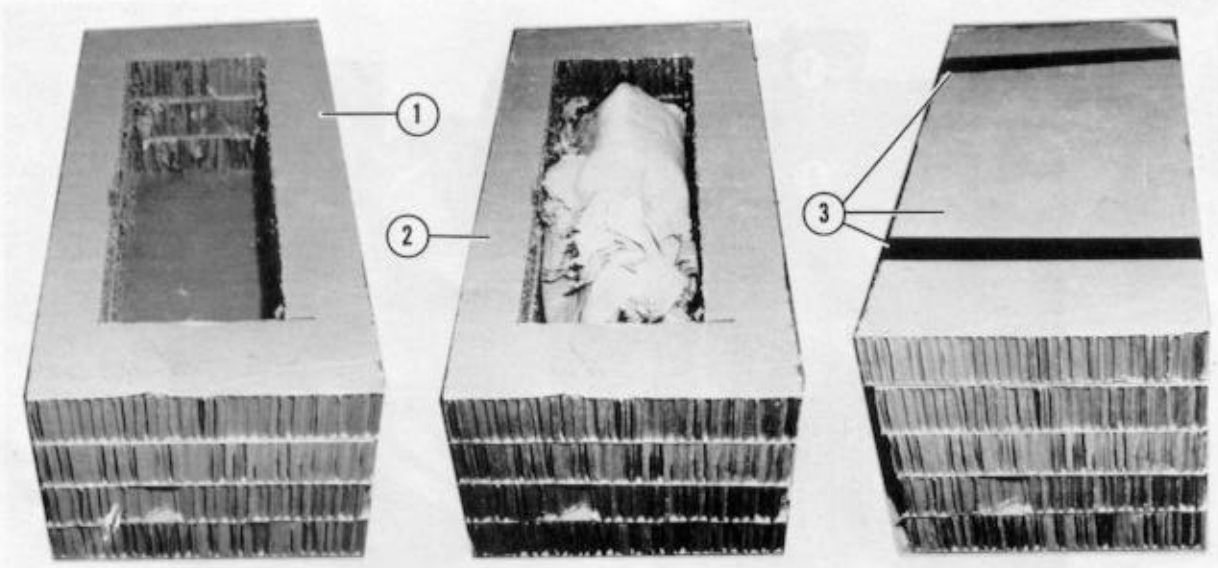
3-21. Preparing Howitzer and Equipment

Prepare the howitzer as described in paragraph 3-5 and as shown in Figures 3-10 and 3-11. Stow the external air transport slings as shown in Figure 3-25. Prepare the collimator as shown in Figure 3-26.



1. Wrap the external air transport slings in an A-22 cargo bag assembly.
2. Center the bag on the middle ammunition stack flush with the rear edge of the stack.
3. Pass a 15-foot lashing through clevis 9 and through its own D-ring. Pull the lashing over the sling bag. Fit a D-ring to the end of the lashing and secure the lashing to clevis 9A with a load binder.
4. Tie the bag to the lashings placed in Figure 3-23, steps 1 and 2, in two places with 1/2-inch tubular nylon webbing.

Figure 3-25. External air transport slings stowed



1. Cut five 16- by 36-inch pieces of honeycomb. Make a 9- by 26-inch cutout in the center of three of the pieces. Glue the three pieces with cutouts flush over a solid piece.
2. Pad the collimator generously with cellulose wadding and place it in the collimator box.
3. Place the remaining solid piece of honeycomb flush over the box, and tape the box shut with 2-inch cloth-backed tape.

Figure 3-26. Collimator prepared

3-22. Covering Load

Cover the load as shown in Figure 3-13.

3-23. Stowing Collimator Box and Setting Howitzer on Platform

Stow the collimator box on the load and set the howitzer on the platform as shown in Figure 3-27. Lift the howitzer as shown in Figure 3-14, steps 1 and 2.

3-24. Lashing Howitzer

Lash the howitzer to the platform with fourteen 15-foot lashings as shown in Figure 3-15. Install and safety the lashings according to FM 10-500-2/TO 13C7-1-5.

3-25. Installing Suspension Slings and Deadman's Tie

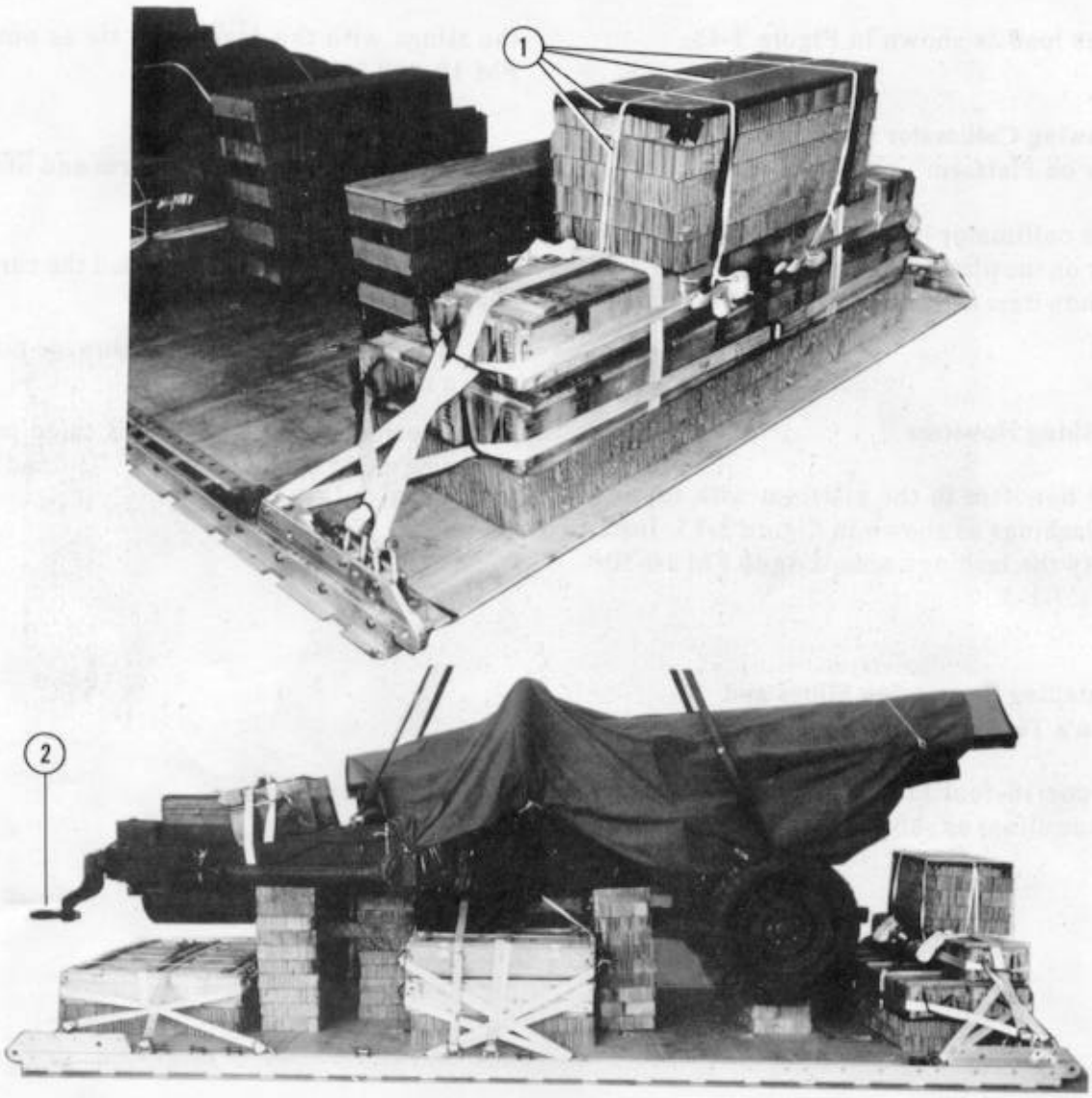
Install four 16-foot (2-loop), type XXVI nylon suspension slings as shown in Figure 3-16. Safety the slings with the deadman's tie as outlined in FM 10-500-2/TO 13C7-1-5.

3-26. Preparing Stowage Platform and Stowing Cargo Parachutes

Prepare the stowage platform and the cargo parachutes as described below.

a. Prepare the cargo parachute stowage platform as shown in Figure 3-17.

b. Prepare and stow two G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-18.

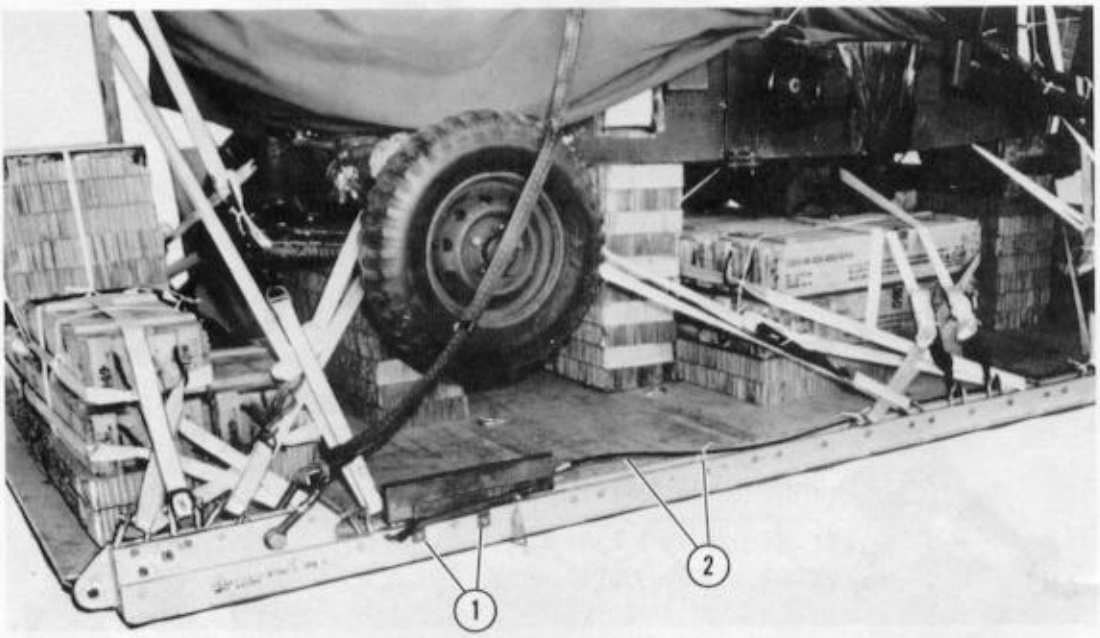


1. Tape the top edges of the collimator box. Center the collimator box on the front stack of boxes. Tie the box to the lashings using three lengths of 1/2-inch tubular nylon webbing.
2. Set the howitzer on the honeycomb stacks with the breechblock on stack 3 and the base plate against stack 2. The lunette must overhang the rear of the platform 16 inches.
3. Remove the lifting slings (not shown).

Figure 3-27. Collimator box stowed and howitzer set on platform

3-27. Installing Extraction System

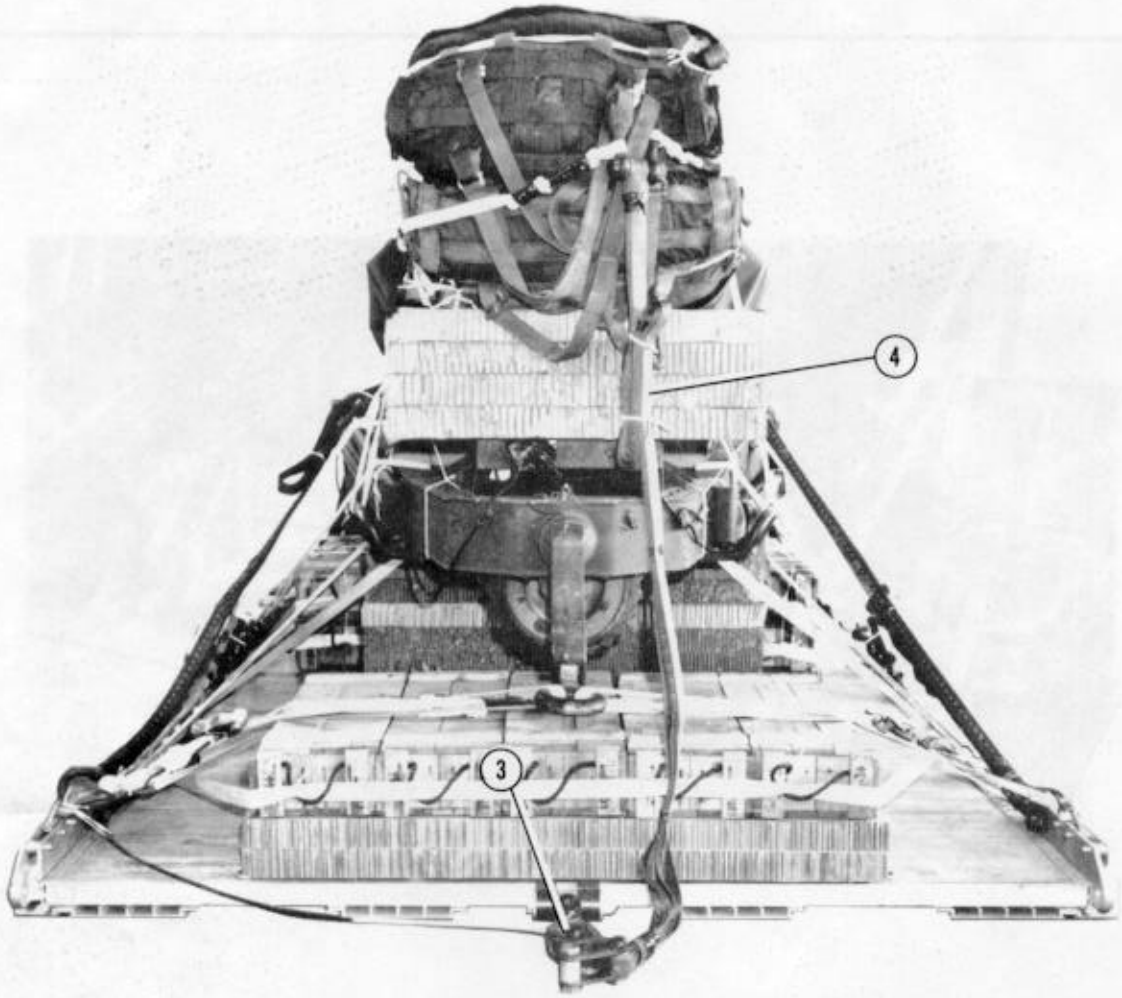
Install the components of the EFTC system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-28.



(1) Install the EFTC mounting brackets to the front set of holes on the left platform side rail.

(2) Attach a 16-foot release cable to the actuator. Install the actuator to the EFTC mounting brackets. Run the cable to the rear of the load. Safety the cable to convenient points along the left rail as shown with 1/4-inch cotton webbing.

Figure 3-28. EFTC installed



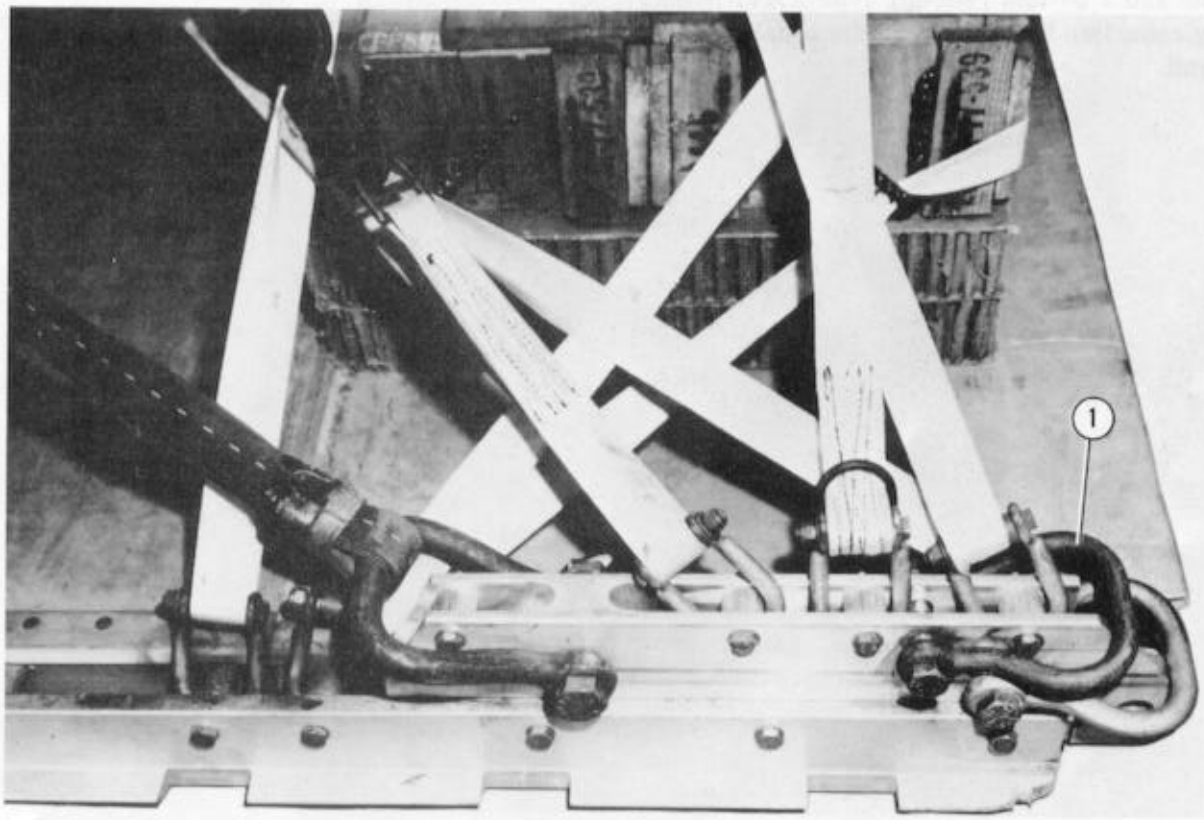
(3) Install the latch assembly to the extraction bracket. Attach the release cable to the latch assembly.

(4) Install a 16-foot (2-loop) nylon webbing sling as the deployment line.

Figure 3-28. EFTC installed (continued)

3-28. Installing Provisions for Emergency Restraints

Install provisions for emergency restraints according to FM 10-500-2/TO 13C7-1-5. Figure 3-29 shows restraint provisions for the C-130 aircraft.



(1) Attach two medium suspension clevises to each of the top two emergency restraint provision holes of each front tandem link.

Figure 3-29. Provisions for emergency restraints installed for C-130 aircraft

3-29. Installing Release System

Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-20.

3-30. Placing Extraction Parachute

Place the extraction parachute as described below.

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

b. C-141 Aircraft. Place a 22-foot cargo extraction parachute and a 140-foot (3-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

3-31. Marking Rigged Load

Mark the rigged load as described in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-30. If the accompanying load varies from the one shown in Figure 3-30, the weight, height, CB, and parachute requirements must be recomputed.

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	8,800 pounds
	Maximum load allowed	9,000 pounds
Height		90 1/2 inches
Width		108 inches
Length		216 1/2 inches
Overhang:	Front	5 1/2 inches
	Rear	19 inches
CB (from front edge of platform)		98 inches
Extraction system		EFTC

Figure 3-30. M102 howitzer rigged with 23 boxes of ammunition for low-velocity airdrop on a type V platform

3-32. Equipment Required

Use the equipment listed in Table 3-2 to rig this load. The equipment required for rigging the accompanying load is also included.

Table 3-2. Equipment required for rigging the M102 howitzer with 23 boxes of ammunition for a low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-00-587-3421	Bag, Cargo, A-22	1
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium) (emergency restraint)	4
4030-00-090-5354	1-in (large)	6
8305-00-242-3593	Cloth, cotton duck, 60-in	8 yd
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer w 16-ft cable	1
1670-00-360-0328	Cover, clevis, large	2
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing (for C-130)	1
1670-01-107-7651	140-ft (3-loop), type XXVI nylon webbing (for C-141)	1
	Link assembly, two-point, 3 3/4-inch	1
5306-00-435-8994	Bolt, 1-in diam, 4-in	(2)
5310-00-232-5165	Nut, 1-in	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	10 sheets
	12- by 6-in	(1)
	12- by 12-in	(15)
	12- by 30-in	(1)
	12- by 48-in	(7)
	16- by 36-in	(5)
	18- by 12-in	(2)
	18- by 24-in	(1)
	36- by 12-in	(20)
	36- by 48-in	(2)
	36- by 96-in	(1)
	62- by 36-in	(2)

Table 3-2. Equipment required for rigging the M102 howitzer with 23 boxes of ammunition for a low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	74- by 24-in	(2)
	74- by 36-in	(2)
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	2
	Cargo extraction:	
1670-00-063-3716	22-ft	1
	Platform, AD, type V, 16-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(34)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(4)
5530-00-128-4981	Plywood, 3/4- by 12- by 36-in	1
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	1
	For lifting:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
1670-01-063-7760	11-ft (2-loop), type XXVI nylon webbing	2
	For riser extension:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	2
	For suspension:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap, parachute release, multicut comes w 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	36
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in	As required
8305-00-263-3591	Type VIII (parachute restraint strap)	7 yd

CHAPTER 4

RIGGING M102 HOWITZER WITH 1 1/4-TON HMMWV TRUCK AND ACCOMPANYING AMMUNITION

Section I

RIGGING HOWITZER AND TRUCK FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM

4-1. Description of Load

The M102, 105-millimeter howitzer is rigged with the 1 1/4-ton HMMWV truck as its prime mover and an accompanying load of gun equipment and ammunition on a 32-foot, type V airdrop platform. A load weighing 800 to 2,000 pounds must be rigged in the truck. The gun equipment and 8 boxes of ammunition are shown. Twenty-two boxes of ammunition are rigged on the platform. This load requires four G-11B cargo parachutes.

4-2. Preparing Platform

Prepare a 32-foot, type V airdrop platform as described below.

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

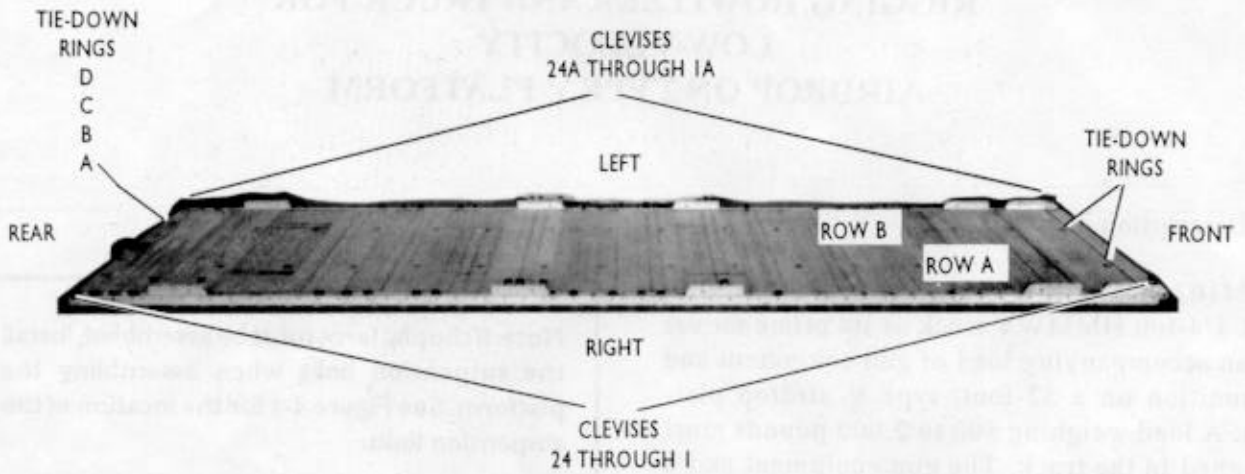
Note: If the platform must be assembled, install the suspension links when assembling the platform. See Figure 4-1 for the location of the suspension links.

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

c. Installing Tandem Links. Install a tandem link on the front of each rail as shown in Figure 4-1.

d. Installing and Numbering Clevises. Bolt and number 48 clevis assemblies as shown in Figure 4-1.

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 26, 27, and 28 on each platform side rail. Face the flat part of the link to the front of the rail.
2. Install a suspension link in holes 6, 7, and 8 on each platform side rail. Face the flat part of the link to the front of the rail.
3. Install a suspension link in holes 37, 38, and 39 on each platform side rail. Face the flat part of the link to the rear of the rail.
4. Install a suspension link in holes 57, 58, and 59 on each platform side rail. Face the flat part of the link to the rear of the rail.

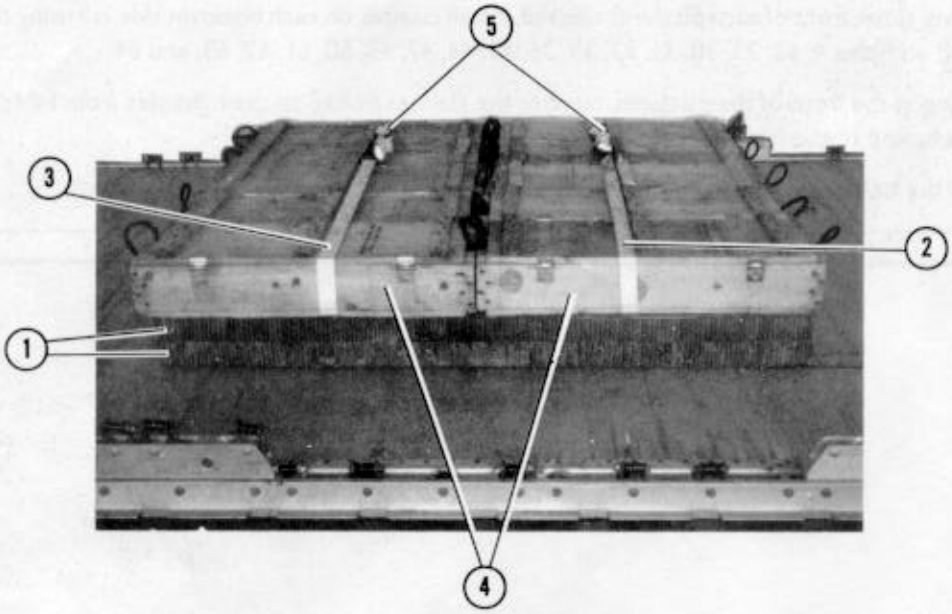
Figure 4-1. Platform prepared

5. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
6. Install a clevis on bushing 1 on each front tandem link.
7. Install a clevis on bushing 2 on the second suspension link on each side.
8. Install clevises on bushings 1, 2, and 3 on the third suspension link on each side.
9. Install clevises on bushings 1 and 4 on the fourth suspension link on each side.
10. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 4, 13, 23, 30, 31, 33, 35, 36, 43, 44, 47, 48, 50, 61, 62, 63, and 64.
11. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 24 and those bolted to the left side from 1A through 24A.
12. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 4-1. Platform prepared (continued)

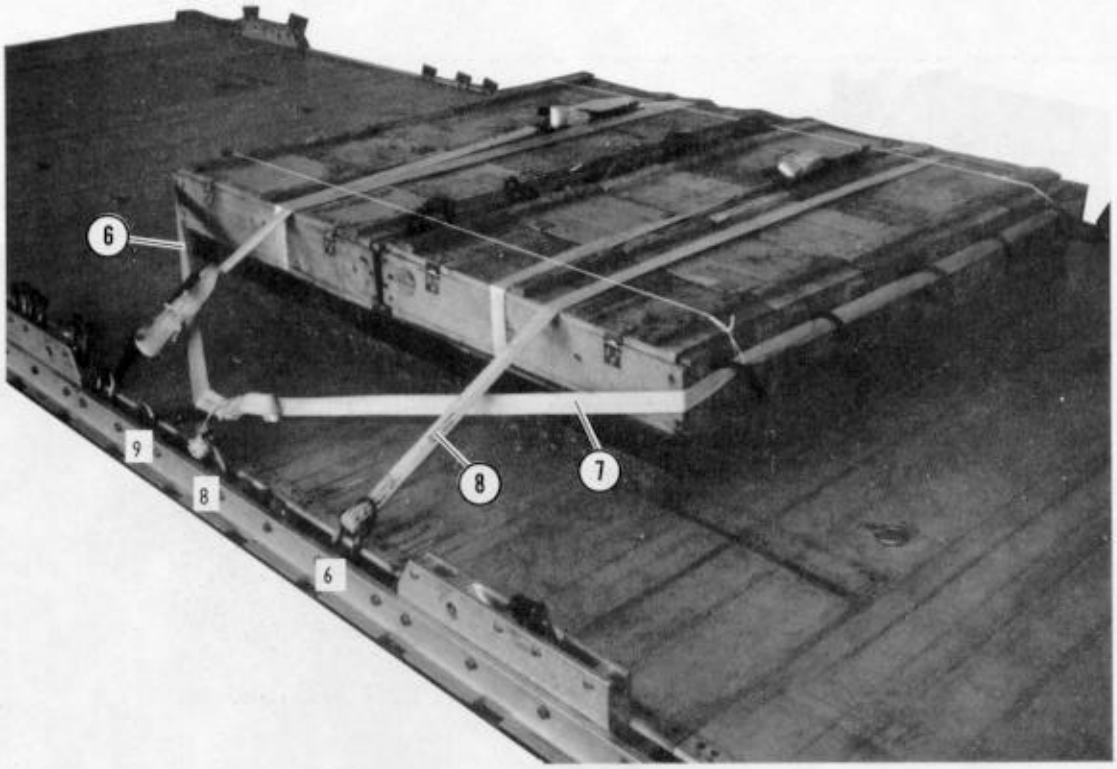
4-3. Stowing Accompanying Load on Platform

Stow 22 boxes of 105-millimeter ammunition weighing 2,640 pounds on the platform as shown in Figures 4-2, 4-3, and 4-4.



1. Alternate two 36- by 72-inch and two 24- by 72-inch pieces of honeycomb to make two layers 60 inches wide and 72 inches long. Position this stack 129 inches from the front edge of the platform.
2. Center a 15-foot lashing 18 inches from the front edge of the stack.
3. Center a 15-foot lashing 52 inches from the front edge of the stack.
4. Place 10 boxes of ammunition on the honeycomb.
5. Secure the lashings placed in steps 2 and 3 above over the boxes with D-rings and load binders.

Figure 4-2. Ten boxes of ammunition stowed on the middle of the platform

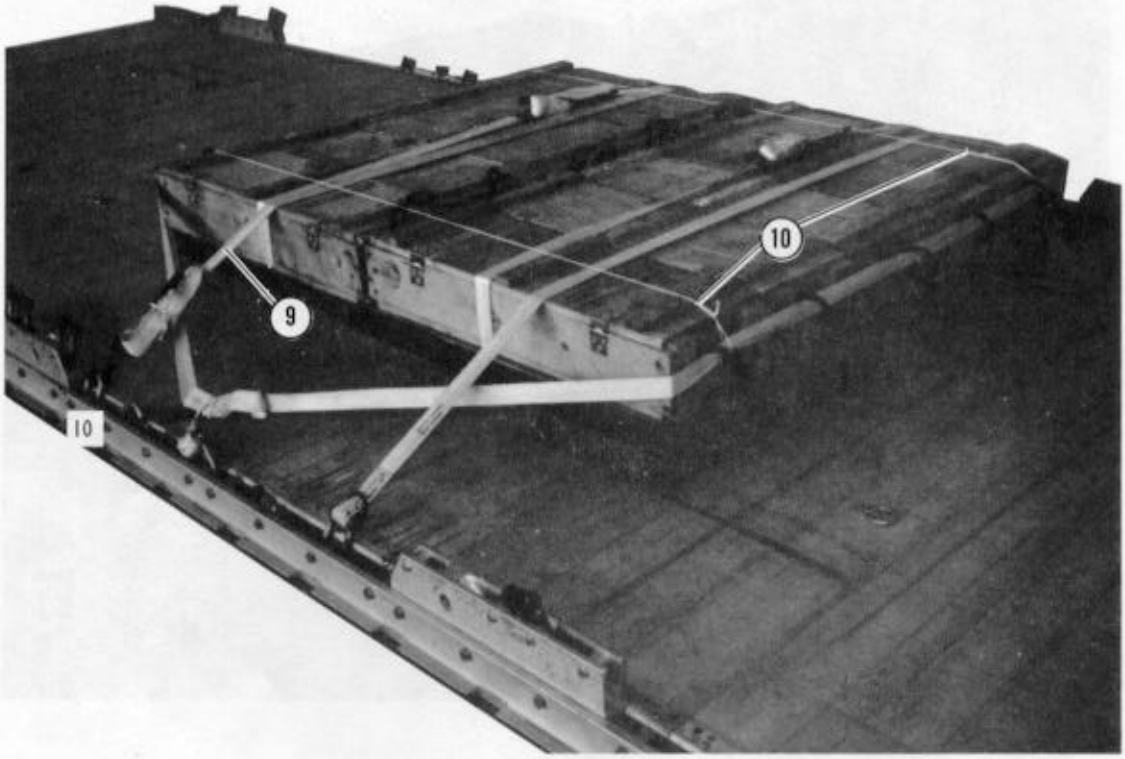


(6) Pass the free end of a 15-foot lashing through clevis 8 and through its own D-ring. Pull the lashing taut, and run it through the rear handles of the boxes. Fit a D-ring to the end of the lashing and secure it to clevis 8A with a load binder.

(7) Pass the free end of a 15-foot lashing through clevis 9A and through its own D-ring. Pull the lashing taut, and run it through the front handles of the boxes. Fit a D-ring to the end of the lashing and secure it to clevis 9 with a load binder.

(8) Pass the free end of a 15-foot lashing through clevis 6 and through its own D-ring. Pull the lashing taut, and run it over the top of the boxes. Fit a D-ring to the end of the lashing and secure it to clevis 6A with a load binder.

Figure 4-2. Ten boxes of ammunition stowed on the middle of the platform (continued)

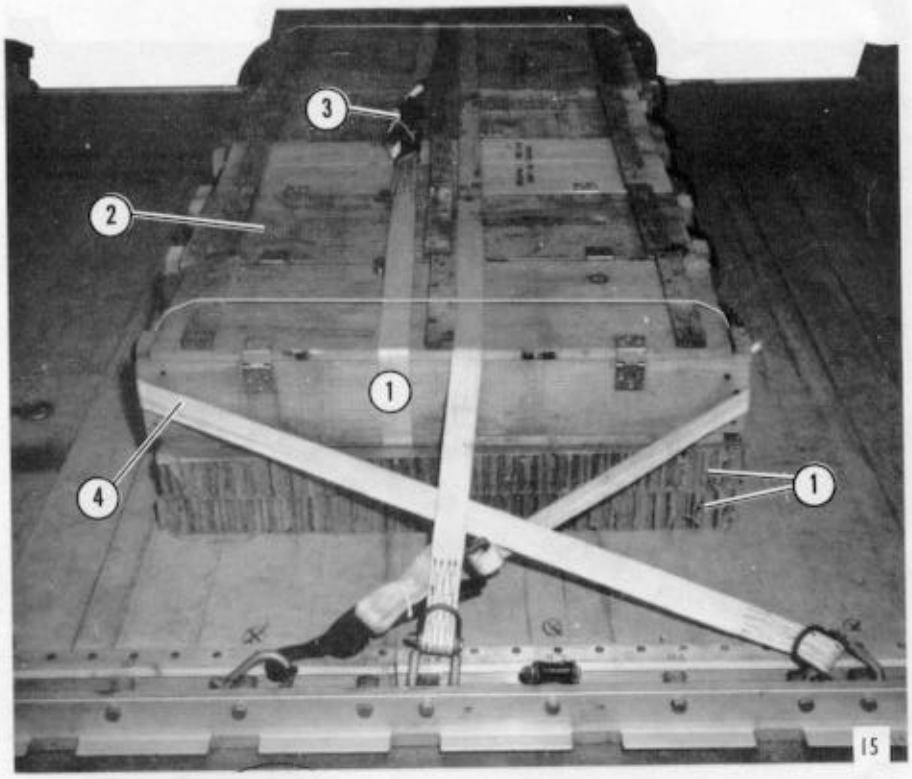


(9) Pass the free end of a 15-foot lashing through clevis 10A and through its own D-ring. Pull the lashing taut, and run it over the top of the boxes. Fit a D-ring to the end of the lashing and secure it to clevis 10 with a load binder.

Note: Invert all clevises to which load binders are attached.

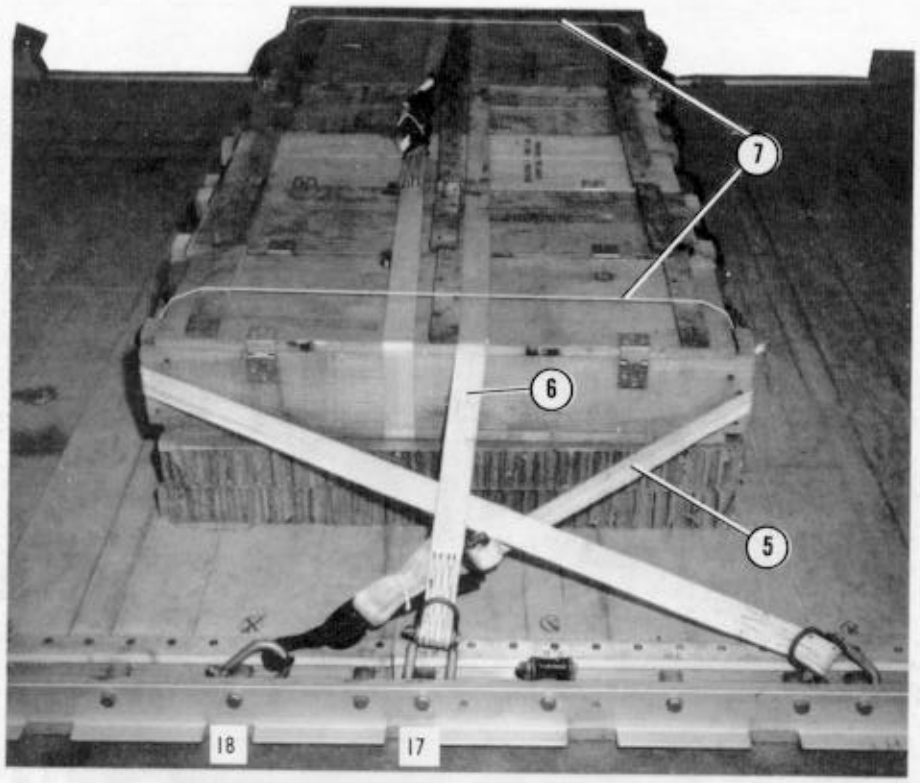
(10) Tie two lengths of type III nylon cord between the lashings on the ends of the boxes to keep the lashings in place.

Figure 4-2. Ten boxes of ammunition stowed on the middle of the platform (continued)



1. Position two 36- by 74-inch pieces of honeycomb 34 inches from the first stack of ammunition. Center a 15-foot lashing on the honeycomb.
2. Place six boxes of ammunition on the honeycomb.
3. Secure the lashing placed in step 1 on top of the boxes with a D-ring and a load binder.
4. Pass the free end of a 15-foot lashing through clevis 15 and through its own D-ring. Pull the lashing taut, and run it through the rear handles of the boxes. Fit a D-ring to the end of the lashing and secure it to clevis 15A with a load binder.

Figure 4-3. Six boxes of ammunition stowed in the howitzer position



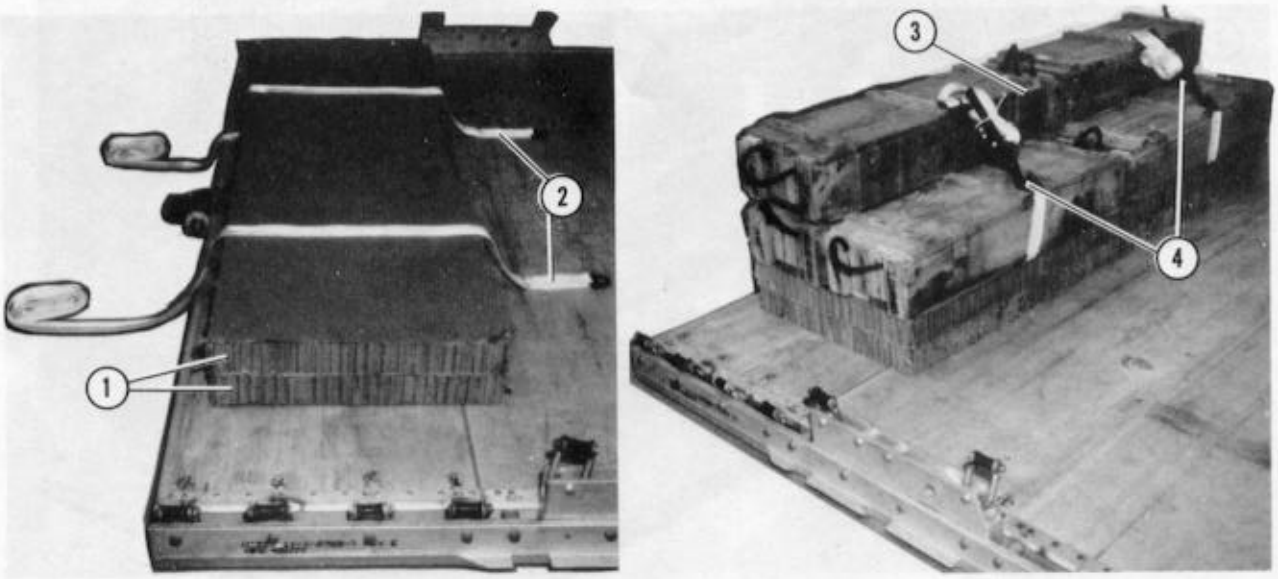
(5) Pass the free end of a 15-foot lashing through clevis 18A and through its own D-ring. Pull the lashing taut, and run it through the front handles of the boxes. Fit a D-ring to the end of the lashing and secure it to clevis 18 with a load binder.

(6) Pass the free end of a 15-foot lashing through clevis 17 and through its own D-ring. Pull the lashing taut, and run it over the top of the boxes. Fit a D-ring to the end of the lashing and secure it to clevis 17A with a load binder.

Note: Invert all clevises to which load binders are attached.

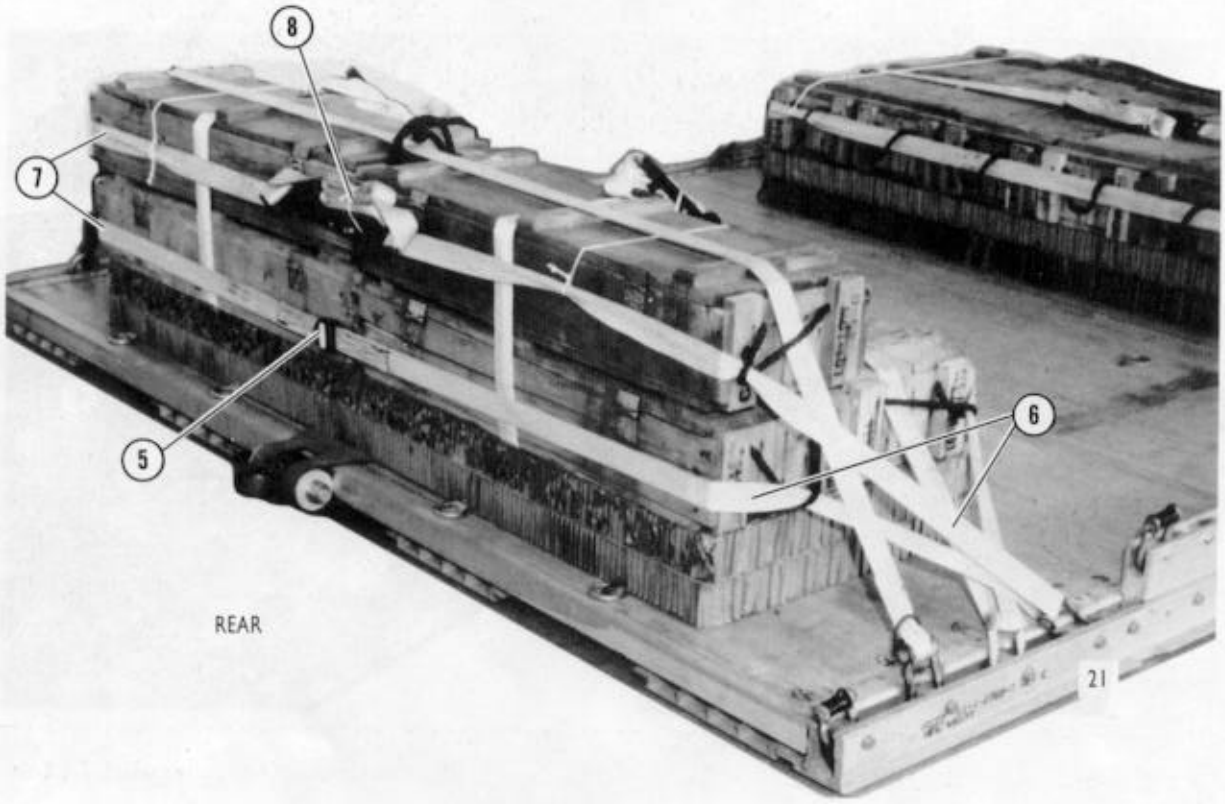
(7) Tie two lengths of type III nylon cord between the lashings on the ends of the boxes to keep the lashings in place.

Figure 4-3. Six boxes of ammunition stowed in the howitzer position (continued)



1. Place two 74- by 24-inch pieces of honeycomb 4 inches from the rear edge of the platform.
2. Place two 15-foot lashings from front to rear on the honeycomb.
3. Place six ammunition boxes on the honeycomb as shown.
4. Secure the lashings placed in step 2 above with D-rings and load binders. Avoid placing the load binders on the rear or top sides of the boxes.

Figure 4-4. Six boxes of ammunition stowed on the rear of the platform



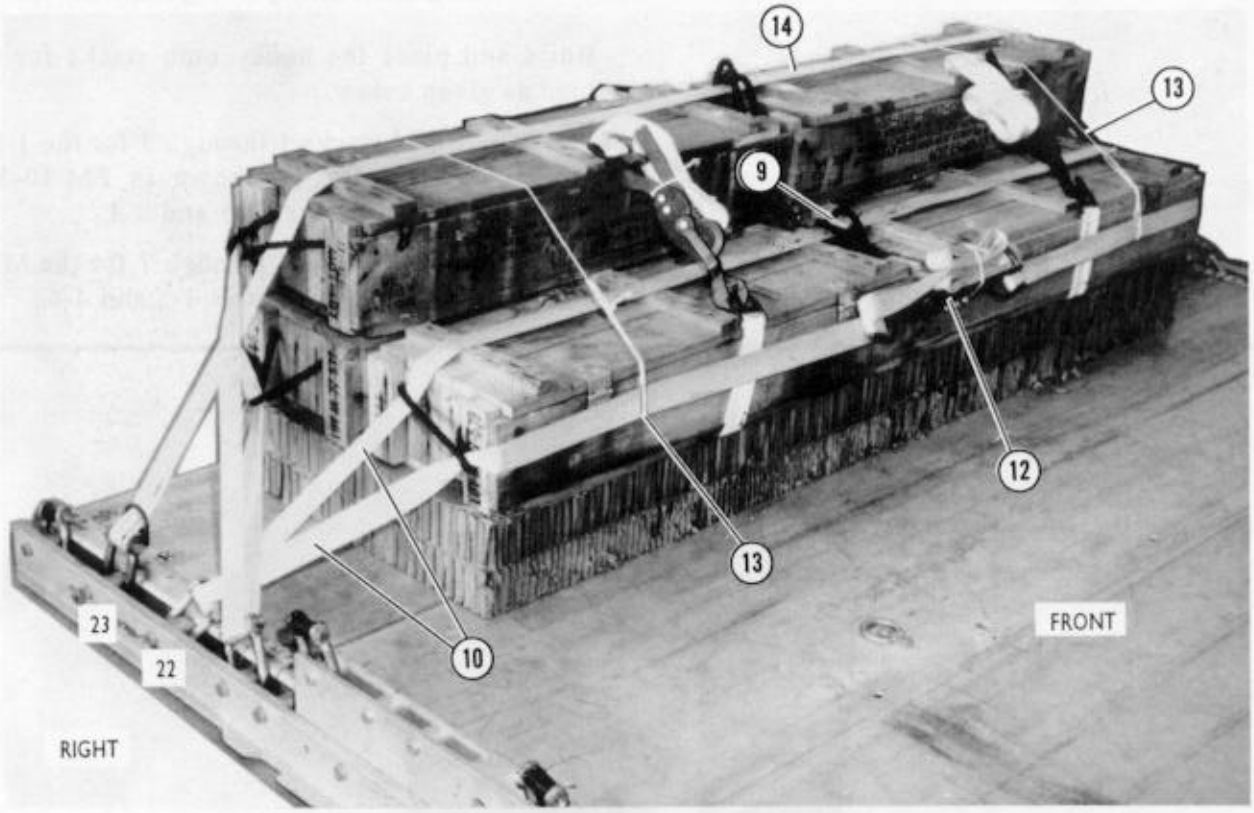
(5) Form a 30-foot lashing according to FM 10-500-2/TO 13C7-1-5. Place the double D-rings at the center of the bottom boxes at the rear of the platform.

(6) Pass one end of the lashing through the handle of the bottom box, through clevis 21, up through the handle of the top box, and back to the center of the top boxes.

(7) Pass the other end of the lashing to the other side of the load as in step 6, but using clevis 21A.

(8) Secure the lashing with two D-rings and a load binder on the rear side of the top ammunition boxes.

Figure 4-4. Six boxes of ammunition stowed on the rear of the platform (continued)



(9) Form a 30-foot lashing according to FM 10-500-2/TO 13C7-1-5. Place the double D-rings between the two front boxes.

(10) Pass one end of the lashing through the handle of the right box, through clevis 22, and back through the right box handle.

(11) Pass the other end of the lashing through the handle of the left box, through clevis 22A, and back through the left box handle (not shown).

(12) Secure the lashing in front of the boxes with two D-rings and a load binder.

(13) Tie the lashings together with two lengths of type III nylon cord on the right and left sides of the load.

(14) Pass the free end of a 15-foot lashing through clevis 23 and through its own D-ring. Run the lashing over the top rear boxes through the box handles. Invert clevis 23A. Fit a D-ring to the end of the lashing, and secure the lashing to clevis 23A with a load binder.

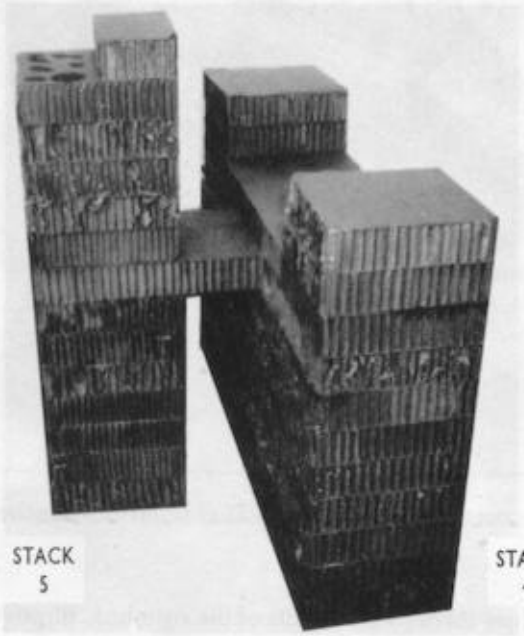
Figure 4-4. Six boxes of ammunition stowed on the rear of the platform (continued)

4-4. Building and Placing Honeycomb Stacks

Build and place the honeycomb stacks for this load as given below.

a. Build stacks 1 through 3 for the 1 1/4-ton HMMWV truck as shown in FM 10-517/TO 13C7-1-111, Figures 2-3 and 2-4.

b. Build stacks 4 through 7 for the M102 howitzer as shown in Figures 4-5 and 4-6.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
4	7	48	12	Honeycomb	Form a stack.
	1	12	30	Honeycomb	Center honeycomb on the stack to form a bridge to the rear.

Figure 4-5. Honeycomb stacks 4 and 5 prepared

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
	2	18	12	Honeycomb	Place one piece of honeycomb on each side of bridge and flush with stack.
	1	48	12	Honeycomb	Place honeycomb flush over bridge and adjacent pieces.
	4	12	12	Honeycomb	Place two pieces flush on each side of the stack.
5	7	12	12	Honeycomb	Form stack. Center honeycomb under the bridge from stack 4.
	5	12	12	Honeycomb	Stack honeycomb over bridge, flush with base.
	1	12	6	Honeycomb	Place honeycomb on front edge of stack.

Figure 4-5. Honeycomb stacks 4 and 5 prepared (continued)

STACK
6

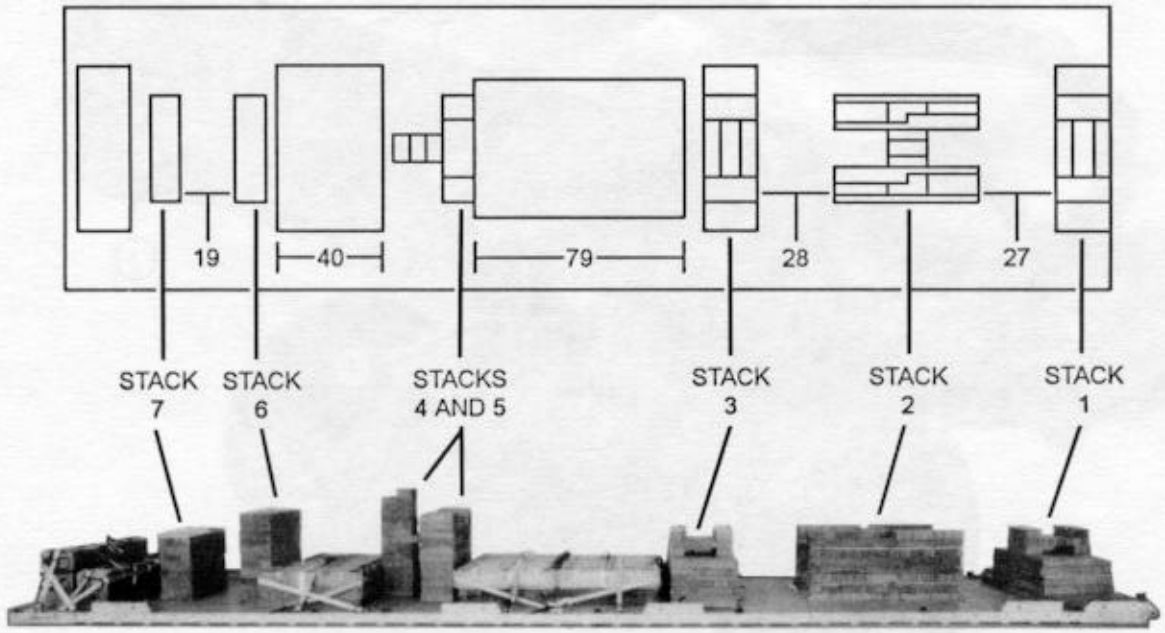
STACK
7

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
6	11	36	12	Honeycomb	Form stack.
7	8	36	12	Honeycomb	Form stack.
	1	36	12	3/4-inch plywood	Place plywood flush on honeycomb stack.

Figure 4-6. Honeycomb stacks 6 and 7 prepared

c. Place the stacks on the platform as shown in Figure 4-7.

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



Stack Number	Position of Stack on Platform
	Place stack:
1	Centered and flush with the front edge of the platform.
2	Centered 27 inches from stack 1.
3	Centered 28 inches from stack 2.
4 and 5	Centered 79 inches from stack 3.
6	Centered 40 inches from stack 5.
7	Centered 19 inches from stack 6.

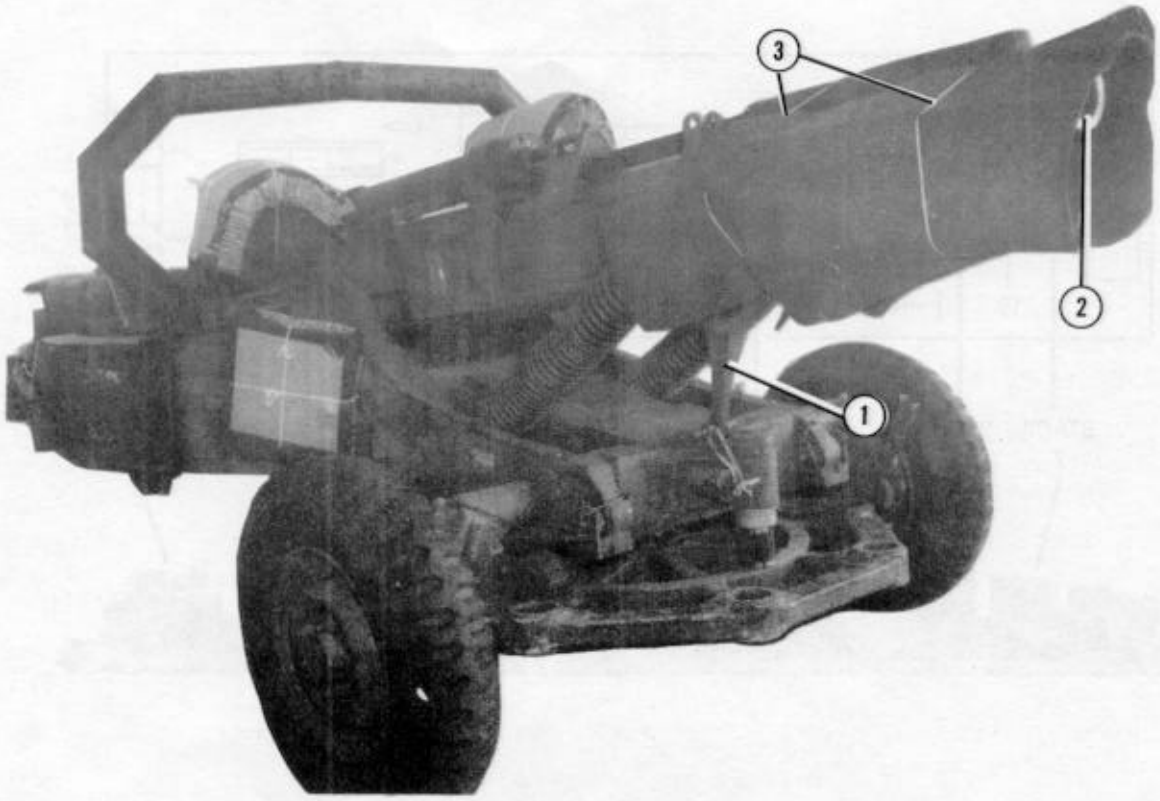
Figure 4-7. Honeycomb stacks placed on platform

4-5. Preparing Howitzer and Truck

Prepare the howitzer and truck as described below.

a. Prepare the howitzer as shown in Figure 4-8.

b. Prepare the truck as described in FM 10-517/TO 13C7-1-111, paragraph 2-4a through e, g through i, and as shown in Figures 2-7 through 2-9, Figure 2-10 (steps 1, 2, and 3), Figure 2-11, Figure 2-12 (omit the padding on the rear lower control arms), and Figure 2-13 (omit step 2).



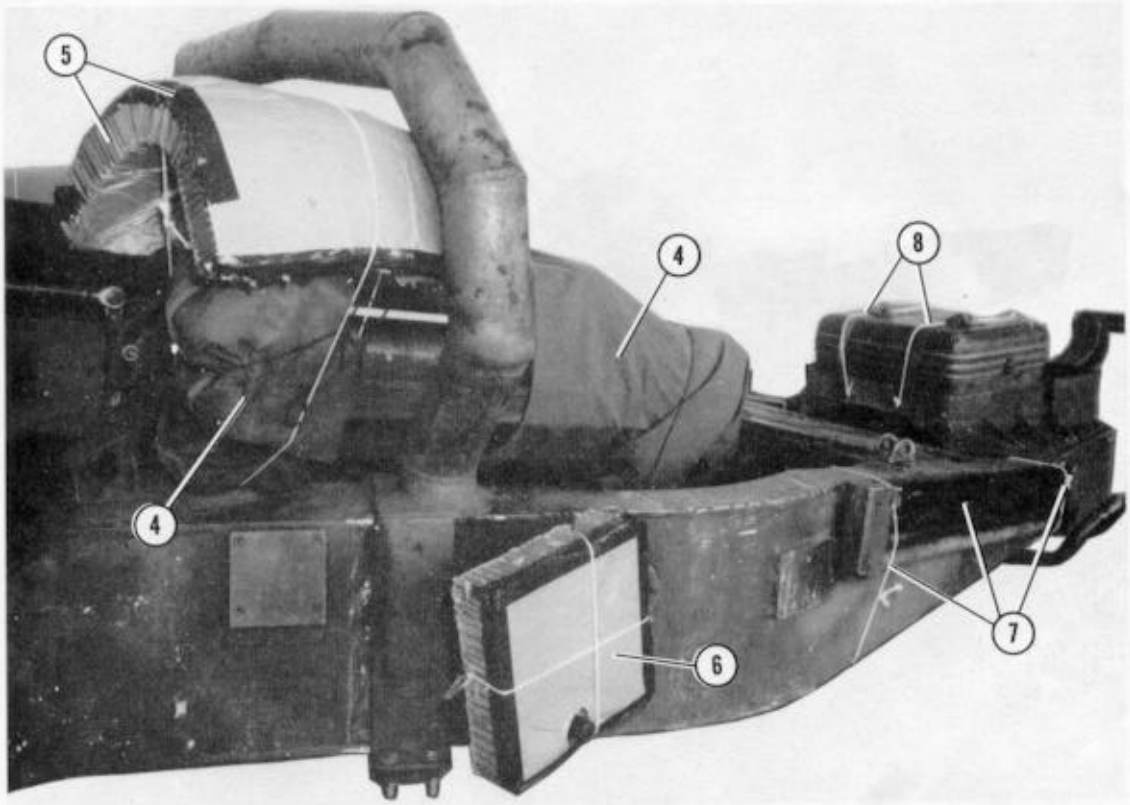
(1) Secure the gun in the out-of-battery position and lock the travel lock.

Note: Have artillery personnel assist with step 1.

(2) Plug the gun muzzle with the plug provided.

(3) Wrap the forward 3 feet of the gun tube with two pieces of 36- by 36-inch felt tied in place with type III nylon cord.

Figure 4-8. Howitzer prepared



(4) Cover the sights and the breechblock with the covers provided.

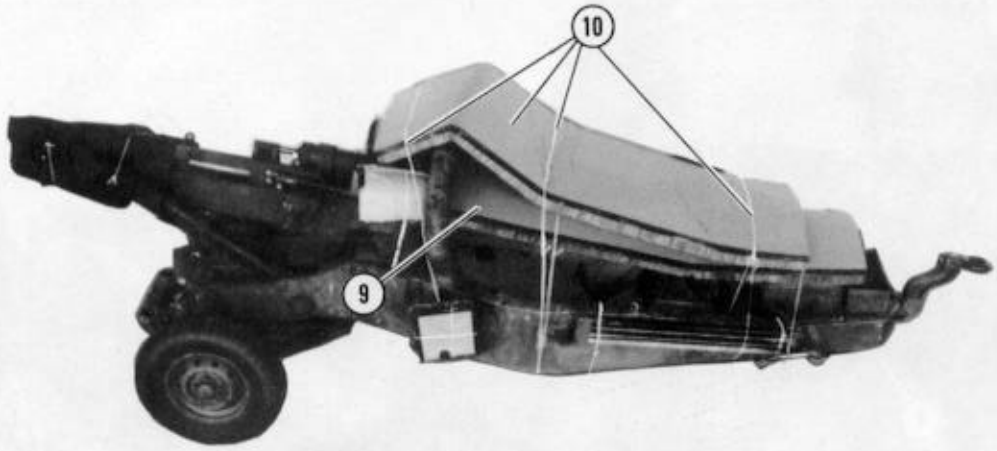
(5) Cover each sight with an 18- by 24-inch piece of honeycomb. Tape the edges of the honeycomb and tie it to the sight mounts with type III nylon cord.

(6) Tie a 12- by 12-inch piece of honeycomb over the traversing and elevation wheels with type III nylon cord. Cut a hole in each piece of honeycomb to allow for the wheel handle.

(7) Secure the sections of the rammer staff in their mounts on the left trail with two lengths of type III nylon cord.

(8) Secure the sight case in its mount with the straps provided. Tie the case to the howitzer with two lengths of type III nylon cord.

Figure 4-8. Howitzer prepared (continued)



(9) Place a 36- by 96-inch piece of honeycomb over the breechblock and the sight case. Make a 5- by 5-inch cutout in each front corner to clear the sights. Make a third 5- by 5-inch cutout to allow for the breech operator handle. Tie the honeycomb in place with type III nylon cord.

(10) Place a 36- by 96-inch piece of honeycomb over the roll bar and over the piece placed in step 9. Tie it to convenient points with type III nylon cord.

Figure 4-8. Howitzer prepared (continued)

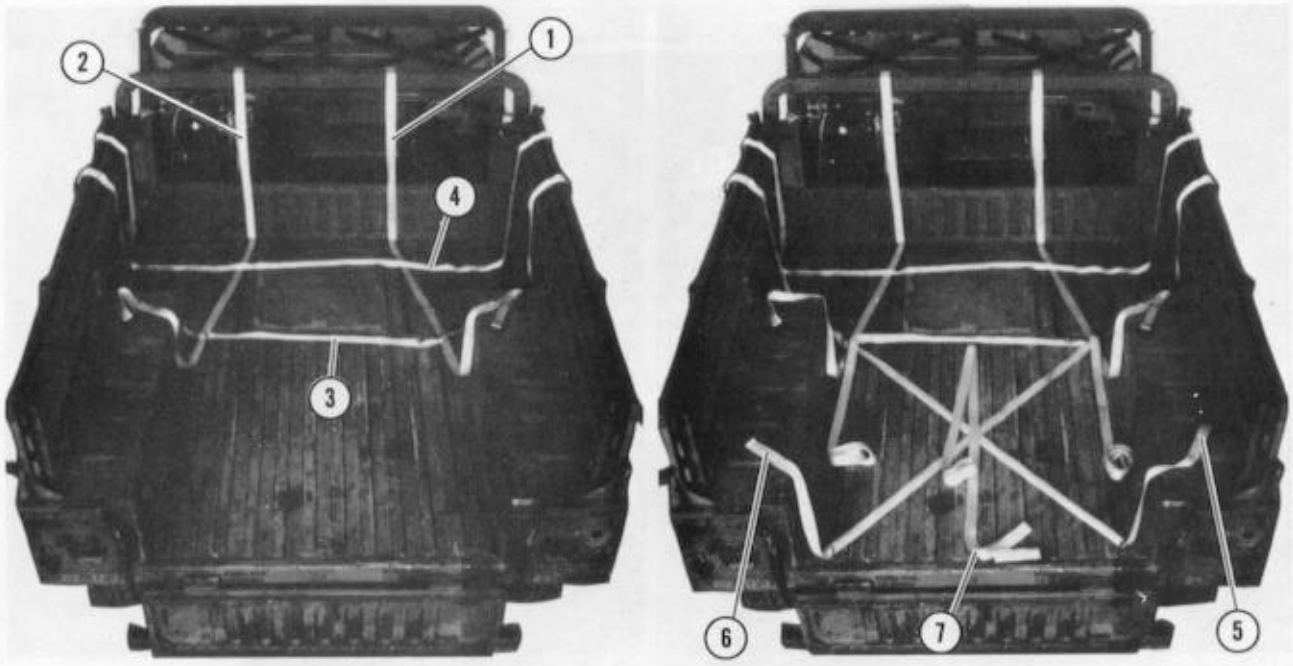
4-6. Stowing Howitzer Equipment and Ammunition in Truck and Installing Body Side Boards

Stow the howitzer equipment and ammunition in the truck and install the body side protection boards as described below.

a. Stow the howitzer equipment, the gun crew equipment, and eight boxes of 105-millimeter ammunition in the bed of the truck as shown in

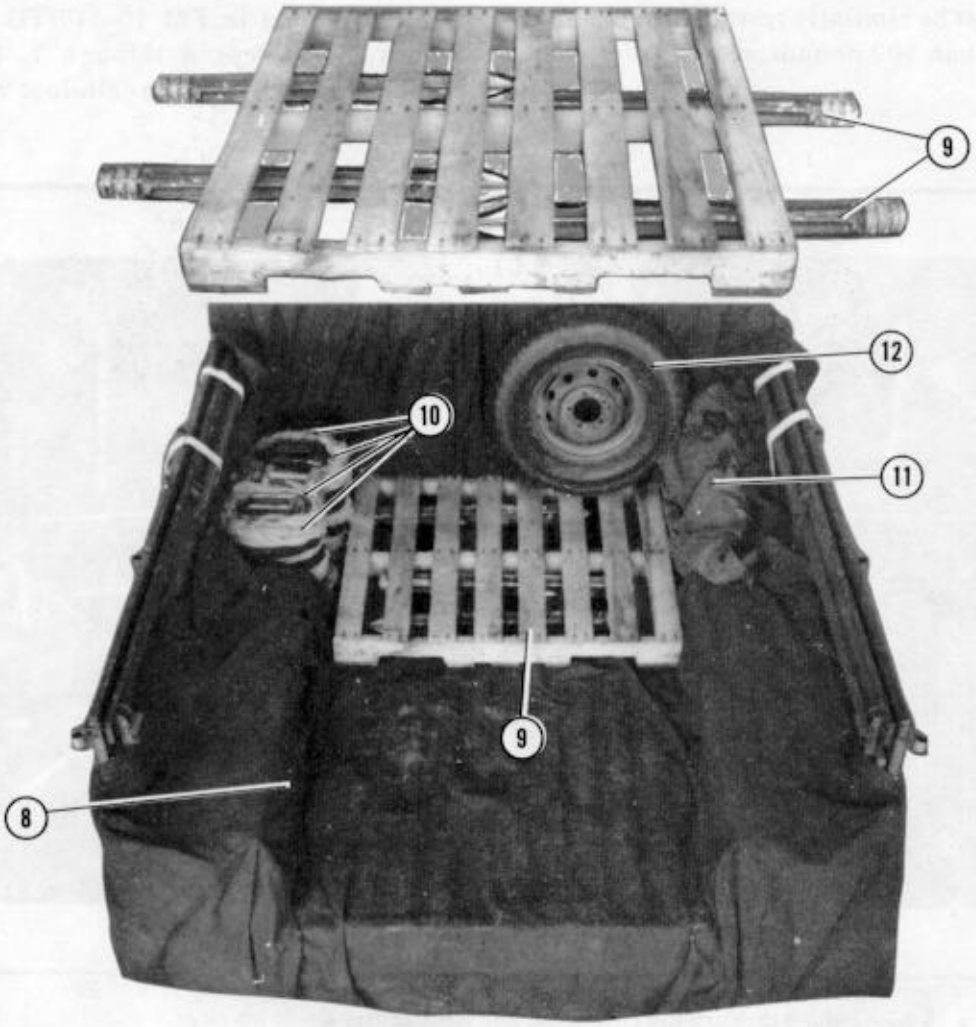
Figures 4-9 and 4-10. Loads that vary from the load shown must be similarly restrained and must weigh no less than 800 pounds and no more than 2,000 pounds.

b. Install the body side protection boards on the truck as shown in FM 10-517/TO 13C7-1-111, Figure 2-13, steps 4 through 7. Pad the load binder over the hood with cellulose wadding taped in placed.



1. Pass a 15-foot lashing through the right front and right center tie-down rings.
2. Pass a 15-foot lashing through the left front and left center tie-down rings.
3. Pass a 15-foot lashing through both center tie-down rings.
4. Place a 15-foot lashing across the cargo bed 10 inches from the front.
5. Pass a 15-foot lashing through the right rear and left center tie-down rings.
6. Pass a 15-foot lashing through the left rear and right center tie-down rings.
7. Pass a 15-foot lashing through both center tie-down rings.

Figure 4-9. Howitzer equipment stowed in truck



(8) Place a large ammunition tarp over the cargo bed.

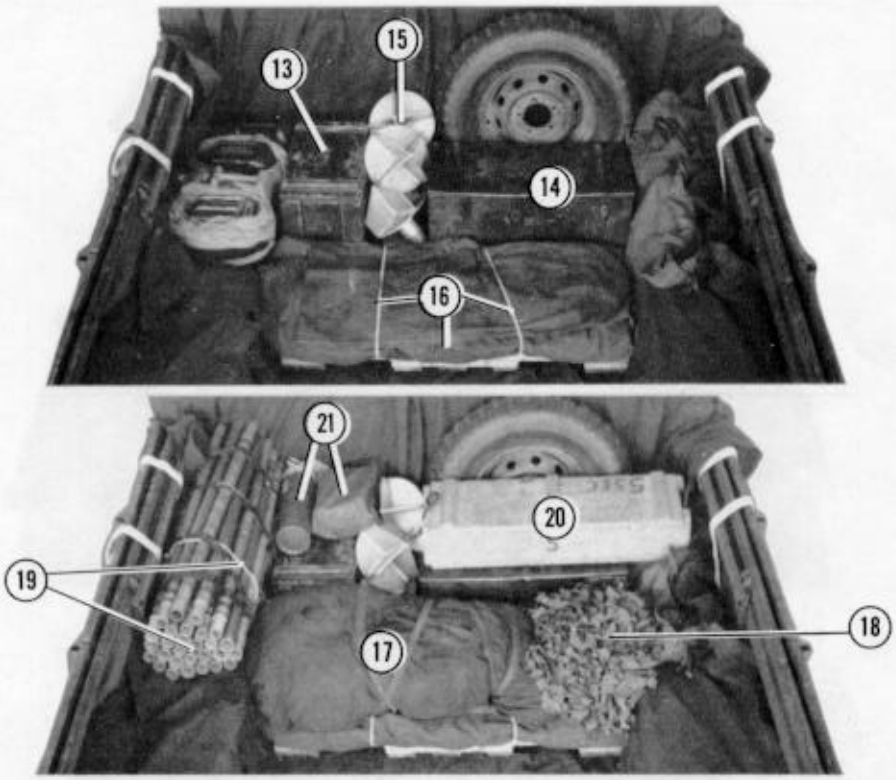
(9) Place the four base plate stakes in the holes of a common wood pallet. Place the pallet in the front of the cargo bed.

(10) Pad two filled fuel cans and two filled water cans with cellulose wadding. Place them against the left front of the cargo bed.

(11) Place the sling bags in the right front of the cargo bed.

(12) Place the spare wheel on the pallet and against the front wall.

Figure 4-9. Howitzer equipment stowed in truck (continued)



(13) Place the gun display unit box against the fuel cans.

(14) Place the section chest against the wheel and the sling bag.

(15) Set the self-emplacement stakes between the section chest and the gun display unit box.

(16) Fold the A-22 bag and tie it with two lengths of 1/2-inch tubular nylon webbing. Place it on the pallet behind the boxes.

(17) Fold the section tent and place it on top of the A-22 bag.

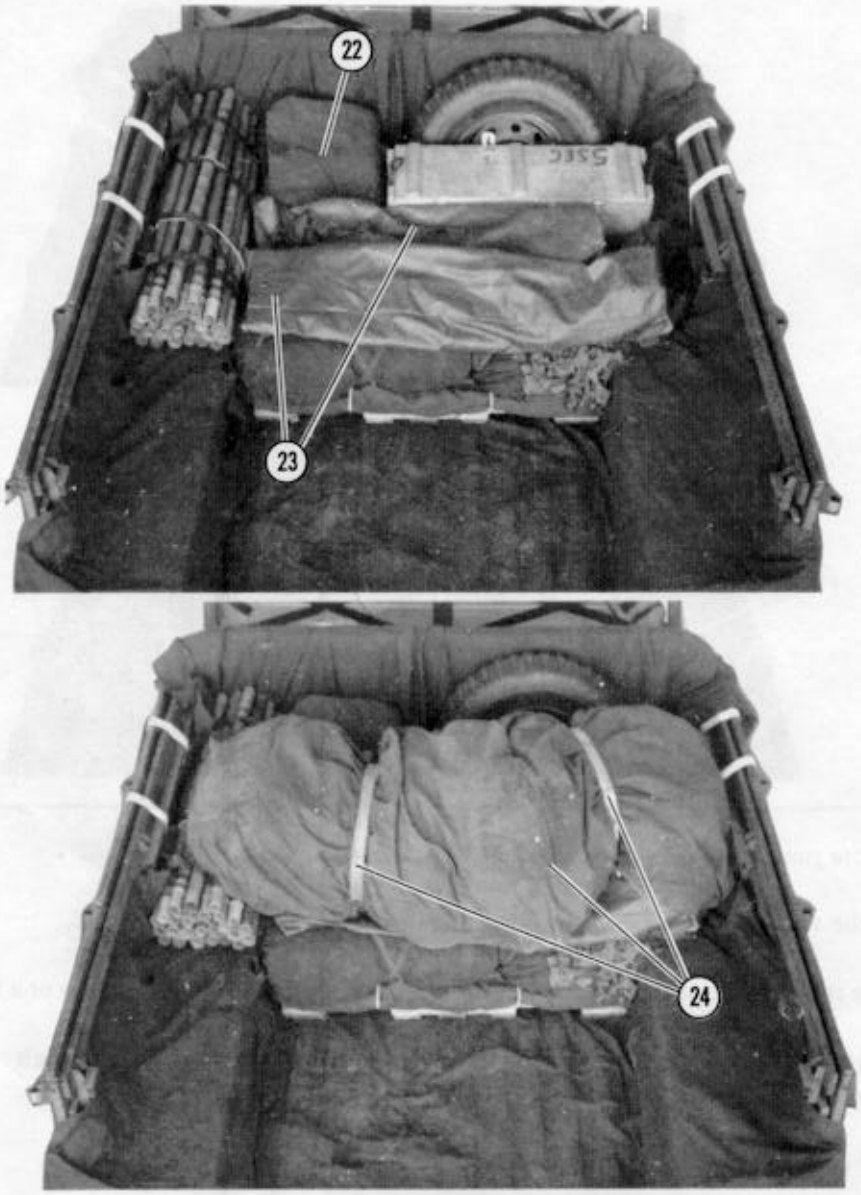
(18) Place the camouflage net on the A-22 bag next to the tent.

(19) Place the camouflage net poles on the left side. Tie them together with 1/2-inch tubular nylon webbing.

(20) Place the NBC contingency box on top of the section chest.

(21) Place the bag of tent stakes and the fire extinguisher on top of the gun display unit box.

Figure 4-9. Howitzer equipment stowed in truck (continued)

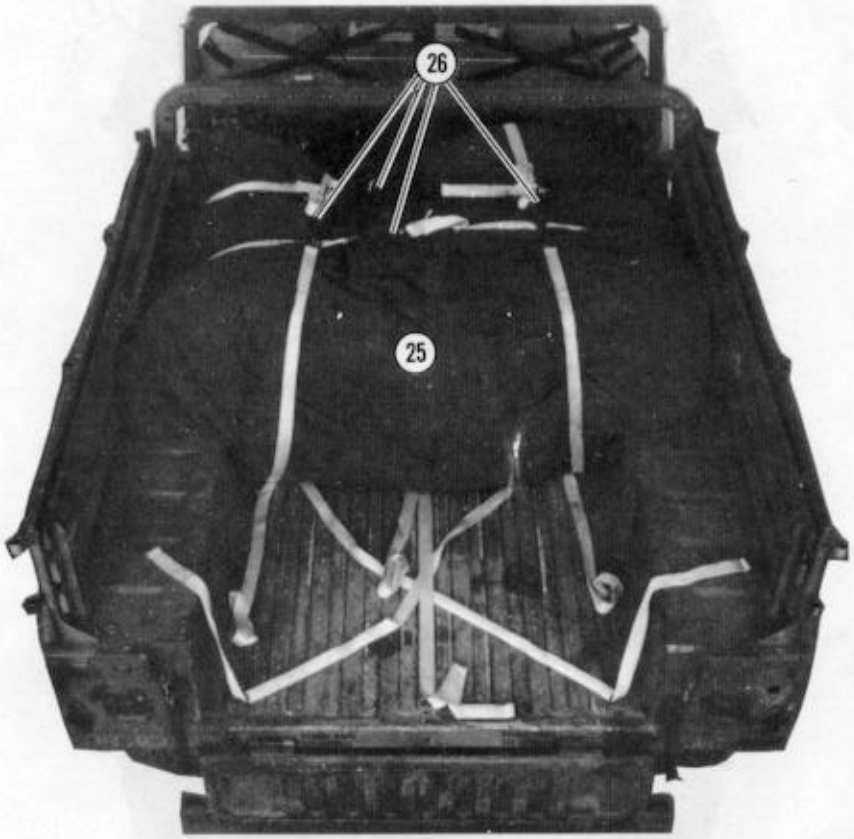


(22) Fold the canvas truck cover and set it over the tent stake bag and the fire extinguisher.

(23) Set the advance party bag and the camouflage net bag over the section tent.

(24) Roll the large camouflage net, tie it with two lengths of type VIII or other scrap webbing material and place it over the load.

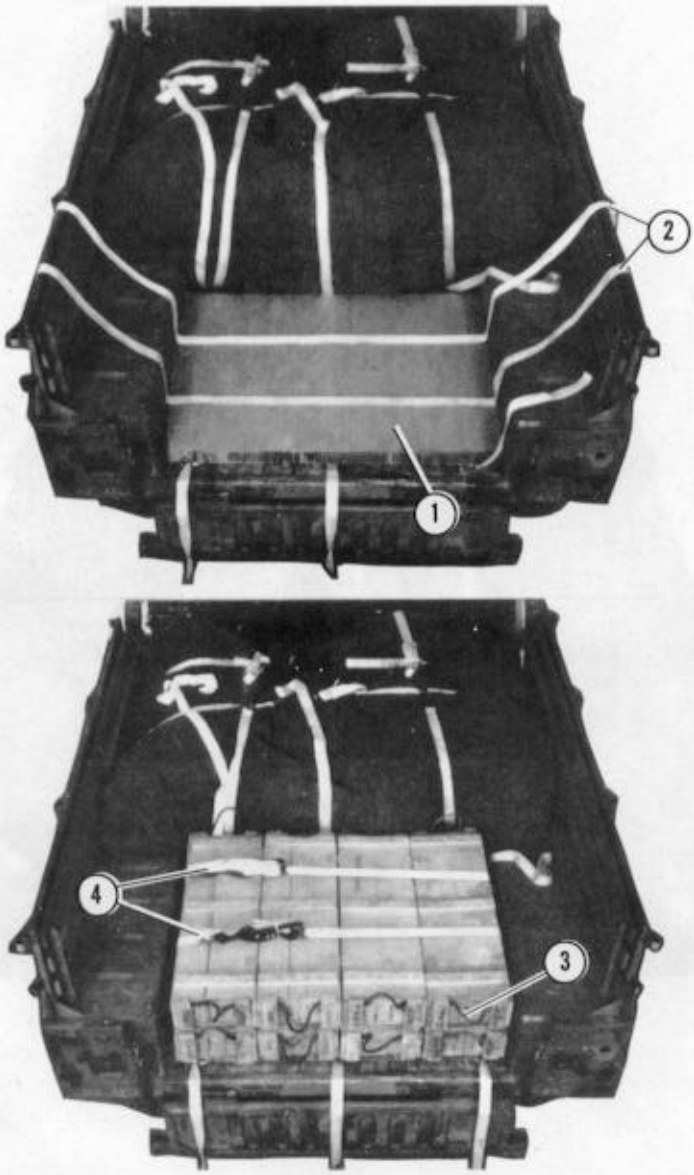
Figure 4-9. Howitzer equipment stowed in truck (continued)



(25) Fold the tarp over the load.

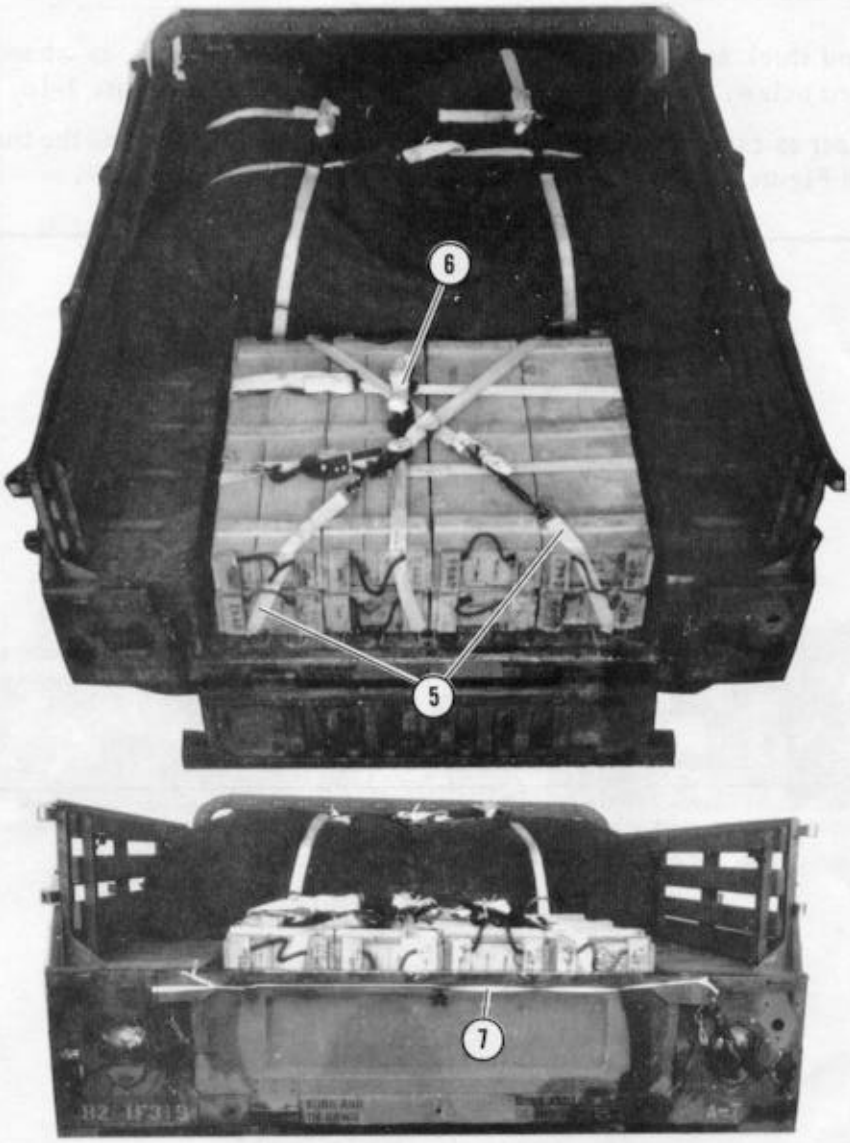
(26) Secure the lashings placed in steps 1, 2, 3, and 4 over the load with D-rings and load binders.

Figure 4-9. Howitzer equipment stowed in truck (continued)



1. Place a 36- by 50-inch piece of honeycomb in the rear of the truck bed.
2. Lay two 15-foot lashings over the honeycomb as shown.
3. Place eight ammunition boxes over the honeycomb and lashings.
4. Secure the lashings placed in step 2 over the boxes with D-rings and load binders.

Figure 4-10. Ammunition stowed in truck



(5) Pass the ends of the lashings placed in steps 5 and 6, Figure 4-9, through the nearest box handles and over the boxes. Secure the lashings with D-rings and load binders.

(6) Pass the ends of the lashing placed in step 7, Figure 4-9, through the upper box handles and over the boxes. Secure the lashing with a D-ring and a load binder.

(7) Close the tailgate and secure it with a length of 1/2-inch tubular nylon webbing.

Figure 4-10. Ammunition stowed in truck (continued)

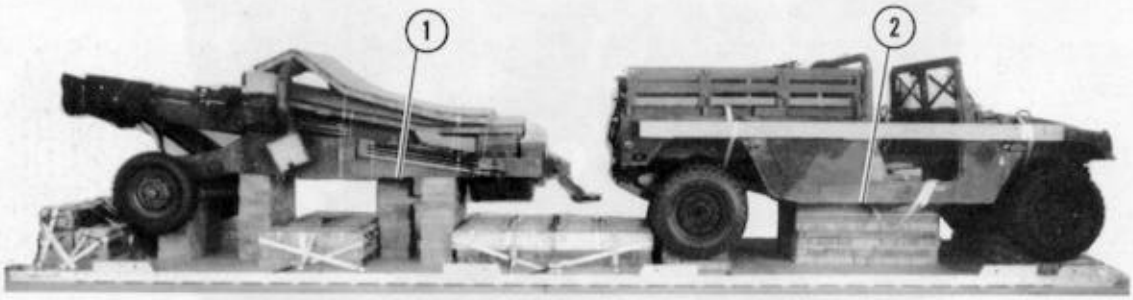
4-7. Setting Howitzer and Truck on Platform

Lift the howitzer and truck and set them on the platform as described below.

a. Lift the howitzer as explained in paragraph 3-7 and as shown in Figure 3-14.

b. Lift the truck as shown in FM 10-517/TO 13C7-1-111, Figure 2-16.

c. Set the howitzer and the truck on the platform as shown in Figure 4-11.



(1) Set the howitzer on stacks 4, 5, and 6 so that the breechblock rests on stack 4 and the base plate rests on stack 6.

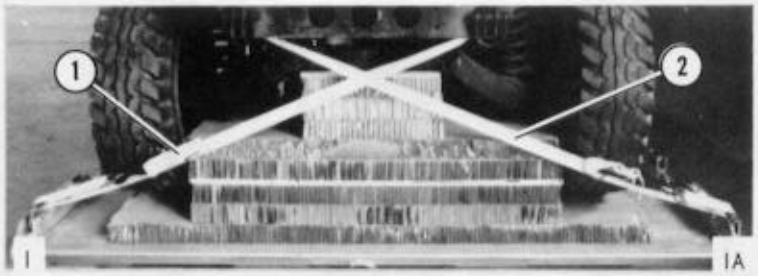
(2) Set the truck on stacks 1, 2, and 3 so that the suspension cross members rest squarely on stacks 1 and 3. Be sure that the frame rails rest squarely on stack 2.

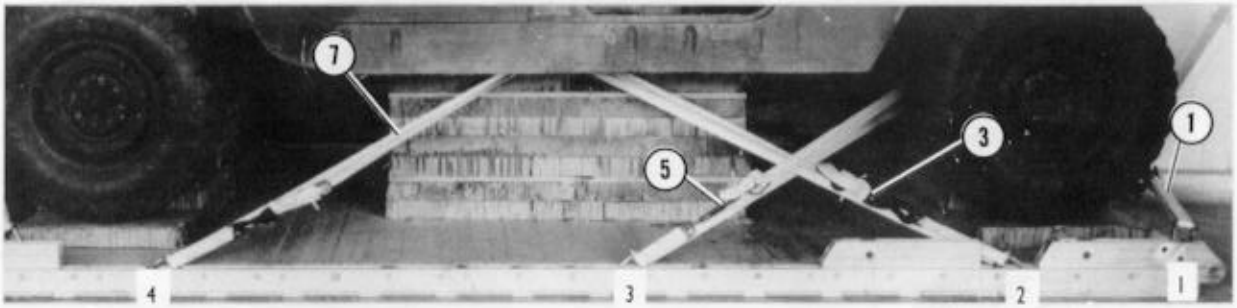
Figure 4-11. Howitzer and truck set on platform

4-8. Lashing Howitzer and Truck

Lash the howitzer and truck to the platform with twenty-four 15-foot lashings as shown in Figures 4-12, 4-13, and 4-14. Install and safety the lashings according to FM 10-500-2/TO 13C7-1-5.

Note: Left and right refer to the truck, NOT the platform.

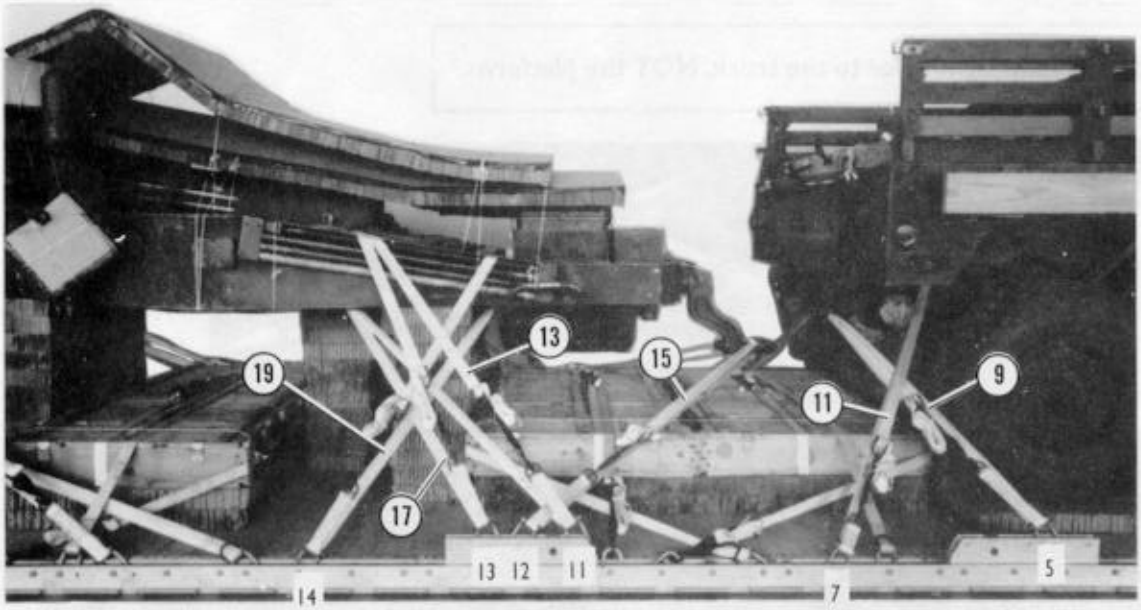




Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	1	Through tie-down bracket on end of left frame rail.
2	1A	Through tie-down bracket on end of right frame rail.
*3	2	Around right frame rail cross member.
*4	2A	Around left frame rail cross member.
5	3	Around right lower control arm.
6	3A	Around left lower control arm.
*7	4	Around right frame rail cross member.
*8	4A	Around left frame rail cross member.
*Pre-positioned lashings.		

Figure 4-12. Lashings 1 through 8 installed

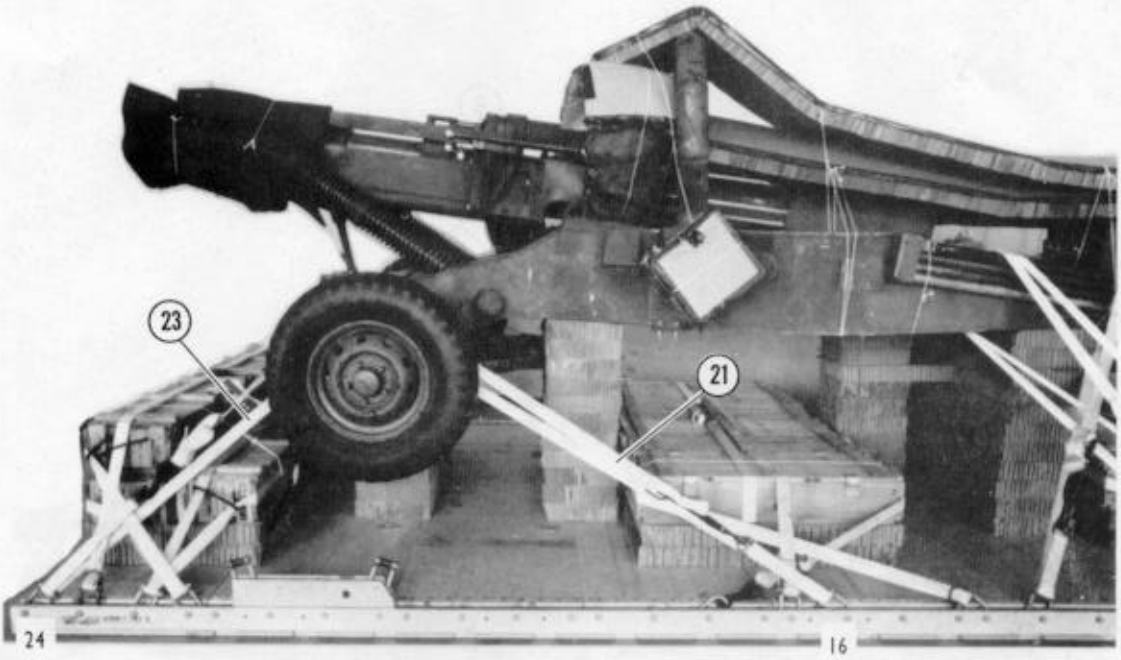
Note: Left and right refer to the truck and howitzer, NOT the platform.



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
9	5	Through right lifting shackle on rear bumper.
10	5A	Through left lifting shackle on rear bumper.
11	7	Through tie-down bracket behind right rear coil spring.
12	7A	Through tie-down bracket behind left rear coil spring.
13	11	Around left trail.
14	11A	Around right trail.
15	12	Through lunette.
16	12A	Through lunette.
17	13	Around left trail.
18	13A	Around right trail.
19	14	Around left trail.
20	14A	Around right trail.

Figure 4-13. Lashings 9 through 20 installed

Note: Left and right refer to the howitzer, NOT the platform.

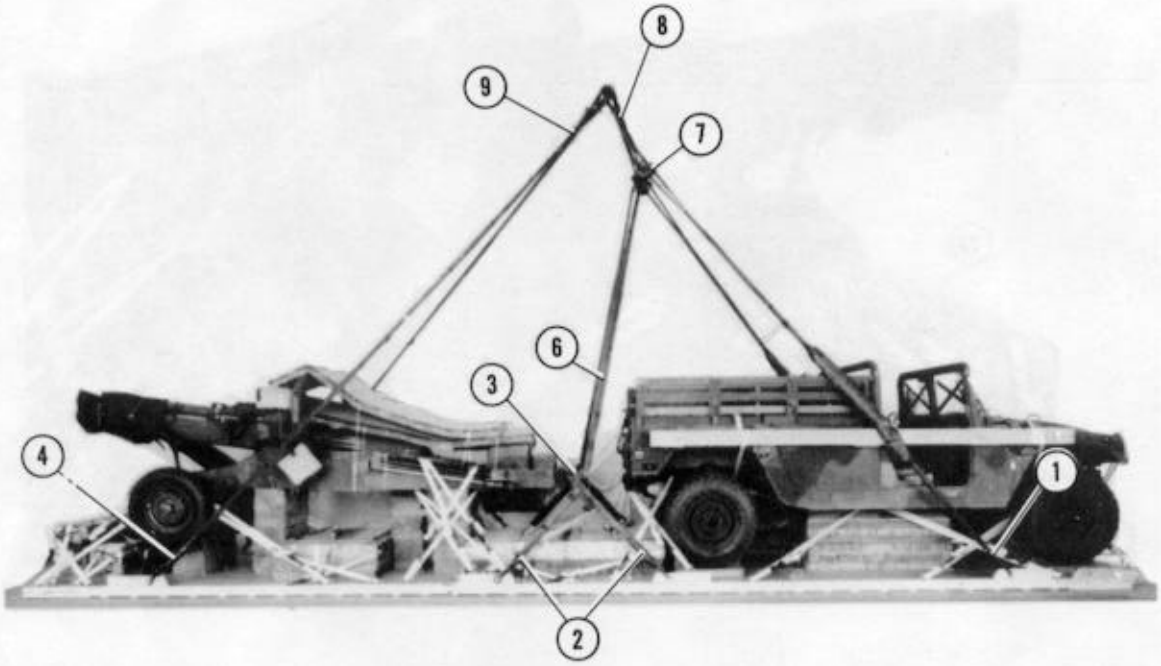


Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
21	16	Around left wheel support arm.
22	16A	Around right wheel support arm.
23	24	Around left wheel support arm.
24	24A	Around right wheel support arm.

Figure 4-14. Lashings 21 through 24 installed

4-9. Installing and Safetying Suspension Slings

Install the suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figures 4-15. Pad and safety the suspension slings as shown in Figure 4-16.

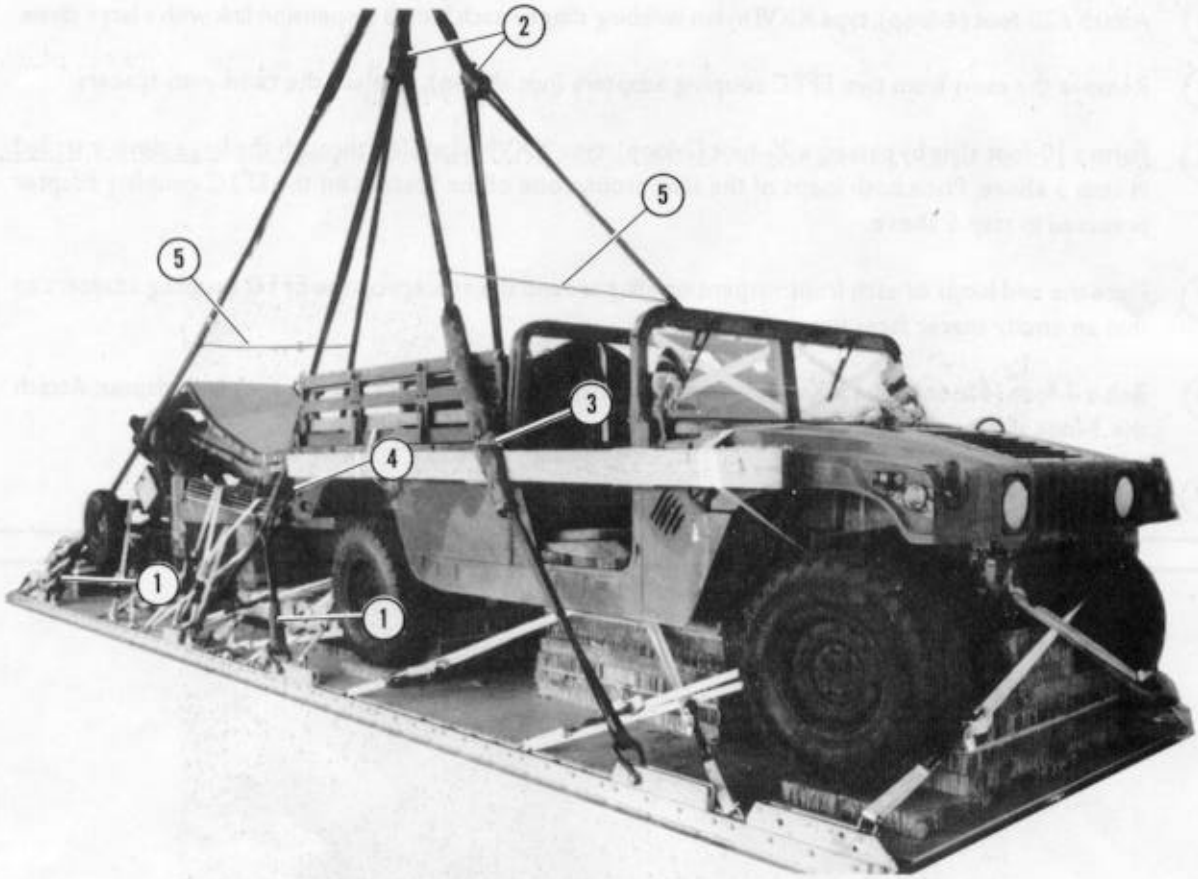


1. Attach a 16-foot (4-loop), type XXVI nylon webbing sling to each first suspension link with a large suspension clevis.
2. Attach a 3-foot (4-loop), type XXVI nylon webbing sling to each second and third suspension link with a large suspension clevis.
3. Place the 3-foot slings installed in step 2 in the bell portion of a large suspension clevis.

Figure 4-15. Suspension slings installed

4. Attach a 20-foot (4-loop), type XXVI nylon webbing sling to each fourth suspension link with a large clevis.
5. Remove the cams from two EFTC coupling adapters (not shown). Replace the cams with spacers.
6. Form a 10-foot sling by passing a 20-foot (2-loop), type XXVI nylon sling through the large clevis installed in step 3 above. Place both loops of the sling around one of the spacers on the EFTC coupling adapter prepared in step 5 above.
7. Place the end loops of each front suspension sling around the spacers on the EFTC coupling adapters so that an empty spacer faces upward.
8. Bolt a 3-foot (4-loop), type XXVI nylon webbing sling to the top spacer of each coupling adapter. Attach the 3-foot slings to the crane hook.
9. Attach the loops on the rear suspension slings to the crane hook.

Figure 4-15. Suspension slings installed (continued)



1. Pad the loops of the suspension slings attached to the second and fourth suspension clevises on each side with 4- by 24-inch pieces of 1/2-inch felt tied in place. Wrap the padding with tape.
2. Wrap the EFTC coupling adapters with 1/2-inch felt taped in place.
3. Pad the front suspension sling 46 inches from the clevis with a 6- by 55-inch piece of felt wrapped with tape. Tie the slings to the truck B-pillar with a length of type III nylon cord.
4. Tie the large suspension clevises at the junctions of the center suspension slings to convenient points on the truck with type III nylon cord.
5. Safety tie the left and right front suspension slings to each other with a double length of 1/2-inch tubular nylon webbing. Safety tie the rear suspension slings to each other in the same way.

Figure 4-16. Suspension slings padded and safetied

4-10. Preparing Stowage Platform and Stowing Cargo Parachutes

Prepare the stowage platform and stow the cargo parachutes as described below.

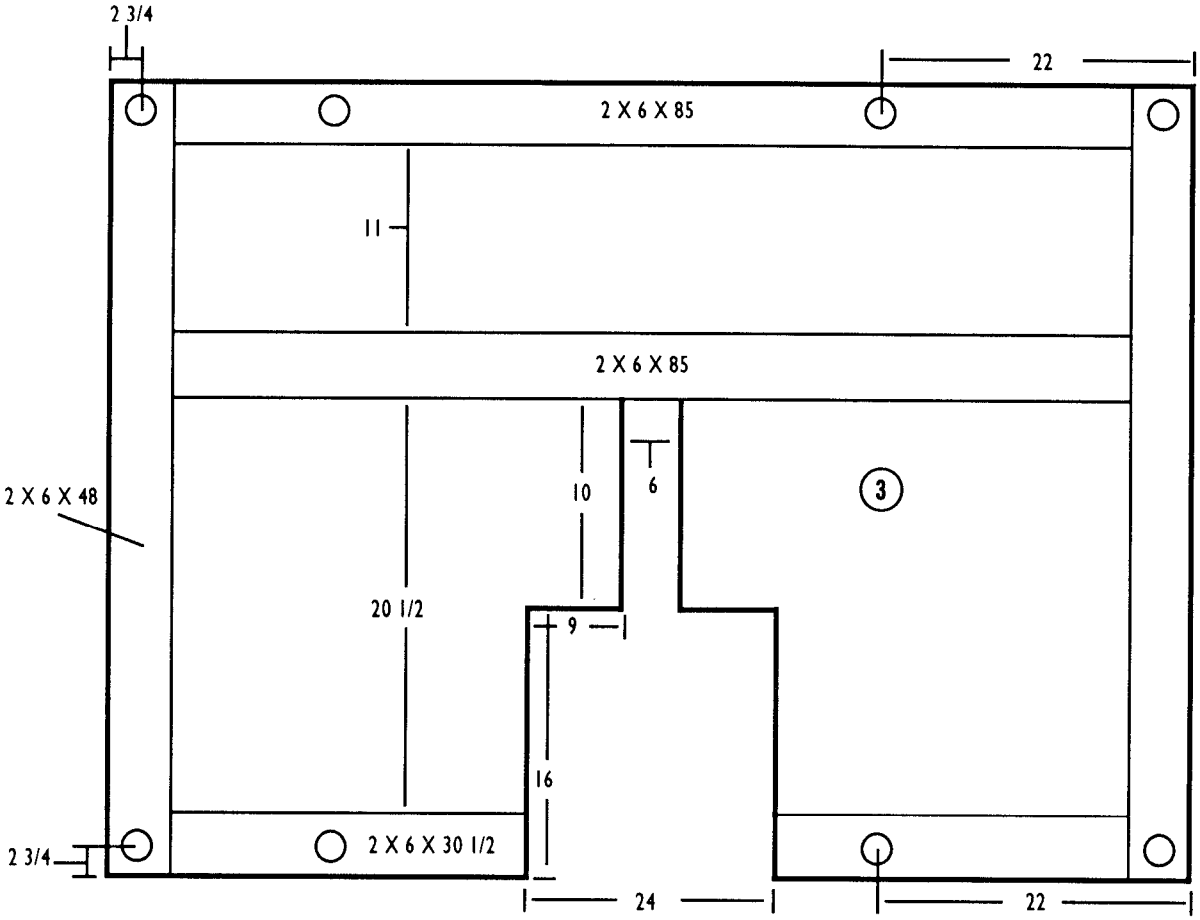
a. Prepare the cargo parachute stowage platform as shown in Figure 4-17.

(1) Place seven 12- by 74-inch pieces of honeycomb flush over the rear ammunition stack even with the rear edge.

(2) Make two 14-layer stacks of 12- by 24-inch honeycomb. Place one stack on each side of the howitzer 30 inches from the rear edge of the platform. Place the stacks 2 inches from the suspension links.

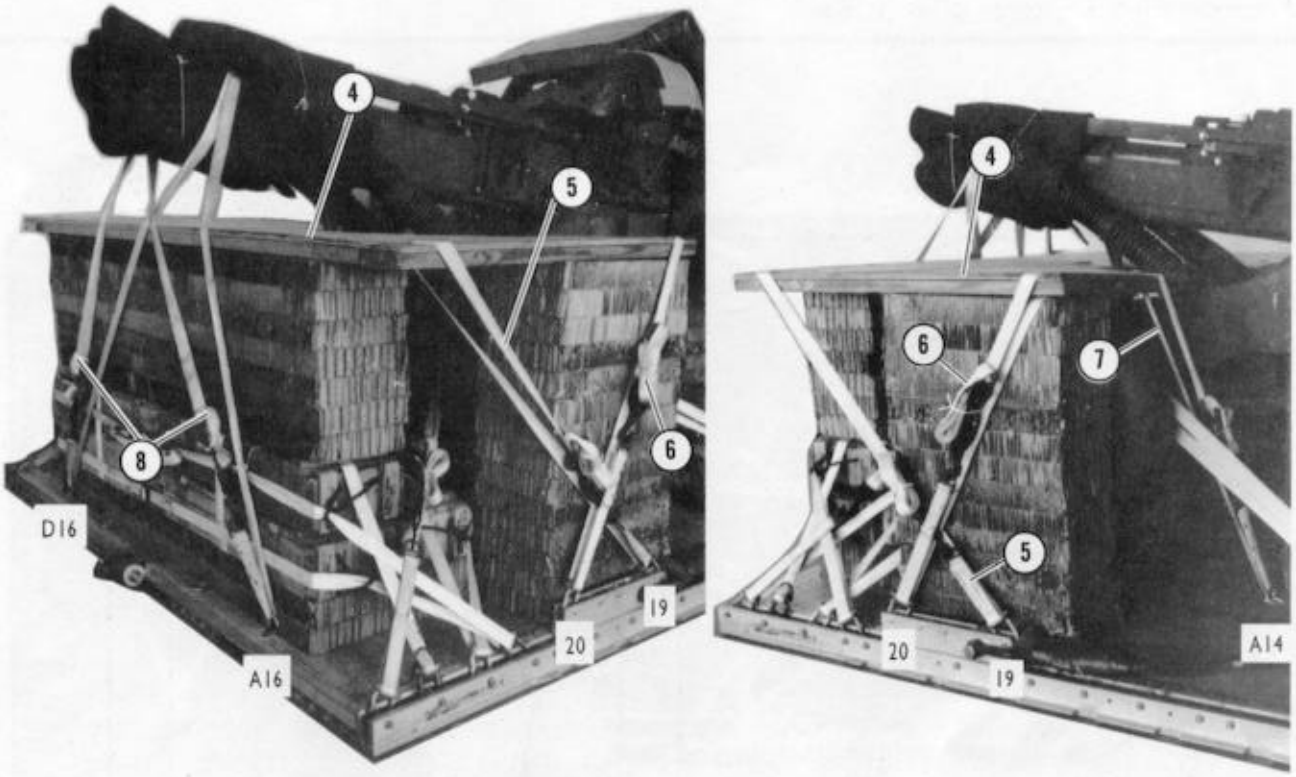
Figure 4-17. Stowage platform prepared

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



(3) Construct the parachute stowage platform from a 48- by 96-inch piece of 3/4-inch plywood. Reinforce the edges and center with 2- by 6-inch lumber as shown. Drill 2-inch holes as shown.

Figure 4-17. Stowage platform prepared (continued)



(4) Set the stowage platform flush on the honeycomb with the cutout to the front.

(5) Lash the rear holes of the parachute stowage platform to clevises 19 and 19A with two 15-foot lashings.

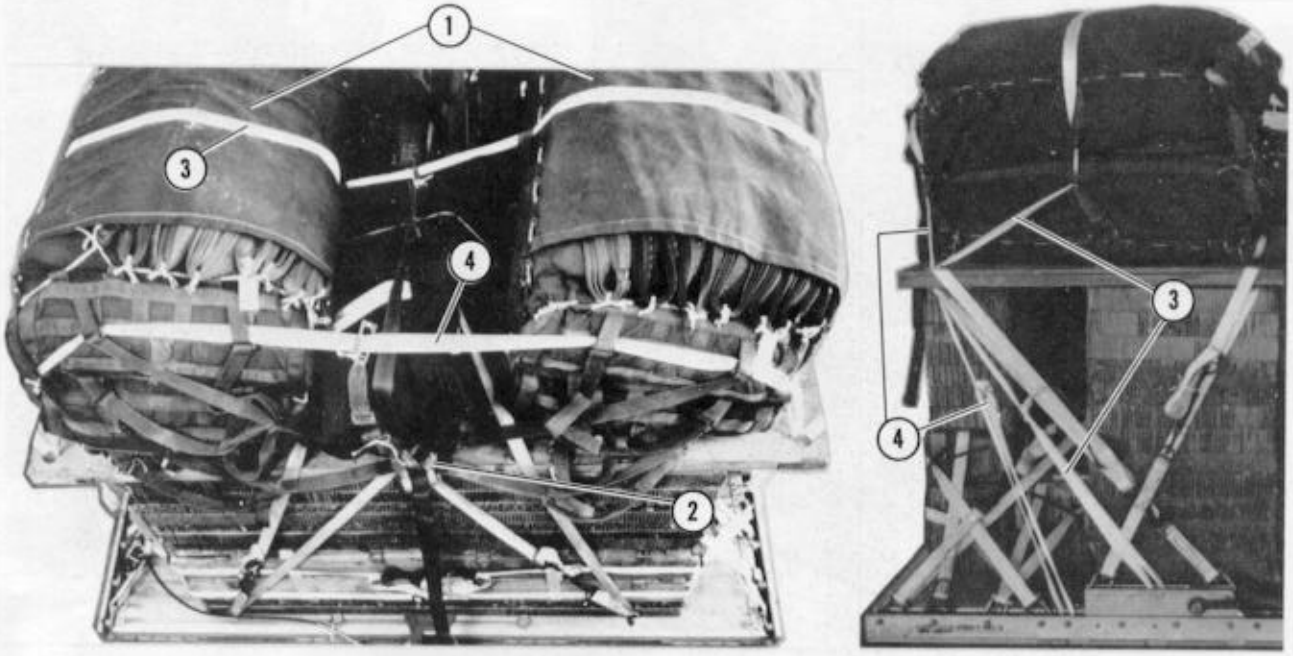
(6) Lash the front holes of the parachute stowage platform to clevises 20 and 20A with two 15-foot lashings.

(7) Lash the front inside holes of the parachute stowage platform to tie-down rings A14 and B14 with two 15-foot lashings.

(8) Cut a hole in each side of the felt covering the howitzer tube. Lash the tube to tie-down rings A16 and D16 with two 15-foot lashings.

Figure 4-17. Stowage platform prepared (continued)

b. Prepare and stow four G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 4-18.



1. Stack two G-11B cargo parachutes on each side of the howitzer tube.
2. Fit the bridle loops of the parachutes onto the arms of a large suspension clevis. Support the clevis with two turns of 1/4-inch cotton webbing tied around the gun barrel.
3. Pass the center restraint strap through the bag carrying handles and down through the rear holes in the stowage platform. Tie the center restraint to the second bushing of the rear suspension link.
4. Pass the rear restraint strap through the upper bridle assembly attaching loops of both upper parachutes, down through the bag carrying handles, and through the rear holes in the stowage platform. Tie the rear restraint strap to bushings 60 and 60A on the platform side rails.

Figure 4-18. Cargo parachutes stowed

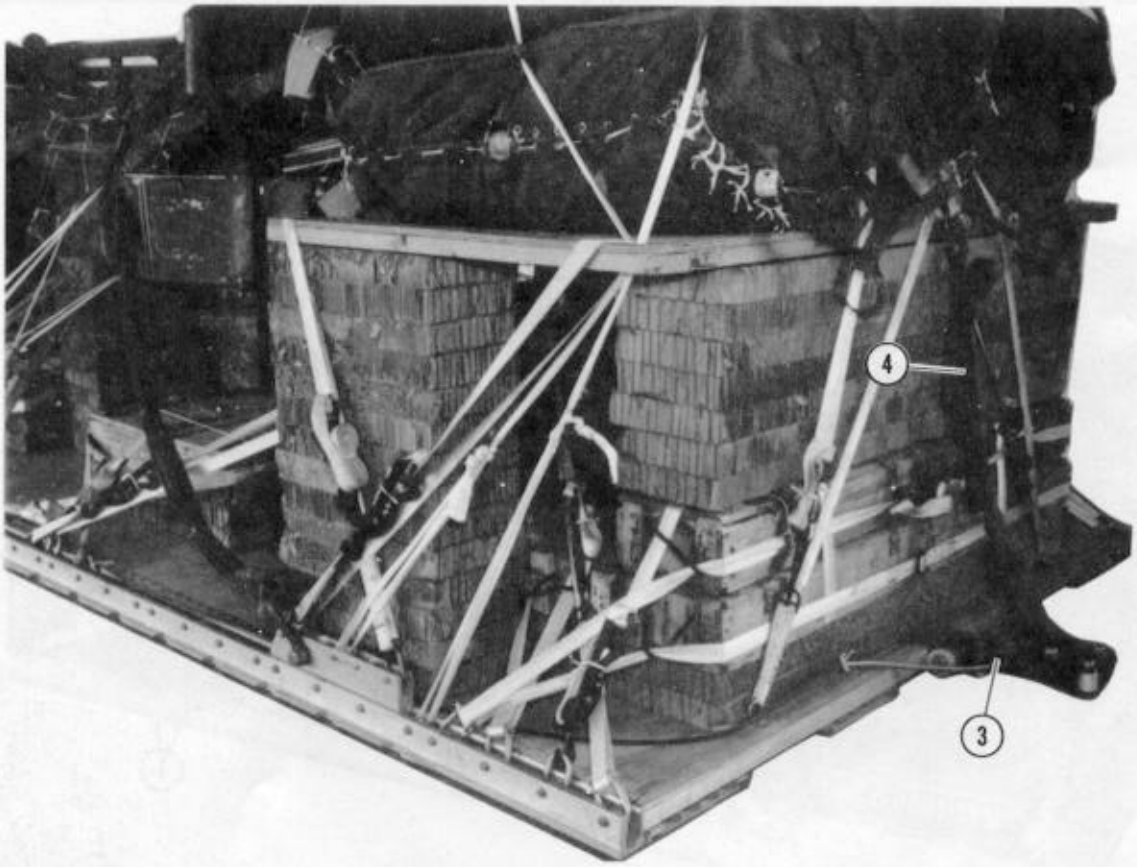
4-11. Installing Extraction System

Install the components of the EFTC system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figures 4-19 and 4-20.

(1) Install the EFTC mounting brackets in the rear (third) mounting holes in the left platform rail.

(2) Attach a 28-foot release cable to the actuator. Install the actuator to the EFTC mounting brackets. Run the cable to the rear of the load.

Figure 4-19. EFTC actuator installed



(3) Install the latch assembly to the extraction bracket. Attach the release cable to the latch assembly. Safety the cable to tie-down ring C16 with 1/4-inch cotton webbing.

(4) Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line.

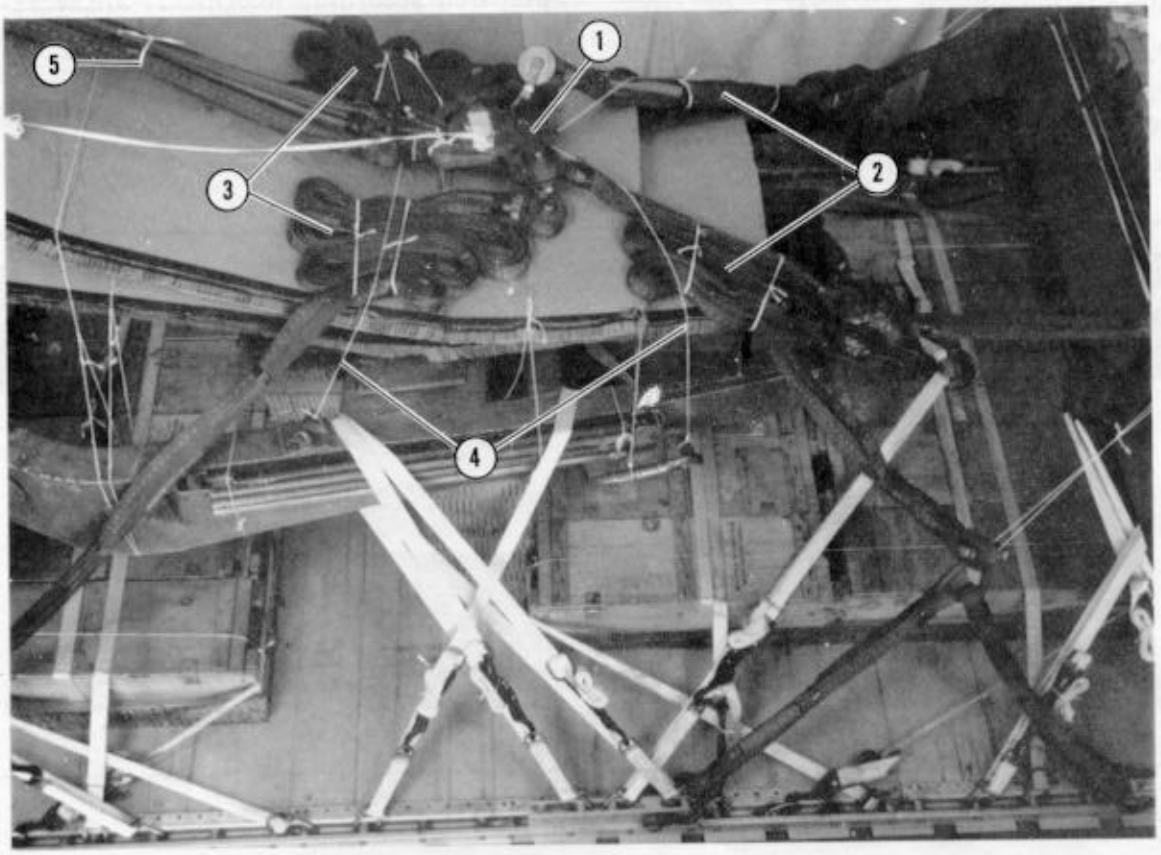
Figure 4-20. EFTC installed on rear of platform

4-12. Installing Provisions for Emergency Restraints

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

4-13. Installing Release System

Prepare and install an M-2 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 4-21.



1. Center the M-2 release on the honeycomb covering the howitzer.
2. S-fold and tie the center suspension slings with type I, 1/4-inch cotton webbing.
3. S-fold and tie the rear suspension slings with type I, 1/4-inch cotton webbing.
4. Secure the release to convenient points on the howitzer with type III nylon cord.
5. Tie the riser extensions together with a length of type I, 1/4-inch cotton webbing.

Figure 4-21. M-2 cargo parachute release installed

4-14. Placing Extraction Parachute

Place the extraction parachute as described below.

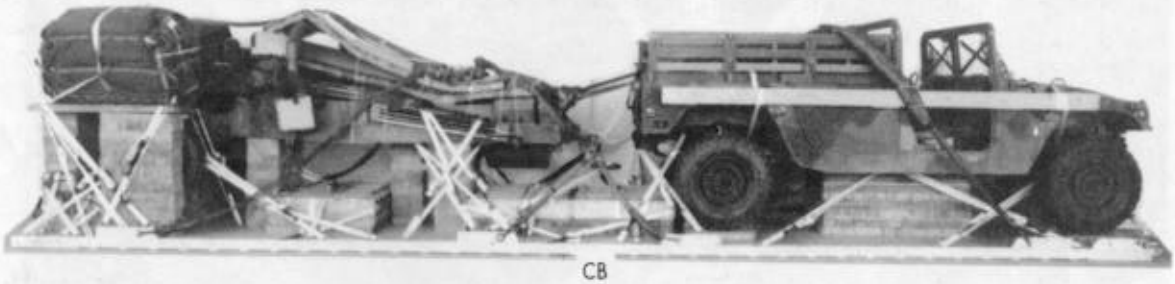
a. C-130 Aircraft. Place a 28-foot cargo extraction parachute and a 60-foot (3-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

b. C-141 Aircraft. Place a 28-foot cargo extraction parachute and a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.

4-15. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 4-22. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the equipment fuel tanks and batteries have been prepared according to AFR 71-4/TM 38-250. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

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	17,770 pounds
	Maximum load allowed	19,000 pounds
Height		83 inches
Width		108 inches
Length		407 inches
Overhang:	Front (nose bumper)	5 inches
	Rear (extraction system)	18 inches
CB (from front edge of platform)		196 inches
Extraction system		EFTC

Figure 4-22. M102 howitzer with 1 1/4-ton truck and accompanying ammunition rigged for low-velocity airdrop

4-16. Equipment Required

Use the equipment listed in Table 4-1 to rig this load.

Table 4-1. Equipment required for rigging the M102 howitzer with 1 1/4-ton truck and accompanying ammunition on a type V platform for low-velocity airdrop

National Stock Number	Item	Quantity
1670-00-162-4981	Adapter, coupling, EFTC	2
5365-00-405-9293	Spacer	(2)
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium)	4
4030-00-090-5354	1-in (large)	13
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-157-6527	Coupling, airdrop, extraction force transfer w 28-ft cable	1
1670-00-360-0329	Cover, link assembly (type IV)	4
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	2
	Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-ft (3-loop) or	1
1670-01-107-7651	140-ft (3-loop)	1
	Link assembly:	
	Two-point:	1
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in	(2)
1670-00-003-1954	Plate, side, 5 1/2-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-783-5988	Type IV	1
5510-00-220-6148	Lumber, 2- by 6-in:	2
	16-in	1
	30 1/2-in	2
	48-in	2
	85-in	2
	150-in	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:	29
	6- by 10-in	(10)
	6- by 24-in	(2)

Table 4-1. Equipment required for rigging the M102 howitzer with 1 1/4-ton truck and accompanying ammunition on a type V platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
	8- by 24-in	(2)
	8- by 54-in	(6)
	10- by 10-in	(5)
	12- by 6-in	(1)
	12- by 12-in	(19)
	12- by 22-in	(8)
	12- by 24-in	(28)
	12- by 30-in	(1)
	12- by 54-in	(4)
	12- by 74-in	(12)
	18- by 12-in	(2)
	18- by 24-in	(2)
	20- by 6-in	(8)
	20- by 24-in	(2)
	24- by 72-in	(2)
	30- by 72-in	(4)
	36- by 12-in	(19)
	36- by 72-in	(2)
	36- by 74-in	(2)
	36- by 96-in	(2)
	42- by 10-in	(2)
	48- by 12-in	(8)
	50- by 36-in	(1)
	54- by 24-in	(8)
	74- by 24-in	(2)
	80- by 24-in	(2)
	Parachute:	
1670-01-016-7841	Cargo, G-11B	4
1670-00-040-8135	Cargo extraction, 28-ft, heavy-duty	1
	Platform, AD, type V, 32-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(48)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-247-2389	Suspension link	(8)
1670-01-162-2381	Tandem link	(2)

Table 4-1. Equipment required for rigging the M102 howitzer with 1 1/4-ton truck and accompanying ammunition on a type V platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
5530-00-128-4981	Plywood, 3/4-in:	
	8- by 54-in	2
	10- by 10-in	2
	12- by 54-in	2
	20- by 6-in	4
	36- by 12-in	1
	48- by 96-in	1
	54- by 24-in	2
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo airdrop, type XXVI nylon webbing:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop)	1
	For lifting:	
1670-01-062-6304	9-ft (2-loop)	4
1670-01-063-7760	11-ft (2-loop)	2
1670-01-063-7761	16-ft (2-loop)	2
	For riser extension:	
1670-01-062-6311	120-ft (2-loop)	4
	For suspension:	
1670-01-062-6309	3-ft (4-loop)	6
1670-00-432-2507	16-ft (4-loop)	2
1670-01-062-6302	20-ft (2-loop)	2
1670-00-432-2511	20-ft (4-loop)	2
	Strap:	
1670-00-040-8219	Parachute release, multicut comes w 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	69
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in or	As required
8305-00-268-2453	1/2-in	As required
8305-00-268-2455	1-in	As required
8305-00-263-3591	Type VIII	As required

CHAPTER 5

RIGGING M119 HOWITZER FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM

Section I

RIGGING M119 HOWITZER AND ACCOMPANYING AMMUNITION

5-1. Description of Load

The M119, 105-millimeter howitzer (line number H57505) is rigged on a 16-foot, type V airdrop platform with two G-11B cargo parachutes. This load includes an accompanying load of 30 boxes of ammunition and 7 boxes of fuzes weighing 3,713 pounds. The howitzer is rigged for a low-velocity airdrop from a C-130, C-141, or C-5 aircraft.

5-2. Preparing Platform

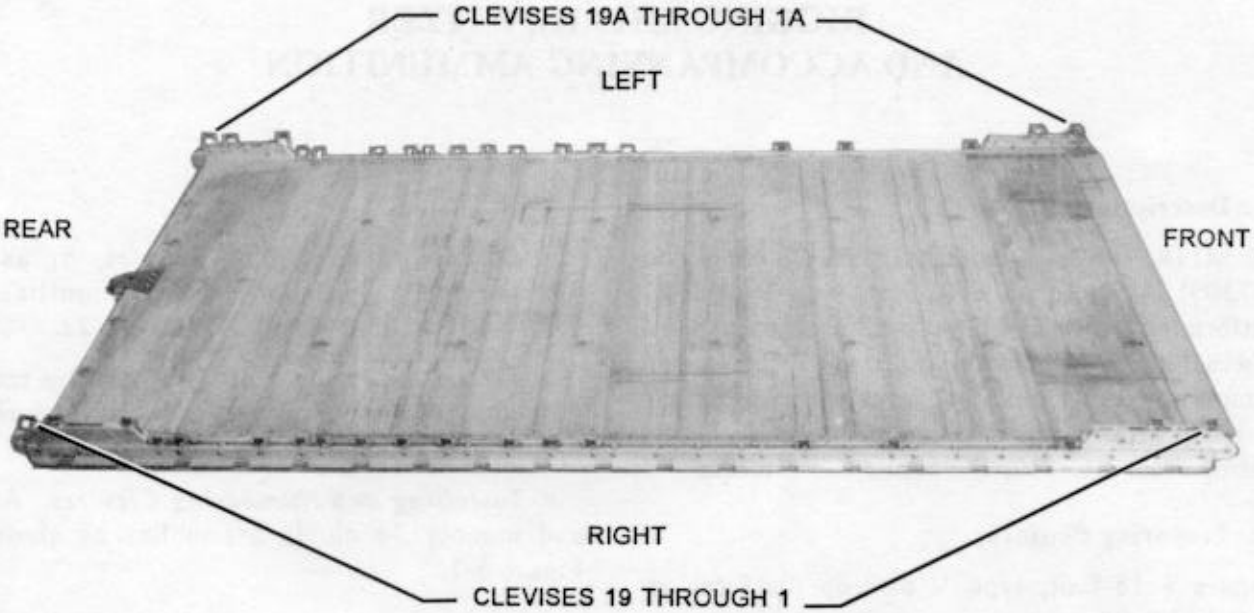
Prepare a 16-foot, type V airdrop platform as described below.

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

b. Installing Tandem Links. Install a tandem link on the front and rear of each rail as shown in Figure 5-1.

c. Installing and Numbering Clevises. Attach and number 38 clevis assemblies as shown in Figure 5-1.

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



Step:

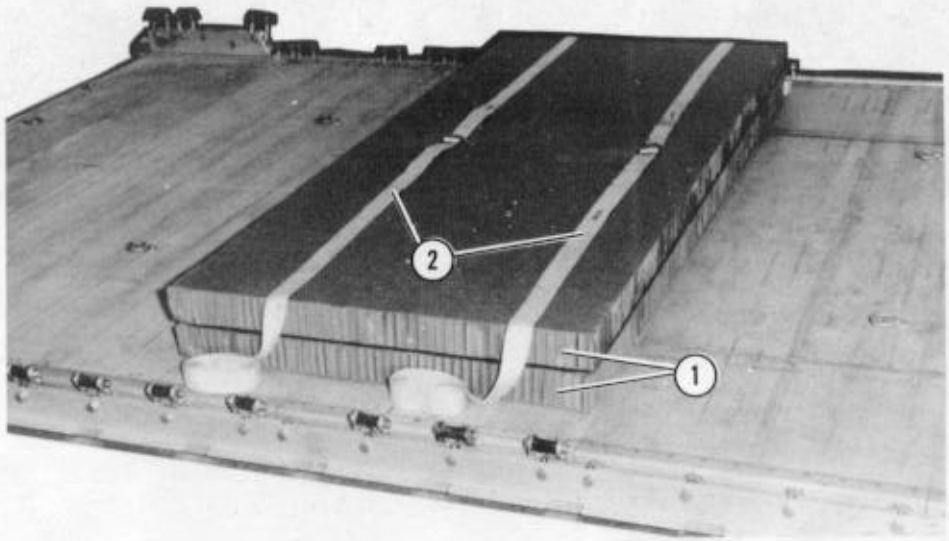
1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install a tandem link on the rear of each platform side rail using holes 30, 31, and 32.
3. Install clevises on bushings 1 and 3 of each front tandem link.
4. Install clevises on bushings 1, 3, and 4 of each rear tandem link.
5. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 4, 9, 11, 17, 18, 19, 21, 22, 23, 24, 25, 26, 28, and 29.
6. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 19 and those bolted to the left side from 1A through 19A.
7. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 5-1. Platform prepared

5-3. Stowing Accompanying Load

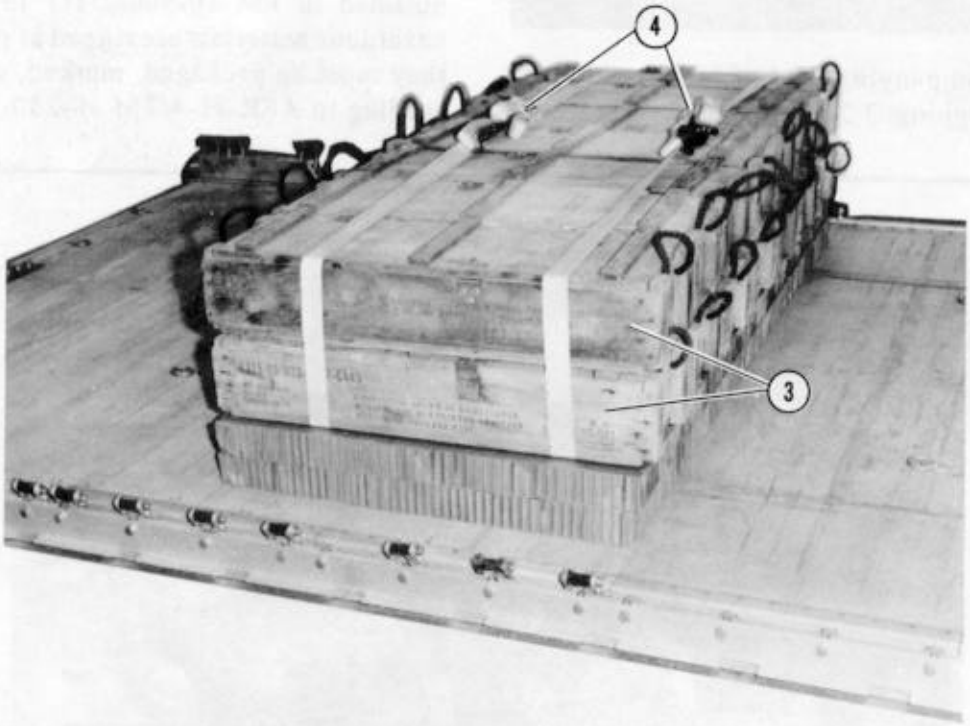
CAUTION: Only ammunition listed in FM 10-553/TO 13C7-18-41 may be airdropped.

Stow the accompanying load of 28 boxes of ammunition weighing 3,360 pounds as shown in Figures 5-2, 5-3, and 5-4. The other two boxes of ammunition will be stowed after the gun is lashed to the platform. Make sure the accompanying load meets the restrictions and requirements as outlined in FM 10-500-2/TO 13C7-1-5. When hazardous materials are rigged as part of the load, they must be packaged, marked, and labeled according to AFR 71-4/TM 38-250.



1. Center two 36- by 84-inch pieces of honeycomb 96 inches from the front edge of the platform.
2. Form two 30-foot lashings according to FM 10-500-2/TO 13C7-1-5, and lay them from side to side on the honeycomb.

Figure 5-2. First stack of ammunition secured with lashings

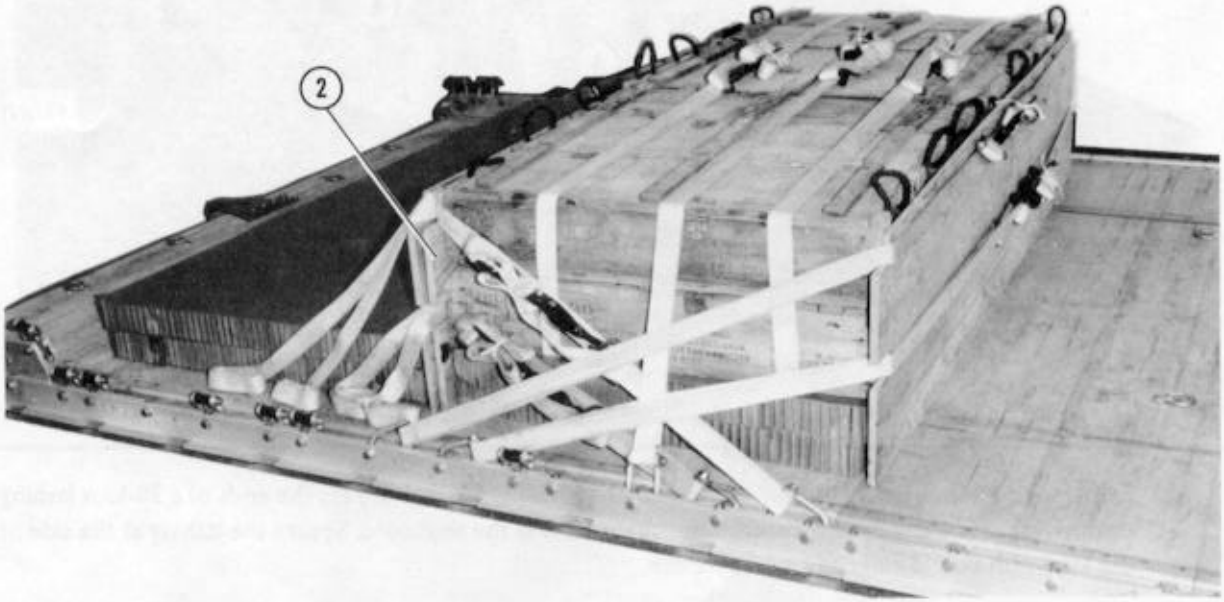


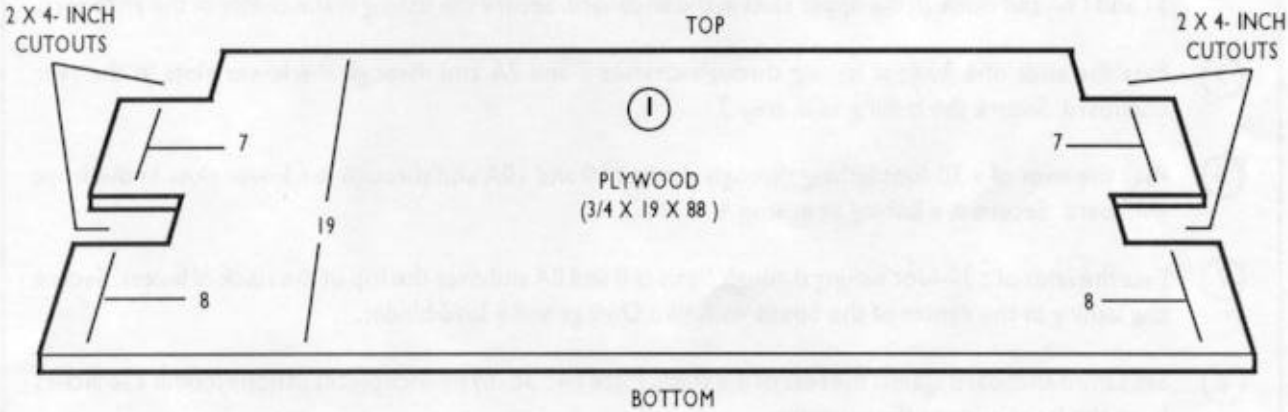
(3) Place 14 ammunition boxes on the honeycomb.

(4) Secure the 30-foot lashings with D-rings and load binders.

Figure 5-2. First stack of ammunition secured with lashings (continued)

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.

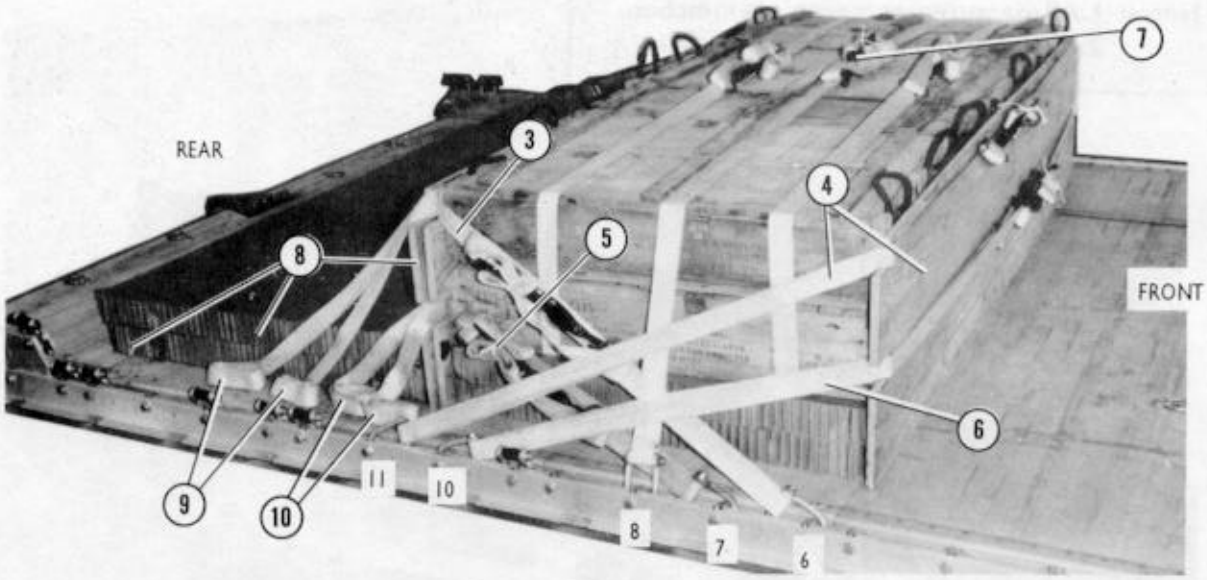




1 Cut four endboards as shown using 3/4- by 19- by 88-inch pieces of plywood.

2 Place an endboard against the rear of the stack of boxes.

Figure 5-3. First stack of ammunition lashed



(3) Form seven 30-foot lashings according to FM 10-500-2/TO 13C7-1-5. Pass the ends of a 30-foot lashing through clevises 6 and 6A and through the upper slots in the endboard. Secure the lashing at the side of the load with two D-rings and a load binder.

(4) Place an endboard against the front of the stack of boxes. Pass the ends of a 30-foot lashing through clevises 11 and 11A and through the upper slots in the endboard. Secure the lashing in the center of the endboard.

(5) Pass the ends of a 30-foot lashing through clevises 7 and 7A and through the lower slots in the rear endboard. Secure the lashing as in step 3.

(6) Pass the ends of a 30-foot lashing through clevises 10 and 10A and through the lower slots in the front endboard. Secure the lashing as in step 4.

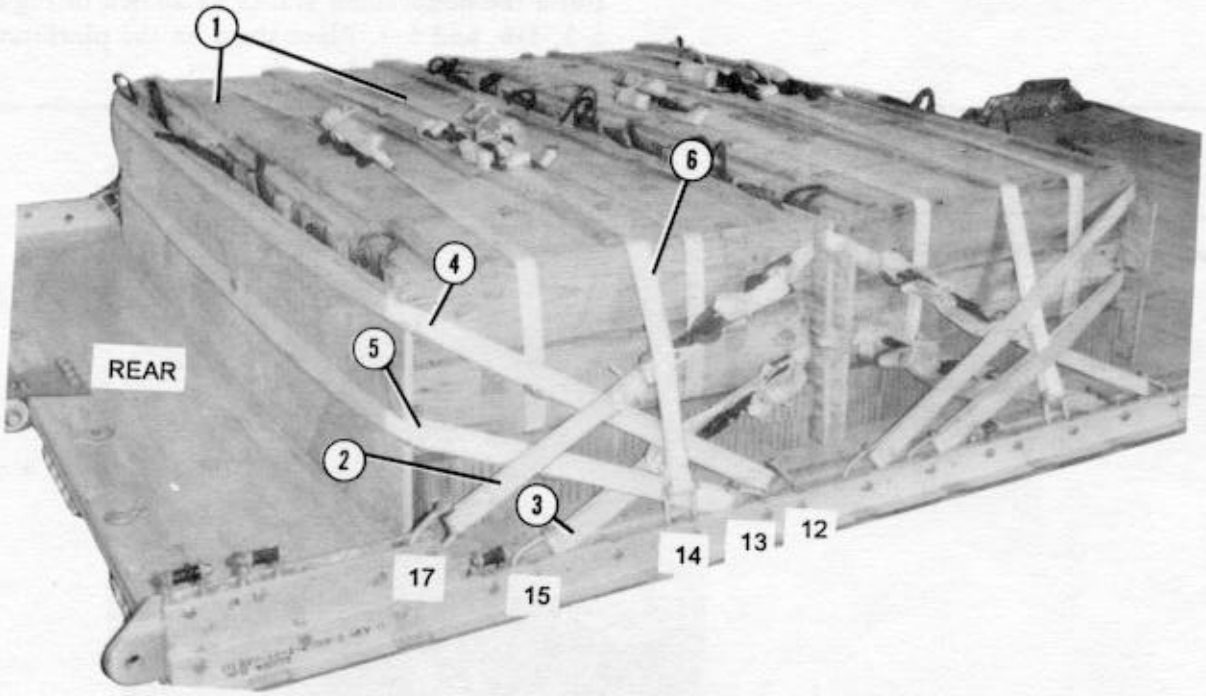
(7) Pass the ends of a 30-foot lashing through clevises 8 and 8A and over the top of the stack of boxes. Secure the lashing in the center of the boxes with two D-rings and a load binder.

(8) Set a third endboard against the rear of the stack. Place two 36- by 84-inch pieces of honeycomb 136 inches from the front edge of the platform.

(9) Pre-position a 30-foot lashing through clevis 17A and through the upper slots.

(10) Pre-position a 30-foot lashing through clevis 15A and through the lower slots.

Figure 5-3. First stack of ammunition lashed (continued)



Note: Form five 30-foot lashings according to FM 10-500-2/TO 13C7-1-5.

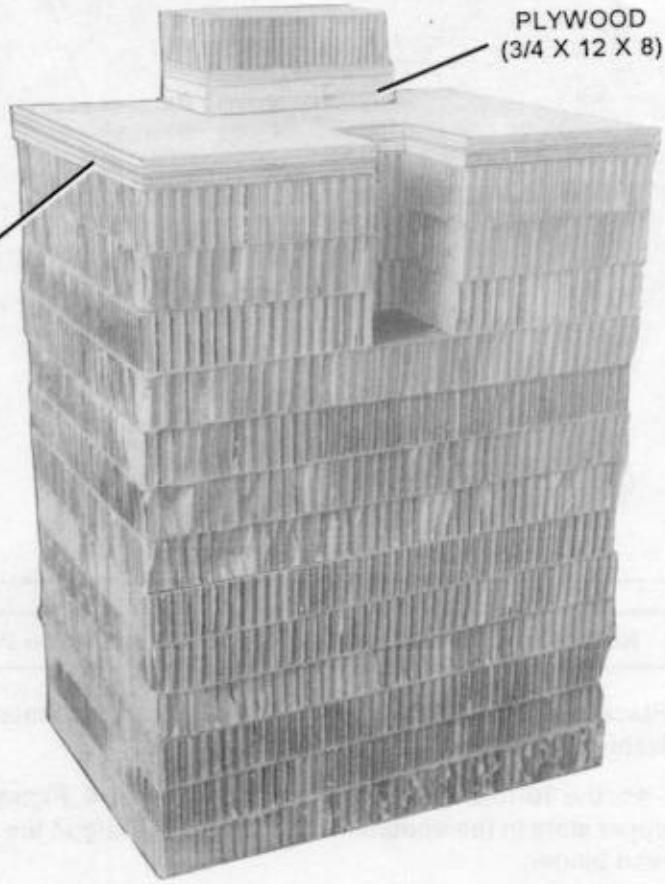
1. Place two 30-foot lashings and 14 boxes of ammunition on the honeycomb. Secure the lashings as shown in Figure 5-2, step 4.
2. Pass the 30-foot lashing pre-positioned in step 9, Figure 5-3, through clevis 17 and through the upper slots in the endboard. Secure the lashing at the side of the load with two D-rings and a load binder.
3. Pass the 30-foot lashing pre-positioned in step 10, Figure 5-3, through clevis 15 and through the lower slots in the endboard. Secure the lashing as in step 2.
4. Place an endboard against the rear of the stack of boxes. Pass the ends of a 30-foot lashing through clevises 12 and 12A and through the upper slots in the endboard. Secure the lashing on the left side of the load with two D-rings and a load binder.
5. Pass the ends of a 30-foot lashing through clevises 13 and 13A and through the lower slots in the endboard. Secure the lashing as in step 4.
6. Pass the ends of a 30-foot lashing through clevises 14 and 14A and over the top of the stack of boxes. Secure the lashing in the center of the boxes with two D-rings and a load binder.

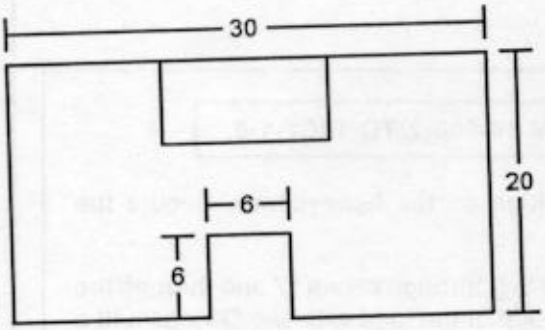
Figure 5-4. Second stack of ammunition lashed

5-4. Building and Placing Honeycomb Stacks

Build the honeycomb stacks as shown in Figures 5-5, 5-6, and 5-7. Place them on the platform as shown in Figure 5-8.

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.





TOP VIEW

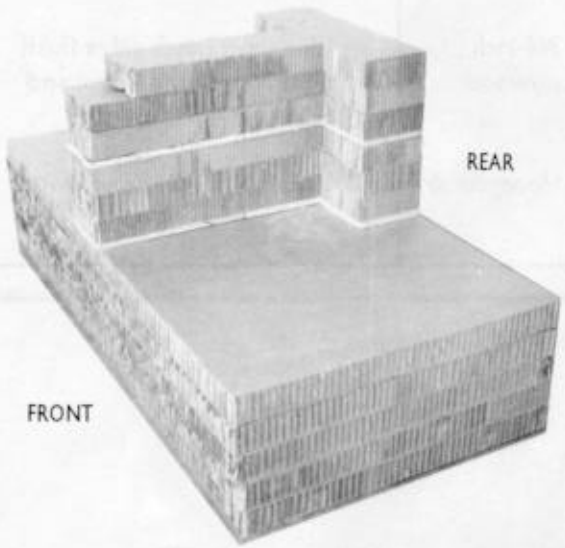
Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	10	30	20	Honeycomb	Form a stack.
	3	30	20	Honeycomb	Center a cut 6 inches wide and 6 inches deep in a 30-inch side. Place these pieces flush on the stack with the cutouts to the rear.

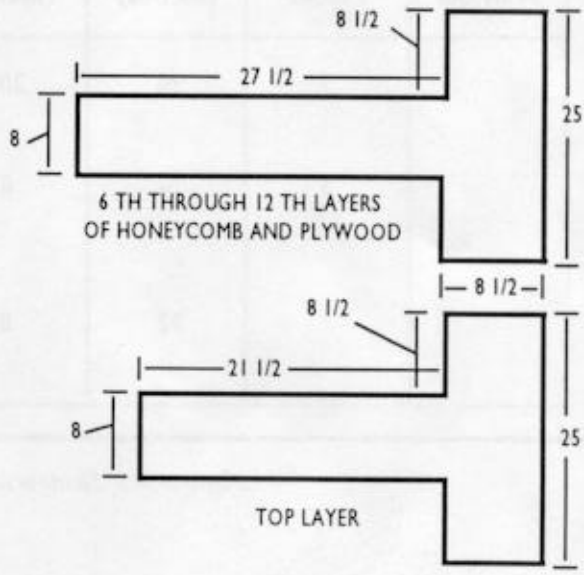
Figure 5-5. Honeycomb stack 1 prepared

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
	2	30	20	3/4-inch plywood	Make same cuts as above and place on honeycomb.
	3	12	8	3/4-inch plywood	Glue the 12-inch sides flush along the front edge and centered.
	1	12	8	Honeycomb	Glue flush over the plywood placed above.

Figure 5-5. Honeycomb stack 1 prepared (continued)

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.





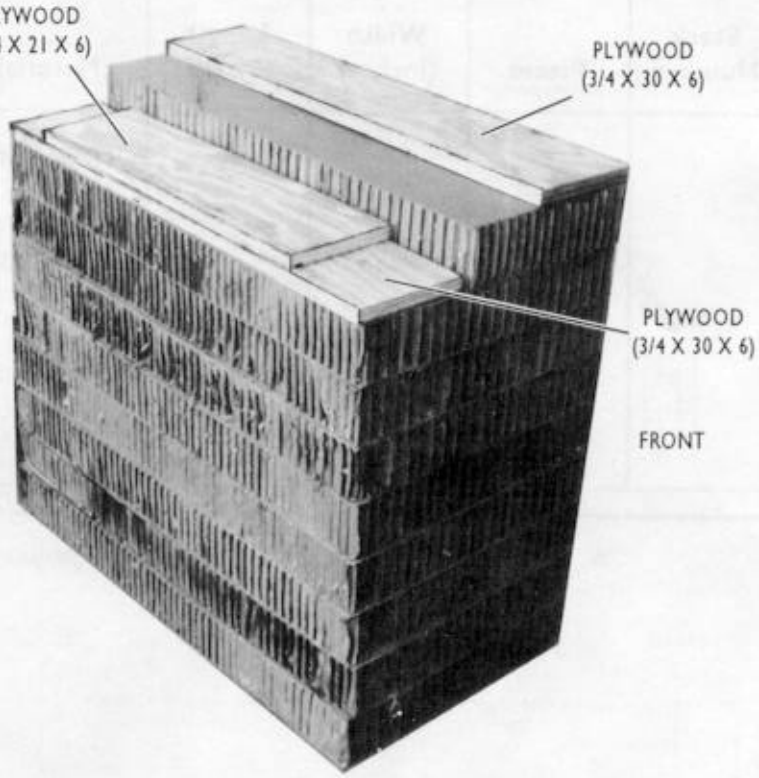
Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
2	5	72	36	Honeycomb	Form a stack.
	1	25	36	3/4-inch plywood	Make cutouts as shown.
	3	25	36	Honeycomb	Make cutouts as shown, and place flush on the plywood.
	1	25	36	3/4-inch plywood	Make cutouts as shown, and place flush on the honeycomb.

Figure 5-6. Honeycomb stack 2 prepared

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
	2	25	36	Honeycomb	Make cutouts as shown, and place flush on the plywood.
	1	25	30	Honeycomb	Make cutouts as shown for the top layer, and place flush on the stack. Center the T-shaped stack on the base .

Figure 5-6. Honeycomb stack 2 prepared (continued)

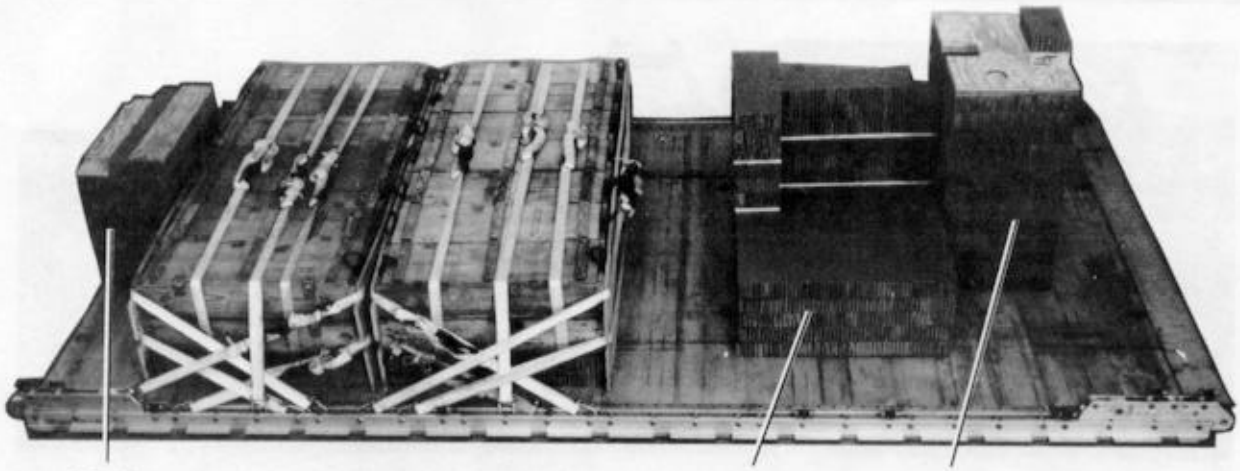
Note: All measurements are given in inches.

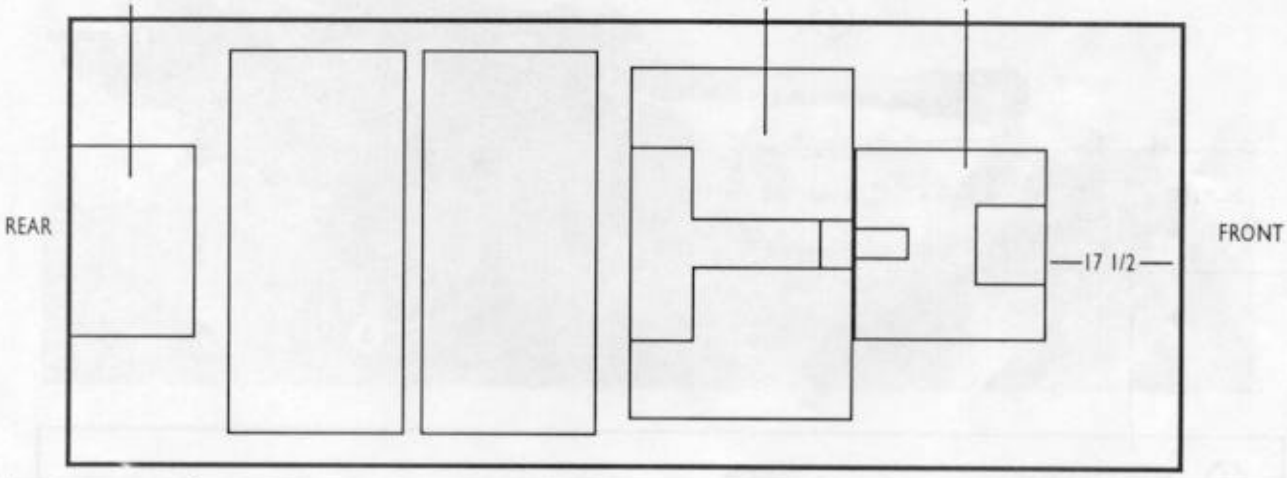


Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3	8	30	16	Honeycomb	Form a stack.
	1	30	10	Honeycomb	Glue honeycomb even with front edge of base.
	1	30	6	3/4-inch plywood	Glue plywood even with front edge of honeycomb.
	1	30	6	3/4-inch plywood	Glue plywood flush on rear area of stack.
	1	21	6	3/4-inch plywood	Center and glue plywood on the rear piece of plywood.

Figure 5-7. Honeycomb stack 3 prepared

Notes: 1. Measurement is given in inches.
2. This drawing is not drawn to scale.



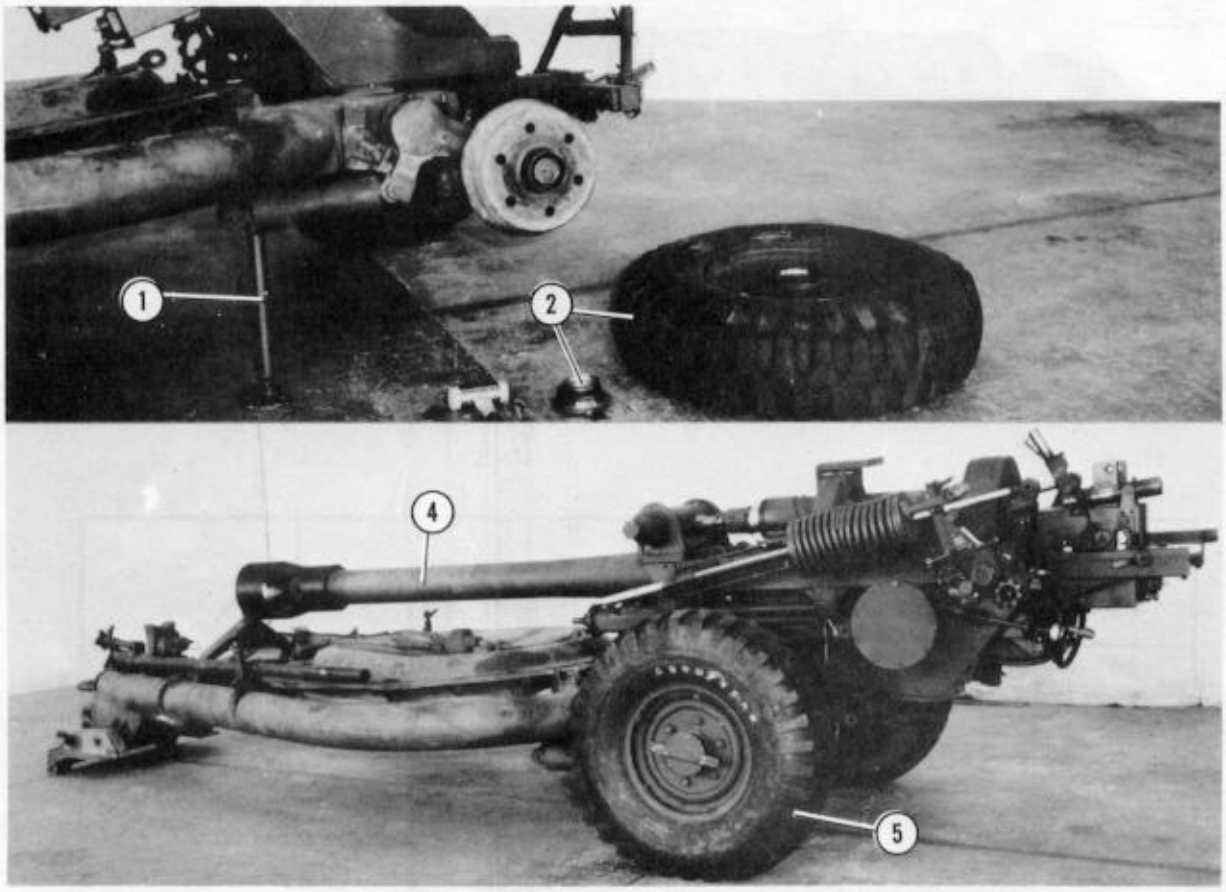


Stack Number	Position of Stack on Platform
	Place stack:
1	Centered 17 1/2 inches from front edge of platform.
2	Centered and flush against stack 1.
3	Centered and flush with rear edge of platform.

Figure 5-8. Honeycomb stacks placed on platform

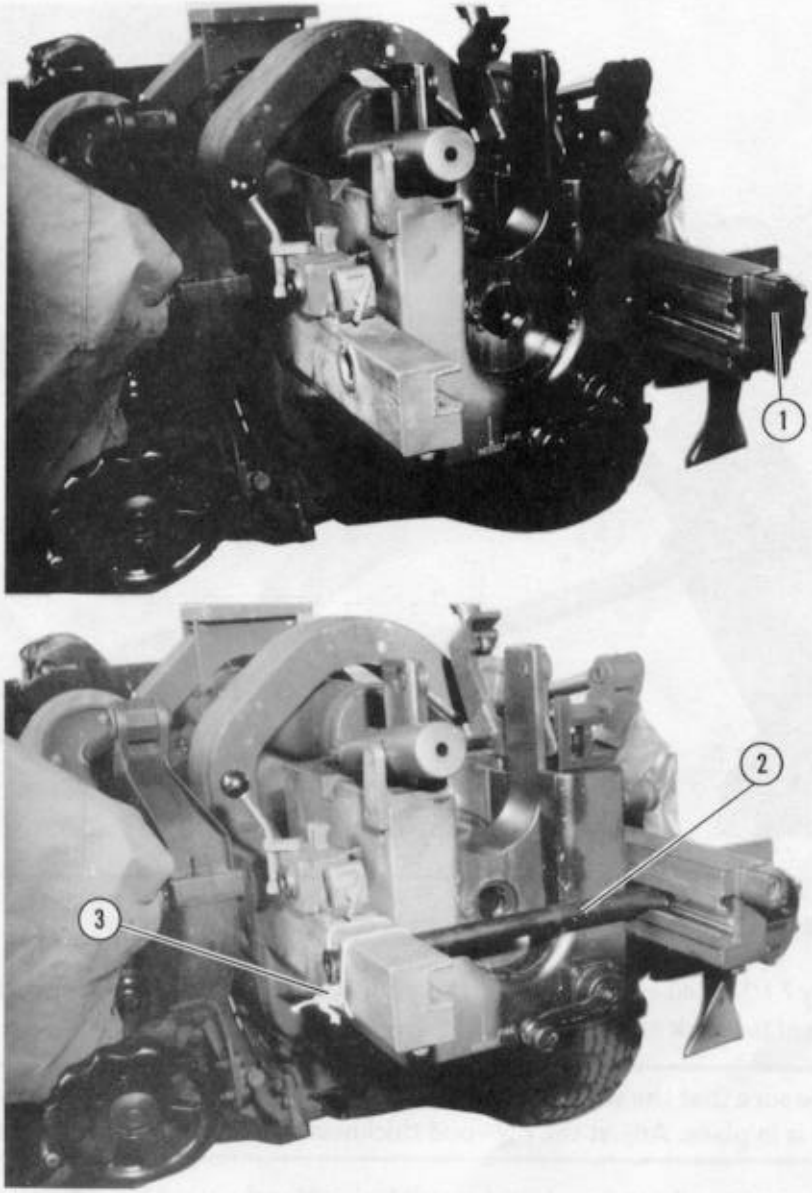
5-5. Preparing Howitzer

Prepare the howitzer as shown in Figures 5-9 through 5-18.



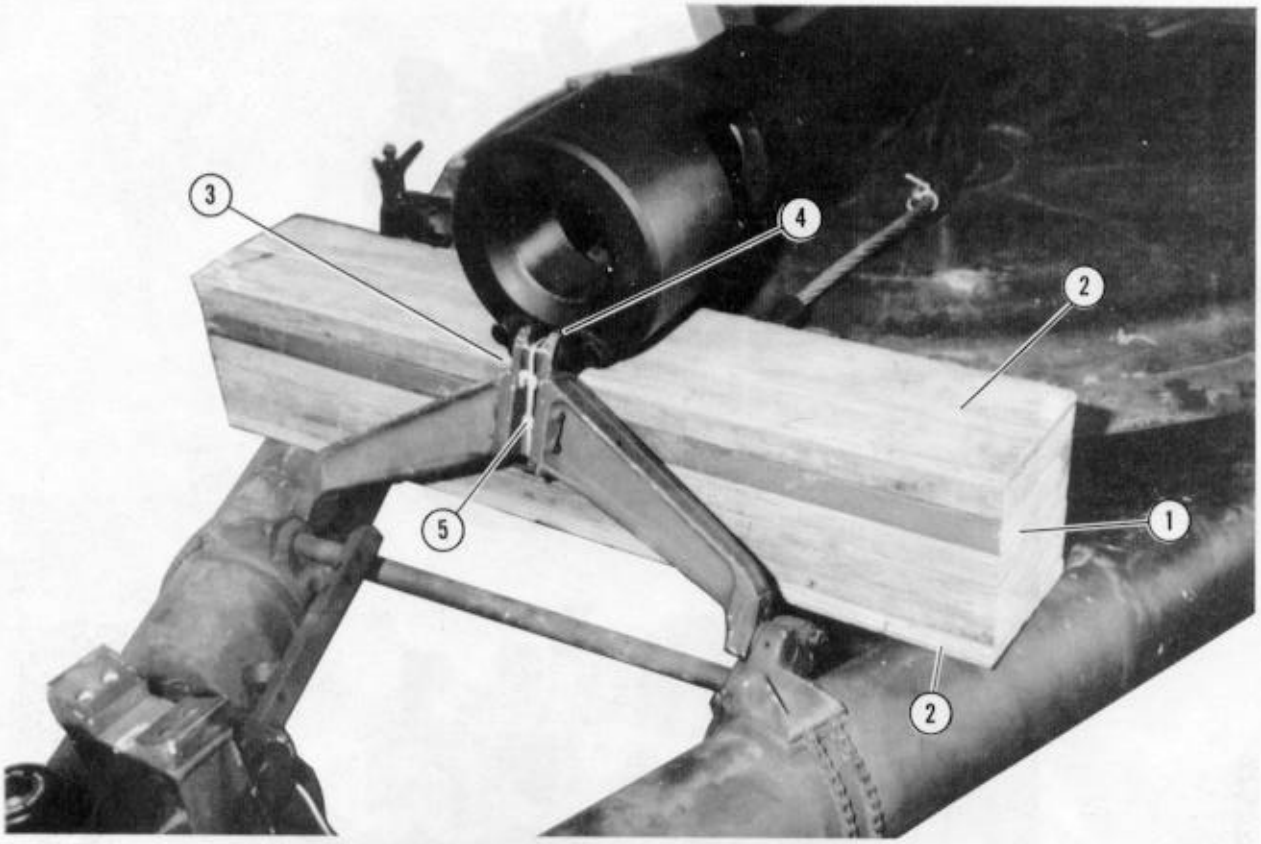
1. Install the jack.
2. Use the mallet to remove the wheel hub and the right front wheel.
3. Place the travelling stay in its locking bracket (not shown).
4. Traverse the barrel to the rear until it is centered between the trails.
5. Replace the wheel and hub. Stow the jack and mallet in their bracket on the left side of the gun.

Figure 5-9. Gun placed in travel position



1. Remove the run back stop bar from its storage hole on the right rail. (Bar shown stowed.)
2. Insert the bar from the left side into the holes provided in both rails.
3. Secure the left end of the bar to the left rail with type III nylon cord.

Figure 5-10. Run back stop bar secured across breech



1. Use 20d nails to nail five 2- by 8- by 40-inch pieces of lumber flush together.

2. Cut a 3/4- by 7 1/2- by 40-inch piece and a 1/2- by 7 1/2- by 40-inch piece of plywood. Nail one piece flush to each side of the stack of boards.

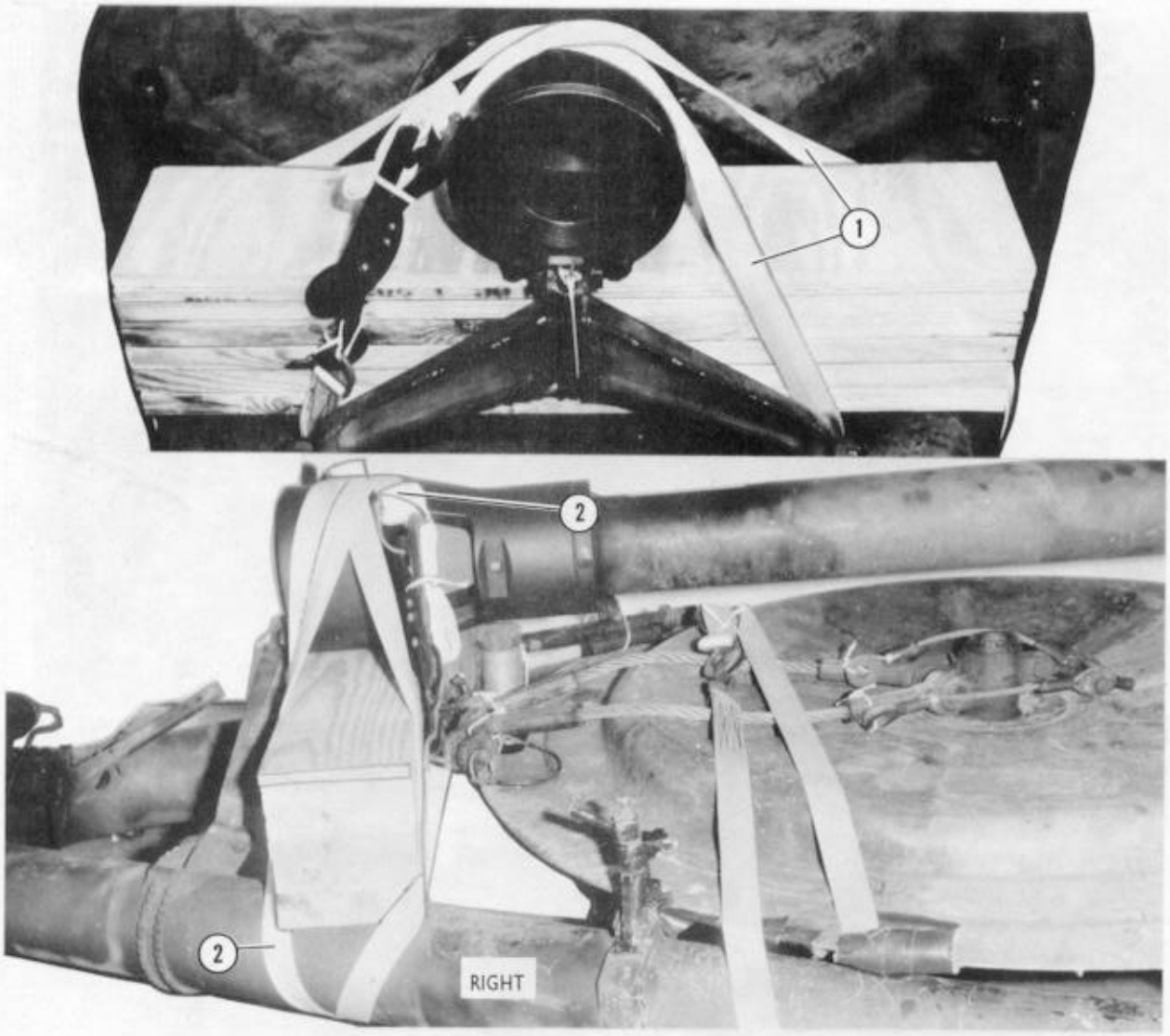
Note: Be sure that the wood support fits snugly under the muzzle brake when the latch bracket is in place. Adjust the plywood thickness, if necessary, to ensure a snug fit.

3. Center the support on the trails under the muzzle brake. Align the rear edge of the support with the edge of the muzzle brake.

4. Swing the latch bracket assembly up to the muzzle brake. Lock the latch bracket assembly to the fitting on the muzzle brake.

5. Secure the latch bracket with type III nylon cord.

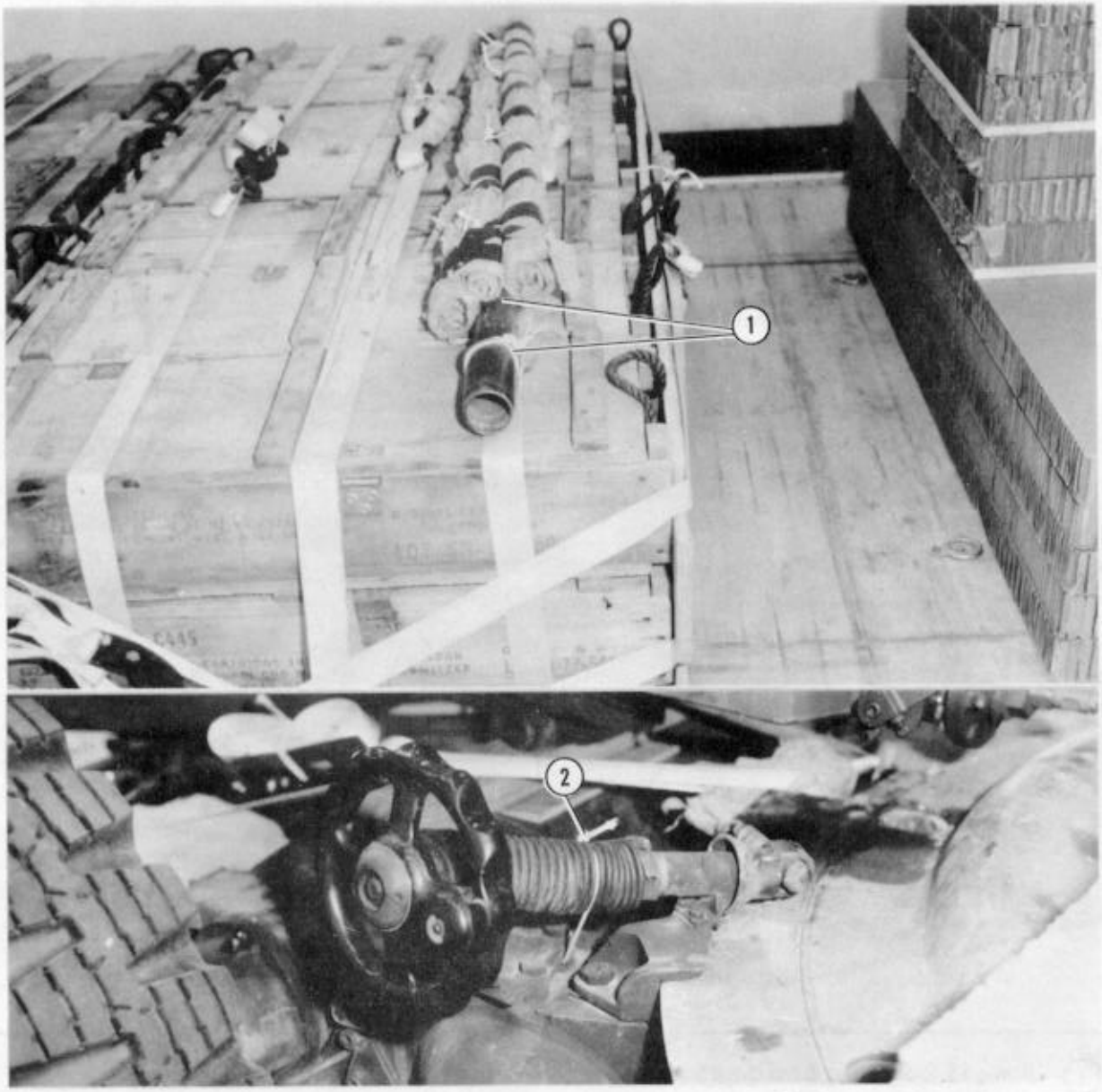
Figure 5-11. Muzzle brake support constructed and placed



(1) Run a 15-foot lashing from the front of the support, around the left trail, behind the support, over the muzzle brake, in front of the support, under the right trail, and over the muzzle brake. Secure it on the left side of the muzzle brake with a D-ring and a load binder.

(2) Beginning behind the support on the right side, run a 15-foot lashing under the right trail, in front of the support, up over the muzzle brake, behind the support, under the left trail, and over the muzzle brake. Secure it on the right side and behind the support with a D-ring and a load binder.

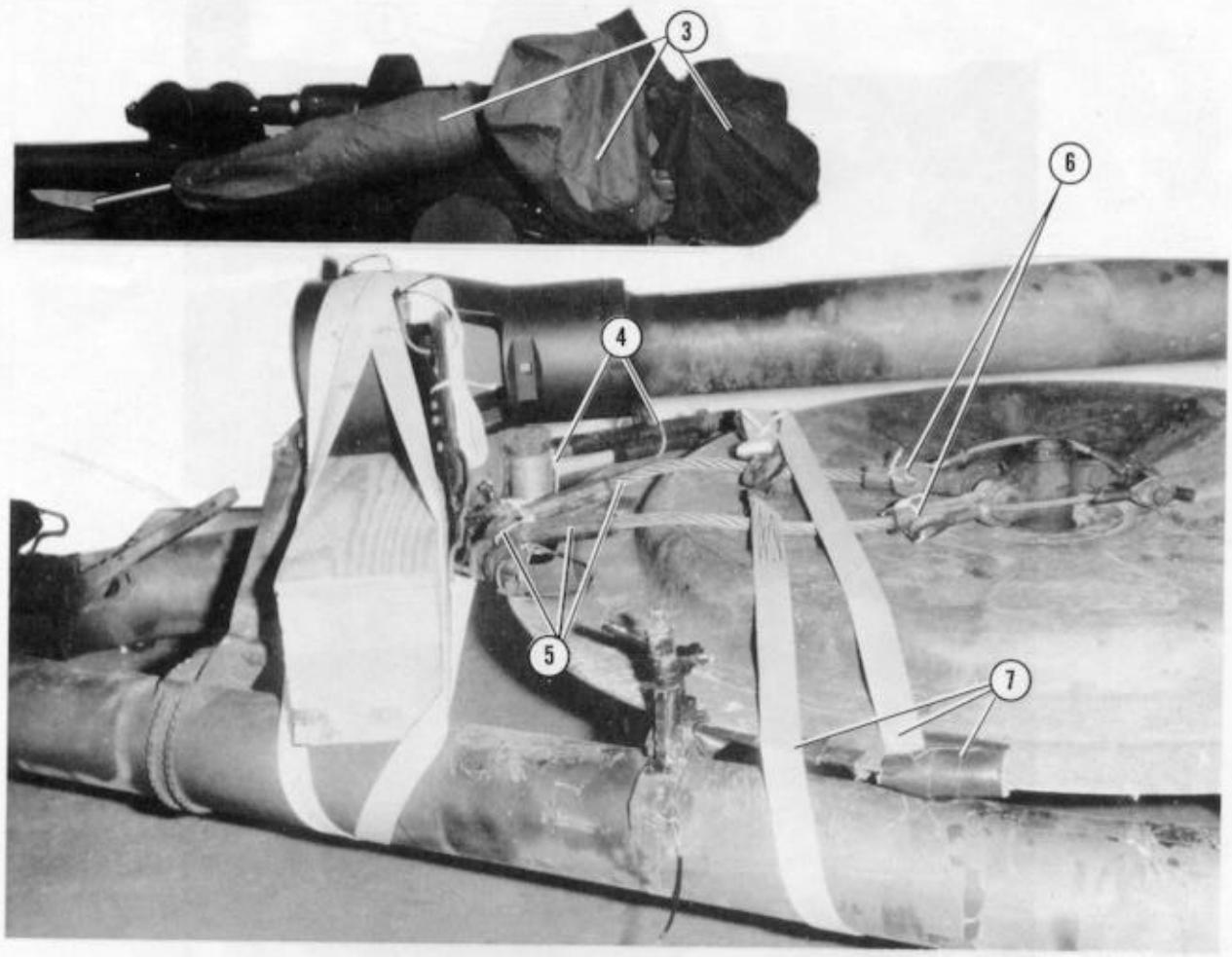
Figure 5-12. Muzzle brake support secured



(1) Wrap the aiming poles, trail lifting bar, rammer staff, and barrel brush with cellulose wadding. Tie them to the front ammunition box lashing with type III nylon cord.

(2) Remove the traversing wheel (not shown). Secure it to its bracket on the left trail with type III nylon cord.

Figure 5-13. Gun equipment stowed



(3) Cover the breech, sights, and recoil springs with the covers provided.

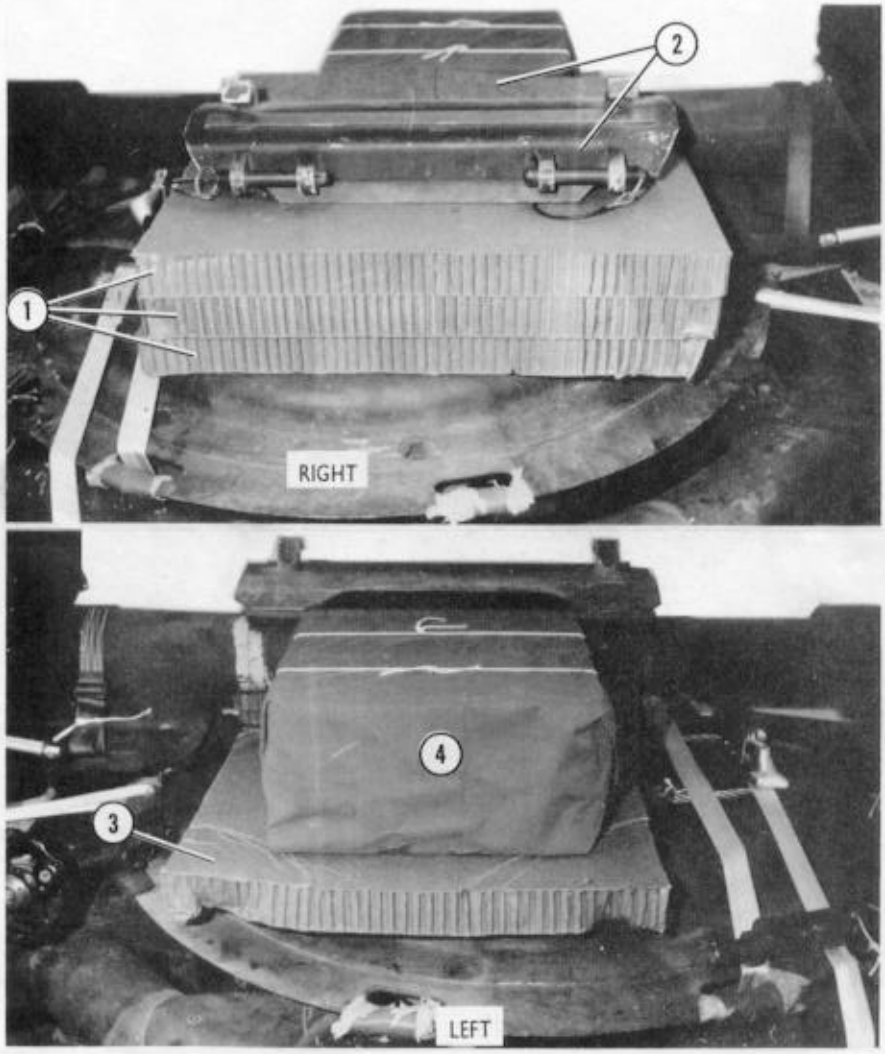
(4) Tie the jack and mallet in their storage bracket with type III nylon cord.

(5) Tie the large firing stay cables to the rear firing platform hole with type III nylon cord.

(6) Tie the smaller firing stay cables to the large firing stay cables with type III nylon cord.

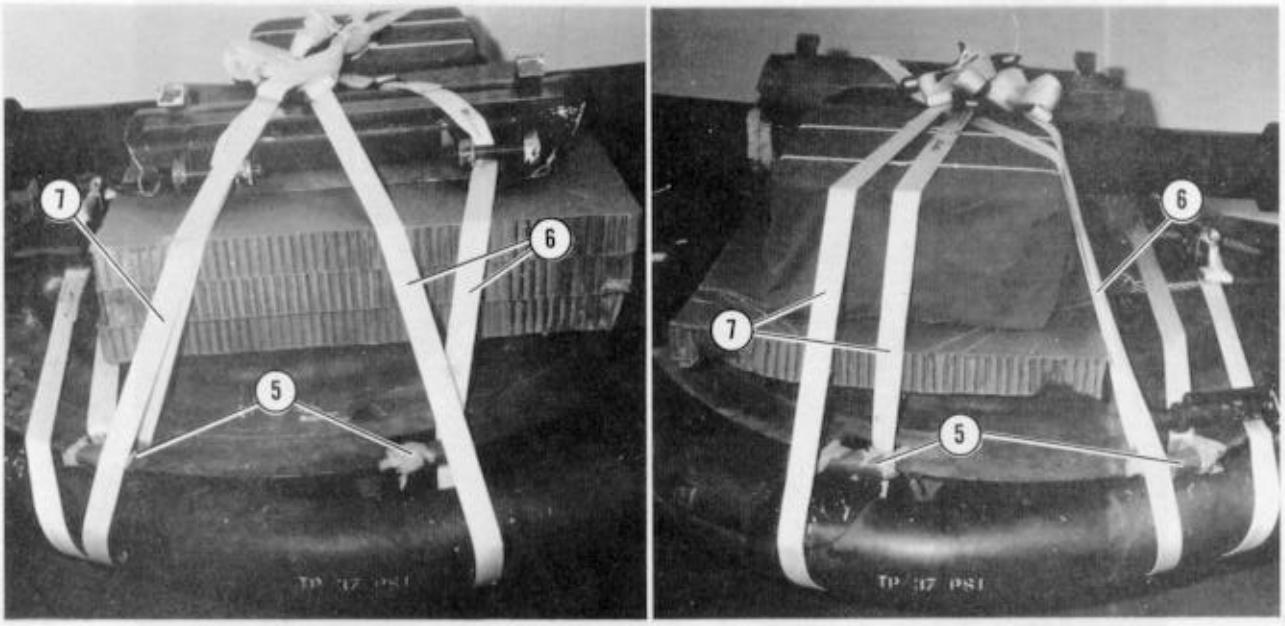
(7) Pad the rear side firing platform holes with 11- by 5-inch felt taped in place. Secure a 15-foot lashing through both holes, around the trails, and over the firing platform.

Figure 5-13. Gun equipment stowed (continued)



1. Place a stack of three 18- by 36-inch pieces of honeycomb on the firing platform against the gun tube.
2. Lay an 8- by 36-inch piece of felt against the barrel. Place the field spade against the felt as shown.
3. Place a 24- by 30-inch piece of honeycomb lengthwise on the firing platform on the left side of the gun tube.
4. Wrap the gunner's sight box, tool bag, and camouflage net in a tarpaulin. Tie the bundle securely with type III nylon cord, and place it on the honeycomb.

Figure 5-14. Howitzer equipment stowed on firing platform



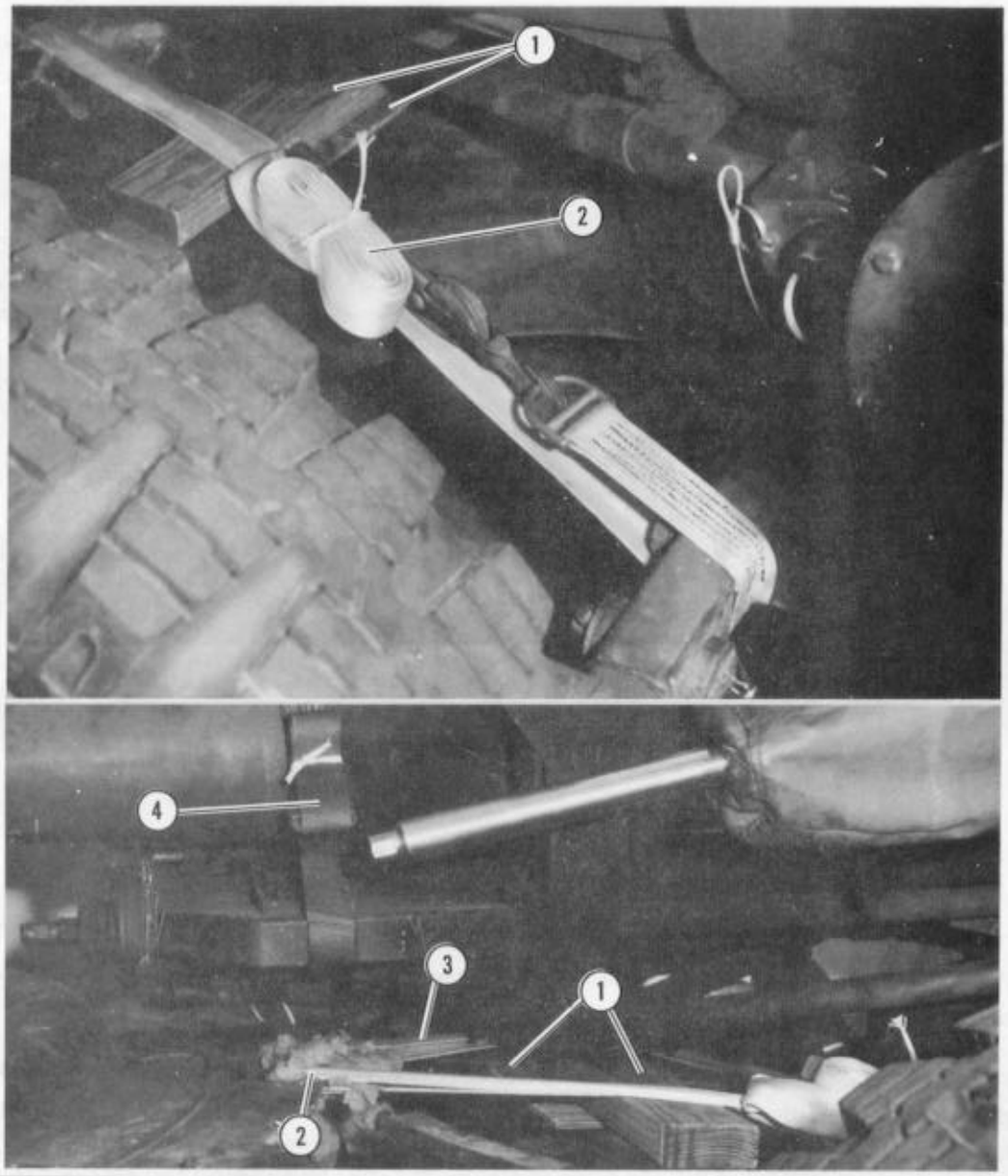
RIGHT LEFT

(5) Pad the two remaining side firing platform lifting holes on the firing platform with two 5- by 11-inch pieces of felt.

(6) Form two 30-foot lashings according to FM 10-500-2/TO 13C7-1-5. Lay a 30-foot lashing diagonally across the items stowed on the firing platform. Pass one end through the field spade hinge and firing platform lifting hole directly below. Pass the other end over the tarpaulin, down through the nearest firing platform lifting hole, and around the left trail. Bring both free ends to the top of the load, and secure them over the tarpaulin with two D-rings and a load binder.

(7) Pass the end of another 30-foot lashing through the second field spade hinge and down through the firing platform lifting hole directly below. Pass the other end over the tarpaulin, down through the remaining firing platform lifting hole, and around the left trail. Bring both free ends to the top of the load, and secure them as in step 6.

Figure 5-14. Howitzer equipment stowed on firing platform (continued)



(1) Center a 1/2- by 10 1/2- by 6-inch piece of plywood directly under the hinge of the travelling stay. Center a 2- by 4- by 24-inch piece of lumber over the plywood.

Note: Be sure that the wood support fits snugly between the travelling stay and the carriage. Adjust the plywood thickness, if necessary, to ensure a snug fit.

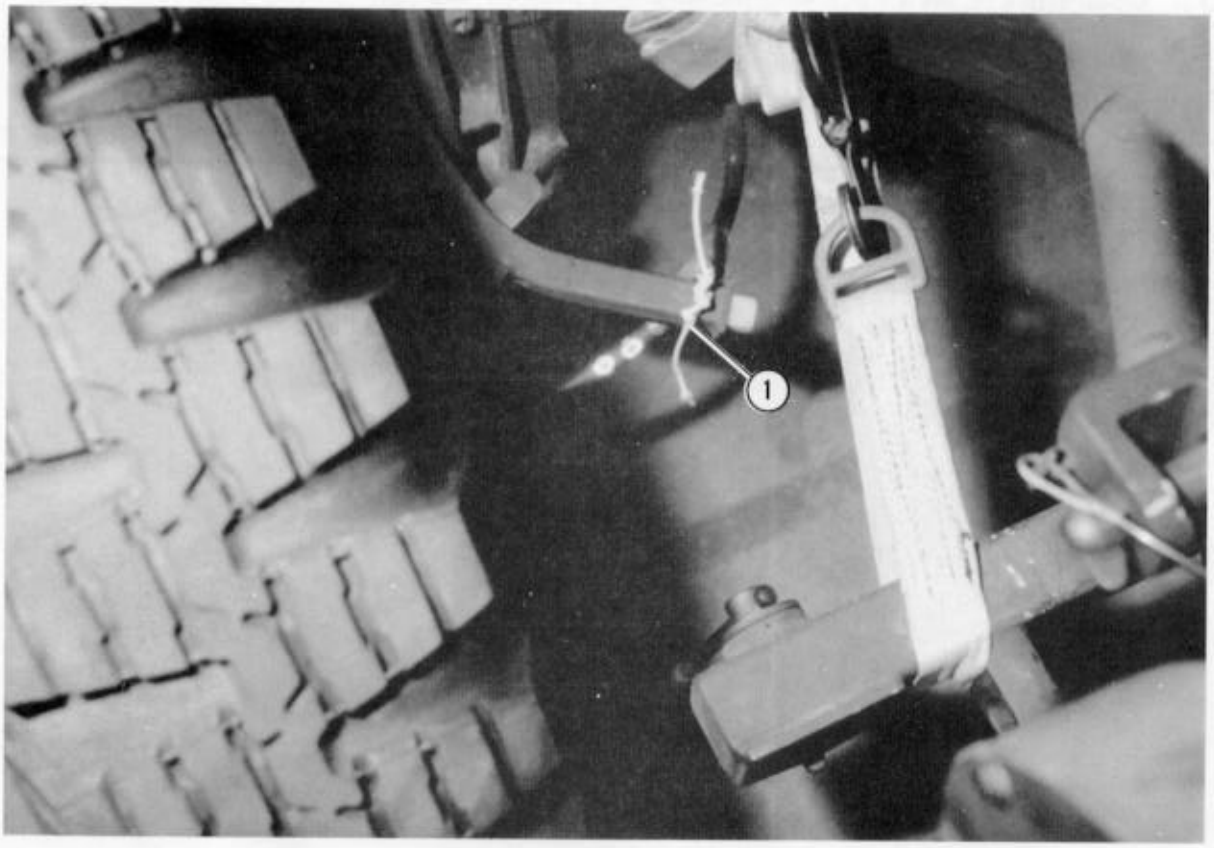
Figure 5-15. Wood under buffer assembly secured

2. Pad the front firing platform hole with cellulose wadding. Pass a 15-foot lashing through the hole, over the lumber placed in step 1, and around the brake light bar. Secure the lashing on top with a D-ring and a load binder.

3. Repeat step 2 on the left side, using the same firing platform hole.

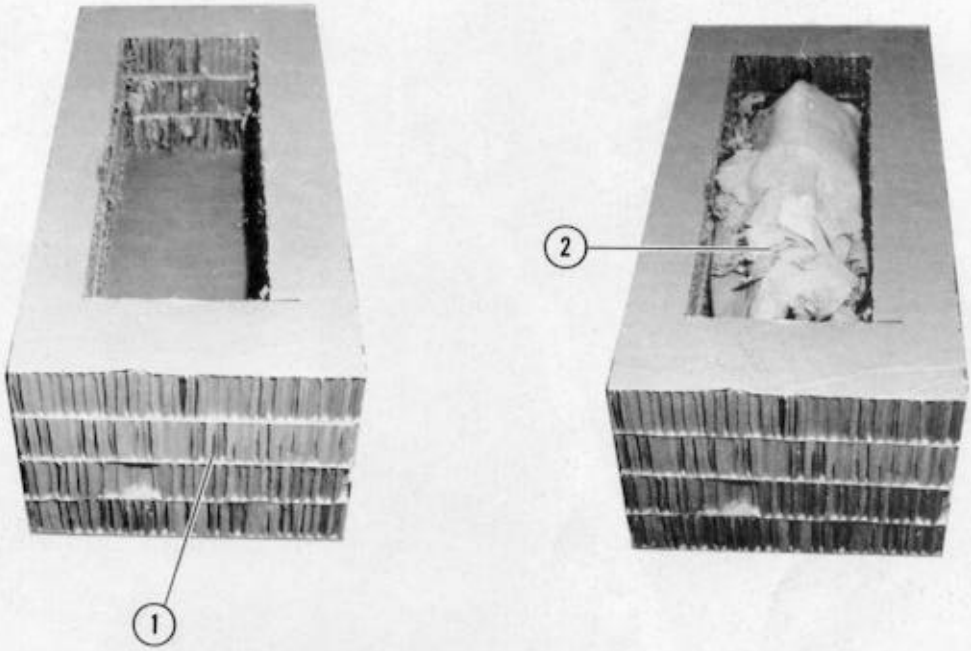
4. Pass a 60-inch shear strap around the barrel and under the buffer assembly. Secure the strap with its friction adapter. Tie the excess strap with 1/4-inch cotton webbing.

Figure 5-15. Wood under buffer assembly secured (continued)



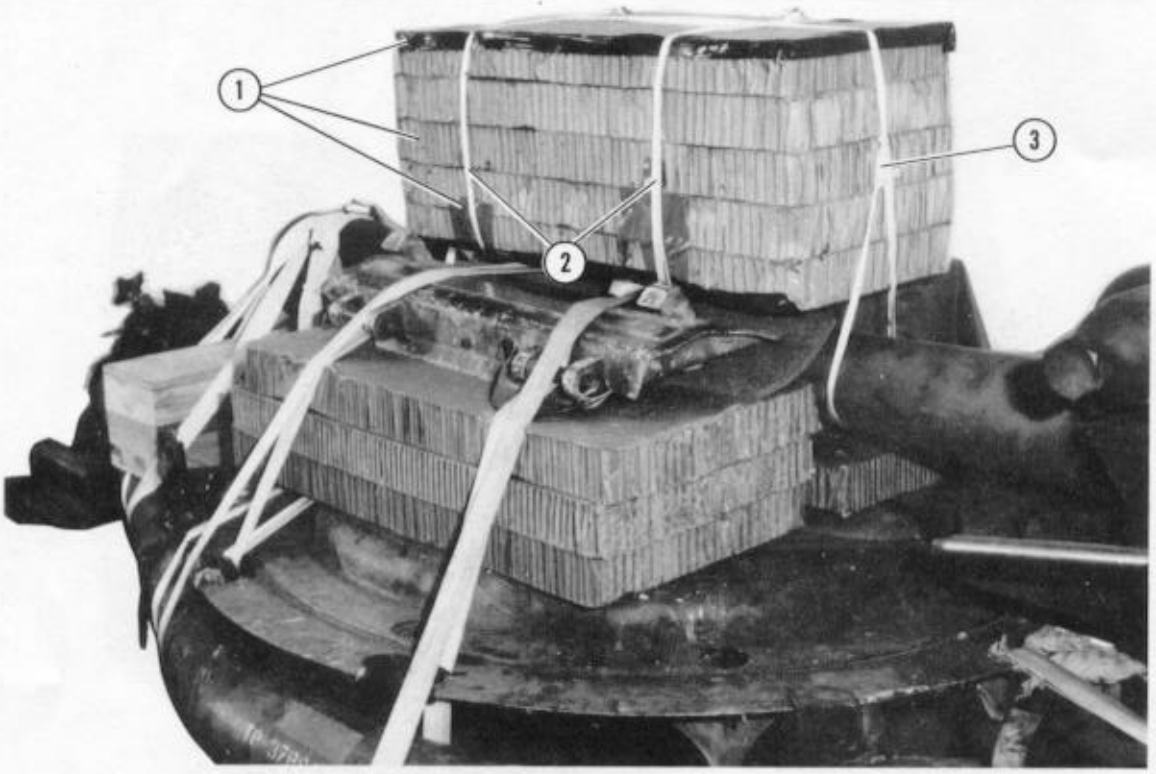
(1) Tie the brake lines to the brake handle with type III nylon cord.

Figure 5-16. Brake lines secured to brake handle



1. Cut five 15- by 36-inch pieces of honeycomb. Center a cutout in three of the pieces to fit the collimator. Glue the three pieces with the cutouts flush over a solid piece of honeycomb.
2. Pad the collimator generously with cellulose wadding, and place it in the collimator box.
3. Tie the remaining solid piece of honeycomb flush over the box with lengths of 1/2-inch tubular nylon webbing (not shown).

Figure 5-17. Collimator stowed

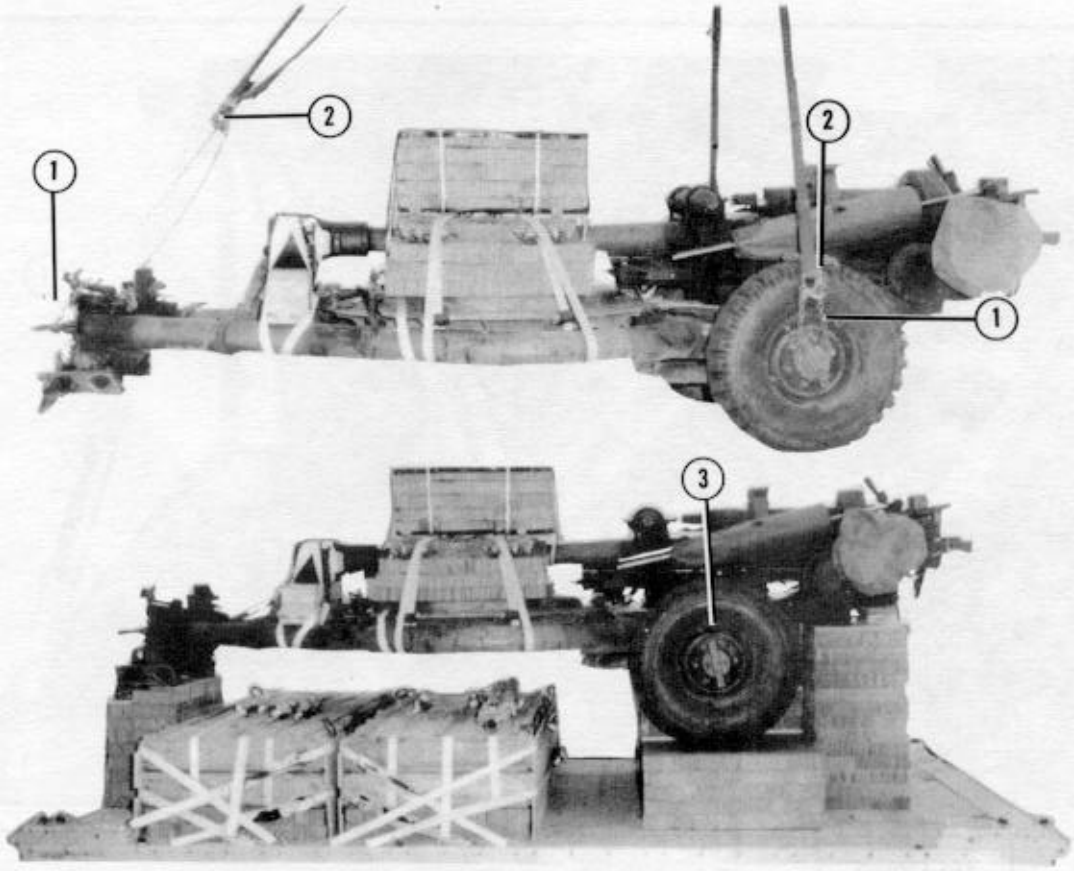


1. Center the collimator lengthwise over the gun tube and the firing platform. Tape the top and bottom edges of the box.
2. Pass two lengths of 1/2-inch tubular nylon webbing under the gun tube and over the box. Tie them tightly with a surgeon's knot, a locking knot, and overhand knots in the running ends.
3. Pass one length of 1/2-inch tubular nylon webbing lengthwise over the box. Secure it around the gun tube at each end with a trucker's hitch.

Figure 5-18. Collimator box secured to load

5-6. Lifting and Positioning Howitzer

Lift the howitzer and position it on the honeycomb stacks as shown in Figure 5-19.



(1) Wrap 10,000-pound chains around the wheel hubs, and run a 10,000-pound chain through the lunette.

(2) Attach hooks to the ends of four 11-foot (2-loop), type XXVI nylon slings, and hook the slings to the chains. Adjust the chains, as necessary, to ensure that the howitzer remains level when lifted.

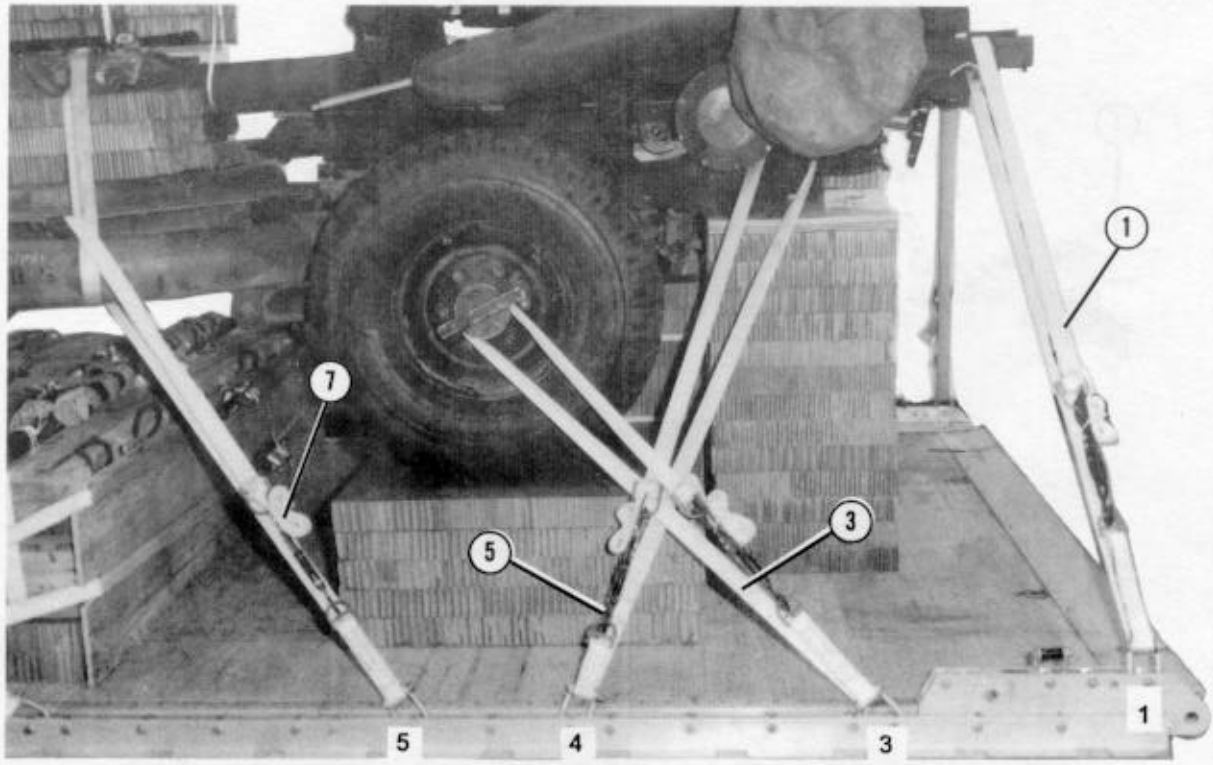
Note: The hooks shown are not standard items. Other hooks available at the rigging facility may be used.

(3) Center the howitzer on the platform, and on the stacks as shown.

Figure 5-19. Howitzer lifted and positioned on platform

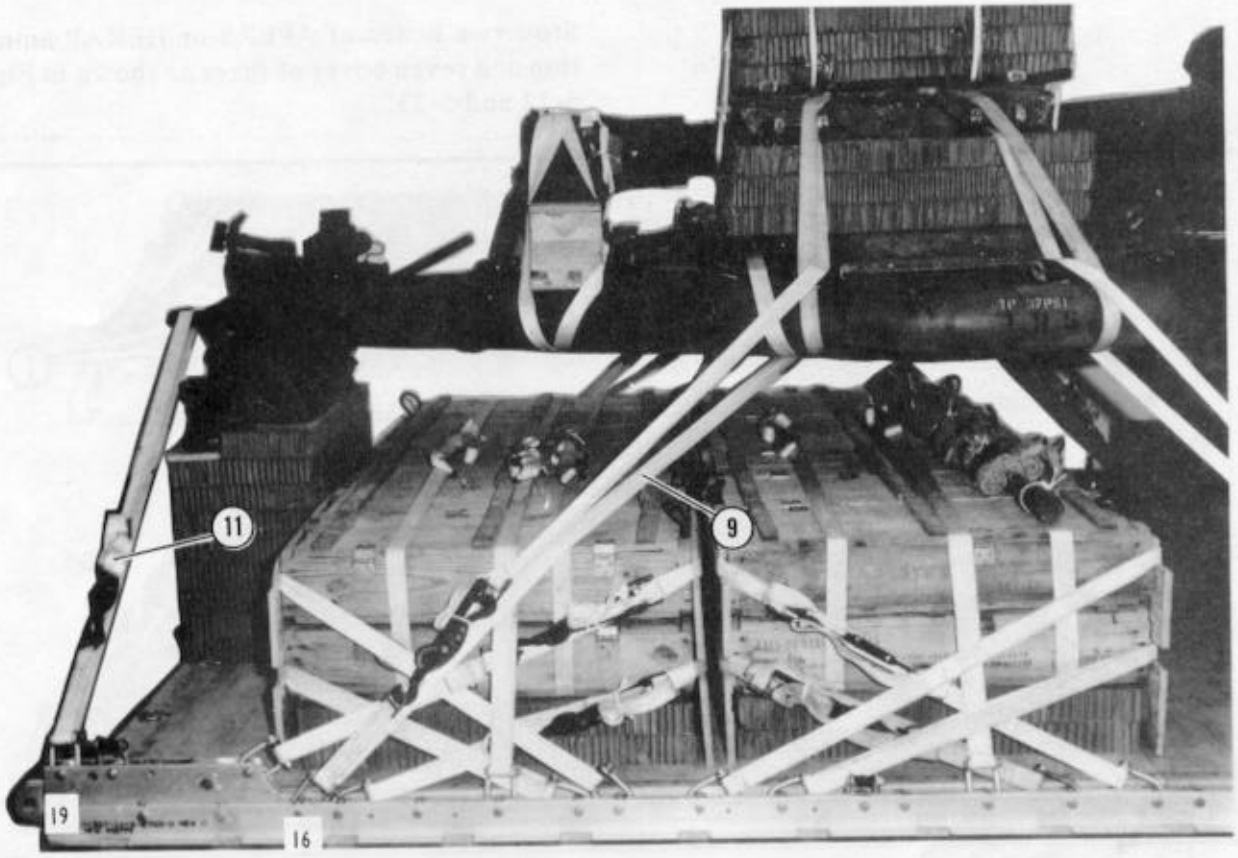
5-7. Lashing Howitzer

Lash the howitzer to the platform as shown in Figures 5-20 and 5-21. Install and safety the lashings according to FM 10-500-2/ TO 13C7-1-5.



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	1	Around rail, right side.
2	1A	Around rail, left side.
3	3	Around wheel hub, right side.
4	3A	Around wheel hub, left side.
5	4	Around saddle, behind elevating wheel shaft, right side.
6	4A	Around saddle, left side.
7	5	Through hole in firing platform and around trail, right side.
8	5A	Through hole in firing platform and around trail, left side.

Figure 5-20. Lashings 1 through 8 installed

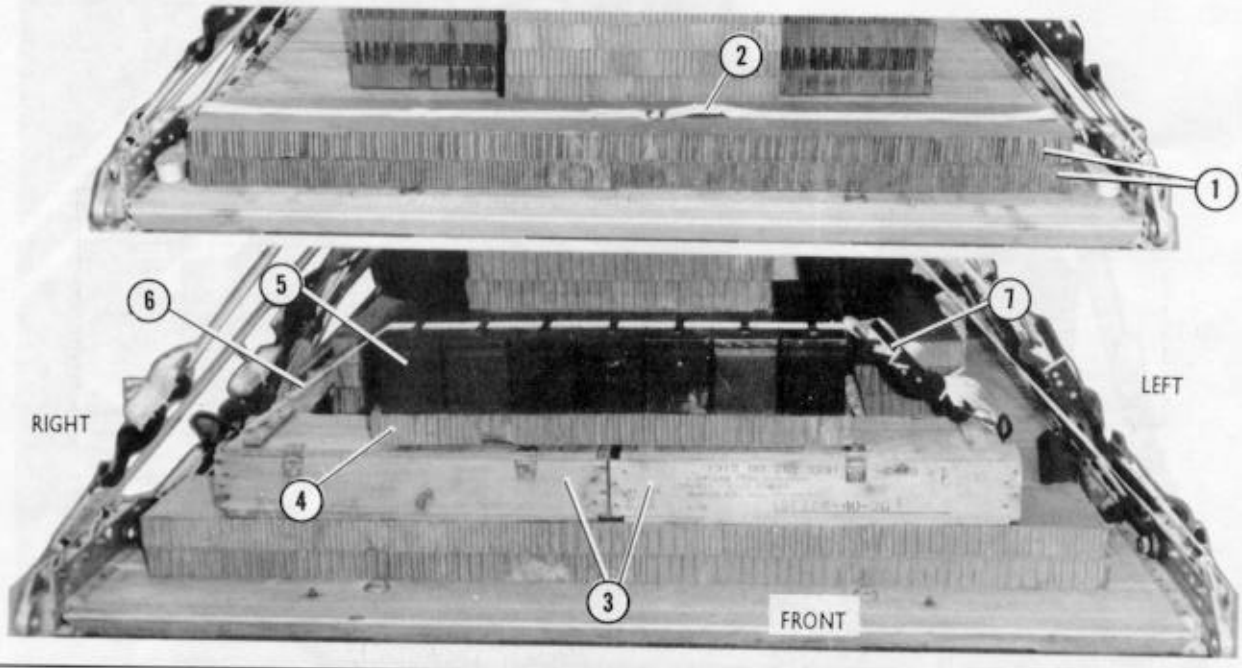


Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
9	16	Through hole in firing platform and around trail, right side.
10	16A	Through hole in firing platform and around trail, left side.
11	19	Through lunette, right side.
12	19A	Through lunette, left side.

Figure 5-21. Lashings 9 through 12 installed

5-8. Stowing Additional Accompanying Load

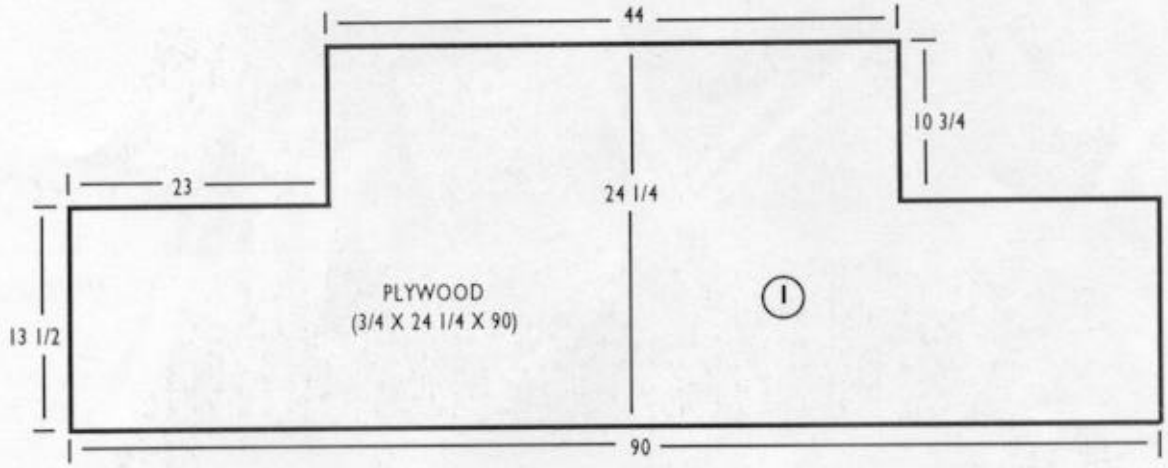
Stow two boxes of APERS or HERAP ammunition and seven boxes of fuzes as shown in Figures 5-22 and 5-23.

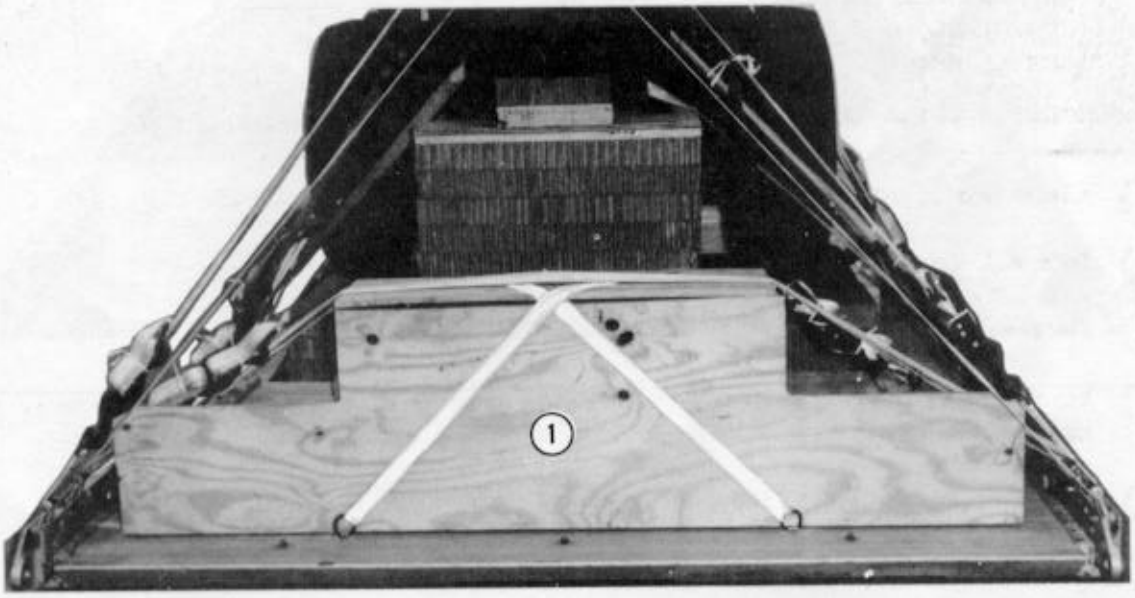


1. Center two 12- by 90-inch layers of honeycomb on the front of the platform flush against stack 1.
2. Form a 30-foot lashing, and lay it from side to side on the layers of honeycomb.
3. Place two APERS or HERAP boxes of ammunition on the honeycomb and the lashing as shown.
4. Lay a 12- by 45-inch piece of honeycomb on the boxes. Compress the honeycomb to allow for the slats on the boxes.
5. Place seven boxes of fuzes side by side on the honeycomb.
6. Pass one end of the lashing on the right side of the load through the handle of the wooden box and under the handles of the metal boxes. Pass the other end on the left side of the load under the handle of the wooden box.
7. Secure the lashing with two D-rings and a load binder on the left side of the load.

Figure 5-22. Boxes of ammunition and fuzes stowed and lashed together

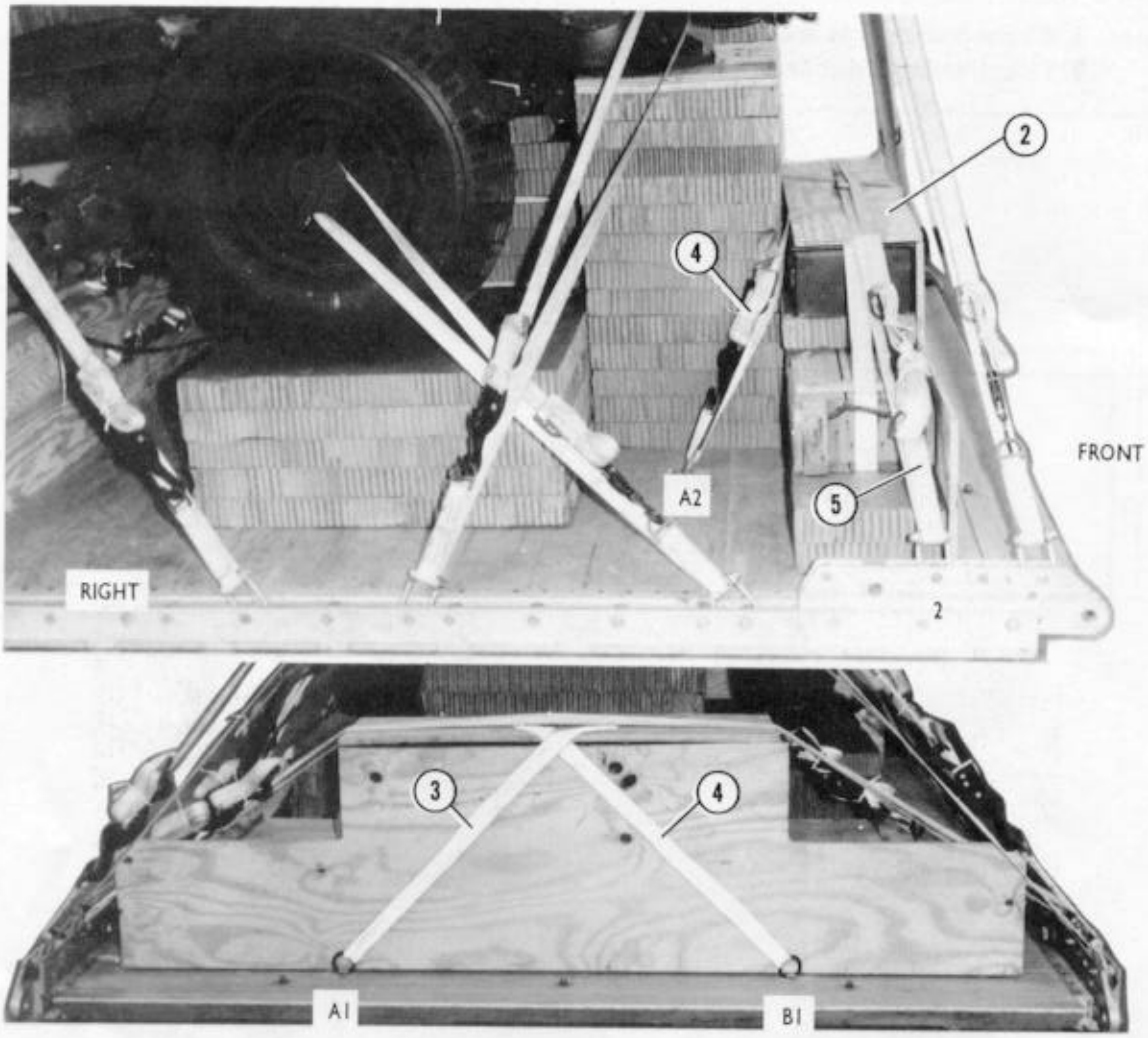
Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.





(1) Cut an endboard as shown above, and place it against the front of the ammunition.

Figure 5-23. Boxes of ammunition and fuzes lashed to platform



(2) Place a 12- by 44-inch piece of 3/4-inch plywood on top of the fuze boxes.

(3) Secure the plywood with a 15-foot lashing from tie-down ring A1 to B2.

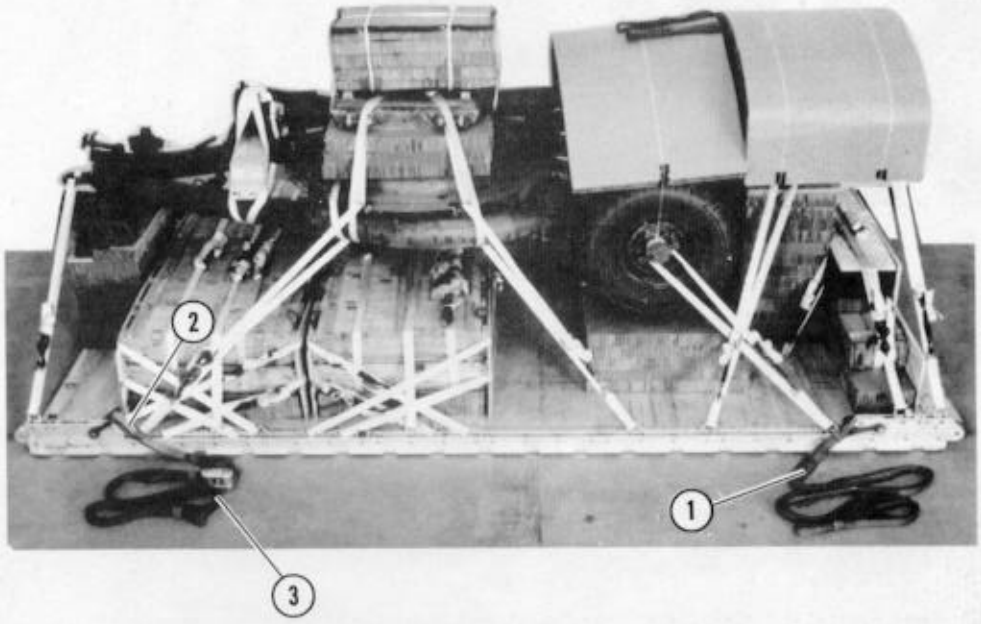
(4) Pass a 15-foot lashing from tie-down ring B1 to A2.

(5) Form a 30-foot lashing according to FM 10-500-2/TO 13C7-1-5. Place the lashing over the top of the plywood and pass the ends through clevises 2 and 2A. Secure the lashing with two D-rings and a load binder on the right side of the boxes.

Figure 5-23. Boxes of ammunition and fuzes lashed to platform (continued)

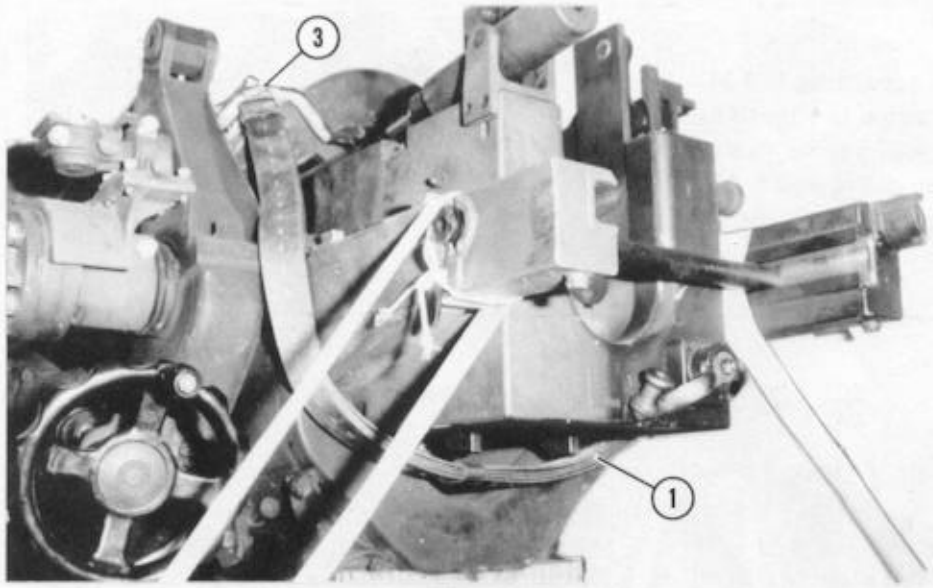
5-9. Installing Suspension Slings, Antitumble Slings, and Deadman's Tie

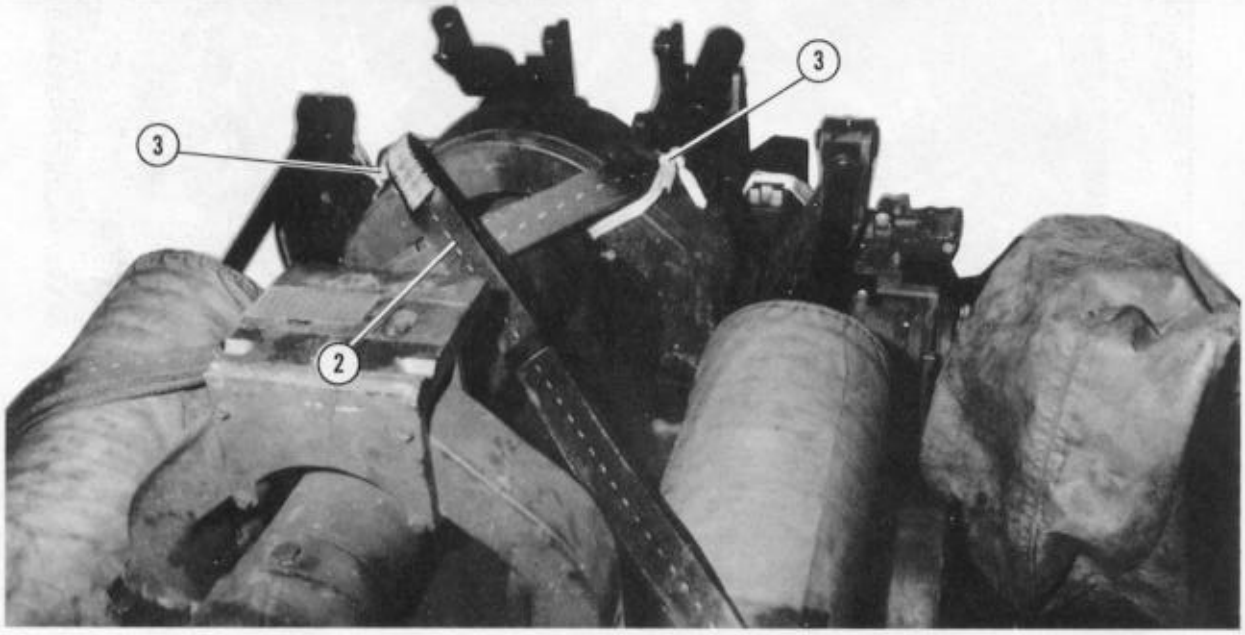
Install the suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-24. Install the antitumble slings as shown in Figure 5-25. Cover the load as shown in Figures 5-26 and 5-27. Secure and safety the slings as shown in Figure 5-27.



1. Attach a 12-foot (2-loop), type XXVI nylon webbing sling to each front tandem link with a large suspension clevis.
2. Attach a 3-foot (4-loop), type XXVI nylon webbing sling to each rear tandem link with a large suspension clevis.
3. Attach a 9-foot (2-loop), type XXVI nylon webbing sling to each of the 3-foot slings installed in step 2 with a 5 1/2 inch two-point link assembly.

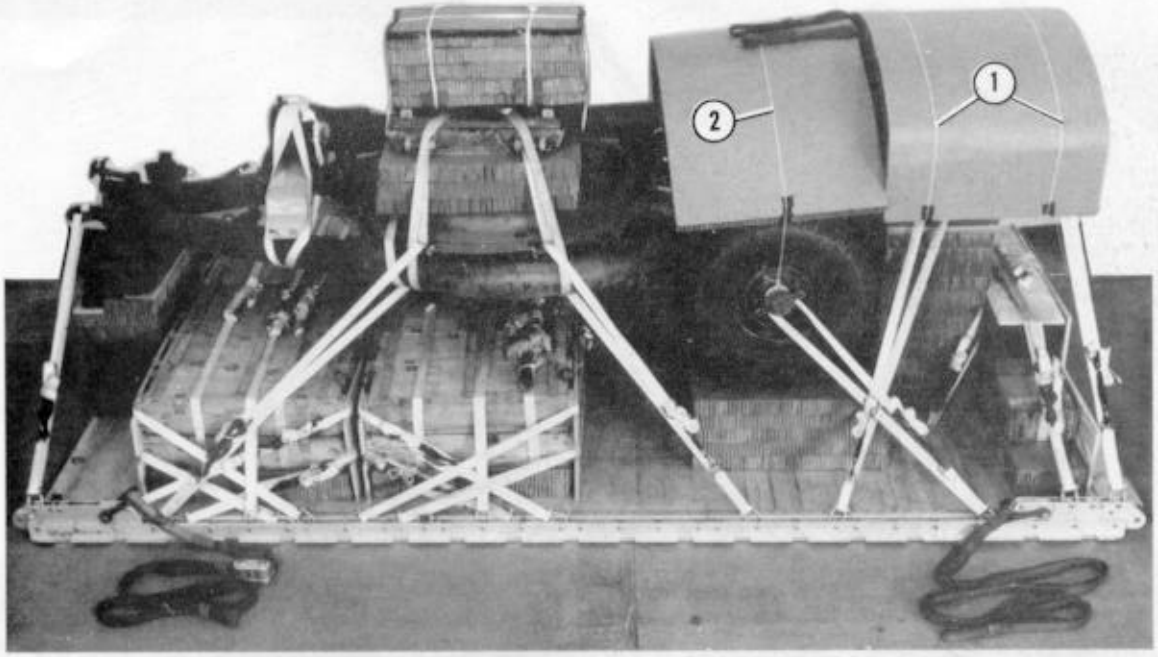
Figure 5-24. Suspension slings installed





1. Pass a 12-foot (2-loop), type XXVI nylon sling under the breech area.
2. Bring both ends of the sling up over the yoke, and cross them over the recoil tube.
3. Safety the sling to the yoke on each side with 1/2-inch tubular nylon webbing.

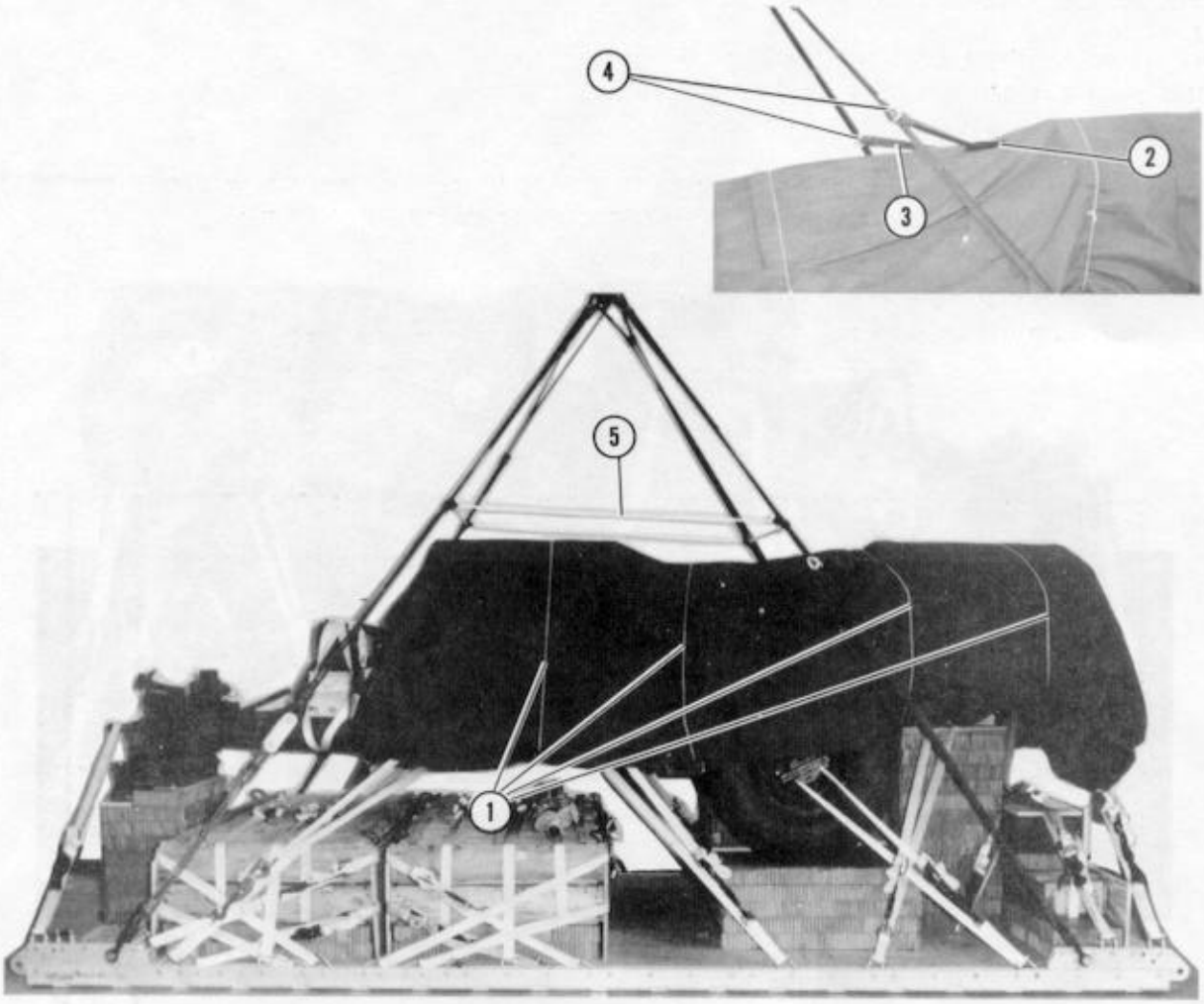
Figure 5-25. Antitumble sling installed on howitzer



(1) Bend a 36- by 96-inch sheet of honeycomb over the breech area of the gun. Secure it to convenient points on the load with type III nylon cord.

(2) Center a 36- by 96-inch sheet of honeycomb over the wheels. Rest the antitumble slings on top of the honeycomb. Bend the honeycomb down, and secure it to the wheel hubs with type III nylon cord.

Figure 5-26. Load covered



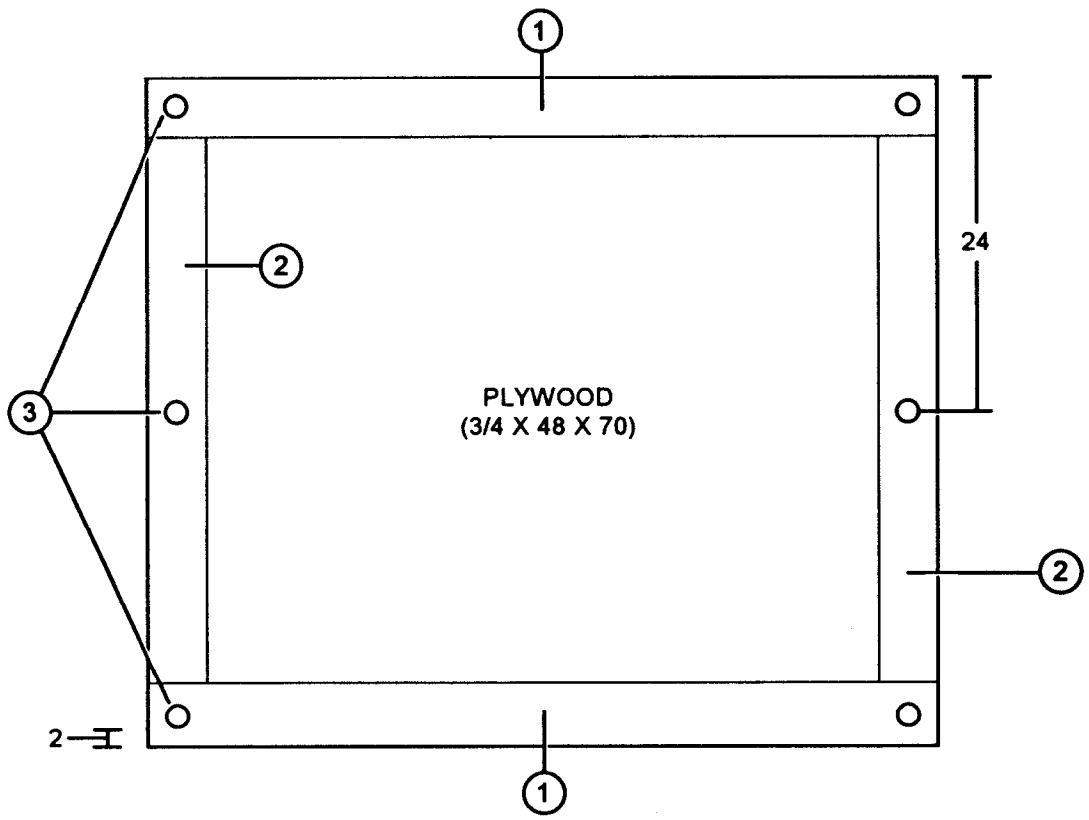
1. Tie a 10- by 15-foot canvas load cover over the howitzer with type III nylon cord.
2. Cut slits in the cover to accommodate the antitumble slings.
3. Extend the suspension slings upward to the crane hook, running the front slings through the loops in the antitumble slings.
4. Tie the antitumble slings to the front suspension slings with 1/2-inch tubular nylon webbing, in a figure-8 safety tie.
5. Safety the slings with a deadman's tie according to FM 10-500-2/ TO 13C7-1-5.

Figure 5-27. Slings secured and safetied

5-10. Stowing Cargo Parachutes

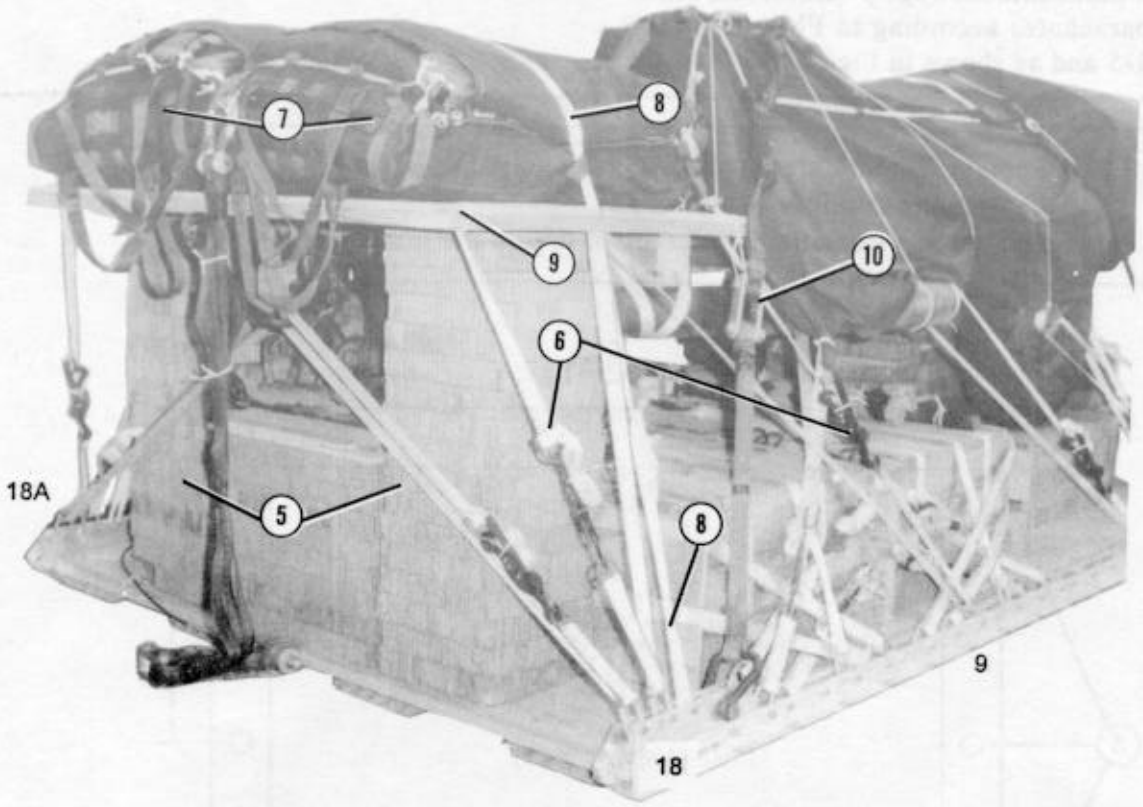
Prepare the parachute stowage platform and stow the cargo parachutes according to FM 10-500-2/ TO 13C7-1-5 and as shown in Figure 5-28.

Notes:
1. **All measurements are given in inches.**
2. **This drawing is not drawn to scale.**
3. **8d common wire nails must be used to join the individual pieces.**



1. Nail a 2- by 6- by 70-inch piece of lumber flush with the front and rear edges of a 3/4- by 48- by 70-inch piece of plywood.
2. Nail a 2- by 6- by 37-inch piece of lumber to each side of the plywood as shown.
3. Make three 2-inch holes in each 48-inch side of the platform as shown.

Figure 5-28. Parachute stowage platform constructed and cargo parachutes stowed



(4) Set two stacks of 17 layers each of 18- by 18-inch honeycomb flush against the accompanying load and stack 3. Set three 36- by 12-inch pieces of honeycomb on the gun trails 6 inches behind the gun tube support block to support the parachute stowage platform (not shown).

(5) Center the parachute stowage platform on the honeycomb stacks. Lash the parachute stowage platform to clevises 9 and 9A and clevises 18 and 18A.

(6) Prepare and install two G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5.

(7) Tie one length of Type VIII nylon webbing over the parachutes and to the second bushing on each rear tandem link to restrain the parachutes.

(8) Tie the plywood and 2- by 6-inch lumber of the parachute stowage platform tightly together through the corner holes with type III nylon cord.

(9) Tie the two-point link on each rear suspension sling to the front corner hole in the parachute stowage platform with a length of type III nylon cord.

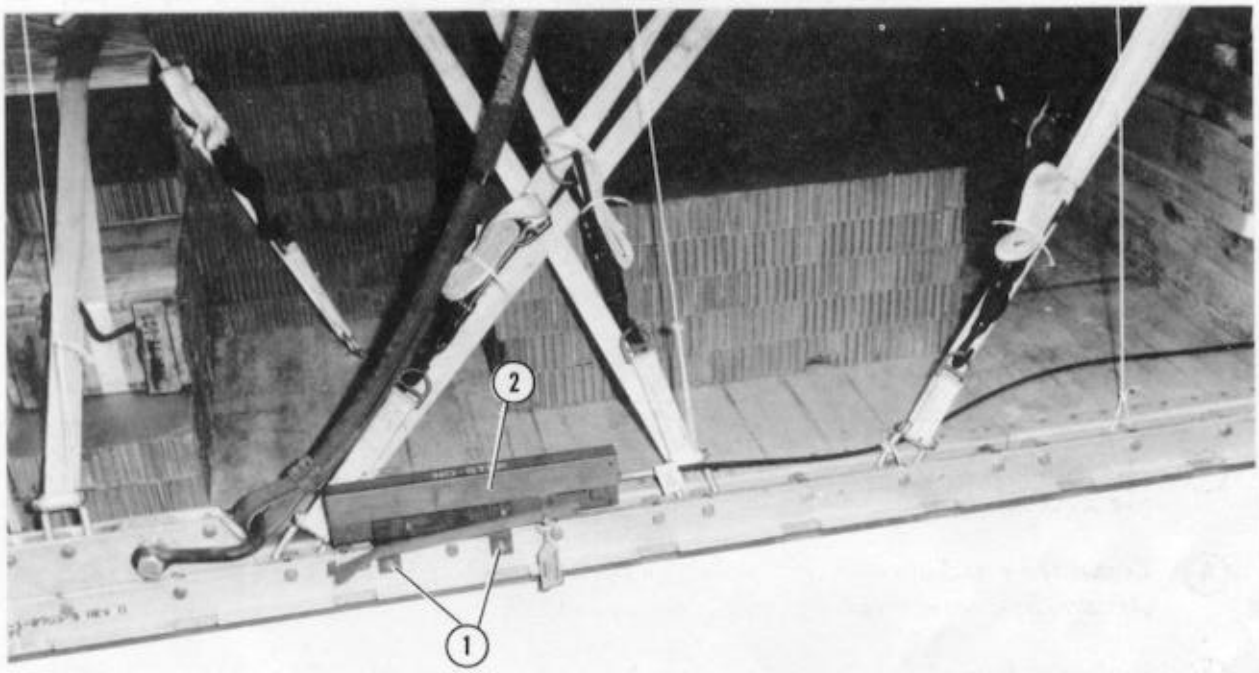
Figure 5-28. Parachute stowage platform constructed and cargo parachutes stowed (continued)

5-11. Installing Extraction System

Install the EFTC extraction system on the load according to FM 10-500-2/ TO 13C7-1-5 and as shown in Figure 5-29.

5-12. Installing Provisions for Emergency Restraints

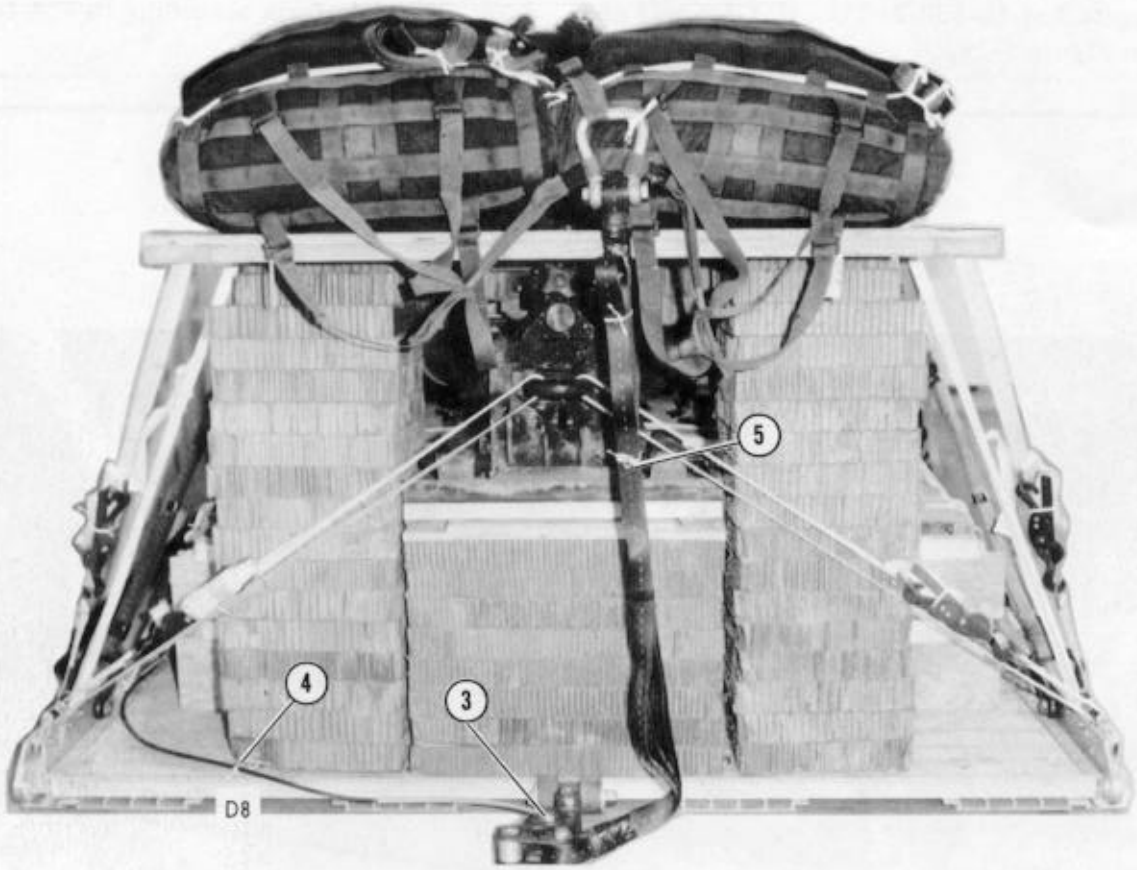
Install provisions for emergency restraints on the front of the platform according to FM 10-500-2/ TO 13C7-1-5.



(1) Install the EFTC mounting brackets to the front set of holes on the left platform side rail.

(2) Install the actuator according to FM 10-500-2/TO 13C7-1-5.

Figure 5-29. EFTC installed



(3) Install the latch assembly and latch assembly adapter to the extraction bracket according to FM 10-500-2/TO 13C7-1-5.

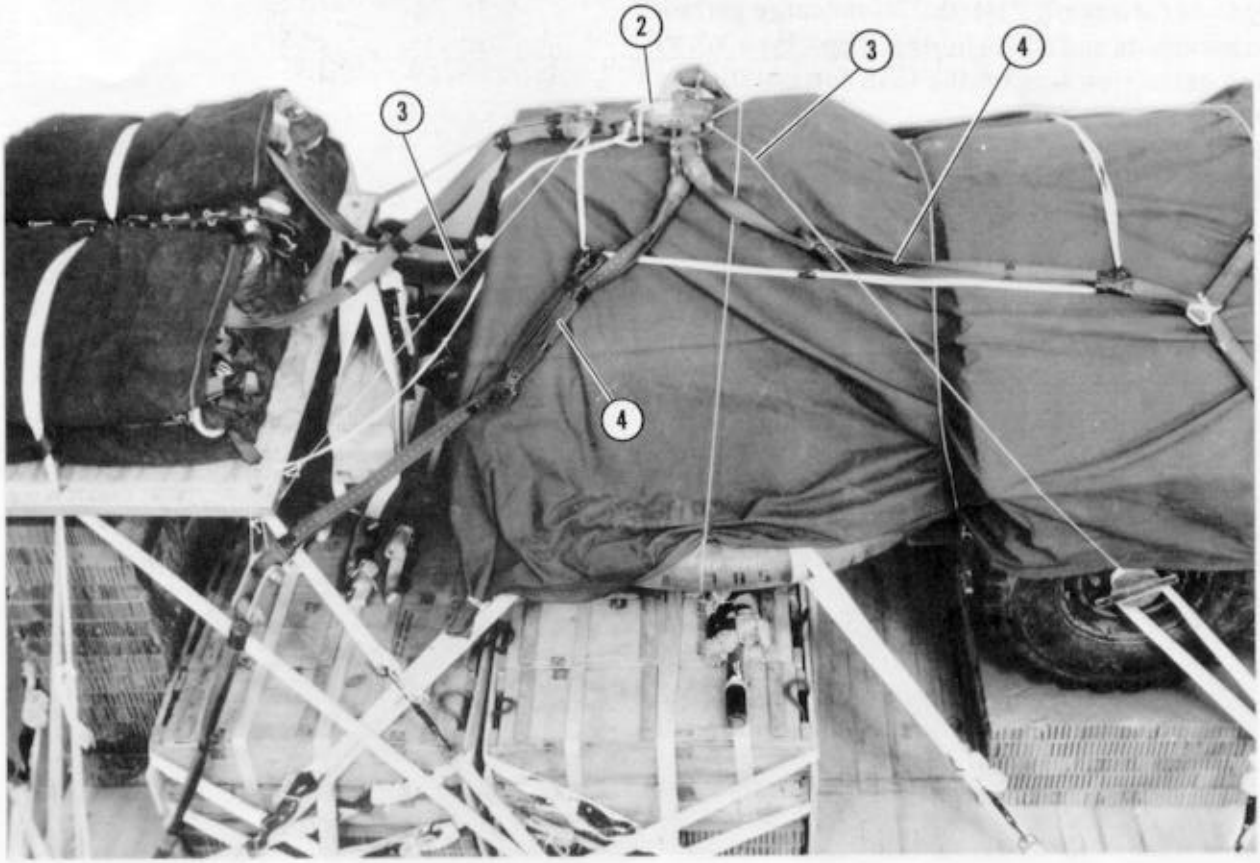
(4) Install a 16-foot cable according to FM 10-500-2/TO 13C7-1-5. Safety the cable to tie-down ring D8 with 1/4-inch cotton webbing.

(5) Install a 9-foot deployment sling on the load. Bolt it to the latch assembly. S-fold the slack, and tie the folds with 1/4-inch cotton webbing.

Figure 5-29. EFTC installed (continued)

5-13. Installing Release System

Prepare and install an M-1 cargo parachute release according to FM 10-500-2/ TO 13C7-1-5 and as shown in Figure 5-30.



1. Prepare and install an M-1 cargo parachute release as outlined in FM 10-500-2/TO 13C7-1-5 (not shown).
2. Center the release on the collimator box.
3. Tie the release to convenient points on the load with type III nylon cord.
4. S-fold and tape or tie the slack in the suspension slings.

Figure 5-30. M-1 release installed

5-14. Placing Extraction Parachute

Place the extraction parachute as described below.

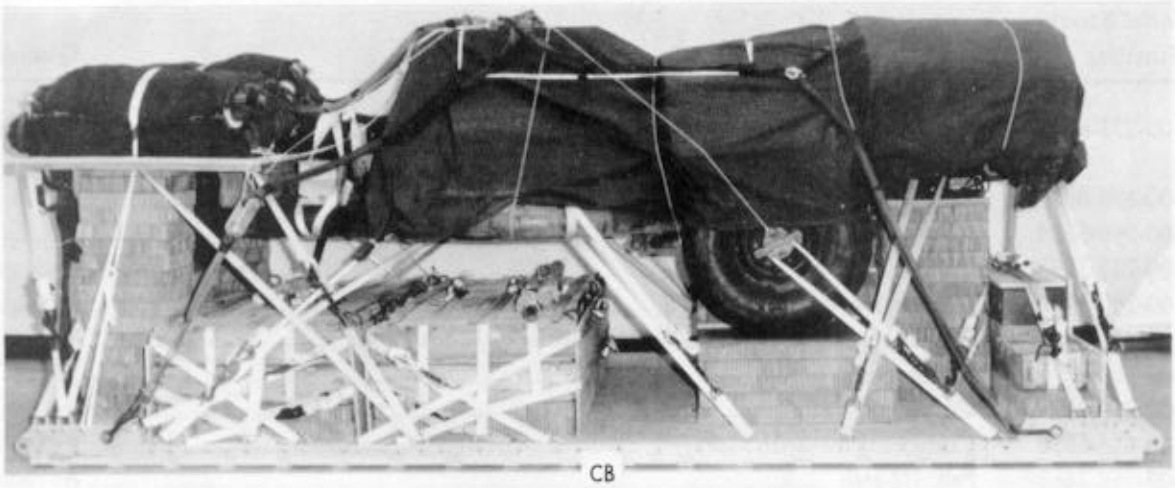
a. C-130 Aircraft. Place a 22-foot cargo extraction parachute and a 60-foot (3-loop), type XXVI nylon extraction line on the load for installation in the aircraft.

b. C-141 Aircraft. Place a 22-foot cargo extraction parachute and a 140-foot (3-loop), type XXVI nylon extraction line on the load for installation in the aircraft.

5-15. Marking Rigged Load

Mark the rigged load as described in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-31. Complete DD Form 1387-2, and securely attach it to the load. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

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	10,000 pounds
	Maximum load allowed	10,500 pounds
Height		83 inches
Width		108 inches
Length		216 inches
Overhang:	Front	5 1/2 inches
	Rear	19 inches
CB (from front edge of platform)		100 inches
Extraction system		EFTC

Figure 5-31. M119 howitzer rigged for low-velocity airdrop on a type V platform

5-16. Equipment Required

Use the equipment listed in Table 5-1 to rig this load. The equipment required for rigging the accompanying load is also included.

Table 5-1. Equipment required for rigging the M119 howitzer for a low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium) (emergency restraint)	4
4030-00-090-5354	1-in (large)	5
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer w 16-ft cable	1
1670-00-360-0328	Cover, clevis, large	1
1670-00-360-0329	Cover, link	6
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing (for C-130)	1
1670-01-107-7651	140-ft (3-loop), type XXVI nylon webbing (for C-141)	1
1670-00-783-5988	Link assembly, type IV	6
	Link assembly, two-point, 3 3/4-inch	1
5306-00-435-8994	Bolt	(2)
5310-00-232-5165	Nut, 1-in	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
	Link assembly, two-point, 5 1/2-inch	2
5306-00-435-8994	Bolt	(4)
5310-00-232-5165	Nut, 1-in	(4)
1670-00-003-1954	Plate, side, 5 1/2-inch	(4)
5365-00-007-3414	Spacer, large	(4)
	Lumber:	
5510-00-220-6146	2- by 4- by 24-in	1
5510-00-220-6196	Lumber, 2- by 6- by:	
	48-in	2
	59-in	2
5510-00-220-6246	2- by 8- by 40-in	5

Table 5-1. Equipment required for rigging the M119 howitzer for a low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	Nail, steel wire, common:	
5315-00-010-4659	8d	As required
5315-00-164-5121	20d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	21 sheets
	12- by 8-in	(1)
	12- by 45-in	(1)
	12- by 90-in	(2)
	15- by 36-in	(5)
	18- by 18-in	(34)
	18- by 36-in	(3)
	24- by 30-in	(1)
	25- by 30-in	(2)
	25- by 36-in	(10)
	30- by 10-in	(1)
	30- by 16-in	(8)
	30- by 20-in	(13)
	36- by 84-in	(4)
	36- by 96-in	(2)
	72- by 36-in	(10)
	Parachute:	
	Cargo:	
1670-00-269-1107	G-11A or	3
1670-01-016-7841	G-11B	2
1670-01-063-3716	Cargo extraction, 22-ft	2
	Platform, AD, type V, 16-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(38)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(4)
5530-00-129-7777	Plywood, 1/2-in:	
	7 1/2- by 40-in	1
	10 1/2- by 6-in	1
5530-00-128-4981	Plywood, 3/4-in:	
	7 1/2- by 40-in	1
	12- by 8-in	3

Table 5-1. Equipment required for rigging the M119 howitzer for a low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	12- by 44-in	1
	19- by 88-in	4
	21- by 6-in	1
	24 1/2- by 90-in	1
	25- by 36-in	4
	30- by 6-in	2
	30- by 20-in	2
	48- by 70-in	1
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For antitumble sling:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	2
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
	For lifting:	
1670-01-063-7760	11-ft (2-loop), type XXVI nylon webbing	4
	For riser extension:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing (for G-11A)	6
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing (for G-11B)	4
	For suspension:	
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	2
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	2
1670-00-040-8219	Strap, parachute release, multicut, comes w 3 knives	2
1670-00-368-7486	Strap, webbing, nylon (shear strap)	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	58
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
8305-00-082-5752	Nylon, tubular, 1/2-in, natural	As required
8305-00-263-3591	Nylon, type VIII	As required

Section II

RIGGING M119 HOWITZER, ACCOMPANYING AMMUNITION AND 81-MILLIMETER MORTAR

5-17. Description of Load

The M119, 105-millimeter howitzer (line number H57505) is rigged on a 16-foot, type V airdrop platform with three G-11B cargo parachutes. This load includes an accompanying load of 30 boxes of ammunition and 7 boxes of fuzes weighing 3,713 pounds, and an 81-millimeter mortar weighing 350 pounds. The howitzer is rigged for a low-velocity airdrop from a C-130, C-141, or C-5 aircraft.

5-18. Preparing Platform

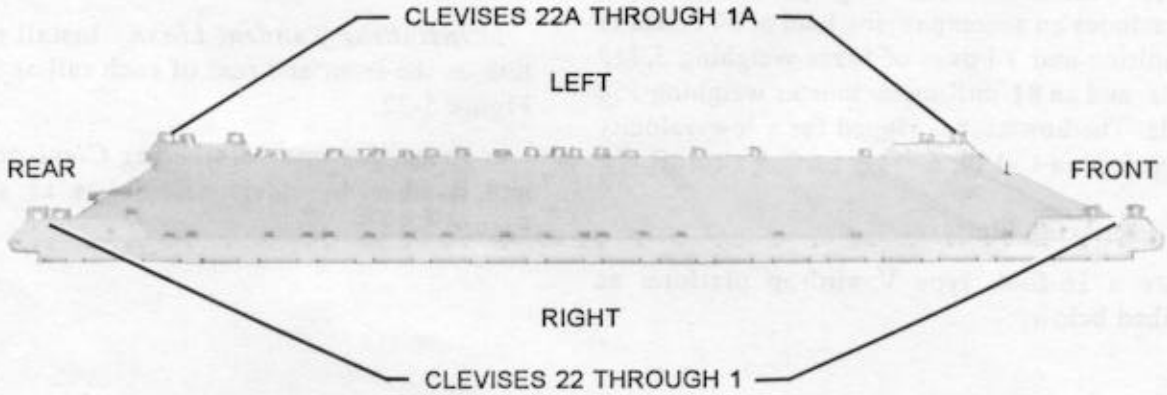
Prepare a 16-foot, type V airdrop platform as described below.

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

b. Installing Tandem Links. Install a tandem link on the front and rear of each rail as shown in Figure 5-32.

c. Installing and Numbering Clevises. Attach and number 44 clevis assemblies as shown in Figure 5-32.

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



Step:

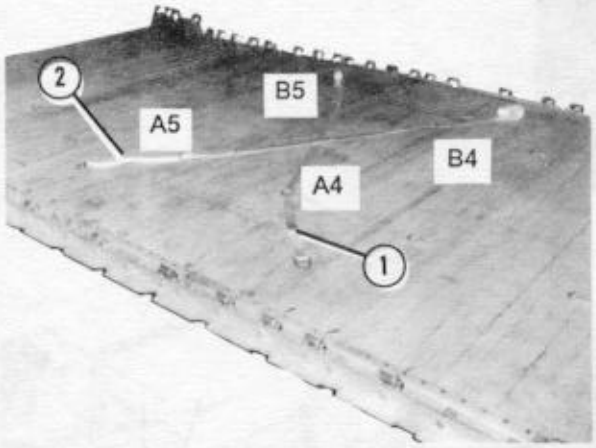
1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install a tandem link on the rear of each platform side rail using holes 30, 31, and 32.
3. Install clevises on bushings 1 and 3 of each front tandem link.
4. Install clevises on bushings 1, 3, and 4 of each rear tandem link.
5. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 4, 9, 11, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 28, and 29.
6. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 22 and those bolted to the left side from 1A through 22A.
7. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

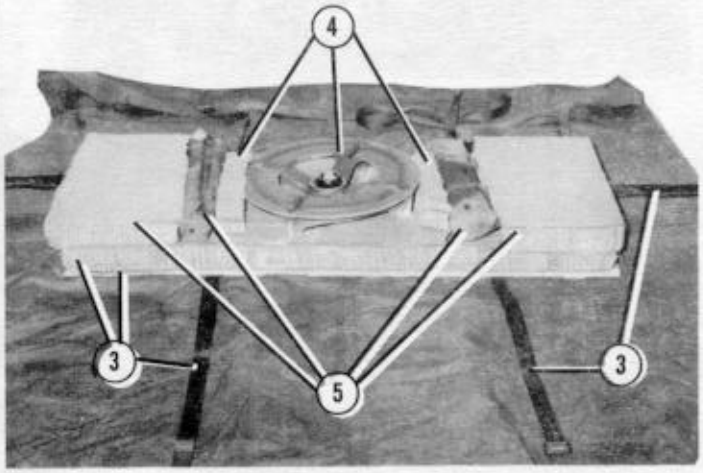
Figure 5-32. Platform prepared

5-19. Stowing Accompanying Load

Stow the 81-millimeter mortar and four boxes of 81-millimeter ammunition as shown in Figure 5-33. Stow 28 boxes of 105-millimeter ammunition as shown in Figures 5-34 and 5-35. Two additional boxes of ammunition will be stowed after the gun is lashed to the platform.

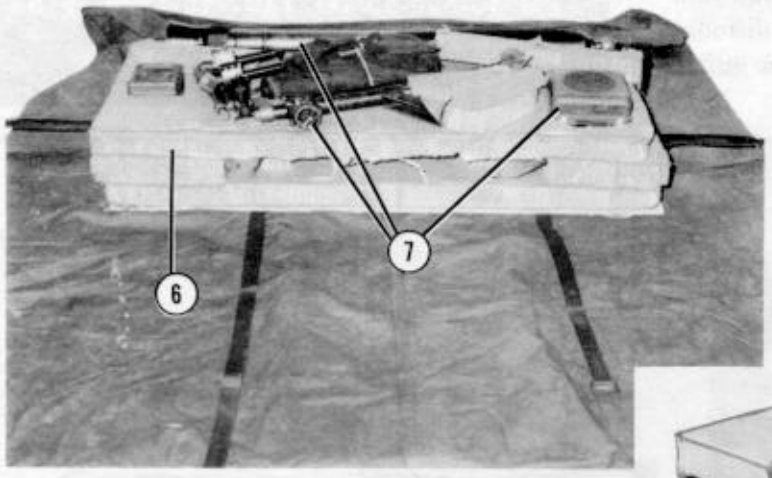
CAUTION: Only ammunition listed in FM 10-500-53/TO 13C7-18-41 may be airdropped.

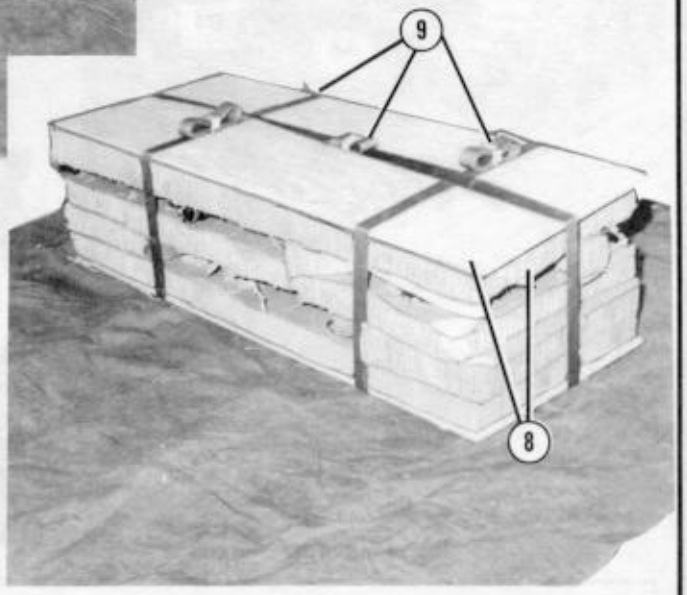




1. Place a 15-foot lashing in tie-down rings A4 and B5.
2. Place a 15-foot lashing in tie-down rings A5 and B4.
3. Center an A-21 bag or a 10- by 10-foot piece of cotton duck cloth over the lashings. Lay two A7A straps over the cover 36 inches apart and center a third A7A strap over them. Center a 24- by 62-inch piece of 3/4-inch plywood over the straps and the cover. Center a 24- by 62-inch piece of honeycomb over the plywood.
4. Center the mortar baseplate over the honeycomb. Place a 16- by 3-inch piece of honeycomb on each side of the baseplate.
5. Place a bundle of aiming pole sections on each side of the honeycomb placed in step 4 above. Fill the remaining area with honeycomb cut to fit.

Figure 5-33. Mortar and ammunition stowed





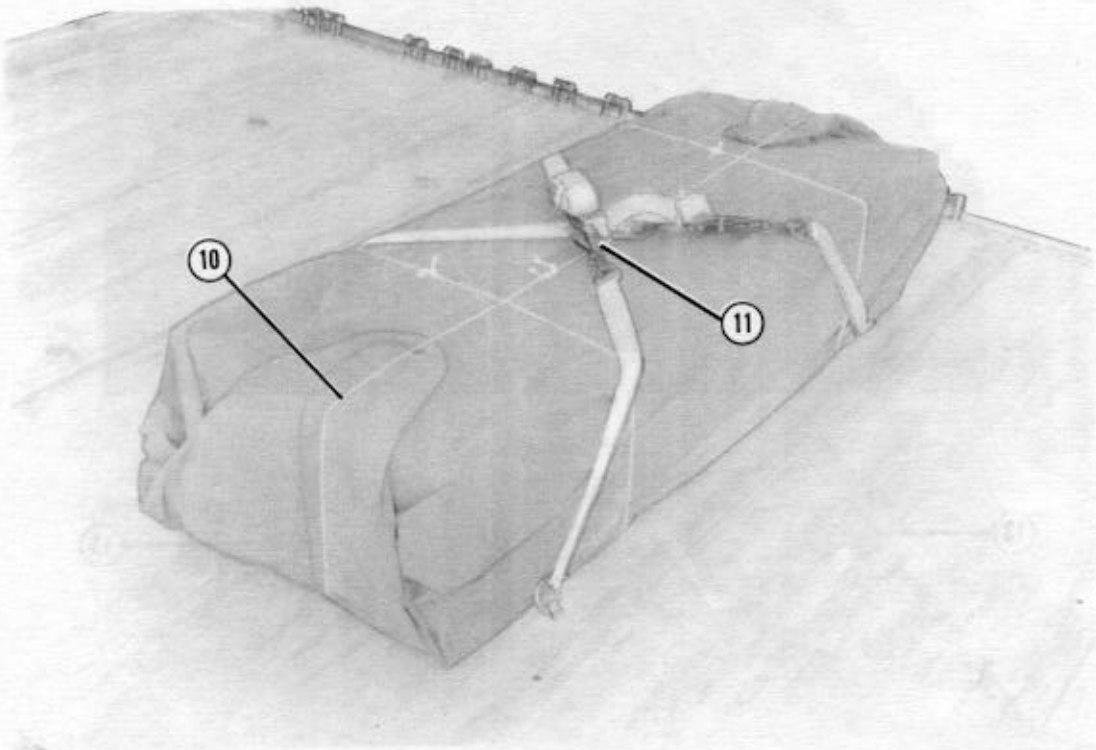
(6) Place a 24- by 62-inch piece of honeycomb over the items placed in steps 4 and 5.

(7) Place the mortar tube along one side of the package. Arrange the mount, bipod, and sight boxes on the honeycomb. Pad with cellulose wadding and honeycomb, and fill empty space with honeycomb.

(8) Cover the package with a 24- by 62-inch piece of honeycomb, and a 3/4- by 24- by 62-inch piece of plywood.

(9) Secure the package as shown with the three A7A straps placed in step 3.

Figure 5-33. Mortar and ammunition stowed (continued)

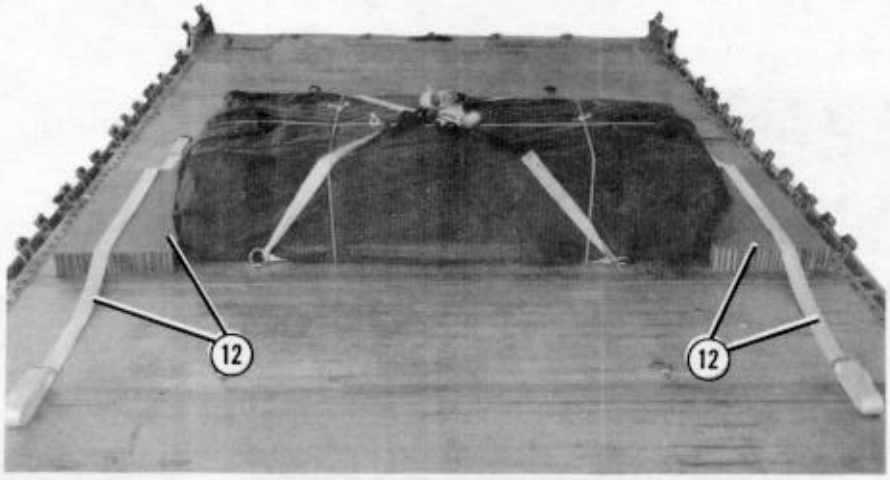


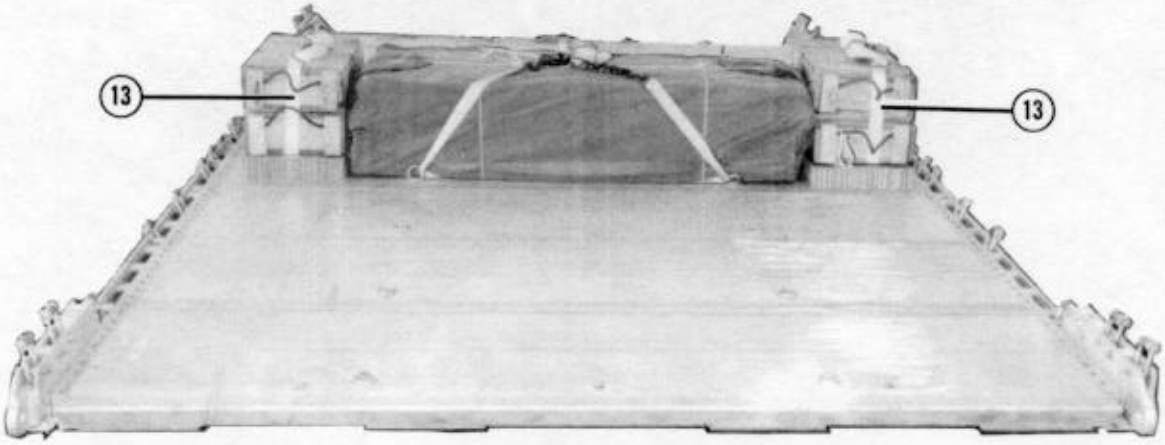
(10) Bring the flaps of the A-21 container or cloth cover over the package. Tie the cover shut with type III nylon cord.

(11) Secure the lashings placed in steps 1 and 2 over the load.

Figure 5-33. Mortar and ammunition stowed (continued)

NOTICE OF EXCEPTION: Exception to FM 10-500-2/TO 13C7-1-5 is granted to rig ammunition with one layer of honeycomb.

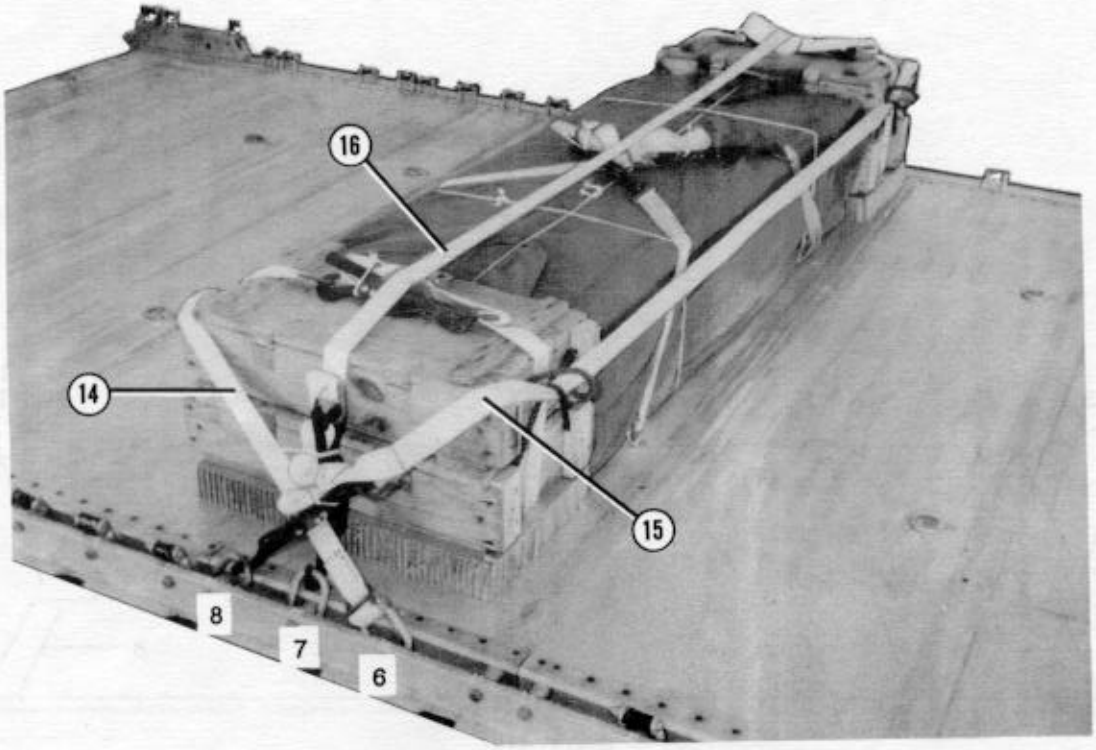




(12) Center an 18- by 24-inch piece of honeycomb on each side of the mortar. Place a 15-foot lashing over each piece of honeycomb in a front-to-rear direction.

(13) Place two boxes of mortar ammunition on the honeycomb and flush with the ends of the mortar package. Bring each of the lashings placed in step 12 through the box carrying handles, and secure the lashings on top of the boxes.

Figure 5-33. Mortar and ammunition stowed (continued)



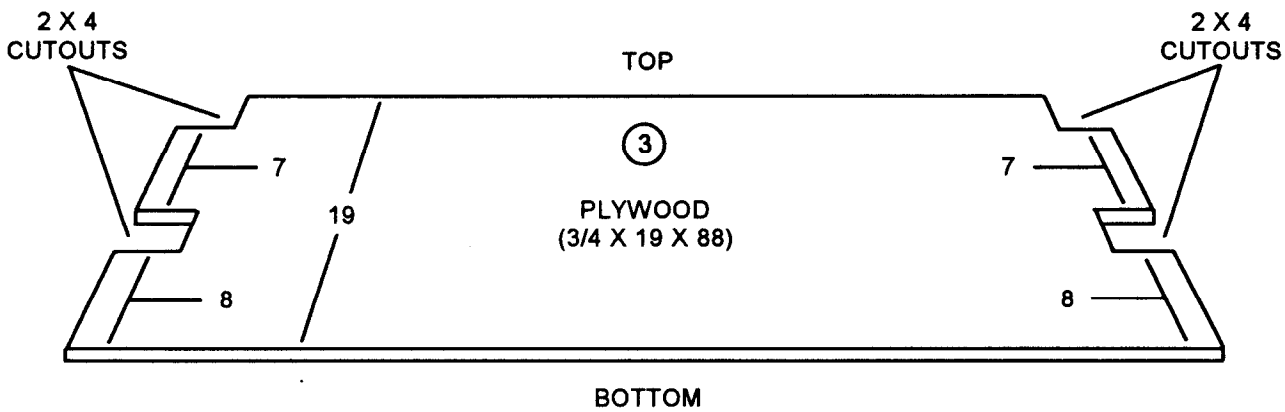
(14) Run a 15-foot lashing through clevis 6 and through its own D-ring. Run the lashing through both carrying handles at the rear of the right boxes and around the rear side. Run the lashing through both carrying handles at the rear of the left boxes. Secure the lashing to clevis 6A with a D-ring and a load binder.

(15) Run a 15-foot lashing through clevis 8A and through its own D-ring. Run the lashing through both carrying handles at the front of the left boxes and around the front side. Run the lashing through both carrying handles at the front of the right boxes. Secure the lashing to clevis 8 with a D-ring and a load binder.

(16) Run a 15-foot lashing through clevis 7A and through its own D-ring. Run the lashing over the top of the ammunition and mortar. Secure the lashing to clevis 7 with a D-ring and a load binder.

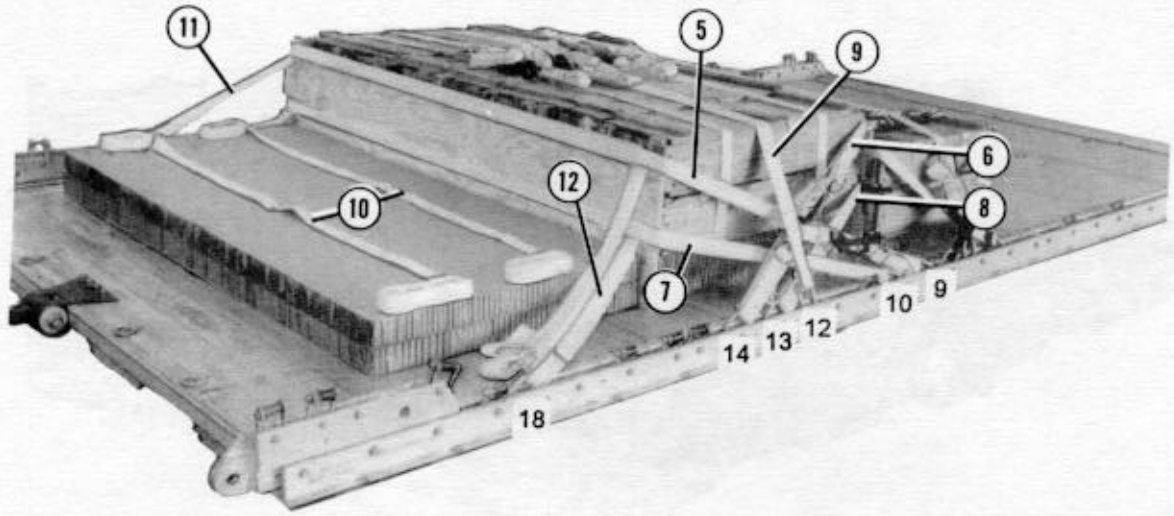
Figure 5-33. Mortar and ammunition stowed (continued)

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



1. Center two 36- by 84-inch pieces of honeycomb 96 inches from the front edge of the platform and place two 30-foot lashings on the honeycomb as shown in Figure 5-2, steps 1 and 2.
2. Place 14 boxes of ammunition on the honeycomb and bind the boxes together with the lashings as shown in Figure 5-2, steps 3 and 4.
3. Cut three endboards as shown using 3/4- by 19- by 88-inch pieces of plywood.
4. Place an endboard against the front and rear of the first stack of boxes (not shown).

Figure 5-34. First stack of ammunition lashed



Note: Form nine 30-foot lashings according to FM 10-500-2/TO 13C7-1-5.

(5) Pass the ends of a 30-foot lashing through clevises 9 and 9A and through the upper slots in the second endboard. Secure the lashing at the side of the load with two D-rings and a load binder.

(6) Pass the ends of a 30-foot lashing through clevises 14 and 14A and through the upper slots in the first endboard. Secure the lashing as in step 5.

(7) Pass the ends of a 30-foot lashing through clevises 10 and 10A and through the lower slots in the rear endboard. Secure the lashing as in step 5.

(8) Pass the ends of a 30-foot lashing through clevises 13 and 13A and through the lower slots in the front endboard. Secure the lashing as in step 5.

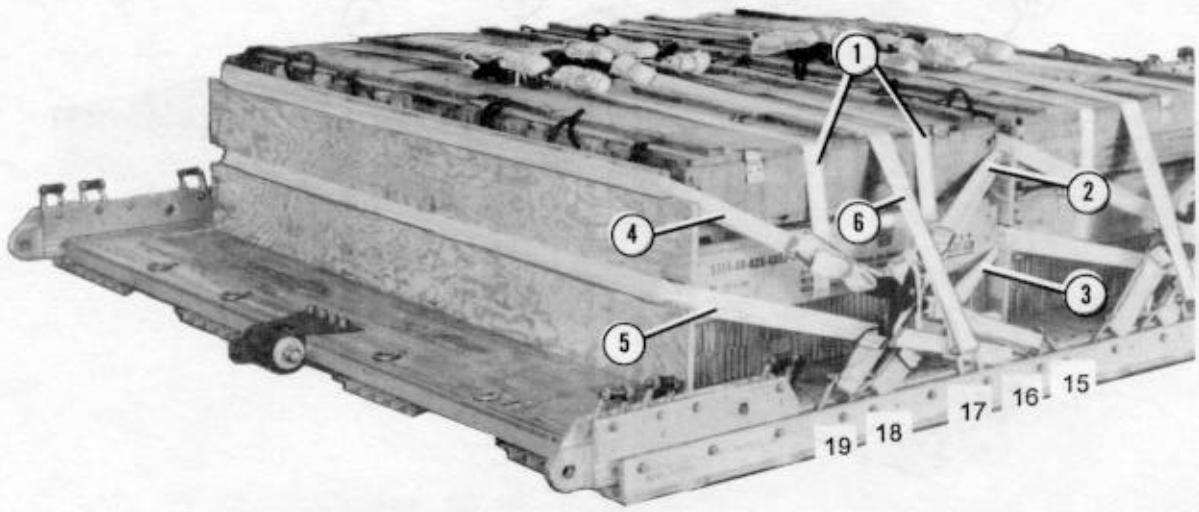
(9) Pass the ends of a 30-foot lashing through clevises 12 and 12A and over the top of the stack of boxes. Secure the lashing in the center of the boxes with two D-rings and a load binder.

(10) Center two 36- by 84-inch pieces of honeycomb against the second endboard. Place two 30-foot lashings on the honeycomb as shown.

(11) Pre-position a 30-foot lashing through clevis 19A and through the upper slots.

(12) Pre-position a 30-foot lashing through clevis 18 and through the lower slots.

Figure 5-34. First stack of ammunition lashed (continued)



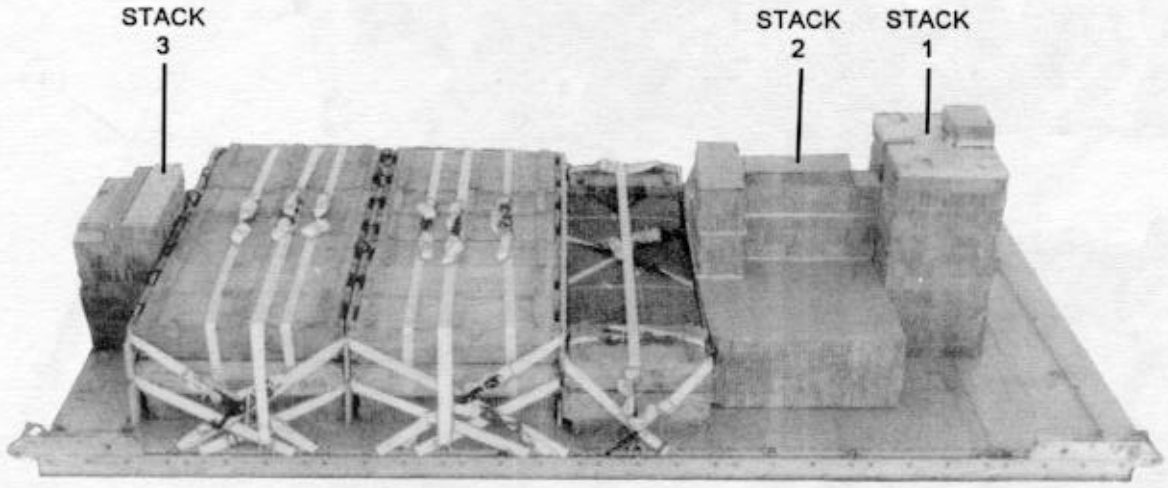
Note: Form five 30-foot lashings according to FM 10-500-2/TO 13C7-1-5.

1. Place the second stack of 14 boxes of ammunition on the honeycomb. Secure the lashings pre-positioned in step 10, Figure 5-34, around the second stack of boxes.
2. Pass the 30-foot lashing pre-positioned in step 11, Figure 5-34, through clevis 19 and through the upper slots in the endboard. Secure the lashing at the side of the load with two D-rings and a load binder.
3. Pass the 30-foot lashing pre-positioned in step 12, Figure 5-34, through clevis 18A and through the lower slots in the endboard. Secure the lashing as in step 2.
4. Place an endboard against the rear of the stack of boxes. Pass the ends of a 30-foot lashing through clevises 15 and 15A and through the upper slots in the endboard. Secure the lashing on the side of the load with two D-rings and a load binder.
5. Pass the ends of a 30-foot lashing through clevises 16 and 16A and through the lower slots in the endboard. Secure the lashing as in step 4.
6. Pass the ends of a 30-foot lashing through clevises 17 and 17A and over the top of the stack of boxes. Secure the lashing in the center of the boxes with two D-rings and a load binder.

Figure 5-35. Second stack of ammunition lashed

5-20. Building and Placing Honeycomb Stacks

Build the honeycomb stacks for the howitzer as shown in Figures 5-5, 5-6, and 5-7. Place the honeycomb stacks on the platform as shown in Figure 5-36.



Stack Number	Position of Stack on Platform
	Place stack:
1	Centered 17 1/2 inches from front edge of platform.
2	Centered and flush against stack 1.
3	Centered and flush with rear edge of platform.

Figure 5-36. Honeycomb stacks placed on platform

5-21. Preparing Howitzer

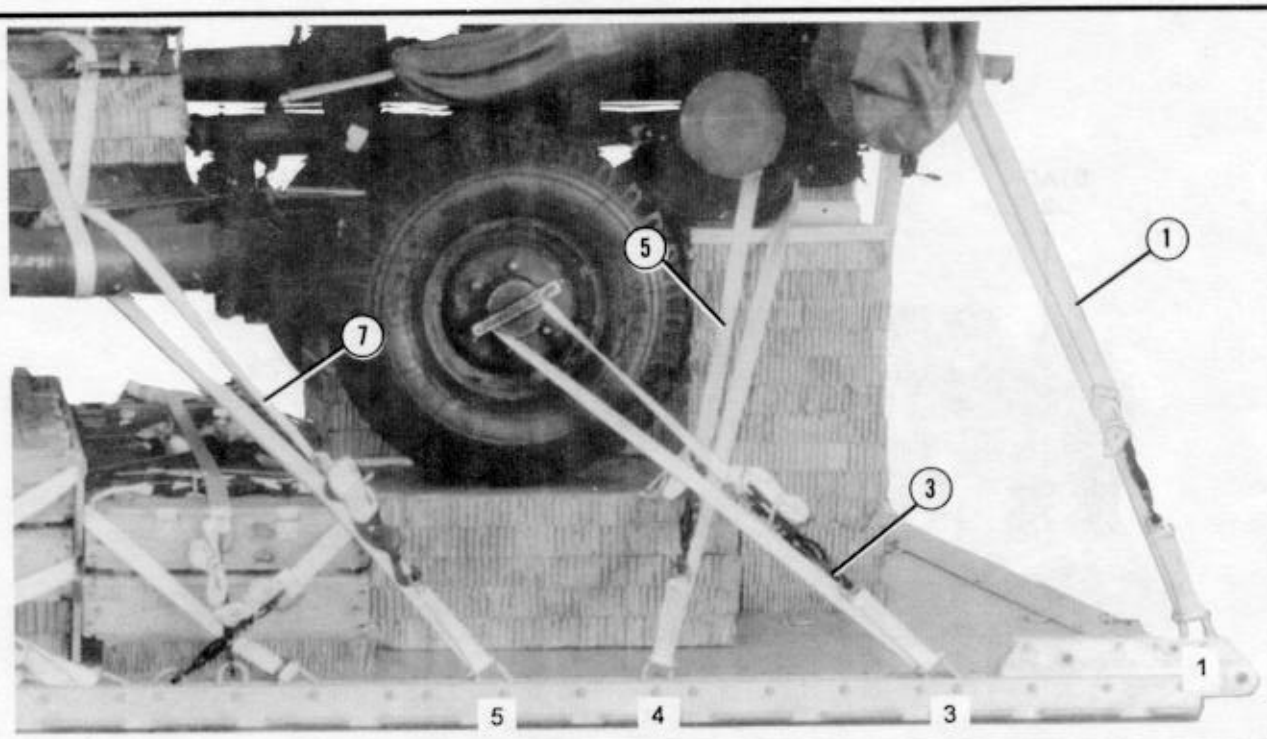
Prepare the howitzer as shown in Figures 5-9 through 5-18.

5-22. Lifting and Positioning Howitzer

Lift the howitzer and position it on the honeycomb stacks as shown in Figure 5-19.

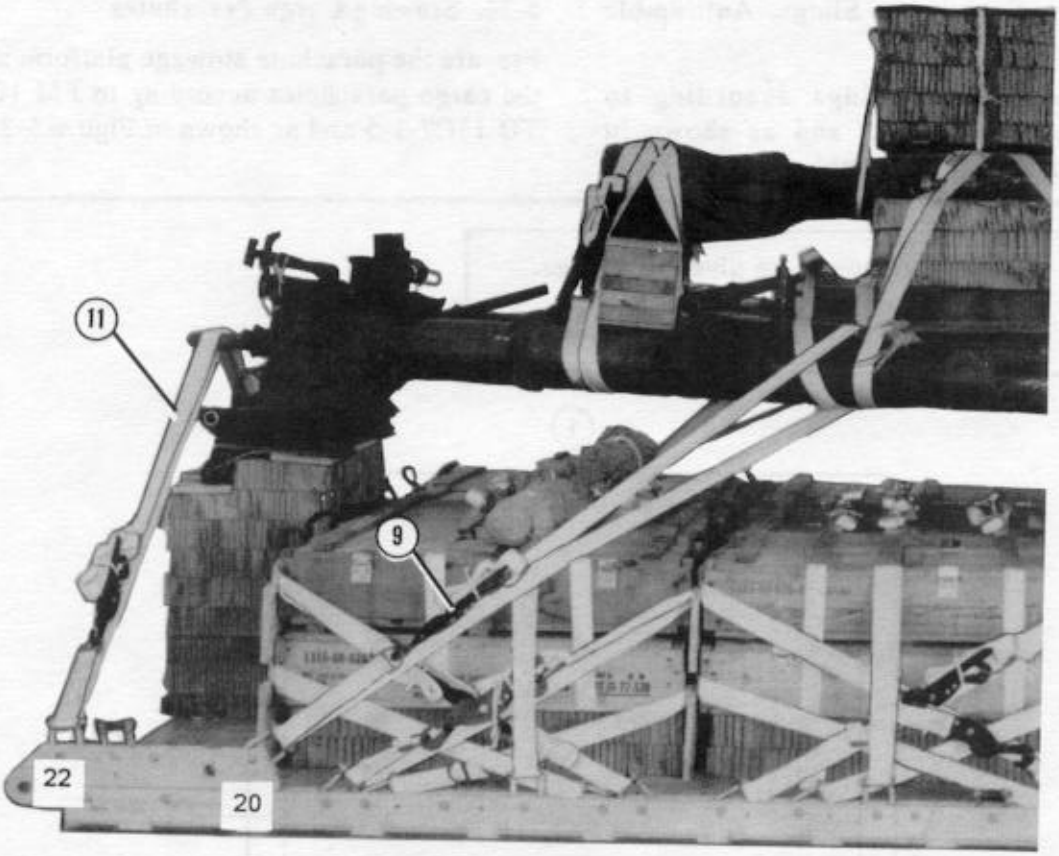
5-23. Lashing Howitzer

Lash the howitzer to the platform with twelve 15-foot lashings as shown in Figure 5-37. Install and safety the lashings according to FM 10-500-2/ TO 13C7-1-5.



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	1	Around rail, right side.
2	1A	Around rail, left side.
3	3	Around wheel hub, right side.
4	3A	Around wheel hub, left side.
5	4	Around saddle, behind elevating wheel shaft, right side.
6	4A	Around saddle, left side.
7	5	Through hole in firing platform and around trail, right side.
8	5A	Through hole in firing platform and around trail, left side.

Figure 5-37. Lashings installed



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
9	20	Through hole in firing platform and around trail, right side.
10	20A	Through hole in firing platform and around trail, left side.
11	22	Through lunette, right side.
12	22A	Through lunette, left side.

Figure 5-37. Lashings installed (continued)

5-24. Stowing Additional Accompanying Load

Stow two boxes of APERS or HERAP ammunition and seven boxes of fuzes as shown in Figures 5-22 and 5-23.

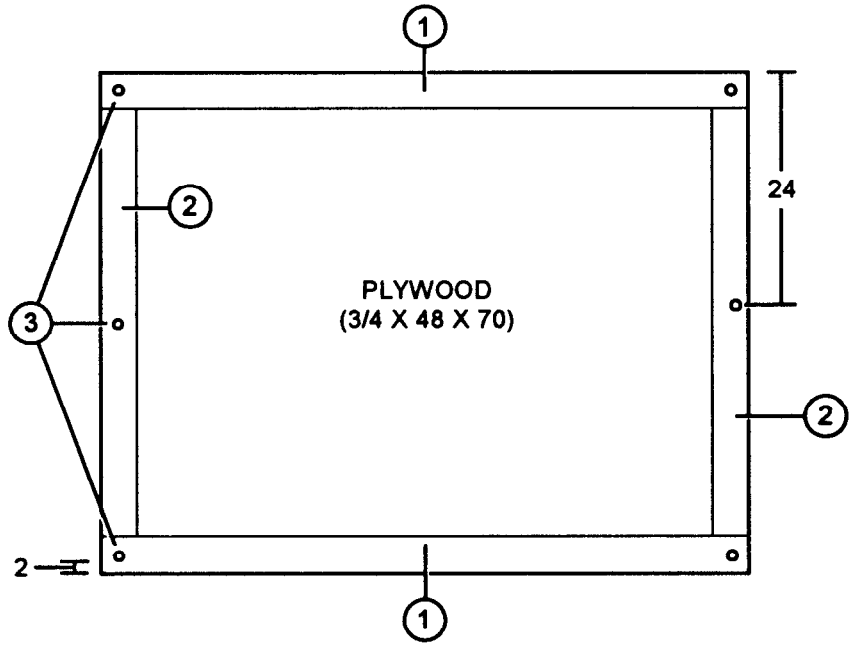
5-25. Installing Suspension Slings, Antitumble Sling, and Deadman's Tie

Install the suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-24. Install the antitumble sling as shown in Figure 5-25. Cover the load as shown in Figures 5-26 and 5-27. Secure and safety the slings as shown in Figure 5-27.

5-26. Stowing Cargo Parachutes

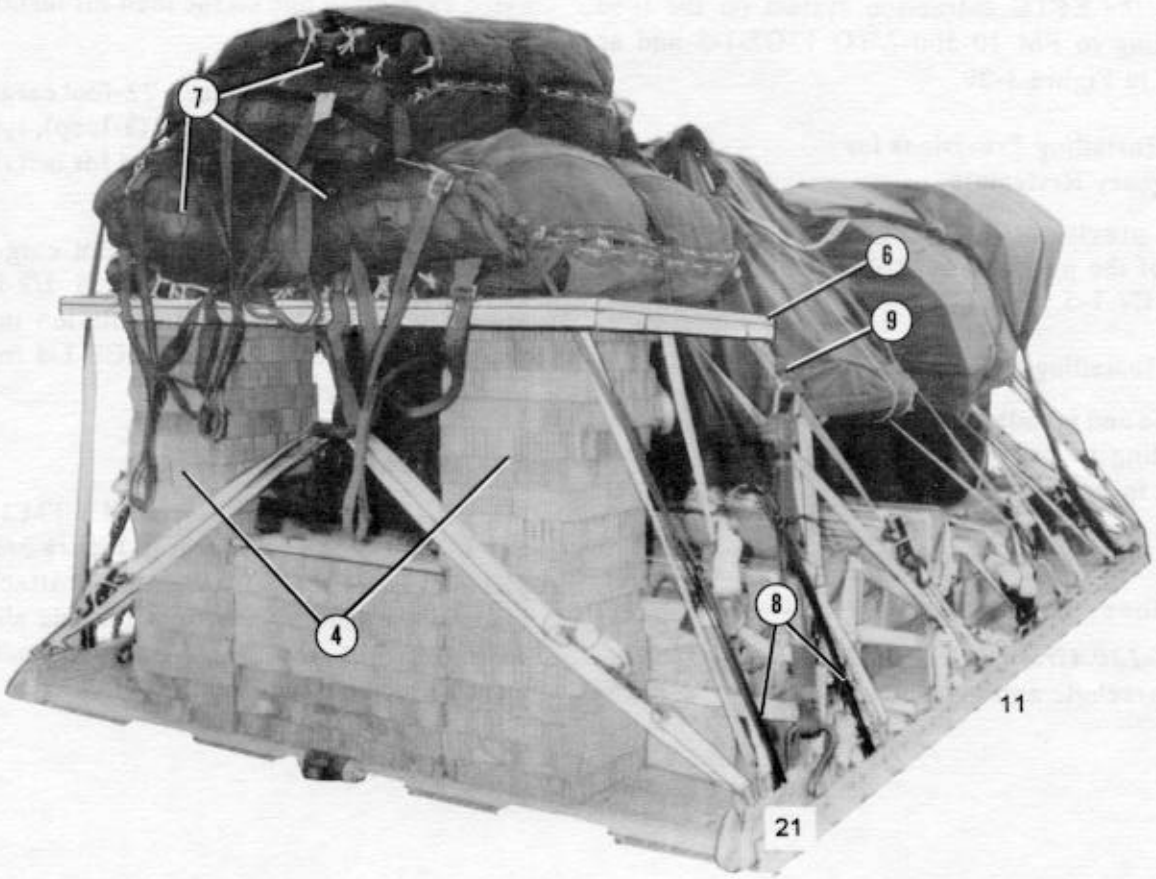
Prepare the parachute stowage platform and stow the cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-38.

Notes:
1. **All measurements are given in inches.**
2. **This drawing is not drawn to scale.**
3. **Use 8d nails to join the individual pieces.**



1. Nail a 2- by 6- by 70-inch piece of lumber flush with the front and rear edges of a 3/4- by 48- by 70-inch piece of plywood.
2. Nail a 2- by 6- by 37-inch piece of lumber to each side of the plywood as shown.
3. Make three 2-inch holes in each 48-inch side of the platform as shown.

Figure 5-38. Parachute stowage platform constructed and cargo parachutes stowed



(4) Set two stacks of 17 layers each of 18- by 18-inch honeycomb flush against the accompanying load and stack 3.

(5) Set three 36- by 12-inch pieces of honeycomb on the gun trails 6 inches behind the gun tube support block to support the parachute stowage platform (not shown).

(6) Center the parachute stowage platform on the honeycomb stacks. Lash the parachute stowage platform to clevises 11 and 11A and clevises 21 and 21A.

(7) Prepare and install three G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5.

(8) Tie the rear restraint strap to the second bushing on each rear tandem link. Tie the front restraint strap to the 27th bushing on each side.

(9) Tie the two-point link on each rear suspension link to the front corner hole in the parachute stowage platform with a length of Type III nylon cord.

Figure 5-38. Parachute stowage platform constructed and cargo parachutes stowed (continued)

5-27. Installing Extraction System

Install the EFTC extraction system on the load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-29.

5-28. Installing Provisions for Emergency Restraints

Install provisions for emergency restraints on the front of the platform according to FM 10-500-2/TO 13C7-1-5.

5-29. Installing Release System

Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-30.

5-30. Placing Extraction Parachute

Place the extraction parachute as described below.

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

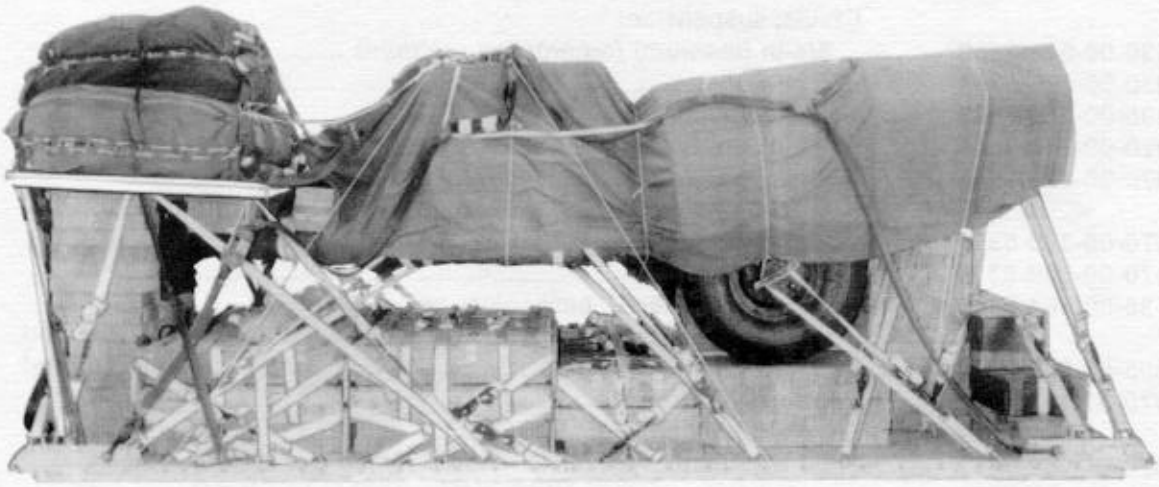
b. C-141 Aircraft. Place a 22-foot cargo extraction parachute and a 140-foot (3-loop), type XXVI nylon extraction line on the load for installation in the aircraft.

c. C-5 Aircraft. Place a 22-foot cargo extraction parachute and a two-point 5 1/2-inch link assembly on the load for installation in the aircraft. See FM 10-500-2/TO 13C7-1-5 for extraction line requirements.

5-31. Marking Rigged Load

Mark the rigged load as described in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 5-39. Complete DD Form 1387-2, and securely attach it to the load. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

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



CB

RIGGED LOAD DATA

Weight: Load shown	11,2000 pounds
Height	86 inches
Width	108 inches
Length	201 inches
Overhang: Front	0 inches
Rear	5 1/2 inches
CB (from front edge of platform)	105 inches
Extraction system	EFTC

Figure 5-39. M119 howitzer rigged with 81-millimeter mortar for low-velocity airdrop on a Type V platform

5-32. Equipment Required

Use the equipment listed in Table 5-2 to rig the load shown.

Table 5-2. Equipment required for rigging the M119 howitzer with 81-millimeter mortar for low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium) (emergency restraint)	4
4030-00-090-5354	1-in (large)	5
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer w 16-ft cable	1
1670-00-360-0328	Cover, clevis, large	1
1670-00-360-0329	Cover, link	6
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing (for C-130)	1
1670-01-107-7651	140-ft (3-loop), type XXVI nylon webbing (for C-141)	1
	Link assembly:	
1670-00-783-5988	Type IV	6
	Two-point, 3 3/4-in	1
5306-00-435-8994	Bolt	(2)
5310-00-232-5165	Nut	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
	Two-point, 5 1/2-in	2
5306-00-435-8994	Bolt	(4)
5310-00-232-5165	Nut	(4)
1670-00-003-1954	Plate, side, 5 1/2-in	(4)
5365-00-007-3414	Spacer, large	(4)
	Lumber:	
5510-00-220-6146	2- by 4- by 24-in	1
5510-00-220-6196	2- by 6- by:	
	37-in	2
	70-in	2
5510-00-220-6246	2- by 8- by 40-in	5
	Nail, steel wire, common:	
5315-00-010-4659	8d	As required
5315-00-164-5121	20d	As required

Table 5-2. Equipment required for rigging the M119 howitzer with 81-millimeter mortar for low-velocity airdrop on a 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
	3- by 16-in	(2)
	12- by 8-in	(1)
	12- by 45-in	(1)
	12- by 90-in	(2)
	15- by 36-in	(5)
	18- by 18-in	(34)
	18- by 36-in	(3)
	24- by 18-in	(2)
	24- by 30-in	(1)
	25- by 30-in	(2)
	25- by 36-in	(10)
	30- by 10-in	(1)
	30- by 16-in	(8)
	30- by 20-in	(13)
	36- by 18-in	(3)
	36- by 84-in	(4)
	36- by 96-in	(2)
	62- by 24-in	(3)
	72- by 36-in	(10)
	Parachute, cargo:	
1670-00-687-5458	Extraction, 22-ft	2
1670-01-016-7841	G-11B	3
	Platform, AD, type V, 16-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(44)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(4)
5530-00-129-7777	Plywood, 1/2-in:	
	7 1/2- by 40-in	1
	10 1/2- by 6-in	1
5530-00-128-4981	Plywood, 3/4-in:	
	7 1/2- by 40-in	1
	12- by 8-in	3
	12- by 44-in	1
	19- by 88-in	4
	21- by 6-in	1
	24- by 62-in	2
	24 1/2- by 90-in	1

Table 5-2. Equipment required for rigging the M119 howitzer with 81-millimeter mortar for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	25- by 36-in	2
	30- by 6-in	2
	30- by 20-in	2
	48- by 70-in	1
1670-01-097-8816	Release, cargo parachute, M-1	1
1670-00-251-1153	Sling assembly, cargo airdrop, A-7A	3
	Sling, cargo, airdrop:	
	For antitumble sling:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	1
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For lifting:	
1670-01-063-7760	11-ft (2-loop), type XXVI nylon webbing	4
	For riser extension:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	4
	For suspension:	
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	2
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	2
1670-00-040-8219	Strap, parachute release, multicut, comes w 3 knives	2
1670-00-368-7486	Strap, webbing, nylon (shear strap)	1
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 I	As required
8305-00-082-5752	Nylon, tubular, 1/2-in, 1,000-lb, natural	As required
8305-00-263-3591	Nylon, type VIII, 3,600-lb	As required

CHAPTER 7

RIGGING M119 HOWITZER WITH 1 1/4-TON M1037 HMMWV TRUCK AND ACCOMPANYING AMMUNITION

Section I

RIGGING HOWITZER AND TRUCK FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM

7-1. Description of Load

The M119, 105-millimeter howitzer is rigged with the M1037 1 1/4-ton HMMWV truck as its prime mover and an accompanying load of ammunition on a 32-foot, type V airdrop platform. A load weighing 800 to 2,000 pounds must be rigged in the truck. This load requires four G-11B cargo parachutes.

7-2. Preparing Platform

Prepare a 32-foot, type V airdrop platform as described below.

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

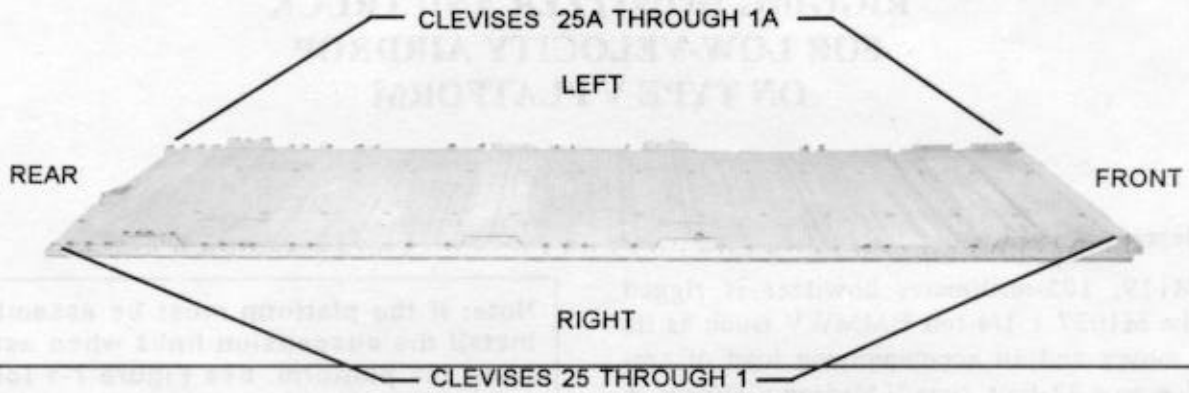
Note: If the platform must be assembled, install the suspension links when assembling the platform. See Figure 7-1 for the location of the suspension links.

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

c. Installing Tandem Links. Install a tandem link on the front of each rail as shown in Figure 7-1.

d. Installing and Numbering Clevises. Bolt and number 50 clevis assemblies as shown in Figure 7-1.

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:

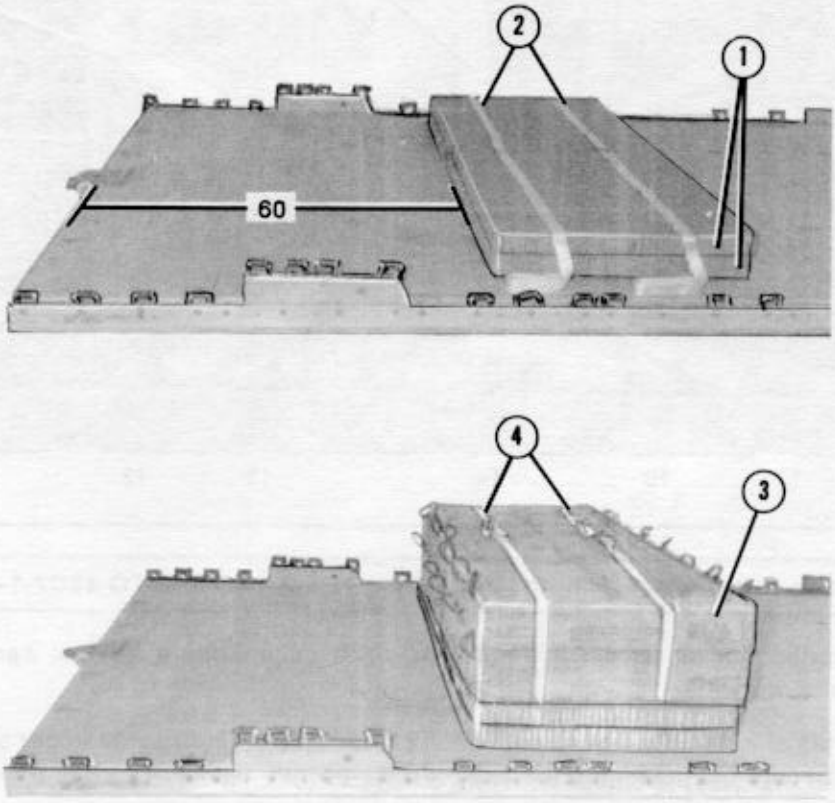
1. Install a suspension link in holes 26, 27, and 28 on each platform side rail. Face the flat part of the link to the front of the rail.
2. Install a suspension link in holes 6, 7, and 8 on each platform side rail. Face the flat part of the link to the front of the rail.
3. Install a suspension link in holes 37, 38, and 39 on each platform side rail. Face the flat part of the link to the rear of the rail.
4. Install a suspension link in holes 57, 58, and 59 on each platform side rail. Face the flat part of the link to the rear of the rail.
5. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
6. Install a clevis on bushing 1 of each front tandem link.
7. Install a clevis on bushing 2 on the second suspension link on each side.
8. Install clevises on bushings 1, 2, 3, and 4 on the fourth suspension link on each side.
9. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 10, 15, 16, 30, 33, 34, 35, 41, 43, 49, 50, 52, 53, 54, 55, 61, 62, 63, and 64.
10. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 25 and those bolted to the left side from 1A through 25A.
11. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 7-1. Platform prepared

7-3. Stowing Accompanying Load on Platform

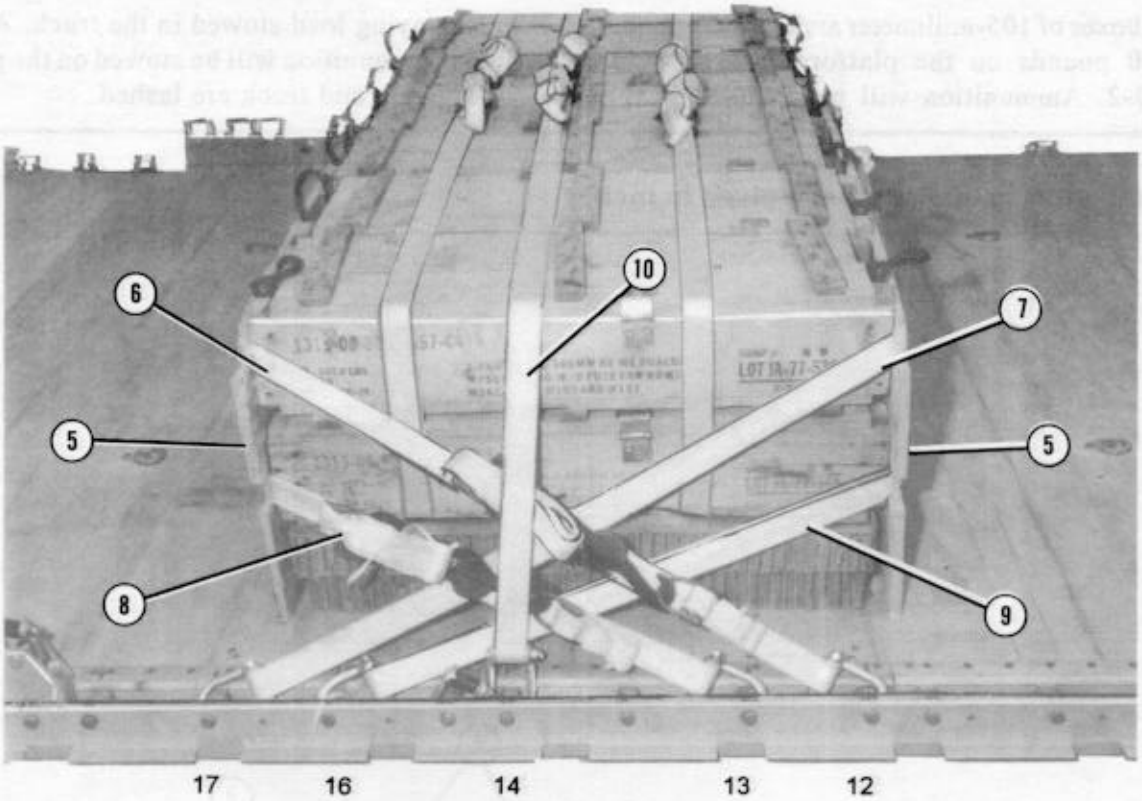
Stow 28 boxes of 105-millimeter ammunition weighing 3360 pounds on the platform as shown in Figure 7-2. Ammunition will be included in the accompanying load stowed in the truck. Also, additional ammunition will be stowed on the platform after the gun and truck are lashed.

Note: All measurements are given in inches.



1. Center two 84- by 36-inch pieces of honeycomb 60 inches from the rear edge of the platform.
2. Form two 30-foot lashings according to FM 10-500-2/TO 13C7-1-5, and lay them from side to side on the honeycomb.
3. Place 14 boxes of ammunition on the honeycomb.
4. Secure the 30-foot lashings over the boxes with D-rings and load binders.

Figure 7-2. Ammunition stowed and lashed to platform



Note: Form five 30-foot lashings according to FM 10-500-2/TO 13C7-1-5.

(5) Cut four endboards as shown in Figure 5-3. Set an endboard against each end of the ammunition stack.

(6) Pass the ends of a lashing through clevises 12 and 12A and through the upper slots in the rear endboard. Secure the lashing at the side of the load with two D-rings and a load binder.

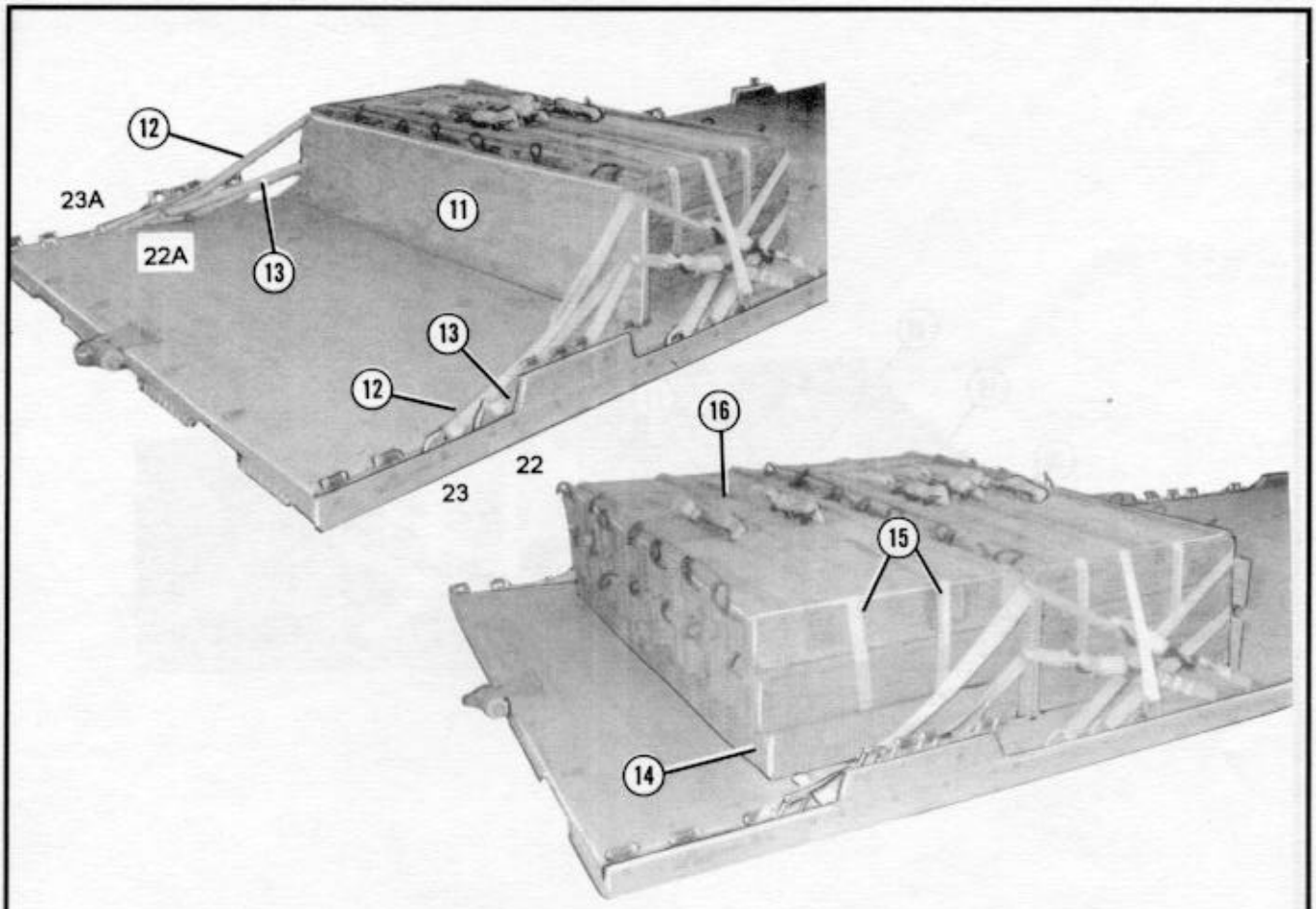
(7) Pass the ends of a lashing through clevises 17 and 17A and through the upper slots in the front endboard. Secure the lashing in the center of the endboard.

(8) Pass the ends of a lashing through clevises 13 and 13A and through the lower slots in the rear endboard. Secure the lashing as in step 6.

(9) Pass the ends of a lashing through clevises 16 and 16A and through the lower slots in the front endboard. Secure the lashing as in step 7.

(10) Pass the ends of a lashing through clevises 14 and 14A and over the stack of boxes. Secure the lashing in the center of the boxes.

Figure 7-2. Ammunition stowed and lashed to platform (continued)



Note: Form four 30-foot lashings according to FM 10-500-2/TO 13C7-1-5.

(11) Set a third endboard against the rear of the ammunition stack.

(12) Center a 30-foot lashing through clevis 23A. Place the ends of the lashing through the upper slots in the endboard to the right side of the load, to clevis 23.

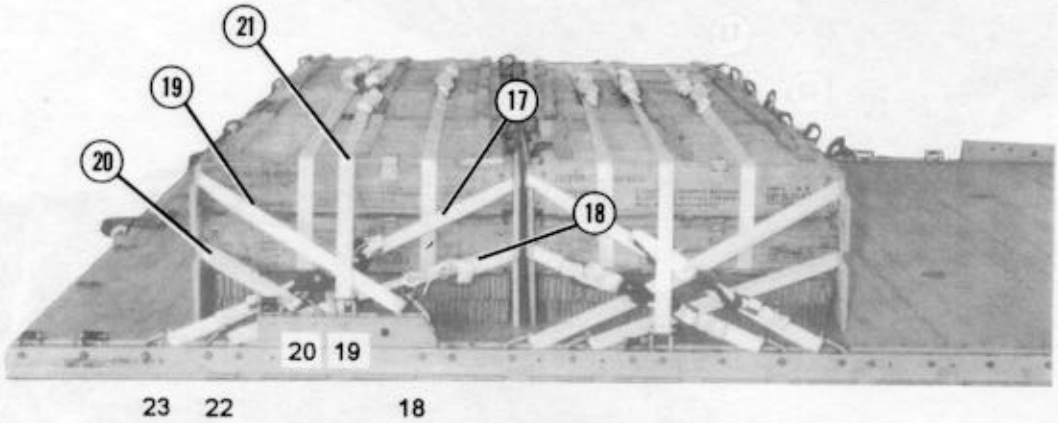
(13) Center a 30-foot lashing through clevis 22A. Place the ends of the lashing through the lower slots in the endboard to the right side of the load, to clevis 22.

(14) Center two 84- by 36-inch pieces of honeycomb 17 inches from the rear edge of the platform.

(15) Place two 30-foot lashings on the honeycomb as shown in step 2.

(16) Place 14 ammunition boxes over the lashings and honeycomb. Secure the lashings over the boxes with D-rings and load binders.

Figure 7-2. Ammunition stowed and lashed to platform (continued)



(17) Pass the lashing pre-positioned in step 12 through clevis 23. Secure the lashing on the right side.

(18) Pass the lashing pre-positioned in step 13 through clevis 22. Secure the lashing on the right side.

(19) Set the fourth endboard against the rear of the stack of boxes. Pass a 30-foot lashing through clevises 18 and 18A and through the upper slots in the rear endboard. Secure the lashing on the side of the load or on one side of the endboard.

(20) Pass a 30-foot lashing through clevises 20 and 20A and through the lower slots in the rear endboard. Secure the lashing as in step 19.

(21) Pass a 30-foot lashing through clevises 19 and 19A and over the top of the boxes. Secure the lashing on top.

Figure 7-2. Ammunition stowed and lashed to platform (continued)

7-4. Building and Placing Honeycomb Stacks and Placing Drive-Off Aids

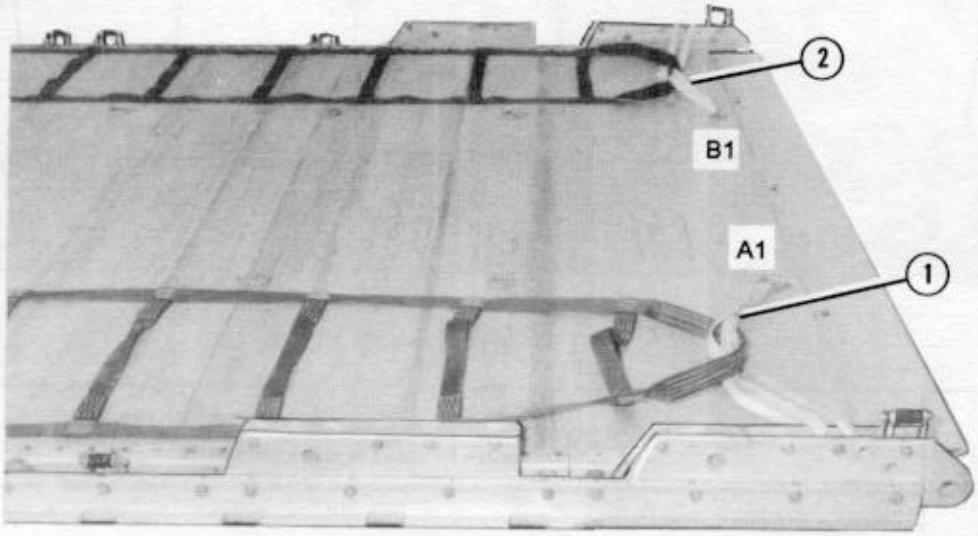
Build and place the honeycomb stacks and place the drive-off aids on the platform as explained below.

a. Build honeycomb stacks 1 through 3 for the 1 1/4-ton HMMWV truck as shown in FM 10-517/TO 13C7-1-111, Figures 2-3 and 2-4.

b. Build honeycomb stacks 4 through 6 for the M119 howitzer as shown in Figures 5-5 through 5-7.

c. Place the drive-off aids to the front of the platform as shown in Figure 7-3.

d. Place the honeycomb stacks on the platform as shown in Figure 7-4.

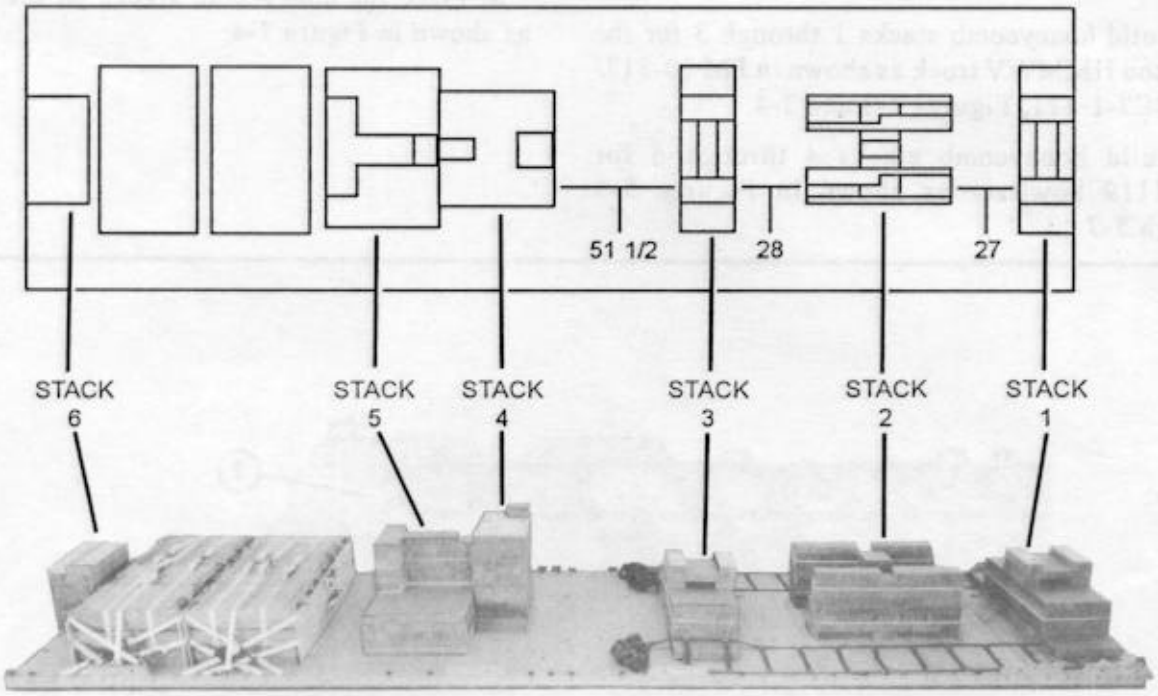


(1) Run a length of type V, or 1-inch tubular nylon webbing around the second bushing on the front tandem link, through the end loop of a drive-off aid, and through tie-down ring A1. Knot the webbing as shown in FM 10-500-2/TO 13C7-1-5.

(2) Repeat this procedure for the left side of the platform using tie-down ring B1.

Figure 7-3. Drive-off aids placed on platform

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



Stack Number	Position of Stack on Platform
	Place stack:
1	Centered and flush with the front edge of the platform.
	Note: Place stack 1 over drive-off aids.
2	Centered 27 inches from stack 1.
3	Centered 28 inches from stack 2.
	Note: Drive-off aids go over the sides of stack 3.
4	Centered 51 1/2 inches from stack 3.
5	Centered and flush with the rear of stack 4.
6	Centered and flush with the rear edge of the platform.

Figure 7-4. Honeycomb stacks placed on platform

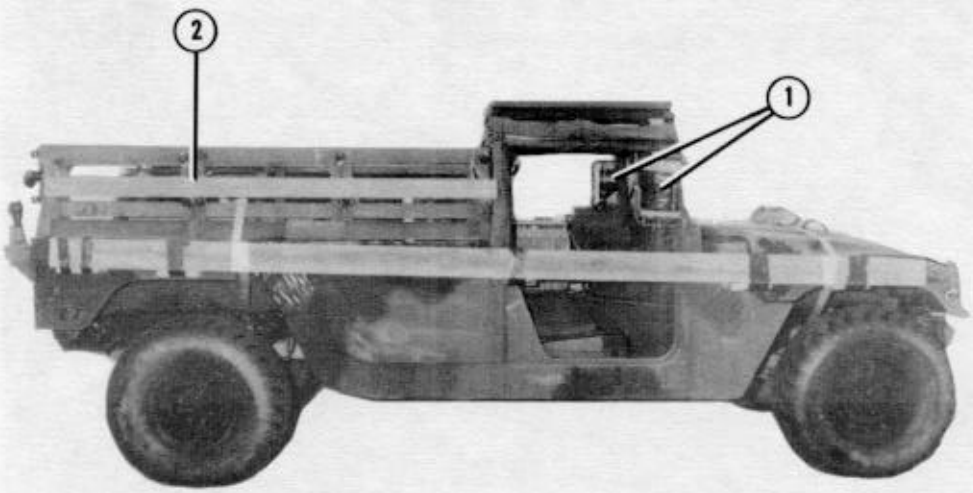
7-5. Preparing Howitzer and Truck

Prepare the howitzer and truck as described below.

a. Prepare the howitzer as shown in Figures 5-9 through 5-16.

b. Prepare the truck with the roof rack as described in FM 10-517/TO 13C7-1-111, paragraph 2-4a through e, g and h, and as shown in Figures 2-6 through 2-9, 2-11, 2-12 , and 2-13 (omit step 1). Additionally, prepare the truck as shown in Figure 7-5.

Note: Prepare trucks without the roof rack in the same way, but add the procedures in FM 10-517/TO 13C7-1-111, Figure 2-10 (omit step 12).



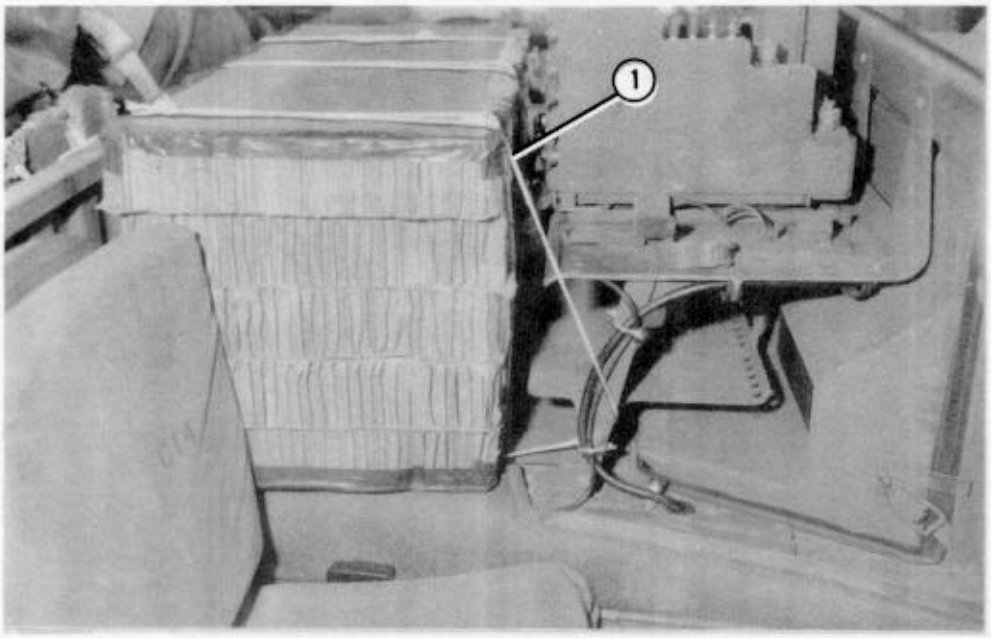
(1) Fold both mirrors to the side, pad them with cellulose wadding, and tie them together inside the windshield with type III nylon cord.

(2) If the wood sides are installed on the truck, tie a 2- by 4- by 84-inch piece of lumber to the second wood slat with type III nylon cord.

Figure 7-5. Truck with roof rack prepared

7-6. Stowing Howitzer Equipment and Ammunition in Truck

Stow the howitzer equipment in trucks equipped with the ammunition rack as shown in Figure 7-6. Adapt these procedures and those procedures in Chapter 5, FM 10-517-1-111 that include artillery fire direction control equipment to stow equipment in other trucks.



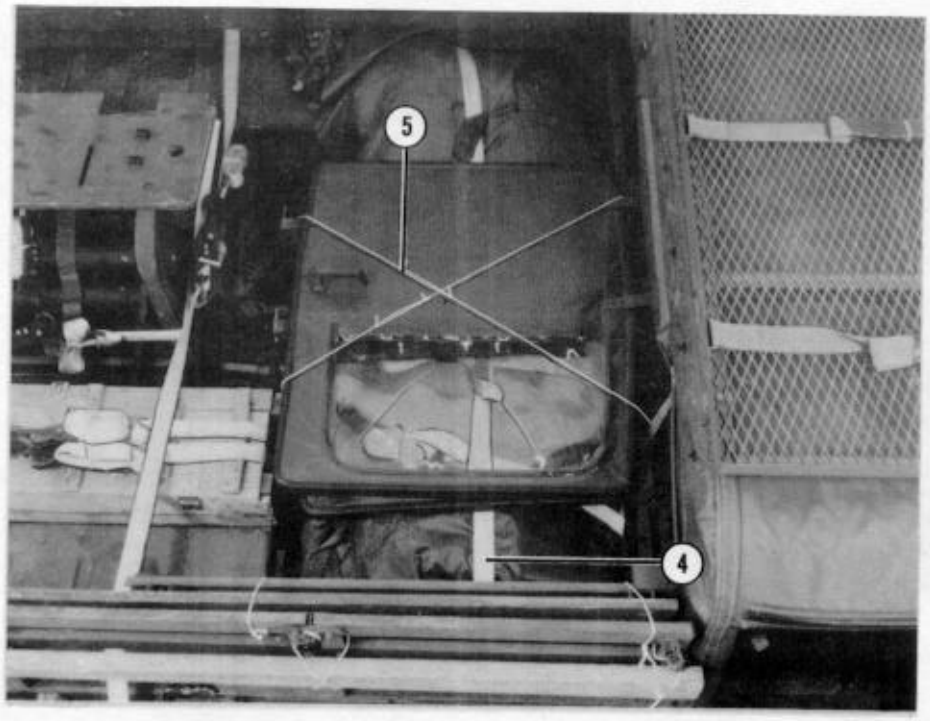
1 Set the boxed collimator (Figure 5-17) between the seats. Tie the box to the cargo bed and to the radio mounting bracket with type III nylon cord.

Figure 7-6. Howitzer equipment stowed in truck

(2) Place a layer of honeycomb cut to fit in the bottom of the ammunition rack. Place a 15-foot lashing over the honeycomb. Place 14 fiber containers in the rack as shown and secure the lashing over them.

(3) Place a 15-foot lashing through the two right side tie-down rings in the bed of the truck. Place a piece of honeycomb cut slightly larger than the dimensions of an ammunition box over the lashing. Place a second 15-foot lashing over the honeycomb. Place two ammunition boxes over the lashing and honeycomb. Bring both lashings up through the box carrying handles and secure them with D-rings and load binders on top of the boxes.

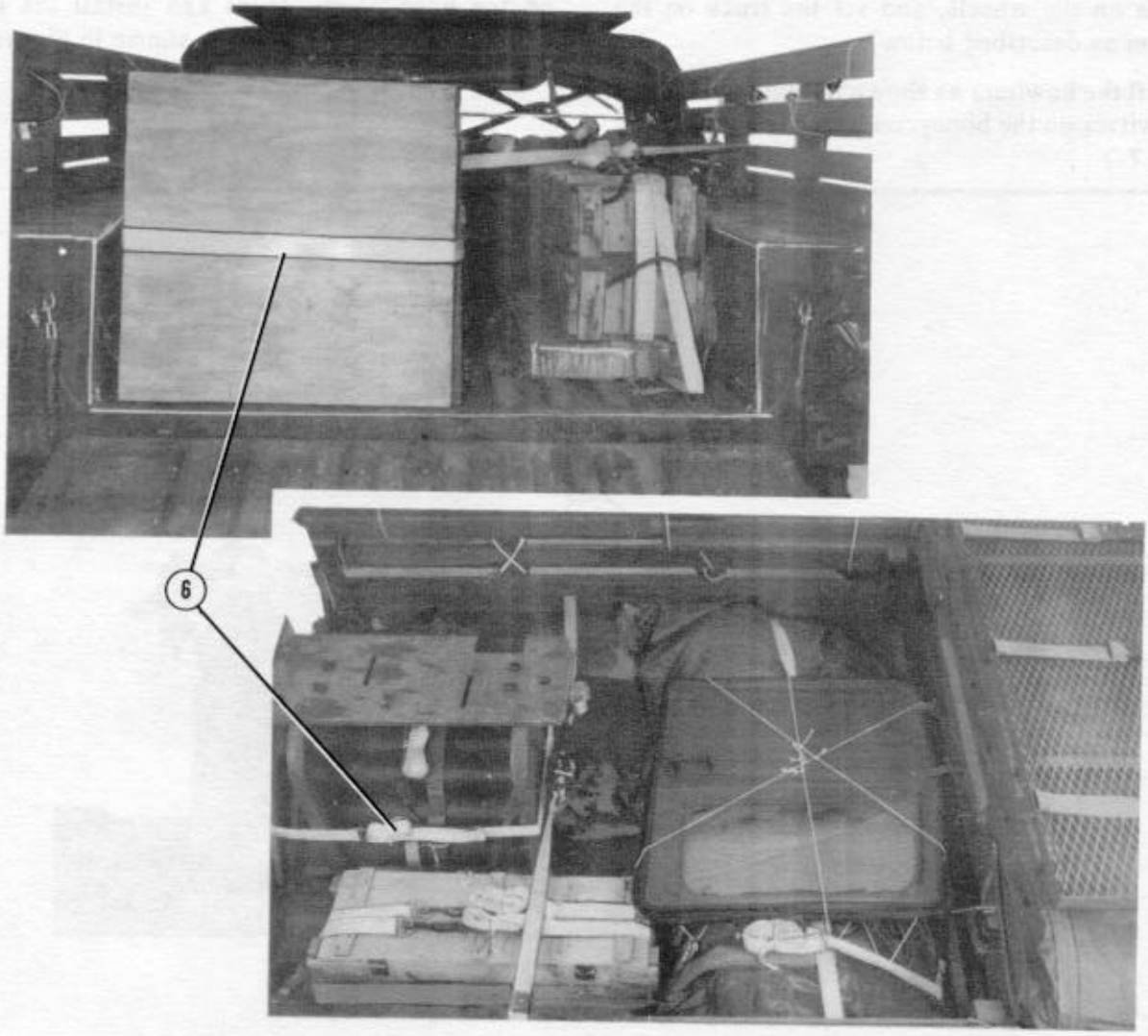
Figure 7-6. Howitzer equipment stowed in truck (continued)



(4) Place 15-foot lashings through the tie-down rings in the front of the cargo bed in both front-to-rear and side-to-side directions. Place the truck covers, camouflage nets and pole bag over the lashings. Secure the lashings over the equipment with D-rings and load binders.

(5) Tie the truck doors to the lashings with type III nylon cord.

Figure 7-6. Howitzer equipment stowed in truck (continued)



(6) Set a 3/4- by 28- by 28-inch piece of plywood against the rear of the ammunition rack. Lash the plywood horizontally to the rack with a 15-foot lashing, a D-ring, and a load binder.

(7) Close the tailgate and secure it shut with 1/2-inch tubular nylon webbing (not shown).

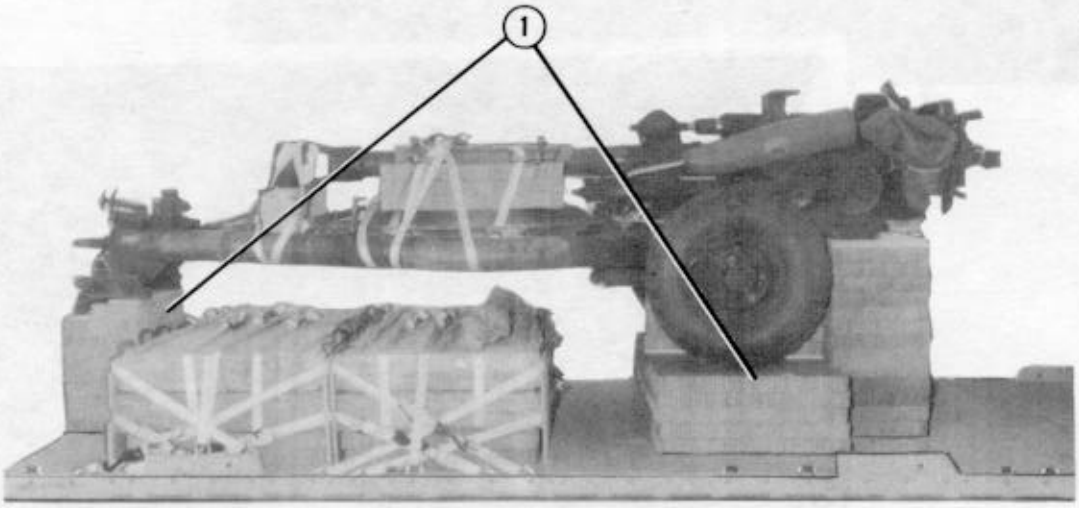
Figure 7-6. Howitzer equipment stowed in truck (continued)

7-7. Setting Howitzer and Truck on Platform and Installing Drive-Off Aids on Truck

Lift the howitzer and set it on the platform as described below. Lift the truck, install the drive-off aids on the wheels, and set the truck on the platform as described below.

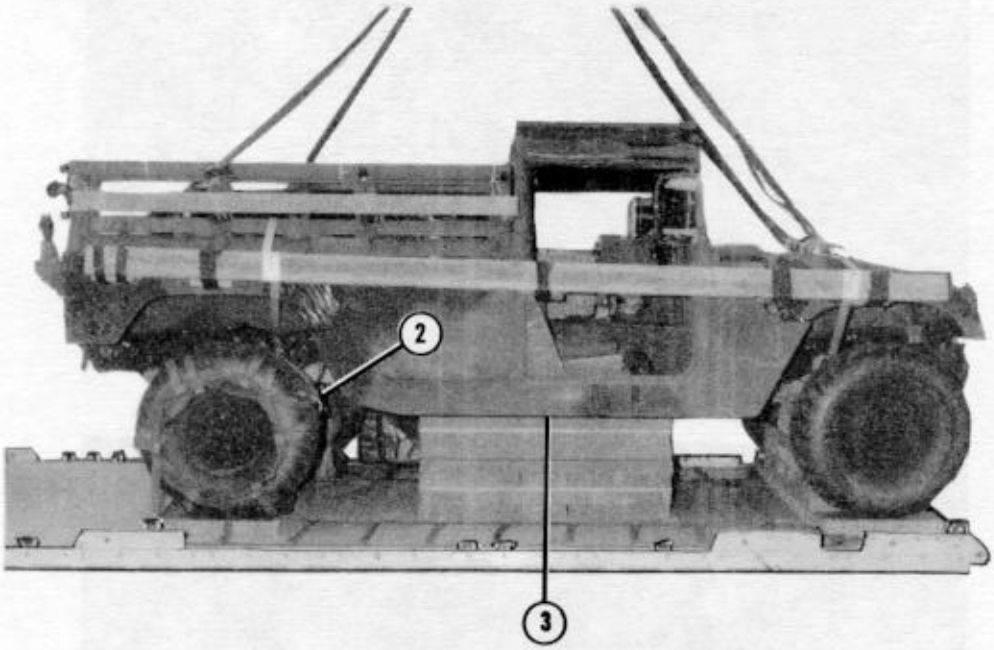
a. Lift the howitzer as shown in Figure 5-19. Set the howitzer on the honeycomb stacks as shown in Figure 7-7.

b. Lift the truck as shown in FM 10-517/TO 13C7-1-111, Figure 2-17. Position the truck on the honeycomb stacks and install the drive-off aids to the rear wheels as shown in Figure 7-7.



(1) Set the howitzer on stacks 4, 5, and 6 as shown.

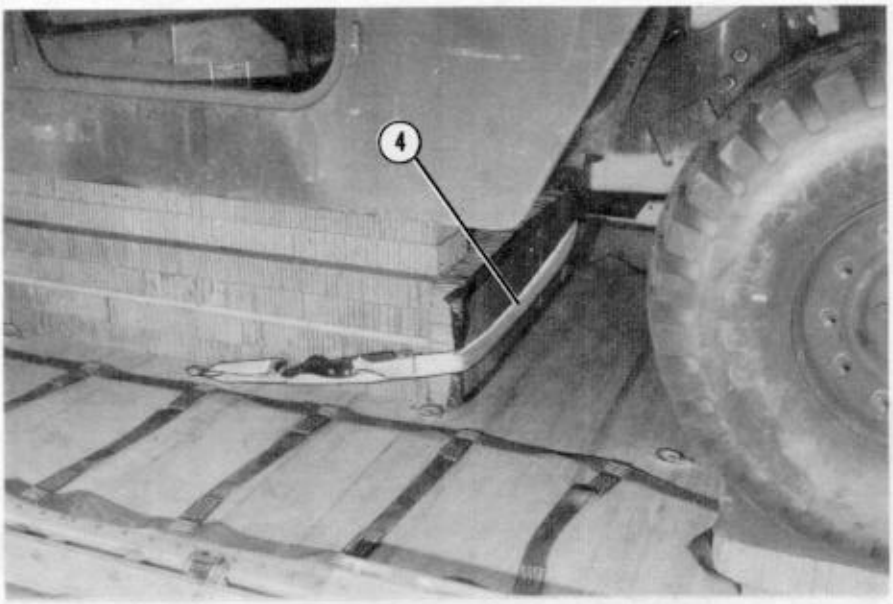
Figure 7-7. Howitzer and truck set on platform and drive-off aids installed

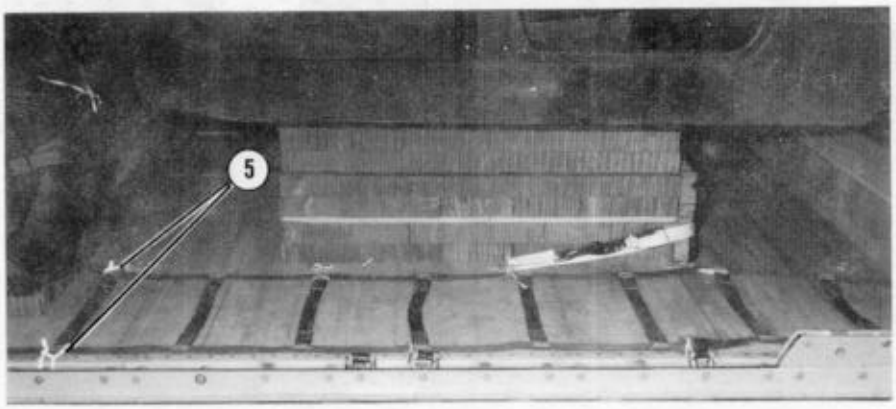


(2) Suspend the truck slightly over the honeycomb stacks. Lay a drive-off aid under each rear wheel. Turn the wheel until the webbing is wound around the wheel and under slight tension. Tie the end loop of each drive-off aid to the nearest cross piece with two turns of 1/4-inch cotton webbing.

(3) Set the truck on stacks 1, 2, and 3 so that the suspension cross members rest squarely on stacks 1 and 3 as shown. Be sure that the frame rails rest squarely on stack 2.

Figure 7-7. Howitzer and truck set on platform and drive-off aids installed (continued)





(4) Place a 12- by 42-inch piece of honeycomb against the front of stack 2 as shown. Run a 15-foot lashing through tie-down rings A4 and B4 and around the front side of stack 2 as shown. Secure the lashing on the side.

(5) Tie the drive-off aids to side rail bushings and to tie-down rings with 1/4-inch cotton webbing.

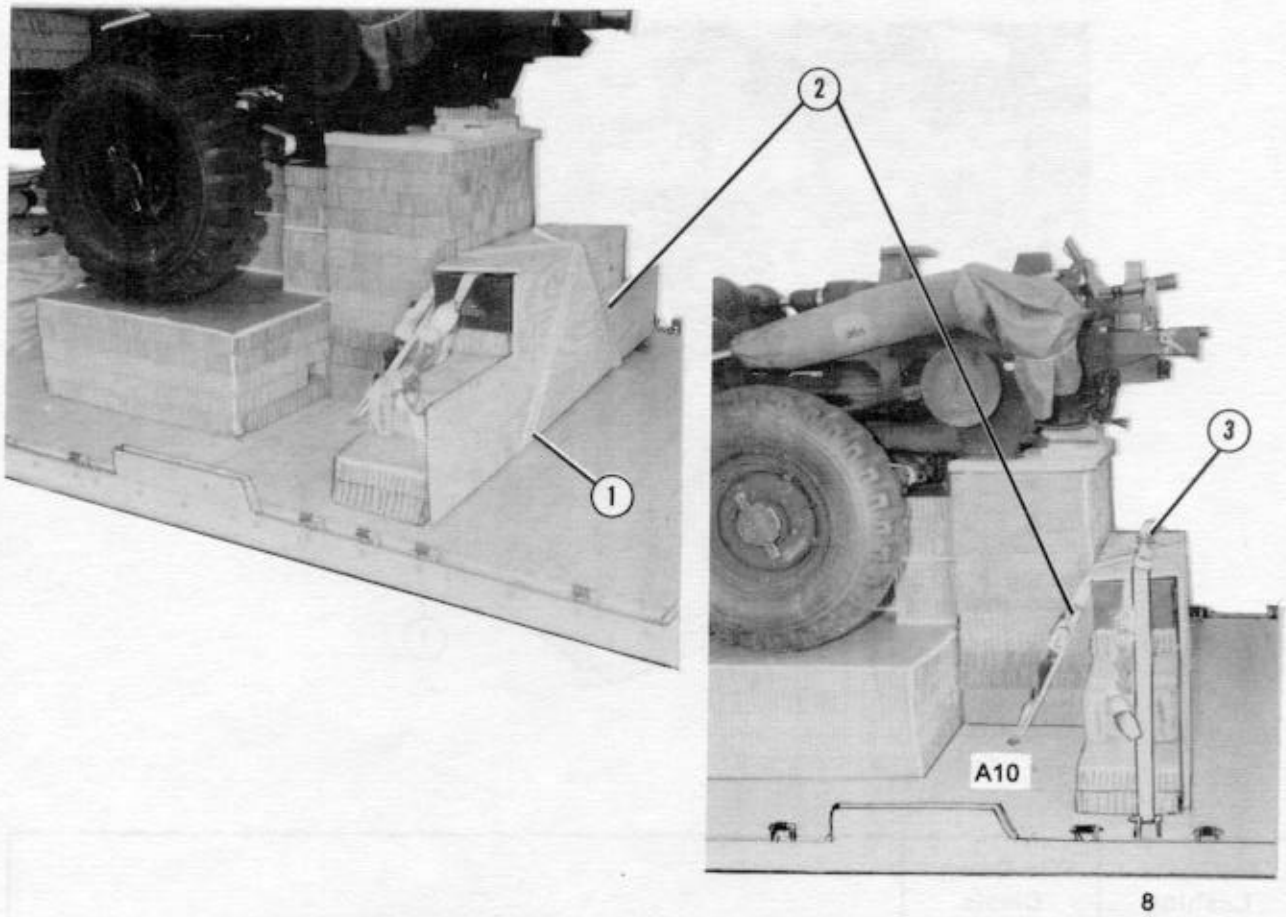
Figure 7-7. Howitzer and truck set on platform and drive-off aids installed (continued)

7-8. Stowing Additional Accompanying Load

Stow two boxes of APERS or HERAP ammunition and seven boxes of fuzes as described below.

a. Construct the ammunition and fuze package against the front side of stack 4 as shown in Figure 5-22, and Figure 5-23, steps 1 and 2.

b. Lash the ammunition package to the platform as shown in Figure 7-8.

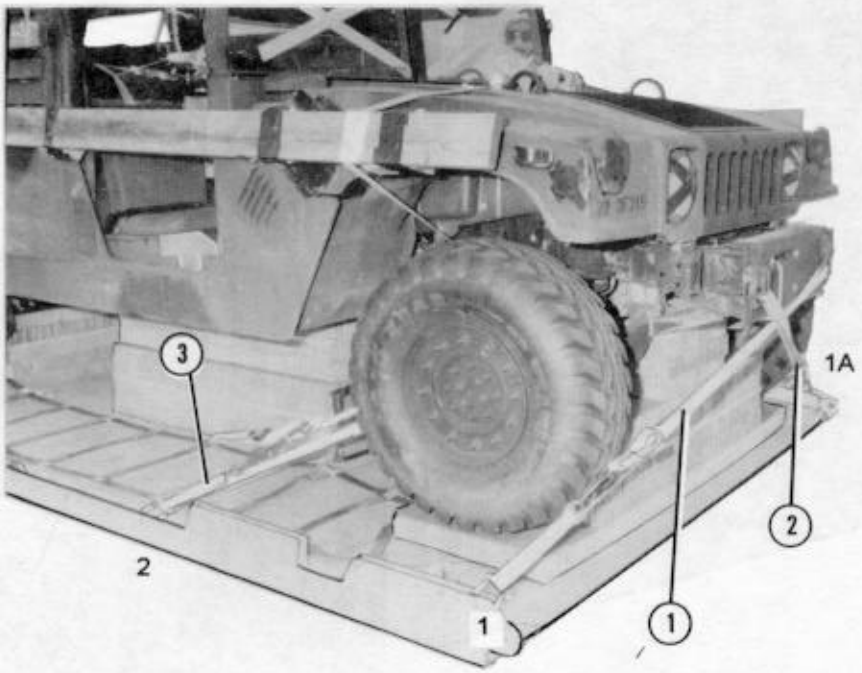


1. Secure the plywood with a 15-foot lashing from tie-down ring A9 to B10.
2. Pass a second 15-foot lashing over the plywood between tie-down rings A10 and B9.
3. Form a 30-foot lashing according to FM 10-500-2/TO 13C7-1-5. Place the lashing over the top of the plywood and pass the ends through clevises 8 and 8A. Secure the lashing with two D-rings and a load binder.

Figure 7-8. Boxes of ammunition and fuzes lashed to platform

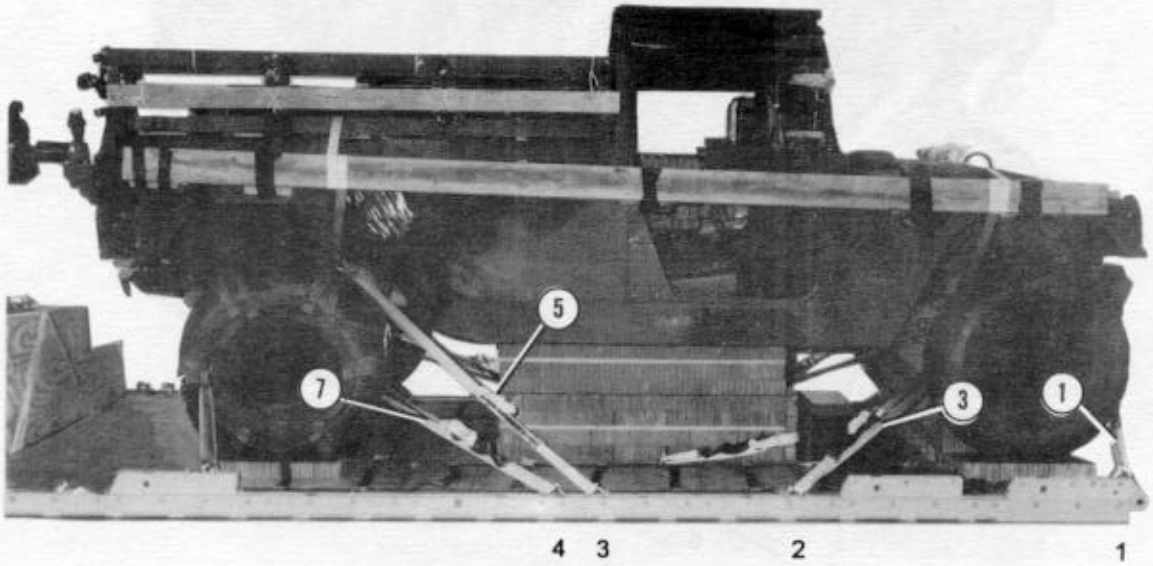
7-9. Lashing Howitzer and Truck

Lash the howitzer and truck to the platform with twenty-four 15-foot lashings as shown in Figure 7-9. Install and safety the lashings according to FM 10-500-2/TO 13C7-1-5.



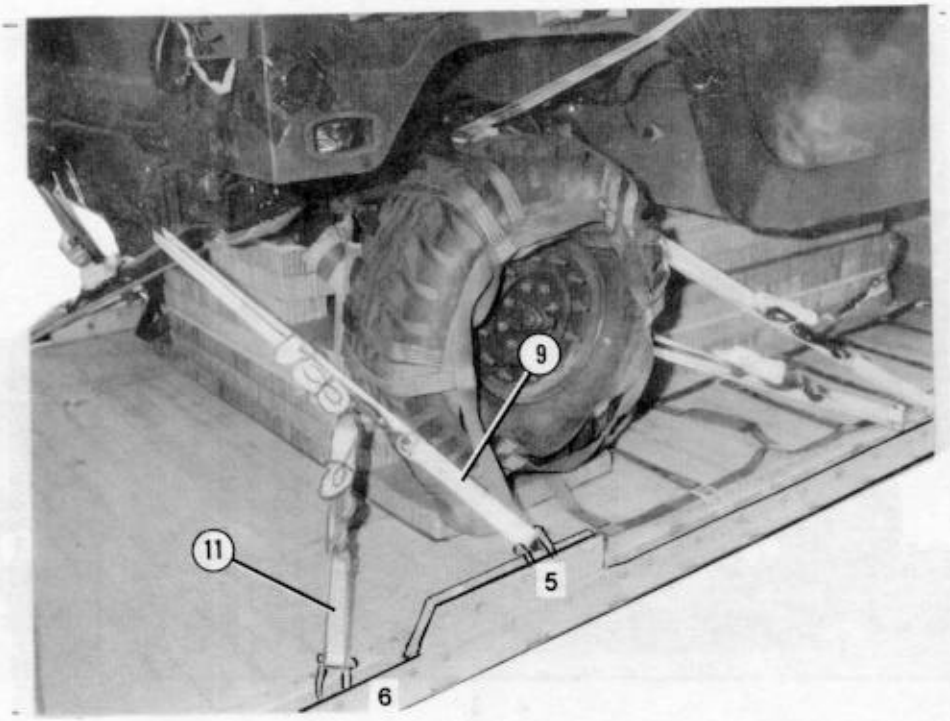
Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	1	Through left front lifting shackle.
2	1A	Through right front lifting shackle.
3	2	Around lower control arm, right side.
4	2A	Around lower control arm, left side.

Figure 7-9. Lashings installed



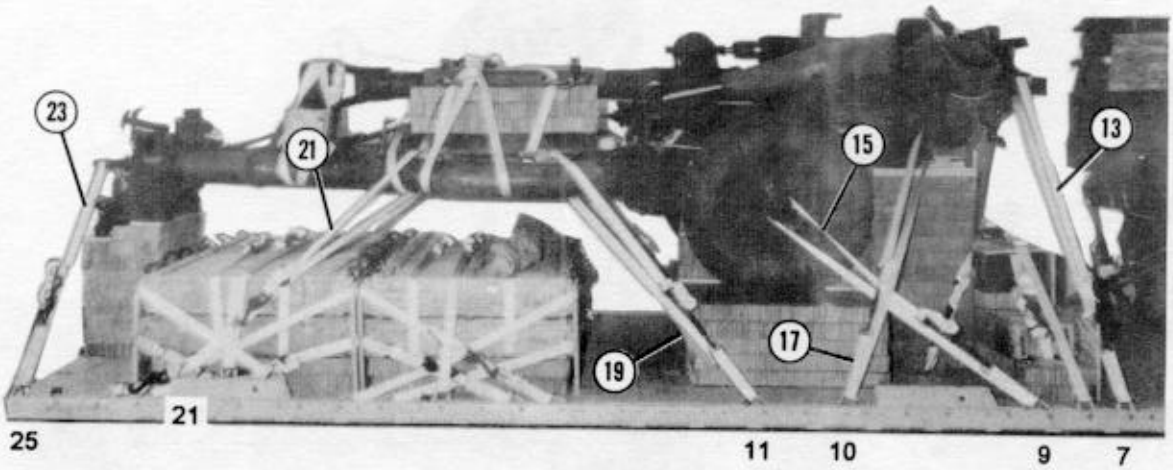
Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
5	3	Around upper control arm, right side.
6	3A	Around upper control arm, left side.
7	4	Around lower control arm, right side.
8	4A	Around lower control arm, left side.

Figure 7-9. Lashings installed (continued)



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
9	5	Through right rear lifting shackle.
10	5A	Through left rear lifting shackle.
11	6	Around control arm, right side.
12	6A	Around control arm, left side.

Figure 7-9. Lashings installed (continued)

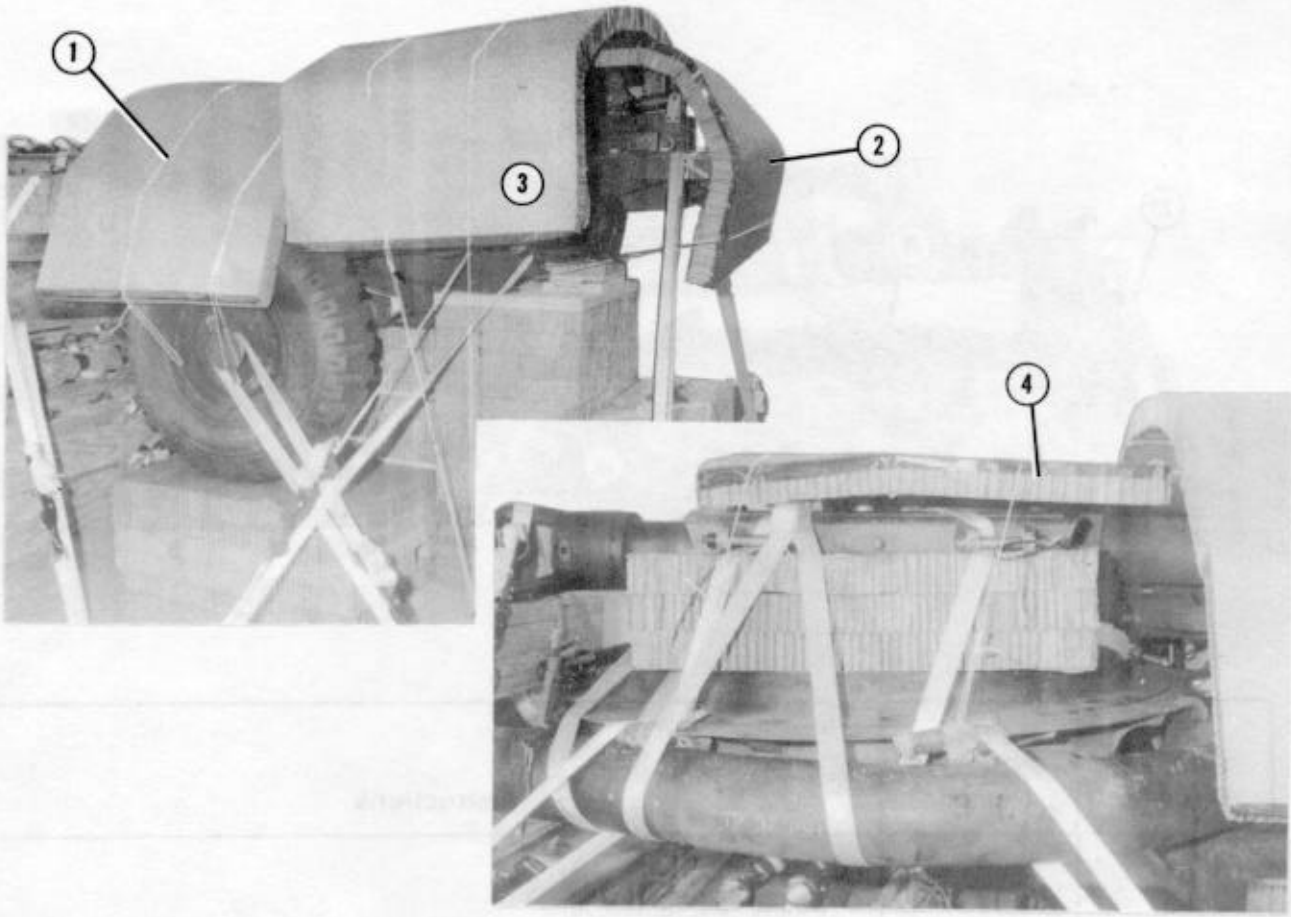


Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
13	7	Around rail, right side.
14	7A	Around rail, left side.
15	9	Around wheel hub, right side.
16	9A	Around wheel hub, left side.
17	10	Around saddle, behind elevating wheel shaft, right side.
18	10A	Around saddle, left side.
19	11	Through hole in firing platform and around right trail.
20	11A	Through hole in firing platform and around left trail.
21	21	Through hole in firing platform and around right trail.
22	21A	Through hole in firing platform and around left trail.
23	25	Through lunette.
24	25A	Through lunette.

Figure 7-9. Lashings installed (continued)

7-10. Covering Howitzer with Honeycomb

Install protective honeycomb covers as shown in Figure 7-10.

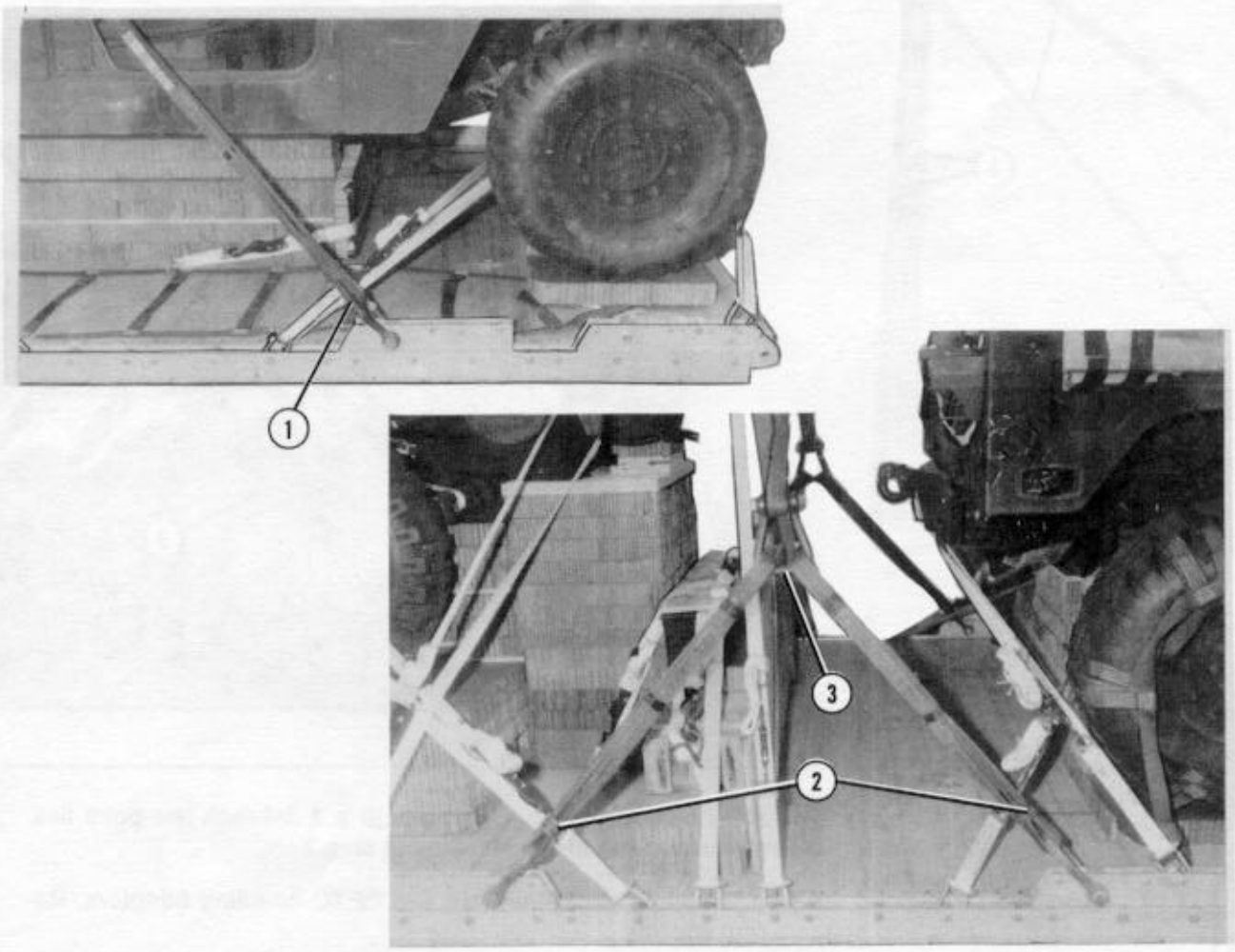


1. Center a 36- by 96-inch piece of honeycomb over the wheels and bend it over the gun. Tie the honeycomb to the wheels with type III nylon cord.
2. Bend a 36- by 30-inch piece of honeycomb over the breech. Tie the honeycomb to convenient points on the gun with type III nylon cord.
3. Bend a 36- by 96-inch piece of honeycomb over the sights and the piece placed in step 2 above. Tie the honeycomb to tie-down rings with type III nylon cord.
4. Place a 36- by 36-inch piece of honeycomb over the gun tube and tie it to the holes in the firing platform with type III nylon cord.

Figure 7-10. Honeycomb covers installed

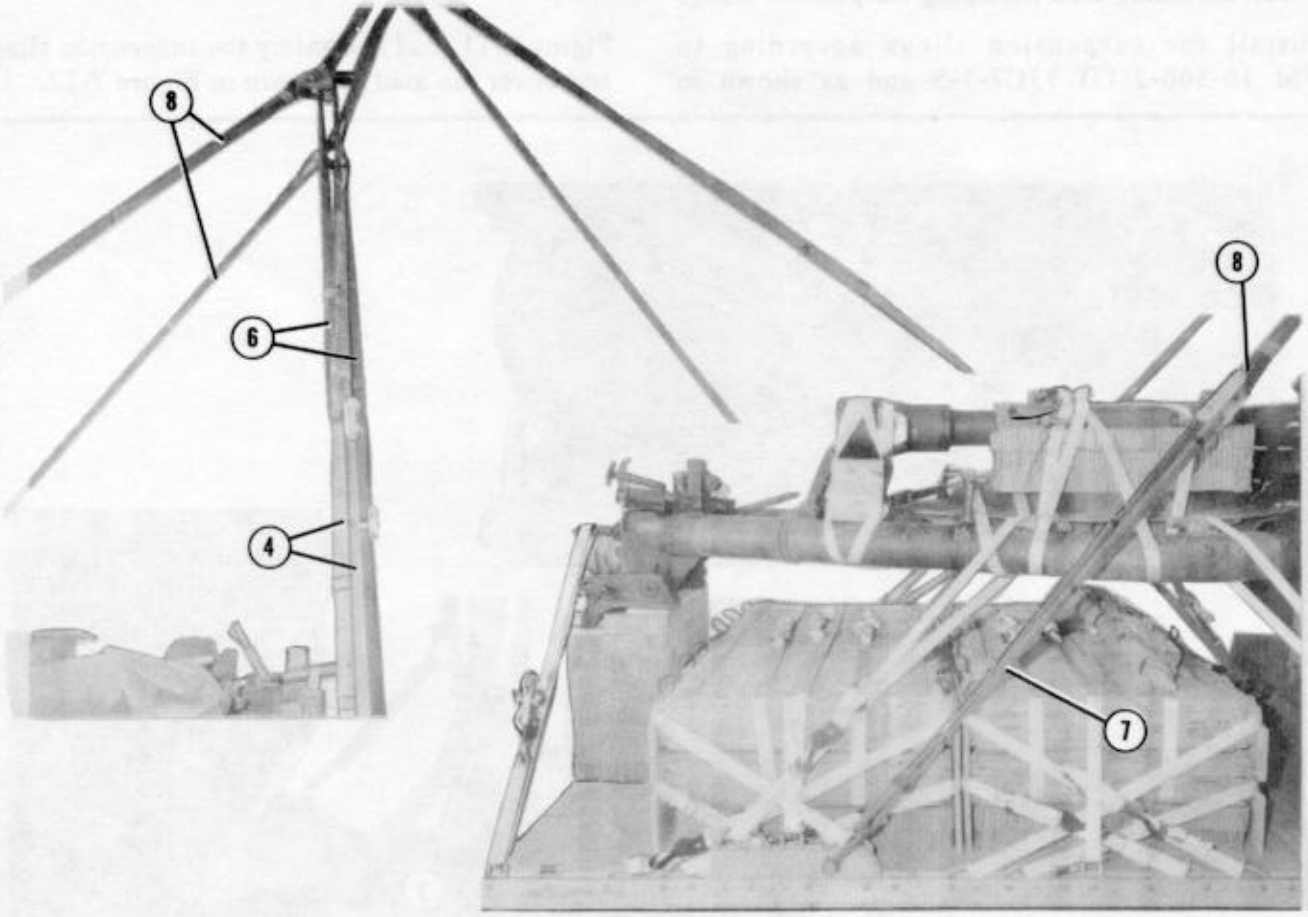
7-11. Installing and Safetying Suspension Slings

Install the suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-11. Pad and safety the suspension slings, and cover the load as shown in Figure 7-12.



1. Attach a 20-foot (4-loop), type XXVI nylon webbing sling to each first suspension link with a large suspension clevis.
2. Attach a 3-foot (4-loop), type XXVI nylon webbing sling to each second and third suspension link with a large suspension clevis.
3. Place the 3-foot slings installed in step 2 in the bell portion of a large suspension clevis.

Figure 7-11. Suspension slings installed



(4) Pass a 9-foot (2-loop), type XXVI nylon webbing sling through a 3 3/4-inch two-point link. Bolt both end loops to the large suspension clevis installed in step 3.

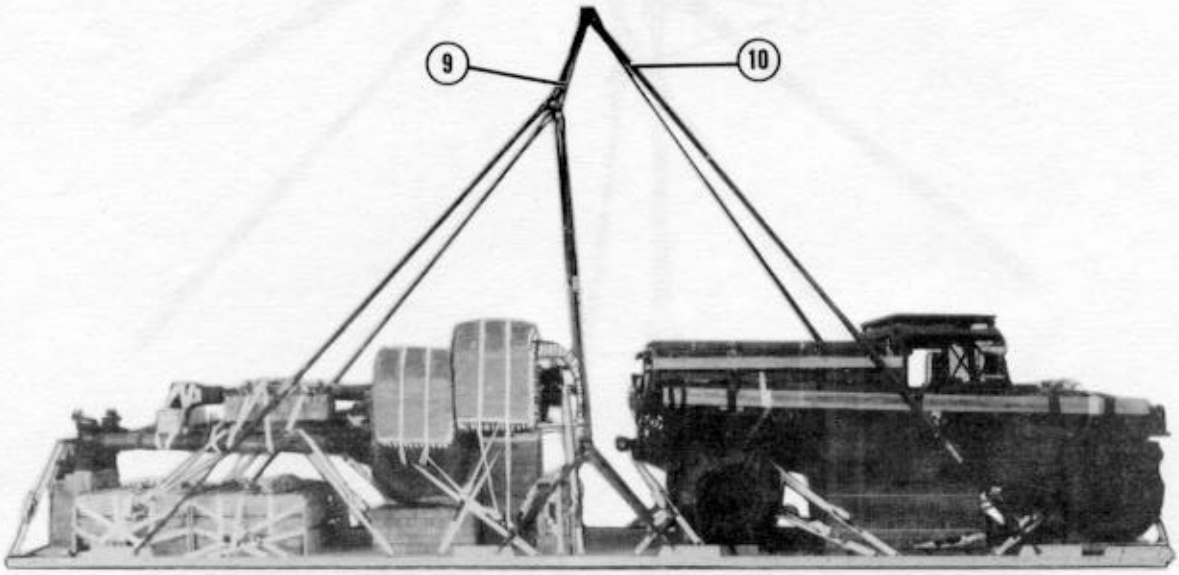
(5) Make two three-point links by removing the cams from two EFTC coupling adaptors. Replace the cams with spacers (not shown).

(6) Pass an 11-foot (2-loop), type XXVI nylon webbing sling around one spool of a three-point link. Bolt both end loops to the free side of the 3 3/4-inch two-point link attached in step 4.

(7) Pass an 11-foot (2-loop), type XXVI nylon webbing sling through a 5 1/2-inch, two-point link. Place both end loops in the bell portion of a large suspension clevis. Repeat this procedure and bolt each of the clevises to a fourth suspension link.

(8) Bolt one end of an 11-foot (4-loop), type XXVI nylon webbing sling to the 5 1/2-inch two-point link installed in step 7. Bolt the free end of this sling to the three-point link installed in step 6.

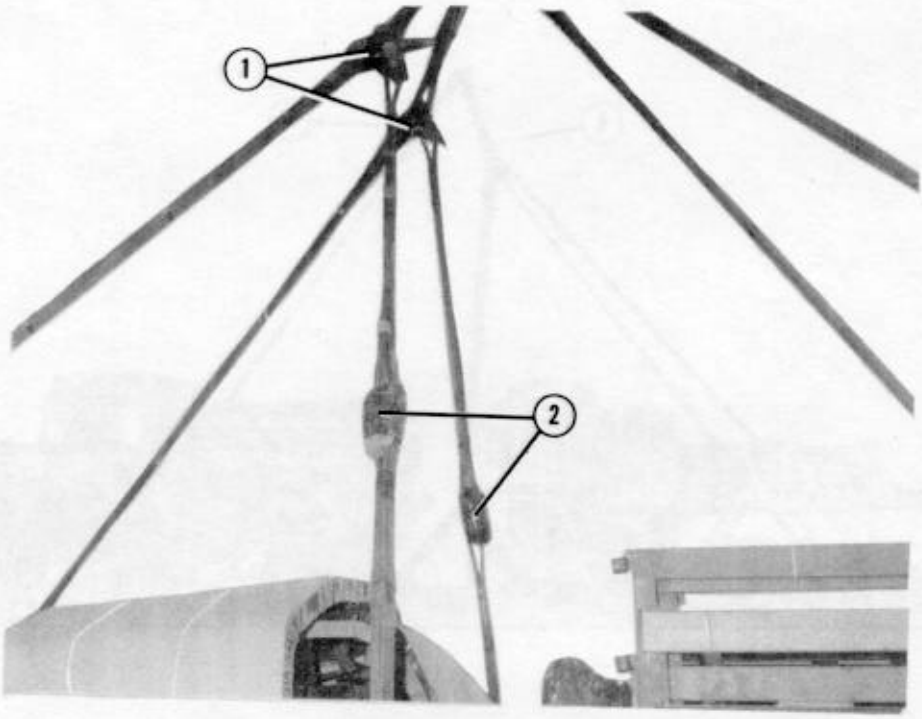
Figure 7-11. Suspension slings installed (continued)



(9) Attach a 3-foot (4-loop), type XXVI nylon webbing sling to each upper spool of the three-point links. Attach the free ends of the 3-foot slings to the crane hook.

(10) Attach the front slings to the crane hook. Pull the slings taut.

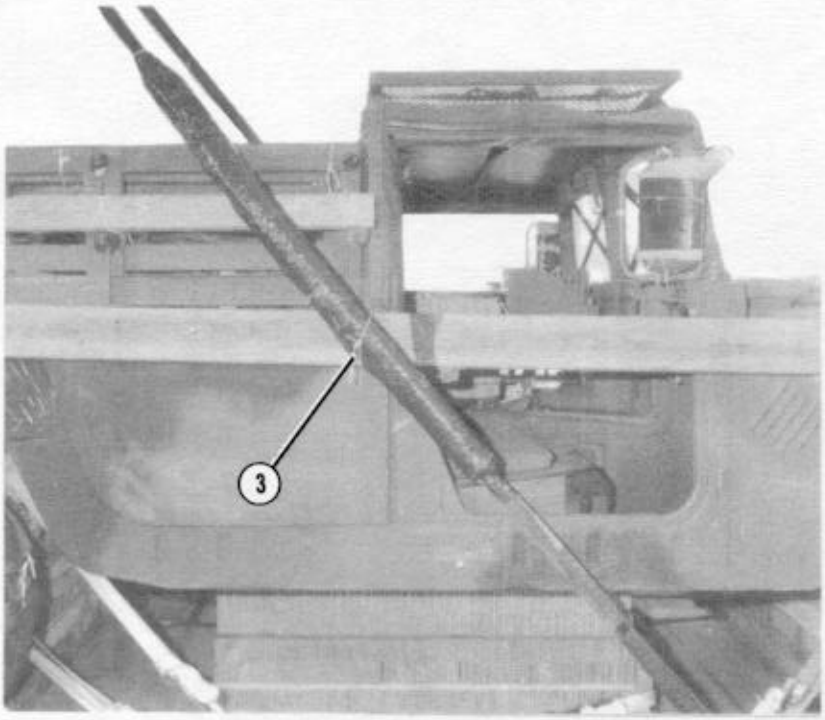
Figure 7-11. Suspension slings installed (continued)

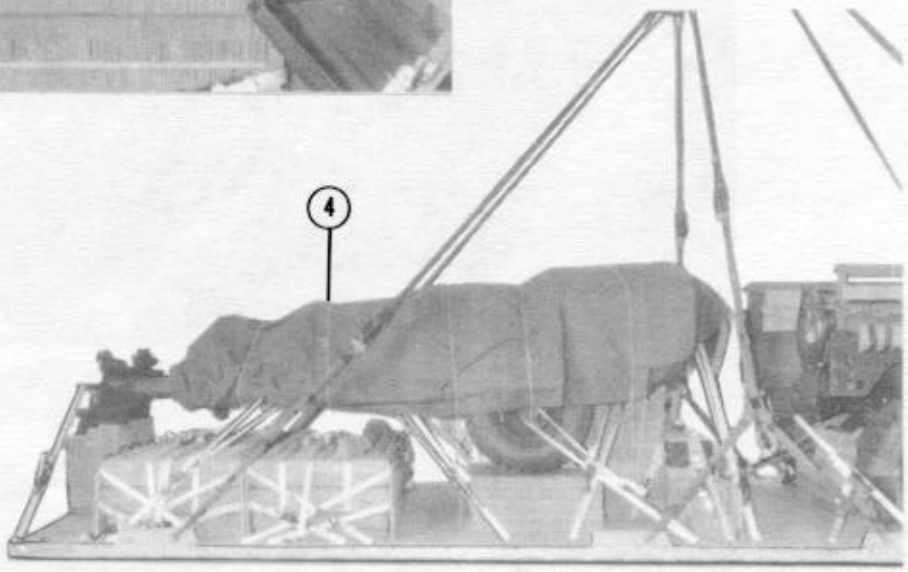


(1) Pad the three-point links with felt and tape it in place.

(2) Pad the two-point link assemblies with cellulose wadding and tape it in place.

Figure 7-12. Howitzer covered, and suspension slings padded and safetied

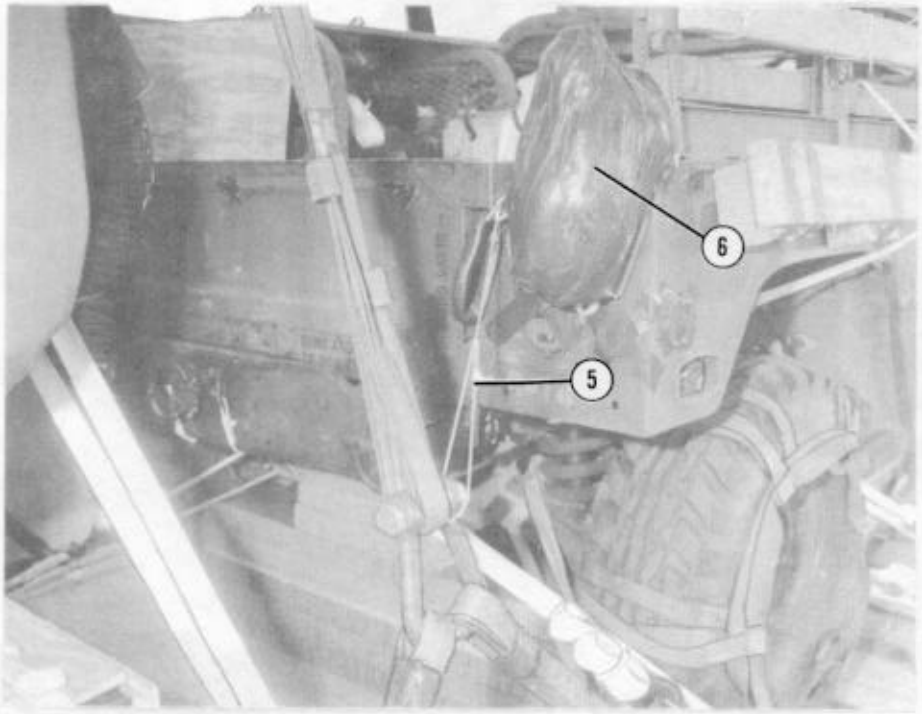




(3) Wrap each front suspension sling 46 inches from the clevis with a 6- by 55-inch piece of felt, and tape it in place. Safety the front slings to the sideboards with type III nylon cord.

(4) Cover the howitzer with a 10- by 15-foot piece of cotton duck cloth. Tie the cover to convenient points with type III nylon cord.

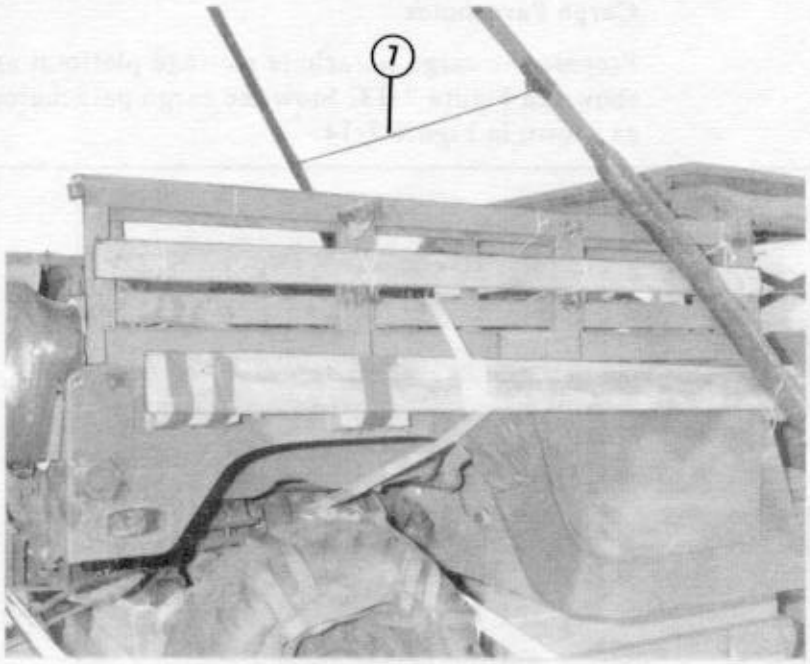
Figure 7-12. Howitzer covered, and suspension slings padded and safetied (continued)

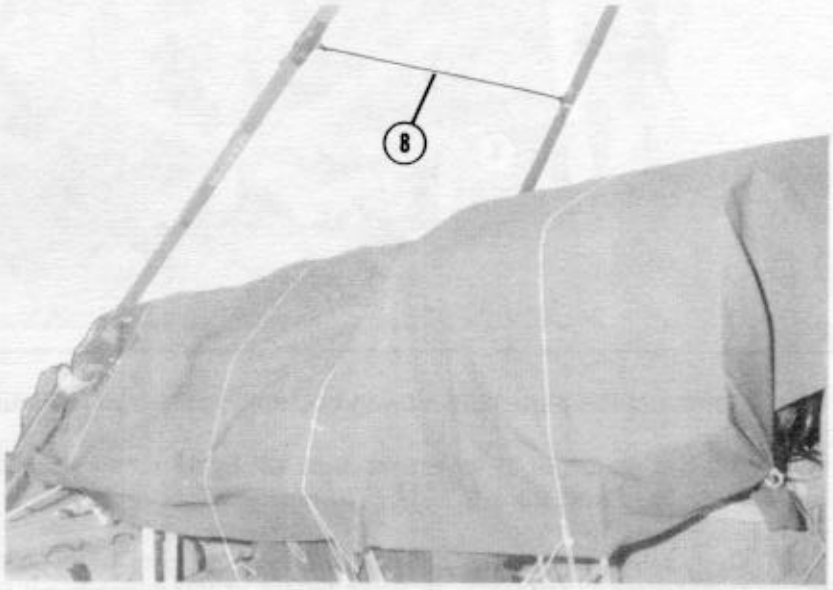


(5) Safety tie the large suspension clevises to the truck tailgate with type III nylon cord.

(6) Pad the antenna mount with cellulose wadding and tape it in place.

Figure 7-12. Howitzer covered, and suspension slings padded and safetied (continued)





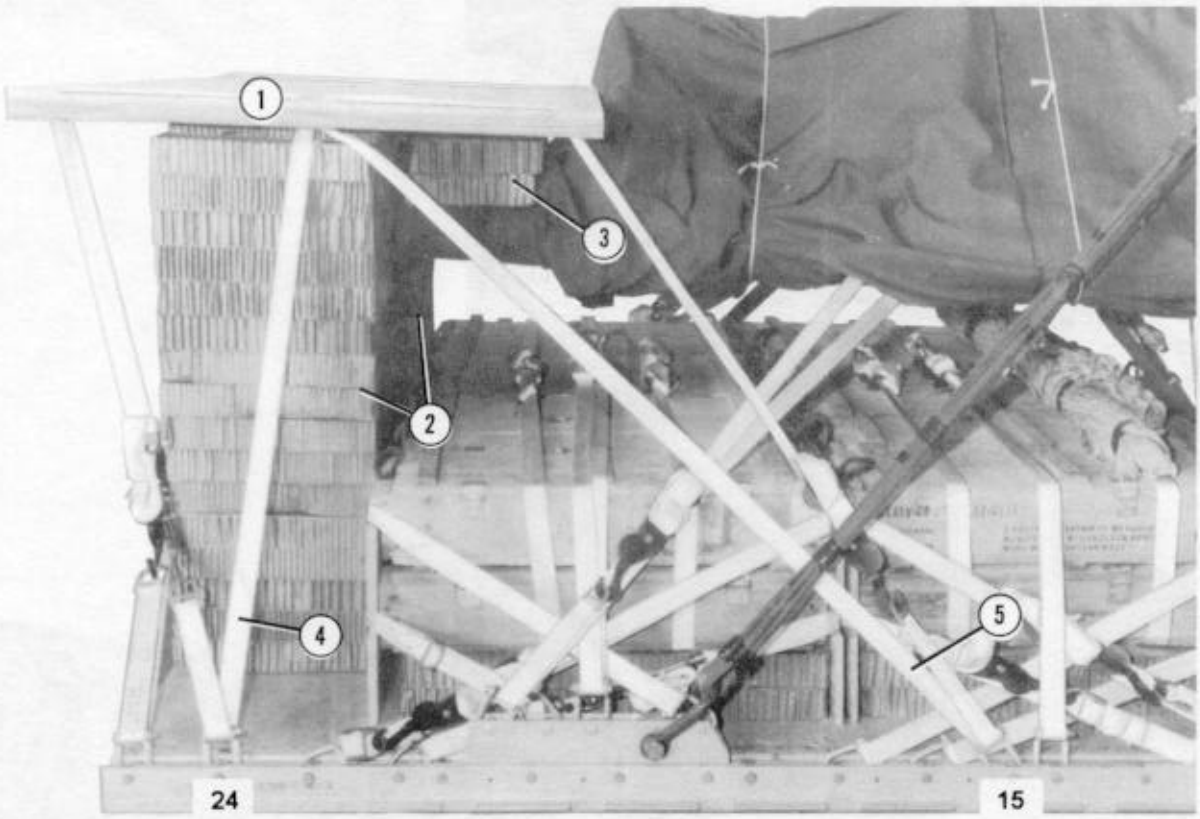
(7) Tie the front slings together 6 to 8 inches above the highest point of the load with a double length of 1/2-inch tubular nylon webbing.

(8) Tie the rear suspension slings together in the same way as in step 7.

Figure 7-12. Howitzer covered, and suspension slings padded and safetied (continued)

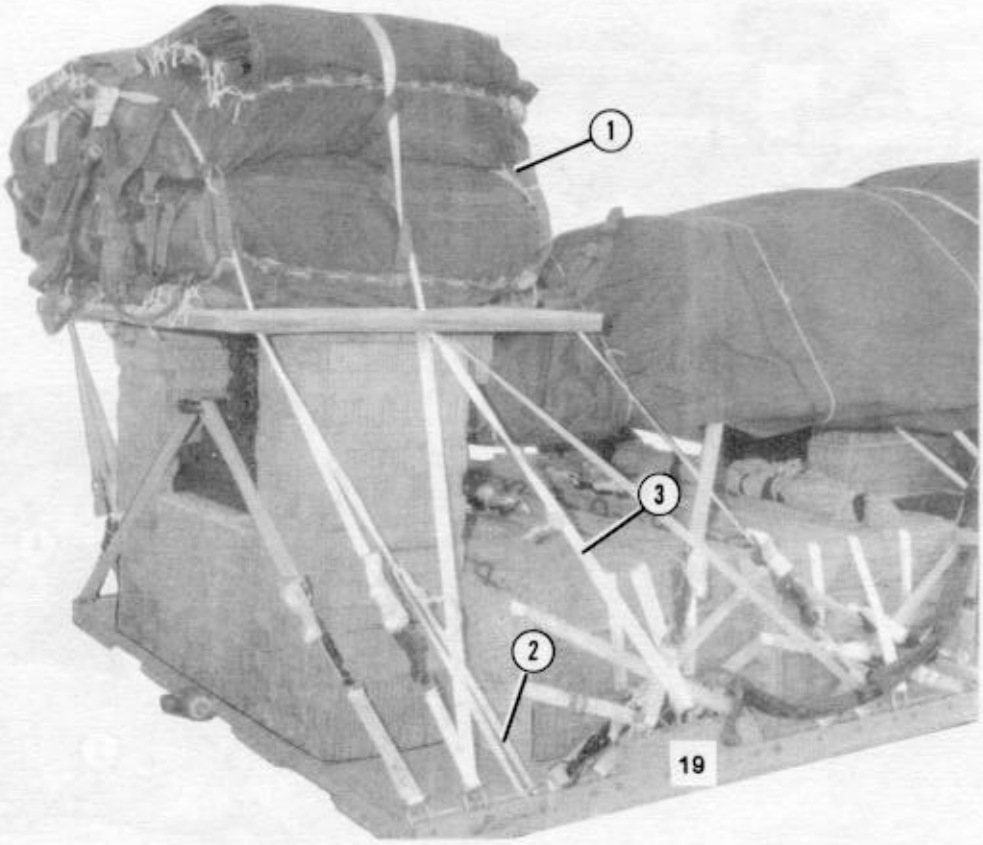
7-12. Preparing Stowage Platform and Stowing Cargo Parachutes

Prepare the cargo parachute stowage platform as shown in Figure 7-13. Stow the cargo parachutes as shown in Figure 7-14.



1. Construct the parachute stowage platform as shown in Figure 5-28.
2. Set two stacks of 17 layers each of 18- by 18-inch honeycomb flush against the accompanying load and stack 6.
3. Center the parachute stowage platform on the honeycomb stacks. Support the front of the stowage platform with three layers of honeycomb cut to fit over the trails and to allow for the lumber portion of the platform.
4. Lash the rear two holes in the parachute stowage platform to clevises 24 and 24A.
5. Lash the front two holes in the parachute stowage platform to clevises 15 and 15A.

Figure 7-13. Stowage platform prepared

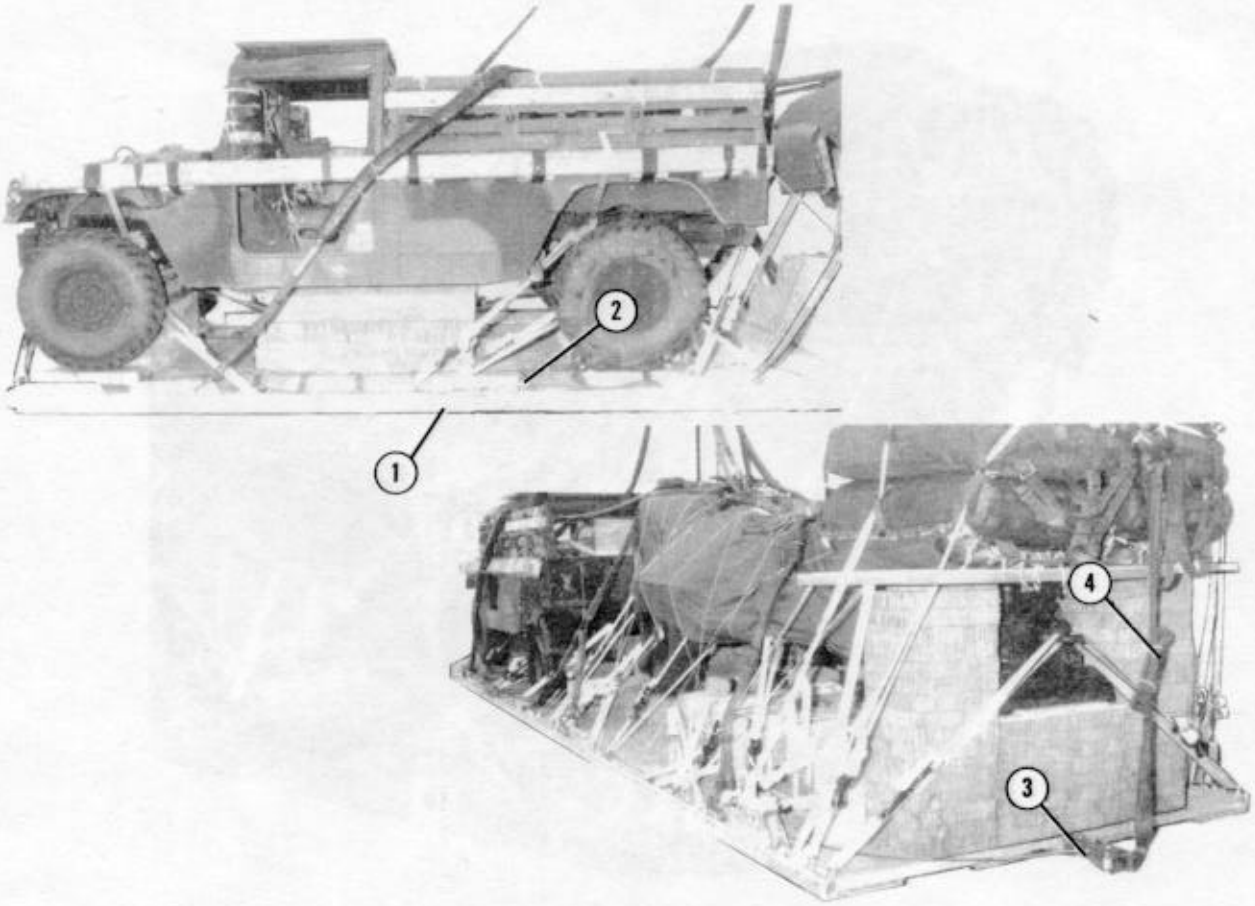


1. Prepare and install four G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5.
2. Tie the rear parachute restraint strap to bushings 62 and 62A.
3. Tie the front parachute restraint strap to clevises 19 and 19A.

Figure 7-14. Cargo parachutes stowed

7-13. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-15.

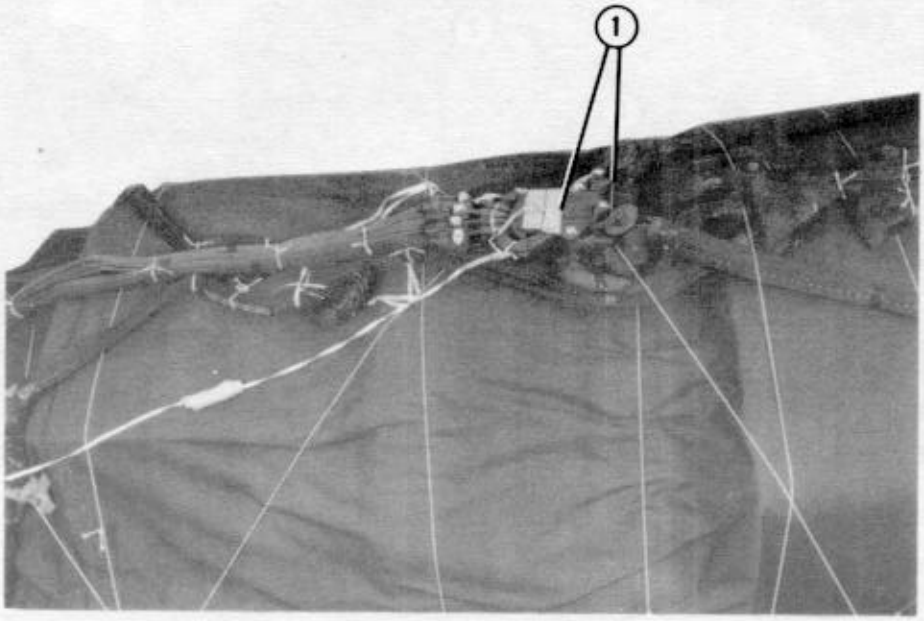


1. Install the actuator brackets to the front mounting holes on the left platform side rail.
2. Attach a 28-foot release cable to the actuator. Install the actuator to the brackets and run the cable to the rear.
3. Install the latch assembly to the extraction bracket. Attach the release cable to the latch assembly.
4. Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line. S-fold the slack and tape or tie the folds.

Figure 7-15. Extraction system installed

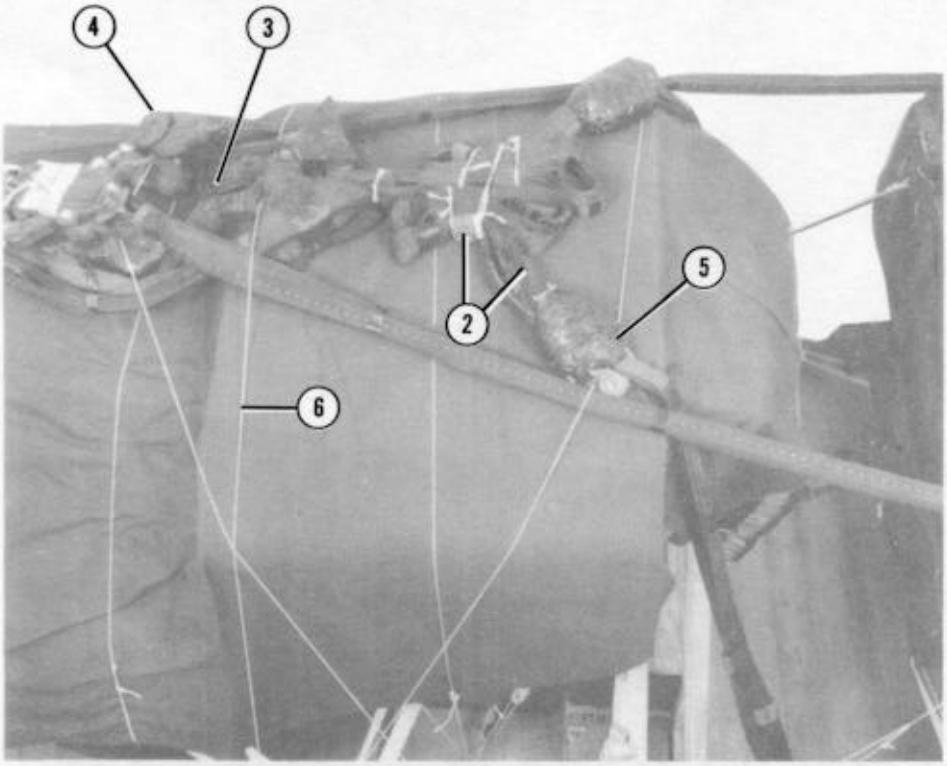
7-14. Installing Release System

Prepare and install an M-2 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-16.



(1) Center the M-2 release assembly on the howitzer load cover. Tie the release to convenient points on the load with type III nylon cord.

Figure 7-16. M-2 release installed



(2) Fold the center suspension slings as shown and tie them with type I, 1/4-inch cotton webbing.

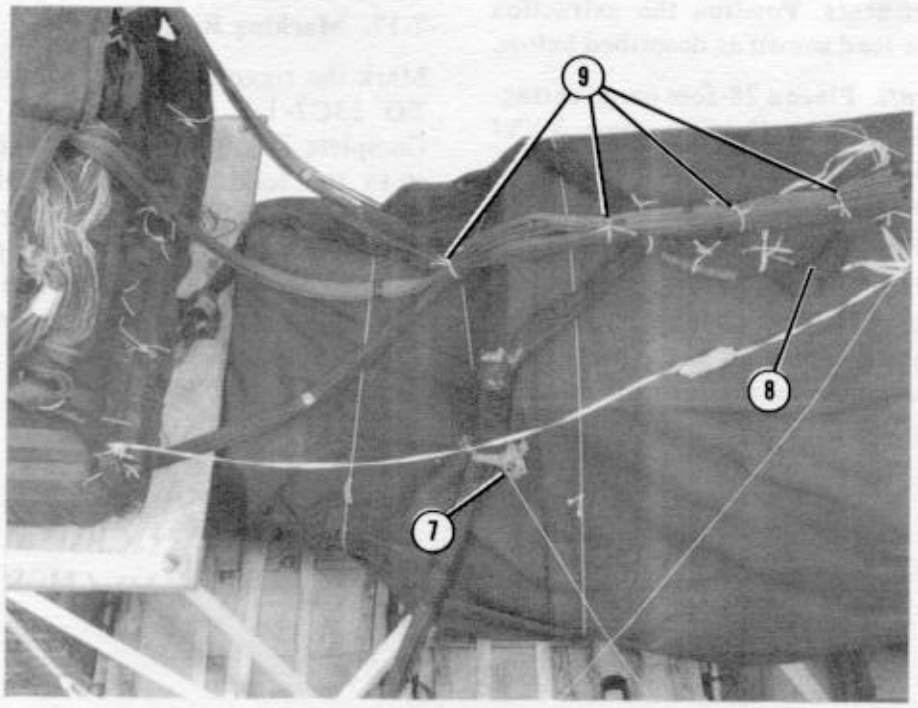
(3) Attach the 3-foot slings at the top of the three-point links to the lower spools of the release.

(4) Attach the front suspension slings to the upper spools of the release.

(5) Secure the two-point link assemblies to convenient points on the load with type III nylon cord passed through the taped links.

(6) Secure the three-point links to convenient points on the load with type III nylon cord passed through the end loops of the 3-foot slings.

Figure 7-16. M-2 release installed (continued)



(7) Secure the two-point link assemblies on the rear slings to convenient points on the load with type III nylon cord passed through the links.

(8) S-fold and tie the rear slings with type I, 1/4-inch cotton webbing.

(9) Tie the riser extensions together in several places as shown with type I, 1/4-inch cotton webbing.

Figure 7-16. M-2 release installed (continued)

7-15. Installing Provisions for Emergency Restraints

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

7-16. Placing Extraction Parachutes

Refer to FM 10-500-2/TO 13C7-1-5 for extraction parachute requirements. Position the extraction parachutes for the load shown as described below.

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

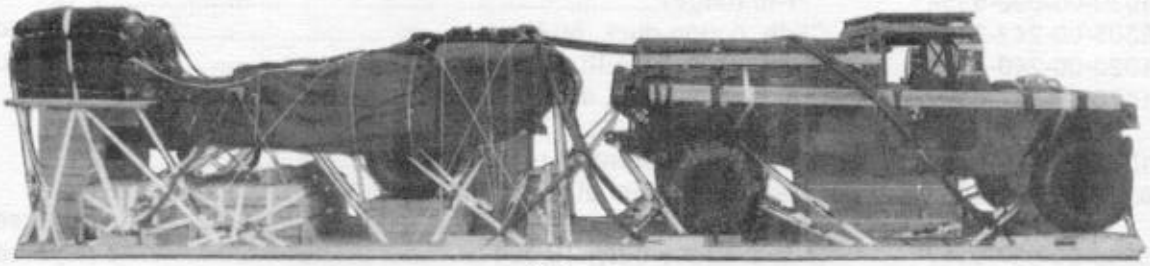
b. C-141B Aircraft. Place a 28-foot cargo extraction parachute; a 140-foot (3-loop), type XXVI nylon webbing extraction line; and a two-point, 5 1/2-inch link assembly on the load for installation in the aircraft.

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

7-17. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-17. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the load had been prepared according to AFJMAN 24-240. If the load varies from the one shown, recompute the weight, height, CB, and parachute requirements according to FM 10-500-2/TO 13C7-1-5.

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



CB

RIGGED LOAD DATA

Weight: Minimum load allowed	20,160 pounds
Maximum load allowed	20,600 pounds
Height	91 inches
Width	108 inches
Length	406 inches
Overhang: Front	10 inches
Rear	12 inches
CB (from front edge of platform)	201 inches
Extraction System (shown)	EFTC

Figure 7-17. M119 howitzer with 1 1/4-ton truck and accompanying ammunition rigged for low-velocity airdrop on a type V platform

7-18. Equipment Required

Use the equipment listed in Table 7-1 to rig the load shown.

Table 7-1. Equipment required for rigging the M119 howitzer with 1 1/4-ton truck and accompanying ammunition for low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
1670-00-162-4981	Adapter, coupling, EFTC	2
5365-00-405-9293	Spacer	(2)
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium) (emergency restraint)	6
4030-00-090-5354	1-in (large)	12
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-157-6527	Coupling, airdrop, extraction force transfer w 28-ft cable	1
1670-00-360-0329	Cover, link assembly, type IV	12
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	As required
8305-00-958-3685	Felt sheet, 1/2-in	As required
1670-01-183-2678	Leaf, extraction line	2
	* Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-ft (3-loop) or	1
1670-01-107-7651	140-ft (3-loop)	1
	Link assembly:	
	Two-point, 3 3/4-inch	2
5306-00-435-8994	Bolt, 1-in diam, 4 in long	(4)
5310-00-232-5165	Nut, 1-in	(4)
5310-00-003-1953	Plate, side, 3 3/4-in	(4)
5365-00-007-3414	Spacer, large	(4)
	Two-point, 5 1/2-in:	3
5306-00-435-8994	Bolt, 1-in diam, 4 in long	(6)
5310-00-232-5165	Nut, 1-in	(6)
1670-00-003-1954	Plate, side, 5 1/2-in	(6)
5365-00-007-3414	Spacer, large	(6)
1670-00-783-5988	Type IV	12
	Lumber:	
5510-00-220-6146	2- by 4-in	As required
5510-00-220-6148	2- by 6-in	As required
5510-00-220-6246	2- by 8-in	As required
	Nail, steel wire, common:	
5315-00-010-4659	8d	As required
5315-00-164-5121	20d	As required

Table 7-1. Equipment required for rigging the M119 howitzer with 1 1/4-ton truck and accompanying ammunition for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	29 sheets
	6- by 10-in	(10)
	6- by 24-in	(2)
	8- by 24-in	(2)
	8- by 54-in	(6)
	10- by 10-in	(5)
	12- by 8-in	(1)
	12- by 12-in	(1)
	12- by 18-in	(1)
	12- by 22-in	(8)
	12- by 36-in	(3)
	12- by 42-in	(1)
	12- by 45-in	(1)
	12- by 54-in	(4)
	12- by 90-in	(2)
	15- by 36-in	(5)
	18- by 18-in	(34)
	18- by 36-in	(3)
	20- by 6-in	(8)
	20- by 24-in	(2)
	24- by 30-in	(1)
	25- by 30-in	(1)
	25- by 36-in	(5)
	30- by 10-in	(1)
	30- by 16-in	(8)
	30- by 20-in	(13)
	36- by 30-in	(1)
	36- by 36-in	(1)
	42- by 10-in	(2)
	54- by 24-in	(8)
	72- by 36-in	(5)
	80- by 24-in	(2)
	84- by 36-in	(4)
	96- by 36-in	(2)
1670-01-016-7841	Parachute, cargo, G-11B	4
	Parachute, cargo extraction:	
1670-01-063-3715	15-ft	1
1670-00-040-8135	28-ft	1
	Platform, AD, type V, 32-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)

Table 7-1. Equipment required for rigging the M119 howitzer with 1 1/4-ton truck and accompanying ammunition for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
1670-01-162-2385	Bumper, nose	(1)
1670-01-162-2372	Clevis assembly (type V)	(50)
1670-01-247-2389	Suspension link	(4)
1670-01-162-2381	Tandem link (multi-purpose)	(2)
	Plywood:	
5530-00-129-7777	1/2-in	As required
5530-00-128-4981	3/4-in	As required
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo airdrop, type XXVI nylon webbing:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop)	1
	For lifting:	
1670-01-062-6304	9-ft (2-loop)	2
1670-01-063-7760	11-ft (2-loop)	4
1670-01-062-6303	12-ft (2-loop)	2
	For riser extension:	
1670-01-062-6311	120-ft (2-loop)	4
	For suspension:	
1670-01-062-6306	3-ft (4-loop)	6
1670-01-062-6304	9-ft (2-loop)	2
1670-01-063-7760	11-ft (2-loop)	4
1670-01-062-6310	11-ft (4-loop)	2
1670-01-064-4453	20-ft (4-loop)	2
1670-00-040-8219	Strap, parachute release, multicut (comes w 3 knives)	2
1670-00-368-7486	Strap, webbing, nylon (shear strap)	1
7510-00-266-5016	Tape, PSA, cloth back, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	77
1670-00-431-8486	Universal drive-off aid	1
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in, natural	As required
8305-00-268-2455	1-in, natural	As required
8305-00-263-3591	Type VIII	As required

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

CHAPTER 8

RIGGING TWO M119 HOWITZERS FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM

Section I

RIGGING HOWITZERS WITH EIGHTY-TWO BOXES OF AMMUNITION

8-1. Description of Load

Two M119, 105-millimeter howitzers (line number H57505) are rigged on a 20-foot, type V airdrop platform with an accompanying load of 82 boxes of ammunition and 21 cans of fuzes (when required). This load requires five G-11B cargo parachutes.

8-2. Preparing Platform

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

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

Note: If the platform must be assembled, install the suspension links when assembling the platform. See Figure 8-1 for the location of the suspension links.

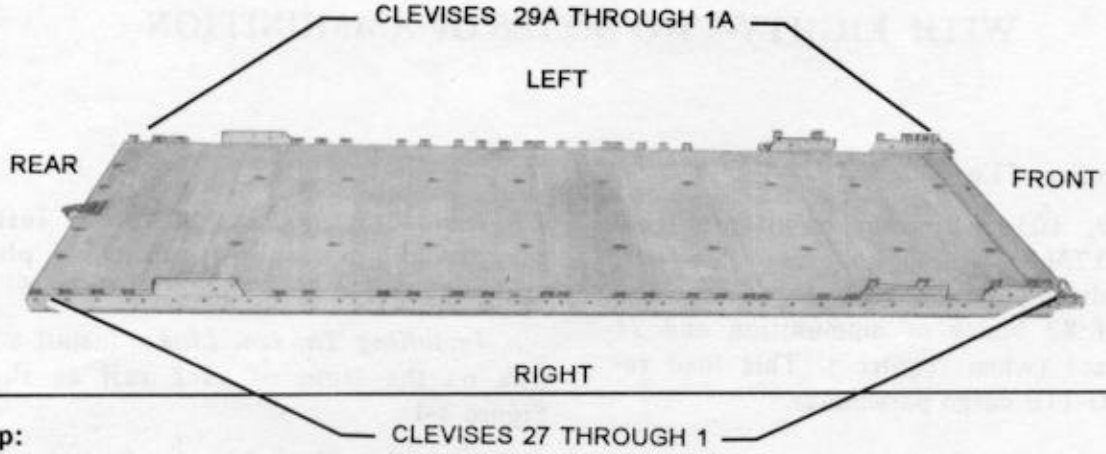
b. Installing Suspension Links. Install the suspension links on the assembled platforms according to FM 10-500-2/TO 13C7-1-5.

c. Installing Tandem Links. Install a tandem link on the front of each rail as shown in Figure 8-1.

d. Installing Nose Bumper. The nose bumper must be installed for this load.

e. Installing and Numbering Clevises. Bolt and number 58 clevis assemblies as shown in Figure 8-1.

Note: Measurements given in this chapter are from the front edge of the platform, NOT from the front edge of the nose bumper.



Step:

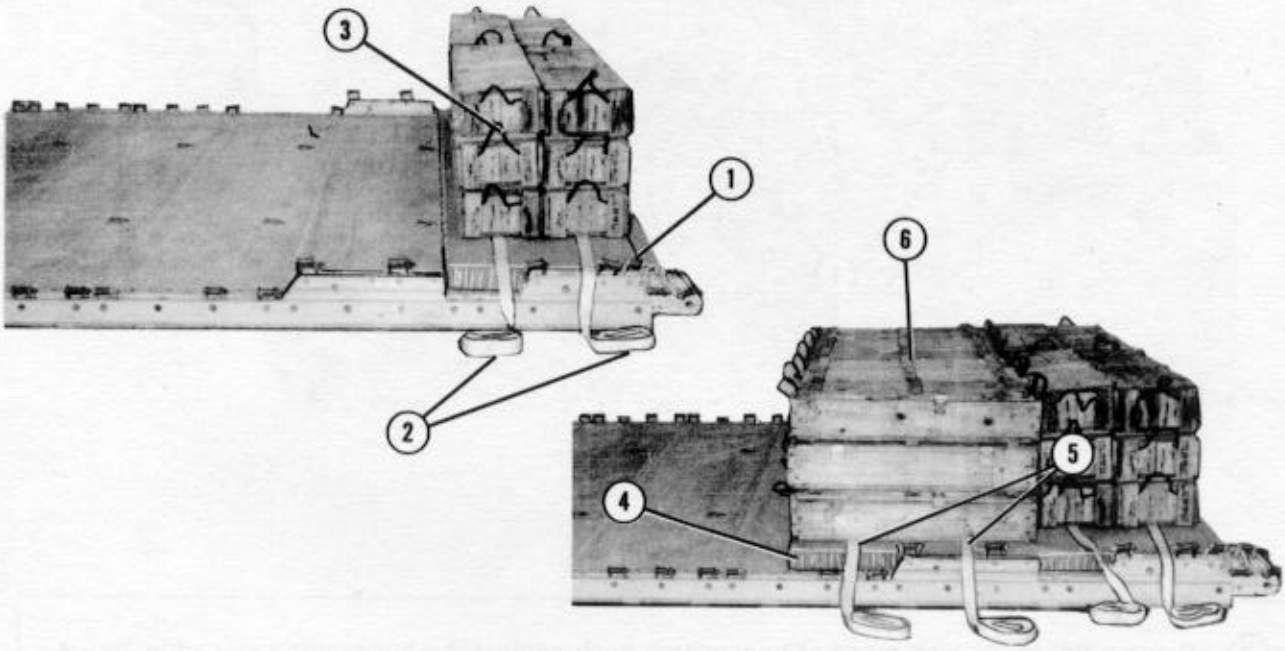
1. Install a suspension link in holes 6, 7, and 8 on each platform side rail. Face the flat part of the link to the front of the rail.
2. Install a tandem link on the front of each platform side rail using holes 1, 2 and 3.
3. Install a suspension link in holes 33, 34, and 35. Face the flat part of the link to the rear of the rail.
4. Install clevises on bushings 1, 2, 3, and 4 of each front tandem link. Bolt two additional clevises to each of the clevises bolted on bushing 1.
5. Install clevises on bushings 2 and 4 of each front suspension link.
6. Starting at the front of the right platform side rail, install clevises on the bushings bolted on holes 9, 10, 12, 13, 14, 15, 17, 18, 20, 21, 23, 24, 26, 27, 30, 31, 37, 38, 39, and 40.
7. Starting at the front of the left platform side rail, install clevises on the bushings bolted on holes 4, 9, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 30, 31, 37, 38, 39, and 40.
8. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 27. Starting at the front of the platform, number the clevises bolted to the left side from 1A through 29A.
9. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 8-1. Platform prepared

8-3. Stowing and Lashing First Group of Ammunition Boxes

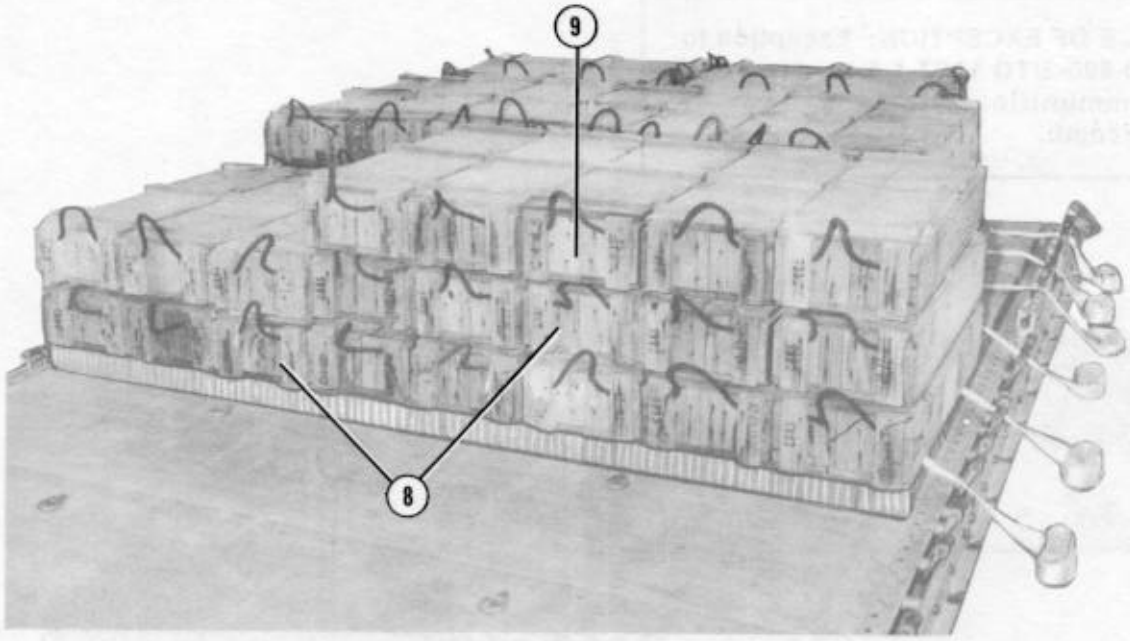
Stow 54 boxes of ammunition on the platform and lash the ammunition boxes together as shown in Figure 8-2. Lash the ammunition to the platform as shown in Figure 8-3.

NOTICE OF EXCEPTION: Exception to FM 10-500-2/TO 13C7-1-5 is granted to rig ammunition with one layer of honeycomb.



1. Center a 96- by 26-inch piece of honeycomb 3/4 inch from the front edge of the platform.
2. Center two 30-foot lashings 12 inches apart across the honeycomb.
3. Place twelve ammunition boxes flush over the lashings and honeycomb.
4. Place a 96- by 36-inch piece of honeycomb flush against the piece placed in step 1.
5. Center two 30-foot lashings 18 inches apart across the honeycomb.
6. Place 21 ammunition boxes over the lashings and honeycomb as shown.

Figure 8-2. First group of ammunition boxes stowed



(7) Place a 96- by 36-inch piece of honeycomb flush against the honeycomb placed in step 4. Place two 30-foot lashings on the honeycomb as in step 5.

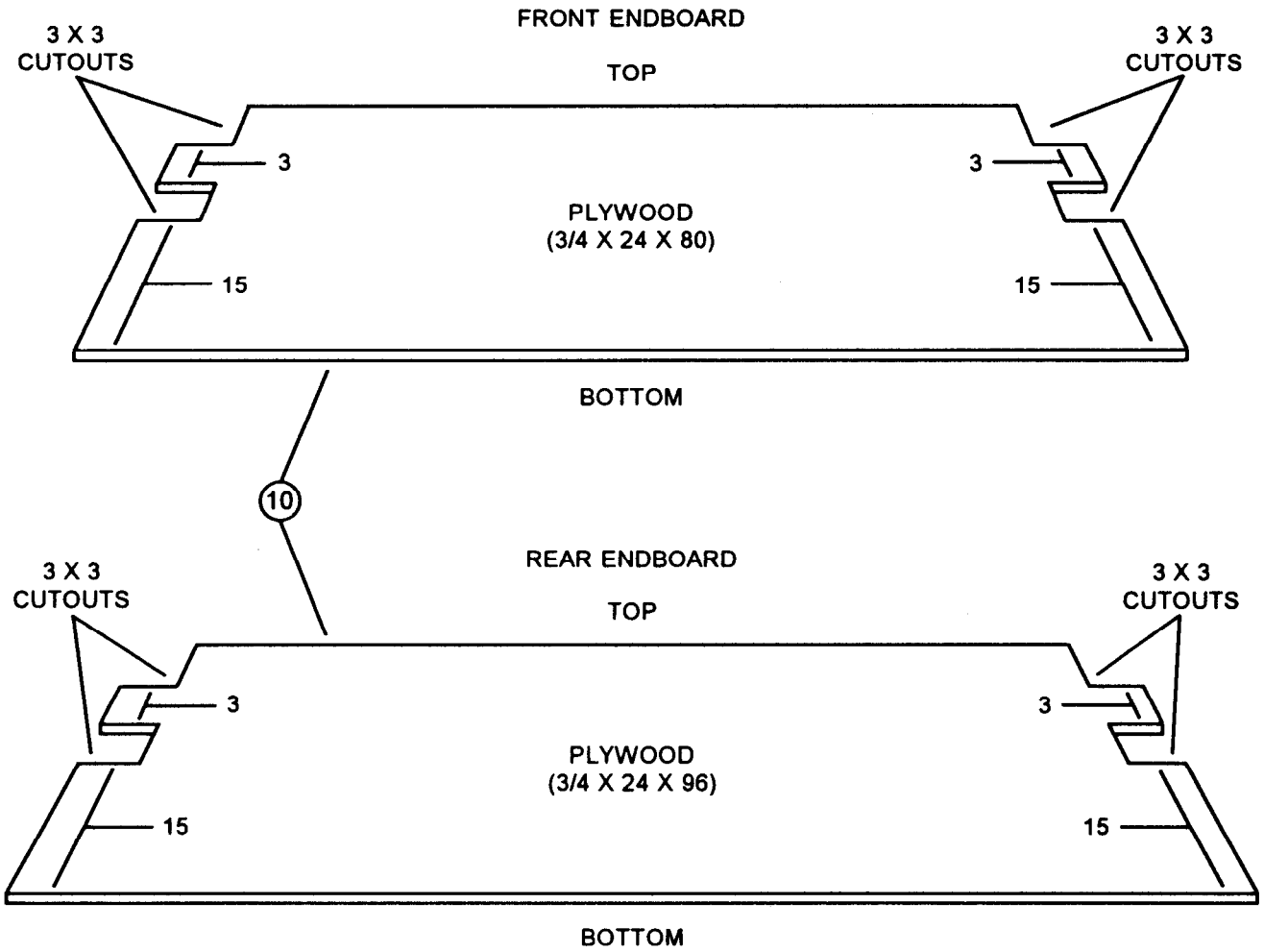
(8) Place two layers of eight boxes each flush over the lashings and honeycomb.

Note: Allow four inches between the bottom left box and the platform side rail. If all boxes do not rest solidly on the honeycomb, substitute two layers of honeycomb for this box. Insufficient clearance in this area may interfere with EFTC actuator installation.

(9) Place five boxes on the right side of the stack as shown.

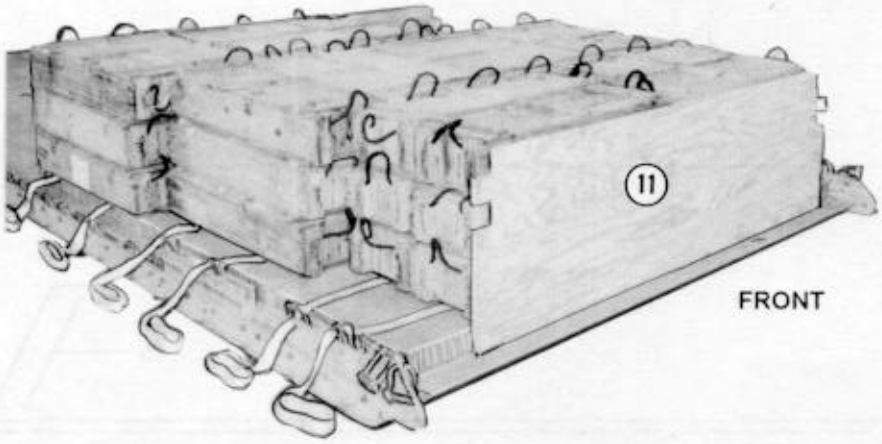
Figure 8-2. First group of ammunition boxes stowed (continued)

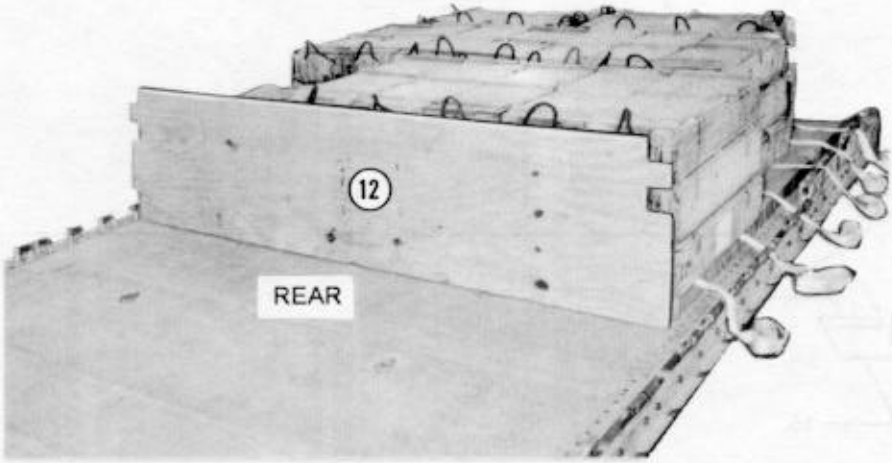
Notes: 1. All measurements are in inches
2. These drawings are not drawn to scale.



(10) Cut the front and rear endboards for the first group of ammunition from 3/4-inch plywood as shown.

Figure 8-2. First group of ammunition boxes stowed (continued)

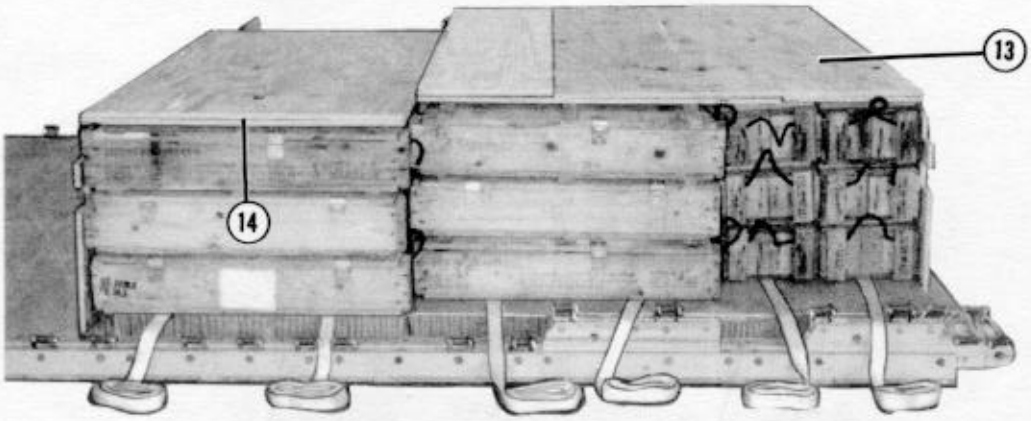


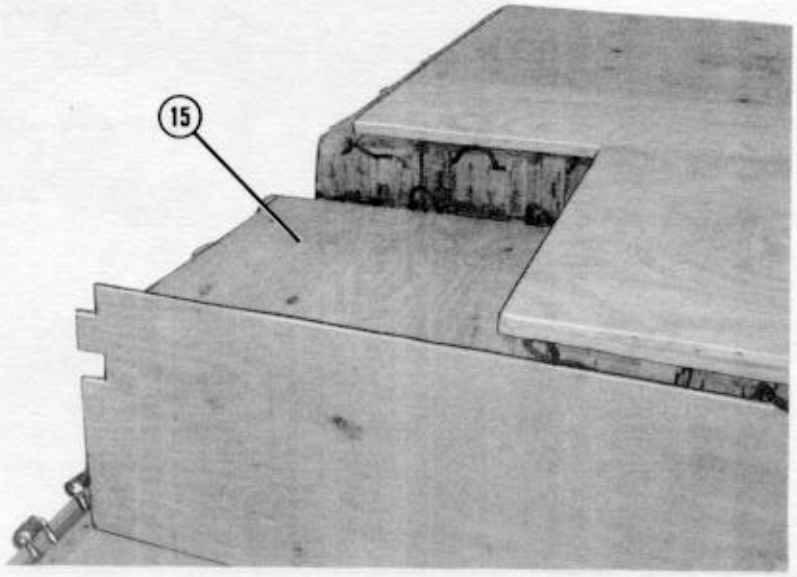


(11) Place the front endboard against the front of the boxes.

(12) Place the rear endboard against the rear of the boxes.

Figure 8-2. First group of ammunition boxes stowed (continued)



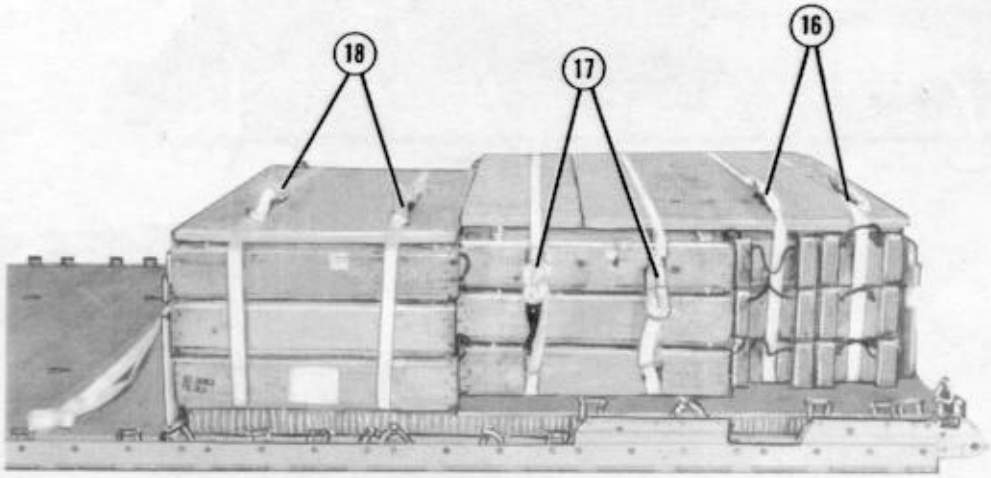


(13) Cover the first three rows of boxes with two layers of 3/4-inch plywood. Alternate two 74- by 17-inch and two 74- by 45-inch pieces as shown.

(14) Cover the rear row of boxes with two layers of 3/4- by 60- by 37-inch plywood placed flush along the right side of the boxes.

(15) Place two 3/4- by 34- by 30-inch layers of plywood in the vacant area in the left rear.

Figure 8-2. First group of ammunition boxes stowed (continued)



(16) Secure the lashings pre-positioned in step 2 as far to the right as possible on top of the boxes.

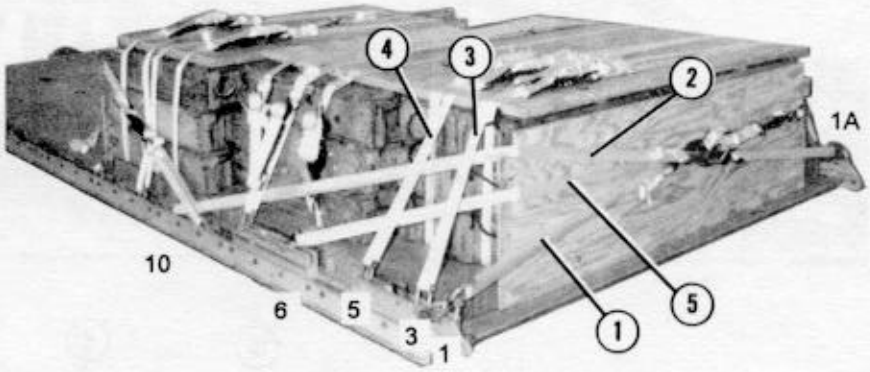
(17) Secure the two lashings pre-positioned in step 5 on the right side.

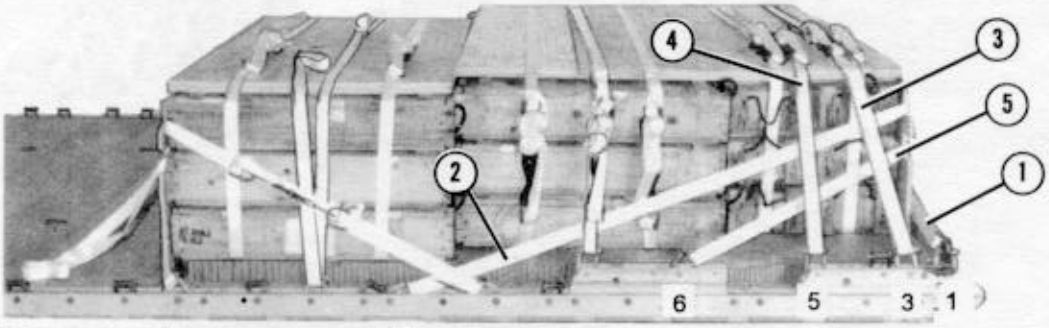
(18) Secure the two lashings pre-positioned in step 7 on top of the boxes.

Note: It will be necessary to leave these lashings unsecured if the metal boxes of fuzes will be included in this load.

Figure 8-2. First group of ammunition boxes stowed (continued)

Note: Lashings used below are all 30-foot lashings.

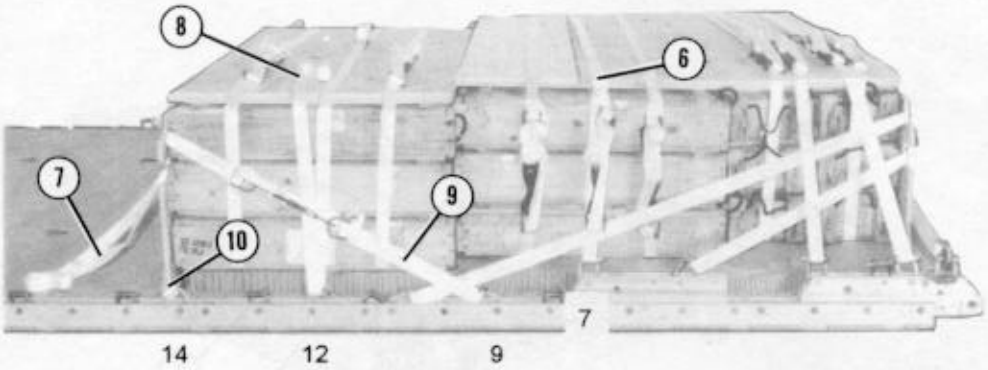


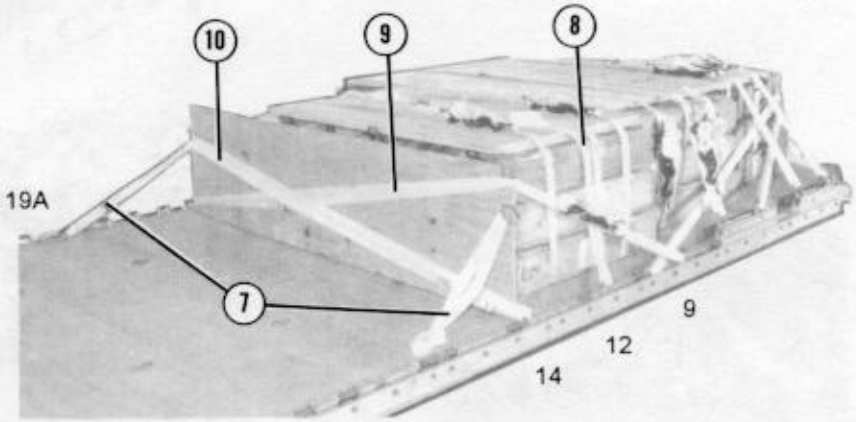


Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	1 and 10A	Through clevis 1, through the left lower cutout in the front endboard, and through clevis 10A. Secure the lashing in front.
2	1A and 10	Through clevis 1A, through the right upper cutout in the front endboard, and through clevis 10. Secure the lashing in front.
3	3 and 3A	Through both clevises and over the top of the load. Secure the lashing on the top right.
4	5 and 5A	Through both clevises and over the top of the load. Secure the lashing on the top right.
5	6 and 7A	Through both clevises and through the lower cutouts in the front endboard. Secure the lashing in front.

Figure 8-3. First group of ammunition boxes lashed to platform

Note: Lashings used below are all 30-foot lashings.



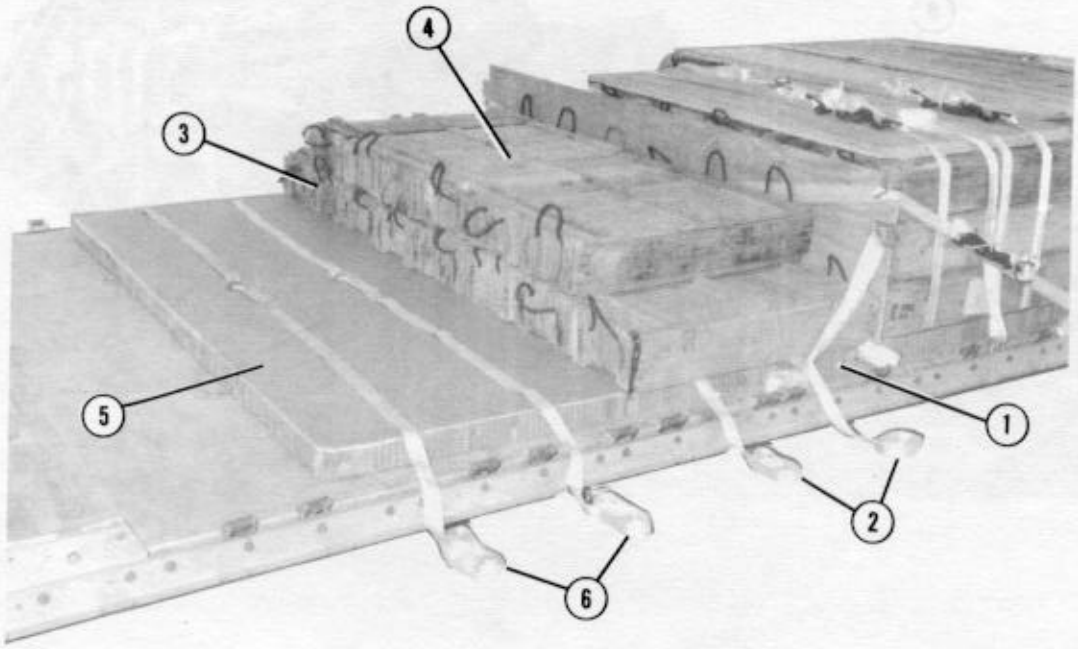


Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
6	7 and 8A	Through both clevises and over the top of the load. Secure the lashing on the side.
7	19A	Through clevis 19A and through both lower cutouts in the rear endboard. Do not secure this lashing.
8	12 and 11A	Through both clevises and over the top of the load. Do not secure this lashing.
9	9 and 13A	Through clevis 9, through the right upper cutout in the rear endboard, and through clevis 13A. Secure the lashing on the side.
10	14 and 9A	Through clevis 14, through the left lower cutout in the rear endboard, and through clevis 9A. Secure the lashing on the side.

Figure 8-3. First group of ammunition boxes lashed to platform (continued)

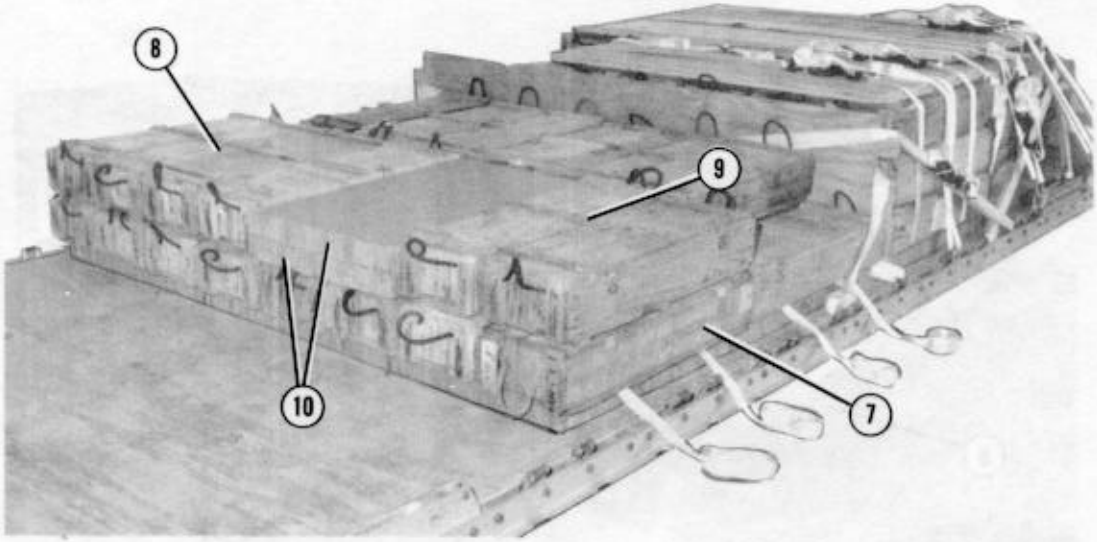
8-4. Stowing and Lashing Second Group of Ammunition Boxes

Stow 28 boxes of ammunition on the platform and lash the boxes together as shown in Figure 8-4. Lash the ammunition to the platform as shown in Figure 8-5.



1. Center a 96- by 36-inch piece of honeycomb against the second endboard.
2. Center two 30-foot lashings 18 inches apart on the honeycomb.
3. Place eight boxes flush over the honeycomb and lashings.
4. Place six boxes over those placed in step 3, leaving an empty space on the left and right.
5. Center a 96- by 36-inch piece of honeycomb against the honeycomb placed in step 1.
6. Place two 30-foot lashings on the honeycomb as in step 2.

Figure 8-4. Second group of ammunition boxes stowed



(7) Place eight boxes flush over the honeycomb and lashings.

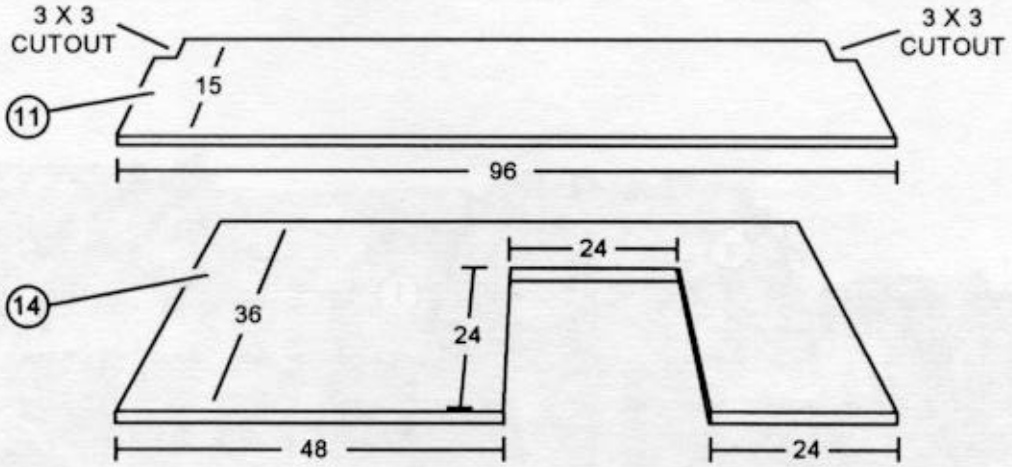
(8) Place four boxes on the left side of the stack.

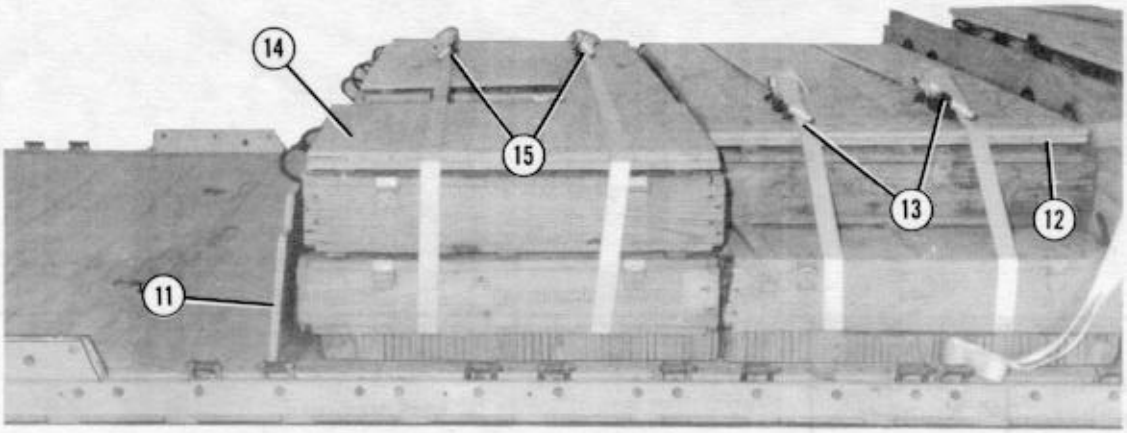
(9) Place two boxes on the right side of the stack.

(10) Place two 24- by 38-inch pieces of honeycomb in the empty space.

Figure 8-4. Second group of ammunition boxes stowed (continued)

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.





(11) Construct the rear endboard of 3/4- by 96- by 15-inch plywood as shown. Place the endboard against the rear of the boxes.

(12) Place two 3/4- by 74- by 36-inch pieces of plywood flush over the first stack of boxes.

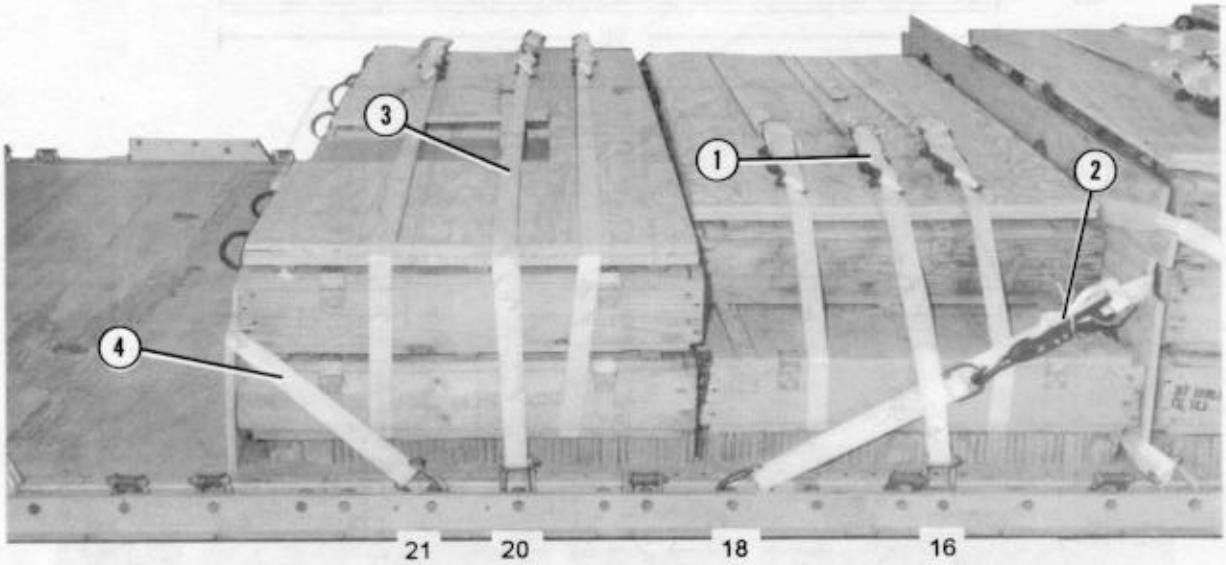
(13) Secure the lashings placed in step 2 over the load.

(14) Make the cutout as shown in two 3/4- by 96- by 36-inch pieces of plywood. Place the plywood over the last row of boxes with the cutout facing the rear.

(15) Secure the lashings placed in step 6 on top of the boxes, as far to the left as possible.

Figure 8-4. Second group of ammunition boxes stowed (continued)

Note: Lashings used below are all 30-foot lashings.



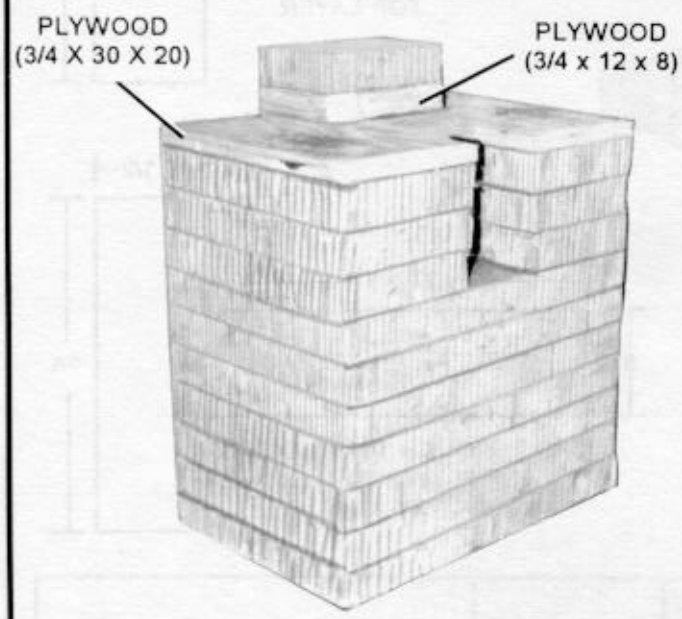
Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	16 and 17A	Through both clevises and over the top of the load. Secure the lashing on top.
2	18 and 19A	Pre-positioned in Figure 8-3 through clevis 18. Pass the lashing through the lower cutouts in the second endboard. Secure the lashing on the right.
3	20 and 22A	Through both clevises and over the top of the load. Secure the lashing on top and as far to the left as possible.
4	21 and 23A	Through both clevises and through the cutouts in the rear endboard. Secure the lashing in the rear.

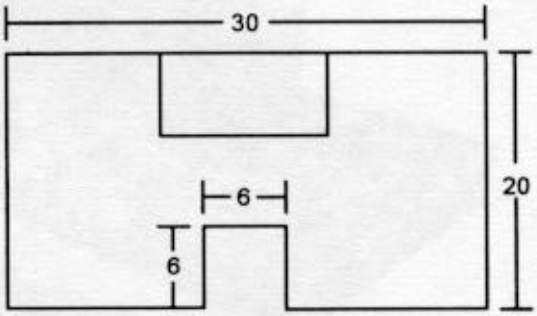
Figure 8-5. Second group of ammunition boxes lashed to platform

8-5. Building and Placing Honeycomb Stacks

Build the honeycomb stacks for the howitzers as shown in Figure 8-6. Place the stacks as shown in Figure 8-7.

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



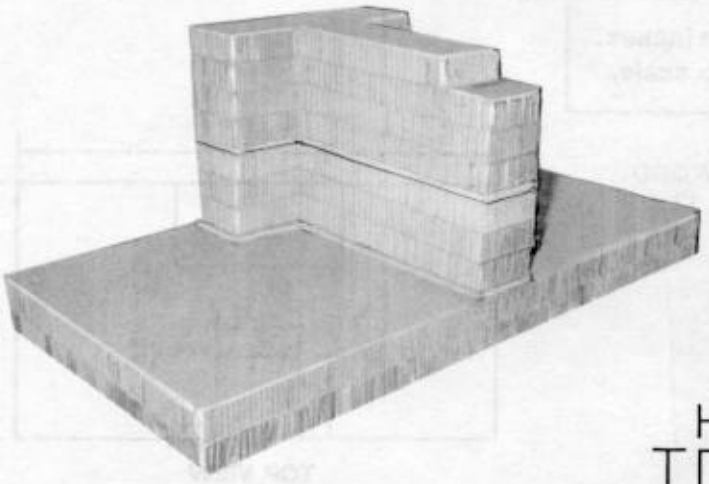


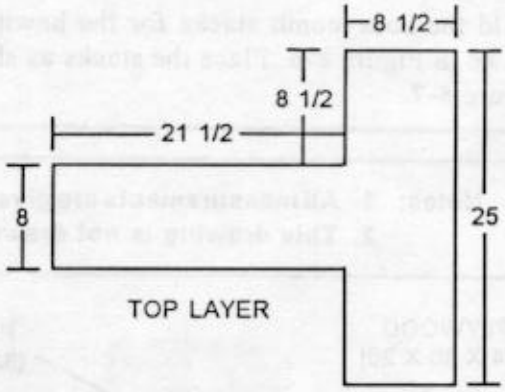
TOP VIEW

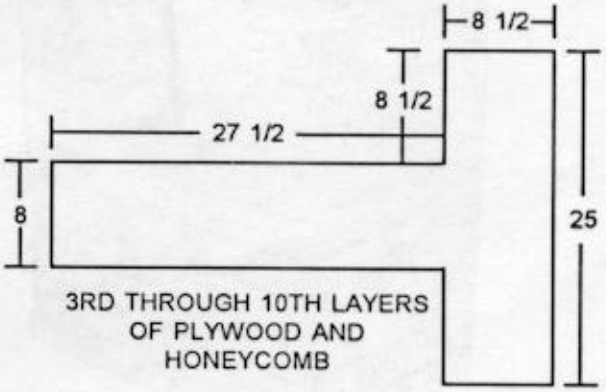
Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1 and 4	7	30	20	Honeycomb	Form stack.
	3	30	20	Honeycomb	Center a cut 6 inches wide and 6 inches deep in a 30-inch side. Place these pieces flush on the stack.
	2	30	20	3/4-inch plywood	Make cuts as above and place on honeycomb.
	3	12	8	3/4-inch plywood	Glue flush along uncut 30-inch edge and centered.
	1	12	8	Honeycomb	Glue flush over plywood placed above.

Figure 8-6. Honeycomb stacks prepared

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.



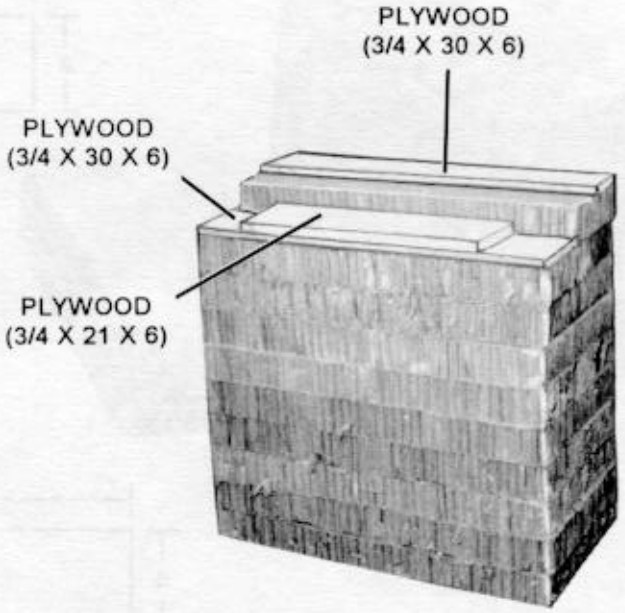




Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
2	2	72	36	Honeycomb	Stack honeycomb to form base.
	1	25	36	3/4-inch plywood	Make cutouts as shown, and center on base.
	3	25	36	Honeycomb	Make cutouts as shown, and place flush on plywood.
	1	25	36	3/4-inch plywood	Make cutouts as shown, and place flush on honeycomb.
	3	25	36	Honeycomb	Make cutouts as shown, and place flush on plywood.
	1	25	30	Honeycomb	Make cutouts as shown and place flush on top.

Figure 8-6. Honeycomb stacks prepared (continued)

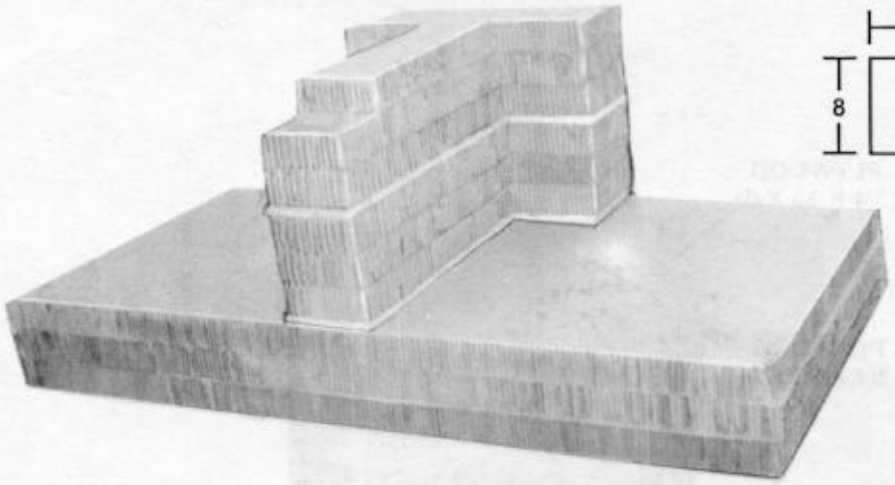
Note: All measurements are given in inches.

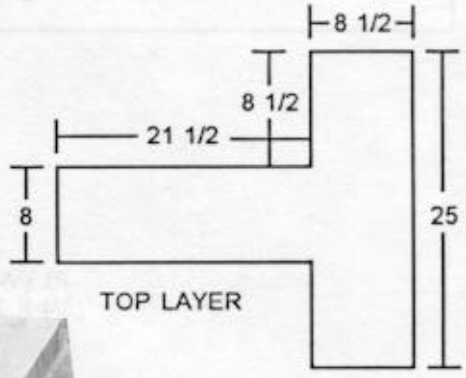


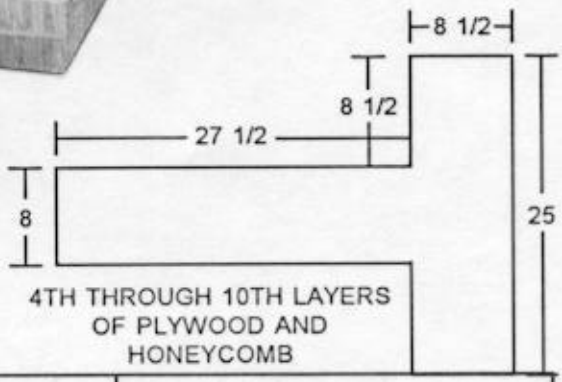
Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3	9	30	16	Honeycomb	Form base.
	1	30	10	Honeycomb	Place honeycomb even with one edge of base.
	1	30	6	3/4-inch plywood	Place plywood flush along outside edge of honeycomb placed above.
	1	30	6	3/4-inch plywood	Place plywood flush on base next to honeycomb placed above.
	1	21	6	3/4-inch plywood	Center plywood on the lower piece of plywood.

Figure 8-6. Honeycomb stacks prepared (continued)

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.



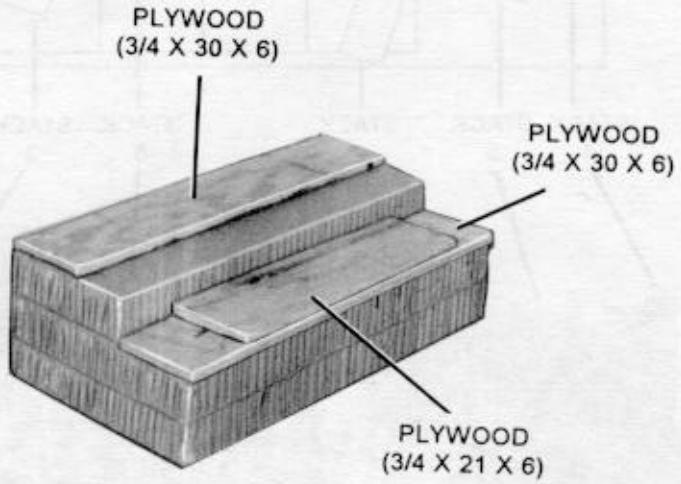




Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
5	3	72	36	Honeycomb	Stack to form a base.
	1	25	36	3/4-inch plywood	Make cutouts as shown, and center on base.
	3	25	36	Honeycomb	Make cutouts as shown, and place flush on plywood.
	1	25	36	3/4-inch plywood	Make cutouts as shown, and place flush on honeycomb.
	2	25	36	Honeycomb	Make cutouts as shown, and place flush on plywood.
	1	25	30	Honeycomb	Make cutouts as shown, and place flush on top.

Figure 8-6. Honeycomb stacks prepared (continued)

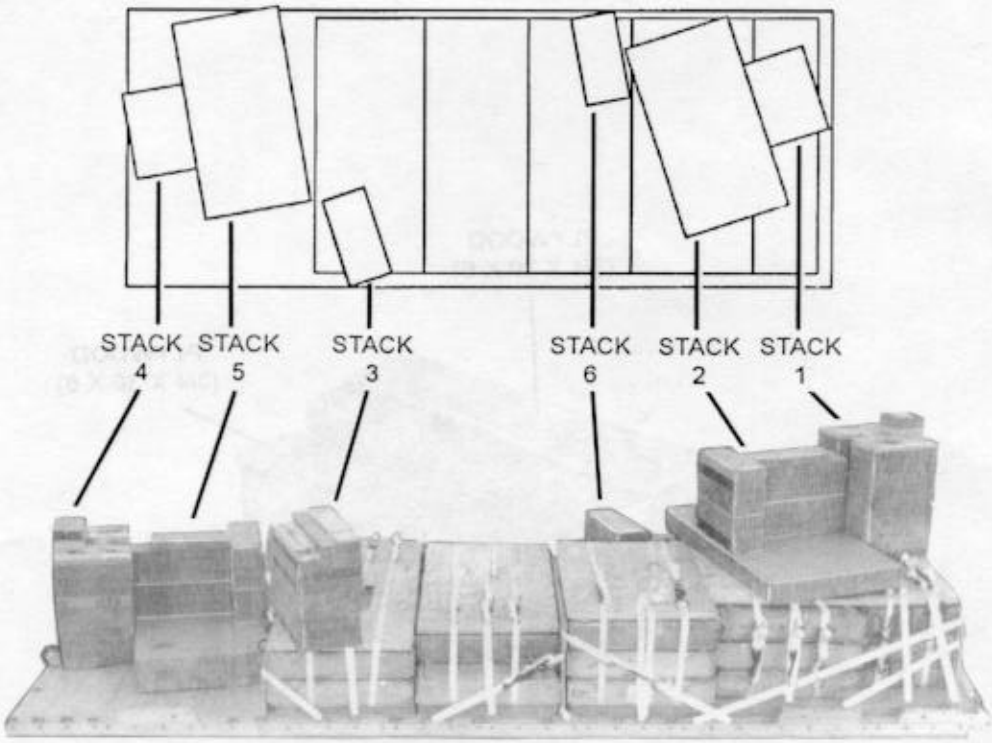
Note: All measurements are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
6	2	30	16	Honeycomb	Stack to form base.
	1	30	10	Honeycomb	Place honeycomb even with one edge of base.
	1	30	6	3/4-inch plywood	Place plywood flush along outside edge of honeycomb placed above.
	1	30	6	3/4-inch plywood	Place plywood flush on base next to honeycomb placed above.
	1	21	6	3/4-inch plywood	Center plywood on the lower piece of plywood.

Figure 8-6. Honeycomb stacks prepared (continued)

Note: This drawing is not drawn to scale.



Note: Stack locations are approximate. Exact placement will vary because of differences in individual guns. Be sure that the stacks rest solidly on the platform or on the plywood decking.

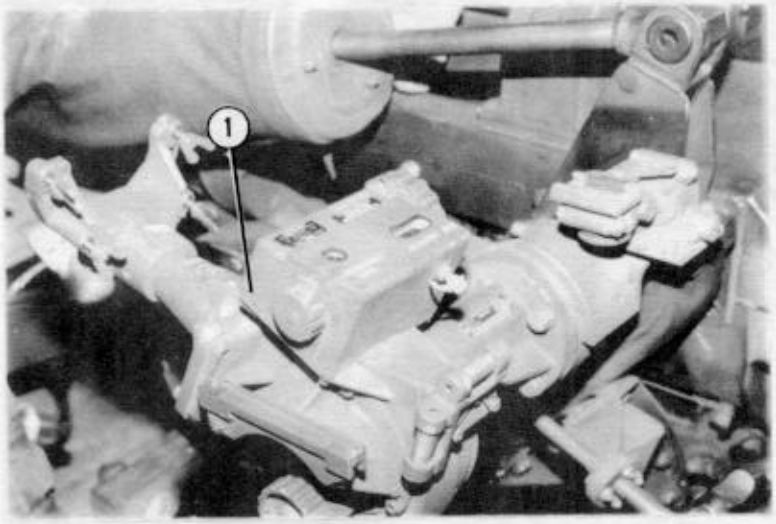
Stack Number	Position of Stack
1	Place on the plywood decking with the right front corner 28 inches from the right front corner of the plywood, and the left front corner of the stack 4 inches from the front edge of the plywood.
2	Center the front edge against stack 1.
3	Align on the rear section of plywood decking on a central axis with stacks 1 and 2.
4	Place at the rear of the platform, with the right rear corner of the stack 34 inches from the right rail. Let the left side of the stack overhang the rear edge of the platform from the point at which the extraction bracket meets the rear edge of the platform.
5	Center in front of stack 4.
6	Align on the third ammunition stack on a central axis with stacks 4 and 5.

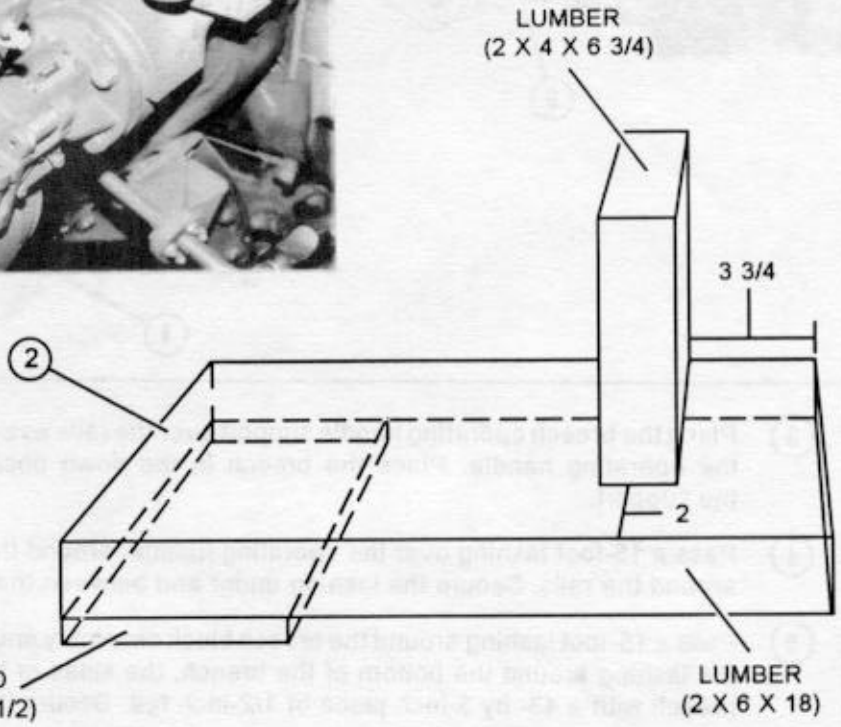
Figure 8-7. Honeycomb stacks placed

8-6. Preparing Howitzers

Prepare both howitzers as shown in Figures 5-9 through 5-17, and as shown in Figure 8-8. Further prepare the front howitzer as shown in Figure 8-9, and the rear howitzer as shown in Figure 8-10.

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.

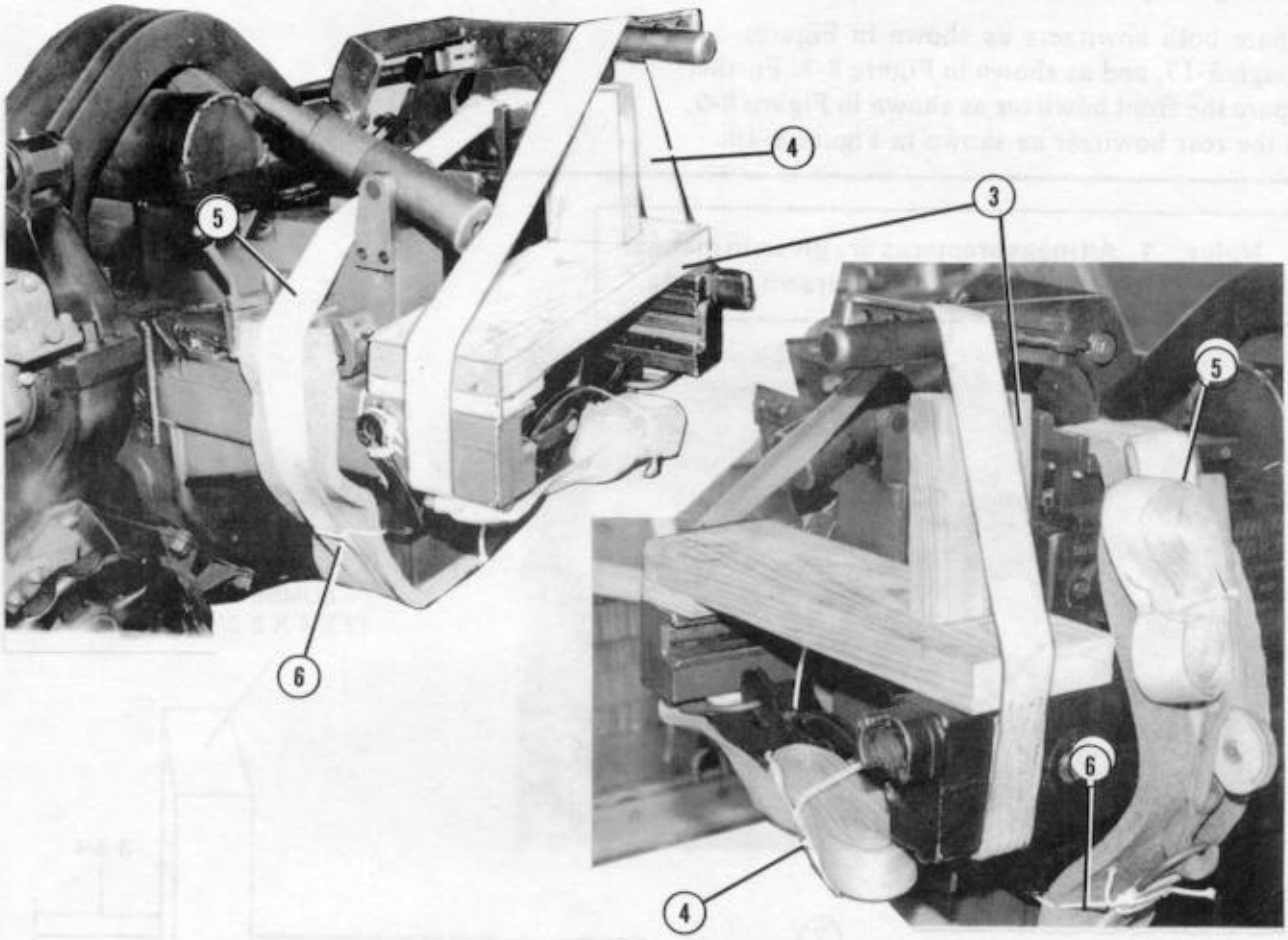




(1) Tilt the left sight assembly forward.

(2) Construct the breech operating handle support as shown.

Figure 8-8. Both howitzers prepared



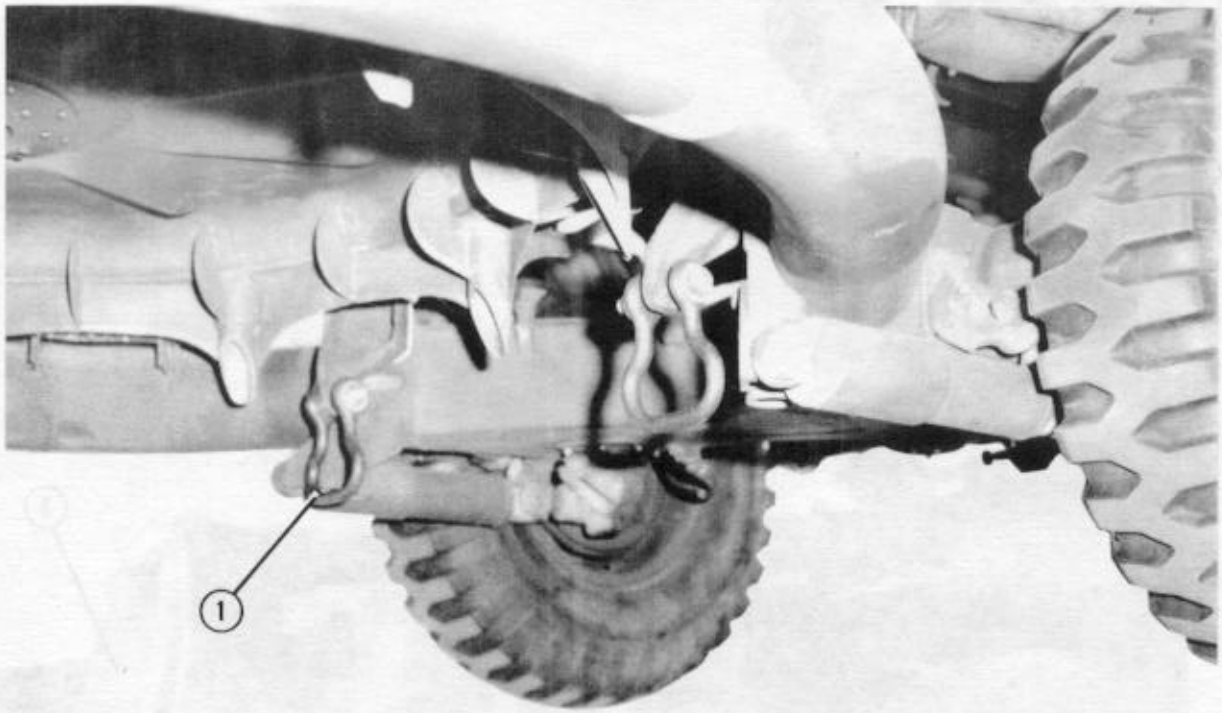
(3) Place the breech operating handle support over the rails as shown with the upright piece under the operating handle. Place the breech in the down position with the handle resting on the support.

(4) Pass a 15-foot lashing over the operating handle, around the ends of the wood support, and around the rails. Secure the lashing under and between the rails.

(5) Pass a 15-foot lashing around the breech block assembly and under the operating handle. Pad the lashing around the bottom of the breech, the sides of the rails and the right side of the breech with a 43- by 3-inch piece of 1/2-inch felt. Secure the lashing on the right.

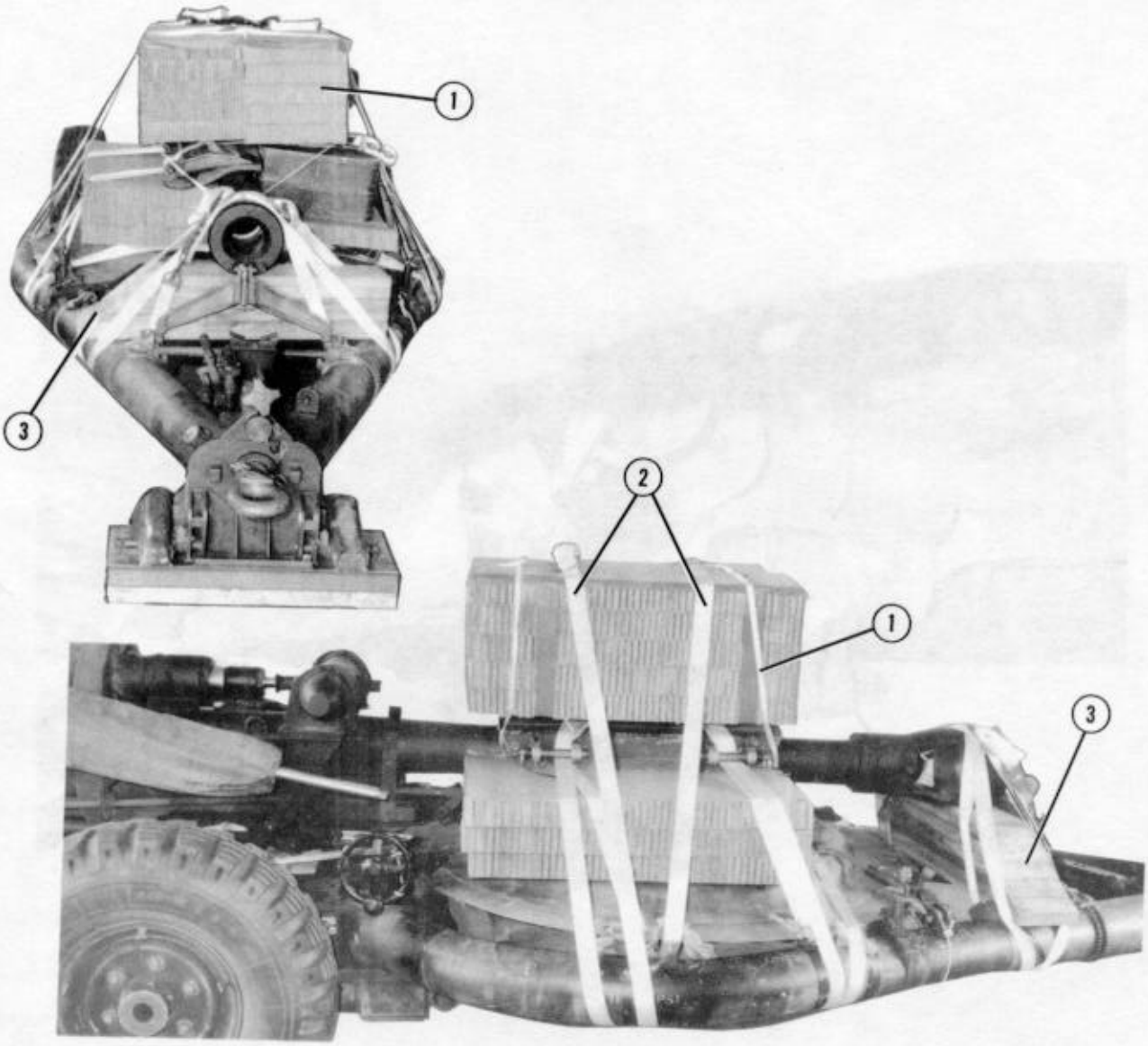
(6) Safety the lashing installed in step 5 in place with a length of type III nylon cord. Pass the cord around the lashing on the left, cross the cord under the lashing and pass both free ends around the bottom part of the breech assembly. Cross the ends of the cord under the lashing on the right and tie it over the lashing.

Figure 8-8. Both howitzers prepared (continued)



1 Install a medium suspension clevis onto each of the brackets on the underside of the gun carriage.

Figure 8-9. Front howitzer prepared

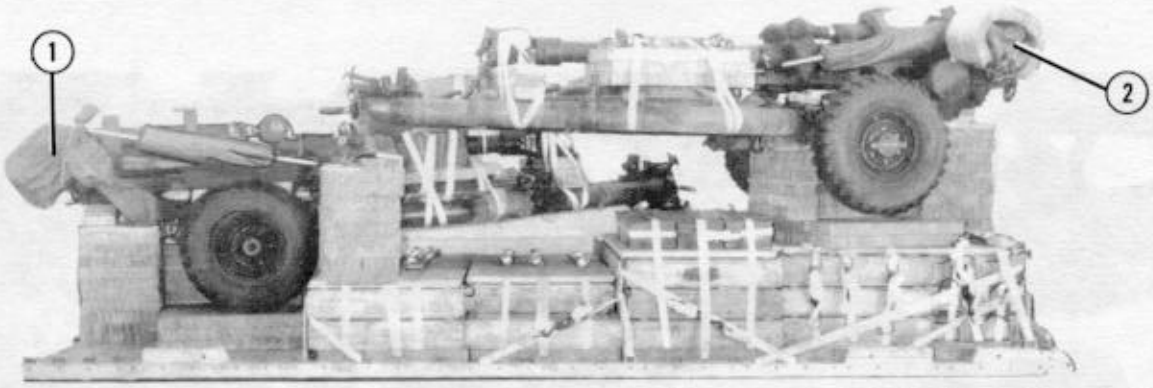


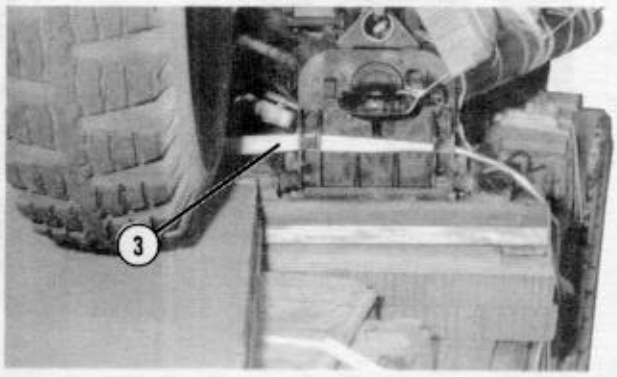
1. Tie the collimator boxes for both howitzers together, or make a 36- by 36-inch box for two collimators, and secure to the gun tube with 1/2-inch tubular nylon webbing.
2. Pass a 30-foot lashing over the collimator and around both trails. Secure the lashing on the top.
3. Bevel the left side of the muzzle support block 45 degrees.

Figure 8-10. Rear howitzer prepared

8-7. Placing Howitzers on Honeycomb Stacks, Lashing Howitzers, and Installing Protective Honeycomb

Place the howitzers on the platform as shown in Figure 8-11. Lash the howitzers together and install protective honeycomb as shown in Figure 8-12.





(1) Position the rear howitzer on stacks 4, 5, and 6. The breech assembly must overhang the rear edge of the platform 17 inches.

(2) Position the front howitzer on stacks 1, 2, and 3. The breech assembly must overhang the front edge of the platform 17 inches.

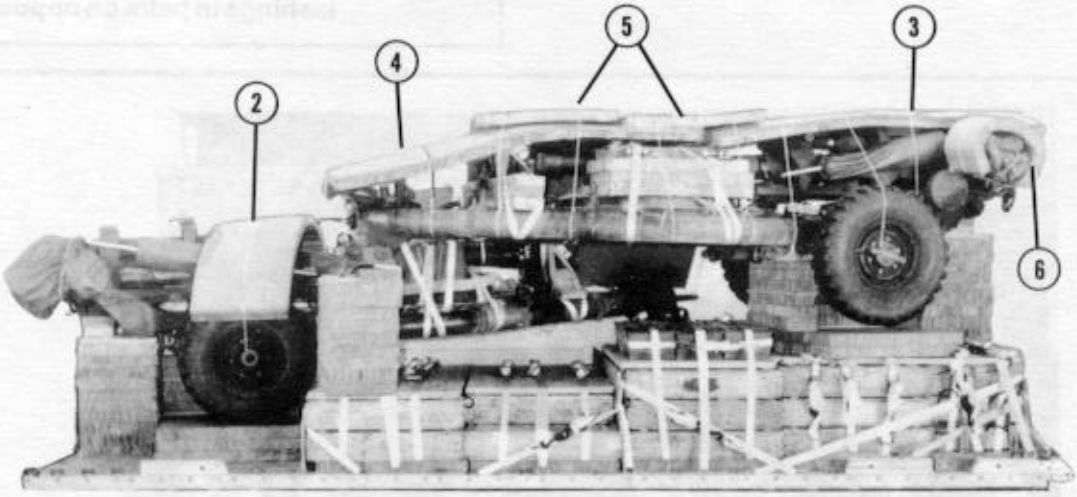
Notes:
1. **Do not allow the howitzers to overhang either side of the platform.**
2. **Fuzes packed in 21 metal ammunition boxes can be rigged at this time. Place them on the third ammunition stack and secure them with the binding lashings. Lash the boxes together horizontally.**

(3) Unfasten the rear binding lashing on the third stack of boxes and pass it through the holes in the spade assembly of the rear howitzer. Secure the lashing on top of the plywood decking or fuze boxes, if rigged on this load.

Figure 8-11. Howitzers placed on honeycomb stacks

(1) Lash the inside trails of the howitzers together as shown with two 15-foot lashings.

Figure 8-12. Howitzers lashed together and protective honeycomb installed



(2) Bend a 24- by 96-inch piece of honeycomb over the rear howitzer cylinders. Tie the honeycomb in place with a length of type III nylon cord tied to the wheel hubs.

(3) Place a 24- by 96-inch piece of honeycomb lengthwise over the front howitzer. Tape the sides of the honeycomb and tie it to convenient points on the howitzer with type III nylon cord.

(4) Bend a 36- by 96-inch piece of honeycomb lengthwise over the gun tube and spade assembly of the front howitzer. Tape the sides of the honeycomb and tie it to the howitzer with type III nylon cord.

(5) Tie two 96- by 36-inch pieces of honeycomb to the left side of the load, covering the gun tube of the rear howitzer and the trail of the front howitzer. Tie the honeycomb to the howitzer trails with type III nylon cord.

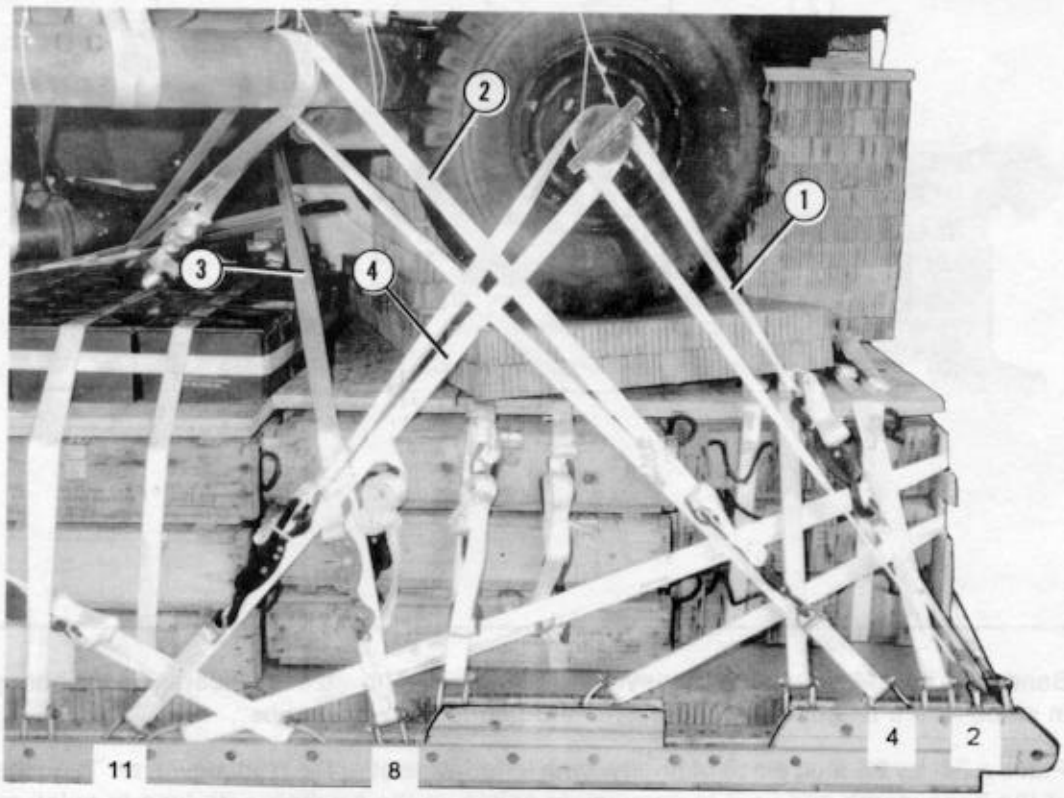
(6) Bend a piece of honeycomb cut to fit over the sight assembly of the front howitzer. Tie it in place with type III nylon cord.

Figure 8-12. Howitzers lashed together and protective honeycomb installed (continued)

8-8. Lashing Howitzers

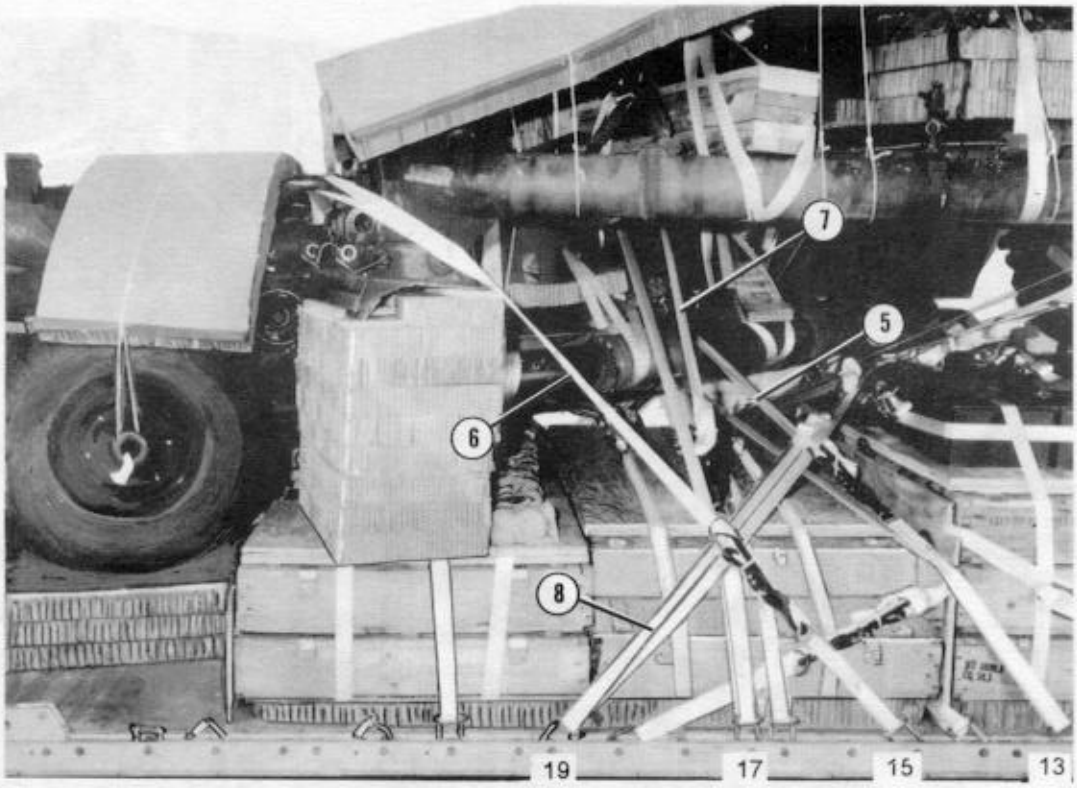
Lash the howitzers to the right side of the platform as shown in Figure 8-13. Lash the howitzers to the left side of the platform as shown in Figure 8-14.

Notes:
1. **Lashing numbering for the right side begins with 1. The sequence is repeated for the left side.**
2. **Do not tighten the lashings until all are installed. Tighten the lashings in pairs on opposite sides.**



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	2	Around wheel hub.
2	4	Around trail, near side.
3	8	Through medium clevis installed under front howitzer, far side.
4	11	Around wheel hub.

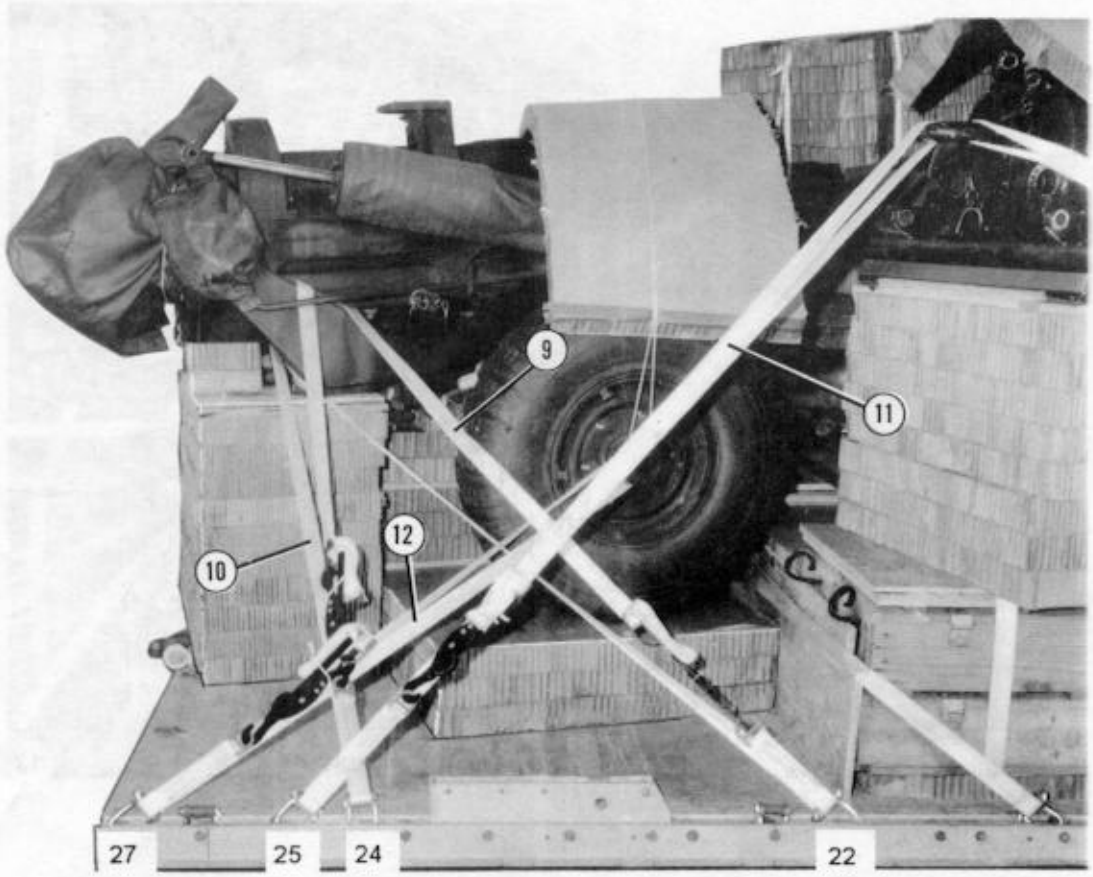
Figure 8-13. Lashings on right side installed



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
5	13	Around trail of rear howitzer, near side, and through cutout of endboard.
6	15	Through lunette on front howitzer.
7	17	Around trail on far side of front howitzer.
* 8	19	Through lunette on rear howitzer.

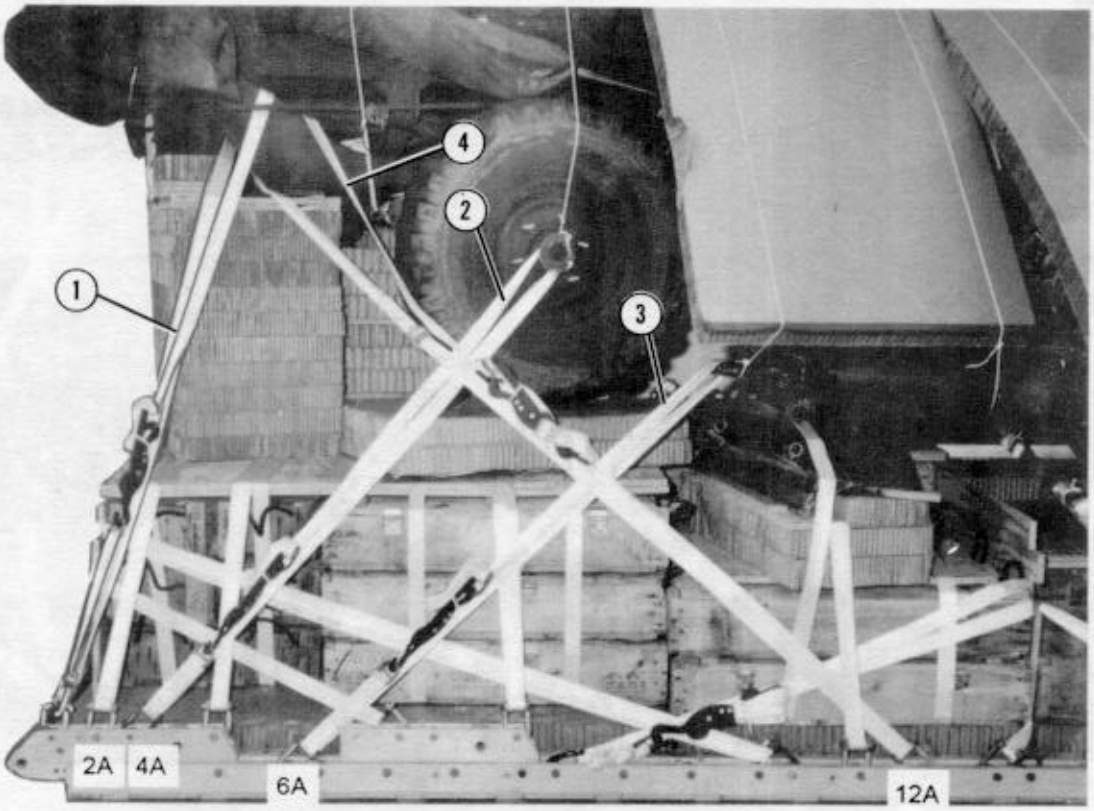
* 30-foot lashings.

Figure 8-13. Lashings on right side installed (continued)



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
9	22	Around saddle of rear howitzer.
10	24	Around saddle of rear howitzer.
11	25	Through lunette, front howitzer.
12	27	Around wheel hub, rear howitzer.

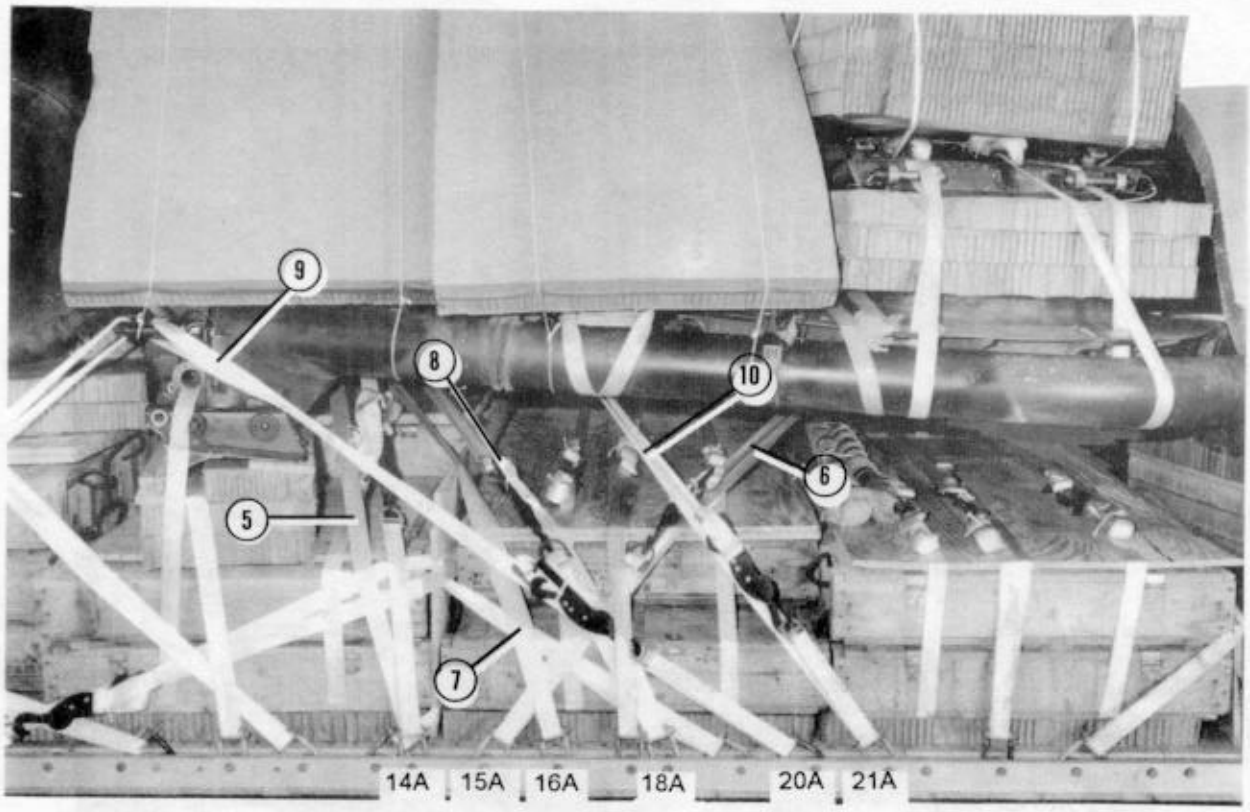
Figure 8-13. Lashings on right side installed (continued)



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	2A	Around saddle of front howitzer.
2	4A	Around wheel hub of front howitzer.
3	6A	Through lunette of rear howitzer.
* 4	12A	Around saddle of front howitzer.

* 30-foot lashings.

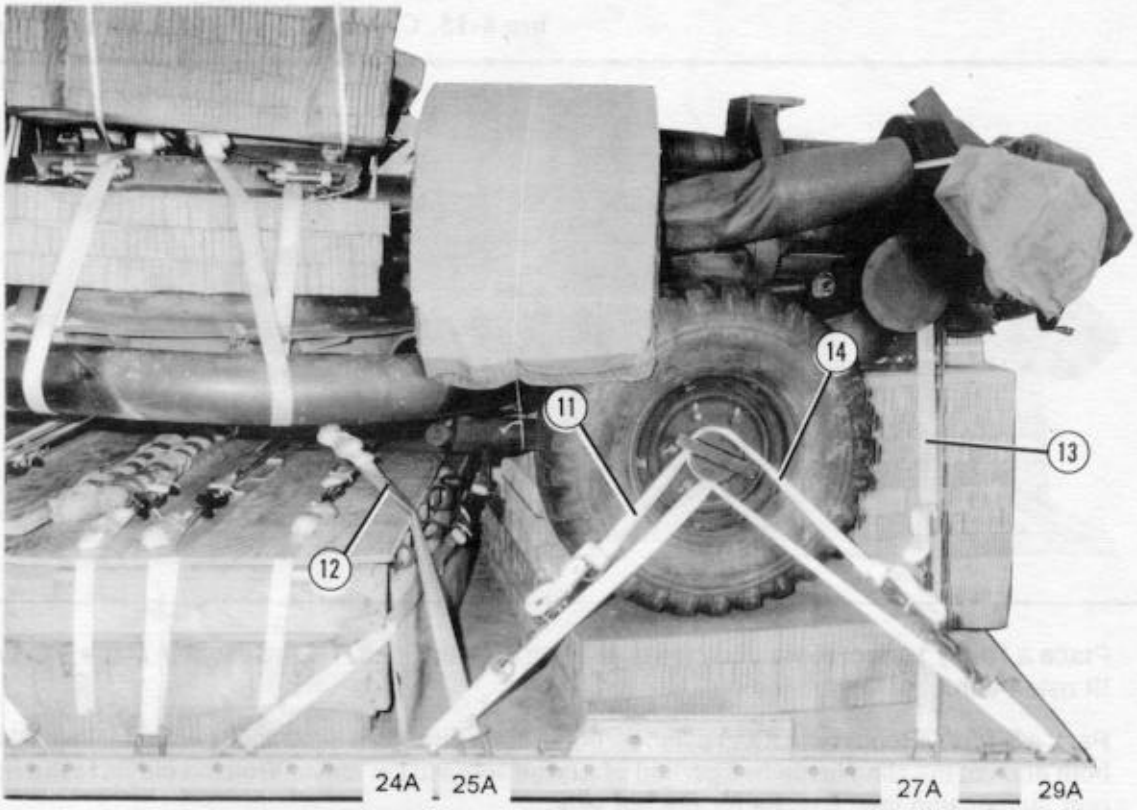
Figure 8-14. Lashings on left side installed



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
5	14A	Around trail on far side of rear howitzer.
* 6	15A	Around trail and up through hole in firing platform, rear howitzer.
* 7	16A	Through medium clevis installed under front howitzer, near side.
* 8	18A	Around trail on far side of front howitzer.
9	20A	Through lunette, rear howitzer.
10	21A	Around trail on far side of rear howitzer.

* 30-foot lashings.

Figure 8-14. Lashings on left side installed (continued)



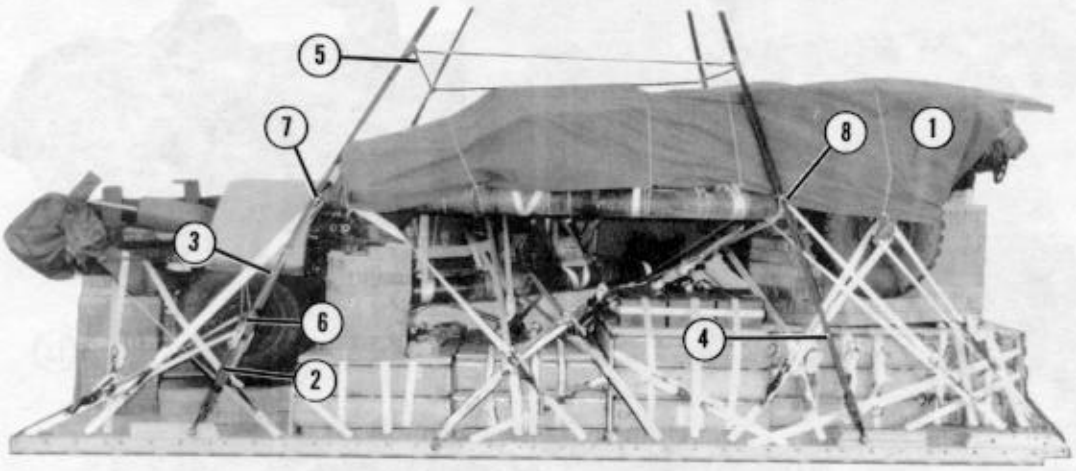
Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
11	24A	Around wheel hub.
* 12	25A	Around trail on far side of rear howitzer.
13	27A	Around saddle, and under elevating wheel shaft.
14	29A	Around wheel hub.

* 30-foot lashings.

Figure 8-14. Lashings on left side installed (continued)

8-9. Installing Suspension Slings and Covering Load

Install the suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-15. Cover the load as shown in Figure 8-15.



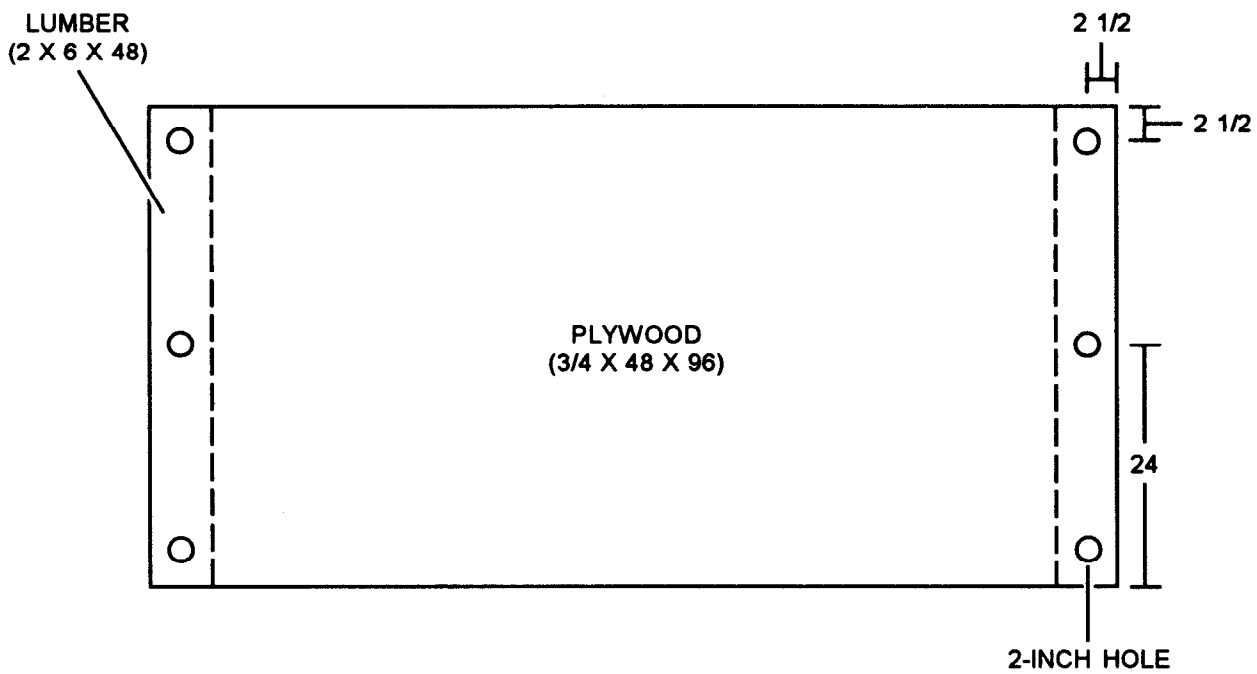
1. Place a 10- by 16-foot piece of cotton duck cloth over the load. Tie the cover in place with type III nylon cord.
2. Pass a 3-foot (4-loop) type XXVI nylon webbing sling through a 5 1/2-inch two-point link. Place both ends of the sling in the bell portion of a large suspension clevis. Bolt the clevis to the right rear suspension link. Repeat for the left side.
3. Attach a 16-foot (4-loop) type XXVI nylon webbing sling to each of the 5 1/2-inch two-point links installed in step 2.
4. Attach a 16-foot (4-loop) type XXVI nylon webbing sling to each front suspension link with a large suspension clevis.
5. Extend the slings and install the deadman's tie 6 to 8 inches above the highest point of the load according to FM 10-500-2/TO 13C7-1-5.
6. Safety the right rear two-point link to the lunette of the front howitzer with type III nylon cord. Safety the left rear two-point link to the nearest howitzer trail (left side not shown).
7. Safety the right rear sling to the lunette of the front howitzer at a point where the sling passes the lunette. Use type III nylon cord.
8. Safety the right front suspension sling to the nearest howitzer trail with type III nylon cord. Safety the left front suspension sling to the wheel hub of the front howitzer (left side not shown).

Figure 8-15. Suspension slings and load cover installed

8-10. Preparing Storage Platform and Stowing Cargo Parachutes

Prepare the parachute stowage platform as shown in Figure 8-16. Prepare the left parachute stowage platform support as shown in Figure 8-17. Prepare the right parachute stowage platform support as shown in Figure 8-18. Assemble the stowage platform as shown in Figure 8-19. Stow five G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-20.

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.

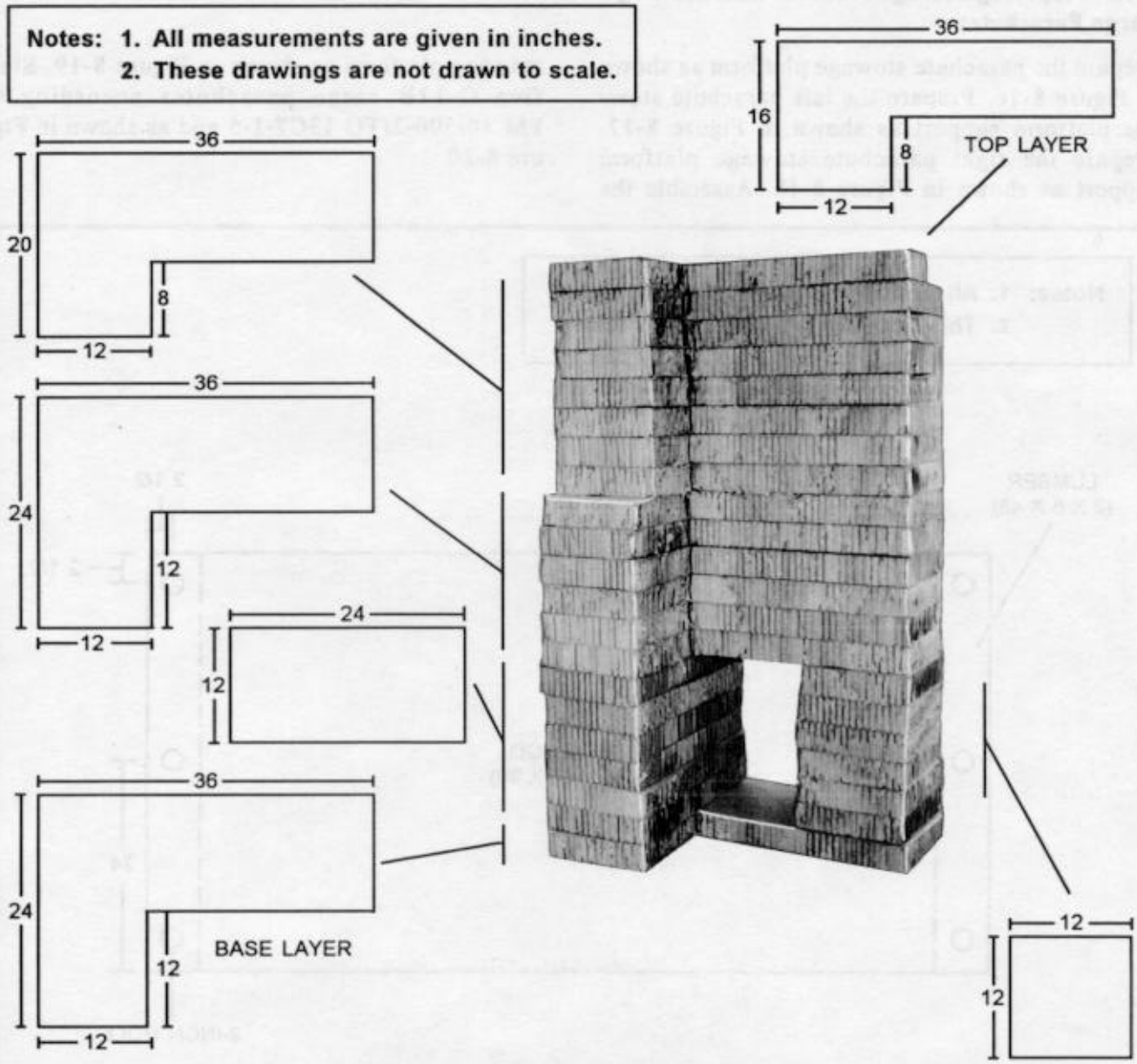


(1) Prepare the parachute stowage platform as shown.

(2) Tie the lumber to the plywood through each of the holes with a length of type III nylon cord.

Figure 8-16. Parachute stowage platform prepared

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.



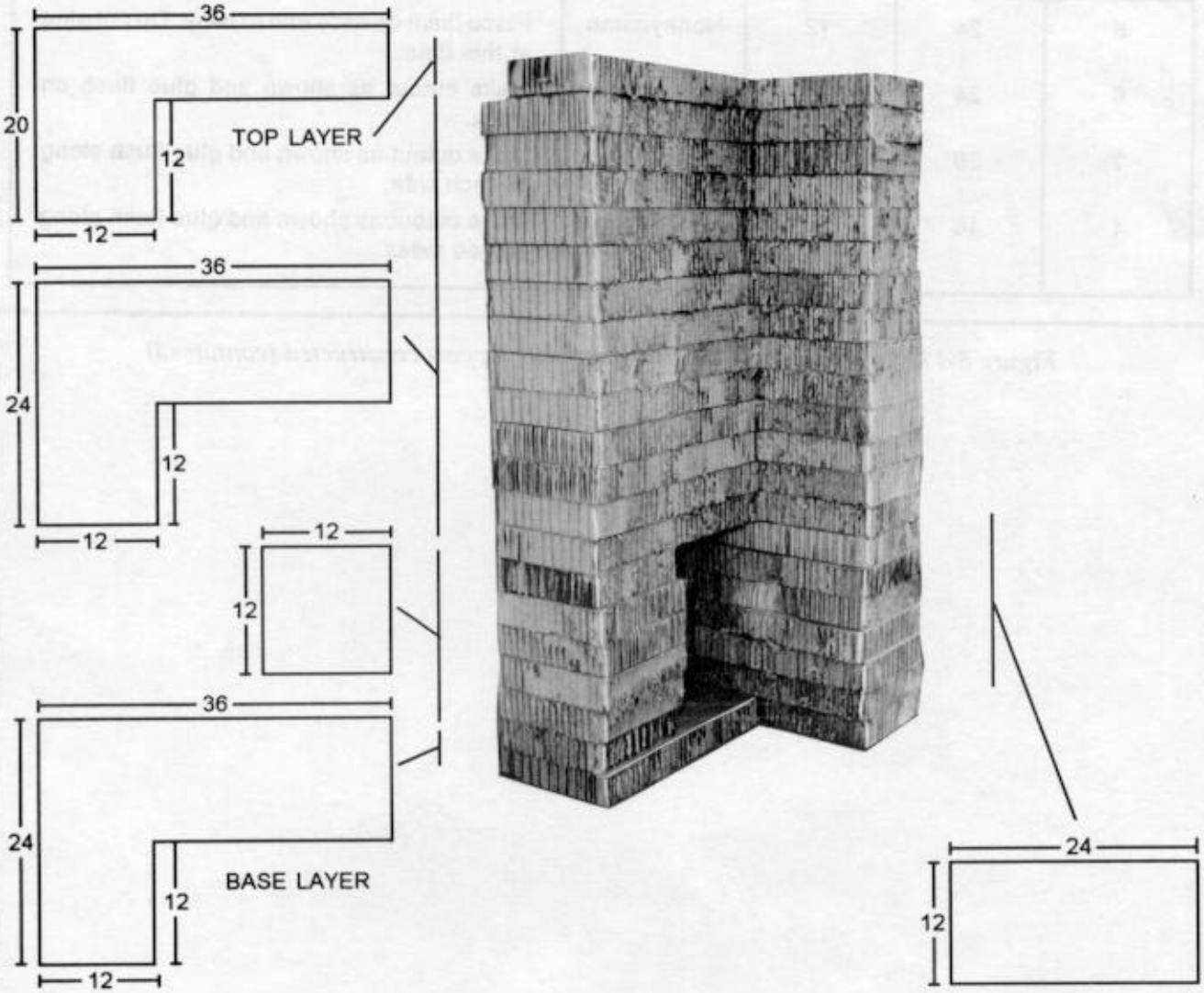
Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	24	36	Honeycomb	Make cutout on base as shown.
6	12	12	Honeycomb	Place flush on narrow end of base. Do not glue at this time.

Figure 8-17. Left parachute stowage platform support constructed

Pieces	Width (Inches)	Length (Inches)	Material	Instructions
6	24	12	Honeycomb	Place flush on wide end of base. Do not glue at this time.
6	24	36	Honeycomb	Make cutout as shown and glue flush on stack.
7	20	36	Honeycomb	Make cutout as shown and glue flush along 36-inch side.
1	16	36	Honeycomb	Make cutout as shown and glue flush along angled sides.

Figure 8-17. Left parachute stowage platform support constructed (continued)

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.

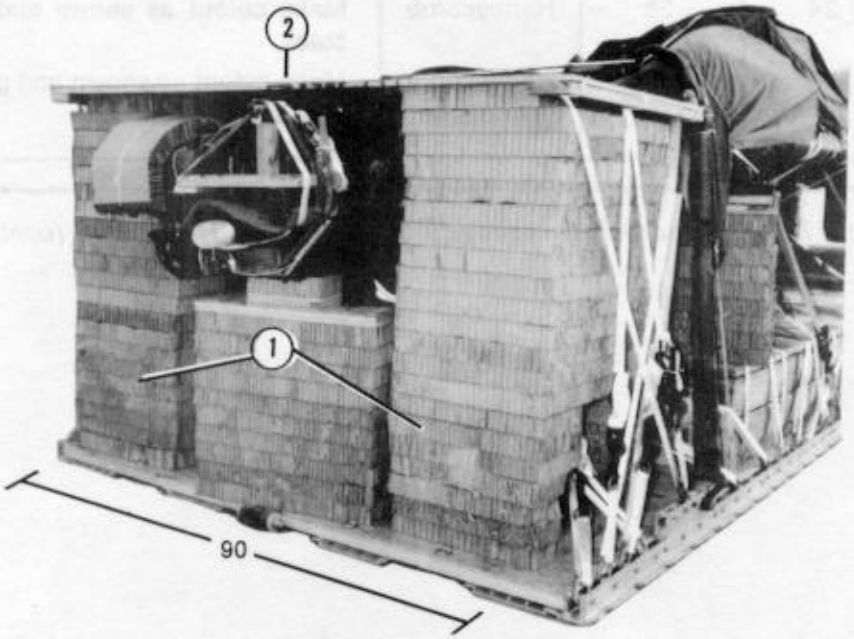


Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	24	36	Honeycomb	Make cutout on base as shown.
6	12	12	Honeycomb	Place flush on narrow end of base. Do not glue at this time.

Figure 8-18. Right parachute stowage platform support constructed

Pieces	Width (Inches)	Length (Inches)	Material	Instructions
6	24	12	Honeycomb	Place flush on wide end of base. Do not glue at this time.
13	24	36	Honeycomb	Make cutout as shown and glue flush on stack.
1	20	36	Honeycomb	Make cutout as shown and glue flush along angled sides.

Figure 8-18. Right parachute stowage platform support constructed (continued)

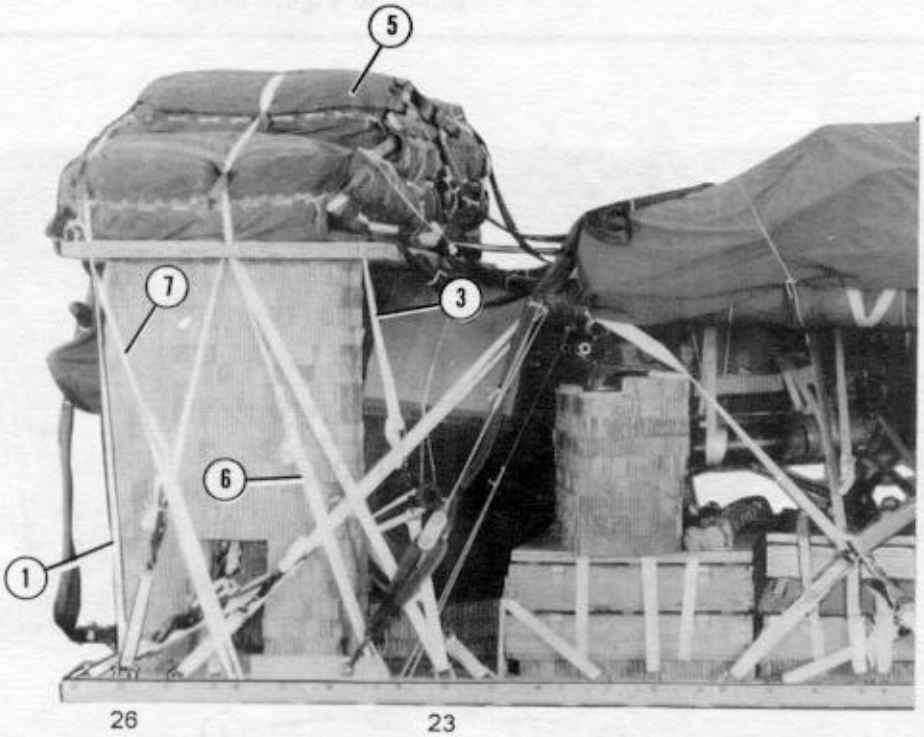


(1) Place the base layers of the left and right parachute stowage platform supports with the wide ends to the rear, 4 inches from the rear edge of the platform and 90 inches apart. Glue the upper layers of the supports to the bases.

(2) Fit the parachute stowage platform to the honeycomb supports.

Note: At this time trim the supports and stack 5 as necessary to allow for the lashings and for firm support of the parachute stowage platform. The supports may be moved as necessary.

Figure 8-19. Parachute stowage platform assembled and placed

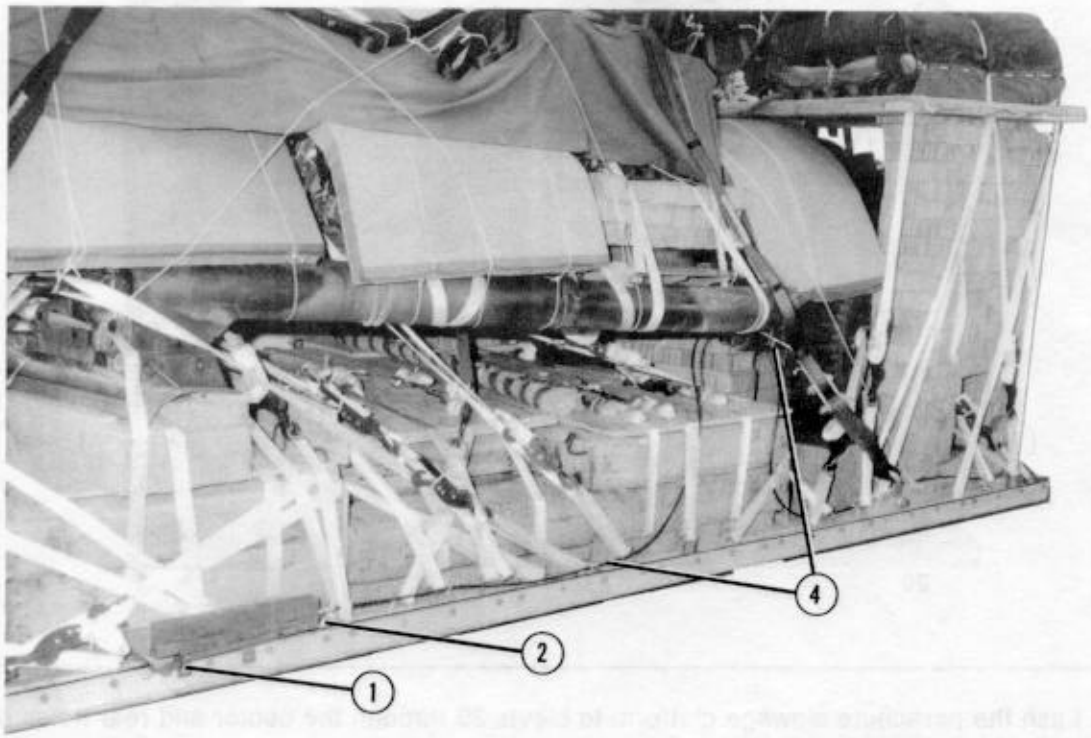


1. Lash the parachute stowage platform to clevis 26 through the center and rear holes on the right side.
2. Lash the parachute stowage platform to clevis 28A through the center and rear holes on the left side (not shown).
3. Lash the parachute stowage platform to clevis 23 through the center and front holes on the right side.
4. Lash the parachute stowage platform to clevis 26A through the center and front holes on the left side (not shown).
5. Prepare and install five G-11B cargo parachutes.
6. Tie the front parachute restraint strap to the first bushing on each rear suspension link.
7. Tie the rear parachute restraint strap to the first bushing after the suspension link on each rail.

Figure 8-20. Cargo parachutes stowed

8-11. Installing Extraction System

Install the EFTC extraction system on the load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-21.

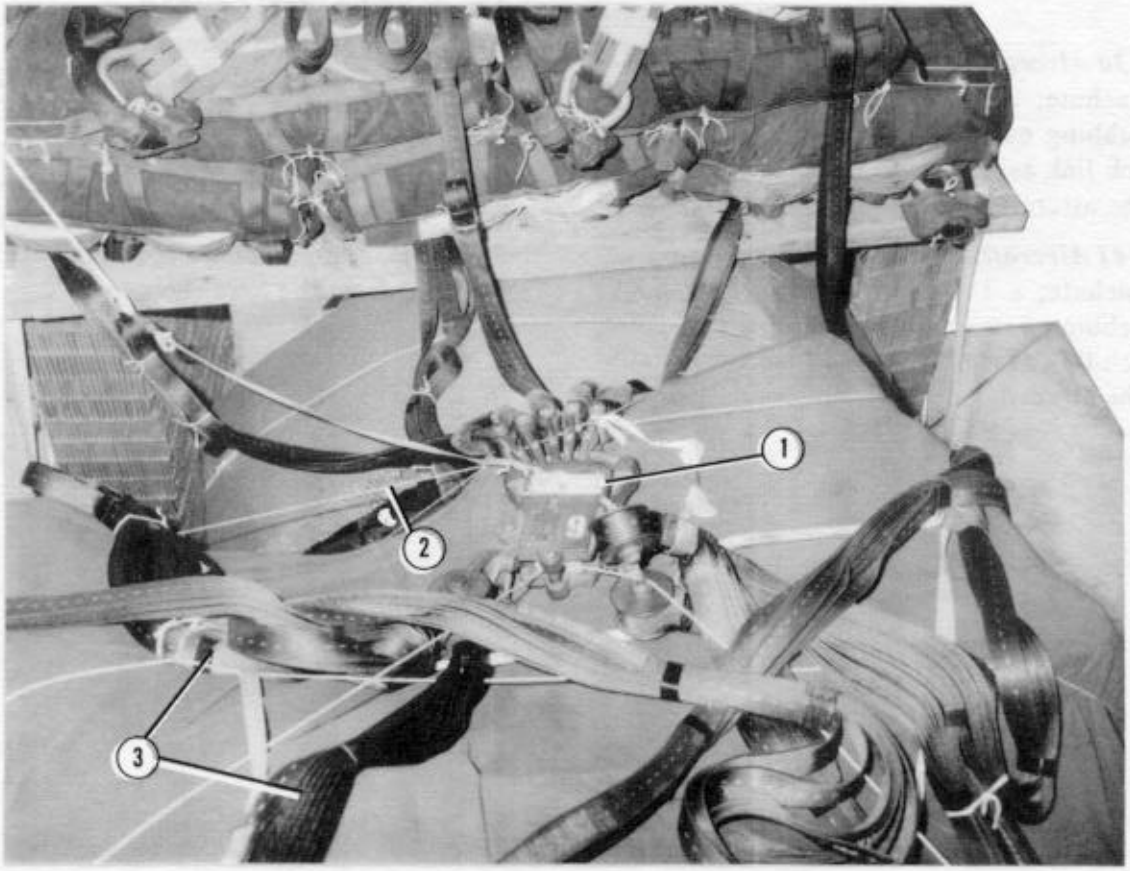


1. Install the EFTC mounting brackets to the rear set of holes on the left platform side rail.
2. Install the actuator according to FM 10-500-2/TO 13C7-1-5.
3. Install the latch assembly and latch assembly adapter to the extraction bracket according to FM 10-500-2/TO 13C7-1-5 (not shown).
4. Install a 20-foot cable according to FM 10-500-2/TO 13C7-1-5. Safety the cable to convenient points with type I, 1/4-inch cotton webbing.
5. Install a 12-foot (2-loop), type XXVI nylon webbing deployment line. S-fold the slack and tie the folds with type I, 1/4-inch cotton webbing (not shown).

Figure 8-21. EFTC installed

8-12. Installing Release System

Prepare and install an M-2 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-22.



1. Center the M-2 release on the honeycomb in front of the parachutes.
2. Secure the release to convenient points on the load with type III nylon cord.
3. S-fold and tie slack in the suspension slings with type I, 1/4-inch cotton webbing.

Figure 8-22. M-2 release installed

8-13. Installing Provisions for Emergency Restraints

Install provisions for emergency restraints on the front of the platform according to FM 10-500-2/TO 13C7-1-5.

8-14. Placing Extraction Parachutes

Place the extraction parachutes as described below.

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

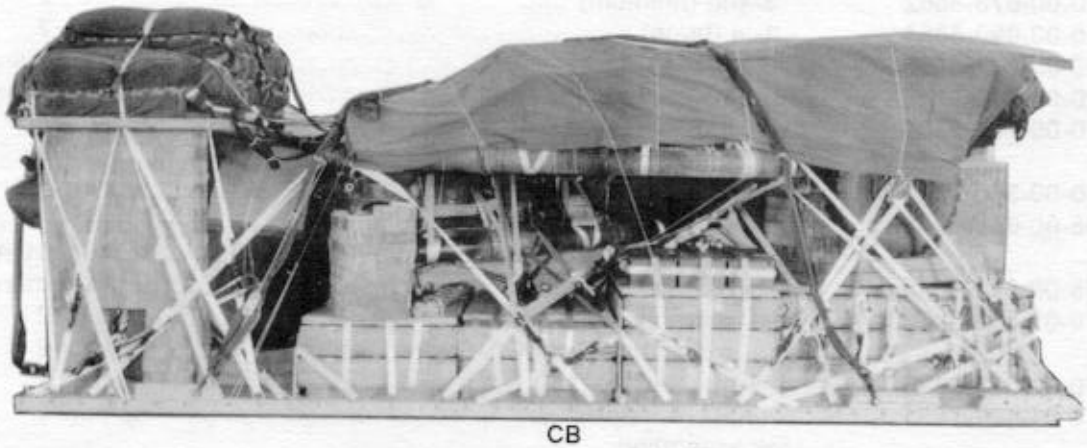
b. C-141 Aircraft. Place a 28-foot cargo extraction parachute; a 140-foot (3-loop), type XXVI nylon webbing extraction line; and a two-point, 5 1/2-inch link assembly on the load for installation in the aircraft.

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

8-15. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-23. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the load has been prepared according to AFJMAN 24-240. Use FM 10-500-2/TO 13C7-1-5 to compute the weight, height, CB, and parachute requirements for loads that differ from 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.



CB

RIGGED LOAD DATA

Weight: Minimum load allowed	22,660 pounds
Maximum load allowed	24,000 pounds
Height	98 inches
Width	108 inches
Length	274 inches
Overhang: Front	17 inches
Rear	17 inches
CB (from front edge of platform)	110 inches
Extraction System	EFTC

Figure 8-23. Two M119 howitzers rigged for low-velocity airdrop on a type V platform

8-16. Equipment Required

Use the equipment listed in Table 8-1 to rig the load shown.

Table 8-1. Equipment required for rigging two M119 howitzers for low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium)	2
4030-00-090-5354	1-in (large)	7
8305-00-242-3593	Cloth, cotton duck	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5787	Coupling, airdrop, extraction force transfer w 20-ft cable	1
1670-00-360-0329	Cover, link assembly (type IV)	20
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction, type XXVI nylon webbing:	2
1670-01-062-6313	60-ft (3-loop) or	1
1670-01-107-7651	140-ft (3-loop)	1
	Link assembly:	
	Two-point, 3 3/4-in:	1
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)
	Two-point, 5 1/2-in:	2
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(4)
5310-00-232-5165	Nut, 1-in	(4)
1670-00-003-1954	Plate, side, 5 1/2-in	(4)
5365-00-007-3414	Spacer, large	(4)
1670-00-783-5988	Type IV	20
	Lumber:	
5510-00-220-6146	2- by 4-in	As required
5510-00-220-6148	2- by 6-in	As required
5510-00-220-6246	2- by 8-in	As required
	Nail, steel wire, common:	
5315-00-010-4659	8d	As required
5315-00-064-5121	20d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	
	3- by 36- by 96-in:	31
	12- by 8-in	(2)

Table 8-1. Equipment required for rigging two M119 howitzers for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	12- by 12-in	(12)
	12- by 24-in	(12)
	15- by 36-in	(10)
	16- by 36-in	(1)
	18- by 36-in	(6)
	20- by 36-in	(9)
	24- by 36-in	(22)
	24- by 38-in	(2)
	25- by 30-in	(2)
	25- by 36-in	(11)
	30- by 10-in	(2)
	30- by 16-in	(11)
	30- by 20-in	(20)
	36- by 96-in	(1)
	72- by 36-in	(5)
	96- by 24-in	(2)
	96- by 26-in	(1)
	96- by 36-in	(6)
	Parachute:	
1670-01-016-7841	Cargo, G-11B	5
1670-00-040-8135	Cargo extraction, 28-ft	1
	Platform, AD, type V, 20-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(58)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-00-081-6865	Nose bumper, 104-in	(1)
1670-01-247-2389	Suspension link	(4)
1670-01-162-2381	Tandem link	(2)
5530-00-129-7777	Plywood, 1/2-in:	
	10 1/2- by 6-in	2
	40- by 7 1/2-in	2
5530-00-128-4981	Plywood, 3/4-in:	
	12- by 8-in	3
	21- by 6-in	2
	25- by 36-in	4
	30- by 6-in	4
	30- by 20-in	2
	34- by 30-in	1
	40- by 7 1/2-in	2
	60- by 37-in	2
	74- by 17-in	2

Table 8-1. Equipment required for rigging two M119 howitzers for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	74- by 36-in	2
	74- by 45-in	2
	80- by 24-in	1
	96- by 15-in	1
	96- by 24-in	1
	96- by 36-in	2
	96- by 48-in	1
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo, airdrop, type XXVI nylon webbing:	
	For deployment line:	
1670-01-062-6303	12-ft (2-loop)	1
	For lifting:	
1670-01-063-7760	11-ft (2-loop)	3
	For riser extension:	
1670-01-062-6302	20-ft (2-loop)	20
	For suspension:	
1670-01-062-6306	3-ft (4-loop)	2
1670-01-432-2507	16-ft (4-loop)	4
1670-00-040-8219	Strap, parachute release, multicut (comes w 3 knives)	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	100
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
	Nylon, tubular:	
8305-00-082-5752	1/2-in	As required
8305-00-268-2455	1-in	As required
8305-00-263-3591	Type VIII	As required

Section II

RIGGING HOWITZERS WITH SIXTY-THREE BOXES OF AMMUNITION

8-17. Description of Load

Two M119, 105-millimeter howitzers (line number H57505) are rigged on a 20-foot, type V airdrop platform with an accompanying load of 63 boxes of ammunition and 21 boxes of fuzes (when required). This load requires four G-11B cargo parachutes.

8-18. Preparing Platform

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

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

Note: If the platform must be assembled, install the suspension links when assembling the platform. See Figure 8-24 for the location of the suspension links.

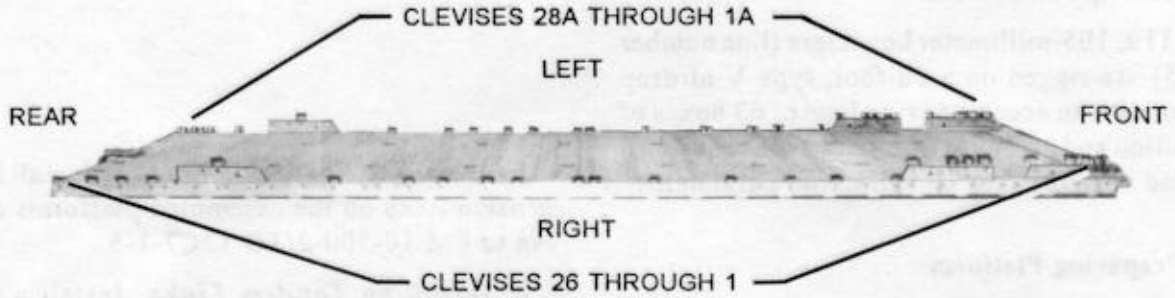
b. Installing Suspension Links. Install the suspension links on the assembled platforms according to FM 10-500-2/TO 13C7-1-5.

c. Installing Tandem Links. Install a tandem link on the front of each rail as shown in Figure 8-24.

d. Installing Nose Bumper. The nose bumper must be installed for this load.

e. Installing and Numbering Clevises. Bolt and number 57 clevis assemblies as shown in Figure 8-24.

Note: Measurements given in this chapter are from the front edge of the platform, NOT from the front edge of the nose bumper.



Step:

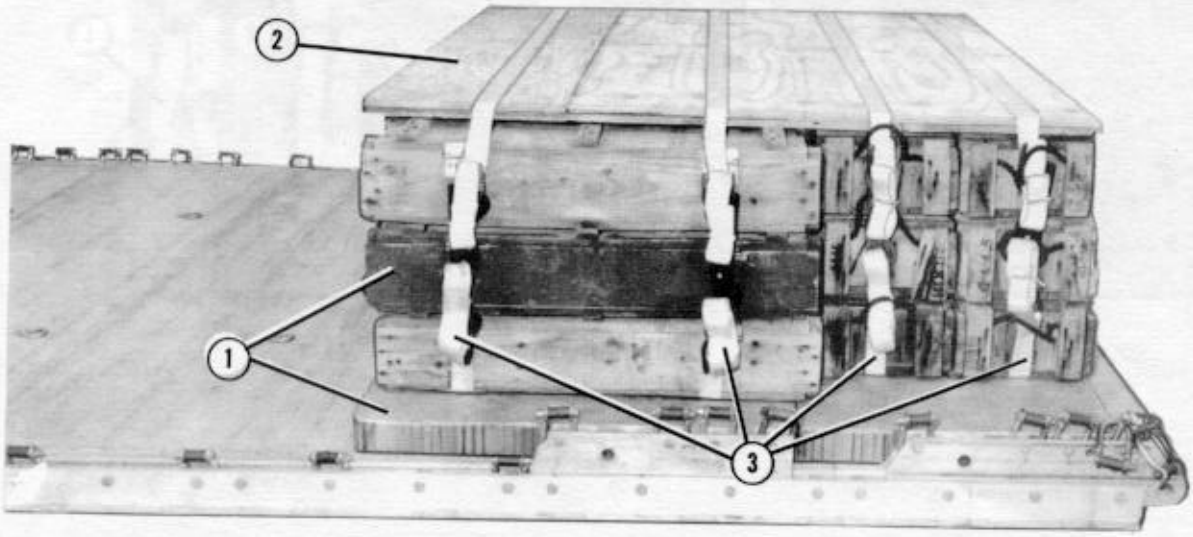
1. Install a suspension link in holes 6, 7, and 8 on each platform side rail. Face the flat part of the link to the front of the rail.
2. Install a tandem link on the front of each platform side rail using holes 1, 2 and 3.
3. Install a suspension link in holes 33, 34, and 35. Face the flat part of the link to the rear of the rail.
4. Install clevises on bushings 1, 2, 3, and 4 of each front tandem link. Bolt two additional clevises to each of the clevises bolted on bushing 1.
5. Install clevises on bushings 1, 2, 3, and 4 of the right front suspension link.
6. Install clevises on bushings 1, 2, 3, and 4 of the left front suspension link. Bolt two additional clevises to the clevis bolted on bushing 1.
7. Install a clevis on bushing 2 of each second suspension link.
8. Starting at the front of the right platform side rail, install clevises on the bushings bolted on holes 9, 11, 13, 15, 18, 20, 21, 23, 24, 26, 27, 30, 37, 38, 39, and 40.
9. Starting at the front of the left platform side rail, install clevises on the bushings bolted on holes 11, 12, 16, 18, 19, 20, 21, 22, 23, 24, 26, 27, 30, 31, 38, 39, and 40.
10. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 26. Starting at the front of the platform, number the clevises bolted to the left side from 1A through 28A.
11. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 8-24. Platform prepared

8-19. Stowing and Lashing First Group of Ammunition Boxes

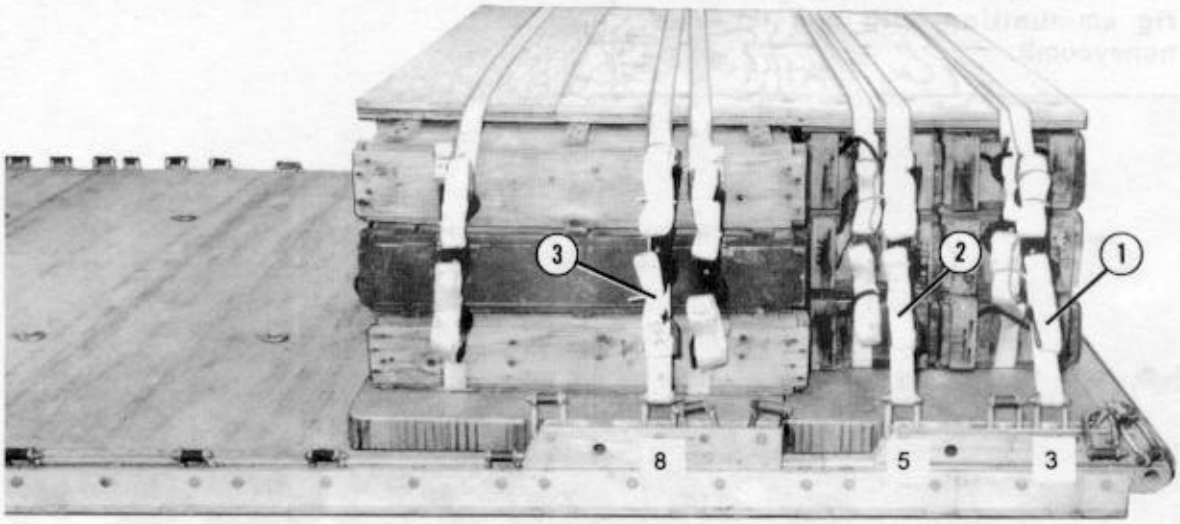
Stow 33 boxes of ammunition on the platform and lash the ammunition boxes together as shown in Figure 8-25. Lash the ammunition to the platform as shown in Figure 8-26.

NOTICE OF EXCEPTION: Exception to FM 10-500-2/TO 13C7-1-5 is granted to rig ammunition with one layer of honeycomb.



1. Place honeycomb, lashings, and 33 boxes of ammunition on the platform as shown in Figure 8-2, steps 1 through 6.
2. Cover the boxes with two layers of 3/4-inch plywood. Alternate two 74- by 17-inch and two 74- by 45-inch pieces as shown.
3. Secure the four pre-positioned lashings on the side of the boxes as shown.

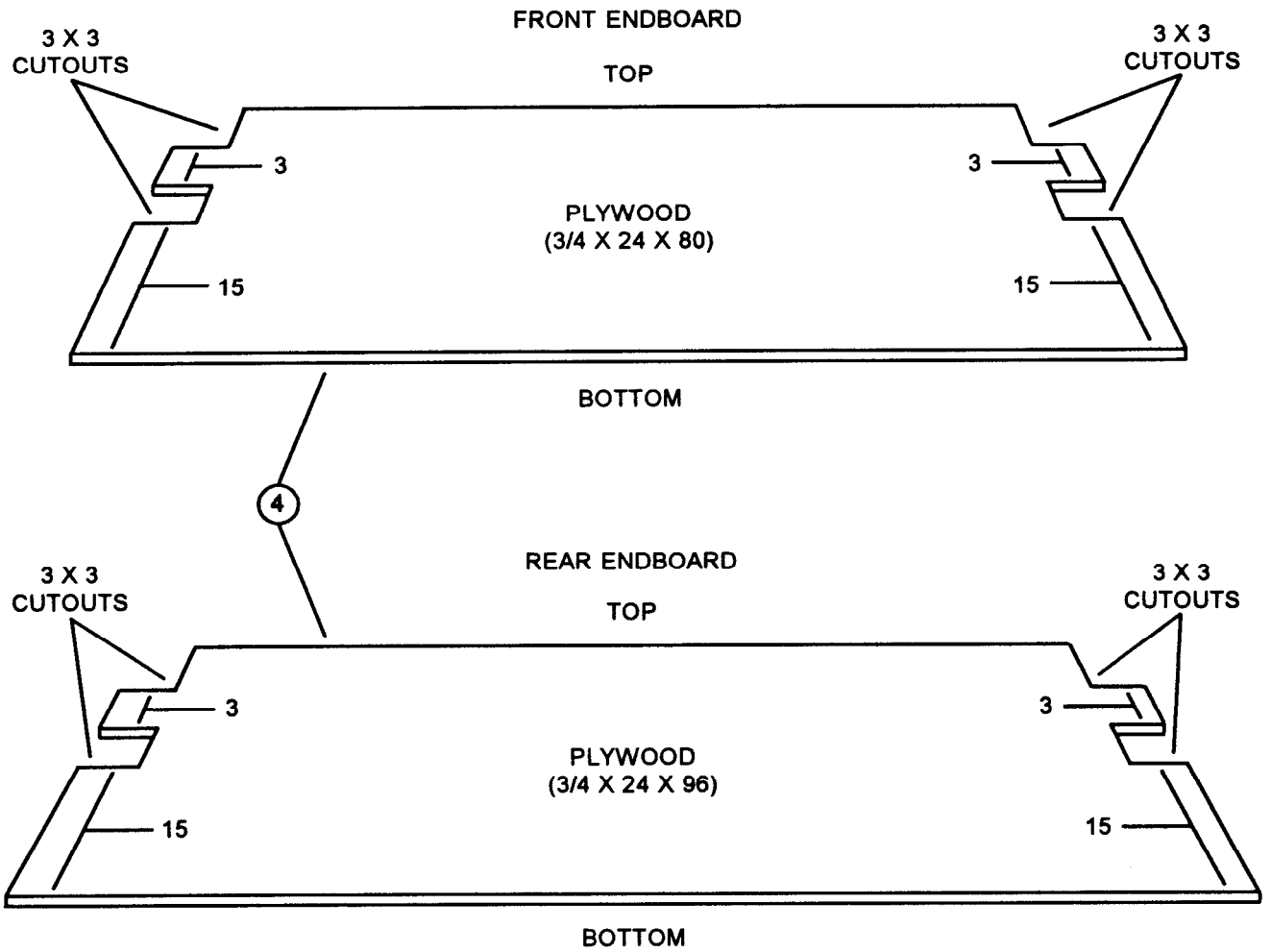
Figure 8-25. First group of ammunition boxes stowed



1. Pass a 30-foot lashing through clevises 3 and 3A and over the top of the boxes. Secure the lashing on the side.
2. Pass a 30-foot lashing through clevises 5 and 5A and over the top of the boxes. Secure the lashing on the side.
3. Pass a 30-foot lashing through clevises 8 and 9A and over the top of the boxes. Secure the lashing on the side.

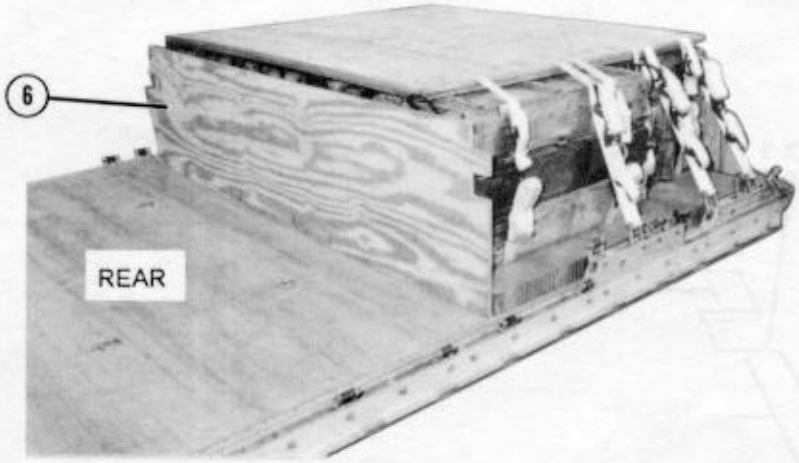
Figure 8-26. First group of ammunition boxes lashed to platform

Notes: 1. All measurements are in inches
2. These drawings are not drawn to scale.



(4) Cut the front and rear endboards for the first group of ammunition from 3/4-inch plywood as shown.

Figure 8-26. First group of ammunition boxes lashed to platform (continued)

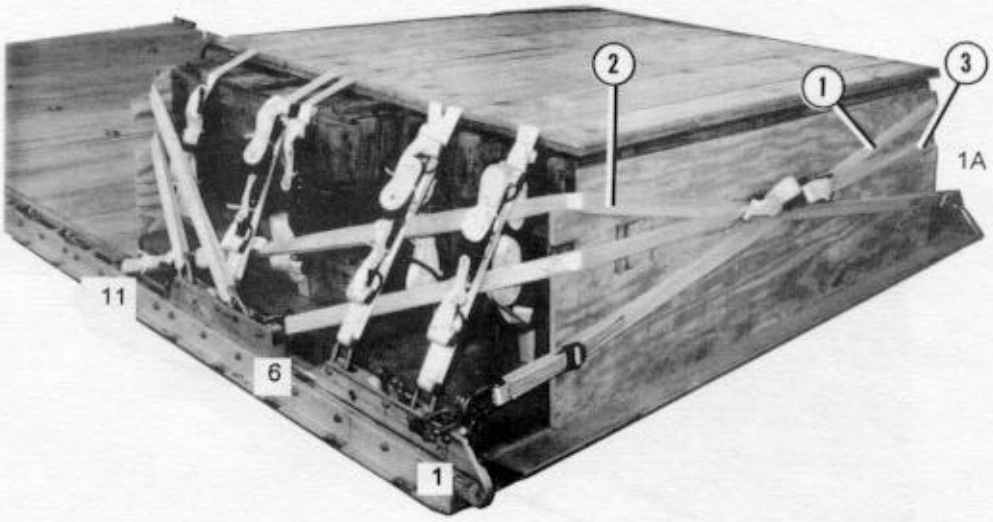


(5) Place the front endboard against the front of the boxes.

(6) Place the rear endboard against the rear of the boxes.

Figure 8-26. First group of ammunition boxes lashed to platform (continued)

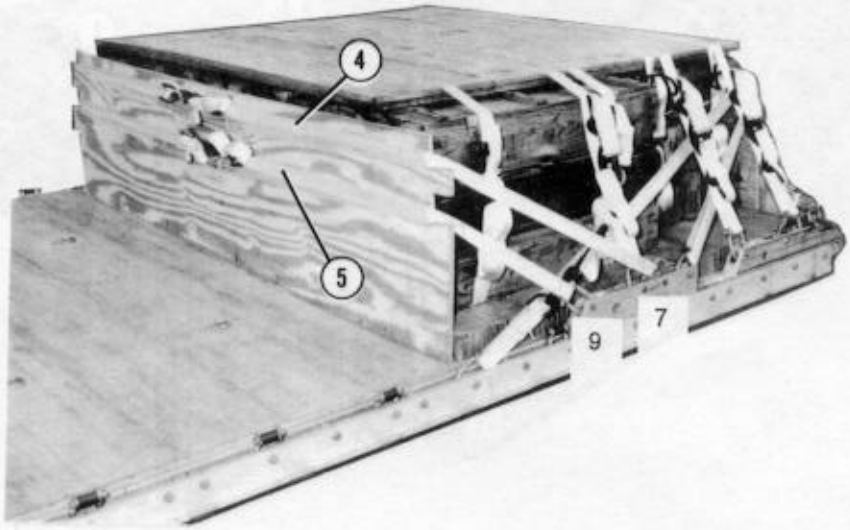
Note: Lashings used below are all 30-foot lashings.



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	1 and 11A	Through clevis 1, through the left upper cutout in the front endboard, and through clevis 11A. Secure the lashing on the left side.
2	1A and 11	Through clevis 1A, through the right upper cutout in the front endboard, and through clevis 11. Secure the lashing on the right side.
3	6 and 6A	Through both clevises and through the lower cutouts in the front endboard. Secure the lashing in front.

Figure 8-26. First group of ammunition boxes lashed to platform (continued)

Note: Lashings used below are all 30-foot lashings.

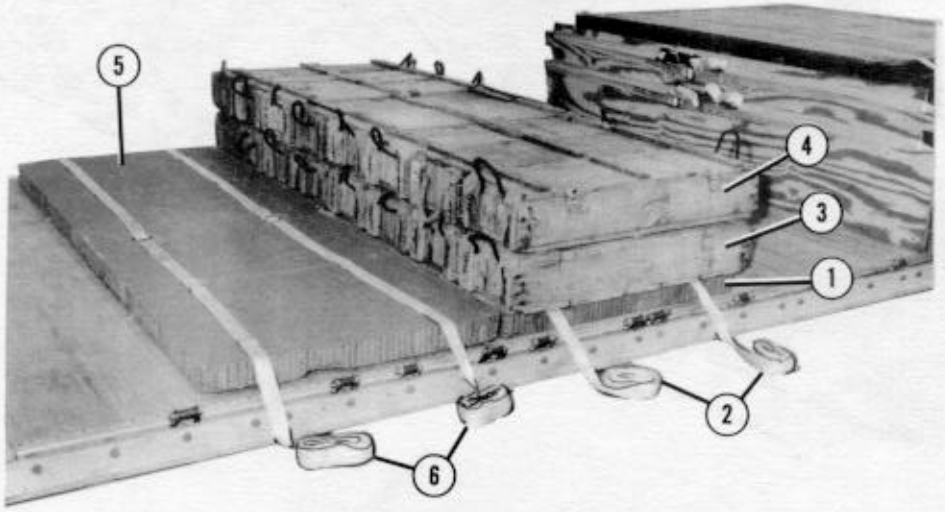


Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
4	7 and 8A	Through both clevises and through the upper cutouts in the rear endboard. Secure the lashing at the rear.
5	9 and 10A	Through both clevises and through the lower cutouts in the rear endboard. Secure the lashing at the rear.

Figure 8-26. First group of ammunition boxes lashed to platform (continued)

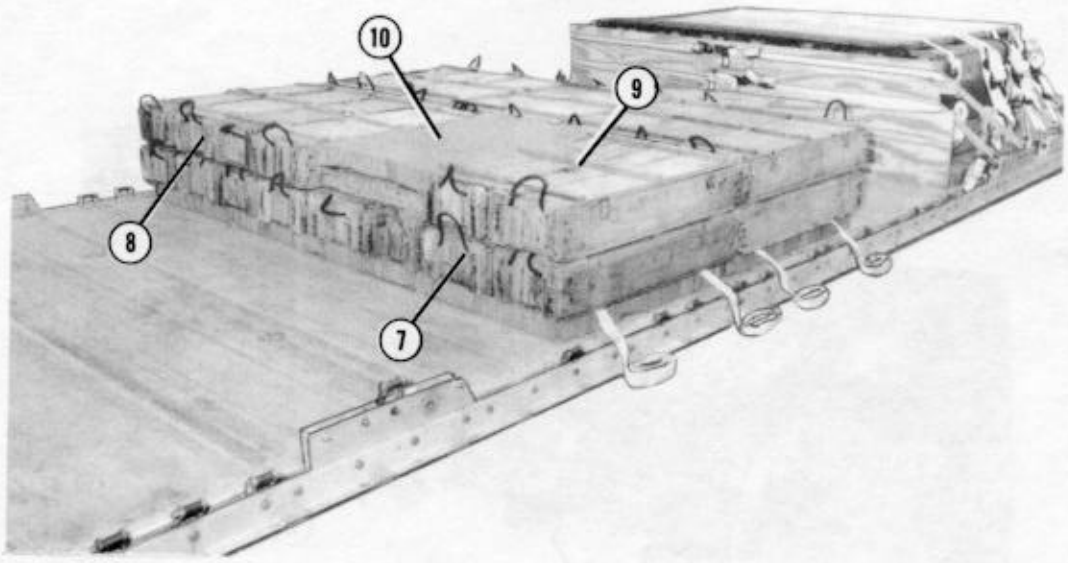
8-20. Stowing and Lashing Second Group of Ammunition Boxes

Stow 30 boxes of ammunition on the platform and lash the boxes together as shown in Figure 8-27. Lash the ammunition to the platform as shown in Figure 8-28.



1. Center a 96- by 36-inch piece of honeycomb 100 inches from the front edge of the platform.
2. Center two 30-foot lashings 18 inches apart on the honeycomb.
3. Place eight boxes flush over the honeycomb and lashings.
4. Place eight boxes over those placed in step 3.
5. Center a 96- by 36-inch piece of honeycomb against the honeycomb placed in step 1.
6. Place two 30-foot lashings on the honeycomb as in step 2.

Figure 8-27. Second group of ammunition boxes stowed



(7) Place eight boxes flush over the honeycomb and lashings.

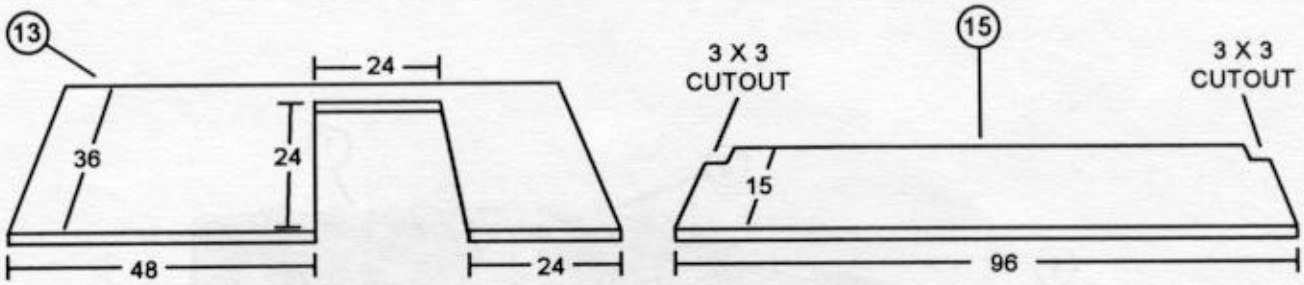
(8) Place four boxes on the left side of the stack.

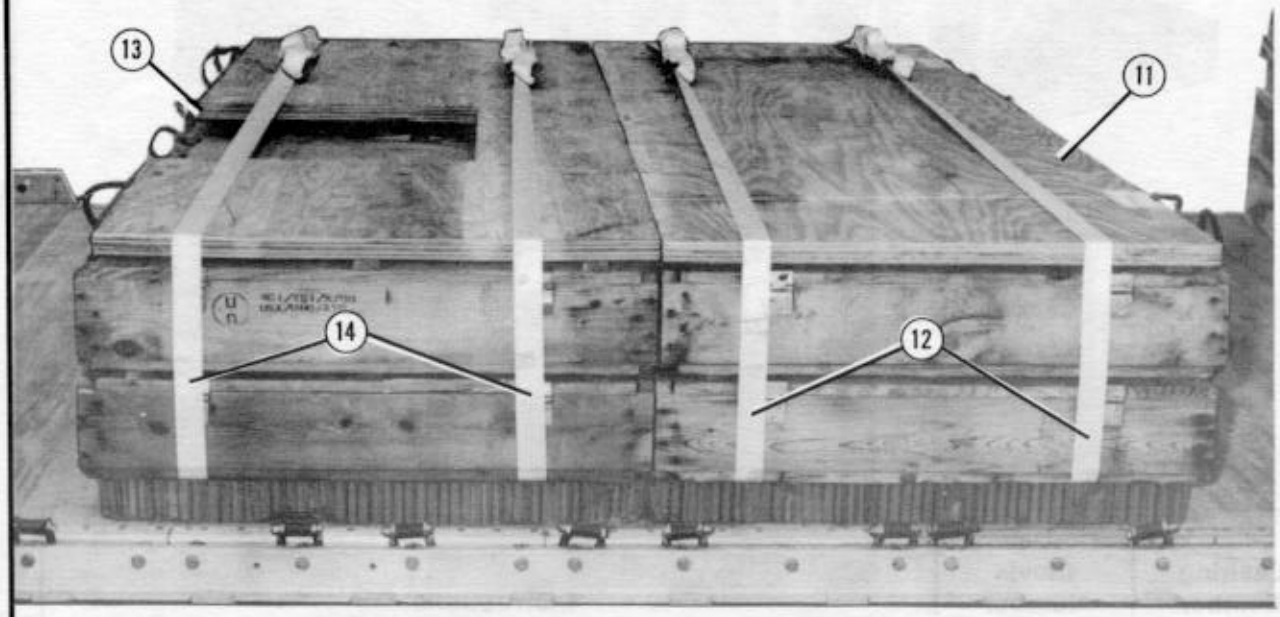
(9) Place two boxes on the right side of the stack.

(10) Place two 24- by 38-inch pieces of honeycomb in the empty space.

Figure 8-27. Second group of ammunition boxes stowed (continued)

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.





(11) Place two 3/4- by 96- by 36-inch pieces of plywood flush over the first stack of boxes.

(12) Secure the lashings placed in step 2 over the load.

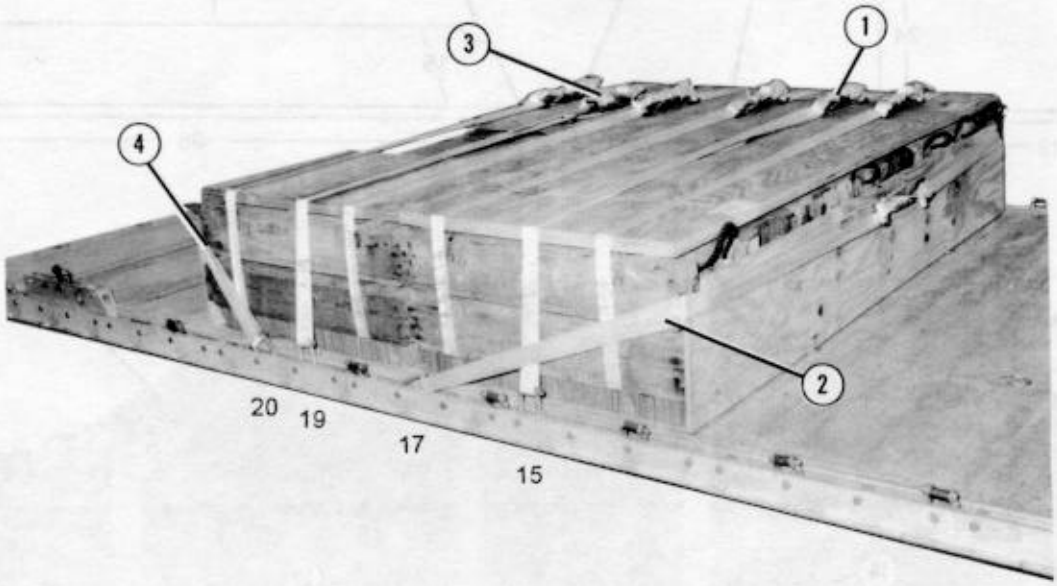
(13) Make the cutout as shown in two 3/4- by 96- by 36-inch pieces of plywood. Place the plywood over the last row of boxes with the cutout facing the rear.

(14) Secure the lashings placed in step 6 on top of the boxes, as far to the left as possible.

(15) Construct two endboards of 3/4-inch plywood as shown. Place one against each end of the ammunition stack.

Figure 8-27. Second group of ammunition boxes stowed (continued)

Note: Lashings used below are all 30-foot lashings.



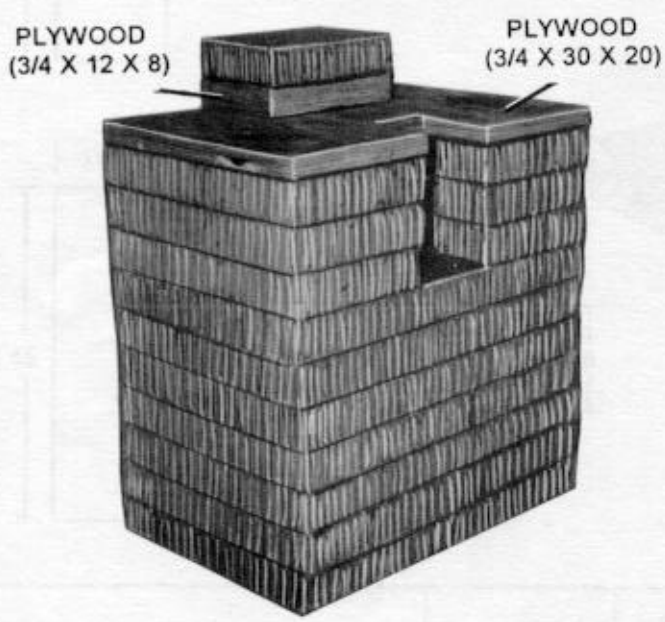
Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	15 and 16A	Through both clevises and over the top of the boxes. Secure the lashing on top as far to the left as possible.
2	17 and 19A	Through both clevises and through the cutouts on the front endboard. Secure the lashing in the front.
3	19 and 21A	Through both clevises and over the top of the boxes. Secure the lashing on top as far to the left as possible.
4	20 and 22A	Through both clevises and through the cutouts in the rear endboard. Secure the lashing in the rear.

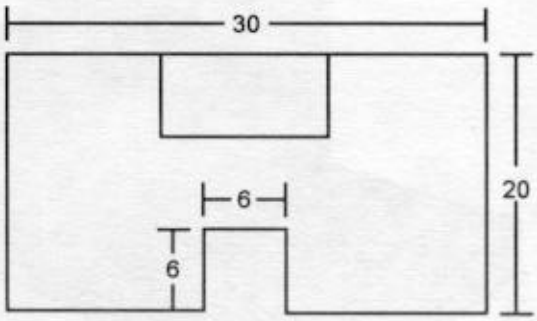
Figure 8-28. Second group of ammunition boxes lashed to platform

8-21. Building and Placing Honeycomb Stacks

Build the honeycomb stacks for the howitzers as shown in Figure 8-29. Place the stacks as shown in Figure 8-30.

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



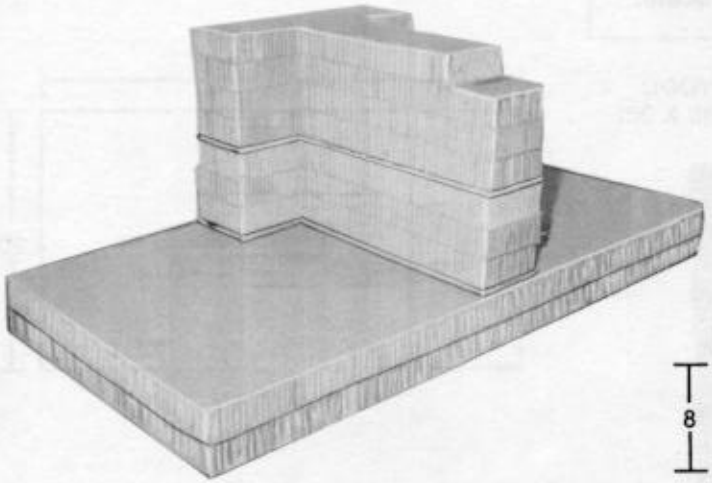


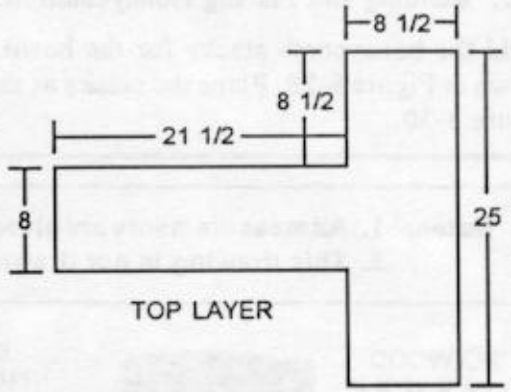
TOP VIEW

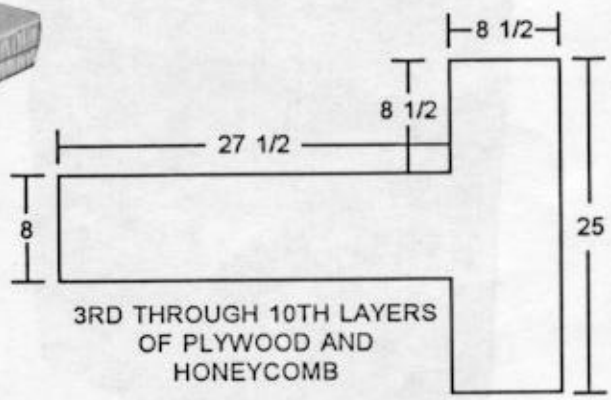
Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1 and 4	7	30	20	Honeycomb	Form stack.
	3	30	20	Honeycomb	Center a cut 6 inches wide and 6 inches deep in a 30-inch side. Place these pieces flush on the stack.
	2	30	20	3/4-inch plywood	Make cuts as above and place on honeycomb.
	3	12	8	3/4-inch plywood	Glue flush along uncut 30-inch edge and centered.
	1	12	8	Honeycomb	Glue flush over plywood placed above.

Figure 8-29. Honeycomb stacks prepared

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.



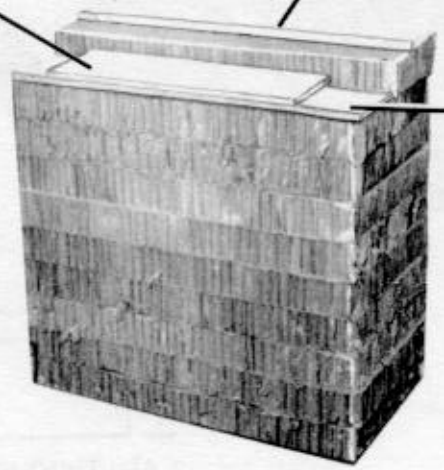




Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
2	2	72	36	Honeycomb	Stack honeycomb to form base.
	1	25	36	3/4-inch plywood	Make cutouts as shown, and center on base.
	3	25	36	Honeycomb	Make cutouts as shown, and stack flush on plywood.
	1	25	36	3/4-inch plywood	Make cutouts as shown, and place flush on honeycomb.
	3	25	36	Honeycomb	Make cutouts as shown, and place flush on plywood.
	1	25	30	Honeycomb	Make cutouts as shown and place flush on top.

Figure 8-29. Honeycomb stacks prepared (continued)

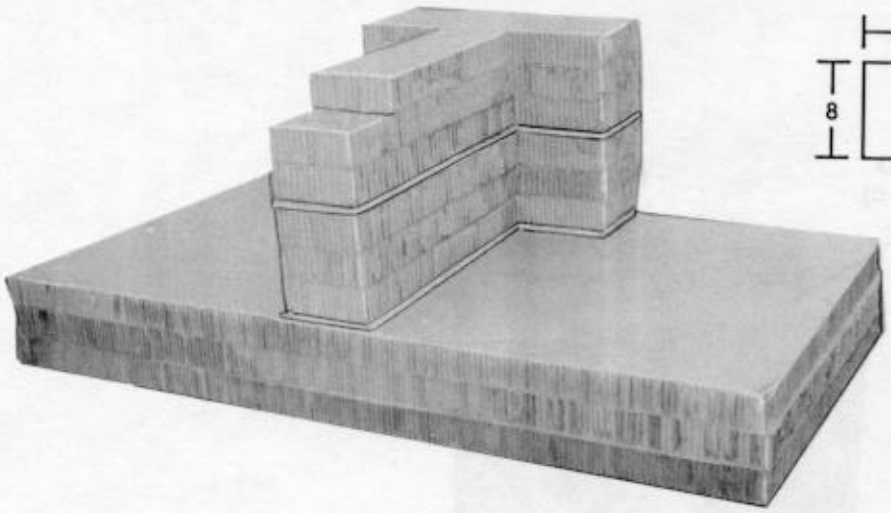
Note: All measurements are given in inches.

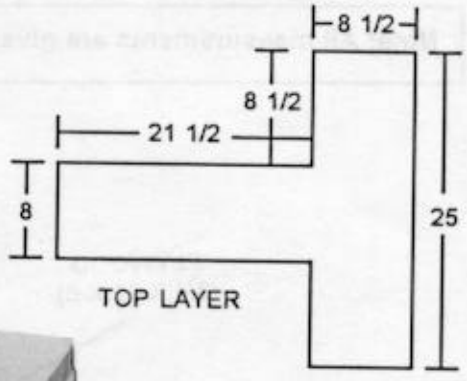


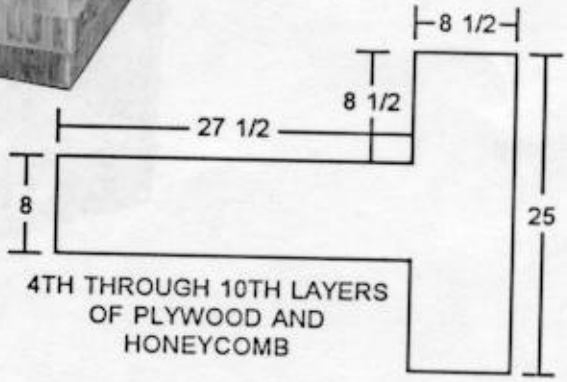
Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3	9	30	16	Honeycomb	Form base.
	1	30	10	Honeycomb	Place honeycomb even with one edge of base.
	1	30	6	3/4-inch plywood	Place plywood flush along outside edge of honeycomb placed above.
	1	30	6	3/4-inch plywood	Place plywood flush on base next to honeycomb placed above.
	1	21	6	3/4-inch plywood	Center plywood on the lower piece of plywood.

Figure 8-29. Honeycomb stacks prepared (continued)

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.



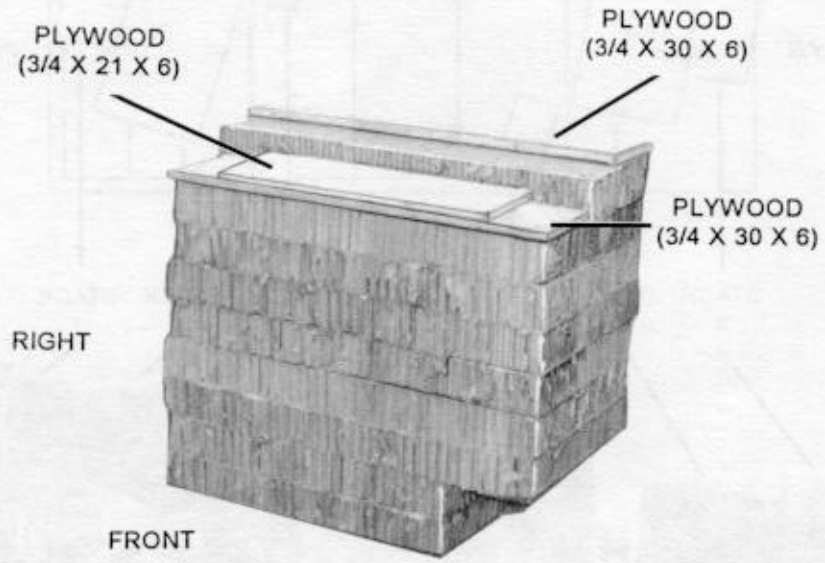




Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
5	3	72	36	Honeycomb	Stack to form a base.
	1	25	36	3/4-inch plywood	Make cutouts as shown, and center on base.
	3	25	36	Honeycomb	Make cutouts as shown, and place flush on plywood.
	1	25	36	3/4-inch plywood	Make cutouts as plywood and place flush on honeycomb.
	2	25	36	Honeycomb	Make cutouts as shown, and place flush on plywood.
	1	25	30	Honeycomb	Make cutouts as shown, and place flush on top.

Figure 8-29. Honeycomb stacks prepared (continued)

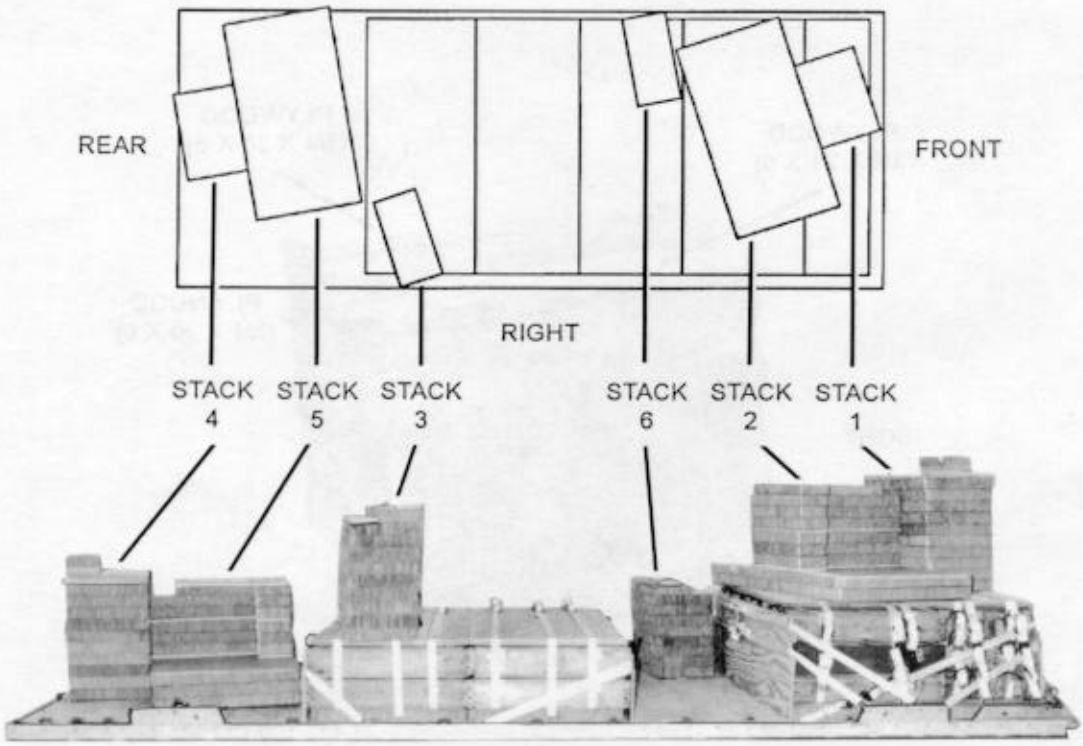
Note: All measurements are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
6	2	24	16	Honeycomb	Stack to form base.
	6	30	16	Honeycomb	Glue flush with right edge of base.
	1	30	10	Honeycomb	Glue flush with rear edge of base.
	1	30	6	3/4-inch plywood	Glue flush along rear edge of honeycomb placed above.
	1	30	6	3/4-inch plywood	Glue flush on front of base.
	1	21	6	3/4-inch plywood	Glue centered on lower piece of plywood.

Figure 8-29. Honeycomb stacks prepared (continued)

Note: This drawing is not drawn to scale.



Note: Stack locations are approximate. Exact placement will vary because of differences in individual guns. Be sure that the stacks rest solidly on the platform or on the plywood decking.

Stack Number	Position of Stack
1	Place on the plywood decking with the right front corner 28 inches from the right front corner of the plywood, and the left front corner of the stack 4 inches from the front edge of the plywood.
2	Center the front edge against stack 1.
3	Align on the rear section of plywood decking on a central axis with stacks 1 and 2.
4	Place at the rear of the platform, with the right rear corner of the stack 34 inches from the right rail. Let the left side of the stack overhang the rear edge of the platform from the point at which the extraction bracket meets the rear edge of the platform.
5	Center in front of stack 4.
6	Align on the platform on a central axis with stacks 4 and 5.

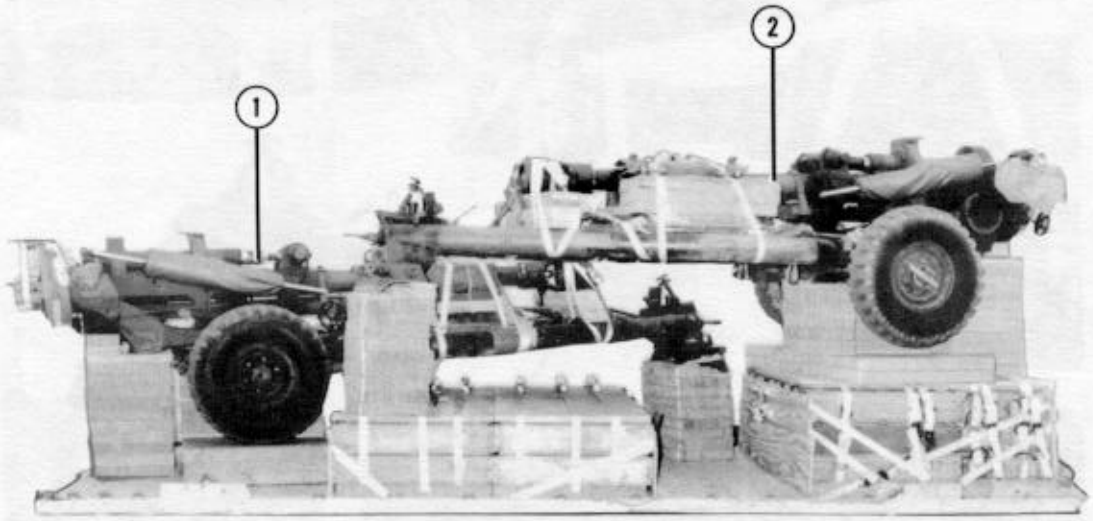
Figure 8-30. Honeycomb stacks placed

8-22. Preparing Howitzers

Prepare both howitzers as shown in Figures 5-9 through 5-17, and as shown in Figure 8-8. Prepare the front howitzer as shown in Figure 8-9, and the rear howitzer as shown in Figure 8-10.

8-23. Placing Howitzers on Platform

Place the howitzers on the platform as shown in Figure 8-31.



1. Position the rear howitzer on stacks 4, 5, and 6. The breech assembly must overhang the rear edge of the platform 17 inches.
2. Position the front howitzer on stacks 1, 2, and 3. The breech assembly must overhang the front edge of the platform 17 inches.

Figure 8-31. Howitzers placed on honeycomb stacks

(3) Secure the inside trails of the howitzers together as shown with two 15-foot lashings.

Note: Do not allow the outside trail of either howitzer to overhang the side of the platform.

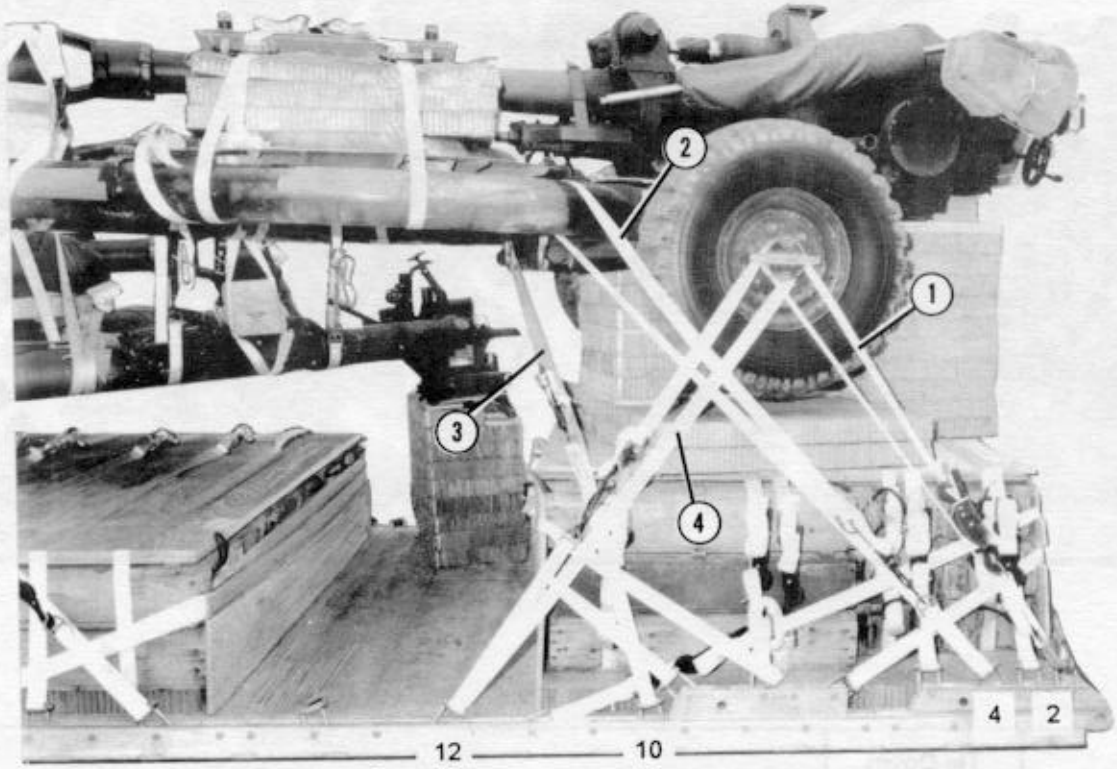
Figure 8-31. Howitzers placed on honeycomb stacks (continued)

8-24. Lashing Howitzers

Lash the howitzers to the right side of the platform as shown in Figure 8-32. Lash the howitzers to the left side of the platform as shown in Figure 8-33.

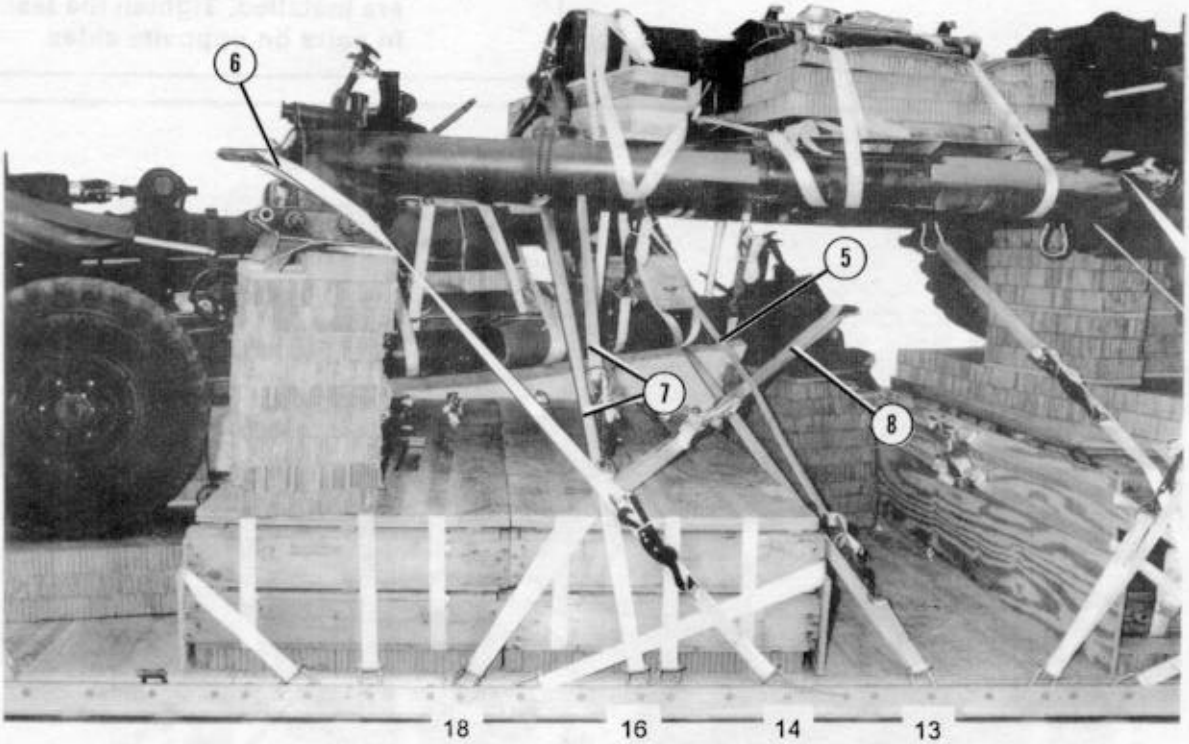
Notes: 1. Lashing numbering for the right side begins with 1. The sequence is repeated for the left side.

2. Do not tighten the lashings until all are installed. Tighten the lashings in pairs on opposite sides.



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	2	Around wheel hub.
2	4	Around trail, near side.
3	10	Through medium clevis installed under front howitzer, far side.
4	12	Around wheel hub.

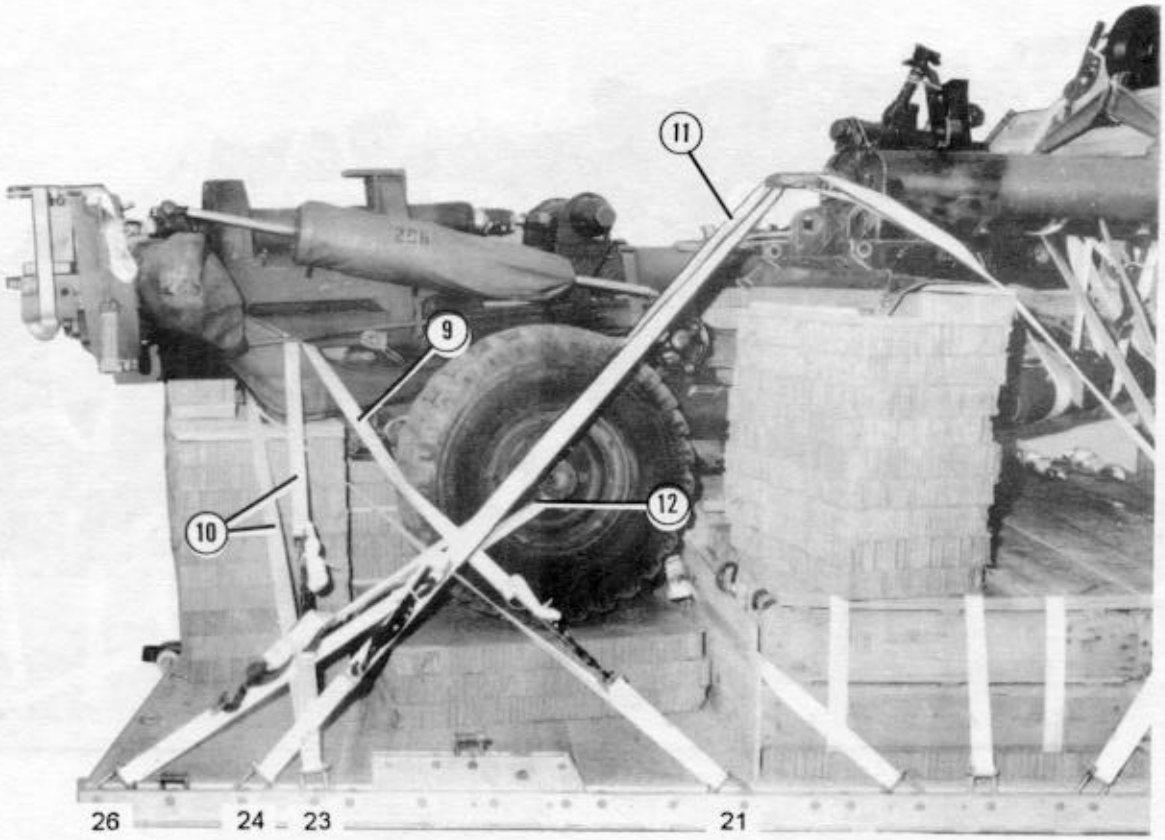
Figure 8-32. Lashings on right side installed



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
5	13	Around trail of rear howitzer, near side.
6	14	Through lunette on front howitzer.
7	16	Around trail on far side of front howitzer.
* 8	18	Through lunette on rear howitzer.

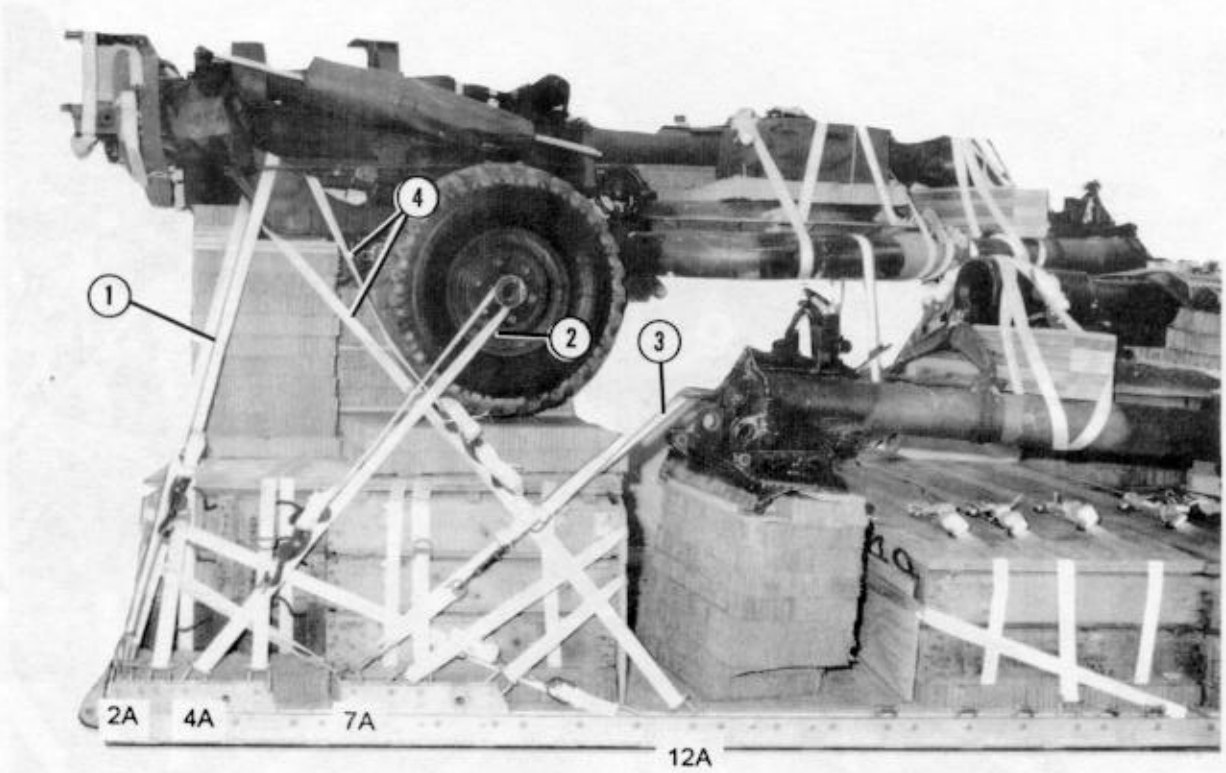
* 30-foot lashings.

Figure 8-32. Lashings on right side installed (continued)



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
9	21	Around saddle of rear howitzer.
10	23	Around saddle of rear howitzer.
11	24	Through lunette of front howitzer.
12	26	Around wheel hub of rear howitzer.

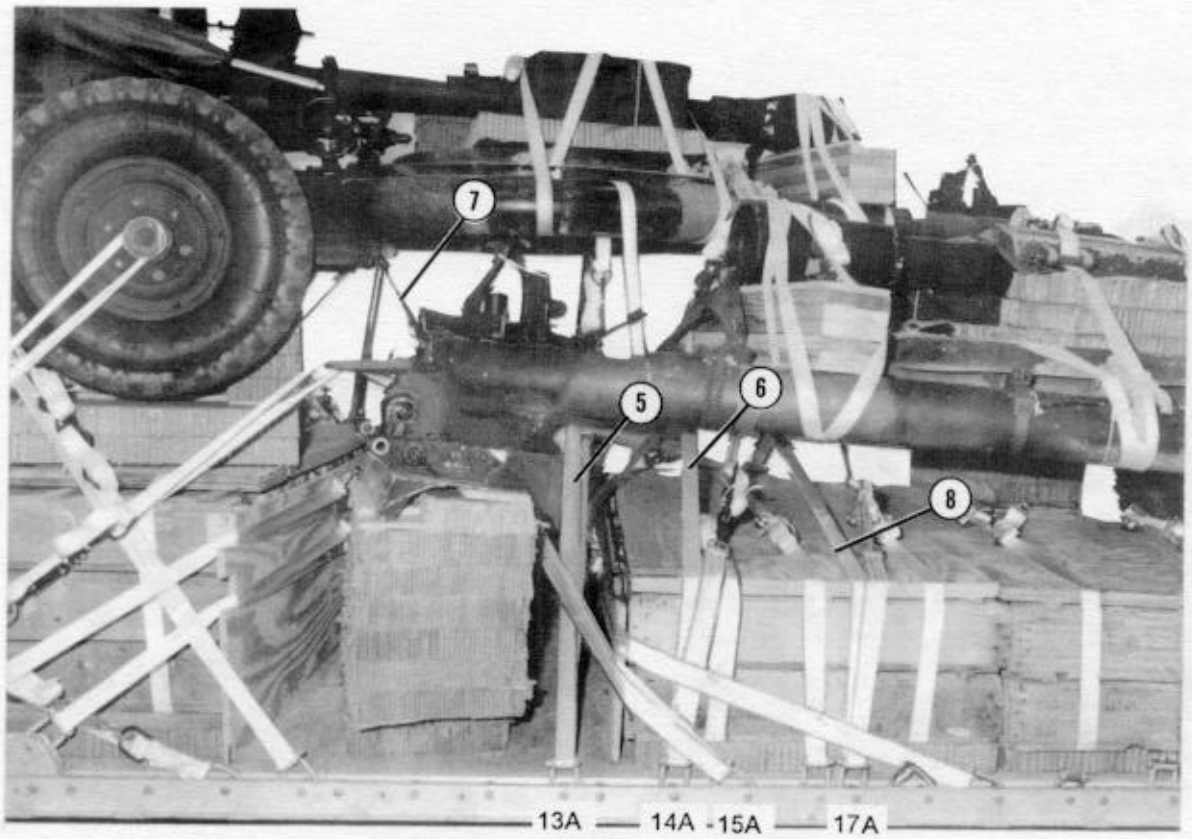
Figure 8-32. Lashings on right side installed (continued)



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	2A	Around saddle of front howitzer.
2	4A	Around wheel hub of front howitzer.
3	7A	Through lunette of rear howitzer.
* 4	12A	Around saddle of front howitzer.

* 30-foot lashings.

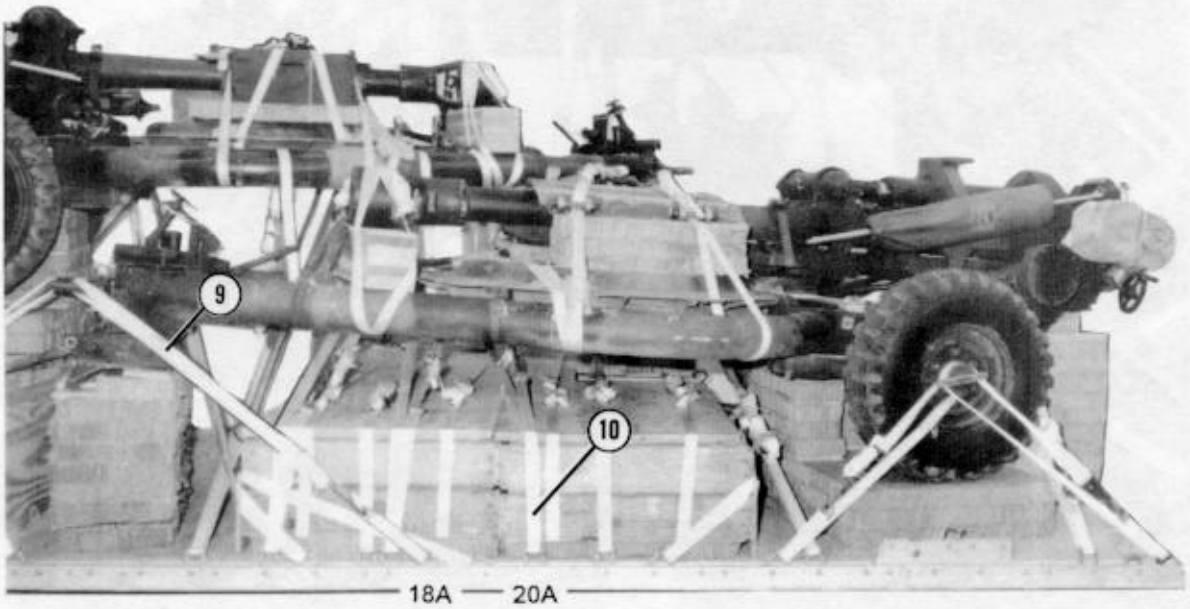
Figure 8-33. Lashings on left side installed



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
* 5	13A	Around trail on far side of front howitzer.
6	14A	Around trail on far side of rear howitzer.
* 7	15A	Through medium clevis installed under front howitzer, far side.
8	17A	Around trail on far side of rear howitzer.

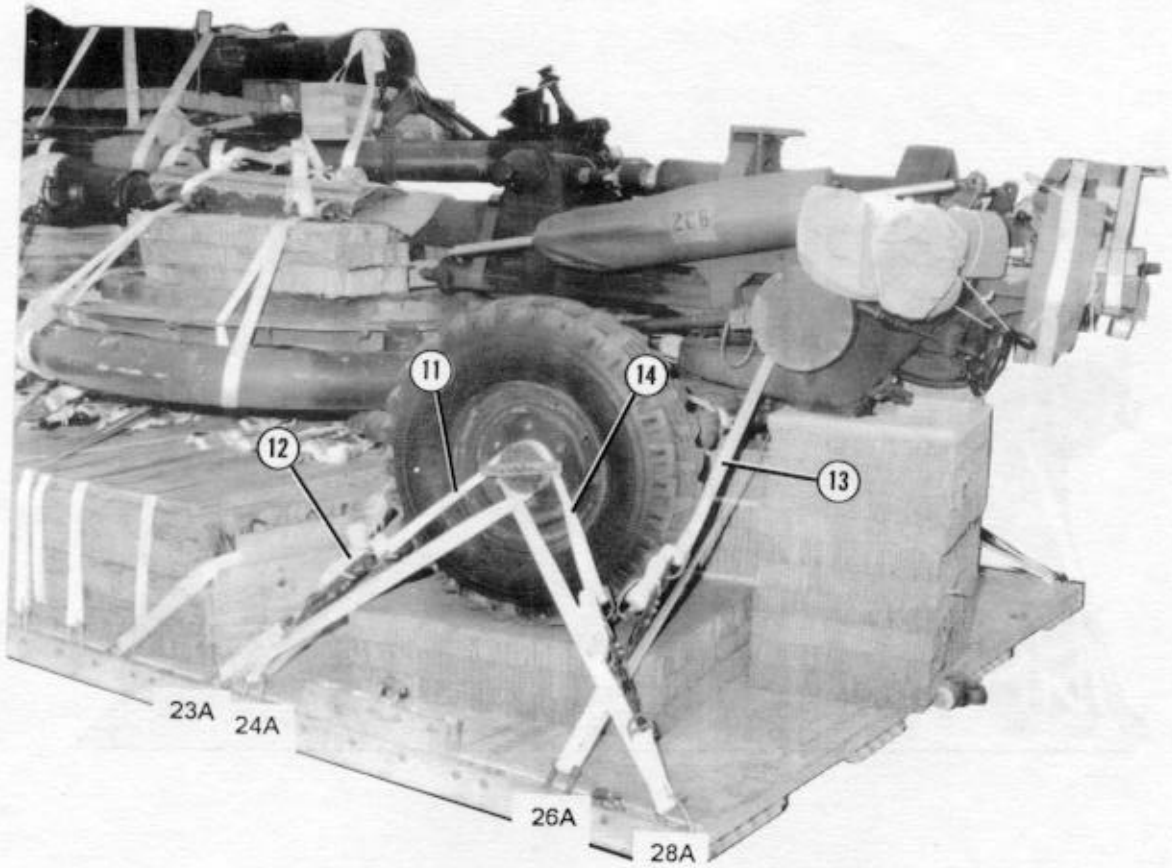
* 30-foot lashings.

Figure 8-33. Lashings on left side installed (continued)



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
9	18A	Through lunette of rear howitzer.
10	20A	Around trail on far side of rear howitzer.

Figure 8-33. Lashings on left side installed (continued)

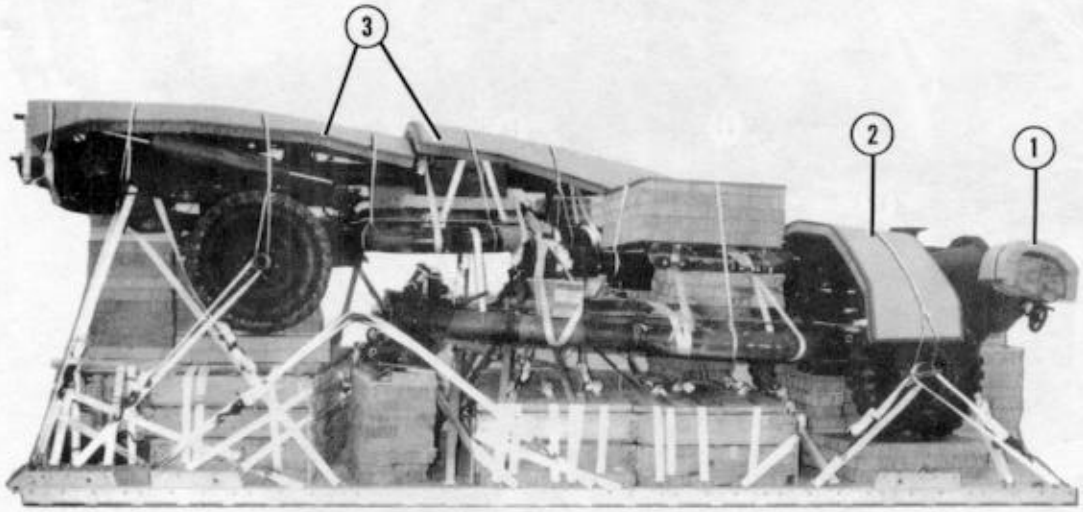


Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
11	23A	Around wheel hub.
12	24A	Around trail on far side of rear howitzer.
13	26A	Around saddle.
14	28A	Around wheel hub.

Figure 8-33. Lashings on left side installed (continued)

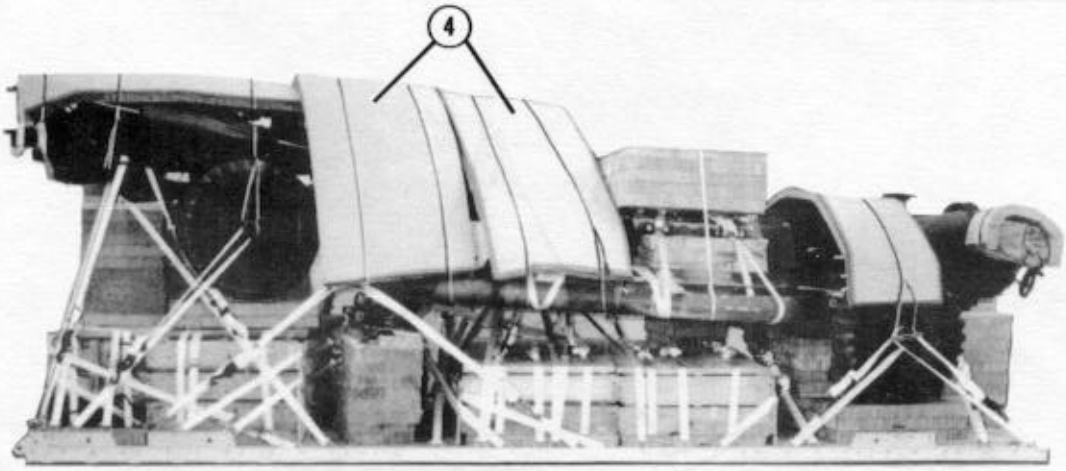
8-25. Covering the Load

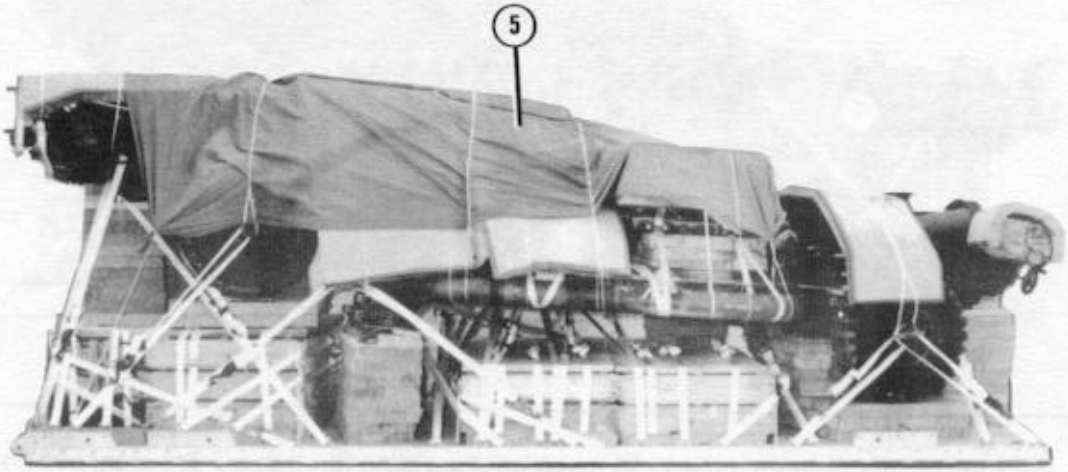
Install protective honeycomb and the cloth cover as shown in Figure 8-34.



1. Bend a 12- by 40-inch piece of honeycomb over the sight mount of each howitzer. Secure in place with type III nylon cord.
2. Bend a 24- by 96-inch piece of honeycomb over the rear howitzer cylinders. Tie the honeycomb in place with a length of type III nylon cord tied to the wheel hubs.
3. Center two 36- by 96-inch pieces of honeycomb end-to-end lengthwise over the length of the front howitzer. Bend the honeycomb over the howitzer, tape the sides of the honeycomb, and tie it to convenient points on the load with type III nylon cord.

Figure 8-34. Howitzers covered





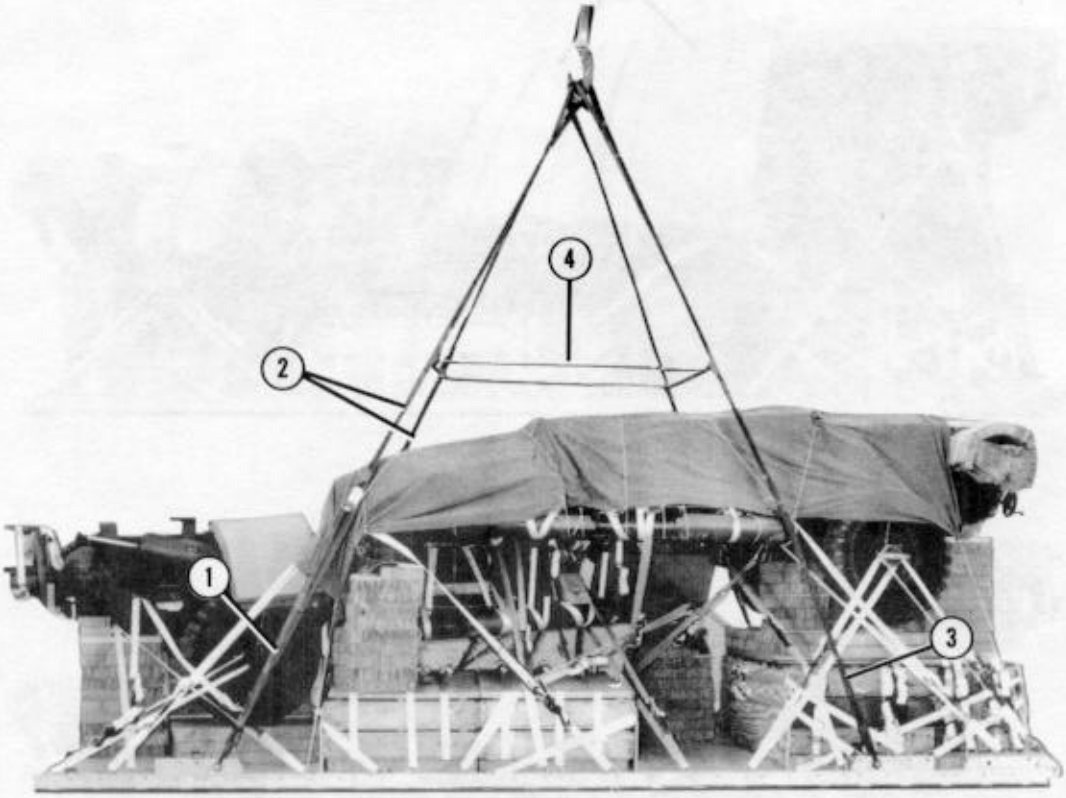
(4) Tie two 96- by 36-inch pieces of honeycomb to the left side of the load, covering the gun tube of the rear howitzer and the trail of the front howitzer. Tie the honeycomb to the howitzer trails with type III nylon cord.

(5) Cover the load with a 10- by 16-foot piece of cotton duck cloth. Tie the cloth to convenient points on the load with type III nylon cord.

Figure 8-34. Howitzers covered (continued)

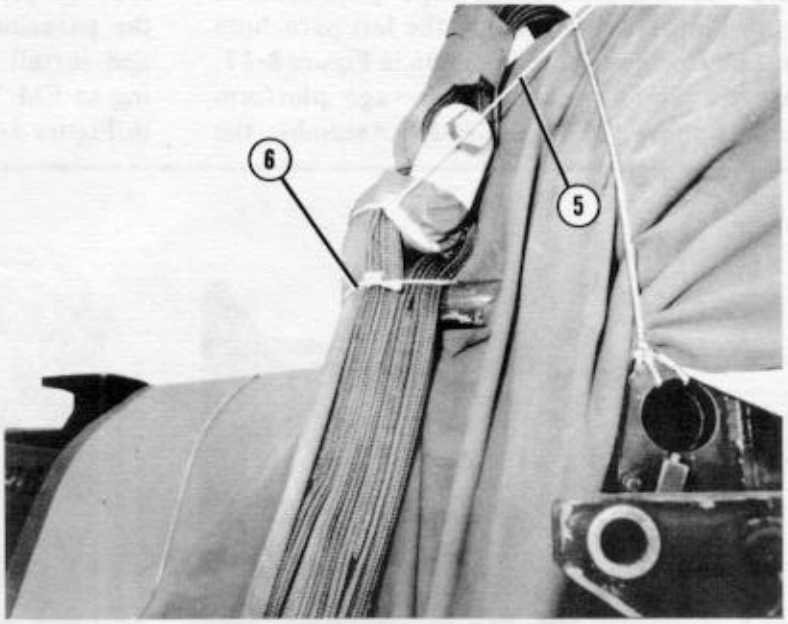
8-26. Installing Suspension Slings

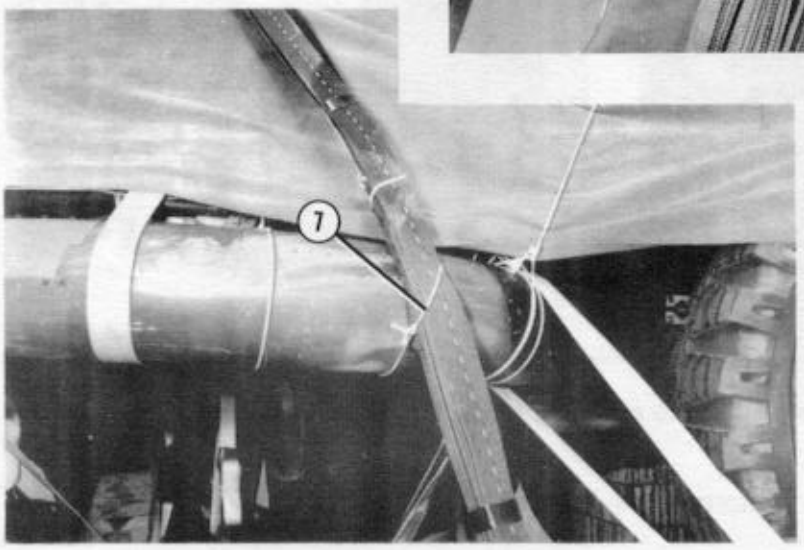
Install and safety the suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-35.



1. Pass an 11-foot (4-loop), type XXVI nylon webbing sling through a 3 3/4-inch, two point link. Place both end loops of the sling in the bell portion of a large suspension clevis. Bolt the clevis to the right rear suspension link. Repeat for the left side.
2. Attach an 11-foot (4-loop), type XXVI nylon webbing sling to each of the 3 3/4-inch two-point links installed in step 1.
3. Attach a 16-foot (4-loop) type XXVI nylon webbing sling to each front suspension link with a large suspension clevis.
4. Extend the slings and install the deadman's tie 6 to 8 inches above the highest point of the load.

Figure 8-35. Suspension slings installed and safetied





(5) Tie the two 3 3/4-inch two-point links to one another with a length of type III nylon cord.

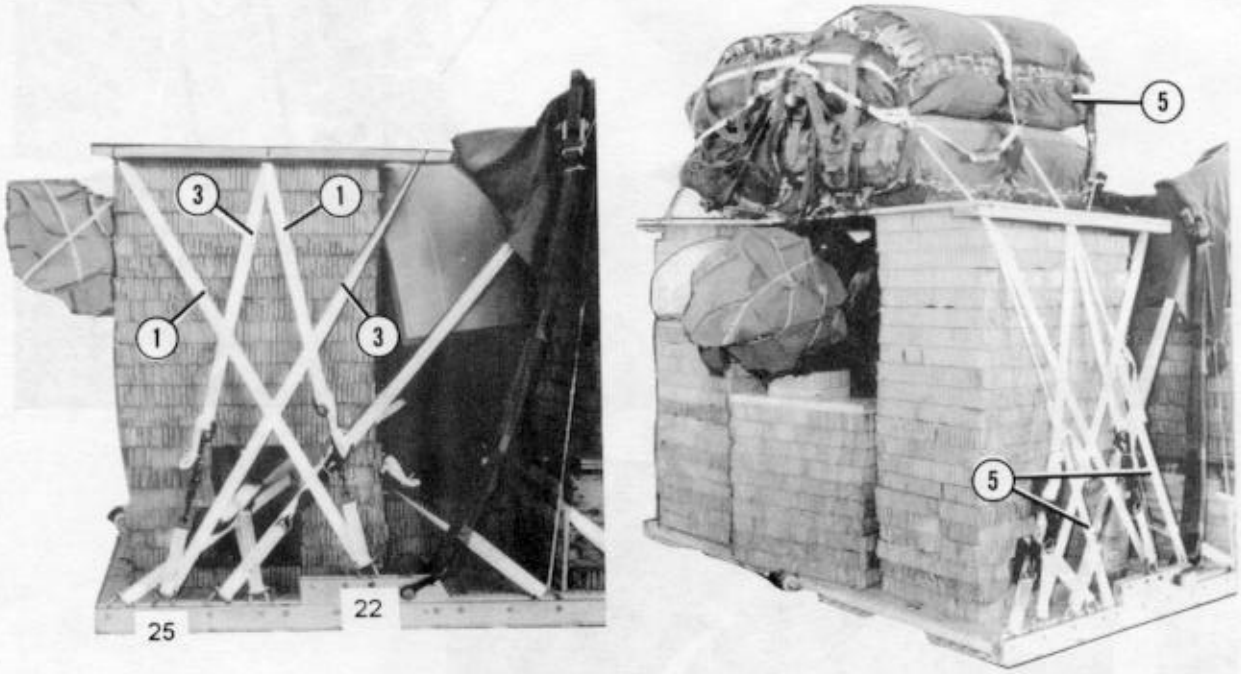
(6) Safety the right rear suspension sling to the lunette of the front howitzer below the link assembly with type III nylon cord. Safety the left rear link assembly to the spade of the front howitzer (left side not shown).

(7) Safety the right front suspension sling to the nearest howitzer trail with type III nylon cord. Safety the left front suspension sling to the lunette of the rear howitzer (left side not shown).

Figure 8-35. Suspension slings installed and safetied (continued)

8-27. Installing Cargo Parachutes

Prepare the parachute stowage platform as shown in Figure 8-16. Prepare the left parachute stowage platform support as shown in Figure 8-17. Prepare the right parachute stowage platform support as shown in Figure 8-18. Assemble the stowage platform as shown in Figure 8-19. Lash the parachute stowage platform to the platform and install four G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-36.

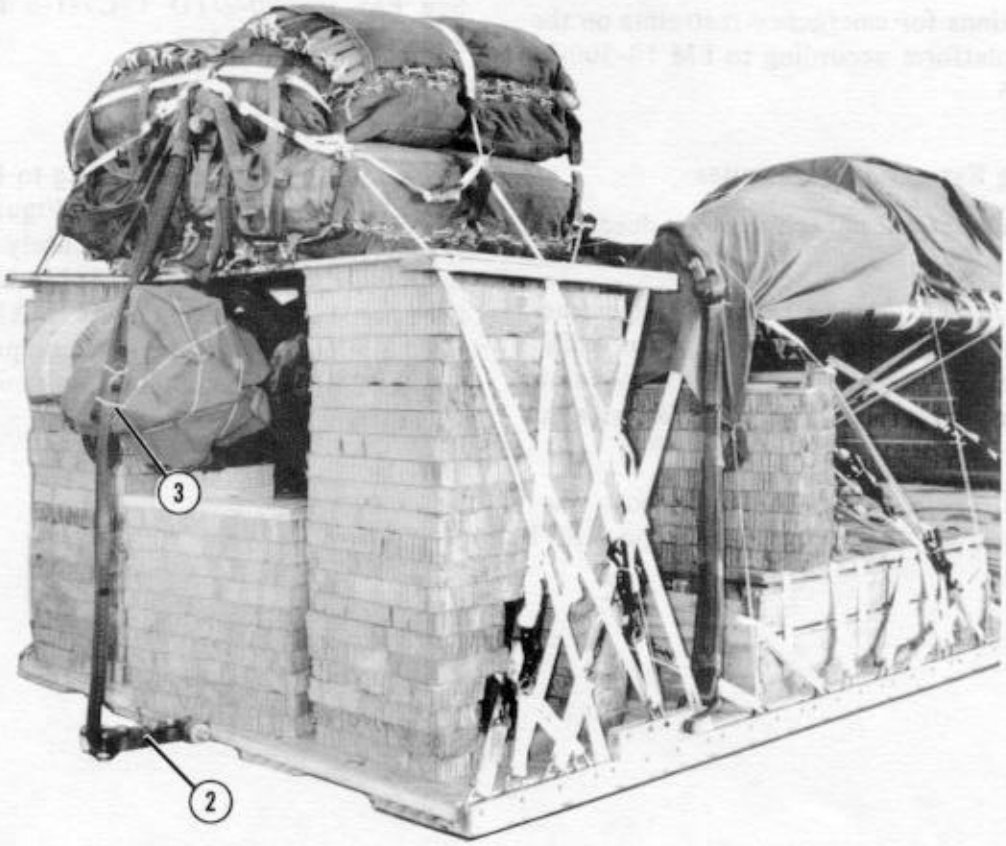


1. Lash the parachute stowage platform to clevis 22 through the center and rear holes on the right side.
2. Lash the parachute stowage platform to clevis 25A through the center and rear holes on the left side (not shown).
3. Lash the parachute stowage platform to clevis 25 through the center and front holes on the right side.
4. Lash the parachute stowage platform to clevis 27A through the center and front holes on the left side (not shown).
5. Prepare and install four G-11B cargo parachutes. Tie the front restraint strap to the first bushing on each rear suspension link. Tie the rear restraint strap to the first bushing after the suspension link on each side.

Figure 8-36. Cargo parachutes installed

8-28. Installing Extraction System

Install the EFTC extraction system on the load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-37.



1. Install the mounting brackets, actuator, and a 20-foot cable as shown in Figure 8-21. Use the rear EFTC mounting holes on the left rail.
2. Install the latch assembly and latch assembly adapter to the extraction bracket. Install the cable to the latch assembly.
3. Install a 12-foot (2-loop), type XXVI nylon webbing deployment line. S-fold the slack and tie the folds with type I, 1/4-inch cotton webbing.

Figure 8-37. EFTC installed

8-29. Installing Release System

Prepare and install an M-2 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-22.

8-30. Installing Provisions for Emergency Restraints

Install provisions for emergency restraints on the front of the platform according to FM 10-500-2/TO 13C7-1-5.

8-31. Placing Extraction Parachutes

Place the extraction parachutes as described below.

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

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

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

8-32. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-38. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the load has been prepared according to AFJMAN 24-240. Use FM 10-500-2/TO 13C7-1-5 to compute the weight, height, CB, and parachute requirements for loads that differ from 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.

CB

RIGGED LOAD DATA

Weight: Load shown	19,320 pounds
Maximum load allowed	19,500 pounds
Height	99 1/2 inches
Width	108 inches
Length	274 inches
Overhang: Front	17 inches
Rear	17 inches
CB (from front edge of platform)	112 inches
Extraction System	EFTC

Figure 8-38. Two M119 howitzers with light ammunition load rigged for low-velocity airdrop on a type V platform

8-33. Equipment Required

Use the equipment listed in Table 8-2 to rig the load shown.

Table 8-2. Equipment required for rigging two M119 howitzers with light ammunition load for low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium)	2
4030-00-090-5354	1-in (large)	7
8305-00-242-3593	Cloth, cotton duck	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5787	Coupling, airdrop, extraction force transfer w 20-ft cable	1
1670-00-360-0329	Cover, link assembly (type IV)	20
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction, type XXVI nylon webbing:	2
1670-01-062-6313	60-ft (3-loop) or	1
1670-01-107-7651	140-ft (3-loop)	1
	Link assembly:	
	Two-point, 3 3/4-in:	3
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(6)
5310-00-232-5165	Nut, 1-in, hexagonal	(6)
1670-00-003-1953	Plate, side, 3 3/4-in	(6)
5365-00-007-3414	Spacer, large	(6)
1670-00-783-5988	Type IV	20
	Lumber:	
5510-00-220-6146	2- by 4-in	As required
5510-00-220-6148	2- by 6-in	As required
5510-00-220-6246	2- by 8-in	As required
	Nail, steel wire, common:	
5315-00-010-4659	8d	As required
5315-00-064-5121	20d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	
	3- by 36- by 96-in:	1
	12- by 8-in	(2)
	12- by 12-in	(12)
	12- by 24-in	(12)
	15- by 36-in	(10)
	16- by 36-in	(1)
	18- by 36-in	(6)

Table 8-2. Equipment required for rigging two M119 howitzers with light ammunition load for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	20- by 36-in	(9)
	24- by 16-in	(2)
	24- by 36-in	(22)
	24- by 38-in	(2)
	25- by 30-in	(2)
	25- by 36-in	(11)
	30- by 10-in	(2)
	30- by 16-in	(15)
	30- by 20-in	(20)
	36- by 96-in	(1)
	72- by 36-in	(5)
	96- by 24-in	(2)
	96- by 26-in	(1)
	96- by 36-in	(5)
	Parachute:	
1670-01-016-7841	Cargo, G-11B	4
1670-00-040-8135	Cargo extraction, 28-ft	1
	Platform, AD, type V, 20-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(57)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-00-081-6865	Nose bumper, 104-in	(1)
1670-01-247-2389	Suspension link	(4)
1670-01-162-2381	Tandem link	(2)
5530-00-129-7777	Plywood, 1/2-in:	
	10 1/2- by 6-in	2
	40- by 7 1/2-in	2
5530-00-128-4981	Plywood, 3/4-in:	
	12- by 8-in	3
	21- by 6-in	2
	25- by 36-in	4
	30- by 6-in	4
	30- by 20-in	2
	34- by 30-in	1
	40- by 7 1/2-in	2
	74- by 17-in	2
	74- by 36-in	2
	74- by 45-in	2
	80- by 24-in	1
	96- by 15-in	2

Table 8-2. Equipment required for rigging two M119 howitzers with light ammunition load for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	96- by 24-in	1
	96- by 36-in	2
	96- by 48-in	1
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo, airdrop, type XXVI nylon webbing:	
	For deployment line:	
1670-01-062-6303	12-ft (2-loop)	1
	For lifting:	
1670-01-063-7760	11-ft (2-loop)	3
	For riser extension:	
1670-01-062-6302	20-ft (2-loop)	20
	For suspension:	
1670-01-062-6310	11-ft (4-loop)	4
1670-01-432-2507	16-ft (4-loop)	2
1670-00-040-8219	Strap, parachute release, multicut comes w 3 knive	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	94
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
	Nylon, tubular:	
8305-00-082-5752	1/2-in	As required
8305-00-268-2455	1-in	As required
8305-00-263-3591	Type VIII	As required

Section III

RIGGING HOWITZERS WITH TWO 81-MILLIMETER MORTARS

8-34. Description of Load

Two M119, 105-millimeter howitzers (line number H57505) are rigged on a 20-foot, type V airdrop platform with an accompanying load of 68 boxes of ammunition, 21 cans of fuzes (when required), and two 81-millimeter mortars with six boxes of mortar ammunition. This load requires five G-11B cargo parachutes.

8-35. Preparing Platform

Prepare a 20-foot, type V airdrop platform as described in Paragraph 8-2, and as shown in Figure 8-1.

8-36. Stowing and Lashing First Group of Ammunition Boxes

Stow and lash the first group of ammunition boxes as shown in Figures 8-2 and 8-3.

8-37. Packaging and Securing Mortar Components

Build the wooden box for the mortar components as shown in Figure 8-39. Pack the mortar components in the box and close the box as shown in Figure 8-40. Place the mortar ammunition on the load and secure the mortar package as shown in Figure 8-41.

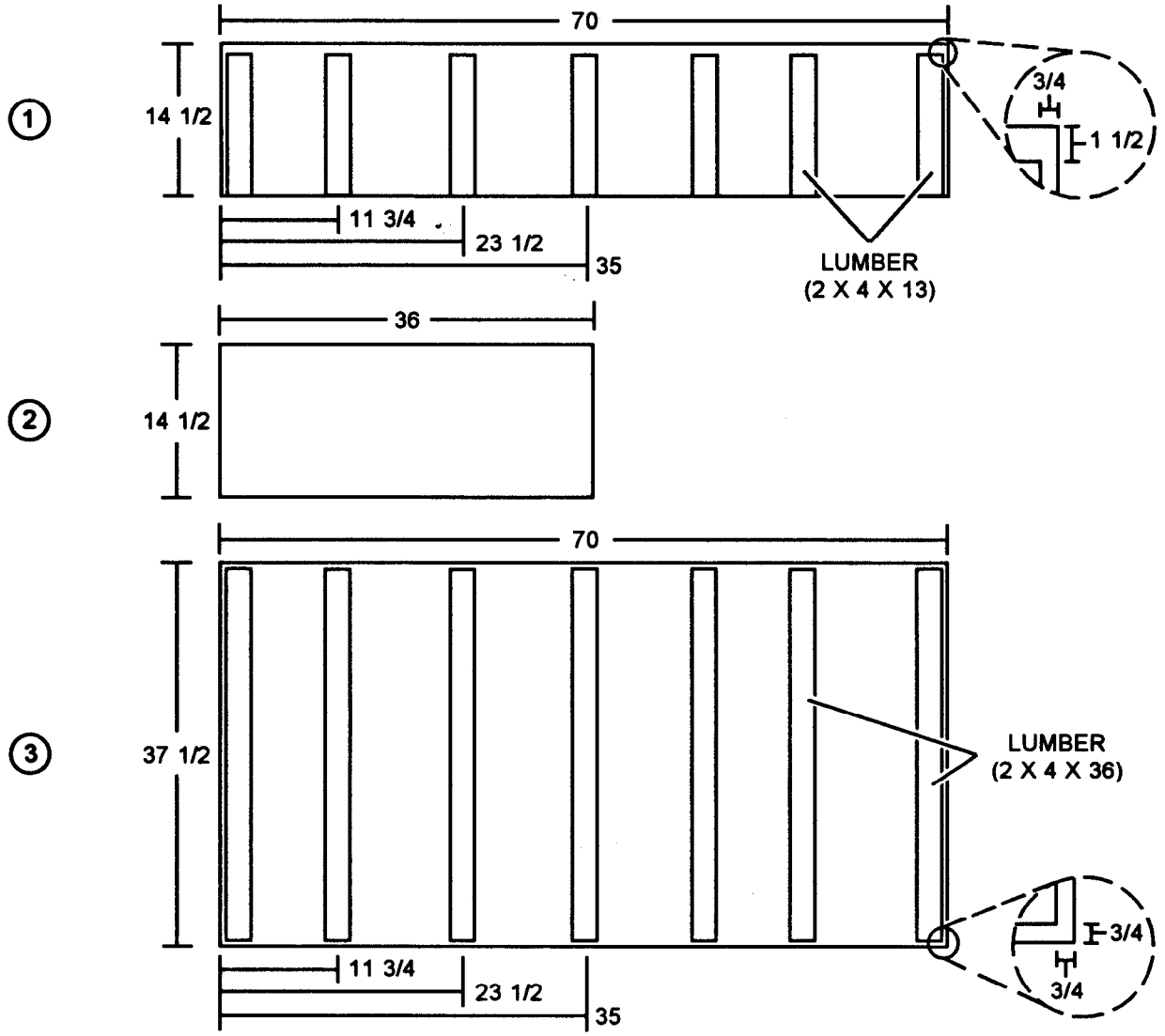
NOTICE OF EXCEPTION: Exception to FM 10-500-2/TO 13C7-1-5 is granted to rig ammunition with one layer of honeycomb.

Note: The mortar and ammunition are rigged as part of the second ammunition stack. See Section I, paragraph 8-4 of this chapter for procedures for rigging the remainder of the second ammunition stack.

8-38. Rigging Howitzers

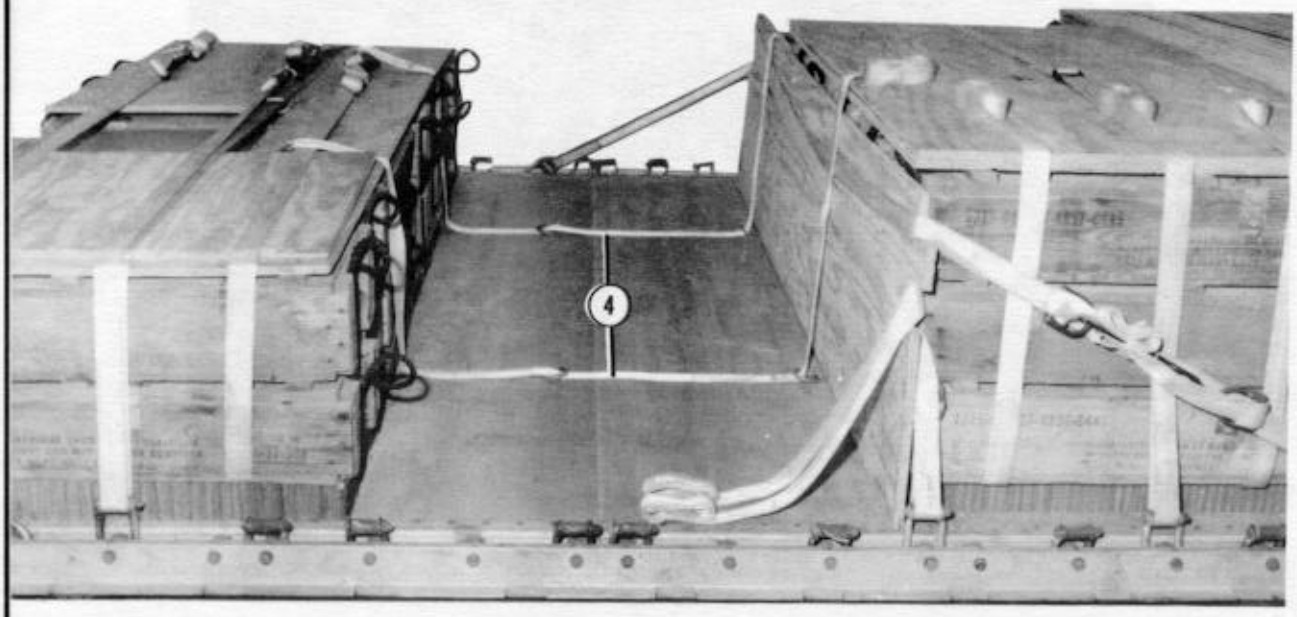
Complete the rigging of this load as shown in Section I of this chapter.

Notes: 1. All measurements are given in inches.
2. These drawings are not drawn to scale.



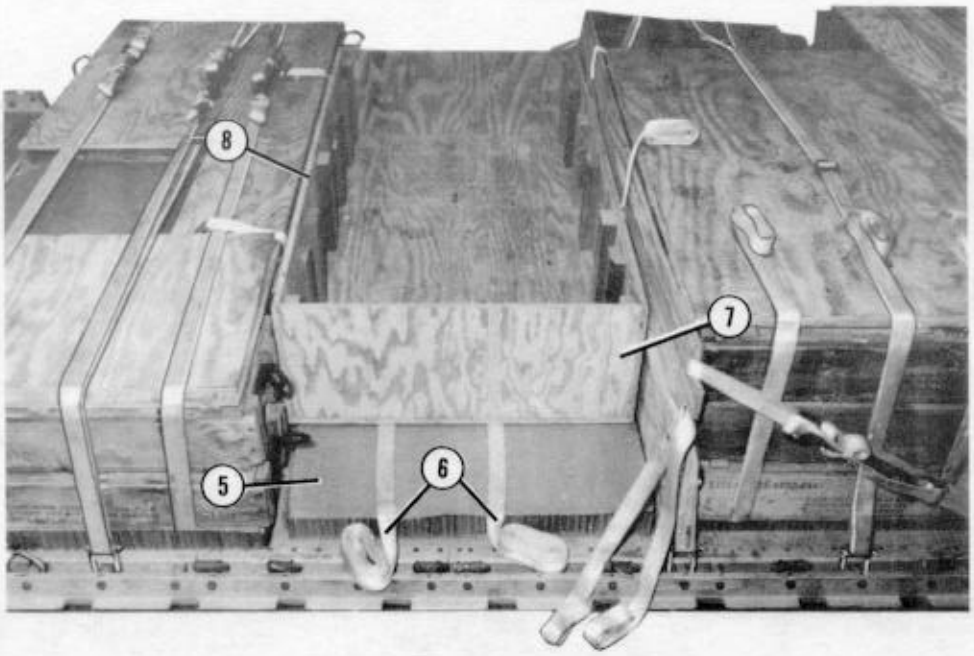
1. Build two box sides of 3/4- by 70- by 14 1/2-inch plywood. Nail 2- by 4- by 13-inch lumber to the sides spaced as shown.
2. Cut two box ends of 3/4- by 36- by 14 1/2-inch plywood.
3. Cut a box bottom and top of 3/4- by 70- by 37 1/2-inch plywood. Nail 2- by 4- by 36-inch lumber to the top spaced as shown.

Figure 8-39. Box for mortars constructed



(4) Pass a 15-foot lashing through tie-down rings A5 and A6. Pass a 15-foot lashing through tie-down rings B5 and B6.

Figure 8-39. Box for mortars constructed (continued)



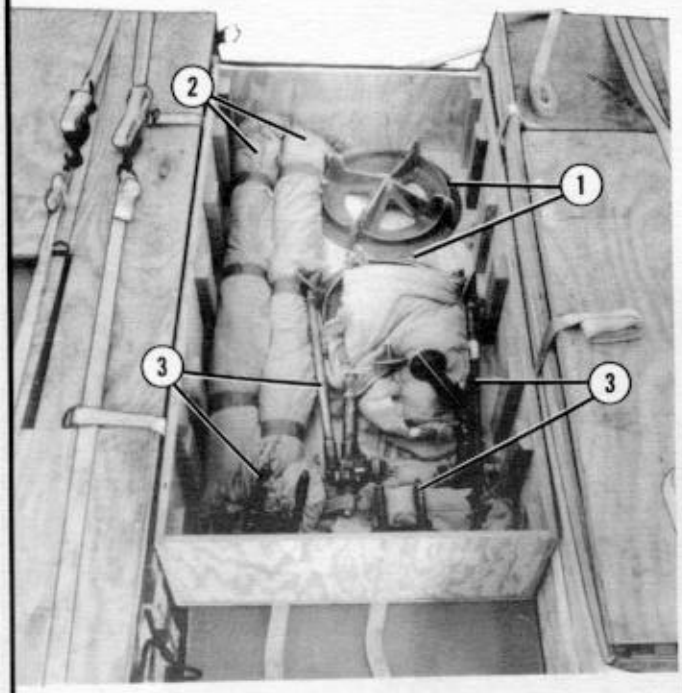
(5) Place a 96- by 36-inch piece of honeycomb against the second endboard.

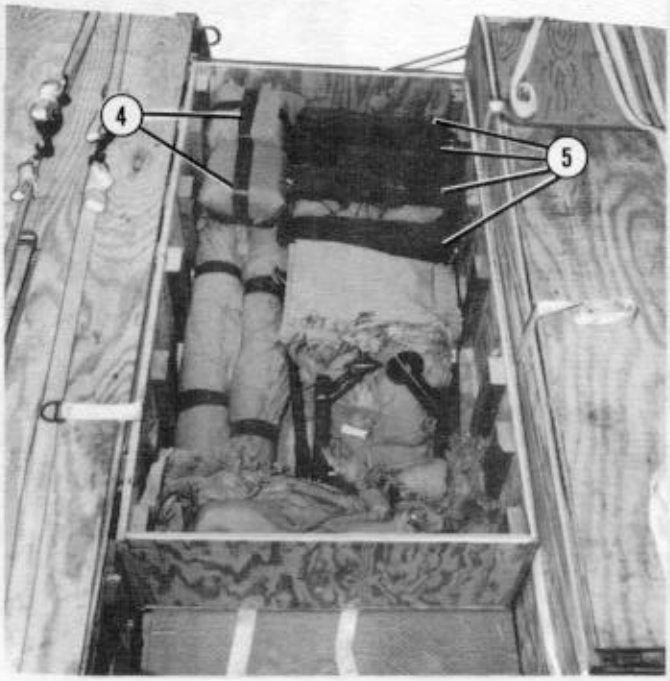
(6) Center a 30-foot lashing 8 inches from the rear edge of the honeycomb. Center a 30-foot lashing 10 inches to the front of the first lashing.

(7) Nail the box ends to the sides through the lumber at the box corners. Nail the box bottom to the sides and ends.

(8) Center the box over the lashings and honeycomb.

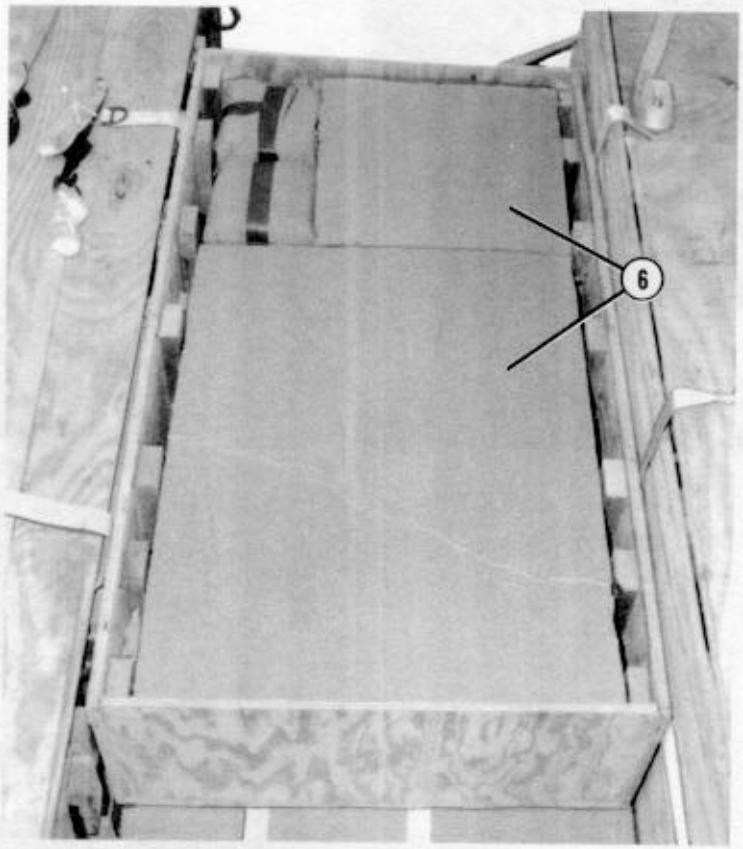
Figure 8-39. Box for mortars constructed (continued)





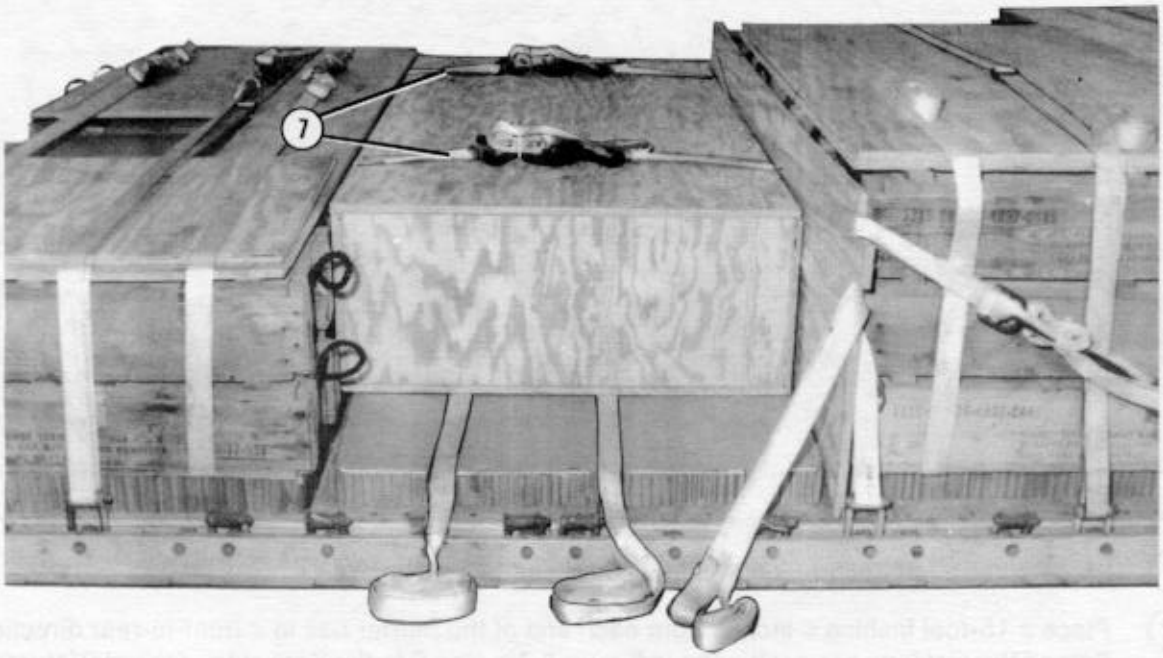
1. Place the two mortar baseplates in the bottom of the box upside down.
2. Wrap the mortar tubes in cellulose wadding taped in place and lay them together beside the base plates.
3. Pad the baseplates with cellulose wadding and lay the bipods and mounts over them.
4. Pad the sight boxes with cellulose wadding taped in place, and lay them over the tubes.
5. Place the aiming pole bags over the padded base plate.

Figure 8-40. Mortar components placed in box



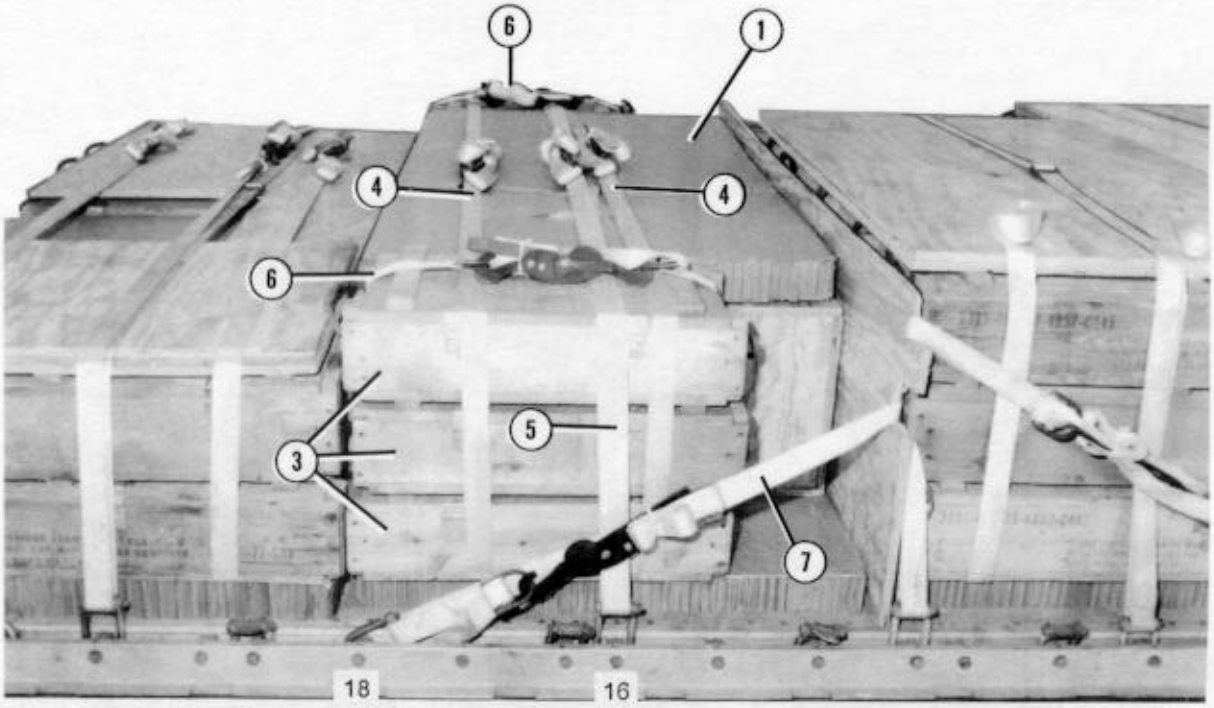
(6) Fill in empty space with additional equipment or honeycomb cut to fit.

Figure 8-40. Mortar components placed in box (continued)



(7) Nail the top onto the box. Secure the lashings pre-positioned in Figure 8-39, step 4 over the box.

Figure 8-40. Mortar components placed in box (continued)



1. Place a 70- by 35-inch piece of honeycomb on the mortar box.
2. Place a 15-foot lashing 6 inches from each end of the mortar box in a front-to-rear direction. Extend the lashings pre-positioned in Figure 8-39, step 6 to the right side of the platform (not shown).
3. Place three boxes of mortar ammunition at each end of the mortar box flush with the rear edge of the box.
4. Secure the lashings pre-positioned in Figure 8-39, step 6 on top of the mortar box and honeycomb cover.
5. Run a 30-foot lashing through clevises 16 and 17A and over the top of the mortar box. Secure the lashing on top of the box.
6. Secure the lashings pre-positioned in step 2 above on top of the boxes of mortar ammunition.
7. Secure the lashing pre-positioned through clevis 19A and around the second endboard to clevis 18. Secure the lashing on the right side.

Figure 8-41. Mortar ammunition placed and secured

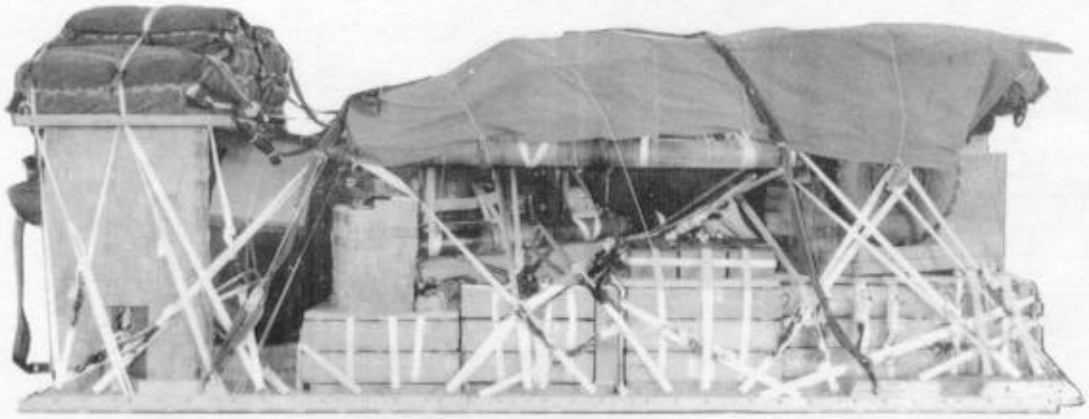
8-39. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-42. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the load has been prepared according to AFJMAN 24-240. Use FM 10-500-2/TO 13C7-1-5 to compute the weight, height, CB, and parachute requirements for loads that differ from the load shown.

8-40. Equipment Required

Use the equipment listed in Table 8-1 to rig the load shown, with the addition of six tie-down assemblies and the materials needed for the mortar box.

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



CB

RIGGED LOAD DATA

Weight: Load shown	21,940 pounds
Maximum load allowed	22,500 pounds
Height	98 inches
Width	108 inches
Length	274 inches
Overhang: Front	17 inches
Rear	17 inches
CB (from front edge of platform)	110 inches
Extraction System	EFTC

Figure 8-42. Two M119 howitzers rigged with two 81-millimeter mortars for low-velocity airdrop on a type V platform

CHAPTER 9

RIGGING M101A1 HOWITZER FOR LOW-VELOCITY AIRDROP ON TYPE V PLATFORM

9-1. Description of Load

The M101A1, 105-millimeter howitzer is rigged on a 16-foot, type V airdrop platform with two G-11B cargo parachutes. This load includes an accompanying load of 21 boxes of ammunition. The accompanying load must weigh at least 2,000 pounds, but no more than 2,400 pounds. The howitzer is rigged for a low-velocity airdrop from a C-130, C-141, or C-5 aircraft.

9-2. Preparing Platform

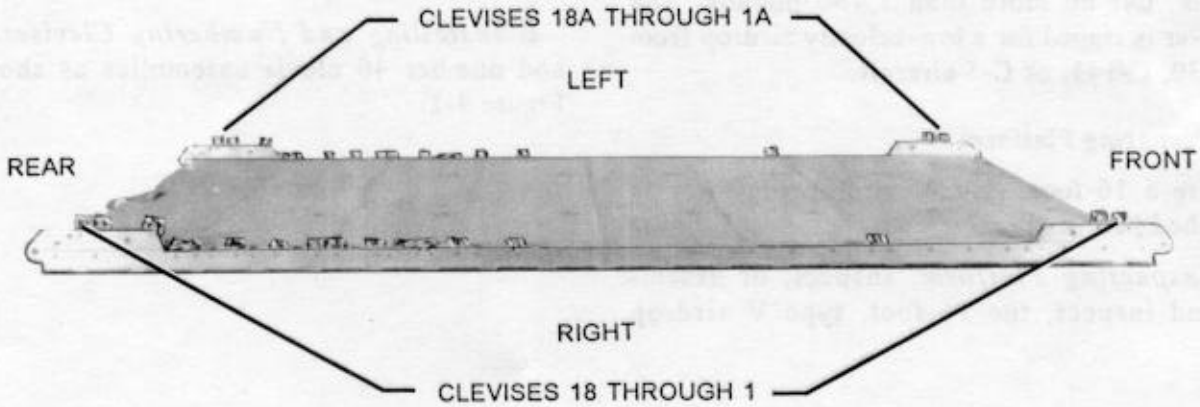
Prepare a 16-foot, type V airdrop platform as described below.

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

b. Installing Tandem Links. Install tandem links on the front and rear of each rail as shown in Figure 9-1.

c. Installing and Numbering Clevises. Bolt and number 40 clevis assemblies as shown in Figure 9-1.

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



Step:

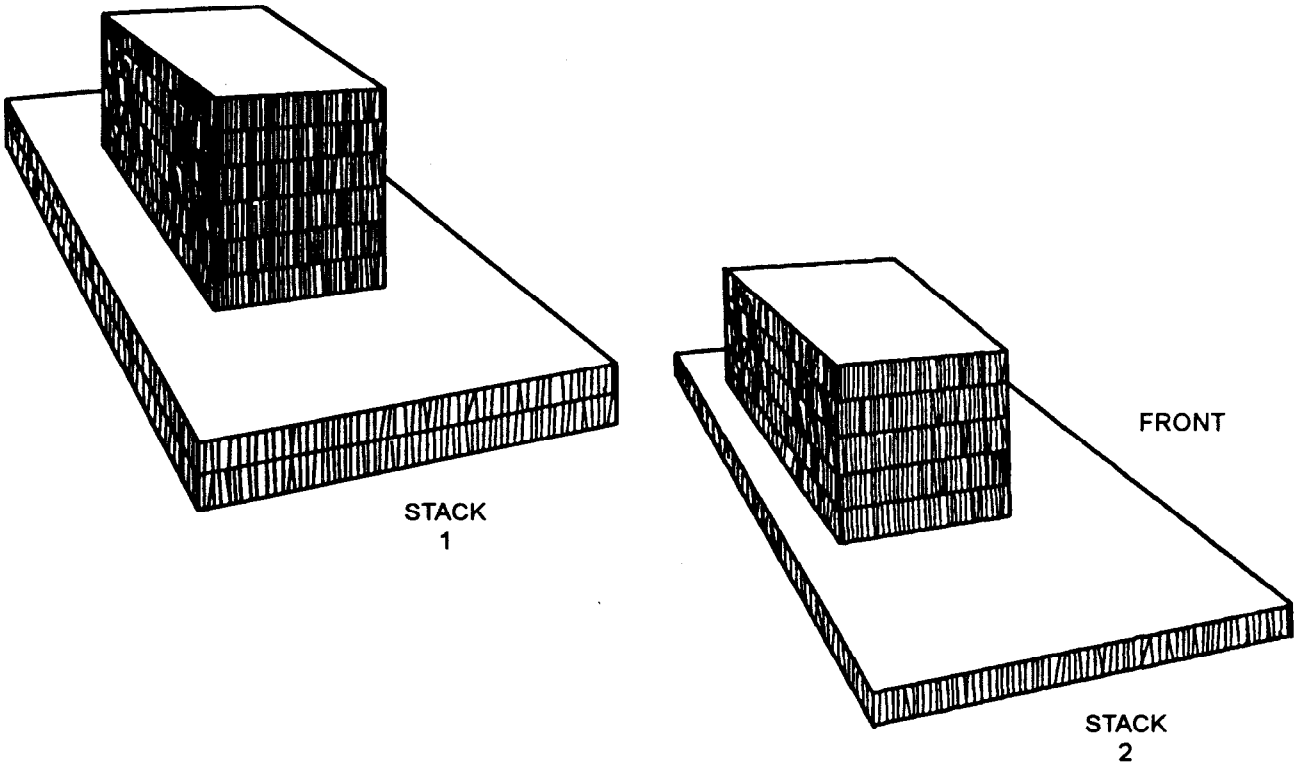
1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install a tandem link on the rear of each platform side rail using holes 30, 31, and 32.
3. Install clevises on bushings 2 and 3 of each front tandem link.
4. Install clevises on bushings 1, 2, and 3 of each rear tandem link.
5. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 9, 19, 21, 22, 23, 24, 25, 26, 27, 28, and 29. Reverse the clevises on holes 22 and 29. Install two clevises on each of the reversed clevises as shown.
6. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 18 and those bolted to the left side from 1A to 18A.
7. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 9-1. Platform prepared

9-3. Building and Placing Honeycomb Stacks

Build the honeycomb stacks as shown in Figure 9-2. Place the stacks on the platform as shown in Figure 9-3.

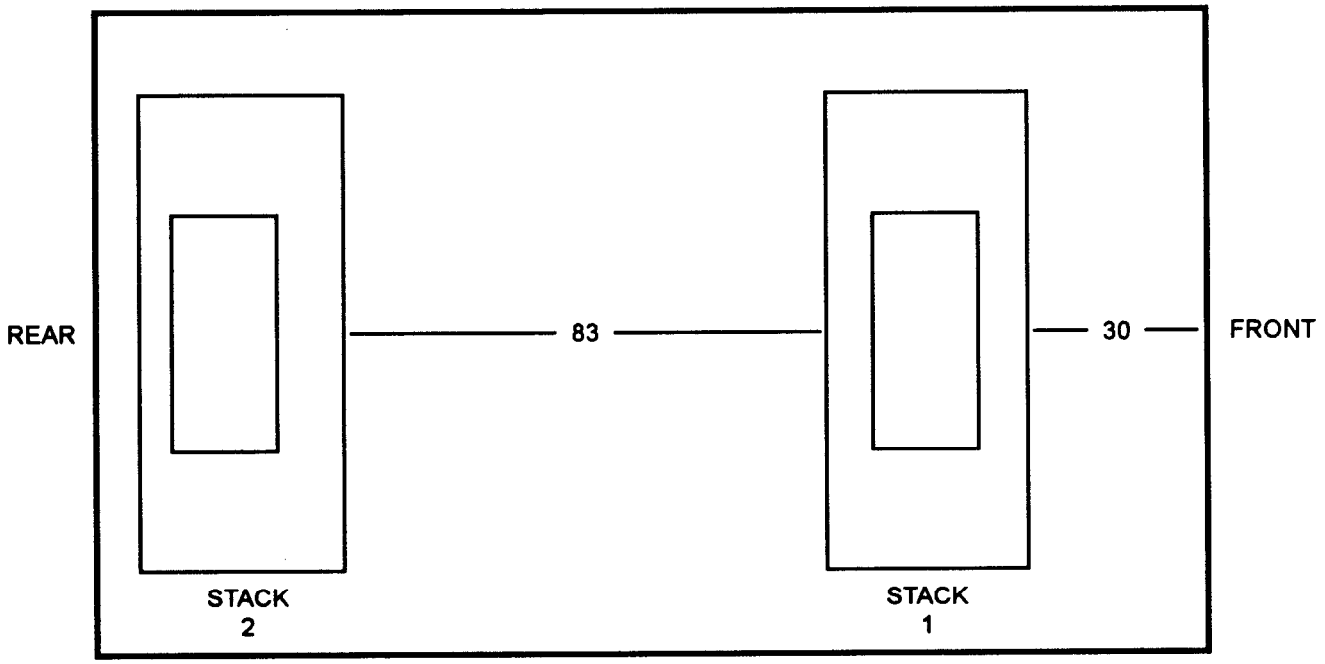
Note: These drawings are not drawn to scale.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	2	84	36	Honeycomb	Stack to form a base.
	6	36	18	Honeycomb	Center and glue honeycomb on the base.
2	1	84	36	Honeycomb	Form a base.
	5	36	18	Honeycomb	Center and glue the smaller pieces 14 inches from the front edge of the base.

Figure 9-2. Honeycomb stacks prepared

Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.



Stack Number	Position of Stack on Platform
1 2	Place stack: Centered 30 inches from front edge of platform. Centered 83 inches from stack 1.

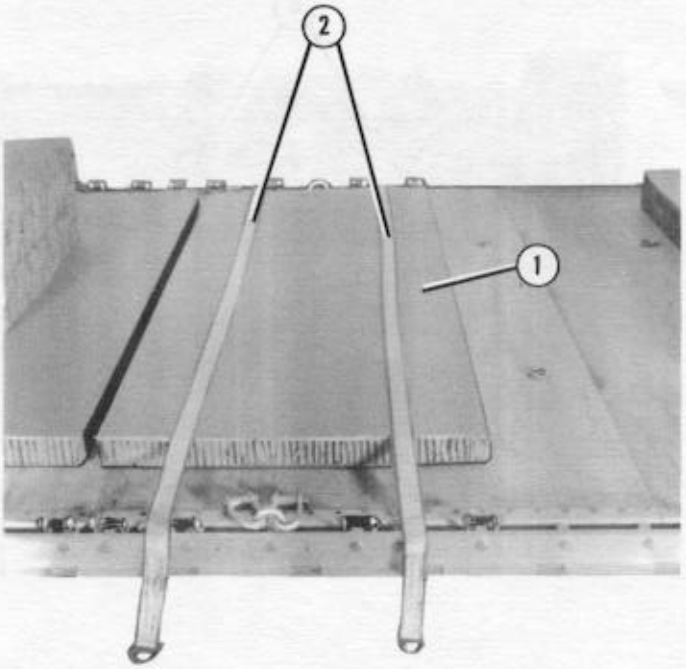
Figure 9-3. Honeycomb stacks placed on platform

9-4. Stowing Accompanying Load

Stow the accompanying load of 21 boxes of ammunition weighing 2,100 pounds as shown in Figures 9-4 and 9-5.

CAUTION: Only ammunition listed in FM 10-500-53/TO 13C7-18-41 may be airdropped.

NOTICE OF EXCEPTION: Exception to FM 10-500-2/TO 13C7-1-5 is granted to rig ammunition with one layer of honeycomb.

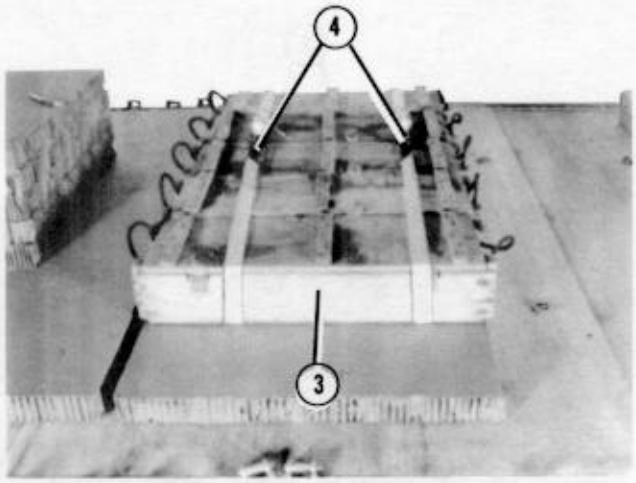


(1) Place an 84- by 36-inch piece of honeycomb centered and 1 inch in front of stack 2.

(2) Center a 15-foot lashing 7 inches from each end of the honeycomb.

Figure 9-4. First stack of ammunition placed and lashed

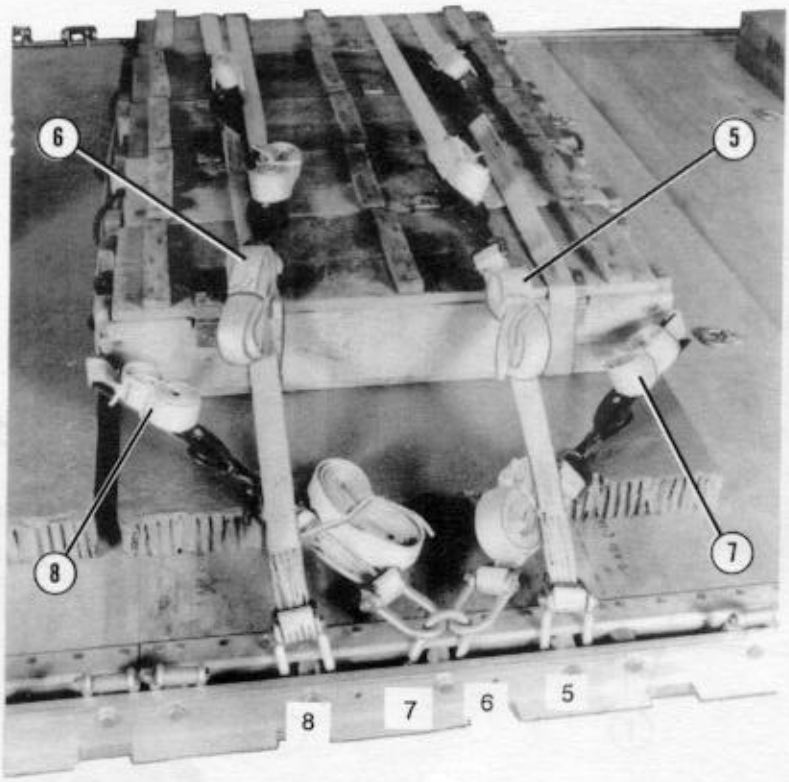
NOTICE OF EXCEPTION: Exception to FM 10-500-2/TO 13C7-1-5 is granted to rig ammunition with one layer of honeycomb.



(3) Center five boxes of ammunition over the lashings.

(4) Secure the lashings over the boxes.

Figure 9-4. First stack of ammunition placed and lashed (continued)



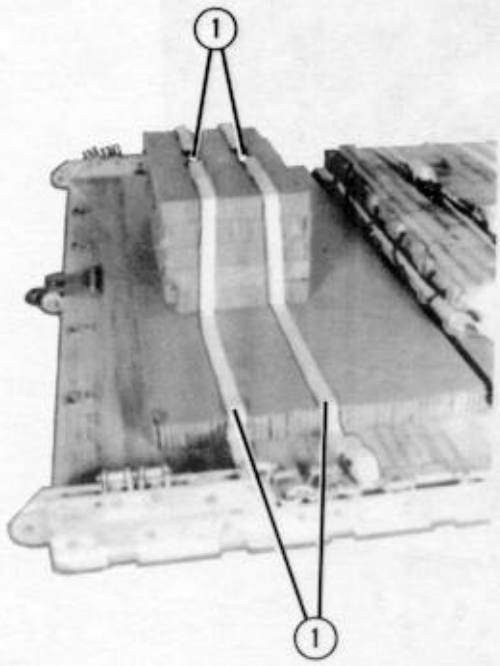
(5) Run a 15-foot lashing through clevis 5 and through its own D-ring. Run a 15-foot lashing through clevis 5A and through its own D-ring. Secure the lashings on top of the boxes with two D-rings and a load binder.

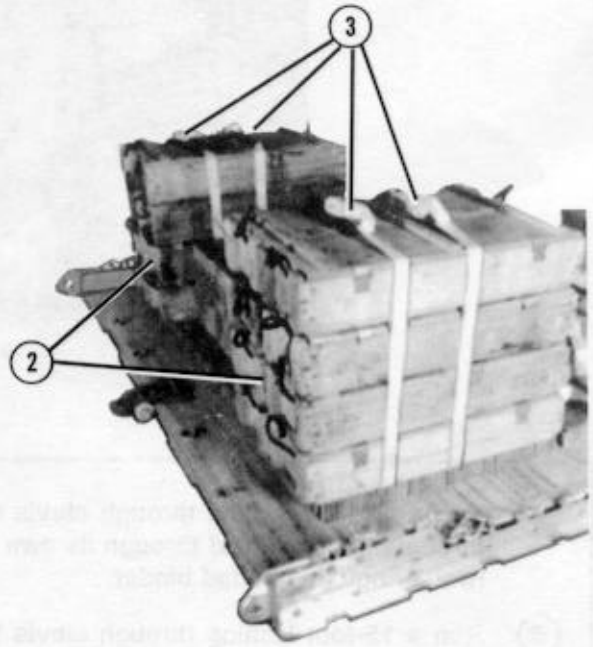
(6) Run a 15-foot lashing through clevis 8 and through its own D-ring. Run a 15-foot lashing through clevis 8A and through its own D-ring. Secure the lashings on top of the boxes with two D-rings and a load binder.

(7) Run a 15-foot lashing through clevis 6A and through its own D-ring. Run the lashing through the box handles on the front side of the boxes. Run a 15-foot lashing through clevis 6 and through its own D-ring. Secure the two lashings on the right side as shown with two D-rings and a load binder.

(8) Run a 15-foot lashing through clevis 7A and through its own D-ring. Run the lashing through the box handles on the rear side of the boxes. Run a 15-foot lashing through clevis 7 and through its own D-ring. Secure the two lashings on the right side as shown with two D-rings and a load binder.

Figure 9-4. First stack of ammunition placed and lashed (continued)



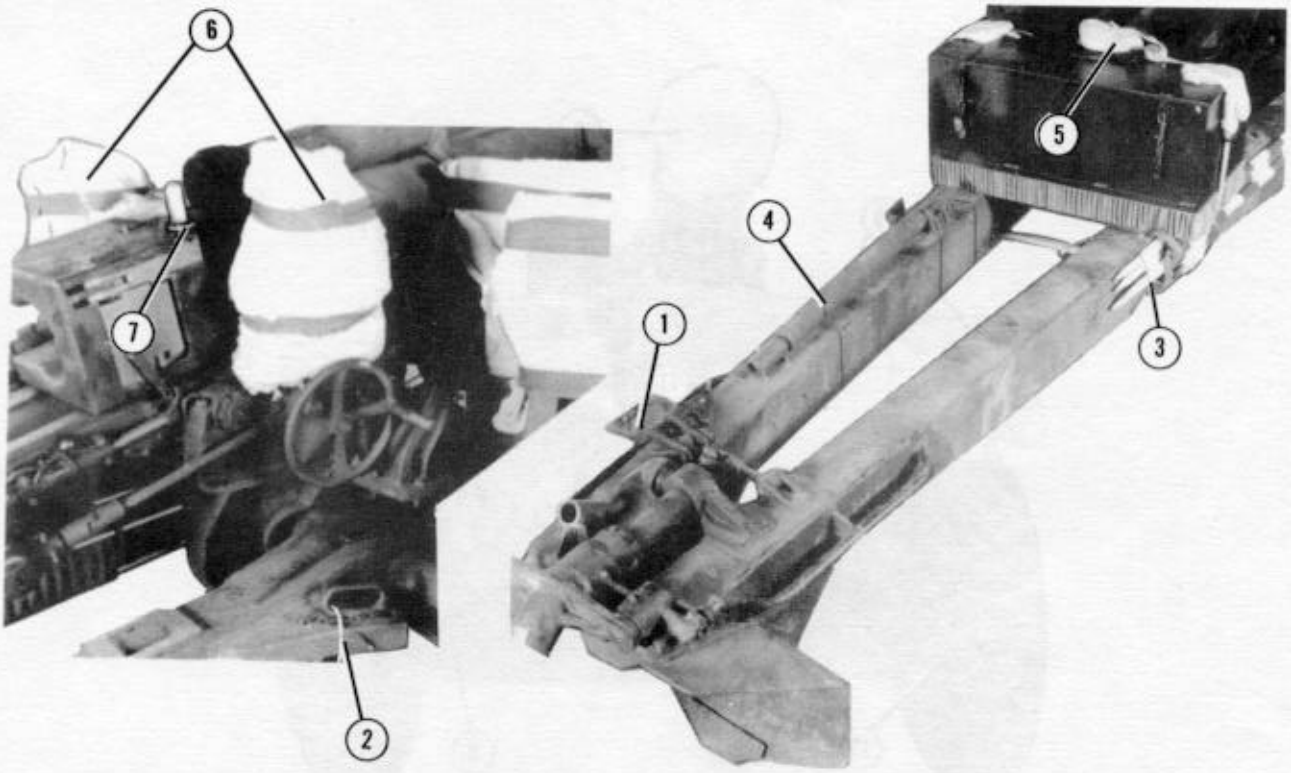


1. Pre-position four 15-foot lashings on stack 2 as shown, 4 inches from each end of the stack. Place the sewn D-rings 3 inches apart at the top center of the stack.
2. Place eight ammunition boxes on each side of stack 2. Place the boxes 1/2 inch from the front edge of the honeycomb.
3. Secure the pre-positioned lashings on top of the boxes.

Figure 9-5. Ammunition boxes placed on stack 2

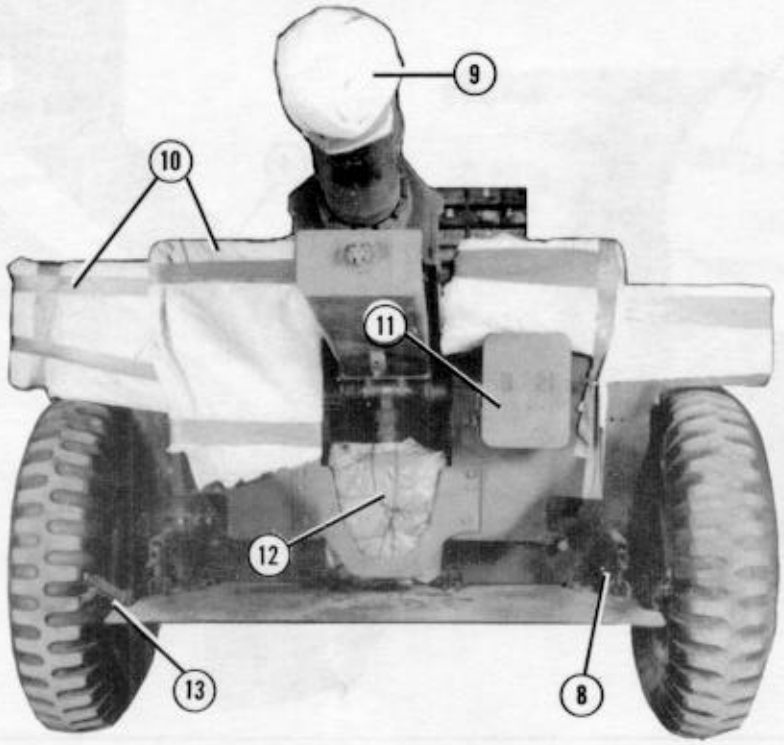
9-5. Preparing Howitzer

Prepare the howitzer as shown in Figure 9-6.



1. Secure the gun trails together. Safety tie the clamp shut with type III nylon cord.
2. Secure the trail lock pins in place with type III nylon cord.
3. Place the aiming poles in the holders provided. Secure the poles in place with type III nylon cord. Secure the cleaning staffs on the left trail in the same way.
4. Place the handling bar in its mounts on top of the left trail. Secure the bar in place with type III nylon cord.
5. Place a 29- by 14-inch piece of honeycomb across the trails 6 inches behind the recoil slide. Place the section chest on the honeycomb. Pass a 15-foot lashing under the trails and up through the chest carrying handles. Pad the lashing where it touches the trails and the chest corners. Secure the lashing on top of the chest.
6. Pad the sight mounts and quadrant with cellulose wadding taped in place.
7. Tie the breech operating handle shut with type III nylon cord.

Figure 9-6. Howitzer prepared



(8) Latch the lower deflector shield down, and safety tie the latches with type III nylon cord.

(9) Pad the muzzle with cellulose wadding taped in place.

(10) Pad the upper edges of the deflector shields with cellulose wadding taped in place.

(11) Pad the sights with cellulose wadding and place them in the sight box. Latch and safety tie the sight box securely shut.

(12) Tie the folded gun cover in place between the deflector shields.

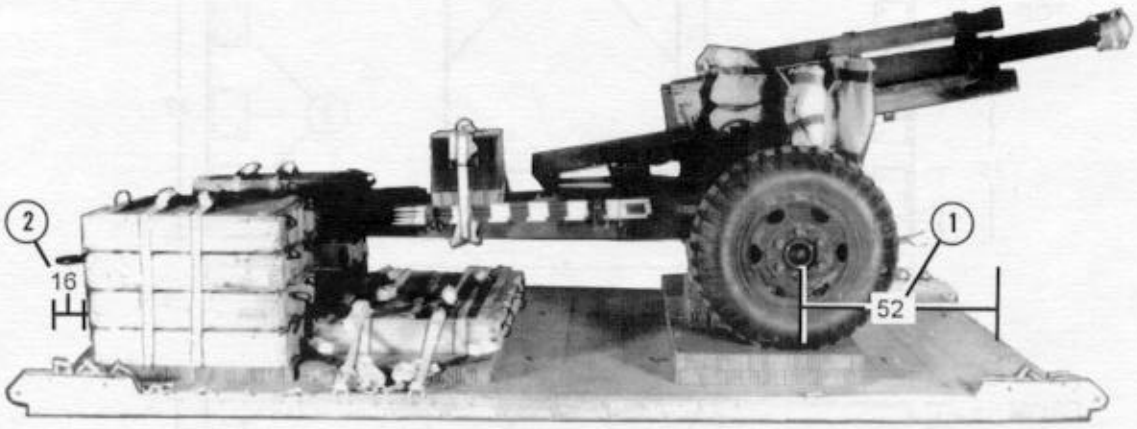
(13) Place the howitzer brake in the lock position. Secure the brake lever with type III nylon cord.

Figure 9-6. Howitzer prepared (continued)

9-6. Placing Howitzer on Platform

Place the howitzer on the honeycomb stacks as shown in Figure 9-7.

Note: Equipment required for lifting the howitzer will be determined by the type of crane or forklift on hand.



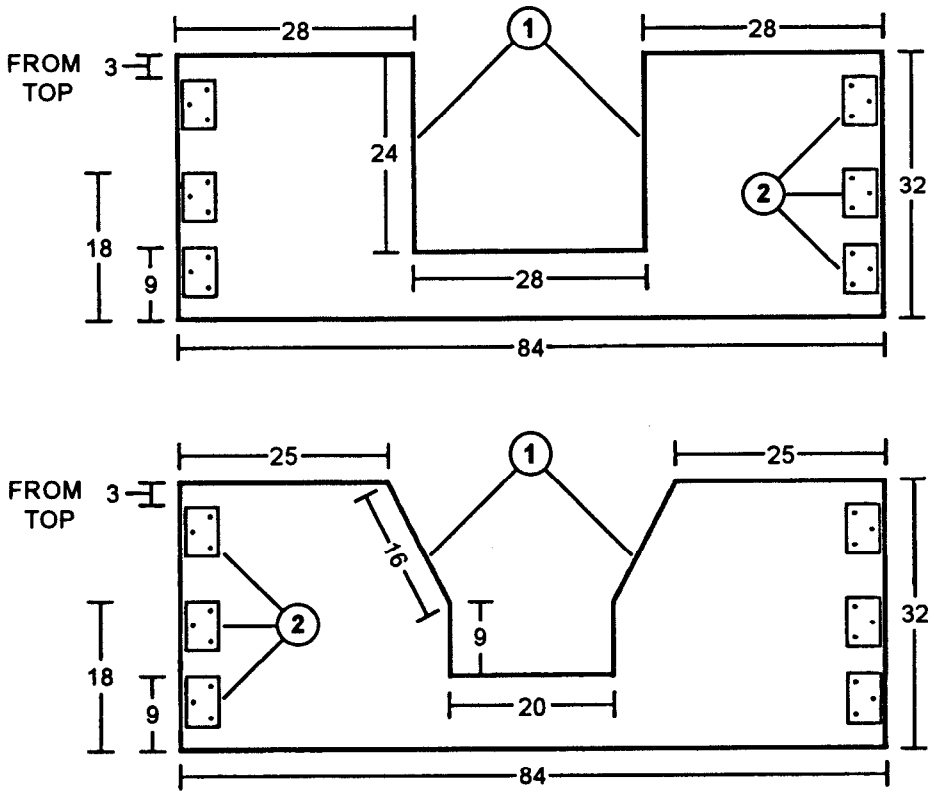
1. Set the howitzer on the stacks so that the center line between the wheels is 52 inches from the front edge of the platform.
2. Allow the towing pintle to overhang the rear edge of the platform 16 inches.

Figure 9-7. Howitzer positioned on platform

9-7. Constructing Endboards and Lashing Rear Ammunition Stack to Platform

Construct the endboards and place them on the load as shown in Figure 9-8. Lash the ammunition placed on stack 2 to the platform as shown in Figure 9-9.

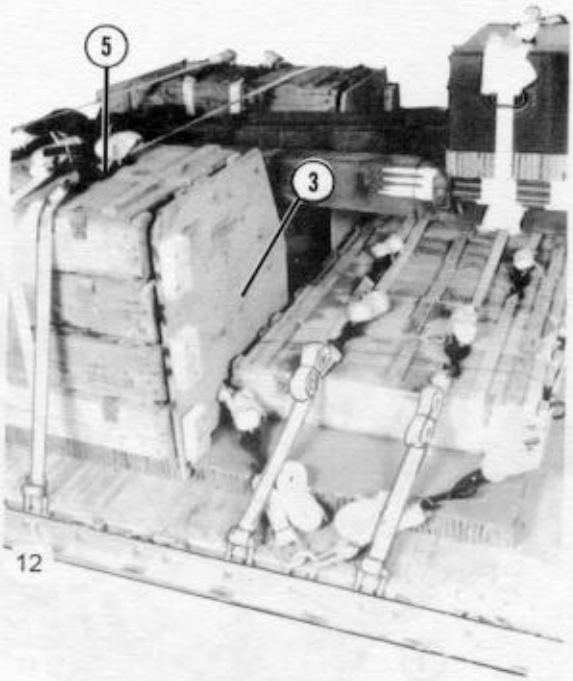
Notes:
1. **All measurements are given in inches.**
2. **These drawings are not drawn to scale.**
3. **Cutouts 2 inches wide and 3 inches deep may be substituted for the nailed cleats shown.**
4. **Use 8d nails.**

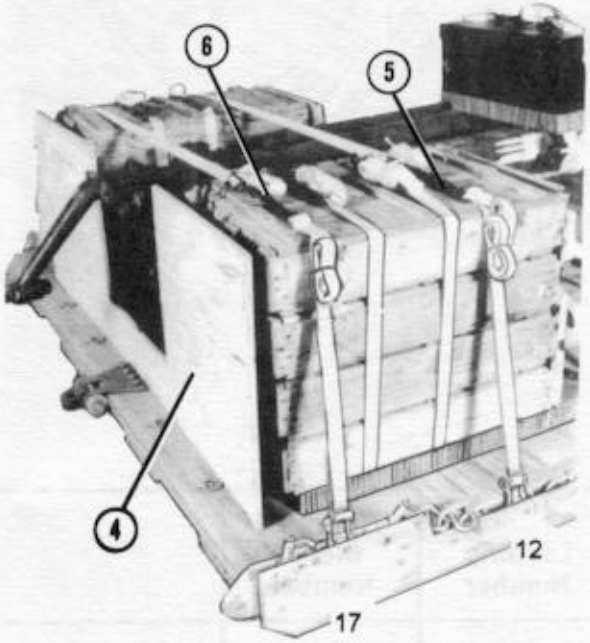


(1) Center cutouts as shown in two 3/4- by 84- by 32-inch pieces of plywood.

(2) Nail 2- by 4- by 6-inch cleats to both sides of each endboard as shown.

Figure 9-8. Endboards constructed and placed





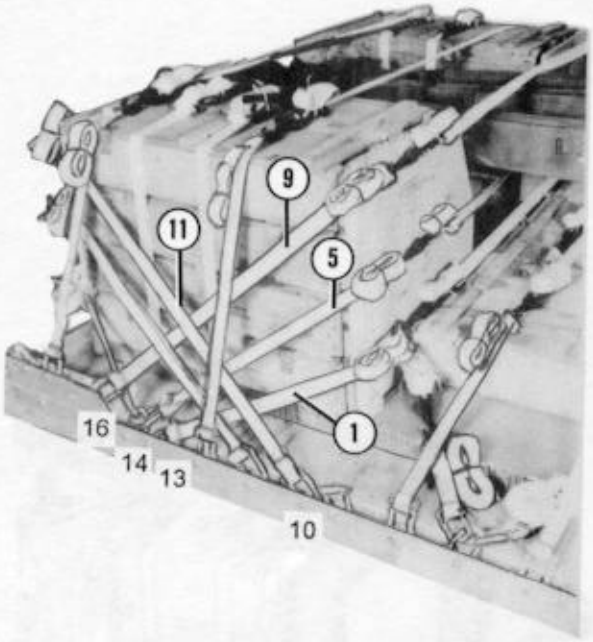
(3) Place the endboard with the wider cutout between the ammunition stacks with the cleats facing the front.

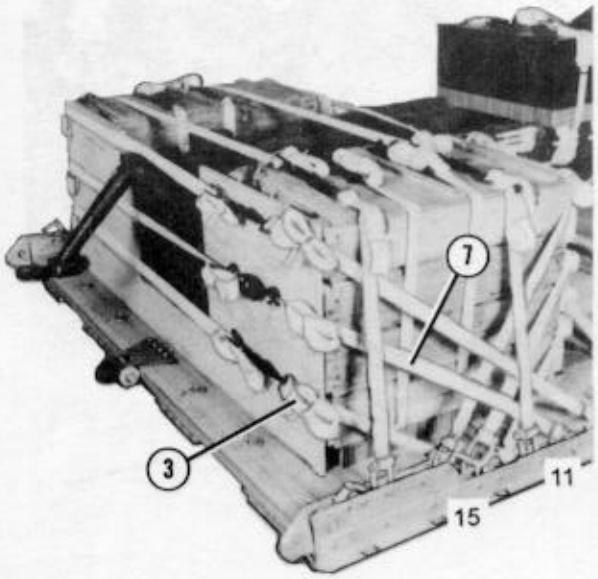
(4) Place the rear endboard against the ammunition stack with the cleats facing the rear.

(5) Run a 15-foot lashing through clevis 12 and through its own D-ring. Run a 15-foot lashing through clevis 12A and through its own D-ring. Secure the lashings over the right side of the stack with two D-rings and a load binder.

(6) Run a 15-foot lashing through clevis 17 and through its own D-ring. Run a 15-foot lashing through clevis 17A and through its own D-ring. Secure the lashings over the right side of the stack with two D-rings and a load binder.

Figure 9-8. Endboards constructed and placed (continued)





Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	13	Through clevis 13 and through its own D-ring.
2	13A	Through clevis 13A and through its own D-ring. Pass lashings 1 and 2 over the lower cleats on the front endboard and secure them together with two D-rings and a load binder.
3	15	Through clevis 15 and through its own D-ring.
4	15A	Through clevis 15A and through its own D-ring. Pass lashings 3 and 4 over the lower cleats on the rear endboard and secure them together with two D-rings and a load binder.
5	14	Through clevis 14 and through its own D-ring.
6	14A	Through clevis 14A and through its own D-ring. Pass lashings 5 and 6 over the center cleats on the front endboard and secure them together with two D-rings and a load binder.

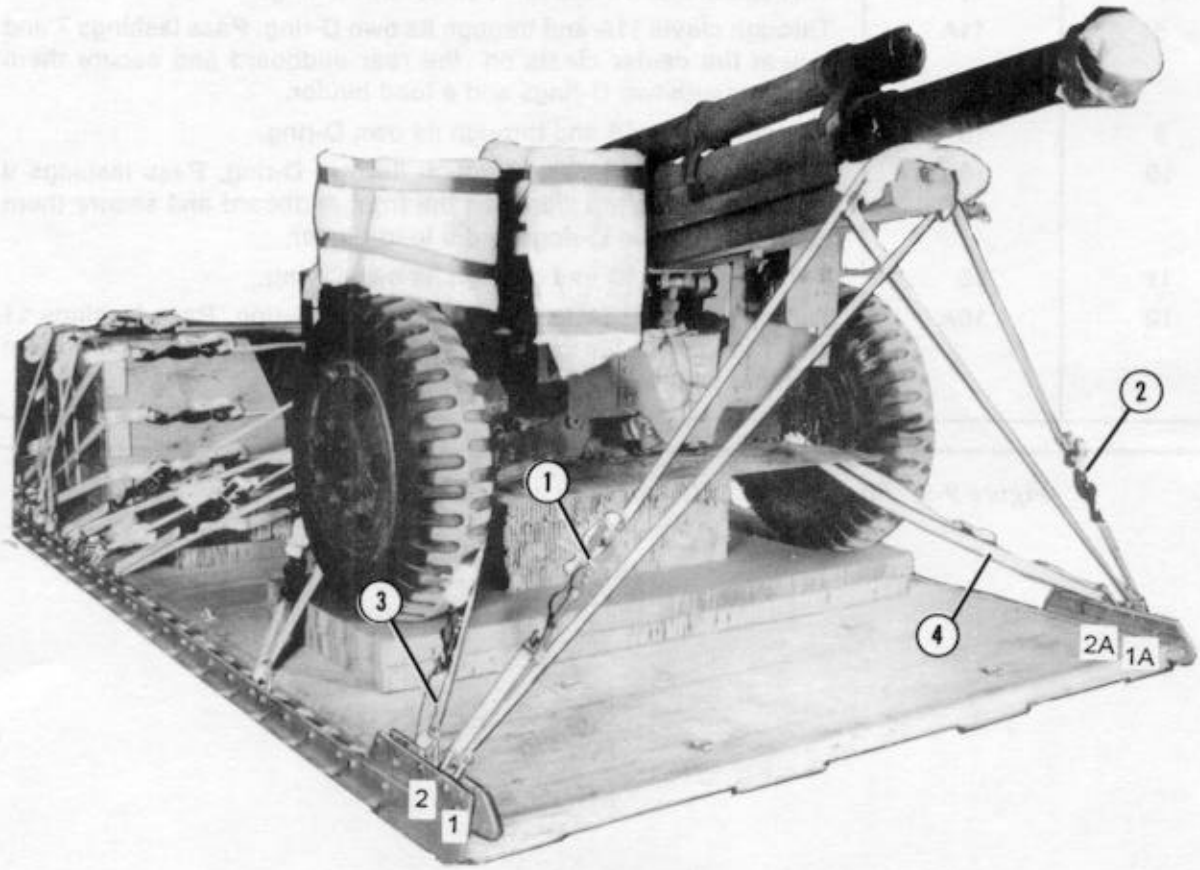
Figure 9-9. Lashings installed for rear ammunition stack

Lashing Number	Tie-Down Clevis Number	Instructions
7	11	Through clevis 11 and through its own D-ring.
8	11A	Through clevis 11A and through its own D-ring. Pass lashings 7 and 8 over the center cleats on the rear endboard and secure them together with two D-rings and a load binder.
9	16	Through clevis 16 and through its own D-ring.
10	16A	Through clevis 16A and through its own D-ring. Pass lashings 9 and 10 over the top cleats on the front endboard and secure them together with two D-rings and a load binder.
11	10	Through clevis 10 and through its own D-ring.
12	10A	Through clevis 10A and through its own D-ring. Pass lashings 11 and 12 over the top cleats on the rear endboard and secure them together with two D-rings and a load binder.

Figure 9-9. Lashings installed for rear ammunition stack (continued)

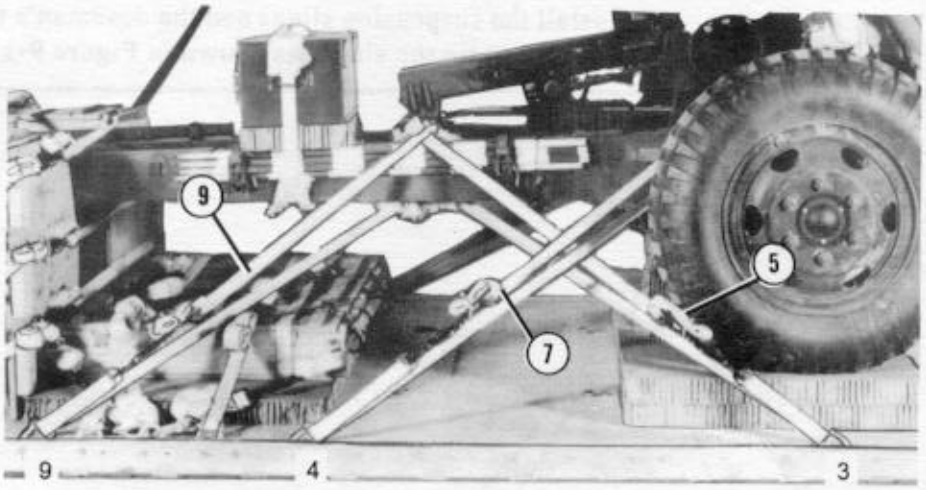
9-8. Lashing Howitzer

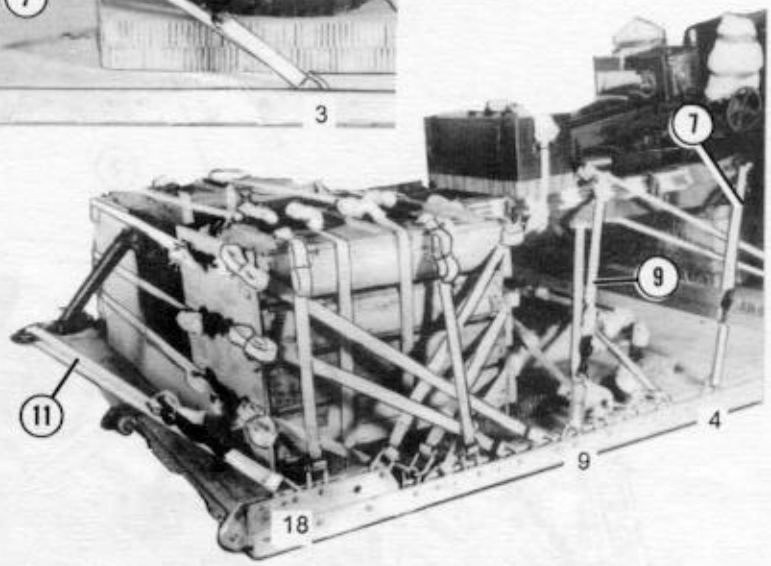
Lash the howitzer to the platform as shown in Figure 9-10.



Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
1	1	Around cradle.
2	1A	Around cradle.
3	2	Around towing hook.
4	2A	Around towing hook.

Figure 9-10. Lashings installed



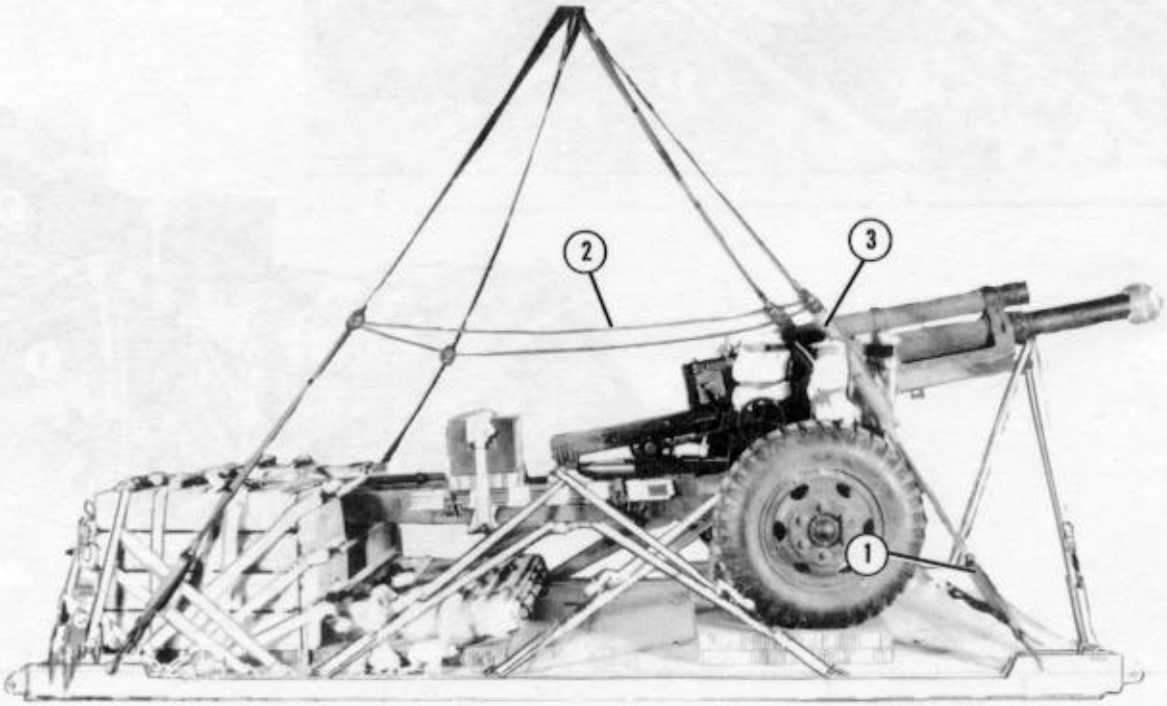


Lashing Number	Tie-Down Clevis Number	Instructions
		Pass lashing:
5	3	Around right trail and around rear side of travelling lock bracket.
6	3A	Around left trail and around rear side of travelling lock bracket.
7	4	Around trail locking arm.
8	4A	Around trail locking arm.
9	9	Around right trail and around front side of travelling lock bracket.
10	9A	Around left trail and around front side of travelling lock bracket.
11	18	Through towing pintle.
12	18A	Through towing pintle.

Figure 9-10. Lashings installed (continued)

9-9. Installing Suspension Slings.

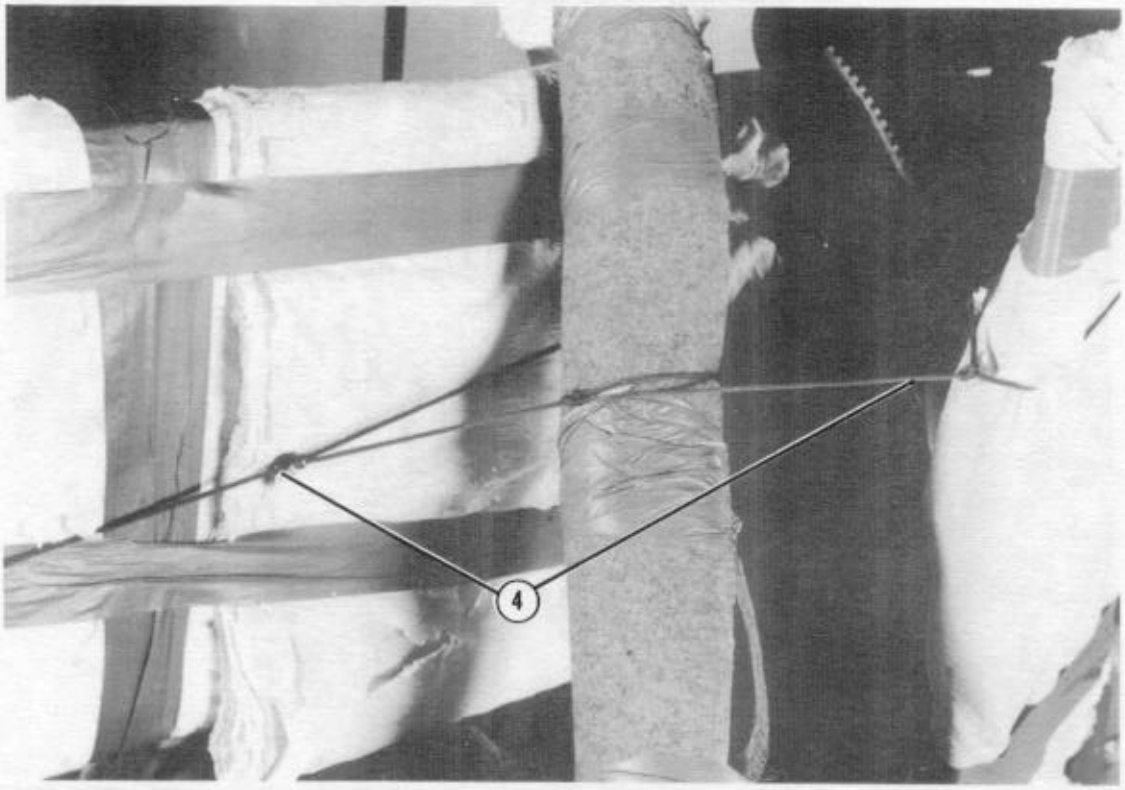
Install the suspension slings and the deadman's tie and safety tie the slings as shown in Figure 9-11.



1. Pass a 3-foot (2-loop), type XXVI nylon webbing sling through an end loop of a 12-foot (2-loop), type XXVI nylon webbing sling. Place both end loops of the 3-foot sling in the bell portion of a large suspension clevis. Bolt the large clevis to the suspension hole of one of the tandem links. Repeat for the other three suspension slings.
2. Raise the suspension slings and install the deadman's tie according to FM 10-500-2/TO 13C7-1-5.
3. Pad each front suspension sling with an 8- by 32-inch piece of felt padding beginning 30 inches from the lower end loop of the 12-foot sling. Tape the felt in place.

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

CAUTION: Each front suspension sling must be securely tied to the deflector shield with type III nylon cord.

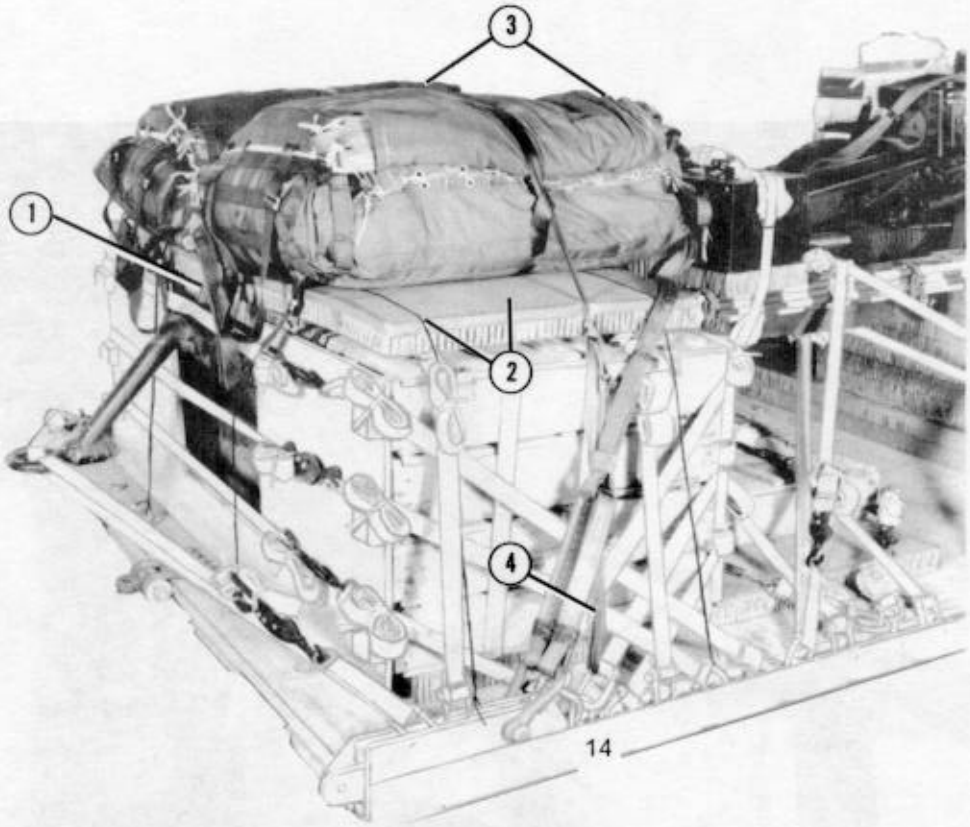


(4) Safety tie the front suspension slings to the deflector shield with type III nylon cord.

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

9-10. Stowing Cargo Parachutes

Stow the cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-12.

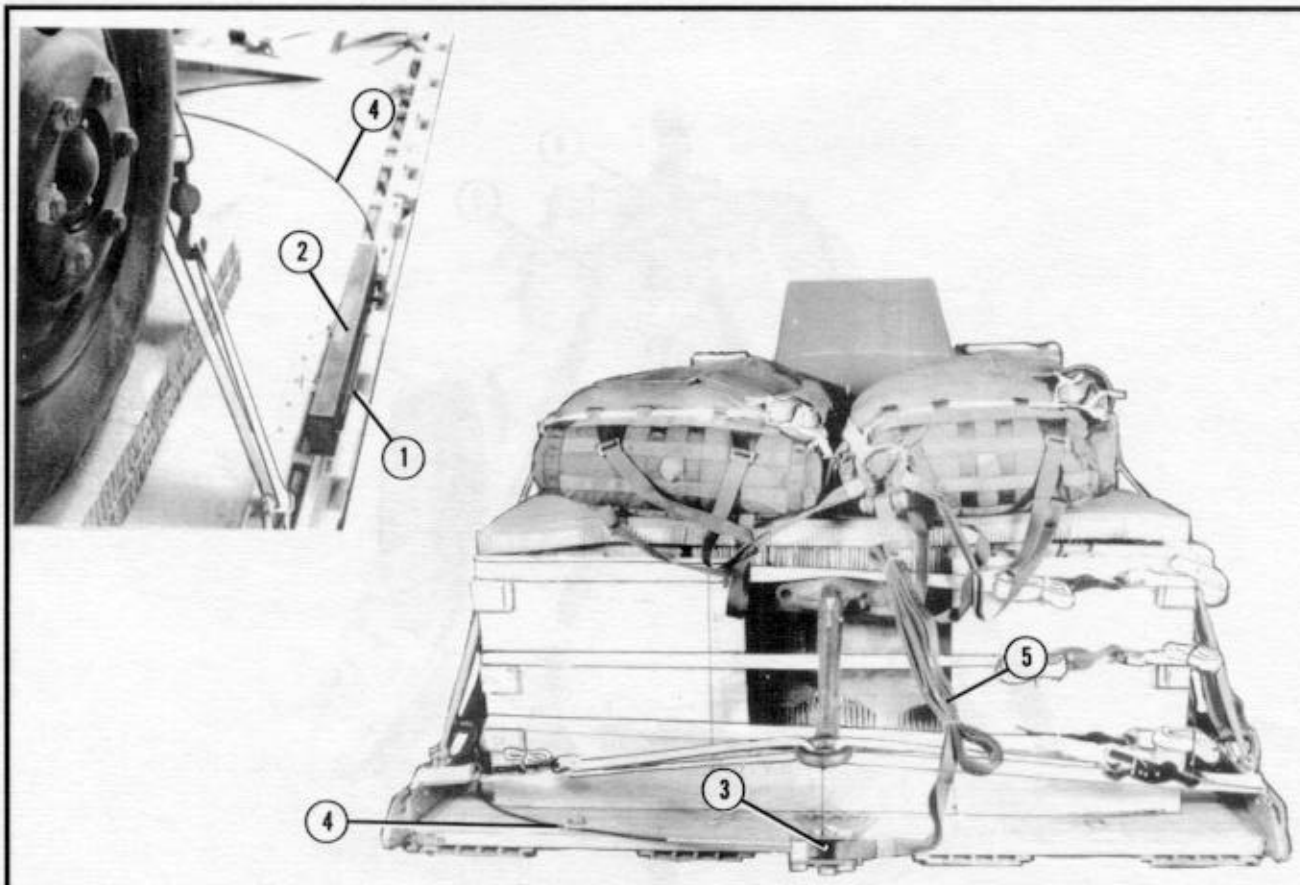


1. Center a 36- by 36-inch piece of honeycomb over the howitzer trails between the stacks of ammunition boxes.
2. Tie an 84- by 36-inch piece of honeycomb over stack 2 with type III nylon cord.
3. Prepare and install two G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5.
4. Restrain the parachutes to clevises 14 and 14A.

Figure 9-12. Cargo parachutes stowed

9-11. Installing Extraction System

Install the EFTC extraction system on the load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-13.

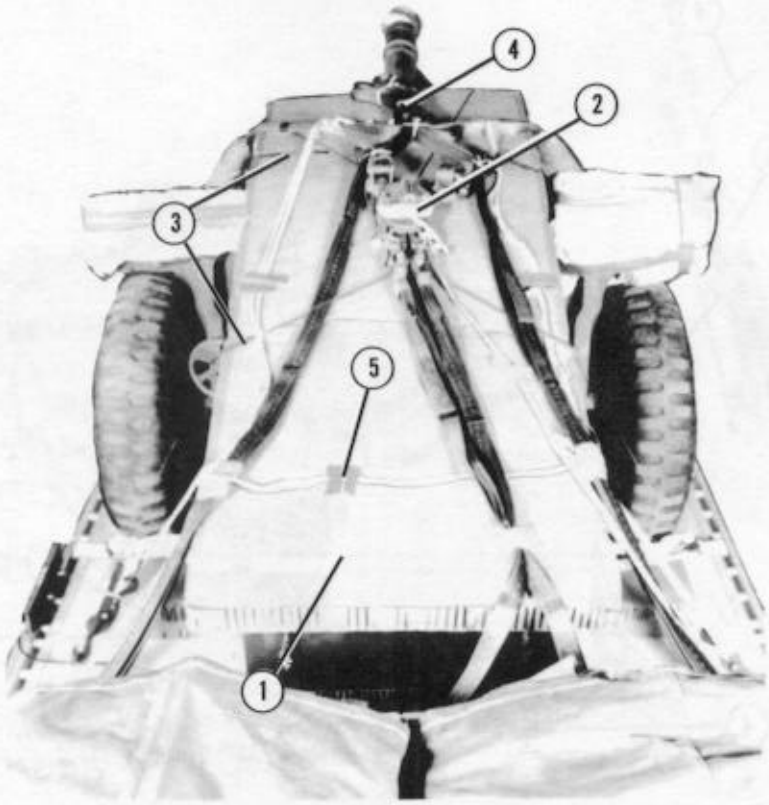


1. Install the EFTC mounting brackets to the rear set of holes on the left platform side rail.
2. Install the actuator according to FM 10-500-2/TO 13C7-1-5.
3. Install the latch assembly and latch assembly adapter to the extraction bracket according to FM 10-500-2/TO 13C7-1-5.
4. Install a 16-foot cable according to FM 10-500-2/TO 13C7-1-5. Safety 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 deployment line. S-fold the slack and tie the folds with type I, 1/4-inch cotton webbing.

Figure 9-13. EFTC installed

9-12. Installing Release System

Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-14.



1. Cover the howitzer from the front deflector shield to 6 inches behind the section chest with a full sheet of honeycomb. Tie the honeycomb to convenient points on the load with type III nylon cord.
2. Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5.
3. Place the release assembly on the honeycomb over the breech area and tie the release to convenient points on the load with type III nylon cord.
4. S-fold and tie slack in the suspension slings with type I, 1/4-inch cotton webbing.
5. Tape each section of the deadman's tie to the honeycomb.

Figure 9-14. M-1 release installed

9-13. Installing Provisions for Emergency Restraints

Install provisions for emergency restraints on the front of the platform according to FM 10-500-2/TO 13C7-1-5.

9-14. Placing Extraction Parachutes

Place the extraction parachutes as described below.

a. C-130 Aircraft. Place a 22-foot cargo extraction parachute; a 60-foot (3-loop), type XXVI nylon webbing extraction line; and a two-point, 3 3/4-inch link assembly on the load for installation in the aircraft.

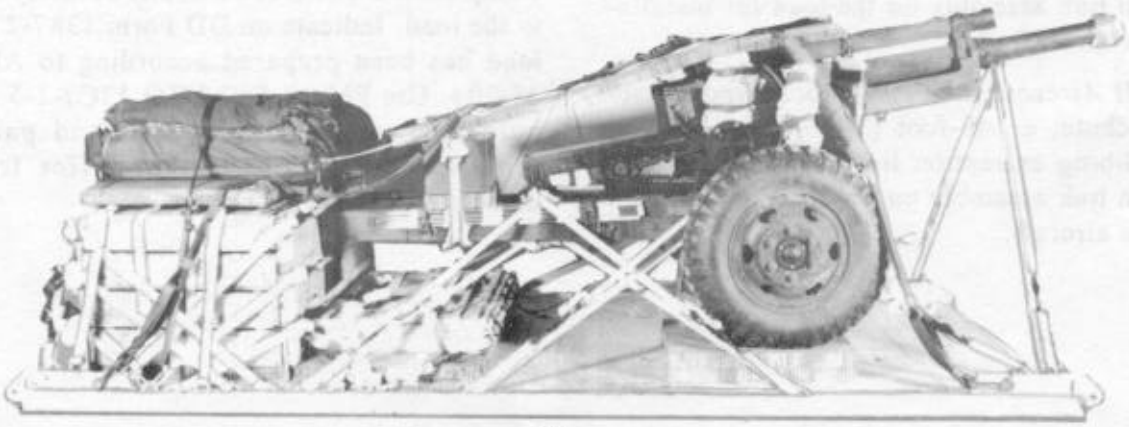
b. C-141 Aircraft. Place a 22-foot cargo extraction parachute; a 140-foot (3-loop), type XXVI nylon webbing extraction line; and a two-point, 3 3/4-inch link assembly on the load for installation in the aircraft.

c. C-5 Aircraft. Place a 22-foot cargo extraction parachute and a two-point, 3 3/4-inch link assembly on the load for installation in the aircraft. See FM 10-500-2/TO 13C7-1-5 for extraction line requirements.

9-15. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-15. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the load has been prepared according to AFJMAN 24-204. Use FM 10-500-2/TO 13C7-1-5 to compute the weight, height, CB, and parachute requirements for loads that differ from 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.



CB

RIGGED LOAD DATA

Weight:	Load shown	9,500 pounds
	Maximum load allowed	9,800 pounds
Height		79 inches
Width		108 inches
Length		192 inches
Overhang:	Front	25 inches
	Rear	18 inches
CB (from front edge of platform)		96 inches
Extraction System		EFTC

Figure 9-15. M101A1 howitzer rigged for low-velocity airdrop on a type V platform

9-16. Equipment Required

Use the equipment listed in Table 9-1 to rig the load shown.

Table 9-1. Equipment required for rigging the M101A1 howitzer for low-velocity airdrop on a 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)	5
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer w 16-ft cable	1
1670-00-360-0329	Cover, link assembly, type IV	3
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	As required
8305-00-958-3685	Felt sheet, 1/2-in	As required
1670-01-183-2678	Leaf, extraction line	2
	*Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-ft (3-loop) or	1
1670-01-107-7651	140-ft (3-loop)	1
	Link assembly:	
	Two-point, 3 3/4-in:	1
5306-00-435-8994	Bolt, 1-in diam, 4 in long	(2)
5310-00-232-5165	Nut, 1-in,	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-783-5988	Type IV	3
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:	8 sheets
	29- by 14-in	1
	36- by 18-in	11
	36- by 36-in	1
	36- by 96-in	1
	84- by 36-in	5
	Parachute:	
1670-01-016-7841	Cargo, G-11B	2
1670-01-063-3716	Cargo, extraction, 22-ft	1
	Platform, AD, type V, 16-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2385	Bumper, nose (optional)	(1)
1670-01-162-2372	Clevis assembly (type V)	(40)

Table 9-1. Equipment required for rigging the M101A1 howitzer for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
1670-01-162-2381	Tandem link (multipurpose)	(4)
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop, type XXVI nylon webbing:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop)	1
	For suspension:	
1670-01-062-6303	12-ft (2-loop)	4
1670-01-062-6301	3-ft (2-loop)	4
	For riser extension:	
1670-01-062-6302	20-ft (2-loop)	2
1670-00-040-8219	Strap, parachute release, multicut (comes w 3 knives)	2
7510-00-266-5016	Tape, PSA, cloth back, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	43
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
8305-00-082-5753	Tubular, 1/2-in, olive drab	As required
8305-00-263-3591	Type VIII	As required

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

GLOSSARY

ACB attitude control bar
AD airdrop
AFB Air Force Base
AFJMAN armed forces joint manual
AFR Air Force regulation
AFTO Air Force technical order
APERS antipersonnel
ARNG Army National Guard
attn attention
c change
CB center of balance
d penny
DA Department of the Army
DC District of Columbia
DD Department of Defense
diam diameter
DZ drop zone
EFTA extraction force transfer actuator
EFTC extraction force transfer coupling
FM field manual
ft foot/feet
gal gallon
HERAP high-explosive rocket-assisted projectile
HMMWV high mobility multi-purpose wheeled vehicle
HQ headquarters
IL Illinois
in inch
LAPE low-altitude parachute extraction
LAPES low-altitude parachute extraction system
lb pound
NBC nuclear, biological, chemical
no number
PEFTC extraction force transfer coupling (platform)
Qty quantity
rqr requirement
SL/CS static line/connector strap
TM technical manual
TO technical order
TRADOC United States Army Training and Doctrine Command
TX Texas
US United States
USAR United States Army Reserve
VA Virginia
w with
yd yard

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