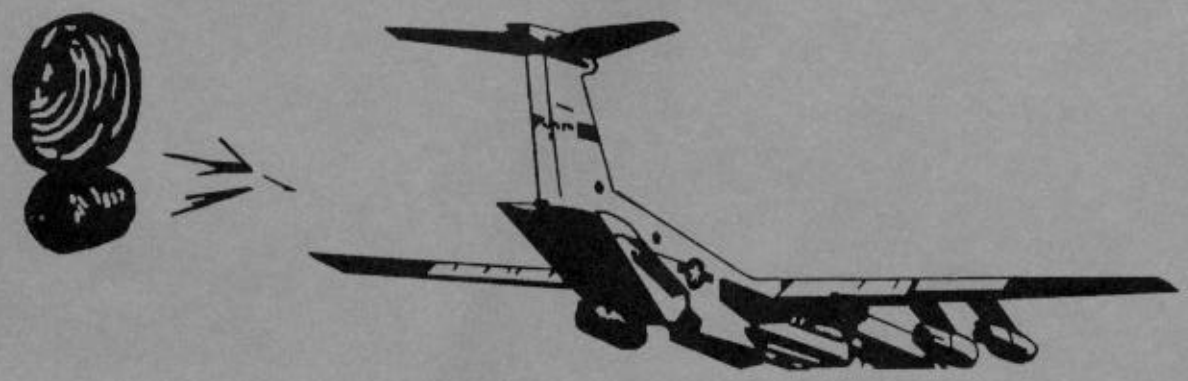
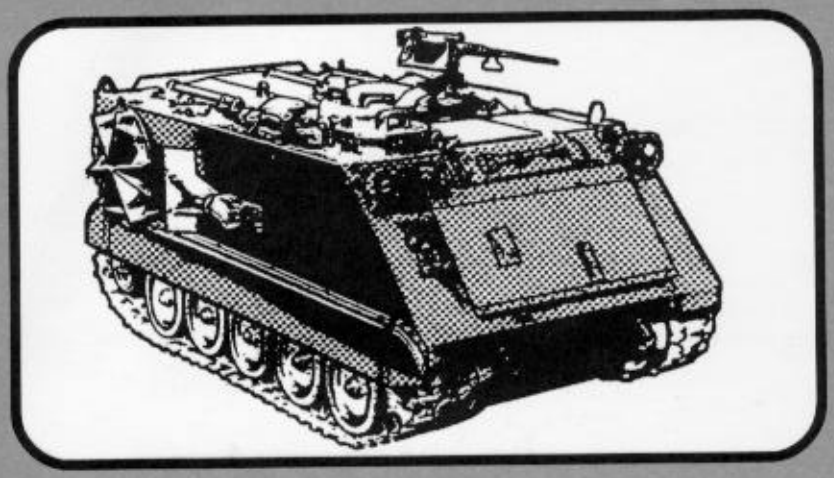
C1, FM 10-567/TO 13C7-16-171



AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING TRACKED PERSONNEL-CARGO CARRIERS



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HEADQUARTERS UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND
FORT MONROE, VIRGINIA 23651-5000

REPLY TO ATTENTION OF

ATCD-SL (70-1f) 21 Oct 96

MEMORANDUM FOR DEPUTY CHIEF OF STAFF OPERATIONS AND PLANS, 400 ARMY PENTAGON, ATTN: DAMO-FDL, WASHINGTON DC 20310-0400

SUBJECT: Quartermaster (QM) Functional Area Assessment (FAA) Response

1. References:

a. Message, HQDA, DAMO-FDL, 231825Z Apr 96, subject: QM FAA Results.

b. Memorandum, HQ TRADOC, ATCG, 29 Jul 96, Army Airdrop Capabilities Assessment.

2. At the 29 Mar 96 QM FAA briefing to the Director of Army Staff, the decision was reached to revisit the Army's decision to "shelf" Low Altitude Parachute Extraction System (LAPES) (reference 1a).

a. Reference 1b, solicited CINCs input for their positions on LAPES and assessments of airdrop capabilities. The CINCs responses will be used to chart the direction and role for airdrop in the 21st century.

b. Based on the responses received (enclosure), there is no strong support for LAPES airdrop capability at this time. The consensus for the airdrop capabilities is to continue support for current Low Velocity Airdrop System (LVAD), develop a 500-foot LVAD and further explore Advanced Precision Aerial Delivery System (APADS).

3. Further, we will continue to maintain a range of airdrop capabilities to support all contingencies throughout the Army. The results of the Army Airdrop Capabilities Assessment also will be incorporated into the Operational Concept for Aerial Delivery Operations and Improved Cargo Aerial Delivery Capability Mission Needs Statement being developed by the Quartermaster Directorate of Combat Developments, U.S. Army Combined Arms Support Command (CASCOM).

4. The HQ TRADOC POC is MAJ Higgins, Airborne Airlift Action Office, ATCD-SL, E-mail: higginsn@emh10.monroe.army.mil, DSN 680-2469/3921, datafax DSN 680-2520.

ATCD-SL

SUBJECT: Quartermaster (QM) Functional Area Assessment (FAA) Response

FOR THE DEPUTY CHIEF OF STAFF FOR COMBAT DEVELOPMENTS:

Encl

JOHN A. MANDEVILLE
Colonel, GS
Director, Combat Service Support

CF:
USACASCOM (ATCL-CG/ATCL-QC/ATCL-MES)
USAQMC&S (ATSM-CG/ATSM-ABN/FS)
USANRDEC (SSCNC-UT/AMSSC-PM)

10/21/1996 13:55 8047343174 QM GENERALS OFFICE PAGE 03

ORGANIZATION	LAPES	LVAD	500' LVAD	APADS	SPTS/ NOT SPEC
USSOCOM		X	X	X	
EUCOM					X
CENTCOM		X	X		
FORSCOM		X	X	X	
TRANSCOM					X
SOUTHCOM	X			X	
VIII ARMY					X
ACOM					X

USSOCOM: Memorandum specifically states that the command does not support LAPES airdrop capability, but supports LVAD as well as APADS.

EUCOM: Draft memorandum specifically states that the command support the need for a low level airdrop capability. However, memorandum summarizes that the specific capability is not important as to have a capability to meet the required mission/threat profile.

CENTCOM: Memorandum specifically states that the command does not support LAPES airdrop capability, but support both current LVAD and 500-foot LVAD airdrop capabilities.

FORSCOM: 1st Endorsement specifically states that the command does not support LAPES airdrop capability, however supports LVAD, 500-foot LVAD and APADS.

TRANSCOM: Memorandum does not specifically address any airdrop capability as it talks to the 21st century requiring the full spectrum of tactical delivery methods.

SOUTHCOM: Memorandum specifically supports LAPES and APADS airdrop capabilities for their command.

VIII ARMY: E-Mail note for VIII Army states that the command has no input to the assessment as their plans call for a limited employment of airdrop.

ACOM: Sent request for input on 30 Sep 96. Received verbal response on 16 Oct 96 stating command is indifferent on the specific capability received.

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND
FORT MONROE, VIRGINIA 23651-5000

REPLY TO
ATTENTION OF

6 SEP 1995

ATCD-SL (70-1f)

MEMORANDUM FOR

Major General Thomas W. Robison, Commander, U.S. Army Combined Arms Support Command and Fort Lee, Fort Lee, VA 23801-6000
Major General Robert K. Guest, Commander, U.S. Army Quartermaster Center and School, Fort Lee, VA 23801-5030

SUBJECT: Low Altitude Parachute Extraction System (LAPES) Disassembly

1. References:

a. Message, HQ TRADOC, ATCD-SL, 100930Z Jan 95, subject: LAPES.

b. OVVM Note, HQ USACASCOM, 30 March 95, subject: TRADOC Disassembly of LAPES.

2. The U.S. Army and other services recently have concurred that LAPES will be terminated, as this capability is no longer required as a viable wartime contingency airdrop option. However, Headquarters, Department of the Army (DA), Deputy Chief of Staff for Operations and Plans, has agreed that LAPES technology will be shelved, and all specialized equipment preserved for possible future use.

3. Take the necessary steps to terminate training and leader development concerning LAPES operations. Major General Guest's questions regarding the disassembly of LAPES (enclosed) with following guidance will be utilized:

a. "Does the U.S. Army Quartermaster Center and School (USAQMC&S) continue to publish LAPES procedures in their joint field manual(FMs)/technical order manuals?" "Do we publish the LAPES procedures that have been written but not been printed yet?" Publishing LAPES procedures in all joint publications, Army FMs, regulations, etc., will be discontinued and addressed in the next revision of the aforementioned documents. Concurrently, all LAPES procedures that have been written and not printed will not be published.

6 SEP 1995

ATCD-SL
SUBJECT: Low Altitude Parachute Extraction System (LAPES) Disassembly

b. "Do we keep LAPES in our programs of instruction (POIs)?" "Do we teach LAPES to other services and our allies?" The USAQMC&S will remove LAPES procedures from POI and cease teaching LAPES to other services and/or allies.

c. "What do we teach to folks that have LAPES equipment in their war reserves?" All instruction concerning LAPES procedures will be discontinued whether LAPES equipment is located in units or in war reserves.

d. "What is the DA/TRADOC guidance on disposition of unit, depot, and war reserves LAPES equipment?" All LAPES equipment in war reserves and depot should be preserved with the exception of a few items that can be utilized in other existing airdrop capabilities. Specifically, the Type V airdrop platforms and attitude control bars of the LAPES system are being utilized to augment current Low Velocity Airdrop Systems (LVADS) loads.

e. "What is the guidance to U.S. Army Test and Experimentation Command on force development test and experimentation certification of LAPES loads?" The certification of all LAPES loads at the Airborne Special Operations Test Directorate will be redirected toward testing and certification of LVADS loads.

4. HQ TRADOC POC is CPT Higgins or CPT Phillips, ATCD-SL, DSN 680-2469/3921, datafax DSN 680-2520.

FOR THE COMMANDER:

Encl

JOE N. BALLARD
Major General, GS
Chief of Staff

CF:
HQDA (DAMO-FDL)
CDR, NRDEC (SAFNC-UA)
CDR, FORSCOM (FCJ3-FC)
CDR, OPTEC (CSTE-CS, CSTE-OPM)
CDR, ATCOM (AMSAT-W-TD)
DIR, ABNSOTD (ATCT-AB)
HQ TRADOC (ATCD-L, ATCD-RM, ATDO-A, ATTG-IT)

SEP 11 '95 08:30AM CSSRD FT MONROE VA P.3/7

Date and time 07/18/95 10:28:11

rom: HIGGINSN--MON1
o: HIGGINSN--MON1

rom: CPT NEIL HIGGINS, (AAACO), 680-2469
ubject: TRADOC "DISASSEMBLY" OF LAPES

```
*********************************
* AIRBORNE AIRLIFT ACTION OFFICE *
*            (AAACO)             *
*********************************
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** Forwarding note from BRUNEAUN--CMSNAMES 07/18/95 10:27 ***
eceived: from LEE-EMH2.ARMY.MIL by MONROE-EMH1.ARMY.MIL (IBM VM SMTP V2R2)
with TCP; Tue, 18 Jul 95 10:27:22 EDT
eceived: from LEE1 by LEE-EMH2.ARMY.MIL (IBM VM SMTP V2R2) with SSMTP id 3547;
Tue, 18 Jul 95 10:29:34 EDT
omments: Converted from PROFS to RFC822 format by PUMP V2.2X
ate: Tue, 18 Jul 95 10:29:26 EDT
rom: NORMAN BRUNEAU <BRUNEAUN@LEE-EMH2.ARMY.MIL>
ubject: TRADOC "DISASSEMBLY" OF LAPES
o: "NEIL HIGGINS- AAACO " <HIGGINSN@MONROE-EMH1.ARMY.MIL>

*** Resending note of 03/30/95 09:23

-To: LARRY MC MILLIAN AAA <MCMILLIL@MONROE-EMH1.ARMY.MIL>
rom: NORMAN BRUNEAU
ubject: TRADOC "DISASSEMBLY" OF LAPES

EIL- HERE ARE THE QUESTIONS THAT MG GUEST WANTS DA/ TRADOC TO ANSWER RE LAPES, AS I UNDERSTAND HIS GUIDANCE. I HAVE DISCUSSED THESE W/ OUR ABN DPT. IF THESE QUESTIONS MAKE SENSE, GIVE ME AN "UP" BEFORE I FORMALLY SEND ANYTHING OUT. MG GUEST WANTS SPECIFIC GUIDANCE FM TRADOC ON LAPES, RESPONSE NEEDS TO BE CLEAR AND TO THE POINT. A LOT OF THIS WILL HINGE ON WHAT ACC PLANS TO DO W/ LAPES NOW THAT THE AIR STAFF HAS GIVEN THEM THE GREEN LIGHT TO KILL IT. IF THEY PLAN TO PLACE IT ON THE SHELF OR KEEP A LIMITED OR CONTINGENCY CAPABILITY, THAT WILL DRIVE YOUR ANSWER TO US, AT THIS POINT I THINK ACC WILL DO WHATEVER THE ARMY WANTS, AS THEIR PRIMARY CUSTOMER. I WILL NOT REHASH HOW THE ARMY DECIDED THEY DIDNT NEED LAPES. QUESTIONS FOLLOW:

DOES THE QMCS CONTINUE TO PUBLISH LAPES PROCEDURES IN THEIRJOINT FM/TO MANUALS?
DO WE PUBLISH THE LAPES PROCEDURES THAT HAVE BEEN WRITTEN BUT HAVE NOT BEEN PRINTED YET?
DO WE REMOVE ALL LAPES PROCEDURES FROM ALREADY PUBLISHED MANUALS?
DO WE KEEP LAPES IN OUR POI?
DO WE TEACH LAPES TO OTHER SERVICES AND OUR ALLIES?
WHAT DO WE TEACH TO FOLKS THAT HAVE LAPES EQUIPMENT IN THEIR WAR RESERVES?
WHAT IS THE DA/TRADOC GUIDANCE ON DISPOSITION OF UNIT, DEPOT, AND WAR RESERVE LAPES EQUIPMENT?
WHAT IS THE GUIDANCE TO TEXCOM ON THE FDTE CERTIFICATION OF LAPES LOADS?

I KNOW THESE ARE TOUGH QUESTIONS, BUT THEY HAVE TO BE ASKED. HQ STAFFS CANNOT SIMPLY SAY "KILL IT" AND MOVE ON TO THE NEXT ISSUE. I DONT THINK WE ARE DOING OUR JOB IF WE LEAVE IT UP TO THE SCHOOLHOUSE TO INTERPRET SKETCHY GUIDANCE. THAT PLACES US IN THE POSSIBLE POSITION OF BEING ACCUSED OF NOT FOLLOWING ORDERS.

LETS TALK.....NORM

TAB B

Encl 1

SEP 11 '95 08:30AM CSSRD FT MONROE VA

DEPARTMENT OF THE ARMY
QUARTERMASTER CENTER AND SCHOOL
1201 22D STREET
FORT LEE, VIRGINIA 23801-1601

ATSM-ABN-FS 15 Dec 96

MEMORANDUM FOR RECORD

SUBJECT: Airdrop Equipment Update

Reference:

a. Phone conversation between CW4 Mahon, CASCOM and Dick Harper, Weapons System Management Office, Army Aviation Troop Command, Subject : sab

b. Phone conversation between CW4 Mahon, CASCOM and Don Stump, Logistics Management Specialist, Office, Deputy Chief of Staff for Logistics, Subject, sab

c. Phone conversation between CW4 Mahon, CASCOM and Chief Msgt Okraneck, Hqrs Air Combat Command, Subject sab

d. msg dtg R 181348Z Feb 94, subject: FCIF item: Type II platforms, PEFTC and SL/CS for Air Force unilateral training

1. Based on information received from the references a-c above, the following update is provided per request ref c, above.

a. The type II modular platform no longer exists within any contingency stocks. Therefore, maintaining Joint Inspection training program is no longer required for this equipment.

b. The Parachute Extraction Transfer Force Coupling (PEFTC) no longer exists within any contingency stocks. Therefore, maintaining Joint Inspection training program is no longer required for this equipment.

c. The metric platform interim rigging procedures are no longer valid as they apply to metric platforms. Those rigging procedures which have dual application with the type V platform are still valid for the type V platform.

d. The static line connector strap (SL/CS) currently has limited application. Only those loads that specifically require this system are authorized use of this system. The SL/CS is not an across the board substitute for the Extraction Force Transfer Coupling (EFTC). These authorized loads are specific in nature and will normally be found in the special operations arena of airdrop loads. This system is not authorized for use IAW ref d, above.

2. For additional questions/information contact the undersigned at DSN 687-4733, Fax 3084.

John R. Mahon
CW4, USA
Senior Airdrop Systems
Technician

CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
DEPARTMENT OF THE AIR FORCE
Washington, DC, 4 August 1997

AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING TRACKED PERSONNEL-CARGO CARRIERS

This change adds the procedures for rigging M973A, 1 1/2-ton cargo carrier and the M113 armored personnel carrier on a type V platform for low-velocity airdrop.

FM 10-567/TO 13C7-16-171, 29 June 1979, is changed as follows:

1. New or changed material is identified by a vertical bar (▮) in the margin opposite the changed material.

2. Remove old pages and insert new pages as indicated below:

Remove old pages	Insert new pages
Cover 1	Cover 1
i through vii	i through vi
1-1	1-1
----------	6-1 through 6-39
----------	7-1 through 7-33
----------	Glossary-1
A-1	References-1

3. File this transmittal page in front of the publication for reference purposes.

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By Order of the Secretary of the Army:

DENNIS J. REIMER
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
03738

DISTRIBUTION:

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FIELD MANUAL
No. 10-567
TECHNICAL ORDER
No. 13C7-16-171

HEADQUARTERS
DEPARTMENT OF THE ARMY
DEPARTMENT OF THE AIR FORCE
Washington, DC, 29 June 1979

AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING TRACKED PERSONNEL-CARGO CARRIERS

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PREFACE

SCOPE

a. This manual tells and shows how to rig the following items for low-velocity airdrop from a C-130 aircraft:
   (1) M113 and M113A1 armored personnel carriers.
   (2) M114 and M114A1 armored personnel carriers (command and reconnaissance).
   (3) M116 armored cargo carrier.

b. This manual also covers the rigging of the following items for low-velocity airdrop from a C-141 aircraft:
   (1) M114 and M114A1 armored personnel carriers (command and reconnaissance).
   (2) M116 armored cargo carrier.

c. This manual also covers the rigging of the following items for delivery by the low-altitude parachute-extraction system (LAPES) from a C-130 aircraft:
   (1) M113 and M113A1 armored personnel carrier with or without an accompanying load.
   (2) M106A1 self-propelled mortar carriers with an accompanying load.

d. This manual also covers the rigging of the M973A 1 1/2-Ton cargo carrier small unit support vehicle for low-velocity airdrop from a C-130, C-141, C-5 or C-17 aircraft.

USER INFORMATION

The proponent of this publication is HQ TRADOC. You are encouraged to report any errors or omissions and suggest ways for making this a better manual. Army personnel, send your comments on DA Form 2028 directly to:

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USA QUARTERMASTER CENTER AND SCHOOL
1010 SHOP ROAD
FORT LEE VIRGINIA 23801-1502

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3300 RUSSELL ROAD SUITE 318A
QUANTICO VA 22134-5021

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

CHAPTER 1

INTRODUCTION

1-1. Description of Items

The description of items covered in this manual are listed below.

a. M113 Armored Personnel Carrier. The M113 carrier weighs 19,000 pounds. Its length is 191 inches, and its width is 105 inches. The height of the carrier is 86 inches.

b. M113A1 Armored Personnel Carrier. The M113A1 carrier weighs 19,180 pounds. Its length is 191 inches, and its width is 105 inches. The height of the carrier is 98 inches.

c. M114 Armored, Full-Tracked Personnel Carrier. The M114 carrier weighs 14,150 pounds. Its length is 96 inches, and its width is 167 inches. The height of the carrier is 91 inches.

d. M114A1 Armored Personnel Carrier. The M114A1 carrier weighs 14,350 pounds. Its length is 96 inches, and its width is 167 inches. The height of the carrier is 86 inches.

[redacted] ing to TO 1C-141A-9. [redacted] 80 inches. The height of the carrier is 81 inches.

f. M106A1 Mortar Carrier. The M106A1 carrier weighs 21,680 pounds. Its length is 192 inches, and its width is 112 inches. The height of the carrier is 89 inches.

g. M973A 1 1/2-Ton Cargo Carrier Small Unit Support Vehicle. The M973A carrier weighs 14,500 pounds. Its length is 271 inches, and its width is 74 inches. The height of the carrier is 90 1/2 inches.

1-2. Special Considerations

CAUTION: Only ammunition listed in FM 10-500-53/MCRP 4-3.8/TO 13C7-18-41 may be airdropped. Package, mark, and label hazardous material according to AFJMAN 24-204/TM 38-250. Special considerations for this manual are described below.

a. The loads covered in this manual may include hazardous material as defined in AFJMAN 24-204/TM 38-250.

b. When the M114 or M114A1 carrier is to be [redacted]

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

CHAPTER 6

RIGGING M973A, 1 1/2-TON CARGO CARRIER SMALL UNIT SUPPORT VEHICLE (SUSV) ON THE TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

6-1. Description of Load

The SUSV is a tracked vehicle with a driver's compartment and a troop carrier compartment attached to the rear of the driver's compartment. The SUSV is rigged on a 28-foot, type V airdrop platform. Four G-11B cargo parachutes are used for low-velocity airdrop from a C-130, C-141, C-5 or C-17 aircraft. The vehicle is 271-inches long, 74-inches wide, 90 1/2-inches in height, and weighs 14,506 pounds. The vehicle must be rigged with an accompanying load that weighs 2,000 pounds but not more than 2,100 pounds. The accompanying load shown is 105-millimeter ammunition rigged on the front end of the platform, however other equipment may be rigged.

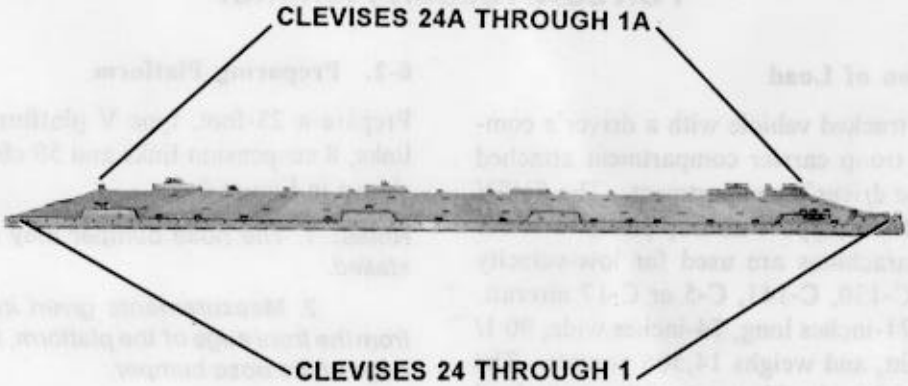
CAUTION: Only ammunition listed in FM 10-500-53/MCRP 4-3.8/TO 13C7-18-41 may be airdropped. Package, mark, and label hazardous material according to AFJMAN 24-204/TM 38-250.

6-2. Preparing Platform

Prepare a 28-foot, type V platform using 2 tandem links, 8 suspension links and 50 clevis assemblies as shown in Figure 6-1.

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:

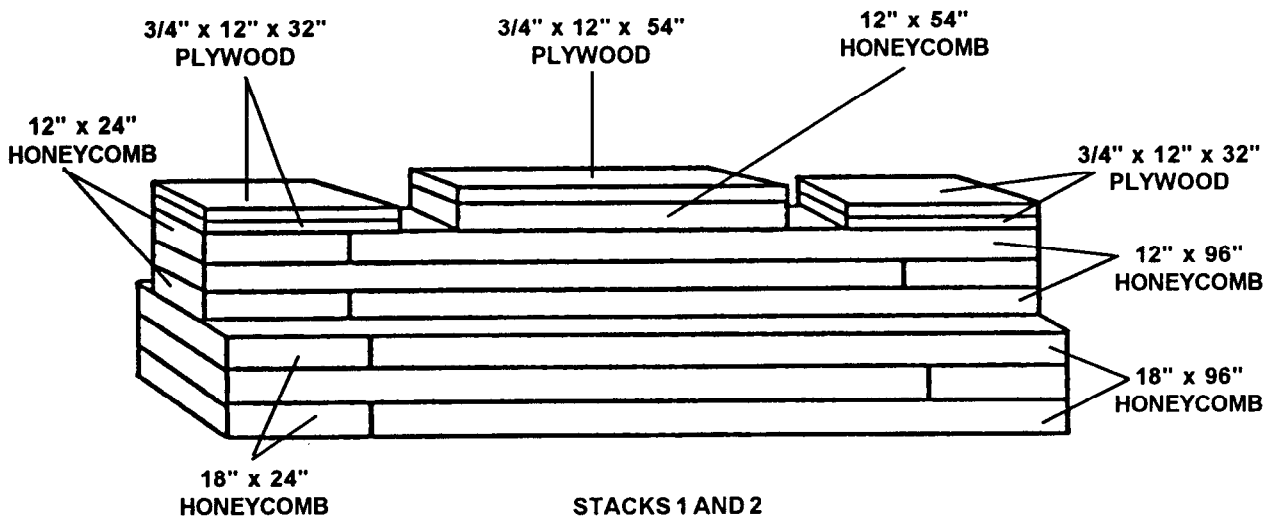
1. Inspect, or assemble and inspect, a 20-foot, type V airdrop platform for LVAD in accordance with (IAW) TM 10-1670-268-20&P/TO13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
3. Install four suspension links on each side rail using bushing holes 6, 7, and 8; 22, 23, and 24; 33, 34, and 35; 49, 50, and 51.
4. Install a clevis on bushings 1, 2, 3, and 4 on each front tandem link.
5. Install a clevis on bushings 1, 2, and 3 on the first set of suspension links. Reverse the clevis on the second bushing. Install two clevises on this reversed clevis.
6. Install a clevis on bushing 2 on the third set of suspension links.
7. Install a clevis on bushings 2 and 3 on the fourth set of suspension links.
8. Starting at the front of the platform, install clevises on the bushings bolted on holes 5, 10, 13, 16, 18, 20, 26, 30, 37, 42, 45, 47, and 56.
9. Starting at the front of the platform, number the clevises bolted to the right side rail from 1 through 24 and those bolted to the left side rail from 1A through 24A.
10. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 6-1. Platform prepared

6-3. Preparing and Positioning Honeycomb Stacks

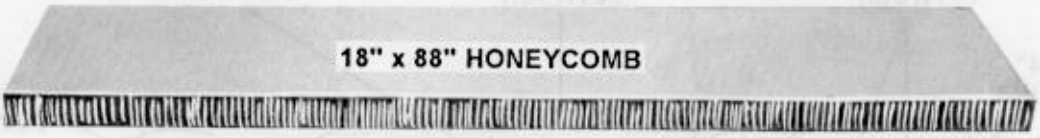
Prepare the honeycomb stacks for the SUSV as shown in Figures 6-2 and 6-3. Position the honeycomb stacks on the platform as shown in Figure 6-4.

Notes: This drawing is not drawn to scale.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1 and 2	3	18	96	Honeycomb	Alternate pieces of honey-
	3	18	24	Honeycomb	comb as shown to form base.
	3	12	96	Honeycomb	Center and alternate honey-
	3	12	24	Honeycomb	comb pieces on base.
	4	12	32	3/4-inch plywood	Place two pieces on each end of the stack.
	1	12	54	Honeycomb	Center the piece of honeycomb between the 12- by 32-inch pieces of plywood.
	1	12	54	3/4-inch plywood	Center the piece of plywood on the 12- by 54-inch piece of honeycomb.

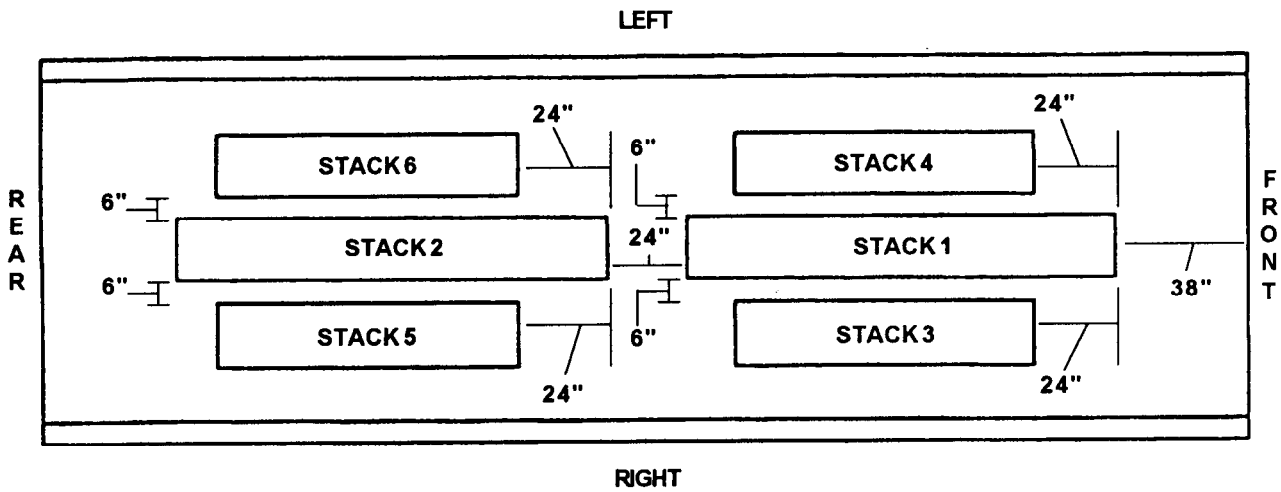
Figure 6-2. Stack 1 and 2 prepared



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3, 4, 5, and 6	1	18	88	Honeycomb	

Figure 6-3. Stacks 3, 4, 5, and 6 prepared

Note: This drawing is not drawn to scale.



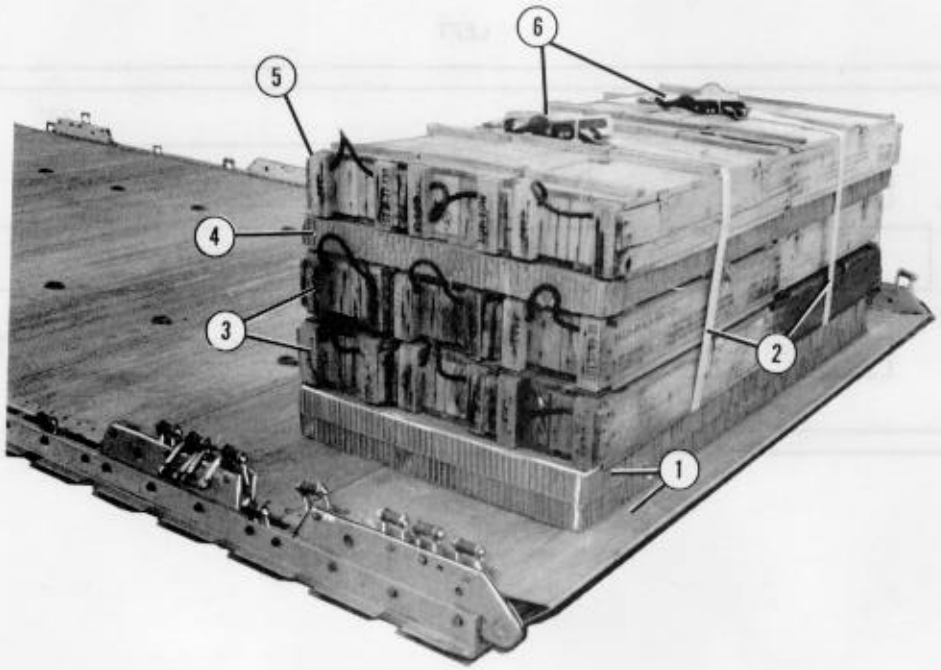
Stack Number	Position of Stack on Platform
	Place stack:
1	Center stack 1, 38 inches from the front edge of the platform.
2	Center stack 2, 24 inches to the rear of stack 1.
3	Position stack 3, 24 inches from the right front edge of stack 1, and 6 inches from the side of stack 1.
4	Position stack 4, 24 inches from the left front edge of stack 1, and 6 inches from the side of stack 1.
5	Position stack 5, 24 inches from the right front edge of stack 2, and 6 inches from the side of stack 2.
6	Position stack 6, 24 inches from the left front edge of stack 2, and 6 inches from the side of stack 2.

Figure 6-4. Honeycomb stacks positioned on platform

6-4. Positioning Accompanying Load on Platform

Position and secure 18 boxes of 105-mm ammunition on the platform as shown in Figure 6-5.

CAUTION: The accompanying load must weigh 2,000 pounds. The center of balance is critical for this load.



(1) Center two 78 1/2- by 36-inch pieces of honeycomb 1 inch from the front edge of the platform.

Note: 1. Leave room for front end board to set on platform without nose bumper attached.
2. Photograph is not showing all the honeycomb stacks (removed for viewing purposes).

(2) Evenly space two 15-foot lashings on the honeycomb.

(3) Position 12 boxes of ammunition on the pre-positioned lashings to form 2 layers of ammunition.

(4) Position an additional 78 1/2- by 36-in piece of honeycomb on top of the second layer of ammunition.

(5) Position six boxes of ammunition on top of the 78 1/2- by 36-inch piece of honeycomb to form a third layer of ammunition.

(6) Secure the pre-positioned lashings on top of the boxes of ammunition.

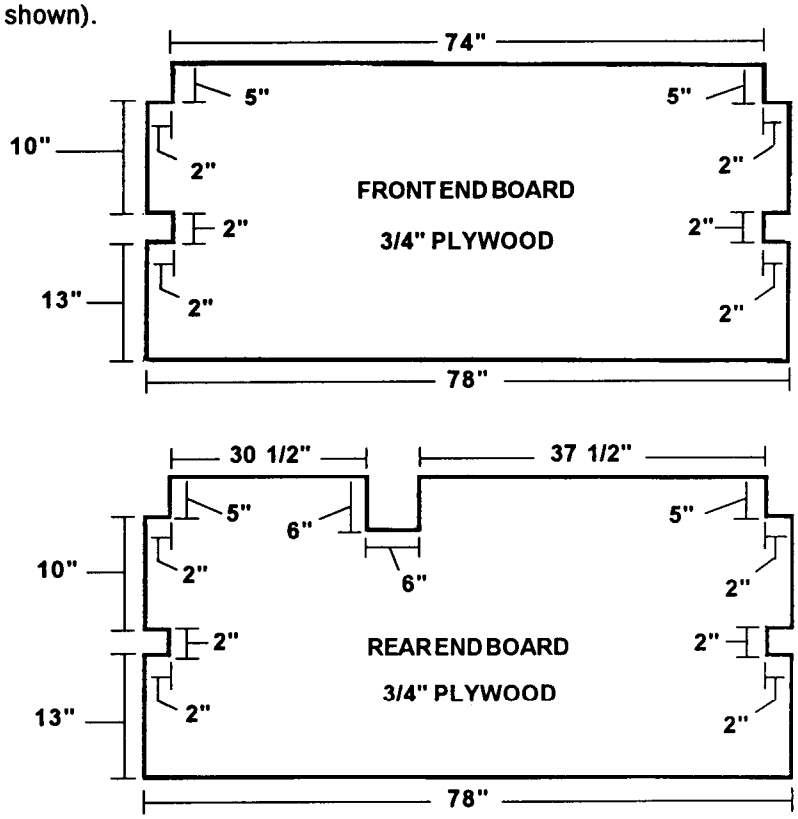
Figure 6-5. Accompanying load positioned and secured

6-5. Building, Positioning, and Securing End Boards

Build and position the two end boards as shown in Figure 6-6. Secure the end boards as shown in Figure 6-7.

Notes: 1. These drawings are not drawn to scale.

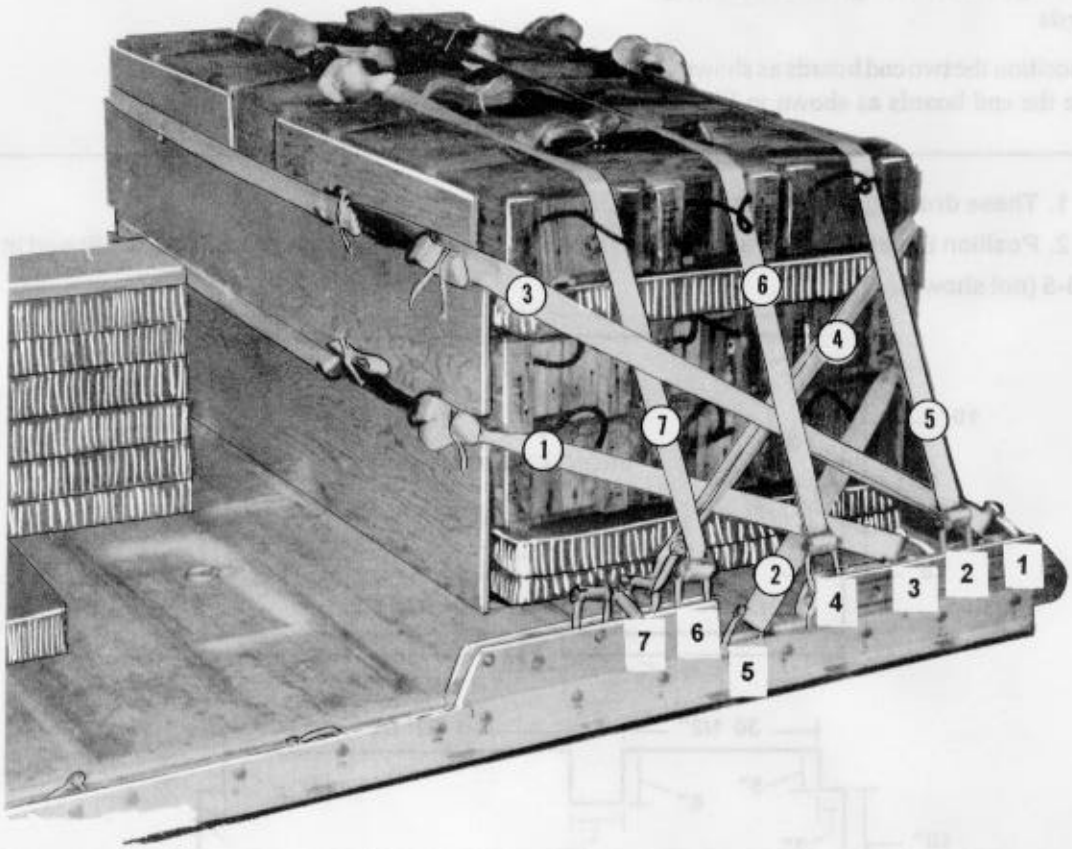
2. Position the end boards against the front and rear of the ammunition boxes positioned in Figure 6-5 (not shown).



Step:

1. Cut one front end board from a piece of 3/4-inch plywood 78 inches in width by 30 inches in length.
2. Measure 13 inches from the bottom and make a 2 x 2 inch cut as shown in Figure 6-6.
3. Measure 10 inches from the 2 x 2 inch cut portion and make a 2 x 5 inch cut on top of the front end board as shown in Figure 6-6.
4. Repeat steps one through three to construct rear end board.
5. Measure 30 1/2 inches from the top left 2 x 5 inch cut portion on the rear end board. Cut a 6 x 6 inch cut as shown in Figure 6-6.

Figure 6-6. End boards built and positioned



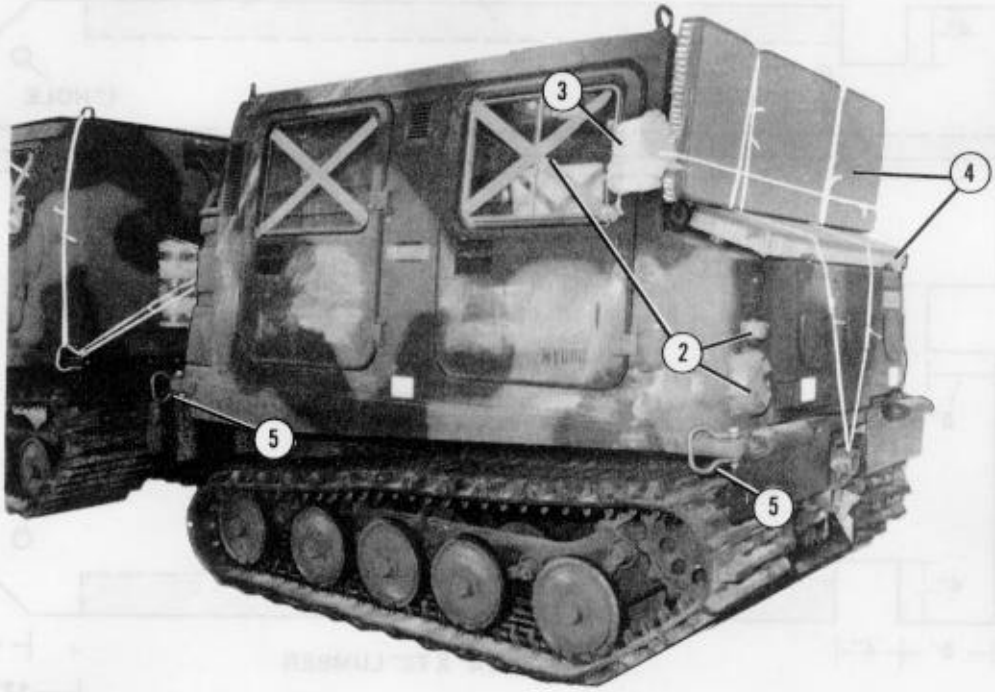
Lashing Number	Tie-down Clevis Number	Instructions
		Install lashing:
*1	3 and 3A	Through bottom notches, through both clevises, then secure the lashing on rear end board.
*2	5 and 5A	Through bottom notches, through both clevises, then secure the lashing on front end board.
*3	1 and 1A	Through top notches, through both clevises, then secure the lashing on rear end board.
*4	7 and 7A	Through top notches, through both clevises, then secure the lashing on front end board.
5	2 and 2A	Through each clevis, then secure both lashings on top of load.
6	4 and 4A	Through each clevis, then secure both lashings on top of load.
7	6 and 6A	Through each clevis, then secure both lashings on top of load.
*Denotes 30-foot lashings		

Figure 6-7. End boards secured

6-6. Preparing the SUSV

Prepare the SUSV as shown in Figures 6-8 through 6-13.

a. Prepare the front car as shown in Figures 6-8 and 6-9.

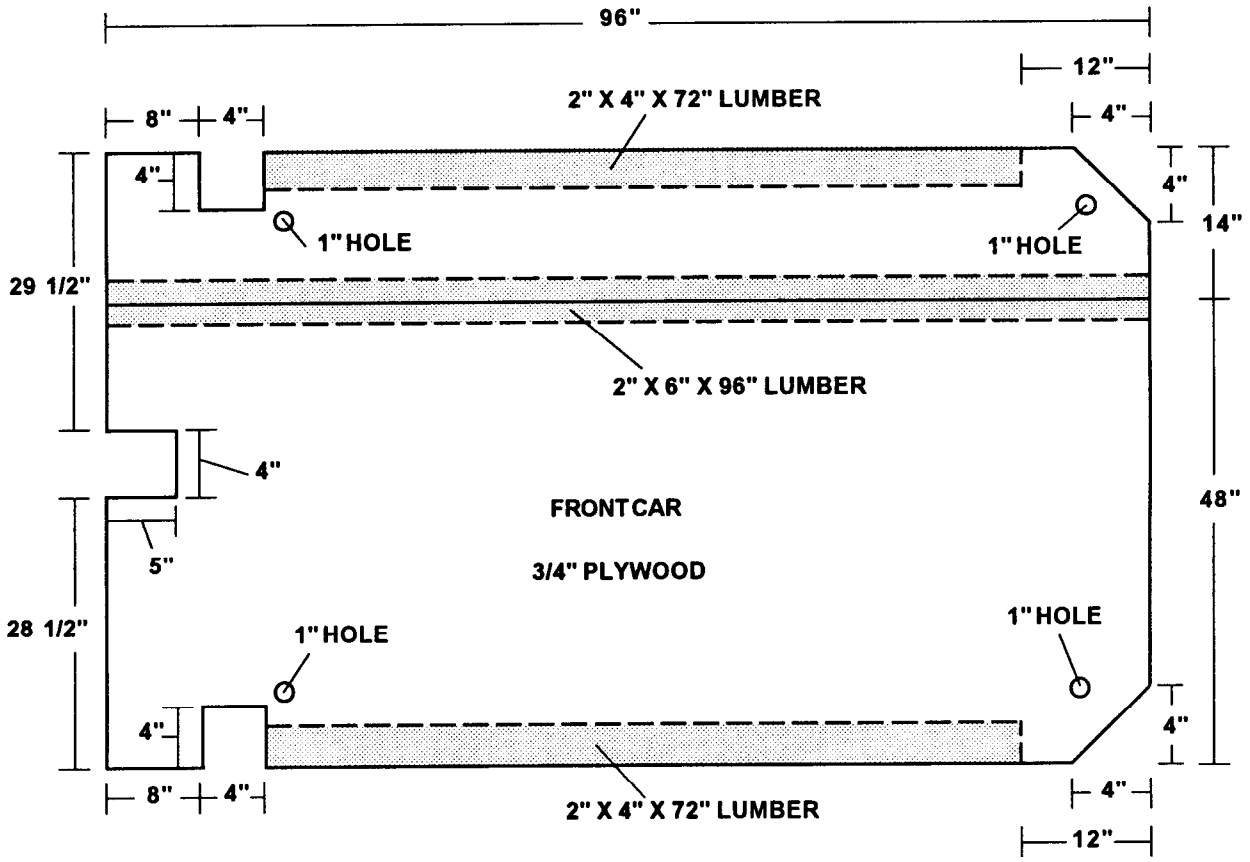


1. Make sure each of the two fuel tanks are 3/4 full.
2. Tape the front headlights, turn signals, windows and side reflectors.
3. Pad and tape both outside mirrors with cellulose wadding.
4. Fit and position two pieces of honeycomb to cover the windshield and front grill. Secure the honeycomb in place using type III nylon cord.
5. Install a medium clevis in each of the four holes on the corners of the front car.
6. Tape the instrument panel gauges inside the driver's compartment (not shown).
7. Tape the opening on the left side of the air breather on the rear of the front car (not shown).
8. Secure the steering wheel to the seat frame with type III nylon cord (not shown).

Figure 6-8. Front car prepared

Notes: 1. This drawing is not drawn to scale.

2. The plywood roof protector board for the front car will be positioned and secured after the load is positioned on the platform.



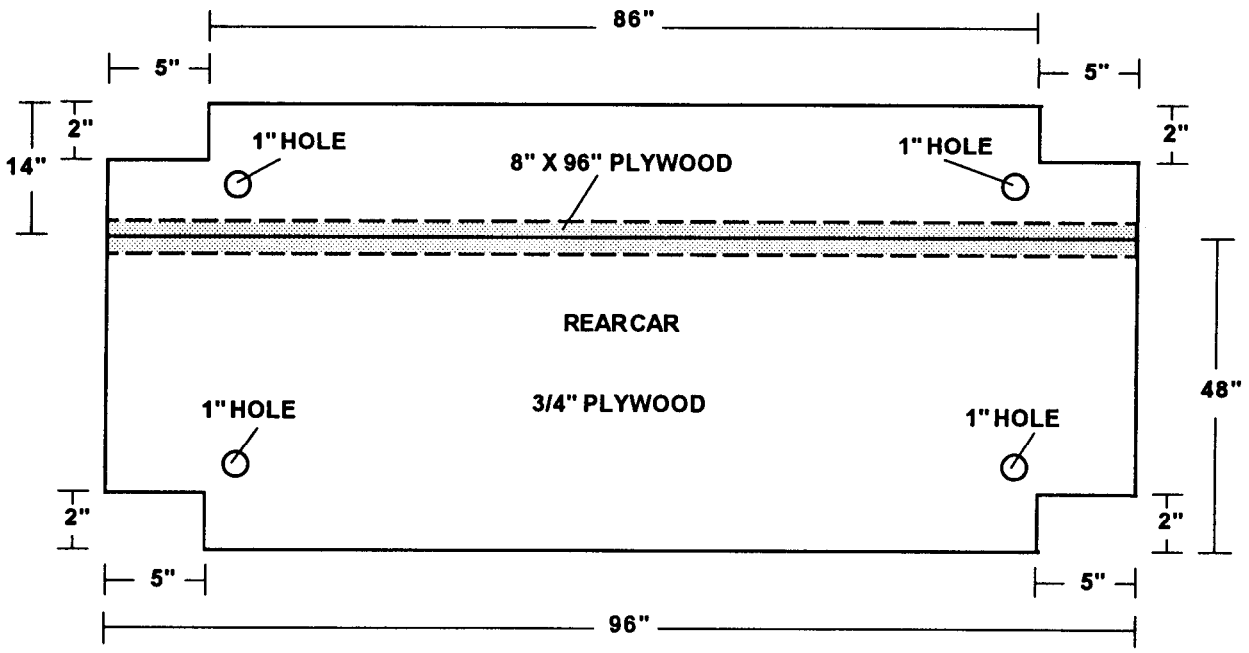
Step:

1. Prepare a roof protector board for the front car using a 3/4- by 48- by 96-inch piece of plywood and a 3/4- by 14- by 96-inch piece of plywood.
2. Join the pieces of plywood in step 1 by nailing a 2- by 6- by 96-inch piece of lumber on the bottom of the seam.
3. Make cutouts in the plywood using the above given dimensions.
4. Nail a 2- by 4- by 72-inch piece of lumber to the bottom left side of the roof protector 12 inches from the front edge and flush with the side.
5. Nail a 2- by 4- by 72-inch piece of lumber to the bottom right side of the roof protector 12 inches from the front edge and flush with the side.

Figure 6-9. Front car roof protector board built

b. Prepare the rear car as shown in Figures 6-10 through 6-13.

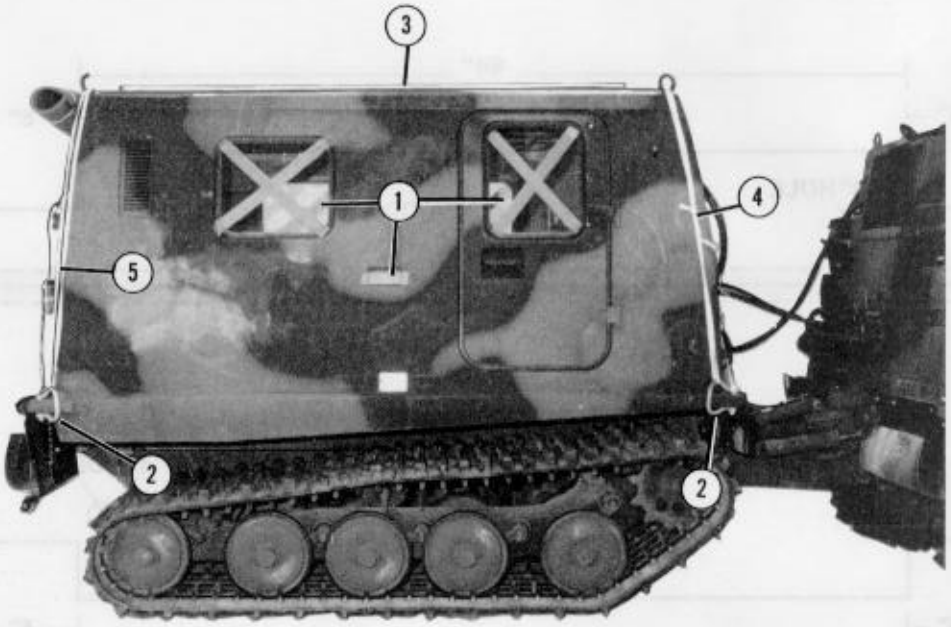
Note: This drawing is not drawn to scale.



Step:

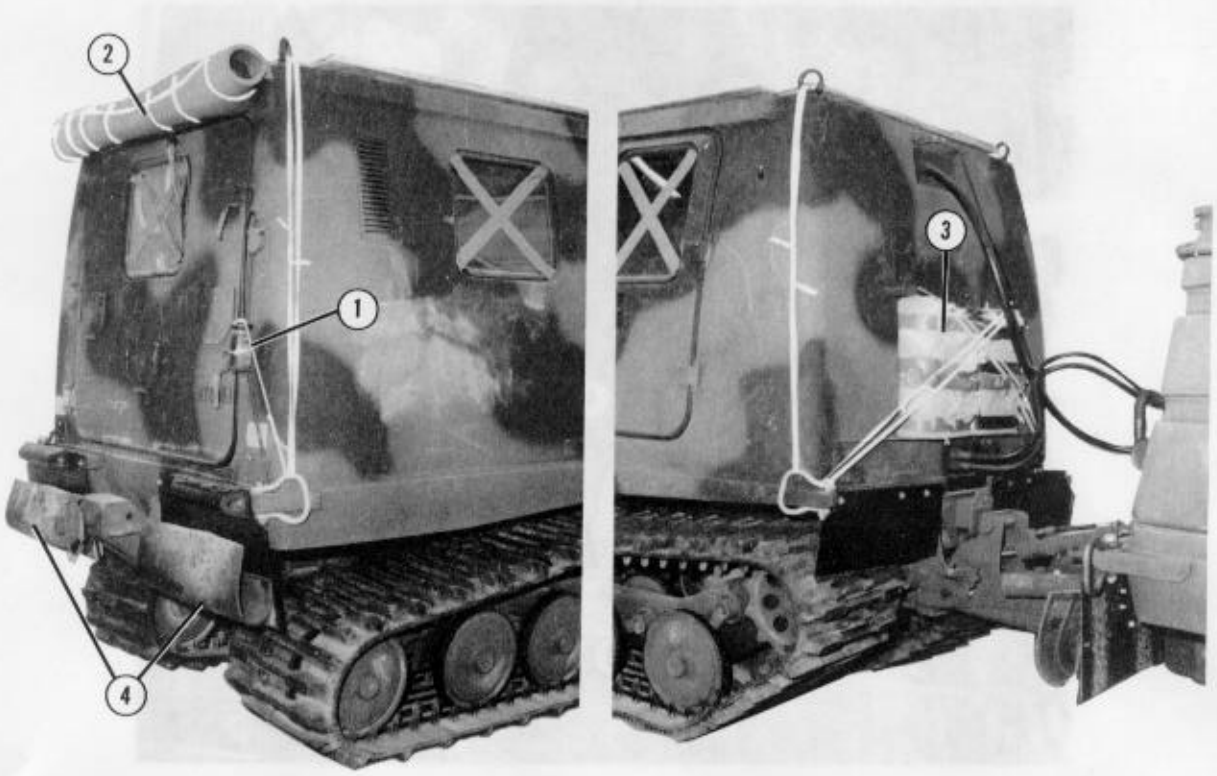
1. Prepare a roof protector board for the rear car using a 3/4- by 48- by 96-inch piece of plywood and a 3/4- by 14- by 96-inch piece of plywood.
2. Join the pieces of plywood in step 1 by nailing a 3/4- by 8- by 96-inch piece of plywood on top of the seam.
3. Make cutouts on the corners of the plywood using the above given dimensions.

Figure 6-10. Rear car roof protector board built



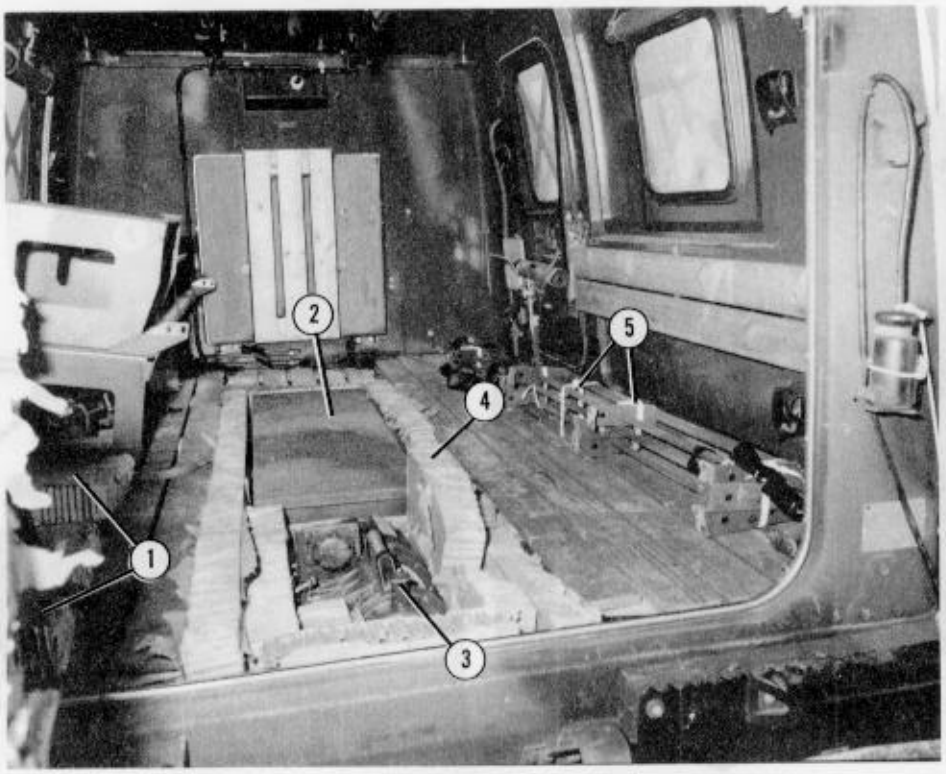
1. Tape the turn signals, windows and side reflectors.
2. Install a medium clevis in each of the four holes on the corners of the rear car.
3. Position the roof protector board on top of the rear car.
4. Secure the roof protector board by passing a length of 1/2-inch tubular nylon webbing through the right front 1-inch hole of the protector board, through the right front lifting point and medium clevis of the rear car.
5. Repeat step 4 for the other three corners of the car.

Figure 6-11. Rear car roof protector board secured



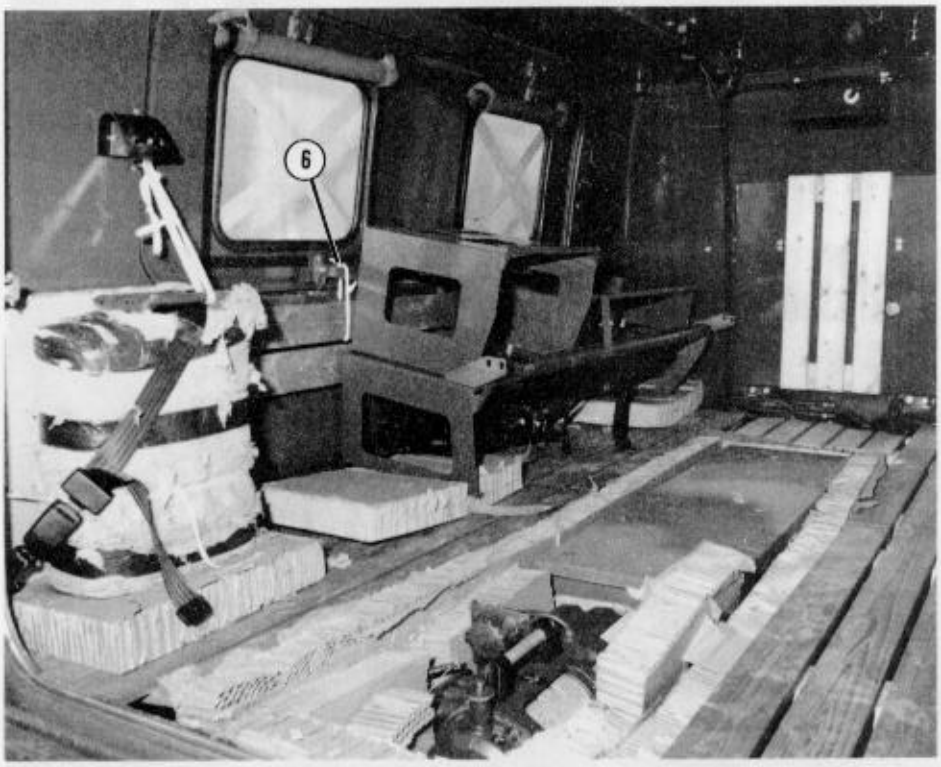
1. Secure the trailer tail light cord with a length of type III nylon cord.
2. Wrap a 1/2- by 18- by 57-inch piece of felt padding over the rear tail lights. Secure the felt padding in place using pieces of type III nylon cord.
3. Pad and tape two fuel cans with cellulose wadding. Strap the fuel cans on the front of the rear car in their stowage compartments. Secure the fuel cans using two lengths of 1/2-inch tubular nylon webbing.
4. Raise the rear mud flaps and secure them in place with their own hook buttons.

Figure 6-12. Outside of rear car prepared



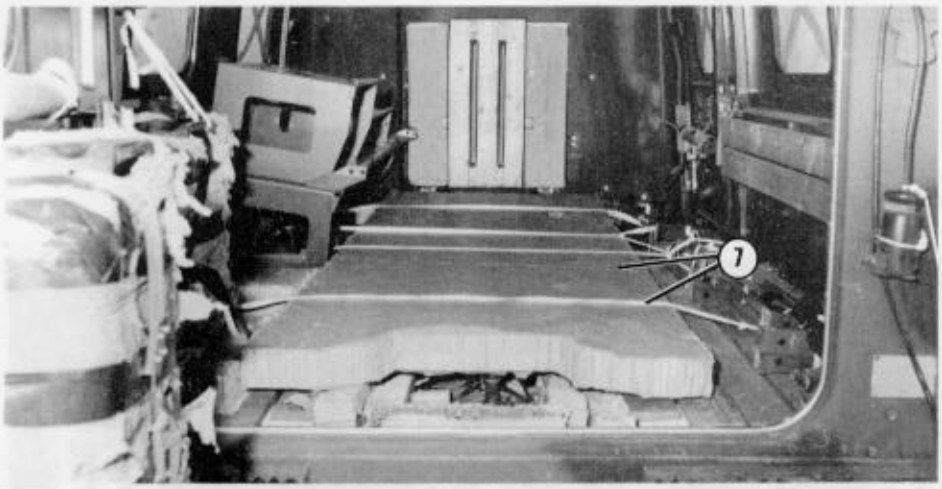
1. Place a layer of honeycomb under the troop seats in the rear car.
2. Place the OVM box between the troop seats.
3. Disconnect the winch and place it to the rear of the OVM box.
4. Use pieces of honeycomb as filler around the OVM box and the winch.
5. Place the rear car roof racks on the right troop seats. Secure the racks to the seats using 1/2-inch tubular nylon webbing.

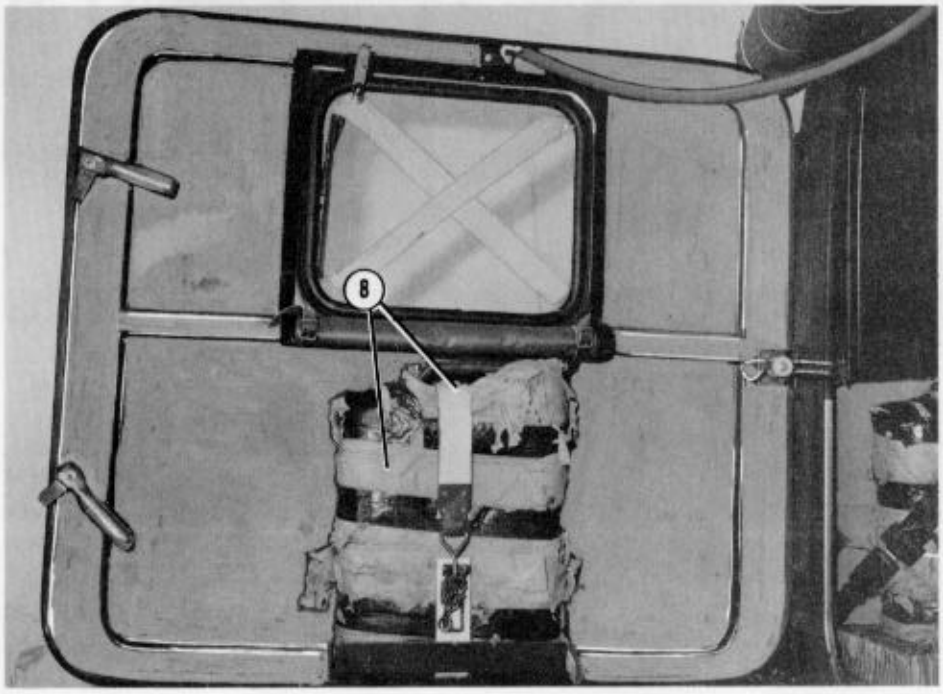
Figure 6-13. Inside of rear car prepared



(6) Secure the emergency escape window handles using type III nylon cord to the back of the left troop seats.

Figure 6-13. Inside of rear car prepared (continued)





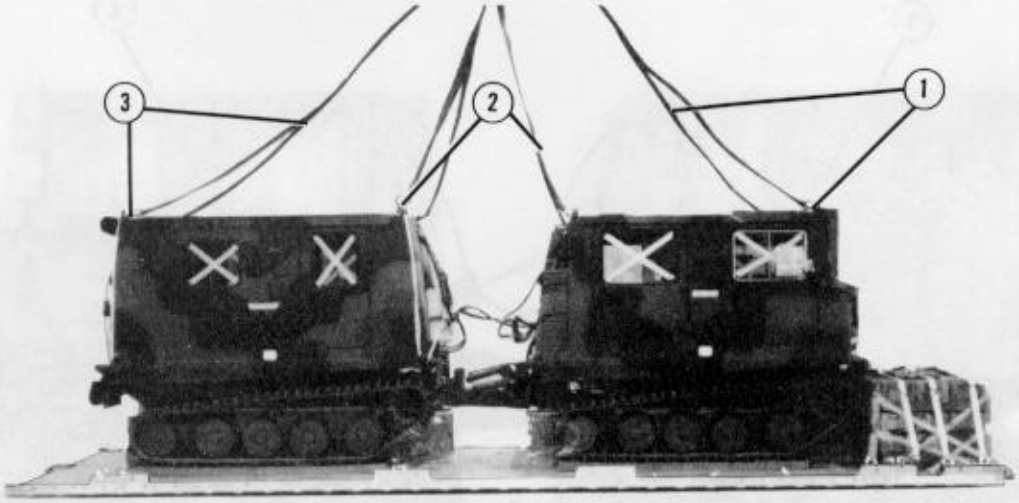
(7) Place a layer of honeycomb on top of the OVM box and winch. Secure the honeycomb in place using four pieces of 1/2-inch tubular nylon webbing.

(8) Pad and tape an additional fuel can with cellulose wadding. Place the fuel can in the fuel can compartment on the inside of the rear door. Secure the fuel can using the securing straps.

Figure 6-13. Inside of rear car prepared (continued)

6-7. Positioning the SUSV on Platform

Position the SUSV on the platform using a crane as shown in Figure 6-14.

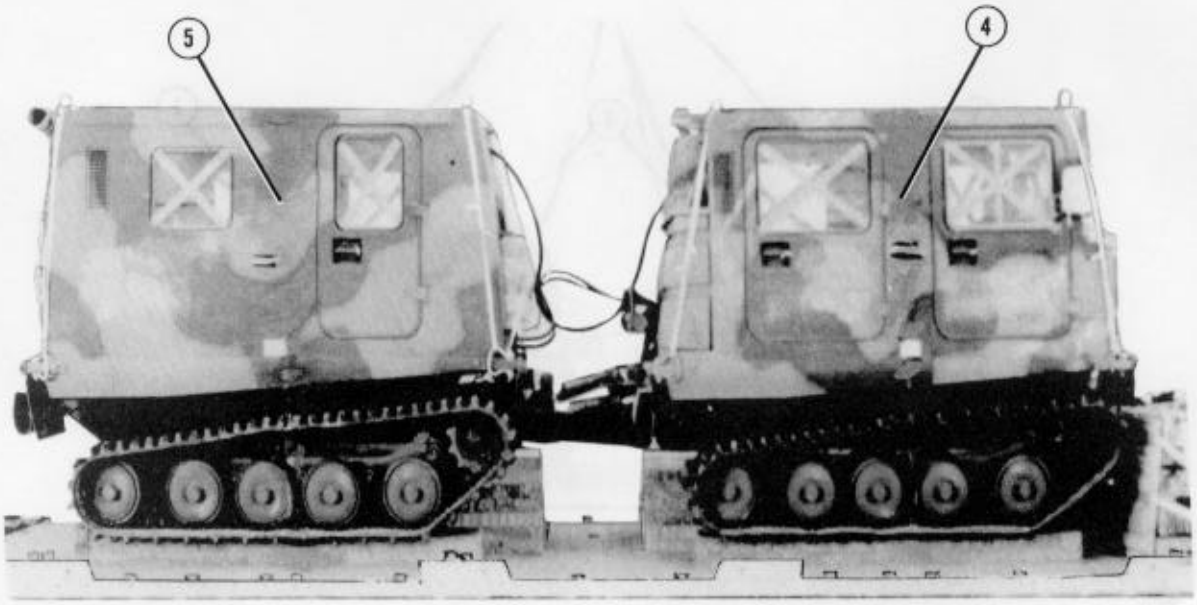


(1) Attach two 12-foot (2-loop), type XXVI nylon webbing slings to the front lifting provisions of the front car using two medium clevises. Pass a 3-foot (2-loop), type XXVI nylon webbing sling through the free ends of the 12-foot slings. Attach the free ends of the 3-foot (2-loop) type XXVI nylon webbing sling to the crane hook.

(2) Attach four 9-foot (2-loop), type XXVI nylon webbing slings to the four lifting provisions in the center of the vehicle using four medium clevises. Attach the other end of the slings to a 3-foot sling and form a donut.

(3) Attach two 12-foot (2-loop), type XXVI nylon webbing slings to the rear lifting provisions of the rear car using two medium clevises. Pass a 3-foot (2-loop), type XXVI nylon webbing sling through the free ends of the 12-foot slings. Attach the free ends of the 3-foot sling to the crane hook.

Figure 6-14. SUSV positioned on platform



(4) Position the front car squarely on honeycomb stack 1, and center on the platform.

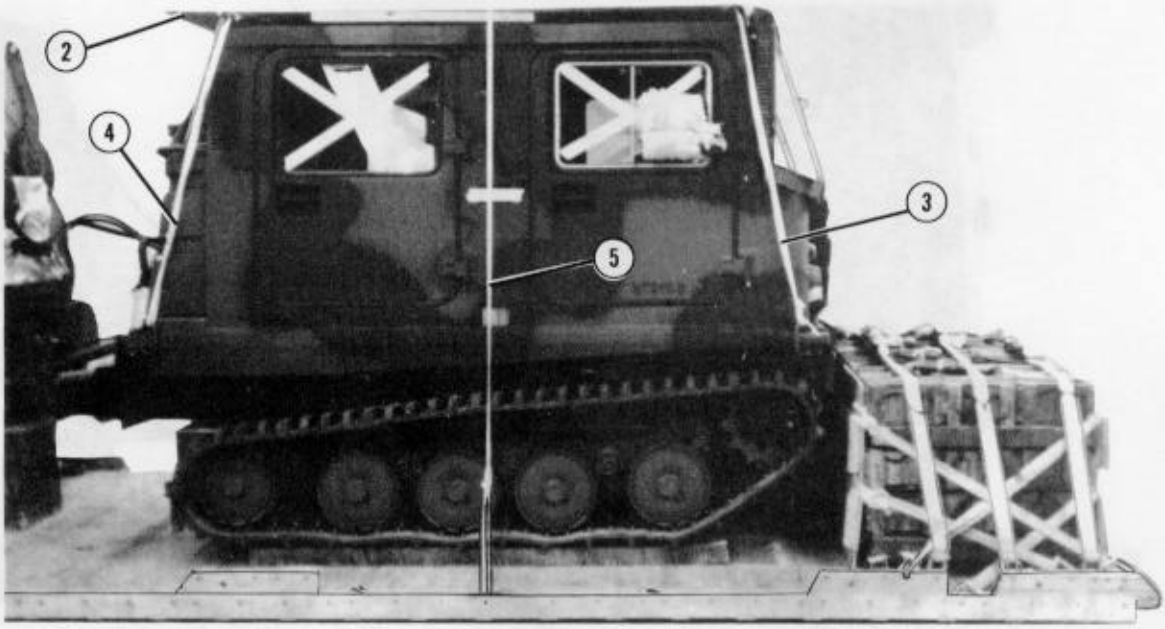
(5) Position the rear car squarely on honeycomb stack 2, and center on the platform.

Note: Honeycomb stacks 3, 4, 5 and 6 may need to be adjusted to fit directly under the vehicle track road wheels.

Figure 6-14. SUSV positioned on platform (continued)

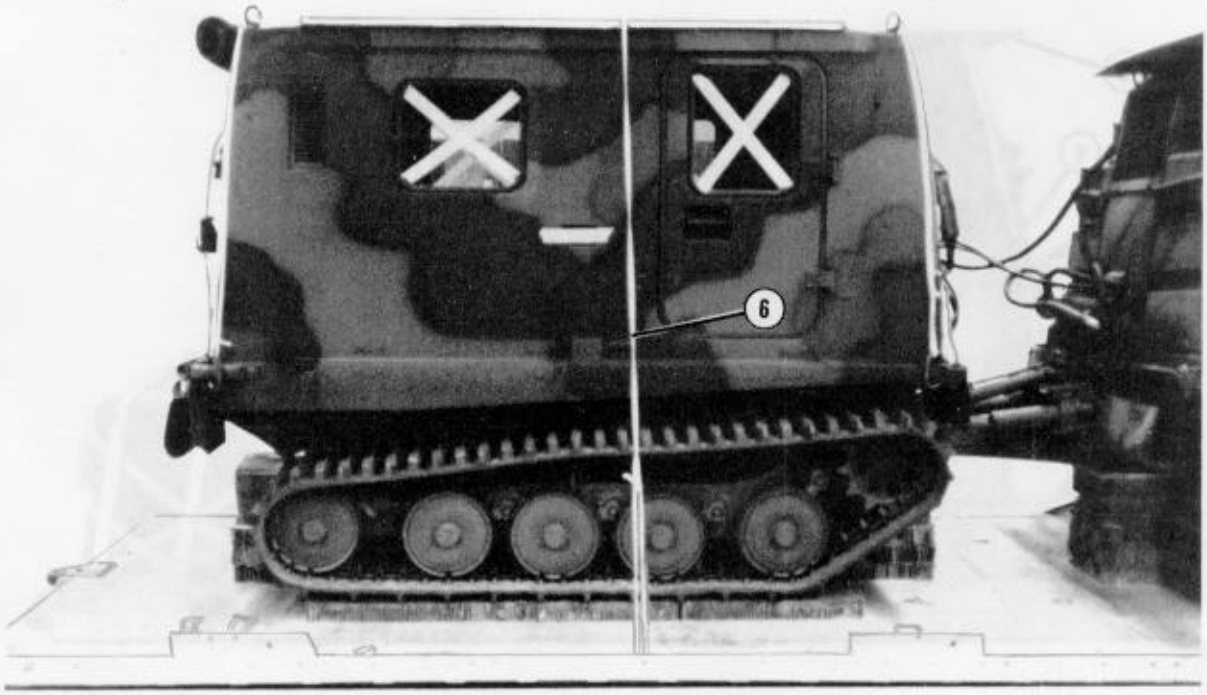
6-8. Preparing SUSV After Positioning

Prepare the SUSV after positioning as shown in Figure 6-15.



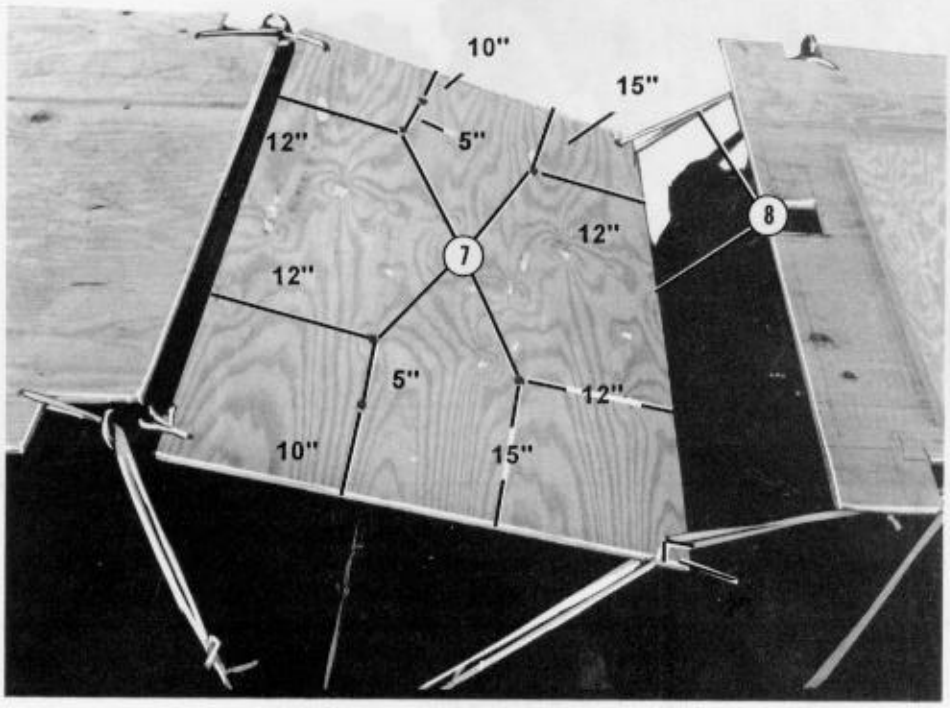
1. Remove the front lifting provisions from the front car (not shown).
2. Position the roof protective board built in Figure 6-9 on top of the front car.
3. Secure the roof protector board by passing a length of 1/2-inch tubular nylon webbing through the right front 1-inch hole of the protector board, and through the right front medium clevis of the front car.
4. Repeat step 3 for the other three corners of the front car.
5. Pass a length of 1/2-inch tubular nylon webbing from bushing 17, over the front car, and secure it to bushing 17A.

Figure 6-15. SUSV prepared after positioning



(6) Pass a length of 1/2-inch tubular nylon webbing from bushing 41, over the rear car, and secure it to bushing 41A.

Figure 6-15. SUSV prepared after positioning (continued)



(7) Drill 1/2-inch holes in a 3/4- by 59- by 42-inch piece of plywood as shown.

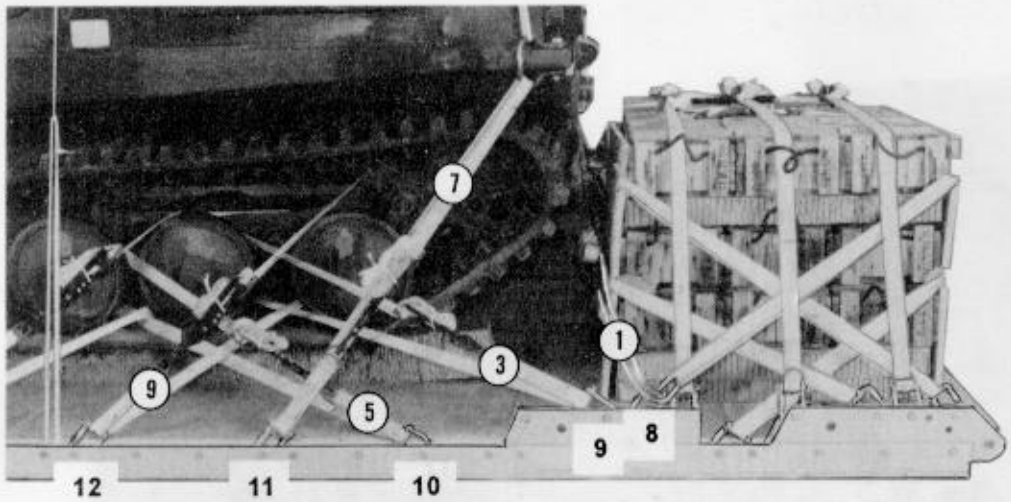
(8) Position the plywood between both cars at a 25- to 30-degree angle. Secure the plywood to both cars using 1/2-inch tubular nylon webbing.

Note: The plywood is required to position the M-2 release system.

Figure 6-15. SUSV prepared after positioning (continued)

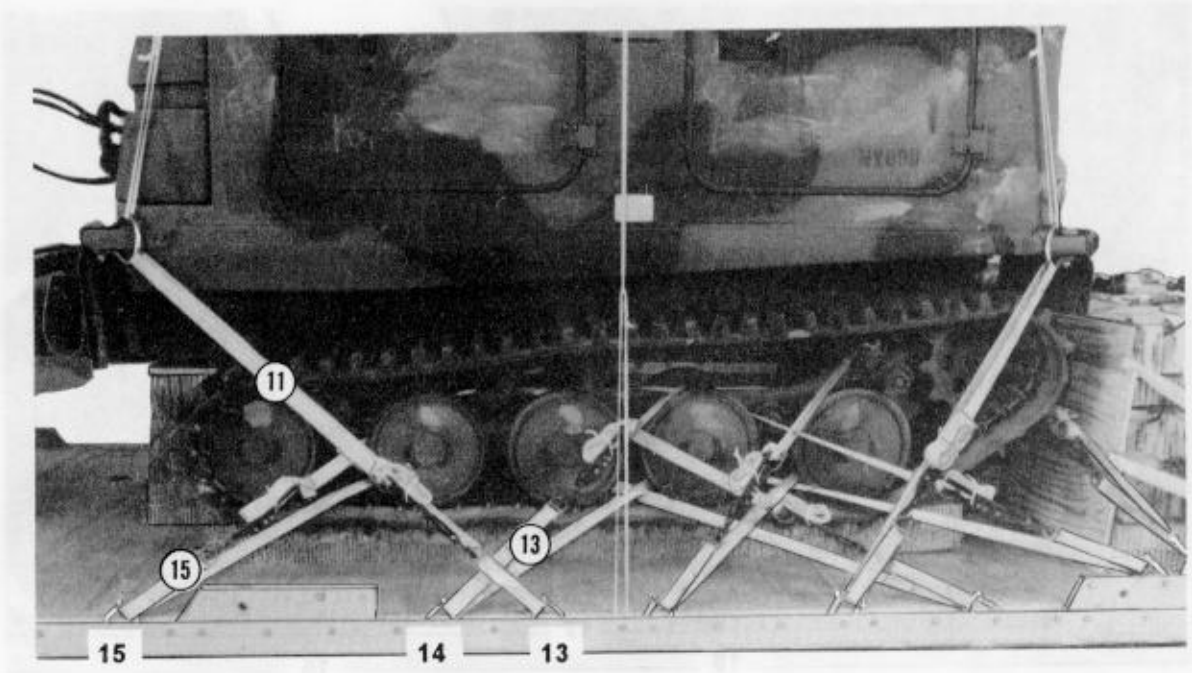
6-9. Lashing the SUSV

Lash the SUSV to the platform with sixty 15-foot tie-down assemblies. Install the lashings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-16.



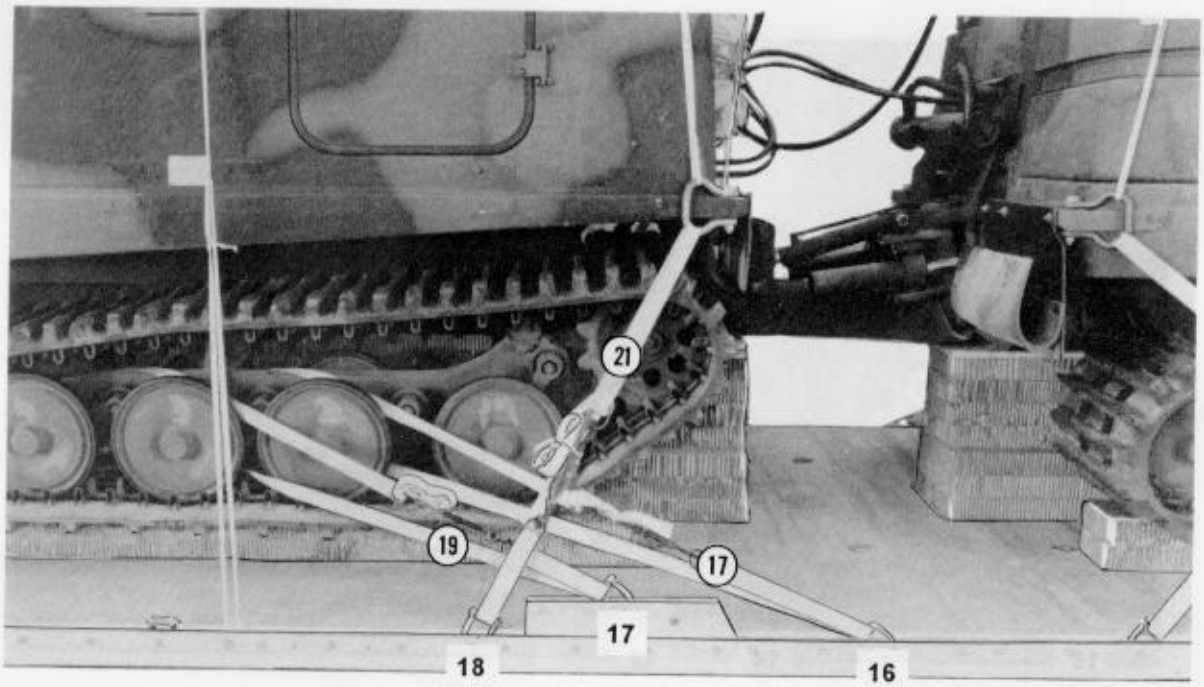
Lashing Number	Tie-down Clevis Number	Instructions
		Install lashing:
1	8	Around towing pin.
2	8A	Around towing pin.
3	9	Over track frame and to the rear of inside pivot arm shoulder of second road wheel, right side.
4	9A	Over track frame and to the rear of inside pivot arm shoulder of second road wheel, left side.
5	10	Over track frame and to the rear of inside pivot arm shoulder of third road wheel, right side.
6	10A	Over track frame and to the rear of inside pivot arm shoulder of third road wheel, left side.
7	11	Through right front medium clevis.
8	11A	Through left front medium clevis.
9	12	Around track frame support and to the rear of inside pivot arm shoulder of first road wheel, right side.
10	12A	Around track frame support and to the rear of inside pivot arm shoulder of first road wheel, left side.

Figure 6-16. Lashings installed



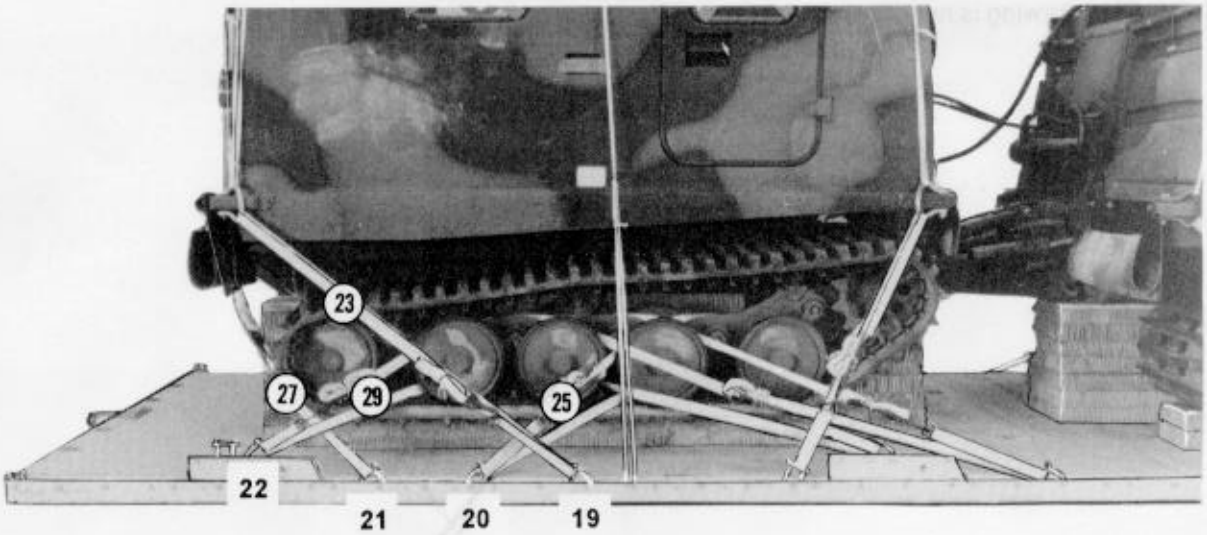
Lashing Number	Tie-down Clevis Number	Instructions
		Install lashing:
11	13	Through right rear medium clevis on front car.
12	13A	Through left rear medium clevis on front car.
13	14	Around track frame support and to the rear of inside pivot arm shoulder of second road wheel, right side.
14	14A	Around track frame support and to the rear of inside pivot arm shoulder of second road wheel, left side.
15	15	Around track frame support and to the rear of inside pivot arm shoulder of fourth road wheel, right side.
16	15A	Around track frame support and to the rear of inside pivot arm shoulder of fourth road wheel, left side.

Figure 6-16. Lashings installed (continued)



Lashing Number	Tie-down Clevis Number	Instructions
17	16	Install lashing: Around track frame support and to the rear of inside pivot arm shoulder of third road wheel of rear car, right side.
18	16A	Around track frame support and to the rear of inside pivot arm shoulder of third road wheel of rear car, left side.
19	17	Around track frame support and to the rear of inside pivot arm shoulder of fourth road wheel of rear car, right side.
20	17A	Around track frame support and to the rear of inside pivot arm shoulder of fourth road wheel of rear car, left side.
21	18	Through right front medium clevis on rear car.
22	18A	Through left front medium clevis on rear car.

Figure 6-16. Lashings installed (continued)



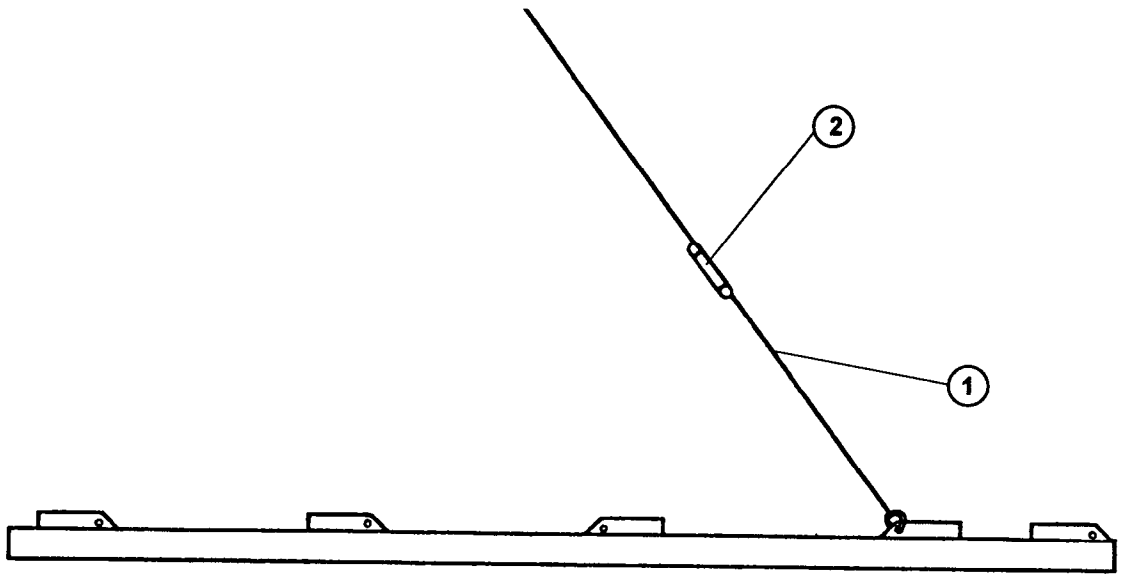
Lashing Number	Tie-down Clevis Number	Instructions
		Install lashing:
23	19	Through right rear medium clevis on rear car.
24	19A	Through left rear medium clevis on rear car.
25	20	Around track frame support and to the rear of inside pivot arm shoulder of second road wheel of rear car, right side.
26	20A	Around track frame support and to the rear of inside pivot arm shoulder of second road wheel of rear car, left side.
27	21	Through tow pintle, right side.
28	21A	Through tow pintle, left side.
29	22	Around track frame support and to the rear of inside pivot arm shoulder of fourth road wheel of rear car, right side.
30	22A	Around track frame support and to the rear of inside pivot arm shoulder of fourth road wheel of rear car, left side.

Figure 6-16. Lashings installed (continued)

6-10. Installing Suspension Slings

Install the suspension slings as shown in Figure 6-17.

Note: This drawing is not drawn to scale.

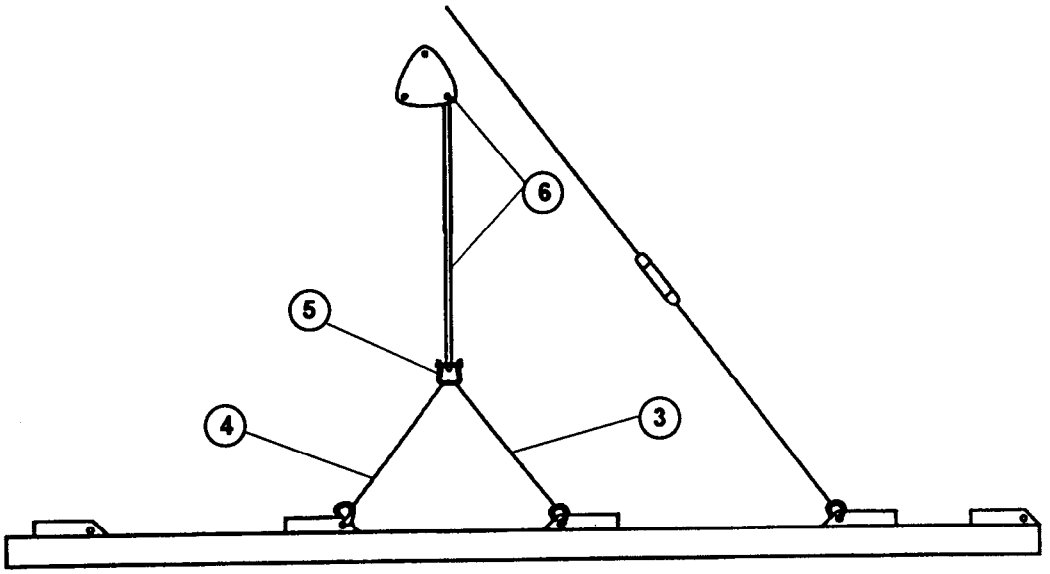


(1) Attach a 20-foot (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the first suspension link on the right side of the platform.

(2) Pad the front sling where it touches the load with felt. Tape the felt in place.

Figure 6-17. Suspension slings installed

Note: This drawing is not drawn to scale.



(3) Attach a 3-foot (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the second suspension link on the right side of the platform.

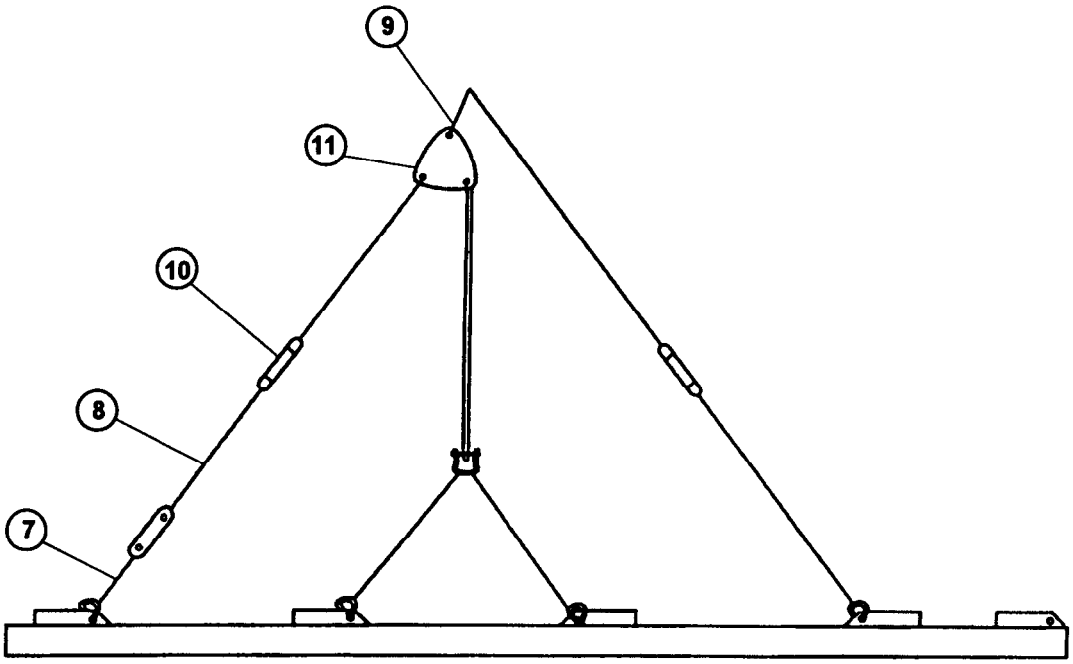
(4) Attach a 3-foot (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Bolt the large suspension clevis to the third suspension link on the right side of the platform.

(5) Attach the free ends of both 3-foot slings to the bell portion of a large suspension clevis on the right side of the platform.

(6) Attach a 12-foot (4-loop), type XXVI nylon webbing sling to the bolt of the large suspension clevis (used in step 5). Attach the free end of the sling to one end of a three point link.

Figure 6-17. Suspension slings installed (continued)

Note: This drawing is not drawn to scale.



(7) Attach a 3-foot (4-loop), type XXVI nylon webbing sling to the bell portion of a large suspension clevis. Attach the suspension clevis to the fourth suspension link. Attach the free end of the sling to a 3 3/4-inch two-point link.

(8) Attach the end of a 16-foot (4-loop), type XXVI nylon webbing sling to the other point of the two-point link. Attach the other end of the sling to the three-point link described in step 6.

(9) Attach a 3-foot (4-loop), type XXVI nylon webbing sling to the top spacer of the three-point link.

(10) Pad the rear sling with felt where the sling touches the load. Tape the felt in place.

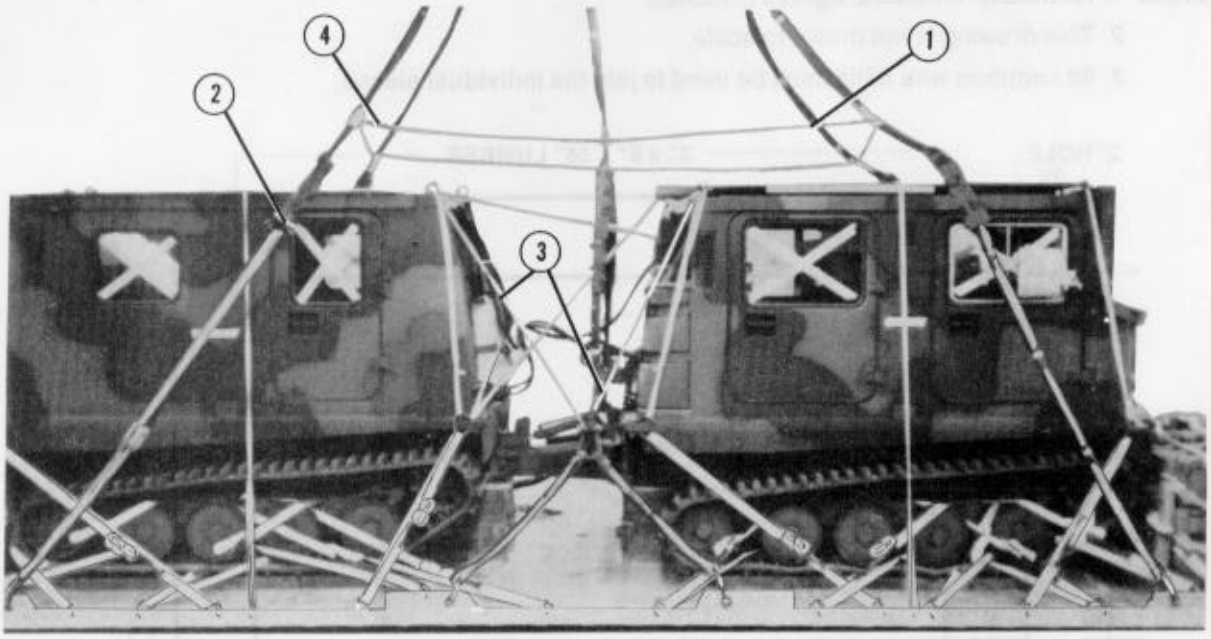
(11) Pad the three-point link with felt. Tape the felt in place.

(12) Repeat steps 1 through 11 for the left side of the platform.

Figure 6-17. Suspension slings installed (continued)

6-11. Safetying the Suspension Slings

Safety the suspension slings as shown in Figure 6-18.



1. Raise the suspension slings above the load.
2. Safety tie the front and rear suspension slings with lengths of type III nylon cord.
3. Safety tie the large clevis of the center suspension slings to the load using type III nylon cord.
4. Install a suspension sling safety tie to the suspension slings according to FM 10-500-2/TO 13C7-1-5.

Figure 6-18. Suspension slings safetied

6-12. Building, Positioning and Securing Parachute Stowage Platform and Honeycomb Stack Supports

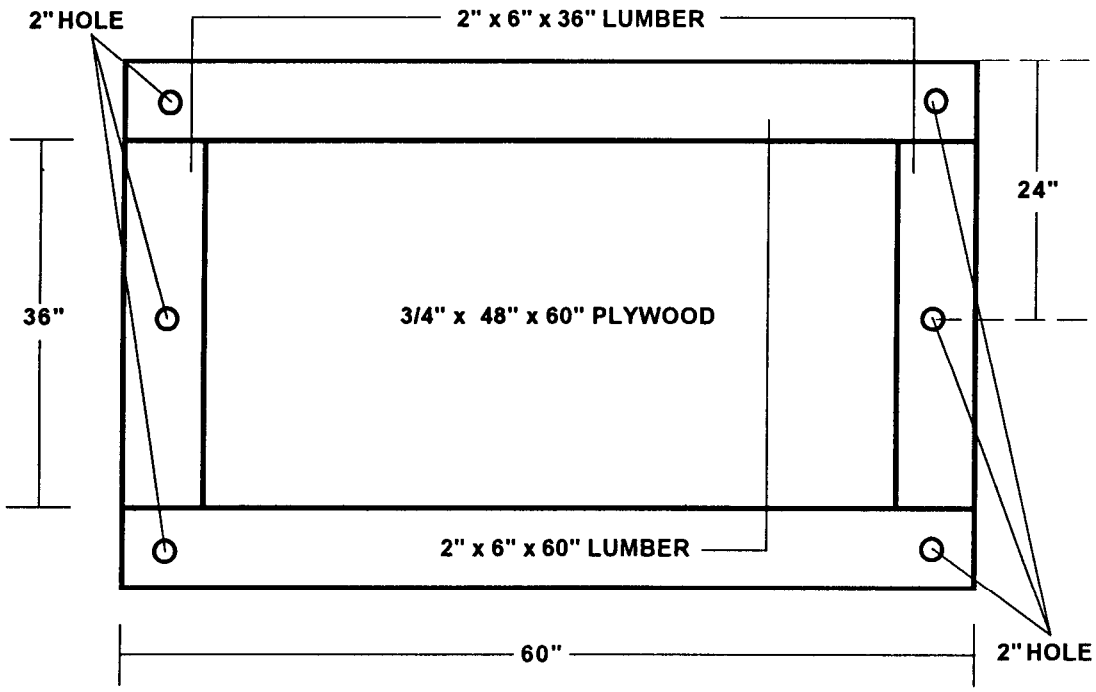
Build, position and secure the parachute stowage platform as described below.

a. Building Honeycomb Support Stacks. Build and position two support stacks for the stowage platform as shown in Figure 6-19.

b. Building Stowage Platform. Build a stowage platform as shown in Figure 6-20.

c. Securing Stowage Platform. Secure the stowage platform as shown in Figure 6-21.

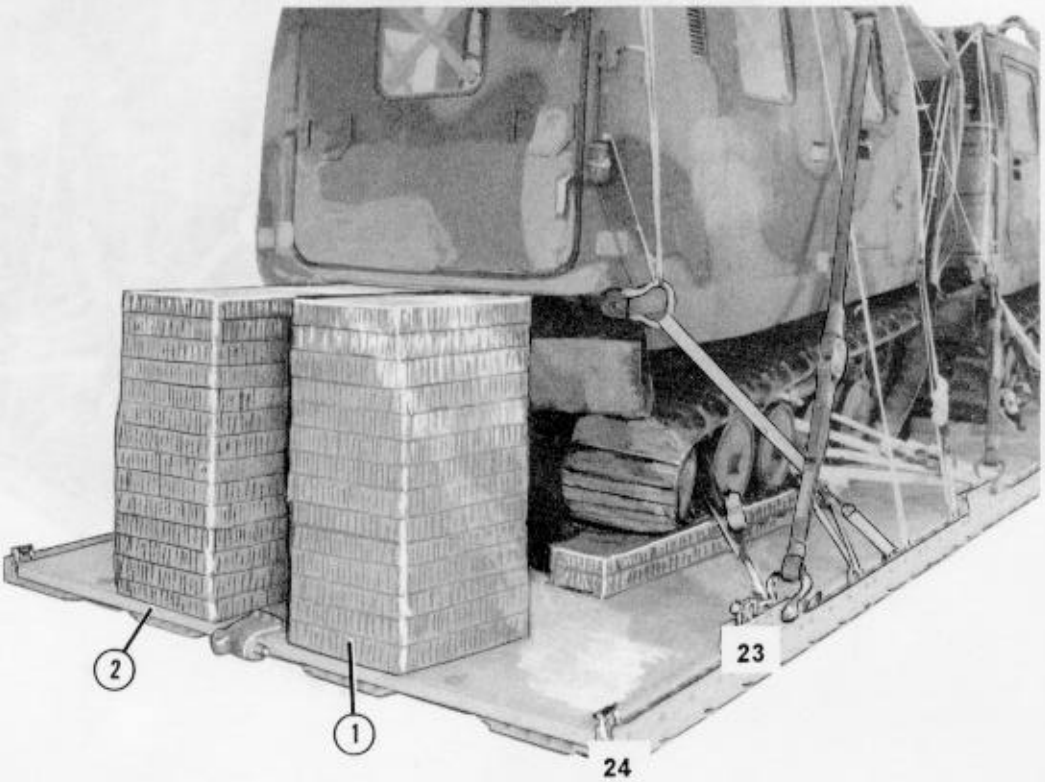
Notes: 1. All measurements are given in inches.
2. This drawing is not drawn to scale.
3. 8d common wire nails must be used to join the individual pieces.



Step:

1. Use a 3/4- by 48- by 60-inch piece of plywood.
2. Nail a 2- by 6- by 36-inch piece of lumber to each side of the plywood as shown.
3. Nail a 2- by 6- by 60-inch piece of lumber flush with the front and rear edges of the plywood.
4. Drill a 2-inch hole 3 inches in diagonally from each corner and center a 2-inch hole 2 inches in from the 48- inch sides as shown.

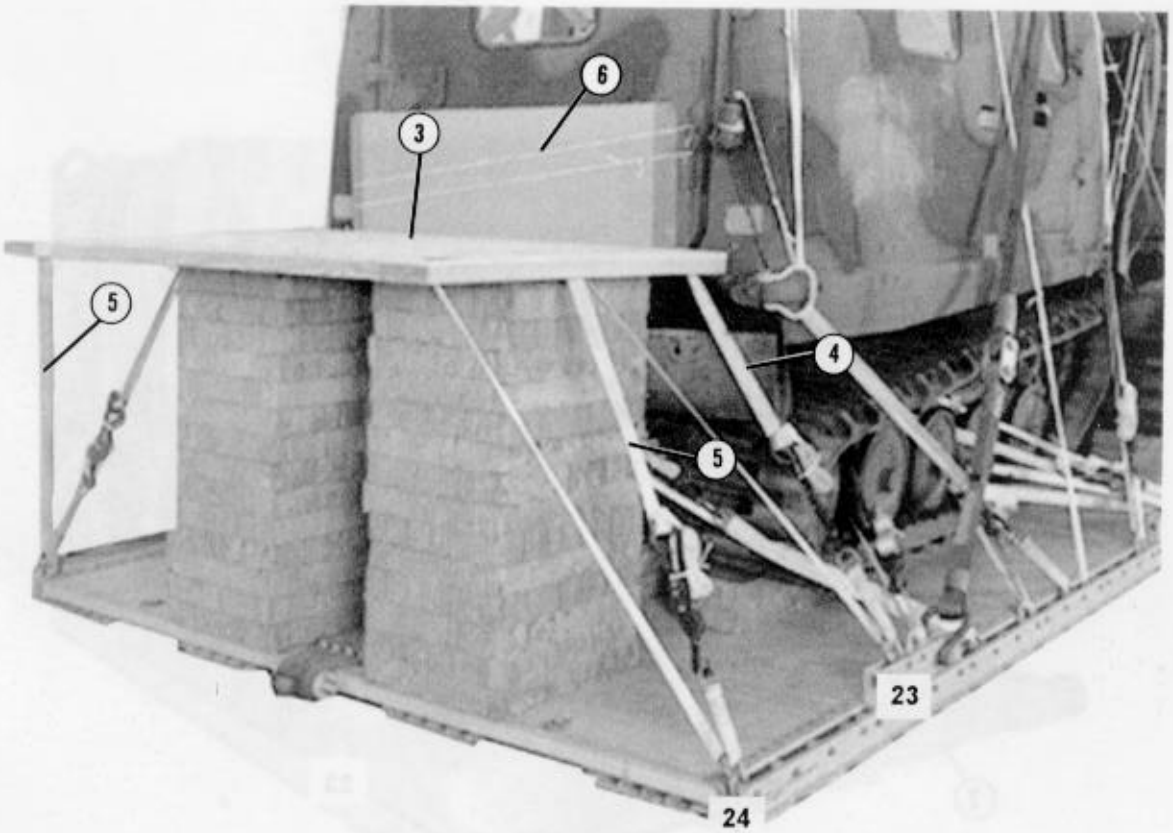
Figure 6-19. Honeycomb support stacks built and positioned



(1) Build two honeycomb stacks using fifteen 18- by 24-inch pieces of honeycomb to support the parachute stowage platform.

(2) Position the honeycomb support stacks flush with the rear edge of the platform and 28-inches from the right and left side rails.

Figure 6-20. Parachute stowage platform built



(3) Center the parachute stowage platform on the honeycomb support stacks.

(4) Pass a 15-foot lashing through the center and front holes on each side of the parachute stowage platform and secure the lashings to clevises 23 and 23A.

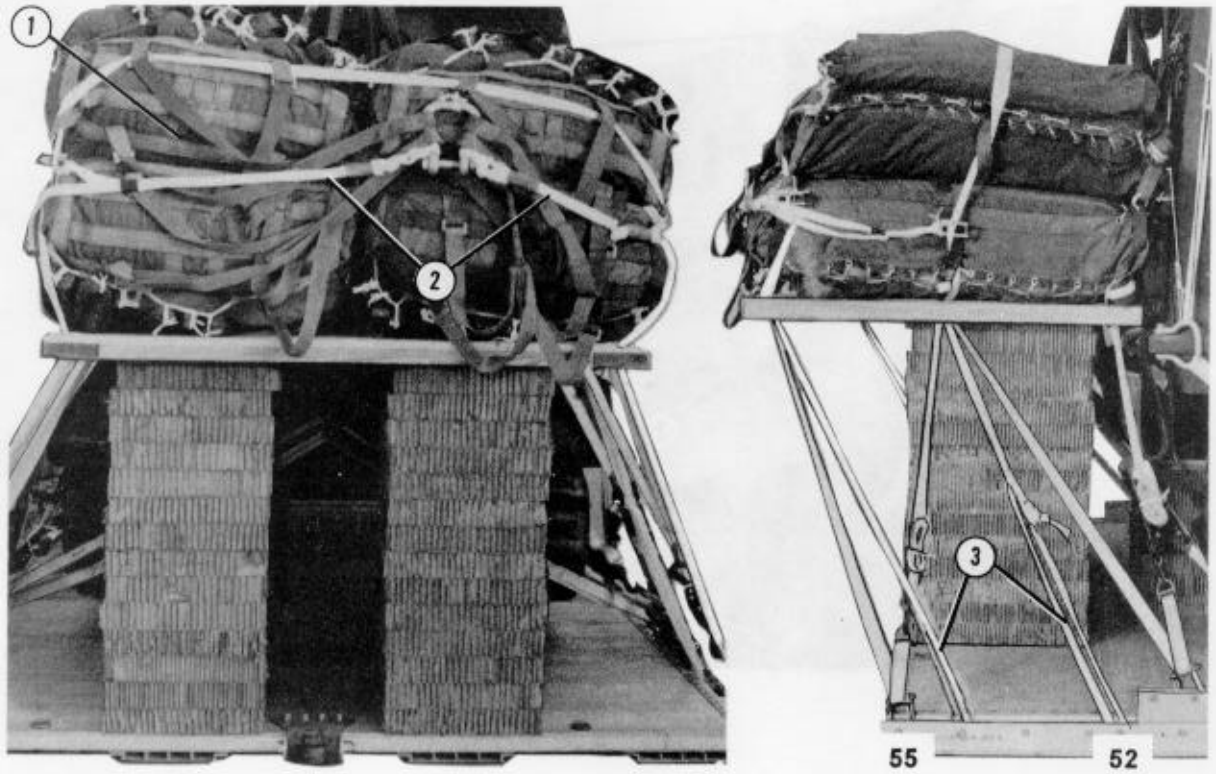
(5) Pass a 15-foot lashing through the center and rear holes on each side of the parachute stowage platform and secure the lashings to clevises 24 and 24A.

(6) Position a 48- by 36-inch piece of honeycomb across the lower half of the rear door. Secure the honeycomb to the car using type III nylon cord.

Figure 6-21. Parachute stowage platform positioned and secured

6-13. Stowing Cargo Parachutes

Stow four G-11B cargo parachutes on the load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-22.



(1) Prepare, position and cluster four G-11B cargo parachutes on the parachute stowage platform as shown in FM 10-500-2/TO 13C7-1-5.

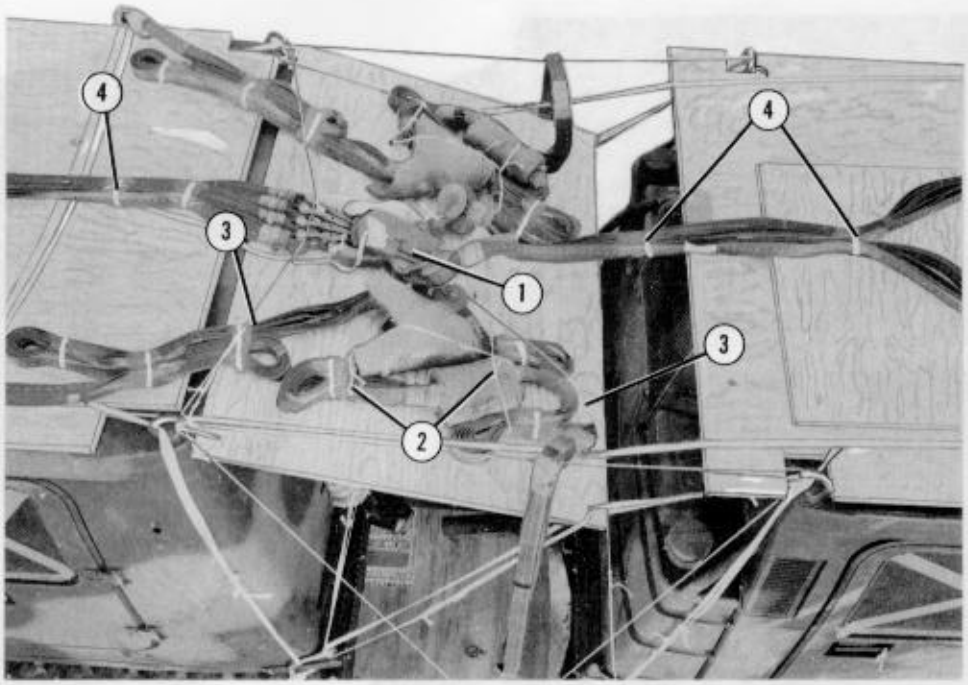
(2) Restrain the cargo parachutes to the platform using two lengths of type VIII nylon webbing according to FM 10-500-2/TO 13C7-1-5. Tie the ends of the webbing to platform bushings 52 and 52A and 55 and 55A.

(3) Install two multi-cut parachute release straps according to FM 10-500-2/TO 13C7-1-5.

Figure 6-22. Cargo parachutes stowed

6-14. Installing Release System

Prepare and install the M-2 release system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-23.



(1) Prepare an M-2 cargo release assembly according to FM 10-500-2/TO 13C7-1-5. Place the M-2 release on the 3/4- by 59- by 42-inch piece of plywood positioned in Figure 6-15. Attach the release to the suspension slings and the cargo parachutes according to FM 10-500-2/TO 13C7-1-5.

(2) Fold the suspension slings. Secure the folds to the plywood platform with lengths of type I, 1/4-inch cotton webbing. Pass the webbing through the holes in the plywood and over the taped links.

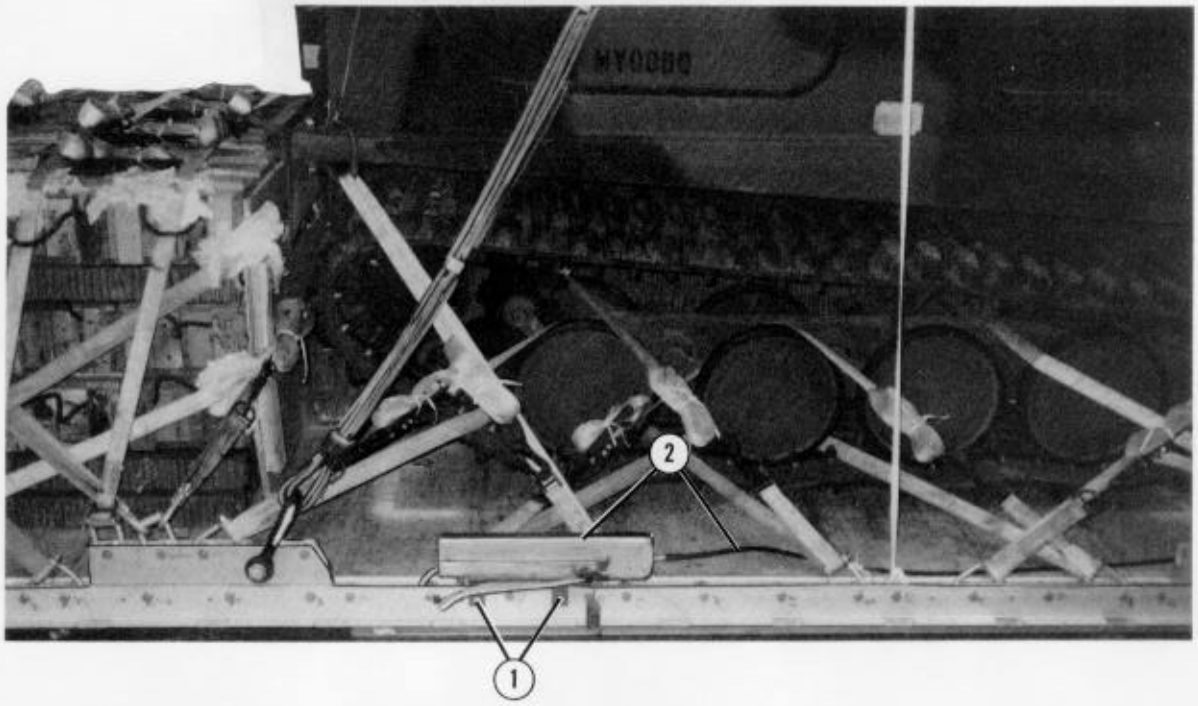
(3) Secure the top and bottom of the M-2 cargo parachute release according to FM 10-500-2/TO 13C7-1-5.

(4) Tie the exposed riser extensions along the rear roof protective board with lengths of type I, 1/4-inch cotton webbing.

Figure 6-23. Release system installed

6-15. Installing Extraction System

Install the EFTC extraction system as shown in Figure 6-24.



(1) Attach the mounting brackets to the front mounting holes on the left platform side rail.

(2) Install the actuator to the mounting brackets. Install a 28-foot cable to the actuator according to FM 10-500-2/TO 13C7-1-5.

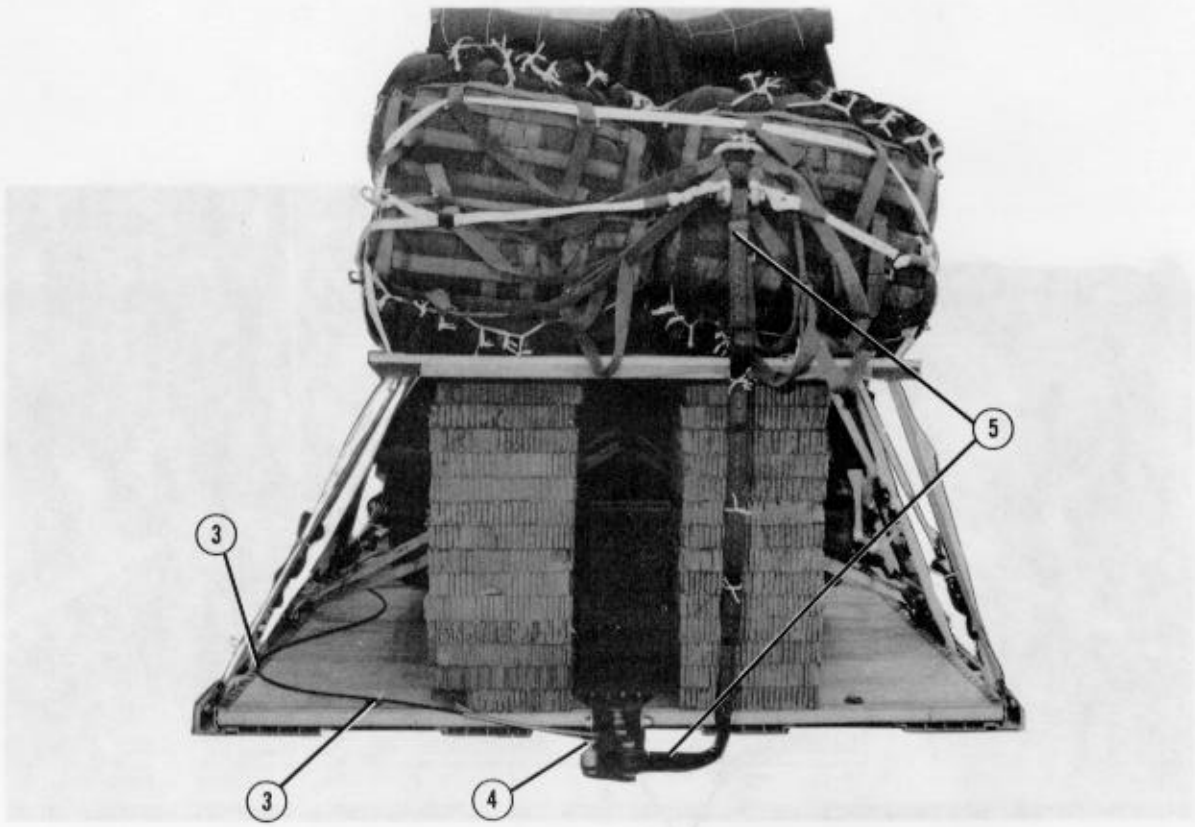
Figure 6-24. Extraction system installed

Table 6-1. Equipment required for rigging the SUSV 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)	12
4030-00-090-5354	1-in (large)	11
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
	Cover:	
1670-00-360-0328	Clevis, large	4
1670-00-360-0329	Link assembly (type IV)	8
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-926-1559	Cloth, cotton muslin, 36-in	As required
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	1
1670-01-107-7651	140-ft (3-loop), type XXVI nylon webbing	1
	Link assembly:	
	Two-point:	
5306-00-435-8994	Bolt, 1-in diam, 4-in long	4
5310-00-232-5165	Nut, 1-in, hexagonal	4
1670-00-003-1953	Plate, side, 3 3/4-in	4
1670-00-003-1954	Plate, side, 5 1/2-in	4
5365-00-007-3414	Spacer, large	4
1670-01-307-0155	Three-point	2
1670-00-783-5988	Type IV	8
	Lumber:	
5510-00-220-6148	2- by 6-in	4 linear feet
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	16 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	4
1670-00-040-8135	Cargo extraction, 28-ft	1
	Platform, AD, type V, 28-ft:	1

Table 6-1. Equipment required for rigging the SUSV for a low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(50)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-247-2389	Suspension link	(8)
1670-01-162-2381	Tandem link	(2)
5530-00-128-4981	Plywood, 3/4-in	6 sheets
1670-01-097-8817	Release, cargo parachute, M-2	1
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	1
	For riser extensions:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	12
	For Lifting:	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	4
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	4
	For suspension slings:	
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	8
1670-01-062-6308	16-ft (4-loop), type XXVI nylon webbing	2
1670-01-064-4453	20-ft (4-loop), type XXVI nylon webbing	2
1670-01-062-6302	12-ft (4-loop), type XXVI nylon webbing	2
1670-00-040-8219	Strap, parachute release, multicut, comes with 3 knives	2
8305-00-074-5124	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	50
	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
8305-00-268-2453	Nylon, tubular, 1/2-in, olive drab	As required
8305-00-263-3591	Type VIII	As required



(3) Safety the 28-foot cable to the lashings along the left platform side rail and to tie-down ring D14 with type I, 1/4-inch cotton webbing.

(4) Attach the cable to the latch assembly according to FM 10-500-2/TO 13C7-1-5.

(5) Install a 12-foot (2-loop), type XXVI nylon webbing sling as a deployment line according to FM 10-5002/TO 13C7-1-5.

Figure 6-24. Extraction system installed (continued)

6-16. Installing Provisions for Emergency Restraints

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

6-17. Placing Extraction Parachute

Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 10-500-2/TO 13C7-1-5. Place the extraction line on the load for installation in the aircraft.

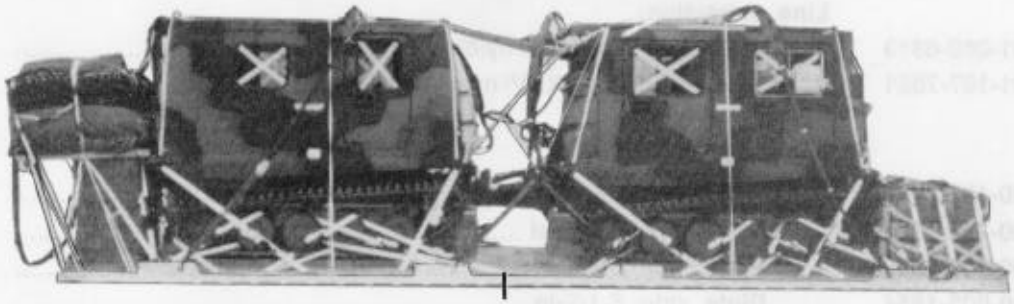
6-18. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-25. Complete Shipper's Declaration for Dangerous Goods.

6-19. Equipment Required

Use the equipment listed in Table 6-1 to rig this load.

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



RIGGED LOAD DATA

Weight:	Load shown	16,500 pounds
	Maximum load allowed	16,600 pounds
Height		97 inches
Width		108 inches
Length		353 inches
Overhang:	Front	0 inches
	Rear	17 inches
CB (from front edge of platform)		155 inches
Extraction system (adds 18 inches to length of platform)		EFTC

Figure 6-25. SUSV rigged for low-velocity airdrop on a type V platform

CHAPTER 7

RIGGING M113 ARMORED PERSONNEL CARRIER ON A 20-FOOT, TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

7-1. Description of Load

The M113, armored personnel carrier (Figure 7-1) is rigged on a 20-foot, type V airdrop platform with five G-11C cargo parachutes and other items of airdrop equipment. The carrier weighs 19,180 pounds with an accompanying load weighing a maximum of 1,890 pounds. The height of the vehicle is 91 inches. The width of the vehicle is 105 inches, and the length is 191 inches. This carrier may be delivered by low-velocity airdrop from the C-130, C-141, C-5 and C-17 aircraft.

7-2. Preparing Platform

Prepare a 20-foot, type V platform as shown in Figure 7-2.

Notes: *1. The nose bumper may or may not be installed.*

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

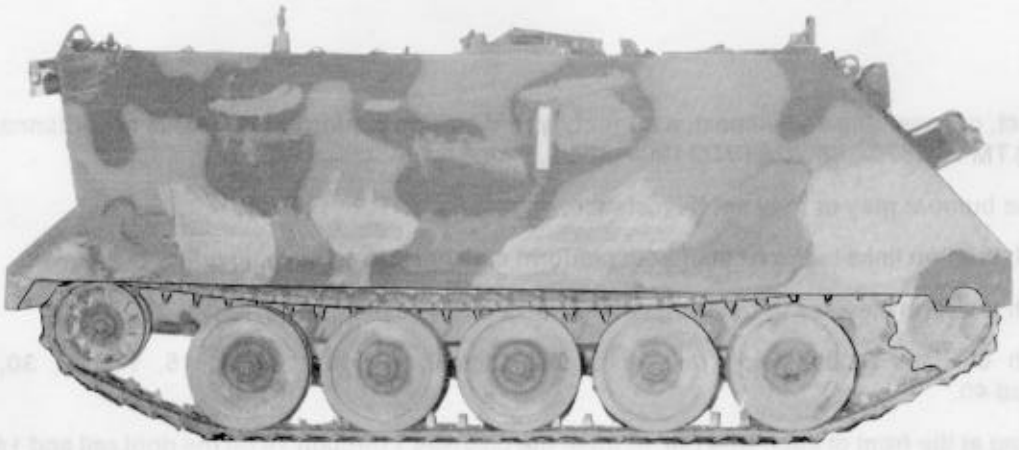
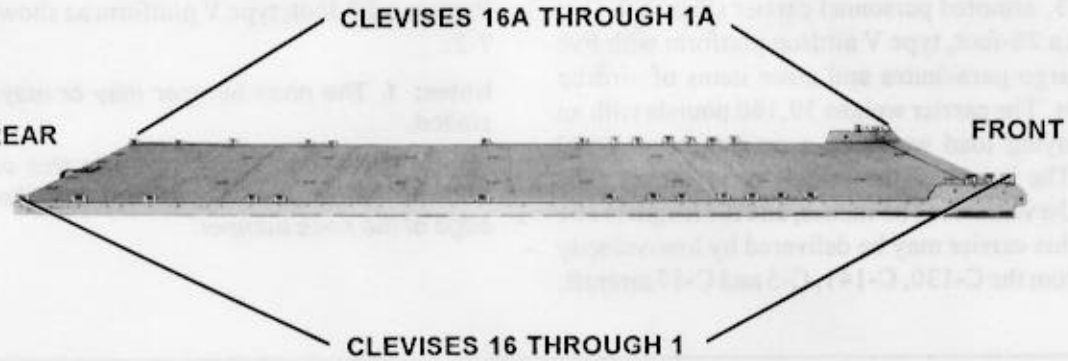


Figure 7-1. M113 armored personnel carrier



Step:

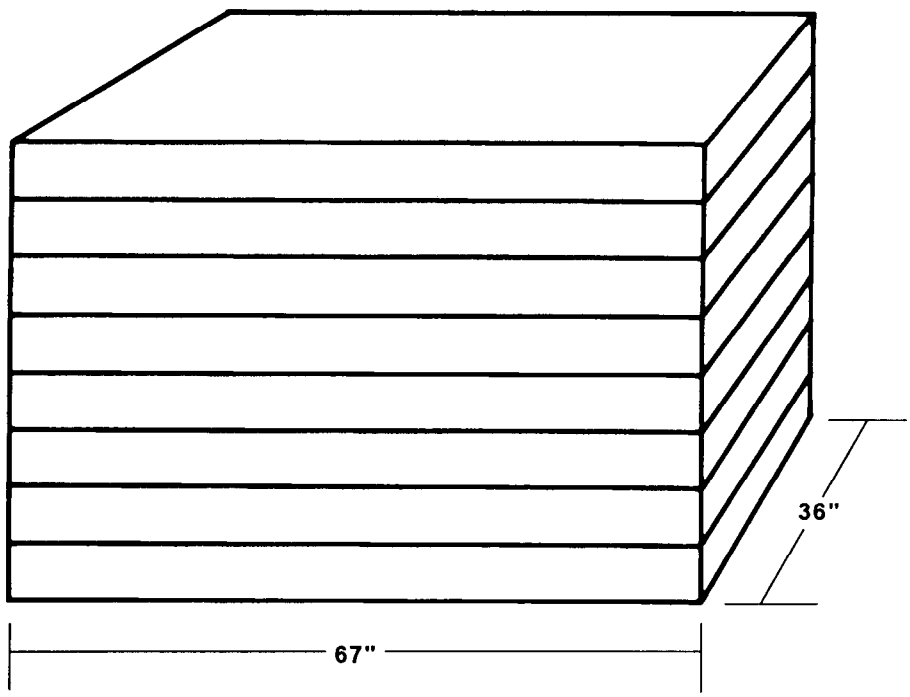
1. Inspect, or assemble and inspect, a 20-foot, type V airdrop platform for LVAD in accordance with (IAW) TM 10-1670-268-20 & P/TO 13C7-52-22.
2. A nose bumper may or may not be installed.
3. Attach tandem links to the front of both platform side rails using bushing holes 1, 2, and 3.
4. Attach platform clevises to the front tandem links using bushings 1, 2, and 3.
5. Attach clevises to both side rails using bushings 9, 10, 11, 12, 14, 15, 17, 22, 30, 31, 35, 38, and 40.
6. Starting at the front of each side rail, number the clevises 1 through 16 on the right rail and 1A through 16A on the left rail.
7. Starting at the front of the platform, number the panels 1 through 10. Label the tie-down rings A and B from right to left. Label the tie-down rings on the last panel A, B, C, and D from right to left.

Figure 7-2. Platform prepared

7-3. Preparing and Positioning Honeycomb Stacks

Prepare five honeycomb stacks as shown in Figures 7-3 through 7-5. Position the stacks on the platform according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-6.

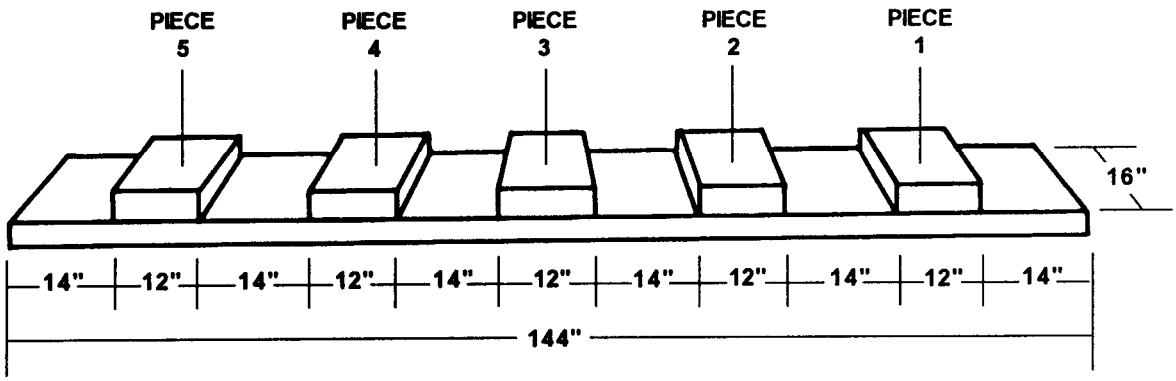
Note: This drawing is not drawn to scale.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1, 2, and 3	8	36	67	Honeycomb	Glue them together to form the stack.

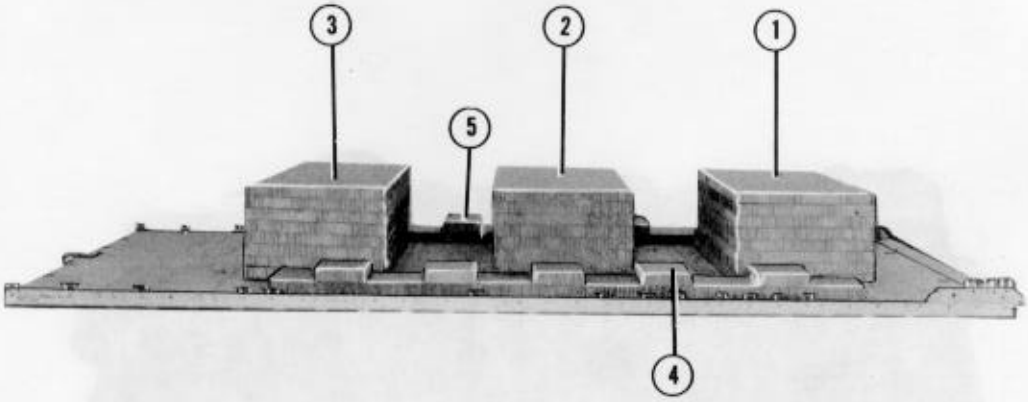
Figure 7-3. Stacks 1, 2, and 3 prepared

Note: This drawing is not drawn to scale.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
4	2	16	72	Honeycomb	Cut two pieces of honeycomb 16 x 72 inches.
	5	12	16	Honeycomb	Cut five pieces of honeycomb. Place the first piece of honeycomb 14 inches from the front edge of the 144-inch piece. Place the second piece of honeycomb 14 inches from the rear edge of the first piece. Place the third piece of honeycomb 14 inches from the rear edge of the second piece. Place the fourth piece of honeycomb 14 inches from the rear edge of the third piece. Place the fifth piece of honeycomb 14 inches from the rear edge of the fourth piece.
5	5	12	16	Honeycomb	Repeat steps for stack 4.

Figure 7-4. Stacks 4 and 5 prepared

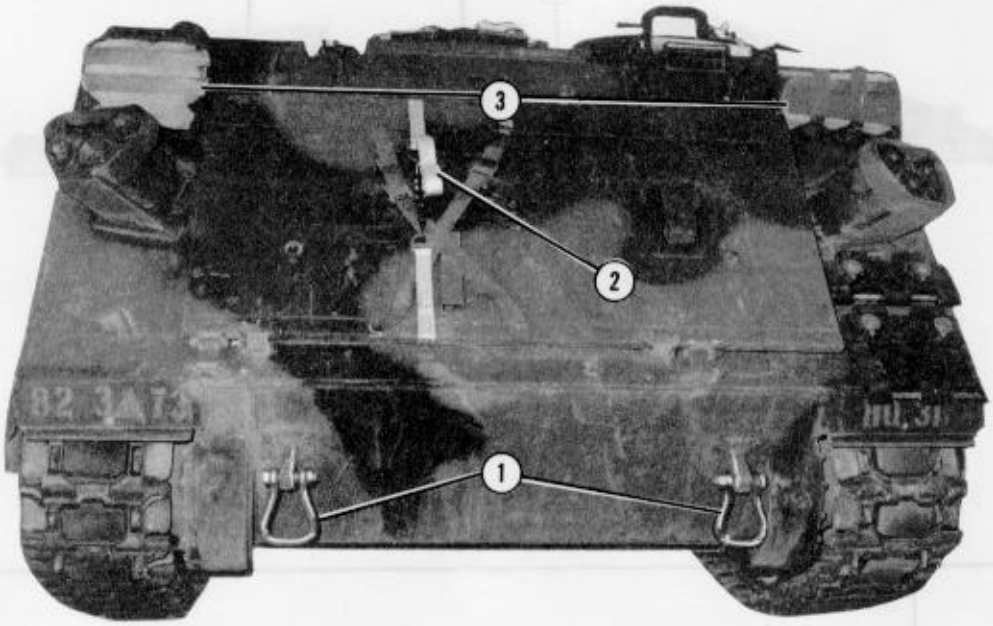


Stack Number	Position of Stack on Platform
	Place stack:
1	28 inches from the front edge of platform, centered between right and left rails.
2	26 inches from rear edge of stack 1 centered between rails.
3	56 inches from rear edge of platform, centered between rails.
4	34 inches from the front edge of platform, along right side of stack 1, 2, and 3.
5	34 inches from the front edge of platform, along left side of stacks 1, 2, and 3.

Figure 7-5. Honeycomb stacks positioned on platform

7-4. Preparing Carrier

Prepare the M113 series carrier as shown in Figure 7-6 through 7-14.



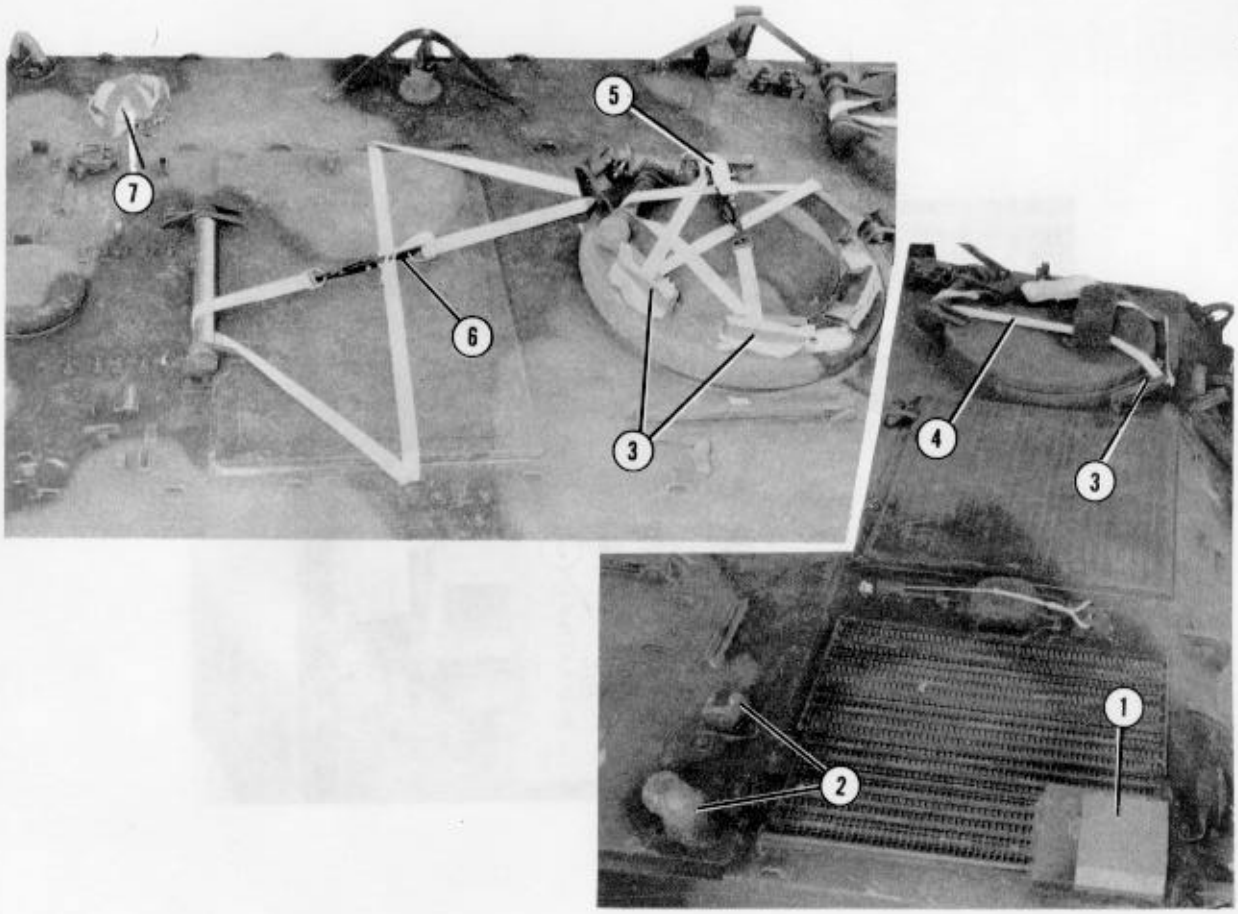
(1) Bolt a large suspension clevis to each front towing eye.

(2) Secure the trim door closed with a 15-foot tie-down assembly.

(3) Pad the headlights with cellulose wadding and tape the wadding in place.

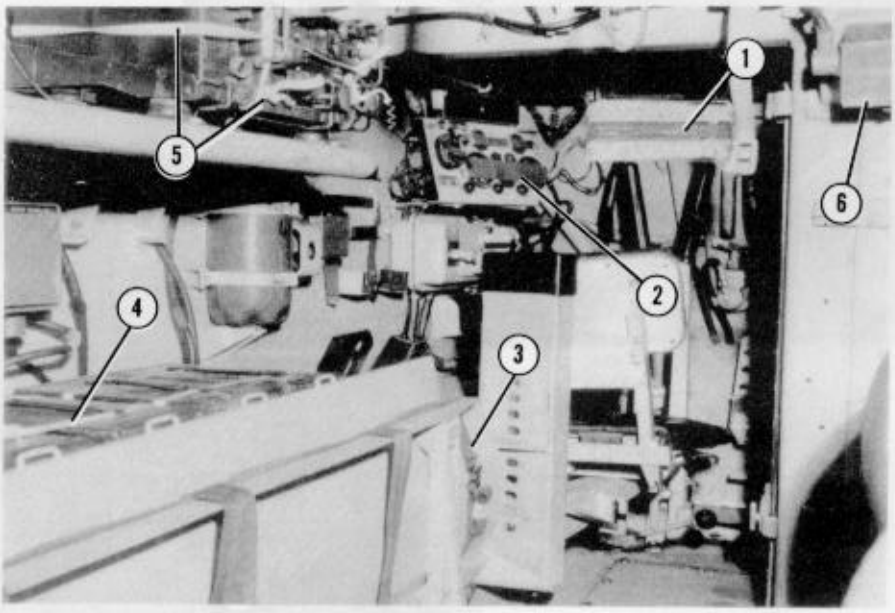
Note: Remove drain plugs and empty any water from the carrier which could have an effect on the weight

Figure 7-6. Front of carrier prepared



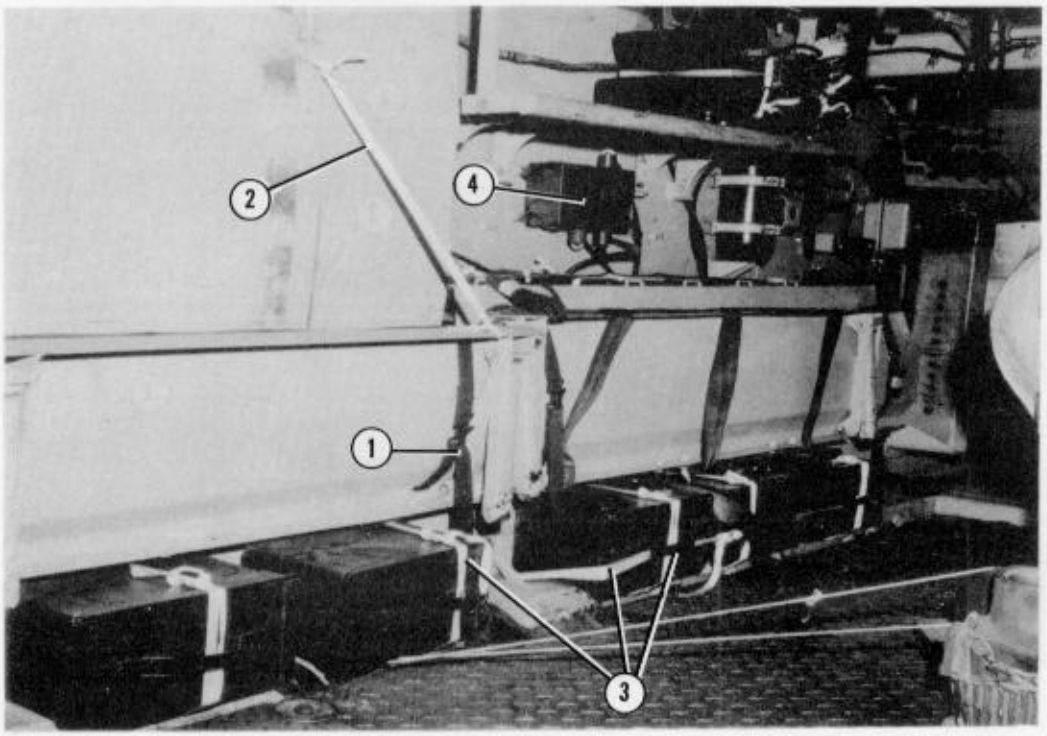
1. Remove engine exhaust pipe and tape the exhaust opening.
2. Tape the heater opening and the front bilge pump opening.
3. Pad the troop commander's periscope and driver's periscope with cellulose wadding and tape the wadding in place.
4. Secure the driver's hatch cover closed with a 15-foot lashing assemble.
5. Secure the troop commander's hatch cover closed with a 15-foot lashing assembly.
6. Secure the cargo hatch cover closed with a 15-foot lashing assembly.
7. Cover the fuel access cover with cellulose wadding. Cover the wadding with plastic and tape it in place.

Figure 7-7. Top of carrier prepared



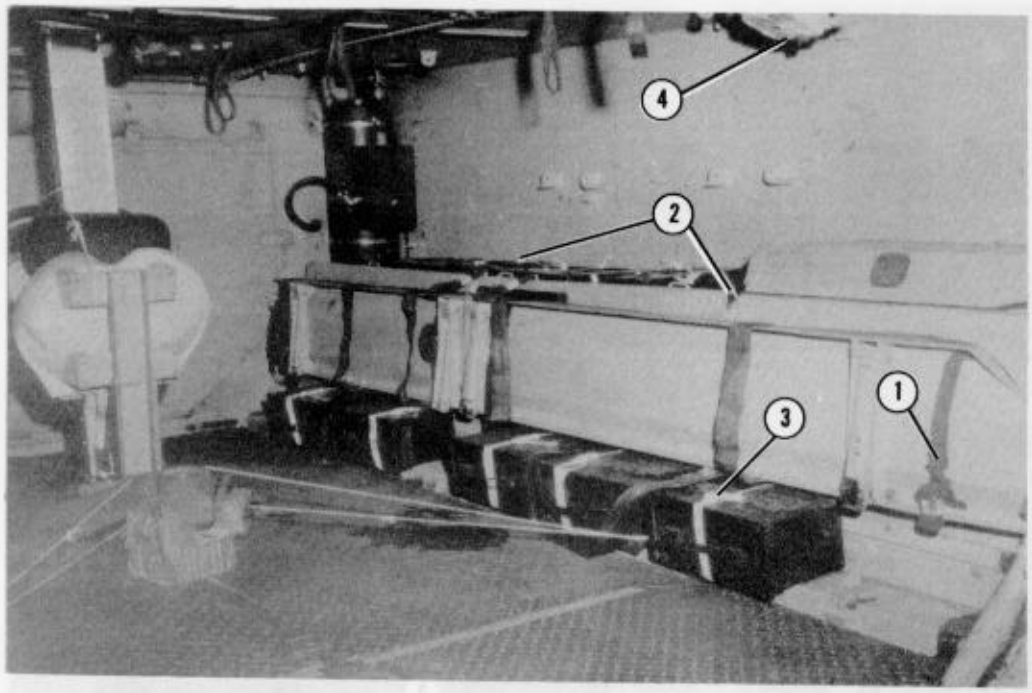
1. Pad the warning lights and driver's periscope with cellulose wadding and tape the wadding in place.
2. Tape all glass on the instrument panel.
3. Raise the left front troop seat and secure it with retaining straps.
4. Place five boxes of .50-caliber ammunition in the rack behind the left front troop seat and tie the boxes in place with 1/2-inch tubular nylon webbing.
5. Tie the radio to the mount with three pieces of 1/2-inch tubular nylon webbing.
6. Tape the front of the speaker box.

Figure 7-8. Driver's compartment and radio prepared



1. Raise the left rear troop seat and secure it with the retaining straps.
2. Tie each end of the seat to the fuel tank with 1/2-inch tubular nylon webbing.
3. Place three boxes of .50-caliber ammunition on the floor under the left front seat and two boxes under the left rear seat. Tie the ammunition boxes in place with 1/2-inch tubular nylon webbing.
4. Tape the complete front of the power supply box.

Figure 7-9. Ammunition boxes stowed on left side of carrier



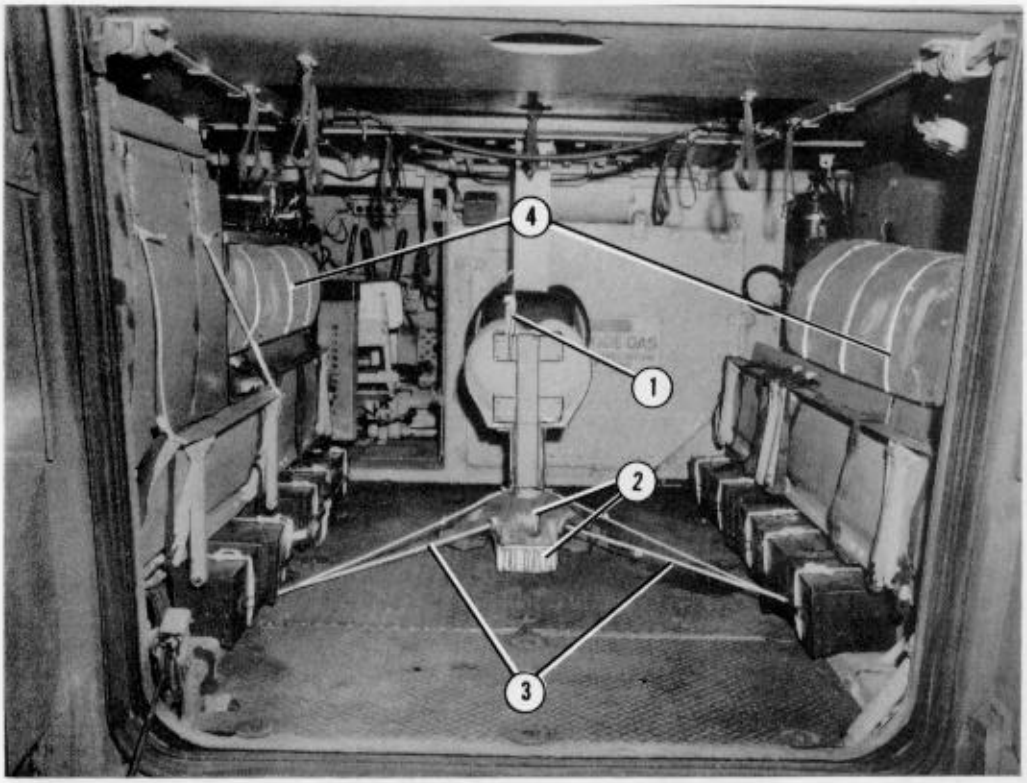
(1) Raise the right troop seats and secure them with retaining straps.

(2) Place seven boxes of .50-caliber ammunition in the rack behind the troop seats and tie the boxes in place with 1/2-inch tubular nylon webbing.

(3) Place five boxes of .50-caliber ammunition on the floor under the troop seats and tie the boxes in place with 1/2-inch tubular nylon webbing.

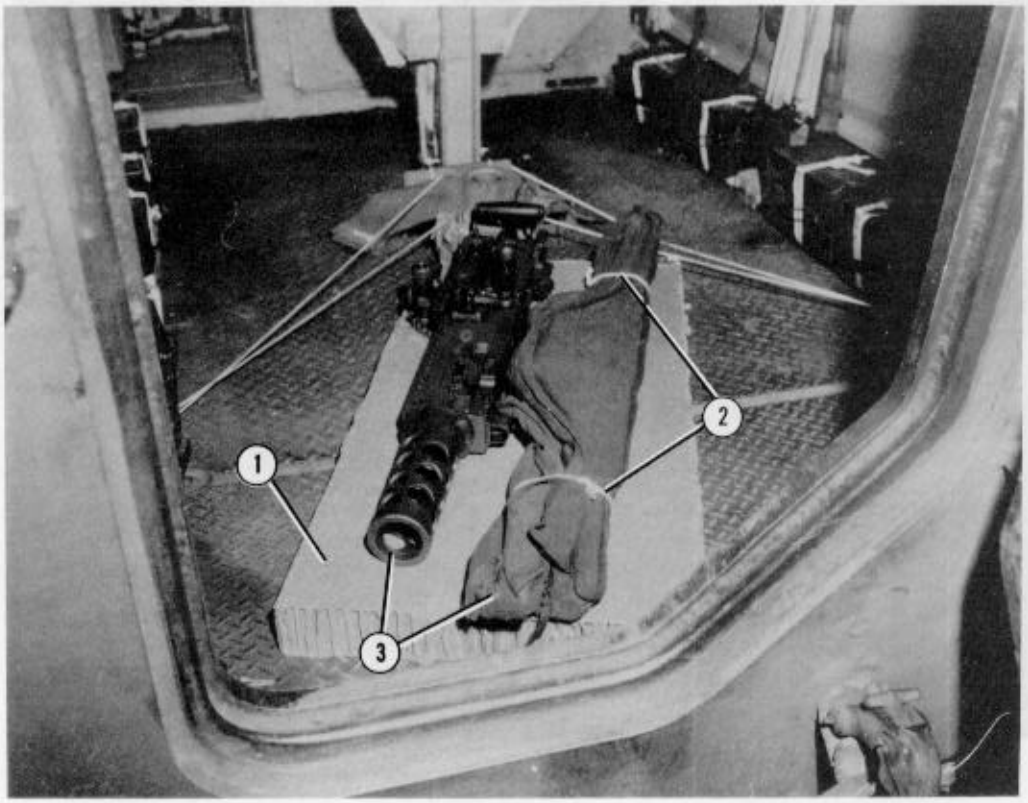
(4) Tape all of the interior lights.

Figure 7-10. Ammunition boxes stowed on right side of carrier



1. Raise the troop commander's seat and the jump seat and tie them in the up position with type III nylon cord.
2. Place two 3- by 6- by 6-inch pieces of honeycomb on the floor under the jump seat and place the machine gun mount on the honeycomb.
3. Tie the mount to the seat brace and the left and right tiedown points with type III nylon cord.
4. Place one troop duffle bag on the top of the ammunition boxes on each side of the carrier. Tie the bags in place with 1/2-inch tubular nylon webbing.

Figure 7-11. Machine gun mount and duffle bags stowed

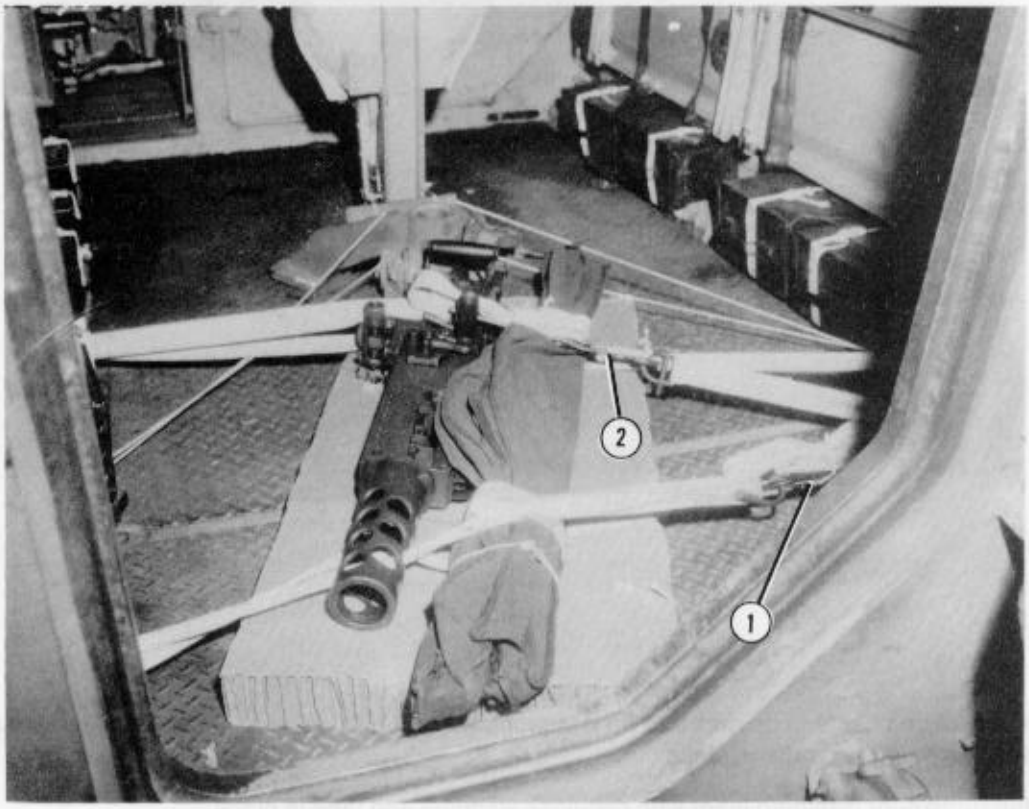


(1) Place a 3- by 18- by 72-inch piece of honeycomb on the floor of the carrier.

(2) Place the machine gun barrels in their carrying case, and tie each end with 1/4-inch cotton webbing.

(3) Place the machine gun and the carrying case on the honeycomb.

Figure 7-12. Machine gun and carrying case positioned on honeycomb

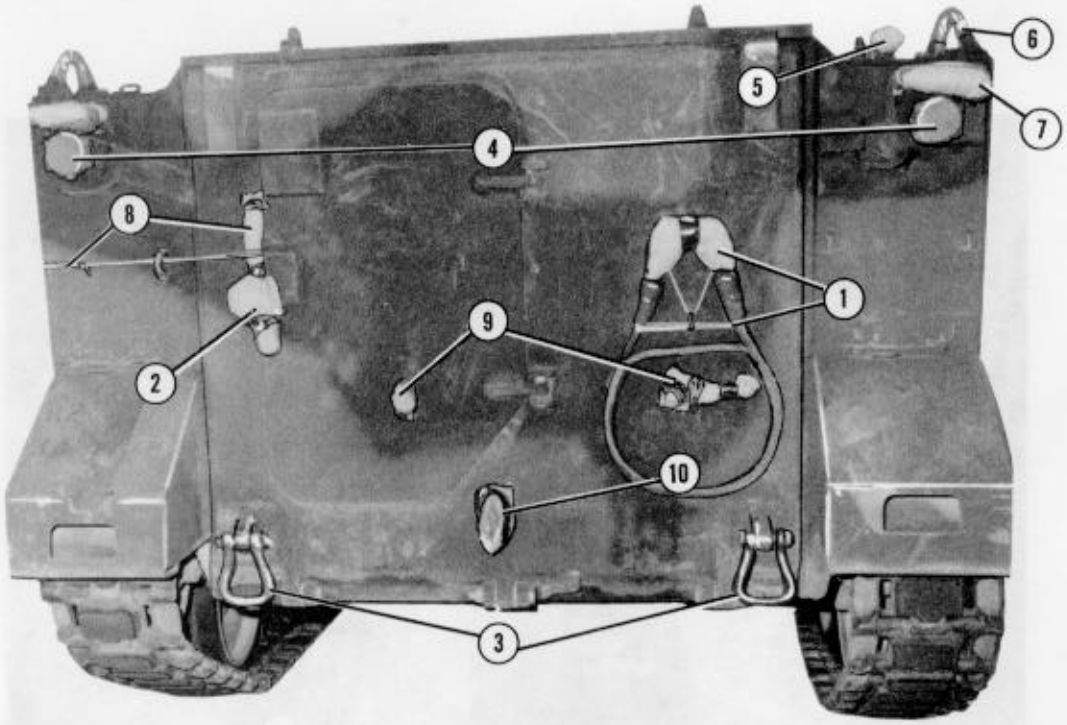


(1) Pass the free end of a 15-foot tie-down strap around the right rear support bracket, around the carrying case, through the vent holes of the machine gun, around the left rear support bracket, and back up through the vent holes of the machine gun. Fit a D-ring on the end of the strap and secure the D-rings together with a load binder.

(2) Run a second 15-foot tie-down strap in the same manner as paragraph (1), above, using the same right rear support bracket, and the opposite end of the machine gun.

Note: Fold all excess strap and tie the folds to the binder with 1/4-inch cotton webbing.

Figure 7-13. Machine gun and barrels secured



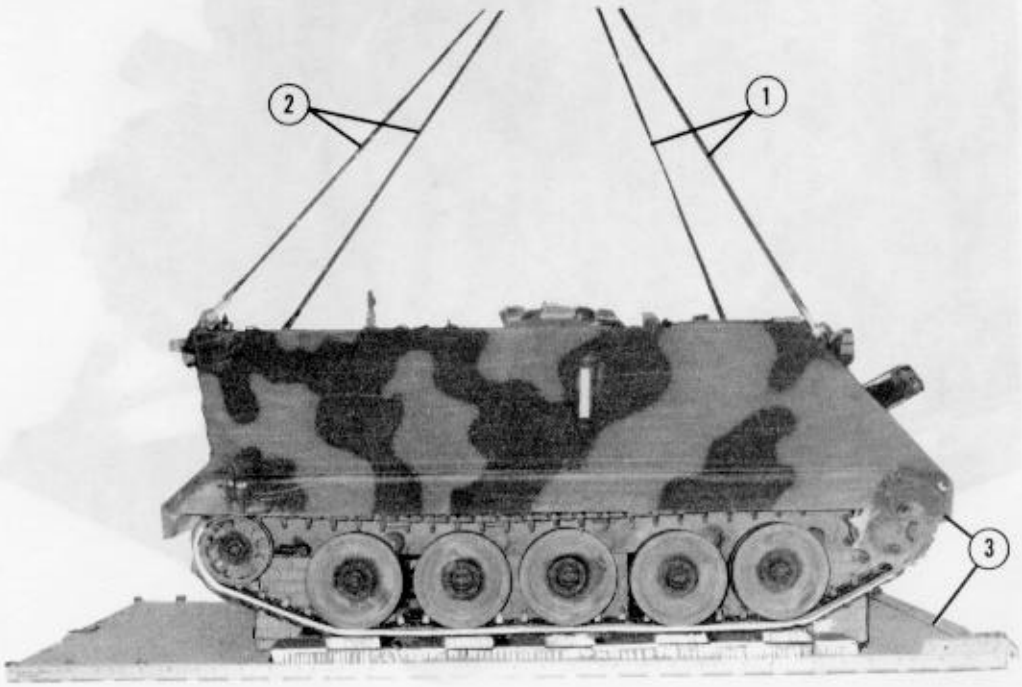
1. Place the towing cable in its rack and tie it in place with type III nylon cord. Pad the cable ends with cellulose wadding and tape in place.
2. Pad the ramp door retaining lever with cellulose wadding and tape in place.
3. Bolt a large suspension clevis to each rear towing eye.
4. Tape the rear lights.
5. Pad the rear bilge pump opening with cellulose wadding and tape in place.
6. Tape rear suspension eyes.
7. Pad hand-holds with cellulose wadding and tape in place.
8. Close the ramp door and lock it with the outer locking handle. Tie the handle in place with type III nylon cord. Pad the handle with cellulose wadding and tape in place.
9. Pad the ramp door catch with cellulose wadding and tape in place.
10. Pad the towing pintle with cellulose wadding and tape in place.

Figure 7-14. Rear of carrier prepared

7-5. Installing Suspension Slings and Positioning Carrier

Install suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-15.

Position the carrier on the platform as shown in Figure 7-15.



(1) Attach a 11-foot (4-loop), type XXVI nylon webbing suspension sling to each suspension lifting point on the front of the carrier with a large clevis.

(2) Attach a 12-foot (4-loop), type XXVI nylon webbing suspension sling to each suspension lifting point on the rear of the carrier with a large clevis.

(3) Position the carrier on the honeycomb stacks with the front of the carrier 13 inches from the front edge of the platform.

Note: When positioning the carrier on the honeycomb stacks ensure that the five carrier wheels are centered on the five pieces of 12- by 16-inch honeycomb.

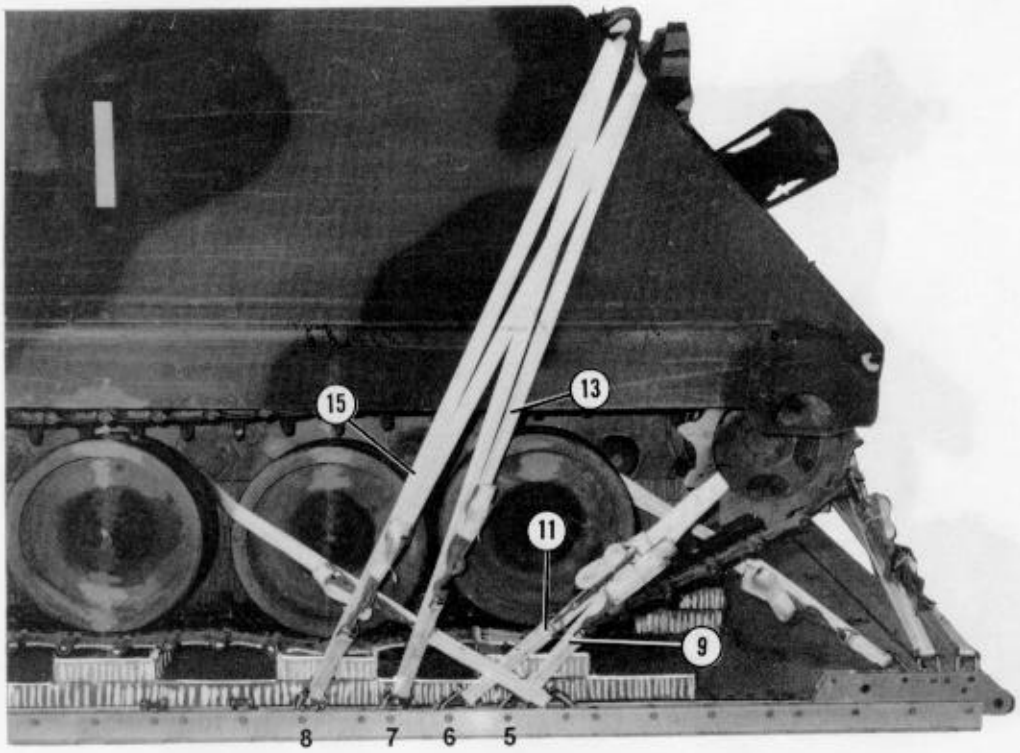
Figure 7-15. Suspension slings installed and carrier positioned on platform

7-6. Installing Carrier Lashings

Lash the carrier to the platform as shown in Figure 7-16. Bind the ends of the lashings together according to FM 10-500-2/TO 13C7-1-5.

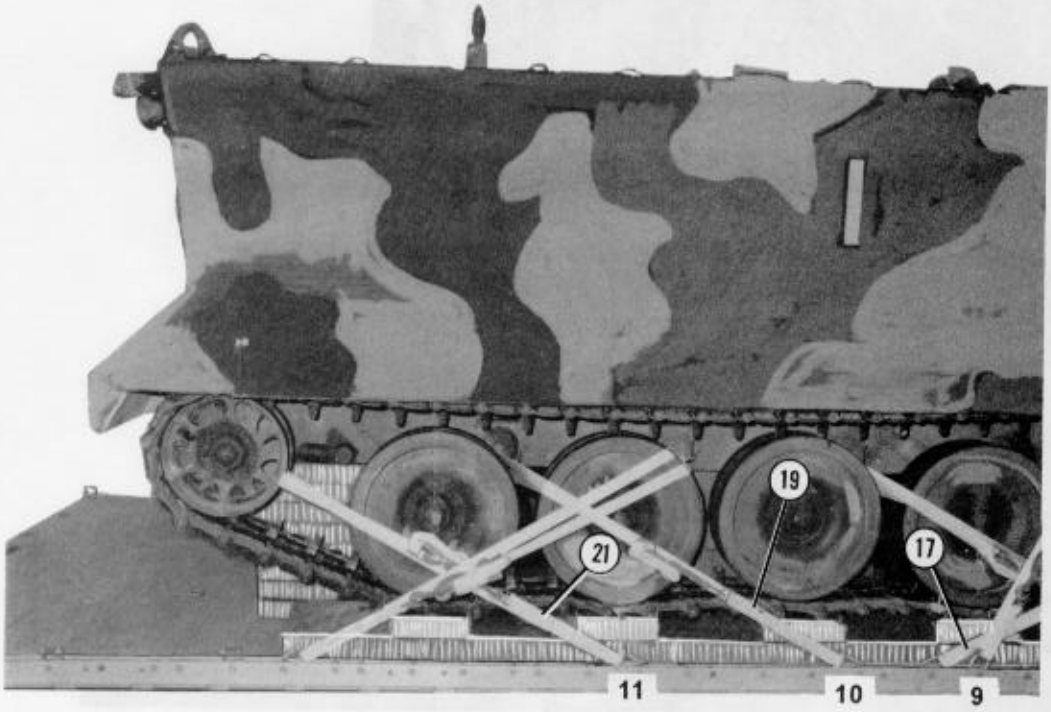
Lashing Number	Tie-down Clevis Number	Instructions
		Install lashing:
1	1	Through left clevis on front of carrier.
2	1A	Through right clevis on front of carrier.
3	2	Through right clevis on front of carrier.
4	2A	Through left clevis on front of carrier.
5	3	Through track around rocker arm of first wheel.
6	3A	Through track around rocker arm of first wheel.
7	4	Around rocker arm of third wheel.
8	4A	Around rocker arm of third wheel.

Figure 7-16. Lashings installed



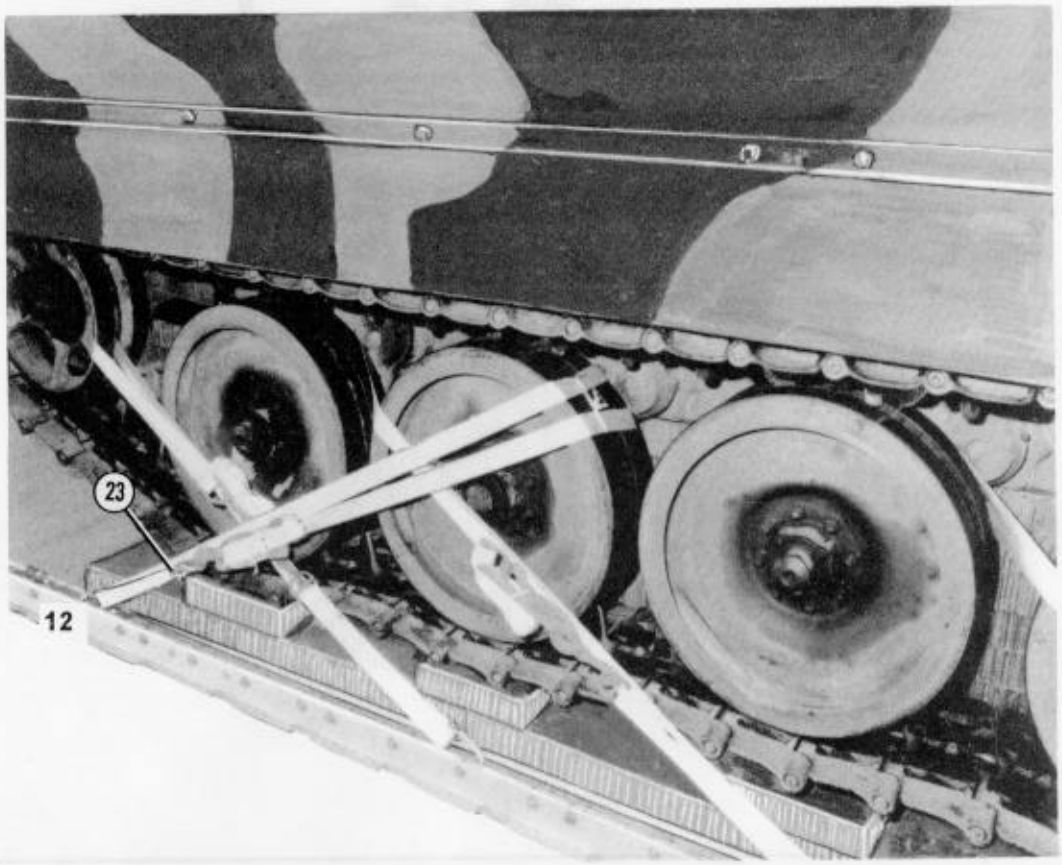
Lashing Number	Tie-down Clevis Number	Instructions
		Install lashing:
9	5	Through right drive sprocket.
10	5A	Through left drive sprocket.
11	6	Through right drive sprocket.
12	6A	Through left drive sprocket.
13	7	Through right lifting point.
14	7A	Through left lifting point.
15	8	Through right lifting point.
16	8A	Through left lifting point.

Figure 7-16. Lashings installed (continued)



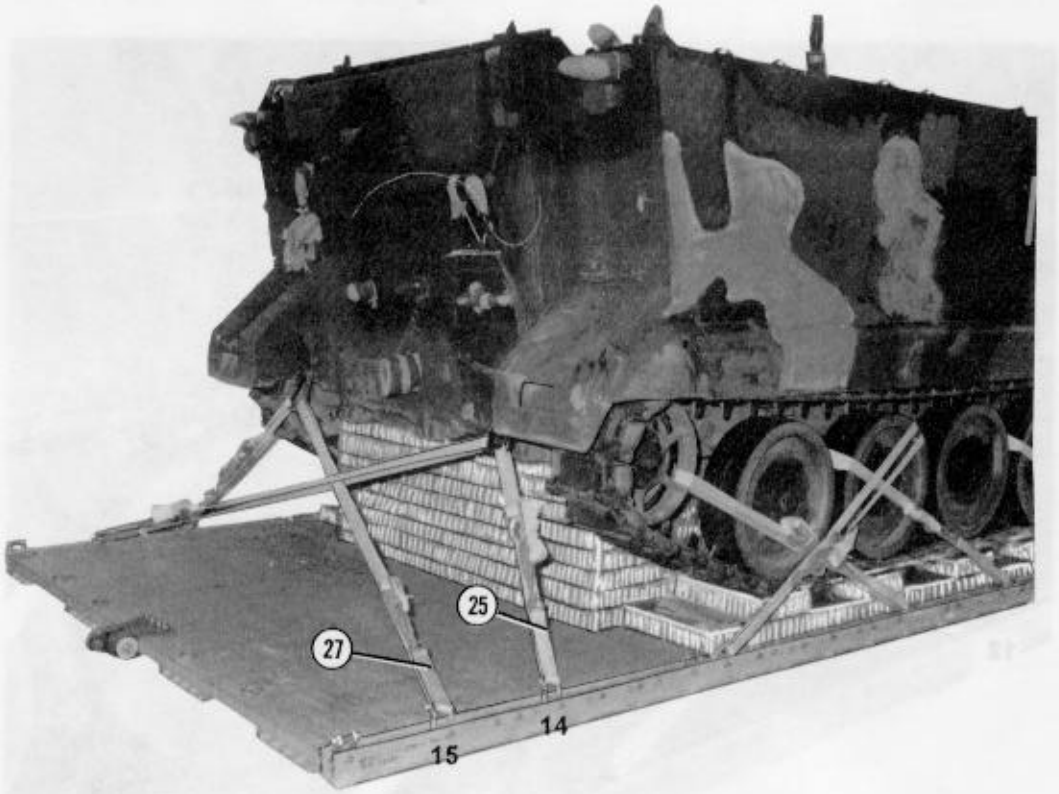
Lashing Number	Tie-down Clevis Number	Instructions
		Install lashing:
17	9	Through right drive sprocket.
18	9A	Through left drive sprocket.
19	10	Around rocker arm of fifth wheel.
20	10A	Around rocker arm of fifth wheel.
21	11	Through right idler wheel.
22	11A	Through left idler wheel.

Figure 7-16. Lashings installed (continued)



Lashing Number	Tie-down Clevis Number	Instructions
23	12	Install lashing: Around rocker arm of fourth wheel. **Note:** Secure lashing with type III nylon cord at the point on top of fourth wheel.

Figure 7-16. Lashings installed (continued)

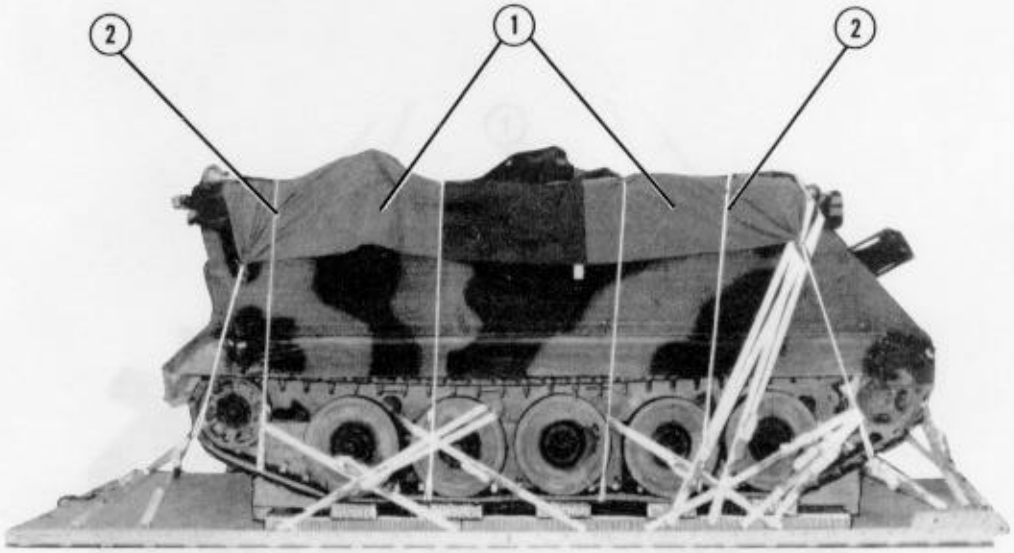


Lashing Number	Tie-down Clevis Number	Instructions
24	12A	Install lashing: Around rocker arm of fourth wheel. **Note:** Secure lashing with type III nylon cord at the point on top of the fourth wheel.
25	14	Through right clevis on rear of carrier.
26	14A	Through left clevis on rear of carrier.
27	15	Through left clevis on rear of carrier.
28	15A	Through right clevis on rear of carrier.

Figure 7-16. Lashings installed (continued)

7-7. Covering Load

Install a load cover as shown in Figure 7-17.



(1) Make a 12- by 12-foot load cover from cotton duck cloth and place the cover over the carrier.

(2) Secure the cover to convenient points on the carrier with type III nylon cord.

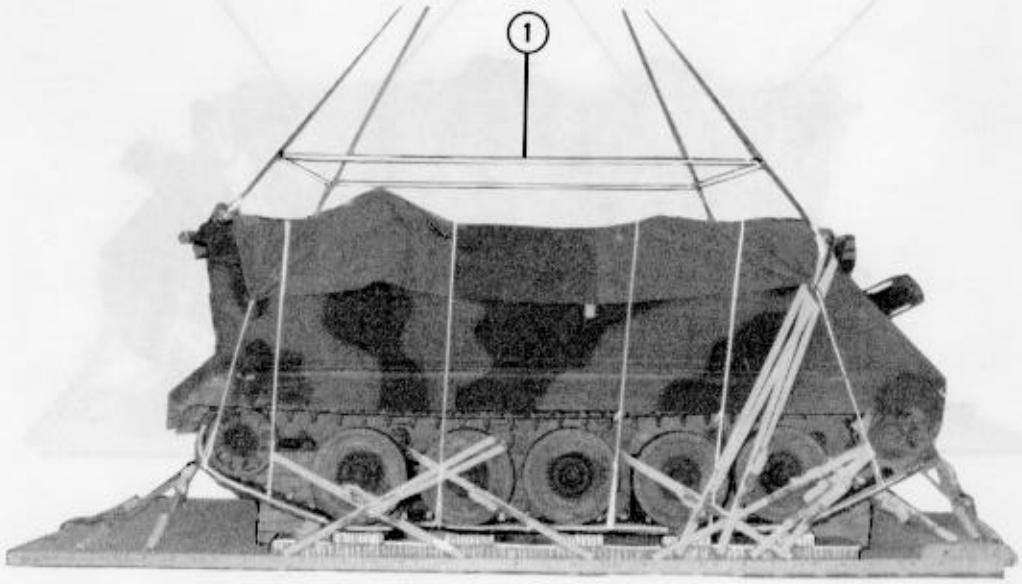
Figure 7-17. Load covered

7-8. Installing Suspension Slings

Install the suspension slings acccording to Paragraph 6-10, and as shown in Figure 6-17.

7-9. Safetying Suspension Slings

Safety suspension slings as shown in Figure 7-18.



(1) Raise the slings upward until they are taut. Install the suspension sling safety tie 6 to 8 inches above the highest point on the load IAW FM 10-500-2/TO 13C7-1-5.

Figure 7-18. Suspension slings installed and safetied

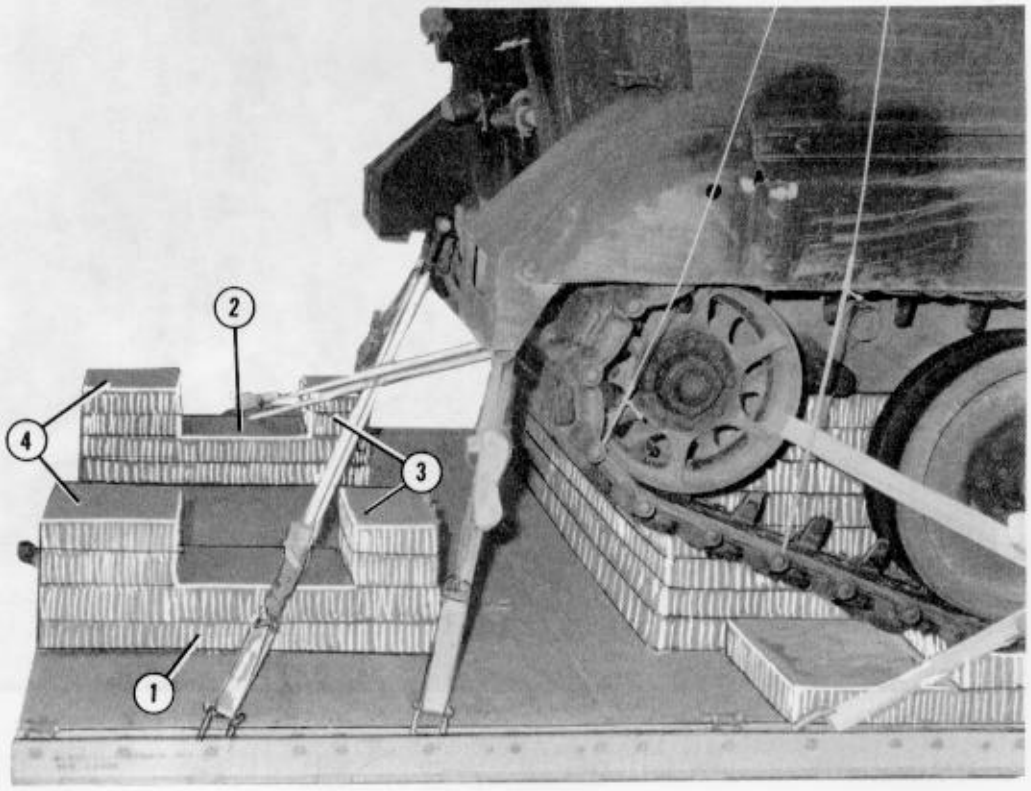
7-10. Building, Positioning, and Securing Parachute Stowage Platform

Build, position and secure the parachute stowage platform as described below.

a. Building Honeycomb Support Stacks. Build two support stacks for the stowage platform as shown in Figure 7-19.

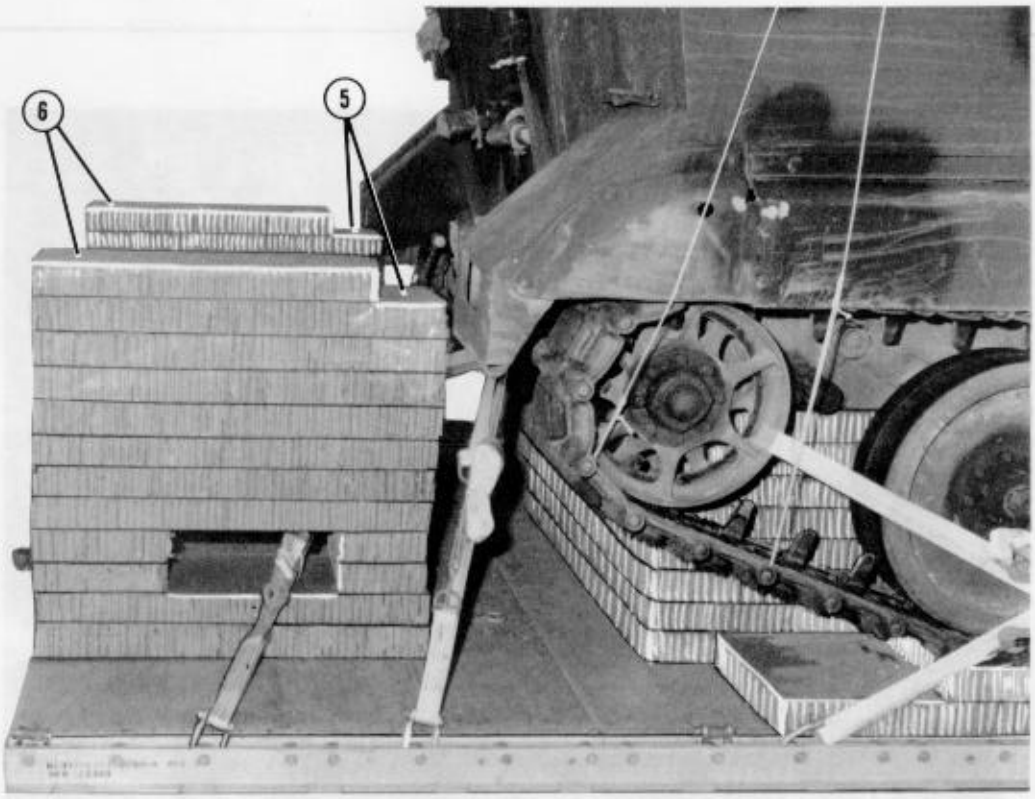
b. Building Stowage Platform. Build a stowage platform as shown in Figure 7-20.

c. Securing Stowage Platform. Secure the stowage platform as shown in Figure 7-21.



1. Cut and glue two 12- by 36-inch stacks of honeycomb, two layers high, and position one stack 20 inches from the outside edge of the right side rail and even with the rear of the platform.
2. Place the other stack 20 inches from the outside edge of the left rail even with the rear of the platform.
3. Cut and glue two 8- by 12-inch stacks of honeycomb two layers high. Glue one stack.
4. Cut and glue two 12- by 12-inch stacks of honeycomb two layers high. Glue one stack on each rear end of the 12- by 36-inch stack.

Figure 7-19. Honeycomb support stacks built

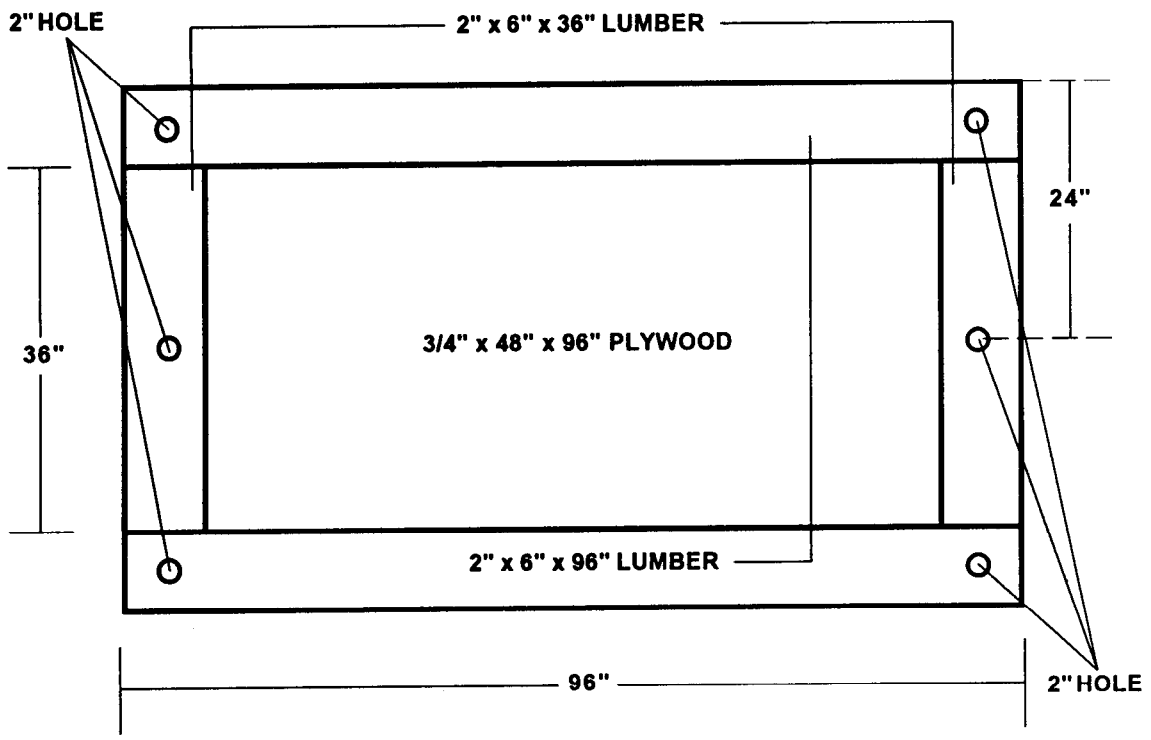


(5) Cut and glue two stacks of honeycomb eight layers high, seven layers will be 12- by 36-inches and the top layer will be 12- by 30-inches.

(6) Glue one stack on each existing stack, position the stacks so the top 12- by 30-inch layer is even with the rear of the platform and the short end is towards the front of the platform.

Figure 7-19. Honeycomb support stacks built (continued)

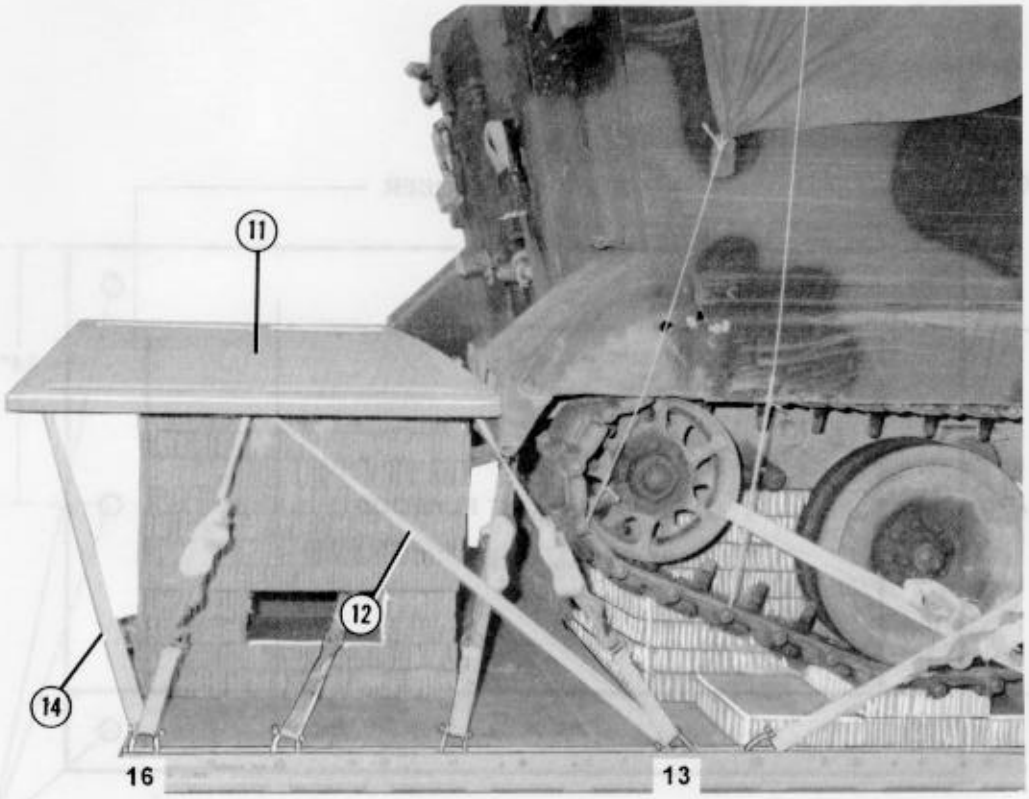
Notes: 1. This drawing is not drawn to scale.
2. 8d common wire nails must be used to join the individual pieces.



Step:

1. Use 3/4- by 48- by 96-inch piece of plywood.
2. Nail a 2- by 6- by 36-inch piece of lumber to each side of the plywood as shown.
3. Nail a 2- by 6- by 96-inch piece of lumber flush with the front and rear edges of the plywood.
4. Drill a 2-inch hole 3 inches in diagonally from each corner and center a 2-inch hole 2 inches in from the 48-inch sides as shown.

Figure 7-20. Parachute stowage platform built



(11) Position parachute storage platform, centered, on the honeycomb stacks and flush against the rear of carrier.

(12) Lash the parachute storage platform to clevis 13 through the center and front holes on the right side.

(13) Lash the parachute storage platform to clevis 13A through the center and front holes on the left side.

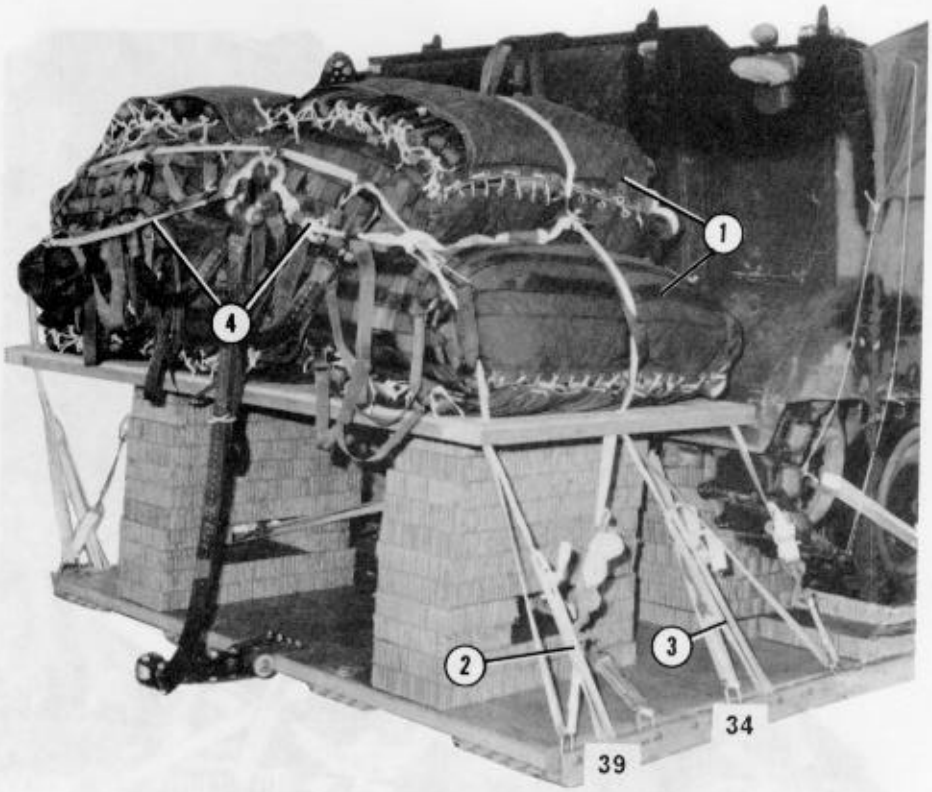
(14) Lash the parachute storage platform to clevis 16 through the center and rear holes on the right side.

(15) Lash the parachute storage platform to clevis 16A through the center and rear holes on the left side.

Figure 7-21. Parachute stowage platform positioned and secured

7-11. Stowing Cargo Parachutes

Prepare and stow five G-11C cargo parachutes acccording to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-22.

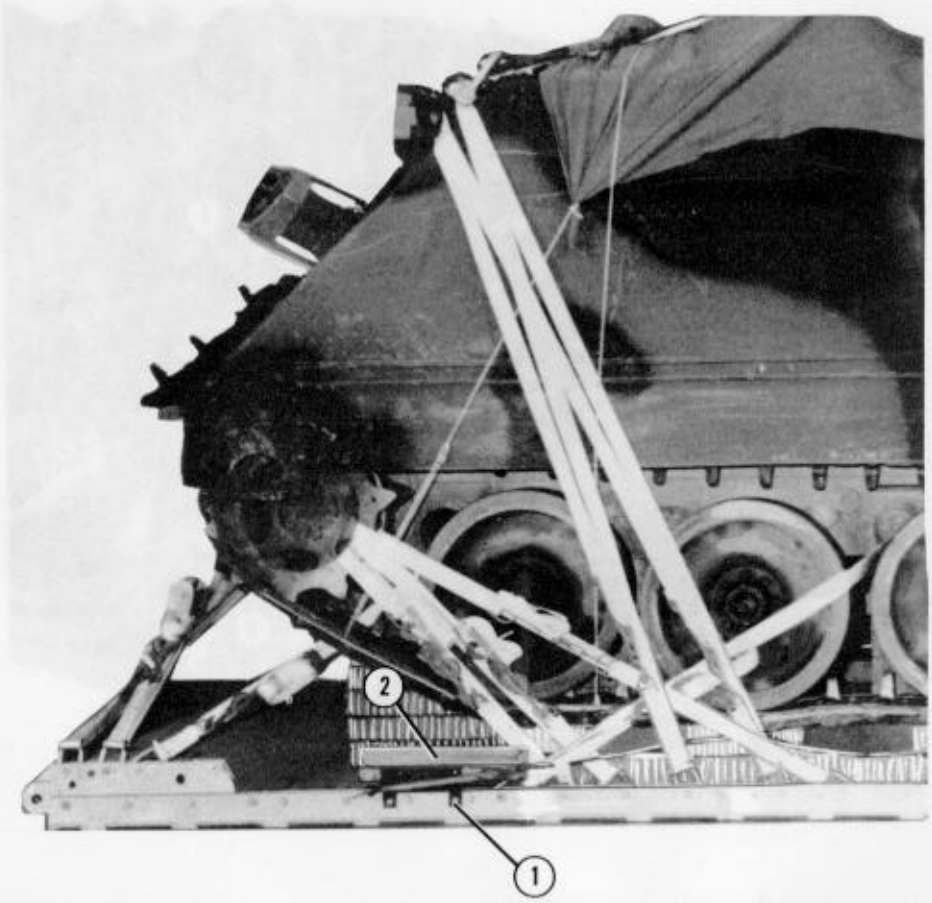


1. Prepare and install five G-11C cargo parachutes according to FM 10-500-2/TO 13C7-1-5.
2. Tie the rear parachute restraint strap to bushing 39 and 39A on both platform side rails.
3. Tie the front parachute restraint strap to bushing 34 and 34A on both platform side rails.
4. Install two multi-cut parachute release straps according to FM 10-500-2/TO 13C7-1-5.

Figure 7-22. Cargo parachutes stowed

7-12. Installing Extraction System

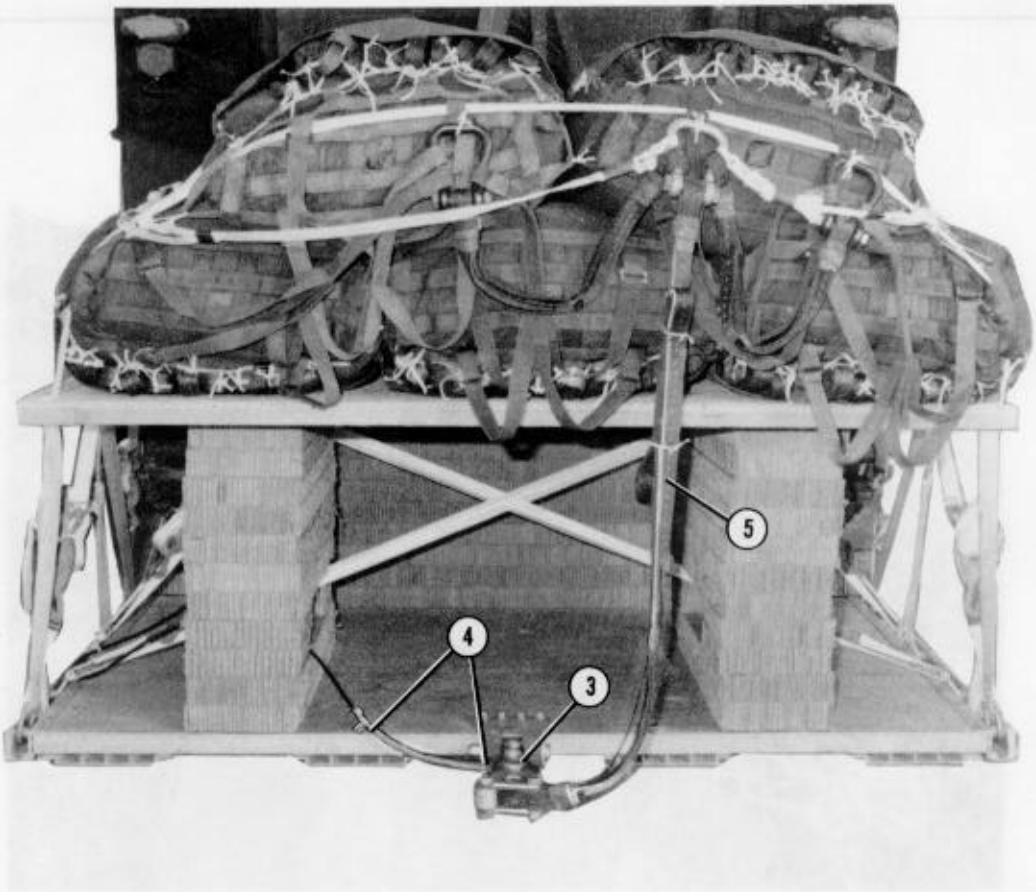
Install the EFTC extraction system on the load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-23.



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

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

Figure 7-23. 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 20-foot cable according to FM 10-500-2/TO 13C7-1-5. Safety the cable to the 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 7-23. EFTC installed (continued)

Table 7-1. Equipment required for rigging the M113 armored personnel carrier for a low-velocity airdrop on a 20-foot type V platform (continued)

National Stock Number	Item	Quantity
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	1
1670-01-097-8817	Release, cargo parachute, M-2 (with modified components):	
	Bolt, clevis (w/sleeves), hardened	(2)
	Bolts, sleeve hardened	(4)
	Spacers, steel, 2 3/8-in	(4)
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	20
	For suspension:	
1670-00-432-2505	11-ft (4-loop), type XXVI nylon webbing	2
1670-00-432-2506	12-ft (4-loop), type XXVI nylon webbing	2
1670-00-040-8219	Strap, parachute release, multicut, comes with 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	32
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type 1	As required
8305-00-082-5752	Nylon, tubular, 1/2-in, natural	As required
4020-00-240-2146	Type III, nylon cord	As required

Table 7-1. Equipment required for rigging the M113 armored personnel carrier for a low-velocity airdrop on a 20-ft type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, Suspension:	
4030-00-090-5354	1-in (large)	12
4030-00-678-8562	3/4-in (medium)	4
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5787	Coupling, airdrop, extraction force transfer w 20-ft cable	1
	Cover:	
1670-00-360-0328	Clevis, large	6
1670-00-360-0329	Link assembly, type IV	15
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
	Lumber:	
5510-00-220-6148	2- by 6- by 36-in	2
5510-00-220-6148	2- by 6- by 96-in	2
5315-00-010-4659	Nail, wire, steel, common, 8d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	
	3- by 36- by 96-in	16 sheets
	12- by 36-in	(18)
	12- by 30-in	(2)
	8- by 12-in	(4)
	12- by 12-in	(4)
	36- by 67-in	(24)
	16- by 144-in	(2)
	12- by 16-in	(10)
	6- by 6-in	(2)
	18- by 72-in	1
	Parachute:	
1670-01-016-7841	Cargo, G-11C	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 (type V)	(32)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(2)

7-15. Placing Extraction Parachute

Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 10-500-2/TO 13C7-1-5. Place the extraction line on the load for installation in the aircraft.

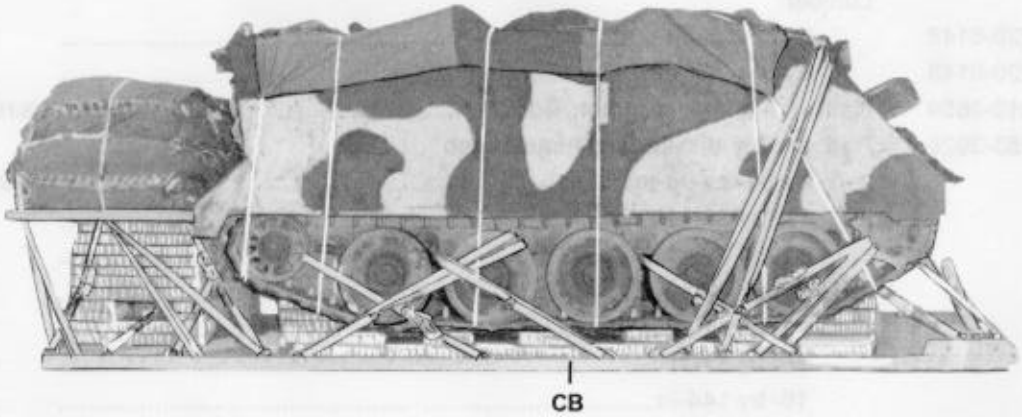
7-16. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-25. Complete Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

7-17. Equipment Required

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

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



RIGGED LOAD DATA

Weight:	Load shown	24,300 pounds
	Maximum load allowed	25,300 pounds
Height		97 inches
Width		108 inches
Length		240 inches
Overhang:	Front	0 inches
	Rear	14 inches
CB (from front edge of platform)		110 inches
Extraction system (adds 18 inches to length of platform)		EFTC

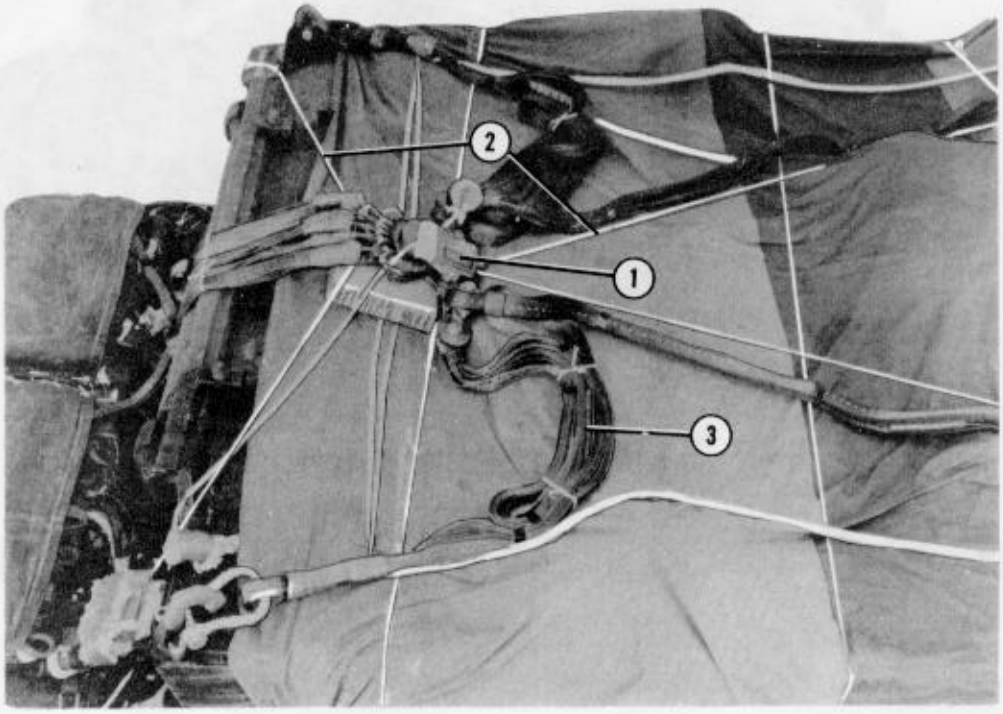
Figure 7-25. M113 armored personnel carrier rigged for low-velocity airdrop on a type V platform

7-13. Installing Provisions for Emergency Restraints

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

7-14. Installing Release System

Prepare, install and safety an M-2 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-24.



1. Prepare an M-2 cargo parachute release assembly according to FM 10-500-2/TO 13C7-1-5. Place the M-2 release on a 20- by 24-inch piece of honeycomb centered on the top rear of the carrier.
2. Secure the top and bottom of the M-2 release to convenient points on the load with type III nylon cord.
3. S-fold and tie the suspension slings with type 1, 1/4-inch cotton webbing.

Figure 7-24. M-2 release installed

7-15. Placing Extraction Parachute

Select the extraction parachute and extraction line needed using the extraction line requirements table in FM 10-500-2/TO 13C7-1-5. Place the extraction line on the load for installation in the aircraft.

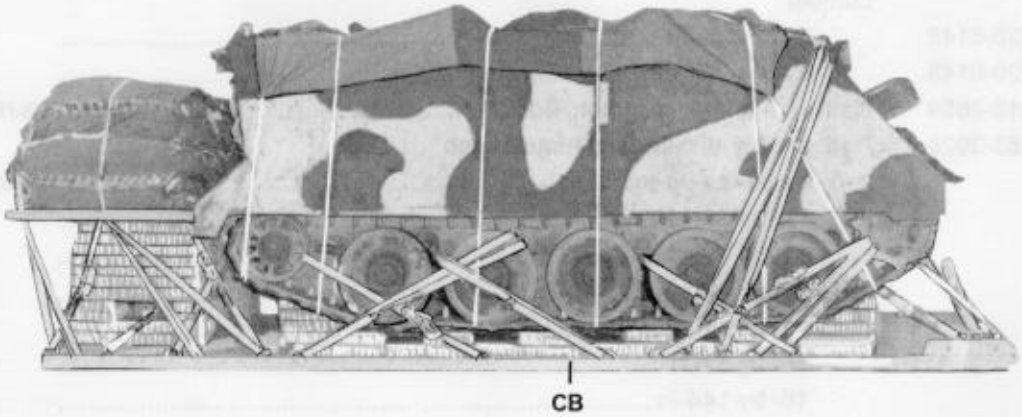
7-16. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-25. Complete Shipper's Declaration for Dangerous Goods. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

7-17. Equipment Required

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

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



RIGGED LOAD DATA

Weight:	Load shown	24,300 pounds
	Maximum load allowed	25,300 pounds
Height		97 inches
Width		108 inches
Length		240 inches
Overhang:	Front	0 inches
	Rear	14 inches
CB (from front edge of platform)		110 inches
Extraction system (adds 18 inches to length of platform)		EFTC

Figure 7-25. M113 armored personnel carrier rigged for low-velocity airdrop on a type V platform

Table 7-1. Equipment required for rigging the M113 armored personnel carrier for a low-velocity airdrop on a 20-ft type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, Suspension:	
4030-00-090-5354	1-in (large)	12
4030-00-678-8562	3/4-in (medium)	4
8305-00-242-3593	Cloth, cotton duck, 60-in	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5787	Coupling, airdrop, extraction force transfer w 20-ft cable	1
	Cover:	
1670-00-360-0328	Clevis, large	6
1670-00-360-0329	Link assembly, type IV	15
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
	Lumber:	
5510-00-220-6148	2- by 6- by 36-in	2
5510-00-220-6148	2- by 6- by 96-in	2
5315-00-010-4659	Nail, wire, steel, common, 8d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	
	3- by 36- by 96-in	16 sheets
	12- by 36-in	(18)
	12- by 30-in	(2)
	8- by 12-in	(4)
	12- by 12-in	(4)
	36- by 67-in	(24)
	16- by 144-in	(2)
	12- by 16-in	(10)
	6- by 6-in	(2)
	18- by 72-in	1
	Parachute:	
1670-01-016-7841	Cargo, G-11C	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 (type V)	(32)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link	(2)

Table 7-1. Equipment required for rigging the M113 armored personnel carrier for a low-velocity airdrop on a 20-foot type V platform (continued)

National Stock Number	Item	Quantity
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	1
1670-01-097-8817	Release, cargo parachute, M-2 (with modified components):	
	Bolt, clevis (w/sleeves), hardened	(2)
	Bolts, sleeve hardened	(4)
	Spacers, steel, 2 3/8-in	(4)
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	20
	For suspension:	
1670-00-432-2505	11-ft (4-loop), type XXVI nylon webbing	2
1670-00-432-2506	12-ft (4-loop), type XXVI nylon webbing	2
1670-00-040-8219	Strap, parachute release, multicut, comes with 3 knives	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	32
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type 1	As required
8305-00-082-5752	Nylon, tubular, 1/2-in, natural	As required
4020-00-240-2146	Type III, nylon cord	As required

GLOSSARY

ACB attitude control bar
AD airdrop
AFB Air Force base
AFR Air Force regulation
AFTO Air Force technical order
ATTN attention
CB center of balance
d penny
DA Department of the Army
DC District of Columbia
DD Department of Defense
diam diameter
EFTA extraction force transfer actuator
EFTC extraction force transfer coupling
FM field manual
ft feet
gal gallon
HQ headquarters
HDDS heavy drop derigging system
IAW in accordance with
in inch
LAPE low-altitude parachute extraction
LAPES low-altitude parachute extraction system
lb pound
LVAD low-velocity airdrop
mm millimeter
No number
NSN national stock number
OVE on-vehicular equipment
OVM operator vehicle maintenance
psi pounds per square inch
SUSV small unit support vehicle
TM technical manual
TO technical order
TRADOC United States Army Training and Doctrine Command
US United States
w with
yd yard

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These documents must be available to the intended users of this publication.

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*AFJMAN 24-204/TM 38-250 has superseded AFR 71-4/TM 38-250 (15 January 1988). Change 1 pages reflect this change. The basic manual still references the superseded publication. You may wish to make pen and ink changes to update the old reference citations accordingly.

**FM 10-500-53/MCRP 4-3.8/TO 13C7-18-41 has superseded FM 10-553/TO 13C7-18-41(4 December 1981). Change 1 pages reflect this change. The basic manual still references the superseded publication. You may wish to make pen and ink changes to update the old reference citations accordingly.

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PIN: 021569-001