ARMY FM 10-532
AIR FORCE TO 13C7-3-361

AIRDROP OF SUPPLIES AND EQUIPMENT

RIGGING 1 1/2-TON TRAILERS

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

DEPARTMENT OF THE ARMY
AERIAL DELIVERY AND FIELD SERVICES DEPARTMENT
U.S. ARMY QUARTERMASTER CENTER AND SCHOOL
1010 SHOP ROAD
FORT LEE, VIRGINIA 23801-1502

REPLY TO
ATTENTION OF

ATSM-ADFSD

7 October 1998

MEMORANDUM FOR Commander, US Army Training Support Center, ATTN: ATIC-TIST (Mr. Baston), Fort Eustis, VA 23604

SUBJECT: Distribution Restriction Notice on Airdrop Rigging Manuals

1. As proponent for development of all 10-500 series airdrop rigging field manuals and the 10-450 sling load manuals, it has been determined that the distribution restriction on these field manuals should be changed to read: Approved for public release, distribution unlimited.

2. It is requested that unrestricted release of these field manuals be made via the Army Training Digital Library.

3. The new distribution notice will be added to the cover pages as future changes/revisions are made to the manuals.

4. Enclosed you will find a numerical list and the number of changes of the manuals that have unlimited distribution.

5. The point of contact for this action is Mr. Roger Hale, DSN 687-4769.

Encl

THEODORE J. DLUGOS
Director, Aerial Delivery and
Field Services Department

Distribution restrictions for the following Airdrop field manuals should read **"Approved for public release; distribution is unlimited."**

10-450-3	10-524, c2	10-552, c2
10-450-4	10-526, c3	10-554
10-500-2, c2	10-527, c3	10-555, c2
10-500-3, c1	10-528, c6	10-556
10-500-7, c1	10-529, c1	10-557
10-500-45	10-530	10-558, c1
10-500-53	10-531, c2	10-562
10-500-66, c1	10-532, c4	10-564, c6
10-500-71	10-533	10-567, c1
10-508, c1	10-534, c2	10-569, c1
10-510, c3	10-535	10-571
10-512, c4	10-537, c4	10-572
10-513, c3	10-539, c3	10-573, c1
10-515, c1	10-540, c2	10-574, c4
10-516	10-541, c1	10-575, c2
10-517, c5	10-542, c2	10-576, c1
10-518	10-543, c2	10-577
10-519, c3	10-546	10-579, c2
10-520, c3	10-547, c1	10-584
10-521, c2	10-548, c1	10-586
10-522, c1	10-549	10-588
10-523, c2	10-550, c3	10-591, c1

DEPARTMENT OF THE ARMY
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)             *
*********************************
```

** 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 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
DEPARTMENT OF THE AIR FORCE
Washington, DC, 28 June 1996

AIRDROP OF SUPPLIES AND EQUIPMENT
RIGGING 1 1/2-TON TRAILERS

This change adds the procedures for rigging the 400-gallon water trailer on a type V platform for low-velocity airdrop. Also with this change, the distribution restriction statement and destruction notice shown below apply to the basic manual and Changes 1, 2 and 3.

FM 10-532/TO 13C7-3-361, 16 April 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
i through v	i through v
1-1	1-1
7-29 and 7-30	7-29 and 7-30
	8-1 through 8-24
Glossary-1	Glossary-1
References-1	References-1 and References-2

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

DISTRIBUTION UNLIMITED

By Order of the Secretaries of the Army and the Air Force:

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
01952

DISTRIBUTION:

Active Army, USAR, and ARNG: To be distributed in accordance with DA Form 12-11E, requirements for FM 10-532, Airdrop of Supplies and Equipment: Rigging 1 1/2-Ton Trailers (Qty rqr block no. 0915).

HANGE
NO 3

HEADQUARTERS
DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 24 March 1992

AIRDROP OF SUPPLIES AND EQUIPMENT
RIGGING 1 1/2-TON TRAILERS

This change adds the procedures for rigging the 1 1/2-ton trailer on a type V platform for low-velocity and LAPE airdrops. Also with this change, the distribution restriction statement and destruction notice shown below must be added to the basic manual and Changes 1 and 2.

FM 10-532/TO 13C7-3-361, 16 April 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
i through v	i through iv
1-1	1-1
	7-1 through 7-56
	Glossary-1
A-1	References-1

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

DISTRIBUTION UNLIMITED

By Order of the Secretaries of the Army and the Air Force:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
00787

DISTRIBUTION:

Active Army, USAR, and ARNG: To be distributed in accordance with DA Form 12-11-E, requirements for FM 10-532, Airdrop of Supplies and Equipment: Rigging 1 1/2-Ton Trailers (Qty rqr block no 0915).

CHANGE

NO 2

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 5 March 1984

AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING 1 1/2-TON TRAILERS

This change adds the procedures for rigging the 1 1/2-ton cargo trailer for airdrop by LAPE.

FM 10-532/TO 13C7-3-361, 16 April 1979, is changed as follows:

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

Remove pages	Insert pages
i through v	i through v
2-1 and 2-2	2-1 and 2-2
	2-17 through 2-30
3-1 and 3-2	3-1 and 3-2
4-13 and 4-14	4-13 and 4-14

2. New or changed material is identified by a vertical bar in the margin opposite the changed material.

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

DISTRIBUTION UNLIMITED

By Order of the Secretaries of the Army and the Air Force:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

DISTRIBUTION:

Active Army, ARNG, and USAR: To be distributed in accordance with DA Form 12-11A, Requirements for Airdrop of Supplies and Equipment (Qty rqr block no. 228).

Additional copies may be requisitioned from the US Army Adjutant General Publications Center, 2800 Eastern Boulevard, Baltimore, MD 21220.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1984—739-033/59

C1, FM 10-532/TO 13C7-3-361

CHANGE
No. 1

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 5 March 1982

AIRDROP OF SUPPLIES AND EQUIPMENT

RIGGING 1 1/2-TON TRAILERS

FM 10-532/TO 13C7-3-361, 16 April 1979, is changed as follows:

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

Remove pages	Insert pages
i through iv	i through v
1-1	1-1
2-11 through 2-16	2-11 through 2-16
3-11 through 3-14	3-11 through 3-15
4-1 through 4-4	4-1 through 4-4
4-9 through 4-12	4-9 through 4-12
4-21 and 4-22	4-21 and 4-22
5-1 and 5-2	5-1 and 5-2
5-15 through 5-19	5-15 through 5-20
	6-1 through 6-18
A-1	A-1

2. New or changed material is identified by a vertical bar in the margin opposite the changed material. Changes to illustrations are indicated by miniature pointing hands.

3. File this change sheet in front of the publication for reference purposes.

By Order of the Secretaries of the Army and the Air Force:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

Active Army, USAR, and ARNG: To be distributed in accordance with DA Form 12-11A, Requirements for Airdrop of Supplies and Equipment (Qty rqr block no. 228).

Additional copies can be requisitioned from the US Army Adjutant General Publications Center, 2800 Eastern Boulevard, Baltimore, MD 21220.

FIELD MANUAL
NO 10-532
TECHNICAL ORDER
NO 13C7-3-361

HEADQUARTERS
DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 16 April 1979

AIRDROP OF SUPPLIES AND EQUIPMENT:
RIGGING 1 1/2-TON TRAILERS

TABLE OF CONTENTS

		Paragraph	Page
CHAPTER 1	INTRODUCTION		
	Scope	1-1	1-1
	Special Considerations	1-2	1-1
	Recommended Changes	1-3	1-1
CHAPTER 2	RIGGING CARGO TRAILER		
Section I	RIGGING TRAILER FOR LOW-VELOCITY AIRDROP		
	[redacted]	2-1	2-1
		2-2	2-1
		2-3	2-1
		2-4	2-1
		2-5	2-4
		2-6	2-8
		2-7	2-9
		2-8	2-9
		2-9	2-9
		2-10	2-12
		2-11	2-13
		2-12	2-13
		2-13	2-13
		2-14	2-13
		2-15	2-13

TYPE II PROCEDURES REMOVED

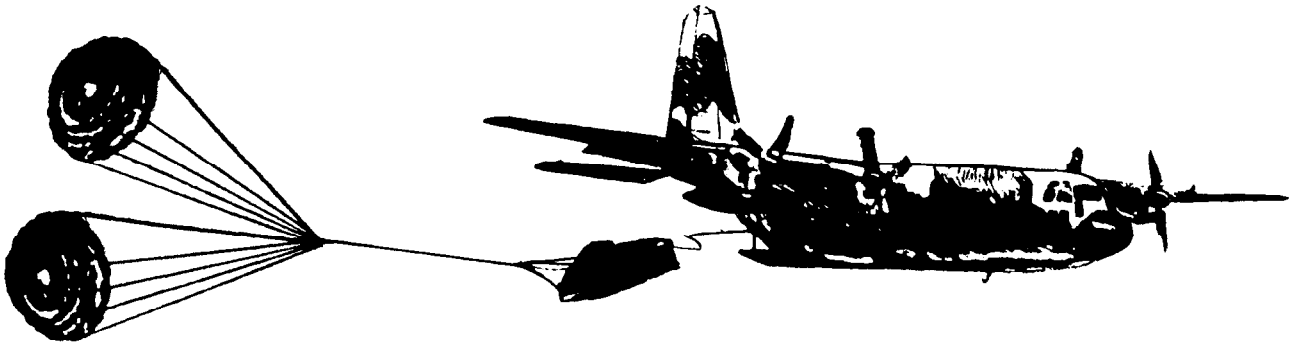
[redacted]

		Paragraph	Page
Section II	RIGGING TRAILER FOR LAPE AIRDROP		
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	2-16	2-17
		2-17	2-17
		2-18	2-18
		2-19	2-18
		2-20	2-18
		2-21	2-22
		2-22	2-22
		2-23	2-26
		2-24	2-28
		2-25	2-28
		2-26	2-28
		2-27	2-28
CHAPTER 3	RIGGING TRAILER-MOUNTED WELDING SET		
	TYPE II PROCEDURES REMOVED	3-1	3-1
		3-2	3-1
		3-3	3-1
		3-4	3-5
		3-5	3-5
		3-6	3-5
		3-7	3-5
		3-8	3-5
		3-9	3-12
		3-10	3-12
		3-11	3-12
		3-12	3-12
		3-13	3-12
		3-14	3-12
CHAPTER 4	RIGGING WATER TANK TRAILERS		
Section I	RIGGING 400-GALLON CAPACITY WATER TRAILER FOR LOW-VELOCITY AIRDROP		
	TYPE II PROCEDURES REMOVED	4-1	4-1
		4-2	4-1
		4-3	4-1
		4-4	4-1
		4-5	4-4
		4-6	4-5
		4-7	4-5
		4-8	4-5
		4-9	4-8
		4-10	4-9
		4-11	4-10

		Paragraph	Page
	TYPE II PROCEDURES REMOVED	4-12	4-10
		4-13	4-10
		4-14	4-10
Section II	**RIGGING 400-GALLON CAPACITY WATER TRAILER FOR LAPES**		
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	4-15	4-13
		4-16	4-13
		4-17	4-13
		4-18	4-14
		4-19	4-14
		4-20	4-15
		4-21	4-15
		4-22	4-15
		4-23	4-21
		4-24	4-21
		4-25	4-21
CHAPTER 5	**RIGGING CHEMICAL-BIOLOGICAL COLLECTIVE PROTECTION SHELTER**		
	TYPE II PROCEDURES REMOVED	5-1	5-1
		5-2	5-1
		5-3	5-1
		5-4	5-1
		5-5	5-1
		5-6	5-12
		5-7	5-12
		5-8	5-12
		5-9	5-12
		5-10	5-12
		5-11	5-15
		5-12	5-15
		5-13	5-15
		5-14	5-15
		5-15	5-18
		5-16	5-18
CHAPTER 6	**RIGGING 420-GALLON-PER-HOUR WATER PURIFICATION UNIT**		
	TYPE II PROCEDURES REMOVED	6-1	6-1
		6-2	6-1
		6-3	6-1
		6-4	6-3
		6-5	6-4
		6-6	6-6

		Paragraph	Page
	TYPE II PROCEDURES REMOVED	6-7	6-12
		6-8	6-14
		6-9	6-14
		6-10	6-14
		6-11	6-14
		6-12	6-14
		6-13	6-14
		6-14	6-16
		6-15	6-16
		6-16	6-16
		6-17	6-16
CHAPTER 7	**RIGGING 1 1/2-TON TRAILER ON A TYPE V PLATFORM**		
Section I	**LOW-VELOCITY AIRDROP**		
	Description of Load	7-1	7-1
	Preparing Platform	7-2	7-2
	Building and Placing Honeycomb Stacks	7-3	7-3
	Preparing Trailer	7-4	7-7
	Stowing Accompanying Load and Trailer Components	7-5	7-9
	Building Body Protection Boards	7-6	7-16
	Lashing Body Protection Boards and Accompanying Load to Trailer	7-7	7-17
	Installing Lifting Slings and Positioning Trailer on Platform	7-8	7-19
	Lashing Trailer	7-9	7-21
	Installing and Safetying Suspension Slings	7-10	7-22
	Building and Installing Parachute Stowage Platform	7-11	7-23
	Stowing and Securing Cargo Parachutes	7-12	7-25
	Installing Extraction System	7-13	7-26
	Installing Parachute Release	7-14	7-28
	Installing Provisions for Emergency Restraints	7-15	7-29
	Placing Extraction Parachute	7-16	7-29
	Marking Rigged Load	7-17	7-29
	Equipment Required	7-18	7-29
Section II	**LAPE AIRDROP**		
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	7-19	7-33
		7-20	7-33
		7-21	7-35
		7-22	7-39
		7-23	7-39
		7-24	7-42
		7-25	7-44
		7-26	7-48
		7-27	7-51
		7-28	7-53

		Paragraph	Page
	REMOVED: 95 MESSAGE TERMINATION OF LAPES	7-29	7-53
		7-30	7-53
CHAPTER 8	**RIGGING 400-GALLON CAPACITY WATER TRAILER FOR LOW-VELOCITY AIRDROP ON A 12-FOOT TYPE V AIRDROP PLATFORM**		
	Description of Load	8-1	8-1
	Preparing Platform	8-2	8-2
	Preparing Honeycomb Stacks	8-3	8-3
	Positioning Honeycomb stacks	8-4	8-7
	Preparing Trailer	8-5	8-8
	Lifting and Positioning Trailer	8-6	8-10
	Installing Lashings	8-7	8-11
	Building Parachute Stowage Platform	8-8	8-13
	Installing Parachute Stowage Platform	8-9	8-14
	Installing Load Cover	8-10	8-15
	Installing and Safetying Suspension Slings	8-11	8-16
	Stowing Cargo Parachutes	8-12	8-17
	Installing Extraction System	8-13	8-18
	Installing Parachute Release	8-14	8-20
	Installing Provisions for Emergency Restraints	8-15	8-21
	Placing Extraction Parachute	8-16	8-21
	Marking the Rigged Load	8-17	8-21
	Equipment Required	8-18	8-21
GLOSSARY			Glossary-1
REFERENCES			References-1



CHAPTER 1

INTRODUCTION

1-1. Scope

This manual tells and shows how to prepare and rig the 1 1/2-ton trailer for low-velocity airdrop on a type II and type V platform. The trailer may be airdropped with or without an accompanying load on the type II platform. It also tells and shows how to prepare and rig the 1 1/2-ton trailer on the type V platform for LAPE airdrop. The trailer must be airdropped with an accompanying load on the type V platform.

1-2. Special Considerations

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

a. These loads may include hazardous materials. When included, they must be packaged, marked and labeled in compliance with AFJAM 24-204/ TM 38-250.

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

1-3. Recommended Changes

The proponent of this publication is HQ TRADOC. You are encouraged to report any errors or omissions, and suggest ways for improving this manual.

Army personnel, send your comments on DA Form 2028 directly to:

AIRBORNE AND FIELD SERVICES DEPARTMENT
US ARMY QUARTERMASTER CENTER AND SCHOOL
1010 SHOP ROAD
FORT LEE VA 23801-1502

Air Force personnel, send your reports on AFTO Form 22 through:

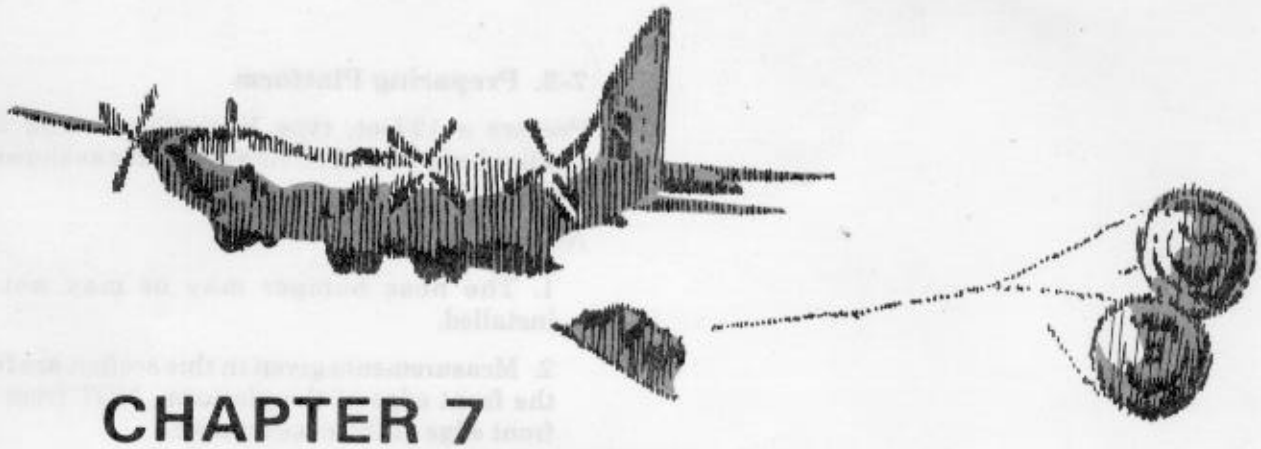
HEADQUARTERS
AIR MOBILITY COMMAND (AMC/DOTX)
402 SCOTT DRIVE UNIT 3A1
SCOTT AFB IL 62225-5302

to:

AIRBORNE AND FIELD SERVICES DEPARTMENT
US ARMY QUARTERMASTER CENTER AND SCHOOL
1010 SHOP ROAD
FORT LEE VA 23801-1502

Also send information copies of AFTO Form 22 to:

SA-ALC/TILDP
485 QUENTIN ROOSEVELT ROAD
KELLY AFB TX 78241-6421



CHAPTER 7

RIGGING 1 1/2-TON TRAILER ON A TYPE V PLATFORM

Section I

LOW-VELOCITY AIRDROP

7-1. Description of Load

The 1 1/2-ton trailer, shown in Figure 7-1, is rigged on a 12-foot, type V platform for low-velocity airdrop. The trailer must be rigged with an accompanying load. The accompanying load must not weigh more than 3,000 pounds. The accompanying load shown in this section consists of 24 ammunition boxes weighing approximately 2,280 pounds. The load shown in this section requires two G-11B cargo parachutes. The trailer weighs 2,650 pounds. It is 166 1/2 inches long and 83 inches wide. Its height is 98 inches, reducible to 55 inches.

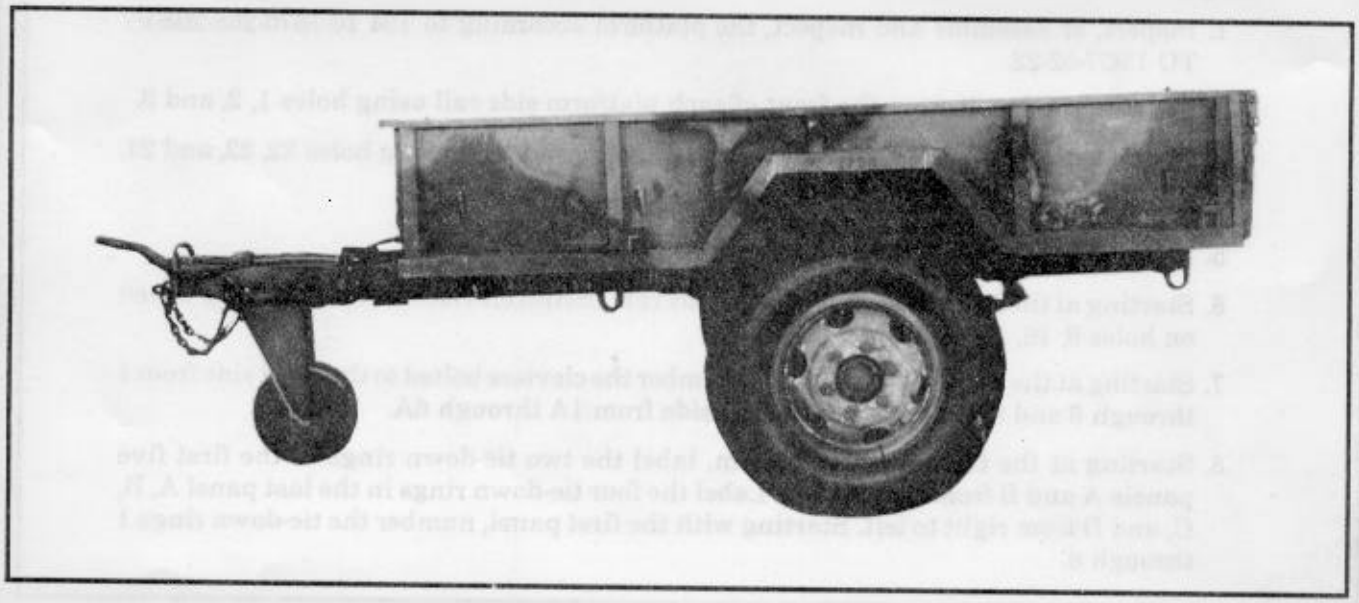


Figure 7-1. Left side of unrigged 1 1/2-ton trailer

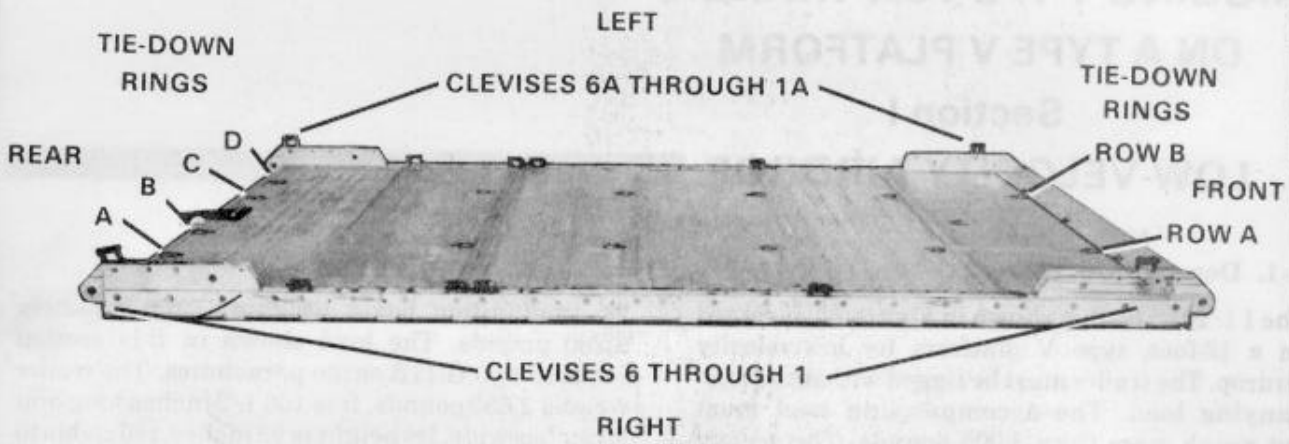
7-2. Preparing Platform

Prepare a 12-foot, type V platform using four tandem links and 12 clevis assemblies as shown in Figure 7-2.

Notes:

1. The nose bumper may or may not be installed.

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



Step:

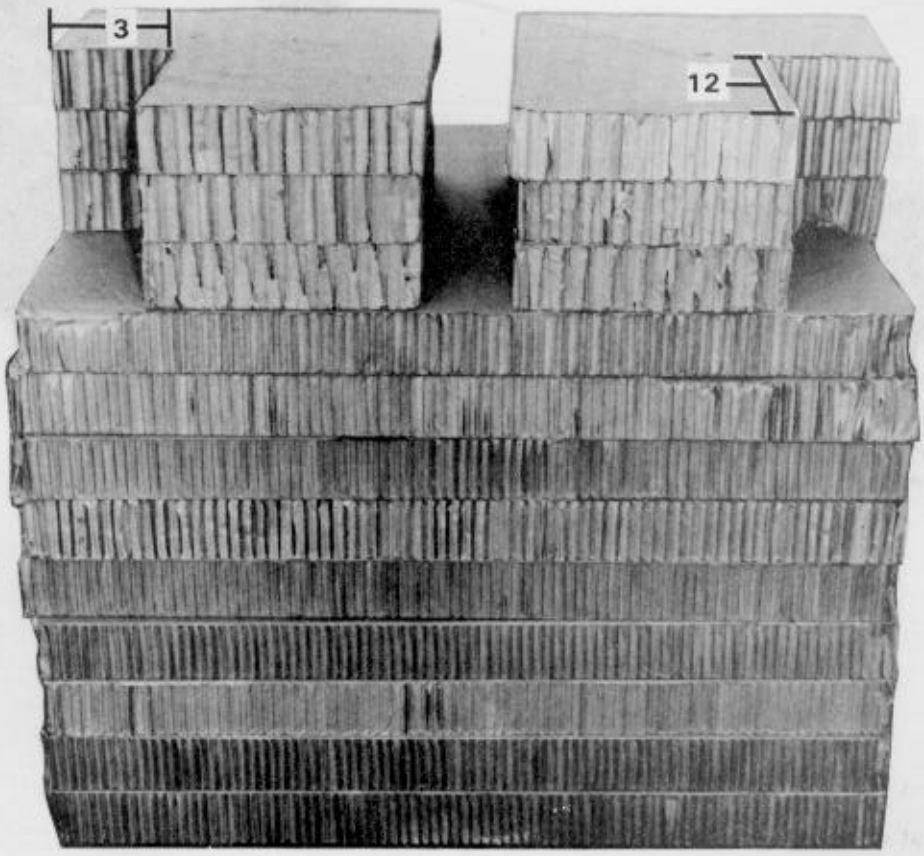
1. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
3. Install a tandem link on the rear of each platform side rail using holes 22, 23, and 24.
4. Install a clevis on bushing 2 on each front tandem link.
5. Install a clevis to bushing 4 on each rear tandem link.
6. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 9, 16, 17, and 20.
7. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 6 and those bolted to the left side from 1A through 6A.
8. Starting at the front of the platform, label the two tie-down rings in the first five panels A and B from right to left. Label the four tie-down rings in the last panel A, B, C, and D from right to left. Starting with the first panel, number the tie-down rings 1 through 6.

Figure 7-2. Platform prepared

7-3. Building and Placing Honeycomb Stacks

Build the honeycomb stacks as shown in Figures 7-3, 7-4, and 7-5. Place the honeycomb stacks on the platform as shown in Figure 7-6.

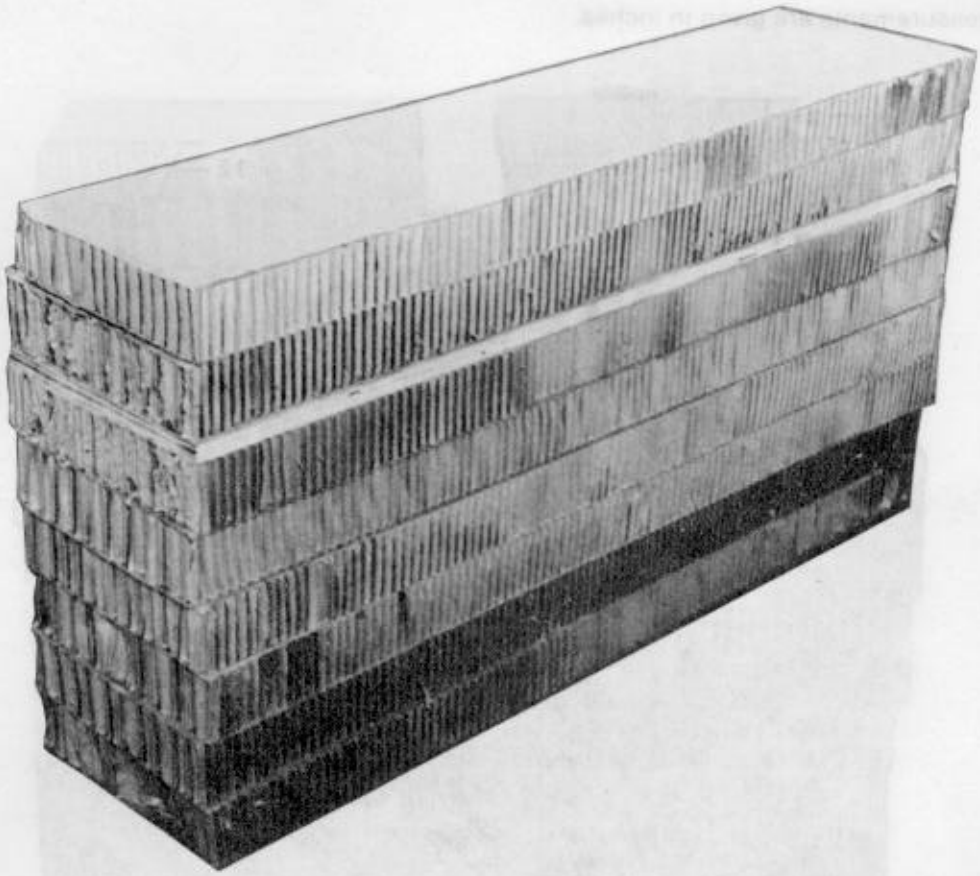
Note: All measurements are given in inches.



FRONT

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	9 6	36 18	40 24	Honeycomb Honeycomb	Form base. Make a 3- by 12-inch cutout on each piece of honeycomb. Place three pieces on each side of the base with the cutout to the front and facing outward on the stack.

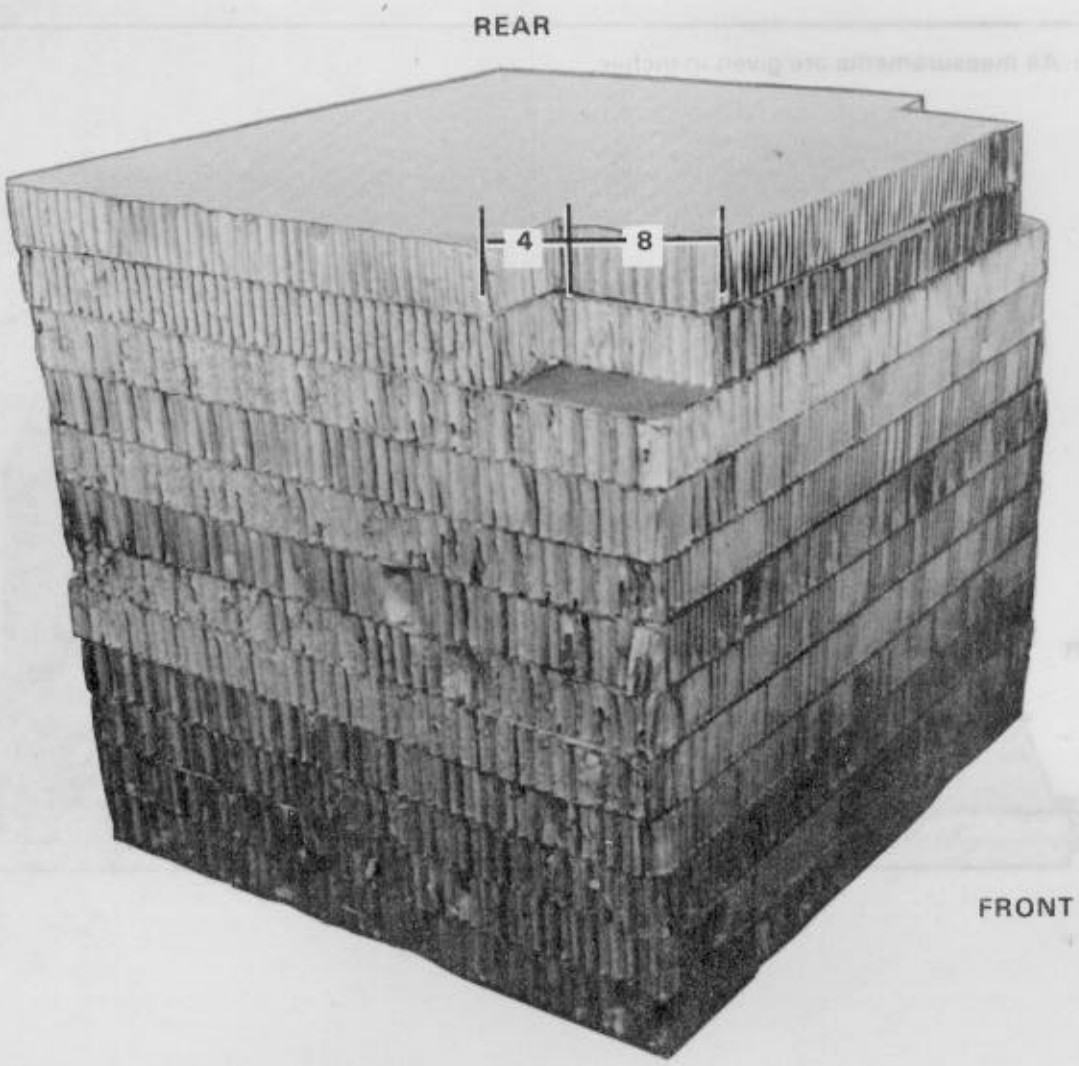
Figure 7-3. Honeycomb stack 1 prepared



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
2	8 1	12 12	48 48	Honeycomb 3/4-inch plywood	Form stack. Place plywood between the 6th and 7th layers.

Figure 7-4. Honeycomb stack 2 prepared

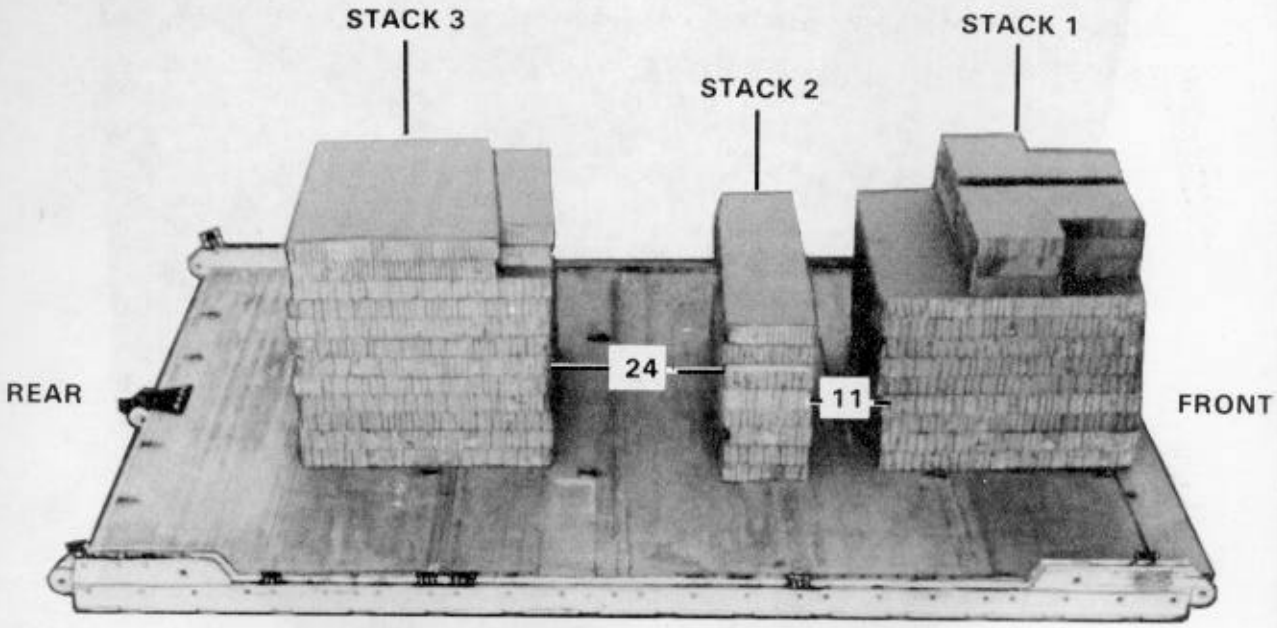
Note: All measurements are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3	12	36	40	Honeycomb	Form stack. Make a 4- by 8-inch cutout on each side to the front of the top two layers.

Figure 7-5. Honeycomb stack 3 prepared

Note: All measurements are given in inches.

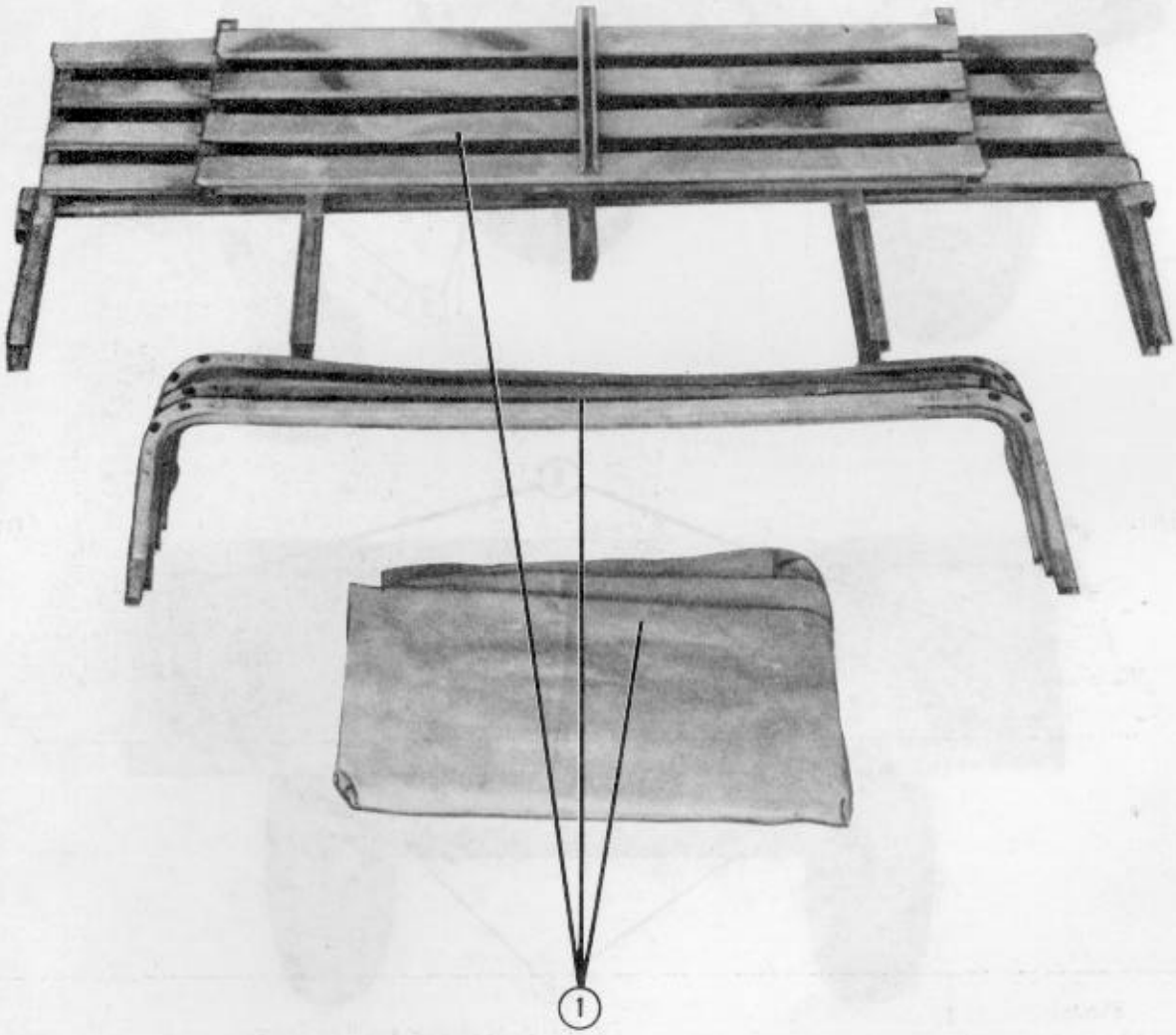


Stack Number	Position of Stack on Platform
	Place stack:
1	Centered, flush with the front edge of the platform.
2	Centered, 11 inches from the rear edge of stack 1.
3	Centered, 24 inches from the rear edge of stack 2.

Figure 7-6. Honeycomb stacks positioned on platform

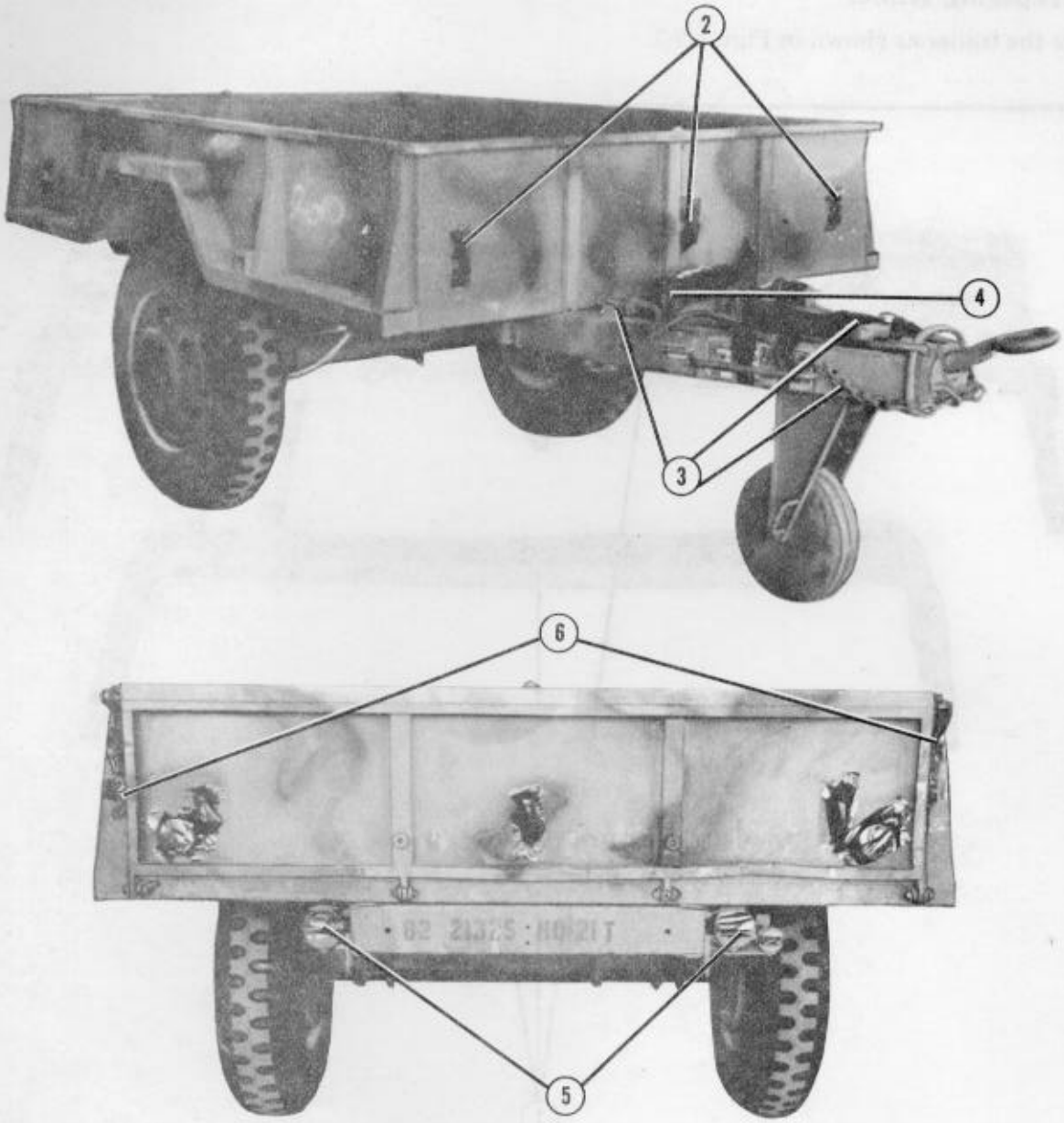
7-4. Preparing Trailer

Prepare the trailer as shown in Figure 7-7.



(1) Remove the rack assembly, bows, and paulin cover.

Figure 7-7. Trailer prepared



(2) Tape the paulin hooks.

(3) Tape the hose, safety chains, and intervehicular cable to the drawbar.

(4) Tape the hand brakes in the locked position using pressure-sensitive tape.

(5) Tape the taillights and reflectors.

(6) Tape the tailgate chains.

Figure 7-7. Trailer prepared (continued)

7-5. Stowing Accompanying Load and Trailer Components

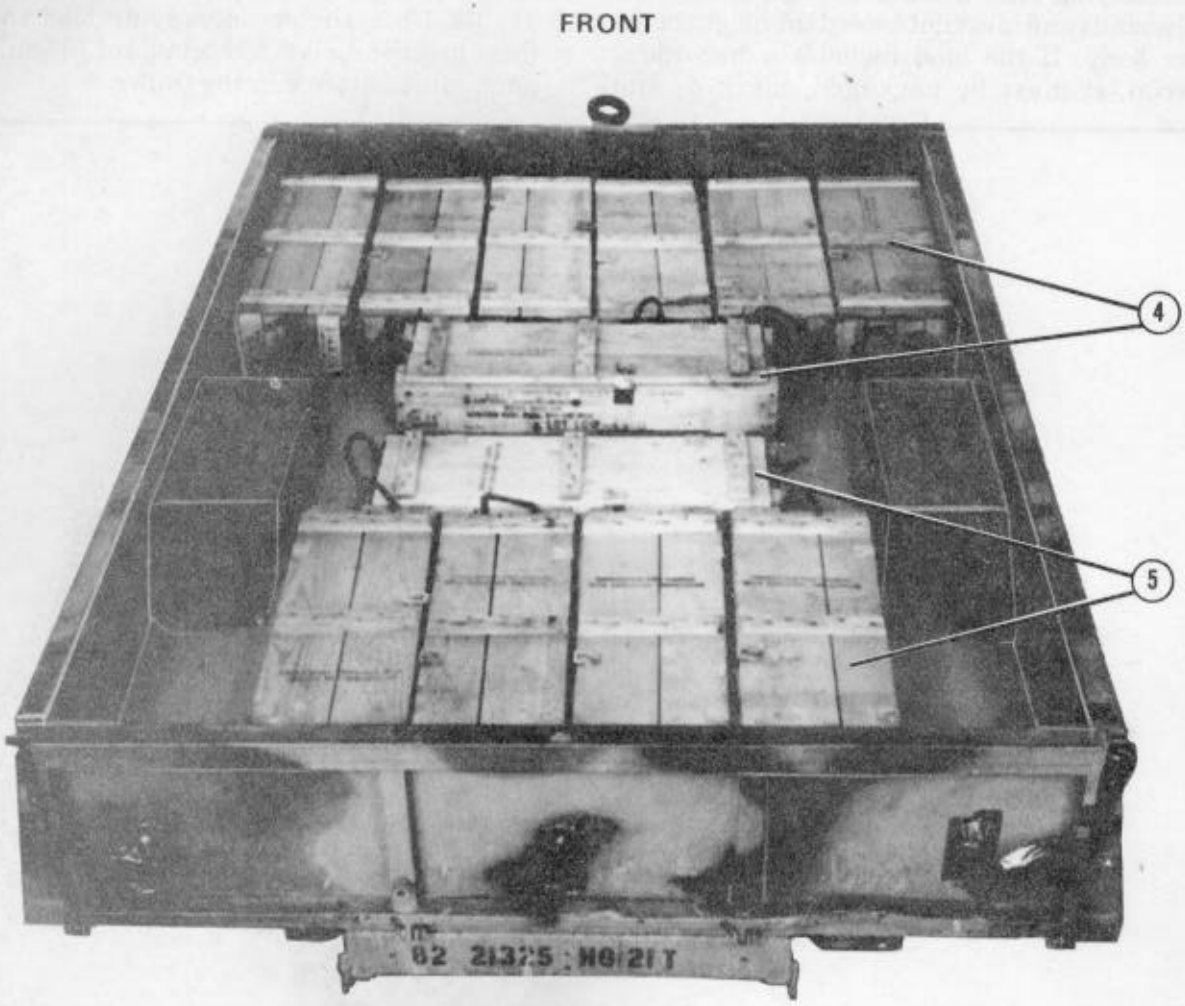
Stow the accompanying load of 24 ammunition boxes in the trailer as shown in Figure 7-8. The accompanying load must not weigh more than 3,000 pounds and must not exceed the height of the trailer body. If the load includes a hazardous material, it must be packaged, marked, and labeled in compliance with AFR 71-4/TM 38-250. The load must comply with the restrictions and meet the requirements outlined in FM 10-500-2/TO 13C7-1-5. The accompanying load shown in these procedures is 2,280 pounds of 105-millimeter ammunition stowed in the trailer.

CAUTION

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

1. Place two 36- by 74-inch pieces of honeycomb in the front of the trailer.
2. Place two 36- by 54-inch pieces of honeycomb in the center of the trailer.
3. Make a 9- by 11-inch cutout on each side of two 36- by 74-inch pieces of honeycomb. Place the honeycomb, with the cutouts facing the front of the trailer, in the rear of the trailer.

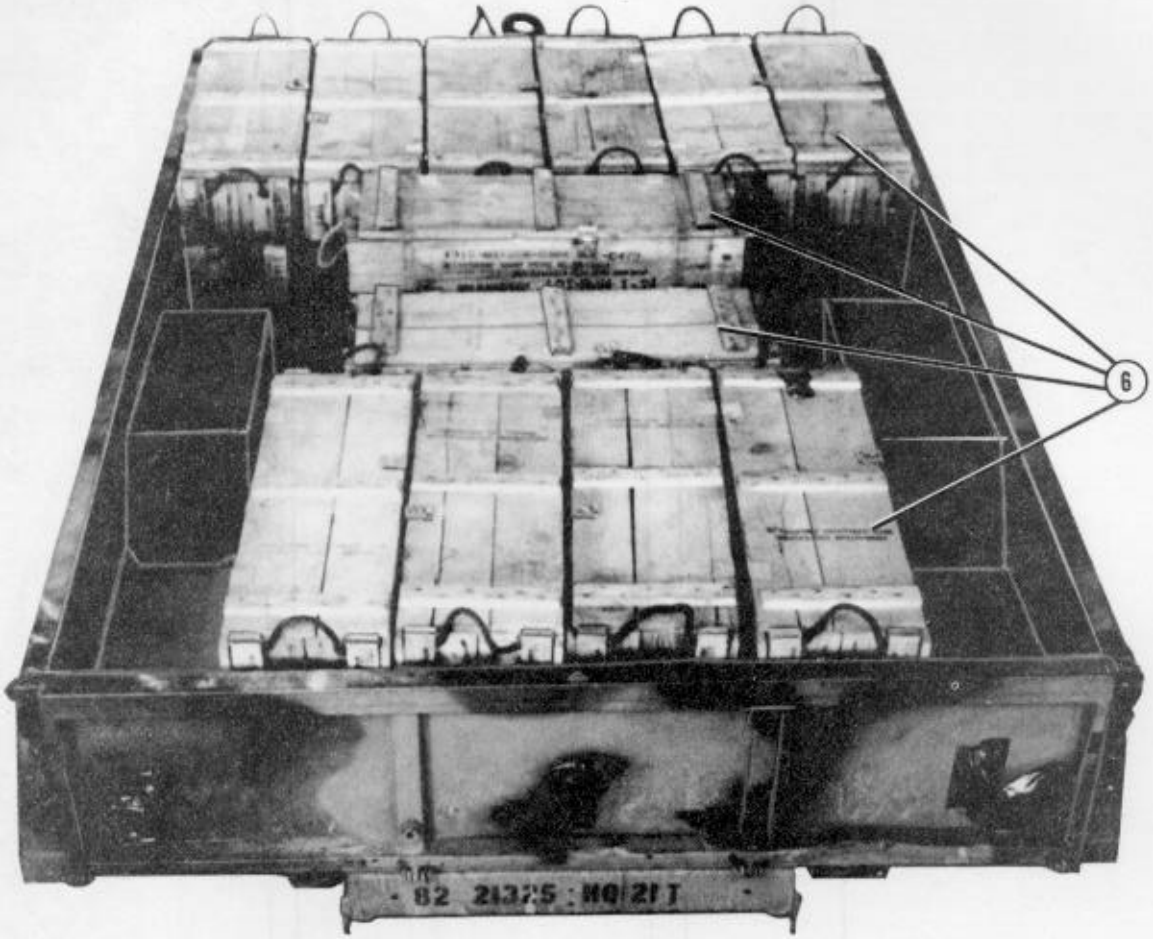
Figure 7-8. Accompanying load and trailer components stowed



(4) Place six boxes of ammunition against the front wall of the trailer. Center a seventh box of ammunition flush against the six ammunition boxes.

(5) Place four boxes of ammunition against the tailgate of the trailer. Center a fifth box of ammunition flush against the four ammunition boxes.

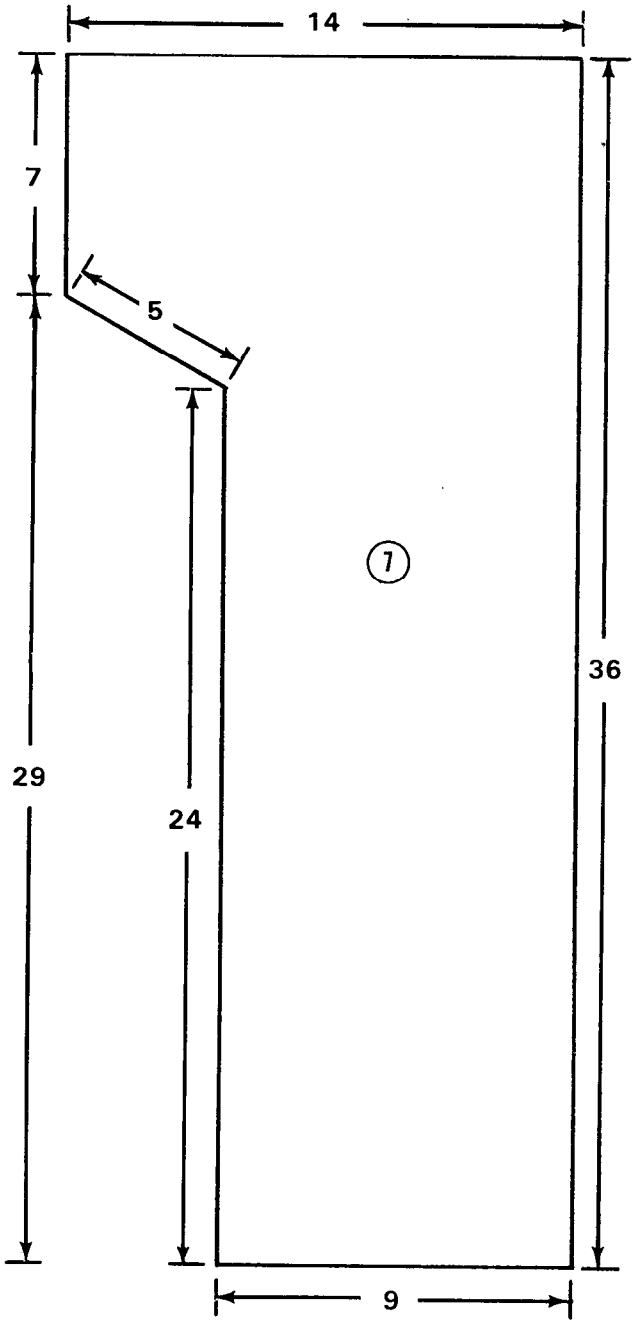
Figure 7-8. Accompanying load and trailer components stowed (continued)



(6) Place 12 additional boxes of ammunition on top of the boxes placed in steps 4 and 5.

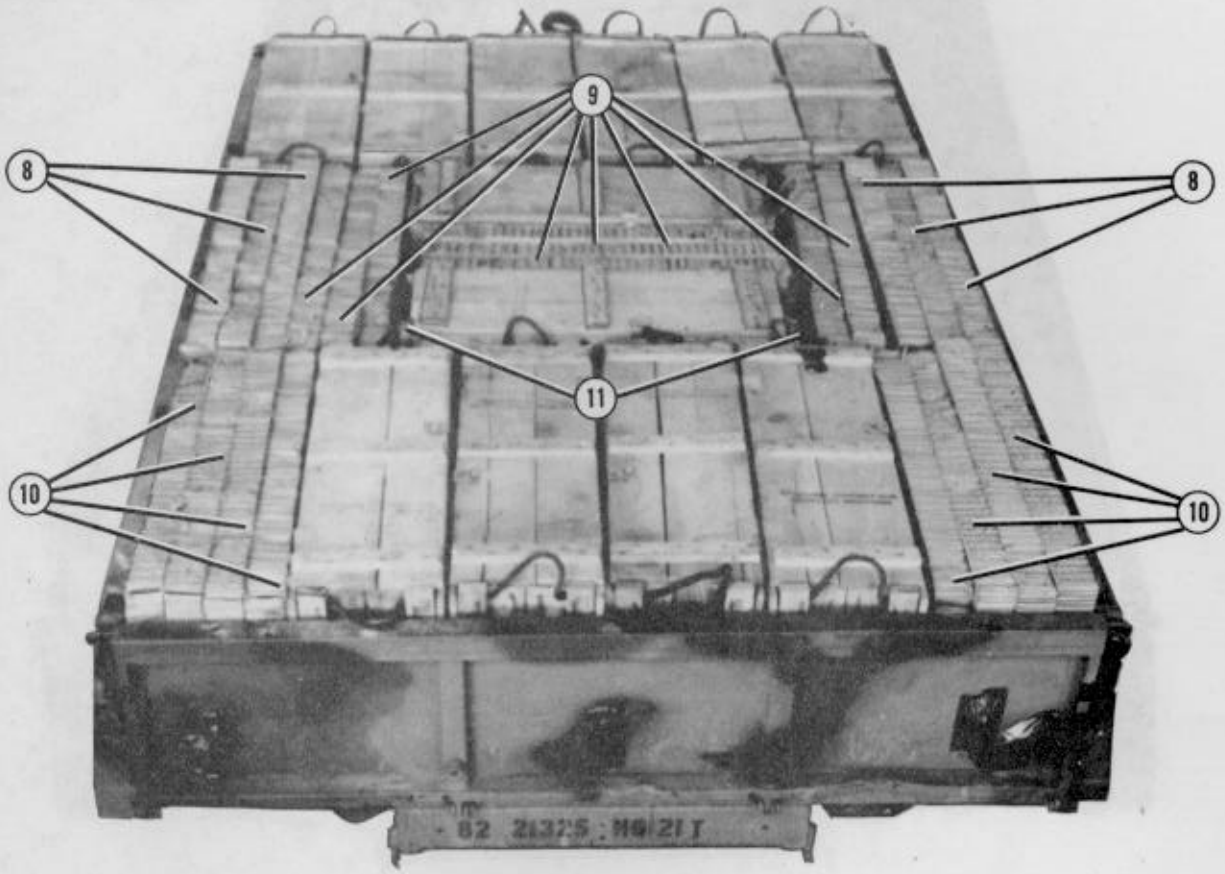
Figure 7-8. Accompanying load and trailer components stowed (continued)

Note: All measurements are given in inches.



(7) Make a 5- by 29-inch cutout as shown in six 14- by 36-inch pieces of honeycomb as shown.

Figure 7-8. Accompanying load and trailer components stowed (continued)



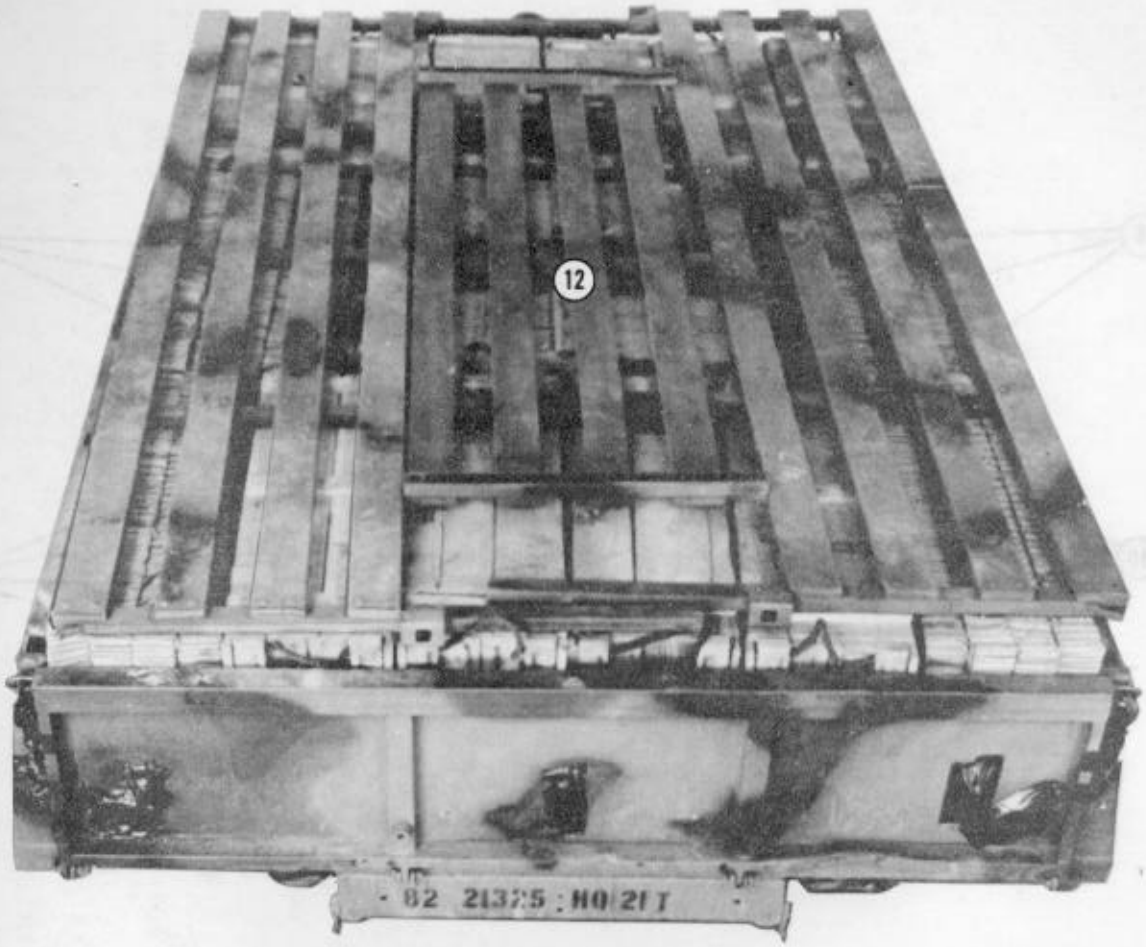
(8) Place three pieces of the honeycomb with the 5- by 29-inch cutouts over each wheel well.

(9) Place eight 36- by 14-inch pieces of honeycomb next to the honeycomb placed in step 8 and the ammunition boxes.

(10) Place four 36- by 14-inch pieces of honeycomb on each side of the rear ammunition boxes.

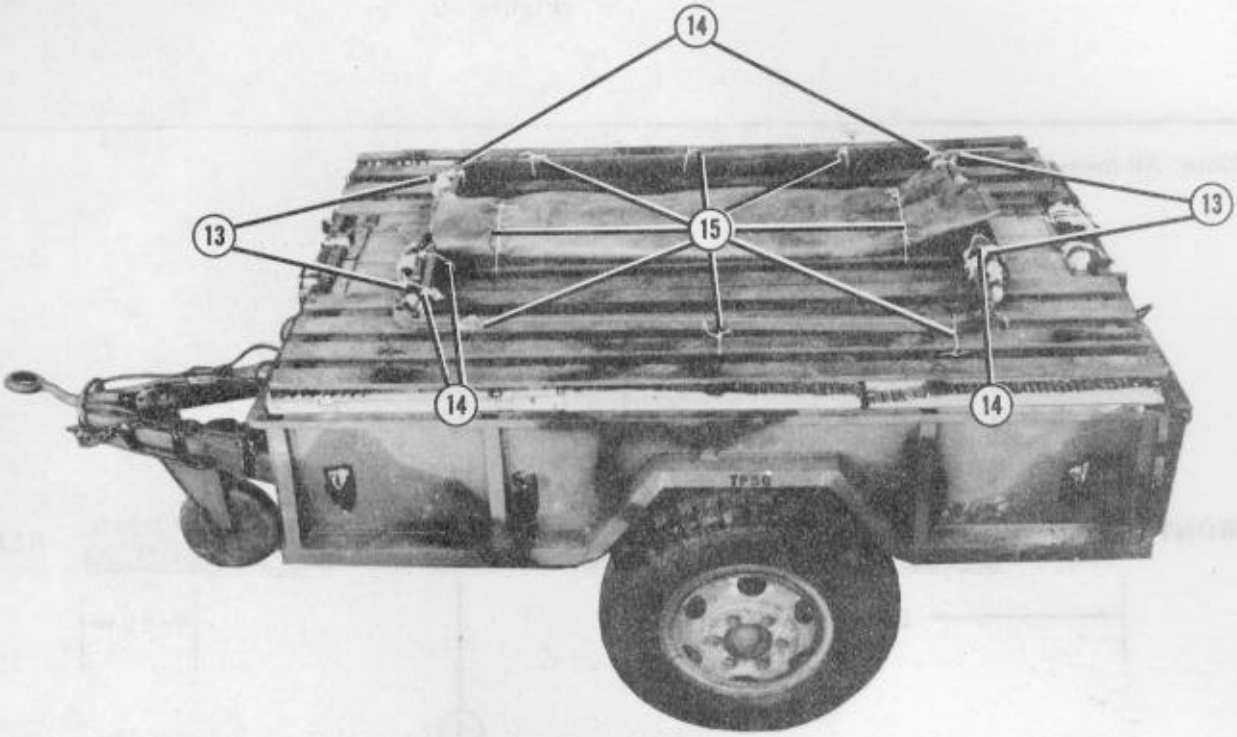
(11) Fill in open areas with honeycomb filler pieces.

Figure 7-8. Accompanying load and trailer components stowed (continued)



(12) Place the rack assembly on top of the ammunition boxes.

Figure 7-8. Accompanying load and trailer components stowed (continued)



(13) Pad all sharp areas of the rack assembly and bows with cellulose wadding. Tape the cellulose wadding in place.

(14) Tie the bows together with type III nylon cord.

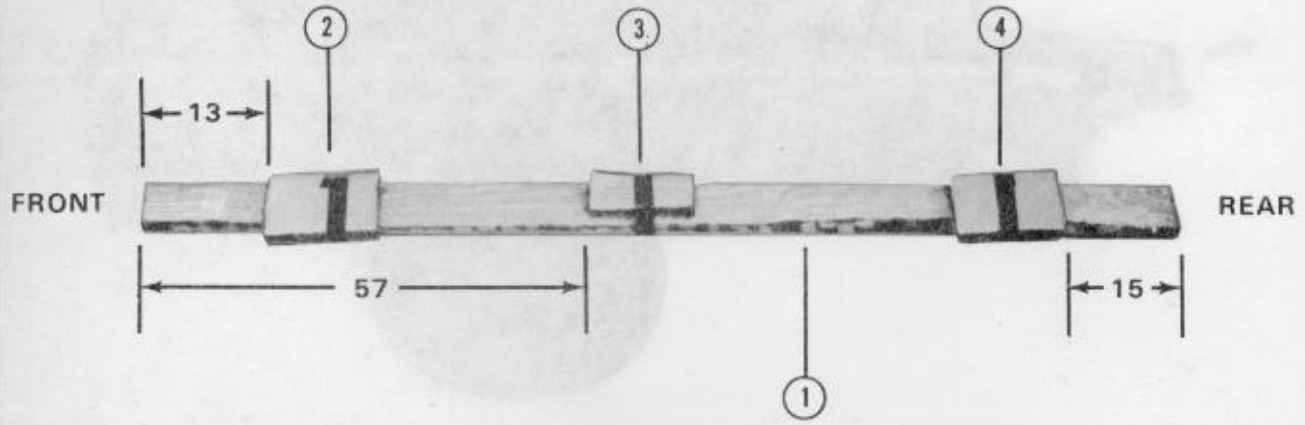
(15) Secure the bows and paulin cover to the rack assembly with type III nylon cord.

Figure 7-8. Accompanying load and trailer components stowed (continued)

7-6. Building Body Protection Boards

Build the body protection boards as shown in Figure 7-9.

Note: All measurements are given in inches.

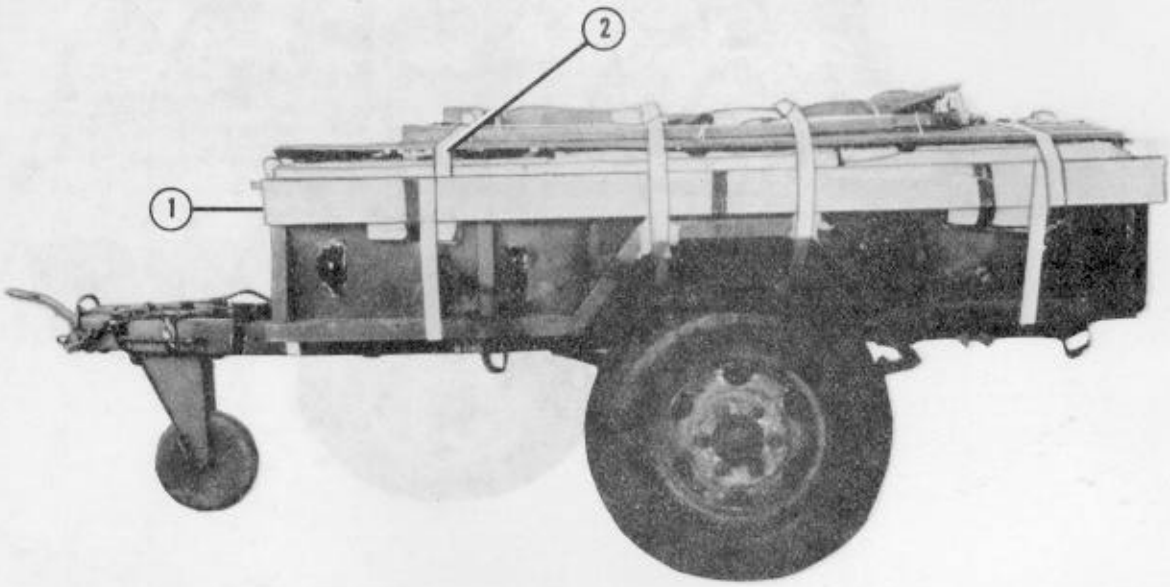


1. Prepare two 2- by 6- by 120-inch pieces of lumber for the body protection boards.
2. Place a 7- by 11-inch piece of honeycomb 13 inches from the front of each board.
3. Place a 4- by 11-inch piece of honeycomb 57 inches from the front of each board.
4. Place a 7- by 11-inch piece of honeycomb 15 inches from the rear of each board.

Figure 7-9. Body protection boards built

7-7. Lashing Body Protection Boards and Accompanying Load to Trailer

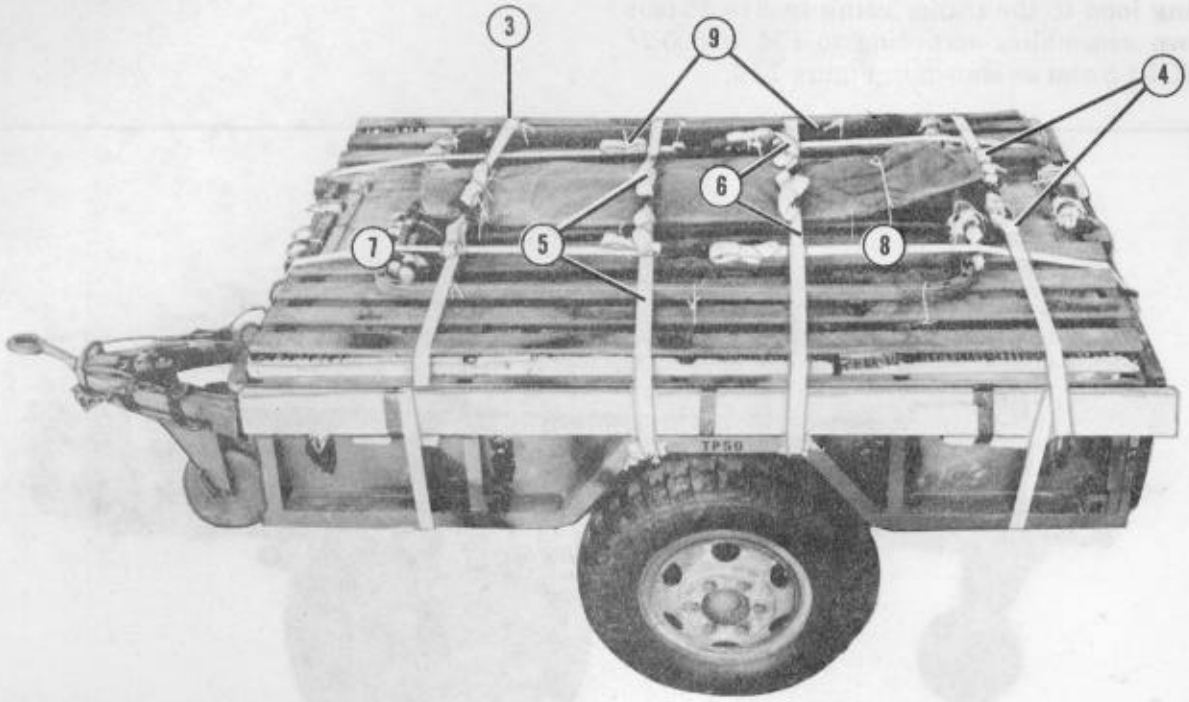
Lash the body protection boards and accompanying load to the trailer using twelve 15-foot tie-down assemblies according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-10.



(1) Place a body protection board on the left side of the trailer.

(2) Pass a 15-foot lashing around the front left frame and through its own D-ring. Pass the free end of the lashing up and around the body protection board once. Pass the free end of the lashing up and over the top of the trailer.

Figure 7-10. Body protection boards and accompanying load lashed to trailer



(3) Repeat steps 1 and 2 for the right side of the trailer. Secure the lashings in steps 2 and 3 with two D-rings and a load binder on top of the load.

(4) Pass a 15-foot lashing around the rear left frame and through its own D-ring. Pass the free end of the lashing up and around the body protection board once. Pass the free end of the lashing up and over the top of the trailer. Repeat step for the right side. Secure the lashings with two D-rings and a load binder.

(5) Repeat step 4 for the front of the wheel well. Do not wrap the lashing around the body protection board.

(6) Repeat step 4 for the rear of the wheel well. Do not wrap the lashing around the body protection board.

(7) Pass a 15-foot tie-down strap around the left drawbar and through its own D-ring. Pass the free end up and over the top of the trailer.

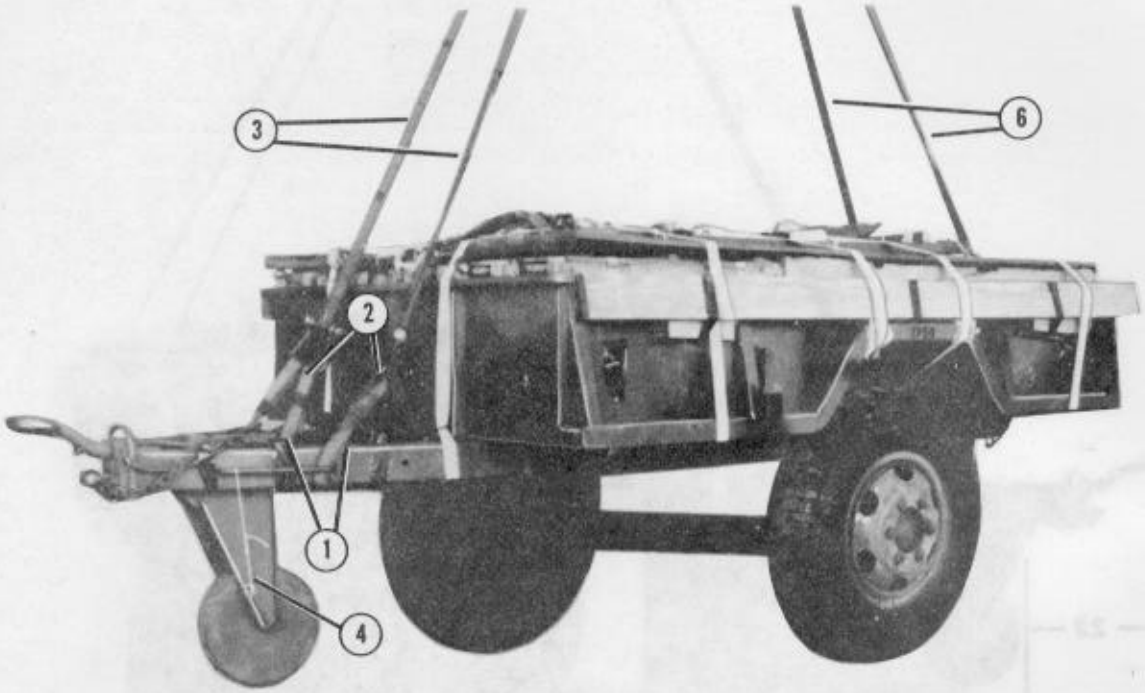
(8) Pass a 15-foot tie-down strap through the left rear tie-down provision and through its own D-ring. Pass the free end up and over the top of the trailer. Secure lashings in steps 7 and 8 with two D-rings and a load binder.

(9) Repeat steps 7 and 8 for the right side of the trailer.

Figure 7-10. Body protection boards and accompanying load lashed to trailer (continued)

7-8. Installing Lifting Slings and Positioning Trailer on Platform

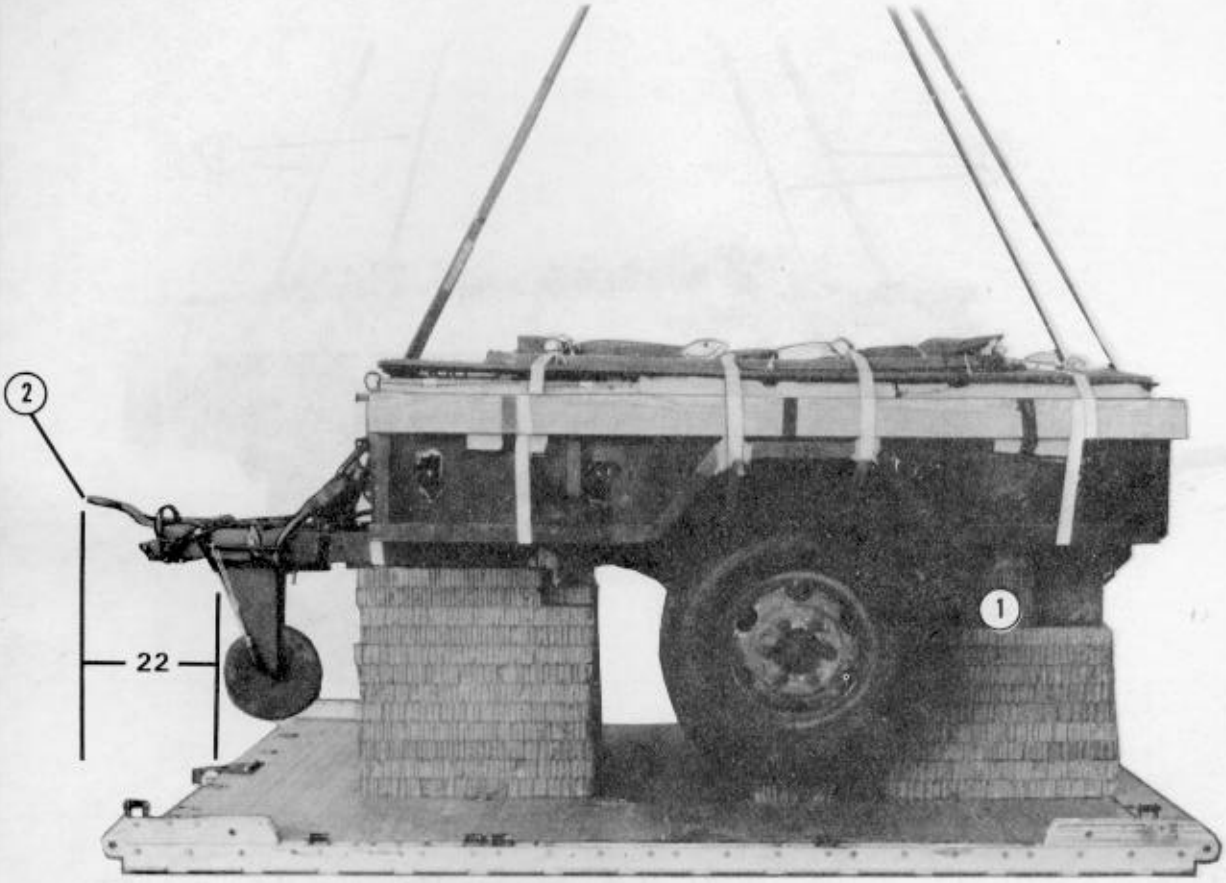
Install the lifting slings using four 3-foot (2-loop), type XXVI nylon slings; two 11-foot (2-loop), type XXVI nylon slings; two 12-foot (2-loop), type XXVI nylon slings; and four large suspension clevises as shown in Figure 7-11. Position the trailer on the platform as shown in Figure 7-12.



1. Wrap a 3-foot sling around each side of the drawbar. Make sure the slings pass between the drawbar and the lifting handle.
2. Attach a large suspension clevis through the ends of each 3-foot sling.
3. Attach an 11-foot sling to each front suspension clevis.
4. Safely tie the caster wheel to the drawbar lifting handles with type III nylon cord.
5. Wrap a 3-foot sling around the left frame at the rear of the trailer (not shown). Attach a large suspension clevis through the ends of the sling (not shown). Repeat step for the right side (not shown).
6. Attach a 12-foot sling to each rear suspension clevis.

Figure 7-11. Lifting slings installed

Note: All measurements are given in inches.

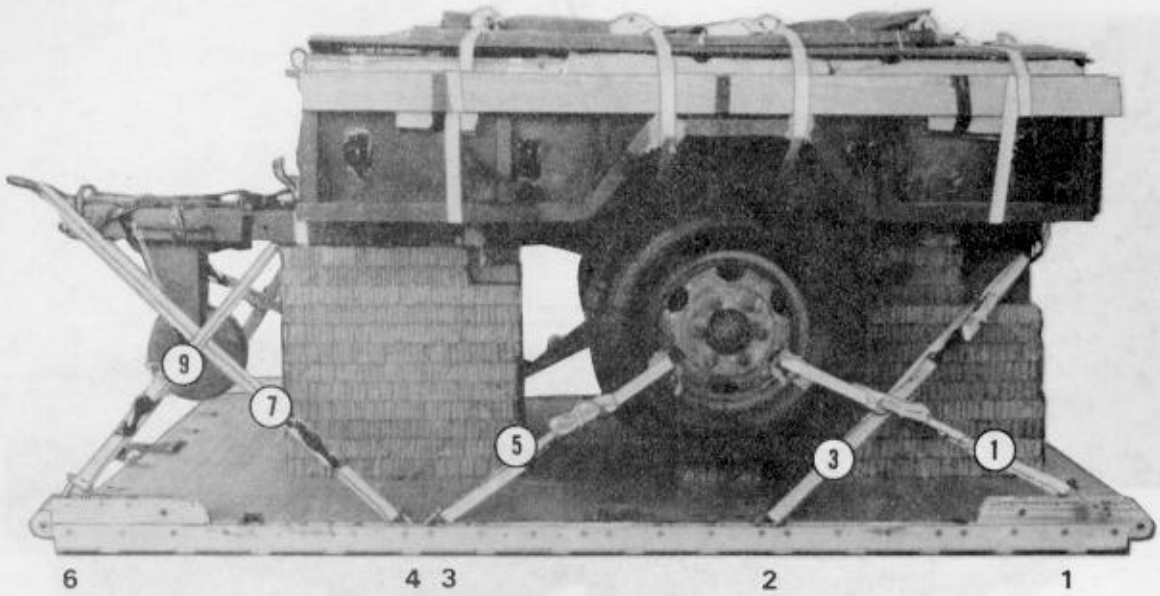


1. Place the trailer on the honeycomb with the axle centered on honeycomb stack 2 and the rear edge of the trailer flush with the front edge of the platform.
2. Make sure the front edge of the lunette overhangs the rear of the platform by 22 inches.
3. Remove the lifting slings (not shown).

Figure 7-12. Trailer positioned

7-9. Lashing Trailer

Lash the trailer to the platform using ten 15-foot tie-down assemblies according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-13.



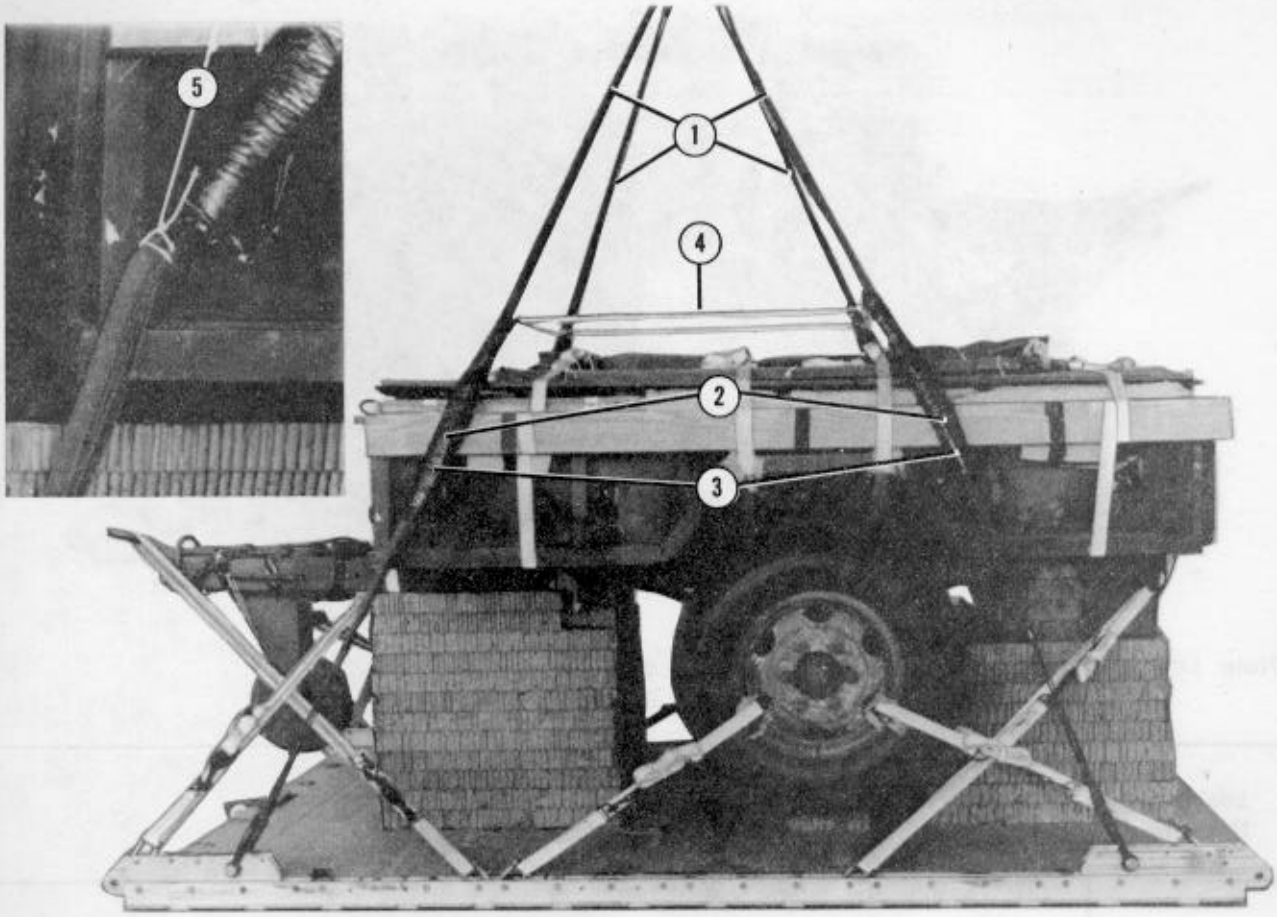
Note: Left, right, rear, and front refer to the trailer, NOT the platform.

Lashing Number	Tie-down Clevis Number	Instructions
		Pass lashing:
1	1	Through left wheel.
2	1A	Through right wheel.
3	2	Through left rear tie-down provision.
4	2A	Through right rear tie-down provision.
5	3	Through left wheel.
6	3A	Through right wheel.
7	4	Through lunette.
8	4A	Through lunette.
9	6	Through left front tie-down provision.
10	6A	Through right front tie-down provision.

Figure 7-13. Lashings 1 through 10 installed

7-10. Installing and Safetying Suspension Slings

Install and safety four large suspension clevises and four 12-foot (2-loop), type XXVI nylon webbing slings as shown in Figure 7-14.



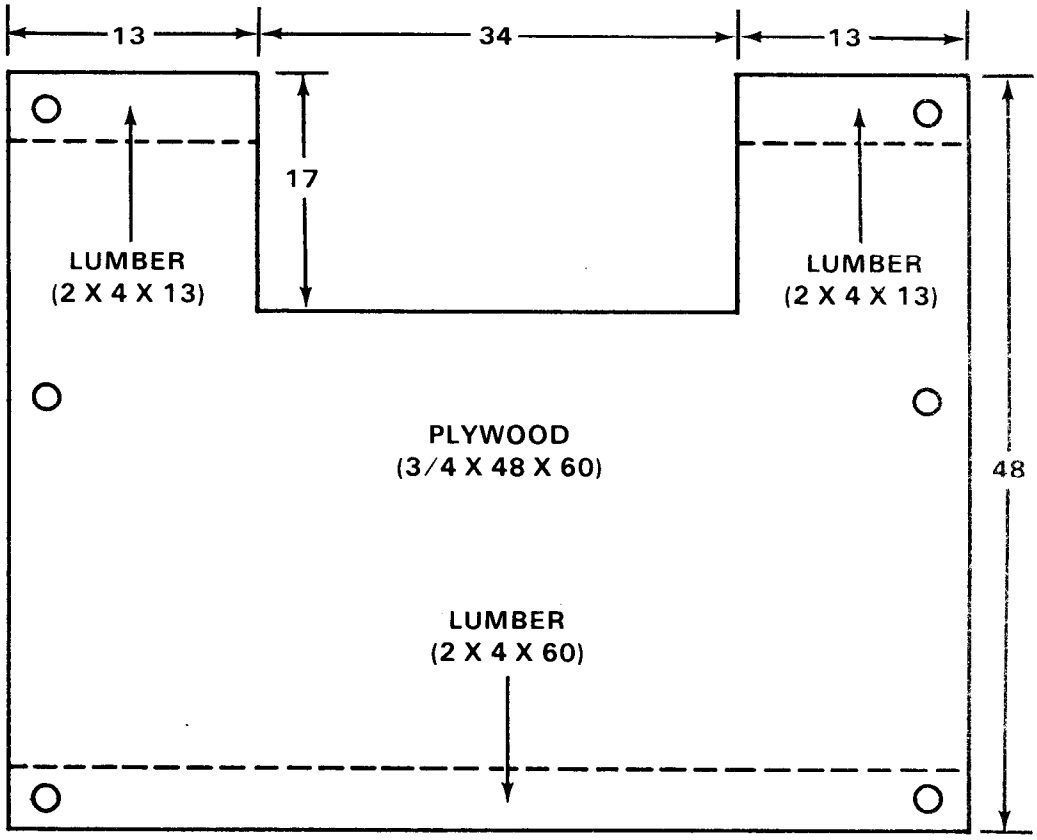
1. Attach a 12-foot sling to each tandem link using a large suspension clevis.
2. Wrap a 10- by 30-inch piece of felt around each sling where it makes contact with the load. Tie the padding in place using type III nylon cord.
3. Tape the padding using pressure-sensitive tape the full length of the felt, and extend the tape over on the suspension slings 6 inches on each end.
4. Safety the slings with a deadman's tie according to FM 10-500-2/TO 13C7-1-5.
5. Safety the suspension slings to the body protection boards using type III nylon cord.

Figure 7-14. Suspension slings installed and safetied

7-11. Building and Installing Parachute Stowage Platform

Build the parachute stowage platform as shown in Figure 7-15. Install the parachute stowage platform as shown in Figure 7-16.

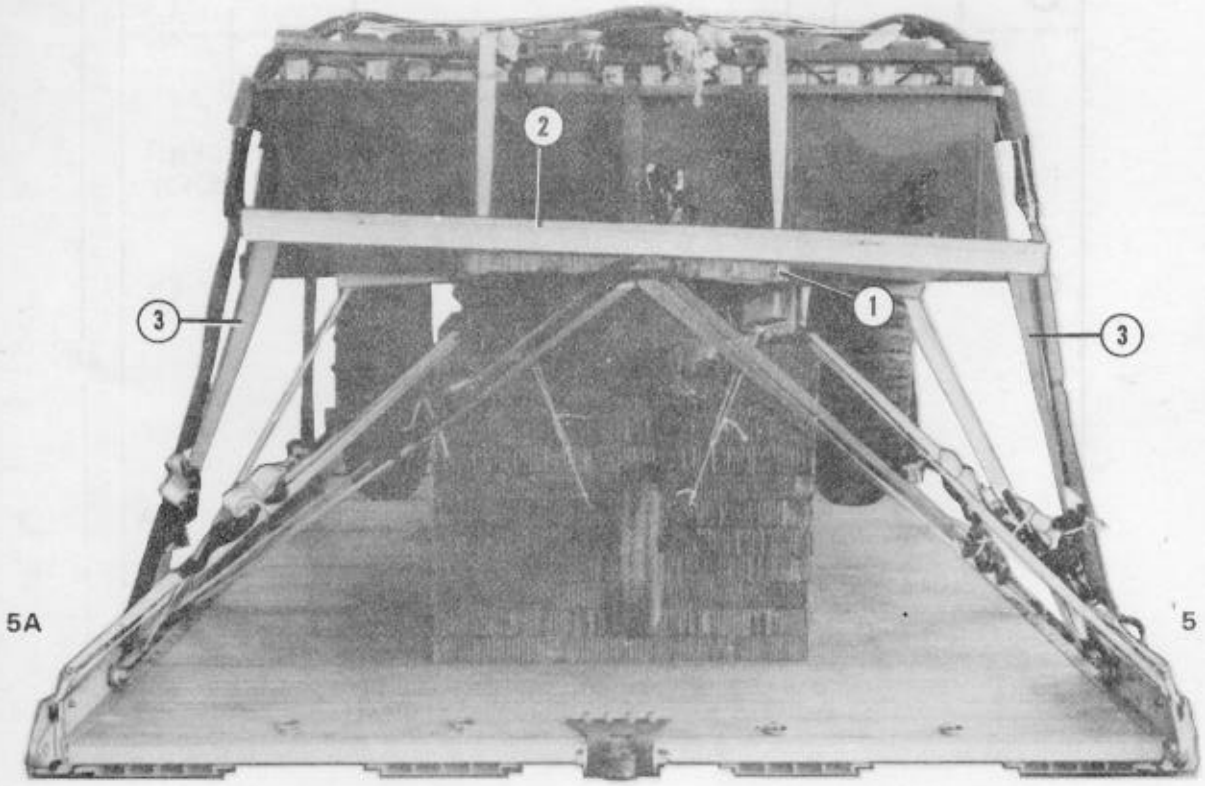
Notes: 1. This drawing is not drawn to scale.
2. All measurements are given in inches.



Step:

1. Cut a 3/4- by 48- by 60-inch piece of plywood.
2. Make a 17- by 34-inch cutout in the center of the front of the plywood.
3. Nail a 2- by 4- by 13-inch piece of lumber on each side of the front of the plywood using sixpenny nails. Nail a 2- by 4-by 60-inch piece of lumber on the rear of the plywood using sixpenny nails.
4. Drill six 2-inch holes as shown.

Figure 7-15. Parachute stowage platform built



(1) Center a 26- by 36-inch piece of honeycomb on the drawbar.

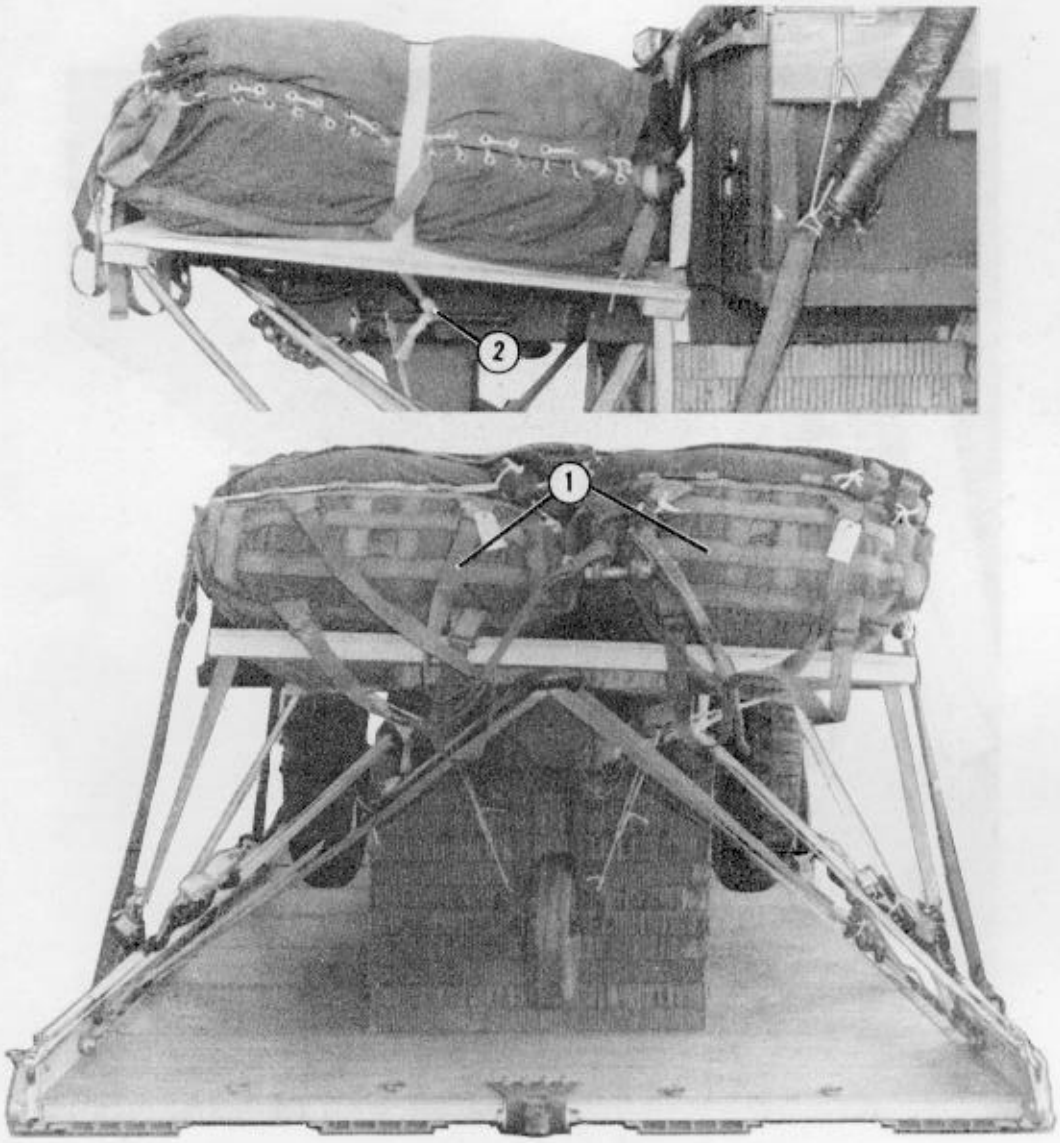
(2) Set the parachute stowage platform on top of the honeycomb.

(3) Lash the parachute stowage platform to clevises 5 and 5A with two 15-foot lashings.

Figure 7-16. Parachute stowage platform installed

7-12. Stowing and Securing Cargo Parachutes

Stow two G-11B cargo parachutes on the parachute stowage platform according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-17.



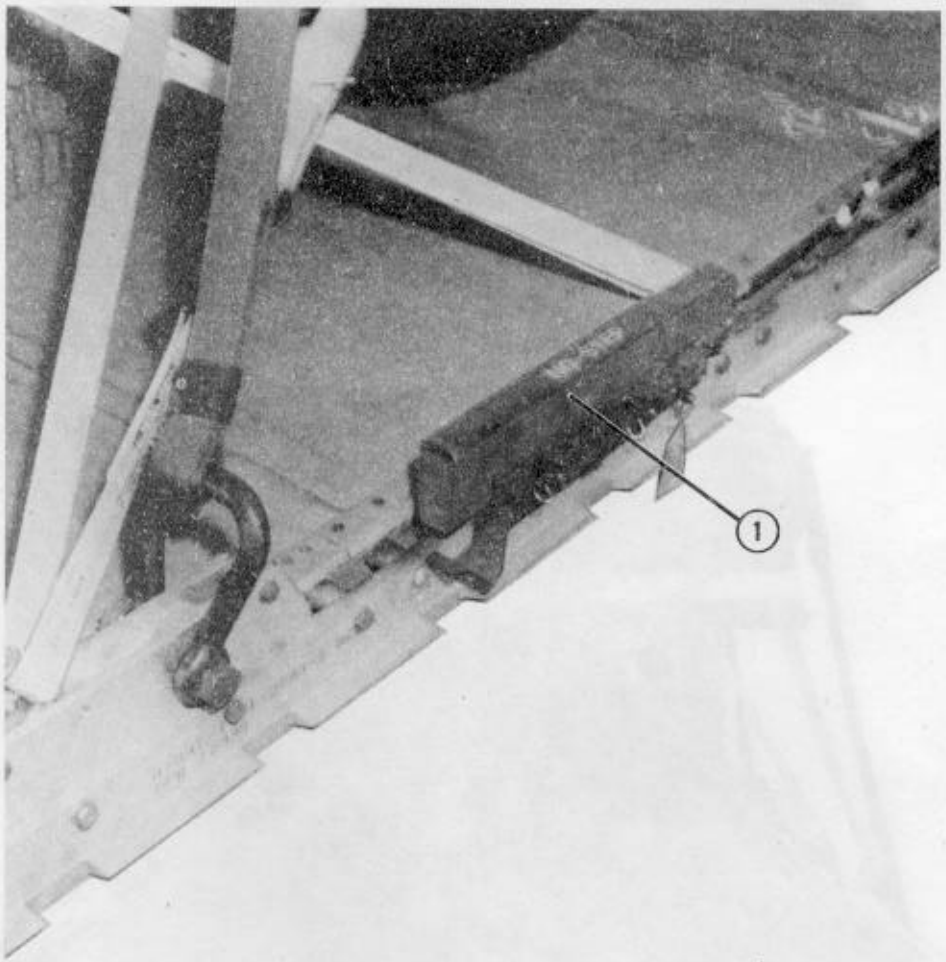
(1) Prepare and position two G-11B cargo parachutes on the parachute stowage platform according to FM 10-500-2/TO 13C7-1-5.

(2) Install a cargo parachute restraint strap according to FM 10-500-2/TO 13C7-1-5. Secure the restraint strap to the drawbar lifting handle.

Figure 7-17. Cargo parachute stowed and secured

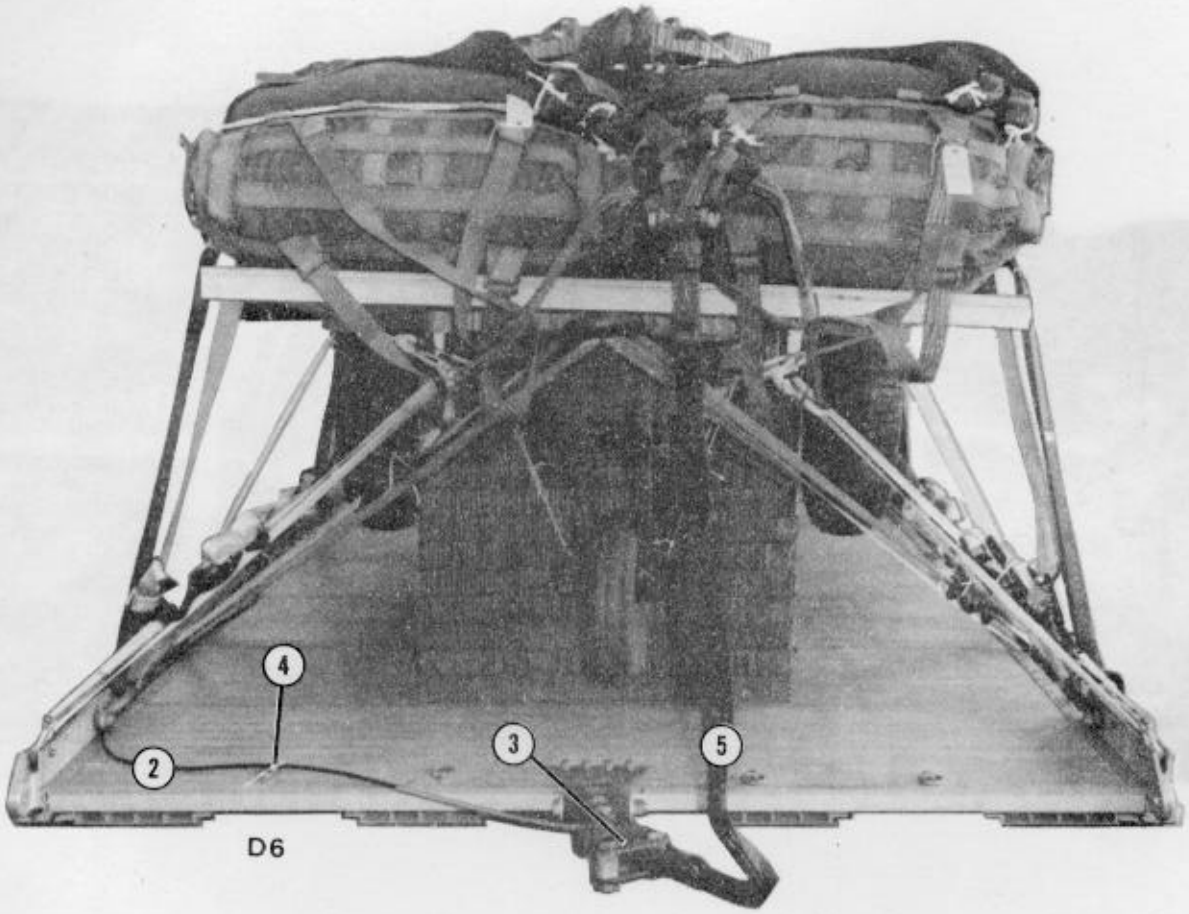
7-13. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-18.



(1) Install the EFTC mounting bracket to the front mounting holes on the left platform rail. Install the actuator to the EFTC mounting brackets according to FM 10-500-2/TO 13C7-1-5.

Figure 7-18. Extraction system installed



(2) Attach a 12-foot release cable to the actuator.

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

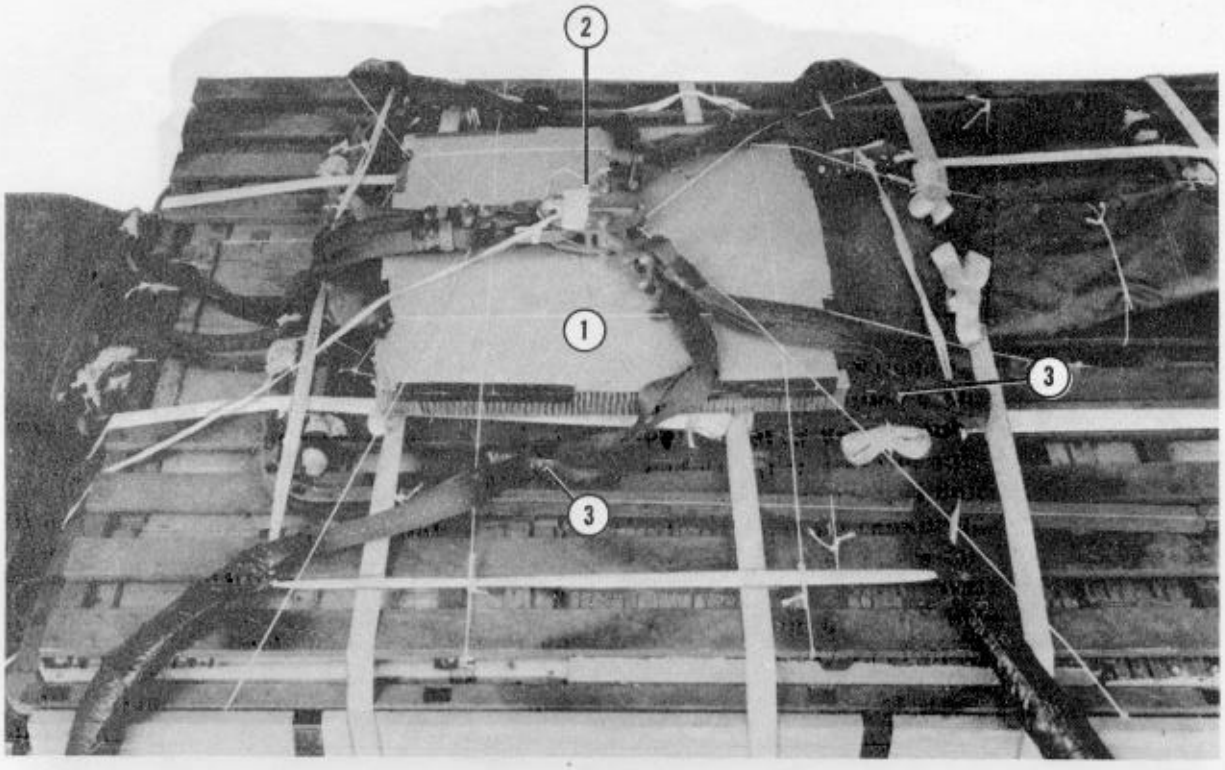
(4) Safety the release cable to tie-down ring D6 and according to FM 10-500-2/TO 13C7-1-5.

(5) Attach a 9-foot (2-loop), type XXVI nylon webbing sling as a deployment line to the load according to FM 10-500-2/TO 13C7-1-5.

Figure 7-18. Extraction system installed (continued)

7-14. Installing Parachute Release

Install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-19.



1. Place a 36- by 36-inch piece of honeycomb on top of the load, and secure it with type III nylon cord.
2. Prepare and install the M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5. Center the release assembly on top of the honeycomb. Secure the release to the paulin hooks on the side of the trailer with type III nylon cord.
3. S-fold the slack in the suspension slings, and tie the folds with type I, 1/4-inch cotton webbing.

Figure 7-19. Parachute release installed

7-15. Installing Provisions for Emergency Restraints

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

7-16. Placing Extraction Parachute

Select the extraction parachute and extraction parachute line needed using the extraction parachute and extraction line requirements table found in FM 10-500-2/TO 13C7-1-5.

7-17. Marking Rigged Load

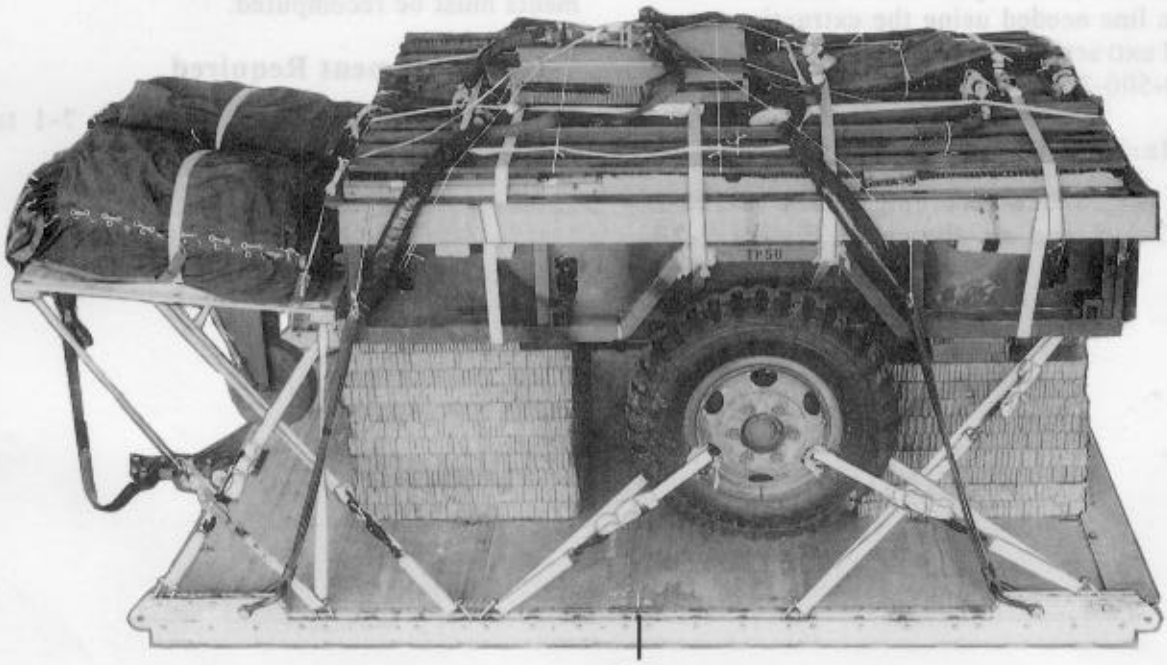
Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-20. Complete the Shipper's Declaration for Dangerous Goods, and securely attach it to the load. Indicate on the Shipper's Declaration for Dangerous Goods that the load has been prepared according to AFJAM 24-204/TM 38-250. If the load varies from the one shown, the weight, height, tip off curve, CB and parachute requirements must be recomputed.

7-18. 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	7,360 pounds
Maximum load allowed	8,080 pounds
Height	81 inches
Width	108 inches
Length	170 1/2 inches
Overhang: Front (nose bumper	4 1/2 inches
Rear (parachute)	22 inches
CB (from front edge of platform)	72 inches
Extraction System	EFTC

Figure 7-20. The 1 1/2-ton trailer rigged on a type V platform for low-velocity airdrop.

Table 7-1. Equipment required for rigging the 1 1/2-ton trailer on a type V platform for low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
3990-00-937-0272	Binder, load, 10,000-lb	6
	Clevis, suspension:	
4030-00-090-5354	1-in (large)	10
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer w 12-ft cable	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	12
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction:	
1670-01-064-4452	60-ft (1-loop), type XXVI nylon webbing	1
1670-01-107-7651	140-ft (3-loop), type XXVI nylon webbing	1
1670-01-107-7652	160-ft (1-loop), type XXVI nylon webbing	1
	Link assembly:	
	Two-point:	
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in, hexagonal	(2)
1670-00-003-1954	Plate, side, 5 1/2-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-783-5988	Type IV	1
	Lumber	
5510-00-220-6146	2- by 4- by 13-in	2
5510-00-220-6146	2- by 4- by 60-in	1
5510-00-220-6148	2- by 6- by 120-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:	5 sheets
	4- by 11-in	(2)
	7- by 11-in	(4)
	12- by 48-in	(8)
	14- by 36-in	(18)
	18- by 24-in	(6)
	26- by 36-in	(1)
	36- by 36-in	(1)
	36- by 40-in	(21)
	36- by 54-in	(2)
	36- by 74-in	(2)
	Parachute:	
1670-01-016-7841	Cargo, G-11B	2
	Cargo, extraction:	
1670-00-052-1548	15-ft	1
1670-00-687-5458	22-ft	1

Table 7-1. Equipment required for rigging the 1 1/2-ton trailer on a type V platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
	Platform, AD, type V, 12-ft	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly	(12)
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 48-in	1
	48- by 60-in	1
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For deployment:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For riser extensions:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	2
	For lifting:	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	4
1670-01-063-7760	11-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	2
	For suspension:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap, parachute release, multicut comes w 3 knives	1
8305-00-074-5124	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	24
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required

CHAPTER 8

RIGGING 400-GALLON CAPACITY WATER TRAILER FOR LOW-VELOCITY AIRDROP ON A 12-FOOT TYPE V AIRDROP PLATFORM

8-1. Description of Load

The 1 1/2-ton, 2-wheeled, 400-gallon tank trailer (model numbers M107A1, M107A2, M149A1, and M149A2) is rigged on a 12-foot, type V platform with two G-11 cargo parachutes. The M149A1 is shown in these procedures. The empty trailer is 162 inches long, 81 inches wide, 79 inches high and weighs 2,720 pounds. When filled, the trailer weighs 6,150 pounds and is 75 inches high.

Figure 8-1. M149A1 400-gallon water trailer

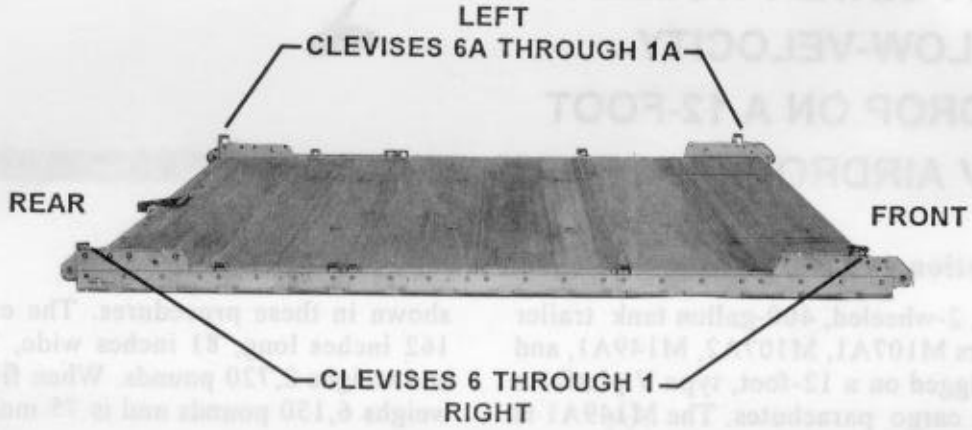
8-2. Preparing Platform

Prepare a 12-foot, type V platform using four tandem links and 12 clevis assemblies as shown in Figure 8-2.

Notes:

1. The nose bumper may or may or not be installed.

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



Step:

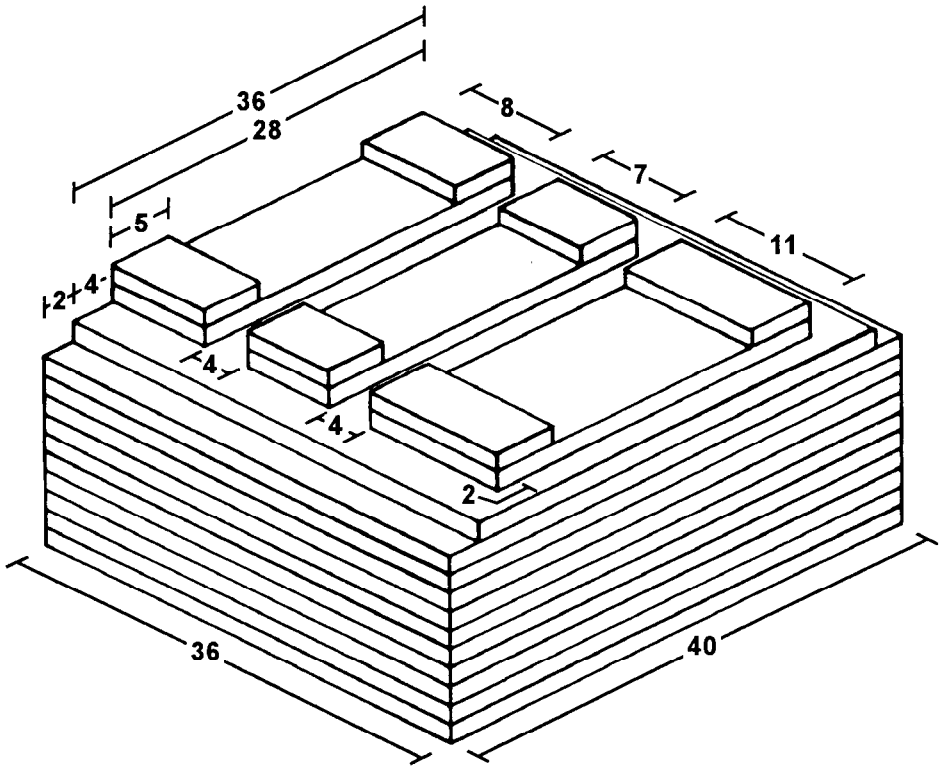
1. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
3. Install a tandem link on the rear of each platform side rail using holes 22, 23, and 24.
4. Install a clevis on bushing 2 on each front tandem link.
5. Install a clevis to bushing 4 on each rear tandem link.
6. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 8, 16, 17, and 20.
7. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 6 and those bolted to the left side from 1A through 6A.

Figure 8-2. Platform prepared

8-3. Preparing Honeycomb Stacks

Prepare the honeycomb stacks as shown in Figures 8-3, 8-4, 8-5 and 8-6.

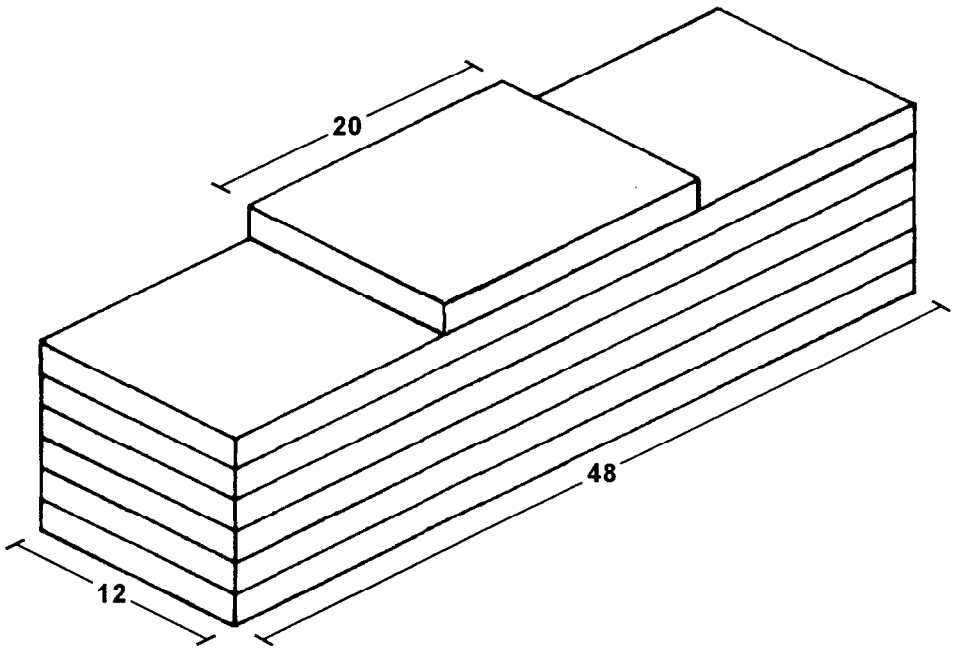
Notes: 1. This drawing is not drawn to scale.
2. All measurements are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	10	40	36	Honeycomb	Stack and glue pieces flush.
	1	36	36	Honeycomb	Stack flush and center.
	1	28	11	Honeycomb	Place as shown.
	2	5	11	Honeycomb	Place as shown.
	1	28	7	Honeycomb	Place as shown.
	2	5	7	Honeycomb	Place as shown.
	1	28	8	Honeycomb	Place as shown.
	2	5	8	Honeycomb	Place as shown.

Figure 8-3. Stack 1 prepared

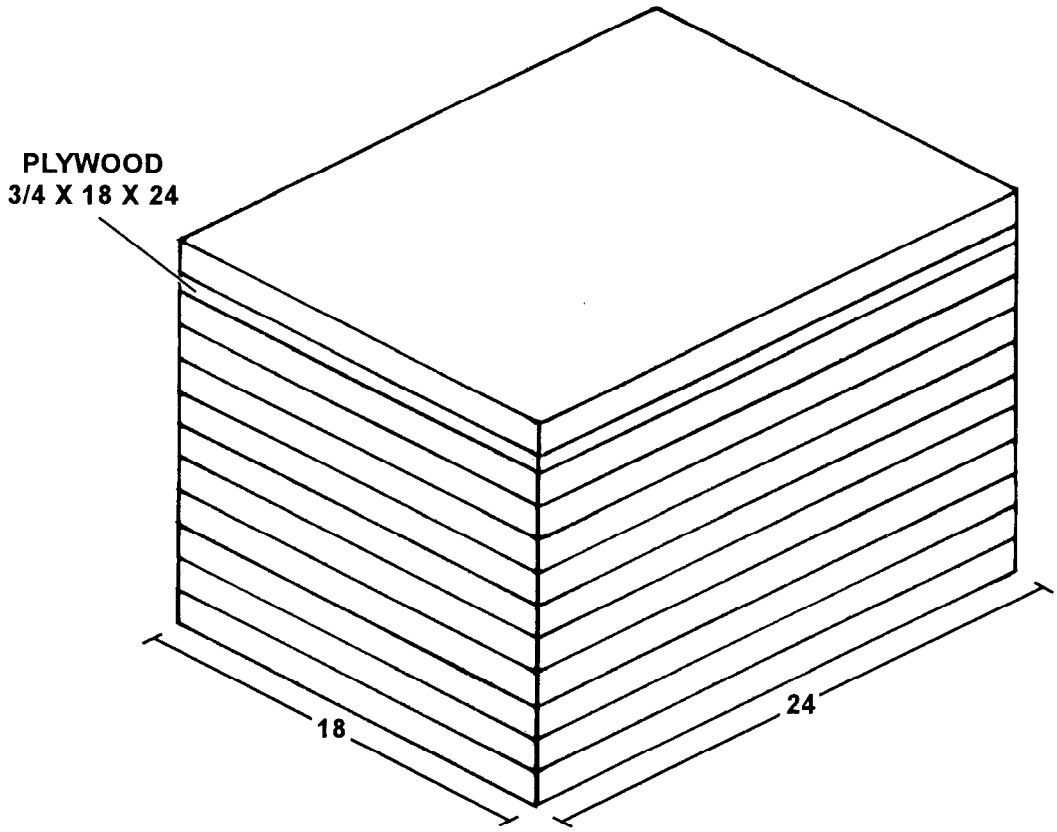
Notes: 1. This drawing is not drawn to scale.
2. All measurements are given in inches.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
2	6 1	48 20	12 12	Honeycomb Honeycomb	Place and glue to form base. Center and glue on top of base.

Figure 8-4. Stack 2 prepared

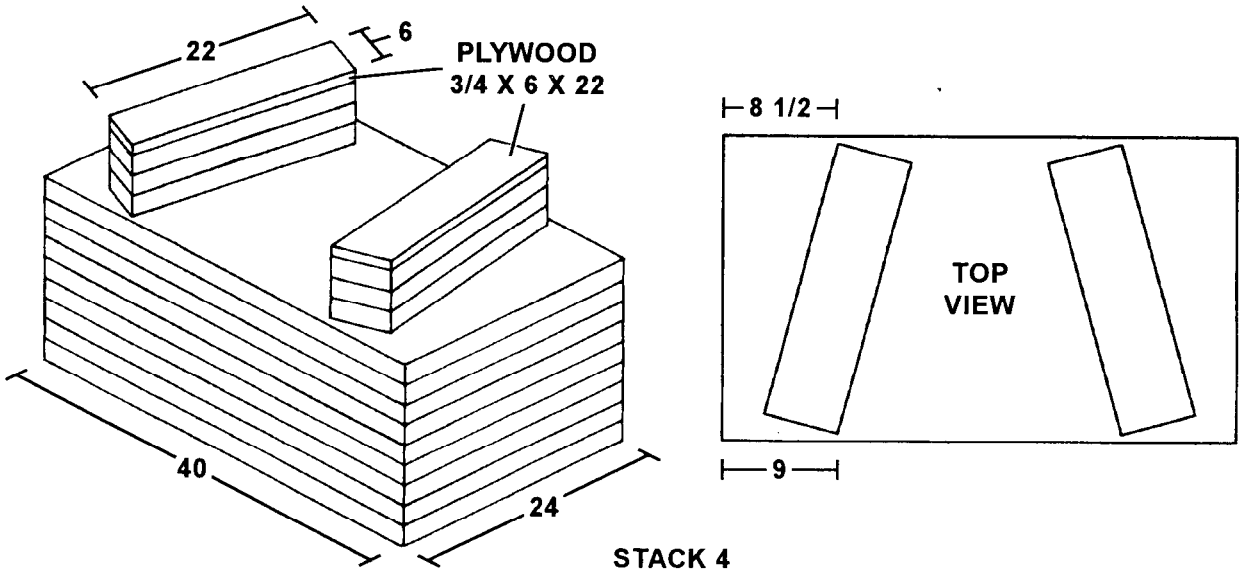
Notes: 1. This drawing is not drawn to scale.
2. All measurements are given in inches.



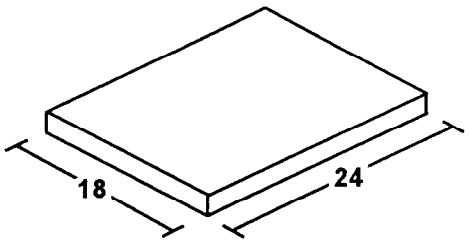
Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
3	10	24	18	Honeycomb	Glue flush to form base.
	1	24	18	3/4-inch plywood	Glue flush on base.
	1	24	18	Honeycomb	Glue flush on plywood.

Figure 8-5. Stack 3 prepared

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



STACK 4



STACKS 5 AND 6

Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
4	9	40	24	Honeycomb	Glue flush to form base.
	6	6	22	Honeycomb	Glue two stacks of three layers on the base as shown.
	2	6	22	3/4-inch plywood	Place and glue on top of 6-inch by 22-inch pieces.
5	1	18	24	Honeycomb	Stacks 5 and 6 consist of one layer.
6	1	18	24	Honeycomb	

Figure 8-6. Stacks 4, 5 and 6 prepared

8-4. Positioning Honeycomb Stacks

Position the honeycomb stacks as shown in Figure 8-7.

Notes:
1. This drawing is not drawn to scale.
2. All measurements are given in inches.
3. Measurements from the front of the platform are taken from the front edge of the nose bumper crease or the front edge of the first panel.
4. Measurements from the rear of the platform are taken from the rear edge of the last panel.

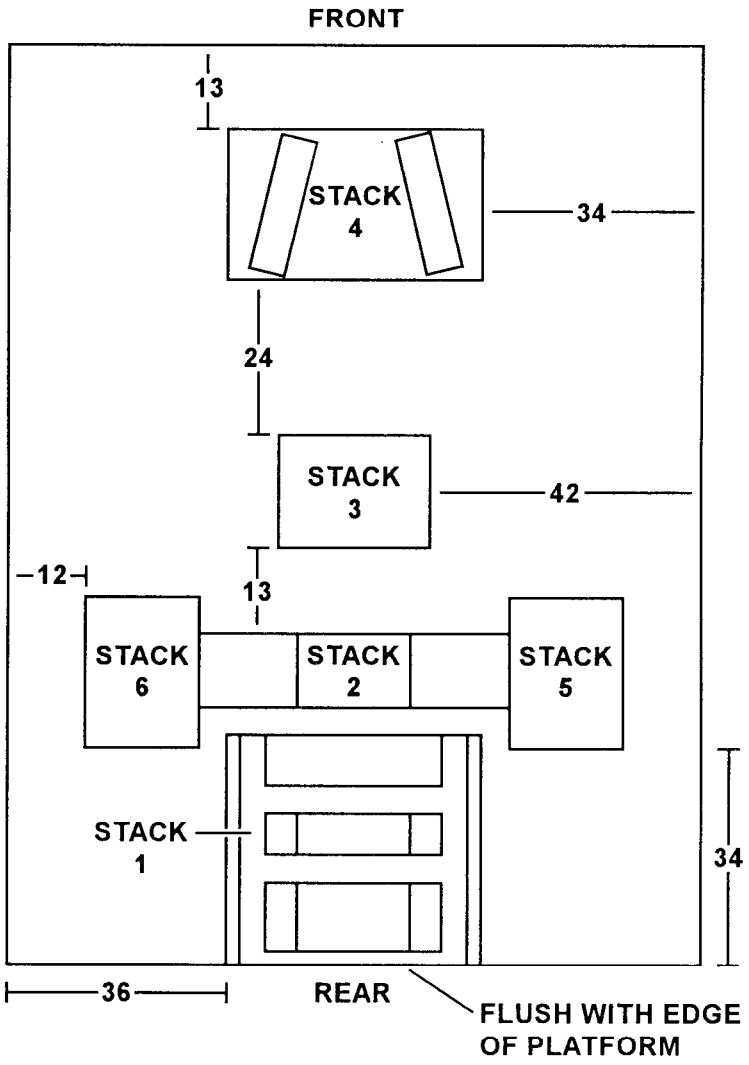


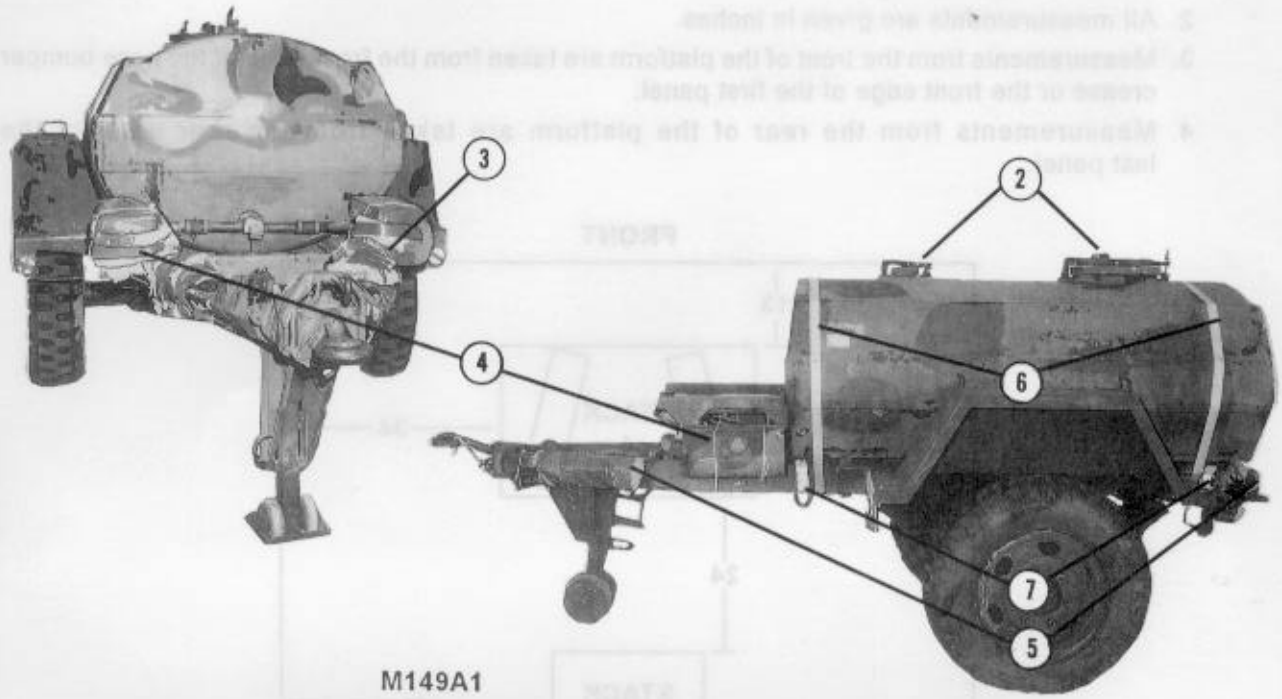
Figure 8-7. Honeycomb positioned

8-5. Preparing Trailer

Prepare the trailer as explained below.

a. Prepare the M149A1 trailer as shown in Figure 8-8.

b. Prepare the M149A2 trailer as shown in steps 1, 3, 4, and 5 of Figure 8-8. Further prepare the M149A2 trailer as shown in Figure 8-9.



M149A1

1. Before preparing the trailer, ensure it is filled with 400 gallons of potable water (not shown).
2. Secure manhole and filler pipe covers, and ensure they are closed tightly.
3. Secure intervehicular cable, hose and safety chains, fold them along the drawbar, and secure them in place with type III nylon cord and tape.
4. Close and latch the piping box covers, secure them with type III nylon cord, and pad the forward end of the piping box with cellulose wadding.
5. Pad and tape the drawbar, lights and reflectors.
6. Pass a 15-foot lashing around the tank and main frame member at a point forward of the second crossmember, and secure it with a load binder and D-ring on the underside of tank. Install a second tie-down strap in the same manner at the rear crossmember.
7. Pass a 15-foot lashing around the left and right main frame members at a point forward of the second crossmember, and secure it with a load binder and D-ring. Install the second tie-down strap in the same manner at the rear crossmember.

Figure 8-8. Trailer prepared and tank and trailer frame reinforced

M149A2

(1) Secure the manhole cover with the hinged eyebolt and wingnut.

(2) Pass three 15-foot lashings around the tank and over the manhole cover. Secure them with three D-rings and load binders.

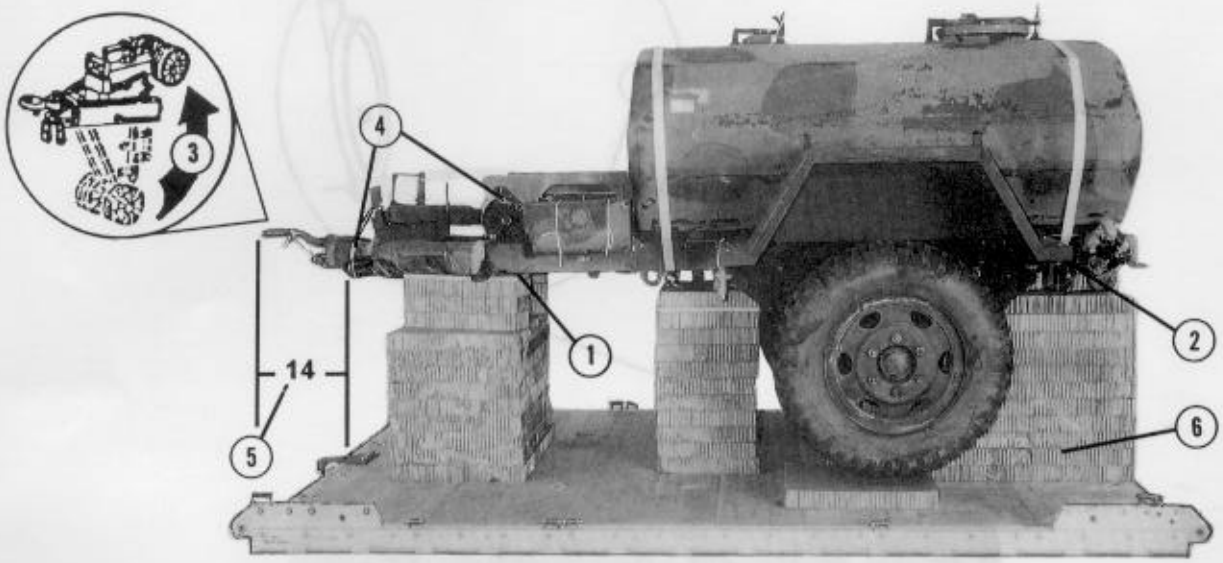
Figure 8-9. M149A2 prepared

8-6. Lifting and Positioning Trailer

Lift and position the trailer with four 12-foot (2-loop), type XXVI nylon webbing lifting slings.

Position the trailer on the platform as shown in Figure 8-10.

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



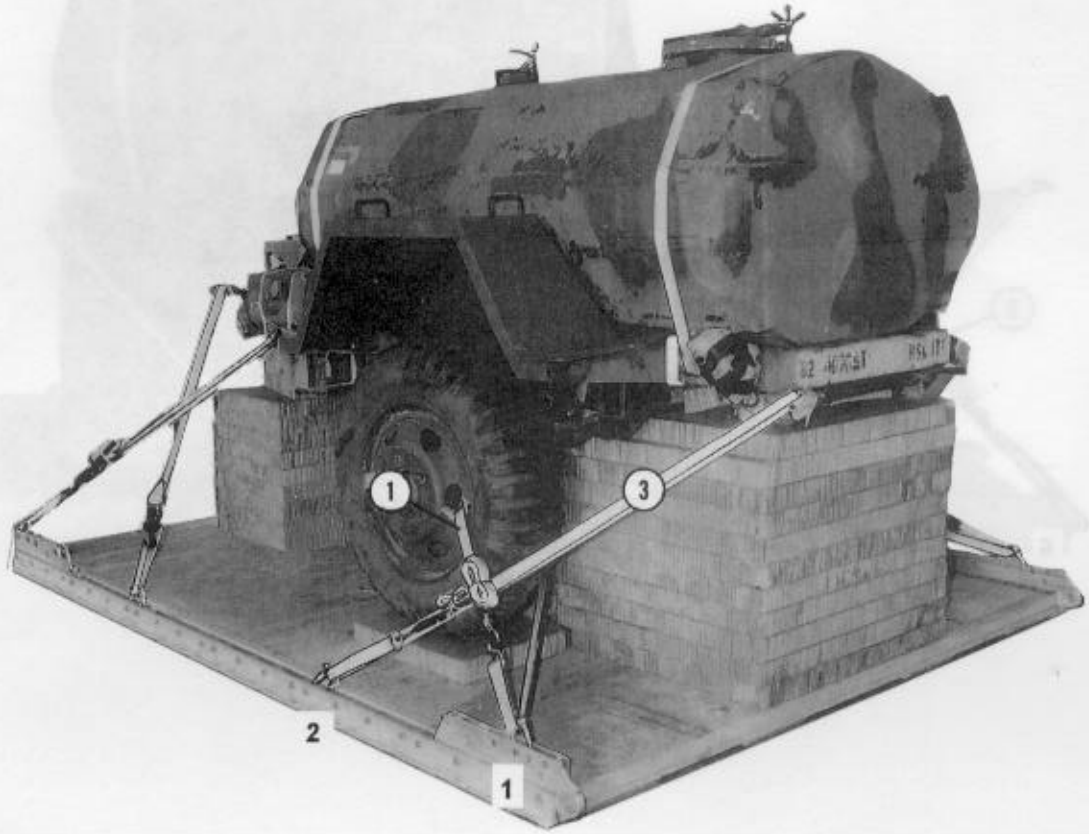
1. Pass one end of a 12-foot (2-loop), type XXVI nylon webbing sling around the drawbar frame and through its own loop. Install a second sling to the other side of the drawbar frame in the same manner (not shown).
2. Pass a 12-foot (2-loop), type XXVI nylon webbing sling around the left rear main frame, up through the left rear lifting provision, and through its own loop. Attach the second sling around the right rear main frame in the same manner. Attach the slings and lift the trailer (not shown).
3. Raise and lock the caster wheel into the traveling position.
4. Safety the caster wheel with two separate pieces of type III nylon cord or 1/2-inch tubular nylon webbing.
5. Make sure the front edge of the lunette overhangs the rear of the platform by 14 inches.
6. Position the trailer on the honeycomb with the rear of the trailer flush with the front edge of the platform.
7. Remove the lifting slings (not shown).

Figure 8-10. Lifting and positioning trailer

8-7. Installing Lashings

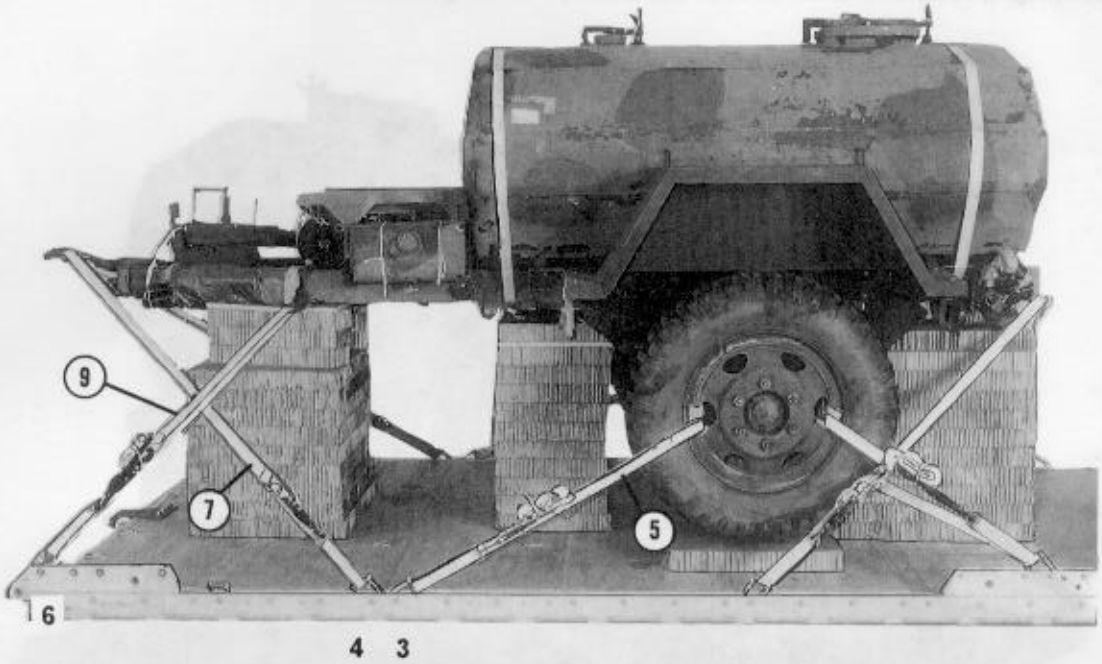
Lash the trailer to the platform with twelve 15-foot tie-down assemblies. Install the lashings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figures 8-11 and 8-12.

Note: Left, right, rear, and front refer to the trailer, not the platform.



Lashing Number	Clevis Number	Instructions
		Pass lashing:
1	1	Through left wheel.
2	1A	Through right wheel
3	2	Through left rear tie-down provision.
4	2A	Through right rear tie-down provision.

Figure 8-11. Lashings 1 through 4 installed



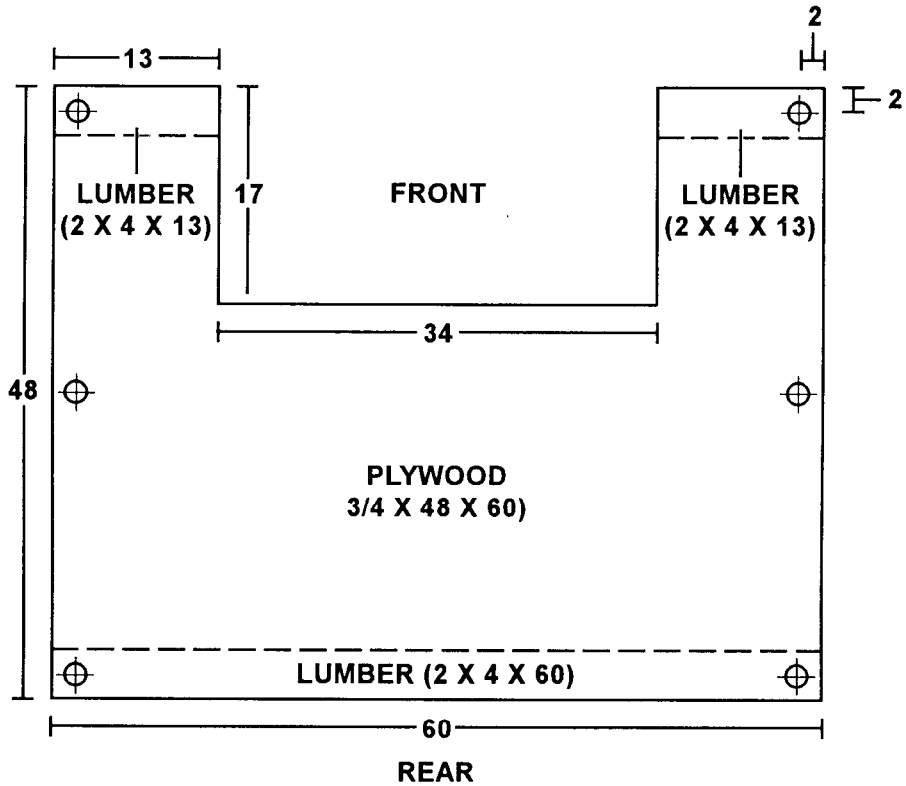
Lashing Number	Clevis Number	Instructions
		Pass lashing:
5	3	Through left wheel.
6	3A	Through right wheel.
7	4	Through lunette.
8	4A	Through lunette.
9	6	Through left front tie-down provision.
10	6A	Through right front tie-down provision.

Figure 8-12. Lashings 5 through 10 installed

8-8. Building Parachute Stowage Platform

Build the parachute stowage platform as shown in Figure 8-13. Install the parachute stowage platform as shown in Figure 8-14.

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



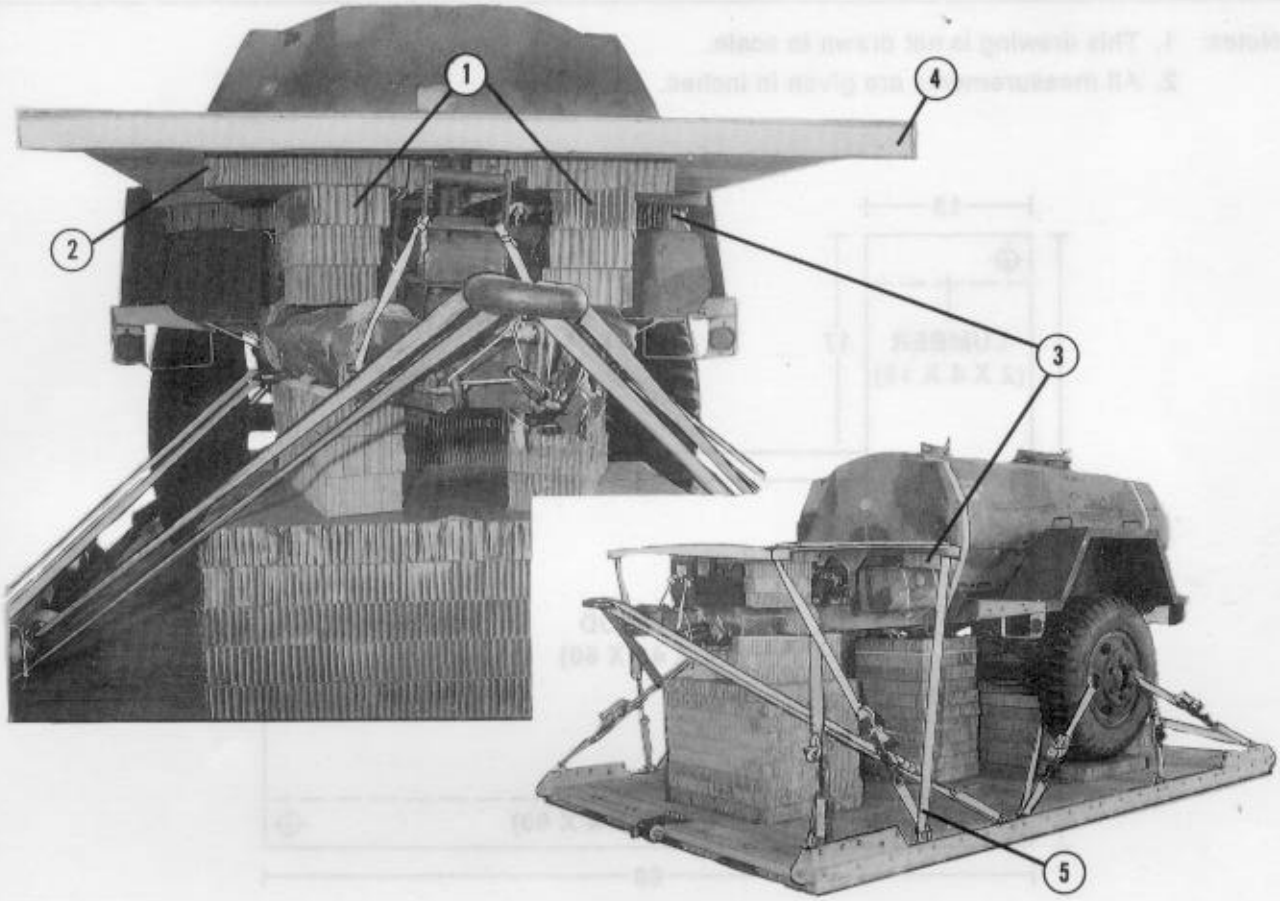
Step:

1. Cut a 3/4- by 48- by 60-inch piece of plywood.
2. Make a 17- by 34-inch cutout in the center of the front of the plywood.
3. Nail a 2- by 4- by 13-inch piece of lumber on each side of the plywood using eightpenny nails. Nail a 2- by 4- by 60-inch piece of lumber on the rear of the plywood using eightpenny nails.
4. Drill six 2-inch holes 2 inches from the edge of the plywood as shown.

Figure 8-13. Parachute stowage platform constructed

8-9. Installing Parachute Stowage Platform

Install the parachute stowage platform as shown in Figure 8-14.

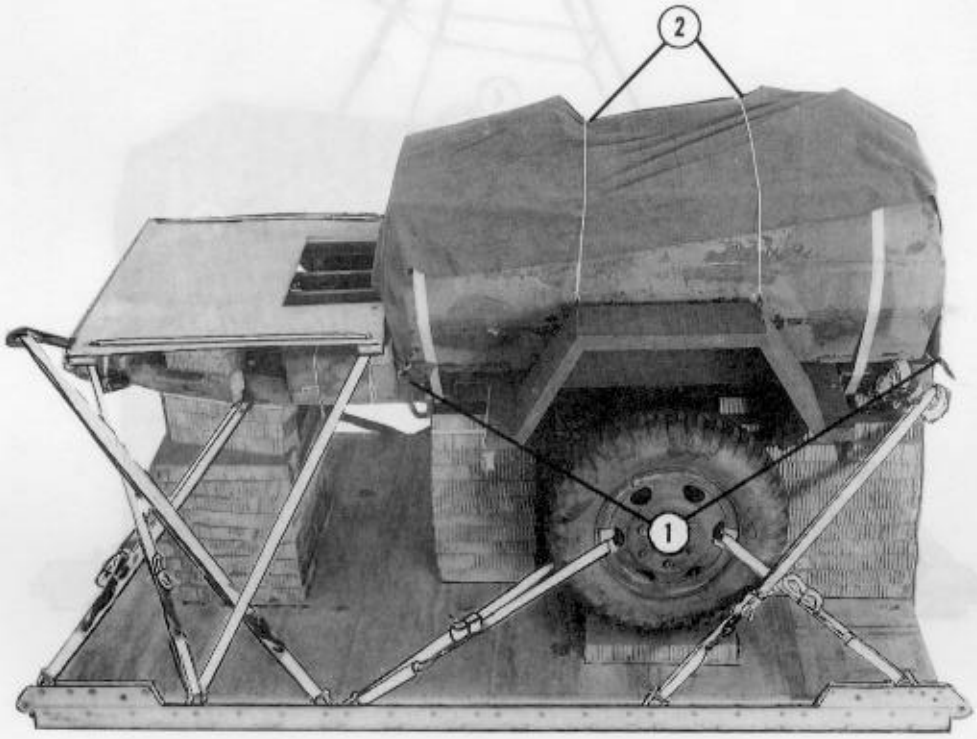


1. Glue three 6-inch by 12-inch pieces of honeycomb and position them on each drawbar.
2. Place a 36-inch by 36-inch piece of honeycomb on top of the two 6-inch by 12-inch honeycomb stacks.
3. Place a 6-inch by 12-inch piece of honeycomb on the forward edge of each piping box.
4. Position the parachute stowage platform on the honeycomb stacks.
5. Lash the stowage platform to clevises 5 and 5A, using two 15-foot lashings, two D-rings, and two load binders.

Figure 8-14. Parachute stowage platform installed

8-10. Installing Load Cover

Install the load cover as shown in Figure 8-15.



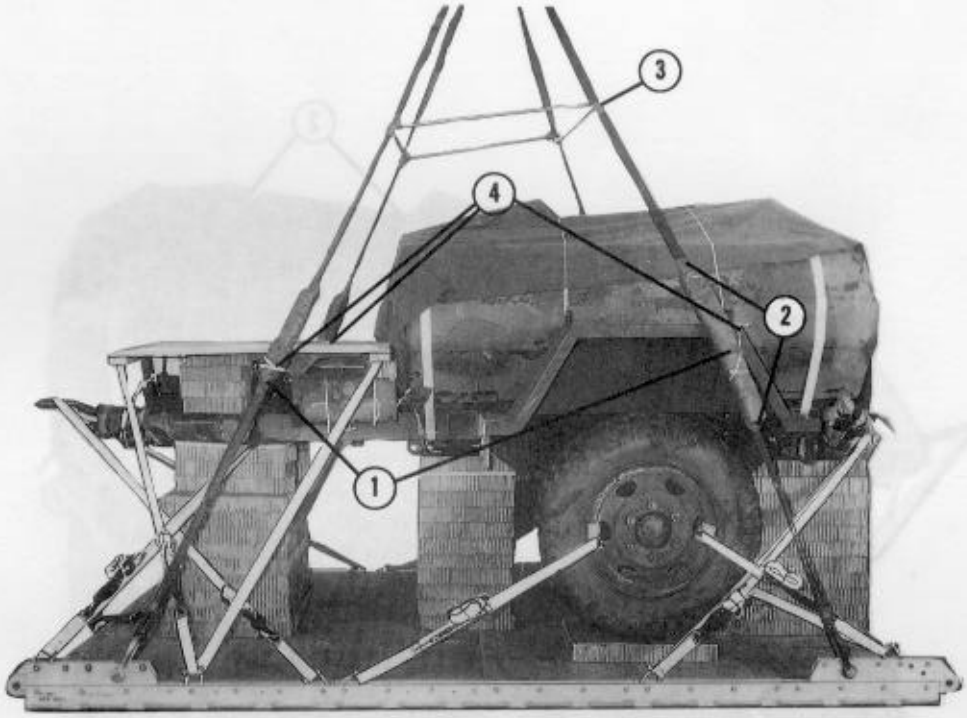
(1) Secure all four corners of the 60-inch by 144-inch cotton cover to convenient points on the load with type III nylon cord.

(2) Run two additional pieces of type III nylon cord over the top of trailer from the handles on the fenders.

Figure 8-15. Load cover installed

8-11. Installing and Safetying Suspension Slings

Install and safety four large suspension clevises and four 12-foot (2-loop), type XXVI nylon webbing slings as shown in Figure 8-16.



(1) Place a 1/2-inch by 10-inch by 30-inch piece of felt padding where each suspension sling makes contact with the load. Tie the felt padding in place using type III nylon cord.

(2) Tape the padding, and extend the tape over the suspension sling 6 inches on both ends.

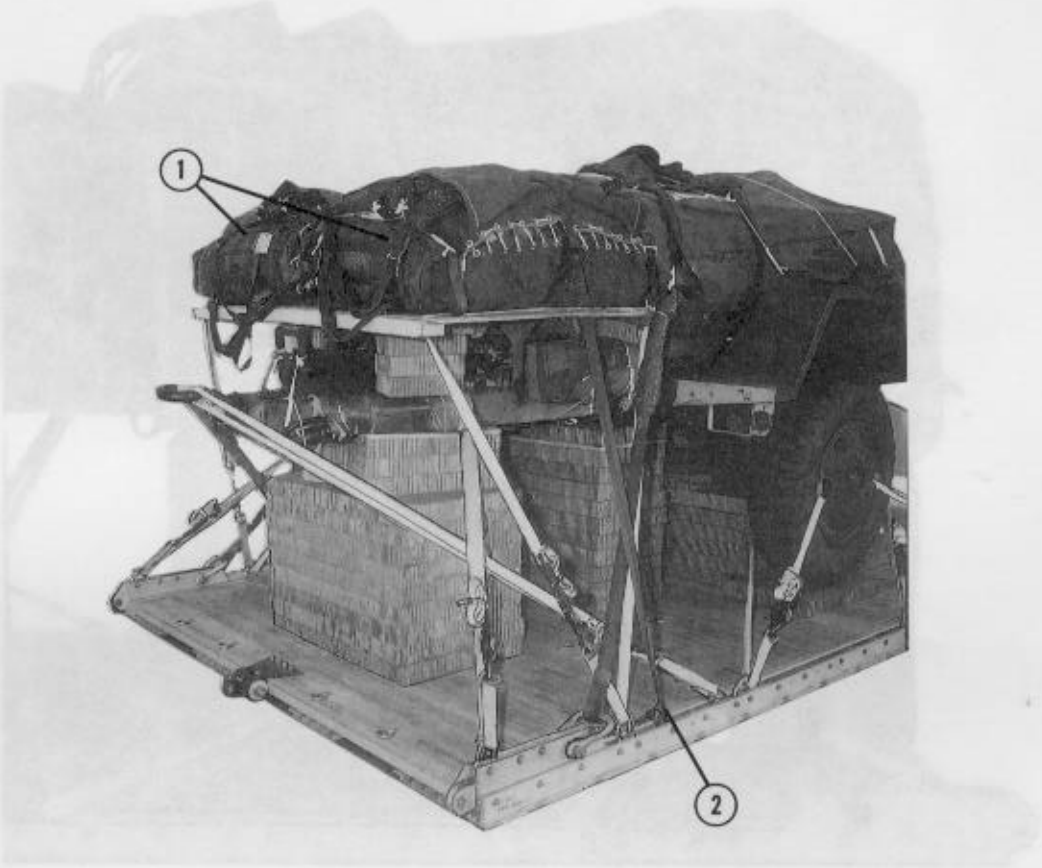
(3) Install a deadman's tie according to FM 10-500-2/TO 13C7-1-5.

(4) Safety the rear slings to the middle holes in the parachute stowage platform with type III nylon cord. Safety the front slings to the fender handles with type III nylon cord.

Figure 8-16. Suspension slings installed and safetied

8-12. Stowing Cargo Parachutes

Stow two G-11 cargo parachutes on the parachute stowage platform according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-17.



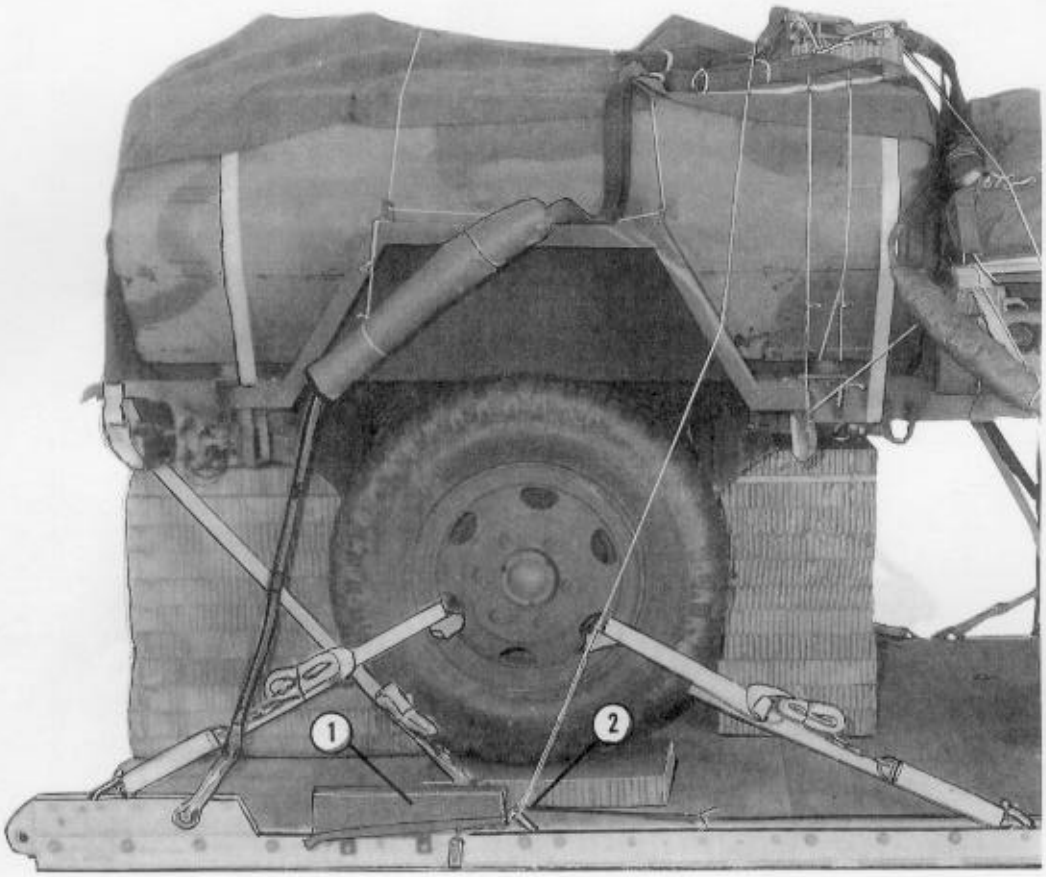
(1) Prepare and position two G-11 parachutes on the parachute stowage platform.

(2) Install a cargo parachute restraint strap according to FM 10-500-2/TO 13C7-1-5. Secure the ends to bushings 19 and 19A.

Figure 8-17. Cargo parachutes stowed

8-13. Installing Extraction System

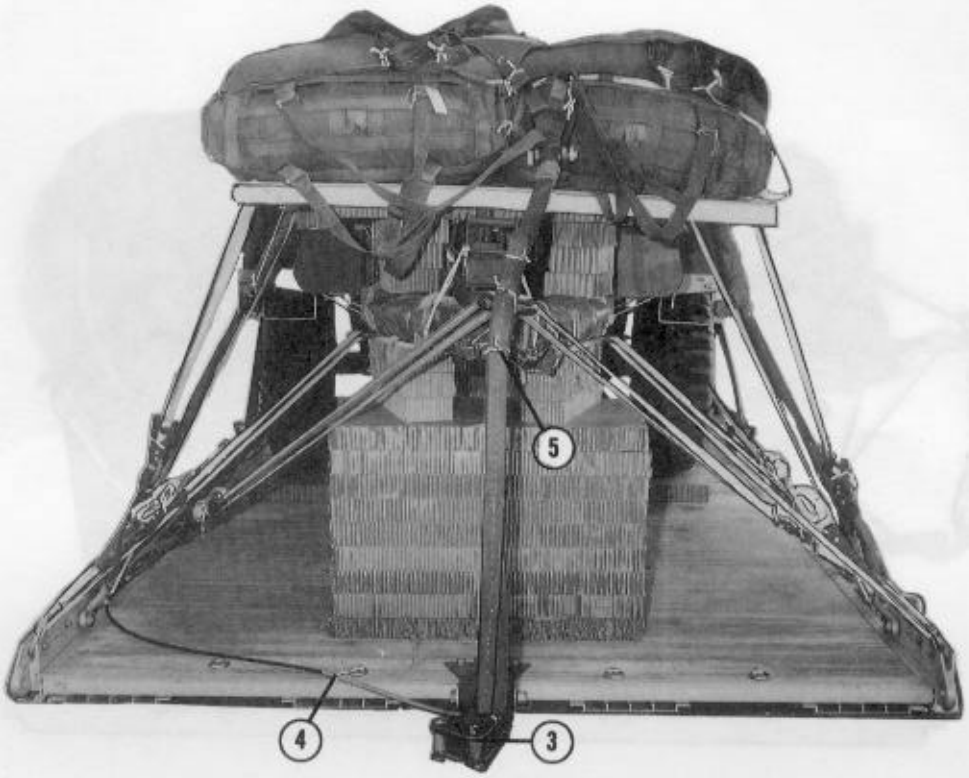
Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-18.



(1) Install the EFTA mounting brackets to the front mounting holes on the left platform rail. Install the actuator to the EFTA mounting bracket.

(2) Attach a 12-foot release cable to the actuator.

Figure 8-18. Extraction system installed



(3) Install the latch assembly to the extraction bracket.

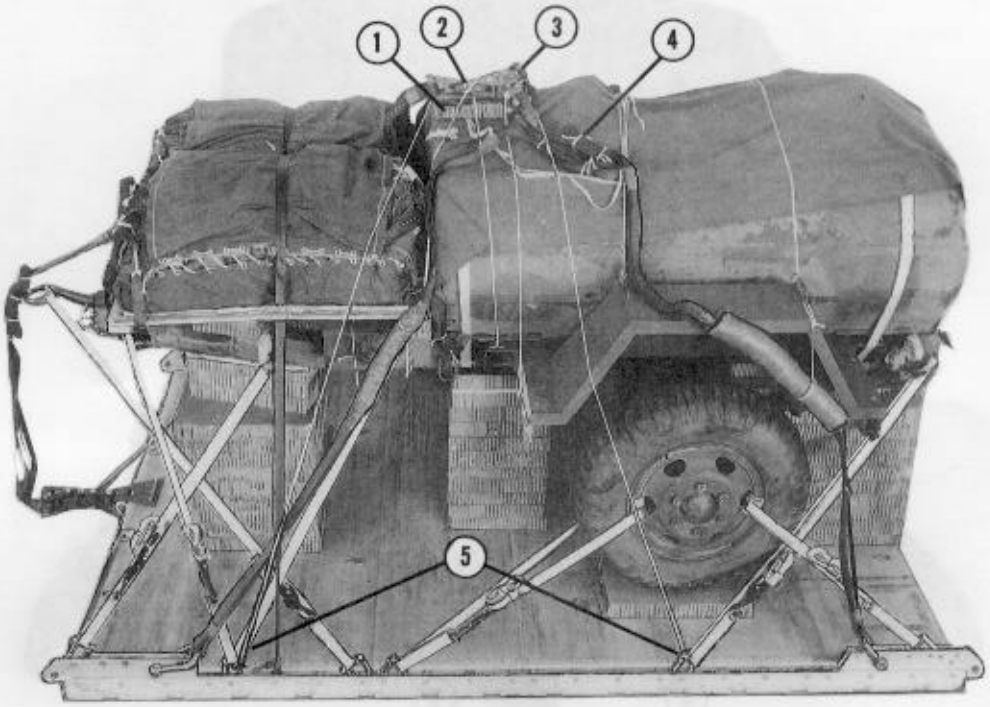
(4) Safety the release cable according to FM 10-500-2/TO 13C7-1-5.

(5) Safety the 9-foot (2-loop) deployment line to the lunette with type I, 1/4-inch cotton webbing.

Figure 8-18. Extraction system installed (continued)

8-14. Installing Parachute Release

Install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 8-19.



1. Place a 12-inch by 16-inch piece of honeycomb on the top rear edge of the trailer, and secure the honeycomb with type III nylon cord.
2. Prepare and position the M-1 cargo parachute release and center the release assembly on top of the honeycomb.
3. Attach the release to the suspension slings and the cargo parachutes according to FM 10-500-2/TO 13C7-1-5.
4. S-fold the slack in the suspension slings and tie the folds in place with type I, 1/4-inch cotton webbing.
5. Secure the release to convenient points on the load or the platform.

Figure 8-19. Parachute release installed

8-15. Installing Provisions for Emergency Restraints

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

8-16. Placing Extraction Parachute

Select the extraction parachute and extraction parachute line needed using the extraction parachute and extraction line requirements table found in FM 10-500-2/TO 13C7-1-5.

8-17. Marking the Rigged Load

Mark the rigged load according to FM 10-500-2/ TO 13C7-1-5 and as shown in Figure 8-20. If the load varies from the one shown, the weight, height, CB, tip-off curve and parachute requirements must be recomputed.

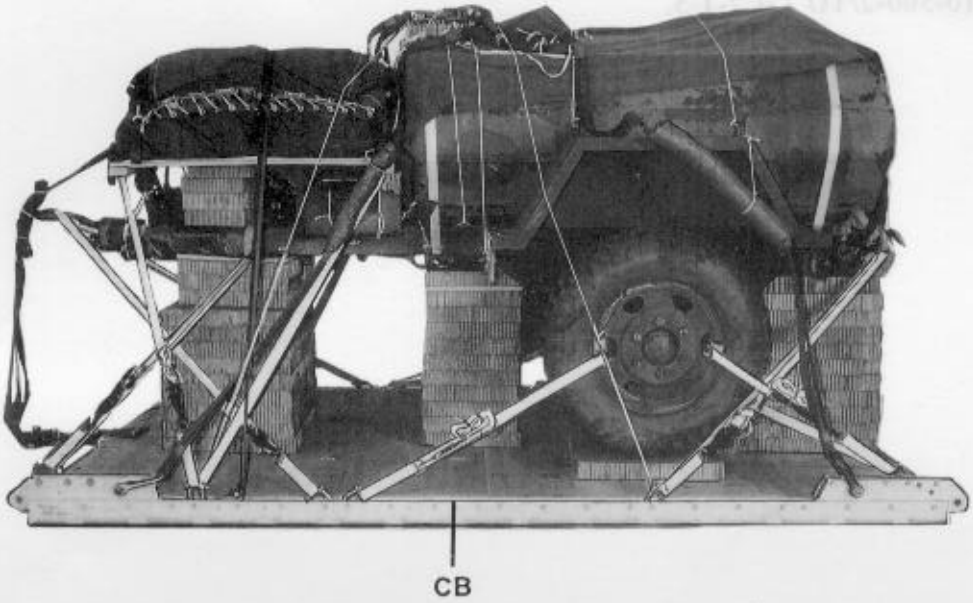
8-18. Equipment Required

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

C4, FM 10-532/TO 13C7-3-361

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	7,200 pounds
Maximum load allowed	10,000 pounds
Height	86 inches
Width	108 inches
Length	156 inches
Overhang: Front	0 inches
Rear (lunette)	14 inches
CB (from front edge of platform)	63 inches
Extraction System	EFTC

Figure 8-20. M149A1 water trailer rigged for low-velocity airdrop on a type V platform

8-22

Table 8-1. Equipment required for rigging 400-gallon capacity water trailer for low-velocity airdrop on a type V platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-01-035-6054	Bridle, extraction line bag.	1
4030-00-090-5354	Clevis assembly, suspension, large	5
4030-00-678-8562	Clevis assembly, suspension, medium (aft restraint)	
	(15-ft extraction, 1 med per side)	2
	(22-ft extraction, 2 med per side)	4
8305-00-242-3593	Cloth, cotton duck, 60-in	12 yd
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
1670-00-360-0328	Cover, clevis, large	2
5365-00-856-0266	D-ring, heavy-duty, 10,000-lb	4
8305-00-937-0147	Felt, 1/2-in thick	As required
1670-01-183-2678	Line, leaf, extraction	2
1670-00-753-3790	Line, multi-loop, deployment, type XXVI nylon webbing	
	9-ft (2-loop)	1
1670-01-062-6302	Line, multi-loop, riser extension, type XXVI nylon webbing	
	20-ft (2-loop)	2
1670-01-062-6303	Line, multi-loop, suspension, type XXVI nylon webbing	
	12-ft (2-loop)	4
1670-01-064-4452	Line, extraction, 60-ft (1-loop), type XXVI nylon webbing	
	(for C-130 w 15-ft extraction)	1
1670-01-062-6313	Line, extraction, 60-ft (3-loop), type XXVI nylon webbing	
	(for C-130 w 22-ft extraction)	1
1670-01-107-7652	Line, extraction, 160-ft (1-loop), type XXVI nylon webbing	
	(for C-141 w 15-ft extraction)	1
1670-01-107-7651	Line, extraction, 140-ft (2-loop), type XXVI nylon webbing	
	(for C-141 w 22-ft extraction)	1
1670-00-783-5988	Link type IV (for 15-ft extraction)	1
	Link, 3 3/4-inch, two point	1
5305-00-435-8994	Bolt, 1-in diam, 4-in long	2
5310-00-232-5165	Nut, 1-in, hexagon	2
1670-00-003-1953	Plate, side, 3 3/4-in	2
5365-00-007-3414	Spacer, large	2
5315-00-010-4659	Nail, steel wire, common, 8d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	32 Sheets
1670-01-016-7841	Parachute, cargo, G-11B	2
	Parachute, cargo extraction:	
1670-01-063-3715	15-ft	1
1670-01-063-3716	22-ft	1

Table 8-1. Equipment required for rigging 400-gallon capacity water trailer for low-velocity airdrop on a type V platform (continued)

National Stock Number	Item	Quantity
	Platform, AD, type V, 12-ft:	
	Bracket:	
1670-01-353-9425	Inside and outside EFTA mounting kit	1
1670-01-162-2375	Inside EFTA	1
1670-01-162-2374	Outside EFTA	1
1670-01-162-3772	Clevis assembly, type V	12
1670-01-162-2376	Extraction bracket assembly	1
1670-00-434-5783	Coupling, airdrop, extraction force transfer w 12-ft cable	1
1670-01-162-2381	Tandem link,	4
5530-00-128-4981	Plywood, 3/4-in:	
	24- by 18-in.	1
	6- by 22-in	2
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	14
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in or	
8305-00-268-2453	1/2-in	As required
8305-00-263-3591	Type VIII, 3,600-lb	As required

GLOSSARY

ACB attitude control bar

AD airdrop

AFB Air Force base

AFJAM armed forces joint manual

AFTO Air Force technical order

ALC Air Logistics Center

AMC Air Mobility Command

ARNG Army Reserve National Guard

attn attention

C change

CAP capacity

CB center of balance

d penny

DA Department of the Army

DC District of Columbia

DD Department of Defense

diam diameter

ea each

EFTA extraction force transfer actuator

EFTC extraction force transfer coupling

fig figure

FM field manual

ft foot/feet

gal gallon

HQ headquarters

IL Illinois

in inch

K thousand

LAPE low-altitude parachute extraction

LAPES low-altitude parachute extraction system

lb pound

MAC Military Airlift Command

med medium

mm millimeter

no number

NSN national stock number

PEFTC extraction force transfer coupling (platform)

Qty quantity

rqr requirement

sec second

SL/CS static line/connector strap

sq square

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

REFERENCES

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

*AFJMAN 24-204/TM 38-250. *Packaging and Materials Handling: Preparing of Hazardous Materials for Military Air Shipments.* November 1994.

FM 10-500-2/TO 13C7-1-5. *Airdrop of Supplies and Equipment: Rigging Airdrop Platforms.* 1 November 1990.

FM 10-553/TO 13C7-18-41. *Airdrop of Supplies and Equipment: Rigging Ammunition.* Interim October 1991.

TM 9-2330-202-14&P. *Operator's, Organizational, Direct Support and General Support Maintenance Manual Including Repair Parts and Special Tools List for Trailer, Cargo.* 10 August 1983.

TM 10-1670-208-20&P/TO 13C3-4-12. *Organizational Maintenance Manual Including Repair Parts and Special Tools List for Platforms, Type II Modular and LAPES/Airdrop Modular.* 10 August 1978.

TM 10-1670-268-20&P/TO 13C7-52-22. *Organizational Maintenance Manual with Repair Parts and Special Tools List: Type V Airdrop Platform.* 1 June 1986.

TM 10-1670-277-23&P/TO 13C5-28-2/NAVAIR 13-1-30. *Unit and Intermediate DS Maintenance Manual Including Repair Parts and Special Tools List for Parachute, 28-Foot Diameter, Extraction.* 9 October 1990.

TM 10-1670-278-23&P/TO 13C5-26-2/NAVAIR 13-1-27/TM 01109C-23&P/1. *Unit and Intermediate DS Maintenance Manual Including Repair Parts and Special Tools List for Parachute, Cargo Type, 15-Foot Diameter, Cargo Extraction.* 6 November 1989.

TM 10-1670-279-23&P/TO 13C5-27-2/NAVAIR 13-1-28. *Unit and Intermediate DS Maintenance Manual Including Repair Parts and Special Tools List for Parachute, Cargo Type, 22-Foot Diameter, Cargo Extraction.* 30 August 1989.

TM 10-1670-280-23&P/TO 13C5-31-2/NAVAIR 13-1-31. *Unit and Intermediate DS Maintenance Manual Including Repair Parts and Special Tools List for Parachute, Cargo Type, G-11A, G-11B, and G-11C.* 5 August 1991.

TM 10-1670-286-20&P/TO 13C5-2-41. *Unit Maintenance Manual for Sling/Extraction Line Panel (Including Stowing Procedures).* 1 April 1986.

AFTO Form 22. *Technical Order Publication Improvement Report.* April 1973.

---

*AFJMAN 24-204 has superseded AFR 71-4/TM 38-250 (15 January 1988). Change 4 pages reflect this change. The basic manual and changes 1, 2, and 3 still reference the superseded publication. You may wish to make pen and ink changes to update the old reference citations accordingly.

DA Form 2028. *Recommended Changes to Publications and Blank Forms.* February 1974.

**DD Form 1387-2. *Shipper's Declaration for Dangerous Goods.*

**Shipper's Declaration for Dangerous Goods has superseded DD Form 1387-2 (February 1982). Change 4 pages reflect this change. The basic manual and changes 1, 2, and 3 still reference the superseded publication. You may wish to make pen and ink changes to update the old reference citations accordingly.

*U.S. Government Printing Office: 1996 - 728-027/40115

PIN : 02156-004

PIN: 021560-004