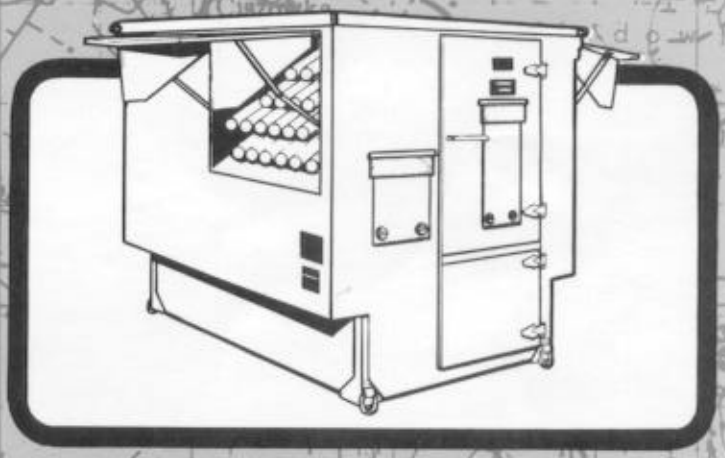
ARMY FM 10-524
AIR FORCE TO 13C7-14-471

# AIRDROP OF SUPPLIES AND EQUIPMENT

# RIGGING COMMUNICATIONS SHELTERS AND POWER UNIT



DEPARTMENTS OF THE ARMY AND THE AIR FORCE

**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)

| 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:

JOE N. BALLARD
Major General, GS
Chief of Staff

Encl

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)

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

From: HIGGINSN--MON1
To: HIGGINSN--MON1

From: CPT NEIL HIGGINS, (AAACO), 680-2467
Subject: TRADOC "DISASSEMBLY" OF LAPES

**********
* AIRBORNE AIRLIFT ACTION OFFICE *
* (AAACO) *
**********

** Forwarding note from BRUNEAUN--CMSNAMES 07/18/95 10:27 ***
Received: from LEE-EMH2.ARMY.MIL by MONROE-EMH1.ARMY.MIL (IBM VM SMTP V2R2)
with TCP; Tue, 18 Jul 95 10:27:22 EDT
Received: from LEE1 by LEE-EMH2.ARMY.MIL (IBM VM SMTP V2R2) with BSMTP id 3547;
Tue, 18 Jul 95 10:29:34 EDT
Comments: Converted from PROFS to RFC822 format by PUMP V2.2X
Date: Tue, 18 Jul 95 10:29:26 EDT
From: NORMAN BRUNEAU <BRUNEAUN@LEE-EMH2.ARMY.MIL>
Subject: TRADOC "DISASSEMBLY" OF LAPES
To: "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>
From: NORMAN BRUNEAU
Subject: TRADOC "DISASSEMBLY" OF LAPES

NEIL- 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 DE-
CIDED THEY DIDNT NEED LAPES. QUESTIONS FOLLOW:

DOES THE GMCS CONTINUE TO PUBLISH LAPES PROCEDURES IN THEIRJOINT FM/TO MAN-
UALS?
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?
DO WE TEACH LAPES EQUIPMENT IN THEIR WAR RESERVES?
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 RE-
SERVE 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 CAN-
NOT 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 GUID-
ANCE. THAT PLACES US IN THE POSSIBLE POSITION OF BEING ACCUSED OF NOT FOLLOW-
ING ORDERS.

LETS TALK.....NORM

SEP 11 '95 08:30AM CSSRD FT MONROE VA P.4/7

Encl 1

**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 2

HEADQUARTERS
DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 31 October 1990

AIRDROP OF SUPPLIES AND EQUIPMENT

# RIGGING COMMUNICATIONS SHELTERS AND POWER UNIT

This change adds the procedures for rigging the S-318/G shelter with AN/GRC-122 or AN/GRC-142 communications equipment for low-velocity airdrop on a type V platform. It also provides procedures for rigging the S-502 or S-250/G shelters with AN/GRC-142 communications equipment for low-velocity and LAPE airdrop on a type V platform. The instructions for rigging the PU-619M trailer-mounted power unit for low-velocity airdrop on a type V platform are given in this change. Also, the instructions for rigging the PU-620M trailer-mounted power unit for low-velocity and LAPE airdrop on a type V platform are provided. Also, with this change, the distribution restriction statement is changed to read as follows: "DISTRIBUTION RESTRICTION. Approved for public release; distribution is unlimited." Please mark this change, as appropriate, on the cover and title (table of contents) page of the basic manual. With use of this statement, a destruction notice is not required. Please delete it where it appears.

FM 10-524/TO 13C7-14-471, 11 February 1981, 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 pages | Insert pages |
|---|---|
| i through vii | i through vi |
| 1-1 | 1-1 through 1-2 |
| 2-1 and 2-2 | 2-1 and 2-2 |
| 6-1 and 6-2 | 6-1 and 6-2 |
| 6-17 and 6-18 | 6-17 and 6-18 |
| 7-1 and 7-2 | 7-1 and 7-2 |
| 7-9 and 7-10 | 7-9 and 7-10 |
| 8-1 and 8-2 | 8-1 and 8-2 |
| 8-11 | 8-11 |
| | 9-1 through 9-27 |
| | 10-1 through 10-33 |
| | 11-1 through 11-66 |
| | Glossary-1 |
| A-1 | References-1 |

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

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

**CARL E. VUONO**
General, United States Army
Chief of Staff

Official:

**THOMAS F. SIKORA**
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:

Active Army, USAR, and ARNG: To be distributed in accordance with DA Form 12-11-E, requirements for FM 10-524 , Airdrop of Supplies and Equipment: Rigging Communications Shelters and Power Unit (Qty rqr block no. 0907).

Change
No 1

DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 27 February 1985

AIRDROP OF SUPPLIES AND EQUIPMENT

# RIGGING COMMUNICATIONS SHELTERS AND POWER UNIT

This change adds the procedures for rigging the S-318/G shelter with AN/GRC-142 equipment for low-velocity airdrop. It also provides procedures for rigging the S-250 and S-502 shelters with AN/GRC-142 equipment for low-velocity and LAPE airdrop.

FM 10-524/TO 13C7-14-471, 11 February 1981, is changed as follows:

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

| Remove pages | Insert pages |
|---|---|
| i through v | i through vii |
| 1-1 | 1-1 |
| 2-1 and 2-2 | 2-1 and 2-2 |
| | 2-23 through 2-30 |
| 5-11 and 5-12 | 5-11 and 5-12 |
| | 7-1 through 7-10 |
| | 8-1 through 8-11 |

2. New or changed materials are 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.

FIELD MANUAL
NO 10-524
TECHNICAL ORDER
NO 13C7-14-471

HEADQUARTERS
DEPARTMENTS OF THE ARMY AND
THE AIR FORCE
Washington, DC, 11 February 1981

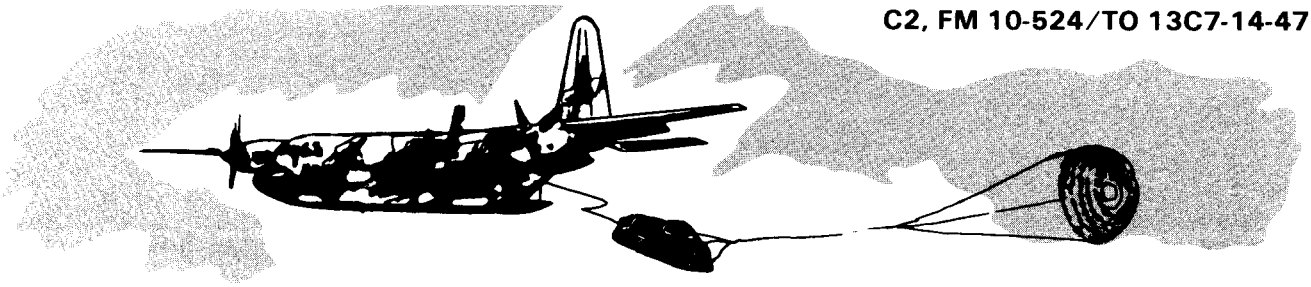
# AIRDROP OF SUPPLIES AND EQUIPMENT RIGGING COMMUNICATIONS SHELTERS AND POWER UNIT

## Table of Contents





* This manual supersedes TM 10-500-24/TO 13C7-14-471, 29 January 1971.



# CHAPTER 1

# INTRODUCTION

## 1-1. Scope

*a.* This manual tells and shows how to rig the following items for low-velocity airdrop from a C-130 or C-141 aircraft:

(1) The S-318/G shelter with AN/GRC-122 or AN/GRC-142 communications equipment on the type II and type V platforms.

(2) The S-89/G shelter with AN/MRC-68 communications equipment on the type II platform.

(3) The S-144/G shelter with AN/GRC-46A communications equipment or S-144A/G shelter with AN/GRC-46B communications equipment and an accompanying load on the type II platform.

(4) The S-171B-MRC shelter with SB-611 communications equipment and an accompanying load on the type II platform.

(5) The PU-620M trailer-mounted power unit on the type II and type V platforms.

(6) The S-250 shelter with AN/GRC-142 communications equipment on the type II platform.

(7) The S-502 shelter with AN/GRC-142 communications equipment on the type II and type V platforms.

(8) The S-250/G shelter with AN/GRC-142 communications equipment on the type V platform.

(9) The PU-619M trailer-mounted power unit on the type V platform.

*b.* This manual also tells and shows how to rig the following items for LAPE airdrop from a C-130 aircraft:

(1) The S171B-MRC shelter with SB-611 communications equipment and an accompanying load on the LAPES platform.

(2) The PU-620M trailer-mounted power unit on the LAPES and type V platforms.

(3) The S-250 shelter with AN/GRC-142 communications equipment and an accompanying load on the LAPES platform.

(4) The S-502 shelter with AN/GRC-142 communications equipment and an accompanying load on the LAPES and type V platforms.

(5) The S-250/G shelter with AN/GRC-142 communications equipment and an accompanying load on the type V platform.

**NOTE:** These LAPE loads must be dropped in tandem.

## 1-2. Special Considerations

Special considerations for this manual are described below.

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

*b.* The loads covered in this manual may include hazardous materials, explosives, and gasoline. When included, these items must be packaged, marked, and labeled according to AFR 71-4/TM 38-250.

*c.* A copy of this manual must be made available to the joint airdrop 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 making this a better manual. Army personnel, send your comments on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to:

**Commander**
**US Army Quartermaster Center and School**
**ATTN: ATSM-DTP**
**Fort Lee, Virginia 23801-5036**

Air Force personnel, send your reports on AFTO Form 22 (Technical Order Publication Improvement Report) through:

**Headquarters**
**Military Airlift Command**
**(MAC/DOXT)**
**Scott AFB, Illinois 62225-5001**

to:

**Commander**
**US Army Quartermaster Center and School**
**ATTN: ATSM-DTP**
**Fort Lee, Virginia 23801-5036**

Also send information copies of AFTO Form 22 to:

**San Antonio ALC/MMILRA**
**Kelly AFB, Texas 78241-5000**

# CHAPTER 9

# RIGGING THE S-318/G SHELTER WITH AN/GRC-122 OR AN/GRC-142 COMMUNICATIONS EQUIPMENT INSTALLED FOR LOW-VELOCITY AIRDROP ON THE TYPE V PLATFORM

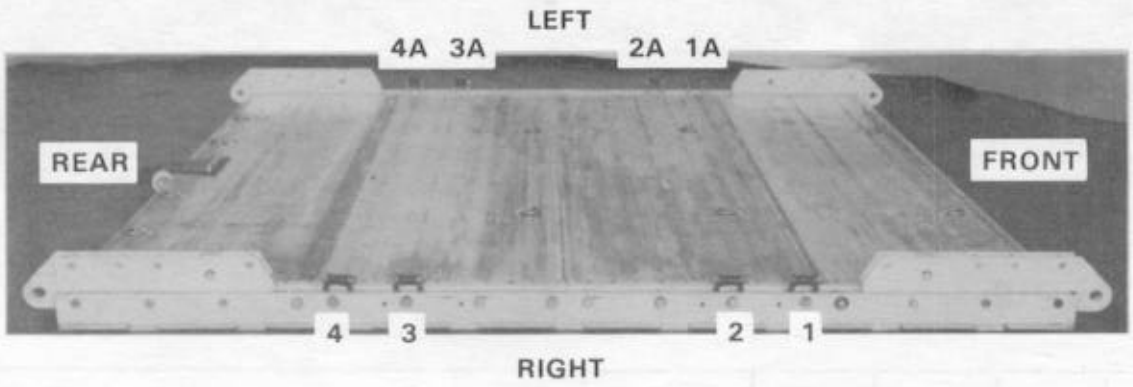
## 9-1. Description of Load

The S-318/G shelter (line number not available) is rigged on an 8-foot, type V airdrop platform for low-velocity airdrop. The load requires one G-11A or G-11B cargo parachute. The unrigged shelter with AN/GRC-122 communications equipment installed weighs 2,150 pounds. The shelter weighs 2,010 pounds with AN/GRC-142 communications equipment installed. It is 89 inches long, 76 inches high, and 72 inches wide. The length can vary, depending upon the air conditioner and vents installed.

## 9-2. Preparing Platform

Prepare an 8-foot, type V airdrop platform using four tandem links and eight clevis assemblies as shown in Figure 9-1.

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



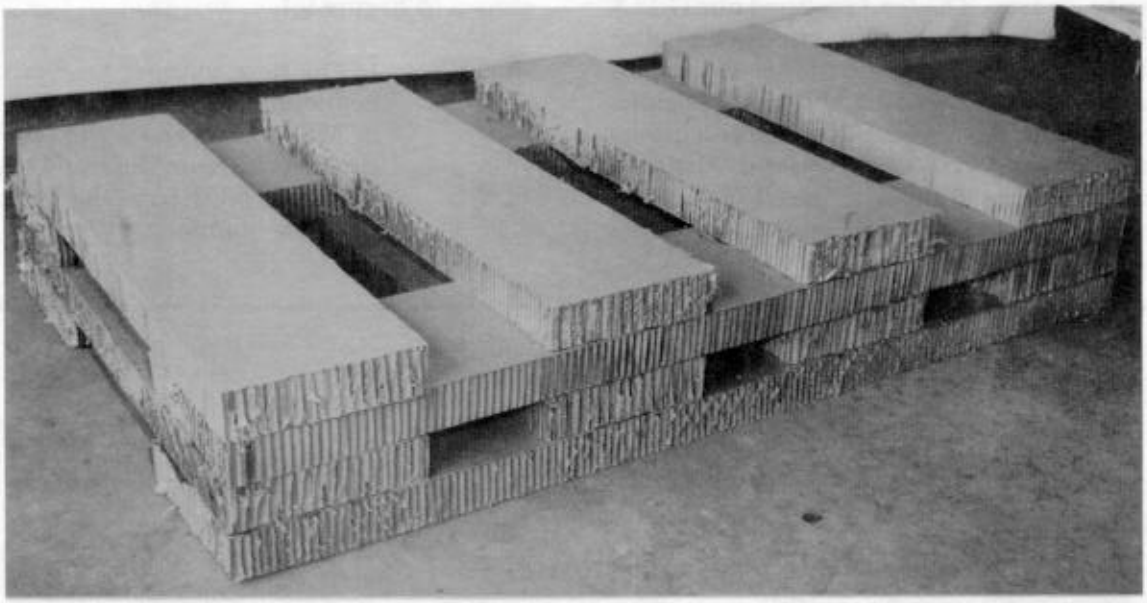

Step:

1. Inspect, or assemble and inspect, the platform as outlined in 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 and on the rear of each platform side rail using holes 14, 15, and 16.
3. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 5, 6, 11, and 12.
4. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 4 and those bolted to the left side from 1A through 4A.

**Figure 9-1. Platform prepared**

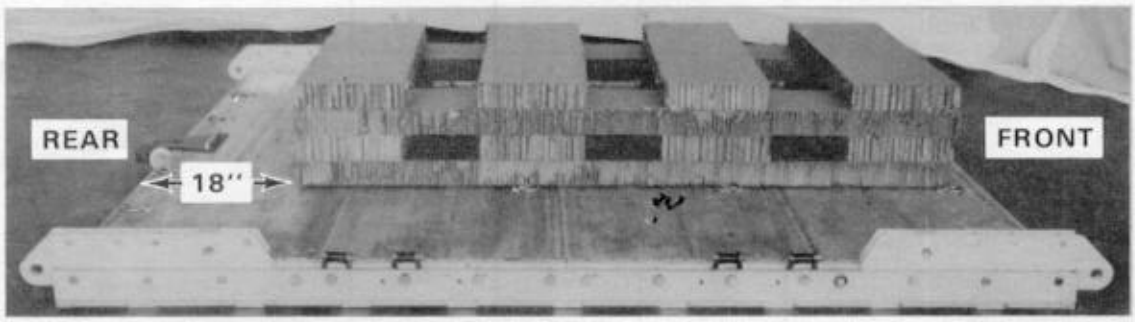
### 9-3. Preparing and Positioning Honeycomb Stack

Prepare the honeycomb stack as shown in Figure 9-2. Position the stack on the platform as shown in Figure 9-3.



| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 1 | 2 | 12 | 72 | Honeycomb | Lay honeycomb parallel and 20 inches apart. |
| | 4 | 44 | 12 | Honeycomb | Glue a piece of honeycomb perpendicular to the base pieces even with each end. Glue two pieces of honeycomb perpendicular to the base and evenly spaced between the two end pieces. |
| | 2 | 12 | 72 | Honeycomb | Glue honeycomb flush over the long edges of the stack. |
| | 4 | 44 | 12 | Honeycomb | Glue honeycomb to the top of the stack, flush with the 44- by 12-inch pieces placed previously. |

Figure 9-2. Honeycomb stack prepared



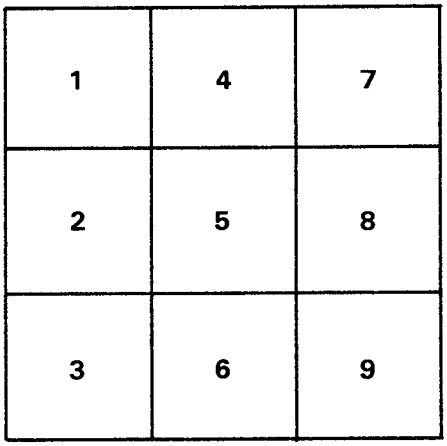

(1) Center the stack on the platform 18 inches from the rear edge of the platform.

**Figure 9-3. Honeycomb stack positioned on platform**

## 9-4. Preparing Shelter

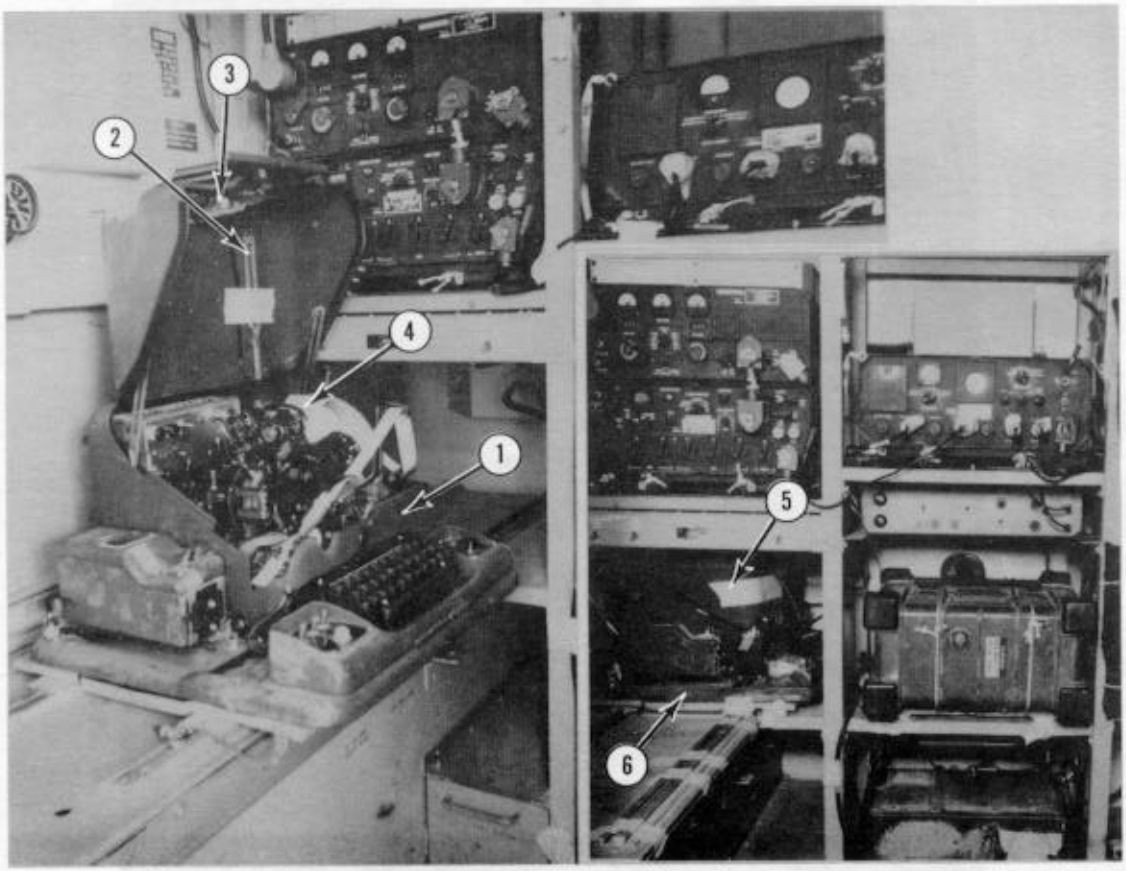
Prepare the shelter as shown in Figures 9-4 through 9-11. Use Figure 9-4 as a guide for locating specific items of communications equipment.

**Note: AN/GRC-122 equipment is shown. AN/GRC-142 communications equipment arrangement is similar.**



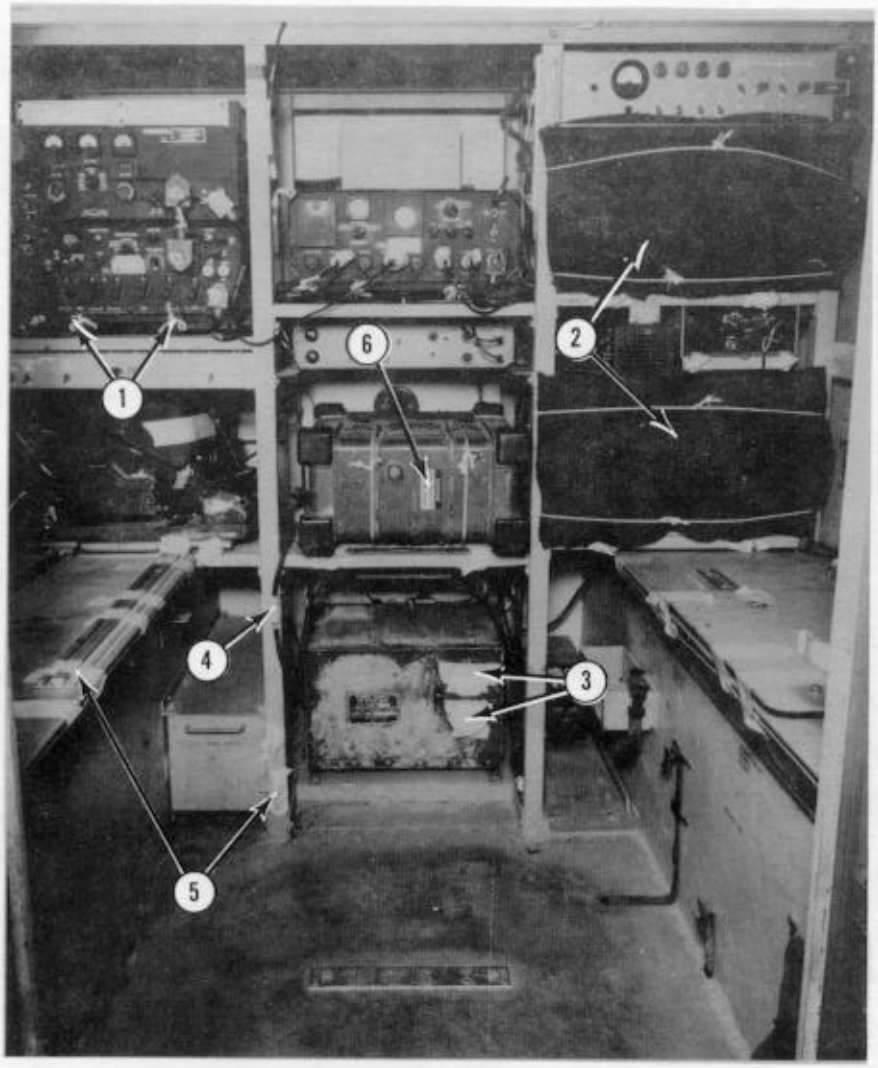

1 AN/GRC 106 and RT-662/GRC
2 TT-76 Teletypewriter
3 Storage Drawer
4 RT-662/GRC and MD 522A/GRC
5 TT-98 Teletypewriter
6 Power Supply
7 KW-7 Crypto Device
8 KW-7 Crypto Device
9 Stowage Space

**Figure 9-4. Typical layout of communications equipment in shelter**




1. Move the TT-76 teletypewriter out on its slide, and open the cover.
2. Tape the tuning fork in its rack in the cover.
3. Tape the light bulb in the cover.
4. Secure the spool in place with tape.
5. Close and latch the cover. Tape the latch.
6. Slide the teletypewriter back into its storage area, and secure its locking pins.

**Figure 9-5. Teletypewriter prepared**




(1) Secure the radio receiving and transmitting equipment (AN/GRC-106, RT-662/GRC, MD-522A/GRC) release handles to the mounting frame bases with type III nylon cord.

(2) Tie felt to the front of the KW-7 crypto devices with type III nylon cord.

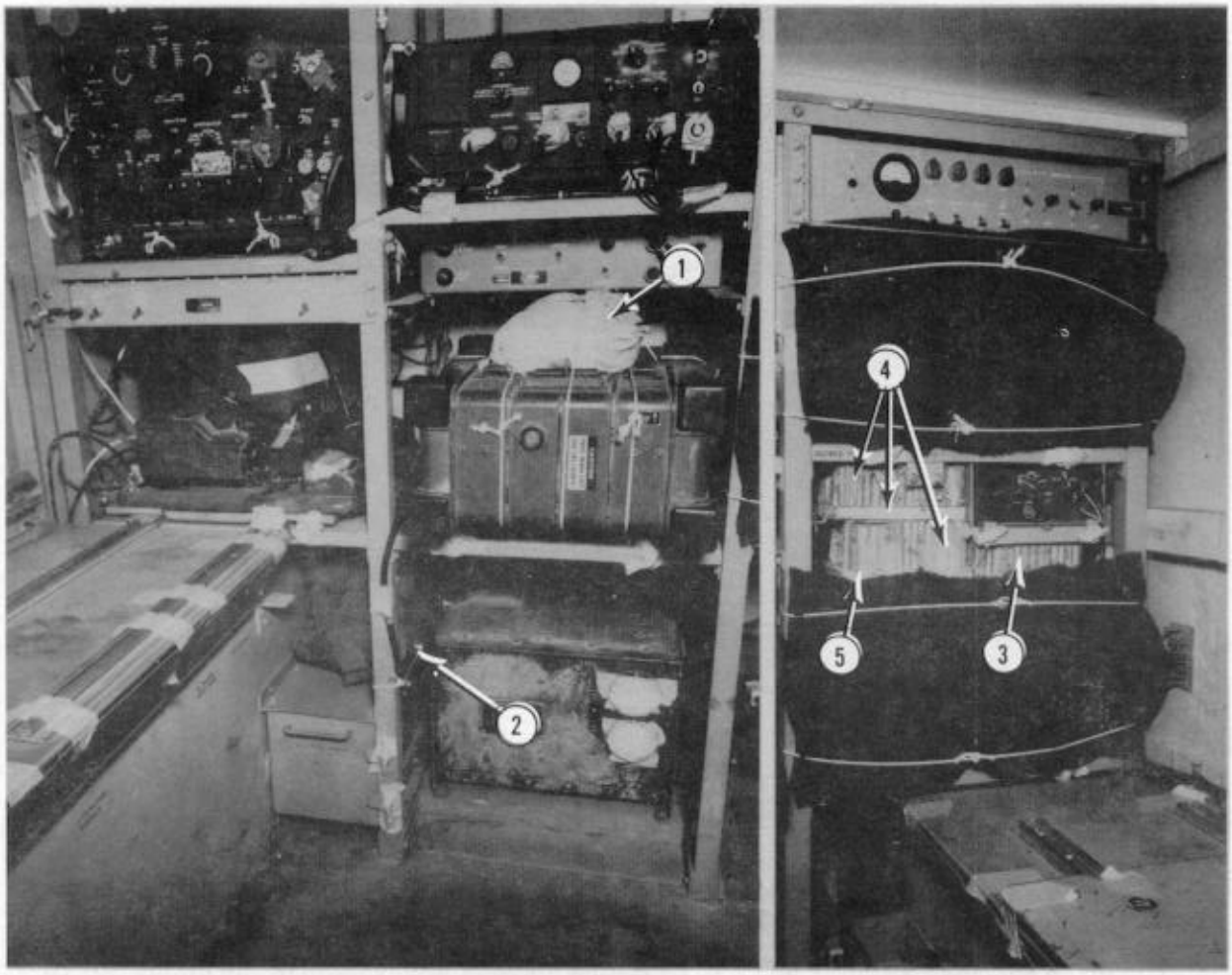
(3) Tape the gages on the power supply. Tape the clock face.

(4) Tape loose cables to convenient points on the racks.

(5) Close, lock, and tape storage compartments.

(6) Have the operator install the cover on the AN/UGC-74(V)3. Tie the cover in place with type III nylon cord. Prepare the AN/UGC-74(V)3, if present, on the right shelf in the same way.

Figure 9-6. Radio equipment, gages, clock, cables, and storage compartments secured




(1) Wrap the speaker with cellulose wadding taped in place. Tie it to the AN/UGC-74(V)3 with type III nylon cord.

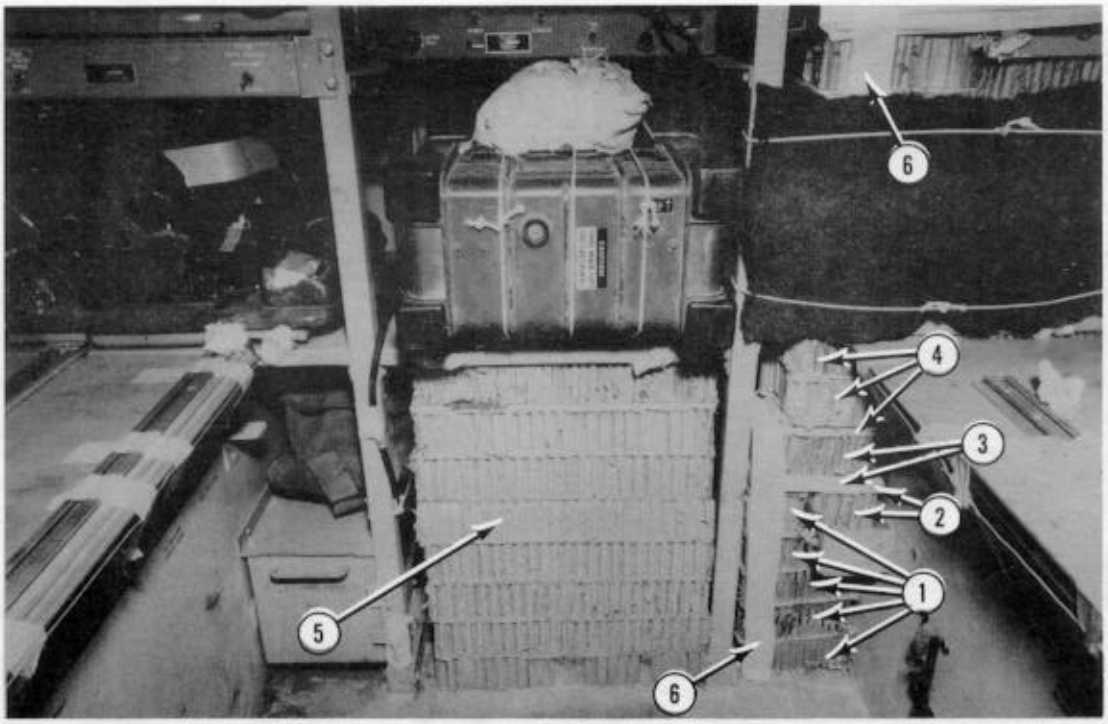
(2) Place the GRA-50 bag in the left storage space. Secure it to the frame legs with type III nylon cord.

(3) Place a 6- by 8-inch piece of honeycomb under the local control C434/GRC.

(4) Glue a 3/4- by 6- by 8-inch piece of plywood between two 6- by 8-inch pieces of honeycomb. Place the stack under the KW-7 crypto device, to the left of the local control.

(5) Slide a 3/4- by 6- by 6-inch piece of plywood under the honeycomb and plywood placed in step 4 above.

**Figure 9-7. GRA-50 bag and speaker stowed and control unit padded**




(1) Fill the area under and to the left of the phone box with three 6- by 8-inch pieces of honeycomb and two 4- by 6-inch pieces of honeycomb.

(2) Place cellulose wadding and a 4- by 6-inch piece of honeycomb in the phone box to level the fifth honeycomb layer. Lay a 3/4- by 6-by 8-inch piece of plywood flush on the honeycomb.

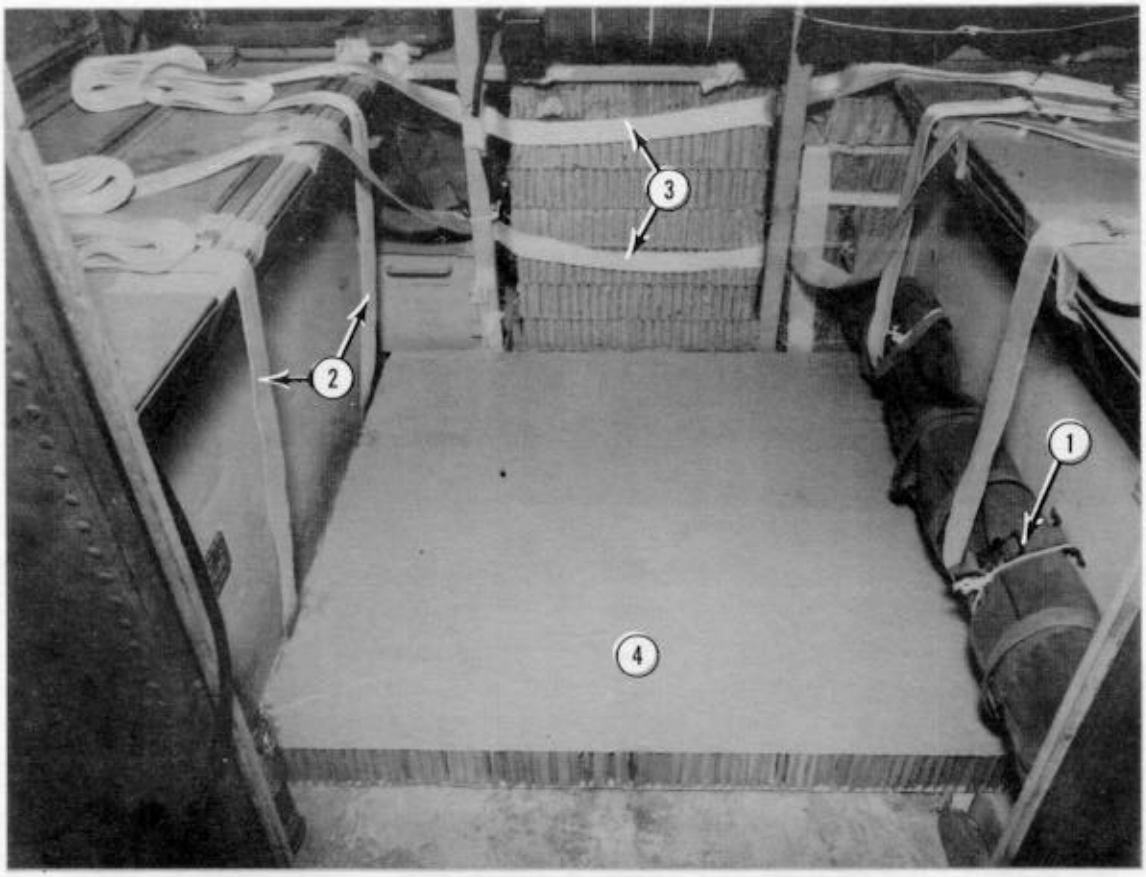
(3) Lay a 6- by 8-inch piece of honeycomb over the plywood placed in step 2 above. Force a 1/4- by 6- by 8-inch piece of plywood over the plywood placed in step 2 above for a snug fit.

(4) Glue two pieces of 6- by 18-inch honeycomb to a 1/4- by 6-by 18-inch piece of plywood. Place it under the KW-7 shelf with the 6-inch edge to the outside and the plywood facing down. Place a second piece of 1/4- by 6-by 18-inch plywood under these pieces.

(5) Support a 6- by 18-inch piece of honeycomb and a 1/4- by 6-by 18-inch piece of plywood under the center shelf. Fit seven 6- by 18-inch pieces of honeycomb over the front of the power supply between the floor and the plywood.

(6) Tape the edges of the honeycomb placed in Figure 9-7 and the honeycomb under the KW-7.

Figure 9-8. Honeycomb and plywood supports placed under shelves



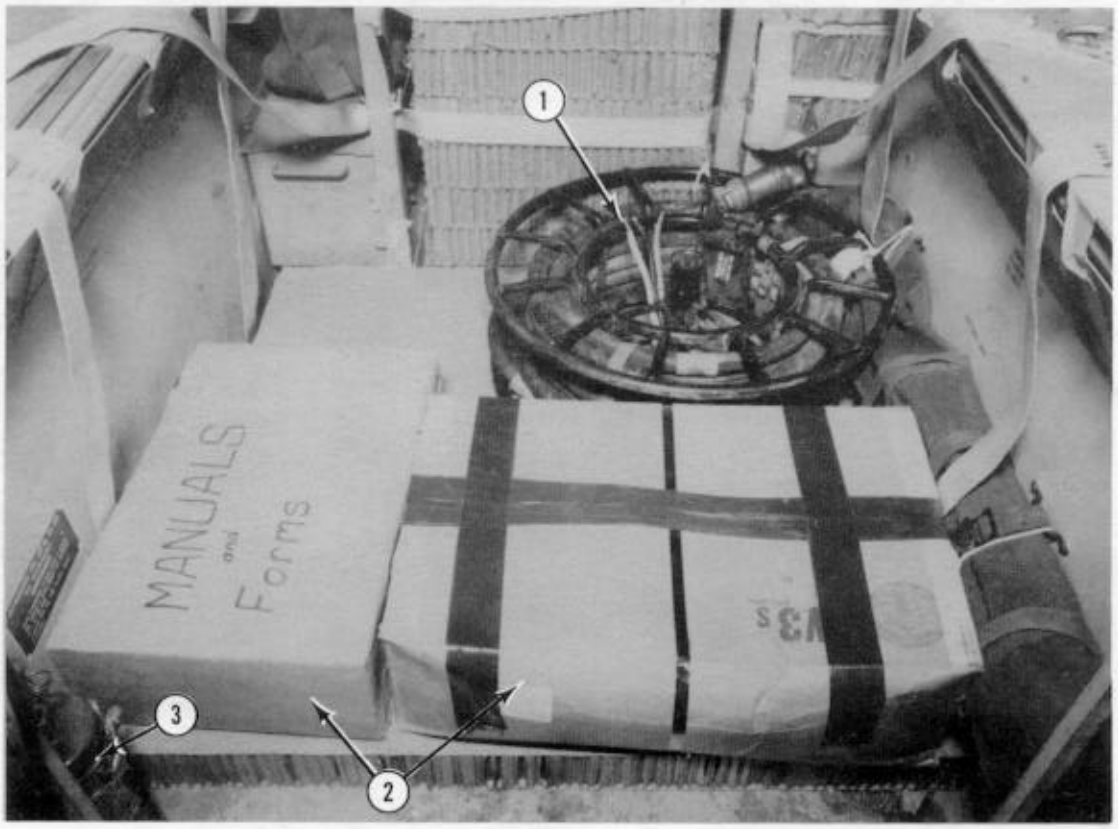

(1) Stow the sledgehammer in its rack near the floor on the right (not shown). Secure the antenna bag with the straps provided and with type III nylon cord.

(2) Lay two 15-foot lashings across the floor from side to side.

(3) Pass two 15-foot lashings behind the shelf supports and in front of the honeycomb stack.

(4) Place a 36- by 38-inch piece of honeycomb on the floor and on top of the lashings.

**Figure 9-9. Floor of shelter prepared**




(1) Place the power cable reel in the right front corner. Secure it to convenient points with type III nylon cord.

(2) Place the boxes of manuals and spare parts along the rear edge of the honeycomb.

(3) Tie the fire extinguisher in its bracket with type III nylon cord.

Figure 9-10. Shelter equipment placed on floor


(4) Place a camouflage net bag over the box on the left side.

(5) Place the ladder over the cable reel and the box on the right side. Secure it to convenient points with type III nylon cord.

(6) Route the lower lashing placed in step 3 of Figure 9-9 under the top and bottom rungs and over the middle rungs of the ladder.

(7) Stand the camouflage net pole bag upright in the left corner. Secure it to the equipment rack with type III nylon cord.

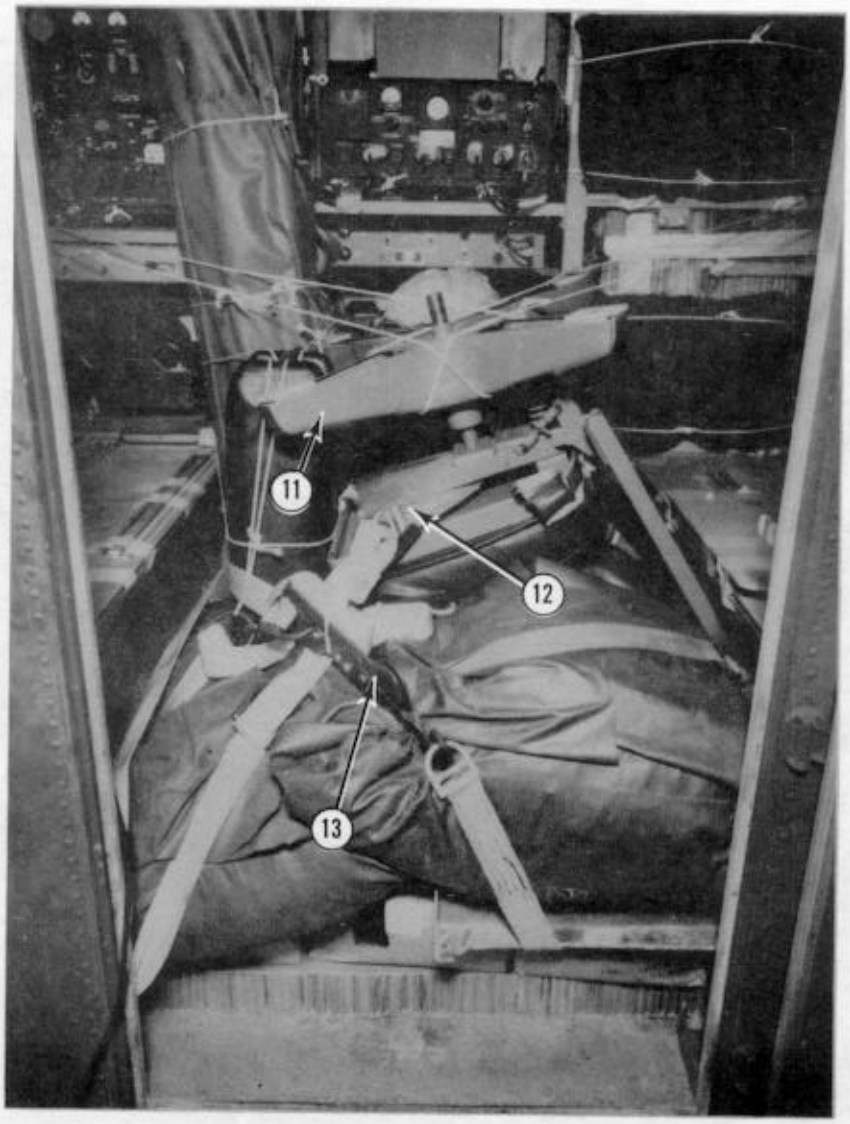
**Figure 9-10. Shelter equipment placed on floor (continued)**


(8) Place the second camouflage net bag over the ladder.

(9) Secure the two lashings placed in step 2 of Figure 9-9 over both camouflage net bags with D-rings and load binders.

(10) Place a water can in front of the camouflage net pole bag. Secure it to the camouflage net pole bag and to the D-ring of the front lashing with type III nylon cord.

Figure 9-10. Shelter equipment placed on floor (continued)



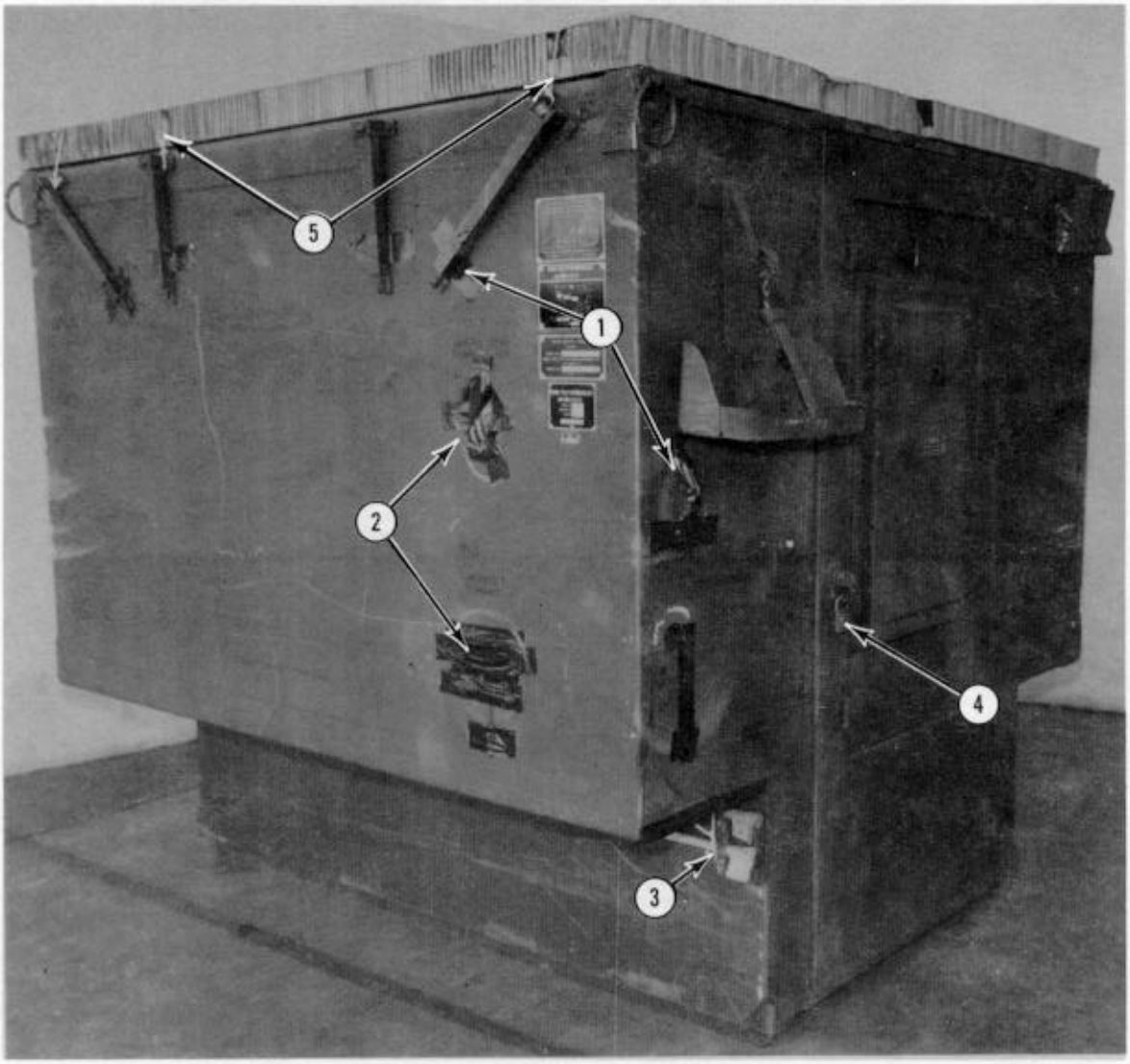

(11) Place the chair with its back down against the right shelf. Tie the chair to convenient points with type III nylon cord.

(12) Route the upper lashing placed in step 3 of Figure 9-9 between the chair seat and frame. Pass it through the lower door latch and fasten it on top of the equipment with a D-ring and a load binder.

(13) Route the lower lashing placed in step 3 of Figure 9-9 around the pole bag and water can. Bring the end of the lashing up from the ladder and fasten the lashing on top of the net bag with a D-ring and a load binder.

Note: Adapt these procedures for shelters with AN/GRC-122 equipment to allow for the teletypewriter on the right shelf.

**Figure 9-10. Shelter equipment placed on floor (continued)**




(1) Tape the shade tarp supports, fold-out steps, and any other loose or sharp items.

(2) Tape the antenna port and heater exhaust port. Pad the power connector port with cellulose wadding and tape it in place.

(3) Secure the ground rods in their holders with type III nylon cord.

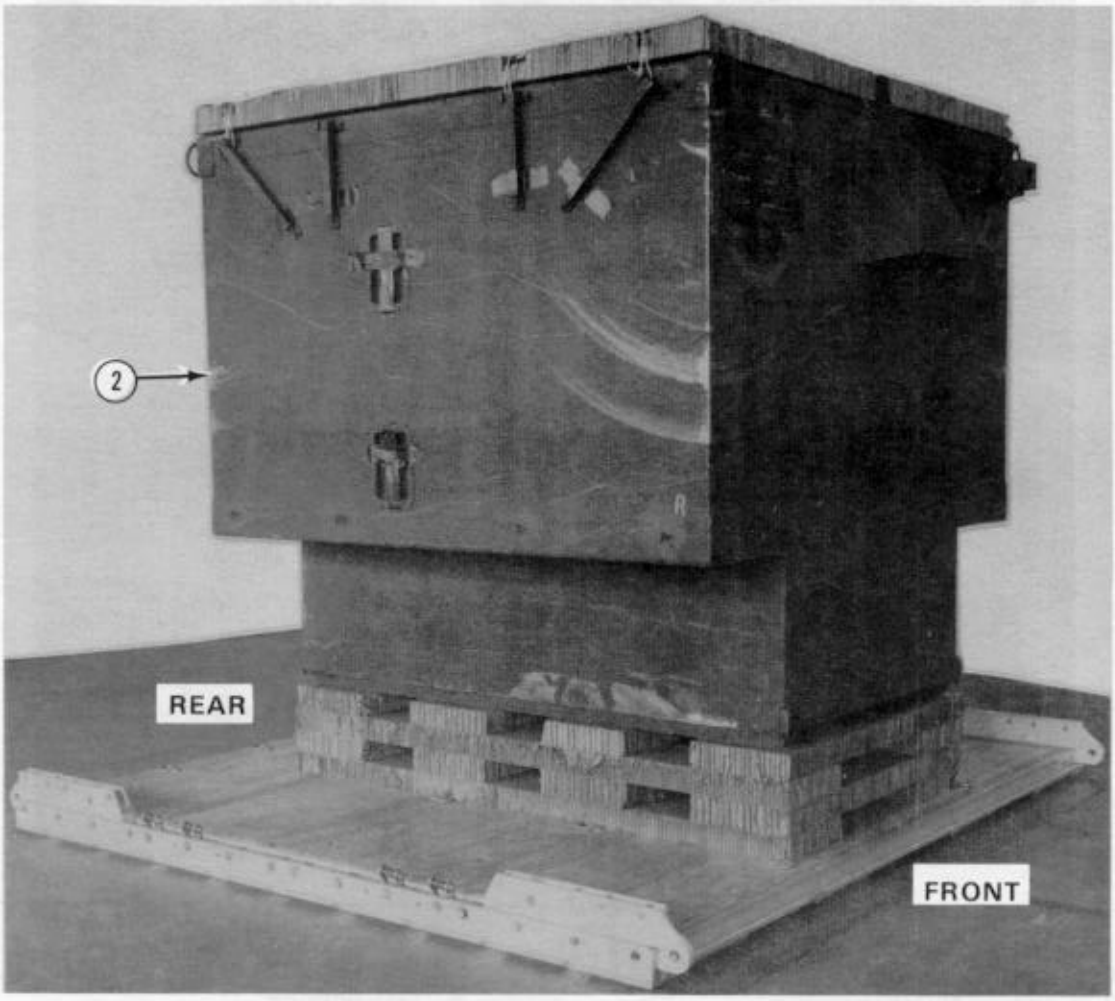
(4) Close and lock the door.

(5) Place two 36- by 73-inch pieces of honeycomb side by side on the roof of the shelter. Tie the honeycomb to the tarp supports using type III nylon cord. Tape the honeycomb under the ties.

Figure 9-11. Outside of shelter prepared

## 9-5. Positioning Shelter

Position the shelter on the platform as shown in Figure 9-12.



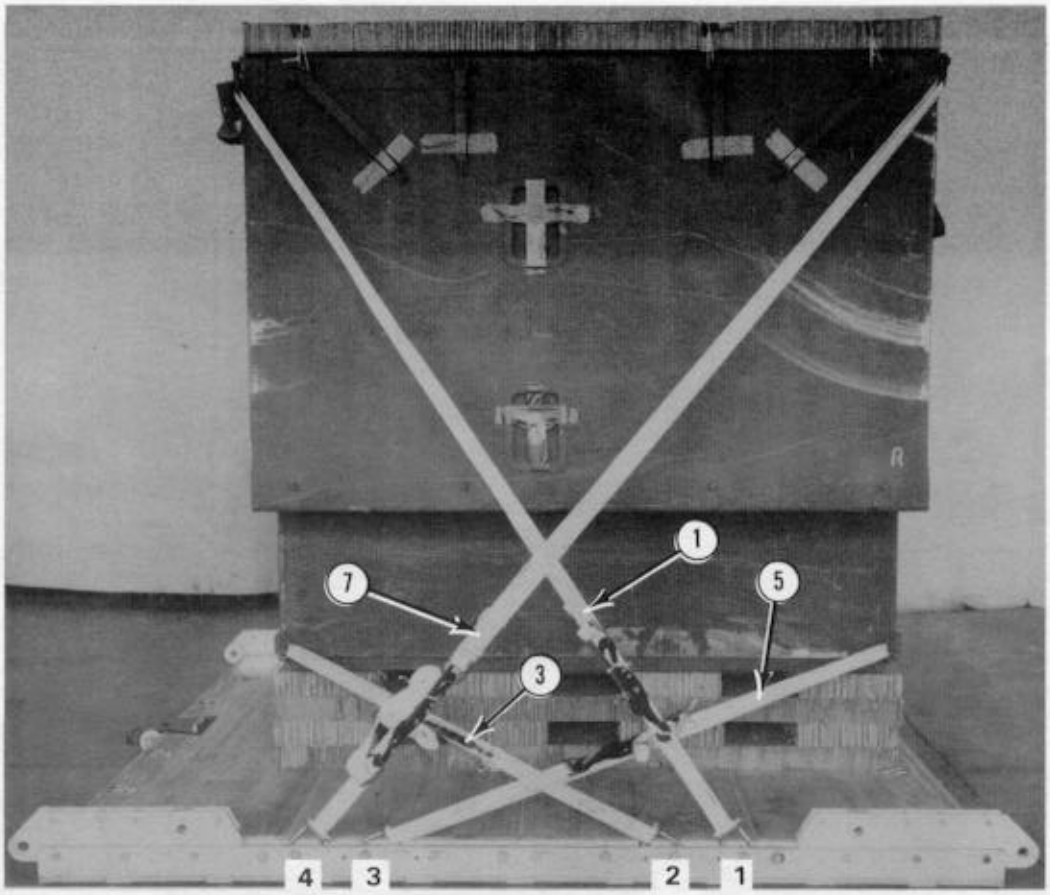

(1) Lift the shelter using the lifting cables provided and the lifting provisions at the top covers (not shown).

(2) Set the shelter flush on the honeycomb stack with the door facing the rear of the platform.

Figure 9-12. Shelter positioned on platform

### 9-6. Lashing Shelter

Lash the shelter to the platform as shown in Figure 9-13.



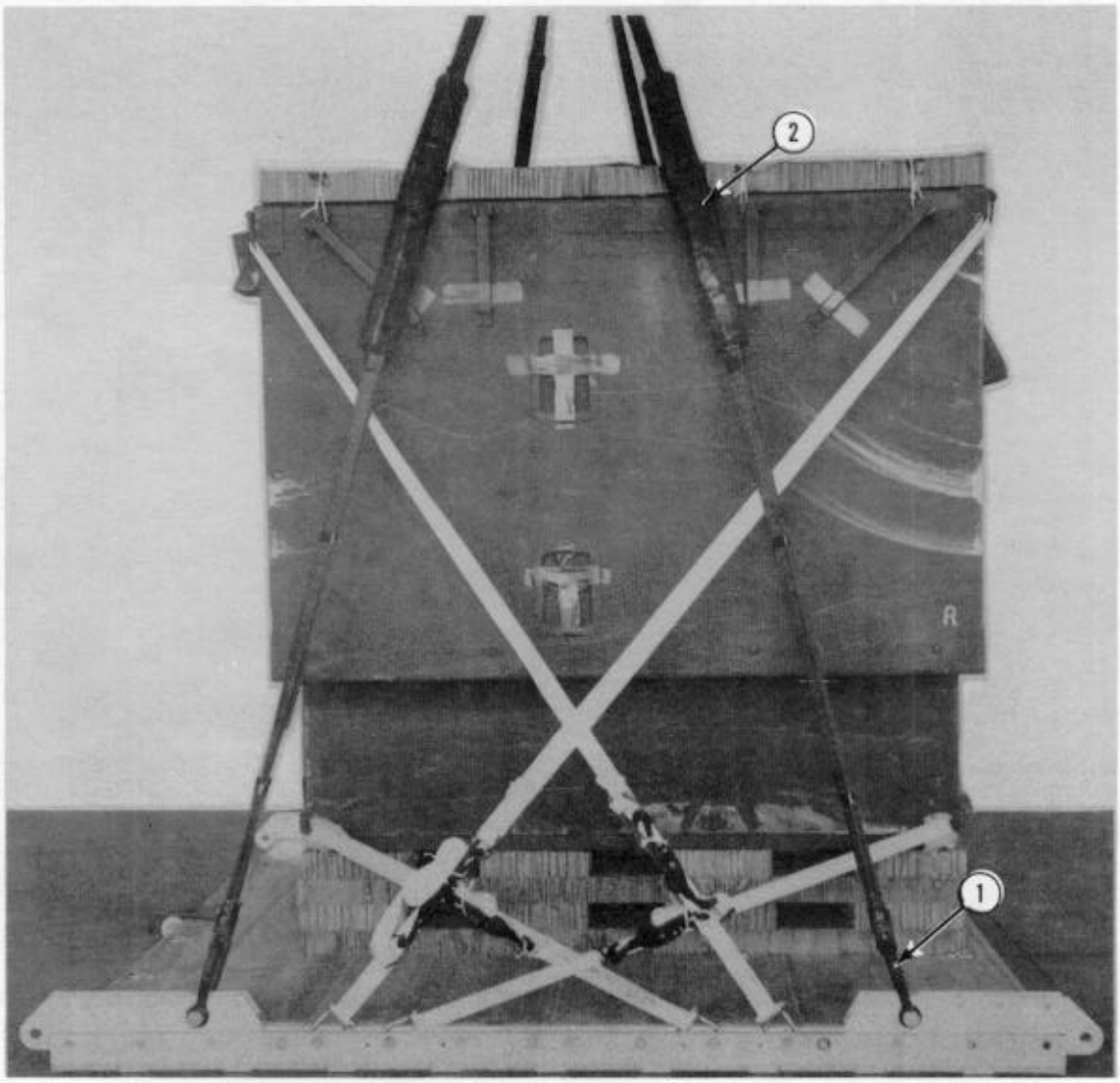

| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| | | Pass lashing: |
| 1 | 1 | To top rear tiedown ring. |
| 2 | 1A | To top rear tiedown ring. |
| 3 | 2 | To bottom rear tiedown ring. |
| 4 | 2A | To bottom rear tiedown ring. |
| 5 | 3 | To bottom front tiedown ring. |
| 6 | 3A | To bottom front tiedown ring. |
| 7 | 4 | To top front tiedown ring. |
| 8 | 4A | To top front tiedown ring. |

Notes: 1. Pad the bottom tiedown rings.
2. Lashings 7 and 8 are 30-foot lashings.

Figure 9-13. Lashings installed

## 9-7. Installing and Safetying Suspension Slings

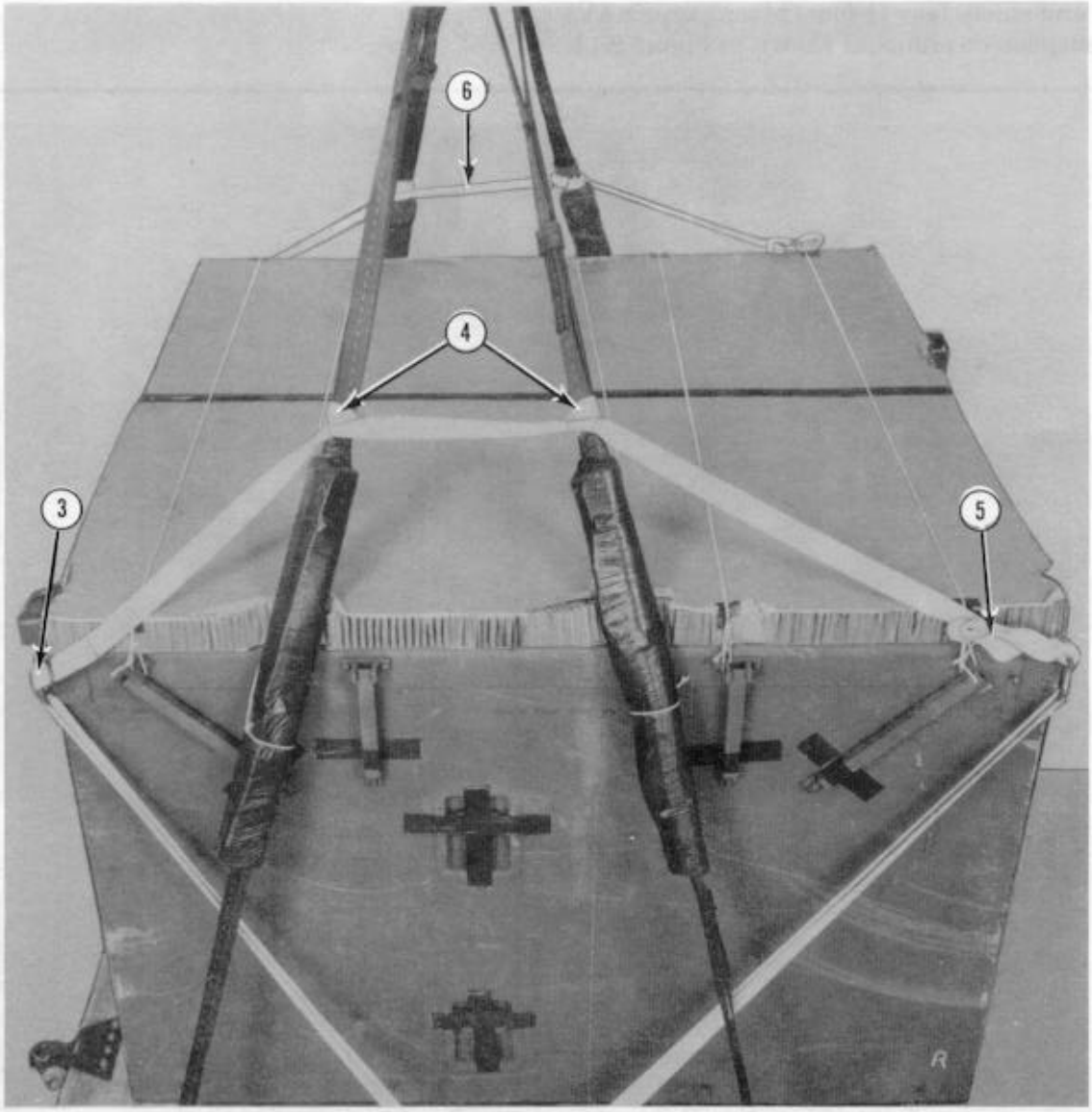
Install and safety four 11-foot (2-loop), type XXVI nylon suspension slings as shown in Figure 9-14.




(1) Attach a suspension sling to each tandem link with a large clevis.

(2) Wrap each sling where it touches the top of the shelter with a 12- by 30-inch piece of felt. Tape the felt in place.

**Figure 9-14. Suspension slings installed and safetied**




(3) Pass a 15-foot tiedown strap through the right rear upper tiedown ring and through its own D-ring.

(4) Wrap the free end one turn around the right rear suspension sling and secure it with one half-hitch. Wrap the free end one turn around the right front suspension sling and secure it with one half-hitch.

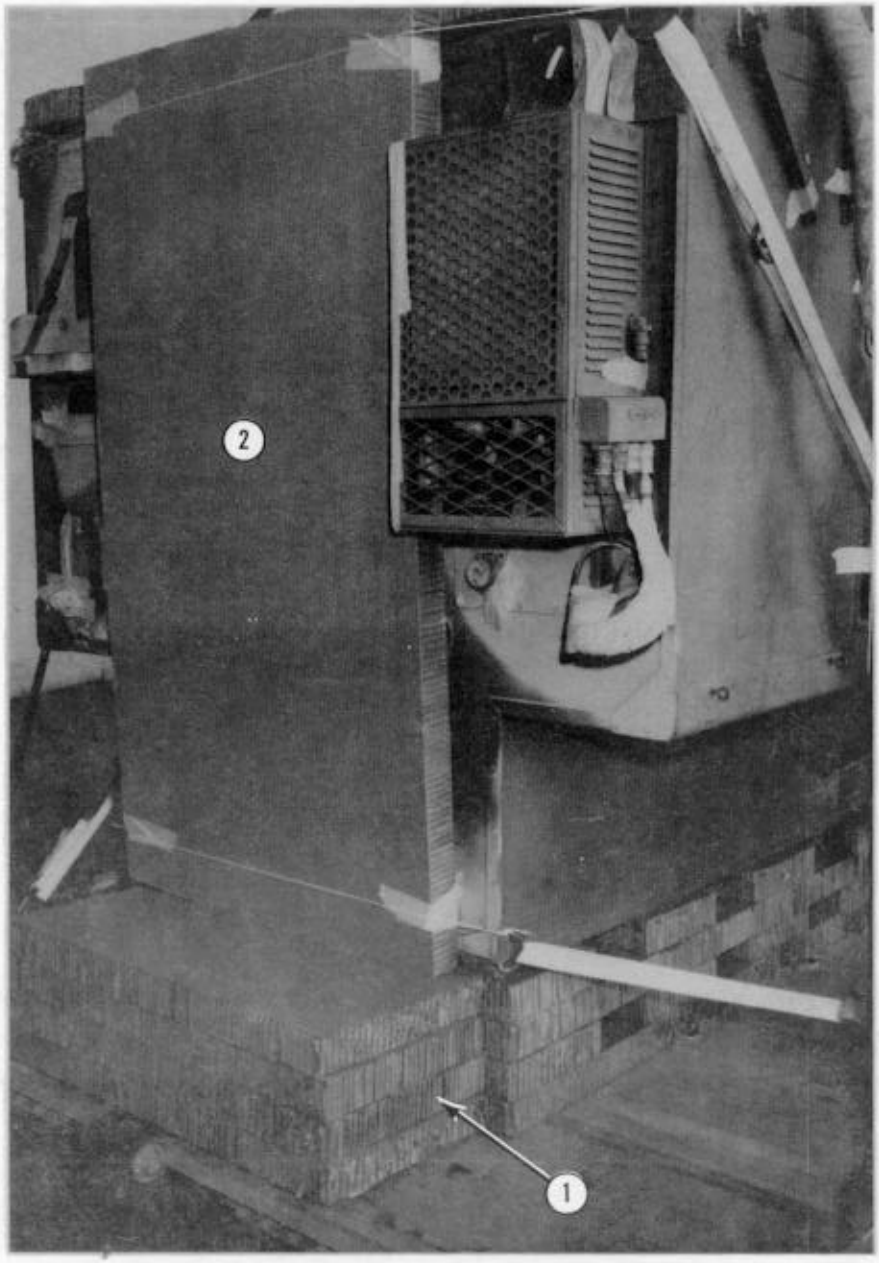
(5) Tie the free end to the right front tiedown ring with two half-hitches. Roll the remainder of the strap, and tie it with type I, 1/4-inch cotton webbing.

(6) Adapt steps 3, 4, and 5 above for the suspension slings on the left side.

**Figure 9-14. Suspension slings installed and safetied (continued)**

## 9-8. Stowing Cargo Parachute

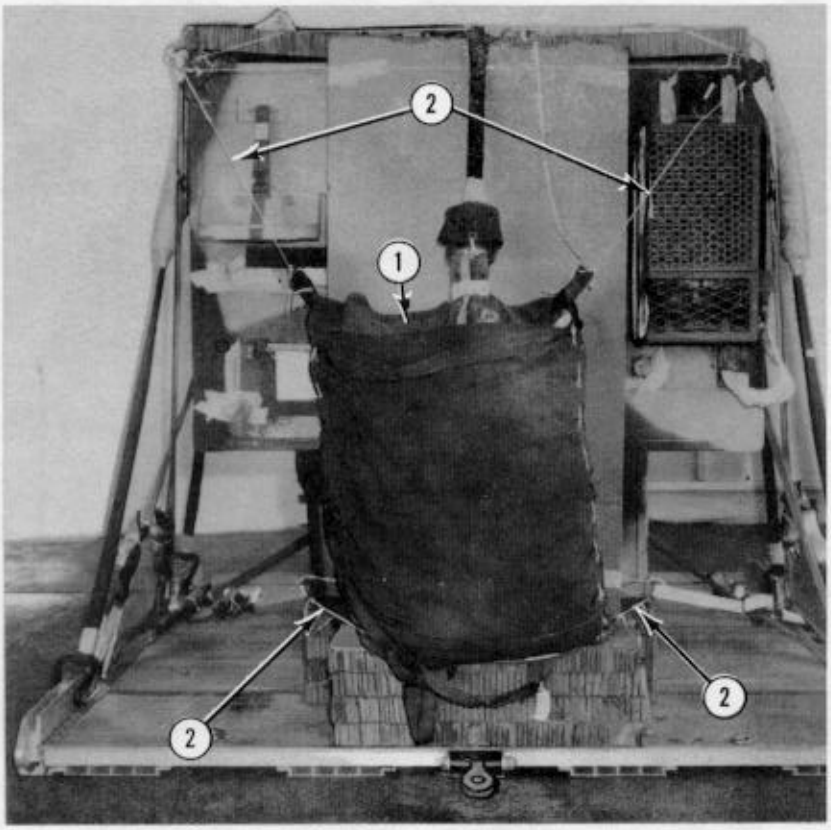
Place honeycomb for stowing the cargo parachute as shown in Figure 9-15. Stow a G-11A or G-11B cargo parachute as shown in Figure 9-16.




(1) Glue four 18- by 36-inch pieces of honeycomb together. Place the honeycomb against the rear of the load.

(2) Stand a 36- by 62-inch piece of honeycomb on end against the shelter. Tie it to the tiedown rings on the shelter with type III nylon cord. Tape the honeycomb under the ties.

**Figure 9-15. Honeycomb placed for parachute**



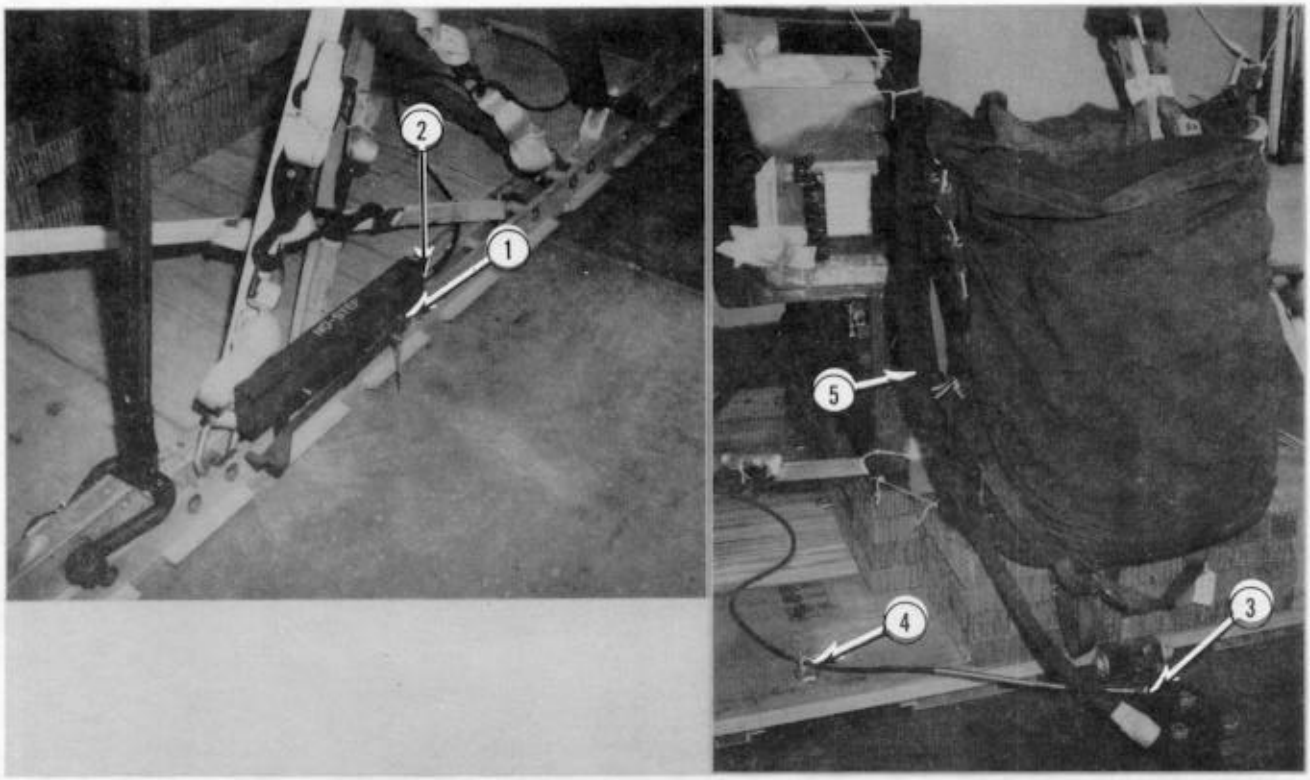

(1) Place the parachute on the honeycomb stack with the bridle loop assembly facing down and the riser compartment facing out.

(2) Secure the parachute to the top and bottom tiedown rings with type III nylon cord.

Figure 9-16. Parachute stowed

## 9-9. Installing Extraction System

Install the EFTC according to FM 10-500-2/ TO 13C7-1-5 and as shown in Figure 9-17.




(1) Install the EFTC mounting brackets in the front mounting holes on the left platform rail.

(2) Attach a 12-foot cable to the actuator. Install the actuator to the EFTC mounting brackets.

(3) Install the latch assembly and attach the cable.

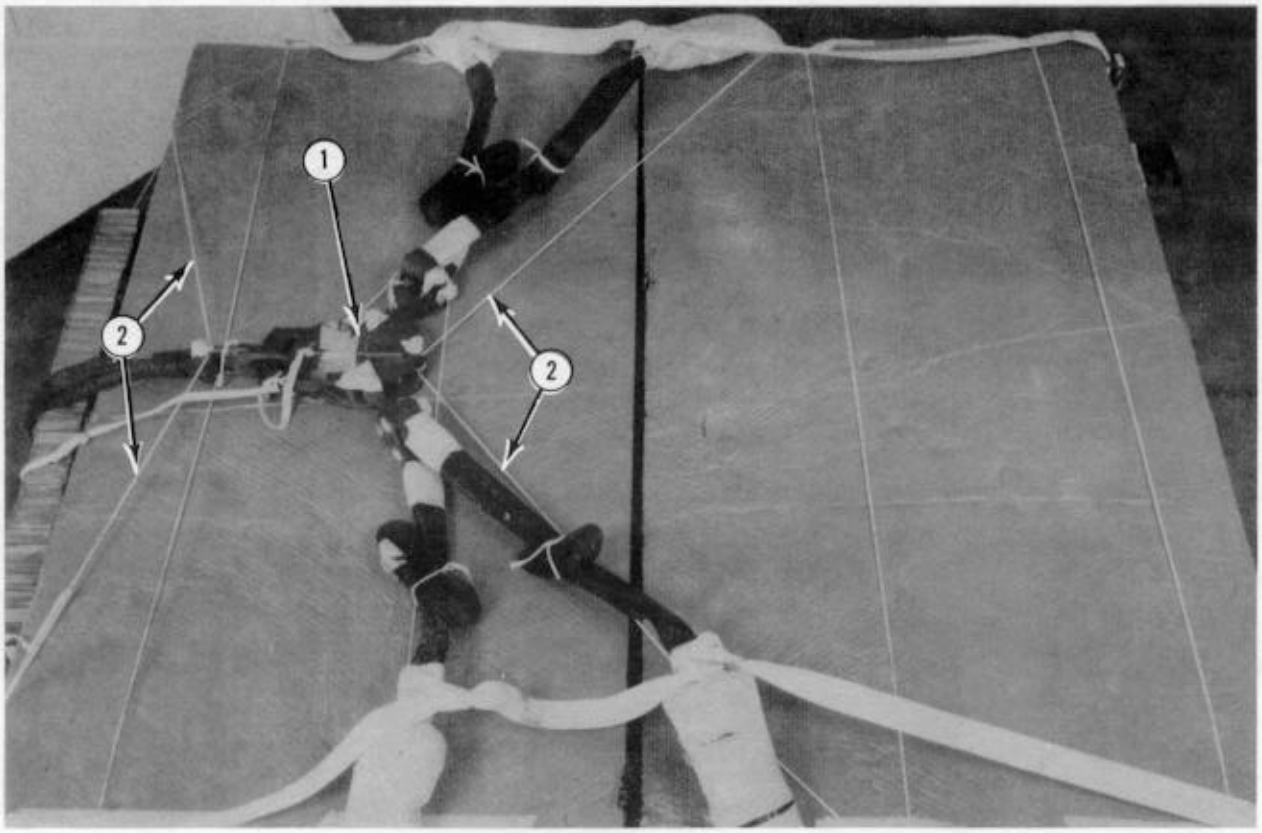
(4) Tie the cable to the left tiedown ring on the rear platform panel with type I, 1/4-inch cotton webbing.

(5) Install a 9-foot (2-loop), type XXVI nylon deployment line on the load. S-fold the deployment line, and secure it to the left parachute bag carrying handles with 1/4-inch cotton webbing.

Figure 9-17. EFTC installed

### 9-10. Installing Parachute Release

Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-18.



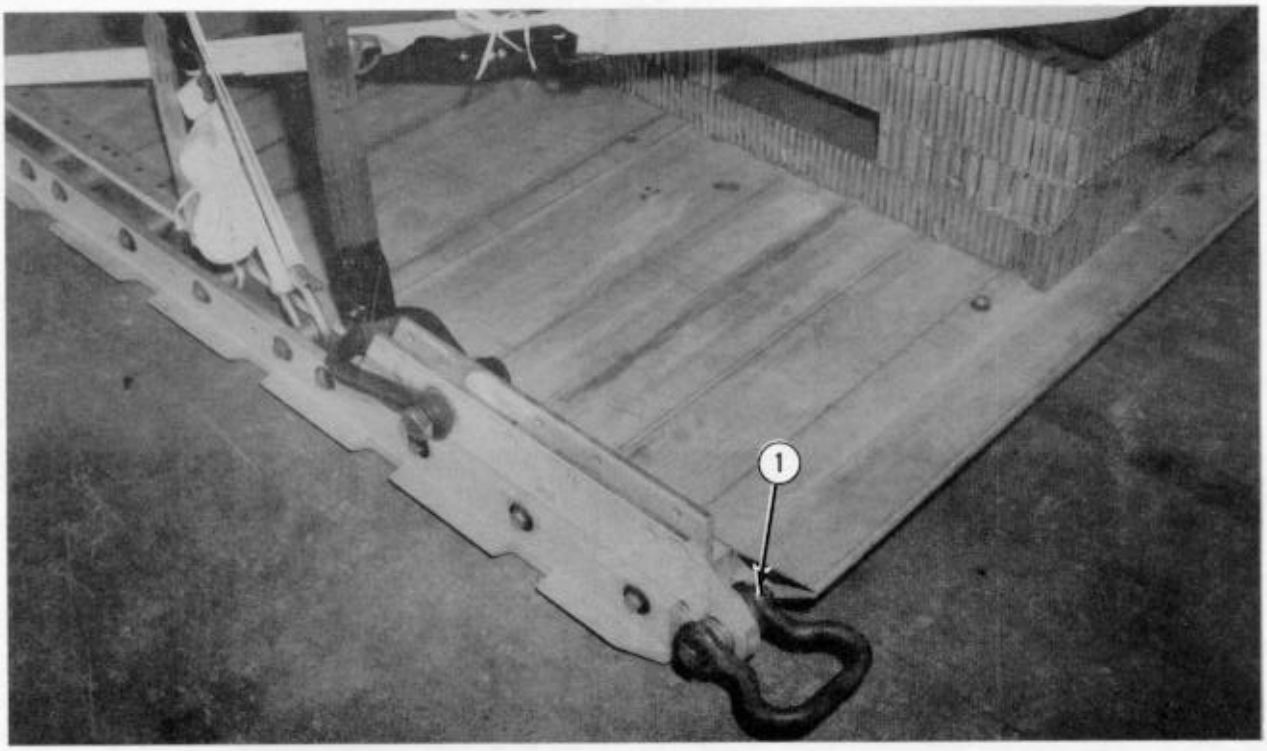

(1) Prepare, install, and safety the M-1 release. Place it on top of the shelter as shown.

(2) Secure the release to the upper tiedown rings with type III nylon cord.

Figure 9-18. M-1 cargo parachute release installed

## 9-11. Installing Provisions for Emergency Restraints

Install a medium clevis in the end hole of each front tandem link as shown in Figure 9-19.




(1) Bolt a medium clevis to each front tandem link. Place spacers or washers on the clevis bolt on either side of the tandem link.

(2) Place the clevises in an upright position, and tie them to the nearest hole in the tandem link with type I, 1/4-inch cotton webbing (not shown).

Figure 9-19. Emergency restraint provisions installed

## 9-12. Placing Extraction Parachute

Place the extraction parachute as described below.

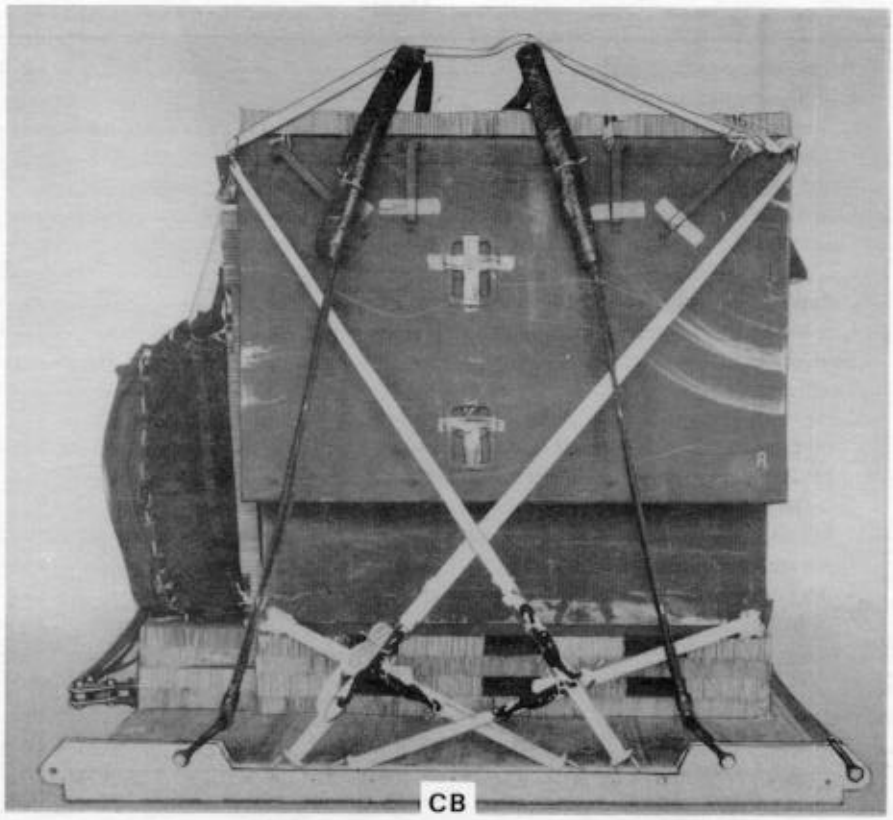
*a. C-130 Aircraft.* Place a 15-foot cargo extraction parachute and a 60-foot (1-loop), type XXVI nylon extraction line on the load for installation in the aircraft.

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

## 9-13. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-20. Complete DD Form 1387-2 (Special Handling Data/Certification), and securely attach it to the load. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

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




**RIGGED LOAD DATA**

| | | |
|---|---|---|
| Weight: | Load shown | 3,630 pounds |
| | Maximum load allowed | 4,500 pounds |
| Height | | 95 1/2 inches |
| Width | | 108 inches |
| Length | | 120 1/2 inches |
| Overhang: | Front | 5 1/2 inches |
| | Rear | 19 inches |
| CB (from front edge of platform) | | 49 inches |

**Figure 9-20. S-318/G shelter with AN/GRC-122 communications equipment rigged for low-velocity airdrop on the type V platform**

## 9-14. Equipment Required

Use the equipment listed in Table 9-1 to rig this load.

Table 9-1. Equipment required for rigging the S-318/G shelter with AN/GRC-122 or AN/GRC-142 communications equipment for low-velocity airdrop on the type V platform

| National Stock Number | Item | Quantity |
|---|---|---|
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| | Clevis, suspension: | |
| 4030-00-678-8562 | 3/4-in (medium) | 2 |
| 4030-00-090-5354 | 1-in (large) | 5 |
| 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 |
| | Cover: | |
| 1670-00-360-0328 | Clevis, large | 1 |
| 1670-00-360-0329 | Link assembly (type IV) | 1 |
| 8135-00-664-6958 | Cushioning material, packaging, cellulose wadding | As required |
| 8305-00-958-3685 | Felt, 1/2-in thick | As required |
| 1670-01-183-2678 | Leaf, extraction line | 2 |
| | Line, extraction: | |
| 1670-01-064-4452 | 60-ft (1-loop), type XXVI nylon webbing or | 1 |
| 1670-00-856-0265 | 60-ft (1-loop), type X nylon webbing (use w 15-ft parachute) | 1 |
| 1670-01-107-7652 | 160-ft (1-loop), type XXVI nylon webbing | 1 |
| 1670-00-783-5988 | Link assembly, type IV | 1 |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in | 6 sheets |
| | 4- by 6-in | (3) |
| | 6- by 8-in | (7) |
| | 6- by 18-in | (9) |
| | 12- by 72-in | (4) |
| | 18- by 36-in | (4) |
| | 36- by 38-in | (1) |
| | 36- by 62-in | (1) |
| | 36- by 73-in | (2) |
| | 44- by 12-in | (8) |
| | Parachute: | |
| | Cargo: | |
| 1670-00-269-1107 | G-11A or | 1 |
| 1670-01-016-7841 | G-11B | 1 |
| | Cargo extraction: | |
| 1670-00-052-1548 | 15-ft or | 1 |
| 1670-01-063-3715 | 15-ft | 1 |
| | Platform, AD, type V, 8-ft: | 1 |
| | Bracket: | |
| 1670-01-162-2375 | Inside EFTA | (1) |
| 1670-01-162-2374 | Outside EFTA | (1) |
| 1670-01-162-2372 | Clevis assembly | (8) |
| 1670-01-162-2376 | Extraction bracket assembly | (1) |
| 1670-01-162-2381 | Tandem link | (4) |
| | Plywood: | |
| 5530-00-129-7721 | 1/4-in: | |
| | 6- by 8-in | 1 |
| | 6- by 18-in | 3 |

Table 9-1. Equipment required for rigging the S-318/G shelter with AN/GRC-122 or AN/GRC-142 communications equipment for low-velocity airdrop on the type V platform (continued)

| National Stock Number | Item | Quantity |
|---|---|---|
| 5530-00-128-4981 | 3/4-in: | |
| | 6- by 6-in | 1 |
| | 6- by 8-in | 2 |
| 1670-01-097-8816 | Release, cargo parachute, M-1 | 1 |
| | Sling, cargo airdrop: | |
| | For deployment line: | |
| 1670-01-062-6304 | 9-ft (2-loop), type XXVI nylon webbing | 1 |
| | For suspension slings: | |
| 1670-01-063-7760 | 11-ft (2-loop), type XXVI nylon webbing | 4 |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 1670-00-937-0271 | Tiedown assembly, 15-ft | 18 |
| 8305-00-268-2411 | Webbing, cotton, type I, 1/4-in | As required |

# CHAPTER 10

# RIGGING THE S-502 OR S-250/G SHELTERS WITH AN/GRC-142 COMMUNICATIONS EQUIPMENT ON THE TYPE V PLATFORM

## Section I

## LOW-VELOCITY AIRDROP

### 10-1. Description of Load

The S-502 shelter (line number S96381) or S-250/G shelter (line number S96381) is rigged on an 8-foot, type V platform for low-velocity airdrop. The load requires one G-11A or G-11B cargo parachute. The S-502 and S-250/G shelters are rigged the same. The S-502 shelter is shown photographed throughout this section. The unrigged S-502 shelter with AN/GRC-142 equipment installed weighs 2,110 pounds. It is 98 inches long, 70 inches high, and 79 inches wide. The unrigged S-250/G shelter with AN/GRC-142 equipment installed weighs 2,410 pounds. It is 97 inches long, 71 inches high, and 83 inches wide.

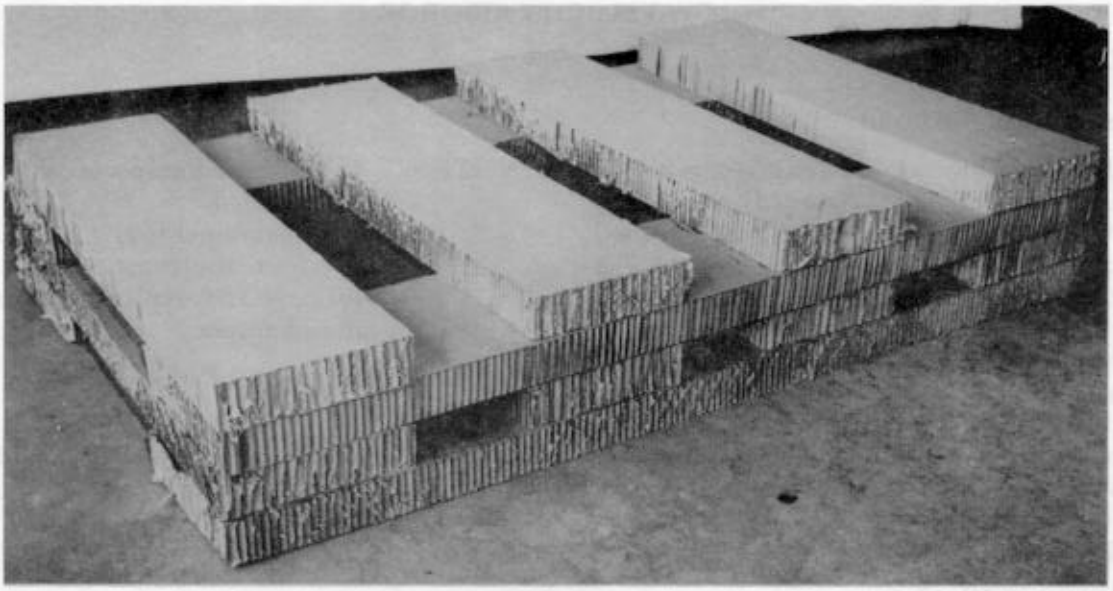
### 10-2. Preparing Platform

Prepare an 8-foot, type V airdrop platform using four tandem links and eight clevis assemblies as shown in Figure 9-1.

**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.

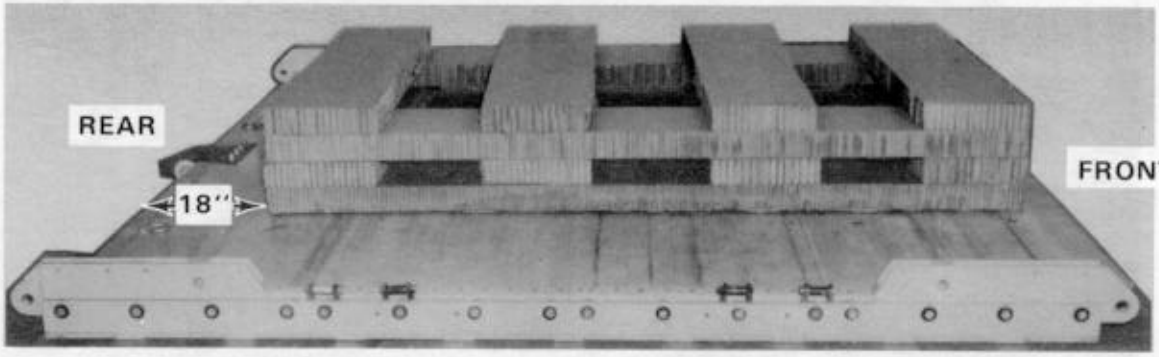
### 10-3. Preparing and Positioning Honeycomb Stack

Prepare the honeycomb stack as shown in Figure 10-1. Position the stack on the platform as shown in Figure 10-2.



| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 1 | 2 | 12 | 82 | Honeycomb | Lay honeycomb parallel and 25 inches apart. |
| | 4 | 49 | 12 | Honeycomb | Glue a piece of honeycomb perpendicular to the base pieces even with each end. Glue two pieces of honeycomb perpendicular to the base and evenly spaced between the two end pieces. |
| | 2 | 12 | 82 | Honeycomb | Glue honeycomb flush over the long edges of the stack. |
| | 4 | 49 | 12 | Honeycomb | Glue honeycomb to the top of the stack, flush with the 49- by 12-inch pieces placed previously. |

Figure 10-1. Honeycomb stack prepared




(1) Center the stack on the platform 18 inches from the rear edge of the platform.

**Figure 10-2. Honeycomb stack positioned on platform**

### 10-4. Preparing Shelter

Prepare the shelter as described below.

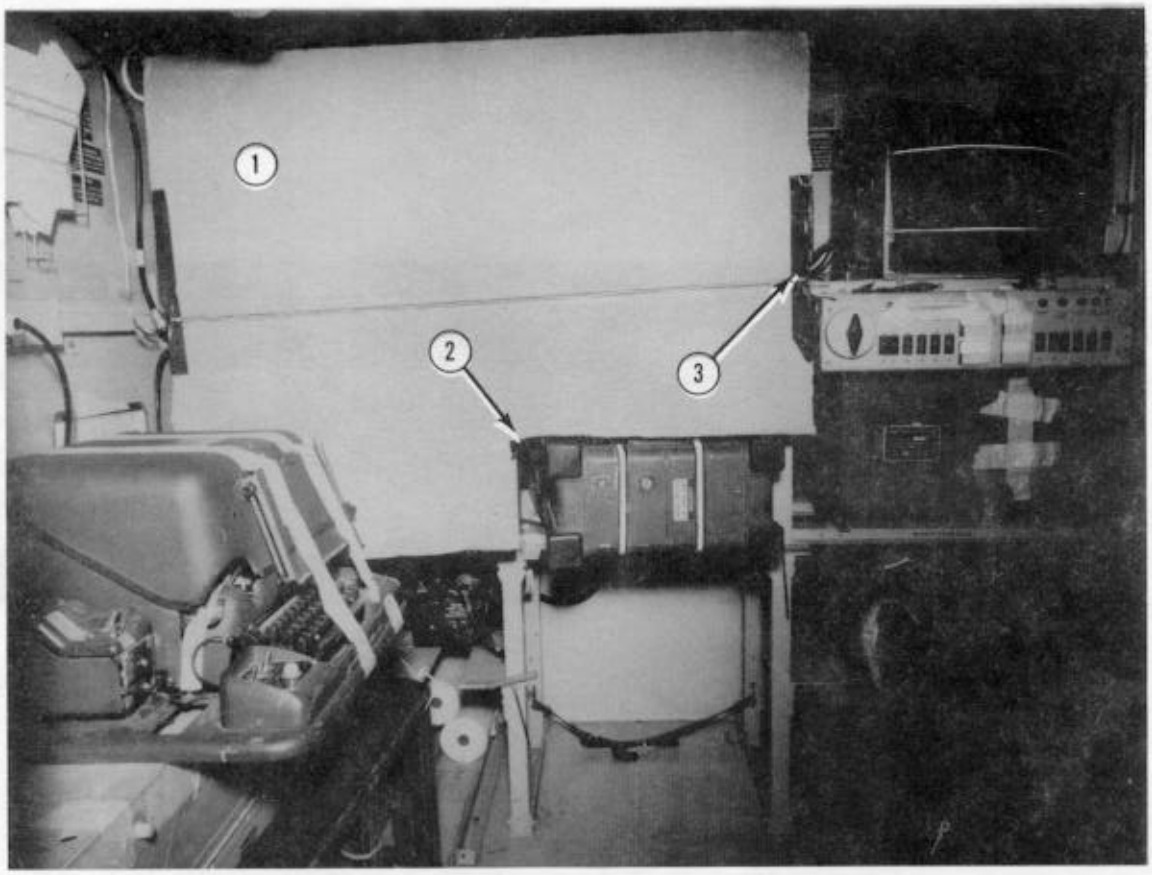
*a.* If a TT-76 teletypewriter is present, prepare it as shown in Figure 9-5. Secure it in place with the pins provided.

*b.* Secure the radio equipment in its racks as shown in Figure 9-6.

**NOTE:** The power supply may be located on the right center shelf.

*c.* Cover the radio equipment with honeycomb as shown in Figure 10-3.

*d.* Prepare the floor of the shelter and stow shelter equipment as shown in Figure 10-4.

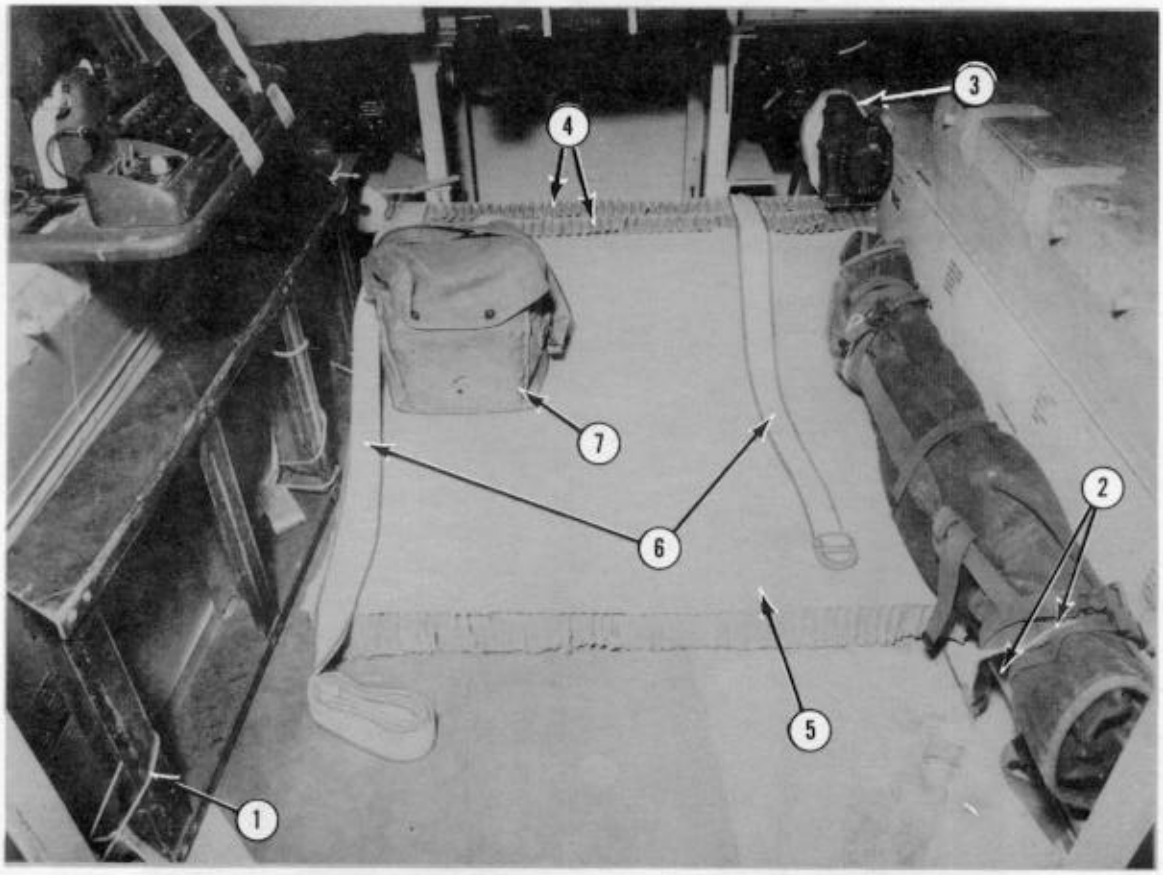



(1) Cut a 36- by 46-inch piece of honeycomb.

(2) Place the 36-inch edge against the left wall, and cover the left and center shelves. Make a cutout to allow for the AN/UGC-74(V)3 teletypewriter.

(3) Secure the honeycomb to the equipment rack with type III nylon cord.

**Figure 10-3. Honeycomb cover placed over radio equipment**




(1) Secure the ladder in its bracket with type III nylon cord.

(2) Stow the sledgehammer in its rack near the floor on the right. Secure the antenna bag with the straps provided and with type III nylon cord.

(3) Tape the telephone and its handset in the proper rack.

(4) Set two 12- by 36-inch pieces of honeycomb on edge against the equipment rack.

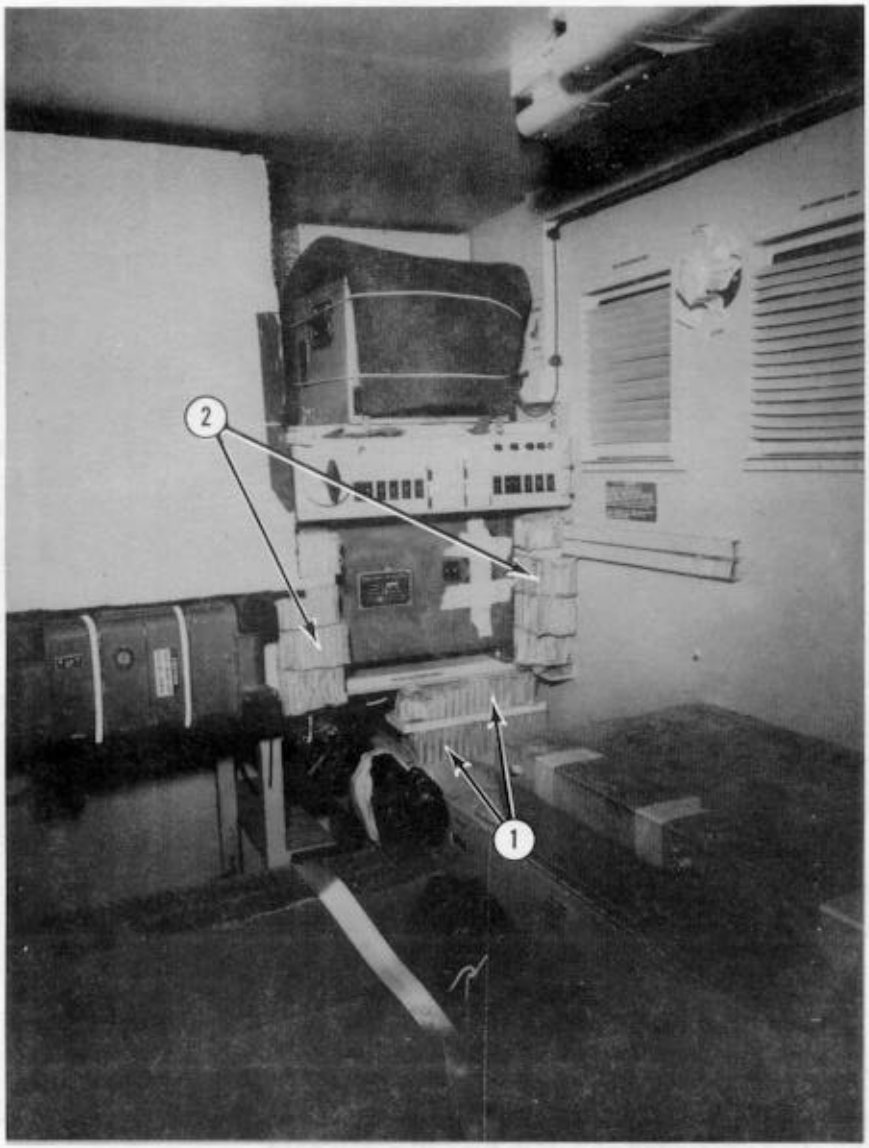
(5) Lay a 32- by 36-inch piece of honeycomb on the floor against the pieces placed in step 4 above.

(6) Run a 15-foot tiedown strap behind the two center shelf supports and over the honeycomb.

(7) Lay the GRA-50 bag in the left front corner.

**Figure 10-4. Floor of shelter prepared**

*e.* Place honeycomb and plywood supports for the power supply and crypto equipment as shown in Figure 10-5.



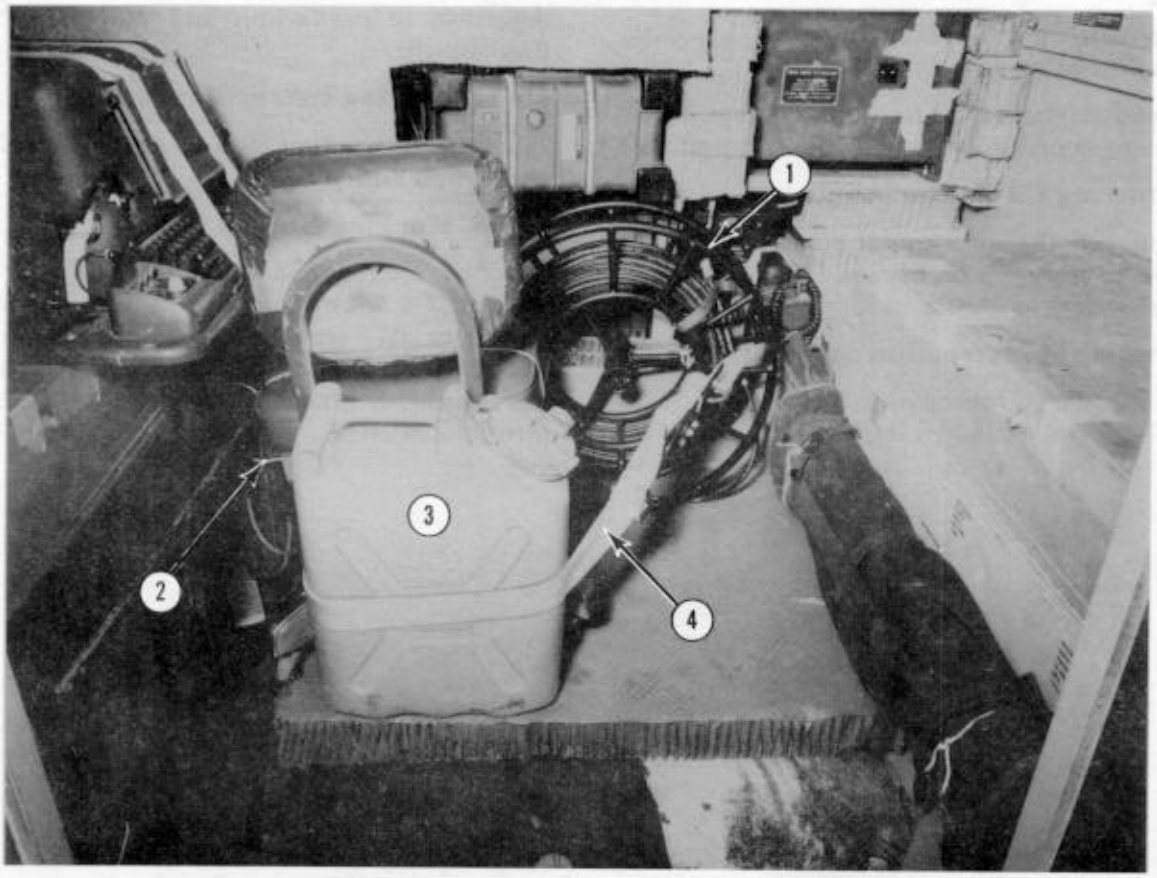

(1) Glue a 3/4- by 4- by 13-inch piece of plywood between two 4- by 13-inch pieces of honeycomb. Fit the support lengthwise between the right storage cabinet and the bottom of the power supply shelf.

(2) Use eight 3 1/2- by 13-inch pieces of honeycomb to make two four-layer stacks. Place a 3/4- by 3 1/2- by 13-inch piece of plywood between the third and fourth layers in each stack. Fit a stack on each side of the power supply.

**Figure 10-5. Power supply and crypto components supported**

*f*. Stow the remaining shelter equipment on the floor as shown in Figure 10-6.

*g*. Prepare the outside of the shelter as shown in Figure 9-11, but use two pieces of 82- by 36-inch honeycomb to cover the shelter roof.




(1) Set the power cable reel on the honeycomb against the upright pieces placed in step 4, Figure 10-4.

(2) Set the operator chair against the cable reel and the ladder. Tie the chair to the ladder with type III nylon cord.

(3) Set a water can against the back of the chair.

(4) Lash the items placed in steps 1, 2, and 3 above with the pre-positioned lashing.

Note: Additional items, such as camouflage nets and poles, may be placed and secured by adapting these procedures and those in Figure 9-10.

**Figure 10-6. Shelter equipment placed on floor**

### 10-5. Positioning Shelter

Position the shelter on the platform as shown in Figure 9-12.

### 10-6. Lashing Shelter

Lash the shelter to the platform as shown in Figure 9-13. The bottom tiedown rings need not be padded.

### 10-7. Installing and Safetying Suspension Slings

Install and safety four 12-foot (2-loop), type XXVI nylon suspension slings as shown in Figure 9-14.

### 10-8. Stowing Cargo Parachute

Place honeycomb for stowing the cargo parachute as shown in Figure 9-15. Stow a G-11A or G-11B cargo parachute as shown in Figure 9-16.

### 10-9. Installing Extraction System

Install the EFTC according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-17.

### 10-10. Installing Parachute Release

Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 9-18.

### 10-11. Installing Provisions for Emergency Restraints

Install provisions for emergency restraints as described in paragraph 9-11 and as shown in Figure 9-19.

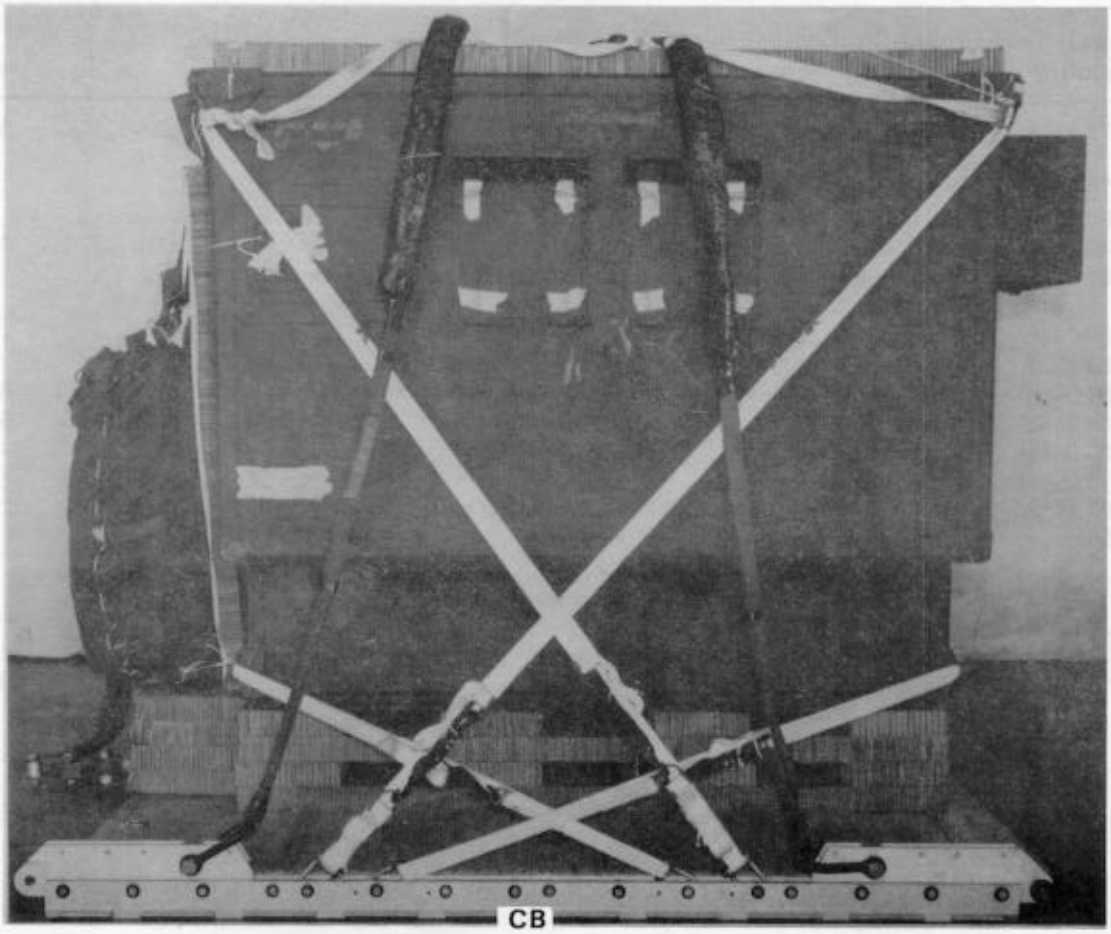
### 10-12. Placing Extraction Parachute

Place the extraction parachute as described in paragraph 9-12.

### 10-13. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 10-7. Complete DD Form 1387-2, and securely attach it to the load. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

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




**RIGGED LOAD DATA**

| | | |
|---|---|---|
| Weight: | Load shown | 3,450 pounds |
| | Maximum load allowed | 4,500 pounds |
| Height | | 95 1/2 inches |
| Width | | 108 inches |
| Length (depending on ventilator installed) | | 120 to 131 inches |
| Overhang: | Front | 16 inches |
| | Rear | 19 inches |
| CB (from front edge of platform) | | 48 inches |

Figure 10-7. S-502 shelter with AN/GRC-142 communications equipment rigged for low-velocity airdrop on the type V platform

## 10-14. Equipment Required

Use the equipment listed in Table 10-1 to rig this load.

Table 10-1. Equipment required for rigging the S-502 or S-250/G shelter with AN/GRC-142 communications equipment for low-velocity airdrop on the type V platform

| National Stock Number | Item | Quantity |
|---|---|---|
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| | Clevis, suspension: | |
| 4030-00-678-8562 | 3/4-in (medium) | 2 |
| 4030-00-090-5354 | 1-in (large) | 5 |
| 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 |
| | Cover: | |
| 1670-00-360-0328 | Clevis, large | 1 |
| 1670-00-360-0329 | Link assembly (type IV) | 1 |
| 8135-00-664-6958 | Cushioning material, packaging, cellulose wadding | As required |
| 8305-00-958-3685 | Felt, 1/2-in thick | As required |
| 1670-01-183-2678 | Leaf, extraction line | 2 |
| | Line, extraction: | |
| 1670-01-064-4452 | 60-ft (1-loop), type XXVI nylon webbing or | 1 |
| 1670-00-856-0265 | 60-ft (1-loop), type X nylon webbing (use w 15-ft parachute) | 1 |
| 1670-01-107-7652 | 160-ft (1-loop), type XXVI nylon webbing | 1 |
| 1670-00-783-5988 | Link assembly, type IV | 1 |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in | 6 sheets |
| | 3 1/2- by 13-in | (8) |
| | 4- by 13-in | (2) |
| | 12- by 36-in | (2) |
| | 12- by 82-in | (4) |
| | 18- by 36-in | (4) |
| | 32- by 36-in | (1) |
| | 36- by 46-in | (1) |
| | 36- by 62-in | (1) |
| | 49- by 12-in | (8) |
| | 82- by 36-in | (2) |
| | Parachute: | |
| | Cargo: | |
| 1670-00-269-1107 | G-11A or | 1 |
| 1670-01-016-7841 | G-11B | 1 |
| | Cargo extraction: | |
| 1670-00-052-1548 | 15-ft or | 1 |
| 1670-01-063-3715 | 15-ft | 1 |
| | Platform, AD, type V, 8-ft: | 1 |
| | Bracket: | |
| 1670-01-162-2375 | Inside EFTA | (1) |
| 1670-01-162-2374 | Outside EFTA | (1) |
| 1670-01-162-2372 | Clevis assembly | (8) |
| 1670-01-162-2376 | Extraction bracket assembly | (1) |
| 1670-01-162-2381 | Tandem link | (4) |
| 5530-00-128-4981 | Plywood, 3/4-in: | |
| | 3 1/2- by 13-in | 2 |
| | 4- by 13-in | 1 |

Table 10-1. Equipment required for rigging the S-502 or S-250/G shelter with AN/GRC-142 communications equipment for low-velocity airdrop on the type V platform (continued)

| National Stock Number | Item | Quantity |
|---|---|---|
| 1670-01-097-8816 | Release, cargo parachute, M-1 | 1 |
| | Sling, cargo airdrop: | |
| | For deployment line: | |
| 1670-01-062-6304 | 9-ft (2-loop), type XXVI nylon webbing | 1 |
| | For suspension slings: | |
| 1670-01-062-6303 | 12-ft (2-loop), type XXVI nylon webbing | 4 |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 1670-00-937-0271 | Tiedown assembly, 15-ft | 15 |
| 8305-00-268-2411 | Webbing, cotton, type I, 1/4-in | As required |

# CHAPTER 11

# RIGGING THE PU-619M AND PU-620M TRAILER-MOUNTED POWER UNITS ON THE TYPE V PLATFORM

## Section I

## RIGGING THE PU-619M POWER UNIT FOR LOW-VELOCITY AIRDROP

### 11-1. Description of Load

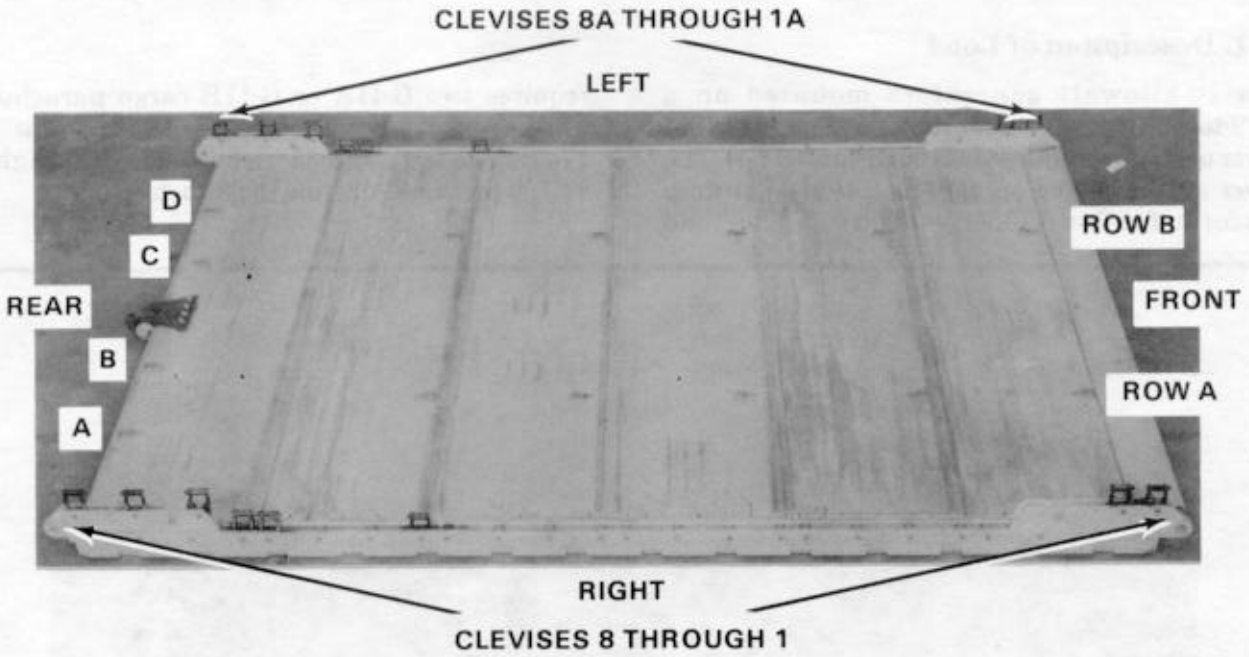
Two 10-kilowatt generators mounted on a 1 1/2-ton (M103A3) trailer make up the PU-619M power unit (line number J42100) (Figure 11-1). The power unit is rigged on a 12-foot, type V airdrop platform for low-velocity airdrop. The load requires two G-11A or G-11B cargo parachutes. The unrigged power unit weighs 4,580 pounds. It is 174 inches long and 83 inches wide. Its height is 94 1/2 inches (reducible to 63 inches).

Figure 11-1. PU-619M power unit with bows and cover removed

## 11-2. Preparing Platform

Prepare a 12-foot, type V airdrop platform using four tandem links and 16 clevis assemblies as shown in Figure 11-2.

**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:**

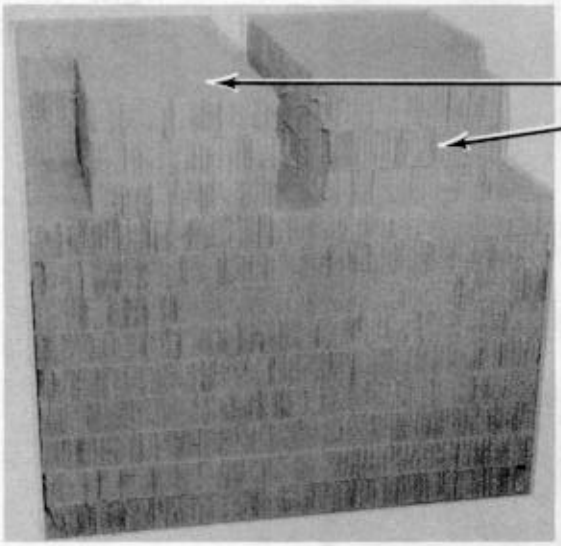
1. Inspect, or assemble and inspect, the platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3 and on the rear of each platform side rail using holes 22, 23, and 24.
3. Install clevises on bushings 1 and 2 of each front tandem link. Install clevises on bushings 1, 2, and 4 of each rear tandem link.
4. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 17, 20, and 21.
5. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 8 and those bolted to the left side from 1A through 8A.
6. Starting at the front of the platform, label the two tiedown rings in the first five panels A and B from right to left. Label the four tiedown rings in the last panel A, B, C, and D from right to left. Starting with the first panel, number the tiedown rings 1 through 6.

Figure 11-2. Platform prepared

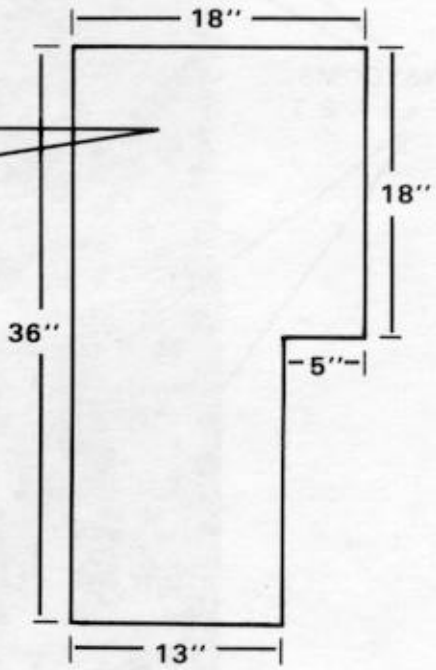
## 11-3. Preparing and Positioning Honeycomb Stacks

Prepare the honeycomb stacks as shown in Figures 11-3, 11-4, and 11-5. Position the stacks on the platform as shown in Figure 11-6.

Note: This drawing is not drawn to scale.



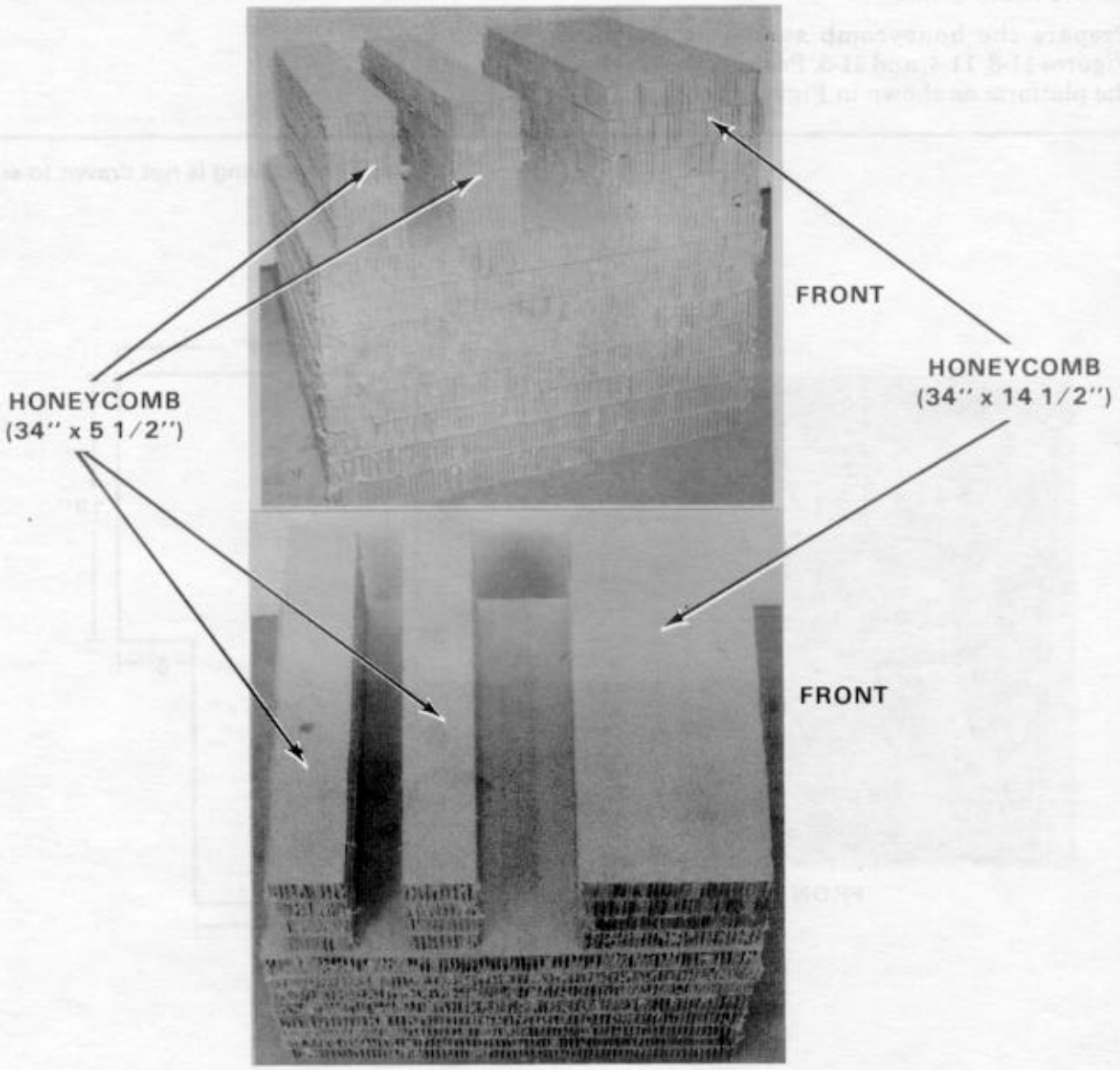
FRONT




FRONT

| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 1 | 9 | 40 | 36 | Honeycomb | Stack honeycomb flush. |
| | 6 | 18 | 36 | Honeycomb | Make cutout as shown in all six pieces of honeycomb. Make two stacks of three layers each. Place them 4 inches apart on the base and flush with the base. Place the cutouts to the front of the base. |

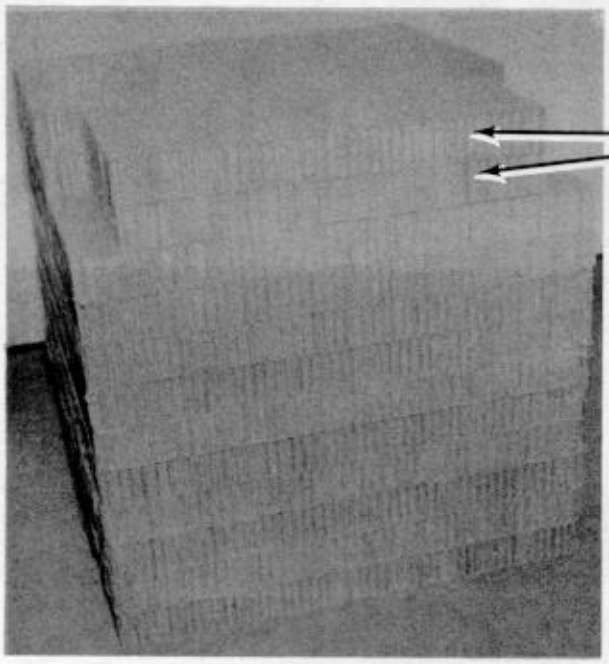
Figure 11-3. Honeycomb stack 1 prepared



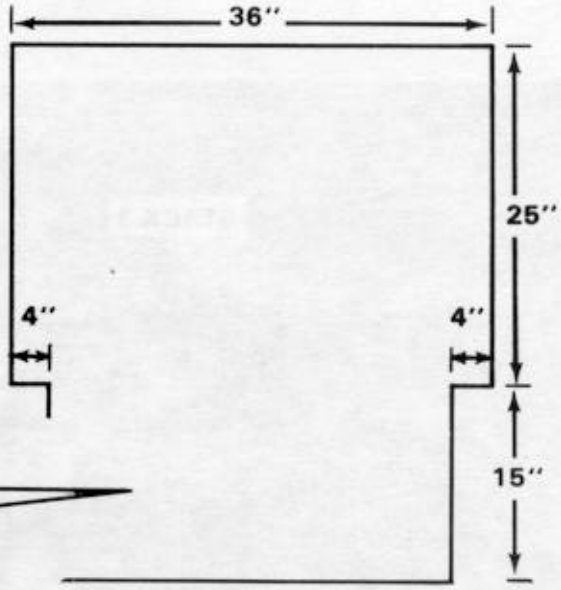

| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 2 | 8 | 35 | 40 | Honeycomb | Stack honeycomb flush. |
| | 8 | 34 | 5 1/2 | Honeycomb | Make two stacks of four layers each. Center one on the base 2 inches from the rear edge and 1/2-inch from each side. Center the other 4 inches from the first. |
| | 4 | 34 | 14 1/2 | Honeycomb | Place honeycomb flush with the front edge, 1/2-inch from each side. |

Figure 11-4. Honeycomb stack 2 prepared

Note: This drawing is not drawn to scale.

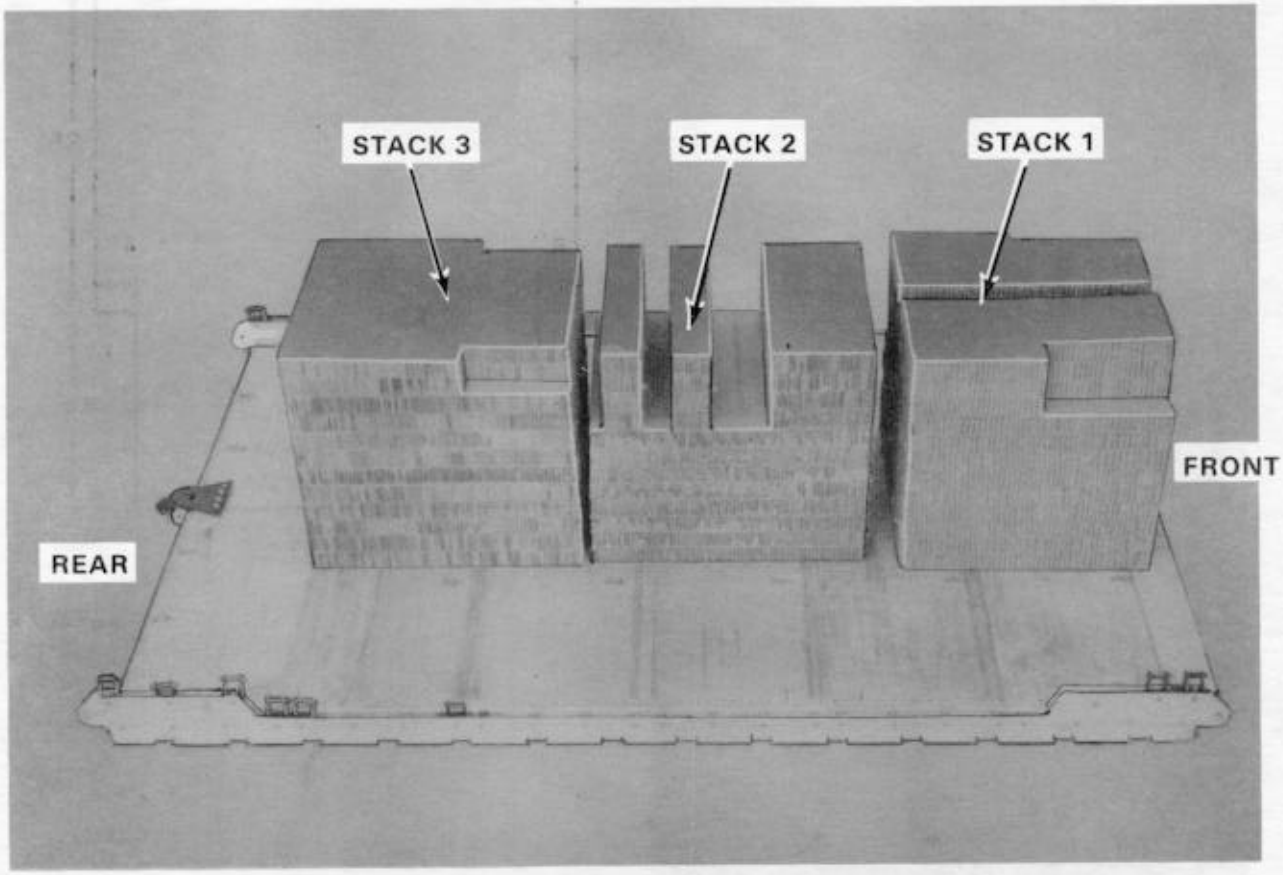


FRONT




| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 3 | 10 | 36 | 40 | Honeycomb | Stack honeycomb flush. |
| | 2 | 36 | 40 | Honeycomb | Make cutouts as shown. Stack honeycomb flush on the base with the cutouts to the front. |

Figure 11-5. Honeycomb stack 3 prepared




| Stack Number | Position of Stack on Platform |
|---|---|
| | Place stack: |
| 1 | Centered flush with the front edge of the platform. |
| 2 | Centered 5 inches from stack 1. |
| 3 | Centered 2 inches from stack 2. |

**Figure 11-6. Honeycomb stacks positioned on platform**

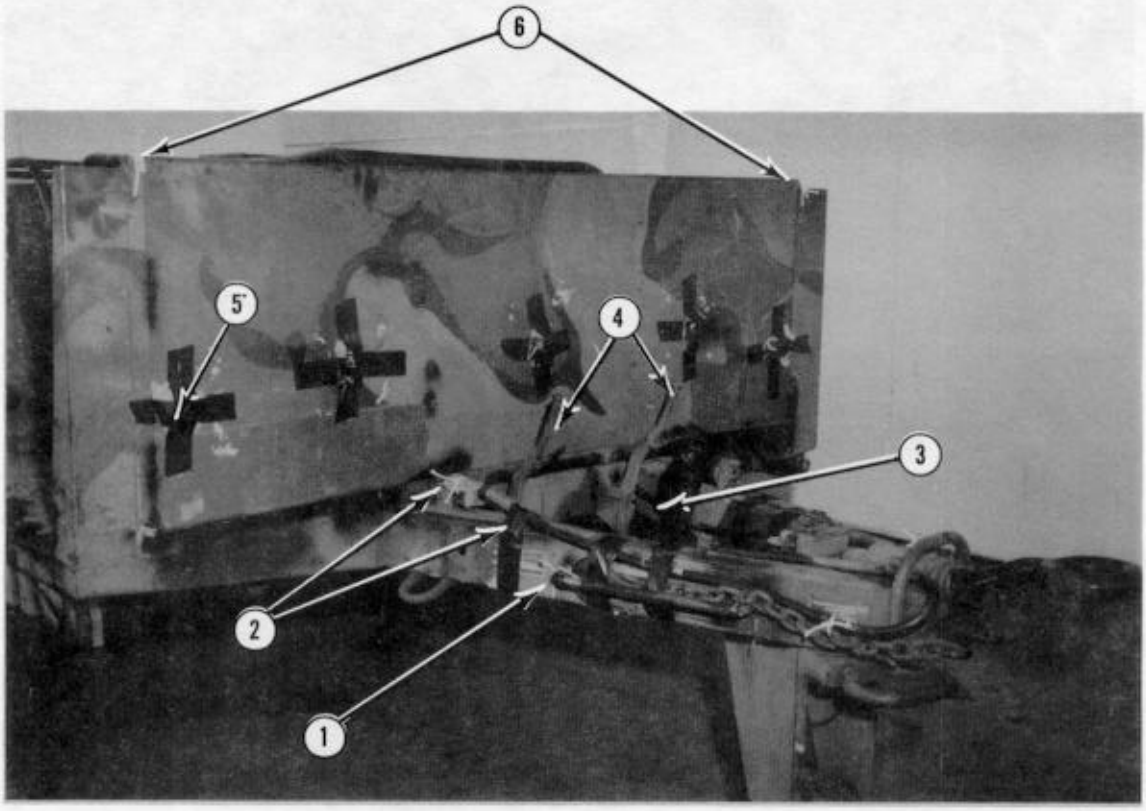
## 11-4. Preparing Power Unit

Prepare the power unit as described below.

*a.* Remove the canvas cover and bows from the trailer.

*b.* Make sure that the fuel tanks on the generators are 1/2 full. Fill any fuel cans to be dropped with this load to within 1 inch of the filler opening.

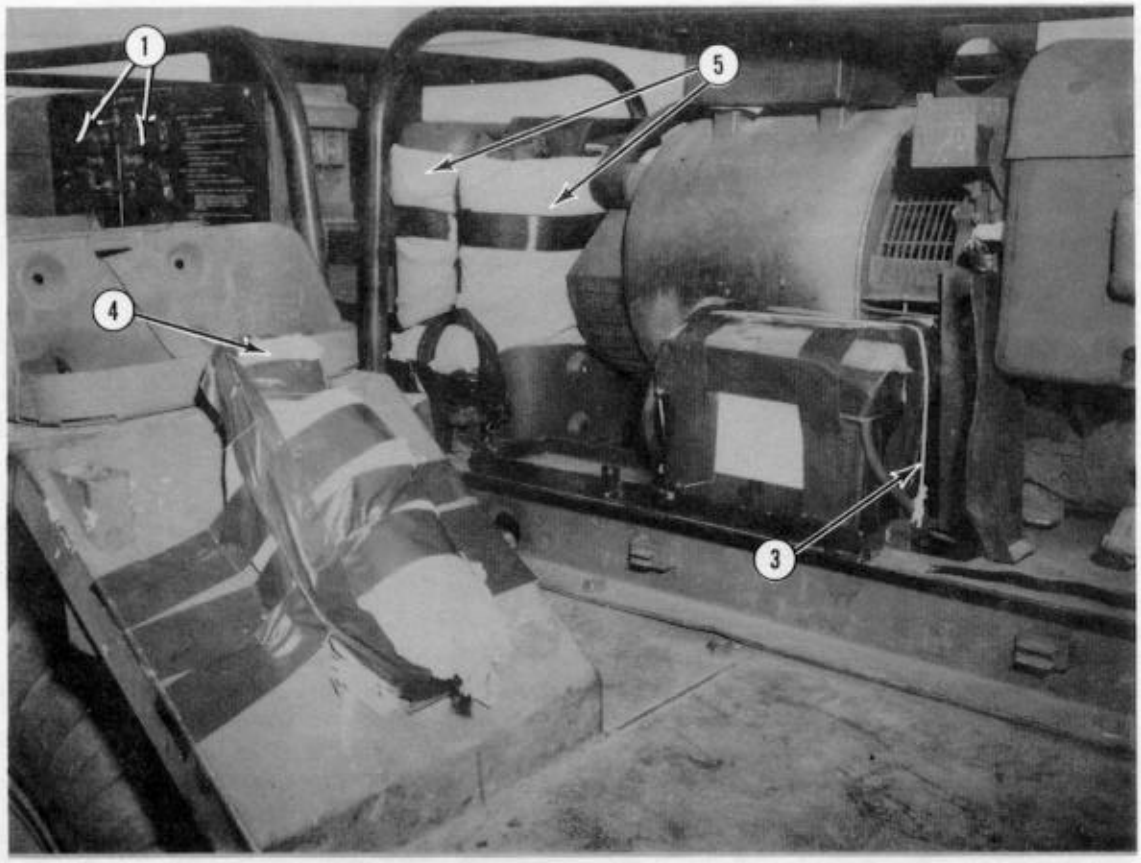
*c.* Prepare the drawbar and splash shield as shown in Figure 11-7.




1. Tie the chain hooks to the lifting handles with type III nylon cord.
2. Secure the air brake cable to its connector and to the chain with type III nylon cord. Tape the cable and chain to the drawbar.
3. Tape the electrical cable to the left side of the drawbar.
4. Release the hand brakes.
5. Pad the tarp cover hooks on the splash shield with cellulose wadding. Tape the cellulose wadding in place.
6. Secure the splash shield to the front corner posts with type III nylon cord.

**Figure 11-7. Front of trailer prepared**

*d.* Prepare the trailer and generators as shown in Figure 11-8.




(1) Tape all gages on the generators.

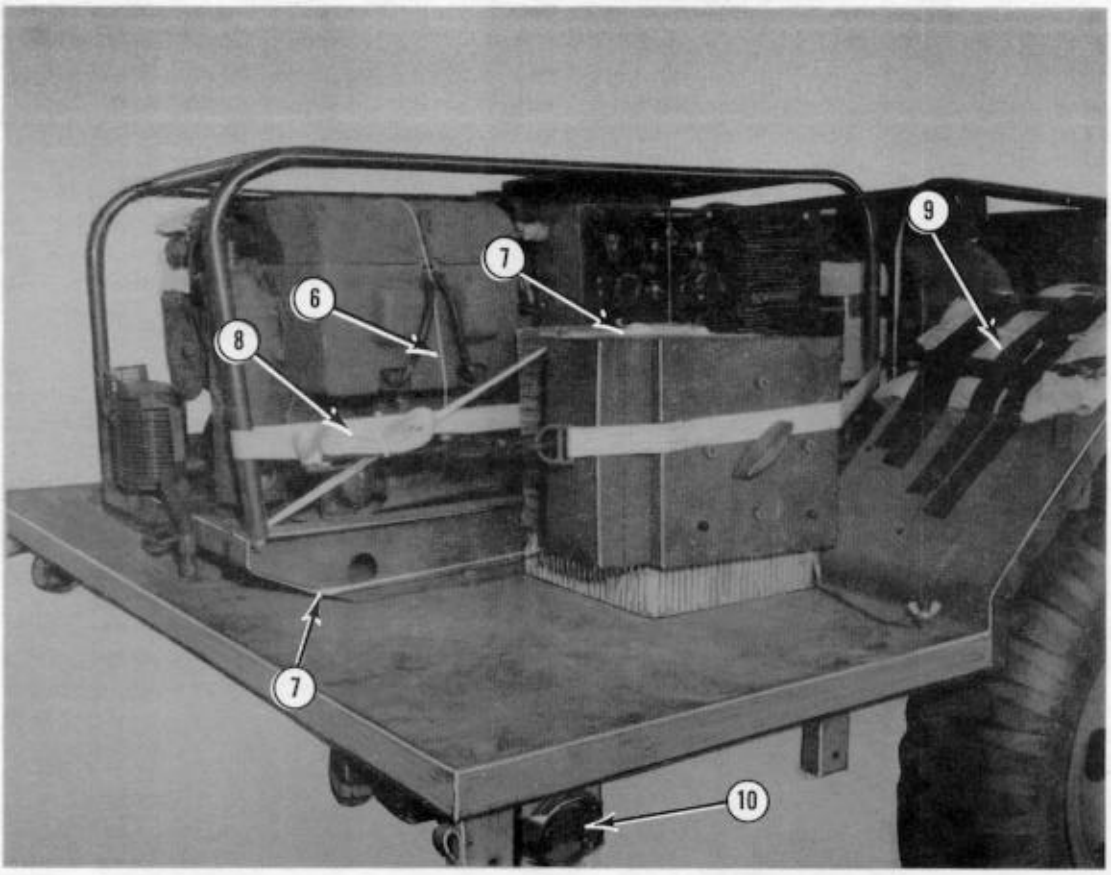
(2) Pad the fuel line sediment bowl (not shown) on each generator with cellulose wadding. Tape the cellulose wadding in place.

(3) Cover each battery with plastic. Tape the plastic in place. Tie the battery to its mount with type III nylon cord.

(4) Safety the fire extinguishers in their holders with type III nylon cord. Pad them with cellulose wadding. Tape the cellulose wadding in place.

(5) Pad the fuel cans and their mounts with cellulose wadding. Tape the cellulose wadding in place. Tie the cans to the mounts with type III nylon cord.

Figure 11-8. Trailer and generators prepared




(6) Secure the top hoods of the generators with type III nylon cord tied to the exhaust manifolds on the left and the generator frames on the right.

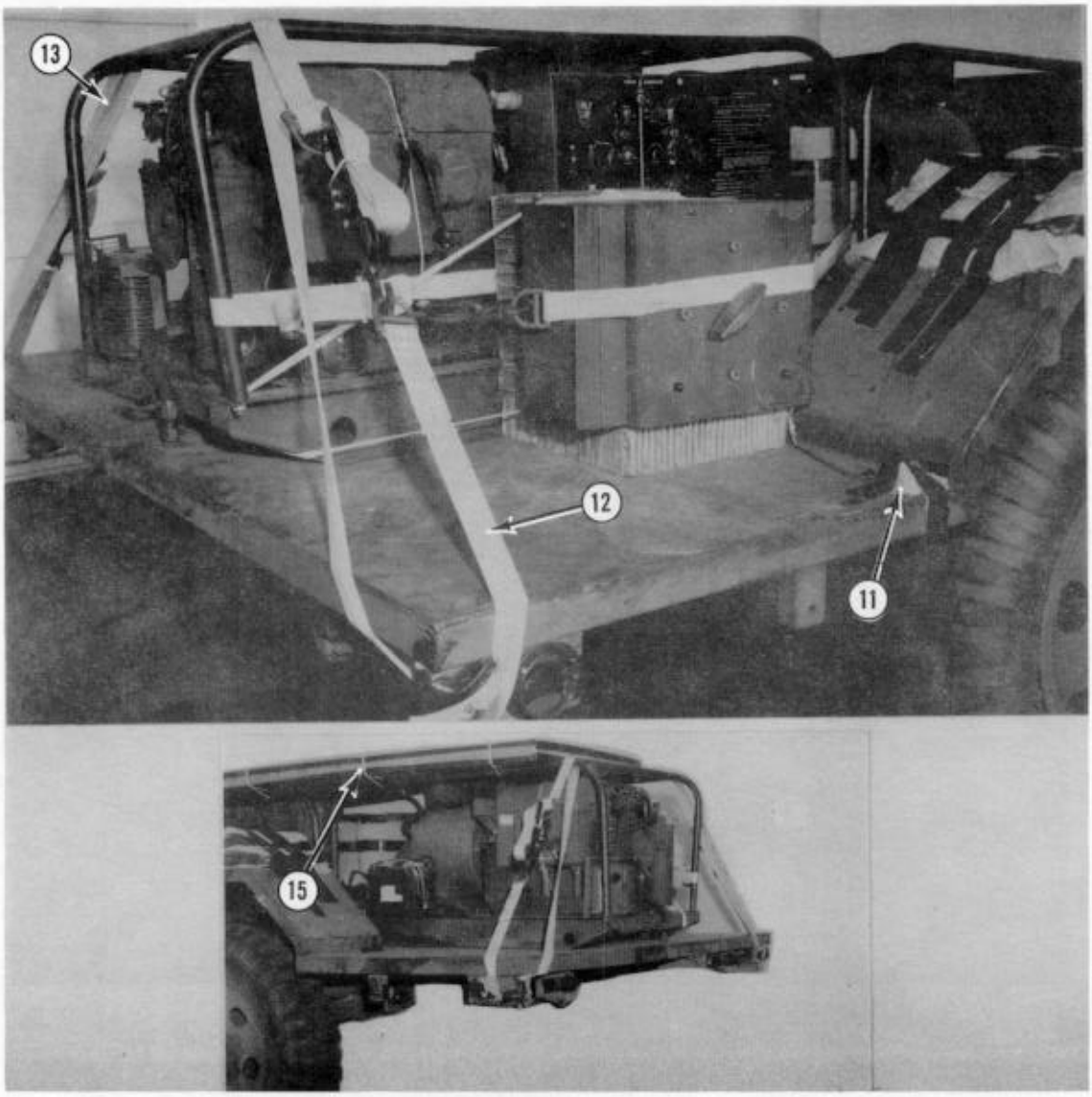
(7) Remove the voltage regulator box from the right fender. Place the box on a 14- by 14-inch piece of honeycomb with another 14- by 14-inch piece of honeycomb between the box and the generator. Run a 20-foot length of 1/2-inch tubular nylon webbing under the regulator box and around the right skid of the rear generator at the front and rear. Bring the webbing over the top of the box, and tie it.

(8) Run a 15-foot lashing around the regulator box and generator frame. Secure it with a D-ring and a load binder.

(9) Pad the fuel can brackets on each fender with cellulose wadding. Tape the cellulose wadding in place.

(10) Tape all lights and reflectors.

Figure 11-8. Trailer and generators prepared (continued)




(11) Cover the ground connection with cellulose wadding. Tape the cellulose wadding in place.

(12) Pass a 15-foot lashing through the rear generator frame in front of the crossbar and down to the right rear corner of the trailer. Pad sharp edges at the trailer corner. Secure the lashing with a D-ring and a load binder.

(13) Lash the generator frame to the left rear corner of the trailer as described in step 12 above.

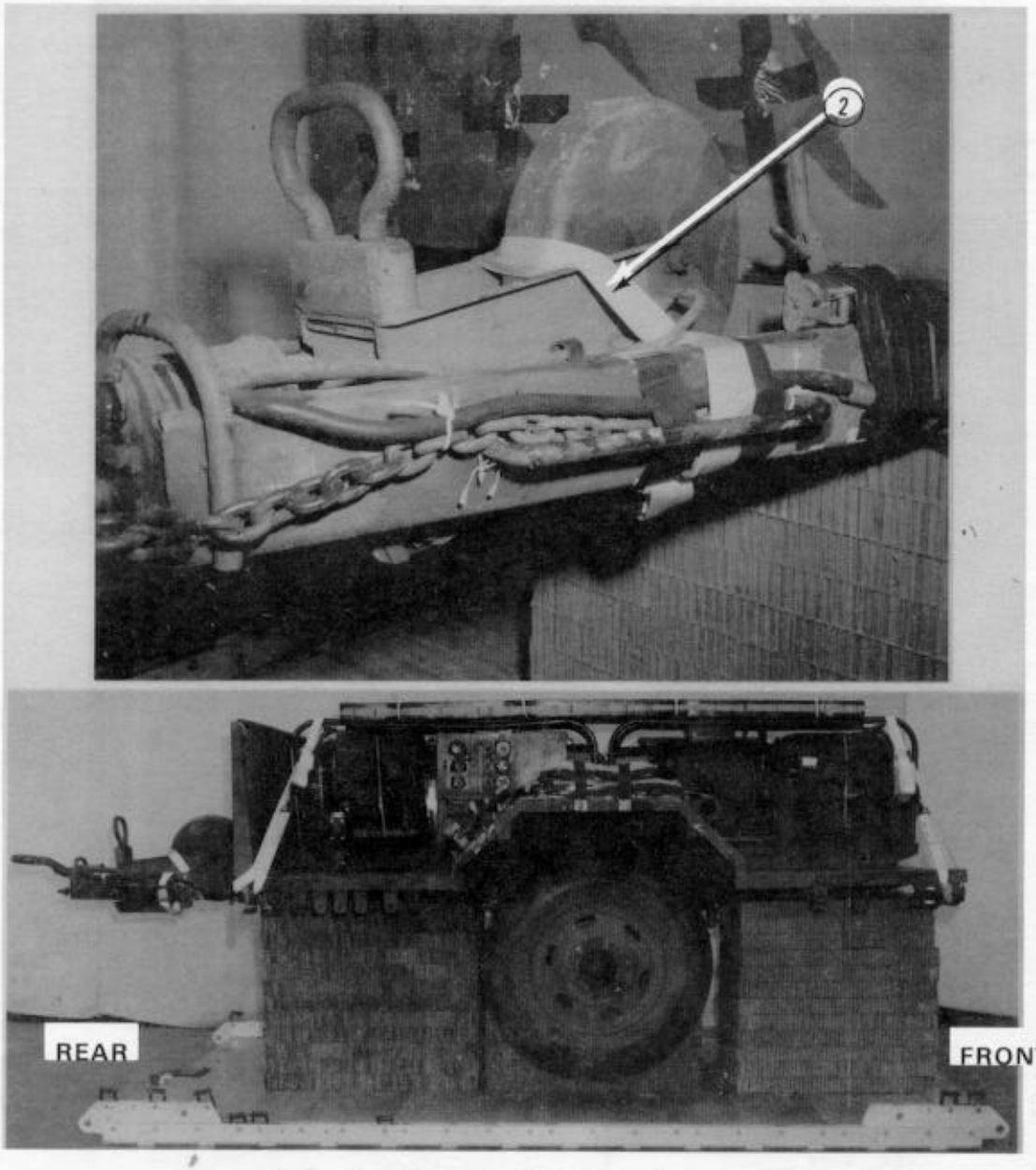
(14) Lash the generator frame to the front corners (not shown) of the trailer as described above.

(15) Tape the edges of a 36- by 96-inch sheet of honeycomb. Tie the honeycomb to the top of the generator frames with type III nylon cord.

Figure 11-8. Trailer and generators prepared (continued)

## 11-5. Positioning Power Unit and Trailer Equipment on Platform

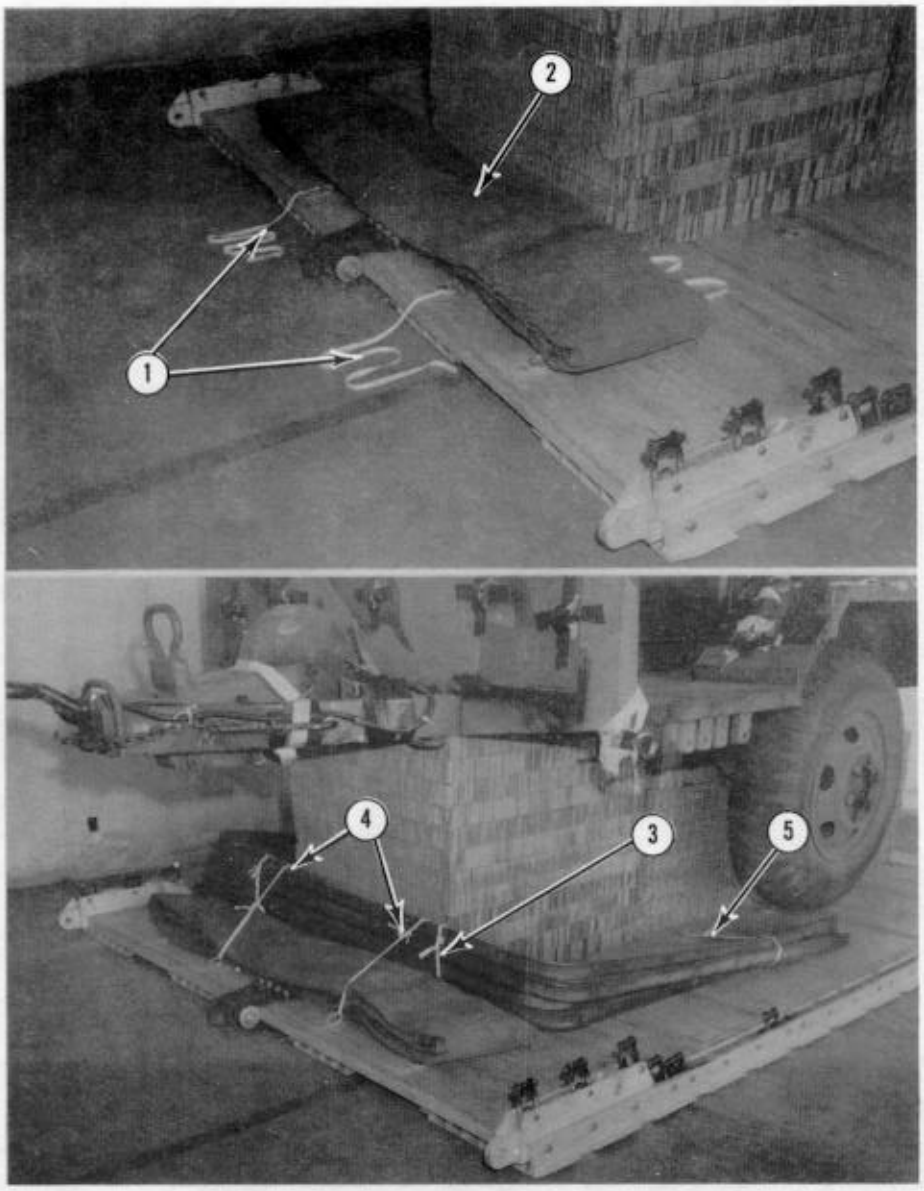
Position the power unit on the platform and secure the caster wheel as shown in Figure 11-9. Stow the trailer equipment on the platform as shown in Figure 11-10.




(1) Center the power unit on the honeycomb stacks with the rear edge even with the front edge of stack 1.

(2) Lock the caster wheel in its up position. Secure it with a 15-foot lashing around the drawbar and through the lifting handles.

Figure 11-9. Power unit positioned on platform and caster wheel secured




(1) Run a 5-foot length of 1/2-inch tubular nylon webbing through tiedown ring B6 and another through tiedown ring C6.

(2) Fold the tarp, and lay it over the webbing placed in step 1 above.

(3) Tie the bows together at the tops and sides with 1/2-inch tubular nylon webbing.

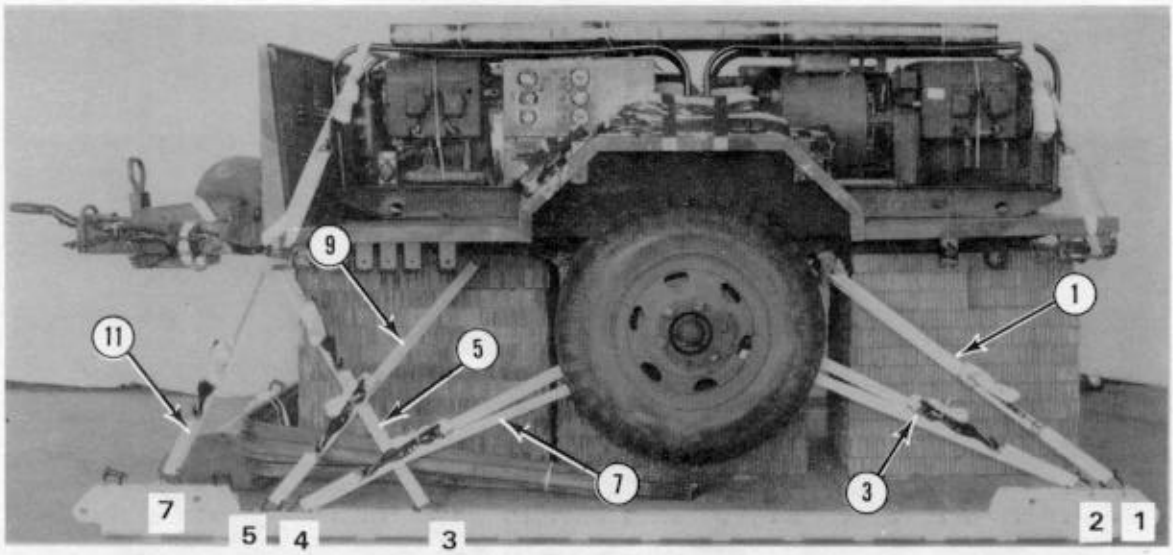
(4) Secure the bows over the tarp with the webbing placed in step 1 above.

(5) Secure the sides of the bows to tiedown rings A4 and B4 with 1/2-inch tubular nylon webbing.

Figure 11-10. Trailer equipment stowed and secured on platform

## 11-6. Lashing Power Unit

Lash the power unit to the platform as shown in Figure 11-11.




| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| | | Pass lashing: |
| 1 | 1 | Around leaf spring, left side. |
| 2 | 1A | Around leaf spring, right side. |
| 3 | 2 | Around left side axle, under the brake line. |
| 4 | 2A | Around right side axle, under the brake line. |
| 5 | 3 | Through left front tiedown provision. |
| 6 | 3A | Through right front tiedown provision. |
| 7 | 4 | Around left side axle, under the brake line. |
| 8 | 4A | Around right side axle, under the brake line. |
| 9 | 5 | Around left center tiedown provision. |
| 10 | 5A | Around right center tiedown provision. |
| 11 | 7 | Through left front tiedown provision. |
| 12 | 7A | Through right front tiedown provision. |

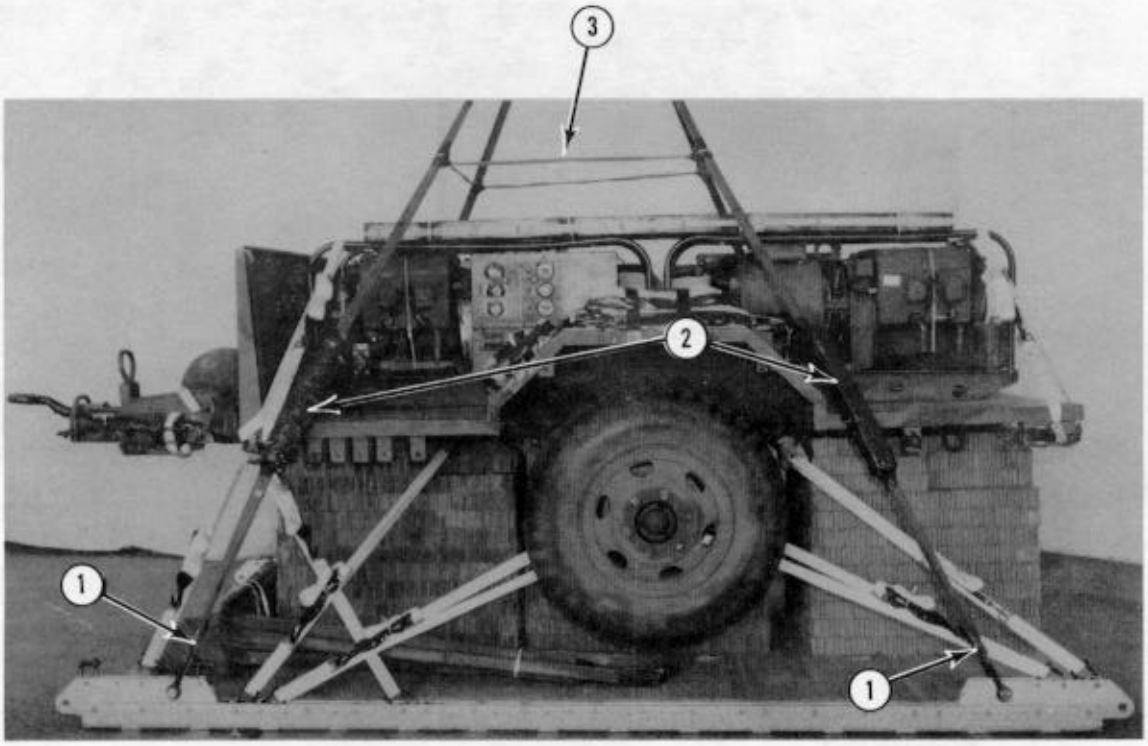
Figure 11-11. Lashings installed

### 11-7. Installing and Safetying Suspension Slings

Install and safety four 12-foot (2-loop), type XXVI nylon suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-12.

### 11-8. Stowing Cargo Parachutes

Prepare and install the parachute stowage platform as shown in Figure 11-13. Stow two G-11A or G-11B cargo parachutes on the load as shown in Figure 11-14.

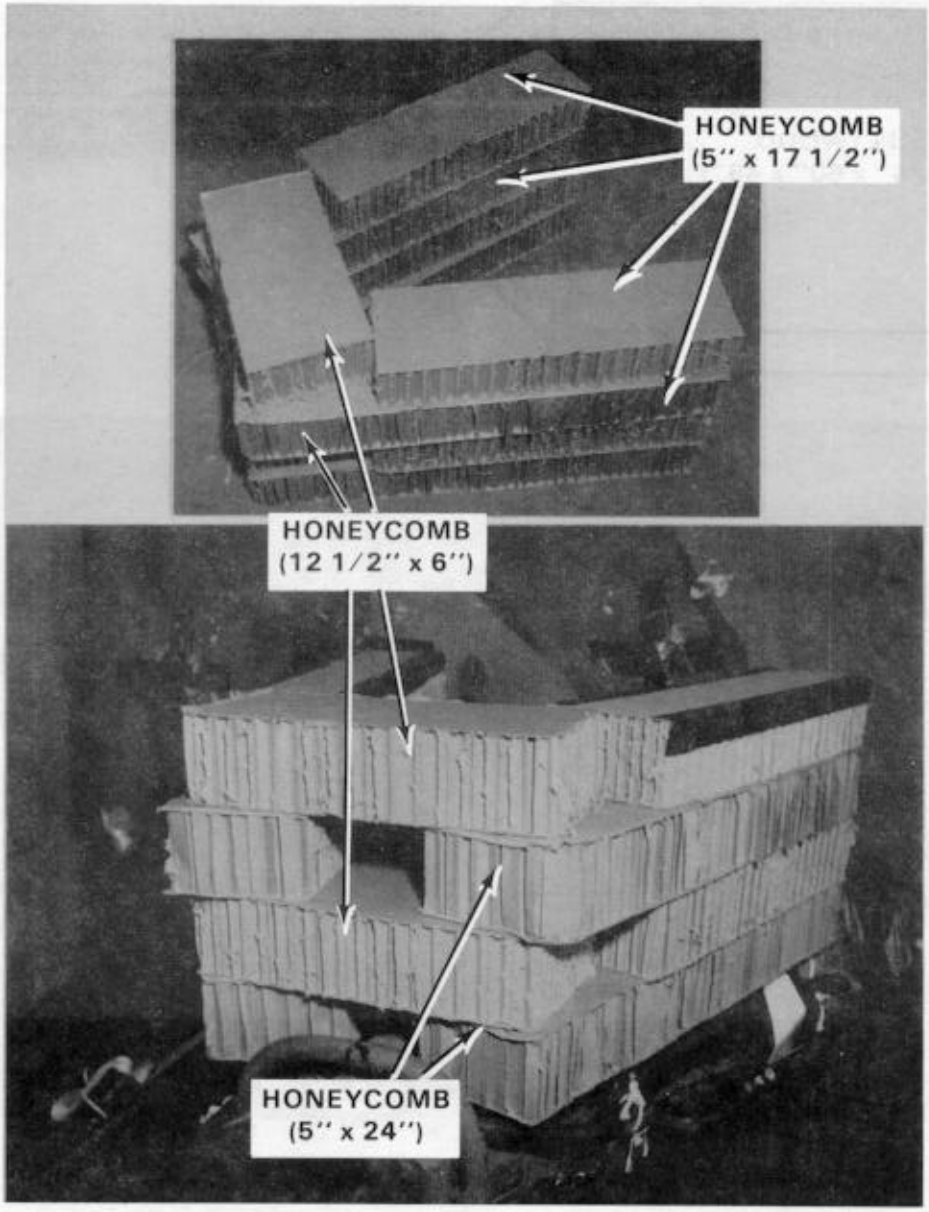



(1) Attach a suspension sling to each tandem link with a large clevis.

(2) Wrap each sling where it touches the floor of the trailer with 6- by 18-inch pieces of felt. Tape the felt in place.

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

Figure 11-12. Suspension slings installed and safetied



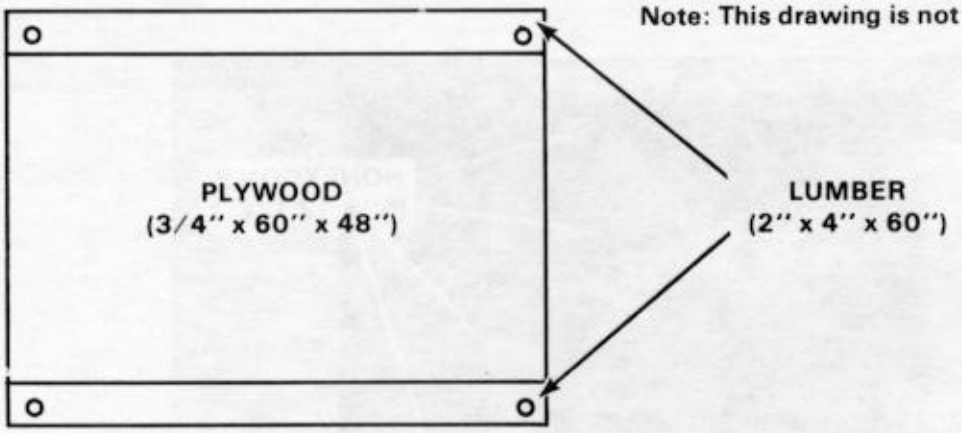

(1) Alternate four 5- by 24-inch and four 5- by 17 1/2-inch pieces of honeycomb to make the sides of the platform support as shown.

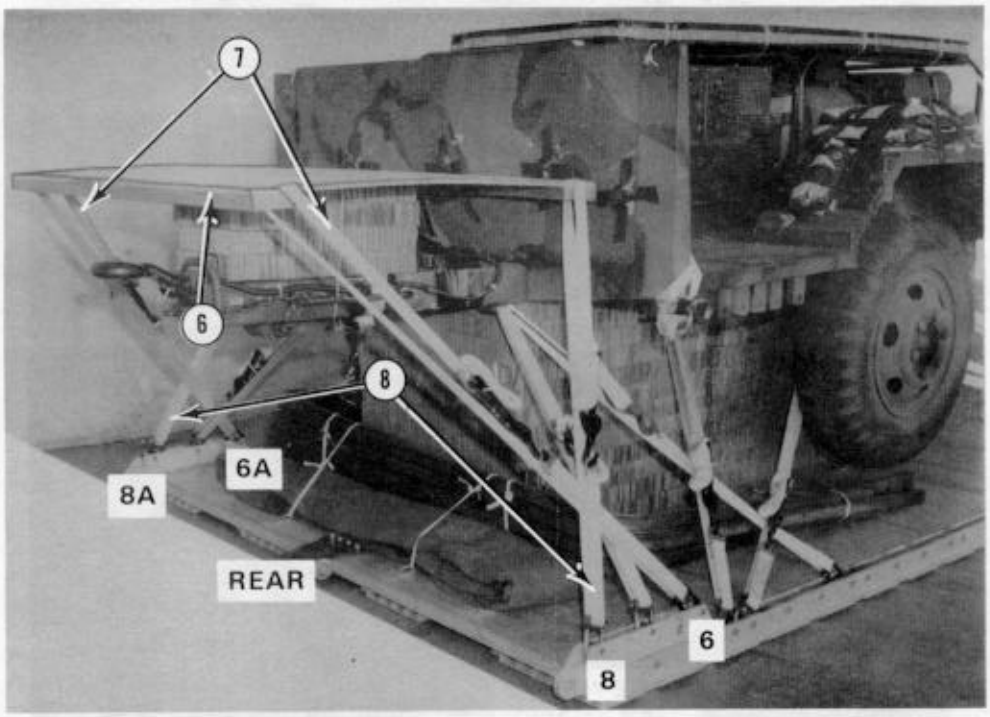
(2) Bridge the two sides of the stack as shown using two 12 1/2- by 6-inch pieces of honeycomb.

Note: Assemble the stack on the drawbar of the trailer to ensure correct alignment.

Figure 11-13. Parachute stowage platform prepared

Note: This drawing is not drawn to scale.




(3) Cut one piece of 3/4- by 60- by 48-inch plywood.

(4) Nail one 2- by 4- by 60-inch lumber flush with each 60-inch side of plywood. Use eightpenny nails.

(5) Drill 2-inch holes in each corner 2 inches from each edge through the plywood and the 2- by 4-inch lumber as shown.

(6) Center the parachute stowage platform on the honeycomb support as shown.

(7) Run 15-foot lashings from clevises 6 and 6A through the rear holes of the parachute stowage platform. Secure each lashing with a D-ring and a load binder.

(8) Run 15-foot lashings from clevises 8 and 8A through the front holes of the parachute stowage platform. Secure each lashing with a D-ring and a load binder.

Figure 11-13. Parachute stowage platform prepared (continued)

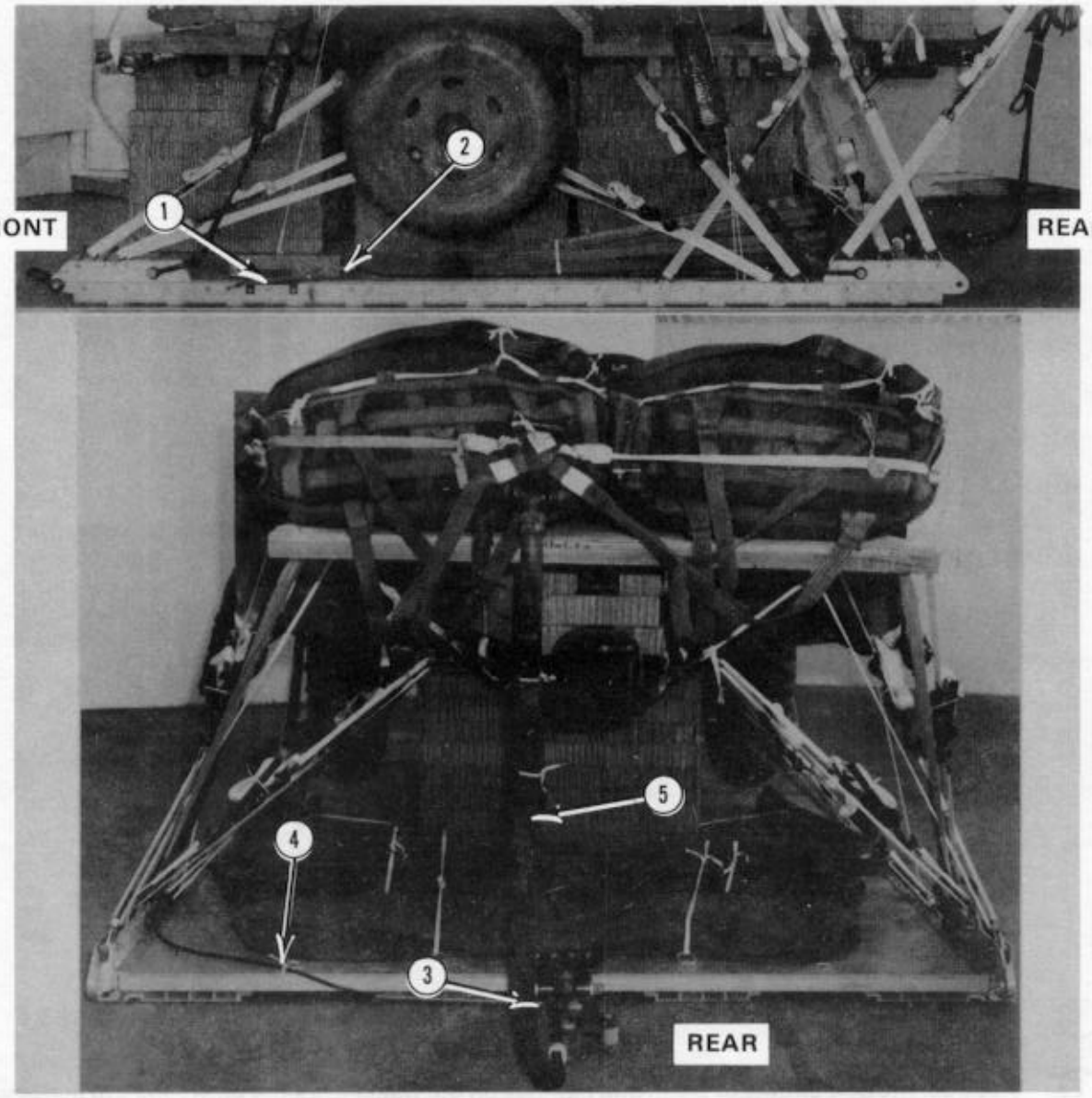

(1) Cluster two G-11A or G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5.

(2) Restrain the parachutes to the lifting handles on the trailer drawbar with type VIII nylon webbing.

**Figure 11-14. Parachutes stowed**

### 11-9. Installing Extraction System

Install the EFTC according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-15.

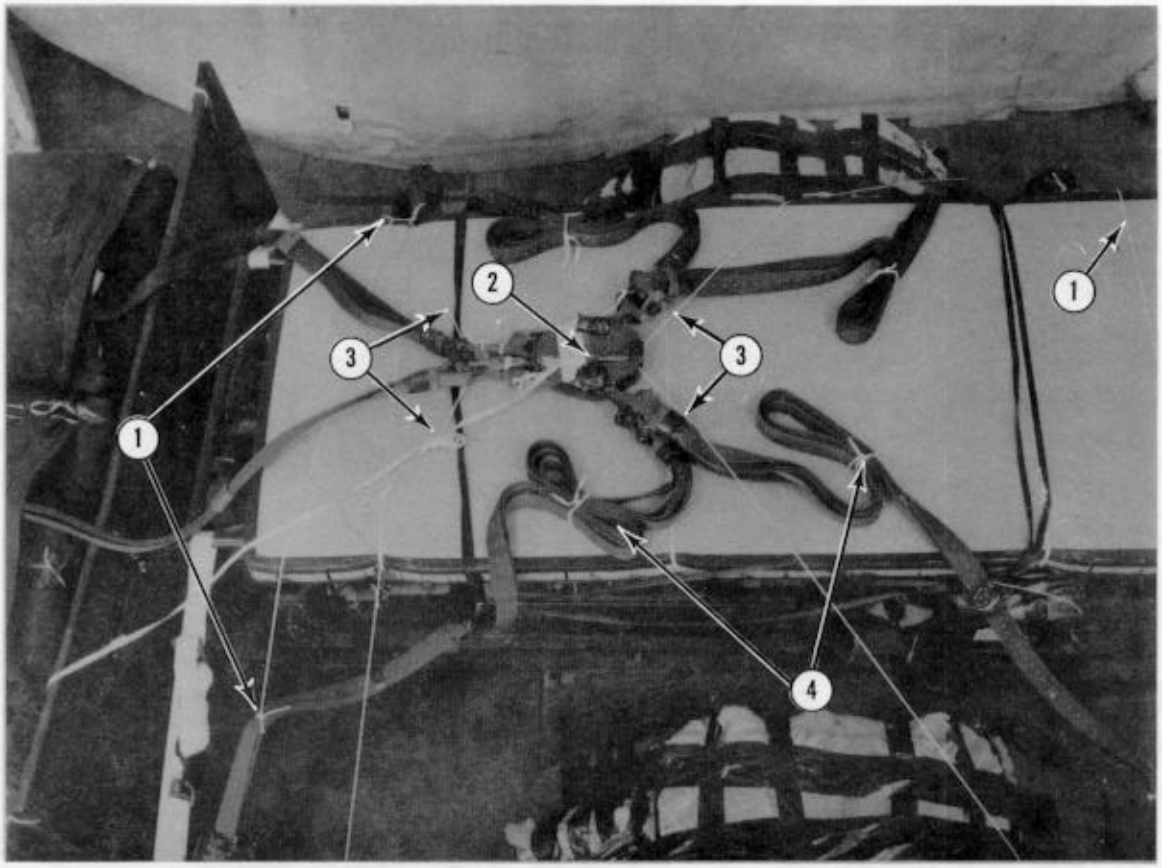



1. Install the EFTC mounting brackets in the front mounting holes on the left platform rail.
2. Attach a 12-foot cable to the actuator. Install the actuator to the EFTC mounting brackets.
3. Install the latch assembly, and attach the cable.
4. Tie the cable to tiedown ring D6 with type I, 1/4-inch cotton webbing.
5. Install a 9-foot (2-loop), type XXVI nylon deployment line on the load.

Figure 11-15. EFTC installed

## 11-10. Installing Parachute Release

Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-16.




(1) Tie both rear slings together from points 12 inches above the padding with type III nylon cord. Tie the front slings in the same way.

(2) Prepare, install, and safety the M-1 release. Place it on the honeycomb covering the generators as shown.

(3) Secure the release to convenient points on the load with type III nylon cord.

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

**Figure 11-16. M-1 cargo parachute release installed**

### 11-11. Installing Provisions for Emergency Restraints

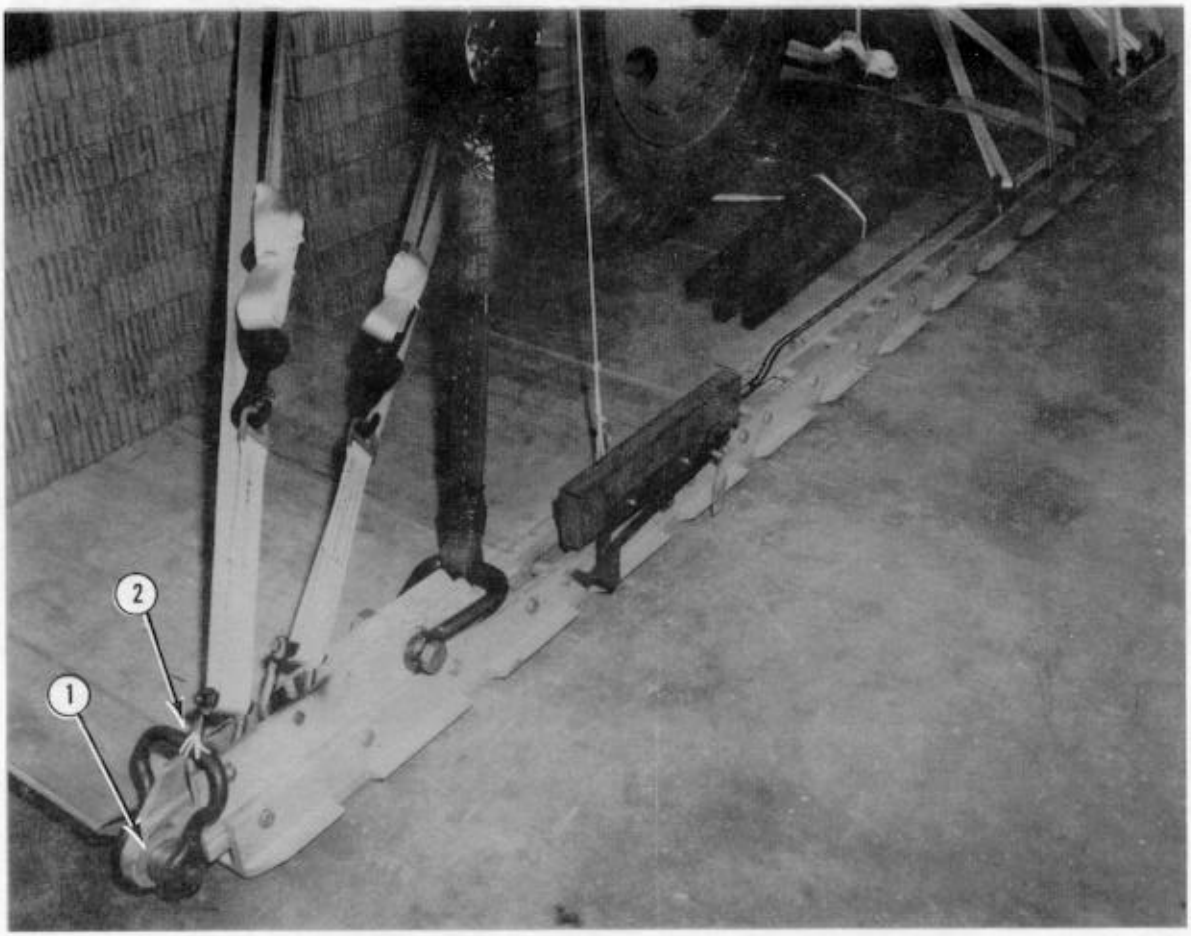
Install a medium clevis in the end hole of each front tandem link as shown in Figure 11-17.

### 11-12. Placing Extraction Parachute

Place the extraction parachute as described below.

*a. C-130 Aircraft.* Place a 15-foot cargo extraction parachute and a 60-foot (1-loop), type XXVI nylon extraction line on the load for installation in the aircraft.

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




1 Bolt a medium clevis to each front tandem link. Place spacers or washers on the clevis bolt on either side of the tandem link.

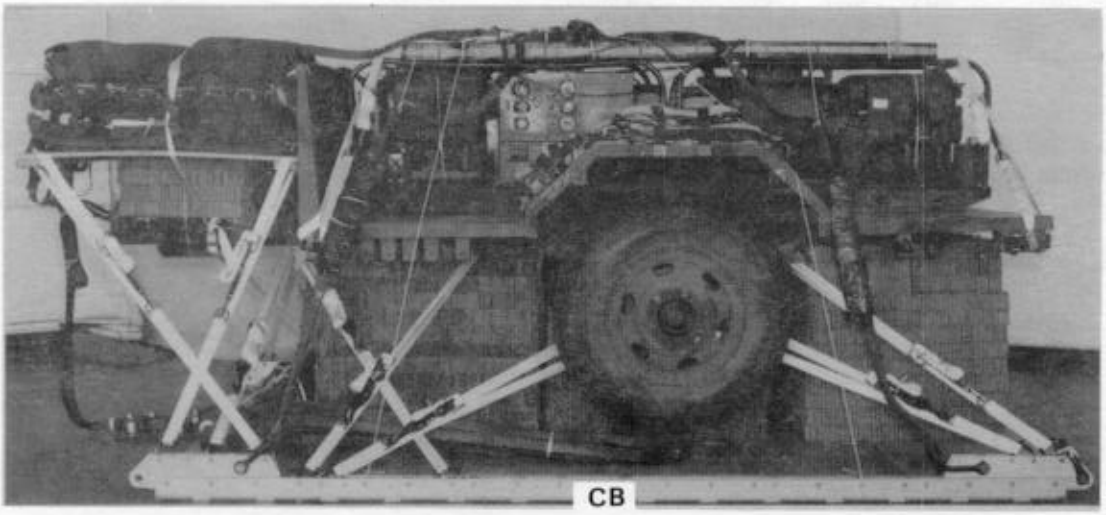
2 Place the clevises in an upright position, and tie them to the nearest lashing with type I, 1/4-inch cotton webbing.

**Figure 11-17. Emergency restraint provisions installed**

### 11-13. Marking Rigged Load

Mark the rigged load as described in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-18. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the generator fuel tanks and batteries have been prepared according to AFR 71-4/TM 38-250. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

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




**RIGGED LOAD DATA**

| | | |
|---|---|---|
| Weight: | Load shown | 6,680 pounds |
| | Maximum load allowed | 7,080 pounds |
| Height | | 76 inches |
| Width | | 108 inches |
| Length | | 180 inches |
| Overhang: | Front | 5 1/2 inches |
| | Rear | 30 1/2 inches |
| CB (from front edge of platform) | | 74 1/2 inches |

**Figure 11-18. PU-619M power unit rigged for low-velocity airdrop on the type V platform**

## 11-14. Equipment Required

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

Table 11-1. Equipment required for rigging the PU-619M power unit for low-velocity airdrop on the type V platform

| National Stock Number | Item | Quantity |
|---|---|---|
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| | Clevis, suspension: | |
| 4030-00-678-8562 | 3/4-in (medium) | 2 |
| 4030-00-090-5354 | 1-in (large) | 5 |
| 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 |
| 1670-00-360-0329 | Cover, link assembly (type IV) | 1 |
| 8135-00-664-6958 | Cushioning material, packaging, cellulose wadding | As required |
| 8305-00-958-3685 | Felt, 1/2-in thick | As required |
| 1670-01-183-2678 | Leaf, extraction line | 2 |
| | Line, extraction: | |
| 1670-01-064-4452 | 60-ft (1-loop), type XXVI nylon webbing or | 1 |
| 1670-00-856-0265 | 60-ft (1-loop), type X nylon webbing (use w 15-ft parachute) | 1 |
| 1670-01-107-7652 | 160-ft (1-loop), type XXVI nylon webbing | 1 |
| 1670-00-783-5988 | Link assembly, type IV | 3 |
| 5510-00-220-6146 | Lumber, 2- by 4- by 60-in | 2 |
| 5315-00-010-4659 | Nail, steel wire, common, 8d | As required |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in | 16 sheets |
| | 5- by 17 1/2-in | (4) |
| | 5- by 24-in | (4) |
| | 12 1/2- by 6-in | (2) |
| | 14- by 14-in | (2) |
| | 18- by 36-in | (6) |
| | 34- by 5 1/2-in | (8) |
| | 34- by 14 1/2-in | (4) |
| | 35- by 40-in | (8) |
| | 36- by 96-in | (1) |
| | 40- by 36-in | (21) |
| | Parachute: | |
| | Cargo: | |
| 1670-00-269-1107 | G-11A or | 2 |
| 1670-01-016-7841 | G-11B | 2 |
| | Cargo extraction: | |
| 1670-00-052-1548 | 15-ft or | 1 |
| 1670-01-063-3715 | 15-ft | 1 |
| | 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 | (16) |
| 1670-01-162-2376 | Extraction bracket assembly | (1) |
| 1670-01-162-2381 | Tandem link | (4) |
| 5530-00-128-4981 | Plywood, 3/4- by 60- by 48-in | 1 |
| 1670-01-097-8816 | Release, cargo parachute, M-1 | 1 |
| | Sling, cargo airdrop: | |
| | For deployment line: | |
| 1670-01-062-6304 | 9-ft (2-loop), type XXVI nylon webbing | 1 |

Table 11-1. Equipment required for rigging the PU-619M power unit for low-velocity airdrop on the type V platform (continued)

| National Stock Number | Item | Quantity |
|---|---|---|
| | For riser extension: | |
| 1670-01-062-6302 | 20-ft (2-loop), type XXVI nylon webbing | 2 |
| | For suspension slings: | |
| 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 | 2 |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 1670-00-937-0271 | Tiedown assembly, 15-ft | 22 |
| | Webbing: | |
| 8305-00-268-2411 | Cotton, type I, 1/4-in | As required |
| 8305-00-082-5752 | Nylon, tubular, 1/2-in, natural | As required |
| 8305-00-263-3591 | Nylon, type VIII | As required |

## Section II

## RIGGING THE PU-620M POWER UNIT FOR LOW-VELOCITY AIRDROP

### 11-15. Description of Load

Two 5-kilowatt generators mounted on a 3/4-ton trailer make up the PU-620M power unit (line number J47617) (Figure 11-19). The power unit is rigged on a 12-foot, type V airdrop platform for low-velocity airdrop. Eight filled fuel cans and three AB-155 antenna kits are dropped with the power unit. The load requires two G-11A cargo parachutes or one G-11B cargo parachute. The unrigged power unit with eight filled fuel cans weighs 2,680 pounds. It is 147 inches long and 75 inches wide. Its height is 80 inches (reducible to 56 inches).

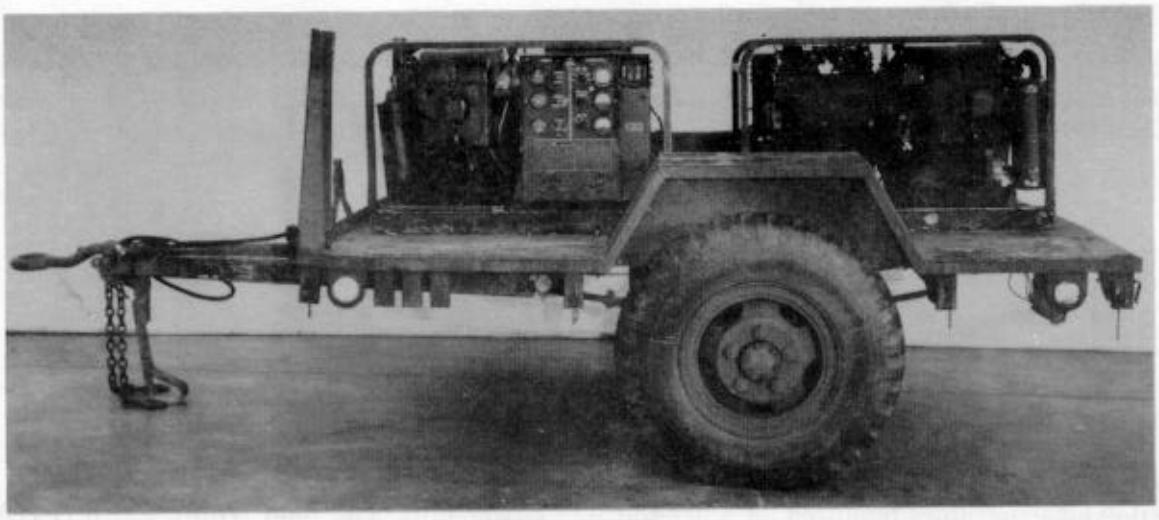
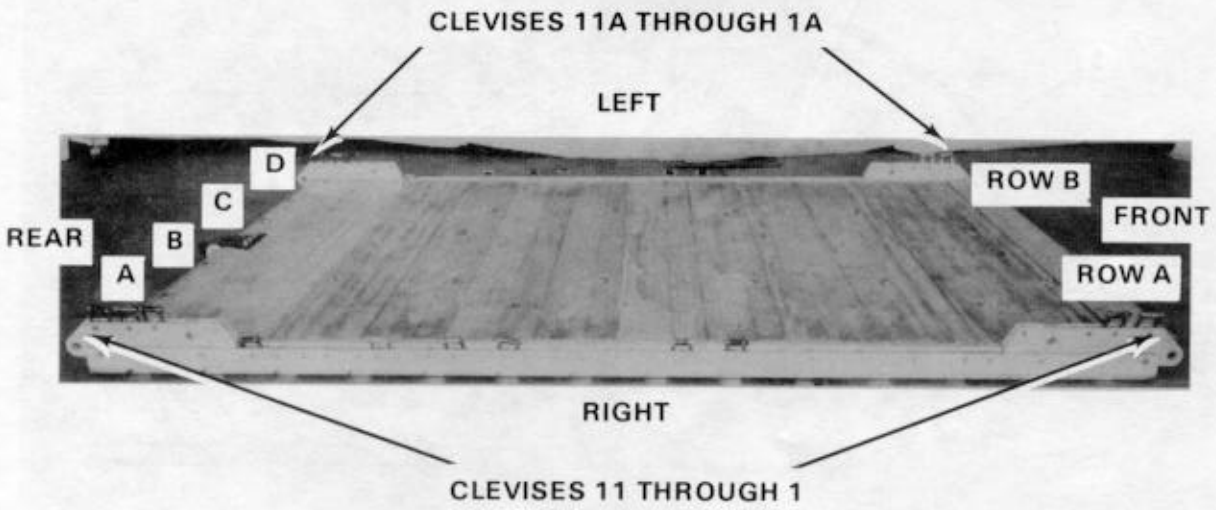


Figure 11-19. PU-620M power unit with bows, cover, and splash shield removed

## 11-16. Preparing Platform

Prepare a 12-foot, type V airdrop platform using four tandem links and 22 clevis assemblies as shown in Figure 11-20.

**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.



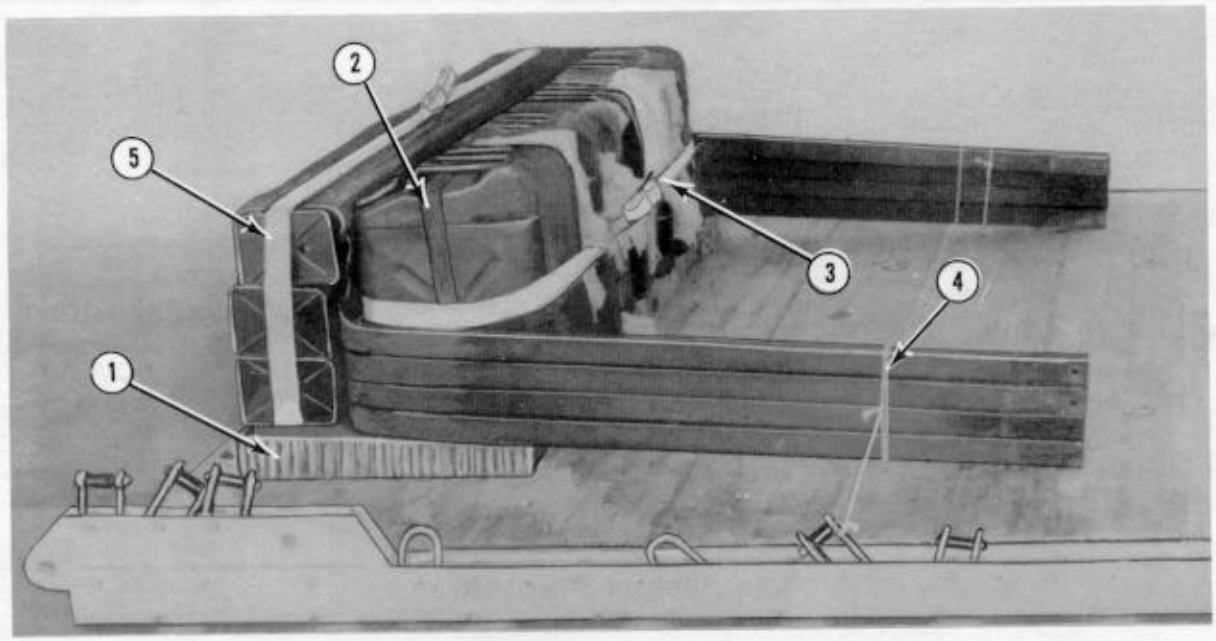

Step:

1. Inspect, or assemble and inspect, the platform as outlined in 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 and on the rear of each platform side rail using holes 22, 23, and 24.
3. Install clevises on bushings 1 and 2 of each front tandem link. Install clevises on bushings 2, 3, and 4 of each rear tandem link.
4. Starting at the front of each platform side rail, install clevises on each platform side rail using the bushings bolted on holes 10, 11, 15, 16, 18, and 21.
5. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 11 and those bolted to the left side from 1A through 11A.
6. Starting at the front of the platform, label the two tiedown rings in the first five panels A and B from right to left. Label the four tiedown rings in the last panel A, B, C, and D from right to left. Starting with the first panel, number the tiedown rings 1 through 6.

Figure 11-20. Platform prepared

## 11-17. Placing Accompanying Load on Platform

Remove the trailer canvas and bows. Place eight fuel cans, the trailer bows, and the antenna sections on the platform, and secure them as shown in Figure 11-21.




(1) Lay a 72- by 24-inch piece of honeycomb 4 inches from the rear edge of the platform. Place two 15-foot lashings on the honeycomb in a front-to-rear direction 12 inches from both sides of the honeycomb.

(2) Remove the fuel cans from their brackets on the fenders. Remove the can brackets and replace their attaching bolts on the fenders. Strap the brackets to the cans with the straps provided.

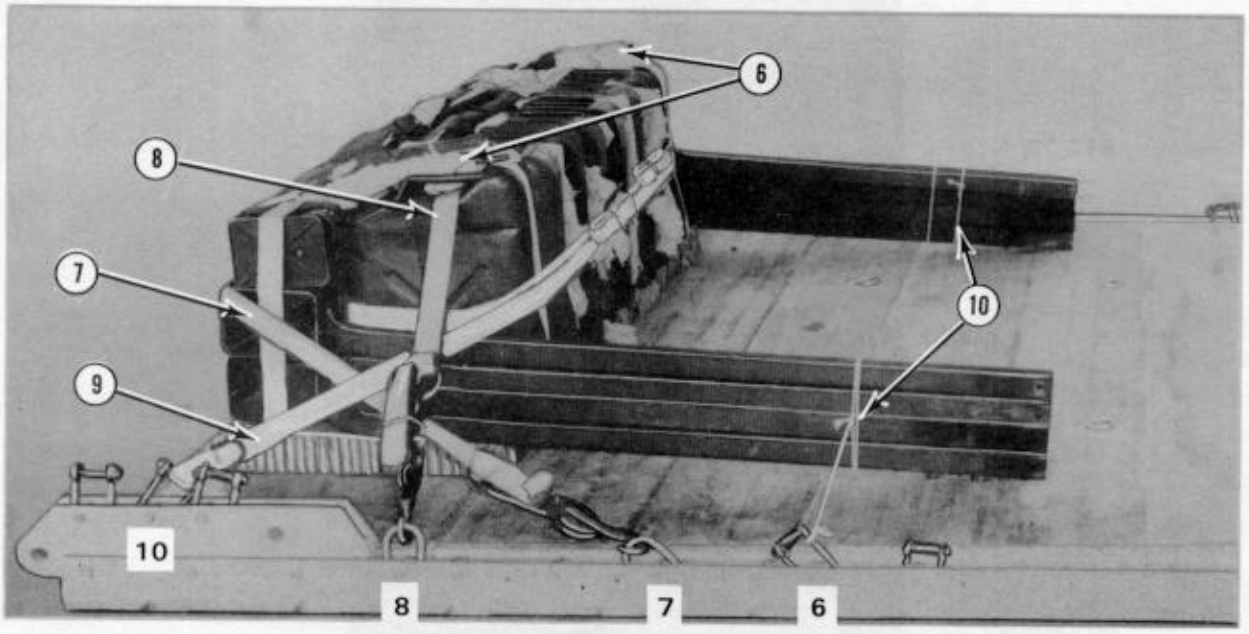
(3) Set eight filled fuel cans along the front edge of the honeycomb. Pad between them with cellulose wadding. Bind them together with a 15-foot lashing.

Note: Fill the cans to within 1 inch of the filler opening.

(4) Stack the trailer bows, and tie them together with type III nylon cord. Place the tops of the bows to the rear of the fuel cans.

(5) Bind three AB-155 antenna kits together with a 15-foot lashing. Place the kits to the rear of the bows.

Figure 11-21. Power unit equipment placed on platform




(6) Fasten the two lashings positioned in step 1 with D-rings and load binders.

(7) Run a 15-foot lashing through clevis 7A, through its own D-ring, and around the rear of the antennas. Secure the free end to clevis 7 with a D-ring and a load binder.

(8) Run a 15-foot lashing through clevis 8A, through its own D-ring, and through the handles of the fuel cans. Secure the free end to clevis 8 with a D-ring and a load binder.

(9) Run a 15-foot lashing through clevis 10A, through its own D-ring, and around the front of the fuel cans. Run a 15-foot lashing through clevis 10, through its own D-ring, and around the front of the fuel cans. Secure the free ends of the lashings in front of the fuel cans with two D-rings and a load binder.

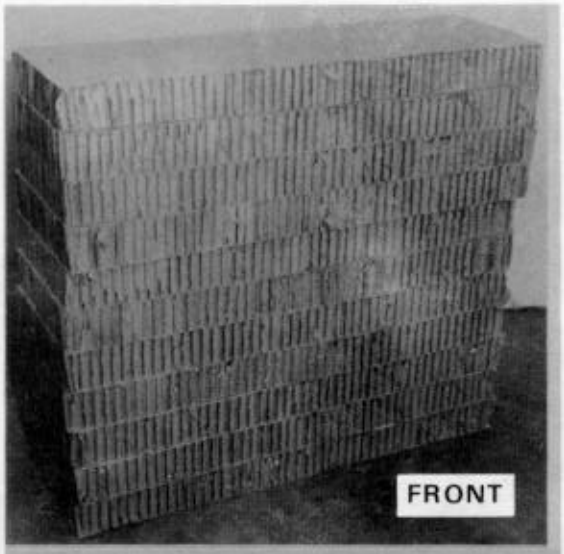
(10) Tie the legs of the bows to clevises 6 and 6A with type III nylon cord.

Figure 11-21. Power unit equipment placed on platform (continued)

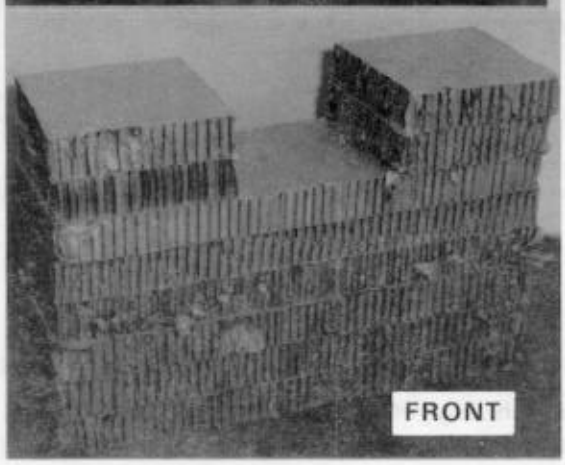
### 11-18. Preparing and Positioning Honeycomb Stacks

Prepare the honeycomb stacks as shown in Figures 11-22 and 11-23. Position the stacks on the platform as shown in Figure 11-24.

STACK 1



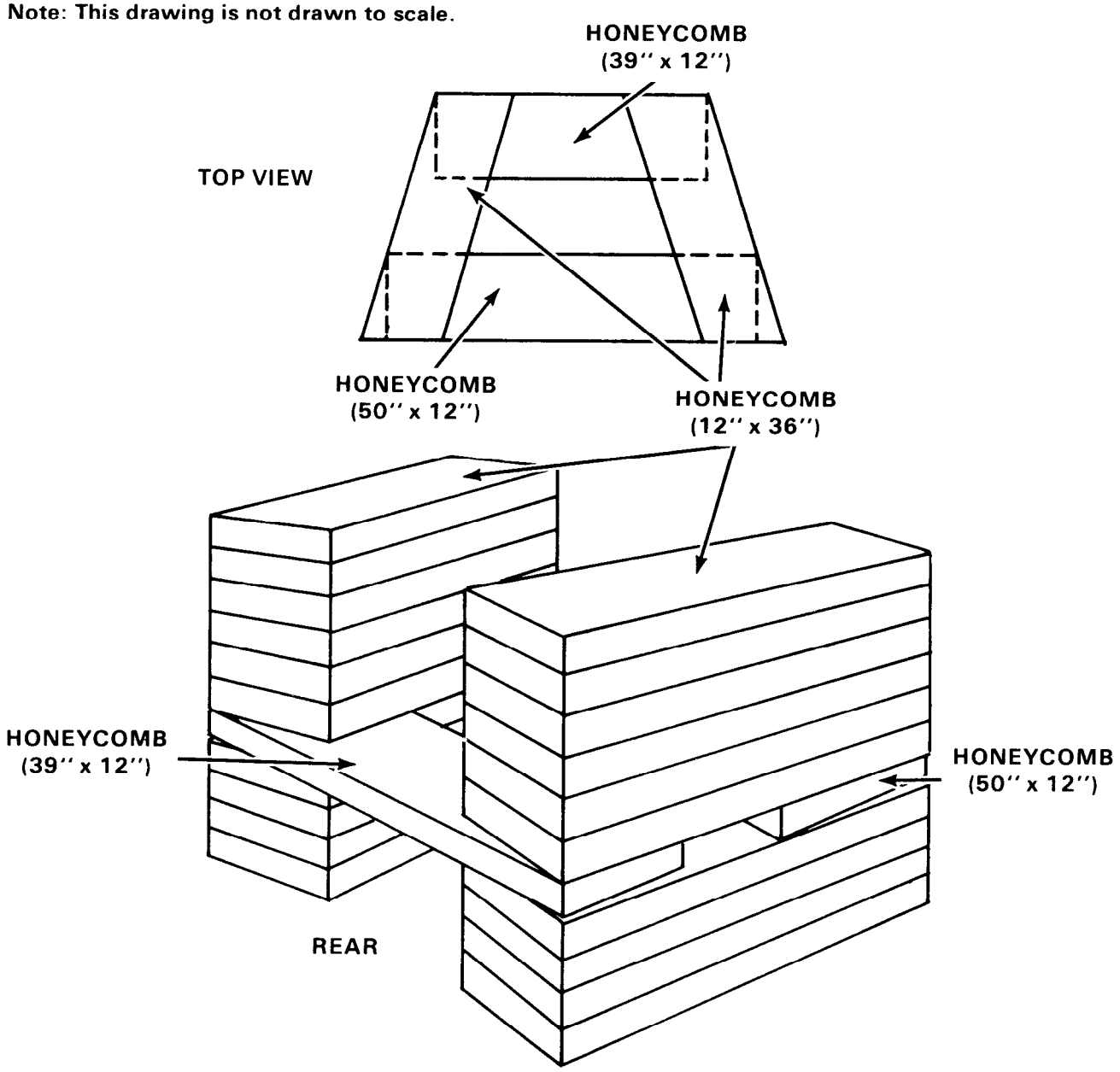

STACK 2




| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 1 | 11 | 36 | 12 | Honeycomb | Stack honeycomb flush. |
| 2 | 6 | 36 | 12 | Honeycomb | Stack honeycomb flush. |
| | 4 | 12 | 12 | Honeycomb | Stack two pieces of honeycomb flush over each side of the base. |

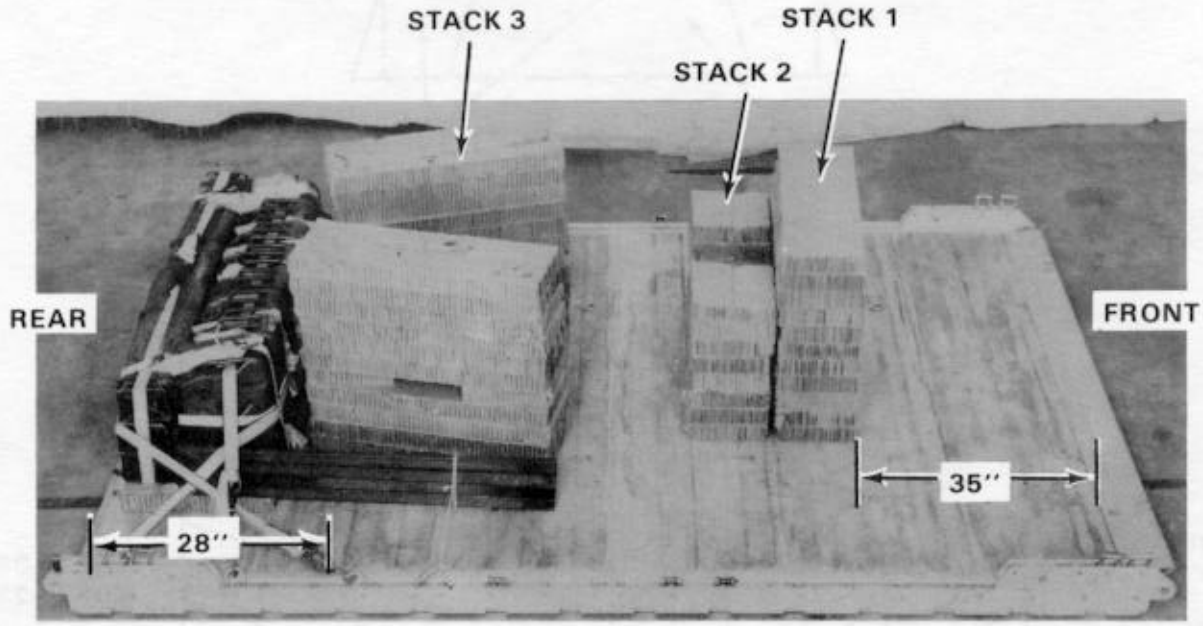
Figure 11-22. Honeycomb stacks 1 and 2 prepared

Note: This drawing is not drawn to scale.




| Stack Number | Pieces | Width (Inches) | Length (Inches) | Material | Instructions |
|---|---|---|---|---|---|
| 3 | 8 | 12 | 36 | Honeycomb | Make two stacks of four layers each. Place them at an angle as shown. |
| | 1 | 39 | 12 | Honeycomb | |
| | 1 | 50 | 12 | Honeycomb | Bridge the two stacks as shown. |
| | 12 | 12 | 36 | Honeycomb | Make two stacks of six layers. Place each stack flush over each side of the base. |

**Figure 11-23. Honeycomb stack 3 prepared**




| Stack Number | Position of Stack on Platform |
|---|---|
| 1 | Place stack: |
| 2 | Centered 35 inches from the front edge of the platform. |
| 3 | Centered flush against stack 1. |
| | Centered 28 inches from the rear edge of the platform. |

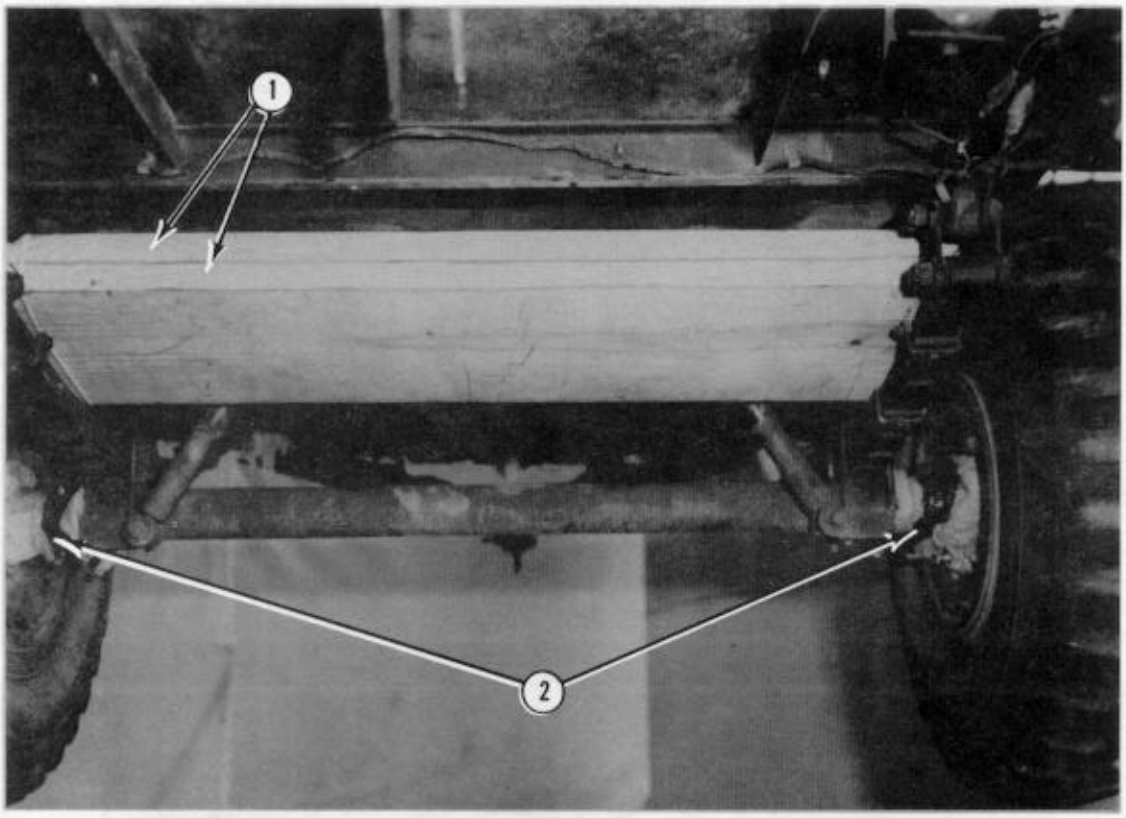
Figure 11-24. Honeycomb stacks positioned on platform

### 11-19. Preparing Power Unit

Prepare the power unit as described below and as shown in Figures 11-25 through 11-29.

*a.* Remove the splash shield from the trailer.

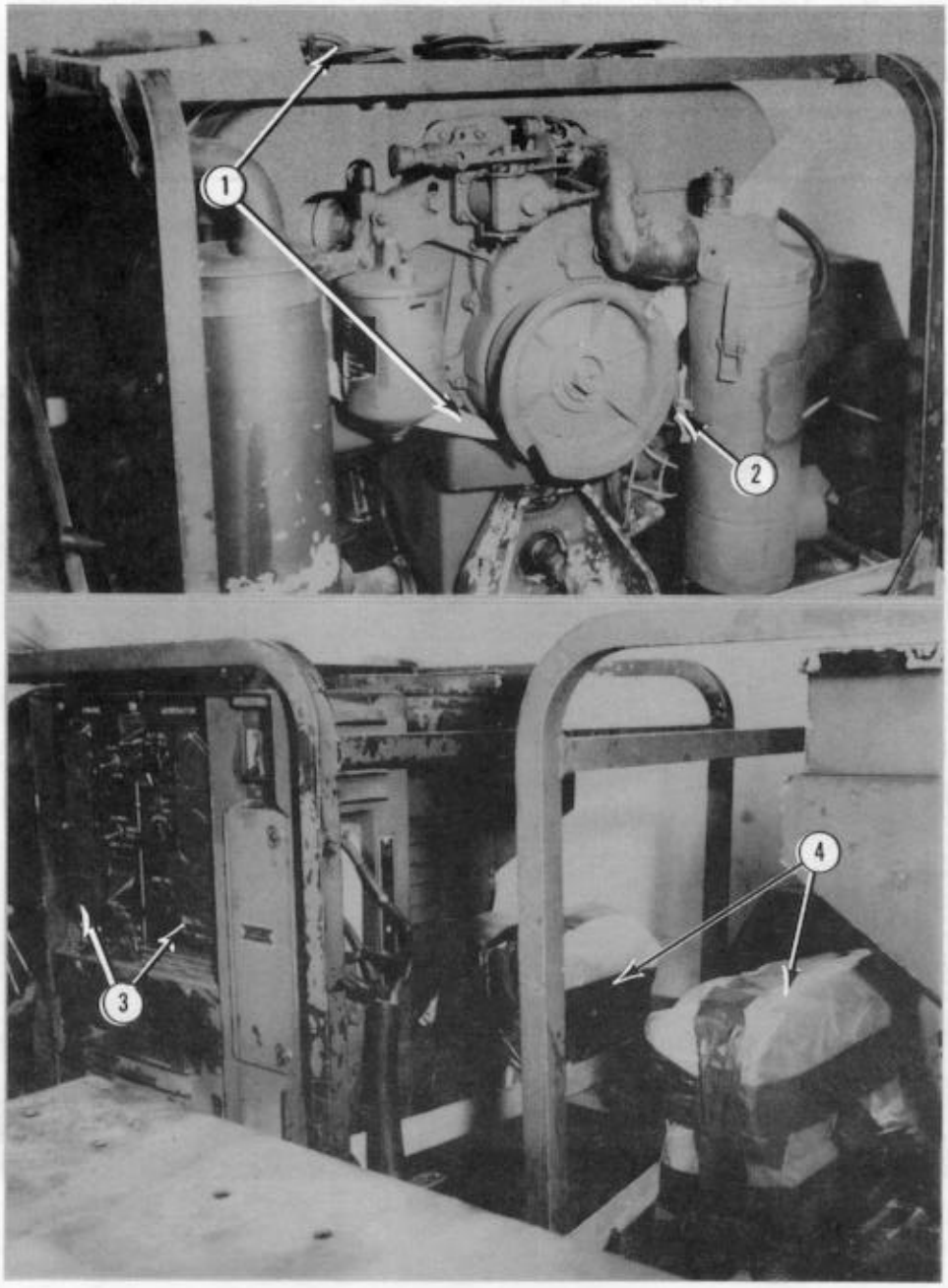
*b.* Make sure the generator fuel tanks are 1/2 full.




(1) Secure two pieces of 2- by 12- by 46-inch lumber under the trailer frame behind the shock absorbers with type III nylon cord.

(2) Pad the axles between the springs and the wheels with cellulose wadding. Tape the cellulose wadding in place.

Figure 11-25. Underside of trailer prepared



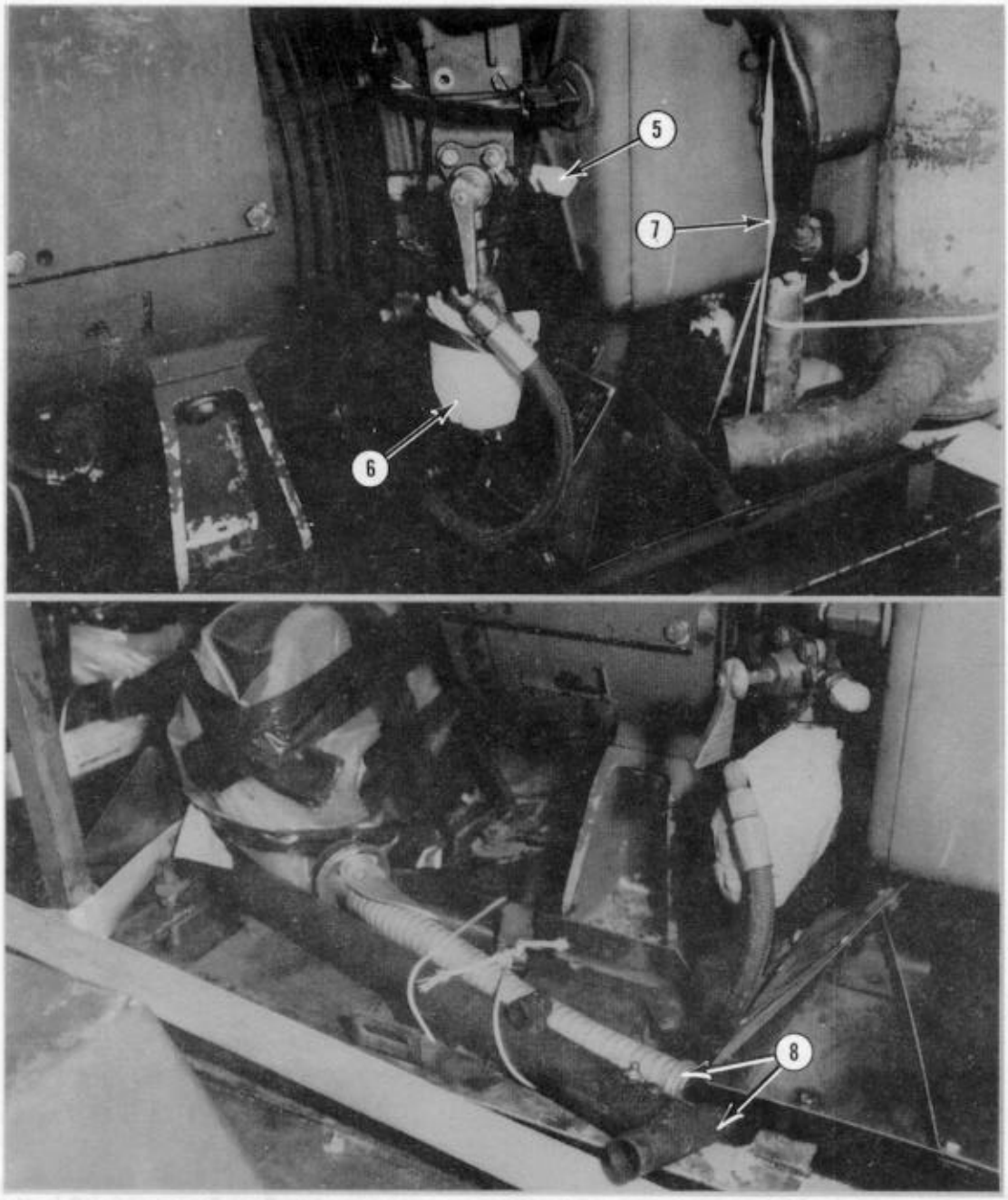

(1) Pass a 15-foot lashing just behind the crankshaft pulley on each generator. Secure them on top of the generator frames with D-rings and load binders.

(2) Tie the air cleaner to its bracket with type III nylon cord.

(3) Tape all gages. Tape the oil filler caps in place (not shown).

(4) Cover the batteries with plastic. Tape the plastic in place. Make sure the battery hold-downs are intact and tight. Reinforce them with type III nylon cord, if necessary.

**Figure 11-26. Generators prepared**



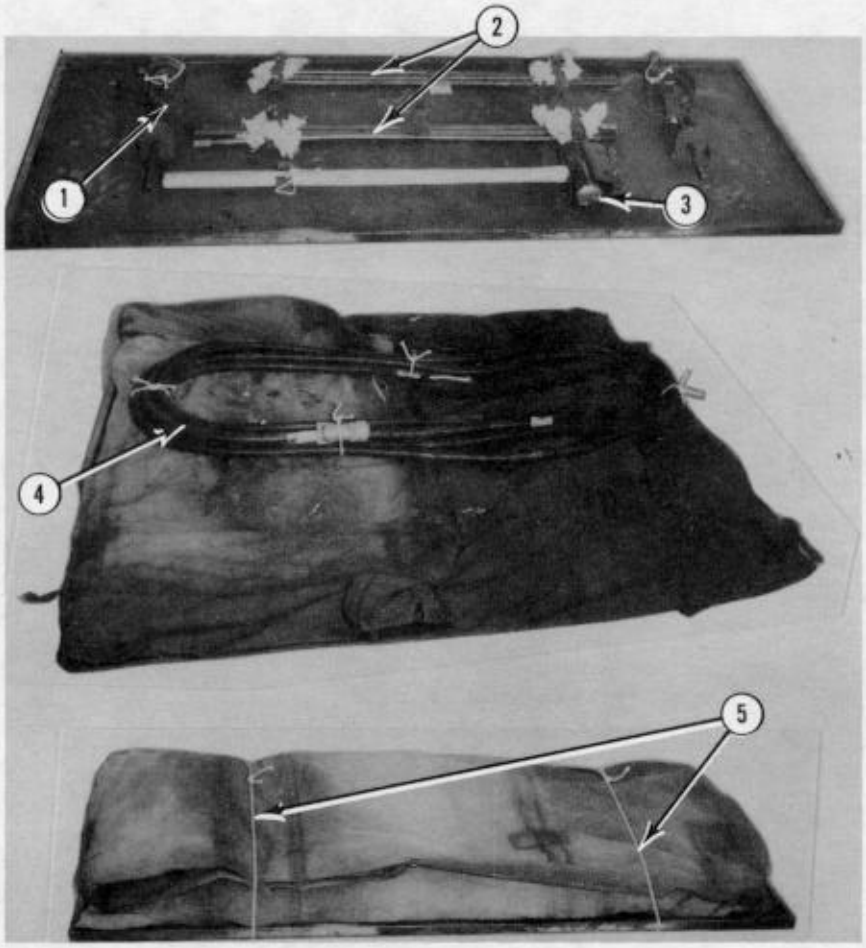

(5) Remove the fuel lines and adapters (not shown). Tape the threaded fuel line connector.

(6) Pad the fuel sediment bowl with cellulose wadding. Tape the cellulose wadding in place.

(7) Pass type III nylon cord over the engine covers. Tie it to convenient points on both sides of the generators.

(8) Tie a fuel can nozzle and the trailer leveling strut to the generator skid with type III nylon cord.

**Figure 11-26. Generators prepared (continued)**




(1) Stow the fuel line adapters and fuel lines removed in step 5 of Figure 11-26 in their brackets on the splash shield. Safety them in place with type III nylon cord.

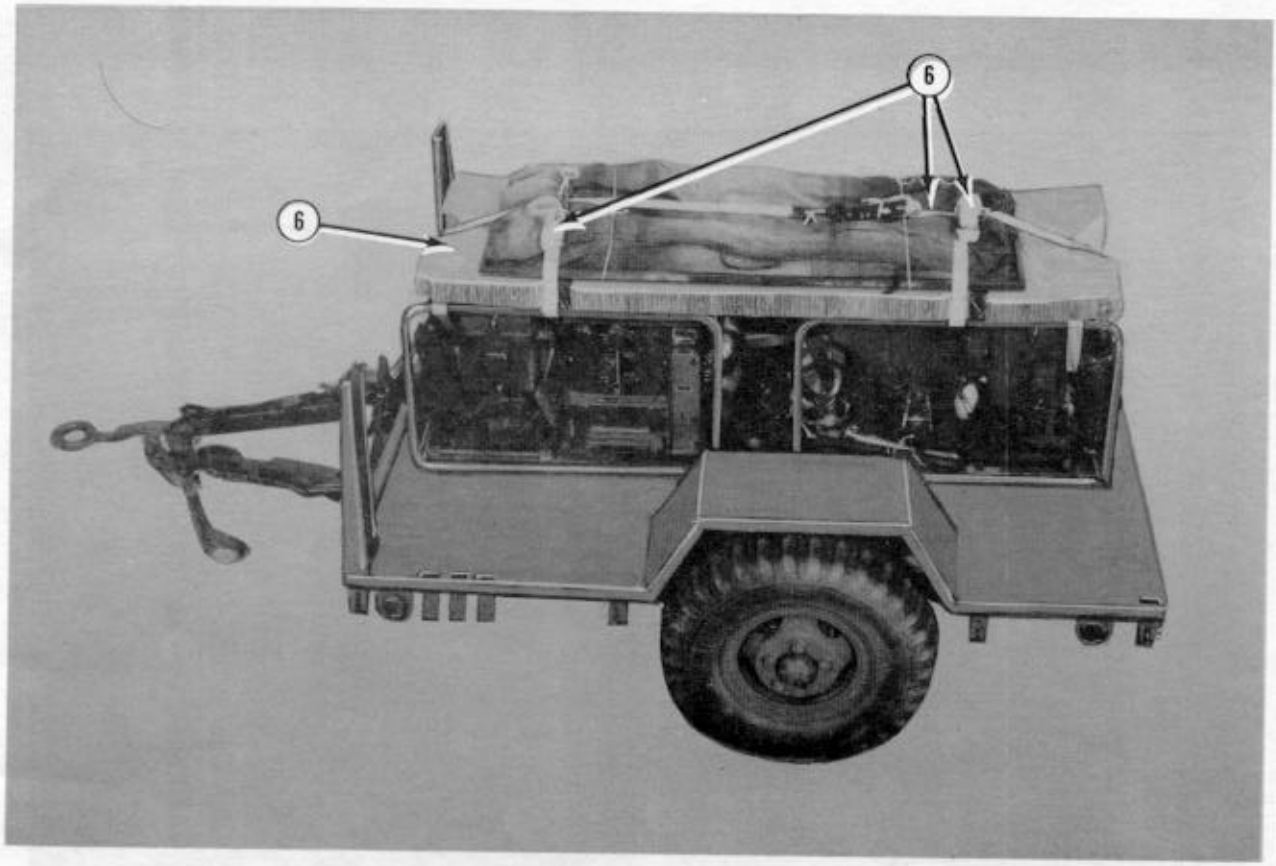
(2) Stow the grounding rods in their holders. Use cellulose wadding and tape to ensure a snug fit.

(3) Stow the sledgehammer in its holder, and safety the handle with type III nylon cord.

(4) Tie the power cable in a loop with type III nylon cord. Lay it on the trailer tarp.

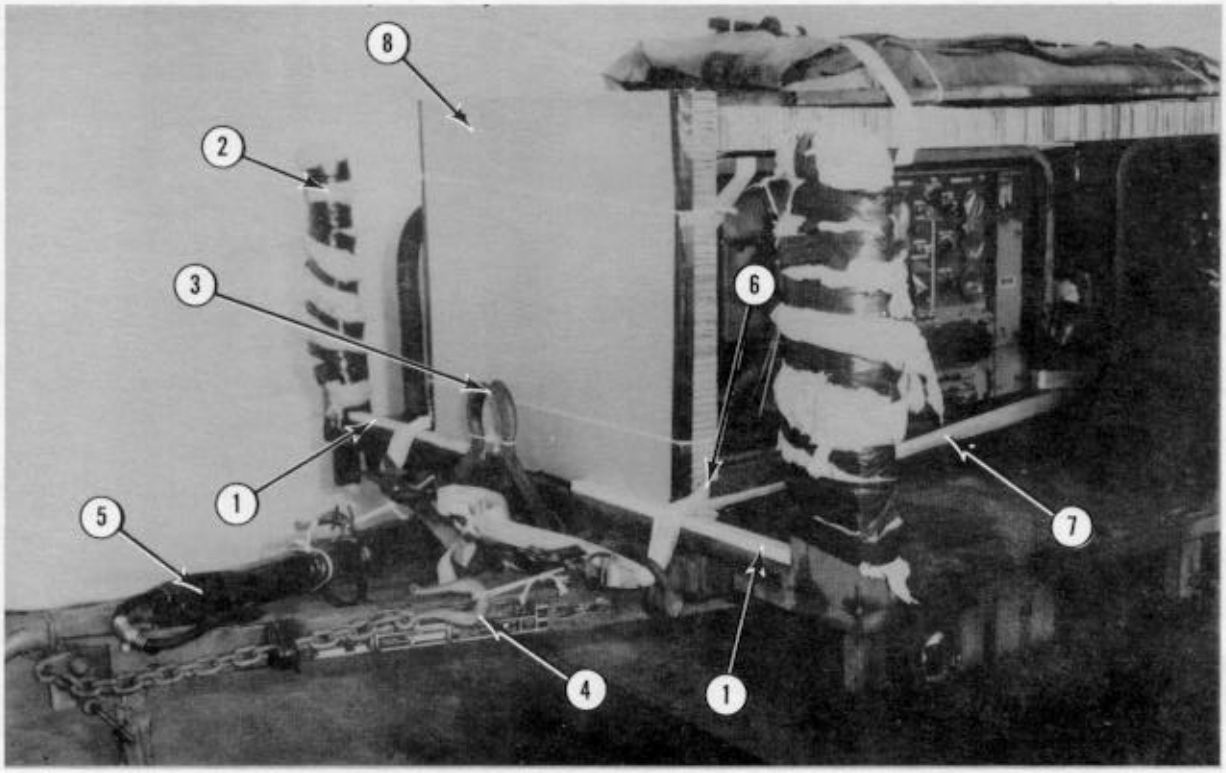
(5) Fold the tarp to fit over the splash shield. Tie the tarp over the splash shield with type III nylon cord.

Figure 11-27. Generator equipment stowed on splash shield




(6) Center a 30- by 84-inch piece of honeycomb over the generator frames. Place the splash shield flat side down on the honeycomb. Lash it to both generator frames with two 15-foot lashings placed side to side and one 15-foot lashing placed front to rear.

**Figure 11-27. Generator equipment stowed on splash shield (continued)**




(1) Fill the gap in the front edge of the trailer floor with two pieces of 1 1/8- by 2- by 24-inch lumber placed against the splash shield supports.

(2) Pad the splash shield supports with cellulose wadding. Tape the cellulose wadding in place.

(3) Tie the two hand brake levers together in the off position with type III nylon cord.

(4) Tie the trailer chains taut to the bracket at the edge of the trailer bed with type III nylon cord.

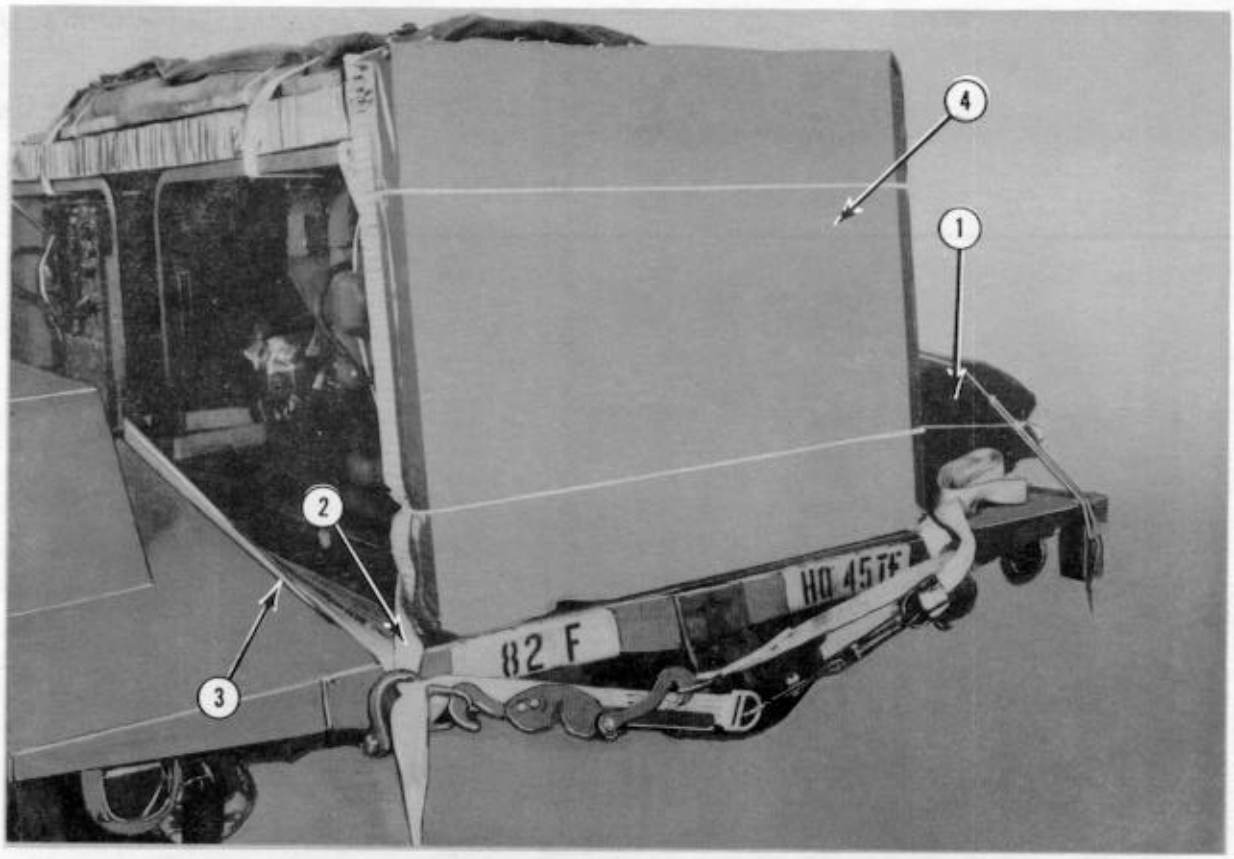
(5) Fold the intervehicular cable, and tape it to the drawbar. Tie the connector end of the cable to the drawbar with type III nylon cord.

(6) Run a 15-foot lashing through the front lifting shackles and around the two nearest upright bars of the front generator frame. Fasten the ends of the lashing with a D-ring and a load binder, but do not tighten the lashing.

(7) Run a 15-foot lashing through the front lifting shackles and around the two nearest upright bars of the rear generator frame. Fasten the ends of the lashing with a D-ring and a load binder, but do not tighten the lashing.

(8) Secure a 29- by 36-inch piece of honeycomb to the front generator frame with type III nylon cord.

Figure 11-28. Front of trailer prepared




(1) Cover the regulator box with a 24- by 24-inch piece of felt. Tie the felt in place with type III nylon cord.

(2) Run a 15-foot lashing through the rear lifting shackles and around the two nearest upright bars of the rear generator frame. Fasten the ends of the lashing with a D-ring and a load binder, but do not tighten the lashing.

(3) Run a 15-foot lashing through the rear lifting shackles and around the two nearest upright bars of the front generator frame. Fasten the ends of the lashing with a D-ring and a load binder, but do not tighten the lashing.

Note: If lifting shackles are not present, bolt medium cargo suspension clevises to the shackle brackets.

(4) Secure a 29- by 36-inch piece of honeycomb to the rear generator frame with type III nylon cord.

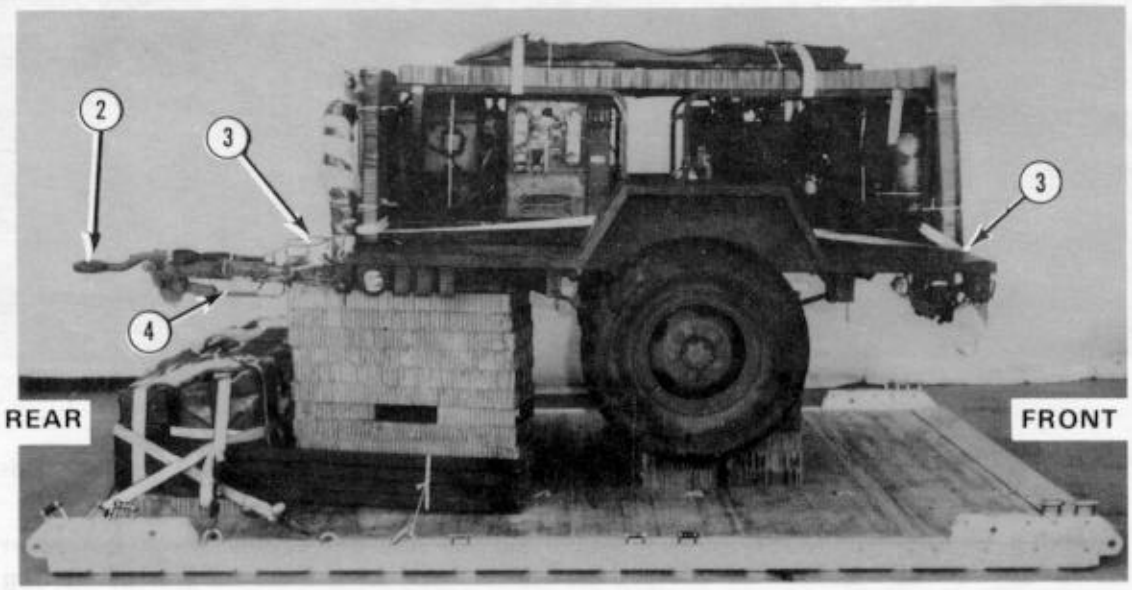
**Figure 11-29. Rear and top of trailer prepared**

### 11-20. Positioning Power Unit on Platform

Position the power unit on the platform as shown in Figure 11-30.

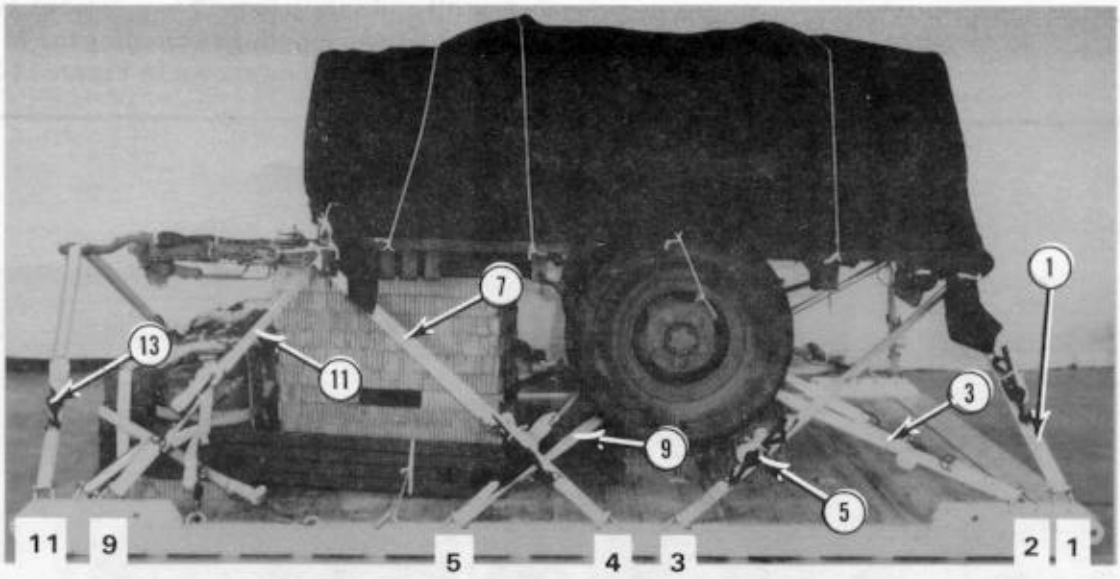
### 11-21. Covering and Lashing Power Unit

Cover the power unit and lash it to the platform as shown in Figure 11-31.




1. Attach a 9-foot, type X or type XXVI nylon sling to each lifting shackle with a medium cargo suspension clevis (not shown).
2. Lift the trailer, and center it on the honeycomb stacks with the end of the lunette 12 inches over the rear edge of the platform. Remove the lifting slings.
3. Tighten the lashings placed in steps 6 and 7 of Figure 11-28 and steps 2 and 3 of Figure 11-29.
4. Place the trailer support in the travel position.

Figure 11-30. Power unit positioned on platform




**Step:**

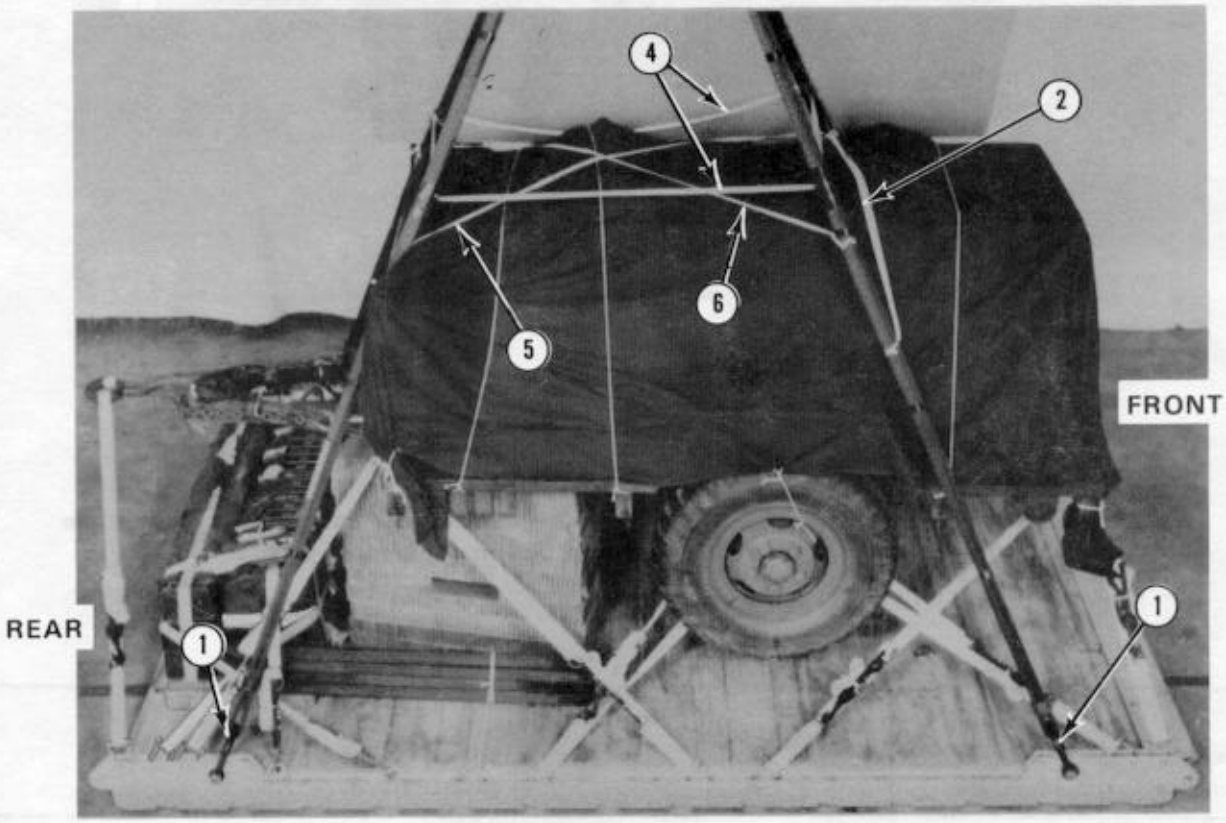
1. Place a 10- by 15-foot canvas load cover over the load. Tie it at each corner. Secure the cover with three lengths of type III nylon cord tied to convenient points.
2. Lash the power unit to the platform as follows:

| Lashing Number | Tiedown Clevis Number | Instructions |
|---|---|---|
| | | Pass lashing: |
| 1 | 1 | Through left rear lifting shackle. |
| 2 | 1A | Through right rear lifting shackle. |
| 3 | 2 | Around left side of axle. |
| 4 | 2A | Around right side of axle. |
| 5 | 3 | Through left rear lifting shackle. |
| 6 | 3A | Through right rear lifting shackle. |
| 7 | 4 | Through left front lifting shackle. |
| 8 | 4A | Through right front lifting shackle. |
| 9 | 5 | Around left side of axle. |
| 10 | 5A | Around right side of axle. |
| 11 | 9 | Through left front lifting shackle. |
| 12 | 9A | Through right front lifting shackle. |
| 13 | 11 | Through lunette. |
| 14 | 11A | Through lunette. |

Figure 11-31. Power unit covered and lashings installed

### 11-22. Installing and Safetying Suspension Slings

Install and safety four 12-foot (2-loop), type XXVI nylon suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-32.




(1) Attach a suspension sling to each tandem link with a large clevis.

(2) Raise the suspension slings. Safety the two front suspension slings to each other 55 inches from the clevises with a double length of 1/2-inch tubular nylon webbing.

(3) Safety the two rear suspension slings to each other 60 inches from the clevises with a double length of 1/2-inch tubular nylon webbing (not shown).

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

(5) Safety the right rear sling to the left front sling 8 inches below the deadman's tie with a length of 1/2-inch tubular nylon webbing.

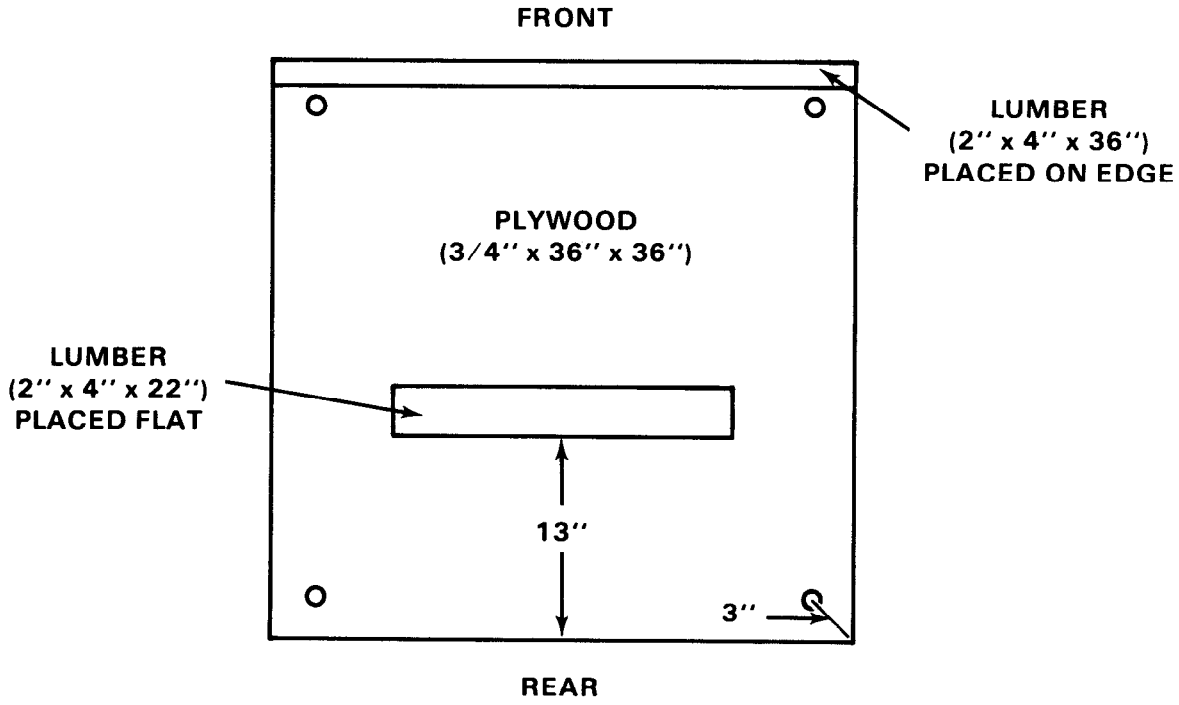
(6) Safety the right front sling to the left rear sling 8 inches below the deadman's tie with a length of 1/2-inch tubular nylon webbing.

Figure 11-32. Suspension slings installed and safetied

## 11-23. Stowing Cargo Parachutes

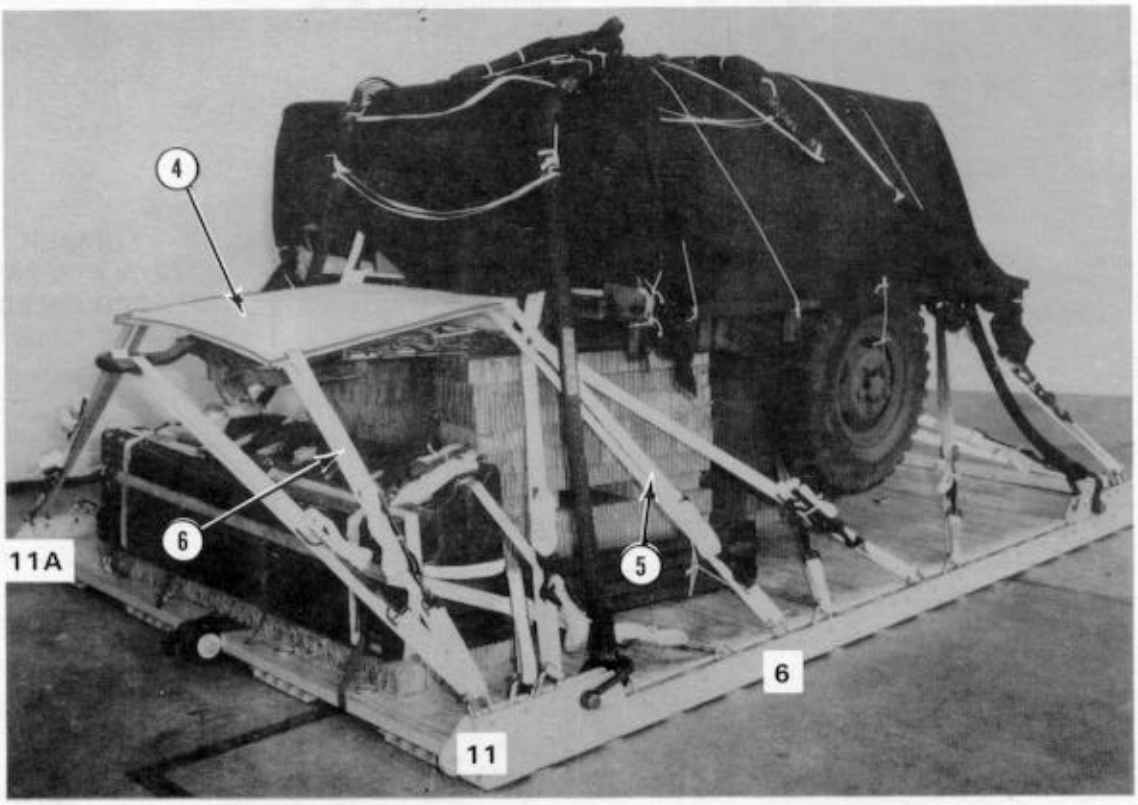
Prepare and install the parachute stowage platform as shown in Figure 11-33. Prepare and install two G-11A cargo parachutes or one G-11B cargo parachute on the load according to FM 10-500-2/TO 13C7-1-5. Figure 11-34 shows one G-11B cargo parachute installed.

Note: This drawing is not drawn to scale.




1. Drill a 2-inch hole 3 inches from each corner (measured from the center of the hole) of a 3/4- by 36- by 36-inch piece of plywood.
2. Nail a 2- by 4- by 36-inch piece of lumber on edge along the front edge. Use eightpenny nails.
3. Center and nail a 2- by 4- by 22-inch piece of lumber 13 inches from and parallel to the rear edge of the plywood.

**Figure 11-33. Parachute stowage platform prepared and installed**

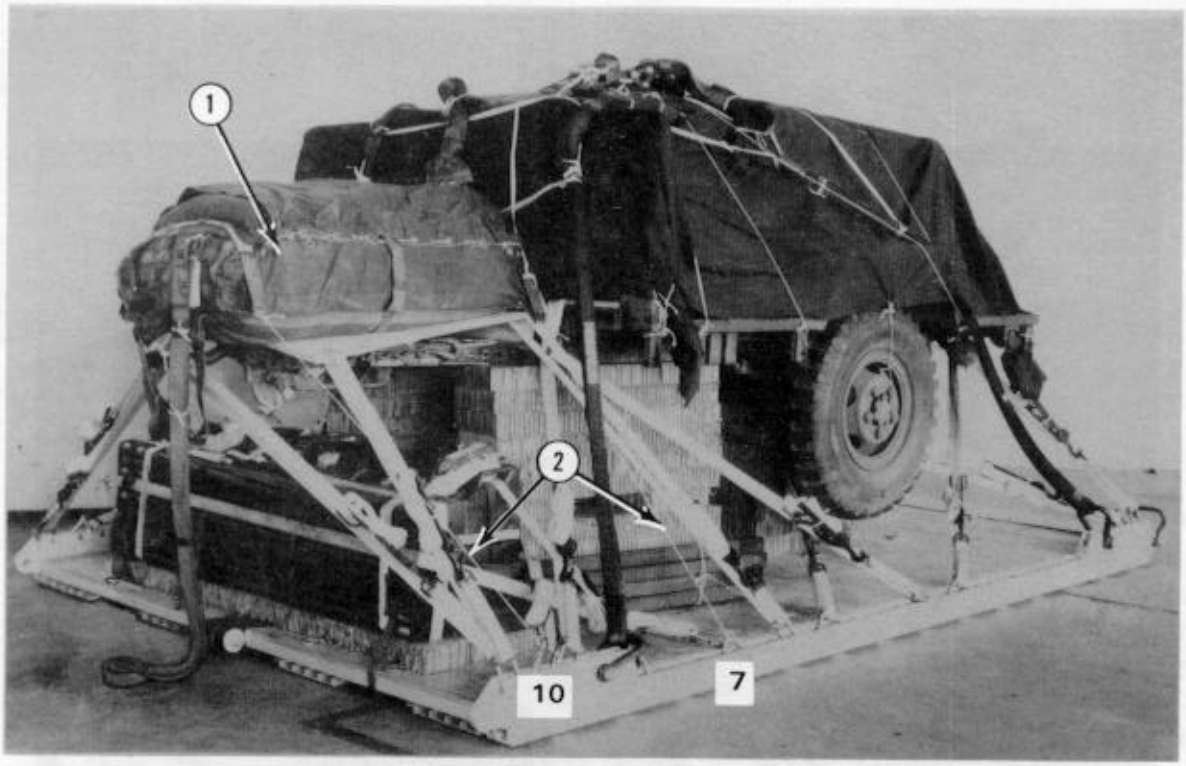



(4) Center the parachute stowage platform on the drawbar.

(5) Run 15-foot lashings from clevises 6 and 6A through the front holes of the parachute stowage platform. Secure each lashing with a D-ring and a load binder.

(6) Run 15-foot lashings from clevises 11 and 11A through the rear holes of the parachute stowage platform. Secure each lashing with a D-ring and a load binder.

Figure 11-33. Parachute stowage platform prepared and installed (continued)




(1) Center a G-11B cargo parachute on the parachute stowage platform. Complete the installation according to FM 10-500-2/TO 13C7-1-5.

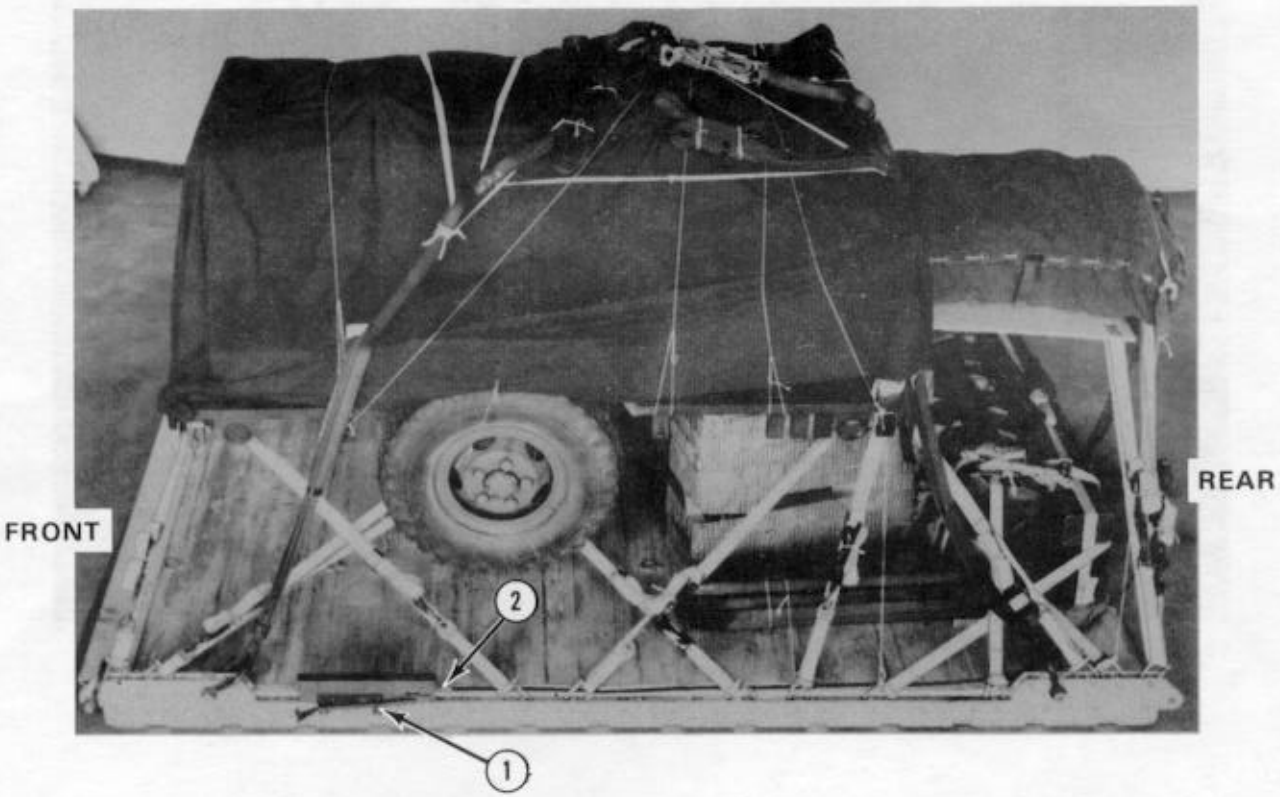
(2) Restrain the parachute with type III nylon cord tied to the bag carrying handles and load tiedown clevises 7, 7A, 10, and 10A.

Note: If two G-11A parachutes are used, restrain them with type VIII nylon webbing to clevises 10 and 10A.

Figure 11-34. One G-11B cargo parachute installed

### 11-24. Installing Extraction System

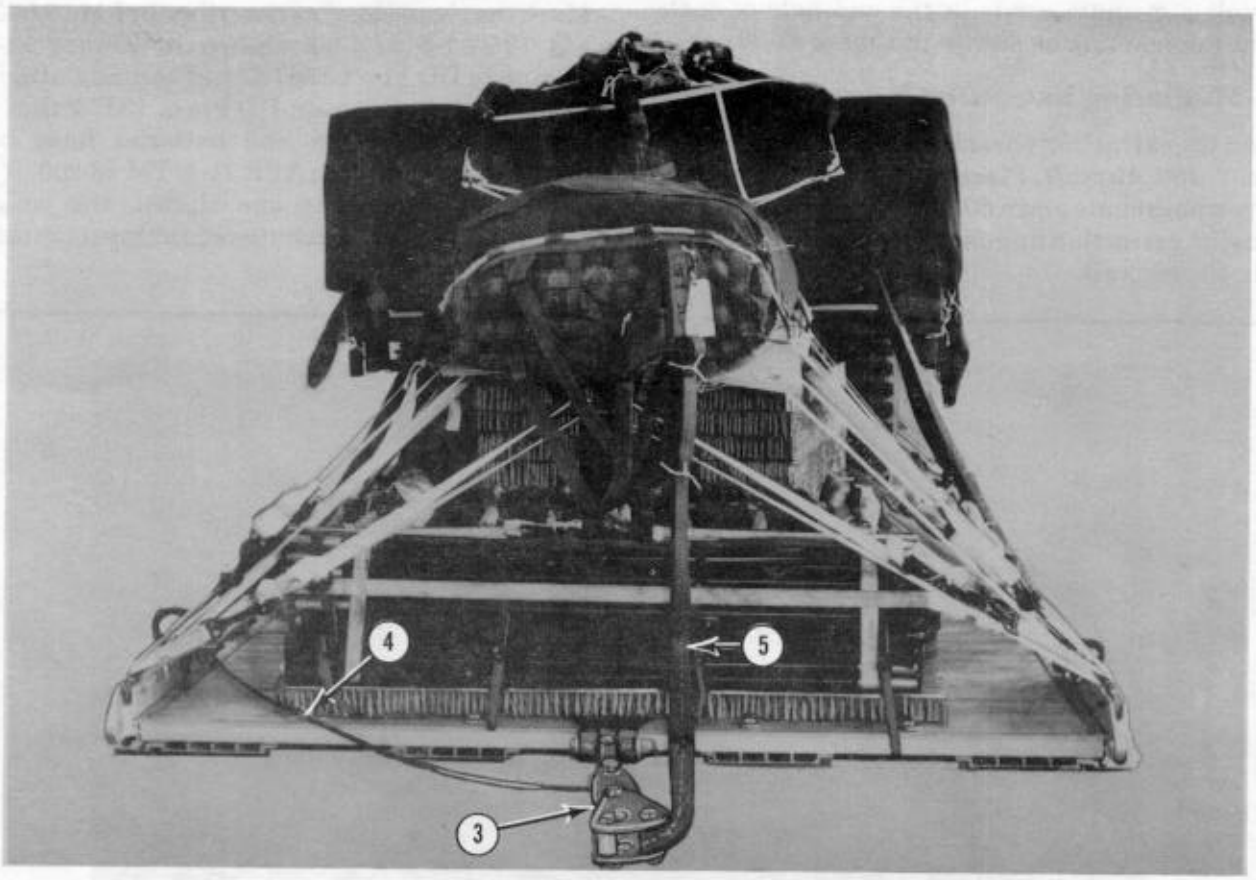
Install the EFTC according to FM 10-500-2/ TO 13C7-1-5 and as shown in Figure 11-35.




(1) Install the EFTC mounting brackets in the front mounting holes on the left platform rail.

(2) Attach a 12-foot cable to the actuator. Install the actuator to the EFTC mounting brackets.

Figure 11-35. EFTC installed




(3) Install the latch assembly and attach the cable.

(4) Tie the cable to tiedown ring D6 with type I, 1/4-inch cotton webbing.

(5) Install a 9-foot (2-loop), type XXVI nylon deployment line on the load.

**Figure 11-35. EFTC installed (continued)**

### 11-25. Installing Parachute Release

Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5. Center the release on the load directly above the wheels.

### 11-26. Installing Provisions for Emergency Restraints

Install a medium clevis in the end hole of each front tandem link as shown in Figure 11-36.

### 11-27. Placing Extraction Parachute

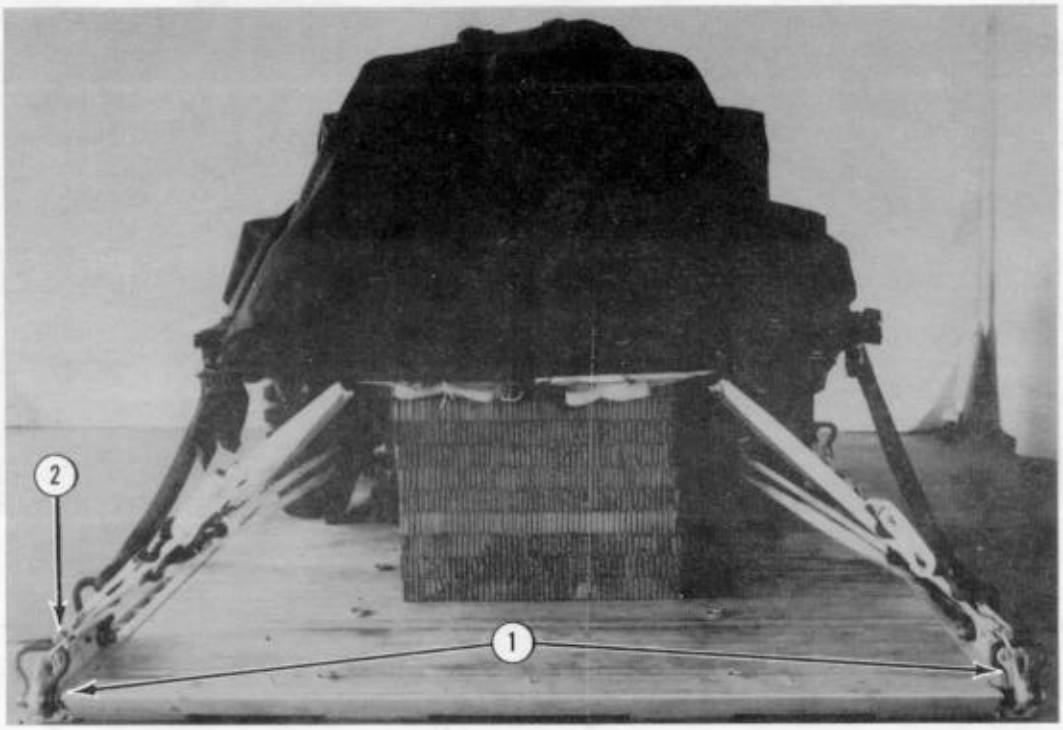
Place the extraction parachute as described below.

*a. C-130 Aircraft.* Place a 15-foot cargo extraction parachute and a 60-foot (1-loop), type XXVI nylon extraction line on the load for installation in the aircraft.

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

### 11-28. Marking Rigged Load

Mark the rigged load as described in FM 10-500-2/TO 13C7-1-5 and as shown in Figure 11-37. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the generator fuel tanks and batteries have been prepared according to AFR 71-4/TM 38-250. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

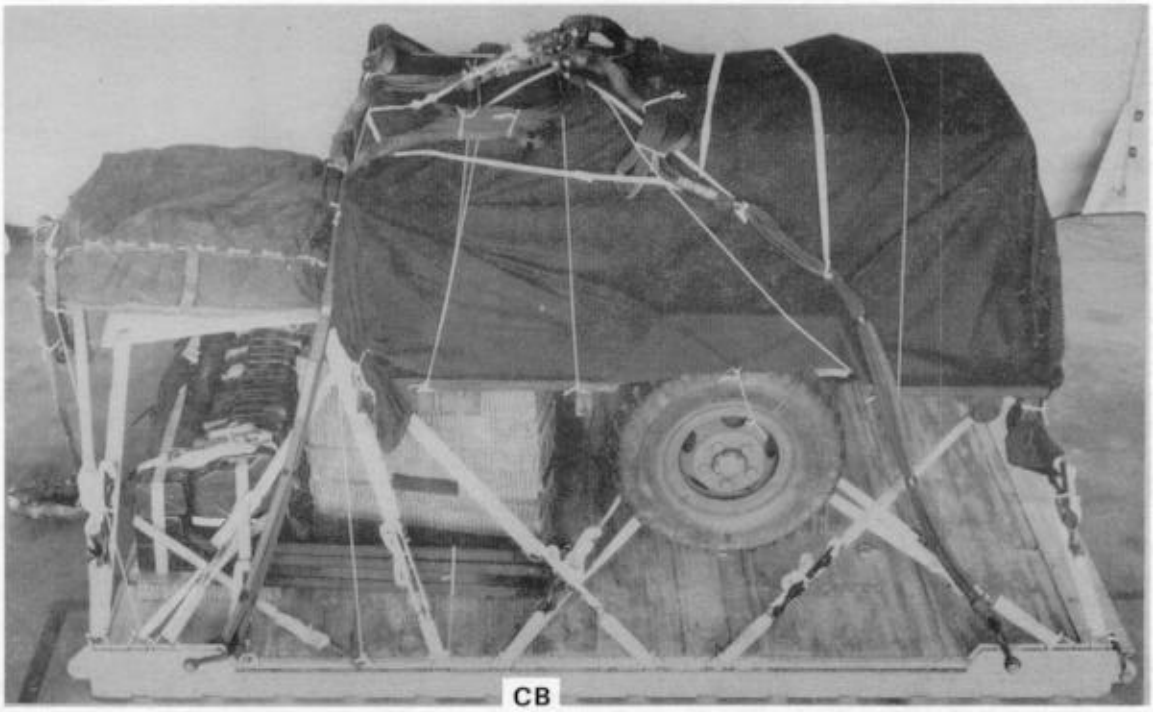



(1) Bolt a medium clevis to each front tandem link. Place spacers or washers on the clevis bolt on either side of the tandem link.

(2) Place the clevises in an upright position, and tie them to the nearest lashing with type I, 1/4-inch cotton webbing.

**Figure 11-36. Emergency restraint provisions installed**

**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 | 4,750 pounds |
| | Maximum load allowed | 5,250 pounds |
| Height | | 81 inches |
| Width | | 108 inches |
| Length | | 169 inches |
| Overhang: | Front | 4 1/2 inches |
| | Rear | 19 inches |
| CB (from front edge of platform) | | 82 1/2 inches |

**Figure 11-37. PU-620M power unit rigged for low-velocity airdrop on the type V platform**

## 11-29. Equipment Required

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

Table 11-2. Equipment required for rigging the PU-620M power unit for low-velocity airdrop on the type V platform

| National Stock Number | Item | Quantity |
|---|---|---|
| 8040-00-273-8713 | Adhesive, paste, 1-gal | As required |
| | Clevis, suspension: | |
| 4030-00-678-8562 | 3/4-in (medium) | 2 |
| 4030-00-090-5354 | 1-in (large) | 5 |
| 8305-00-242-3593 | Cloth, cotton duck, 60-in | As required |
| 4020-00-240-2146 | Cord, nylon, type III, 550-lb | As required |
| 1670-00-434-5783 | Coupling, airdrop, extraction force transfer w 12-ft cable | 1 |
| | Cover: | |
| 1670-00-360-0328 | Clevis, large | 1 |
| 1670-00-360-0329 | Link assembly (type IV) | 3 |
| 8135-00-664-6958 | Cushioning material, packaging, cellulose wadding | As required |
| 8305-00-958-3685 | Felt, 1/2-in thick | As required |
| 1670-01-183-2678 | Leaf, extraction line | 2 |
| | Line, extraction: | |
| 1670-01-064-4452 | 60-ft (1-loop), type XXVI nylon webbing or | 1 |
| 1670-00-856-0265 | 60-ft (1-loop), type X nylon webbing (use w 15-ft parachute) | 1 |
| 1670-01-107-7652 | 160-ft (1-loop), type XXVI nylon webbing | 1 |
| 1670-00-783-5988 | Link assembly, type IV | 3 |
| | Lumber: | |
| 5510-00-220-6146 | 2- by 4-in: | |
| | 22-in | 1 |
| | 24-in | 2 |
| | 36-in | 1 |
| 5510-00-220-6250 | 2- by 12- by 46-in | 2 |
| 5315-00-010-4659 | Nail, steel wire, common, 8d | As required |
| 1670-00-753-3928 | Pad, energy-dissipating, honeycomb, | |
| | 3- by 36- by 96-in | 7 sheets |
| | 12- by 12-in | (4) |
| | 29- by 36-in | (2) |
| | 30- by 84-in | (1) |
| | 36- by 12-in | (37) |
| | 39- by 12-in | (1) |
| | 50- by 12-in | (1) |
| | 72- by 24-in | (1) |
| | Parachute: | |
| | Cargo: | |
| 1670-00-269-1107 | G-11A or | 2 |
| 1670-01-016-7841 | G-11B | 1 |
| | Cargo extraction: | |
| 1670-00-052-1548 | 15-ft or | 1 |
| 1670-00-063-3715 | 15-ft | 1 |
| | 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 | (22) |
| 1670-01-162-2376 | Extraction bracket assembly | (1) |
| 1670-01-162-2381 | Tandem link | (4) |
| 5530-00-128-4981 | Plywood, 3/4- by 36- by 36-in | 1 |

Table 11-2. Equipment required for rigging the PU-620M power unit for low-velocity airdrop on the type V platform (continued)

| National Stock Number | Item | Quantity |
|---|---|---|
| 1670-01-097-8816 | Release, cargo parachute, M-1 | 1 |
| | Sling, cargo airdrop: | |
| | For deployment line: | |
| 1670-01-062-6304 | 9-ft (2-loop), type XXVI nylon webbing | 1 |
| | For lifting: | |
| 1670-01-062-6304 | 9-ft (2-loop), type XXVI nylon webbing | 4 |
| | For riser extension: | |
| 1670-01-062-6302 | 20-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 | 2 |
| 7510-00-266-5016 | Tape, adhesive, 2-in | As required |
| 1670-00-937-0271 | Tiedown assembly, 15-ft | 33 |
| | Webbing: | |
| 8305-00-268-2411 | Cotton, type I, 1/4-in | As required |
| 8305-00-082-5752 | Nylon, tubular, 1/2-in, natural | As required |
| 8305-00-263-3591 | Nylon, type VIII | As required |

# GLOSSARY

ACB attitude control bar

AD airdrop

AFB Air Force base

AFR Air Force regulation

AFTO Air Force technical order

ALC Air Logistics Center

ARNG Army National Guard

attn attention

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

FM field manual

ft foot/feet

gal gallon

HQ headquarters

in inch

LAPE low-altitude parachute-extraction

LAPES low-altitude parachute-extraction system

lb pound

MAC Military Airlift Command

MD Maryland

no number

NSN national stock number

PEFTC extraction force transfer coupling (platform)

qty quantity

rqr required

sec second

SL/CS static line/connector strap

sltd slotted

sq square

TM technical manual

TO technical order

TRADOC United States Army Training and Doctrine Command

US United States

USAR United States Army Reserve

VA Virginia

w with

yd yard

# REFERENCES

| | |
|---|---|
| AFR 71-4/TM 38-250 | Packaging and Materials Handling: Preparing Hazardous Materials for Military Air Shipments |
| FM 10-500-2/TO 13C7-1-5 | Airdrop of Supplies and Equipment: Rigging Airdrop Platforms |
| FM 10-553/TO 13C7-18-41 | Airdrop of Supplies and Equipment: Rigging Ammunition |
| TM 5-2805-258-14/ TM 03523B/TO 38G2-89-21 | Operator, Organizational, Direct Support and General Support Maintenance Manual, Engine, Gasoline, 10-HP |
| TM 10-1670-208-20&P/ TO 13C3-4-12 | Organizational Maintenance Manual Including Repair Parts and Special Tools Lists for Platforms, Types II Modular and LAPES/Airdrop Modular |
| TM 10-1670-215-23/ TO 13C5-1-102 | Organizational and DS Maintenance Manual Including Repair Parts and Special Tools List for Parachute, Cargo Types |
| TM 10-1670-268-20&P/ TO 13C7-52-22 | Organizational Maintenance Manual With Repair Parts and Special Tools List: Type V Airdrop Platform |
| AFTO Form 22 | Technical Order Publication Improvement Report |
| DA Form 2028 | Recommended Changes to Publications and Blank Forms |
| DD Form 1387-2 | Special Handling Data/Certification |