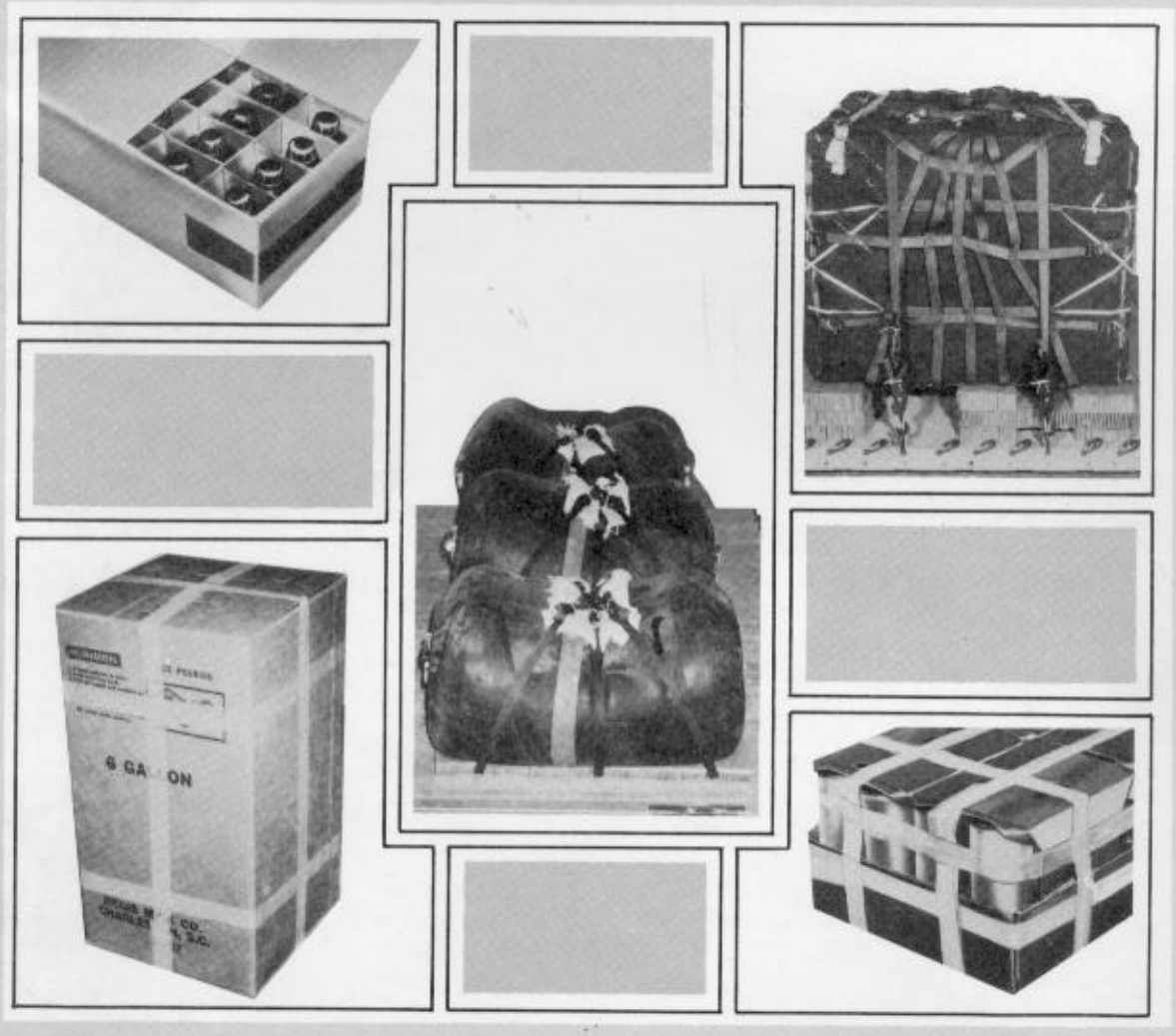
ARMY FM 10-522 / AIR FORCE TO 13C7-2-1001

Airdrop of Supplies and Equipment

RIGGING POTABLE WATER



DEPARTMENTS OF THE ARMY AND THE AIR FORCE

DISTRIBUTION UNLIMITED

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

REPLY TO
ATTENTION OF

ATSM-ADFSD

7 October 1998

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

SUBJECT: Distribution Restriction Notice on Airdrop Rigging Manuals

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

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

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

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

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

Encl

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

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

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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 "OP" 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 TO FOLKS THAT HAVE 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

TAGS 7/18

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

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 1

HEADQUARTERS
DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 30 September 1993

AIRDROP OF SUPPLIES AND EQUIPMENT
RIGGING POTABLE WATER

This change adds the procedures for rigging water drums in A-22 containers and on a type V platform for low-velocity and LAPE airdrops. With this change, the C-5 aircraft may be used for low-velocity airdrop. See FM 10-500-2/TO 13C7-1-5 for guidance when rigging loads for the C-5 aircraft. Please make this change where it applies throughout the manual. Also with this change, the destruction notice shown below must be added to the cover of the basic manual.

FM 10-522/TO 13C7-2-1001, 3 June 1985, is changed as follows:

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

2. Remove and insert pages as indicated below.

Remove pages	Insert pages
i through viii	i through xii
1-1	1-1
	6-1 through 6-35
	7-1 through 7-34
	8-1 through 8-95
	9-1
Glossary-1	Glossary-1
References-1	References-1

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

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DESTRUCTION NOTICE: Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

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

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

Official:

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army
04929

DISTRIBUTION:

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FIELD MANUAL
NO 10-522
TECHNICAL ORDER
NO 13C7-2-1001

HEADQUARTERS
DEPARTMENTS OF THE ARMY
AND THE AIR FORCE
Washington, DC, 3 June 1985

AIRDROP OF SUPPLIES AND EQUIPMENT RIGGING POTABLE WATER

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*This publication supersedes FM 10-522/TO 13C7-2-1001, 16 December 1981, and TM 10-500-70/TO 13C7-39-1, Chapter 3, 2 November 1967.

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CHAPTER 1

Airdrop Information

1-1. Description of Items

The description of the unrigged items covered in this manual is given below:

a. Twenty-four 1-quart plastic canteens filled with 6 gallons of water weigh 54 pounds.

b. One case of zip-top cans weighs 39 pounds.

c. One case of 10-ounce cans weighs 44.25 pounds.

d. The milk-dispensing container filled with 5 gallons of water weighs 42 pounds. It is 10 inches square and 17 inches high. Forty containers can be delivered in one A-22 cargo bag, eight containers can be delivered in one A-21 cargo bag, and 160 containers can be delivered in four A-22 cargo bags.

e. The 55-gallon collapsible water drum is a durable, nonvented, cylindrically shaped, rubber container fitted with a faucet valve. Filled with 55 gallons of water, the drum weighs 400 pounds.

f. The 250-gallon drum filled with 240 gallons of water weighs 2,197 pounds when rigged for low-velocity airdrop. When rigged for LAPE airdrop, the drum is filled with 225 gallons of water and weighs 2,072 pounds. Each drum is 60 inches long and 40 inches in diameter. Empty, the drum weighs 205 pounds. A pumping assembly can be rigged with the load as an accompanying load.

g. The 500-gallon drum filled with 432 gallons of water weighs 3,835 pounds. It is 62 inches long and 53 inches in diameter. Empty, the drum weighs 250 pounds. A pumping assembly can be rigged with the load as an accompanying load.

1-2. Special Considerations

a. Components of the pumping assembly that have been used to deliver petroleum products must not be used to pump water for human use.

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

CHAPTER 2

Rigging Small Containers For Free Drop

Section I

RIGGING TWENTY-FOUR 1-QUART PLASTIC CANTEENS

2-1. Description of Load

The twenty-four 1-quart plastic canteens are rigged inside two cardboard containers. Honeycomb is placed between the inner and outer containers.

2-2. Preparing Inner Container

a. Expand the 30-inch-long inner cardboard container. Close one end by folding the end flaps. Seal the closed end with 3-inch tape. Make sure that the tape extends at least 6 inches down the sides of the container.

b. Expand the cardboard separator assembly.

2-3. Packaging Canteens

Check the canteens to make sure that the caps are tightly sealed. Package the canteens as shown in figure 2-1.

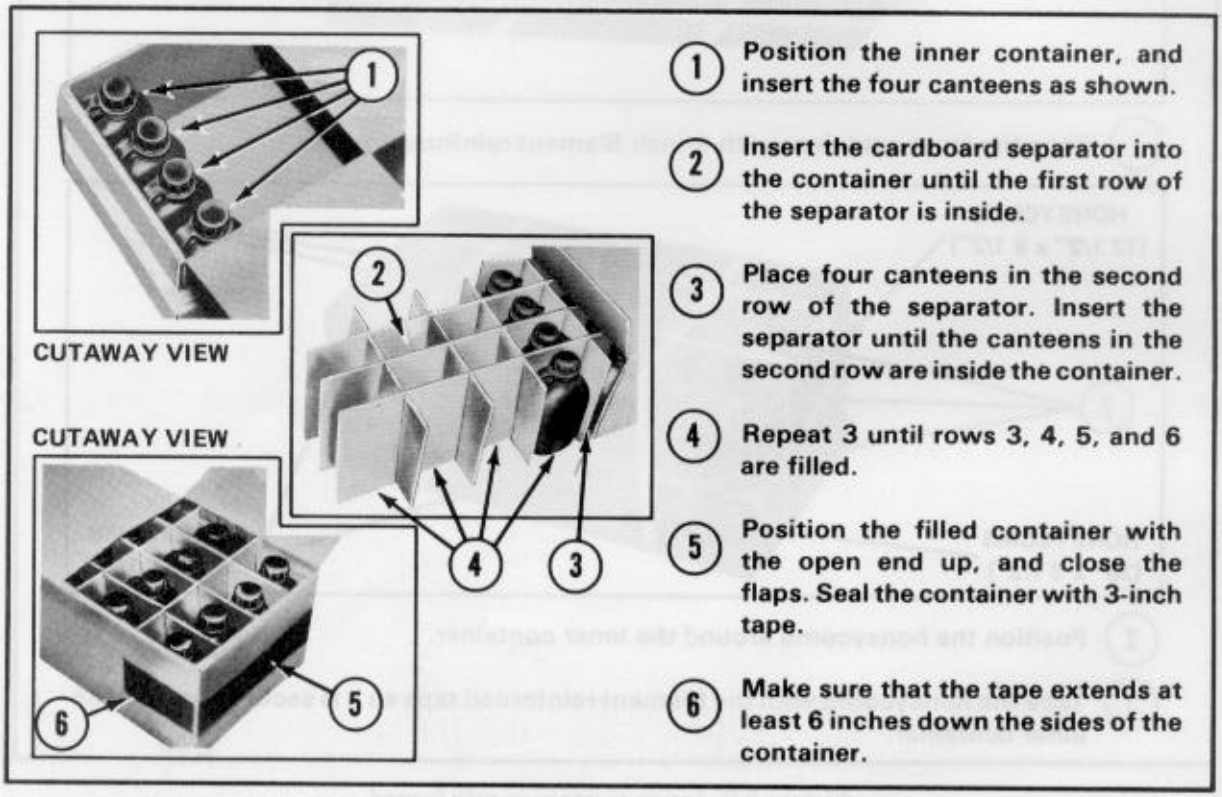


Figure 2-1. Canteens packed in the inner container.

2-4. Reinforcing Inner Container

Reinforce the inner container with 1-inch filament-reinforced tape and with two 12 1/2- by 8 1/2-inch, two 36- by 8 1/2-inch, and two 36- by 18 1/2-inch pieces of honeycomb. See figure 2-2.

2-5. Preparing and Packing Outer Container

Prepare and pack the outer container as shown in figures 2-3 and 2-4.

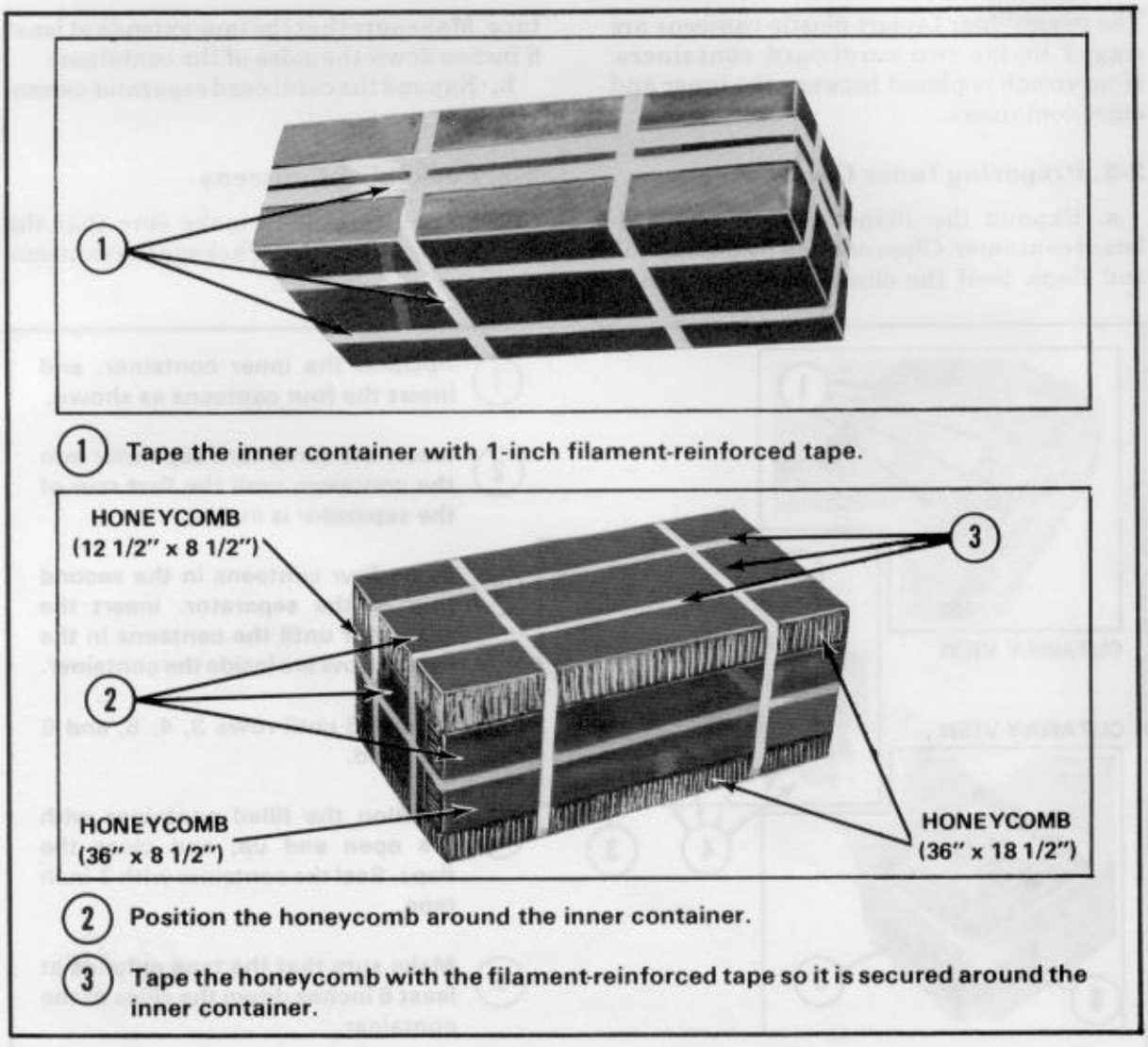
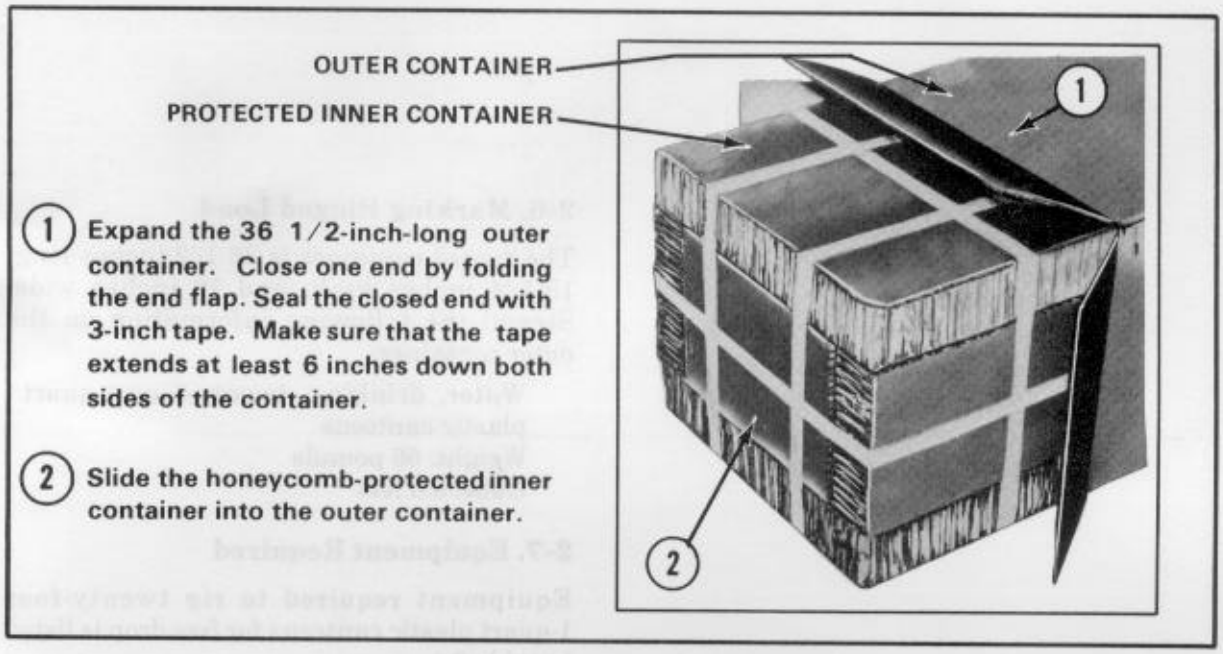


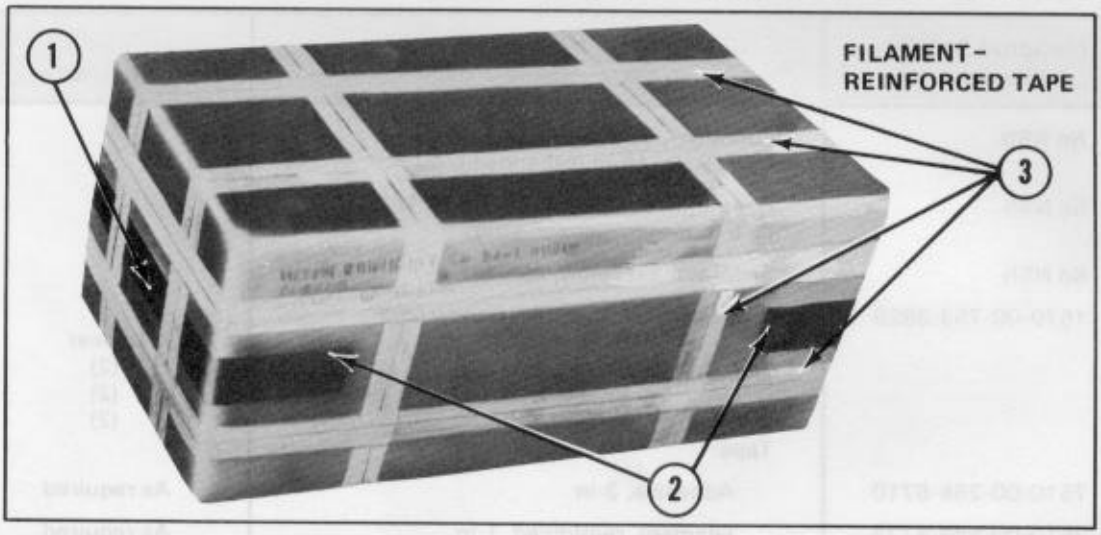
Figure 2-2. Inner container reinforced.



(1) Expand the 36 1/2-inch-long outer container. Close one end by folding the end flap. Seal the closed end with 3-inch tape. Make sure that the tape extends at least 6 inches down both sides of the container.

(2) Slide the honeycomb-protected inner container into the outer container.

Figure 2-3. Outer container prepared.



(1) Position the container with the open end up, and close the end flaps. Seal the container with 3-inch tape.

(2) Make sure the tape extends at least 6 inches down both sides of the container.

(3) Reinforce the outer container with 1-inch filament-reinforced tape.

Figure 2-4. Twenty-four 1-quart plastic canteens packed.

2-6. Marking Rigged Load

The rigged container is 36 1/2 inches long, 15 1/4 inches high, and 19 inches wide. Stencil the following information on the outer container:

Water, drinking, twenty-four 1-quart plastic canteens
Weight: 66 pounds
Cube: 8.3 feet

2-7. Equipment Required

Equipment required to rig twenty-four 1-quart plastic canteens for free drop is listed in table 2-1.

Table 2-1. Equipment required

National Stock Number	Item	Quantity
No NSN	Container, cardboard, 36 1/2- by 18 7/8- by 15-in (expanded size)	1
No NSN	Container, cardboard, 30- by 12 1/2- by 8 5/8-in (expanded size)	1
No NSN	Separator assembly, cardboard	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in:	1 sheet
	12 1/2- by 8 1/2-in	(2)
	36- by 8 1/2-in	(2)
	36- by 18 1/4-in	(2)
	Tape:	
7510-00-266-6710	Adhesive, 3-in	As required
7510-00-582-4772	Filament, reinforced, 1-in	As required

Section II

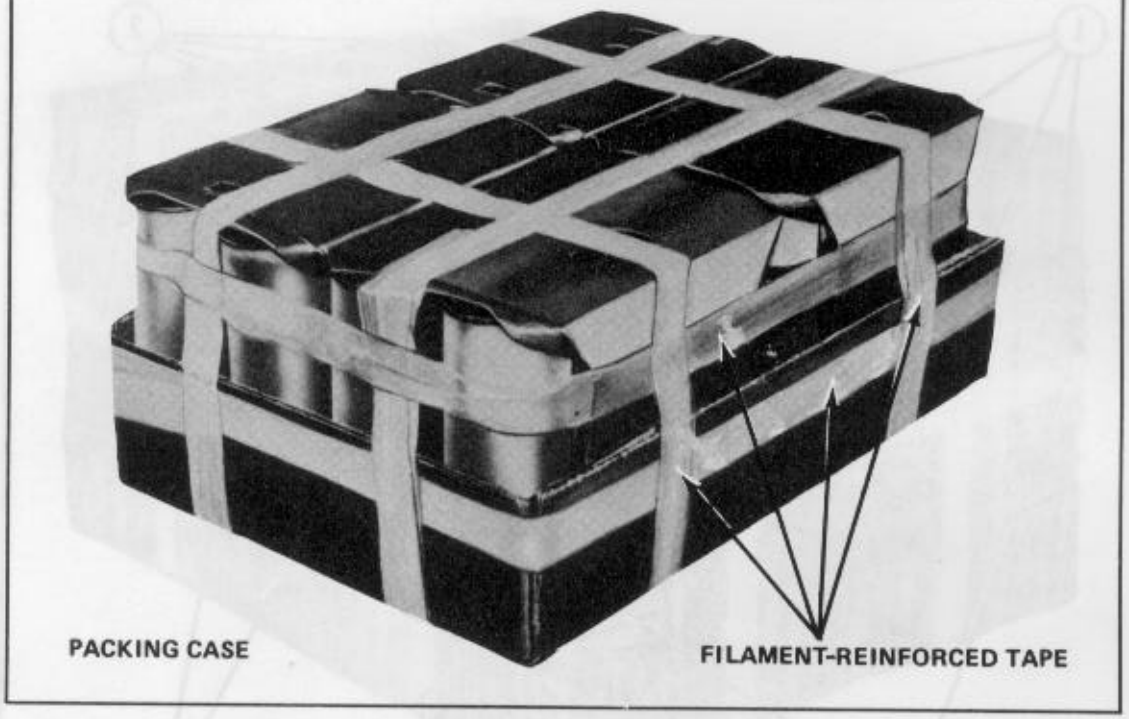
RIGGING TWENTY-FOUR 16-OUNCE CANS

2-8. Description of Load

One case of twenty-four 16-ounce zip-top cans of water is rigged in a cardboard container. Honeycomb is placed between the case and outer container.

2-9. Reinforcing Packing Case

Reinforce the packing case with 1-inch filament- reinforced tape as shown in figure 2-5.



Tape the packing case with 1-inch-wide filament-reinforced tape.

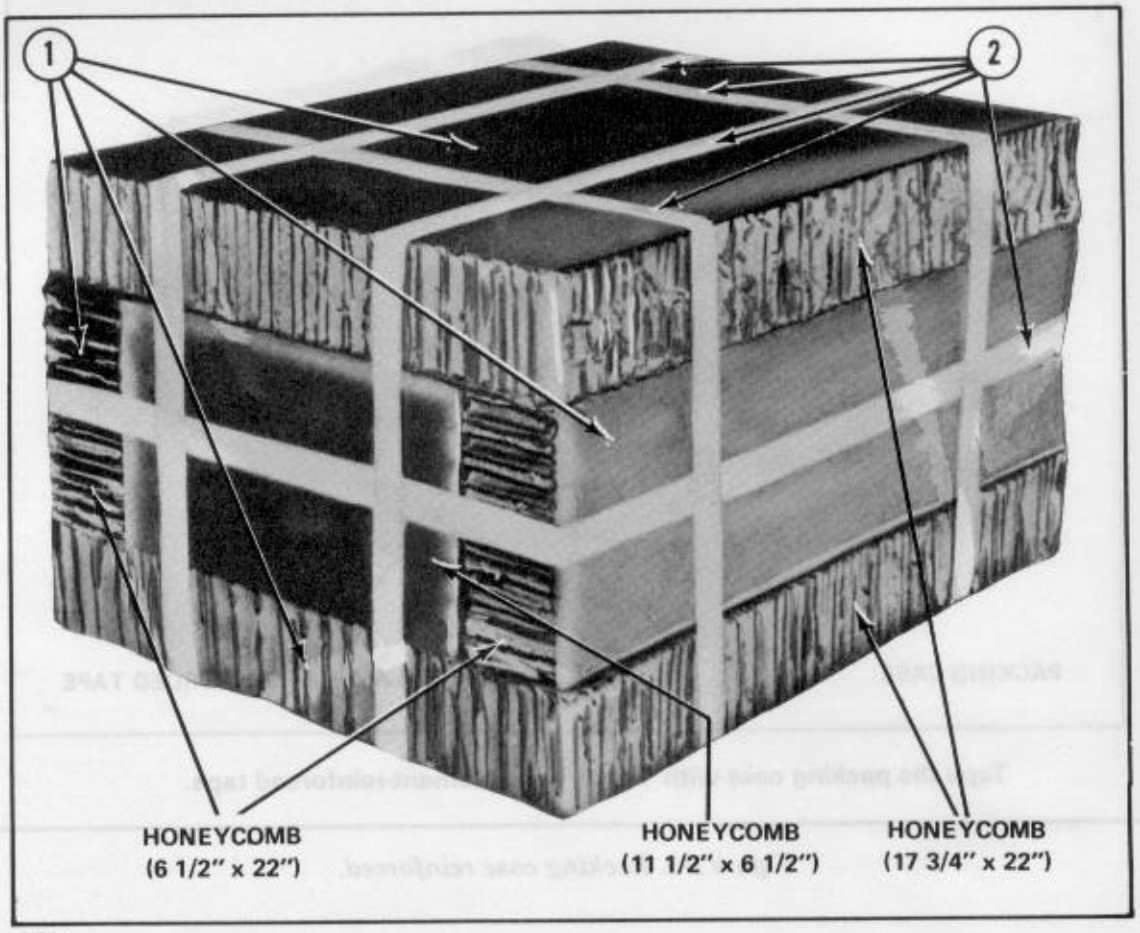
Figure 2-5. Packing case reinforced.

2-10. Positioning Honeycomb

Position two 6 1/2- by 22-inch, two 17 3/4- by 22-inch, and two 11 1/2- by 6 1/2-inch pieces of honeycomb around the packing case as shown in figure 2-6. Secure the honeycomb with 1-inch filament-reinforced tape.

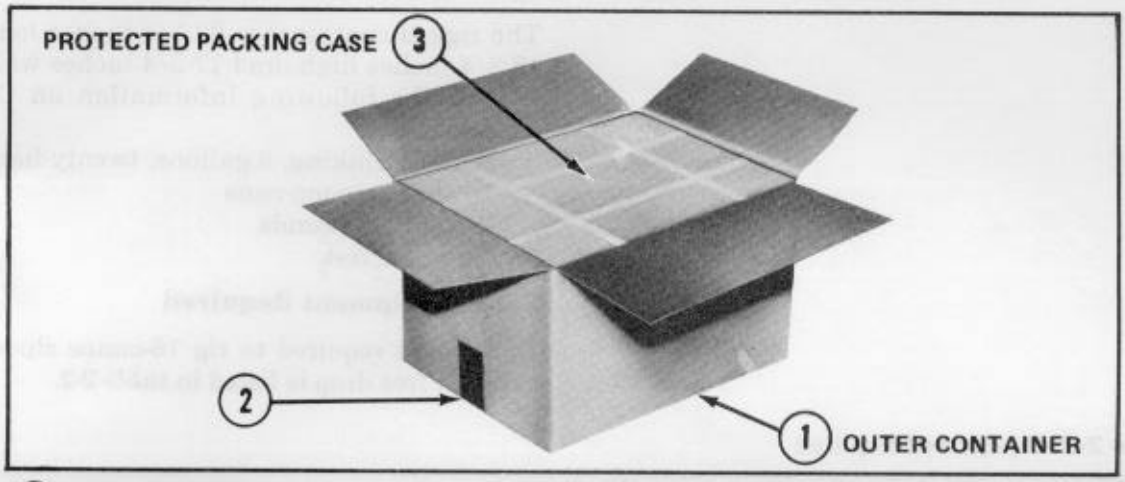
2-11. Preparing and Packing Outer Container

Prepare and pack the outer container as shown in figures 2-7 and 2-8.



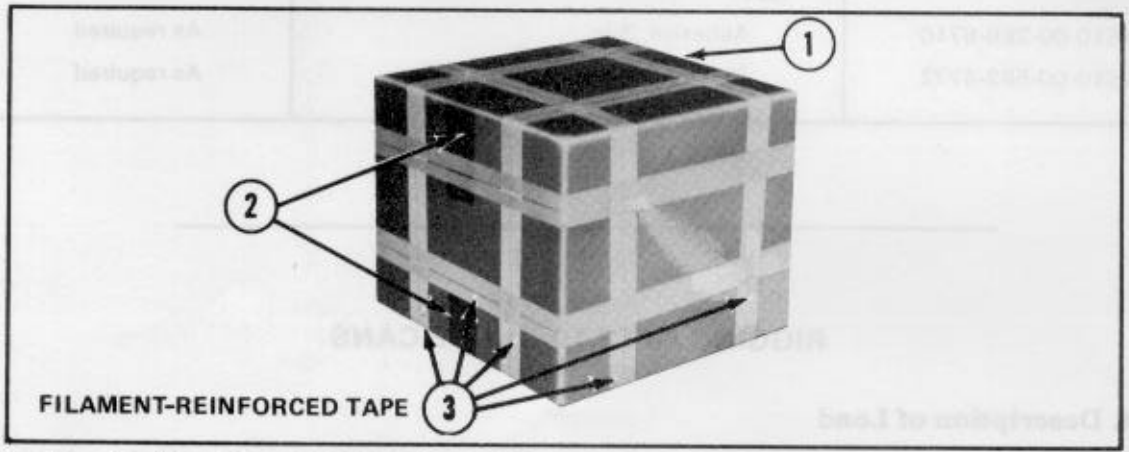
1. Position the honeycomb around the packing case.
2. Use 1-inch filament-reinforced tape to secure the honeycomb around the packing case.

Figure 2-6. Honeycomb placed.



1. Expand the 22 1/4-inch-long outer cardboard container. Close one end of the container by folding the end flaps. Seal the closed end with 3-inch tape.
2. Make sure that the tape extends at least 6 inches down the sides of the container.
3. Slide the packing case, protected with honeycomb, into the outer container.

Figure 2-7. Preparing the outer container.



1. Position the container with the open end up, and close the end flaps. Seal the end of the container with 3-inch tape.
2. Make sure that the tape extends at least 6 inches down the sides of the container.
3. Reinforce the container with 1-inch filament-reinforced tape.

Figure 2-8. One case of zip-top cans of water prepared.

2-12. Marking Rigged Load

The rigged container is 22 1/4 inches long, 13 3/4 inches high, and 17 3/4 inches wide. Stencil the following information on the container:

Water, drinking, 3 gallons, twenty-four 16-ounce zip-top cans
Weight: 39 pounds
Cube: 3.2 feet

2-13. Equipment Required

Equipment required to rig 16-ounce zip-top cans for free drop is listed in table 2-2.

Table 2-2. Equipment required

National Stock Number	Item	Quantity
No NSN	Container, cardboard, 22 1/4- by 17 1/2- by 13 3/4-in (expanded size)	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in:	1 sheet
	6 1/2- by 22-in	(2)
	11 1/2- by 6 1/2-in	(2)
	17 3/4- by 22-in	(2)
	Tape:	
7510-00-266-6710	Adhesive, 3-in	As required
7510-00-582-4772	Filament, reinforced, 1-in	As required

Section III

RIGGING FIFTY 10-OUNCE CANS

2-14. Description of Load

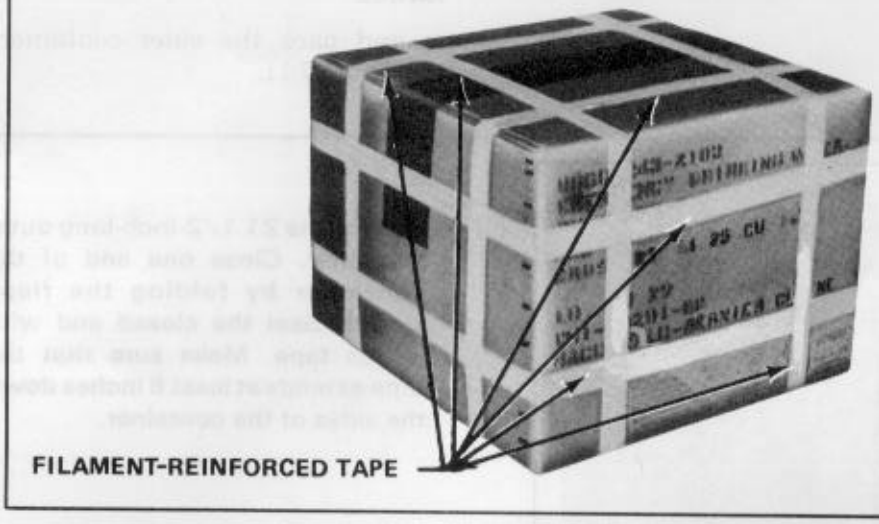
One case of fifty 10-ounce cans of water is rigged in a cardboard container. Honeycomb is placed between the case and outer container.

2-15. Reinforcing Packing Case

Reinforce the packing case with 1-inch filament-reinforced tape applied as shown in figure 2-9.

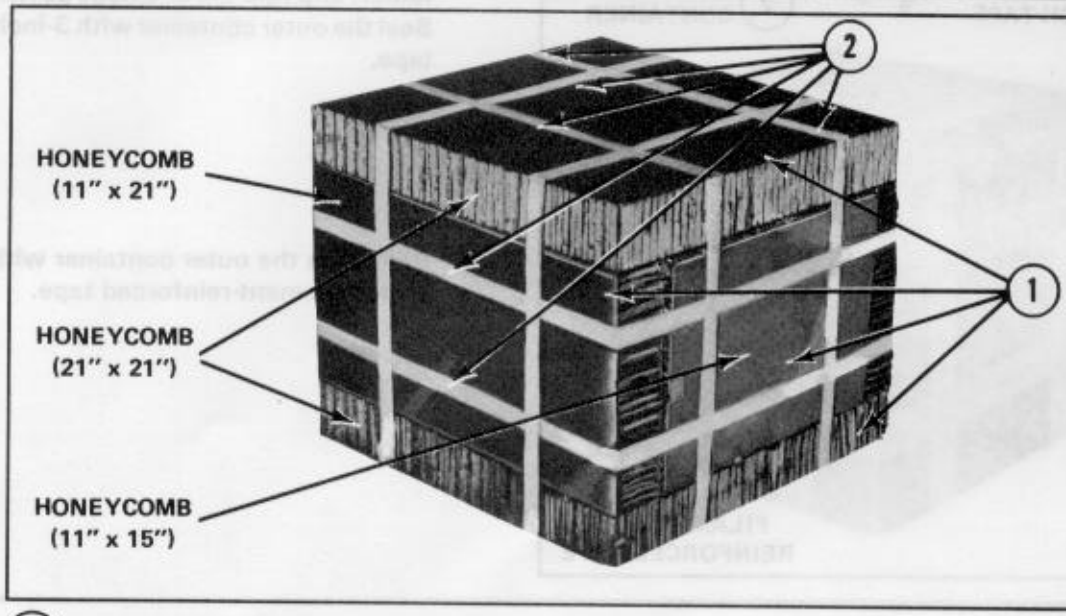
2-16. Positioning Honeycomb

Position two 11- by 21-inch, two 11- by 15-inch, and two 21- by 21-inch pieces of honeycomb as shown in figure 2-10.



Tape the packing case with 1-inch-wide filament-reinforced tape.

Figure 2-9. Packing case reinforced.



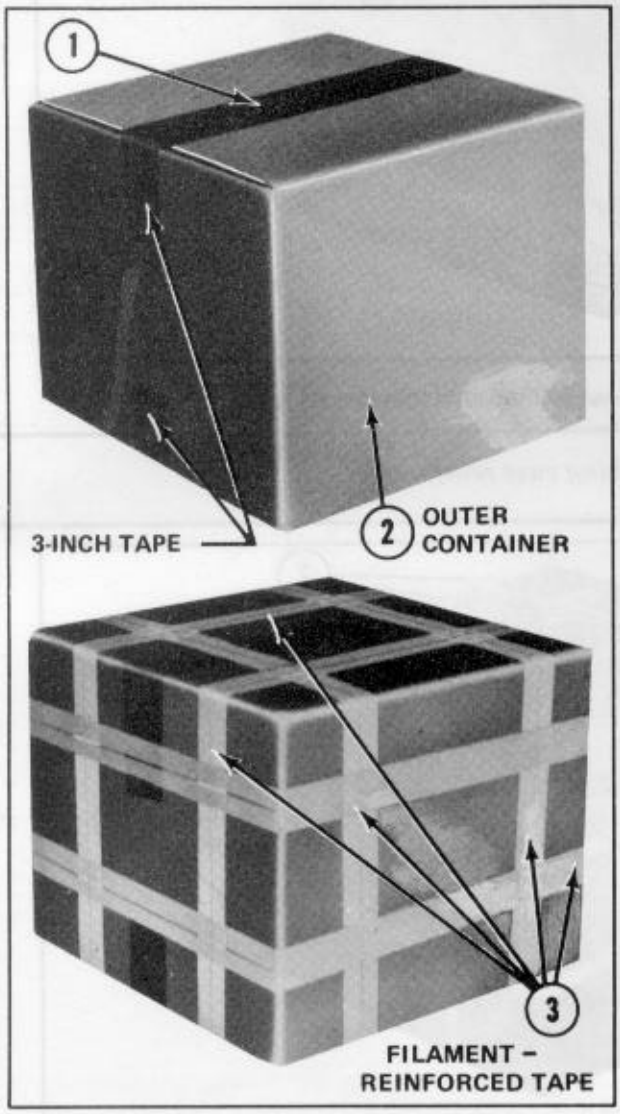
(1) Position the honeycomb around the packing case.

(2) Use 1-inch filament-reinforced tape to secure honeycomb around the packing case.

Figure 2-10. Honeycomb positioned.

2-17. Preparing and Packing Outer Container

Prepare and pack the outer container as shown in figure 2-11.



1. Expand the 21 1/2-inch-long outer container. Close one end of the container by folding the flaps closed. Seal the closed end with 3-inch tape. Make sure that the tape extends at least 6 inches down the sides of the container.

2. Slide the packing case, protected by honeycomb, into the outer container, and fold the end flaps down. Seal the outer container with 3-inch tape.

3. Reinforce the outer container with 1-inch filament-reinforced tape.

Figure 2-11. One case of 10-ounce cans of water prepared.

2-18. Marking Rigged Load

The rigged load is 21 1/2 inches long, 17 1/2 inches high, and 21 1/2 inches wide. Stencil the following information on the outer container:

Emergency drinking water, fifty 10-ounce cans
Weight: 59 pounds
Cube: 4.3 feet

2-19. Equipment Required

Equipment required to rig fifty 10-ounce cans for free drop is listed in table 2-3.

Table 2-3. Equipment required

National Stock Number	Item	Quantity
No NSN	Container, cardboard, 21 1/4- by 21 1/4- by 17-in (expanded size)	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	1 sheet
	11- by 15-in	(2)
	21- by 11-in	(2)
	21- by 21-in	(2)
	Tape:	
7510-00-266-6710	Adhesive, 3-in	As required
7510-00-582-4772	Filament, reinforced, 1-in	As required

CHAPTER 3

Rigging Milk-Dispensing Containers

Section I

RIGGING EIGHT MILK-DISPENSING CONTAINERS IN AN A-21 CARGO BAG

3-1. Description of Load

The 6-gallon milk-dispensing container is used as an expandable container for potable water. It is made up of a fiberboard box and a plastic bag insert. Eight containers are rigged in an A-21 cargo bag. Each cargo bag can be rigged for drop from a door, ramp, or wedge. The A-21 cargo bag uses either one G-13 or one G-14 cargo parachute and a skid and honeycomb kit.

3-2. Preparing Containers

Prepare eight milk-dispensing containers as shown in figure 3-1.

WARNING
Air in the bag can cause the bag to burst during a sudden decompression in the aircraft.

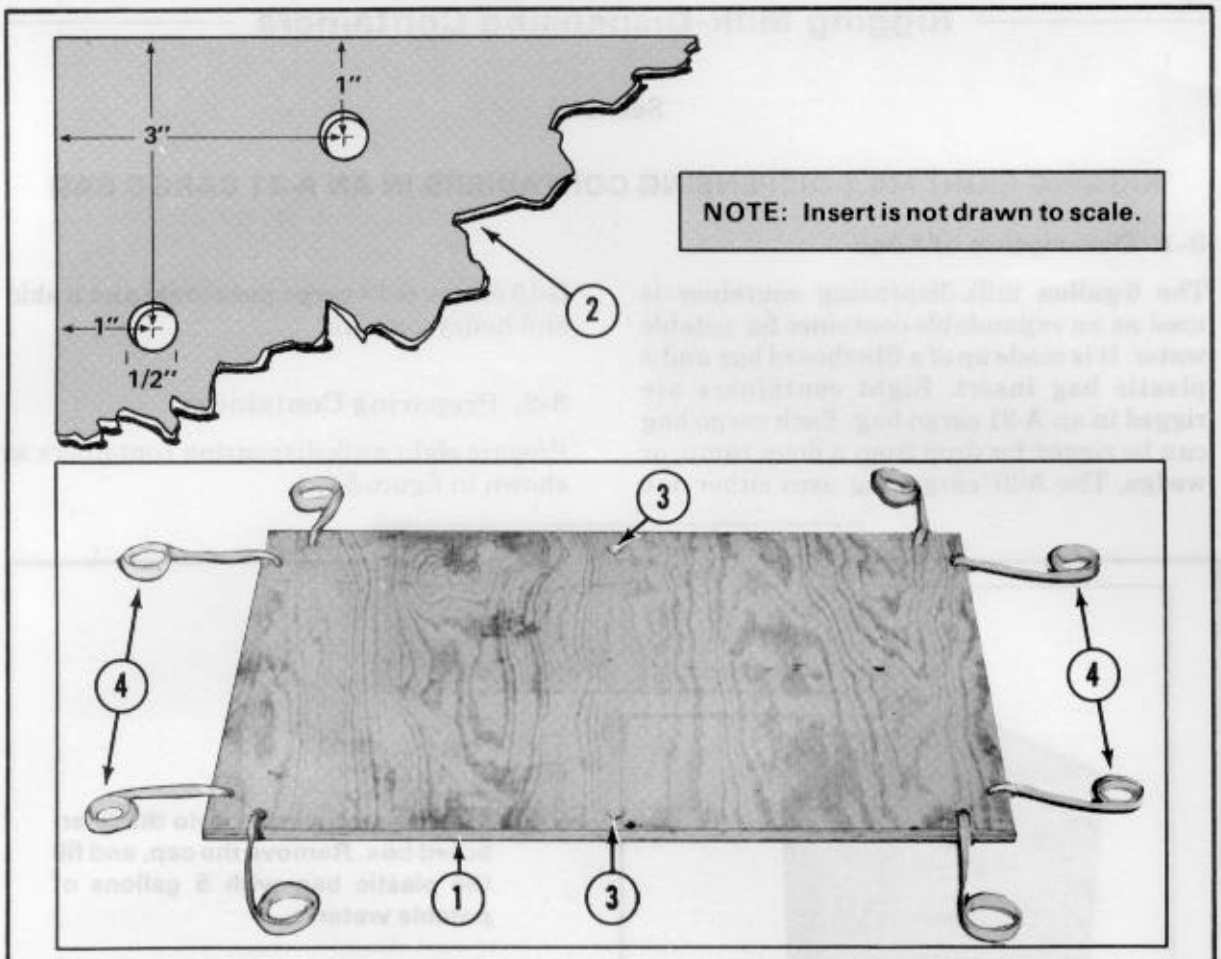
Step:

1. **Insert the plastic bag into the fiberboard box. Remove the cap, and fill the plastic bag with 5 gallons of potable water.**
2. **Push down slowly on the plastic bag to squeeze out all of the air. Replace the cap on the bag.**
3. **Use nylon-reinforced tape to close the container. Wrap four bands of tape twice around each container as shown.**

Figure 3-1. Milk-dispensing container prepared.

3-3. Rigging Load

Rig eight water containers in an A-21 cargo bag as shown in figures 3-2, 3-3, and 3-4.



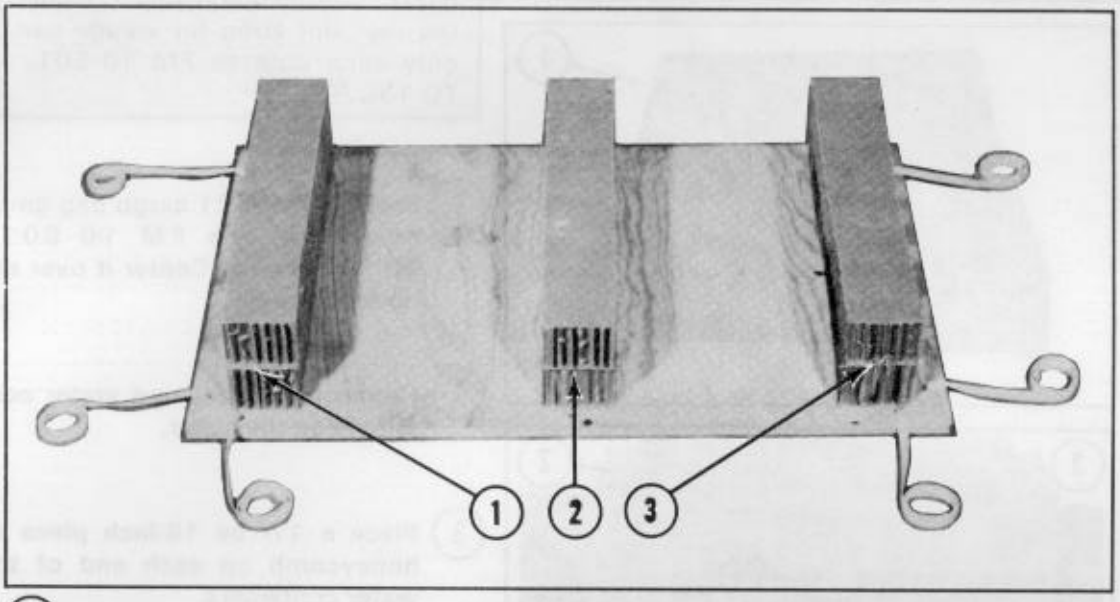
(1) Cut a 3/4-inch-thick sheet of plywood to the correct size:
for ramp use — 32 by 42 inches
for door use — 27 by 42 inches
for wedge use— 27 by 42 inches

(2) Drill two 1/2-inch holes at each corner of the plywood as shown on the insert.

(3) Drill a 1-inch hole centered and 1 inch from each long side of the skid (for wedge use only).

(4) Run an 8-foot length of 1/2-inch tubular nylon through the holes as shown.

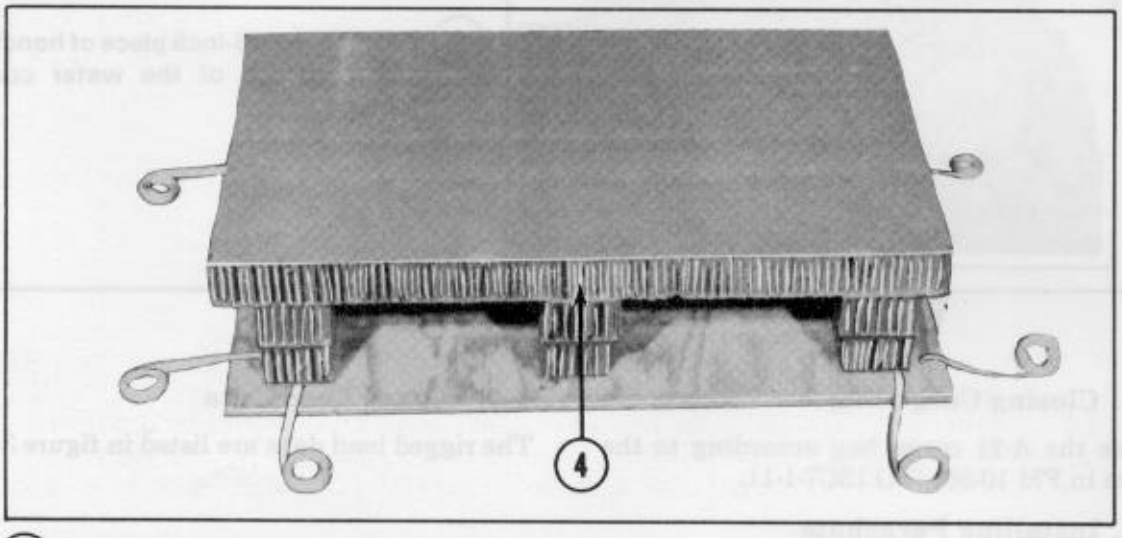
Figure 3-2. Skid prepared.



(1) Glue two 4- by 24-inch pieces of honeycomb together. Glue the honeycomb stack to the skid, 2 inches in from the side and centered between the front and rear edges.

(2) Follow step 1, but center the honeycomb stack on the skid.

(3) Follow step 1.



(4) Center a 24- by 42-inch piece of honeycomb on the three honeycomb stacks, and glue it.

Figure 3-3. Honeycomb stacks built and placed.

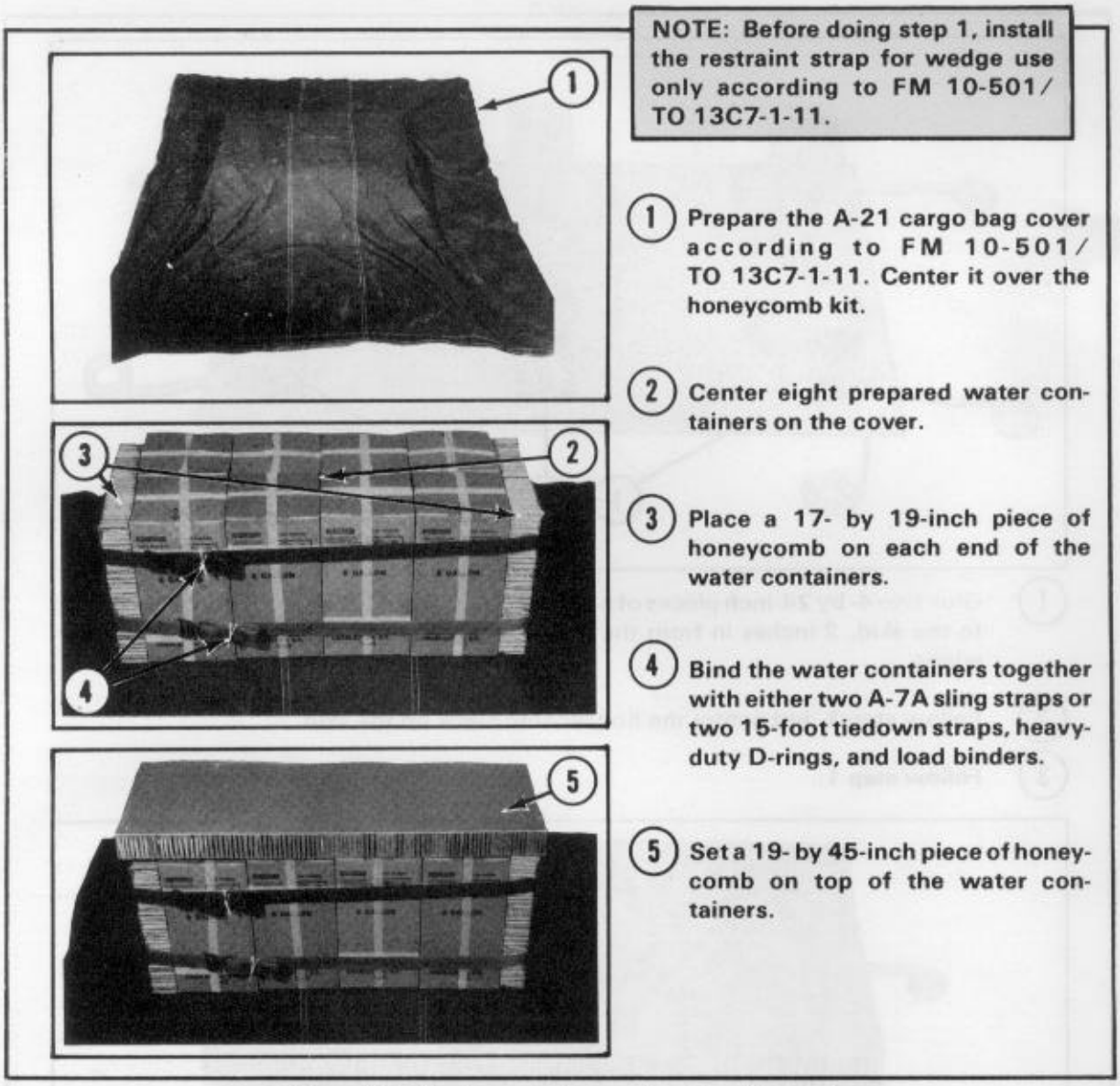


Figure 3-4. Water containers placed and bound.

3-4. Closing Cargo Bag

Close the A-21 cargo bag according to the steps in FM 10-501/TO 13C7-1-11.

3-5. Installing Parachute

Prepare and stow either one G-13 or G-14 cargo parachute according to FM 10-501/ TO 13C7-1-11.

3-6. Rigged Load Data

The rigged load data are listed in figure 3-5.

3-7. Equipment Required

The equipment needed to prepare and rig the water containers is listed in table 3-1.

RIGGED LOAD DATA

Weight	**401 pounds**
Width	**42 inches**
Height	**43 inches**
Length	**27 inches**

Figure 3-5. Milk-dispensing containers rigged in A-21 cargo bag for low-velocity airdrop.

Table 3-1. Equipment required

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-00-242-9173	Bag, cargo, type A-21	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	2 sheets
	4- by 24-in	(6)
	17- by 19-in	(2)
	19- by 45-in	(1)
	24- by 42-in	(1)
1670-00-984-3535	Parachute, cargo, G-13 *or*	1
1670-00-999-2658	Parachute, cargo, G-14	1
5530-00-128-4981	Plywood, 3/4- by:	
	27- by 42-in *or*	1
	32- by 42-in	1
1670-00-251-1153	Sling, cargo, airdrop, type A-7A	1
	Tape:	
7510-00-266-5016	Adhesive, 2-in	As required
7510-00-582-4772	Filament, reinforced, 1-in	As required
1670-00-937-0271	Tiedown assembly	2
8305-00-268-2411	Webbing, cotton, 80-lb	As required
8305-00-082-5752	Webbing, nylon, tubular, 1/2-in	As required

Section II

RIGGING 40 MILK-DISPENSING CONTAINERS IN AN A-22 CARGO BAG

3-8. Description of Load

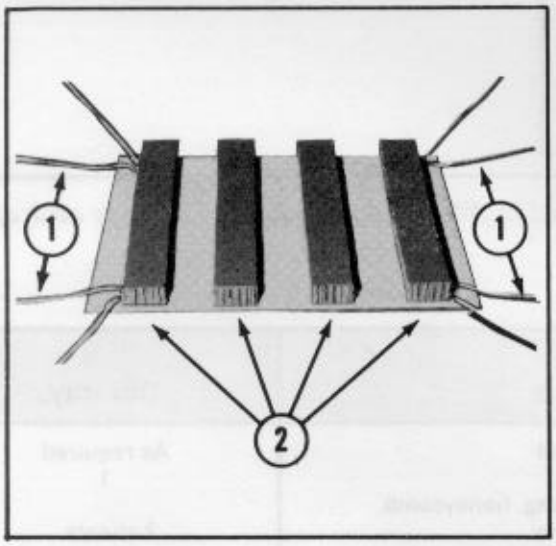
The milk-dispensing container is used as an expendable container for potable water. It is made up of a fiberboard box and a plastic bag insert. Forty containers are rigged in an A-22 cargo bag on a standard skid, NSN 1670-00-883-1654. The load is rigged with one G-12D cargo parachute.

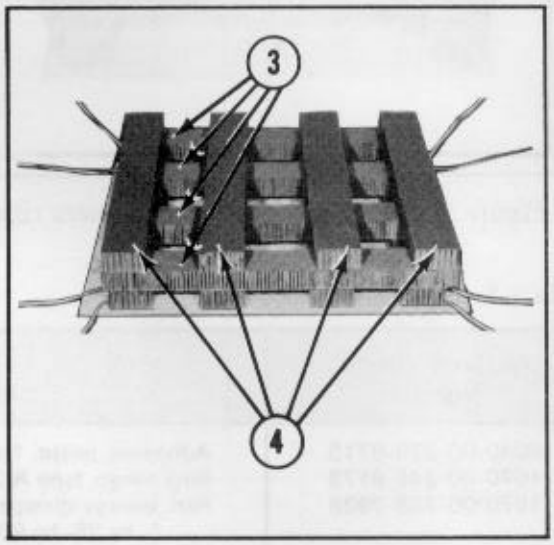
3-9. Preparing Containers

Prepare 40 containers as shown in figure 3-1.

3-10. Rigging Load

Rig 40 containers in an A-22 cargo bag as shown in figures 3-6 through 3-8.





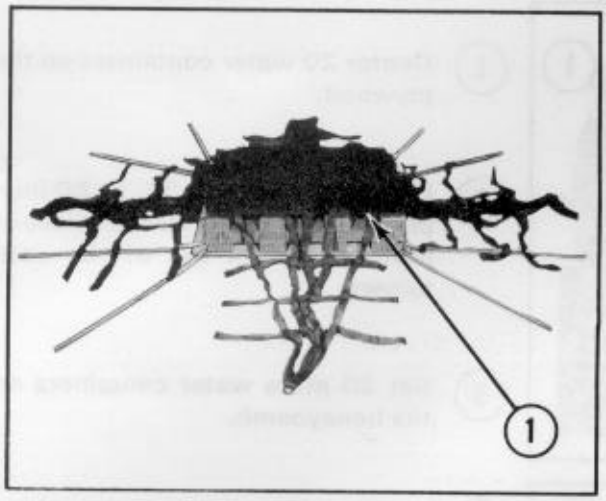
(1) **Run an 8-foot length of 1/2-inch tubular nylon webbing through each pair of holes at the four corners of the skid. Place the skid on a level surface.**

(2) **Glue four 6- by 48-inch pieces of honeycomb to the skid. Place the two outside pieces 2 3/4 inches in from the 48-inch side, and glue them. Space the inner pieces 8 inches from the outside pieces, and glue them.**

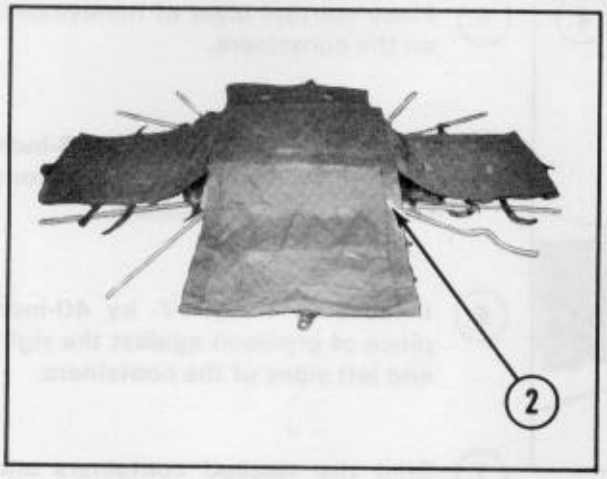
(3) **Cross stack and glue the second layer of four 6- by 48-inch pieces of honeycomb. Center the outside pieces flush with the ends of the first layer. Space the inner pieces 8 inches from the outside pieces, and glue them.**

(4) **Place the third layer of four 6- by 48-inch pieces of honeycomb directly above the first layer, and glue it.**

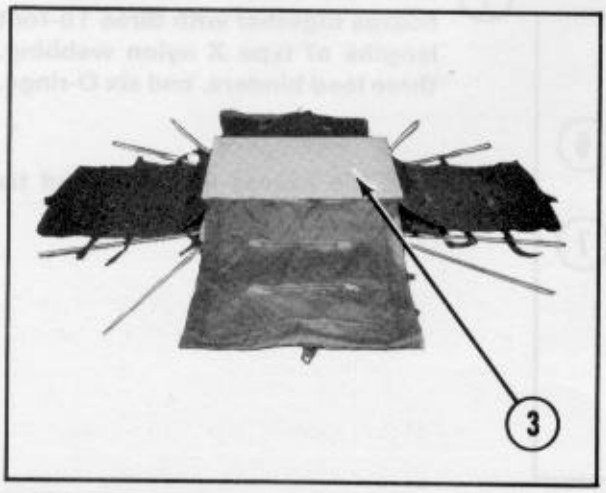
Figure 3-6. Skid prepared and honeycomb stacks placed.



1 Center the A-22 sling assembly on the stacks with the outside of the slings down.

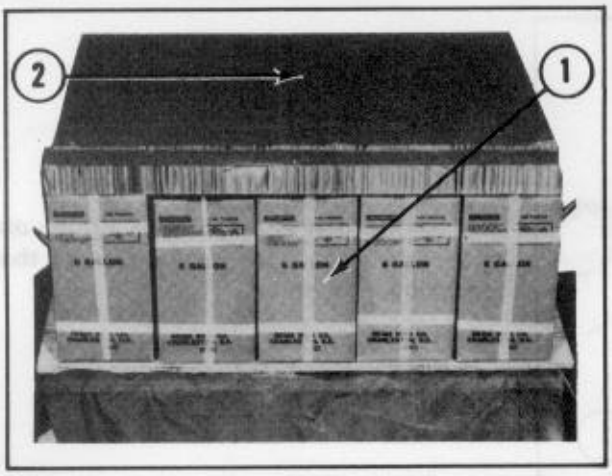


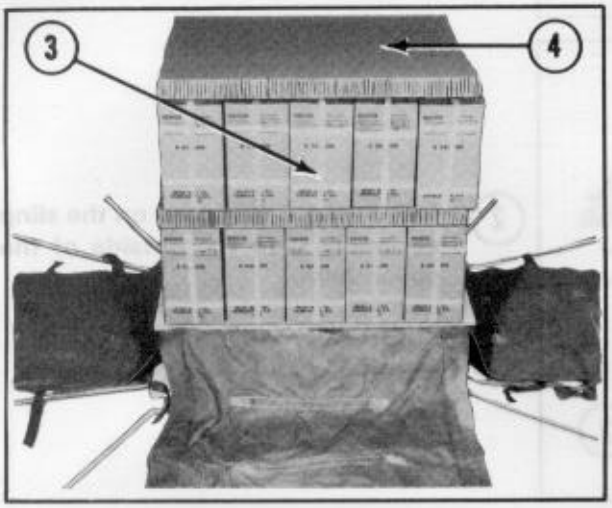
2 Center the A-22 cover on the sling assembly with the outside of the cover down.

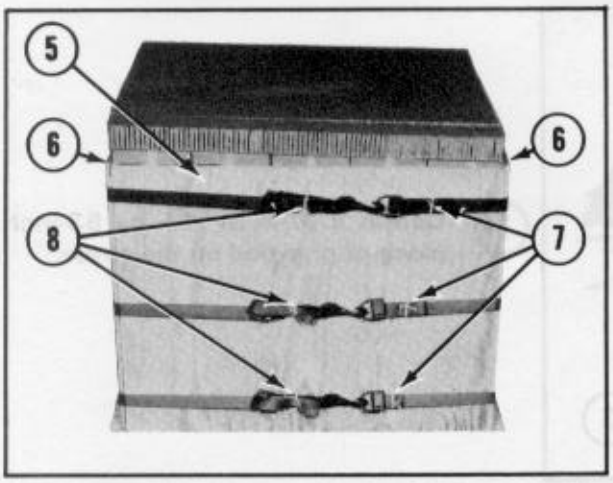


3 Center a 3/4- by 40- by 53-inch piece of plywood on the cover.

Figure 3-7. Cargo bag and plywood placed.







1. Center 20 water containers on the plywood.
2. Place a layer of one 36- by 50-inch piece and one 4- by 50-inch piece of honeycomb on top of the containers.
3. Set 20 more water containers on the honeycomb.
4. Place another layer of honeycomb on the containers.
5. Place a 3/4- by 37- by 48-inch piece of plywood against the front and rear of the containers.
6. Place a 3/4- by 37- by 40-inch piece of plywood against the right and left sides of the containers.
7. Bind the stacked containers and boards together with three 16-foot lengths of type X nylon webbing, three load binders, and six D-rings.
8. Fold the excess webbing, and tie the folds to the load binder.

Figure 3-8. Water containers placed and bound.

3-11. Closing Cargo Bag

Close the A-22 cargo bag according to the steps in FM 10-501/TO 13C7-1-11.

3-12. Installing Parachute

Prepare and stow one G-12D cargo parachute with a 68-inch pilot parachute according to FM 10-501/TO 13C7-1-11.

3-13. Rigged Load Data

The rigged load data are listed in figure 3-9.

RIGGED LOAD DATA

Weight	**2,030 pounds**
Width	**53 1/2 inches**
Height	**65 inches**
Length	**48 inches**

Figure 3-9. Milk-dispensing containers rigged in A-22 cargo bag for low-velocity airdrop.

3-14. Equipment Required

The equipment needed to prepare and rig the water containers is listed in table 3-2.

Table 3-2. Equipment required

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
1670-00-587-3421	Bag, cargo, airdrop, type A-22	1
1670-00-937-0272	Binder, load, 10,000-lb-cap	3
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
5365-00-937-0147	D-ring, heavy-duty	6
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	5 sheets
	4- by 40-in	(2)
	6- by 48-in	(12)
	36- by 50-in	(2)
1670-00-216-7297	Parachute, pilot, 68-in diam	1
1670-00-893-2371	Parachute, cargo, 64-ft, G-12D	1
5530-00-128-4981	Plywood, 3/4- by:	
	37- by 40-in	2
	37- by 48-in	2
	40- by 53-in	1
1670-00-883-1654	Skid, cargo bag, platform	1
	Tape:	
7510-00-266-5016	Adhesive, 2-in	As required
7510-00-582-4772	Filament, reinforced, 1-in	As required
	Webbing:	
8305-00-268-2411	Cotton, 80-lb	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-260-6890	Nylon, type X, 16-ft	3

CHAPTER 6

Rigging 55-Gallon Collapsible Water Drums

Section I

RIGGING DRUMS IN AN A-22 CARGO BAG FOR LOW-VELOCITY AIRDROP

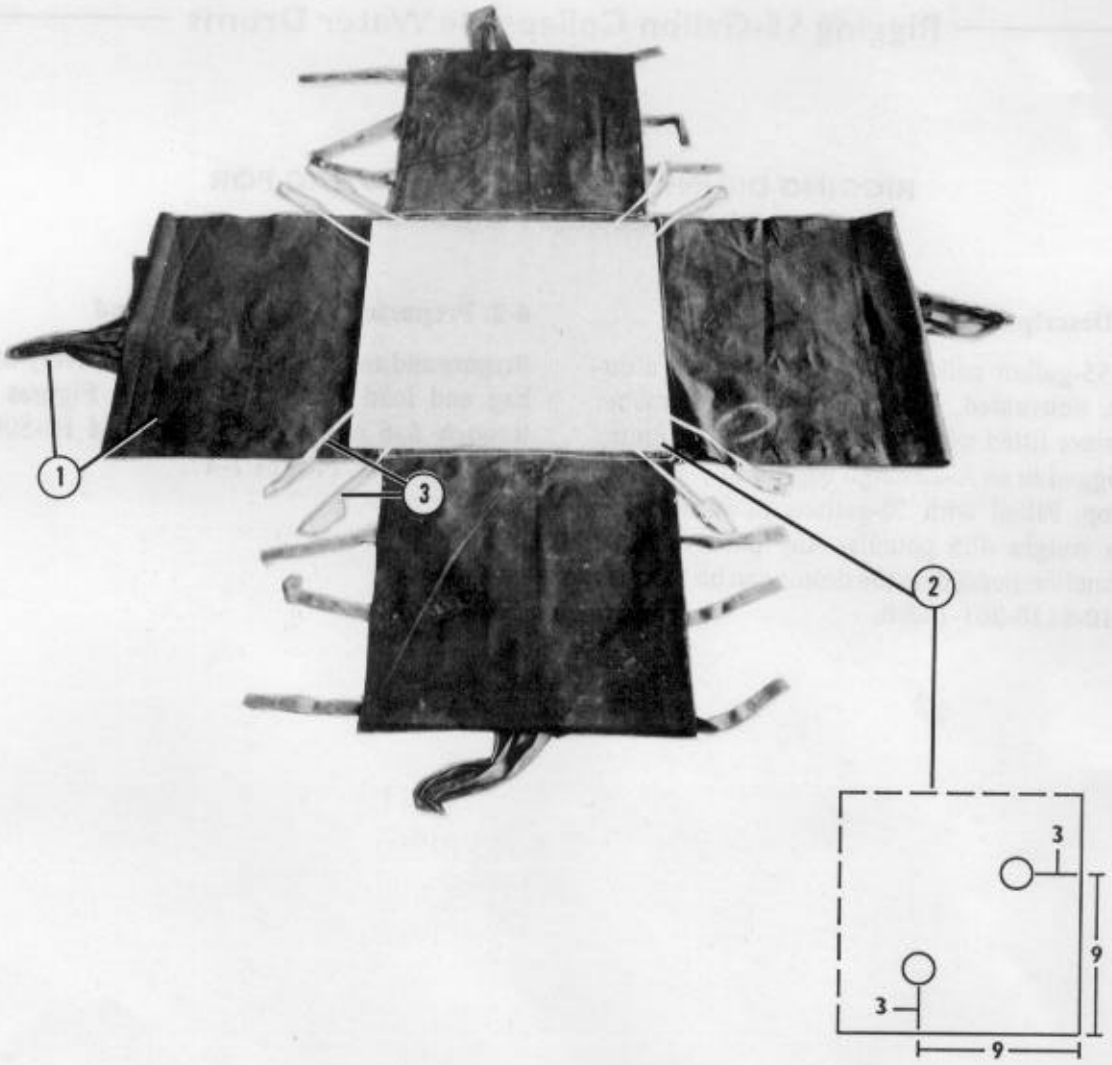
6-1. Description of Load

The 55-gallon collapsible water drum is a durable, nonvented, cylindrically shaped, rubber container fitted with a faucet valve. Four drums are rigged in an A-22 cargo bag for low-velocity airdrop. Filled with 50-gallons of water, each drum weighs 465 pounds. Any parts or other information needed on the drums can be found in TM 10-8110-201-14&P.

6-2. Preparing and Securing Load

Prepare and secure the A-22 aerial delivery cargo bag and load items as shown in Figures 6-1 through 6-6 and according to FM 10-500-3/ TO 13C7-1-11/FMFM 7-47.

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

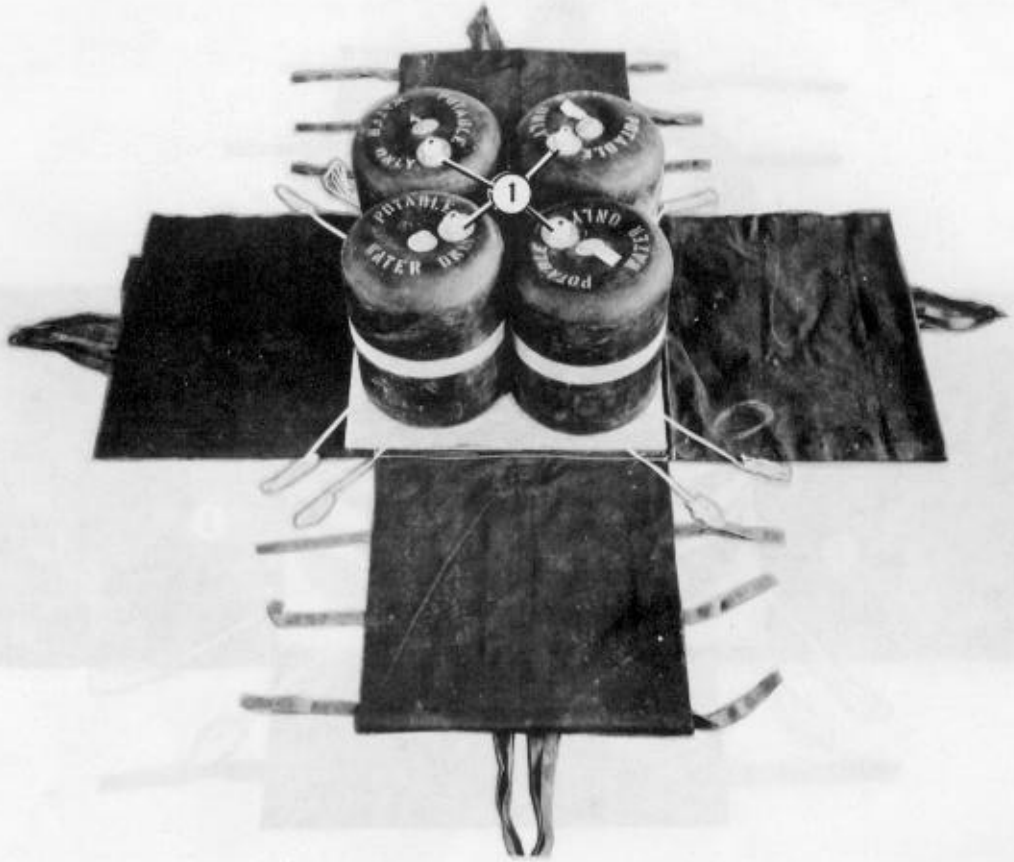


(1) Lay out a sling assembly with cover according to FM 10-500-3/TO 13C7-1-11/FMFM 7-47.

(2) Drill two 1/2-inch holes in each corner of a 3/4- by 48- by 48-inch piece of plywood or skidboard. Place the holes 9 inches from each corner and 3 inches from the edge.

(3) Position the plywood inside the cover. Pass a 15-foot length of 1/2-inch tubular nylon webbing through the holes in each corner of the plywood.

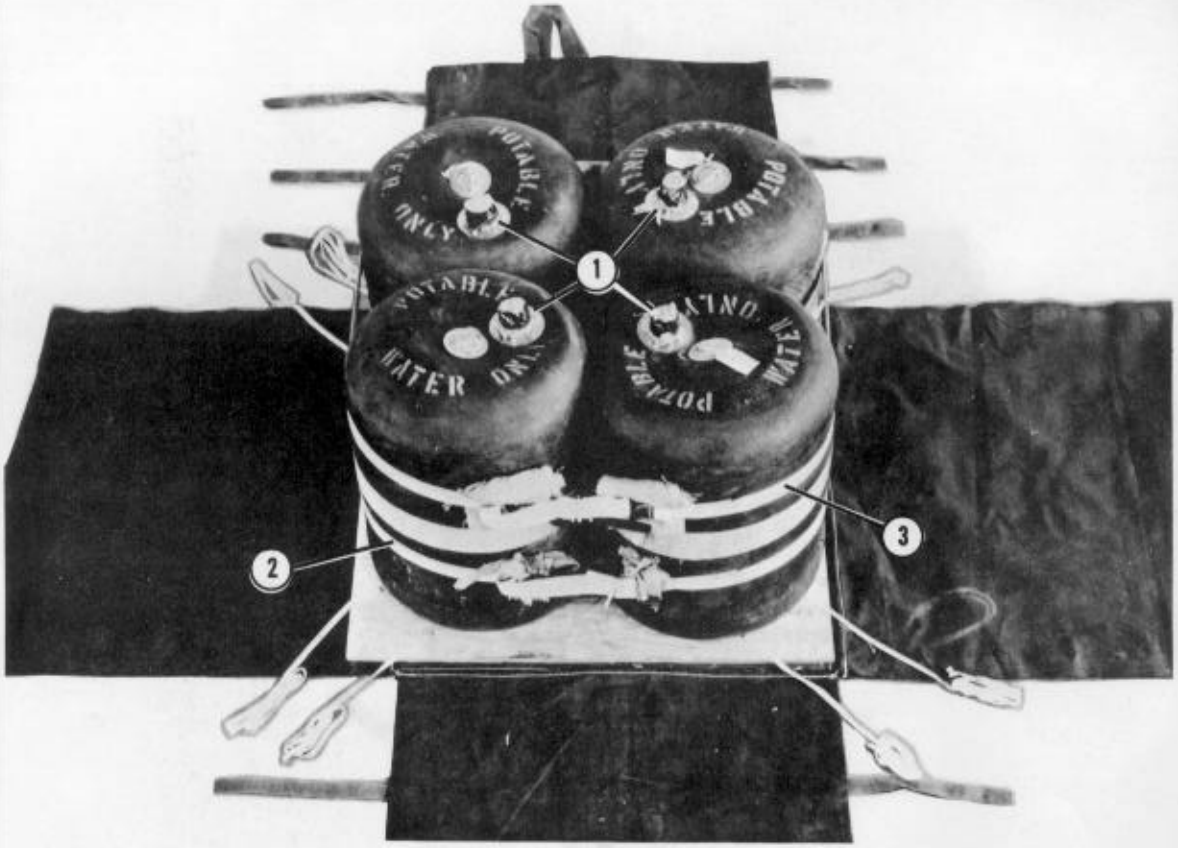
Figure 6-1. A-22 cargo bag prepared



(1) **Center four 55-gallon collapsible water drums on the 48- by 48-inch plywood with the valves facing into the center.**

Figure 6-2. Drums positioned

NOTE: Pad the load binders and D-rings with cellulose wadding.

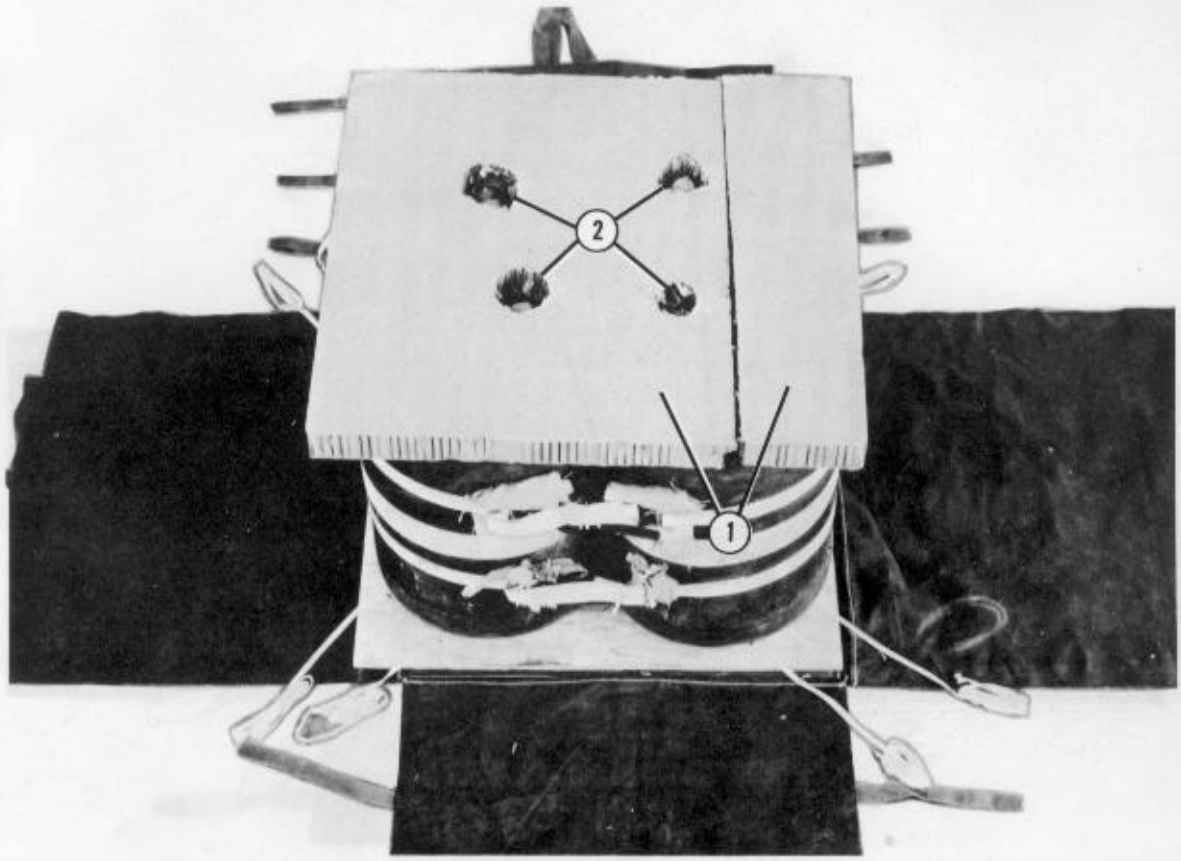


(1) **Pad the faucet valves with cellulose wadding and tape.**

(2) **Pass one 15-foot tie-down lashing around the lower half of the drums, and secure with a load binder and D-ring.**

(3) **Repeat step 2 for the upper half of the drums.**

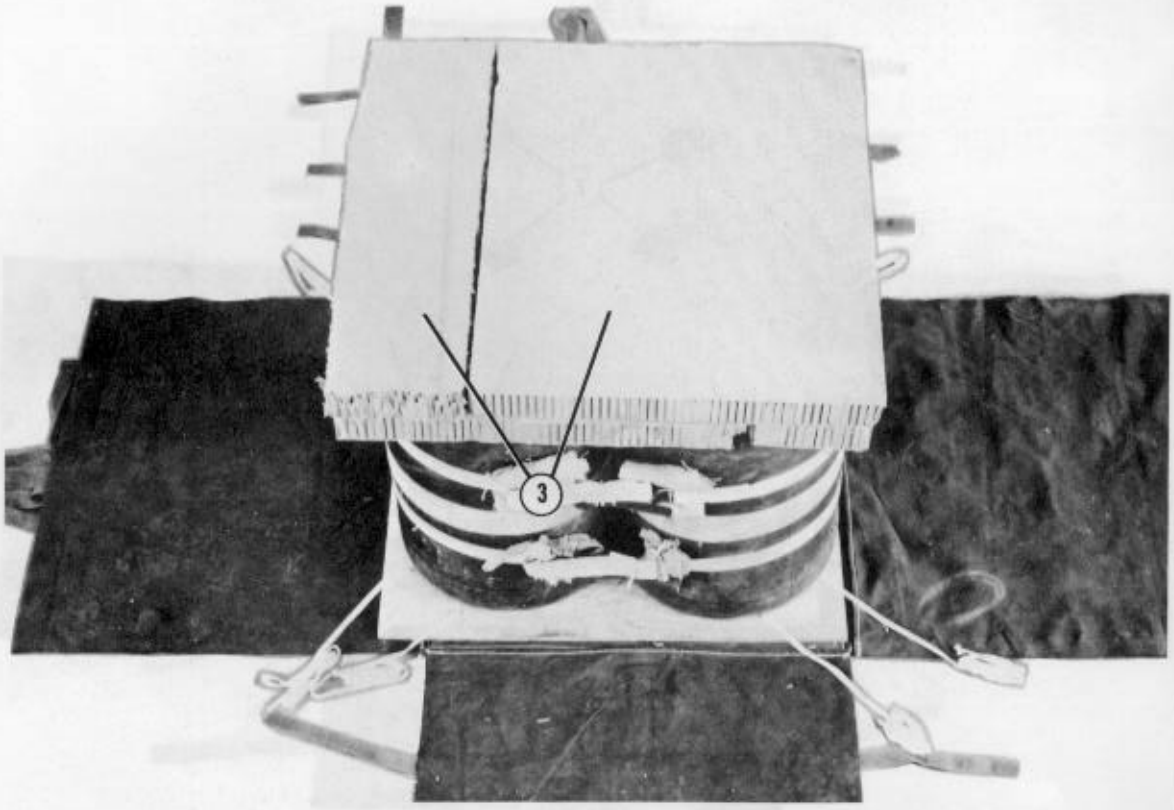
Figure 6-3. Drums secured together



(1) **Center a layer of 48- by 48-inch honeycomb on top of the drums (one piece is 48 by 36 inches and another is 48 by 12 inches).**

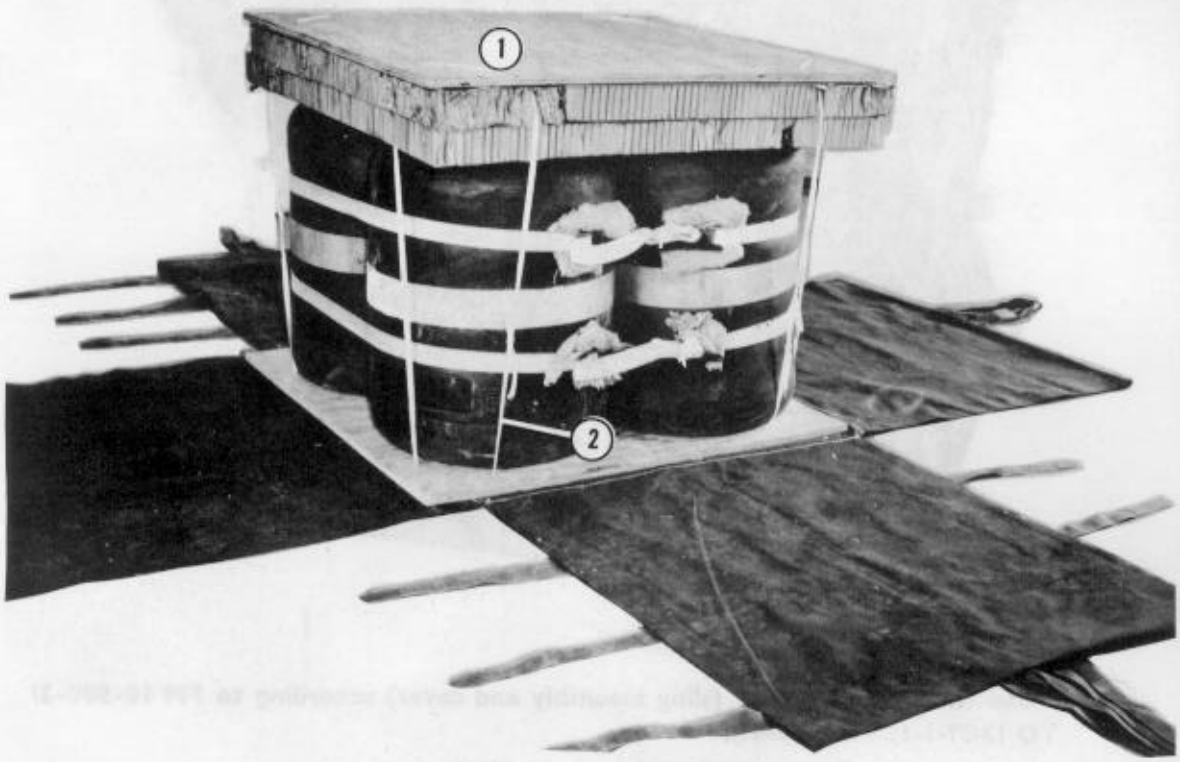
(2) **Mark where the valves contact the 48- by 48-inch layer of honeycomb. Cut holes 5 inches larger than the valves at each mark.**

Figure 6-4. Honeycomb positioned



(3) **Make a second 48- by 48-inch layer of honeycomb on top of the first layer by positioning the 48- by 12-inch piece on the side opposite the same piece of the first layer. Complete the second layer by placing the 48- by 36-inch piece next to the 48- by 12-inch piece.**

Figure 6-4. Honeycomb positioned (continued)



(1) **Position a 3/4- by 48- by 48-inch piece of plywood or skidboard, with holes drilled as described in Figure 6-1 on top of the 48- by 48-inch layers of honeycomb.**

(2) **Secure the two pieces of plywood together by passing the 1/2-inch tubular nylon from each corner of the lower piece of plywood to the same corner of the upper piece of plywood. Tie the ends together with a surgeon's knot and a locking knot according to FM 10-500-2/TO 13C7-1-5.**

Figure 6-5. Plywood and honeycomb secured

(1) **Close the A-22 container (sling assembly and cover) according to FM 10-500-3/ TO 13C7-1-11/FMFM 7-47.**

(2) **Attach the suspension webs to the A-22 container according to FM 10-500-3/ TO 13C7-1-11/FMFM 7-47 (not shown).**

Figure 6-6. A-22 container closed

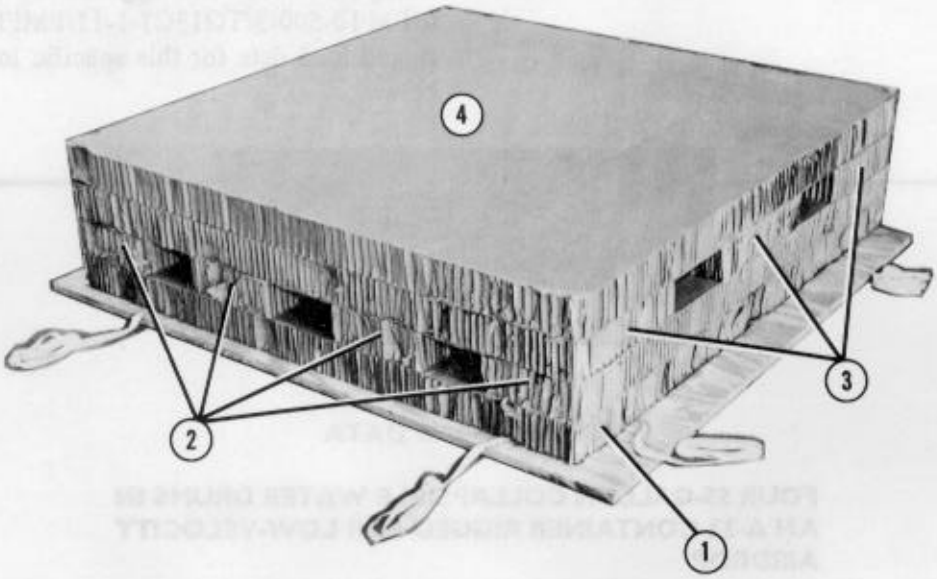
6-3. Preparing Skidboard

Prepare a skidboard according to FM 10-500-3/ TO 13C7-1-11/FMFM 7-47.

6-4. Building and Positioning Honeycomb on Skidboard

Build the honeycomb as shown in Figure 6-7. Position the honeycomb on the skidboard according to FM 10-500-3/TO 13C7-1-11/FMFM 7-47.

NOTE: The honeycomb stack should be glued together. It is not required to glue the stack to the skidboard.



(1) **Cut a 44- by 36-inch and a 44- by 8-inch piece of honeycomb to form the 48- by 48-inch bottom layer.**

(2) **Cut four 44- by 8-inch pieces of honeycomb. Place one piece on each end, flush with the edges of the bottom (first) layer. Evenly space the other two pieces between the end pieces to form the second layer.**

(3) **Cut three 44- by 11-inch pieces of honeycomb. Place one piece on each end, flush with the edges, but running in the opposite direction of the second layer. Center the third piece between the end pieces to form the third layer.**

(4) **Cut a 44- by 36-inch and a 44- by 8-inch piece of honeycomb to form the 48- by 48-inch top (fourth) layer.**

Figure 6-7. Building honeycomb layers

6-5. Securing Skidboard to A-22 Cargo Bag

Secure the skidboard to the container according to FM 10-500-3/TO 13C7-1-11/FMFM 7-47.

6-6. Installing Parachute

Attach and secure the parachute according to FM 10-500-3/TO 13C7-1-11/FMFM 7-47.

6-7. Equipment Required

Use the equipment listed in the table in FM 10-500-3/TO 13C7-1-11/FMFM 7-47 (rigging an A-22 container load for low-velocity airdrop) to rig four 55-gallon collapsible water drums in an A-22 cargo bag for low-velocity airdrop.

6-8. Marking Rigged Load

Compute and mark the rigged load data according to FM 10-500-3/TO13C7-1-11/FMFM 7-47. The rigged load data for this specific load is listed below.

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 must be verified.

RIGGED LOAD DATA

FOUR 55-GALLON COLLAPSIBLE WATER DRUMS IN AN A-22 CONTAINER RIGGED FOR LOW-VELOCITY AIRDROP

Weight	**1,980 pounds**
Height	**52 inches**
Length	**48 inches**
Width	**48 inches**
CB	**24 inches**

Section II

RIGGING DRUMS IN FOUR A-22 CARGO BAGS ON AN 8-FOOT TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

6-9. Description of Load

The 55-gallon collapsible water drum is a durable, nonvented, cylindrically shaped rubber container fitted with a faucet valve. Four drums are rigged in an A-22 cargo bag, and four A-22 containers are rigged on an 8-foot, type V platform for low-velocity airdrop. Filled with 50 gallons of water, each drum weighs 465 pounds. Any parts or other information needed on the drums can be found in TM 10-8110-201-14&P.

6-10. Rigging Procedures

If A-22 containers with 55-gallon collapsible water drums are to be rigged on an 8-foot, type V platform, rig four A-22 cargo bags according to paragraphs 6-2 and 6-7. Do NOT add the 48- by 48-inch skidboards, the four layers of honeycomb, and the G-12 parachutes. Rig the platform load according to FM 10-512/TO 13C7-1-8 using the procedures for rigging bulk supplies in A-22 cargo bags on an 8-foot type V platform.

CHAPTER 7

Rigging 250-Gallon Water Drums for Low-Velocity Airdrop on a Type V Platform

Section I

RIGGING THREE DRUMS ON AN 8-FOOT PLATFORM

7-1. Description of Load

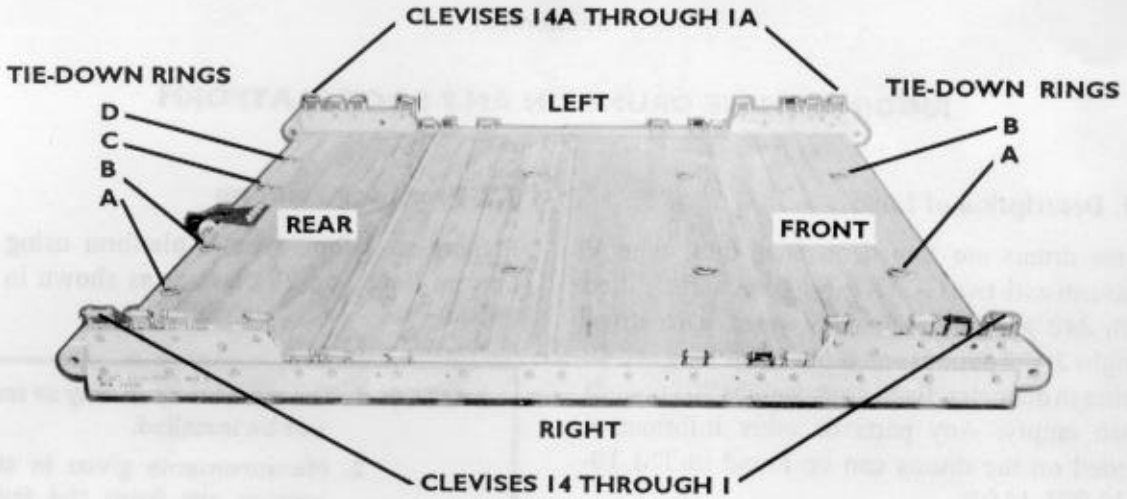
Three drums are rigged on an 8-foot, type V platform with two G-11B cargo parachutes. Filled with 240 gallons of potable water, each drum weighs 2,197 pounds and is 60 inches long and 40 inches in diameter. Each drum weighs 205 pounds when empty. Any parts or other information needed on the drums can be found in TM 10-8110-201-14&P.

7-2. Preparing Platform

Prepare an 8-foot, type V platform using four tandem links and 28 clevises as shown in Figure 7-1.

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.



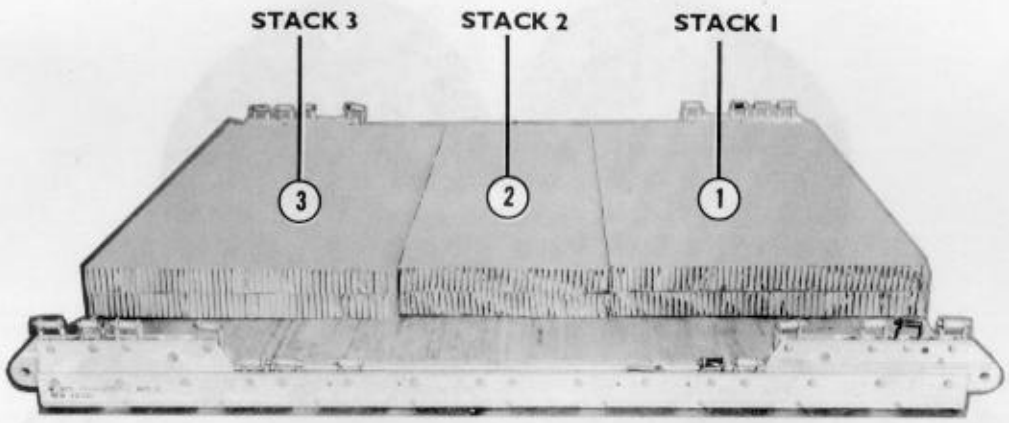
Step:

1. Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
3. Install a tandem link on the rear of each platform side rail using holes 14, 15, and 16.
4. Install a tie-down clevis on bushings 1, 2, 3, and 4 on each front tandem link.
5. Starting at the front of each platform side rail, install a tie-down clevis to the bushings bolted to holes 4, 5, 6, 11, 12, and 13.
6. Install a tie-down clevis to bushings 1, 2, 3, and 4 on each rear tandem link.
7. Starting at the front of the platform, number the clevises bolted to the right side from 1 through 14 and those bolted to the left side from 1A through 14A.
8. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 7-1. Platform prepared

7-3. Preparing and Positioning Honeycomb

Prepare and position the honeycomb on the platform as shown in Figure 7-2.



(1) **Cut two 72- by 36-inch pieces of honeycomb. Center stack 1 flush with the front edge of the platform.**

(2) **Cut two 72- by 24-inch pieces of honeycomb. Center stack 2 flush with the rear edge of stack 1.**

(3) **Cut two 72- by 36-inch pieces of honeycomb. Center stack 3 flush with the rear edge of the platform.**

Figure 7-2. Honeycomb placed on platform

7-4. Installing Lifting Slings

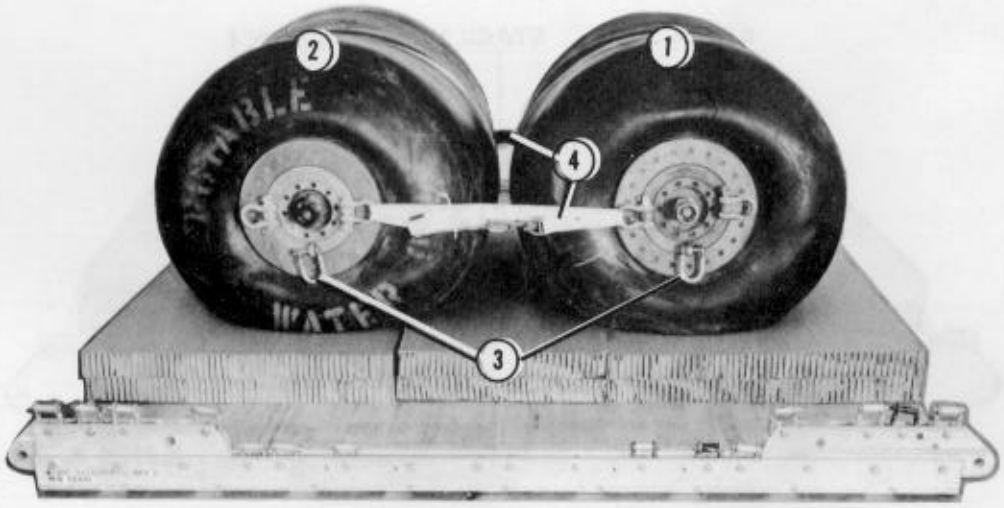
Install the lifting slings to each drum using two 3-foot (2-loop) and two 9-foot (2-loop), type XXVI nylon webbing slings as shown in Figure 4-2.

7-5. Positioning and Lashing Drums Together

Position and lash the drums as described below.

a. *Positioning Drums.* Position the drums on the platform as shown in Figures 7-3 and 7-4.

b. *Lashing Drums Together.* Lash the drums together as shown in Figure 7-3.



(1) **Center a drum on the front pieces of honeycomb as shown above.**

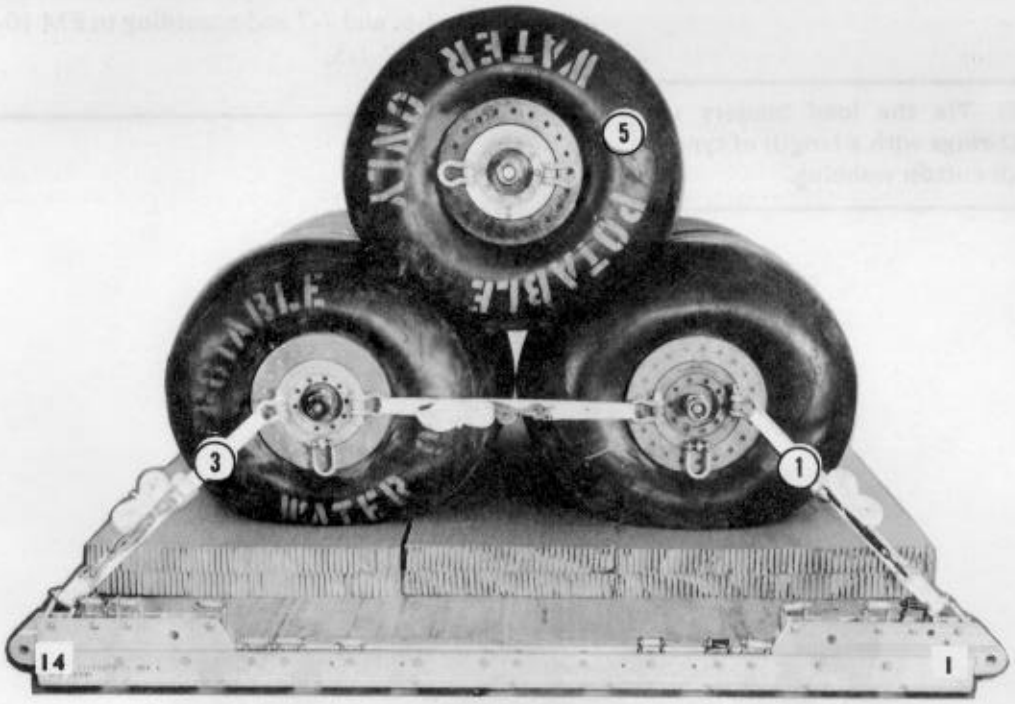
(2) **Center a drum on the rear pieces of honeycomb as shown above.**

NOTE: Remove all lifting slings.

(3) **Bolt a load tie-down clevis to the bottom shackle of each drum.**

(4) **Lash the two drums together with a 15-foot tie-down assembly on each side. Pass the lashing through the inside shackles of the drums on each side.**

Figure 7-3. Drums positioned and lashed together



(1) **Pass a 15-foot tie-down assembly through clevis 1 and then through the right front shackle of the front drum.**

(2) **Pass a 15-foot tie-down assembly through clevis 1A and then through the left front shackle of the front drum (not shown).**

(3) **Pass a 15-foot tie-down assembly through clevis 14 and then through the right rear shackle of the rear drum.**

(4) **Pass a 15-foot tie-down assembly through clevis 14A and then through the left rear shackle of the rear drum (not shown).**

(5) **Center a drum on top of the first two drums, and remove slings.**

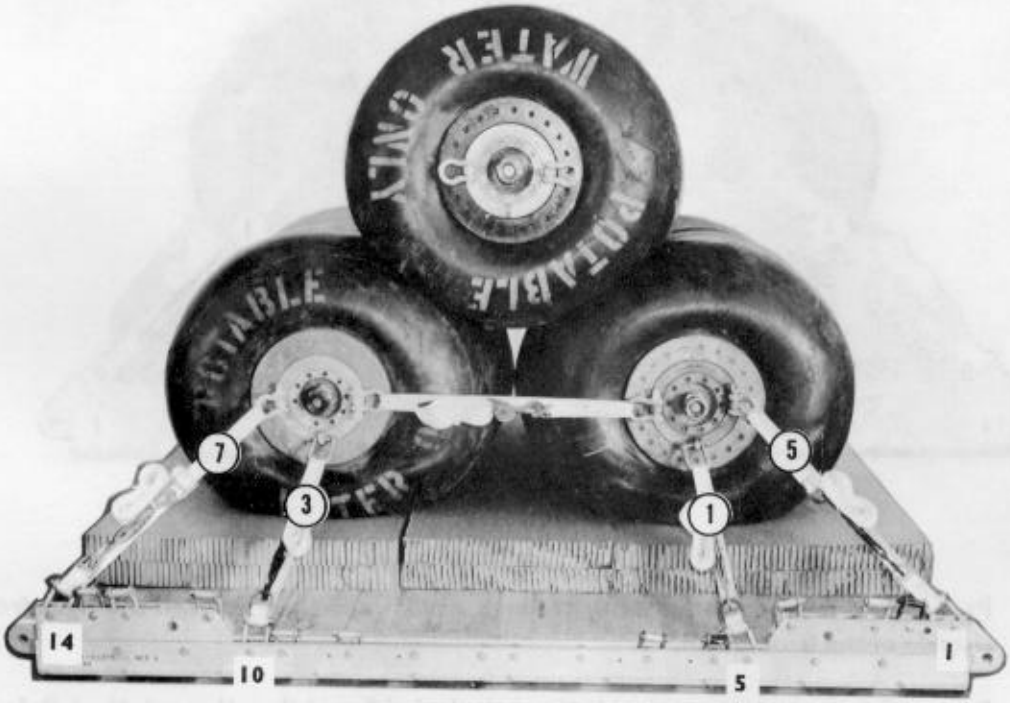
NOTE: Make sure the shackles on the drums are parallel to the platform before installing the lashings.

Figure 7-4. Center drum positioned

7-6. Lashing Drums to the Platform

Use twenty-eight 15-foot tie-down assemblies to lash the drums to the platform as shown in Figures 7-5, 7-6, and 7-7 and according to FM 10-500-2/ TO 13C7-1-5.

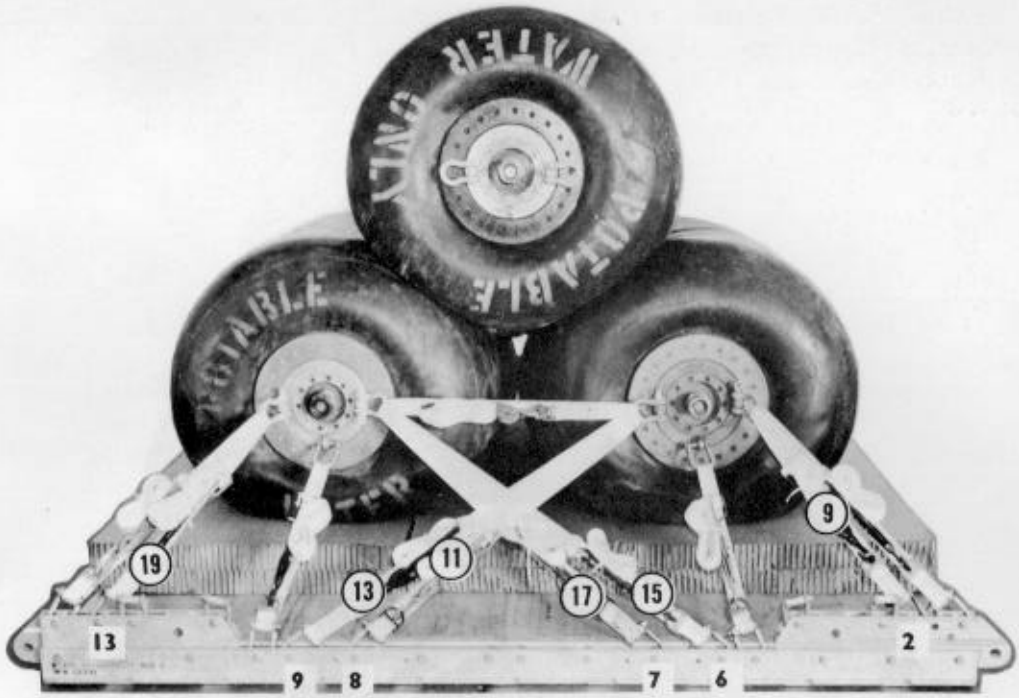
NOTE: Tie the load binders to their D-rings with a length of type I, 1/4-inch cotton webbing.



Lashing Number	Clevis Number	Instructions
1 and 2	5 and 5A	Pass lashing: Through the bottom clevis of the front drum.
3 and 4	10 and 10A	Through the bottom clevis of the rear drum.
*5 and 6	1 and 1A	Through the front shackle of the front drum.
*7 and 8	14 and 14A	Through the rear shackle of the rear drum.

*Lashings were previously installed.

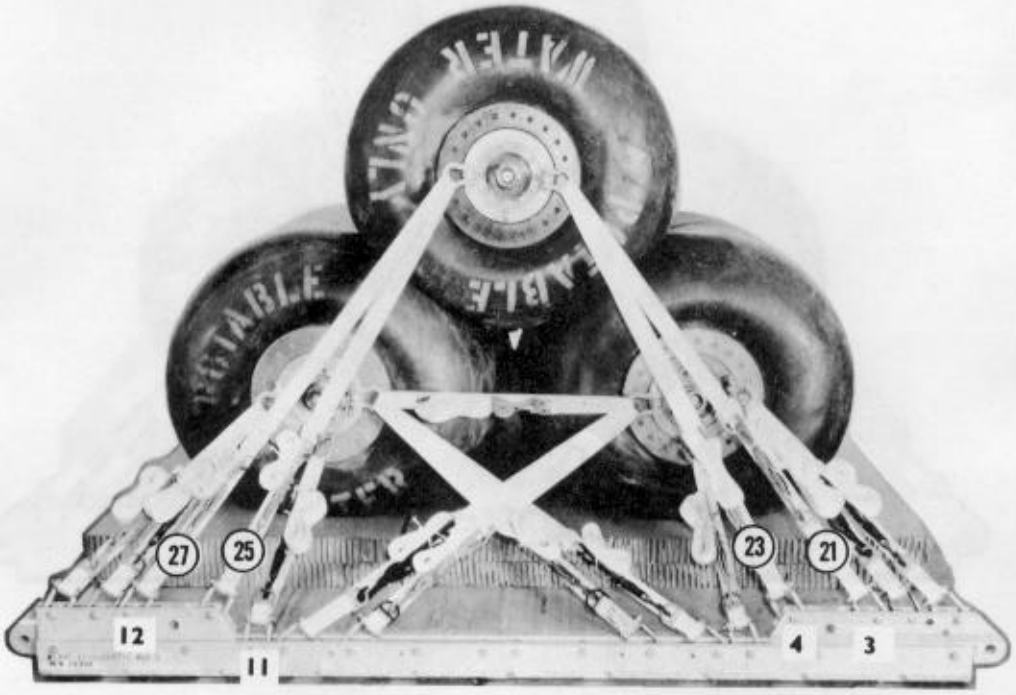
Figure 7-5. Lashings 1 through 8 installed



Lashing Number	Clevis Number	Instructions
		Pass lashing:
9 and 10	2 and 2A	Through the front shackle of the front drum.
11 and 12	8 and 8A	Through the rear shackle of the front drum.
13 and 14	9 and 9A	Through the rear shackle of the front drum.
15 and 16	6 and 6A	Through the front shackle of the rear drum.
17 and 18	7 and 7A	Through the front shackle of the rear drum.
19 and 20	13 and 13A	Through the rear shackle of the rear drum.

Figure 7-6. Lashings 9 through 20 installed

NOTE: Secure the ends of the lashings with D-rings and load binders according to FM 10-500-2/TO 13C7-1-5.

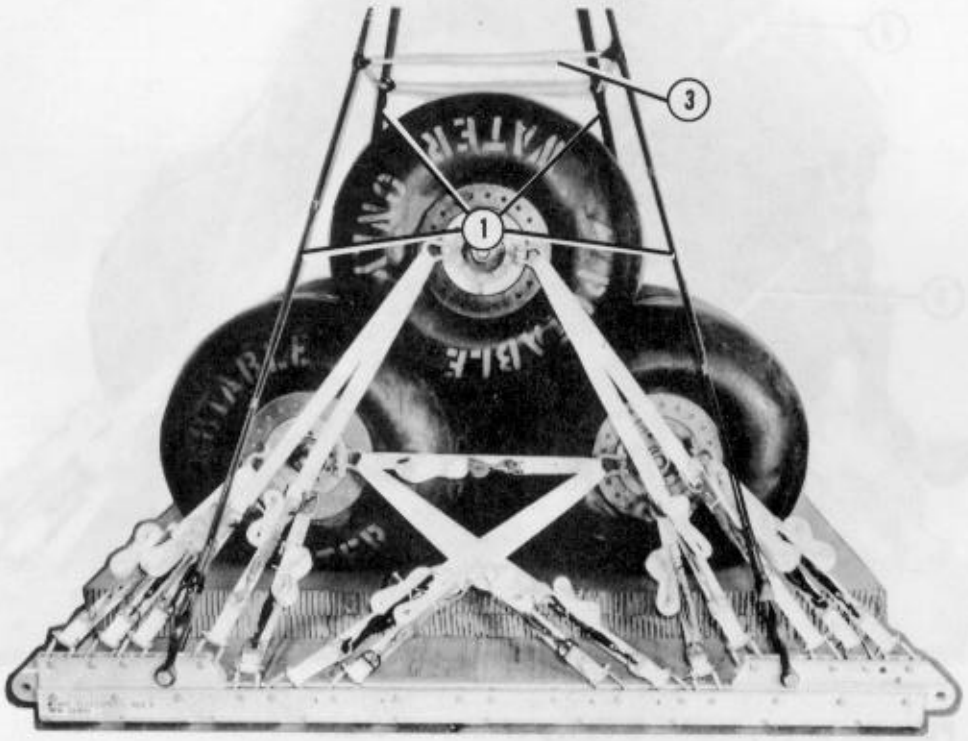


Lashing Number	Clevis Number	Instructions
		Pass lashing:
21 and 22	3 and 3A	Through the front shackle of the center drum.
23 and 24	4 and 4A	Through the front shackle of the center drum.
25 and 26	11 and 11A	Through the rear shackle of the center drum.
27 and 28	12 and 12A	Through the rear shackle of the center drum.

Figure 7-7. Lashings 21 through 28 installed

7-7. Installing and Safetying Suspension Slings

Install four large suspension clevises and four 12-foot (2-loop), type XXVI nylon webbing slings to the tandem links as shown in Figure 7-8.



(1) **Bolt a 12-foot sling to each tandem link using a large suspension clevis.**

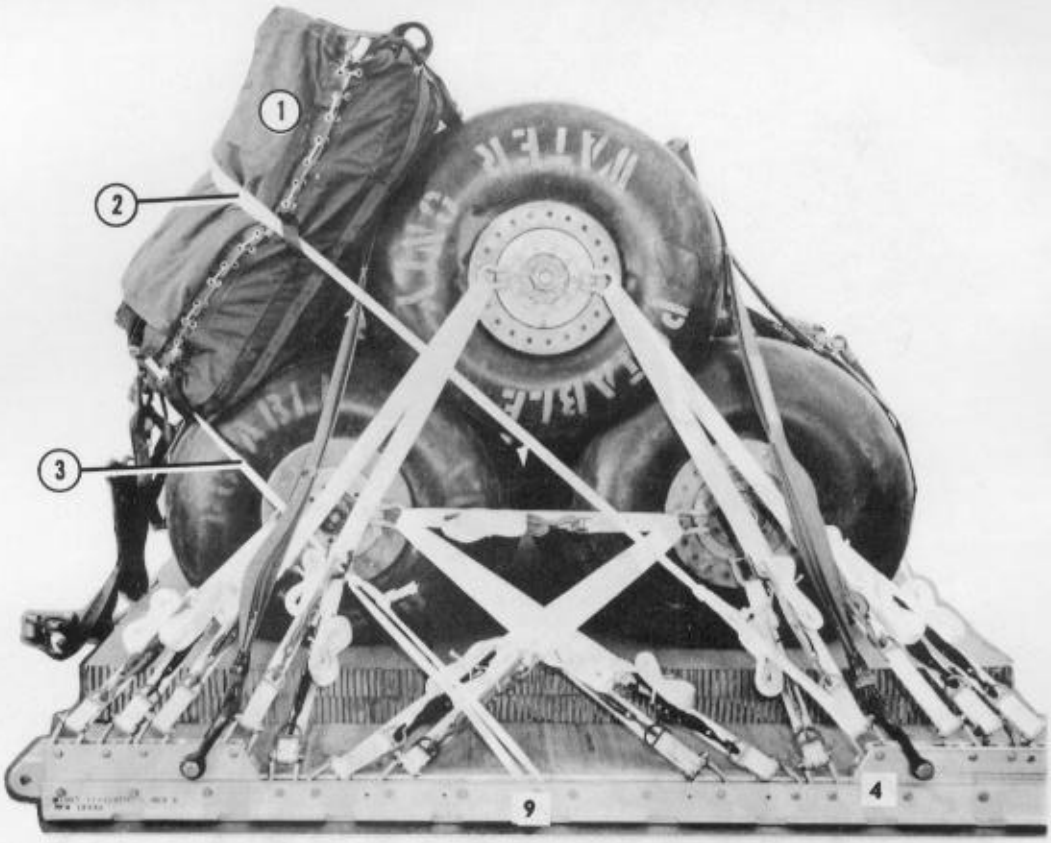
(2) **Raise the suspension slings to their full length using a lifting provision (not shown).**

(3) **Safety the slings with a deadman's tie according to FM 10-500-2/TO 13C7-1-5.**

Figure 7-8. Suspension slings installed

7-8. Stowing Cargo Parachutes

Prepare, place, and restrain two G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figures 7-9 and 7-10.



(1) **Place the cargo parachutes on top of the rear drum.**

CAUTION

As an exception to FM 10-500-2/TO 13C7-1-5 parachute restraint system, two restraints will be on this load.

(2) **Restrain the parachutes according to FM 10-500-2/TO 13C7-1-5 using two lengths of type VIII nylon webbing. Attach one length of webbing to clevises 4 and 4A.**

(3) **Attach the second length of webbing as shown above and according to FM 10-500-2/TO 13C7-1-5 to bushings 9 and 9A.**

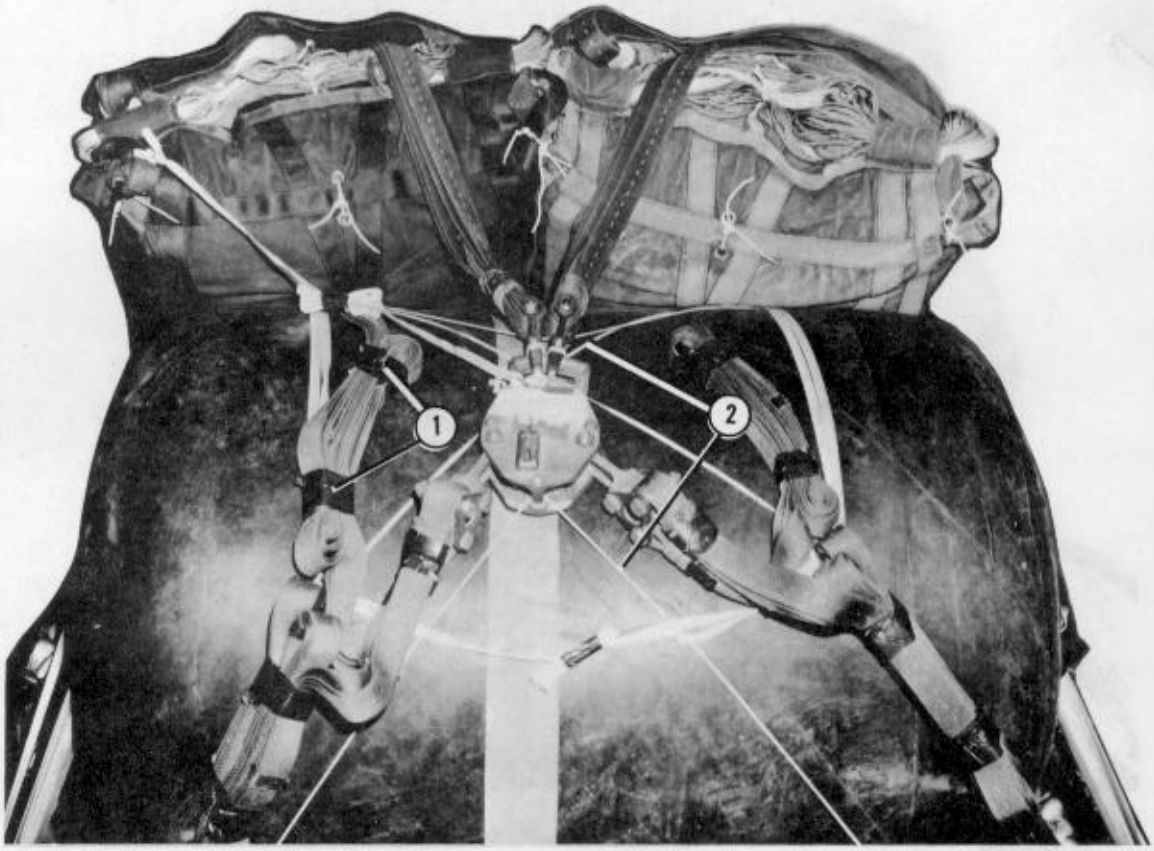
Figure 7-9. Parachute restraint straps installed

(1) **Install two parachute release straps with V-knives according to FM 10-500-2/ TO 13C7-1-5.**

Figure 7-10. Parachute release straps installed

7-9. Installing Parachute Release System

Prepare and attach an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-11.



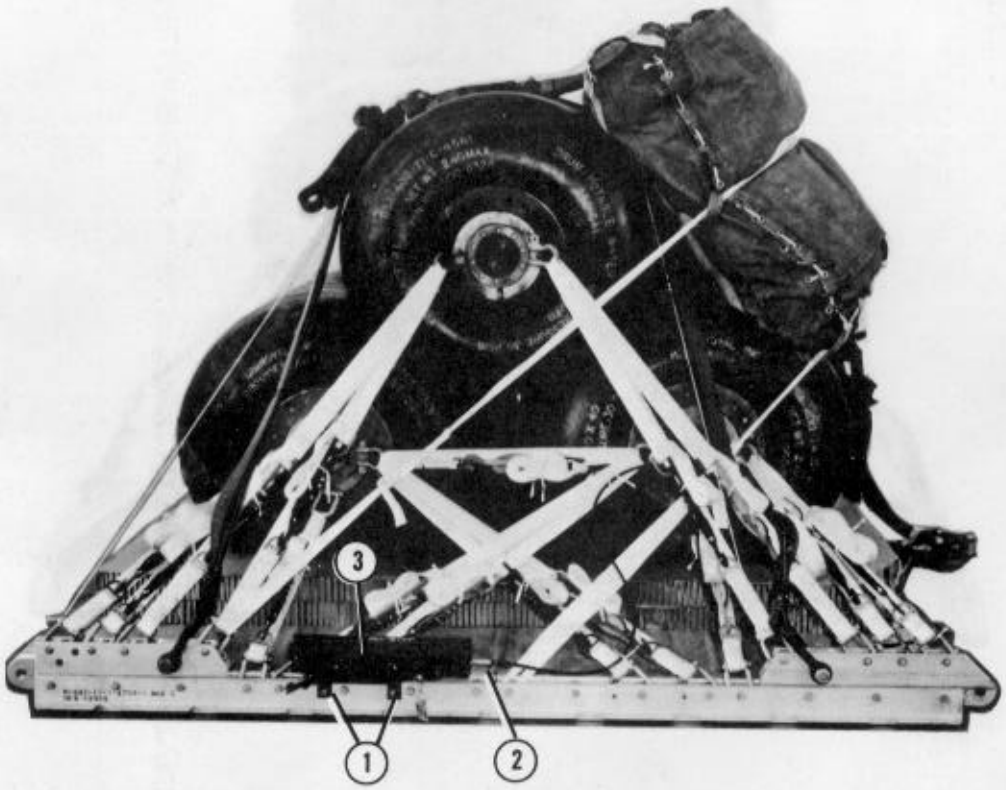
(1) **Place the M-1 cargo parachute release on top of the drum as shown, and attach it according to FM 10-500-2/TO 13C7-1-5. S-fold and tape or tie the slings with type I, 1/4-inch cotton webbing.**

(2) **Secure the M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 with a length of type III nylon cord.**

Figure 7-11. Parachute release attached

7-10. Installing Extraction System

Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-12.



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

(2) **Install a 12-foot cable to the actuator assembly.**

(3) **Attach the actuator assembly to the mounting brackets.**

Figure 7-12. EFTC installed

(4) **Secure the cable to the inside of the lashings and tie-down ring D4 with type I, 1/4-inch cotton webbing.**

(5) **Use a 9-foot (2-loop), type XXVI nylon webbing sling for the deployment line. S-fold the excess line, and tape or tie it with type I, 1/4-inch cotton webbing.**

Figure 7-12. EFTC installed (continued)

7-11. Placing Extraction Parachute

Place the extraction parachute as described below.

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

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

CAUTION

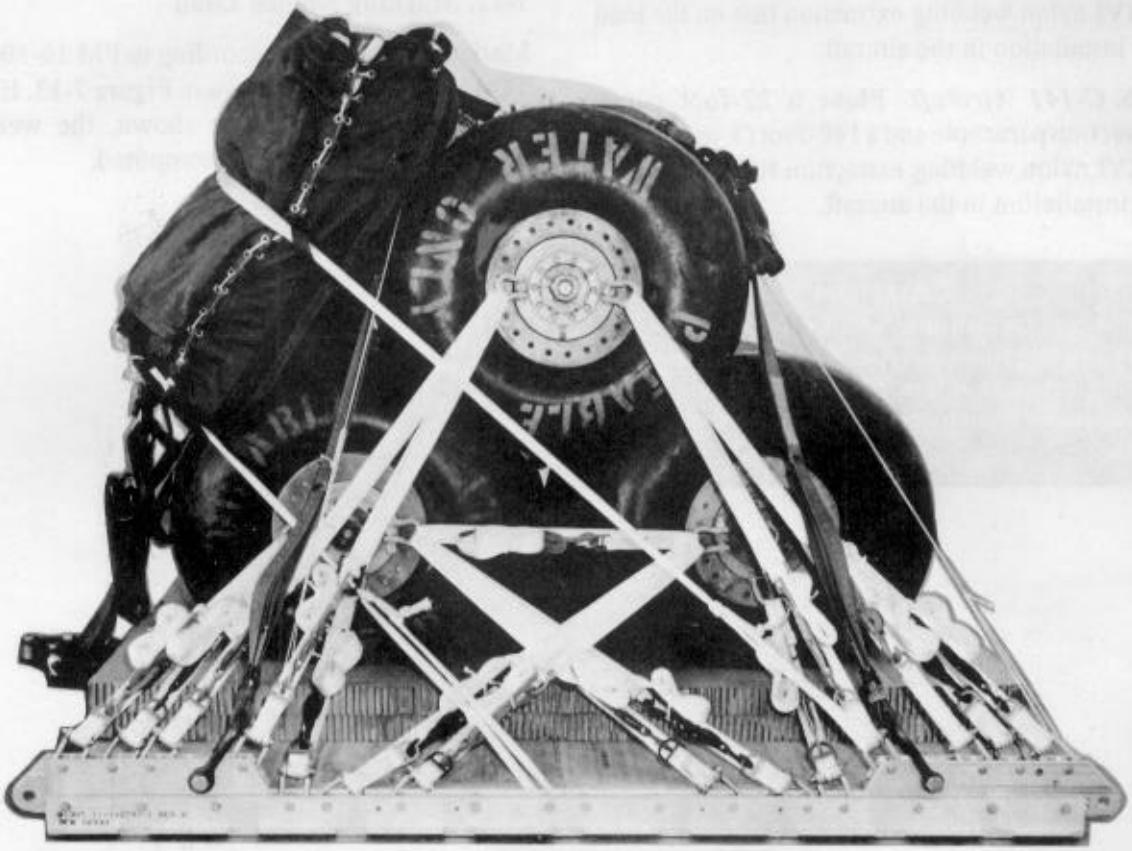
The extraction line will be a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line. Shorter lines will not be used to form the 140-foot extraction line.

NOTE: Sling/extraction line bags must be used.

7-12. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-13. If the load varies from the one shown, the weight, height, and CB must be recomputed.

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



RIGGED LOAD DATA

Weight:	**Load shown**	**8,300 pounds**
	Maximum load allowed	**9,000 pounds**
Height		**77 inches**
Width		**108 inches**
Length		**96 inches**
Overhang:	**Front**	**none**
	Rear	**none**
CB (from front edge of platform)		**50 inches**
Extraction System		**EFTC**

Figure 7-13. Three 250-gallon water drums rigged on an 8-foot, type V platform for low-velocity airdrop

7-13. Equipment Required

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

Table 7-1. Equipment required for rigging three 250-gallon water drums for low-velocity airdrop on an 8-foot, 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
	Coupling:	
	Airdrop, extraction force transfer w cable:	
1670-00-434-5783	12-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	2
1670-00-360-0329	Link assembly, type IV	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
	Link assembly:	
	Two-point:	
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in	(2)
1670-00-003-1953	w/Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-783-5988	Type IV	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	6
	24- by 72-in	(2)
	36- by 72-in	(4)
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	2
	Cargo extraction:	
1670-01-063-3716	22-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 (type V)	(32)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link (multipurpose)	(4)

Table 7-1. Equipment required for rigging three 250-gallon water drums for low-velocity airdrop on an 8-foot, type V platform (continued)

National Stock Number	Item	Quantity
	Release, cargo parachute:	
1670-01-097-8816	M-1	1
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing (Use w 22-ft parachute for C-130)	1
1670-01-107-7651	140-ft (3-loop), type XXVI nylon webbing (Use w 22-ft parachute for C-141)	1
	For lifting and for suspension:	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	4
	For riser extensions:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	2
1670-00-998-0116	Strap, parachute release w V-knife	2
7510-00-266-5016	Tape, adhesive, PSA, cloth back, 2-in	As required
7510-00-266-6710	Tape, masking	As required
1670-00-937-0271	Tie-down assembly, 15-ft	30
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in, natural	As required
8305-00-268-2453	1/2-in, olive drab	As required
8305-00-263-3591	Type VIII	As required

Section II

RIGGING THREE DRUMS ON A 12-FOOT PLATFORM

7-14. Description of Load

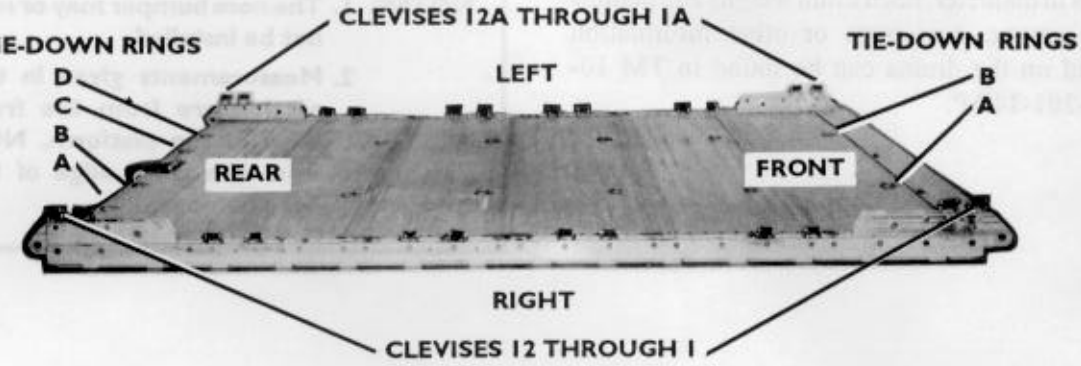
Three drums are rigged on a 12-foot, type V platform with two G-11B cargo parachutes. Filled with 240 gallons of potable water, each drum weighs 2,197 pounds and is 60 inches long and 40 inches in diameter. Each drum weighs 205 pounds when empty. Any parts or other information needed on the drums can be found in TM 10-8110-201-14&P.

7-15. Preparing Platform

Prepare a 12-foot, type V platform using four tandem links and 24 clevises as shown in Figure 7-14.

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

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



Step:

1. **Inspect, or assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.**
2. **Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.**
3. **Install a tandem link on the rear of each platform side rail using holes 22, 23, and 24.**
4. **Install a tie-down clevis on bushings 1 and 2 on each front tandem link.**
5. **Starting at the front of each platform side rail, install a tie-down clevis to the bushings bolted to holes 5, 6, 10, 11, 14, 15, 19, and 20.**
6. **Install a tie-down clevis to bushings 3 and 4 on each rear tandem link.**
7. **Starting at the front of the platform, number the clevises bolted to the right side from 1 through 12 and those bolted to the left side from 1A through 12A.**
8. **Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.**

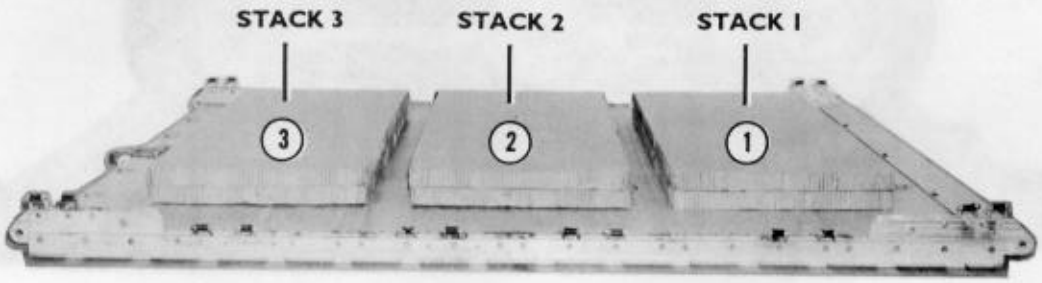
Figure 7-14. Platform prepared

7-16. Preparing and Positioning Honeycomb

Prepare and position the honeycomb on the platform as shown in Figure 7-15.

7-17. Installing Lifting Slings

Install the lifting slings to each drum using two 3-foot (2-loop) and two 9-foot (2-loop), type XXVI nylon webbing slings as shown in Figure 4-2.



(1) **Cut two 72- by 36-inch pieces of honeycomb for stack 1. Center the stack 11 inches from the front edge of the platform.**

(2) **Cut two 72- by 36-inch pieces of honeycomb for stack 2. Center the stack 7 inches from stack 1.**

(3) **Cut two 72- by 36-inch pieces of honeycomb for stack 3. Center the stack 11 inches from the rear edge of the platform.**

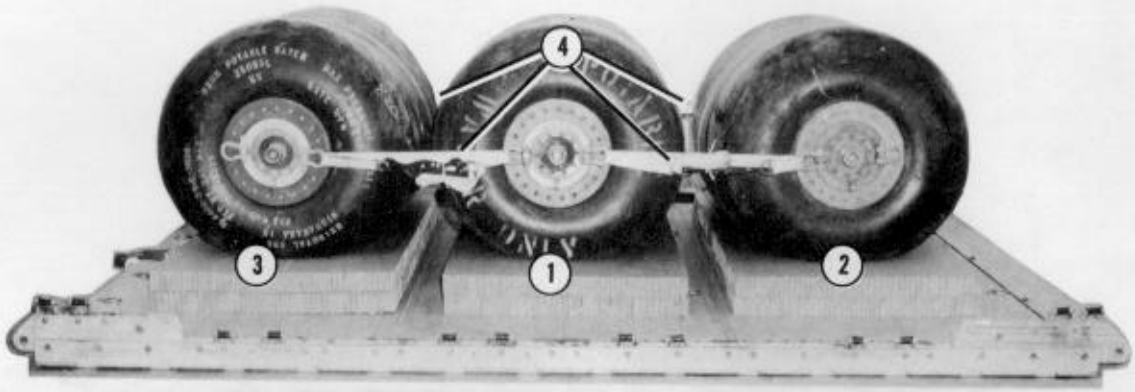
Figure 7-15. Honeycomb placed on platform

7-18. Positioning and Lashing Drums Together

Position and lash the drums as described below.

a. *Positioning Drums.* Position the drums on the platform as shown in Figure 7-16.

b. *Lashing Drums Together.* Lash the drums together as shown in Figure 7-16.



(1) **Center a drum on honeycomb stack 2, and remove the slings.**

(2) **Center a drum on honeycomb stack 1.**

(3) **Center a drum on honeycomb stack 3.**

(4) **Lash the three drums together with four 15-foot tie-down assemblies. Pass the lashings through the inboard shackles of the outside drums and the shackles of the center drum.**

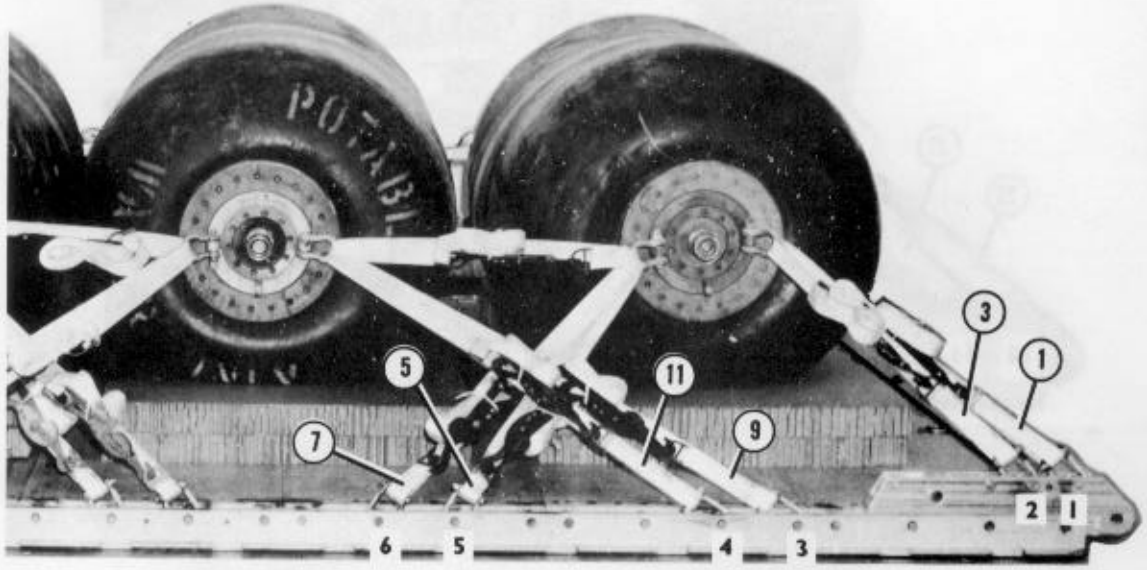
NOTES: 1. **Remove all lifting slings.**
2. **Make sure the shackles on the drums are parallel to the platform before installing the lashings.**

Figure 7-16. Drums positioned and lashed together

7-19. Lashing Drums to the Platform

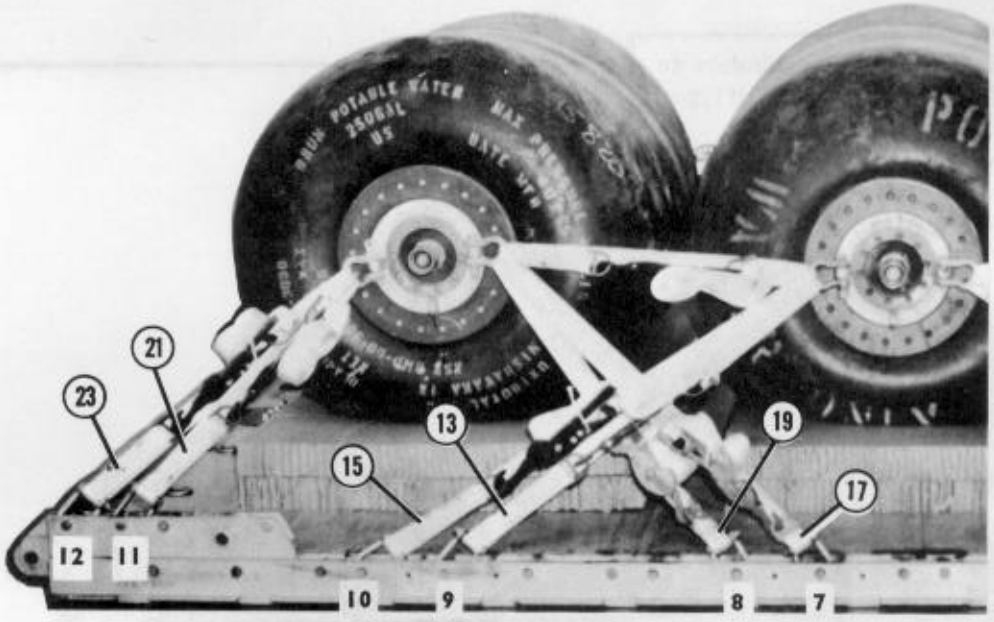
Use twenty-four 15-foot tie-down assemblies to lash the drums to the platform as shown in Figures 7-17 and 7-18 and according to FM 10-500-2/TO 13C7-1-5.

NOTE: Tie the load binders to their D-rings with a piece of type I, 1/4-inch cotton webbing.



Lashing Number	Clevis Number	Instructions
		Pass lashing: FIRST DRUM
1 and 2	1 and 1A	Through the front shackle of the first drum.
3 and 4	2 and 2A	Through the front shackle of the first drum.
5 and 6	5 and 5A	Through the rear shackle of the first drum.
7 and 8	6 and 6A	Through the rear shackle of the first drum.
		SECOND DRUM
9 and 10	3 and 3A	Through the front shackle of the second drum.
11 and 12	4 and 4A	Through the front shackle of the second drum.

Figure 7-17. Lashings 1 through 12 installed

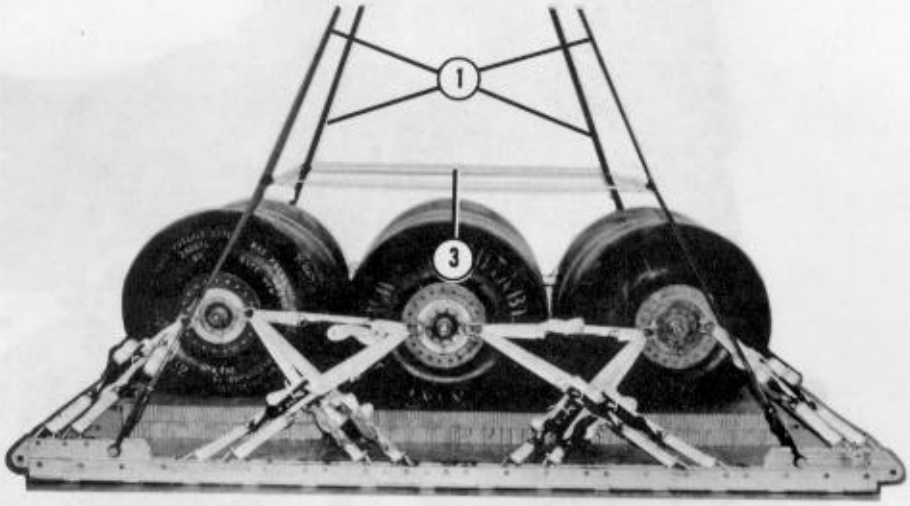


Lashing Number	Clevis Number	Instructions
		Pass lashing:
		SECOND DRUM (continued)
13 and 14	9 and 9A	Through the rear shackle of the second drum.
15 and 16	10 and 10A	Through the rear shackle of the second drum.
		THIRD DRUM
17 and 18	7 and 7A	Through the front shackle of the third drum.
19 and 20	8 and 8A	Through the front shackle of the third drum.
21 and 22	11 and 11A	Through the rear shackle of the third drum.
23 and 24	12 and 12A	Through the rear shackle of the third drum.

Figure 7-18. Lashings 13 through 24 installed

7-20. Installing and Safetying Suspension Slings

Install four large suspension clevises and four 12-foot (2-loop), type XXVI nylon webbing slings to the tandem links as shown in Figure 7-19.



(1) **Bolt a 12-foot sling to each tandem link using a large suspension clevis.**

(2) **Raise the suspension slings to their full length using a lifting provision (not shown).**

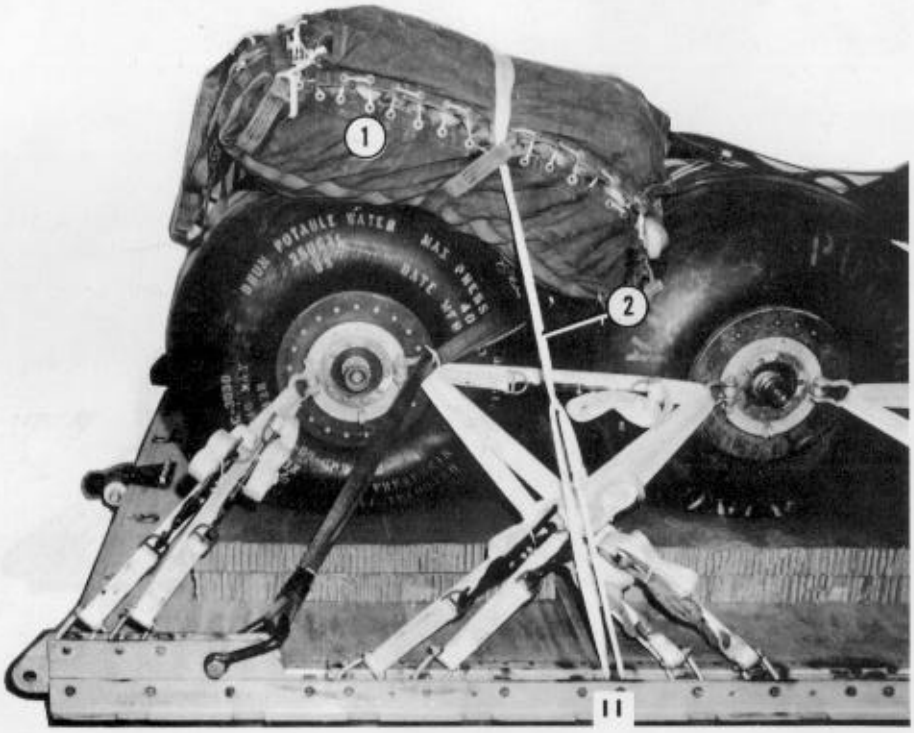
(3) **Safety the slings with a deadman's tie according to FM 10-500-2/TO 13C7-1-5.**

(4) **Secure each sling to the inboard shackles of the first and third drums with a one turn single length of type I, 1/4-inch cotton webbing (not shown).**

Figure 7-19. Suspension slings installed

7-21. Stowing Cargo Parachutes

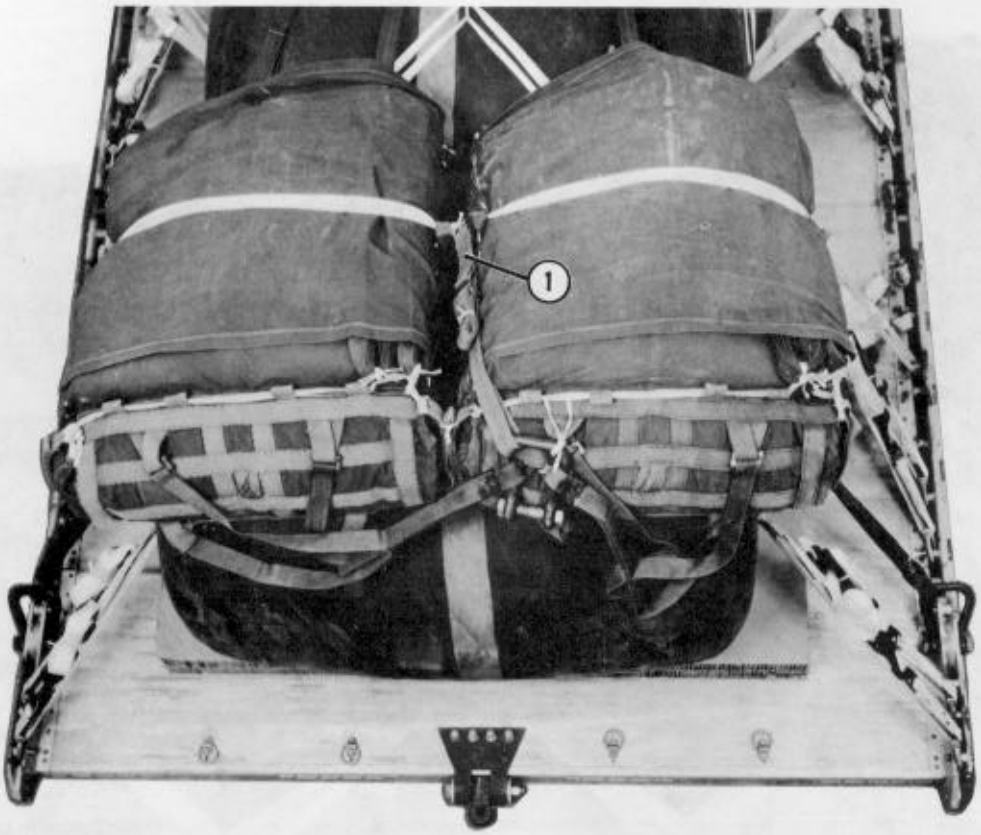
Prepare, place, and restrain two G-11B cargo parachutes according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-20.



(1) **Place the cargo parachutes on top of the rear drum.**

(2) **Restrain the parachutes according to FM 10-500-2/TO 13C7-1-5 using a length of type VIII nylon webbing. Attach a length of webbing to clevises 11 and 11A according to FM 10-500-2/TO 13C7-1-5.**

Figure 7-20. Parachute restraint strap installed



(1) **Install a parachute release strap according to FM 10-500-2/TO 13C7-1-5.**

Figure 7-21. Parachute release strap installed

7-22. Installing Parachute Release System

Prepare and attach an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-22.

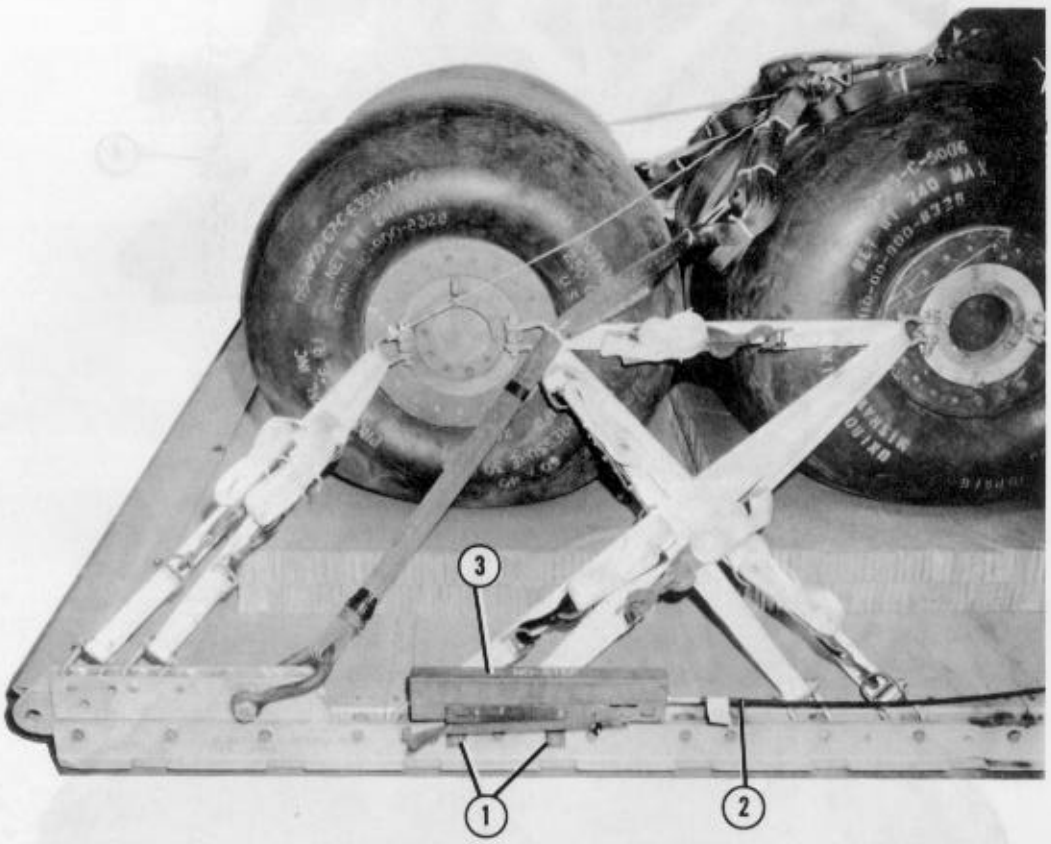
(1) **Place the M-1 cargo parachute release on top of the drum as shown, and attach it according to FM 10-500-2/TO 13C7-1-5. S-fold and tape or tie the slings with type I, 1/4-inch cotton webbing.**

(2) **Secure the M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 with a length of type III nylon cord.**

Figure 7-22. Parachute release attached

7-23. Installing Extraction System

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

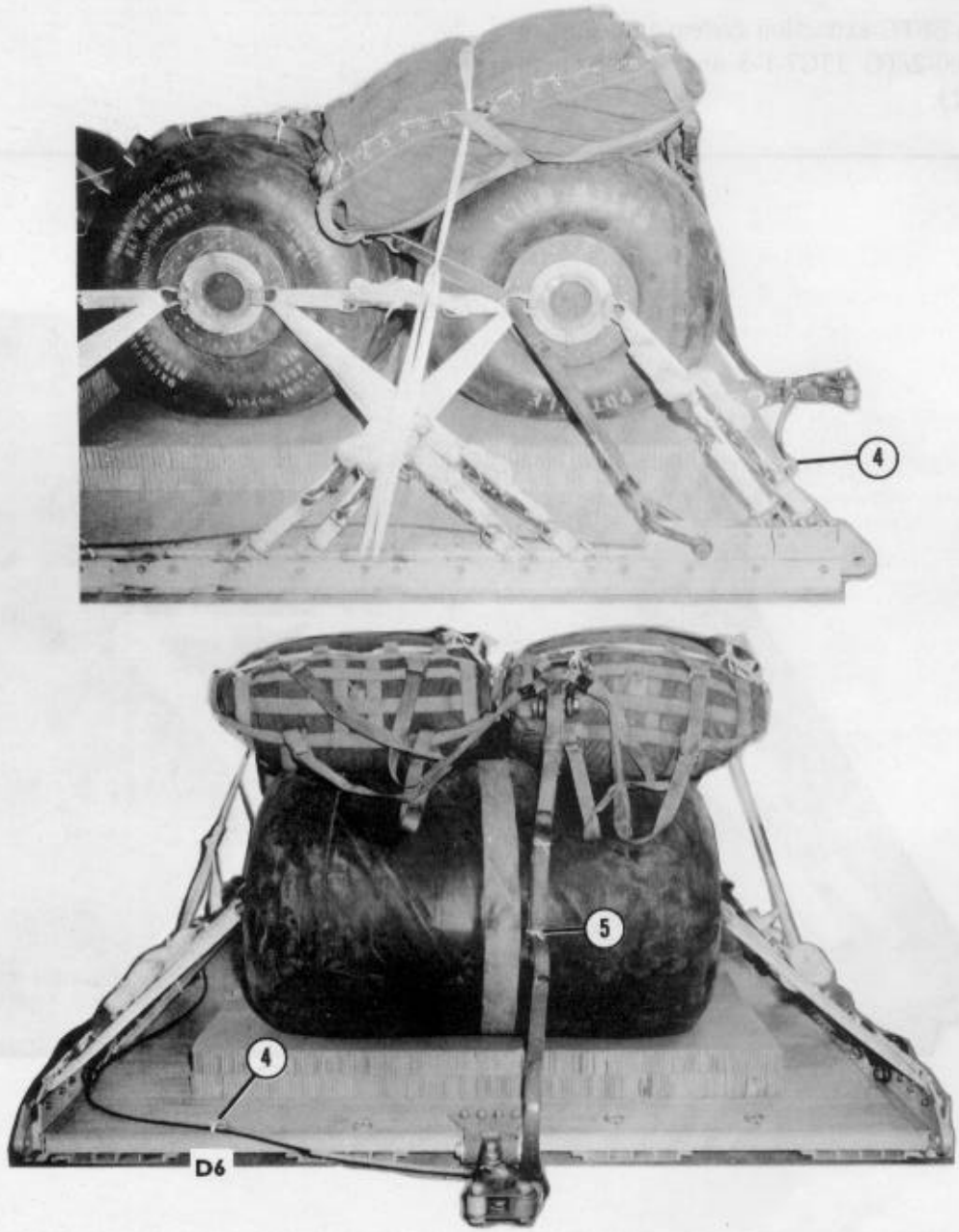


(1) **Install the actuator mounting brackets to the front EFTC mounting holes on the left platform side rail.**

(2) **Install a 12-foot cable to the actuator assembly.**

(3) **Attach the actuator assembly to the mounting brackets.**

Figure 7-23. EFTC installed



(4) **Secure the cable to tie-down ring D6 with type I, 1/4-inch cotton webbing.**

(5) **Use a 9-foot (2-loop), type XXVI nylon webbing sling for the deployment line. S-fold the excess line, and tape or tie it with type I, 1/4-inch cotton webbing.**

Figure 7-23. EFTC installed (continued)

7-24. Placing Extraction Parachute

Place the extraction parachute as described below.

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

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

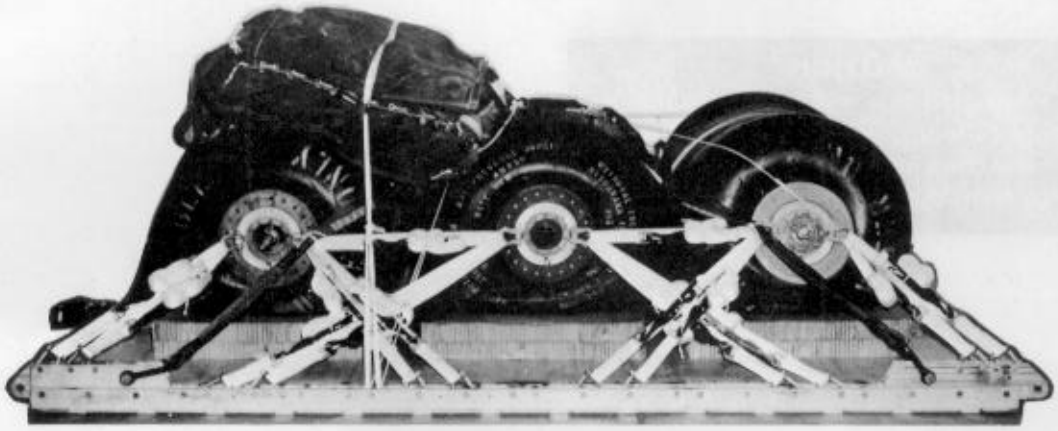
CAUTION
The extraction line will be a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line. DO NOT use shorter lines to form the 140-foot extraction line.

NOTE: Sling/extraction line bags must be used.

7-25. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-24. If the load varies from the one shown, the weight, height, and CB must be recomputed.

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



RIGGED LOAD DATA

Weight:	**Load shown**	**8,760 pounds**
	Maximum load allowed	**9,500 pounds**
Height		**60 inches**
Width		**108 inches**
Length		**162 inches**
Overhang:	**Front**	**none**
	Rear	**none**
CB (from front edge of platform)		**73 inches**
Extraction System		**EFTC**

Figure 7-24. Three 250-gallon water drums rigged on a 12-foot, type V platform for low-velocity airdrop

7-26. Equipment Required

Use the equipment listed in Table 7-2 to rig this load.

Table 7-2. Equipment required for rigging three 250-gallon water drums for low-velocity airdrop on a 12-foot, 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
	Coupling:	
	Airdrop, extraction force transfer w cable:	
1670-00-434-5783	12-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	2
1670-00-360-0329	Link assenbly, type IV	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
	Link assembly:	
	Two-point:	1
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-in, hexagon	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-783-5988	Type IV	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	6
	36- by 72-in	(6)
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	2
	Cargo extraction:	
1670-01-063-3716	22-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 (type V)	(44)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link (multipurpose)	(4)
	Release, cargo parachute:	
1670-01-097-8816	M-1	1

Table 7-2. Equipment required for rigging three 250-gallon water drums for low-velocity airdrop on a 12-foot, type V platform (continued)

National Stock Number	Item	Quantity
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
	For extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing (Use w 22-ft parachute for C-130)	1
1670-01-107-7651	140-ft (3-loop), type XXVI nylon webbing (Use w 22-ft parachute for C-141)	1
	For lifting and for suspension:	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	2
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	4
	For riser extensions:	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing	2
	Strap, parachute release	
1670-00-998-0116	w/V-knife or	1
1670-00-998-5116	w/fastener and knife (guillotine)	1
7510-00-266-5016	Tape, adhesive, PSA, cloth back, 2-in	As required
7510-00-266-6710	Tape, masking, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	28
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in, natural	As required
8305-00-268-2453	1/2-in, olive drab	As required
8305-00-263-3591	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

AMC Air Mobility Command

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

FMFM Fleet Marine Force Manual

ft foot/feet

gal gallon

GPM gallons per minute

HQ headquarters

IL Illinois

in inch

LAPE low-altitude parachute extraction

LAPES low-altitude parachute extraction system

lb pound

no number

NSN national stock number

PEFTC platform extraction force transfer coupling

PSA pressure sensitive adhesive

qty quantity

rqr required

SL/CS static line/connector strap

TM technical manual

TO technical order

TRADOC US Army Training and Doctrine Command

TX Texas

US United States (of America)

USAR United States Army Reserve

VA Virginia

w with

yd yard

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