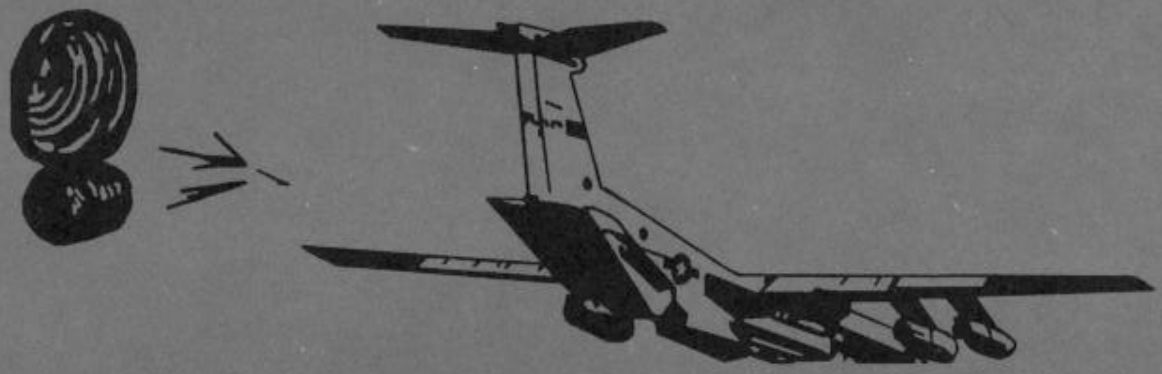
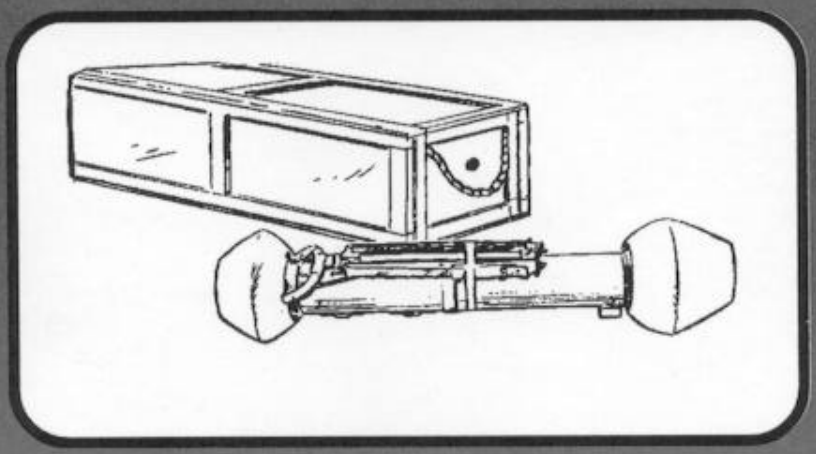
C2, FM 10-552/TO 13C7-22-61



AIRDROP OF SUPPLIES AND EQUIPMENT:

RIGGING DRAGON AND JAVELIN MISSILES



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HEADQUARTERS
DEPARTMENT OF THE ARMY
DEPARTMENT OF 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
DEPARTMENT OF THE ARMY
DEPARTMENT THE AIR FORCE
Washington, DC, 19 May 1997

AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING DRAGON AND JAVELIN MISSILES

This change adds the procedures for rigging Javelin missiles on a two-round and four-round A-7A door bundle, nine missiles on an A-22 stretch container and thirty-six Javelin missiles as a mass supply load on a 12-foot, Type V platform for low-velocity airdrop.

FM 10-552/TO 13C7-22-61, 5 March 1982, is changed as follows:

1. New or changed material is identified by a vertical bar (▮) in the margin opposite the changed material.
2. File this transmittal page in front of the publication
3. Remove old pages and insert new pages as indicated below:

Remove old pages	Insert new pages
Cover 1	**Cover 1**
i-ii	i-ii
v-vi	v-vii
1-1	1-1
.....	6-1 through 6-36
.....	7-1 through 7-24

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By Order of the Secretary of the Army:

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

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
03368

DISTRIBUTION:

Active Army, Army National Guard, and U.S. Army Reserve: To be distributed in accordance with the initial distribution number 110933, requirements for FM 10-552.

CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
DEPARTMENT THE AIR FORCE
Washington, DC, 14 November 1996

AIRDROP OF SUPPLIES AND EQUIPMENT:

RIGGING DRAGON MISSILES

This change adds the procedures for rigging Dragon or Dragon II missiles on a type V platform for low-velocity airdrop.

FM 10-552, 5 March 1982, is changed as follows:

1. New or changed material is identified by a vertical bar (▮) in the margin opposite the changed material.
2. File this transmittal page in front of the publication for reference purposes.
3. Remove old pages and insert new pages as indicated below:

Remove old pages	Insert new pages
Cover 1	Cover 1
i through v	i through vi
1-1	1-1
	5-1 through 5-71
	Glossary-1
Appendix References A-1	References-1

DISTRIBUTION UNLIMITED

Field Manual
No. 10-552
Technical Order
No. 13C7-22-61

HEADQUARTERS
DEPARTMENT OF THE ARMY
DEPARTMENT THE AIR FORCE
Washington, DC, 5 March 1982

AIRDROP OF SUPPLIES AND EQUIPMENT: RIGGING DRAGON AND JAVELIN MISSILES

TABLE OF CONTENTS

[redacted]
TYPE II RIGGING PROCEDURES REMOVED

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CHAPTER 7. RIGGING THIRTY-SIX JAVELIN ROUNDS AS A MASS SUPPLY LOAD ON A 12-FOOT, TYPE V AIRDROP PLATFORM FOR LOW-VELOCITY AIRDROP

PREFACE

SCOPE

This manual tells and shows how to prepare and rig the Dragon or Dragon II antitank/assault and Javelin missiles for low-velocity airdrop from C-130, C-141, C-5, or C-17 aircraft. It is designed for use by all parachute riggers.

USER INFORMATION

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

Aerial Delivery and Field Services Department
USA Quartermaster Center and School
1010 Shop Road
Fort Lee, Virginia 23801-1502

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

Headquarters
Air Mobility Command (AMC/DOTX)
402 Scott Drive, Unit 3Al
Scott AFB, Illinois 62225-5302

Air Force personnel in Special Operations Command, send your reports on AFTO Form 22 through:

HQ AFSOC/DOXT
100 Bartley St., Suite 260
Hurlburt Field, Florida 32544-5273

to:

Aerial Delivery and Field Services Department
USA Quartermaster Center and School
1010 Shop Road
Fort Lee, Virginia 23801-1502

Also send information copy of AFTO Form 22 to:

SA-ALC/TILDP
485 Quentin Roosevelt Road
Kelly AFB, Texas 78241-6421

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

CHAPTER 1

INTRODUCTION

1-1. Description of Items

This manual tells and shows how to rig Dragon and Javelin antitank/assault missiles for airdrop. The missile containers may be airdropped in the following ways:

a. Nine one-round containers are rigged in an A-22 cargo bag on a standard skid for a low-velocity airdrop from a C-130, C-141B, or C-17 aircraft.

b. One 15-round container is rigged in an A-22 cargo sling on a standard skid for a low-velocity airdrop from a C-130, C-141B, or C-17 aircraft.

c. Thirty-six one-round containers are rigged on an 8-foot modular type II platform for a low-velocity airdrop from a C-130 or C-141B aircraft.

d. Four 15-round containers are rigged on an 8-foot modular type II platform for a low-velocity airdrop from a C-130 or C-141B aircraft.

e. Four A-22 cargo bags with nine one-round containers in each A-22 cargo bag are rigged on an 8-foot modular type II platform for a low-velocity airdrop from a C-130 or C-141B aircraft.

f. Four A-22 cargo slings with four 15-round containers are rigged on an 8-foot modular type II platform for a low-velocity airdrop from a C-130 or C-141B aircraft.

g. Thirty-six one-round containers are rigged on a 12-foot LAPES/AD platform for a low-altitude parachute extraction system (LAPES) airdrop from a C-130 aircraft.

Note: LAPES loads weighing less than 6,700 pounds must be dropped as part of a tandem drop.

h. Four 15-round containers are rigged on a 12-foot LAPES/AD platform for a LAPES airdrop from a C-130 aircraft. (See note in g above.)

i. Four A-22 cargo bags with nine one-round containers in each A-22 cargo bag are rigged on a 12-foot LAPES/AD platform for a LAPES airdrop from a C-130 aircraft. (See note in g above.)

j. Four A-22 cargo slings with 15-round containers are rigged on a 12-foot LAPES/AD platform for a LAPES airdrop from a C-130 aircraft. (See note in g above.)

k. Thirty-six one-round containers are rigged on an 8-foot, type V airdrop platform for a low-velocity airdrop from a C-130 or C-141B aircraft.

l. Four 15-round containers are rigged on an 8-foot, type V airdrop platform for a low-velocity airdrop from a C-130, C-141B, or C-17 aircraft.

m. Four A-22 cargo bags with nine one-round containers in each A-22 cargo bag are rigged on an 8-foot, type V airdrop platform for a low-velocity airdrop from a C-130, C-141B, or C-17 aircraft.

n. Four A-22 cargo slings with four 15-round containers are rigged on an 8-foot, type V airdrop platform for a low-velocity airdrop from a C-130, C-141B, C-5, or C17 aircraft.

Note: The following deals with Javelin rounds and containers.

o. Javelin two-round A-7A door bundle rigged for low-velocity airdrop from a C-130 or C-141 aircraft.

p. Javelin four-round A-7A door bundle rigged for low-velocity airdrop from a C-130 or C-141 aircraft.

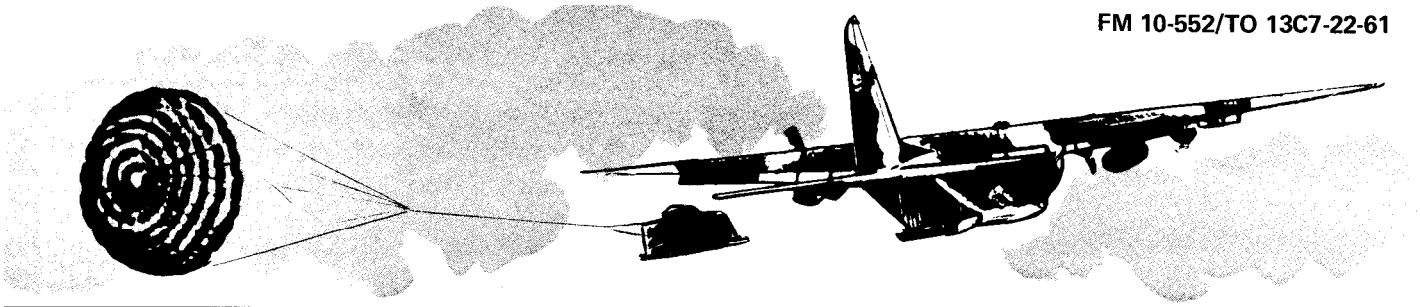
q. Javelin six-round A-22 stretch container rigged for low-velocity airdrop from a C-130 or C-141 aircraft.

r. Javelin thirty-six round mass supply load on a 12-foot, Type V, airdrop platform for low-velocity airdrop from a C-130, C-141, C-5, or C-17 aircraft.

1-2. Special Considerations

a. These loads contain dangerous explosives as defined by *AFJMAN 24-204/TM 38-250.*

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



CHAPTER 2
RIGGING AN A-22 CARGO BAG

Section I
RIGGING NINE ONE-ROUND CONTAINERS

2-1. Description of Load

Nine one-round containers (fig. 2-1) are rigged in an A-22 cargo bag on a standard skid (NSN 1670-00-883-1654). Each container is 47 1/2 inches long, 16 inches wide, and 16 inches high and weighs 67 pounds. The rigged load uses one G-12D, three G-13, or three G-14 cargo parachutes.

2-2. Rigging Load

Rig nine one-round containers in an A-22 cargo bag as shown in figures 2-2 through 2-4.

2-3. Closing Cargo Bag

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

2-4. Installing Parachutes

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

b. Prepare and stow three G-13 cargo parachutes according to *FM 10-501/TO 13C7-1-11,* or

c. Prepare and stow three G-14 cargo parachutes according to *FM 10-501/TO 13C7-1-11.*

Note: This rigged A-22 cargo bag weighs 863 pounds. It is 81 inches high, 53 1/2 inches wide, and 48 inches long.

2-5. Equipment Required

The equipment needed to rig nine one-round containers is listed in table 2-1.

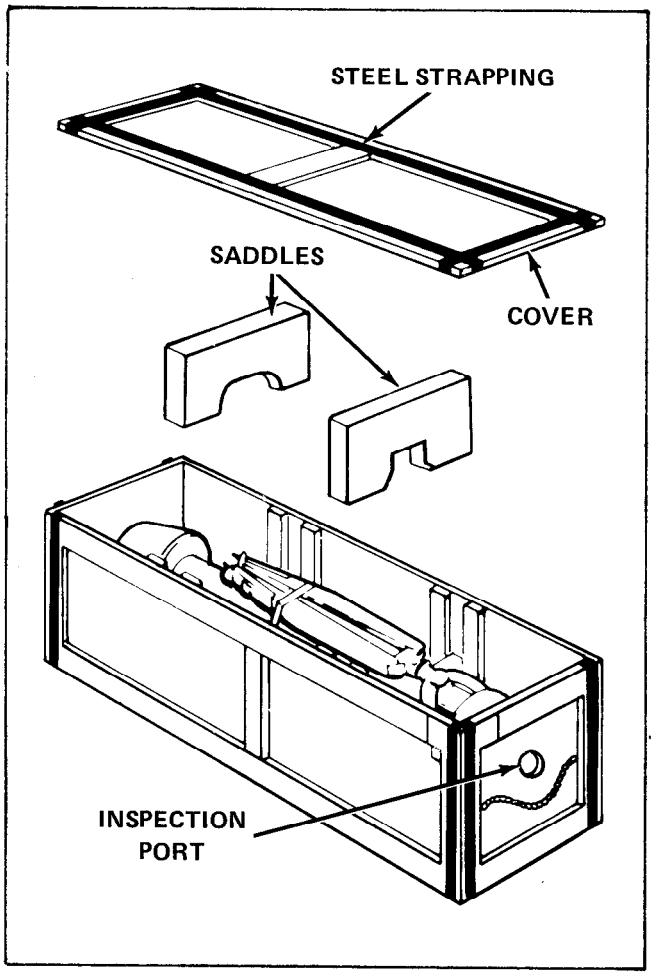
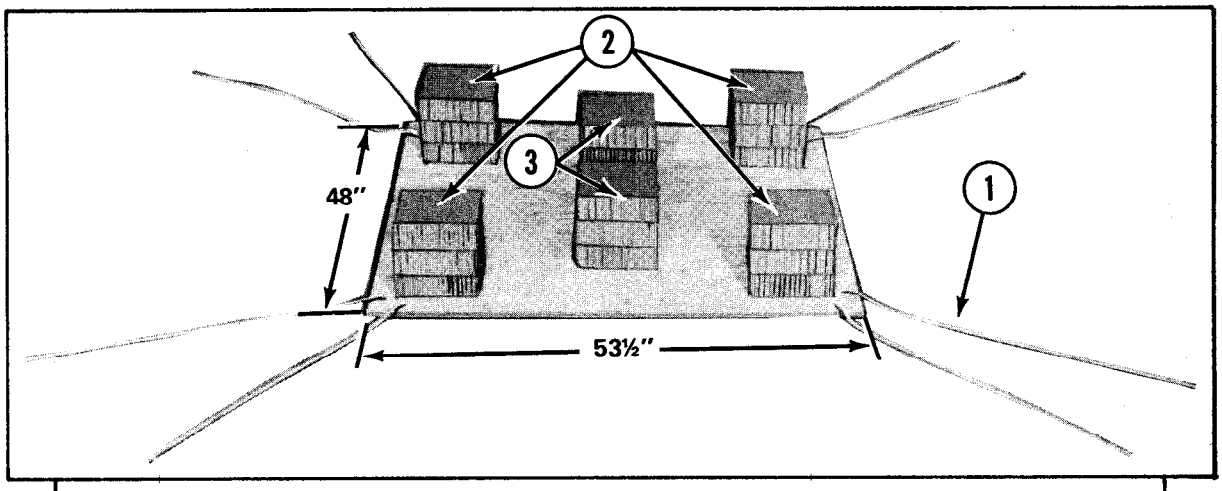


Figure 2-1. A Dragon missile in a one-round container.

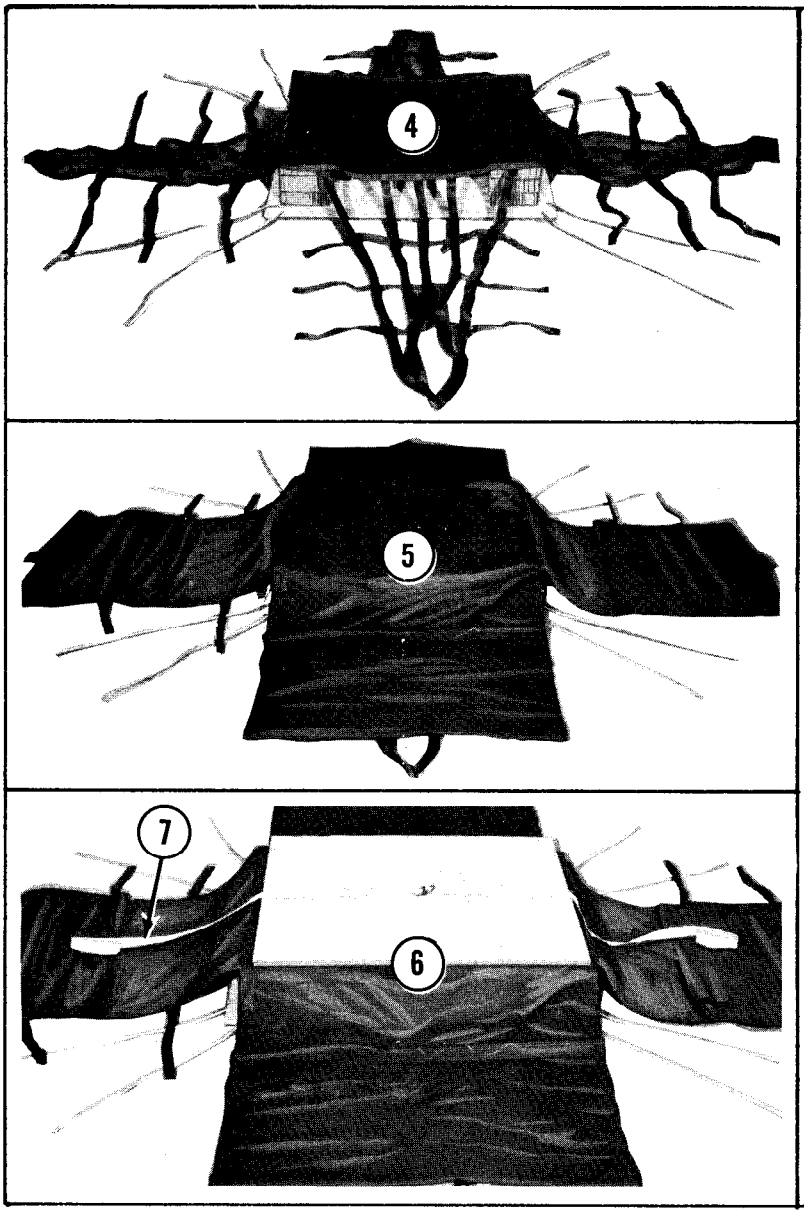


1. Run an 8-foot length of 1/2-inch tubular nylon webbing through each pair of holes at the four corners of the skid. Place the skid on a level surface with the beveled edge down.

2. Make six honeycomb stacks using three layers of 9- by 9-inch honeycomb, and glue the layers together. Position and glue the corner stacks 3 inches in from the sides of the skid.

3. Position the center stacks 10 inches in from the 53 1/2-inch skid board edges and center between the sides. Glue stacks in place.

Figure 2-2. Skid prepared and honeycomb stacks positioned.



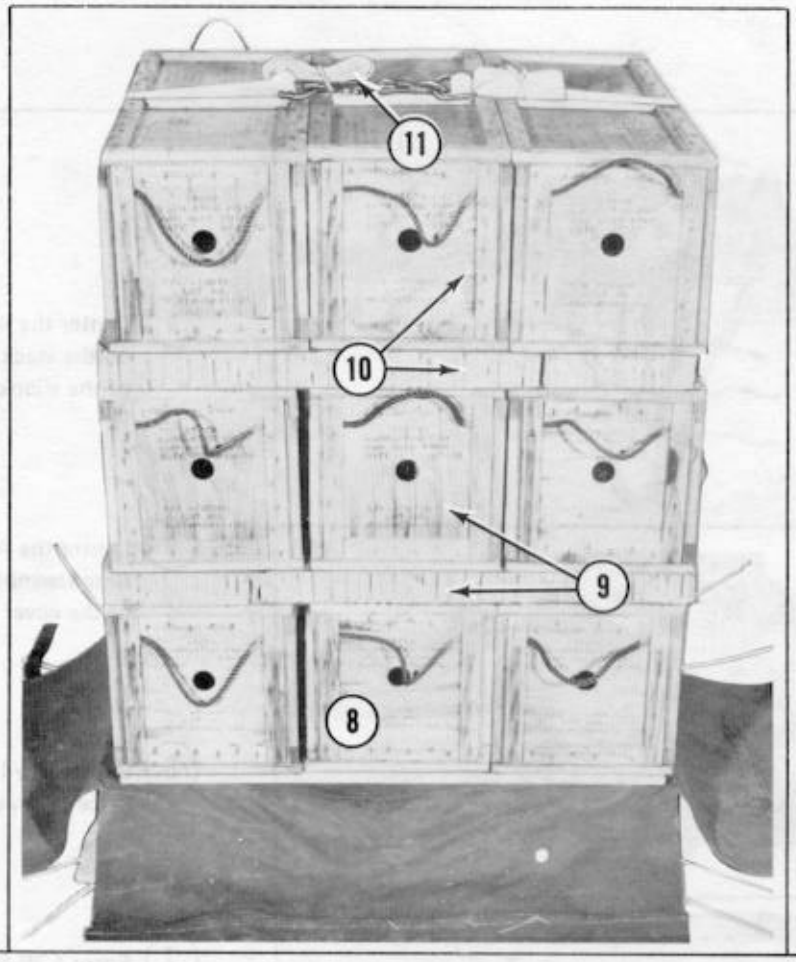
4 Center the A-22 sling assembly on the stacks (with the outside of the sling down).

5 Center the A-22 cover on the sling assembly (with the outside of the cover down).

6 Center a 3/4- by 48- by 48-inch piece of plywood on the cover.

7 Form a 30-foot tiedown strap according to FM 10-500/TO 13C7-1-5 and lay the strap across the center of the plywood from side to side.

Figure 2-3. Cargo bag, plywood, and tiedown strap positioned.



(8) Set three containers on the plywood so that the 47 1/2-inch sides of the containers are parallel with the 48-inch sides of the skid.

(9) Place a layer of honeycomb (one piece 36 by 48 inches and one piece 12 by 48 inches) on the containers. Set three more containers on the honeycomb.

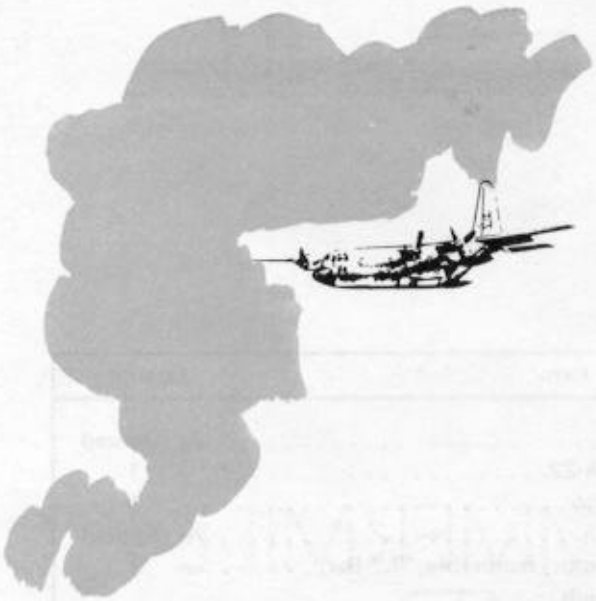
(10) Place another layer of honeycomb on the containers. Set the last three containers on the honeycomb.

(11) Run the ends of the 30-foot tiedown strap over the top of the stacked containers, and bind the ends together with two D-rings and a load binder.

Figure 2-4. Nine one-round containers positioned.

Table 2-1. Equipment Required

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste 1-gal	As required
8465-00-587-3421	Bag, cargo, aeriai delivery, type A-22	1
4030-00-678-8562	Clevis Assembly, suspension, cargo	1
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-217-2421	Link Assembly, parachute connector, removable, "L" Bar	3
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3-by 36- by 96-in:	2 sheets
	9- by 9-in	(18)
	12- by 48-in	(2)
	36- by 48-in	(2)
1670-00-216-7297	Pilot Chute, cargo type, 68-in diam	1
1670-00-984-3535	Parachute, cargo, 24-ft, G-13 or	3
1670-00-999-2658	Parachute, cargo, 34-ft, G-14 or	3
1670-00-893-2371	Parachute, cargo, 64-ft, G-12D	1
5530-00-128-4981	Plywood, 3/4- by 48- by 48-in	1
1670-00-883-1654	Skid, cargo bag, platform	1
1670-00-738-5878	Strap, connector, extraction, 60-in	3
1670-00-738-5879	Strap, connector, extraction, 120-in	3
7510-00-266-5016	Tape, adhesive	As required
1670-00-937-0271	Tiedown Assembly, 10,000-lb:	2
1670-00-937-0272	Binder, load, 10,000-lb-capacity	(1)
5365-00-937-0147	D-ring, heavy-duty	(2)
1670-00-937-0273	Strap, 15-ft.	(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 ONE 15-ROUND CONTAINER

2-6. Description of Load

One 15-round container (fig. 2-5) is rigged in an A-22 cargo sling on a standard skid (NSN 1670-00-883-1654). The container is 49 inches long, 37 inches wide, and 67 inches high and weighs 695 pounds. The rigged load uses one G-12D, three G-13, or three G-14 cargo parachutes. The rigged load also uses four extra suspension webs.

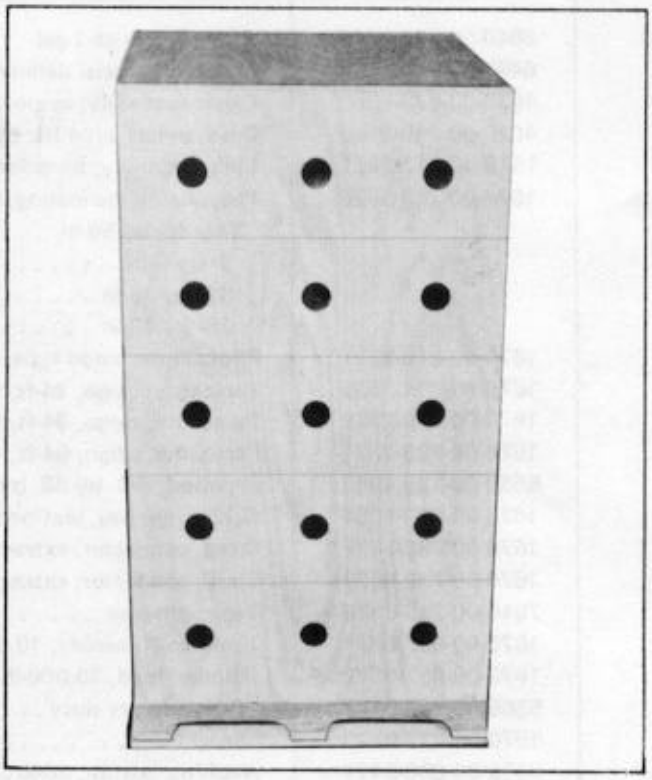


Figure 2-5. A 15-round Dragon missile container.

2-7. Rigging Load

Rig one 15-round Dragon missile container in an A-22 cargo sling assembly as shown in figures 2-6 through 2-8.

2-8. Installing Parachutes

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

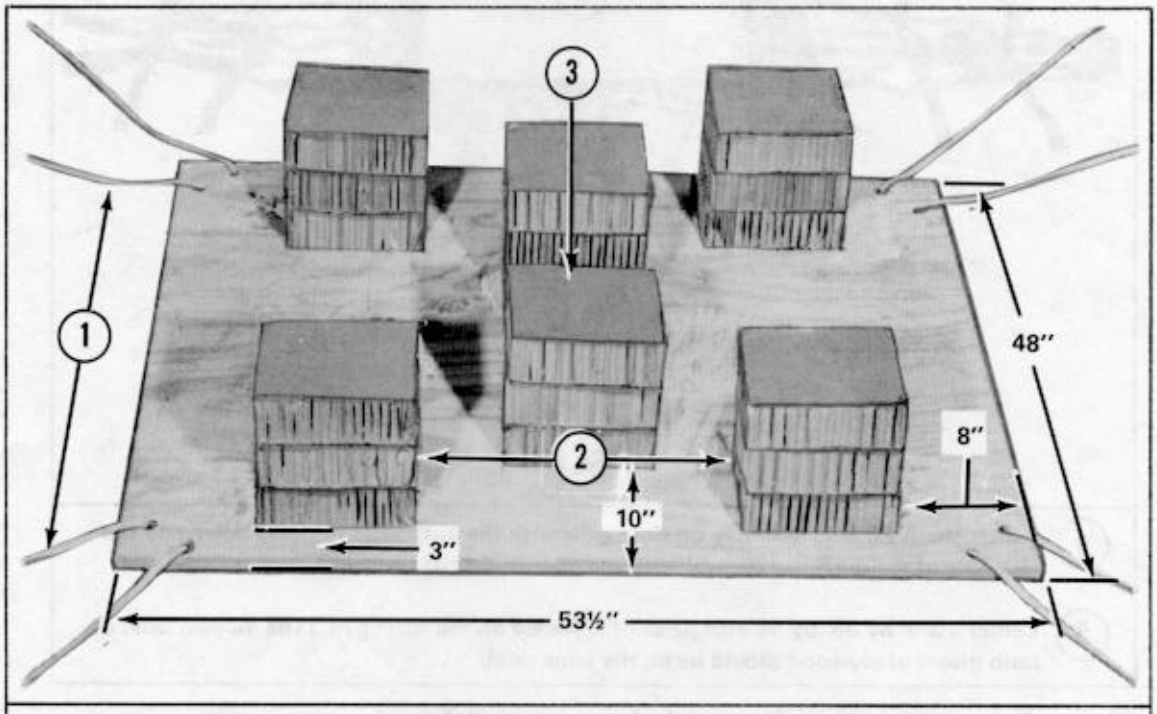
b. Prepare and stow three G-13 cargo parachutes according to *FM 10-501/TO 13C7-1-11*, or

c. Prepare and stow three G-14 cargo parachutes according to *FM 10-501/TO 13C7-1-11*.

Note: This rigged A-22 cargo sling weighs 925 pounds. It is 95 inches high, 53 1/2 inches wide, and 49 inches long.

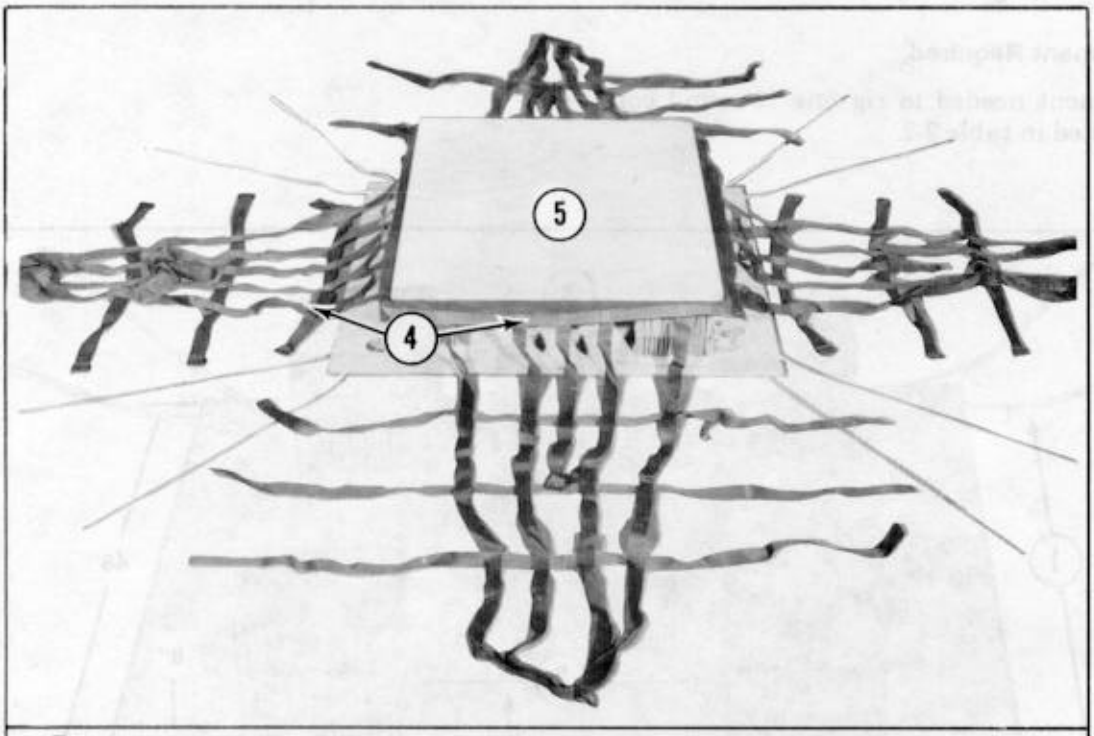
2-9. Equipment Required

The equipment needed to rig one 15-round container is listed in table 2-2.



1. Run an 8-foot length of 1/2-inch nylon webbing through each pair of holes at the four corners of the skid. Place the skid on a level surface with the beveled edge down.
2. Make six honeycomb stacks using three layers of 9- by 9-inch honeycomb, and glue the layers together. Position and glue the corner stacks 8 inches in from the 48-inch sides of the skid and 3 inches in from the 53 1/2-inch sides of the skid.
3. Position the center stacks 10 inches in from the front and rear edges of the skid and center between the sides. Glue stacks in place.

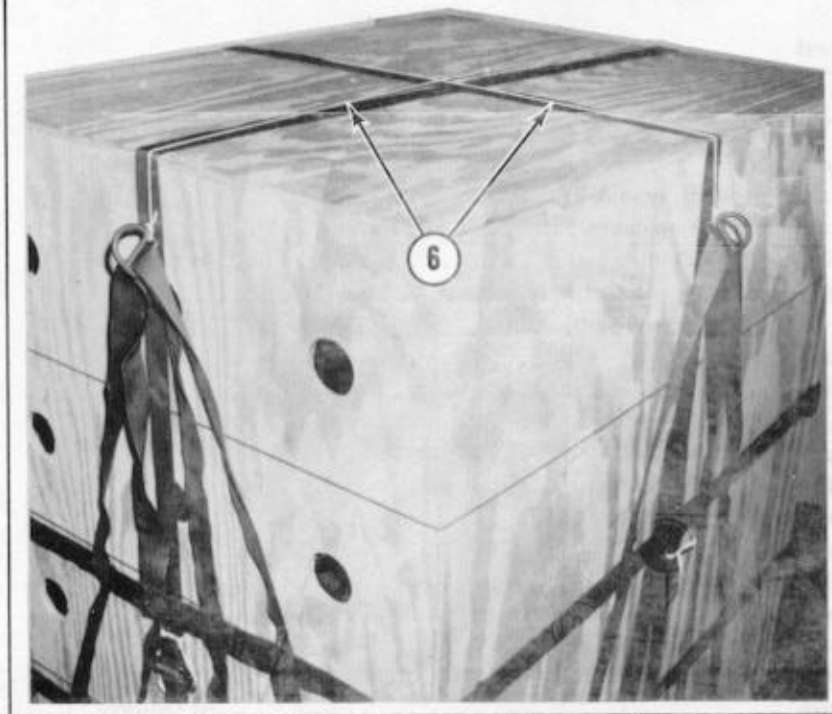
Figure 2-6. Skid prepared and honeycomb stacks positioned.

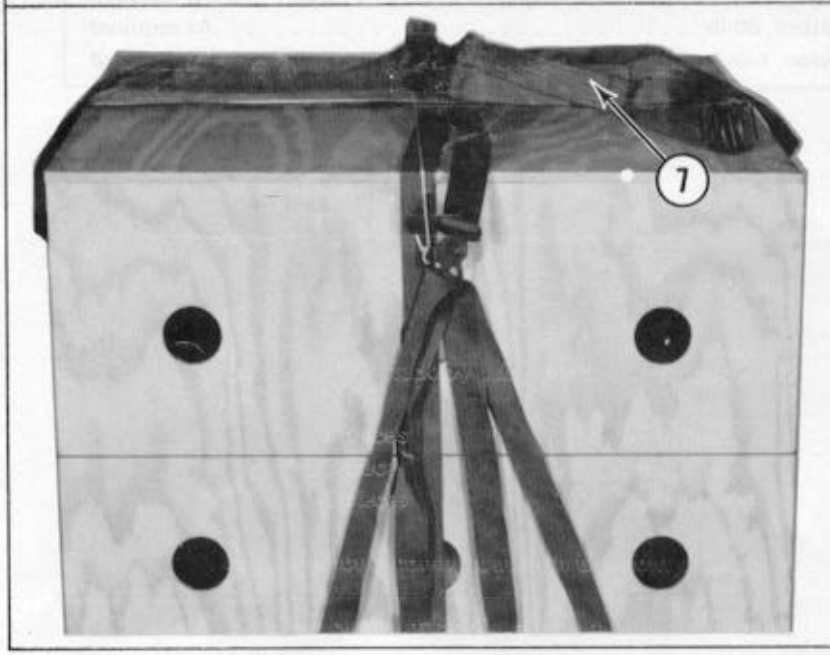


(4) Center the A-22 sling assembly on the stacks with the outside of the sling down and the long side of the scuff pad parallel with the 48-inch side of the skid.

(5) Center a 3/4- by 38- by 48-inch piece of plywood on the scuff pad. (The 48-inch sides of both pieces of plywood should be on the same side).

Figure 2-7. A-22 cargo sling and plywood positioned.





Note: Set the container on the plywood. Close the A-22 cargo sling by following the steps in FM 10-501/ TO 13C7-1-11 and also doing the extra steps below:

(6) Tie the D-ring on the front support web to the D-ring on the rear support web with type III nylon cord. Tie the D-rings of the side support webs together using type III nylon cord.

(7) Snap another suspension web to each normally rigged suspension web. This gives a two-suspension web length snapped onto the D-rings. Be sure that the open side of the connector snaps face inward. Tape all connector straps.

Figure 2-8. Container positioned, and cargo sling closed.

Table 2-2. Equipment Required

National Stock No.	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
8465-00-587-3421	Bag, cargo, aerial delivery, type A-22	1
4030-00-678-8562	Clevis Assembly, suspension, cargo	1
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-217-2421	Link Assembly, parachute connector, removable, "L" Bar	3
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	1 sheet
	9- by 9-in	(18)
1670-00-216-7297	Pilot Chute, cargo type, 68-in diam	1
1670-00-984-3535	Parachute, cargo, 24-ft, G-13 or	3
1670-00-999-2658	Parachute, cargo, 34-ft, G-14 or	3
1670-00-893-2371	Parachute, cargo 64-ft, G-12D	1
5530-00-128-4981	Plywood, 3/4- by 38- by 48-in	1 sheet
1670-00-883-1654	Skid, cargo bag, platform	1
1670-00-738-5878	Strap, connector, extraction, 60-in	3
1670-00-738-5879	Strap, connector, extraction, 120-in	3
1670-00-360-0560	Strap, webbing, suspension, A-22 cargo bag, AD	8
7510-00-266-5016	Tape, adhesive	As required
8305-00-268-2411	Webbing, cotton, 80-lb	As required
8305-00-082-5752	Webbing, nylon, tubular, 1/2-in	As required

CHAPTER 5

RIGGING DRAGON OR DRAGON II MISSILE CONTAINERS ON 8-FOOT, TYPE V AIRDROP PLATFORM FOR LOW-VELOCITY AIRDROP (LVAD)

Section I

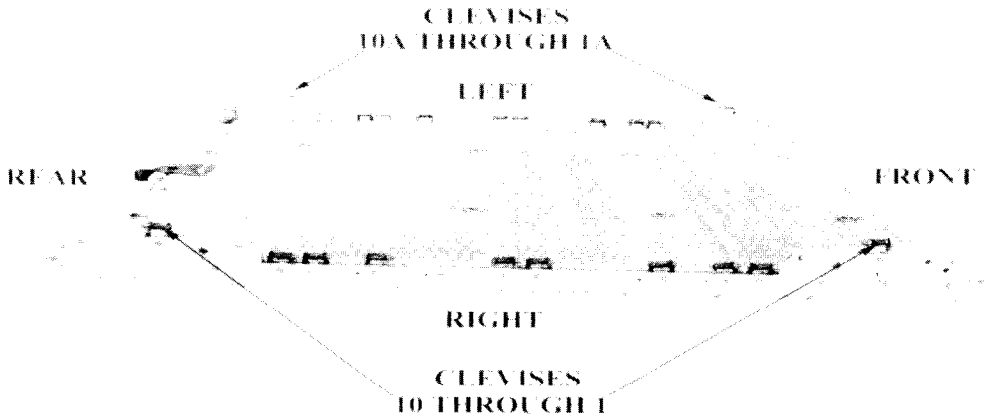
RIGGING 36 ONE-ROUND CONTAINERS

5-1. Description of Load

Thirty-six Dragon or Dragon II missiles in one-round containers are rigged on an 8-foot, type V airdrop platform with one G-11B cargo parachute for low-velocity airdrop (LVAD) from a C-130, C-141B, C-5, or C-17 aircraft. Each container is 47 1/2 inches long, 16 inches wide, 16 inches high, and weighs 67 pounds.

5-2. Preparing Platform

Prepare an 8-foot, type V airdrop platform using 4 tandem links and 20 clevises as shown in *Figure 5-1.*



Step:

1. Inspect, or assemble and inspect, an 8-foot, type V 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. Install a clevis on bushing 3 on each front tandem link and on bushing 3 on 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 4, 5, 6, 8, 9, 11, 12, and 13.

5. Starting at the front of each platform, number the clevises bolted to the right side from 1 through 10 and those bolted to the left side from 1A through 10A.

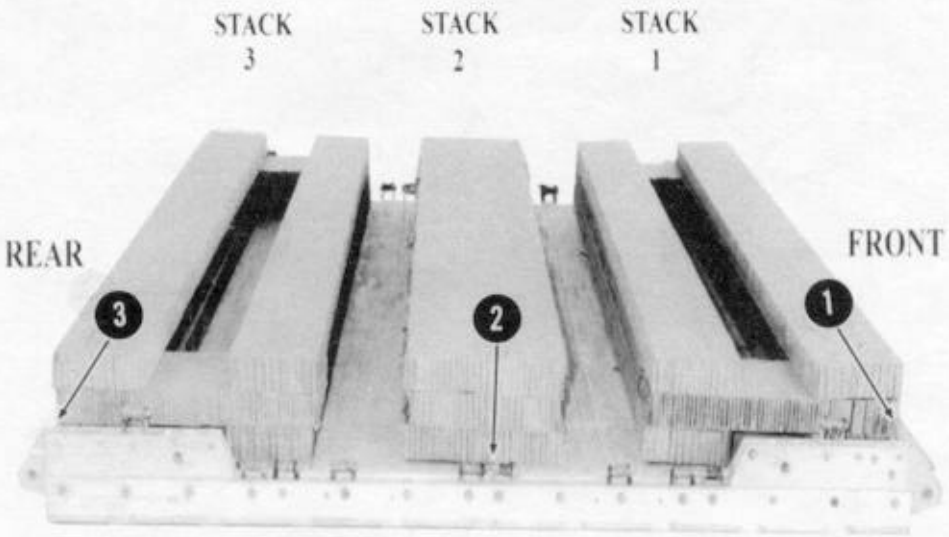
6. Label the panel tiedown rings according to FM 10-500-2/TO 13C7-1-5.

Figure 5-1. Platform prepared

5-3. Building and Placing Honeycomb Stacks

Prepare and position the honeycomb stacks as shown in *Figure 5-2.*

Notes: 1. Measurements from the front of the platform are taken from the front edge of the first panel.
2. Measurements from the rear of the platform are taken from the rear edge of the last panel.



(1) Build the first (1) stack by using the following pieces of honeycomb, and position the honeycomb flush with the front edge of the platform:

4 pieces	10- by 96-inches	(1st and 3d layers)
2 pieces	10- by 76-inches	(2d layer)
2 pieces	10- by 29-inches	(2d layer bridge)

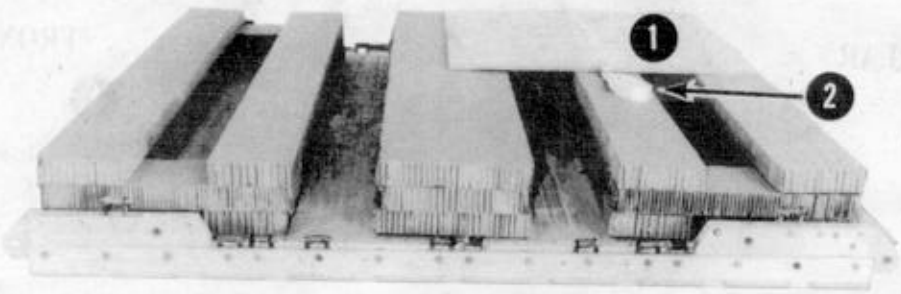
(2) Build the second (2) stack by using three pieces of honeycomb (18- by 96-inch). Center the stack over the joint where the second and third panels join together and between the side rails.

(3) Build the third (3) stack by repeating step 1 above, and position the honeycomb flush with the rear edge of the platform.

Figure 5-2. Honeycomb stacks positioned

5-4. Positioning the Load

Position and lash the container groups as shown in *Figures 5-3* through *5-5*.

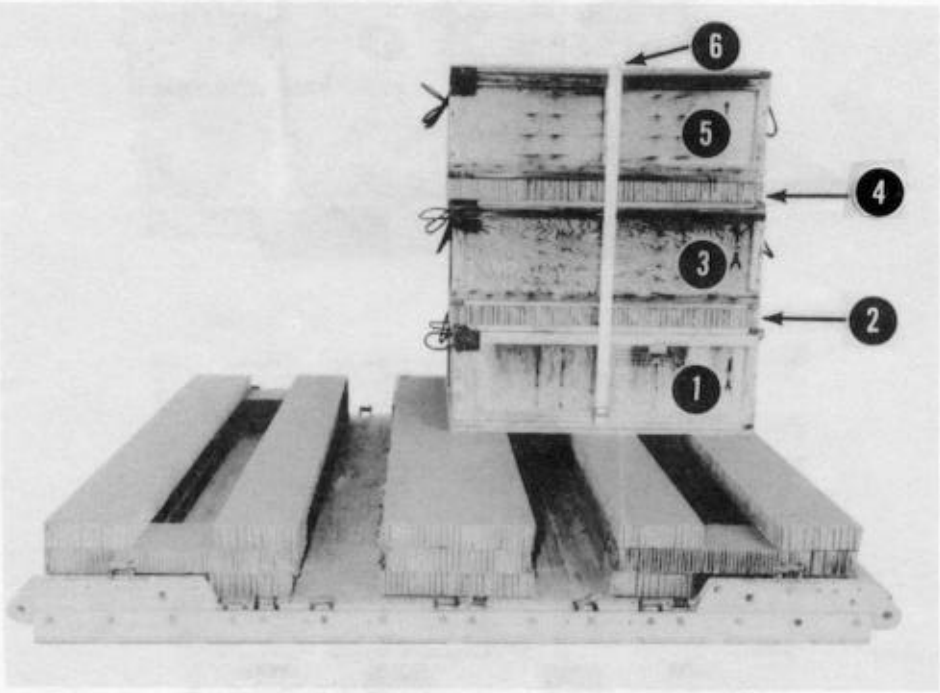


(1) Position a piece of plywood (3/4- by 48- by 48-inches) on the first and second honeycomb stacks. Place the plywood so that the outside edges are flush with the outside edges of the first stack.

(2) Form a 30-foot lashing as outlined in FM 10-500-2/TO 13C7-1-5. Lay the lashing across the center of the plywood.

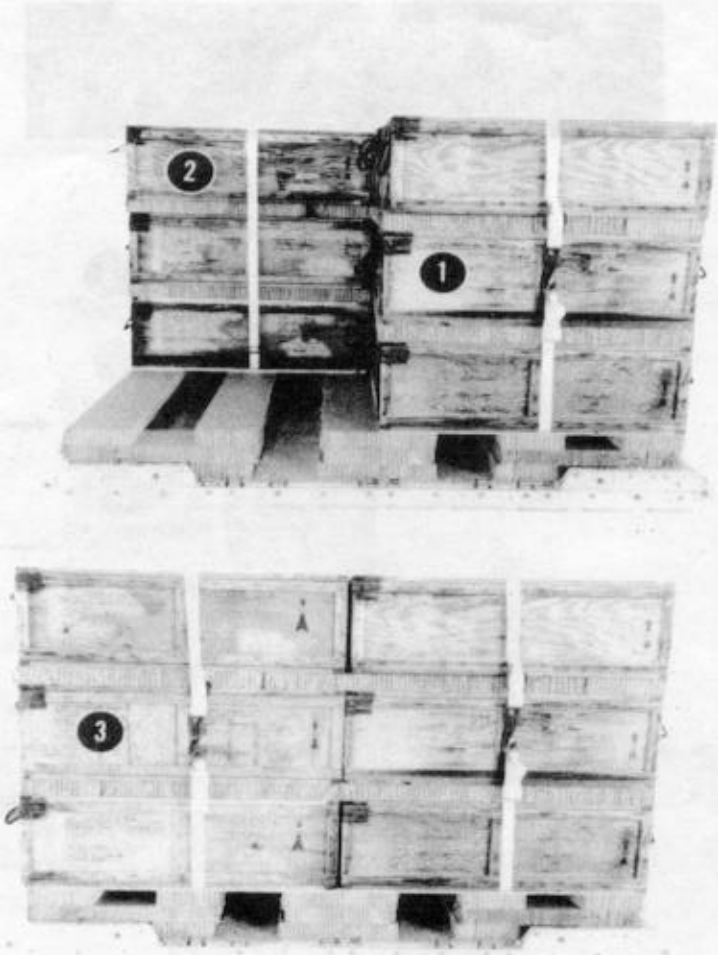
Figure 5-3. Three containers positioned

CAUTION
Ensure the inspection port holes in the missile containers face the front and rear of the platform.



1. Set three containers side by side on the plywood and lashing.
2. Position one layer of honeycomb (one piece 36- by 48-inches, and one piece 12- by 48-inches) on the containers.
3. Set three more containers on the honeycomb layer.
4. Position another layer of honeycomb (one piece 36- by 48-inches, and one piece 12- by 48-inches) on the containers.
5. Set the last three containers on the honeycomb layer.
6. Bind the nine missile containers together with the 30-foot lashing. Secure the lashing on the side of the containers with two D-rings and a load binder.

Figure 5-4. First missile container group positioned, stacked, and lashed



(1) Position the second group of containers following *Figures 5-3 and 5-4.*

(2) Position the third group of containers following *Figures 5-3 and 5-4;* however, the plywood is placed on the center and third stacks and flush with the side edge of the third stack.

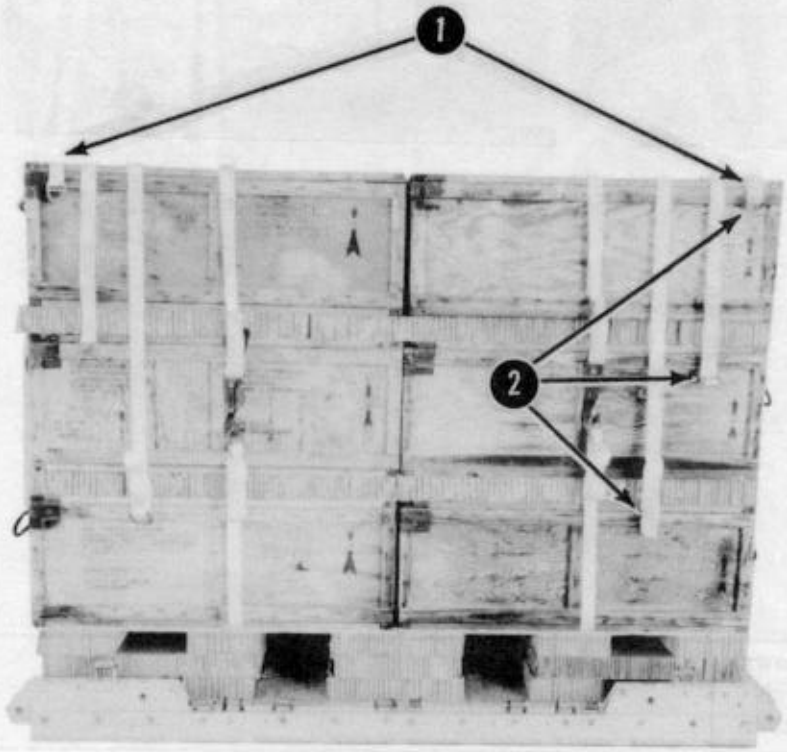
(3) Position the fourth group of containers following *Figures 5-3 and 5-4;* however, the plywood is placed on the center and third stacks and flush with the outside edge of the third stack.

Figure 5-5. Missile container groups 2, 3, and 4 positioned and lashed

5-5. Positioning and Lashing Missile Containers

Position the lashings as shown in *Figure 5-6* and lash the containers to the platform as shown in *Figures 5-7* through *5-9*. Use twenty 15-foot lashings, twenty D-rings, and ten load binders. Install and safety the lashings as outlined in FM 10-500-2/TO 13C7-1-5.

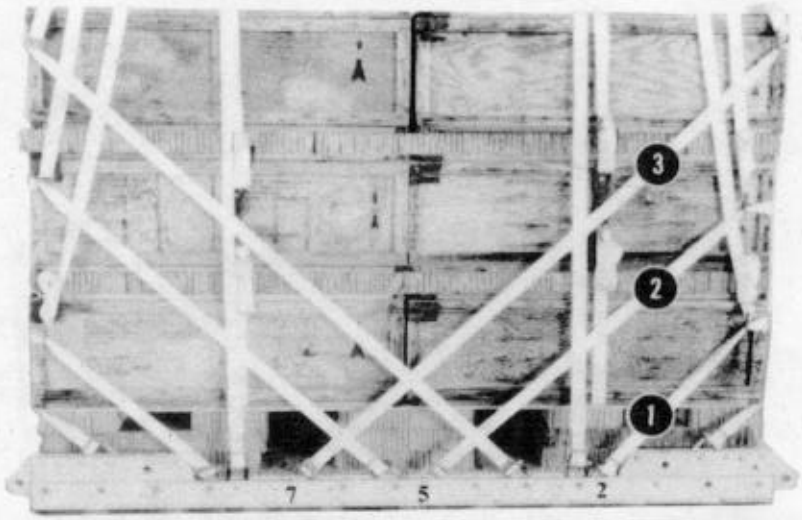
Note: Ensure all corners and sharp edges are padded.



(1) Form two 30-foot lashings as outlined in FM 10-500-2/TO 13C7-1-5. Lay two 15-foot lashings and one 30-foot lashing across both the front and rear edges of the container groups.

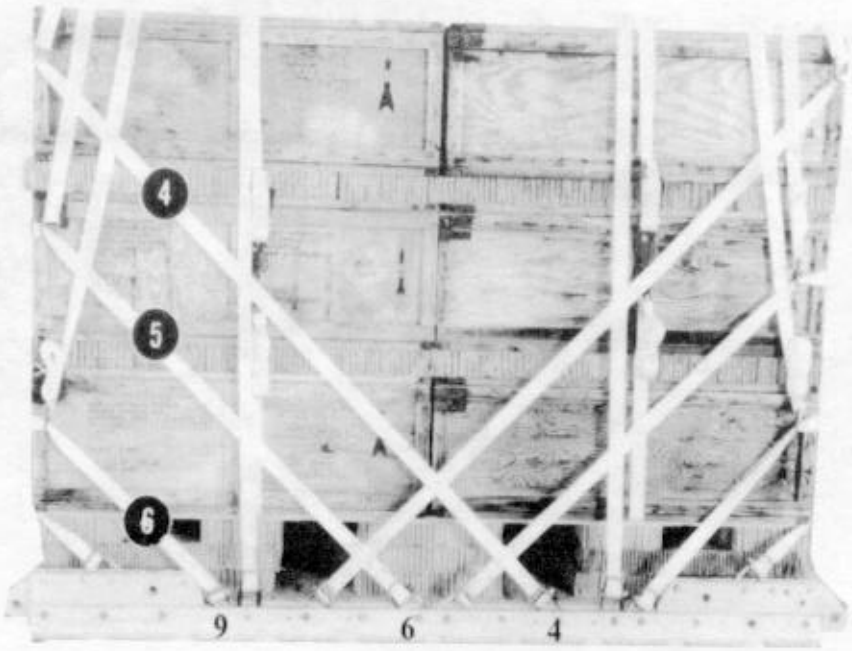
(2) Fit a D-ring to each lashing, and adjust the length of the straps to center each D-ring with a layer of containers.

Figure 5-6. Lashings positioned



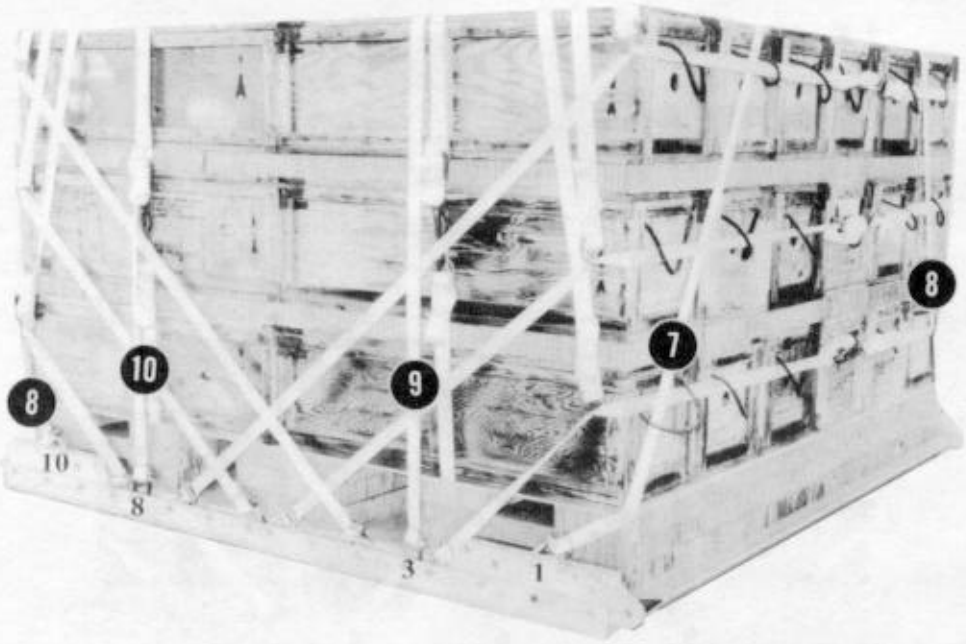
Lashing Number	Tiedown Clevis Number	Instructions
1	2 and 2A	Run a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings through the D-rings and containers carrying handles centered on the bottom container layer. Secure the lashings on the front using two D-rings and a load binder.
2	5 and 5A	Run a 15-foot lashing from clevis 5 and a 15-foot lashing from clevis 5A. Pass the lashings through the D-rings and containers carrying handles centered on the middle container layer. Secure the lashings on the front using two D-rings and a load binder.
3	7 and 7A	Run a 15-foot lashing from clevis 7 and a 15-foot lashing from clevis 7A. Pass the lashings through the D-rings and containers carrying handles centered on the top container layer. Secure the lashings on the front using two D-rings and a load binder.

Figure 5-7. Lashings 1 through 3 installed



Lashing Number	Tiedown Clevis Number	Instructions
4	4 and 4A	Run a 15-foot lashing from clevis 4 and a 15-foot lashing from clevis 4A. Pass the lashings through the D-rings and containers carrying handles centered on the top container layer. Secure the lashings on the front using two D-rings and a load binder.
5	6 and 6A	Run a 15-foot lashing from clevis 6 and a 15-foot lashing from clevis 6A. Pass the lashings through the D-rings and containers carrying handles centered on the middle container layer. Secure the lashings on the front using two D-rings and a load binder.
6	9 and 9A	Run a 15-foot lashing from clevis 9 and a 15-foot lashing from clevis 9A. Pass the lashings through the D-rings and containers carrying handles centered on the bottom container layer. Secure the lashings on the front using two D-rings and a load binder.

Figure 5-8. Lashings 4 through 6 installed

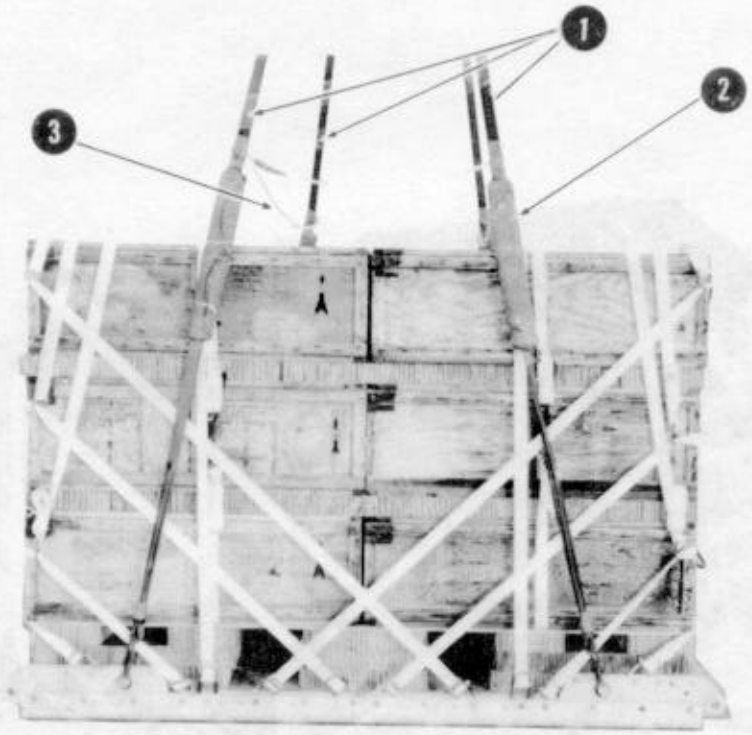


Lashing Number	Tiedown Clevis Number	Instructions
7	1 and 10A	Run a 15-foot lashing from clevis 1 and a 15-foot lashing from clevis 10A. Pass the lashings around bottom ends of the containers and through the bottom and top containers carrying handles and up over the load. Secure the lashings on the top using two D-rings and a load binder.
8	1A and 10	Run a 15-foot lashing from clevis 1A and a 15-foot lashing from clevis 10. Pass the lashings around bottom ends of the containers and through the bottom and top containers carrying handles and up over the load. Secure the lashings on the top using two D-rings and a load binder.
9	3 and 3A	Run a 15-foot lashing from clevis 3 and a 15-foot lashing from clevis 3A. Pass the lashings over the top of the load. Secure the lashings on top using two D-rings and a load binder.
10	8 and 8A	Run a 15-foot lashing from clevis 8 and a 15-foot lashing from clevis 8A. Pass the lashings over the top of the load. Secure the lashings on top using two D-rings and a load binder.

Figure 5-9. Lashings 7 through 10 installed

5-6. Installing Suspension Slings and Deadman's Tie

Install and safety four 16-foot (2-loop), type XXVI nylon slings and four large clevises. Attach each suspension sling to a clevis and attach one clevis to all four tandem links as shown in *Figure 5-10.*



(1) Attach one 16-foot (2-loop), type XXVI nylon suspension sling to a large suspension clevis. Attach the clevis to one of the tandem links. Repeat the same procedure for the other three tandem links.

(2) Use four pieces of felt padding (approximately 18- by 6-inches) to pad the slings. Secure the felt to the sling with type III nylon cord.

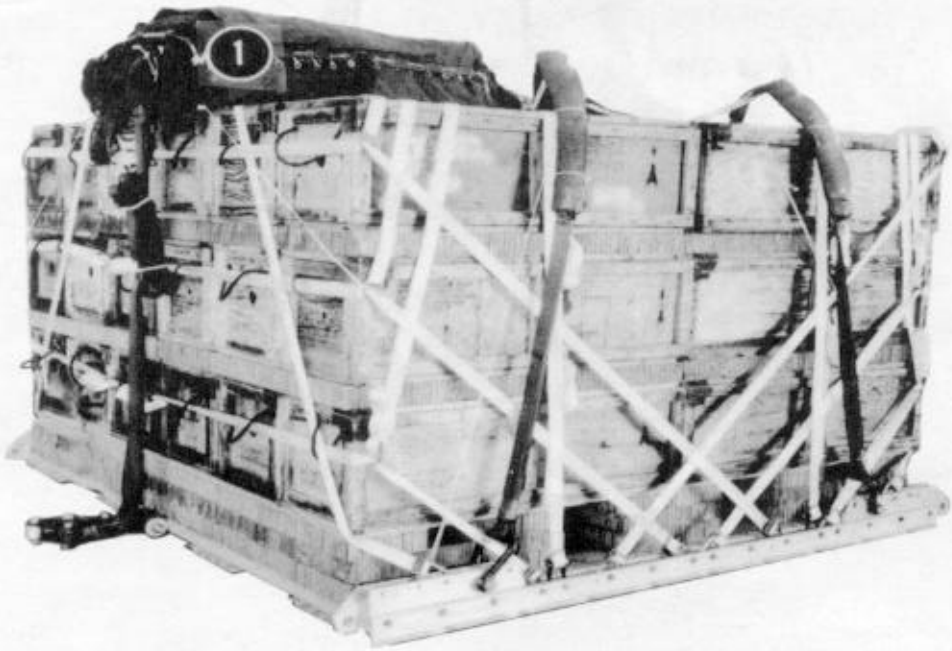
(3) Raise the suspension slings above the load, and install a deadman's tie as outlined in FM 10-500-2/TO 13C7-1-5.

Figure 5-10. Suspension slings and deadman's tie installed

5-7. Stowing Cargo Parachute

Stow one G-11B cargo parachute as outlined in FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-11.*

Note: Use a 12-foot (2-loop), type XXVI nylon sling as a deployment line.

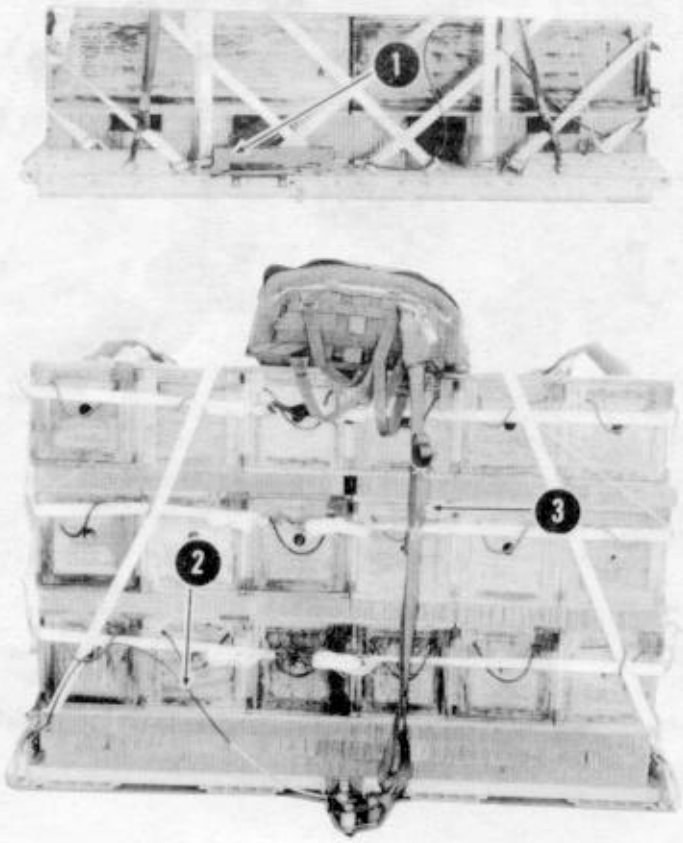


(1) Prepare, place, and secure one G-11B cargo parachute according to FM 10-500-2/TO 13C7-1-5.

Figure 5-11. Cargo parachute stowed and secured to load

5-8. Installing Extraction System

Attach the components of the Extraction Force Transfer Coupling (EFTC) according to FM 10-500-2/ TO 13C7-1-5 and as shown in *Figure 5-12.*



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

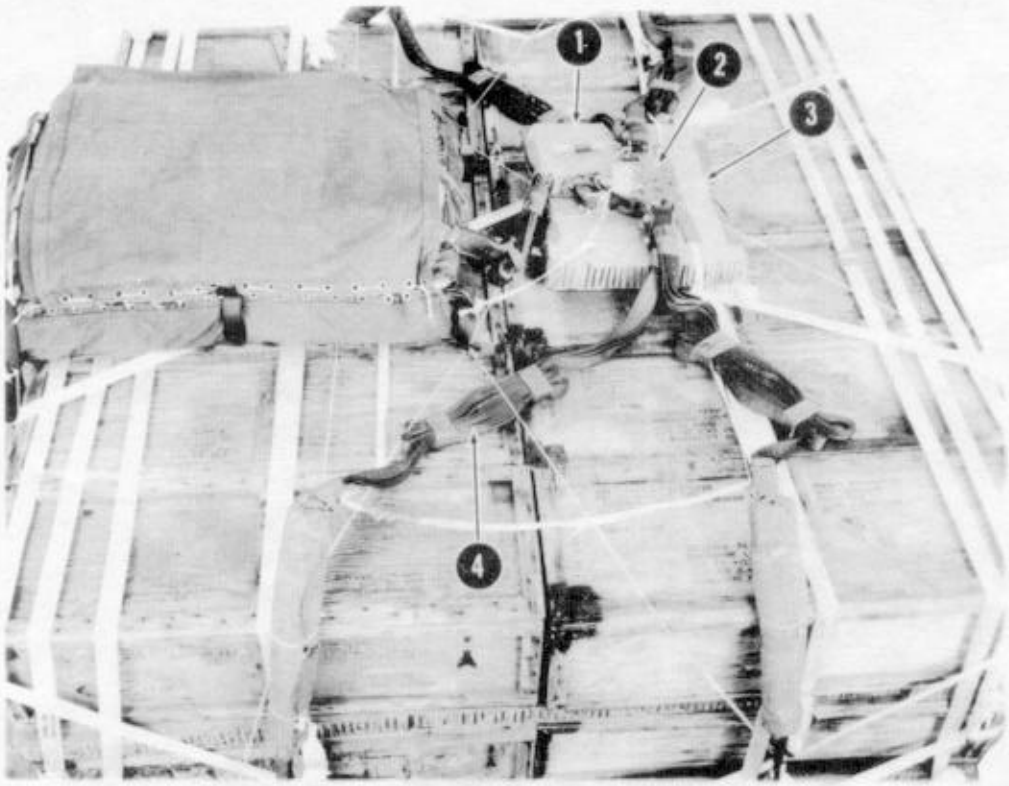
(2) Attach a 12-foot cable according to FM 10-500-2/TO 13C7-1-5. Safety the cable to the lashing with type I, 1/4-inch cotton webbing.

(3) Attach a 12-foot (2-loop), type XXVI nylon sling as a deployment line to the load. Bolt it to the latch assembly on the right spacer. S-fold the excess deployment line and secure the folds with type I, 1/4-inch cotton webbing.

Figure 5-12. EFTC installed

5-9. Installing Parachute Release

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



(1) Position an 18- by 24-inch piece of honeycomb on top of the load, and secure the honeycomb with type III nylon cord.

(2) Place the M-1 release on top of the honeycomb, and attach the suspension slings and the parachute riser extensions.

(3) Secure the M-1 release to the load with type III nylon cord.

(4) S-fold and tape or tie any excess suspension slings.

Figure 5-13. M-1 cargo parachute release installed

5-10. Placing Extraction Parachutes

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

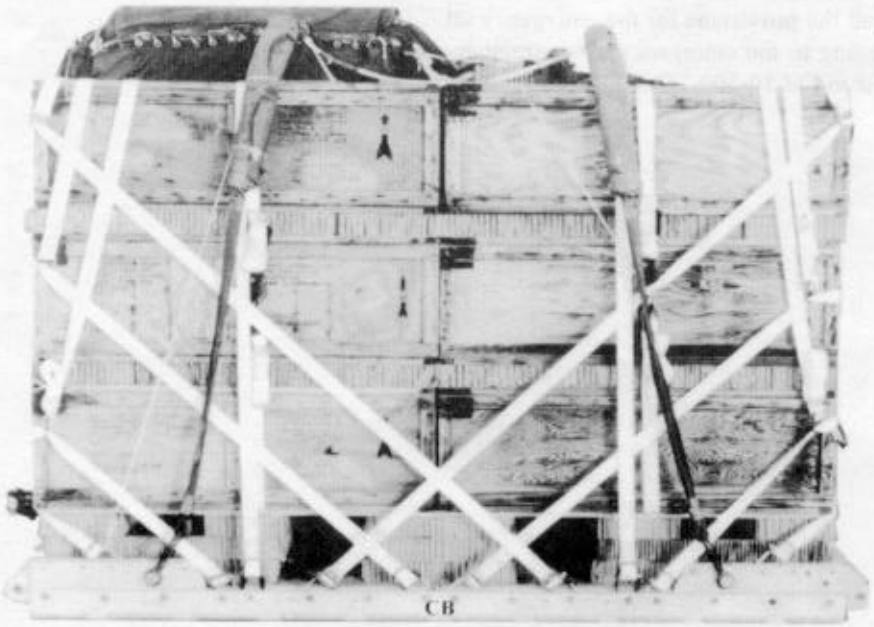
5-11. Installing Provisions for Emergency Restraints

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

5-12. Marking Rigged Load

Mark the rigged load as outlined in FM 10-500-2/ TO 13C7-1-5, and as shown in *Figure 5-14.* Complete Shipper's Declaration for Dangerous Goods and affix to load. If the load varies from the one shown, the weight, height, center of balance (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	3,960 pounds
Height	83 inches
Width	108 inches
Length	96 inches
Overhang: Front	0 inches
Rear	0 inches
Center of balance (CB): (from front edge of platform)	50 inches
Extraction System: (add 18 inches to length of platform)	EFTC

Figure 5-14. Thirty-six one-round containers rigged for low-velocity airdrop

5-13. Equipment Required

Use the equipment listed in *Table 5-1* to rig this load.

Table 5-1. Equipment required for rigging 36 one-round Dragon or Dragon II missile containers on an 8-foot, type V airdrop platform for low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal.	As required
	Clevis, suspension:	
4030-00-090-5354	1-in (large)	4
4020-00-240-2146	Cord, nylon, type III, 550-lb.	As required
1670-00-434-5783	Coupling, airdrop extraction force transfer with cable, 12-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	1
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-01-183-2678	Leaf, extraction line (line bag)	1
	Line, extraction:	
1670-01-064-4452	60-ft (1-loop), type XXVI (for C-130)	1
1670-01-107-7652	160-ft (1-loop), type XXVI (for C-141B, C-5, or C-17)	1
1670-00-783-5988	Link assembly, type IV	1
1670-00-753-3928	Pad, energy-dissipating, (honeycomb),	
	3- by 36- by 96-in:	9 sheets
	10- by 29-in	(4)
	10- by 76-in	(4)
	10- by 96-in	(11)
	12- by 48-in	(8)
	18- by 96-in	(3)
	36- by 48-in	(8)
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	1
	Cargo extraction:	
1670-01-063-3715	15-ft	1
	Platform, airdrop, 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)	(20)
1670-01-162-2376	Extraction bracket assembly	(1)
5530-00-128-4981	Plywood, 3/4-in:	2 sheets
1670-01-162-2381	Tandem link assembly (Multipurpose link)	(4)

Table 5-1. Equipment required for rigging 36 one-round Dragon or Dragon II missile containers on an 8-foot, type V airdrop platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
5530-00-128-4981	Plywood, 3/4-in:	2 sheets
	48- by 48-in	(4)
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For suspension slings:	
1670-00-823-5042	16-ft (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-00-753-3792	12-ft (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	1
1670-00-040-8219	Strap, parachute release with fastener and release knife	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	36
1670-00-937-0272	Binder, load, 10,000-lb capacity	(14)
5365-00-937-0147	D-ring, heavy-duty	(36)
1670-00-937-0273	Strap, 15-ft	(36)
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
8305-00-082-5752	Nylon, tubular 1/2-in	As required

Section II

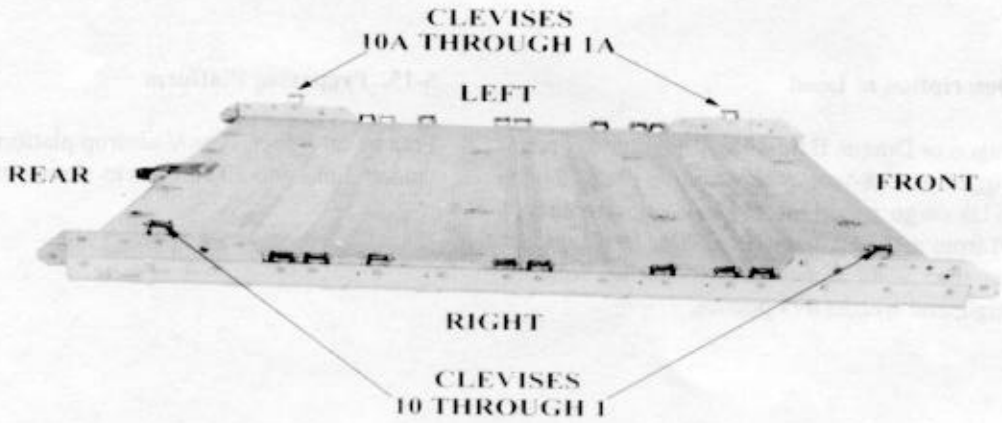
RIGGING FOUR 15-ROUND CONTAINERS

5-14. Description of Load

Four Dragon or Dragon II missiles in 15-round containers are rigged on an 8-foot, type V airdrop platform with one G-11B cargo parachute for low-velocity airdrop (LVAD) from a C-130, C-141B, C-5 or C-17 aircraft. Each container is 49 inches long, 37 inches wide, 67 inches high, and weighs 695 pounds.

5-15. Preparing Platform

Prepare an 8-foot, type V airdrop platform using 4 tandem links and 20 clevises as shown in *Figure 5-15*.



Step:

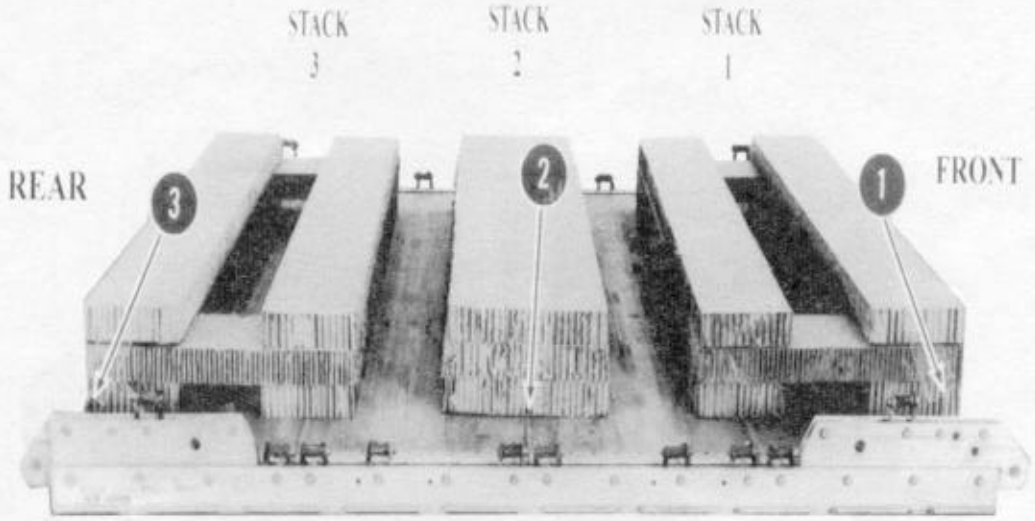
1. Inspect, or assemble and inspect, an 8-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3 and on the rear of each platform side rail using holes 14, 15, and 16.
3. Install a clevis on bushing 3 on each front tandem link and on bushing 3 on 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 4, 5, 6, 8, 9, 11, 12, and 13.
5. Starting at the front of each platform, number the clevises bolted to the right side from 1 through 10 and those bolted to the left side from 1A through 10A.
6. Label the panel tiedown rings according to FM 10-500-2/TO 13C7-1-5.

Figure 5-15. Platform prepared

5-16. Building and Placing Honeycomb Stacks

Build three honeycomb stacks and place them on the platform as shown in *Figure 5-16*.

Notes:
1. Measurements from the front of the platform are taken from the front edge of the first panel.
2. Measurements from the rear of the platform are taken from the rear edge of the last panel.



(1) Build the first (1) stack by using the following pieces of honeycomb:

4 pieces	10- by 80-inches	(1st and 3d layers)
2 pieces	10- by 60-inches	(2d layer)
2 pieces	10- by 29-inches	(2d layer bridge)

Center the honeycomb between the side rails, but position it 1 inch back from the front edge of the platform.

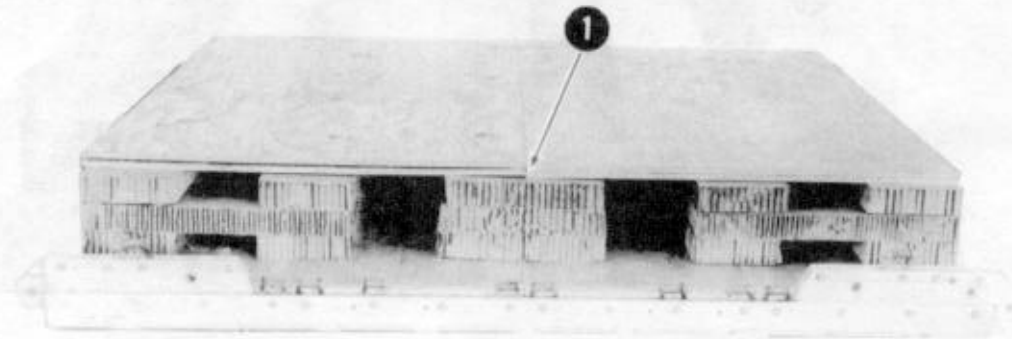
(2) Build the second (2) stack by using three pieces of honeycomb (18- by 80-inches). Center the stack over the joint where the second and third panels join together and between the side rails.

(3) Build the third (3) stack by repeating step 1 above, and position the honeycomb flush with the rear edge of the platform.

Figure 5-16. Honeycomb stacks positioned

5-17. Positioning the Plywood

Position plywood on honeycomb stacks as shown in *Figure 5-17.*



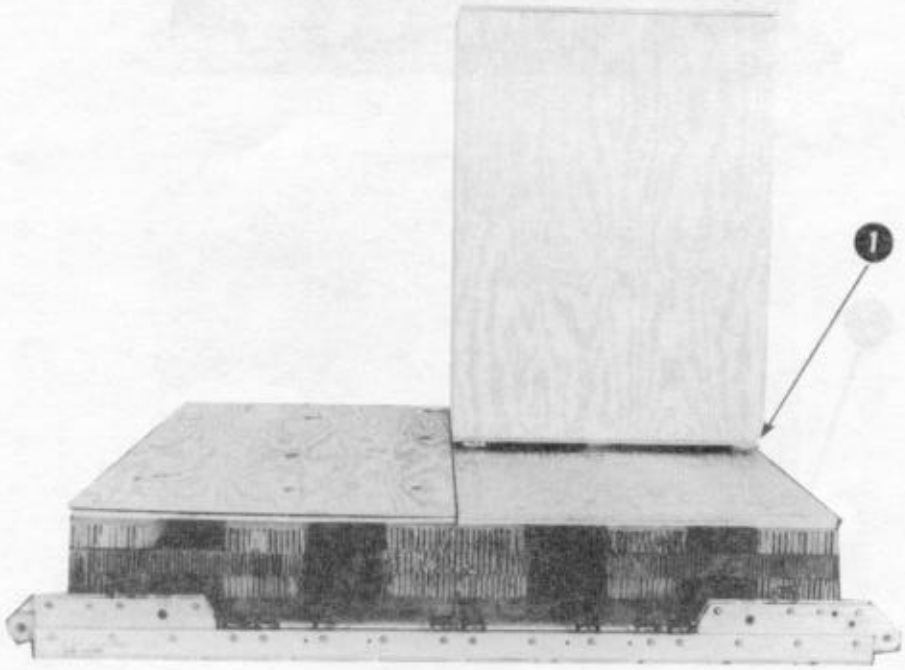
1	Position four pieces of plywood (3/4- by 48- by 76-inches) on the honeycomb stacks. Center the plywood from left to right and front to rear.

Figure 5-17. Plywood positioned

5-18. Positioning Missile Containers

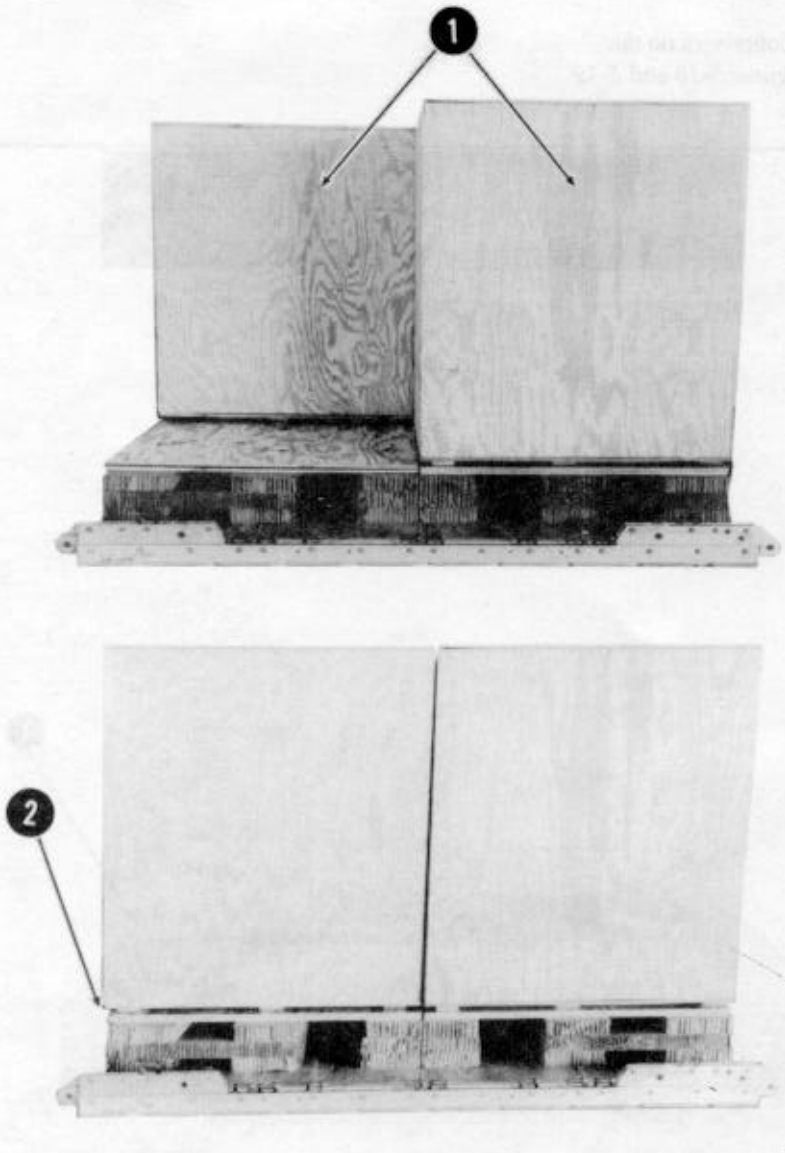
Place the four 15-round containers on the platform as shown in *Figures 5-18* and *5-19*.

CAUTION
Ensure the inspection port holes in the missile containers face the front and rear of the platform.



(1) Place a 15-round missile container on the platform with the container overhanging the front edge of the platform by 1 inch.

Figure 5-18. First missile container positioned



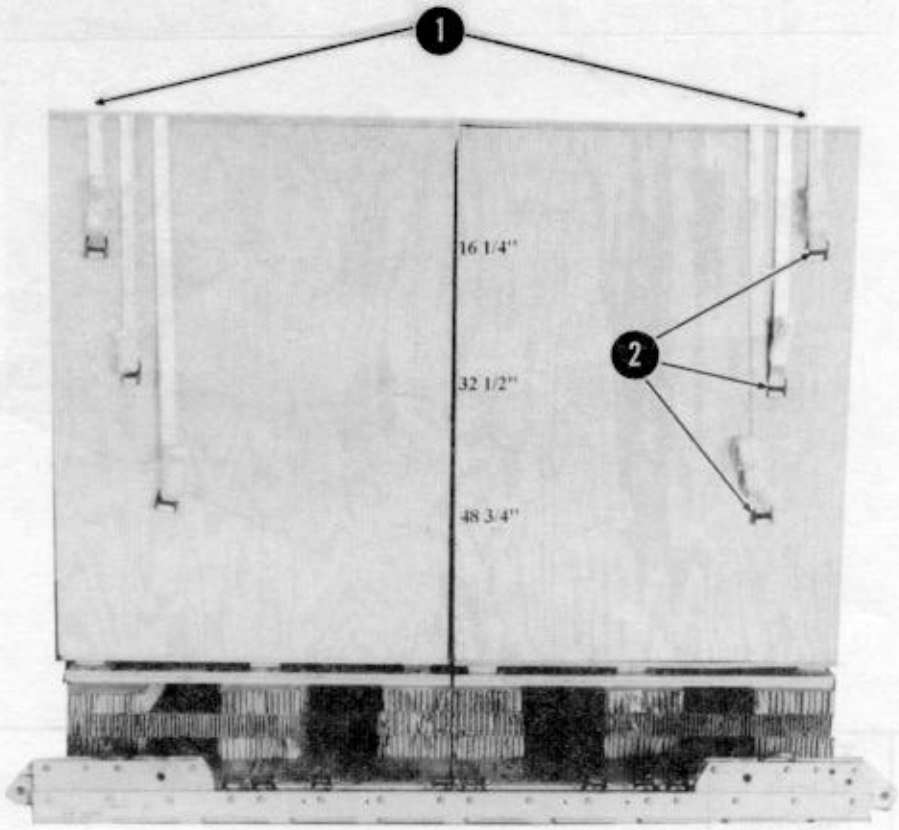
(1) Position the second and third containers on the platform with the containers overhanging the front and rear edges of the platform by 1 inch.

(2) Place the fourth container on the platform with the container overhanging the rear edge of the platform by 1 inch.

Figure 5-19. Missile containers 2, 3, and 4 positioned

5-19. Positioning and Lashing Missile Containers

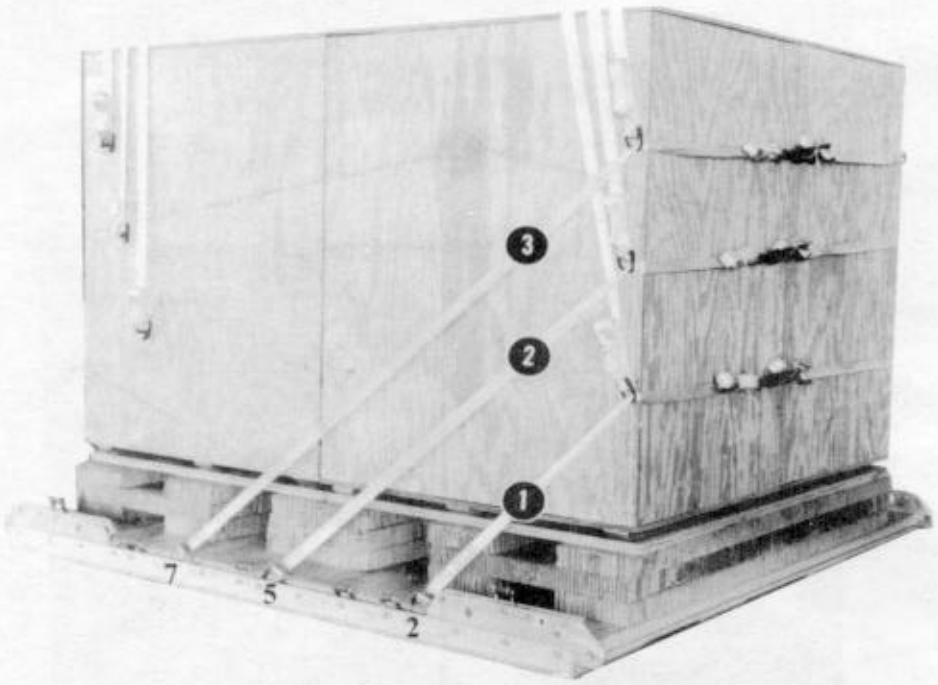
Position the lashings as shown in *Figure 5-20* and lash the containers to the platform as shown in *Figures 5-21* through *5-23*. Use twenty-eight 15-foot lashings, thirty-two D-rings, and ten load binders. Install and safety the lashings as outlined in FM 10-500-2/TO 13C7-1-5.



(1) Form two 30-foot lashings as outlined in FM 10-500-2/TO 13C7-1-5. Lay two 15-foot lashings and one 30-foot lashing across both the front and rear edges of the container groups.

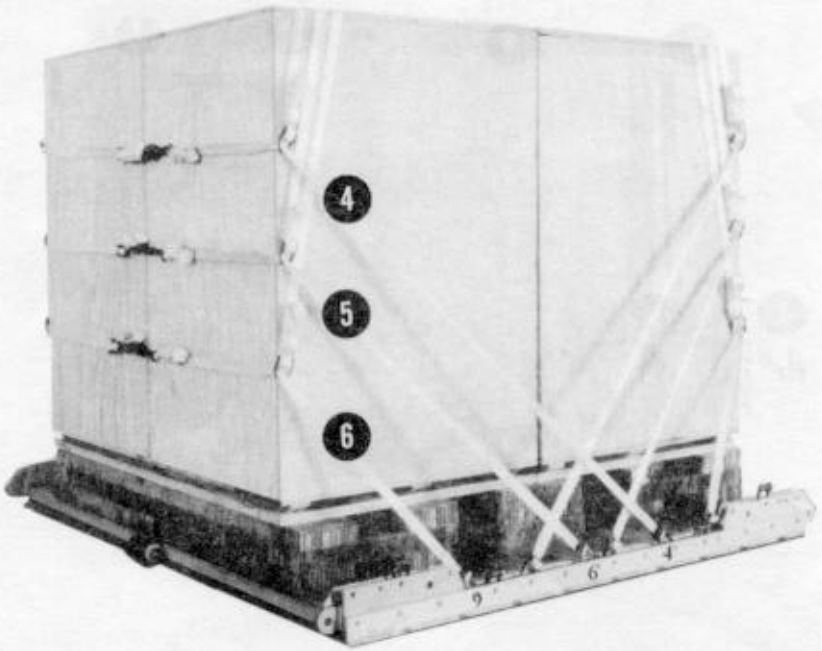
(2) Fit a D-ring to each lashing, and adjust the length of the lashings and D-rings at intervals of 16 1/4 inches from top of containers.

Figure 5-20. Lashings installed



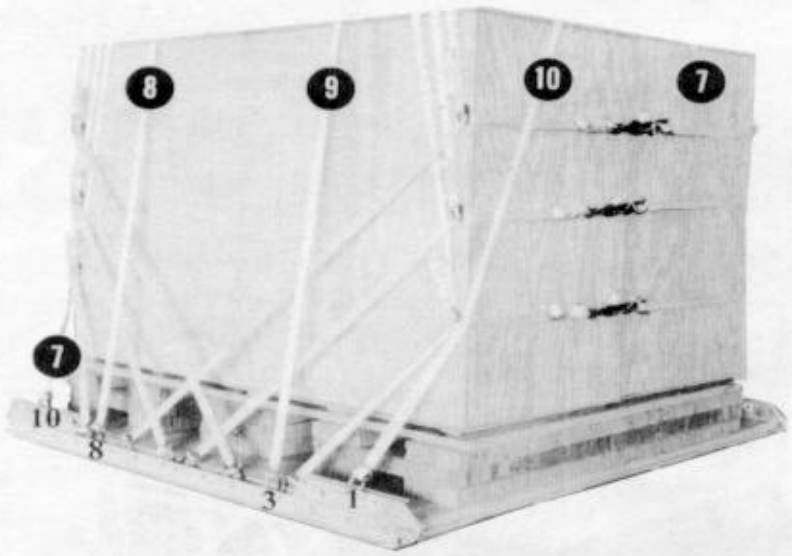
Lashing Number	Tiedown Clevis Number	Instructions
1	2 and 2A	Run a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings through the D-rings. Secure the lashings on the front using two D-rings and a load binder.
2	5 and 5A	Run a 15-foot lashing from clevis 5 and a 15-foot lashing from clevis 5A. Pass the lashings through the D-rings. Secure the lashings on the front using two D-rings and a load binder.
3	7 and 7A	Run a 15-foot lashing from clevis 7 and a 15-foot lashing from clevis 7A. Pass the lashings through the D-rings. Secure the lashings on the front using two D-rings and a load binder.

Figure 5-21. Lashings 1 through 3 installed



Lashing Number	Tiedown Clevis Number	Instructions
4	4 and 4A	Run a 15-foot lashing from clevis 4 and a 15-foot lashing from clevis 4A. Pass the lashings through the D-rings. Secure the lashings on the rear using two D-rings and a load binder.
5	6 and 6A	Run a 15-foot lashing from clevis 6 and a 15-foot lashing from clevis 6A. Pass the lashings through the D-rings. Secure the lashings on the rear using two D-rings and a load binder.
6	9 and 9A	Run a 15-foot lashing from clevis 9 and a 15-foot lashing from clevis 9A. Pass the lashings through the D-rings. Secure the lashings on the rear using two D-rings and a load binder.

Figure 5-22. Lashings 4 through 6 installed

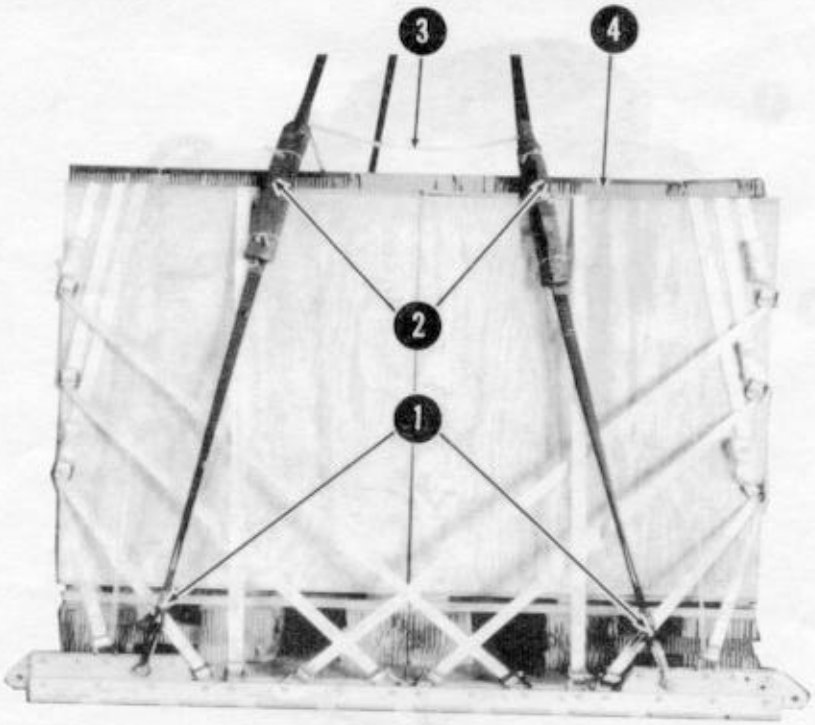


Lashing Number	Tiedown Clevis Number	Instructions
7	10 and 1A	Run a 15-foot lashing from clevis 10 and a 15-foot lashing from clevis 1A. Pass the lashings around ends of the containers and up over the load. Secure the lashings on the top using two D-rings and a load binder. Safety the lashings to the bottom D-rings with type I, 1/4-inch cotton webbing.
8	8 and 8A	Run a 15-foot lashing from clevis 8 and a 15-foot lashing from clevis 8A. Pass the lashings over the top of the load. Secure the lashings on the top using two D-rings and a load binder.
9	3 and 3A	Run a 15-foot lashing from clevis 3 and a 15-foot lashing from clevis 3A. Pass the lashings over the top of the load. Secure the lashings on the top using two D-rings and a load binder.
10	1 and 10A	Run a 15-foot lashing from clevis 1 and a 15-foot lashing from clevis 10A. Pass the lashings around ends of the containers and up over the load. Secure the lashings on the top using two D-rings and a load binder. Safety the lashings to the bottom D-rings with type I, 1/4-inch cotton webbing.

Figure 5-23. Lashings 7 through 10 installed

5-20. Installing Suspension Slings and Deadman's Tie

Install and safety four 16-foot (2-loop), type XXVI nylon slings and four large clevises. Attach each suspension sling to a clevis and attach one clevis to all four tandem links as shown in *Figure 5-24.*



(1) Attach one 16-foot (2-loop), type XXVI nylon suspension sling to a large suspension clevis. Attach the clevis to one of the tandem links. Repeat the same procedure for the other three tandem links.

(2) Use four pieces of felt padding (approximately 18- by 6-inches) to pad the slings. Secure the felt to the sling with type III nylon cord and pressure-sensitive tape.

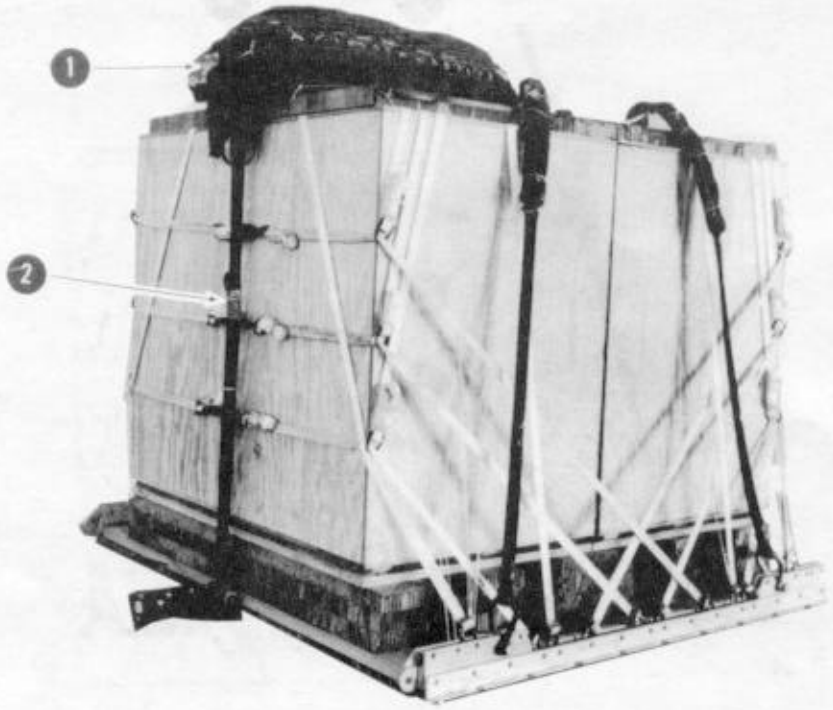
(3) Raise the four suspension slings above the load, and install a deadman's tie as outlined in FM 10-500-2/TO 13C7-1-5.

(4) Position two 36- by 96-inch pieces of honeycomb side by side on top of the load, tape the edges of the honeycomb and secure the honeycomb with type III nylon cord.

Figure 5-24. Suspension slings and deadman's tie installed

5-21. Stowing Cargo Parachute

Stow one G-11B cargo parachute according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-25.*



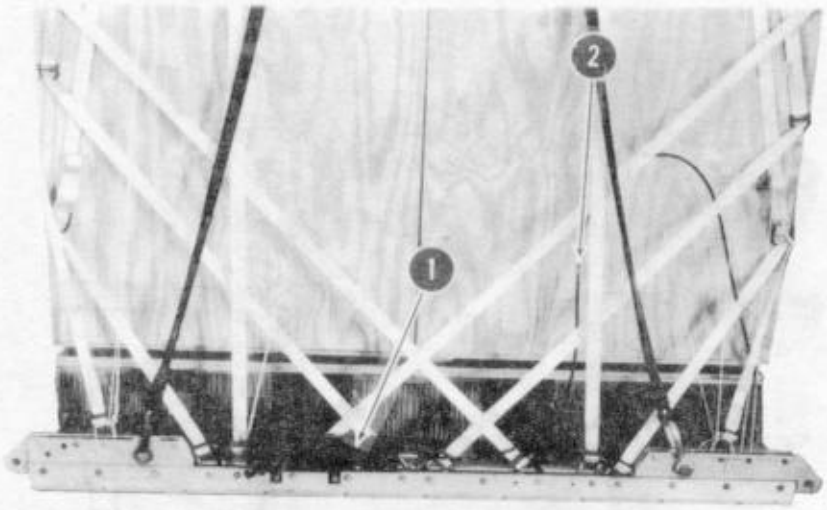
(1) Prepare, place, and secure one G-11B cargo parachute according to FM 10-500-2/TO 13C7-1-5.

(2) Use a 12-foot (2-loop), type XXVI nylon sling as a deployment line. Bolt it to the latch assembly on the right spacer. S-fold the slack and tie the folds with type I, 1/4-inch cotton webbing.

Figure 5-25. Cargo parachute stowed and secured to load

5-22. Installing Extraction System

Attach the components of the Extraction Force Transfer Coupling (EFTC) according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-26.*



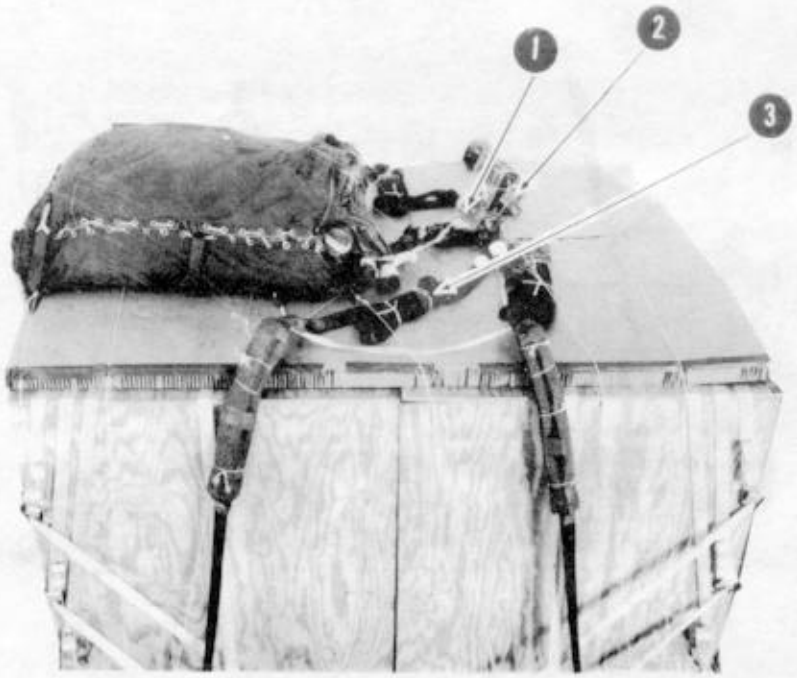
(1) Install the EFTC actuator mounting brackets to the front holes in the left platform rail. Install the EFTC actuator assembly to the brackets according to FM 10-500-2/TO 13C7-1-5.

(2) Install a 12-foot cable according to FM 10-500-2/TO 13C7-1-5. Safety the cable to the lashing with type I, 1/4-inch cotton webbing.

Figure 5-26. EFTC installed

5-23. Installing Parachute Release

Prepare, attach, and safety an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-27.*



(1) Prepare and install an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5. Place the release on top of the honeycomb, and attach the suspension slings and parachute.

(2) Secure the M-1 release to convenient points on the load with type III nylon cord.

(3) Fold the suspension slings. Secure with type I, 1/4-inch cotton webbing.

Figure 5-27. M-1 cargo parachute release installed

5-24. Placing Extraction Parachute

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

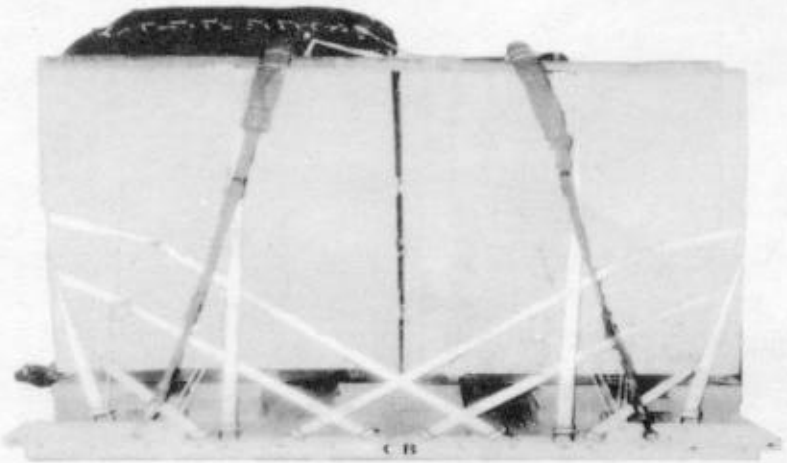
5-25. Installing Provisions for Emergency Restraints

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

5-26. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/ TO 13C7-1-5 and as shown in *Figure 5-28.* Complete Shipper's Declaration for Dangerous Goods and affix to load. If the load varies from the one shown, the weight, height, CB, tip off curve, and parachute requirements must be recomputed.

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



RIGGED LOAD DATA

Weight: Load shown	4,400 pounds
Height	83 inches
Width	108 inches
Length	96 inches
Overhang: Front	1 inch
Rear	1 inch
Center of balance (CB): (from front edge of platform)	51 inches
Extraction System: (add 18 inches to length of platform)	EFTC

Figure 5-28. Four 15-round containers rigged on type V platform for low-velocity airdrop

5-27. Equipment Required

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

Table 5-2. Equipment required for rigging four 15-round Dragon or Dragon II missile containers on an 8-foot, type V airdrop platform for low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal.	As required
4030-00-090-5354	Clevis, suspension, 1-in (large)	4
4020-00-240-2146	Cord, nylon, type III, 550-lb.	As required
1670-00-434-5783	Coupling, airdrop extraction force transfer with cable, 12-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	1
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-01-183-2678	Leaf, extraction line (line bag)	1
	Line extraction:	
1670-01-064-4452	60-ft (1-loop), type XXVI (for C-130)	1
1670-01-107-7652	160-ft (1-loop), type XXVI (for C-141B, C-5, or C-17)	1
1670-00-783-5988	Link assembly, type IV	1
1670-00-753-3928	Pad, energy-dissipating, (honeycomb),	
	3- by 36- by 96-in:	9 sheets
	10- by 29-in	(4)
	10- by 60-in	(4)
	10- by 80-in	(8)
	18- by 24-in	(1)
	18- by 80-in	(3)
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	1
	Cargo extraction:	
1670-01-063-3715	15-ft	1
	Platform, airdrop, 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)	(20)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link assembly (Multipurpose link)	(4)

Table 5-2. Equipment required for rigging four 15-round Dragon or Dragon II missile containers on an 8-foot, type V airdrop platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
5530-00-128-4981	Plywood, 3/4-in:	4 sheets
	48- by 76-in	(4)
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For suspension slings:	
1670-00-823-5042	16-ft (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-00-753-3792	12-ft (2-loop), type XXVI nylon webbing	1
	Riser extension:	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	1
1670-00-040-8219	Strap, parachute release with fastener and release knife	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	28
1670-00-937-0272	Binder, load, 10,000-lb capacity	(10)
5365-00-937-0147	D-ring, heavy-duty	(32)
1670-00-937-0273	Strap, 15-ft	(28)
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
8305-00-082-5752	Nylon, tubular 1/2-in	As required

Section III

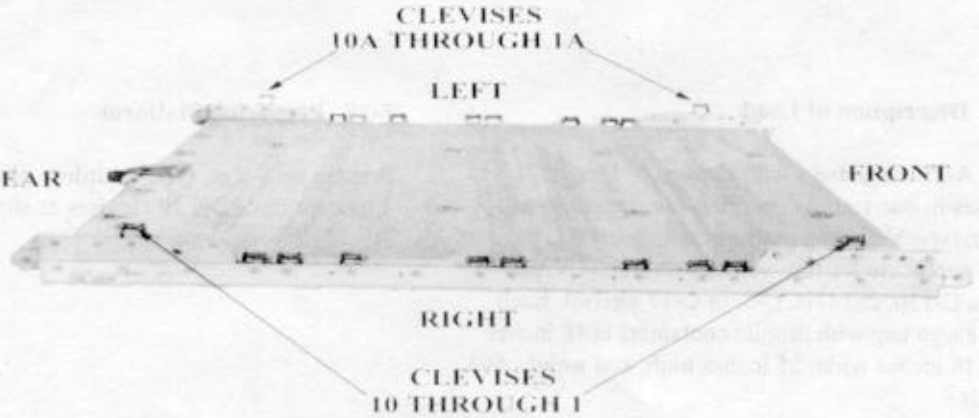
RIGGING FOUR A-22 CARGO BAGS WITH ONE-ROUND CONTAINERS

5-28. Description of Load

Four A-22 cargo bags with Dragon or Dragon II missiles in one-round containers are rigged on an 8-foot, type V airdrop platform with one G-11B cargo parachute for low-velocity airdrop (LVAD) from a C-130, C-141B, C-5, or C-17 aircraft. Each A-22 cargo bag with missile containers is 48 inches long, 48 inches wide, 55 inches high, and weighs 693 pounds.

5-29. Preparing Platform

Prepare an 8-foot, type V airdrop platform using 4 tandem links and 20 clevises as shown in *Figure 5-29.*



Step:

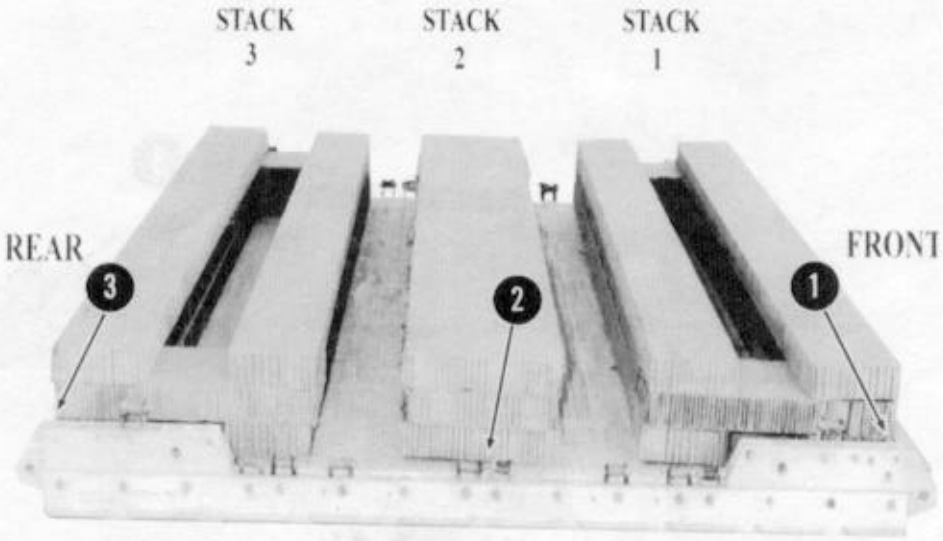
1. Inspect, or assemble and inspect, an 8-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3 and on the rear of each platform side rail using holes 14, 15, and 16.
3. Install a clevis on bushing 3 on each front tandem link and on bushing 3 on each rear tandem link.
4. Starting at the front of each platform side rail, attach clevises to the bushings bolted on holes 4, 5, 6, 8, 9, 11, 12, and 13.
5. Starting at the front of each platform rail, number the clevises bolted to the right side from 1 through 10 and those bolted to the left side from 1A through 10A.
6. Label the panel tiedown rings according to FM 10-500-2/TO 13C7-1-5.

Figure 5-29. Platform prepared

5-30. Building and Placing Honeycomb Stacks

Build three honeycomb stacks and place them on the platform as shown in *Figure 5-30.*

Notes: 1. Measurements from the front of the platform are taken from the front edge of the first panel.
2. Measurements from the rear of the platform are taken from the rear edge of the last panel.



(1) Build the first (1) stack by using the following pieces of honeycomb:

4 pieces	10- by 96-inches	(1st and 3d layers)
2 pieces	10- by 76-inches	(2d layer)
2 pieces	10- by 29-inches	(2d layer bridge)

Center the honeycomb between the side rails, but position it 1 inch back from the front edge of the platform.

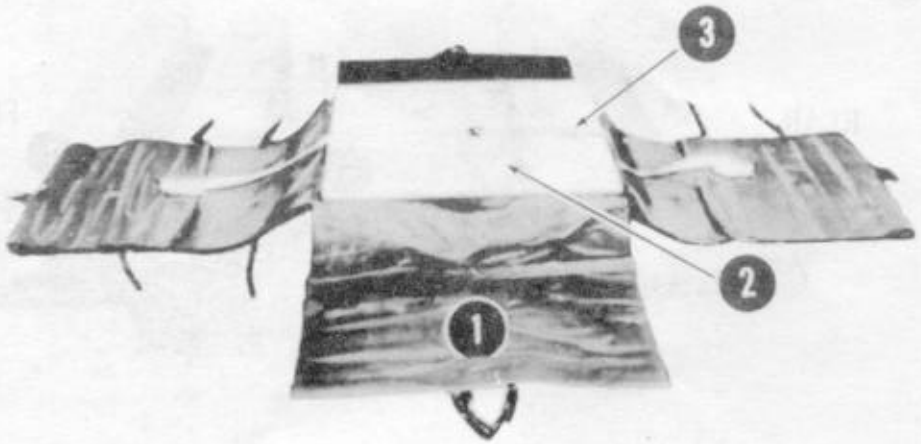
(2) Build the second (2) stack by using three pieces of honeycomb (18- by 96-inches). Center the stack over the joint where the second and third panels join together and between the side rails.

(3) Build the third (3) stack by repeating step 1 above, but position the honeycomb 1 inch from the rear edge of the platform.

Figure 5-30. Honeycomb stacks positioned

5-31. Preparing Load

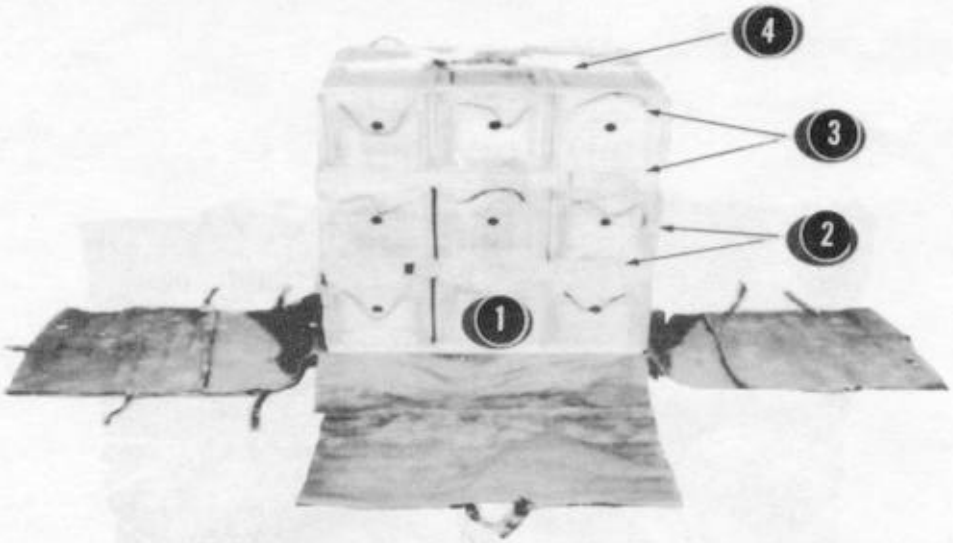
Prepare four A-22 cargo bags with nine one-round containers as shown in *Figures 5-31* and *5-32*; however, do not use the skid or skid honeycomb. Close the A-22 cargo bags by following the steps in FM 10-500-3/TO 13C7-1-11.



1. Center the A-22 cover on the sling assembly (with the outside of the cover down).
2. Center a 3/4- by 48- by 48-inch piece of plywood on the cover.
3. Form a 30-foot lashing according to FM 10-500-2/TO 13C7-1-5 and lay the strap across the center of the plywood from side to side.

Figure 5-31. Cargo bag, plywood, and lashing positioned

CAUTION
Ensure the inspection port holes in the missile containers face the front and rear of the platform.



(1) Set three containers on the plywood so that the 47 1/2 inch sides of the containers are parallel with the plywood (3/4- by 48- by 48-inches) on the A-22 cover.

(2) Place a layer of honeycomb (one piece 36- by 48-inches and one piece 12- by 48-inches) on the containers. Set three more containers on the honeycomb.

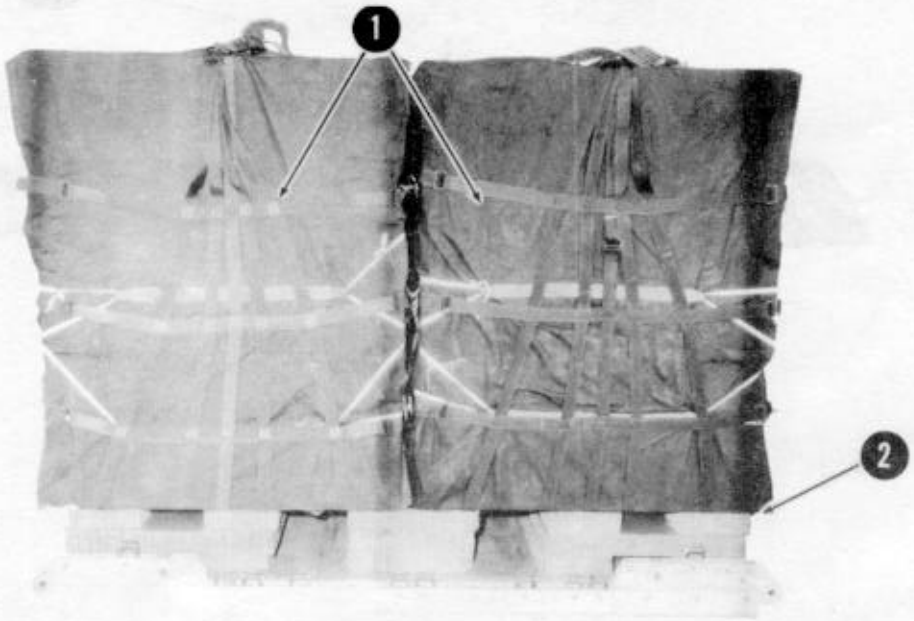
(3) Place another layer of honeycomb on the containers. Set the last three containers on the honeycomb.

(4) Run the ends of the 30-foot lashing over the top of the stacked containers, and bind the ends together with two D-rings and a load binder.

Figure 5-32. Nine one-round containers positioned

5-32. Positioning the Load

Place the four A-22 containers on the platform as shown in *Figure 5-33.*



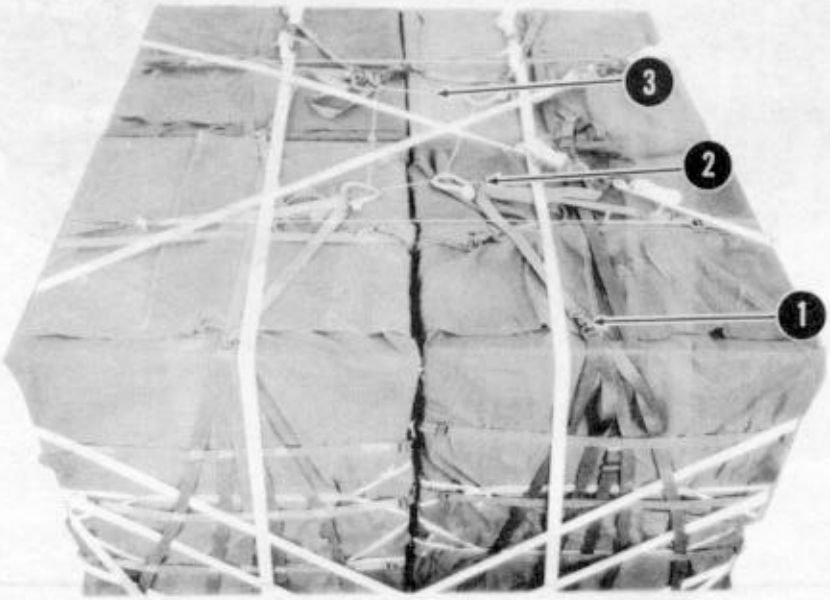
(1) Place the four A-22 cargo bags on the honeycomb stacks, centering them from side to side and from front to rear on the honeycomb.

(2) The A-22 cargo bags will overhang 1 inch on the front and 1 inch on the rear of the platform.

Figure 5-33. A-22 containers positioned

5-33. Securing Suspension Webs and Lashing Containers

Secure the suspension webs as shown in *Figure 5-34* and lash the A-22 cargo bags to the platform as shown in *Figures 5-35* through *5-37*. Use sixteen 15-foot lashings, sixteen D-rings, and ten load binders. Install and safety the lashings as outlined in FM 10-500-2/TO 13C7-1-5.

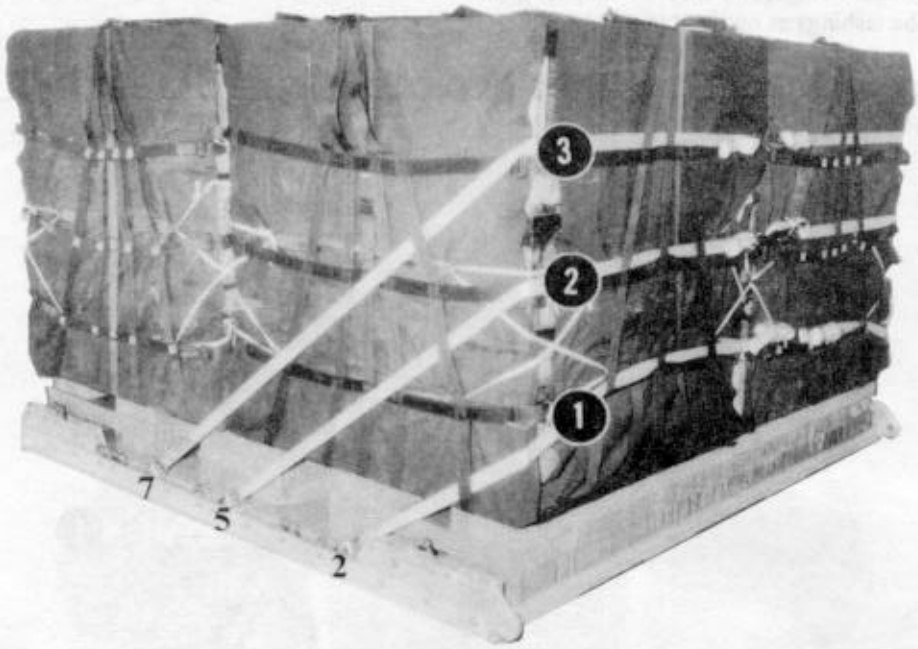


(1) Attach all suspension webs as shown. Route the hook on the snap fastener from outside to inside. The gate on the snap fastener must face inside.

(2) Place the suspension web D-rings on the bolt of the cargo suspension clevis.

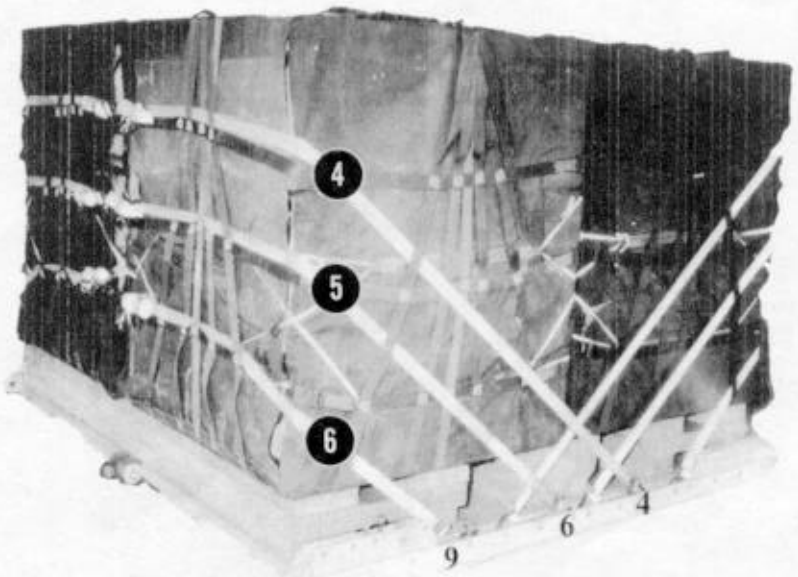
(3) Secure the cargo clevises in place with type III nylon cord.

Figure 5-34. Lashings installed



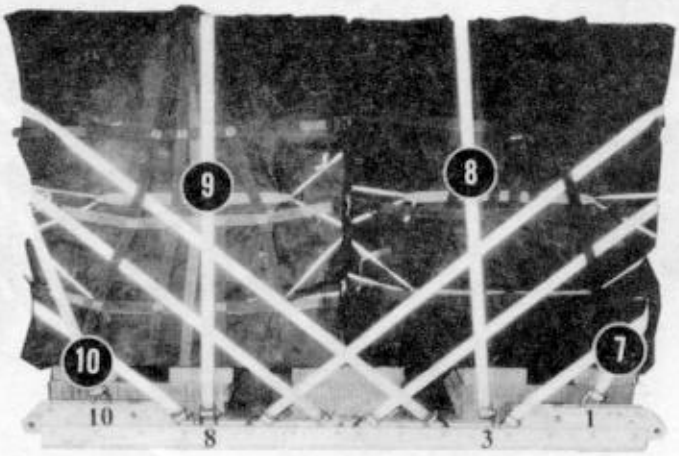
Lashing Number	Tiedown Clevis Number	Instructions
1	2 and 2A	Run a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings underneath the A-22 webbing on the sides and around the front of the load. Secure the lashings on the front using two D-rings and a load binder.
2	5 and 5A	Run a 15-foot lashing from clevis 5 and a 15-foot lashing from clevis 5A. Pass the lashings underneath the A-22 webbing on the sides and around the front of the load. Secure the lashings on the front using two D-rings and a load binder.
3	7 and 7A	Run a 15-foot lashing from clevis 7 and a 15-foot lashing from clevis 7A. Pass the lashings underneath the A-22 webbing on the sides and around the front of the load. Secure the lashings on the front using two D-rings and a load binder.

Figure 5-35. Lashings 1 through 3 installed



Lashing Number	Tiedown Clevis Number	Instructions
4	4 and 4A	Run a 15-foot lashing from clevis 4 and a 15-foot lashing from clevis 4A. Pass the lashings underneath the A-22 webbing on the sides and around the rear of the load. Secure the lashings on the rear using two D-rings and a load binder.
5	6 and 6A	Run a 15-foot lashing from clevis 6 and a 15-foot lashing from clevis 6A. Pass the lashings underneath the A-22 webbing on the sides and around the rear of the load. Secure the lashings on the rear using two D-rings and a load binder.
6	9 and 9A	Run a 15-foot lashing from clevis 9 and a 15-foot lashing from clevis 9A. Pass the lashings underneath the A-22 webbing on the sides and around the rear of the load. Secure the lashings on the rear using two D-rings and a load binder.

Figure 5-36. Lashings 4 through 6 installed

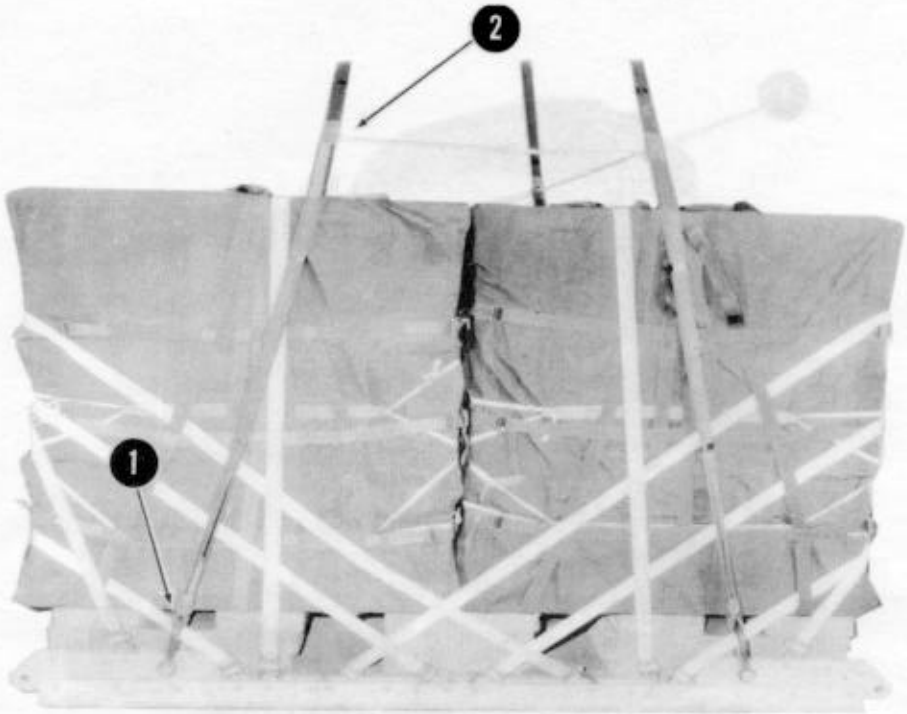


Lashing Number	Tiedown Clevis Number	Instructions
7	1 and 10A	Run a 15-foot lashing from clevis 1 and a 15-foot lashing from clevis 10A. Pass the lashings around front and rear of the load and up over the top of load. Secure the lashings on the top using two D-rings and a load binder.
8	3 and 3A	Run a 15-foot lashing from clevis 3 and a 15-foot lashing from clevis 3A. Pass the lashings over the top of the load. Secure the lashings on the top using two D-rings and a load binder.
9	8 and 8A	Run a 15-foot lashing from clevis 8 and a 15-foot lashing from clevis 8A. Pass the lashings over the top of the load. Secure the lashings on the top using two D-rings and a load binder.
10	10 and 1A	Run a 15-foot lashing from clevis 10 and a 15-foot lashing from clevis 1A. Pass the lashings around front and rear of the load and up over the top of load. Secure the lashings on the top using two D-rings and a load binder.

Figure 5-37. Lashings 7 through 10 installed

5-34. Installing Suspension Slings and Deadman's Tie

Install and safety four 16-foot (2-loop), type XXVI nylon slings and four large clevises. Attach each sling to a clevis and attach one clevis to all four tandem links as shown in *Figure 5-38.*



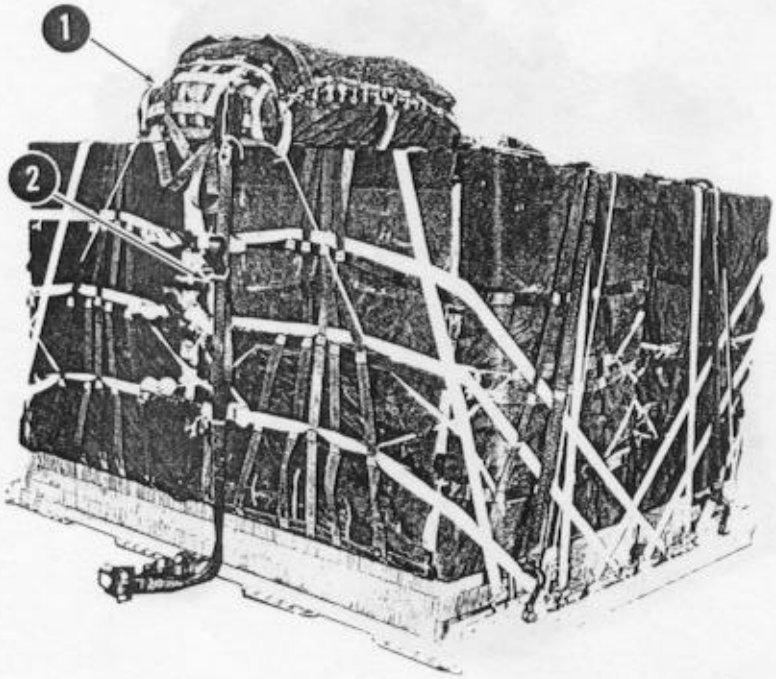
(1) Attach one 16-foot (2-loop), type XXVI nylon suspension sling to a large suspension clevis. Attach the clevis to one of the tandem links. Repeat the same procedure for the other three tandem links.

(2) Raise the four suspension slings above the load, and install a deadman's tie as outlined in FM 10-500-2/TO 13C7-1-5.

Figure 5-38. Suspension slings and deadman's tie installed

5-35. Stowing Cargo Parachute

Stow one G-11B cargo parachute according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-39.*



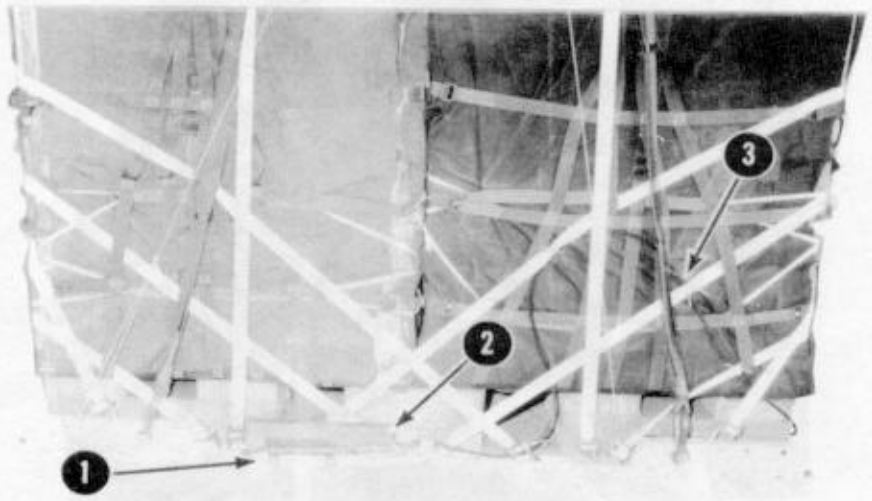
(1) Prepare, place, and secure one G-11B cargo parachute according to FM 10-500-2/TO 13C7-1-5.

(2) Use a 12-foot (2-loop), type XXVI nylon sling as a deployment line. Bolt it to the latch assembly on the right spacer. S-fold the slack and tie the folds with type I, 1/4-inch cotton webbing.

Figure 5-39. Cargo parachute stowed and secured to load

5-36. Installing Extraction System

Attach the components of the Extraction Force Transfer Coupling (EFTC) according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-40.*



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

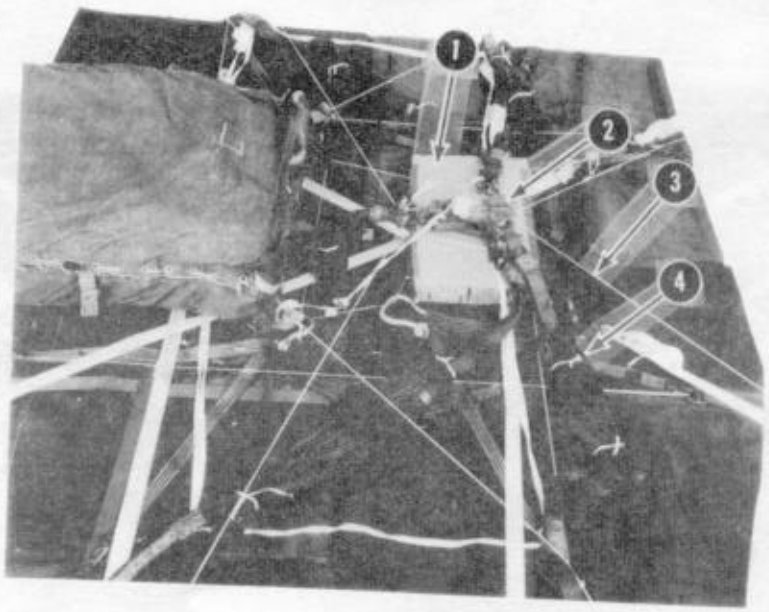
(2) Install the actuator according to FM 10-500-2/TO 13C7-1-5.

(3) Install a 12-foot cable according to FM 10-500-2/TO 13C7-1-5. Safety the cable to the lashing with type I, 1/4-inch cotton webbing.

Figure 5-40. EFTC installed

5-37. Installing Parachute Release

Prepare, attach, and safety an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-41.*



(1) Position an 18- by 24-inch piece of honeycomb on top of the load, and secure the honeycomb with type III nylon cord.

(2) Place the M-1 release on top of the honeycomb, and attach the suspension slings and the parachute riser extensions.

(3) Secure the M-1 release to convenient points on the load with type III nylon cord.

(4) S-fold and tie any excess suspension slings.

Figure 5-41. M-1 cargo parachute release installed

5-38. Placing Extraction Parachute

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

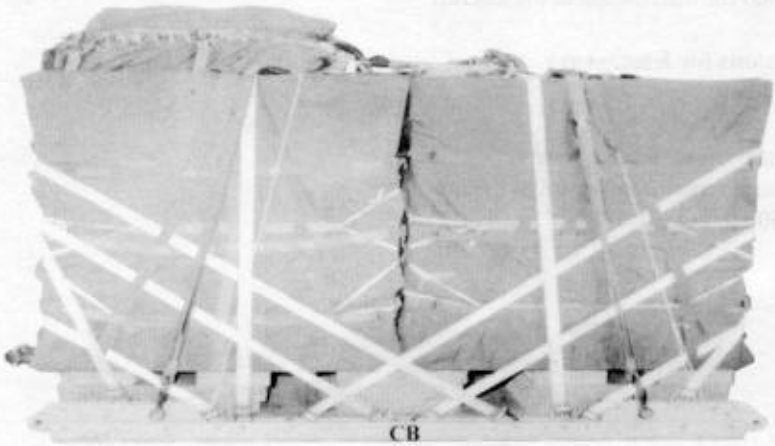
5-39. Installing Provisions for Emergency Restraints

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

5-40. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-42*. Complete Shipper's Declaration for Dangerous Goods and affix to

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	4,040 pounds
Height	83 inches
Width	108 inches
Length	96 inches
Overhang: Front	1 inch
Rear	1 inch
Center of balance (CB): (from front edge of platform)	50 inches
Extraction System: (add 18 inches to length of platform)	EFTC

Figure 5-42. Fifteen-round containers rigged in A-22 cargo slings on type V platform for low-velocity airdrop

5-41. Equipment Required

Use the equipment listed in *Table 5-3* to rig this load.

Table 5-3. Equipment required for rigging one-round Dragon or Dragon II missile containers in four A-22 cargo bags on an 8-foot, type V airdrop platform for low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal.	As required
8465-00-587-3421	Bag, cargo, aerial delivery, type A-22	4
	Clevis, suspension:	
1670-00-678-8562	3/4-in (medium)	4
4030-00-090-5354	1-in (large)	4
4020-00-240-2146	Cord, nylon, type III, 550-lb.	As required
1670-00-434-5783	Coupling, airdrop extraction force transfer with cable, 12-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	1
1670-01-183-2678	Leaf, extraction line (line bag)	1
	Line, extraction:	
1670-01-064-4452	60-ft (1-loop), type XXVI (for C-130)	1
1670-01-107-7652	160-ft (1-loop), type XXVI (for C-141B, C-5, or C-17)	1
1670-00-783-5988	Link assembly, type IV	1
1670-00-753-3928	Pad, energy-dissipating, (honeycomb),	
	3- by 36- by 96-in:	10 sheets
	10- by 29-in	(4)
	10- by 76-in	(4)
	10- by 96-in	(8)
	18- by 24-in	(1)
	18- by 96-in	(3)
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	1
	Cargo extraction:	
1670-01-063-3715	15-ft	1
	Platform, airdrop, 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)	(20)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link assembly (Multipurpose link)	(4)

Table 5-3. Equipment required for rigging one-round Dragon or Dragon II missile containers in four A-22 cargo bags on an 8-foot, type V airdrop platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
1670-01-097-8816	Plywood, 3/4- by 48-in	1
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For suspension slings:	
1670-00-823-5042	16-ft (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-00-753-3792	12-ft (2-loop), type XXVI nylon webbing	1
	Riser, extension	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	
1670-00 -040 -8219	Strap, parachute release with fastener and release knife	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	24
1670-00-937-0272	Binder, load, 10,000-lb capacity	(10)
5365-00-937-0147	D-ring, heavy-duty	(28)
1670-00-937-0273	Strap, 15-ft	(24)
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
8305-00-082-5752	Nylon, tubular 1/2-in	As required

Section IV

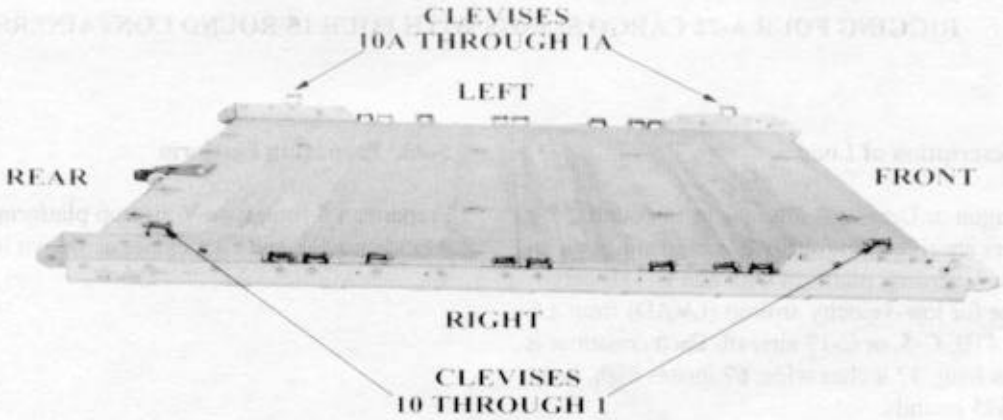
RIGGING FOUR A-22 CARGO SLINGS WITH FOUR 15-ROUND CONTAINERS

5-42. Description of Load

Four Dragon or Dragon II missiles in 15-round containers are rigged in four A-22 cargo slings on an 8-foot, type V airdrop platform with one G-11B cargo parachute for low-velocity airdrop (LVAD) from a C-130, C-141B, C-5, or C-17 aircraft. Each container is 49 inches long, 37 inches wide, 67 inches high, and weighs 695 pounds.

5-43. Preparing Platform

Prepare an 8-foot, type V airdrop platform using 4 tandem links and 20 clevises as shown in *Figure 5-43.*



Step:

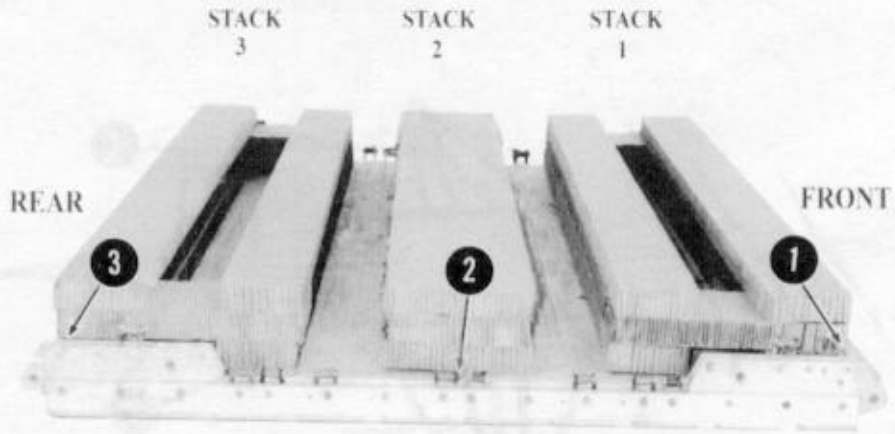
1. Inspect, or assemble and inspect, an 8-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3 and on the rear of each platform side rail using holes 14, 15, and 16.
3. Install a clevis on bushing 3 on each front tandem link and on bushing 3 on 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 4, 5, 6, 8, 9, 11, 12, and 13.
5. Starting at the front of each platform, number the clevises bolted to the right side from 1 through 10 and those bolted to the left side from 1A through 10A.
6. Label the panel tiedown rings according to FM 10-500-2/TO 13C7-1-5.

Figure 5-43. Platform prepared

5-44. Building and Placing Honeycomb Stacks

Build three honeycomb stacks and place them on the platform according to *Figure 5-44*.

Notes: 1. Measurements from the front of the platform are taken from the front edge of the first panel.
2. Measurements from the rear of the platform are taken from the rear edge of the last panel.



(1) Build the first (1) stack by using the following pieces of honeycomb:

4 pieces	10- by 80-inches	(1st and 3d layers)
2 pieces	10- by 60-inches	(2d layer)
2 pieces	10- by 29-inches	(2d layer bridge)

Center the honeycomb between the side rails, but position it 1 inch back from the front edge of the platform.

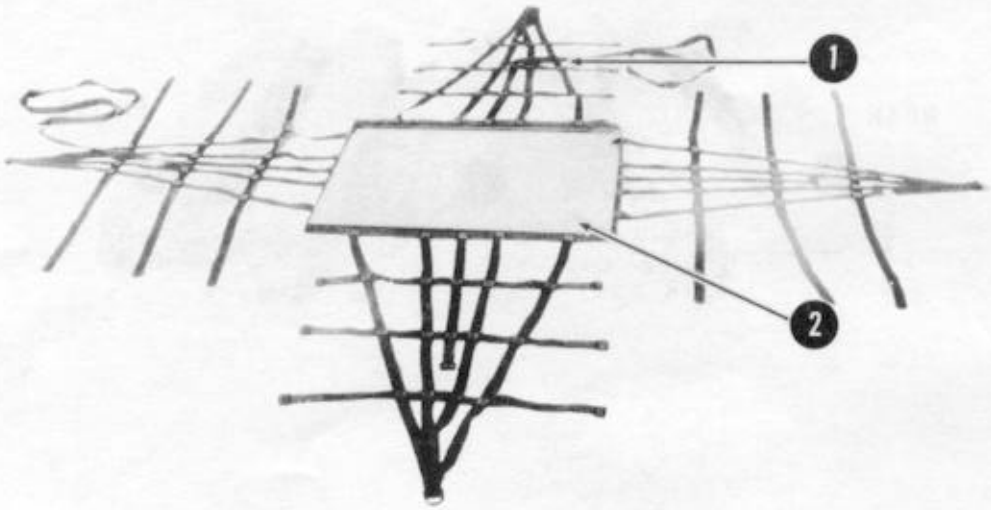
(2) Build the second (2) stack by using three pieces of honeycomb (18- by 80-inches). Center the stack over the joint where the second and third panels join together and between the side rails.

(3) Build the third (3) stack by repeating step 1 above, and position the honeycomb flush with the rear edge of the platform.

Figure 5-44. Honeycomb stacks positioned

5-45. Preparing the Load

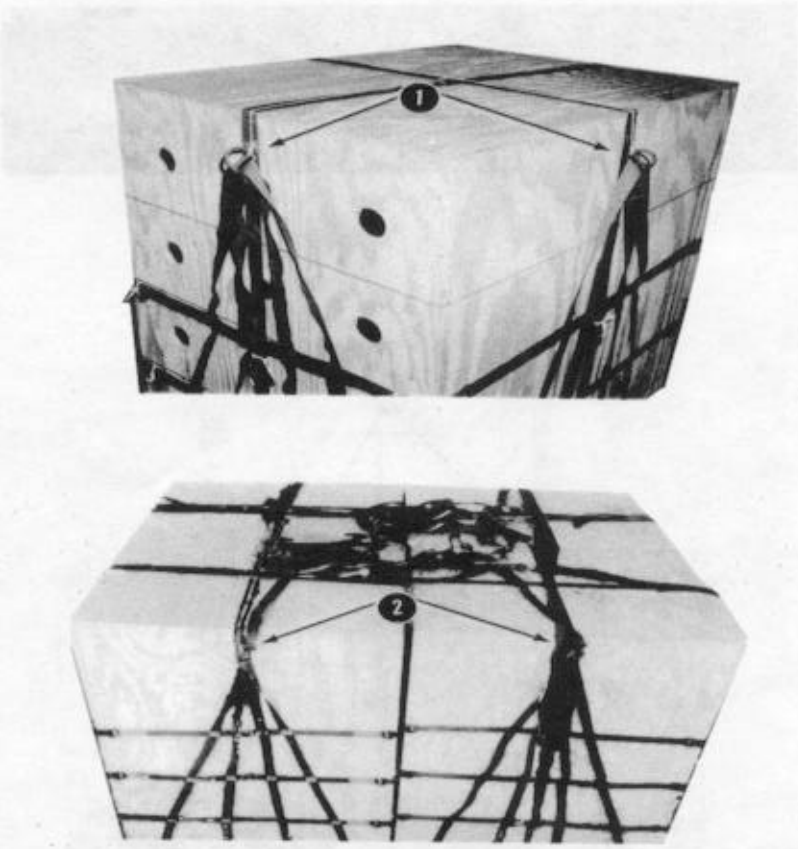
Prepare four A-22 cargo slings with four 15-round containers as shown in *Figures 5-45* and *5-46*, however do not use the skid or skid honeycomb. Close the A-22 slings by following the steps in FM 10-500-3/TO 13C7-1-11.



(1) Position the A-22 sling assembly by following the procedures outlined in FM 10-500-3/TO 13C7-1-11.

(2) Center a 3/4- by 38- by 48-inch piece of plywood on the scuff pad.

Figure 5-45. A-22 cargo sling and plywood positioned



(1) Tie the D-ring on the support web to the rear support web with type III nylon cord. Tie the D-rings of the side of the support webs together using type III nylon cord.

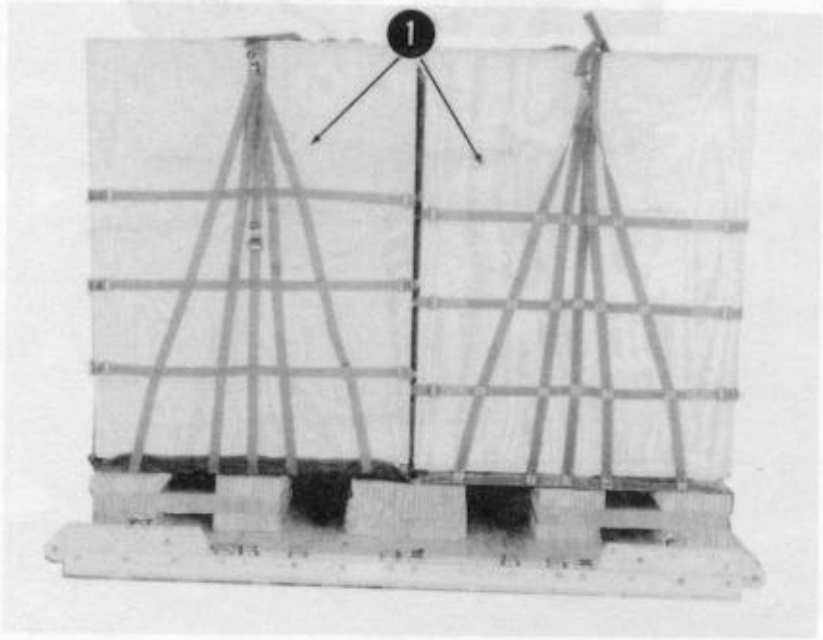
(2) Snap another suspension web to each normally rigged suspension web. This gives a two-suspension web length snapped onto the D-rings. Be sure the open side of the connector snaps face inward. Tape all connector straps.

Figure 5-46. Containers postioned and cargo slings closed

5-46. Positioning Load

Place the four A-22 cargo slings with four 15-round containers on the honeycomb stacks as shown in *Figure 5-47.*

CAUTION
Ensure the inspection port holes in the forward missile containers face the platform; the insection port holes face the rear of the platform in the container groups.

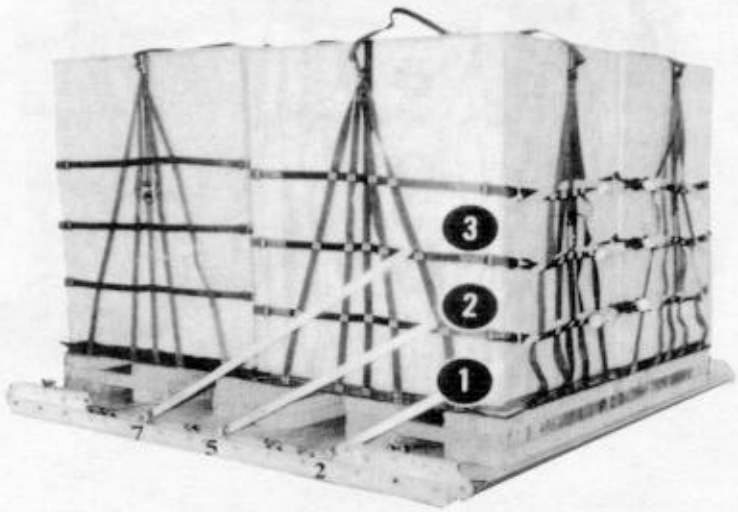


(1) Place four A-22 cargo slings on the honeycomb, centering them from side to side and from front to rear on the platform.

Figure 5-47. Missile containers positioned

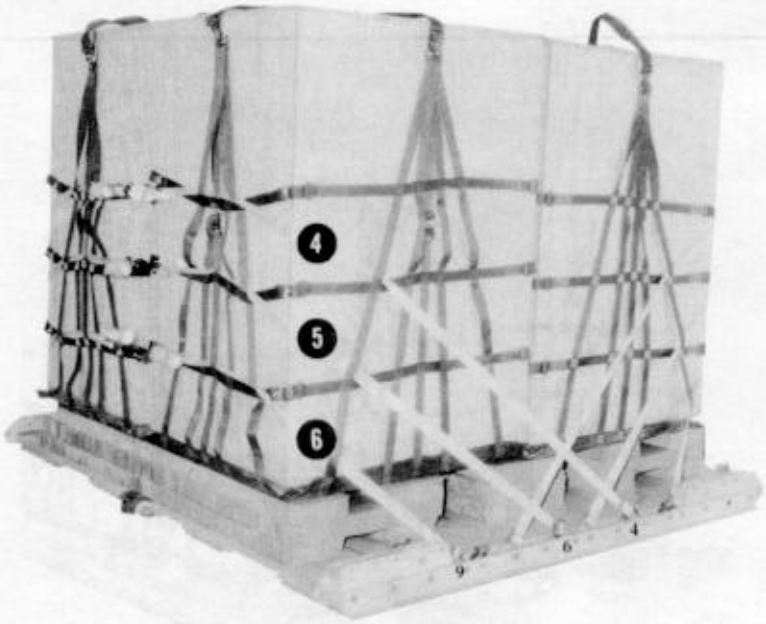
5-47. Lashing Missile Containers

Lash the containers to the platform as shown in *Figures 5-48* through *5-50.* Use twenty 15-foot lashings, twenty D-rings, and ten load binders. Install and safety the lashings as outlined in FM 10-500-2/TO 13C7-1-5.



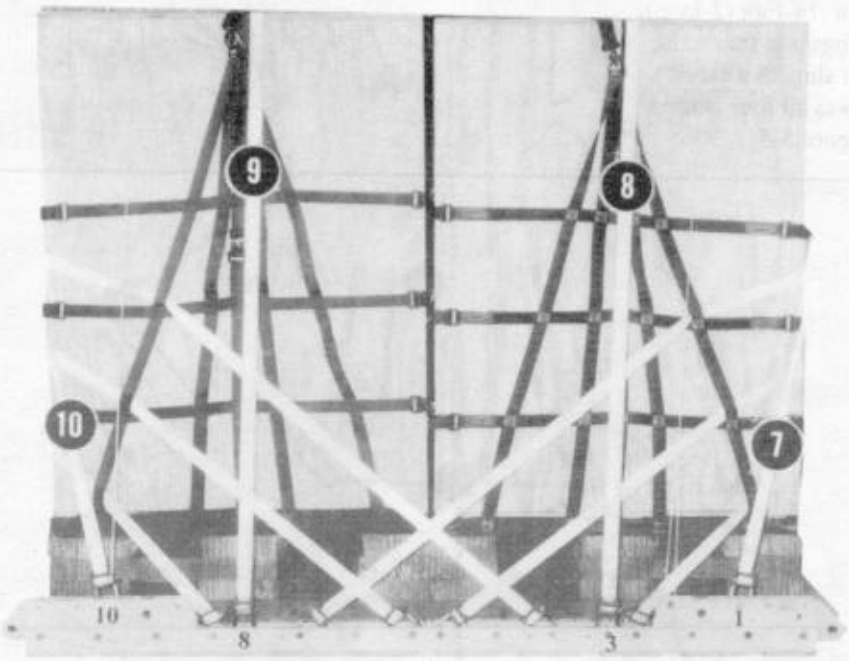
Lashing Number	Tiedown Clevis Number	Instructions
1	2 and 2A	Run a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings underneath the A-22 webbing on the sides and around the front of the load. Secure the lashings on the front using two D-rings and a load binder.
2	5 and 5A	Run a 15-foot lashing from clevis 5 and a 15-foot lashing from clevis 5A. Pass the lashings underneath the A-22 webbing on the sides and around the front of the load. Secure the lashings on the front using two D-rings and a load binder.
3	7 and 7A	Run a 15-foot lashing from clevis 7 and a 15-foot lashing from clevis 7A. Pass the lashings underneath the A-22 webbing on the sides and around the front of the load. Secure the lashings on the front using two D-rings and a load binder.

Figure 5-48. Lashings 1 through 3 installed



Lashing Number	Tiedown Clevis Number	Instructions
4	4 and 4A	Run a 15-foot lashing from clevis 4 and a 15-foot lashing from clevis 4A. Pass the lashings underneath the A-22 webbing on the sides and around the rear of the load. Secure the lashings on the rear using two D-rings and a load binder.
5	6 and 6A	Run a 15-foot lashing from clevis 6 and a 15-foot lashing from clevis 6A. Pass the lashings underneath the A-22 webbing on the sides and around the rear of the load. Secure the lashings on the rear using two D-rings and a load binder.
6	9 and 9A	Run a 15-foot lashing from clevis 9 and a 15-foot lashing from clevis 9A. Pass the lashings underneath the A-22 webbing on the sides and around the rear of the load. Secure the lashings on the rear using two D-rings and a load binder.

Figure 5-49. Lashings 4 through 6 installed

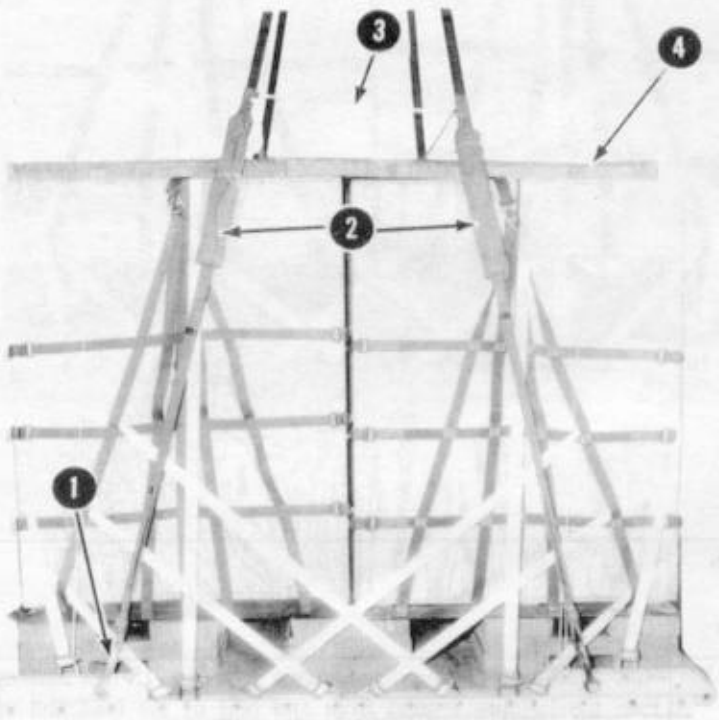


Lashing Number	Tiedown Clevis Number	Instructions
7	1 and 10A	Run a 15-foot lashing from clevis 1 and a 15-foot lashing from clevis 10A. Pass the lashings around front and rear of the load and up over the top of load. Secure the lashings on the top using two D-rings and a load binder.
8	3 and 3A	Run a 15-foot lashing from clevis 3 and a 15-foot lashing from clevis 3A. Pass the lashings over the top of the load. Secure the lashings on the top using two D-rings and a load binder.
9	8 and 8A	Run a 15-foot lashing from clevis 8 and a 15-foot lashing from clevis 8A. Pass the lashings over the top of the load. Secure the lashings on the top using two D-rings and a load binder.
10	10 and 1A	Run a 15-foot lashing from clevis 10 and a 15-foot lashing from clevis 1A. Pass the lashings around front and rear of the load and up over the top of load. Secure the lashings on the top using two D-rings and a load binder.

Figure 5-50. Lashings 7 through 10 installed

5-48. Installing Suspension Slings and Deadman's Tie

Install and safety four 16-foot (2-loop), type XXVI nylon slings and four large clevises. Attach each sling to a clevis and attach one clevis to all four tandem links as shown in *Figure 5-51.*



(1) Attach one 16-foot (2-loop), type XXVI nylon suspension sling to a large suspension clevis. Attach the clevis to one of the tandem links. Repeat the same procedure for the other three tandem links.

(2) Use four pieces of felt padding (approximately 18- by 6-inches) to pad the slings. Secure the felt to the sling with type III nylon cord and pressure-sensitive tape.

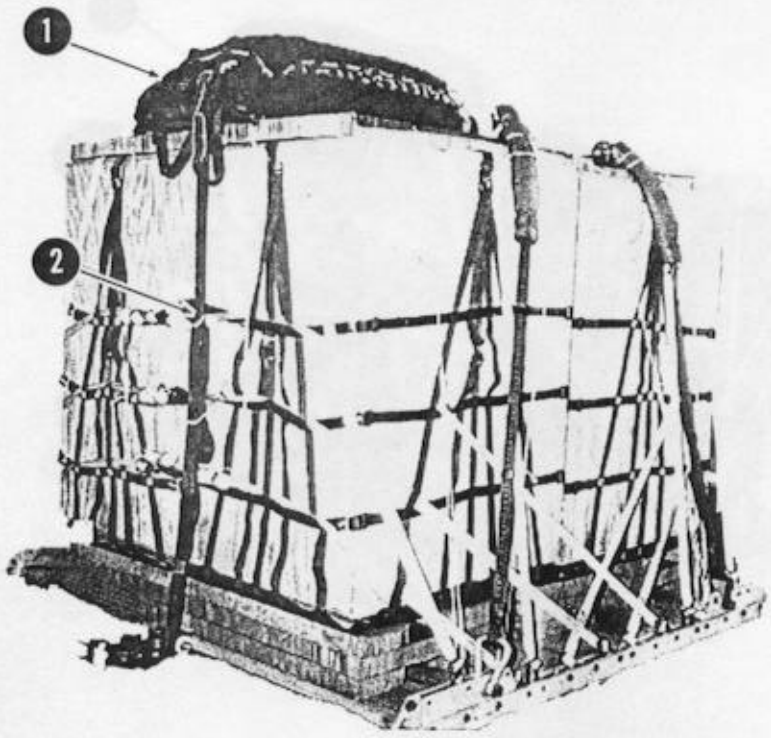
(3) Raise the four suspension slings above the load, and install a deadman's tie as outlined in FM 10-500-2/TO 13C7-1-5.

(4) Position two 36- by 96-inch pieces of honeycomb side by side on top of the load, tape the edges of the honeycomb and secure the honeycomb with type III nylon cord.

Figure 5-51. Suspension slings and deadman's tie installed

5-49. Stowing Cargo Parachute

Stow one G-11B cargo parachute according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-52.*



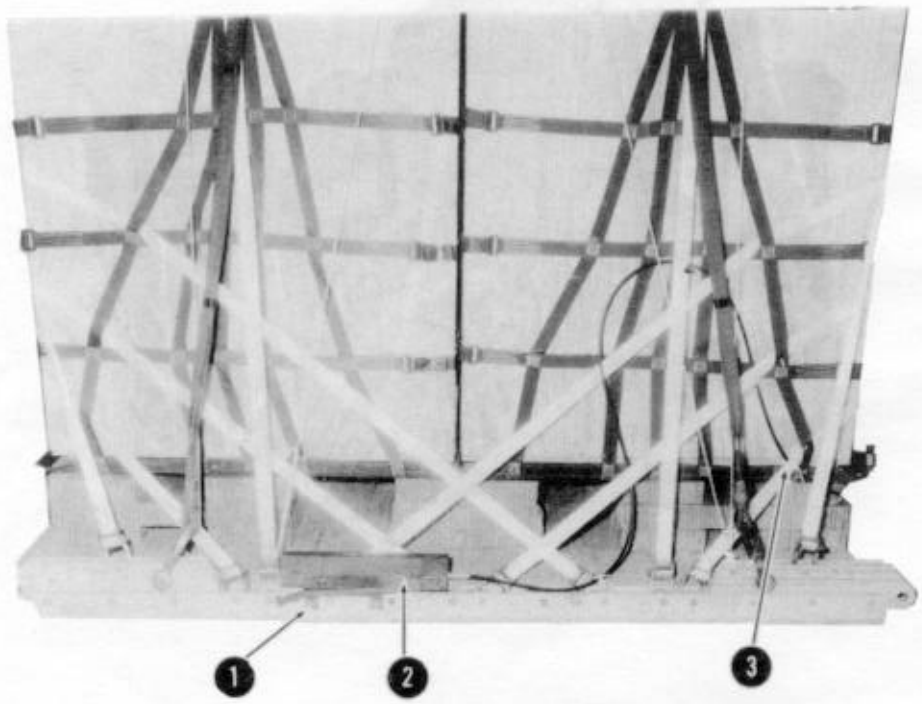
(1) Prepare, place, and secure one G-11B cargo parachute according to FM 10-500-2/TO 13C7-1-5.

(2) Use a 12-foot (2-foot), type XXVI nylon sling as a deployment line. Bolt it to the latch assembly on the right spacer. S-fold the slack and tie the folds with type I, 1/4 inch cotton webbing.

Figure 5-52. Cargo parachute stowed and secured to load

5-50. Installing Extraction System

Attach the components of the Extraction Force Transfer Coupling (EFTC) according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-53.*



(1) Attach the EFTC mounting brackets to the forward holes on the left rail.

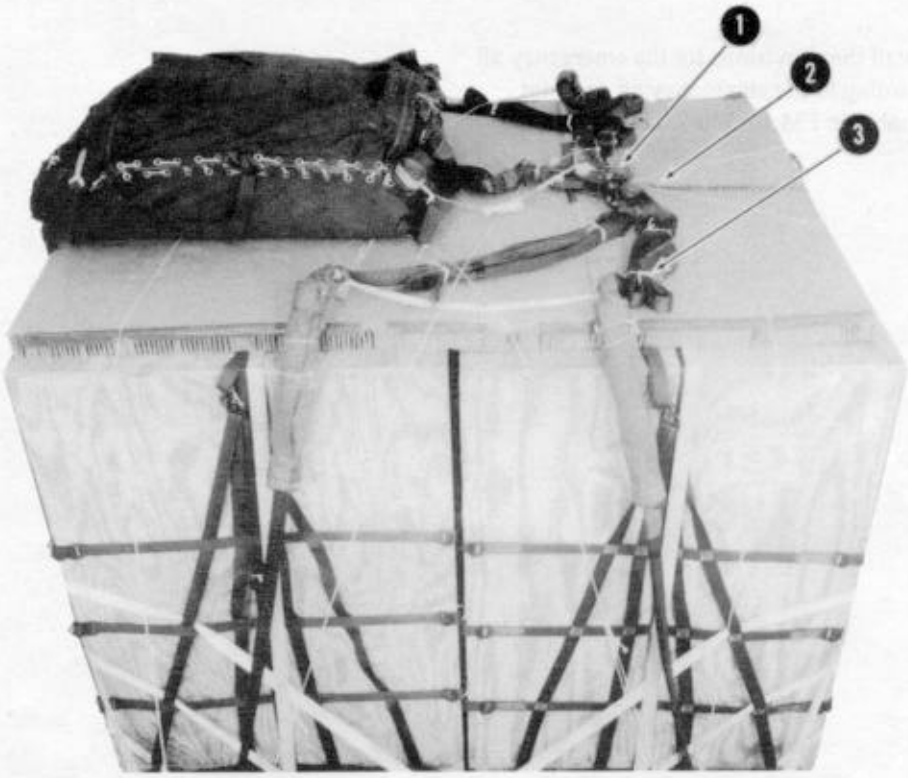
(2) Install the actuator according to FM 10-500-2/TO 13C7-1-5.

(3) Install a 12-foot cable according to FM 10-500-2/TO 13C7-1-5. Safety the cable to the lashing with type I, 1/4-inch cotton webbing.

Figure 5-53. EFTC installed

5-51. Installing Parachute Release

Prepare, attach, and safety an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-54.*



(1) Place the M-1 release on top of the honeycomb, and attach the suspension slings and the parachute riser extensions.

(2) Secure the M-1 release to the load with type III nylon cord.

(3) S-fold and tie any excess suspension slings with type I, 1/4-inch cotton webbing.

Figure 5-54. M-1 cargo parachute release installed

5-52. Placing Extraction Parachute

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

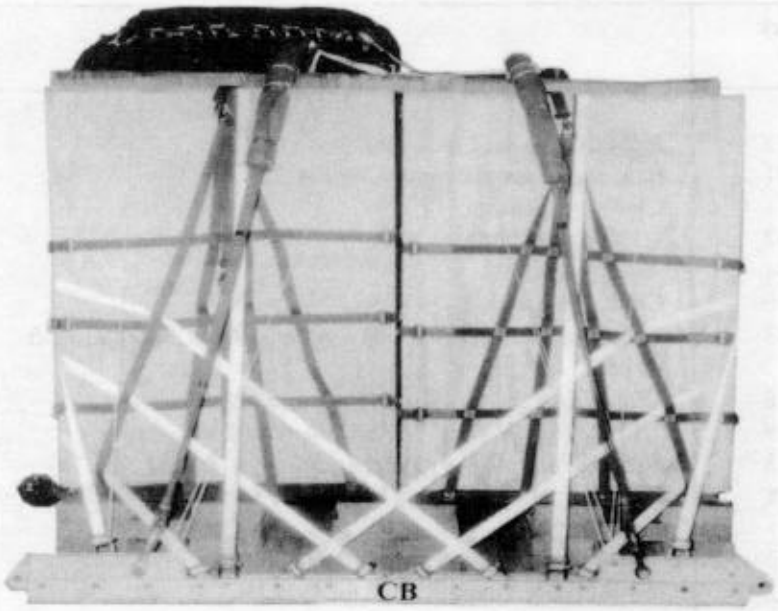
5-53. Installing Provisions for Emergency Restraints

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

5-54. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in *Figure 5-55.* Complete Shipper's Declaration for Dangerous Goods and affix to load. If the load varies from the one shown, the weight, height, CB, tip off curve, 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	4,440 pounds
Height	83 inches
Width	108 inches
Length	96 inches
Overhang: Front	0 inches
Rear	0 inches
Center of balance (CB): (from front edge of platform)	51 inches
Extraction System: (add 18 inches to length of platform)	EFTC

Figure 5-55. Fifteen-round containers rigged in A-22 cargo slings on type V platform for low-velocity airdrop

5-55. Equipment Required

Use the equipment listed in Table 5-4 to rig this load.

Table 5-4. Equipment required for rigging four 15-round Dragon or Dragon II missile containers in A-22 cargo slings on an 8-foot, type V airdrop platform for low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal.	As required
8465-00-587-3421	Bag, cargo, aerial delivery, type A-22	4
	Clevis, suspension:	
1670-00-678-8562	3/4-in (medium)	4
4030-00-090-5354	1-in (large)	4
4020-00-240-2146	Cord, nylon, type III, 550-lb.	As required
1670-00-434-5783	Coupling, airdrop extraction force transfer with cable, 12-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	1
8305-00-958-3685	Felt, 1/2-in thick As required	
1670-01-183-2678	Leaf, extraction line (line bag)	1
	Line, extraction:	
1670-01-064-4452	60-ft (1-loop), type XXVI (for C-130)	1
1670-01-107-7652	160-ft (1-loop), type XXVI (for C-141B, C-5, or C-17)	1
1670-00-783-5988	Link assembly, type IV	1
1670-00-753-3928	Pad, energy-dissipating, (honeycomb),	
	3- by 36- by 96-in:	8 sheets
	10- by 29-in	(4)
	10- by 60-in	(4)
	10- by 80-in	(8)
	18- by 80-in	(3)
	36- by 96-in	(2)
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	1
	Cargo extraction:	
1670-01-063-3715	15-ft	1
	Platform, airdrop, 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)	(20)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link assembly (Multipurpose link)	(4)

Table 5-4. Equipment required for rigging four 15-round Dragon or Dragon II missile containers in A-22 cargo slings on an 8-foot, type V airdrop platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
5530-00-128-4981	Plywood, 3/4-in:	2 sheets
	48- by 48-in	(4)
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For suspension slings:	
1670-00-823-5042	16-ft (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-00-753-3792	12-ft (2-loop), type XXVI nylon webbing	1
	Riser, extension	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	1
1670-00-040-8219	Strap, parachute release with fastener and release knife	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	20
1670-00-937-0272	Binder, load, 10,000-lb capacity	(10)
5365-00-937-0147	D-ring, heavy-duty	(40)
1670-00-937-0273	Strap, 15-ft	(20)
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
8305-00-082-5752	Nylon, tubular 1/2-in	As required

CHAPTER 6

RIGGING THE ADVANCED ANTITANK WEAPON SYSTEM-MEDIUM (JAVELIN) FOR LOW-VELOCITY AIRDROP

Section I

RIGGING TWO-ROUND A-7A DOOR BUNDLE

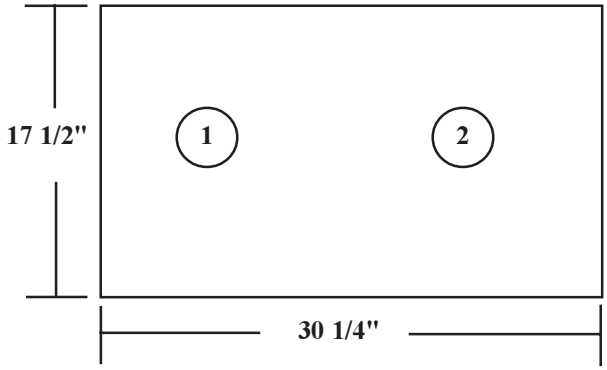
6-1. Description of Load

The Javelin Missile System is a man-portable antitank weapon system made up of a tactical round in a disposable launch tube and a reusable Command Launch Unit (CLU). The Command Launch Unit is not rigged with the tactical rounds. The Javelin can be airdropped as a door bundle in two-round and four-round configurations. As a door bundle, the Javelin can be dropped only from C-130 and C-141 aircraft. The Javelin two-round A-7A door bundle has an approximate rigged weight of 146 pounds. It has a height of 65 1/2 inches, a width of 17 1/2 inches and a length of 30 1/4 inches.

The two-round bundle uses the 24-foot diameter, troop, chest, reserve parachute modified for cargo application. Procedures for modifying the 24-foot troop reserve parachute for cargo use are given in this section.

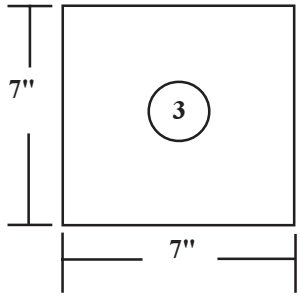
6-2. Preparing Two-Round A-7A Door Bundle

Prepare the two-round A-7A door bundle according to FM 10-500-3/TO 13C7-1-11 and as shown in Figure 6-1.



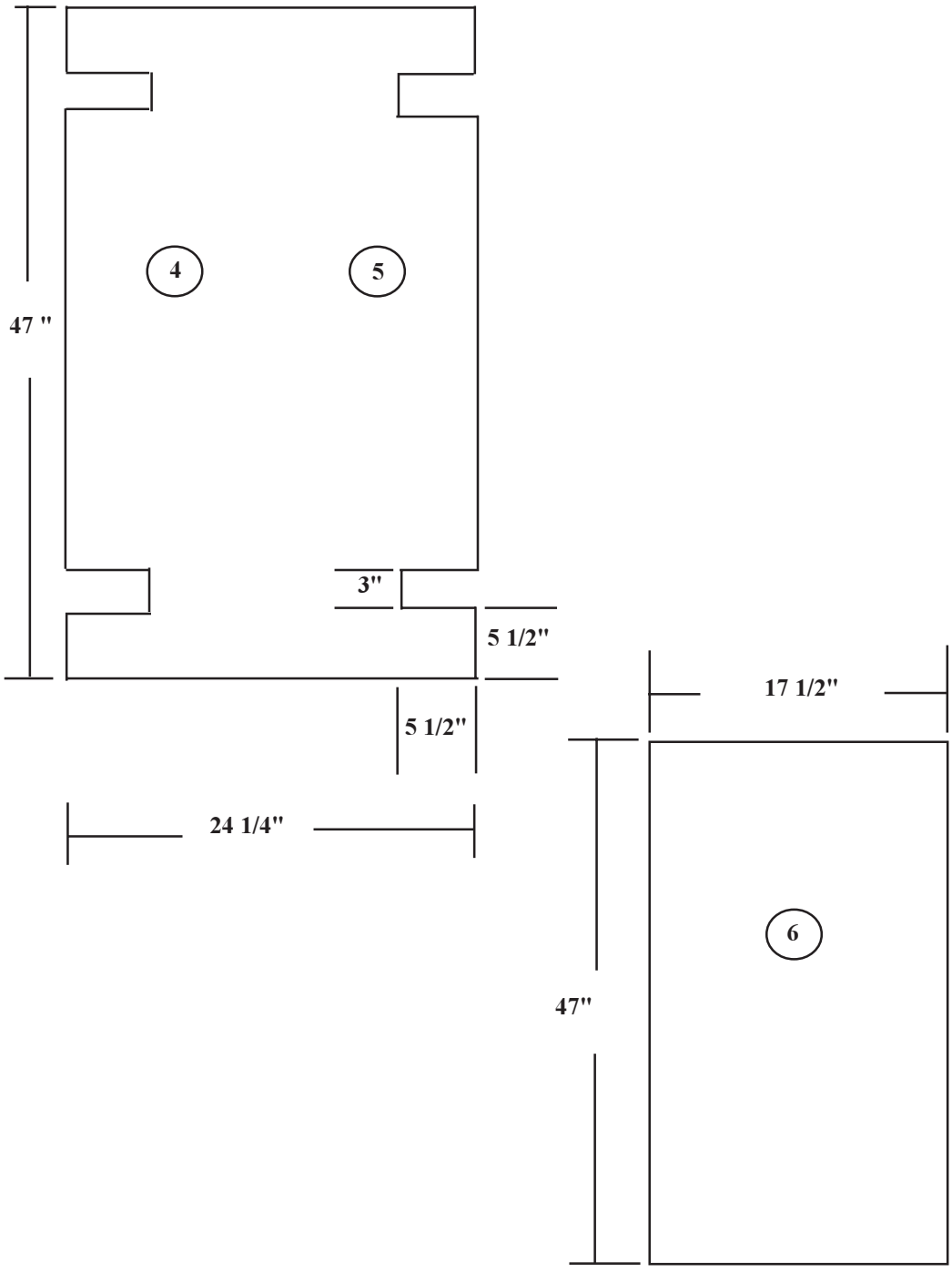
1 Cut two 17 1/2-inch by 30 1/4-inch pieces of 3/4-inch plywood.

2 Cut two 17 1/2-inch by 30 1/4-inch pieces of honeycomb.



3 Cut two 7-inch by 7-inch pieces of honeycomb.

Figure 6-1. Two-round A-7A door bundle prepared

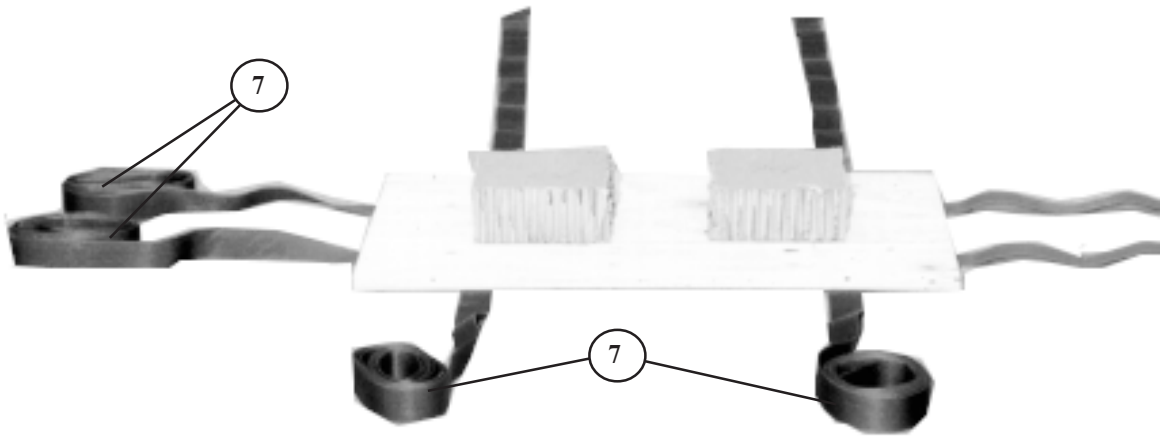


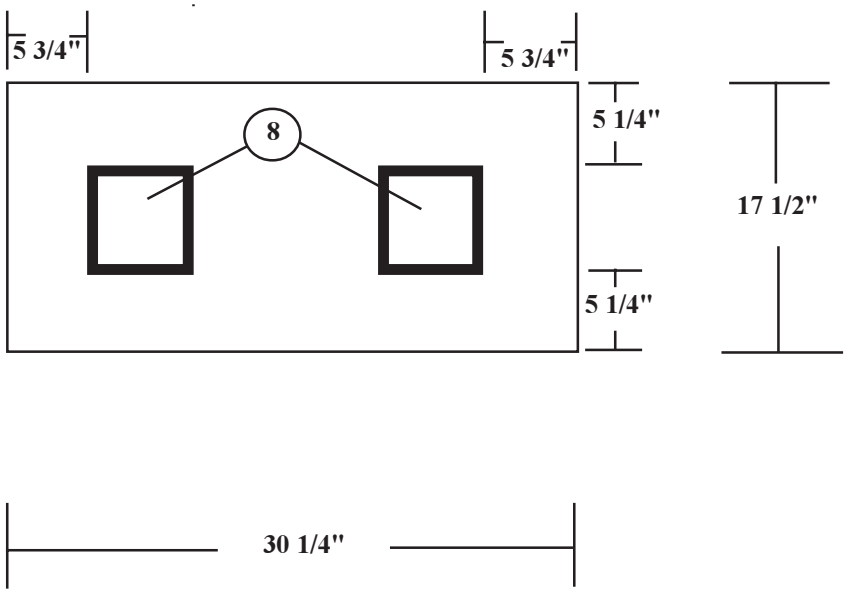
4 Cut two 24 1/4-inch by 47-inch pieces of 3/4-inch plywood with four 3-inch by 5-inch cutouts.

5 Cut two pieces of honeycomb to match step 4.

6 Cut two 17 1/2-inch by 47-inch pieces of honeycomb.

Figure 6-1. Two-round A-7A door bundle prepared (continued)





7 Position four A-7A straps under one of the 17 1/2-inch by 30 1/4-inch pieces of plywood. Position each strap approximately 5 inches from each edge of the plywood.

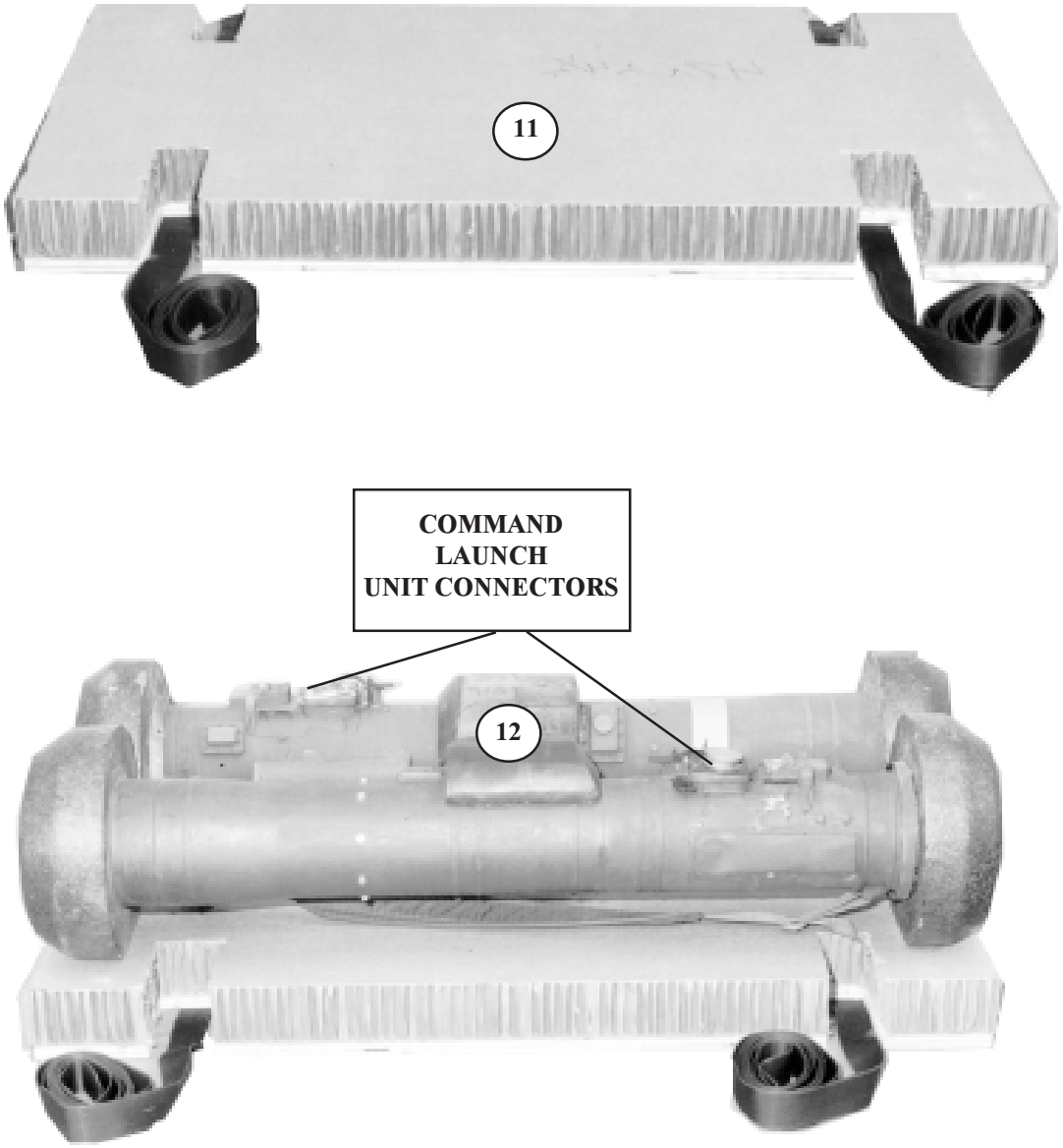
8 Position and glue the two 7-inch by 7-inch pieces of honeycomb on top of the plywood. Each piece should be 5 1/4 inches from the right and left edges of the plywood. Each piece should also be 5 3/4 inches from the forward edge and 5 3/4 inches from the rear edge of the plywood.

Figure 6-1. Two-round A-7A door bundle prepared (continued)

9 Position and glue one of the 17 1/2-inch by 30 1/4-inch pieces of honeycomb centered on the plywood in step 8.

10 Position two A-7A straps, one in each set of cutouts on the 24 1/4-inch by 47-inch piece of plywood.

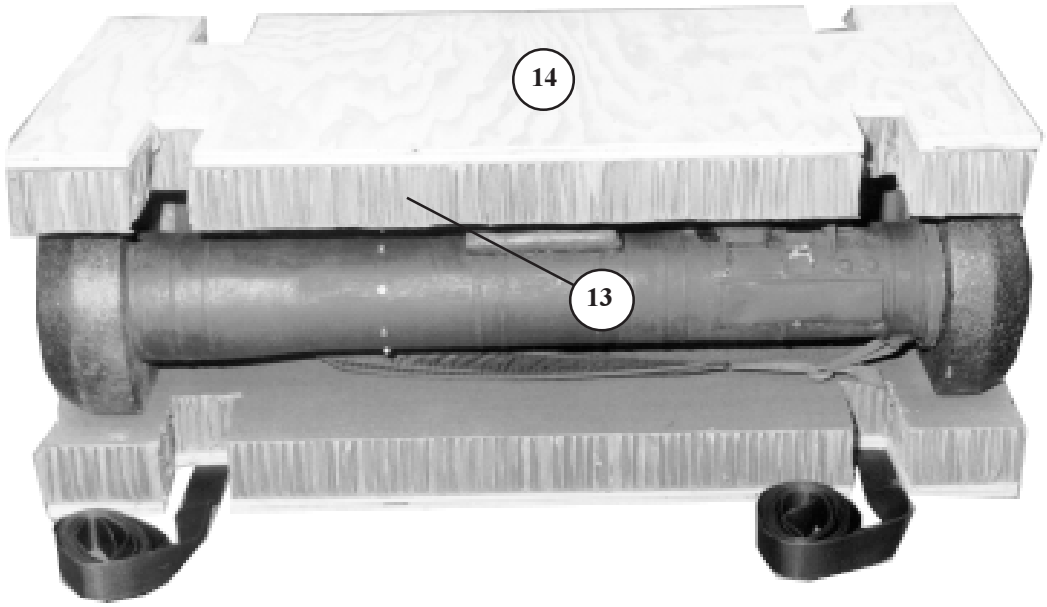
Figure 6-1. Two-round A-7A door bundle prepared (continued)

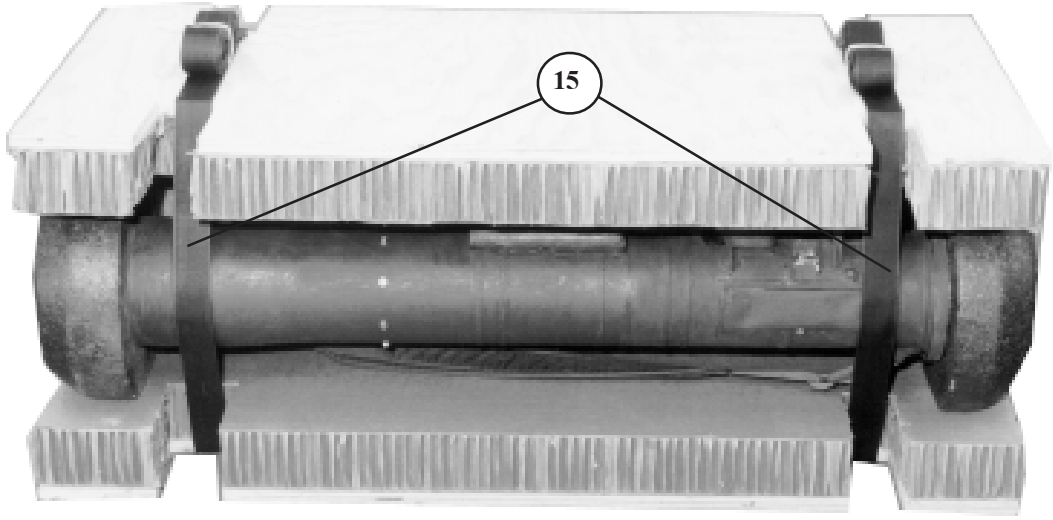


11 Position and glue one of the matching pieces of honeycomb on the top of the plywood in step 10.

12 With the Command Launch Unit connectors on opposite ends, position two Javelin rounds on the honeycomb. Lay the rounds with the flat side of the protective foam down making sure the Battery Coolant Units (BCU) face inward.

Figure 6-1. Two-round A-7A door bundle prepared (continued)



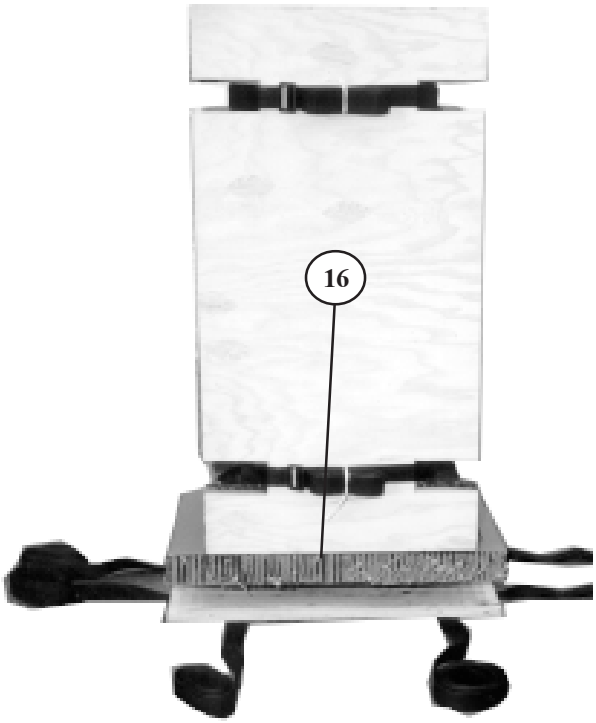


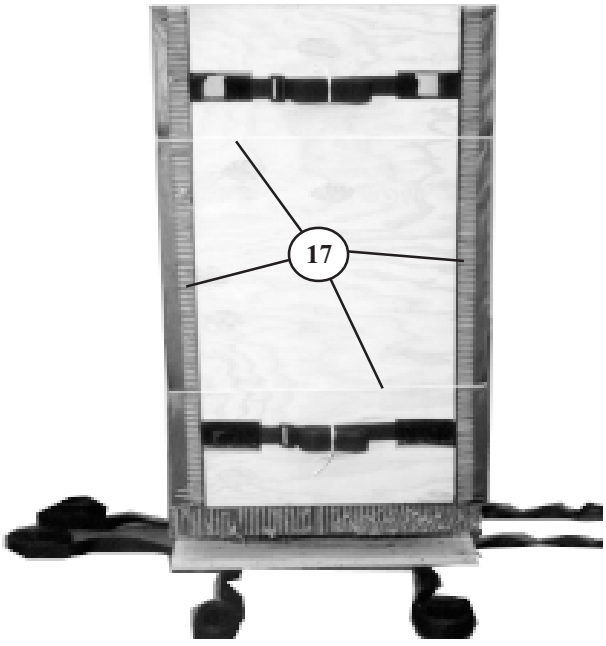
13 Position the other piece of 24 1/4 inch by 47 inch honeycomb with the cutouts evenly on top of the launch tubes.

14 Position and glue the matching piece of plywood on top of the honeycomb.

15 Secure the A-7A straps.

Figure 6-1. Two-round A-7A door bundle prepared (continued)

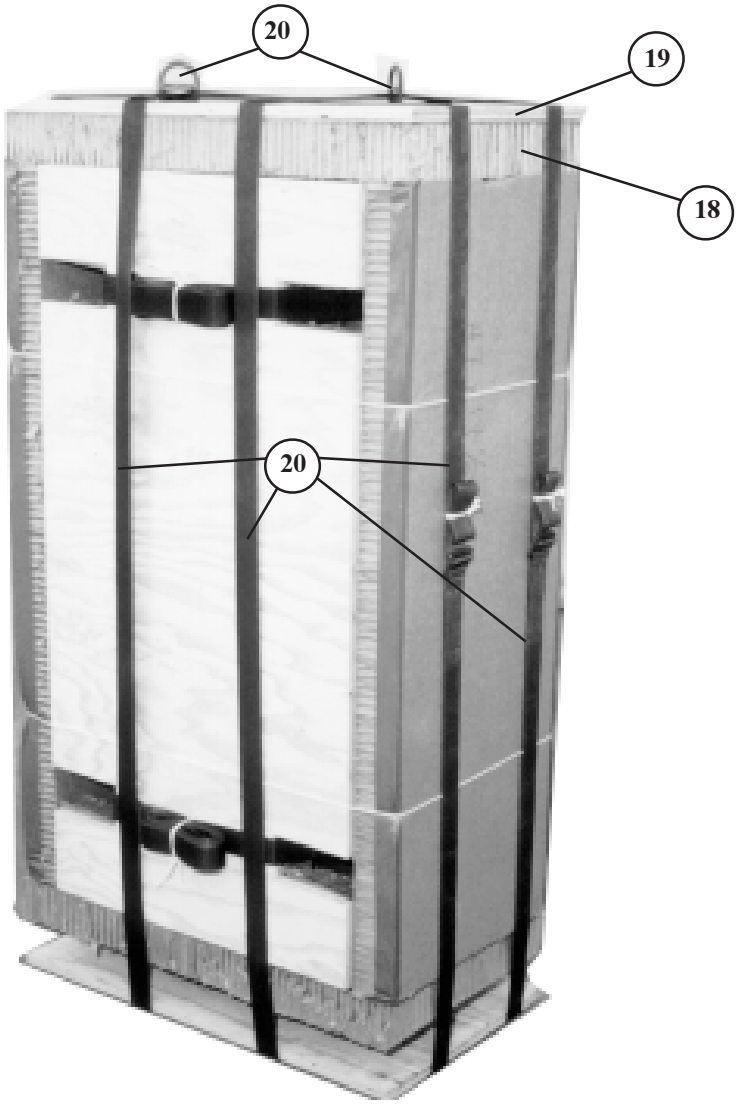




16 Using the materials from steps 7 through 9 as a base, position the materials from steps 10 through 15 on one end centered on the base.

17 Position one of the 17 1/2-inch by 47-inch pieces of honeycomb flush with the front of the load and one flush with the rear of the load. Tape the edges of the honeycomb and secure it in place with two lengths of type III nylon cord.

Figure 6-1. Two round A-7A door bundle prepared (continued)



18 Position one 17 1/2-inch by 30 1/4-inch piece of honeycomb on top of the load.

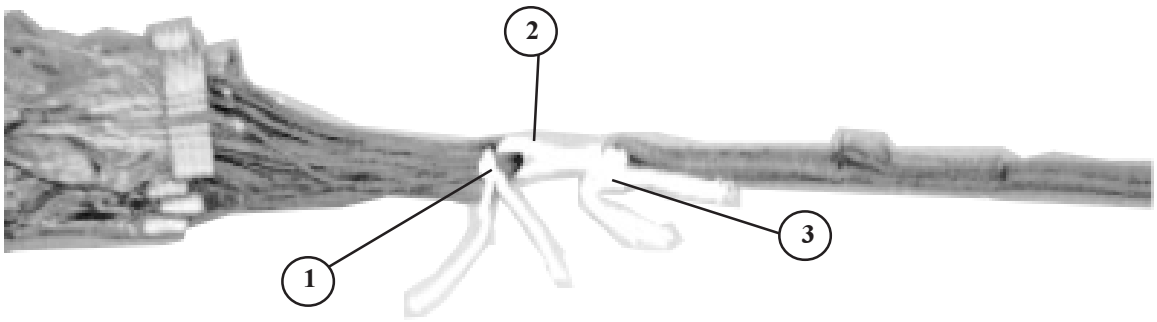
19 Position and glue one 17 1/2-inch by 30 1/4-inch piece of plywood on the honeycomb.

20 Position two D-rings on top of the load. Place one in the left front corner and the other in the right rear corner of the load. Secure in place by passing the running ends of two of the A-7A straps in those corners through the D-rings. Secure all the A-7A straps.

Figure 6-1. Two-round A-7A door bundle prepared (continued)

6-3. Modifying a 24-Foot Troop Chest Reserve Parachute for Cargo Use

Modify a 24-foot troop chest reserve parachute as shown in Figure 6-2.



1. Remove the pilot parachute and bridle assembly from the apex of the main parachute. Form group separation of the apex lines. Maintain separation with a tie of type III nylon cord with the core threads removed. Tie the cord around the apex lines with a surgeon's knot and locking knot, with overhand knots in the running ends. Trim the running ends to 2 inches.

2. Position the static line breakcord attaching loop at a point above and adjacent to the center of the apex lines. Pass one end of a double length of type I, 1/4-inch cotton webbing around the apex lines, and center the cord length. Pass each end of the doubled length of webbing through the static line breakcord attaching loop from opposite directions.

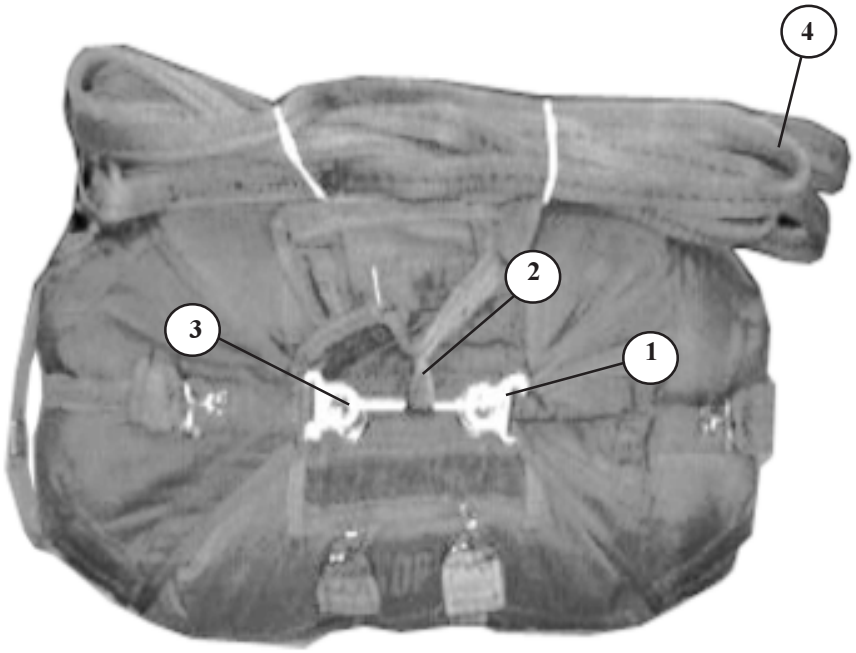
3. Secure the webbing ends together on top of the breakcord attaching loop with a surgeon's knot and locking knot. Leave a 3-inch loop between the apex lines and the static line breakcord ties.

Figure 6-2. Apex line separation and static line breakcord tied

6-4. Closing the Pack Tray and Stowing the Static Line

Pack the parachute according to TM 10-1670-269-23&P. Close the pack tray and stow the static line as shown in Figure 6-3.

CAUTION
Place the apex on top of the last accordion fold. Route the static line to the right inside of the pack tray.



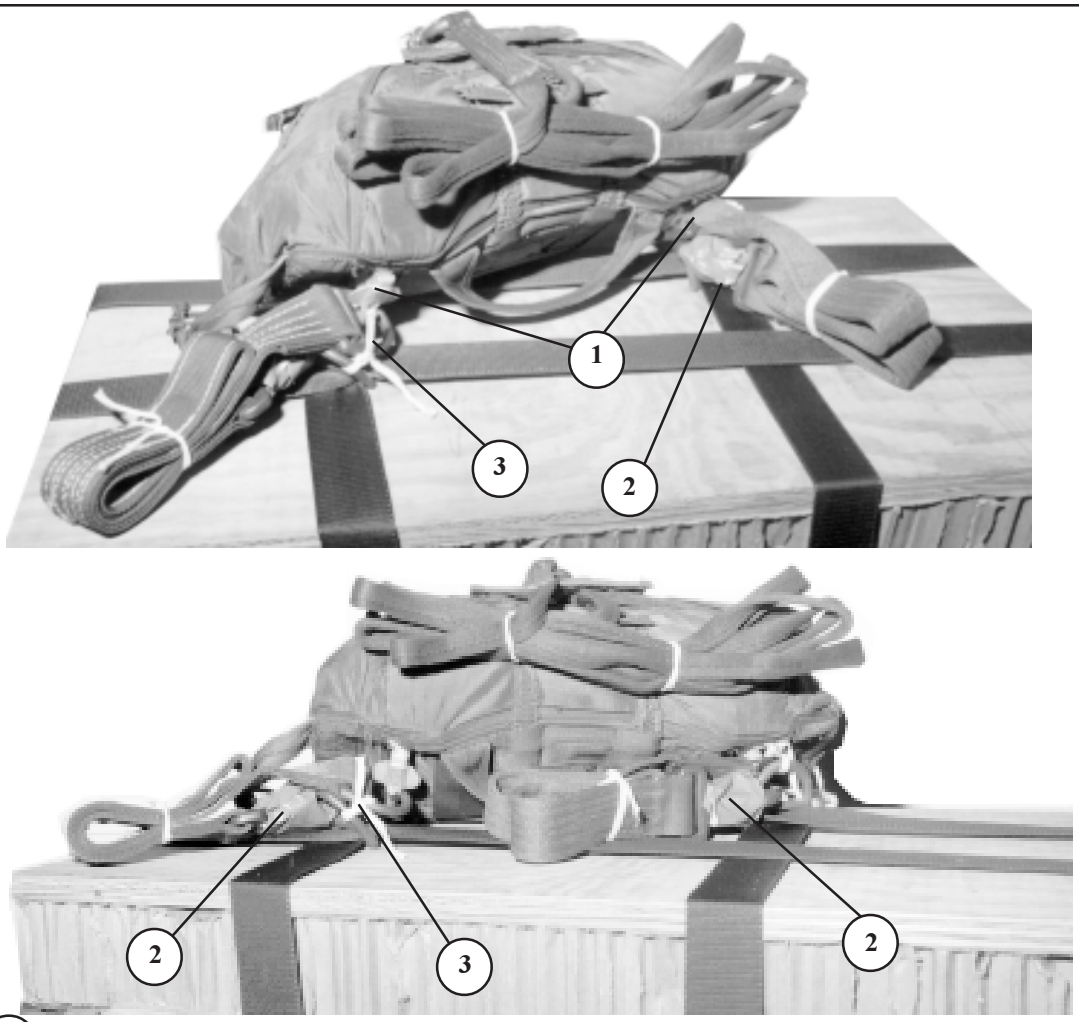
1. Tie an overhand knot in one end of a 12 inch length of type I, 1/4-inch cotton webbing and run the webbing through one cone (from outside to inside).
2. Pass the webbing through the pack opening loop of the G-14 static line.
3. Run the webbing through the other cone (inside to outside), pull the webbing snug, and tie an overhand knot in the running end.
4. Stow the static line on one side in S-folds. Secure to the elastic bands on the bag with retainer bands.

CAUTION
If the load is to be followed by parachutists, attach a drogue to the breakcord attaching loop of the static line, following procedures in TM 10-1670-282-23&P.

Figure 6-3. Pack tray closed and static line stowed

6-5. Attaching Parachute to Load

Attach a 24-foot troop chest reserve parachute as shown in Figure 6-4.



1 Attach the 24-foot troop chest reserve parachute modified for cargo application to the D-rings on two A-22 suspension webs, using butterfly clips on the parachute bag. Secure the clips with safety wires.

2 Attach the connector snaps on the suspension webs to the D-rings on the A-7A straps. Tape the connections.

3 Tie the parachute bag to the A-7A D-rings with a length of type I, 1/4-inch cotton webbing.

Figure 6-4. Parachute attached to load

6-6. Marking Rigged Load

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

6-7. Equipment Required

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

CAUTION
Mark the load "Door Bundle Only, Do Not Drop From AFT Ramp"

RIGGED LOAD DATA

Rigged Weight	146 pounds
Height	65 1/2 inches
Width	17 1/2 inches
Length	30 1/4 inches
Parachute	24-foot diameter troop chest reserve modified for cargo

Figure 6-5. Javelin two-round A-7A door bundle rigged

Table 6-1. Equipment required for rigging the Javelin two-round A-7A door bundle for a low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	3 sheets
1670-00-892-4218	Parachute: 24-foot Diameter, Troop, Chest, Reserve	1
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	2 sheets
1670-00-251-1153	Sling assembly, cargo, airdrop, A-7A	6
8305-00-2168-2411	Webbing, cotton, 1/4-in, 80-lb	As required

Section II

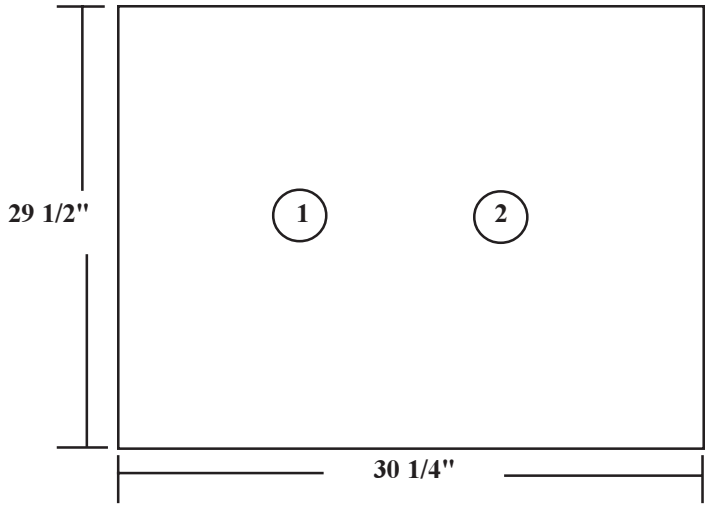
RIGGING FOUR-ROUND A-7A DOOR BUNDLE

6-8. Description of Load

The Javelin Missile System is a man-portable antitank weapon system made up of a tactical round in a disposable launch tube and a reusable Command Launch Unit. The Command Launch Unit is not rigged with the tactical rounds. The Javelin four-round A-7A door bundle has an approximate rigged weight of 271 pounds. It has a height of 57 1/2 inches, a width of 37 1/2 inches and a length of 44 1/2 inches. The four-round bundle uses the G-14 cargo parachute.

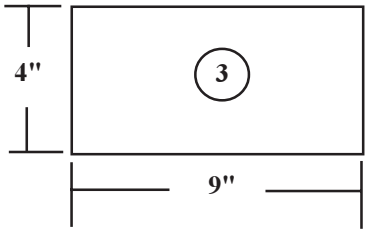
6-9. Preparing Four-Round A-7A Door Bundle

Prepare the four-round A-7A door bundle according to FM 10-500-3/TO 13C7-1-11 and as shown in Figure 6-6.



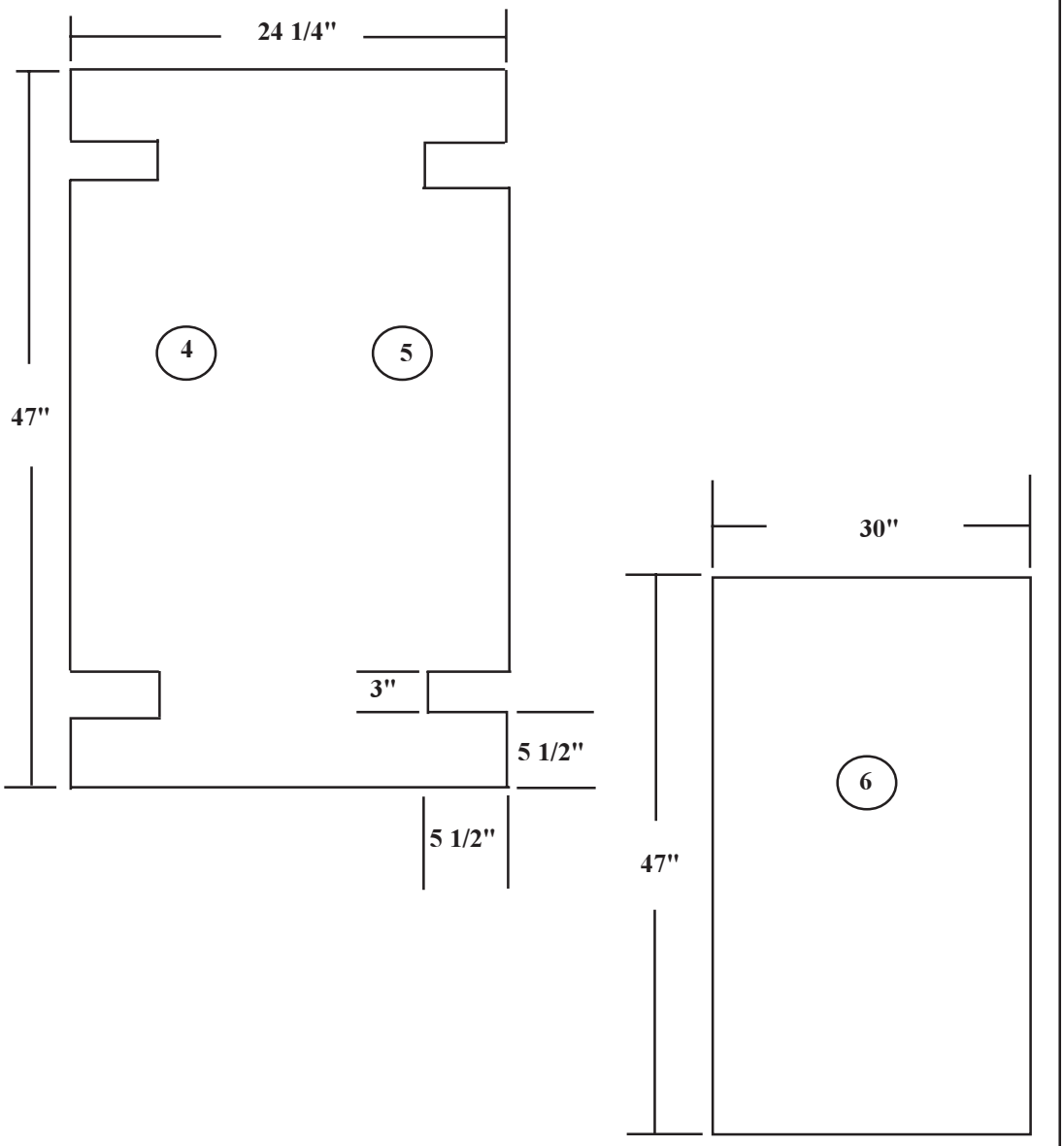
1 Cut two 29 1/2-inch by 30 1/4-inch pieces of plywood.

2 Cut two 29 1/2-inch by 30 1/4-inch pieces of honeycomb.



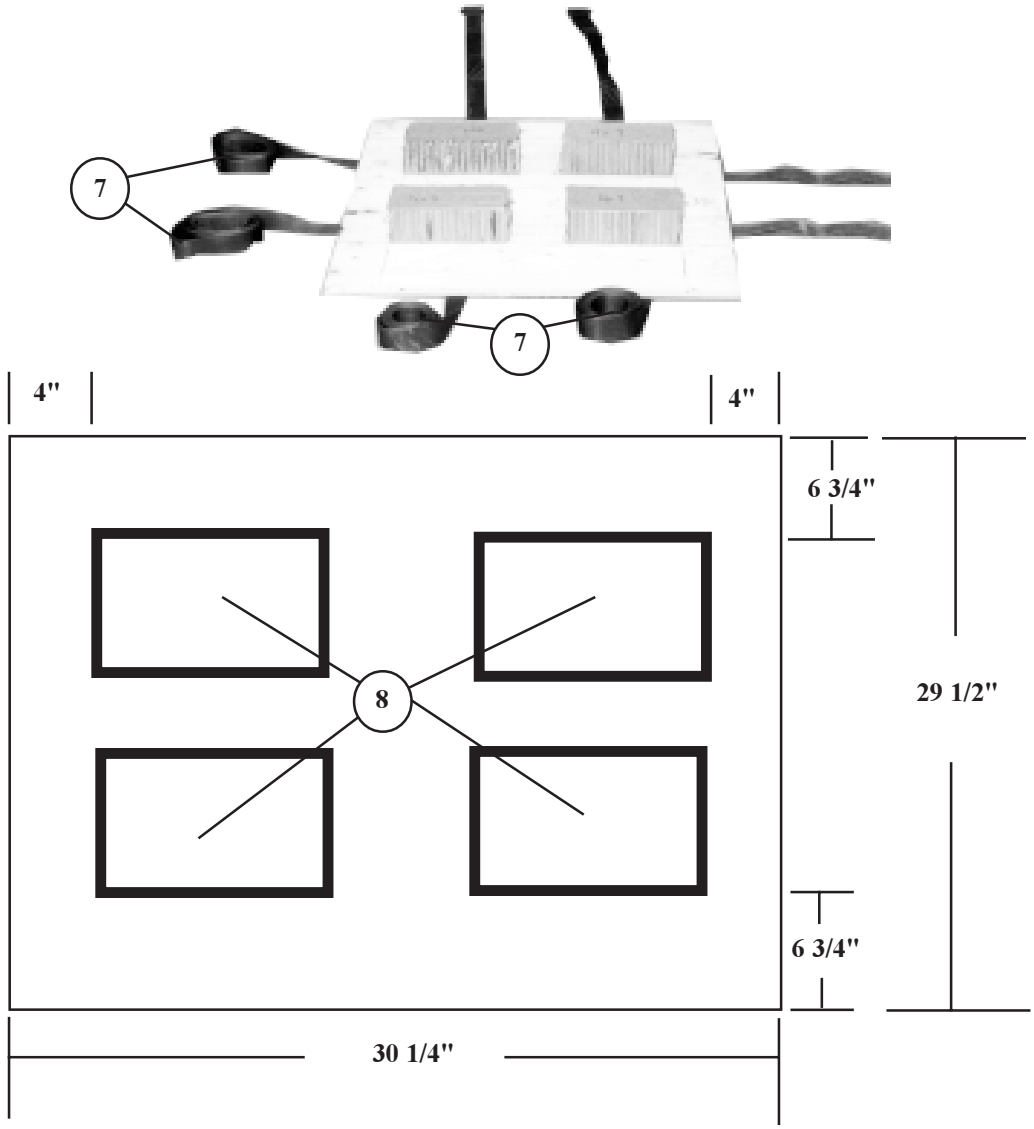
3 Cut four 4-inch by 9-inch pieces of honeycomb.

Figure 6-6. Four-round A-7A door bundle prepared



4	Cut three 24 1/4-inch by 47-inch pieces of 3/4-inch plywood with four 3-inch by 5 1/2-inch cutouts.
5	Cut two pieces of honeycomb to match step 4.
6	Cut two 30-inch by 47-inch pieces of honeycomb.

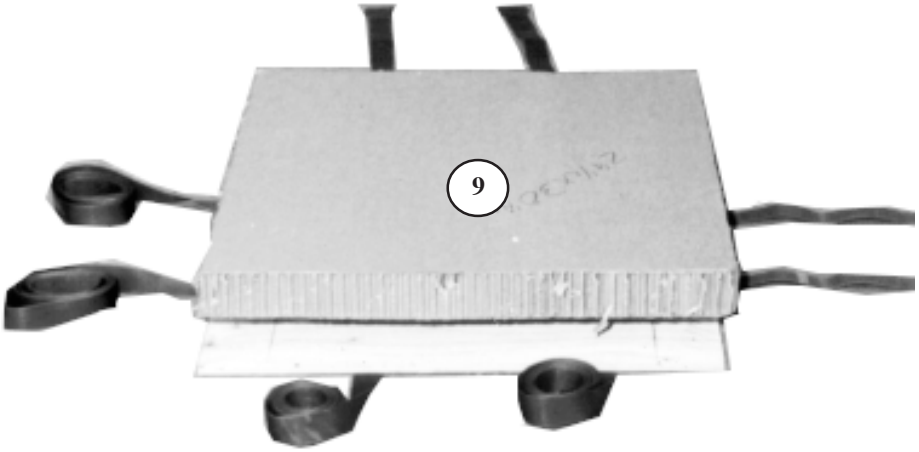
Figure 6-6. Four-round A-7A door bundle prepared (continued)

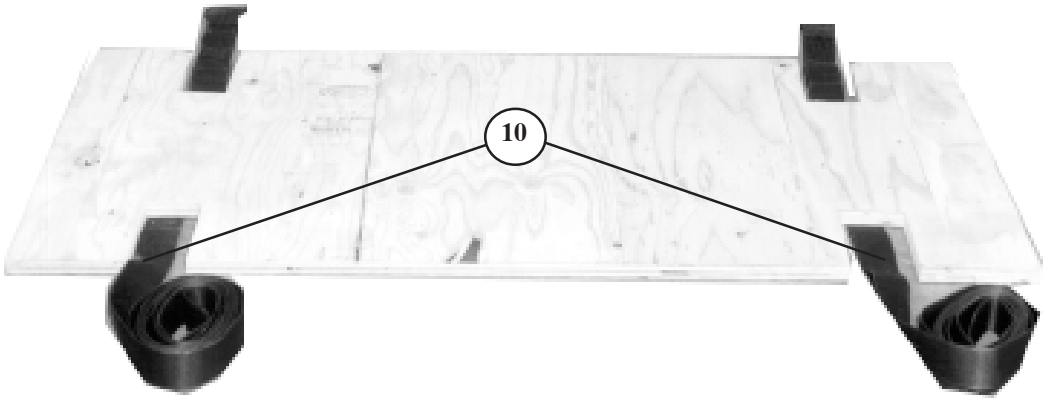


7 Position four A-7A straps under one of the 29 1/2-inch by 30 1/4-inch pieces of plywood. Position each strap approximately 6 inches from each edge of the plywood.

8 Position and glue the four 4-inch by 9-inch pieces of honeycomb on top of the plywood. The pieces on the left side should be 6 3/4 inches from the left edge of the plywood and the right side pieces should be 6 3/4 inches from the right edge of the plywood. The forward pieces should be 4 inches from the forward edge of the platform and the rear pieces should be 4 inches from the rear edge of the plywood.

Figure 6-6. Four-round A-7A door bundle prepared (continued)

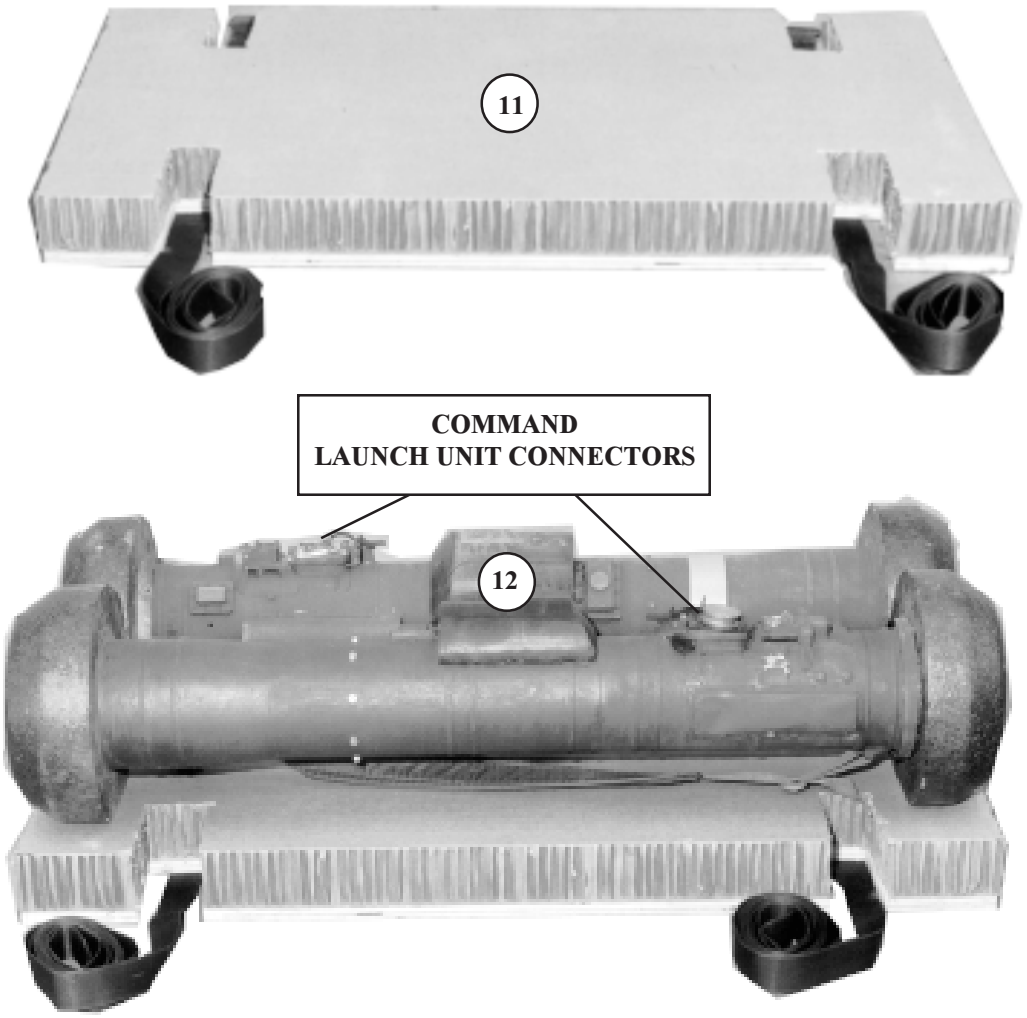




(9) Position and glue one of the 29 1/2-inch by 30 1/4-inch pieces of honeycomb centered on the plywood in step 8.

(10) Position two A-7A straps, one in each set of cutouts on the 24 1/4-inch by 47-inch piece of plywood.

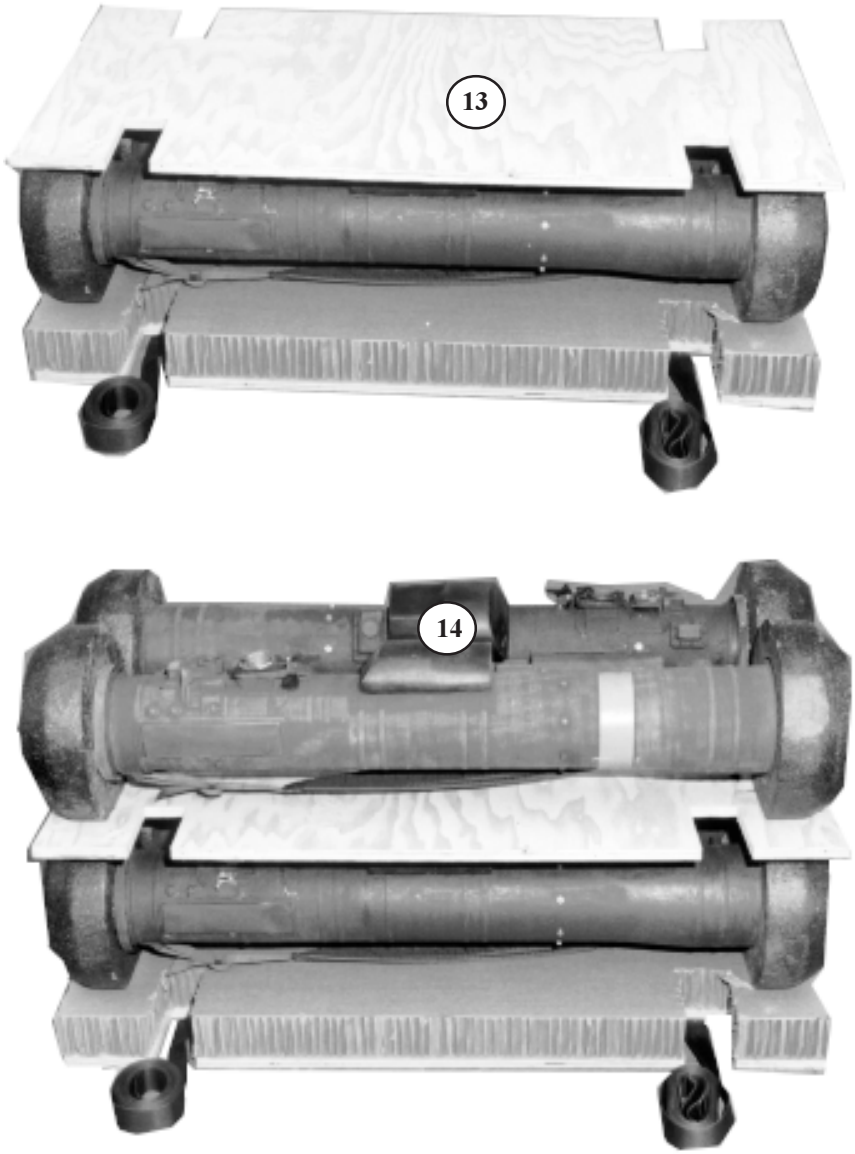
Figure 6-6. Four-round A-7A door bundle prepared (continued)



11 Position and glue one of the matching pieces of honeycomb on the top of the plywood in step 10.

12 With the Command Launch Unit connectors on opposite ends, position two Javelin rounds on the honeycomb. Lay the rounds with the flat side of the protective foam down making sure the Battery Coolant Units face inward.

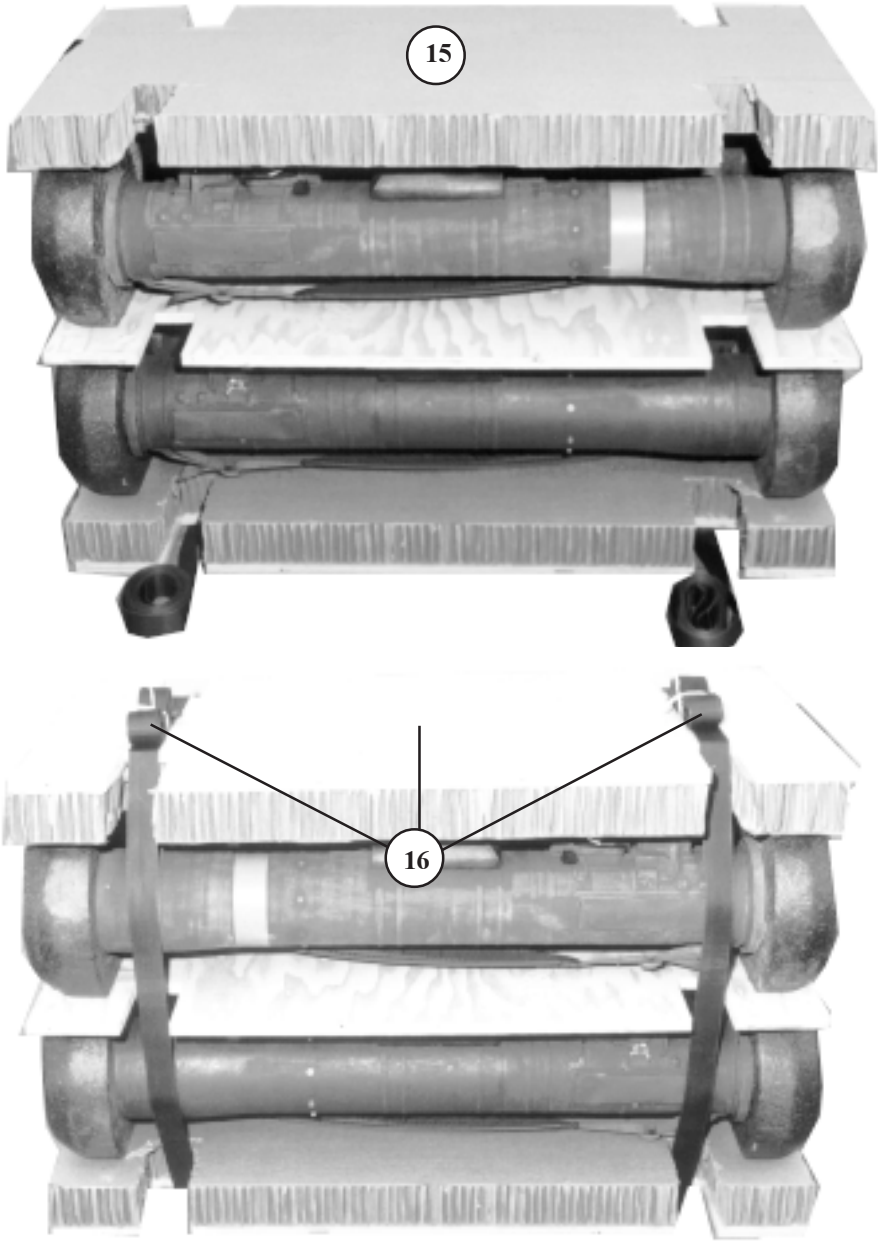
Figure 6-6. Four-round A-7A door bundle prepared (continued)



13 Position the other piece of 24 1/4-inch by 47-inch plywood with the cutouts evenly on top of the launch tubes.

14 Position two more rounds on top of the plywood as outlined in step 12.

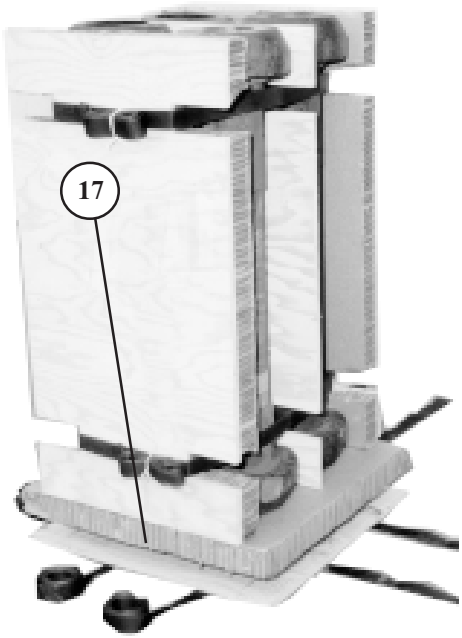
Figure 6-6. Four-round A-7A door bundle prepared (continued)

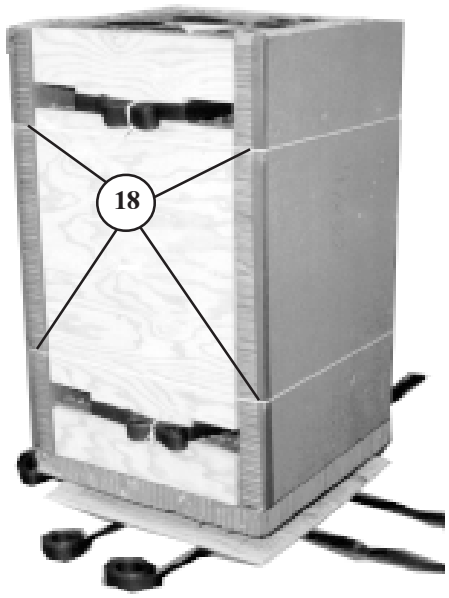


15 Position a piece of 24 1/4-inch by 47-inch honeycomb with the cutouts evenly on top of the launch top.

16 Position and glue the matching piece of plywood on top of the honeycomb. Secure the A-7A straps.

Figure 6-6. Four-round A-7A door bundle prepared (continued)

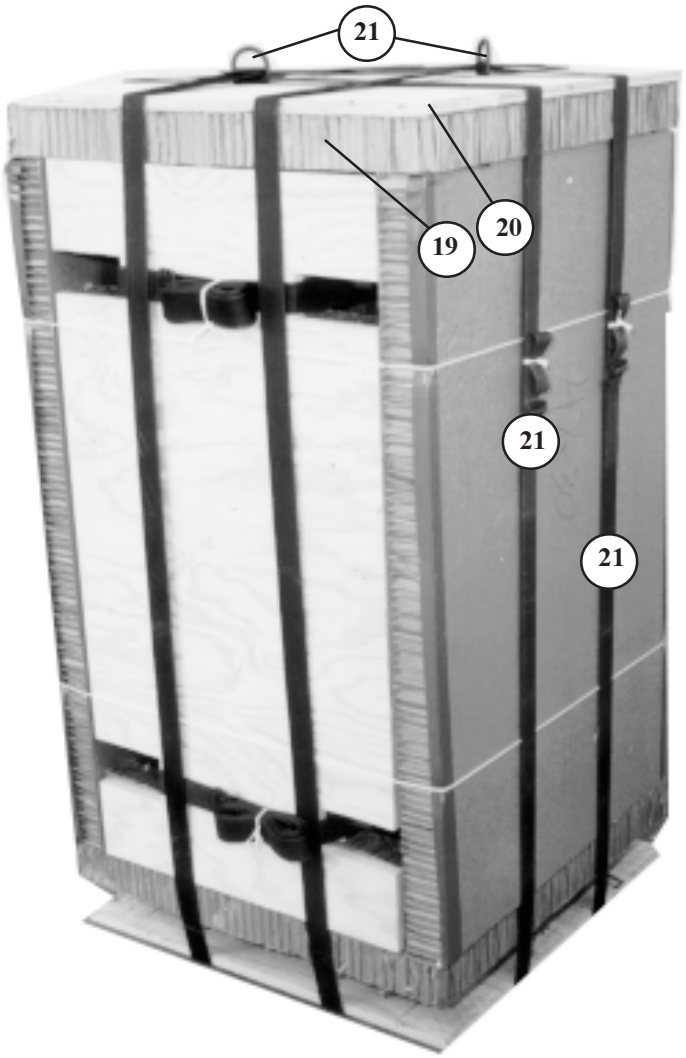




17 Using the materials from steps 7 through 9 as a base, position the materials from steps 10 through 16 on one end centered on the base.

18 Position one of the 30-inch by 47-inch pieces of honeycomb flush with the front of the load and one flush with the rear of the load. Tape the edges of the honeycomb and secure it in place with two lengths of type III nylon cord.

Figure 6-6. Four-round A-7A door bundle prepared (continued)



19 Position one 29 1/2-inch by 30 1/4-inch piece of honeycomb on top of the load.

20 Position and glue one 29 1/2-inch by 30 1/4-inch piece of plywood on the honeycomb.

21 Position two D-rings on top of the load. Place one in the left front corner and the other in the right rear corner of the load. Secure in place by passing the running ends of two of the A-7A straps in those corners through the D-rings. Secure all the A-7A straps.

Figure 6-6. Four-round A-7A door bundle prepared (continued)

6-10. Attaching Parachute to Load

Attach a G-14 cargo parachute as shown in Figure 6-7.

22 Attach a G-14 cargo parachute to a plywood side of the container with the tie tapes on the deployment bag. This will be the rear side of the load. Tie the upper tie tapes to the A-7A straps even with the edge of the vertical piece of honeycomb. Tie the lower tie tapes to the same A-7A straps directly under the bag attachment points.

23 Attach each riser clevis of the parachute to a D-ring on an A-22 suspension web. Attach the clips on the suspension webs to the D-rings on the A-7A straps, and tape the clips.

Figure 6-7. Parachute attached to load

6-11. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-8. Complete Shipper's Declaration for Dangerous Goods and affix to load.

6-12. Equipment Required

Use the equipment listed in Table 6-2 to rig the load.

CAUTION
Mark the load "Door Bundle Only, Do Not Drop From AFT Ramp"

RIGGED LOAD DATA

Rigged Weight	271 pounds
Height	57 1/2 inches
Width	37 1/2 inches
Length	44 1/2 inches
Parachute	G-14 cargo parachute

Figure 6-8. Javelin four-round A-7A door bundle rigged

Table 6-2. Equipment required for rigging the Javelin four-round A-7A door bundle for a low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	3 sheets
1670-00-999-2658	Parachute, G-14, cargo	1
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	2 sheets
1670-00-251-1153	Sling assembly, cargo, airdrop, A-7A	6

Section III

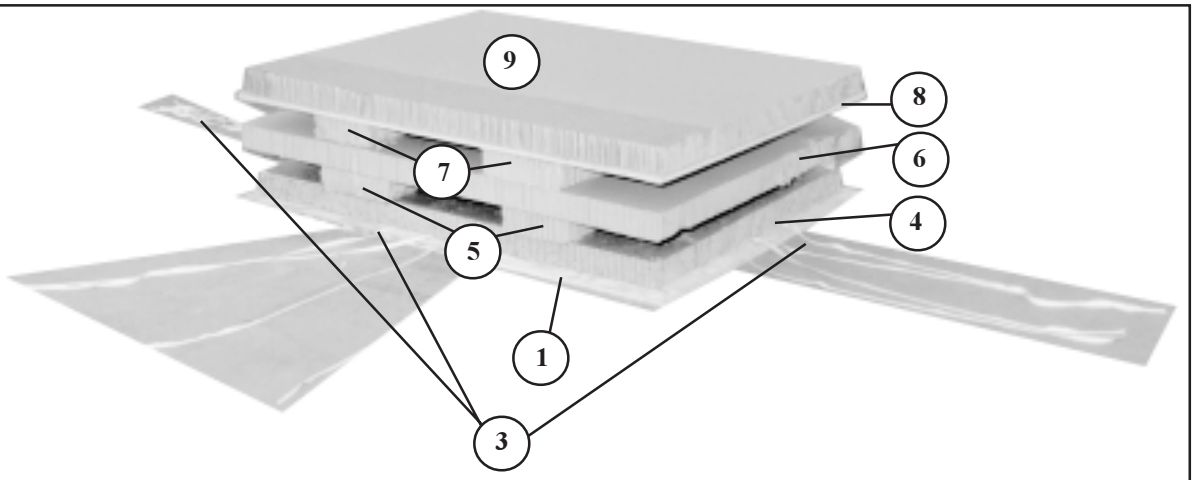
RIGGING NINE-ROUND CDS RIGGED IN AN A-22 STRETCH CONTAINER

6-13. Description of Load

The Javelin Missile System is a man-portable antitank weapon system made up of a tactical round in a disposable launch tube and a reusable command launch unit. The command launch unit is not rigged with the launch tubes. The Javelin nine-round Javelin missile system rigged in an A-22 stretch container has an approximate rigged weight of 810 pounds. It has a height of 65 1/2 inches, a width of 48 inches and a length of 60 inches. The nine round Javelin missile system rigged in an A-22 stretch container uses the G-12E cargo parachute.

6-14. Preparing Skid Board, Ties and Positioning Honeycomb

Prepare the skid board, ties and position the honeycomb according to FM 10-500-3/TO 13C7-1-11 and as shown in Figure 6-9.

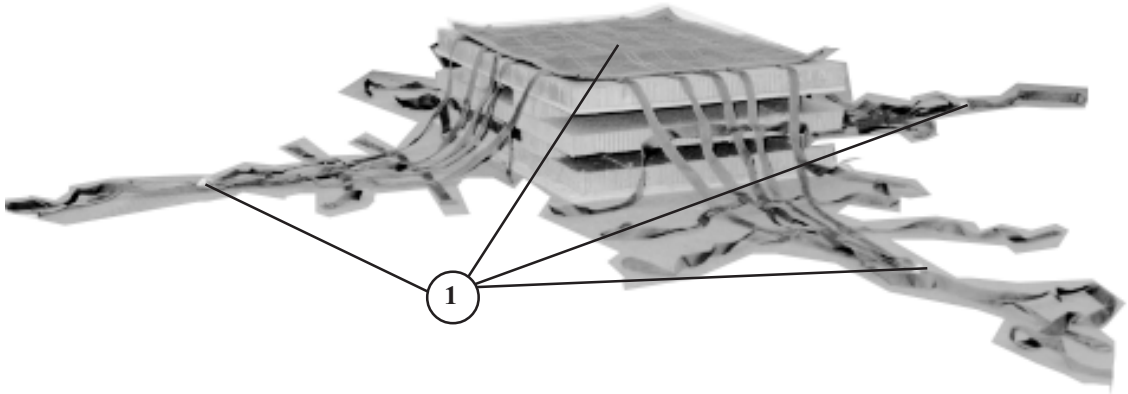


1. Place a 3/4-inch or 1-inch by 48-inch by 60-inch sheet of plywood on a flat surface.
2. Drill sixteen 1/2 inch holes according to FM 10-500-3/TO 13C7-1-11.
3. Cut eight, 8-foot lengths of 1/2-inch tubular nylon webbing and route one length through a set of holes according to FM 10-500-3/TO 13C7-1-11.
4. Cut a 44-inch by 56-inch piece of honeycomb and center it on the plywood.
5. Cut two 5-inch by 56-inch pieces of honeycomb and place each piece on top of the honeycomb 12 inches from each edge.
6. Cut a 44-inch by 56-inch piece of honeycomb and place it on top of the two previous pieces centered.
7. Repeat step 5.
8. Cut a 3/4-inch by 44-inch by 56-inch piece of plywood and place it on top of the two previous pieces centered.
9. Repeat step 6 and place the honeycomb on top of the plywood.

Figure 6-9. Skidboard, ties and honeycomb prepared and positioned

6-15. Positioning A-22 Sling Assemblies

Position two A-22 sling assemblies on the load according to FM 10-500-3/TO 13C7-1-11 and as shown in Figure 6-10.

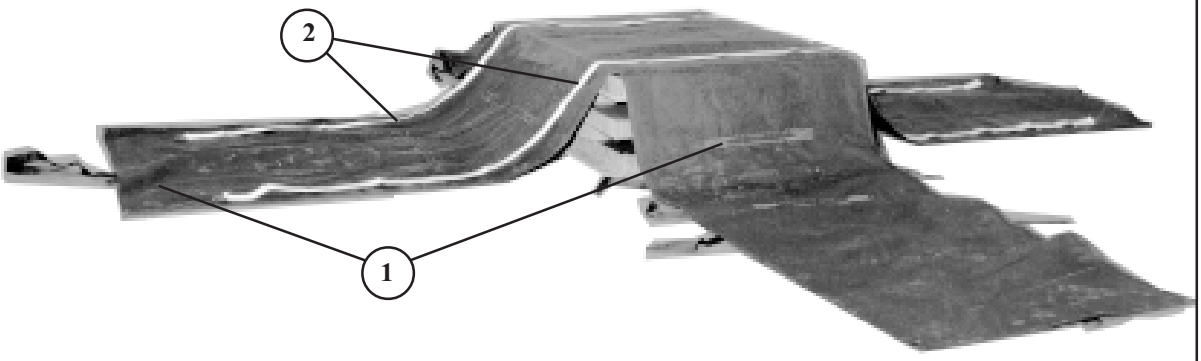


(1) Position the sling assemblies and make the appropriate ties according to FM 10-500-3/TO 13C7-1-11.

Figure 6-10. A-22 sling assemblies positioned

6-16. Positioning Covers and A-7A Straps

Position two covers and two A-7A straps on top of the sling assemblies as shown in Figure 6-11.



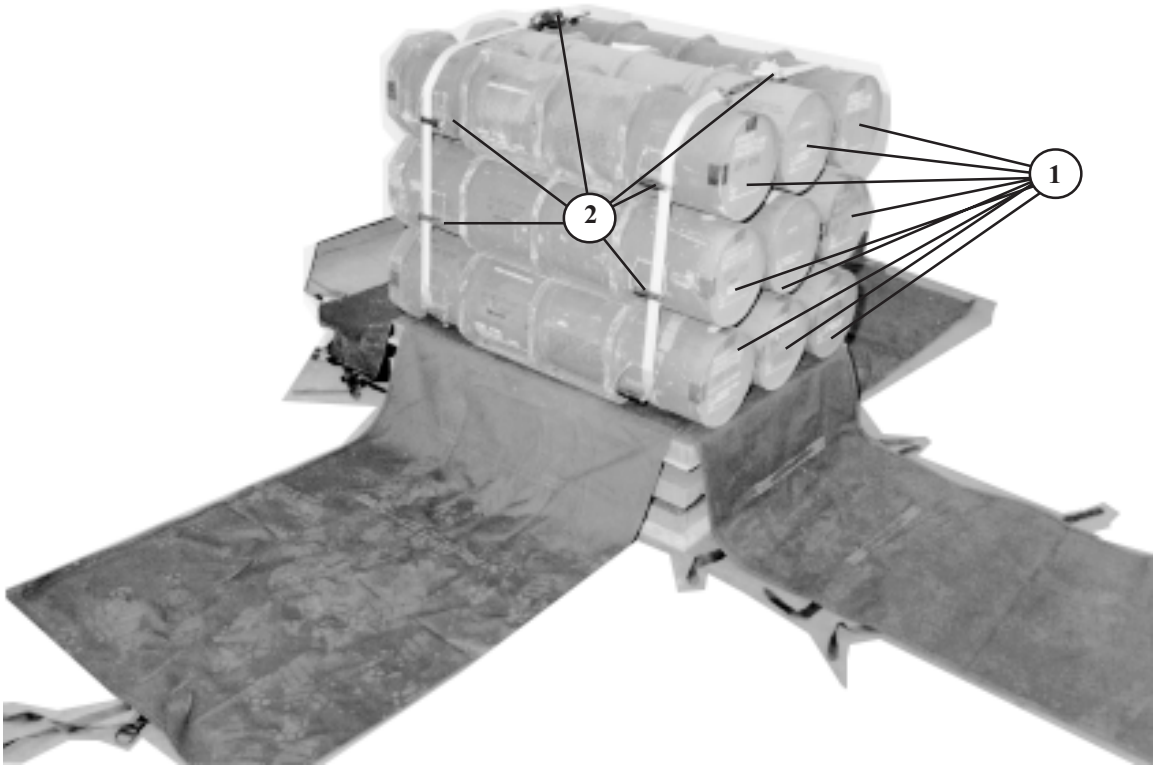
1 Position one cover to the front and the other cover to the rear of the load.

2 Place two tiedown lashings approximately 10 inches from each edge of the 59 inch side.

Figure 6-11. Covers and A-7A straps positioned

6-17. Positioning and Securing Javelin Missiles

Position nine Javelin missiles and secure them as shown in Figure 6-12.



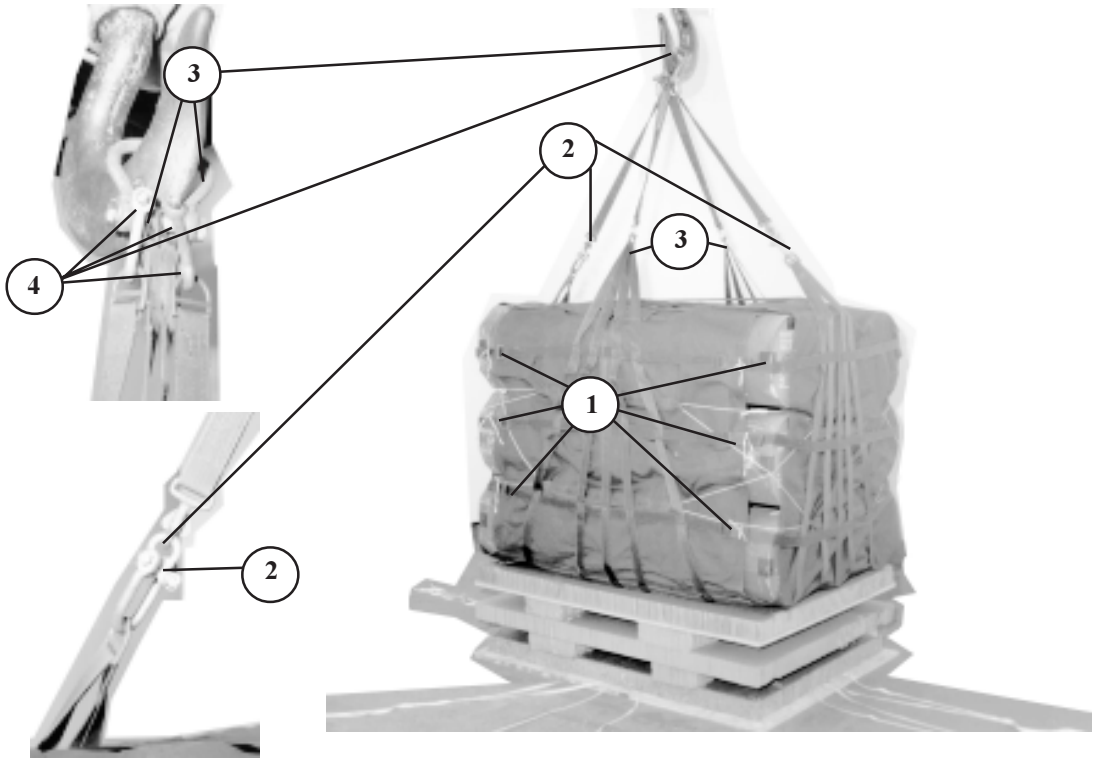
1 Place nine Javelin missiles on the load as shown above.

2 Run the pre-positioned tiedown lashings through the handles of the missiles and secure them on top with a D-ring and loadbinder.

Figure 6-12. Javelin missiles positioned and secured

6-18. Securing the Lateral Straps and Installing Suspension Slings

Secure the lateral straps according to FM 10-500-3/TO 13C7-1-11 and install the suspension slings as shown in Figure 6-13.



1 Secure the lateral straps according to FM 10-500-3/TO 13C7-1-11.

Note: Due to the unequal length of this load and in order to balance the slings evenly, it is necessary to use two different sizes of clevises.

2 Attach a type V platform clevis and a G-13 clevis to each D-ring of the A-22 suspension point on the 60-inch side of the load.

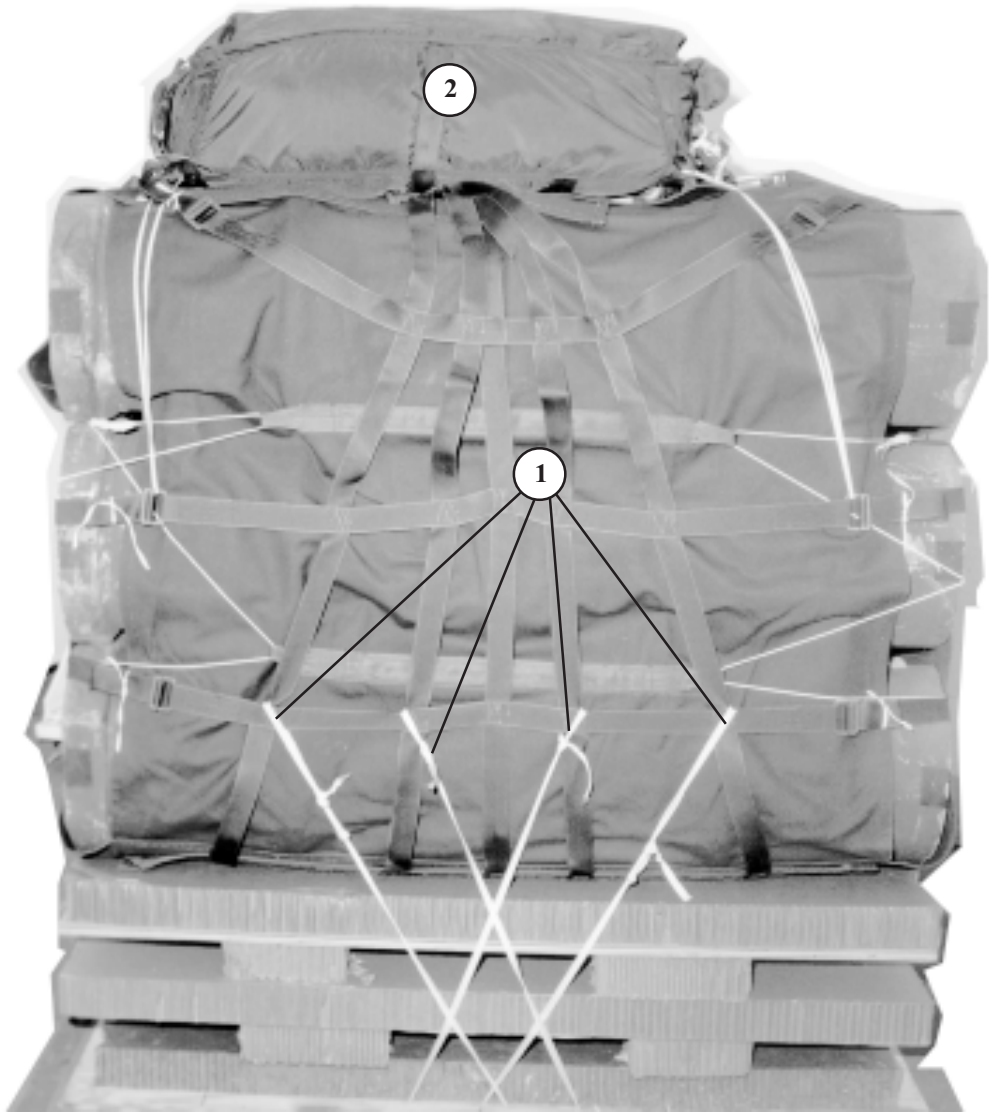
3 On the other connector straps attach a medium clevis.

4 On the other ends of the slings in step 2, attach another type V platform clevis and attach each platform clevis to the medium clevis to keep the slings balanced.

Figure 6-13. Lateral straps secured and suspension slings installed

6-19. Securing Skid Board Ties and Installing Parachute

Secure the skid board ties according to FM 10-500-3/TO 13C7-1-11 and install a G-12E cargo parachute as shown in Figure 6-14.



1	Secure the skid board ties according to FM 10-500-3/TO 13C7-1-11.
2	Install one G-12E cargo parachute according to FM 10-500-3/TO 13C7-1-11.

Figure 6-14. Skid board ties secured and parachute installed

6-11. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 6-15. Complete Shipper's Declaration for Dangerous Goods and affix to load.

6-21. Equipment Required

Use the equipment listed in Table 6-3 to rig the load.

RIGGED LOAD DATA

Rigged Weight	810 pounds
Height	65 1/2 inches
Width	48 inches
Length	60 inches
Parachute	G-12E cargo parachute

Figure 6-15. Javelin nine-round CDS in an A-22 stretch container rigged

Table 6-3. Equipment required for rigging the Javelin nine-round CDS in an A-22 stretch container for a low-velocity airdrop

National Stock Number	Item	Quantity
1670-00-587-3421	Bag, cargo, A-22	2
4030-00-678-8562	Clevis, suspension, 3/4-in (medium)	1
1670-01-162-2372	Clevis assembly (type V)	2
1670-00-753-3928	Pad, energy-dissipating, honeycomb	3 sheets
1670-01-065-3755	Parachute, cargo, G-12E	1
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	2 sheets
1670-01-062-6301	Sling, cargo, airdrop, 3-ft (2-loop)	4
7510-00-266-6710	Tape, masking, 2-in	As required
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
8305-00-082-5752	Tubular, 1/2-in	As required
8305-00-263-3591	Type VIII	As required

CHAPTER 7

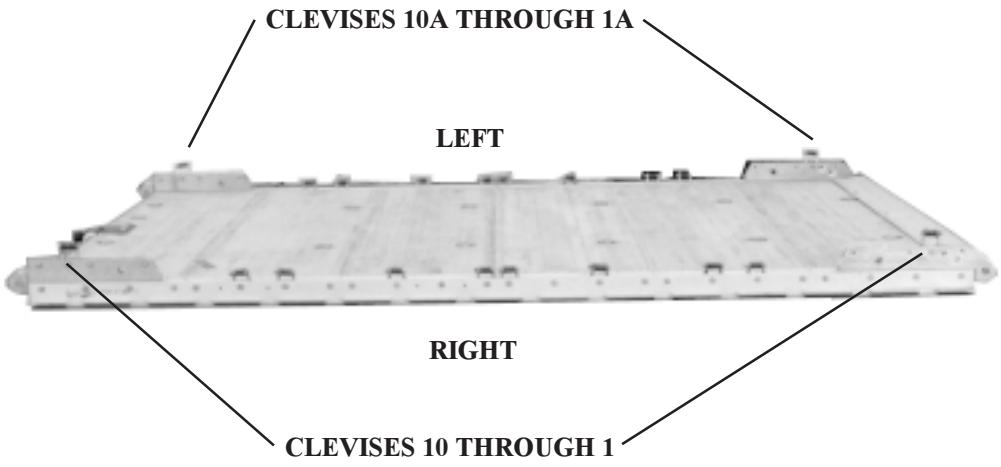
RIGGING THIRTY-SIX JAVELIN ROUNDS AS A MASS SUPPLY LOAD ON A 12-FOOT TYPE V, AIRDROP PLATFORM FOR LOW-VELOCITY AIRDROP

7-1. Description of Load

The Javelin mass supply load consists of 36 Javelin rounds in shipping containers rigged on a 12-foot, Type V platform. Each round in its container weighs approximately 77 pounds each and has a length of 59-inches and diameter of 15 1/4 inches. The load rigged has a total rigged weight of 5,976 pounds, a length of 166 inches with a 5-inch front overhang and a 17-inch rear overhang. The width is 108 inches and the height is 86 inches. The center of balance is 76 inches from the front end of the platform and is rigged using two G-11B cargo parachutes.

7-2. Preparing Platform

Prepare a 12-foot, type V platform as shown in Figure 7-1.



Step:

1. Inspect, or assemble and inspect, a 12-foot, type V airdrop platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link to each side rail using holes 1, 2, 3, and 22, 23, and 24.
3. Install a clevis on bushing 2 on the forward tandem links.
4. Install a clevis on bushing 3 on the rear tandem links.
5. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 6, 7, 10, 12, 13, 15, 18, and 19.
6. Starting at the front of the platform, number the clevises 1 through 10 on the right side and 1A through 10A on the left side.
7. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.

Figure 7-1. Platform prepared

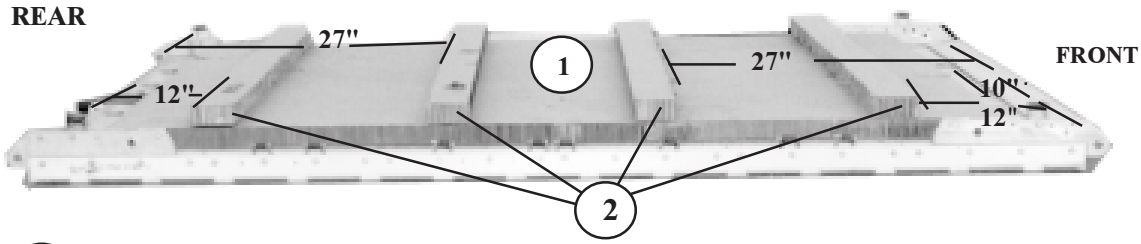
7-3. Building and Positioning Honeycomb Stacks

Build and position the honeycomb stacks as shown in Figure 7-2.

REAR

36" x 76"	36" x 76"	20" x 76"
36" x 49"	36" x 49"	20" x 49"

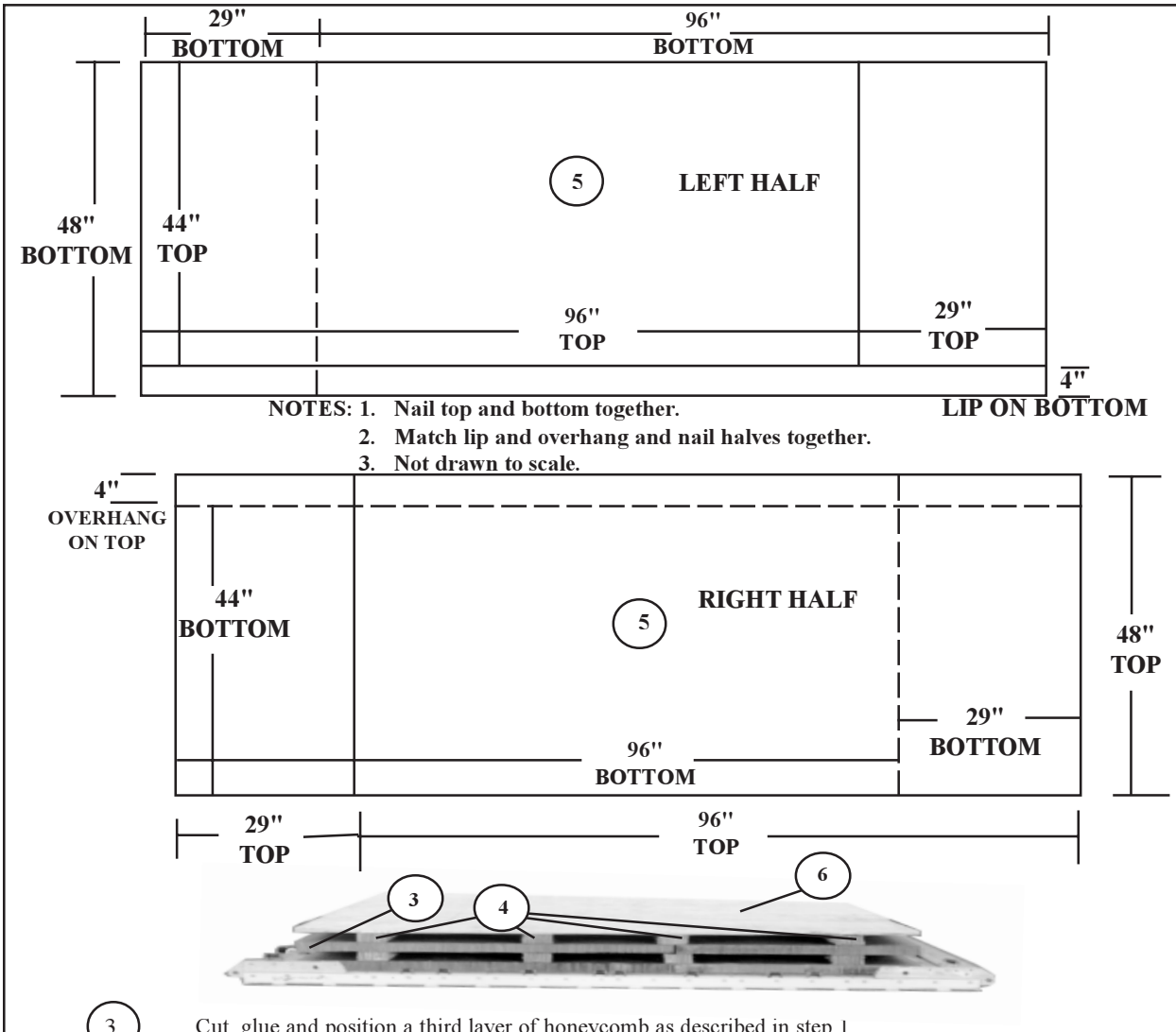
FRONT



1 Cut six pieces of honeycomb as shown in the diagram above and position the honeycomb on the platform centered and 10-inches from the front edge of the platform.

2 Cut four 6-inch by 92-inch pieces of honeycomb. Position and glue the first piece 12 inches from the front edge of the honeycomb stack in step 1. Position and glue the second piece 27 inches from the front edge. Position and glue the third piece 27 inches from the rear edge and the fourth piece 12 inches from the rear edge.

Figure 7-2. Honeycomb stacks built and positioned



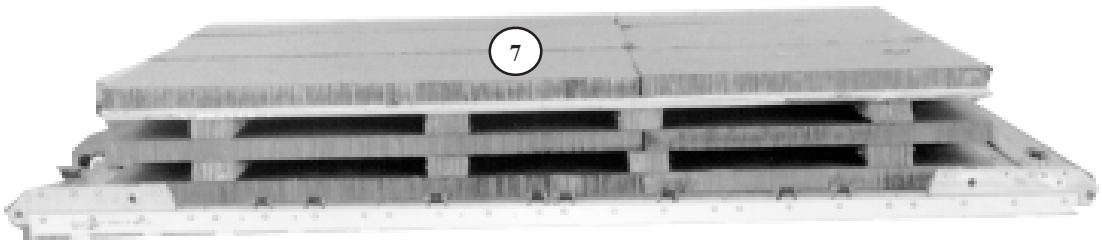
3 Cut, glue and position a third layer of honeycomb as described in step 1.

4 Cut, glue and position a fourth layer of honeycomb as described in step 2 on top of the third layer.

5 The fifth layer is constructed of doubled 3/4-inch plywood. Using two 48-inch by 96-inch pieces of 3/4-inch plywood, cut two 48-by 29-inch pieces, two 44-inch by 49-inch pieces and two 44-inch by 96-inch pieces. Nail the plywood together as shown in the above diagrams. Position one 48-by 96-inch piece of plywood and one 48-by 29-inch piece of plywood end to end forming one layer 125-inches in length. Position one 44-inch by 96-inch piece of plywood and one 44-inch by 29-inch piece of plywood end to end on top of the first layer even with one of the long sides of the section. There should be a 4 inch lip when the plywood is in place. Nail the plywood together. Position one 44 inch by 96-inch piece of plywood and one 44-inch by 29-inch piece of plywood end to end and even with the lip. Position one 48-inch by 96-inch piece of plywood and one 48-inch by 29-inch piece of plywood end to end and even on top of the of the last pieces and nail all the plywood together.

6 Glue and position the plywood centered on top of the honeycomb as shown in the above photo.

Figure 7-2. Honeycomb stacks built and positioned (continued)

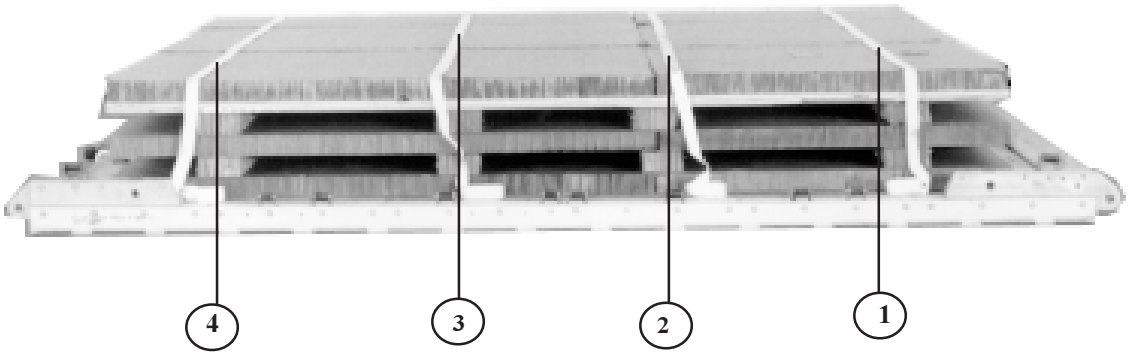


7 Form another layer of honeycomb on top of the plywood as described in step 1.

Figure 7-2. Honeycomb stacks built and positioned (continued)

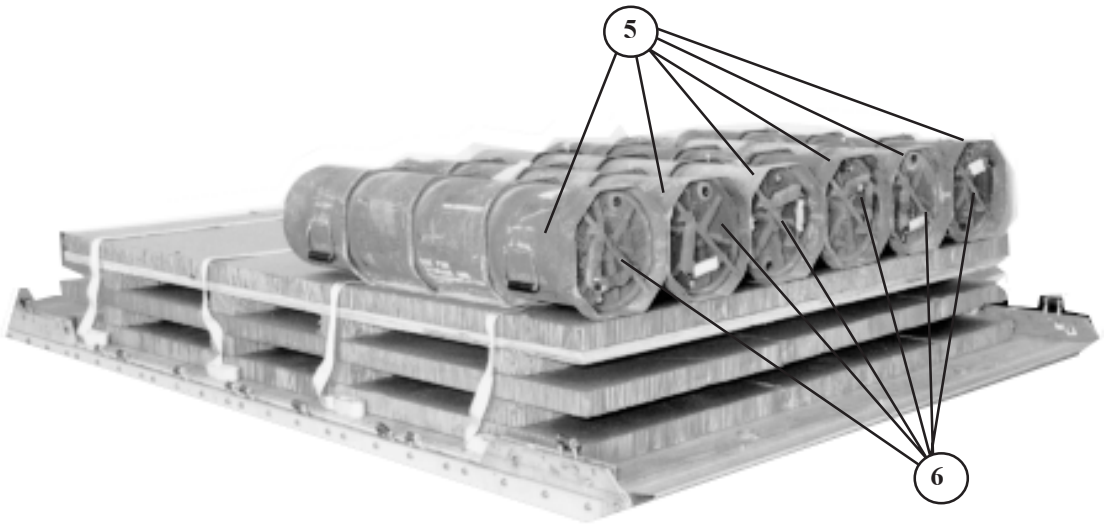
7-4. Positioning and Securing Javelin Rounds

Position and secure 36 Javelin rounds as shown in Figure 7-3.



1. Preposition the first 30-foot lashing 13 inches from the front edge of the platform.
2. Preposition the second 30-foot lashing 45 inches from the front edge of the platform.
3. Preposition the third 30-foot lashing 45 inches from the rear edge of the platform.
4. Preposition the fourth 30-foot lashing 13 inches from the rear edge of the platform.

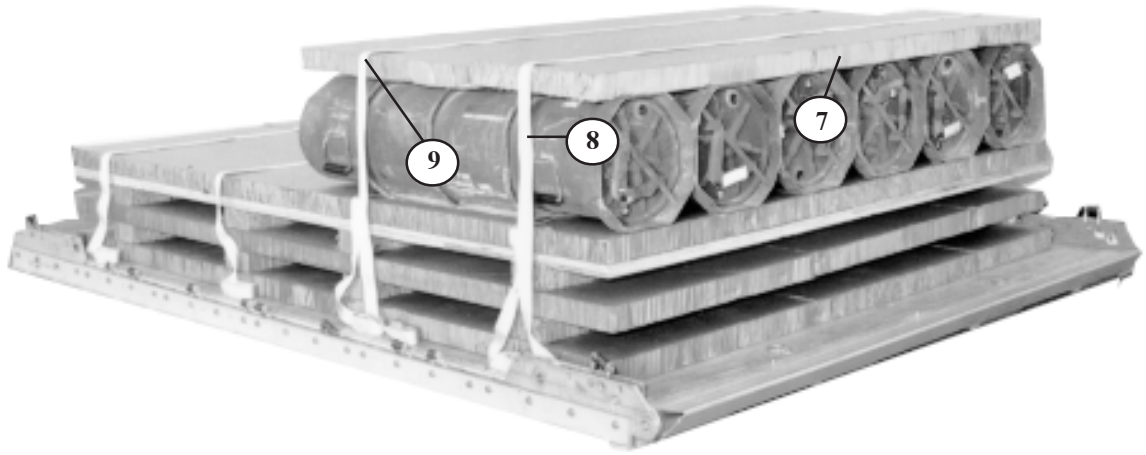
Figure 7-3. Javelin rounds positioned and secured



(5) Position six Javelin containers on the front section of the honeycomb centered and even with the front edge of the honeycomb.

(6) Position the container opening ends to the front of the platform.

Figure 7-3. Javelin rounds positioned and secured (continued)

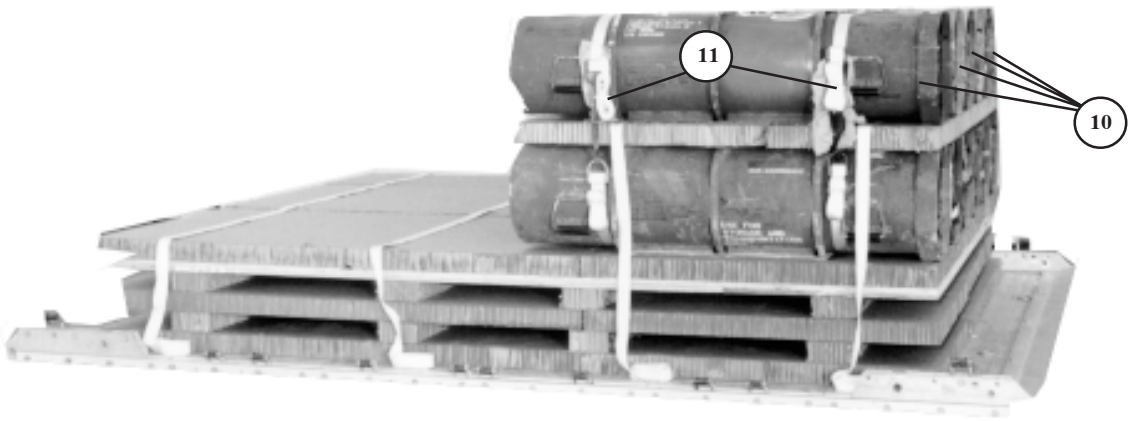


7 Cut and position a 59-inch by 92-inch piece of honeycomb centered on top of the containers.

8 Preposition one 30-foot lashing 16 inches from the front edge of the honeycomb.

9 Preposition a second lashing 40 inches from the front of the honeycomb.

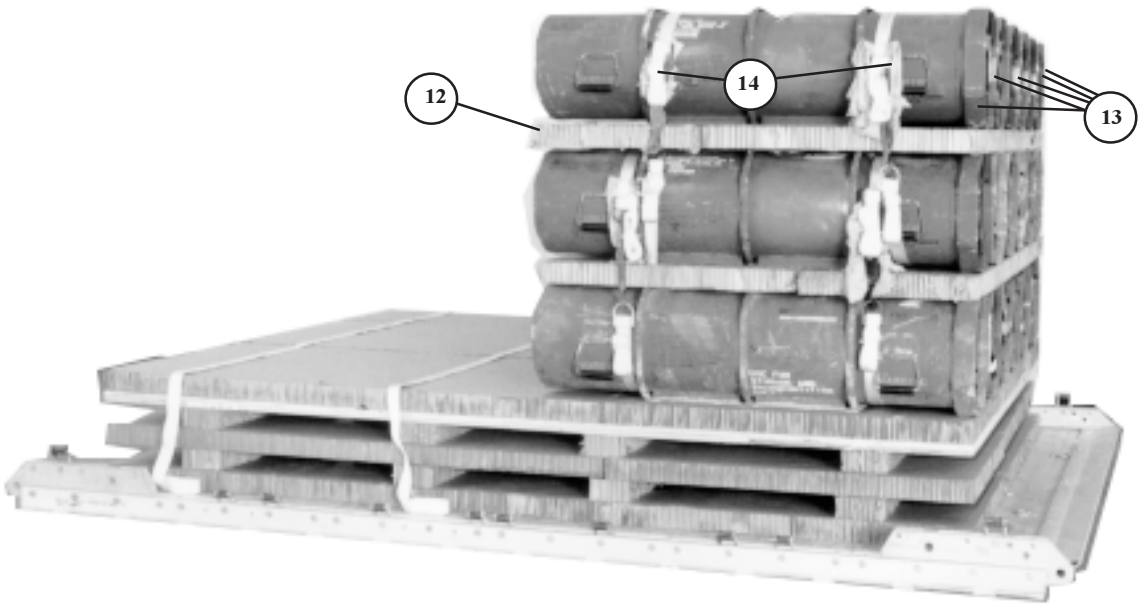
Figure 7-3. Javelin rounds positioned and secured (continued)



(10) Position six more containers as described in step 5.

(11) Secure all twelve containers with the front two prepositioned lashings from steps 1 and 2.

Figure 7-3. Javelin rounds positioned and secured (continued)

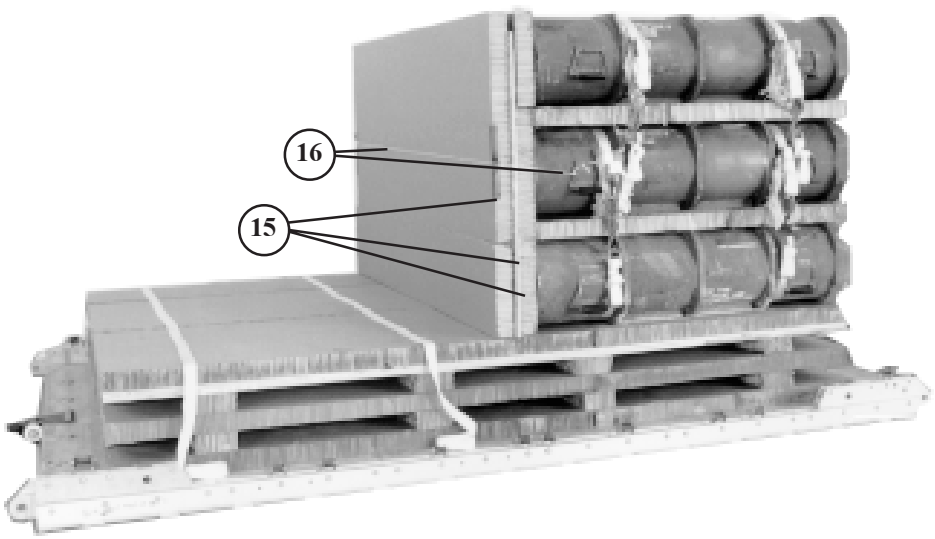


(12) Cut and position another 59-inch by 92-inch piece of honeycomb on top of the first 12 containers.

(13) Position six more containers on top of the honeycomb.

(14) Secure the top 12 containers with the lashings from steps 8 and 9.

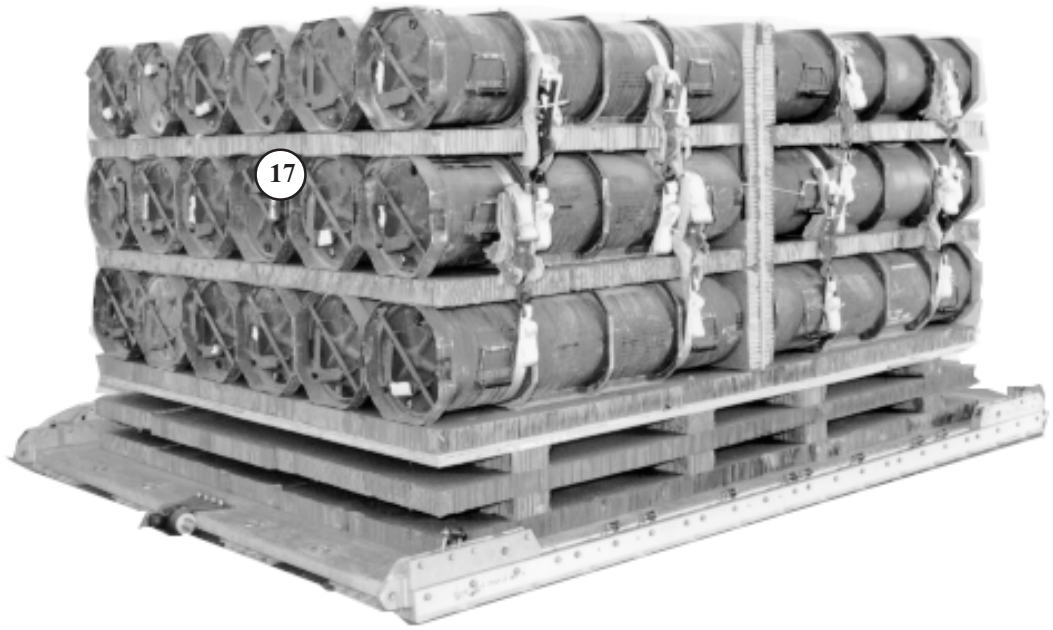
Figure 7-3. Javelin rounds positioned and secured (continued)



(15) Position two layers of 51-inch by 92-inch honeycomb with a 3/4-inch piece of 48-inch by 92-inch plywood between the honeycomb, centered and flush with the rear of the sixteen containers.

(16) Secure the honeycomb and plywood to the containers with type III nylon cord.

Figure 7-3. Javelin rounds positioned and secured (continued)

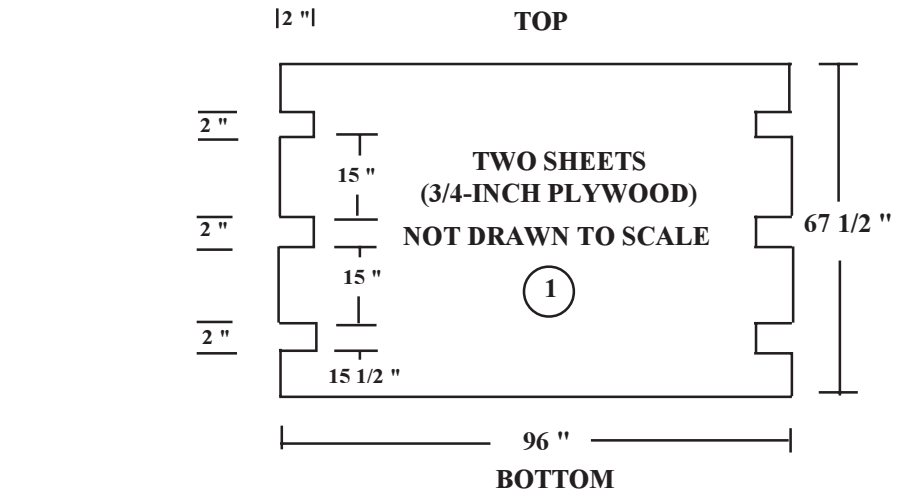


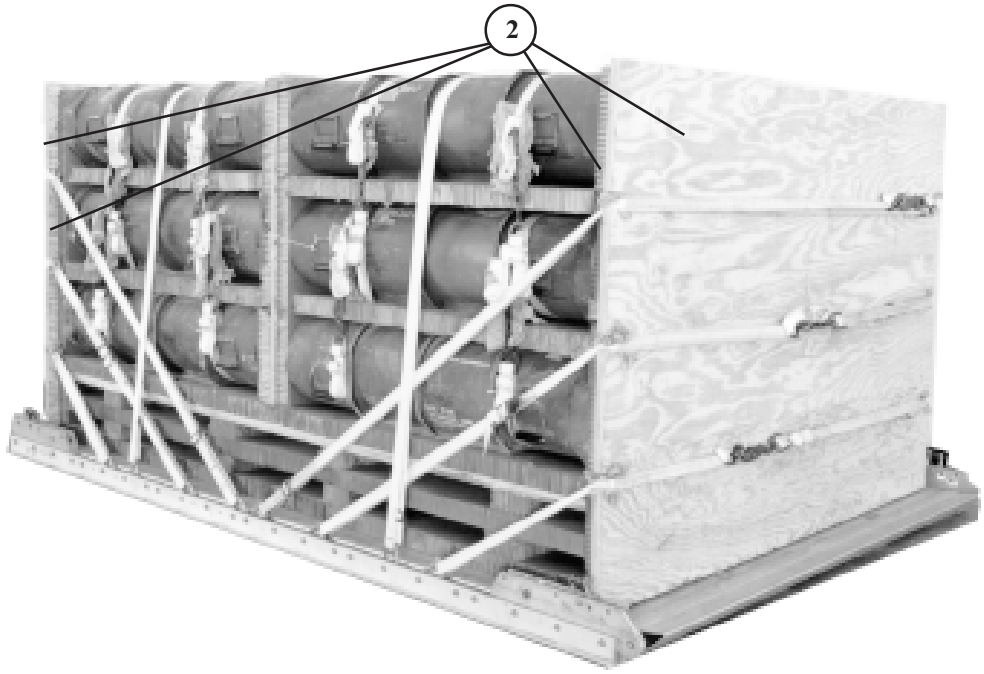
17 Position and secure 18 more containers on the platform following steps 5 through 14. Place the containers with the open ends to the rear of the platform and make the measurements from the rear edge of the platform honeycomb.

Figure 7-3. Javelin rounds positioned and secured (continued)

7-5. Lashing Load to Platform

Lash the load to the platform as shown in Figure 7-4.

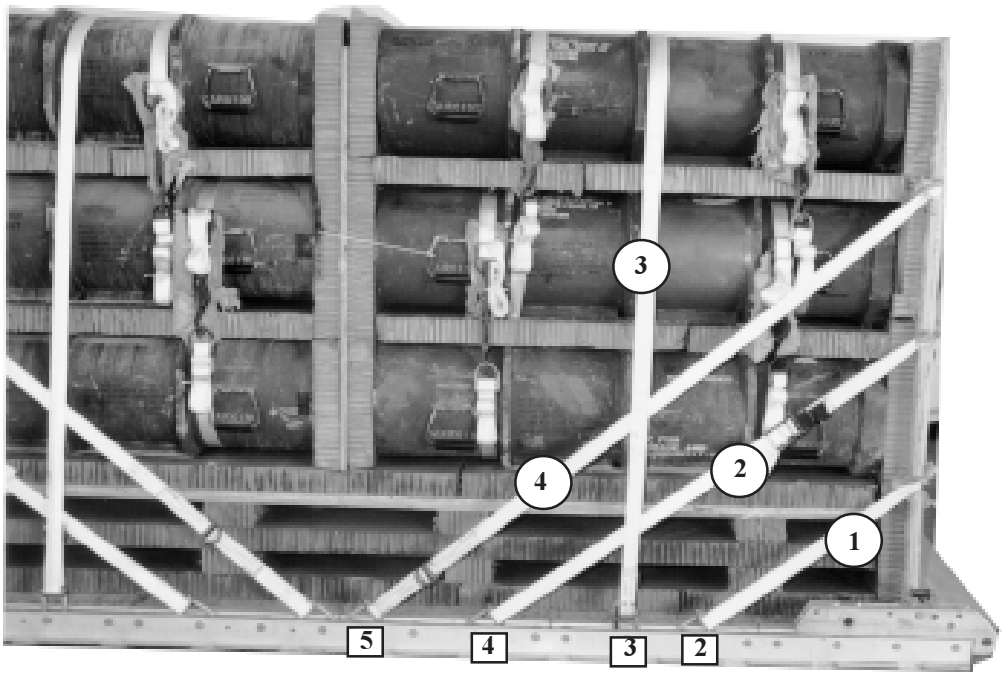




(1) Cut two endboards as shown in the diagram above.

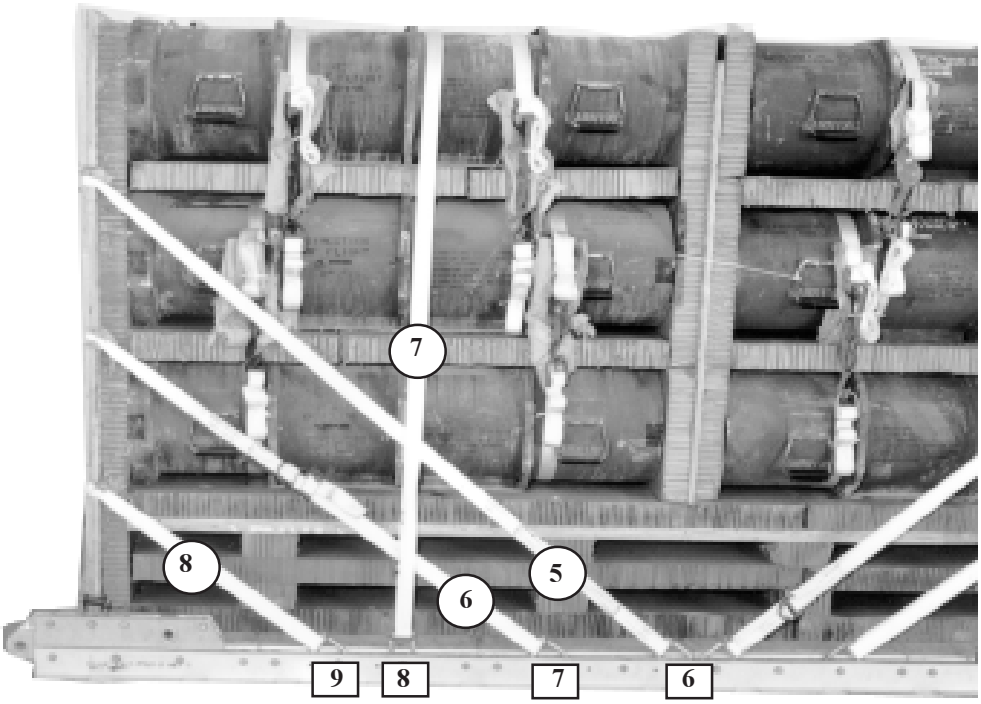
(2) Cut two pieces of 36-inch by 92-inch honeycomb and two pieces of 31 1/2-inch by 96-inch honeycomb and place one piece of each size on each end of the of the load with one endboard.

Figure 7-4. Load lashed to platform



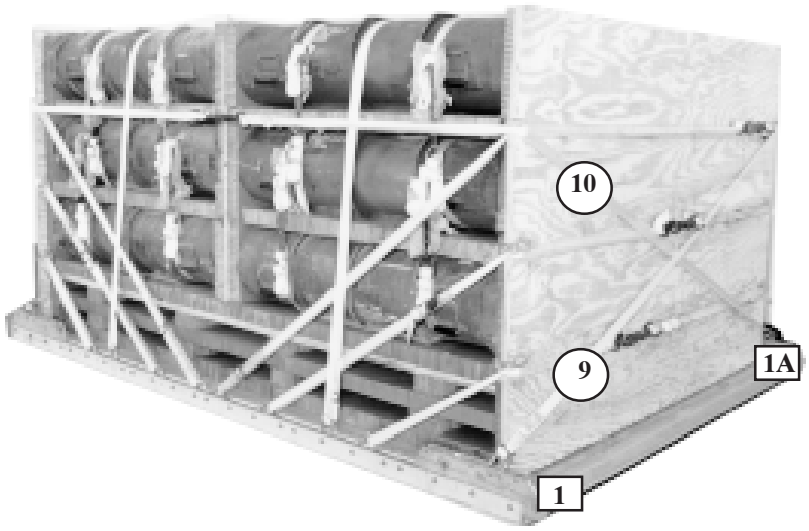
Lashing Number	Tiedown Clevis Number	Instructions
1	2 and 2A	Run a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings through the bottom notch of the front end board. Secure the lashings on the front using two D-rings and a load binder.
2	3 and 3A	Run a 15-foot lashing from clevis 3 and a 15-foot lashing from clevis 3A. Pass the lashings over the top of the load. Secure the lashings on top using another 15-foot lashing and two D-rings and a load binder.
3	4 and 4A	Run a 15-foot lashing from clevis 4 and a 15-foot lashing from clevis 4A. Pass the lashings through the middle notch of the front end board. Secure the lashings on the front using another 15-foot lashing and two D-rings and a load binder.
4	5 and 5A	Run a 15-foot lashing from clevis 5 and a 15-foot lashing from clevis 5A. Pass the lashings through the top notch of the front end board. Secure the lashings on the front using another 15-foot lashing and two D-rings and a load binder.

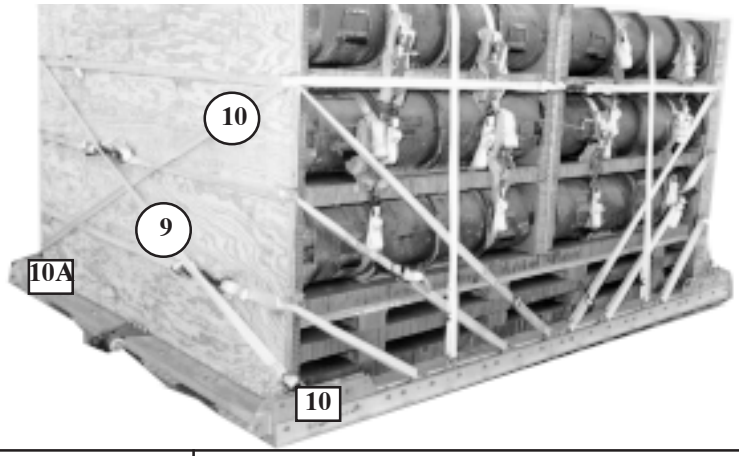
Figure 7-4. Load lashed to platform (continued)



Lashing Number	Tiedown Clevis Number	Instructions
5	6 and 6A	Run a 15-foot lashing from clevis 6 and a 15-foot lashing from clevis 6A. Pass the lashings through the top notch of the rear end board. Secure the lashings on the rear using another 15-foot lashing and two D-rings and a load binder.
6	7 and 7A	Run a 15-foot lashing from clevis 7 and a 15-foot lashing from clevis 7A. Pass the lashings through the middle notch of the rear end board. Secure the lashings on the rear using another 15-foot lashing and two D-rings and a load binder.
7	8 and 8A	Run a 15-foot lashing from clevis 8 and a 15-foot lashing from clevis 8A. Pass the lashings over the top of the load. Secure the lashings on top using another 15-foot lashing and two D-rings and a load binder.
8	9 and 9A	Run a 15-foot lashing from clevis 9 and a 15-foot lashing from clevis 9A. Pass the lashings through the bottom notch of the rear end board. Secure the lashings on the rear using two D-rings and a load binder.

Figure 7-4. Load lashed to platform (continued)



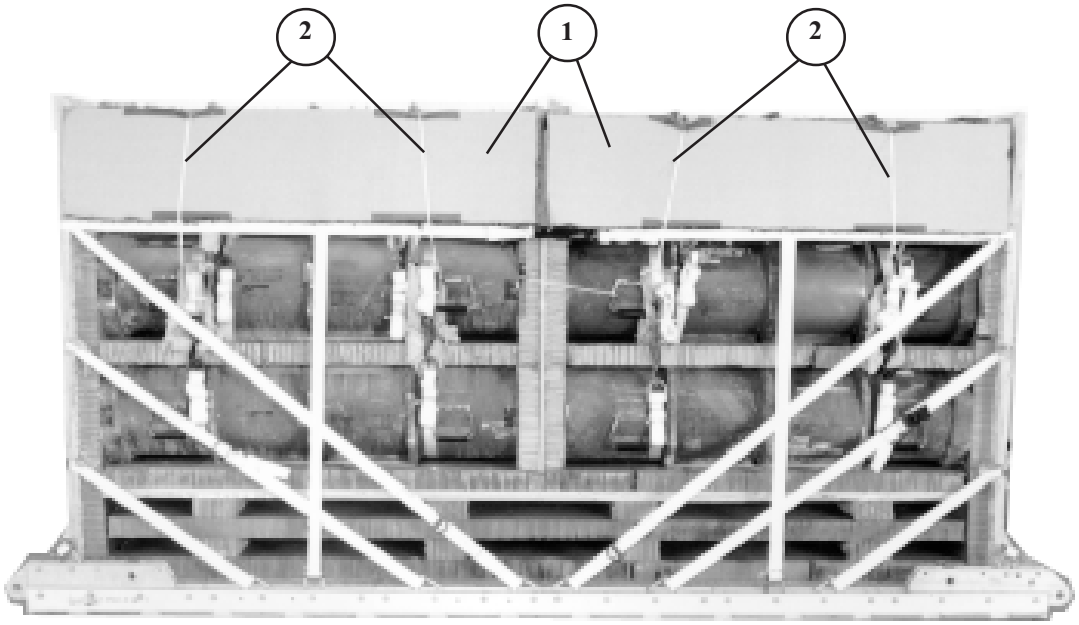


Lashing Number	Tiedown Clevis Number	Instructions
9	1 and 10	Run a 15-foot lashing through clevis 1 and its own D-ring. Pass the running end up through the top left side notch of the front end board. Run another 15-foot lashing through clevis 10 and its own D-ring. Pass the running end up through the top left side notch of the rear end board. Secure the lashings together on the left side of the load using another 15-foot lashing and two D-rings and a load binder.
10	1A and 10A	Run a 15-foot lashing through clevis 1A and its own D-ring. Pass the running end up through the top right side notch of the front end board. Run another 15-foot lashing through clevis 10A and its own D-ring. Pass the running end up through the top right side notch of the rear end board. Secure the lashings together on the right side of the load using another 15-foot lashing and two D-rings and a load binder.

Figure 7-4. Load lashed to platform (continued)

7-6. Covering Load, Installing Suspension Slings and Deadman's Tie

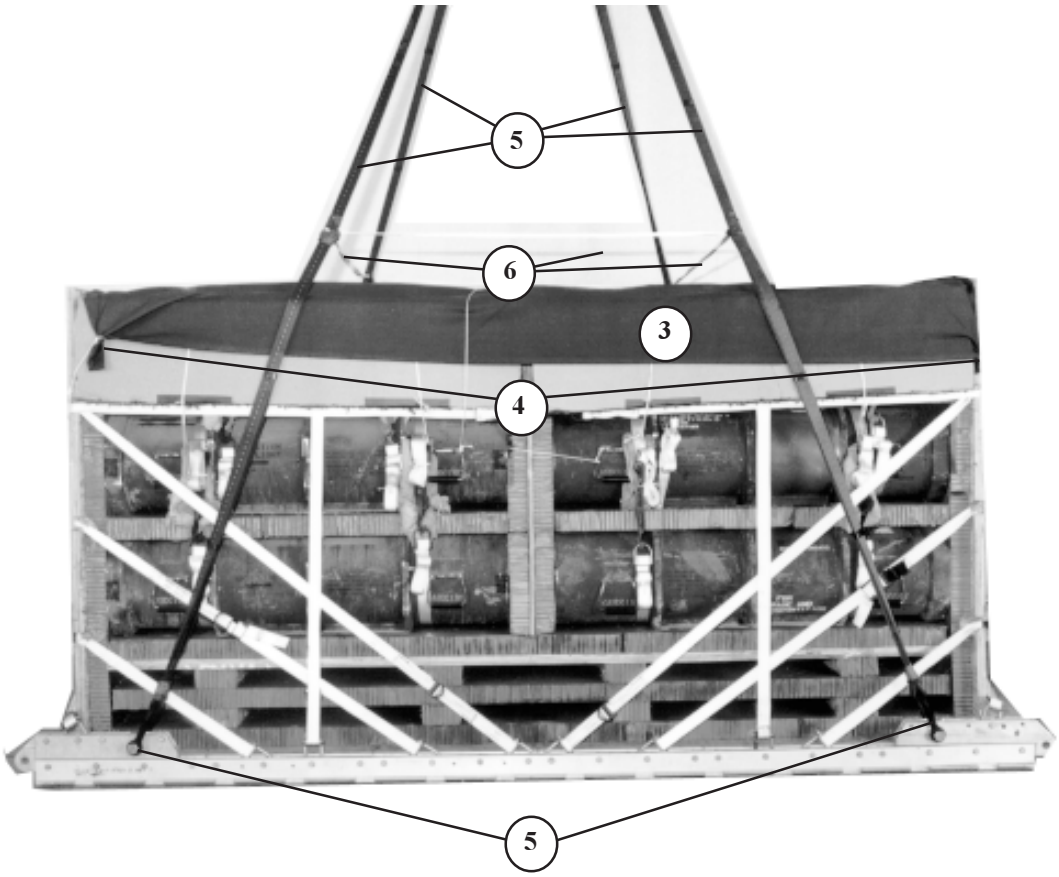
Cover the load and install the suspension slings as shown in Figure 7-5.



(1) Cut four 18-inch by 64-inch pieces of honeycomb and position two pieces on each side of the load.

(2) Secure the pieces to the load with type III nylon cord.

Figure 7-5. Load covered and suspension slings and deadman's tie installed



(3) Position a 120-inch by 125-inch load cover on top of the load.

(4) Secure the cover in place with type III nylon cord.

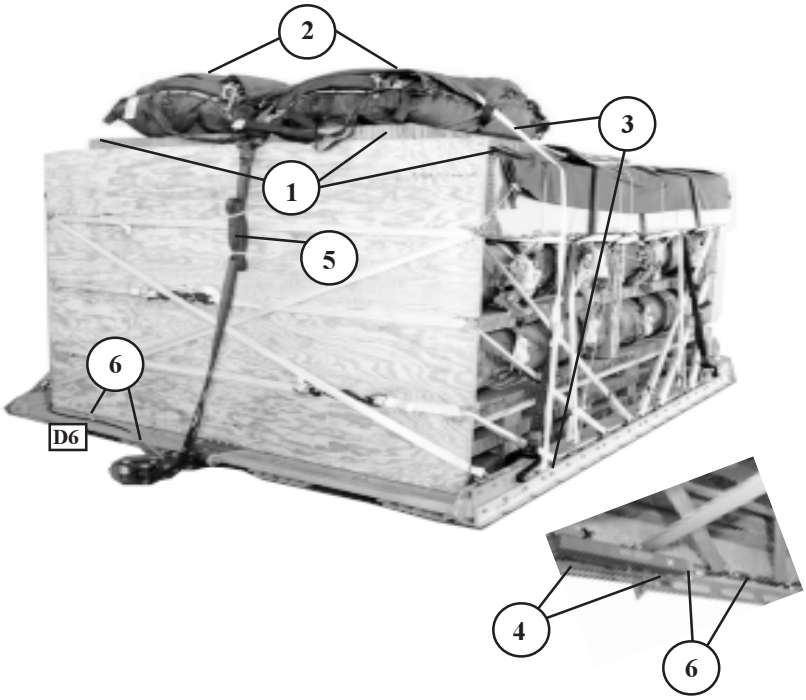
(5) Attach a large clevis to each of four 16-foot (2-loop), type XXVI nylon suspension slings and attach each large clevis to each of the four tandem links.

(6) Raise the slings and install the deadman's tie according to FM 10-500-2/TO 13C7-1-5.

Figure 7-5. Load covered and suspension slings and deadman's tie installed (continued)

7-7. Stowing Cargo Parachutes and Installing Extraction System

Stow two G-11B cargo parachutes and install the EFTC according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-6.

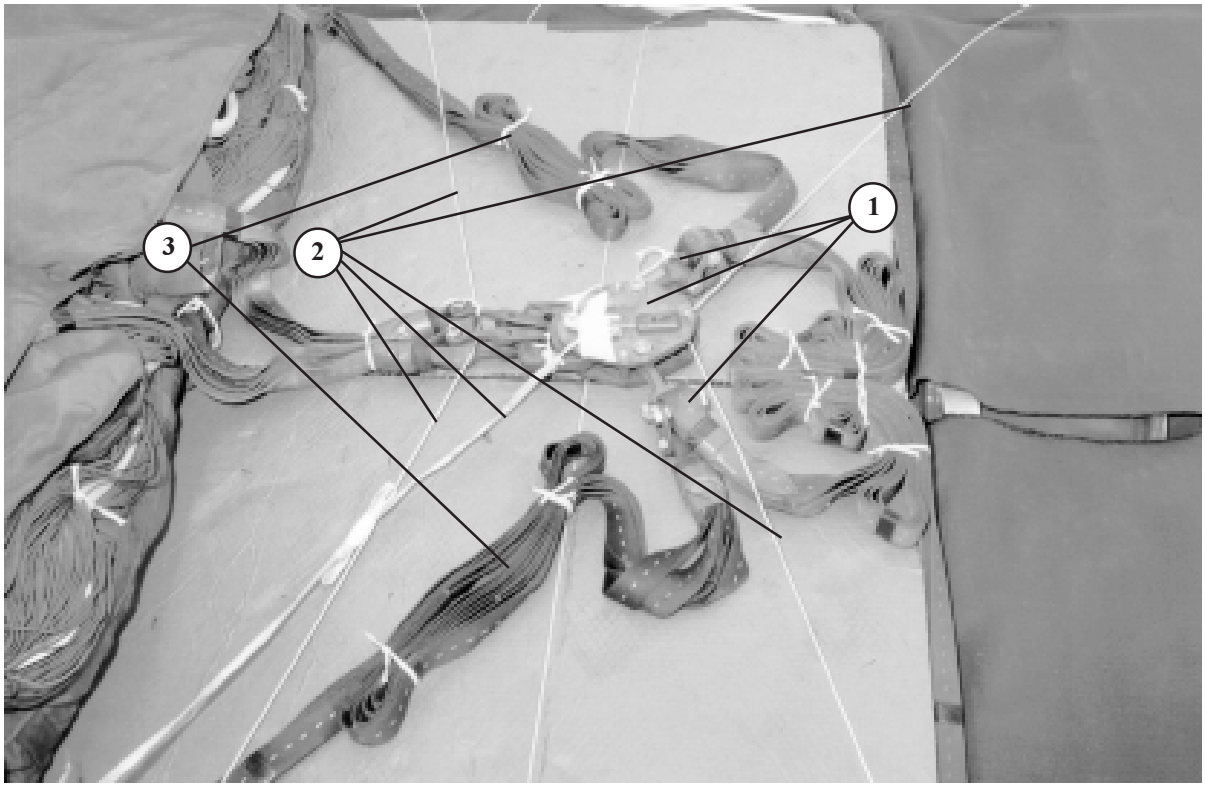


1. Place two full sheets of honeycomb on top of the load side by side with the ends of the sheets flush with the rear end board and secure in place with type III nylon cord.
2. Stow two G-11B cargo parachutes on the load according to FM 10-500-2/TO 13C7-1-5.
3. Run one length of type VIII nylon webbing from bushing 20 on the left side of the platform, through the center carrying handles of the parachutes and bushing 20 on the right side of the platform and secure.
4. Using the aft mounting holes for the EFTC bracket, install the components of the EFTC according to FM 10-500-2/TO 13C7-1-5.
5. Attach a 9-foot (2-loop), type XXVI nylon sling to be used as a deployment line.
6. Install a 16-foot EFTC cable and safety the cable to tiedown ring D6 and along the left side rail using one turn of type I, 1/4-inch cotton webbing.

Figure 7-6. Cargo parachutes stowed and extraction system installed

7-8. Installing Parachute Release

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



(1) Place the M-1 release on top of the previous placed honeycomb located on top of the load and attach the suspension slings and parachute riser extensions.

(2) Secure the M-1 release to convenient points on the load with type III nylon cord.

(3) S-fold and tie any excess suspension slings.

Figure 7-7. M-1 cargo parachute installed

7-9. Placing Extraction Parachute

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

7-10. Installing Provisions for Emergency Restraints

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

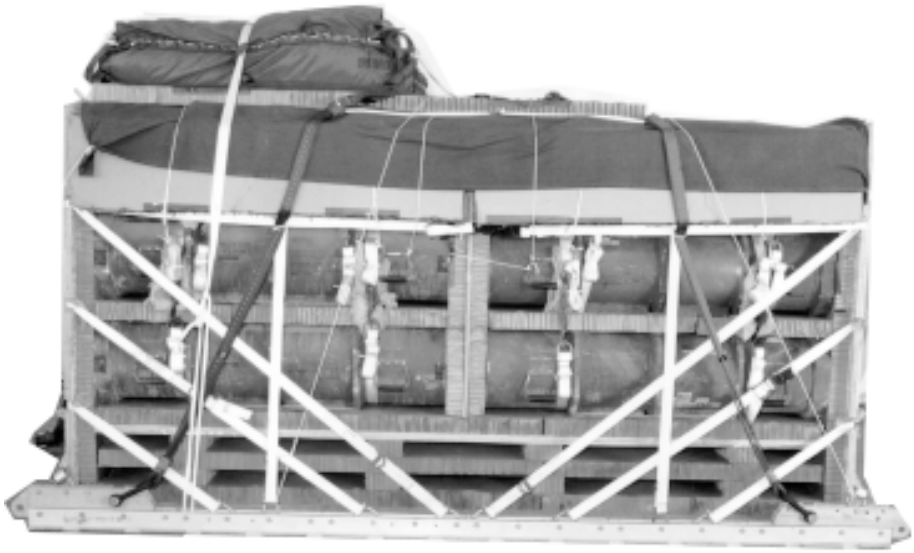
7-11. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 7-8. Complete Shipper's Declaration for Dangerous Goods and affix to load. If the load varies from the one shown, the weight, height, CB, tip off curve, and parachute requirements must be recomputed.

7-12. Equipment Required

Use the equipment listed in Table 7-1 to rig the load shown in Figure 7-8.

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.....5,976 pounds

Height.....86 inches

Width.....108 inches

Length.....166 inches

Overhang: Front.....5 inches

Rear.....17 inches

Center of Balance (CB)
(from front edge of the platform).....76 inches

Extraction System.....EFTC

Figure 7-8. Thirty-six Javelin rounds in containers rigged on a twelve-foot type V platform for low-velocity airdrop

Table 7-1. Equipment required for rigging 36 Javelin rounds on a 12-foot, type V airdrop platform for low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal.	As required
4030-00-090-5354	Clevis, suspension, 1-in (large)	4
4020-00-240-2146	Cord, nylon, type III, 550-lb.	As required
1670-00-434-5785	Coupling, airdrop extraction force transfer with cable, 16-ft	1
	Cover:	
1670-00-360-0328	Clevis, large	1
1670-00-360-0329	Link, type IV	1
8305-00-958-3685	Felt, 1/2-in thick	As required
1670-01-183-2678	Leaf, extraction line (line bag)	1
	Line extraction:	
1670-01-064-4452	60-ft (1-loop), type XXVI (for C-130)	1
1670-01-107-7652	160-ft (1-loop), type XXVI (for C-141, C-5, or C-17)	1
1670-00-783-5988	Link assembly, type IV	1
1670-00-753-3928	Pad, energy-dissipating, (honeycomb),	
	3- by 36- by 96-in:	9 sheets
	6- by 92-in	8
	18- by 64-in	4
	20- by 49-in	3
	20- by 76-in	3
	36- by 49-in	6
	36- by 76-in	6
	36- by 96-in	2
	51- by 92-in	2
	59- by 92-in	2
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	1
	Cargo extraction:	
1670-01-063-3715	15-ft	1
	Platform, airdrop, 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)	(20)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link assembly (Multipurpose link)	(4)

Table 7-1. Equipment required for rigging thirty-six Javelin rounds on a 12-foot, type V airdrop platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
5530-00-128-4981	Plywood, 3/4-in:	9 sheets
	44- by 29-in	2
	44- by 96-in	2
	48- by 29-in	2
	48- by 92-in	1
	48- by 96-in	2
	67 1/2- by 96-in	2
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For suspension slings:	
1670-00-823-5042	16-ft (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-00-753-3792	9-ft (2-loop), type XXVI nylon webbing	1
	Riser extension:	
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	2
1670-00-040-8219	Strap, parachute release with fastener and knife	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	28
1670-00-937-0272	Binder, load, 10,000-lb capacity	(10)
5365-00-937-0147	D-ring, heavy-duty	(32)
1670-00-937-0273	Strap, 15-ft	(28)
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
8305-00-082-5752	Nylon, tubular 1/2-in	As required

GLOSSARY

AD	airdrop
AFB	Air Force base
AFR	Air Force regulation
AFTO	Air Force technical order
ALC	Air Logistics Center
attn	attention
CB	center of balance
DA	Department of the Army
DC	District of Columbia
DD	Department of Defense
diam	diameter
EFTA	extraction force transfer actuator
EFTC	extraction force transfer coupling
FM	field manual
ft	feet
gal	gallon
HQ	headquarters
in	inch
lb	pound
MCRP	Marine Corps References Publication
No	number
NSN	national stock number
TM	technical manual
TO	technical order
TRADOC	United States Army Training and Doctrine Command
US	United States

REFERENCES

AFR 55-40/AR 59-4	Joint Airdrop Inspection Records, Malfunction Investigations and Activity Reporting. 27 November 1984
*AFJMAN 24-204/TM 38-250/ NAVSUP PUB 505/MCO 4030.19F/ DLAM 4145.3	Preparing Hazardous Materials for Military Air Shipments. 25 November 1994
FM 10-500-2/T0 13C7-1-5	Airdrop of Supplies and Equipment: Rigging Airdrop Platforms. 1 November 1990
FM 10-500-3/TO 13C7-1-11/FMFM 7-47	Airdrop of Supplies and Equipment: Rigging Containers. 8 December 1992
**FM 10-500-53/TO 13C7-18-41/ MCRP 4-3. 8	Airdrop of Supplies and Equipment: Rigging Ammunition. 1 March 1996
TM 10-1670-268-20&P/TO 13C3-52-22	Organizational Maintenance Manual With Repair Parts and Special Tools List: Type V Airdrop Platform. 1 June 1986
TM 10-1670-278-23&P/TO 13C5-26-2/ NAVAIR 13-1-27	Unit and Intermediate Direct Support (DS) Maintenance Manual (Including Repair Parts and Special Tools List) for Parachute, Cargo Type: 15-Foot Diameter, Cargo Extraction Parachute. 6 November 1989
TM 10-1670-280 -23&P/TO 13C5-31-2/NAVAIR 13-1-31	Unit and Intermediate Direct Support (DS) Maintenance Manual (Including Repair Parts and Special Tools List) for Parachute, Cargo Type: 100-Foot Diameter, Model G-11A, Model G-11B and Model G-11C. 5 August 1991
AFTO Form 22	Technical Order Publications Improvement Report. April 1973
DA Form 2028	Recommended Changes to Publications and Blank Forms. February 1974
***Shipper's Declaration for Dangerous Goods	Locally Procured Form

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

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

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

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