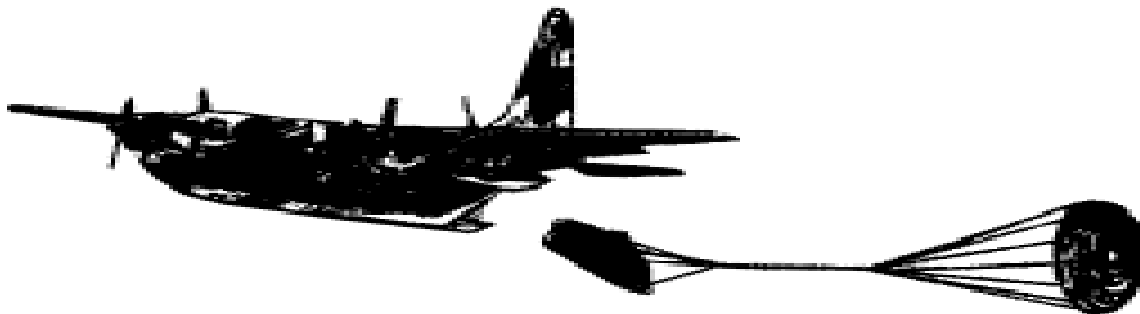
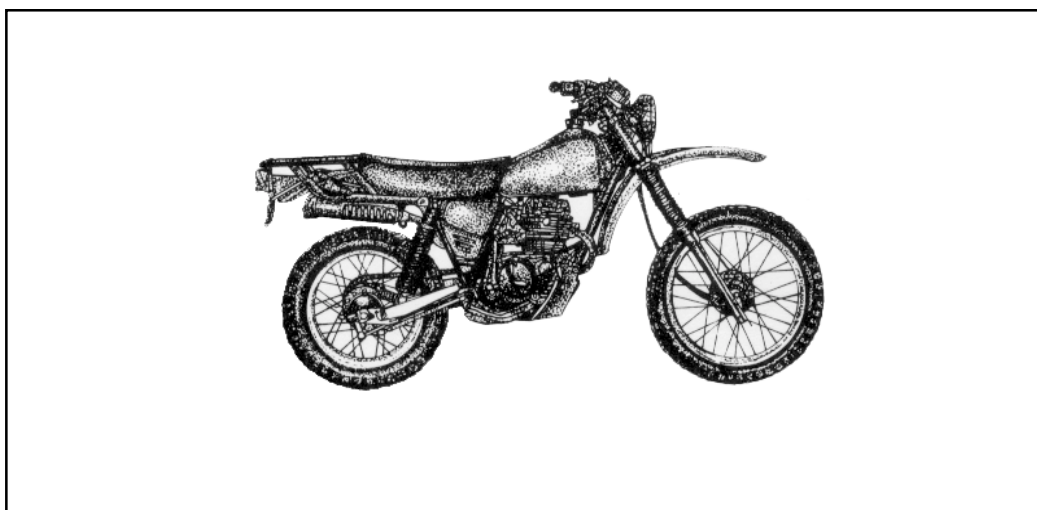




AIRDROP OF SUPPLIES AND EQUIPMENT:

RIGGING MOTORCYCLES



DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

**HEADQUARTERS
DEPARTMENT OF THE ARMY
DEPARTMENT OF THE AIR FORCE**

Field Manual
No 10-500-77
Technical Order
No 13C7-55-1

Headquarters
Department of the Army
Department of the Air Force
Washington, DC, 1 February 2000

Airdrop of Supplies and Equipment Rigging Motorcycles

Contents

	Page
PREFACE	iii
CHAPTER 1 INTRODUCTION	
Description of Items.....	1-0
Special Considerations.....	1-0
CHAPTER 2 RIGGING ONE MOTORCYCLE FOR LOW-VELOCITY AIRDROP	
Description of Load.....	2-1
Building and Preparing Combat- Expendable Platform.....	2-1
Preparing, Positioning, Protecting, and Securing Motorcycle.....	2-3
Stowing Cargo Parachutes.....	2-7
Marking Rigged Load.....	2-8
Equipment Required.....	2-9
CHAPTER 3 RIGGING TWO MOTORCYCLES FOR LOW-VELOCITY AIRDROP	
Description of Load.....	3-1
Building and Preparing Combat- Expendable Platform.....	3-1
Positioning and Joining A-22 Sling Assemblies.....	3-3

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*This manual supersedes FM 10-577/TO 13C7-55-1, 10 February 1986.

Positioning A-22 Cargo Covers and Honeycomb.....	3-5
Preparing, Positioning, and Protecting Motorcycles.....	3-6
Closing Cargo Bags.....	3-8
Attaching Suspension Slings.....	3-12
Packing a 15-Foot Cargo Extraction Parachute.....	3-13
Preparing and Stowing a G-12D or G-12E Cargo Parachute and the 15-Foot Cargo Extraction Parachute.....	3-19
Marking Rigged Load.....	3-20
Equipment Required.....	3-21
GLOSSARY	Glossary-1
REFERENCES	References-1

Preface

Scope

This manual is designed for use by all parachute riggers. This manual shows and tells how to prepare and rig one or two 250- to 300-cubic centimeter Kawasaki or equivalent motorcycles on a combat expendable platform. They are rigged for low-velocity airdrop from a C-130, C-141, or C-17 aircraft.

User Information

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

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Chapter 1

Introduction

DESCRIPTION OF ITEMS

1-1. Each motorcycle is 32 inches wide, 49 inches high, and 88 inches long. They each weigh 275 pounds.

SPECIAL CONSIDERATIONS

1-2. Special considerations for this manual are described below.

- The loads covered in this manual may include hazardous materials as defined in AFJMAN 24-204/TM 38-250. If hazardous materials are included, they must be packaged, marked, and labeled as required by AFJMAN 24-204/TM 38-250.
- A copy of this manual must be available to the joint airdrop inspectors during the before- and after-loading inspections.

Chapter 2

Rigging One Motorcycle For Low-Velocity Airdrop

DESCRIPTION OF LOAD

2-1. The motorcycle is rigged on a 32- by 88-inch Combat Expendable Platform (CEP) with one G-14, or T-10C cargo parachute. The load is rigged for a low-velocity, over the ramp airdrop from a C-130, C-141 or C-17 aircraft.

BUILDING AND PREPARING COMBAT EXPENDABLE PLATFORM

2-2. Build a 32 by 88 inch CEP as shown in Figure 2-1.

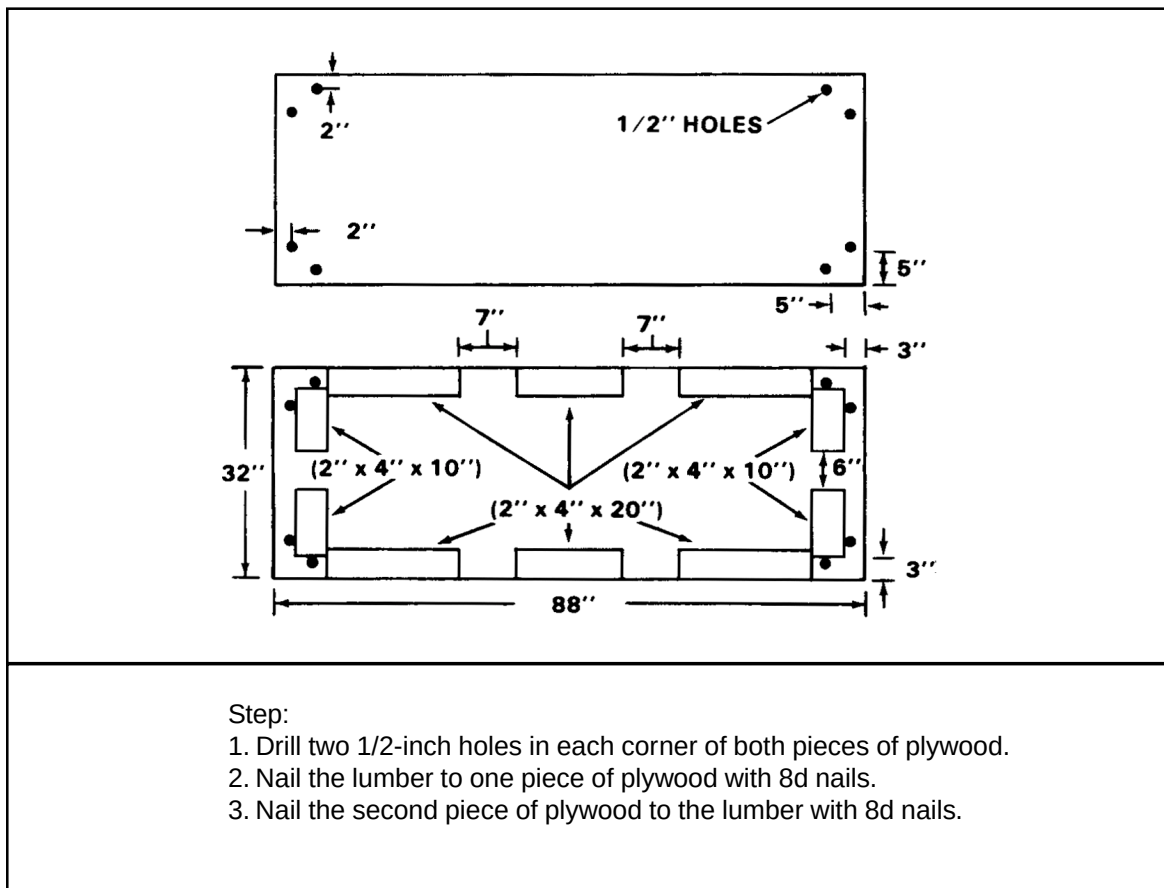


Figure 2-1. Construction Detail for Platform

- Prepare the platform as shown in Figure 2-2.
- Build a honeycomb stack and position it on the platform as shown in Figure 2-3.

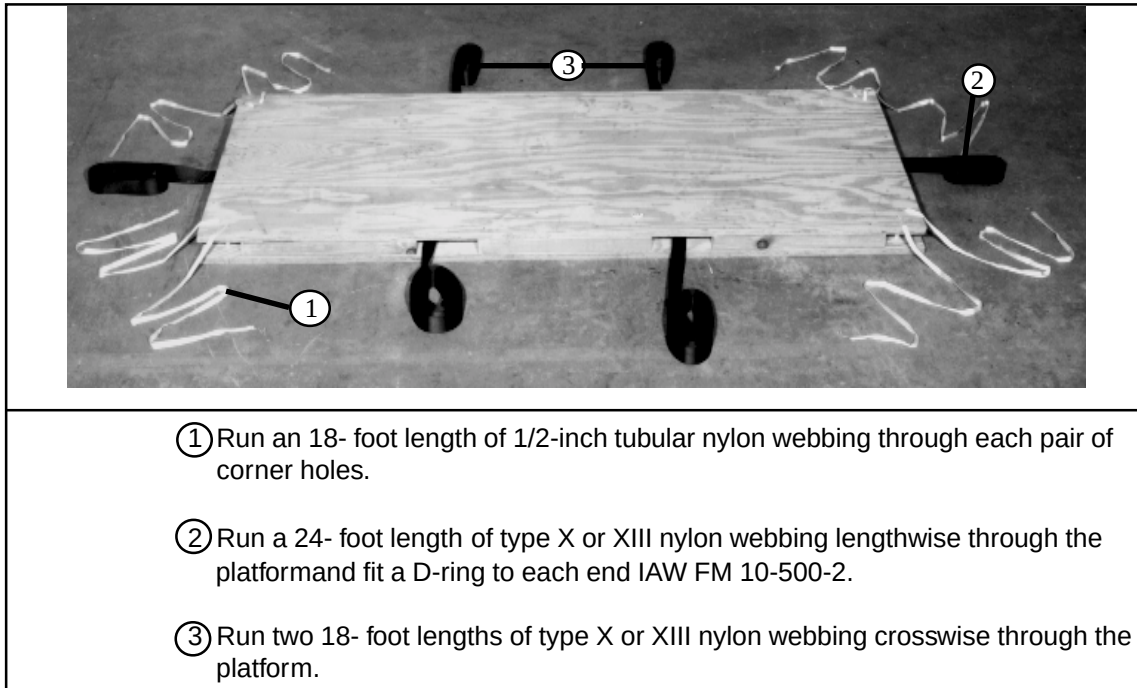


Figure 2-2. Platform Prepared

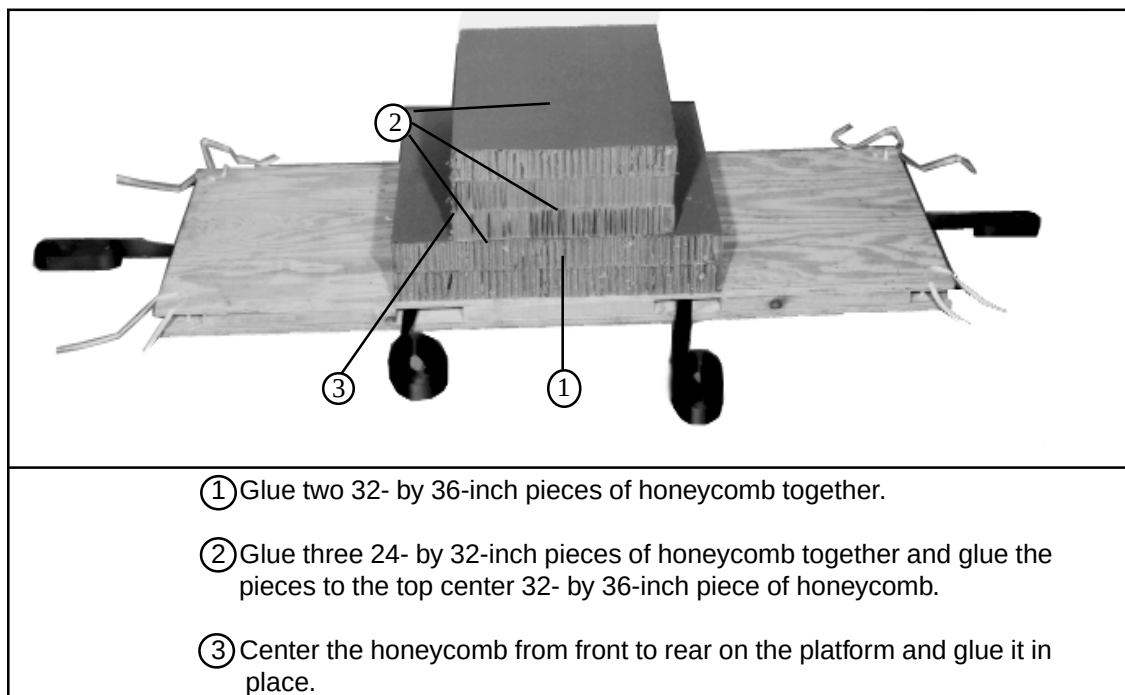


Figure 2-3. Honeycomb Stack Placed on Platform

PREPARING, POSITIONING, PROTECTING, AND SECURING MOTORCYCLE

2-3. Prepare and position the motorcycle on the platform as shown in Figure 2-4.

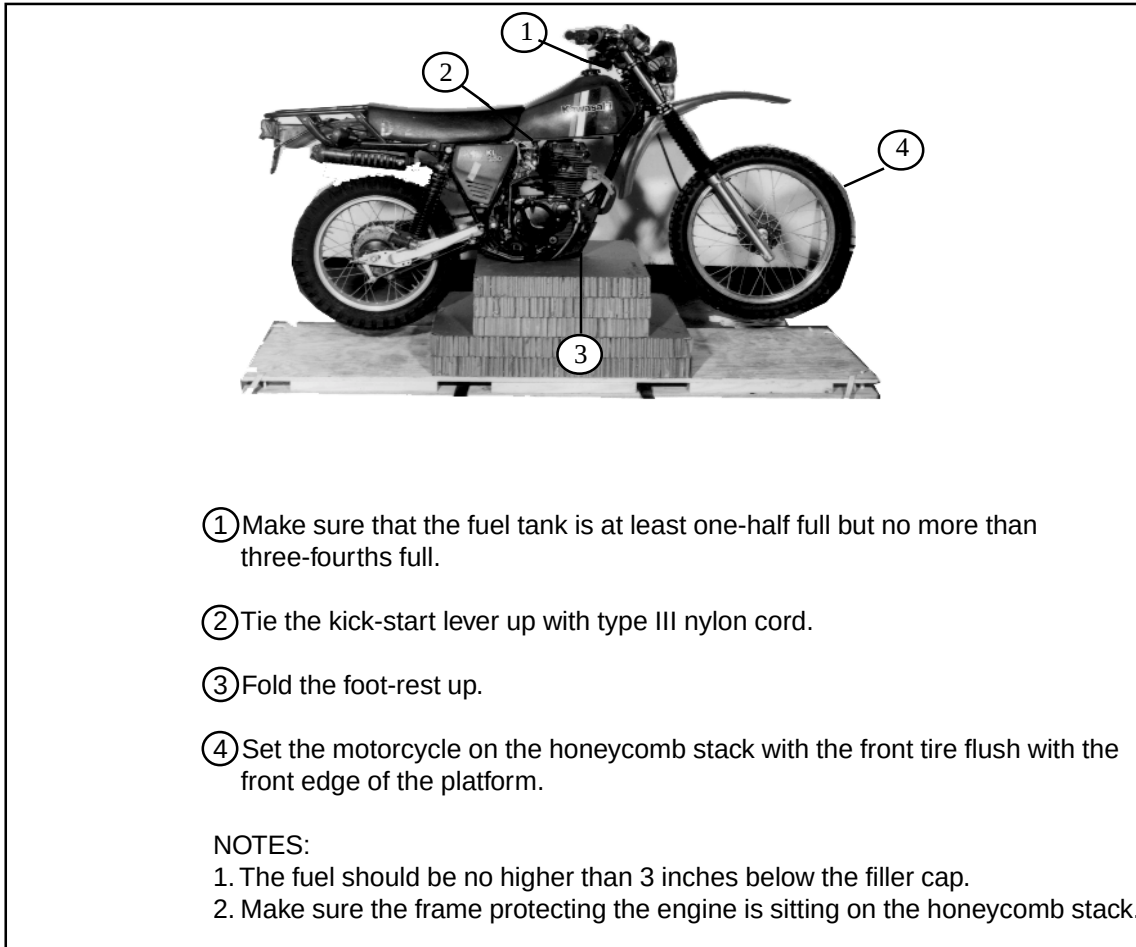
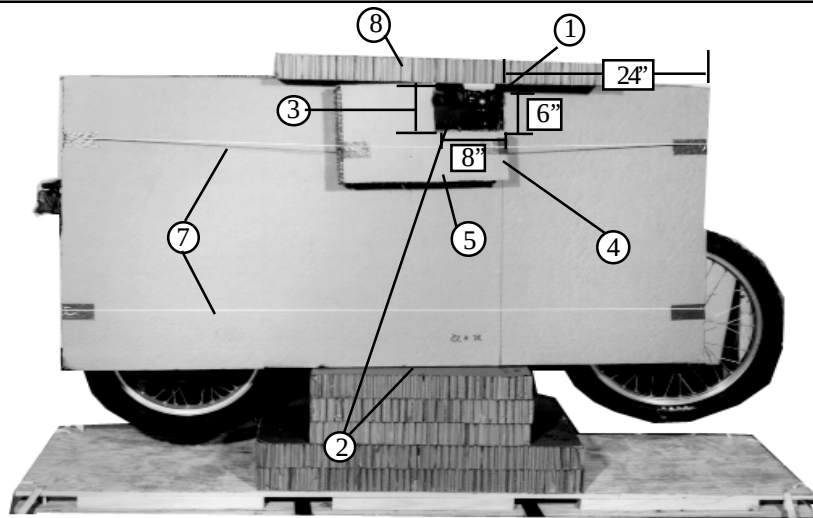


Figure 2-4. Motorcycle Prepared and Placed on Honeycomb

- Tie honeycomb protectors to the motorcycle as shown in Figure 2-5.
- Secure the motorcycle to the platform as shown in Figures 2-6 through 2-7.



- ① Make a 6- by 8-inch cutout in the 72 inch edge of a 36- by 72-inch piece of honeycomb, 24 inches from the front edge.
- ② Set the protector on the right side of the motorcycle. Rest the bottom edge of the protector on the honeycomb stack. Align the cutout with the handlebar.
- ③ Cut a 6- by 8-inch piece of honeycomb from a corner of two 12- by 18- inch pieces of honeycomb per side.
- ④ Align the cutouts (protector) and glue the pieces together.
- ⑤ Place the 12- by 18-inch pieces of honeycomb to the rear of the cutouts.
- ⑥ Repeat steps 2 through 5 and set a second protector on the left side of the motorcycle (not shown).
- ⑦ Tie the protectors in place with lengths of type III nylon cord. Use tape on the protectors to keep the cord from cutting the protectors.
- ⑧ Lay a 32- by 36-inch piece of honeycomb on the protectors so that the 36-inch side of the honeycomb is parallel with the long side of the platform.

Figure 2-5. Honeycomb Protectors Prepared and Tied to Motorcycle

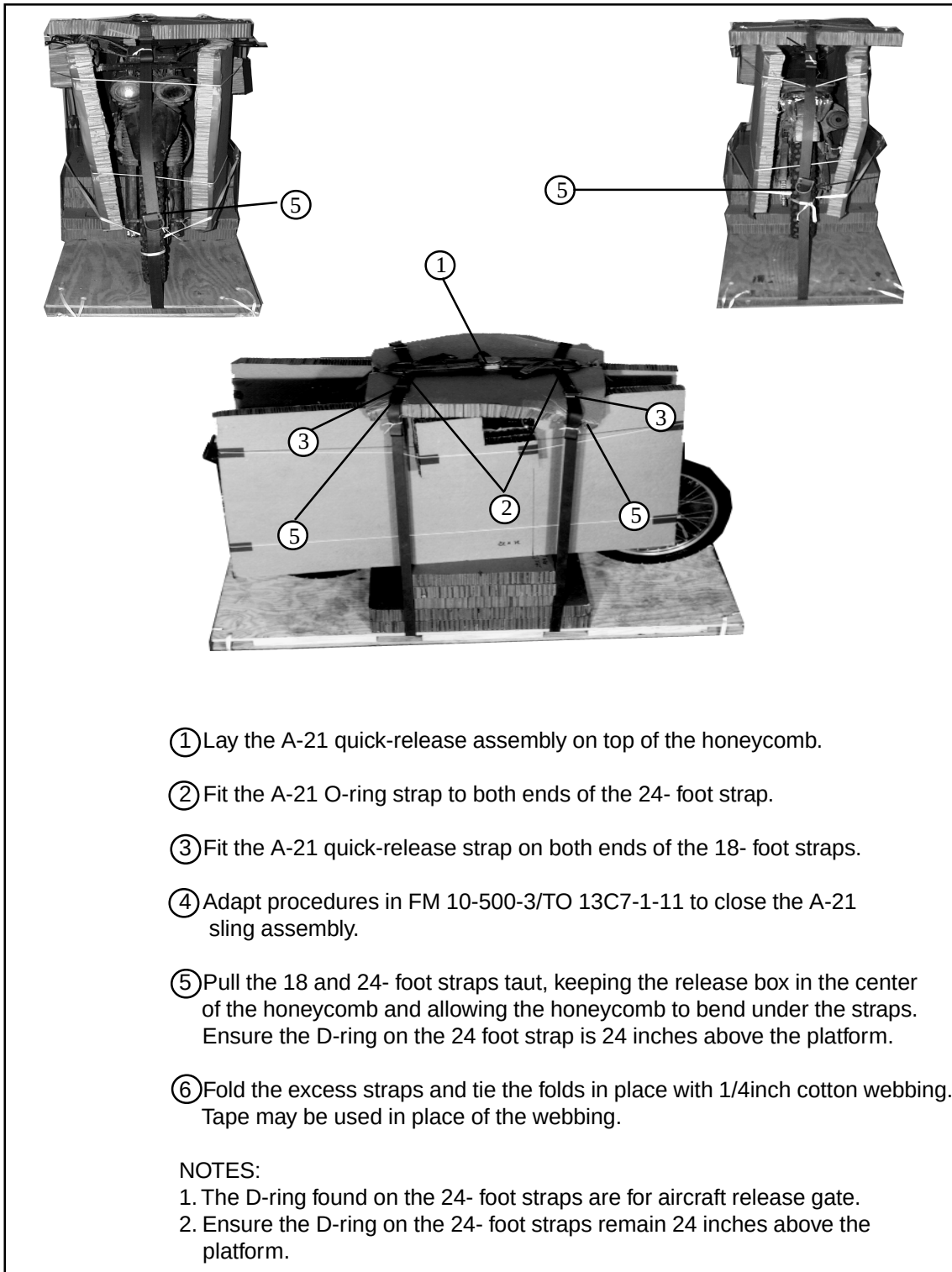


Figure 2-6. Motorcycle Secured to Platform

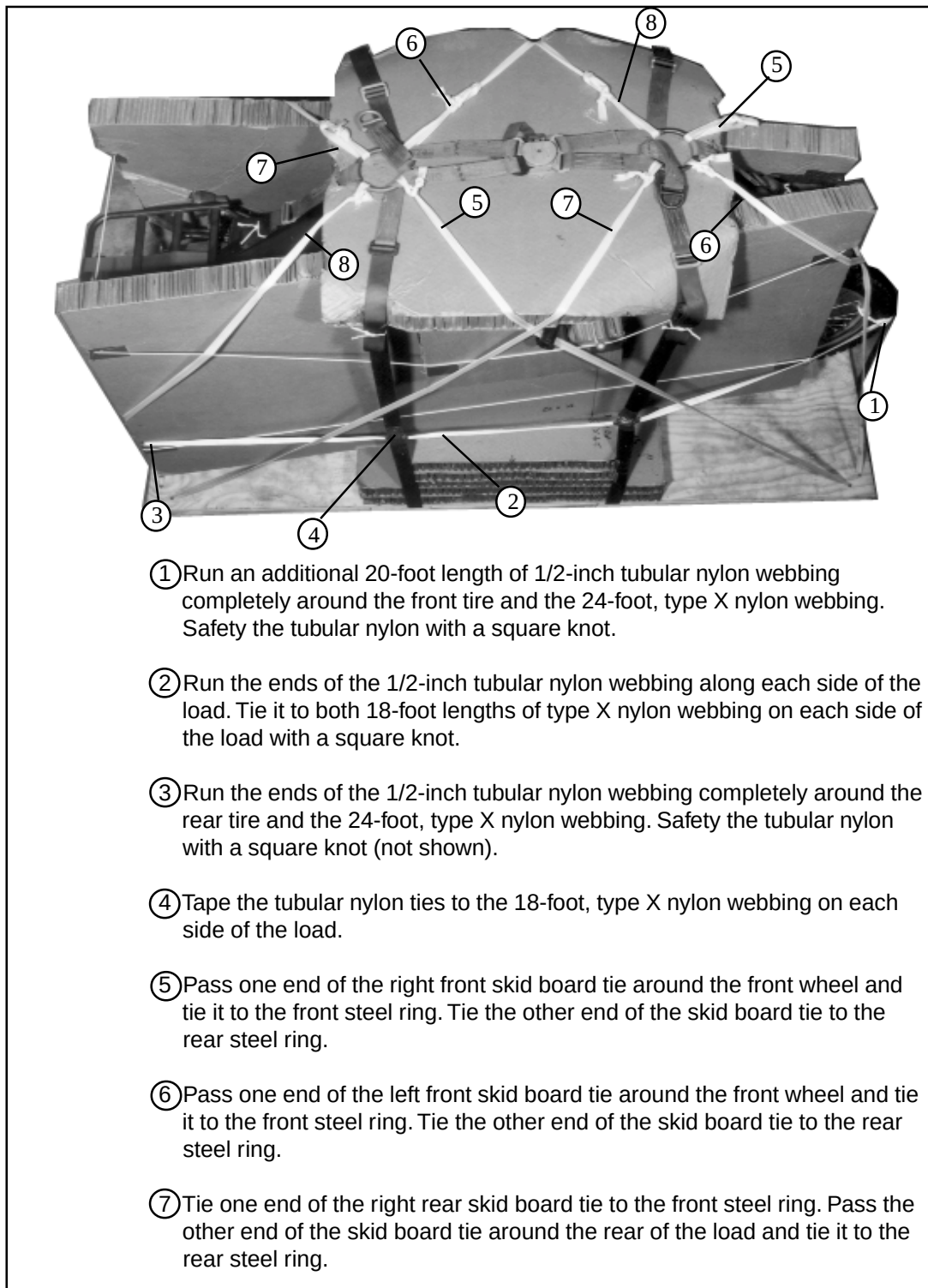


Figure 2-7. Nylon Webbing Tied to Steel Rings

- ⑧ Tie one end of the left rear skid board tie to the front steel ring. Pass the other end of the skid board tie around the rear of the load and tie it to the rear steel ring.

Figure 2-7. Nylon Webbing Tied to Steel Rings (Continued)

STOWING CARGO PARACHUTES

2-4. Select either a G-14 or T-10C cargo parachute. Attach a G-14 or T-10 cargo parachute to the load according to FM 10-500-3/TO 13C7-1-11. Secure the parachute to the load as shown in Figure 2-8.

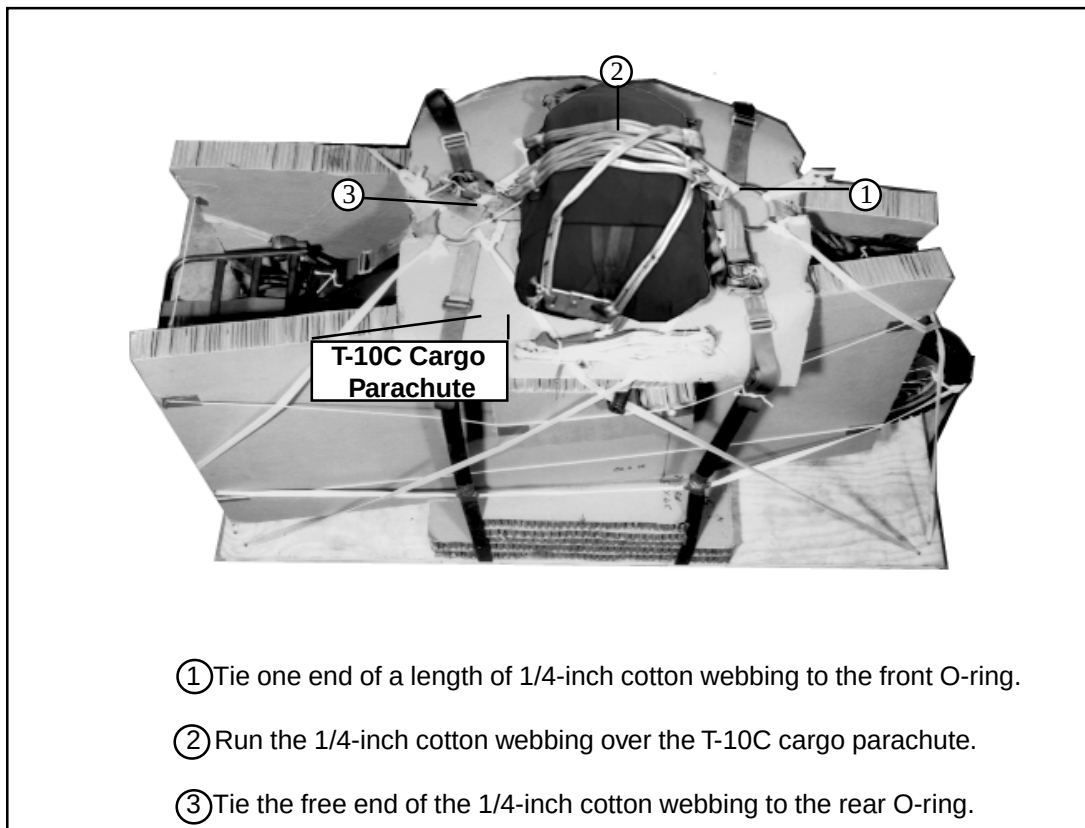


Figure 2-8. Parachute Stowed on Motorcycle Rigged for a Low-Velocity Airdrop

MARKING RIGGED LOAD

2-5. Complete Shipper's Declaration for Dangerous Goods and securely attach it to the load as shown in Figure 2-9. Indicate on the form that the fuel tank has been prepared in accordance with AFJMAN 24-204/TM 38-250. If the load varies, the weight, height, and parachute requirements must be recomputed.

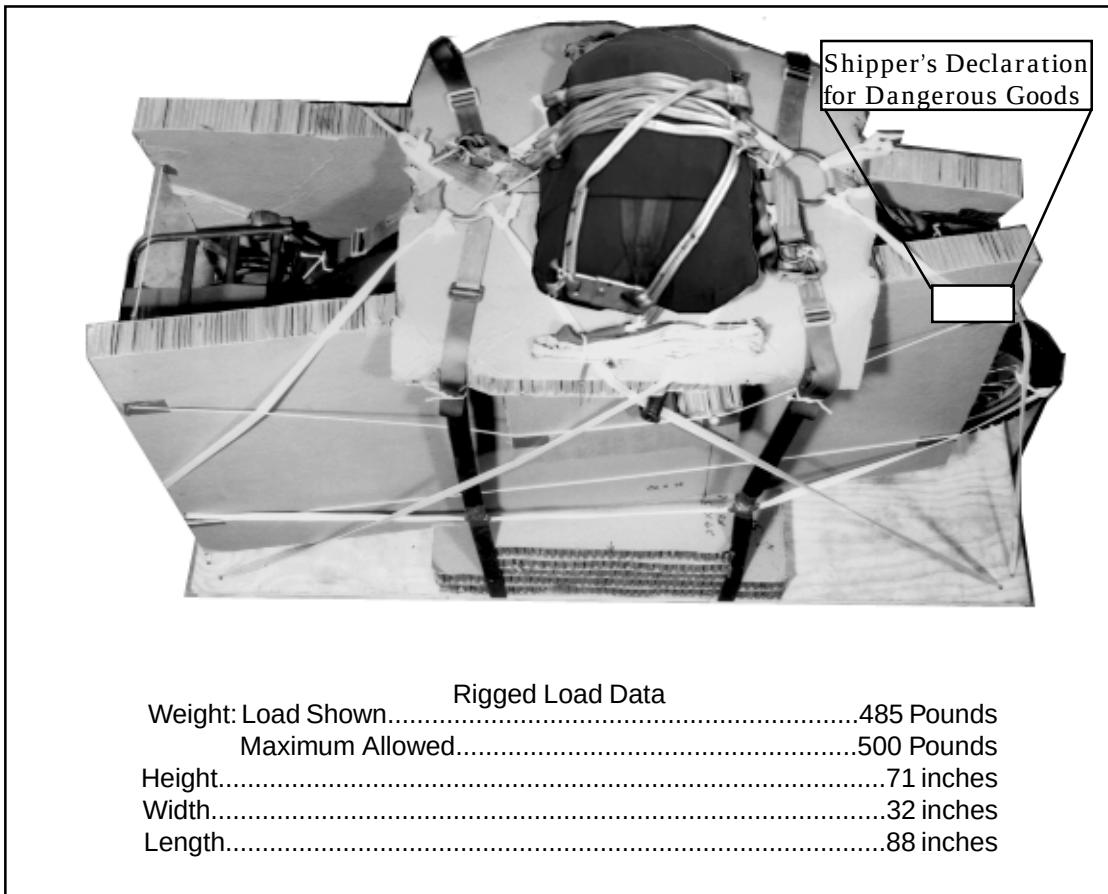


Figure 2-9. Motorcycle Rigged for Low-Velocity Airdrop

EQUIPMENT REQUIRED

2-6. The equipment needed to prepare and rig this load is listed in Table 2-1.

Table 2-1. Equipment Required for Rigging One Motorcycle for Low-Velocity Airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive Paste, 1-gal	As Required
5510-00-220-6146	Lumber:	
	2- by 4- by 10-inches	4
	2- by 4- by 20-inches	6
5315-00-010-4659	Nail, Steel Wire, Common, 8d	As Required
1670-00-753-3928	Pad, Energy-Dissipating Honeycomb,	
	3- by 36- by 96-inches	3 Sheets
	12- by 18-inch	(4)
	24- by 32-inch	(3)
	32- by 36-inch	(3)
	36- by 72-inch	(2)
	Parachute Cargo:	
1670-00-999-2658	G-14 or	1
No NSN	T-10C	1
5530-00-128-4981	Plywood, 3/4- by 32- by 88-inch	2
1670-00-242-9173	A-21 Cargo Bag	1
	Strap:	
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
1670-00-568-3223	Retainer Band	As Required
	Webbing:	
8305-00-268-2411	Cotton, 80-lb	As Required
8305-00-268-2453	Nylon, Tubular, 1/2-inch, 1,000-lb	As Required
8305-00-261-8584	Nylon, Type X or	As Required
8305-00-260-4586	Nylon, Type XIII	As Required
5365-00-937-0147	D-Ring	2

Chapter 3

Rigging Two Motorcycles For Low-Velocity Airdrop

DESCRIPTION OF LOAD

3-1. Two motorcycles are rigged in two A-22 cargo bags on a 48- by 96-inch Combat Expendable Platform (CEP) with one G-12E cargo parachute. The load is rigged for low velocity, over the ramp airdrop from a C-130 aircraft. Each motorcycle is 35 inches wide, 49 inches high, and 88 inches long. Each weighs 275 pounds.

BUILDING AND PREPARING COMBAT EXPENDABLE PLATFORM

3-2. Build and prepare the 48- by 96- inch CEP as shown in Figures 3-1 and 3-1a.

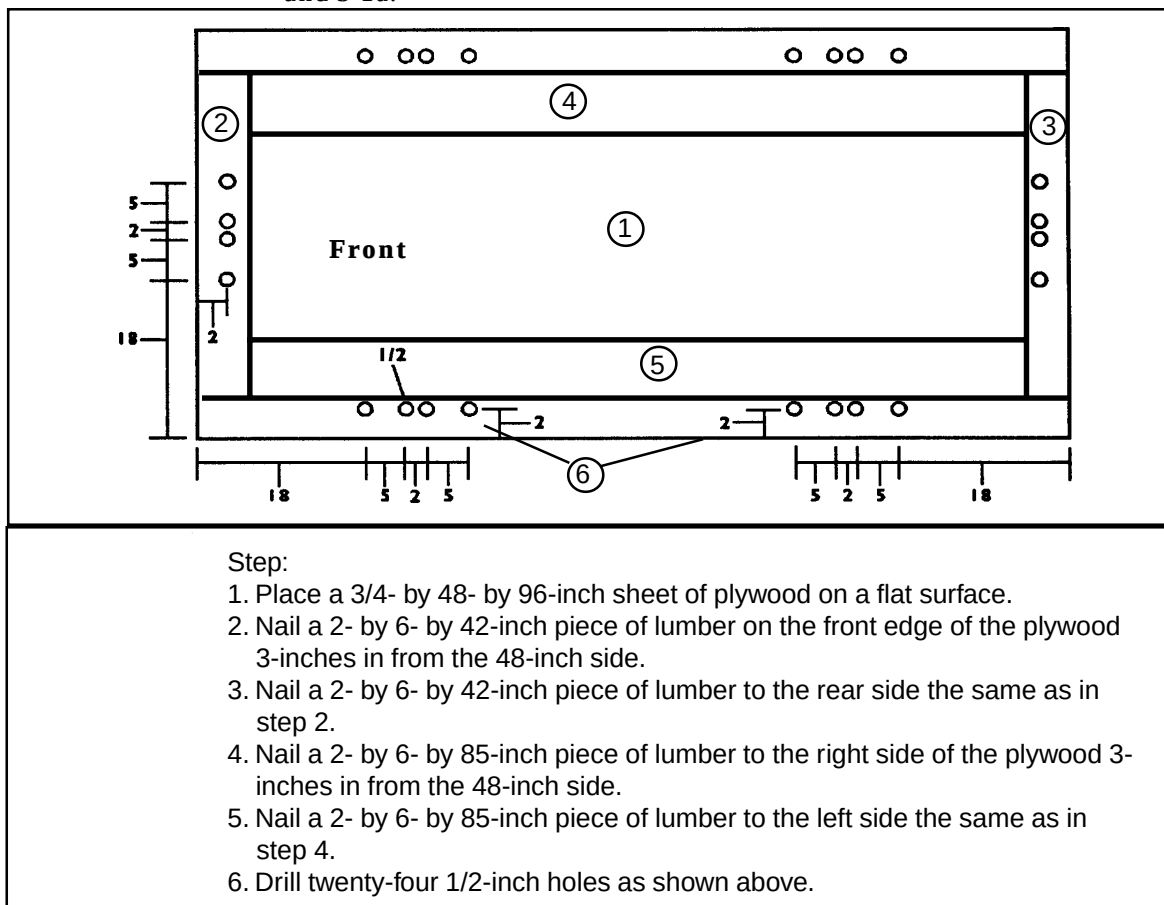


Figure 3-1. Construction Detail for Platform

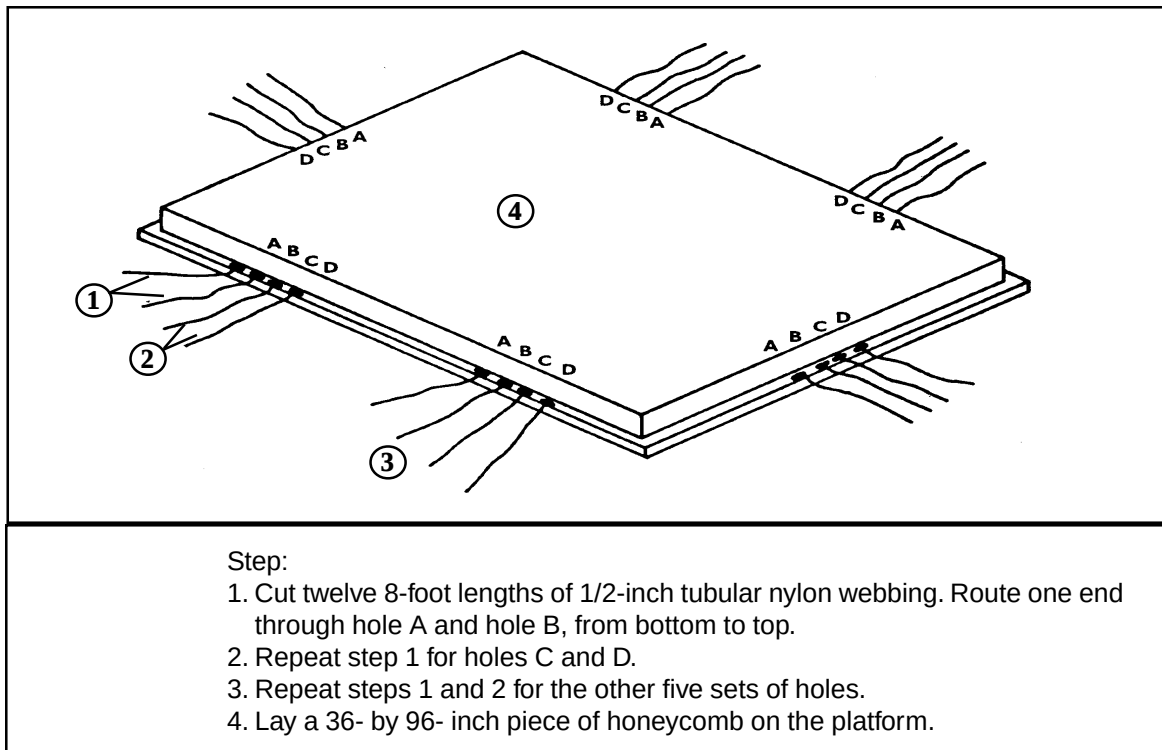


Figure 3-1a. Construction Detail for Platform

POSITIONING AND JOINING A-22 SLING ASSEMBLIES

3-3. Lay two A-22 cargo bag sling assemblies on the platform as shown in Figure 3-2, and join them together as shown in Figure 3-3.

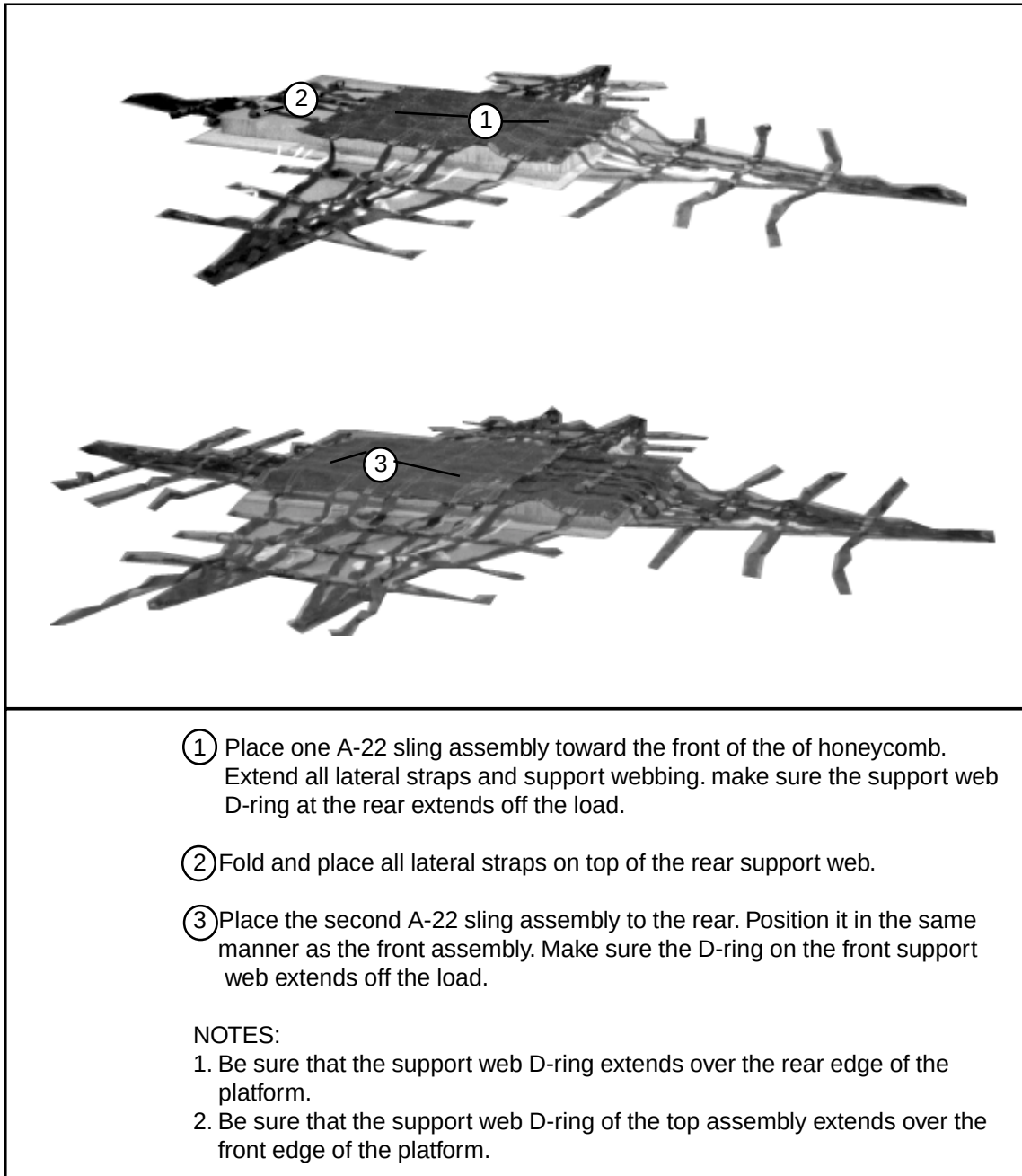


Figure 3-2. A-22 Sling Assemblies Placed on the Platform

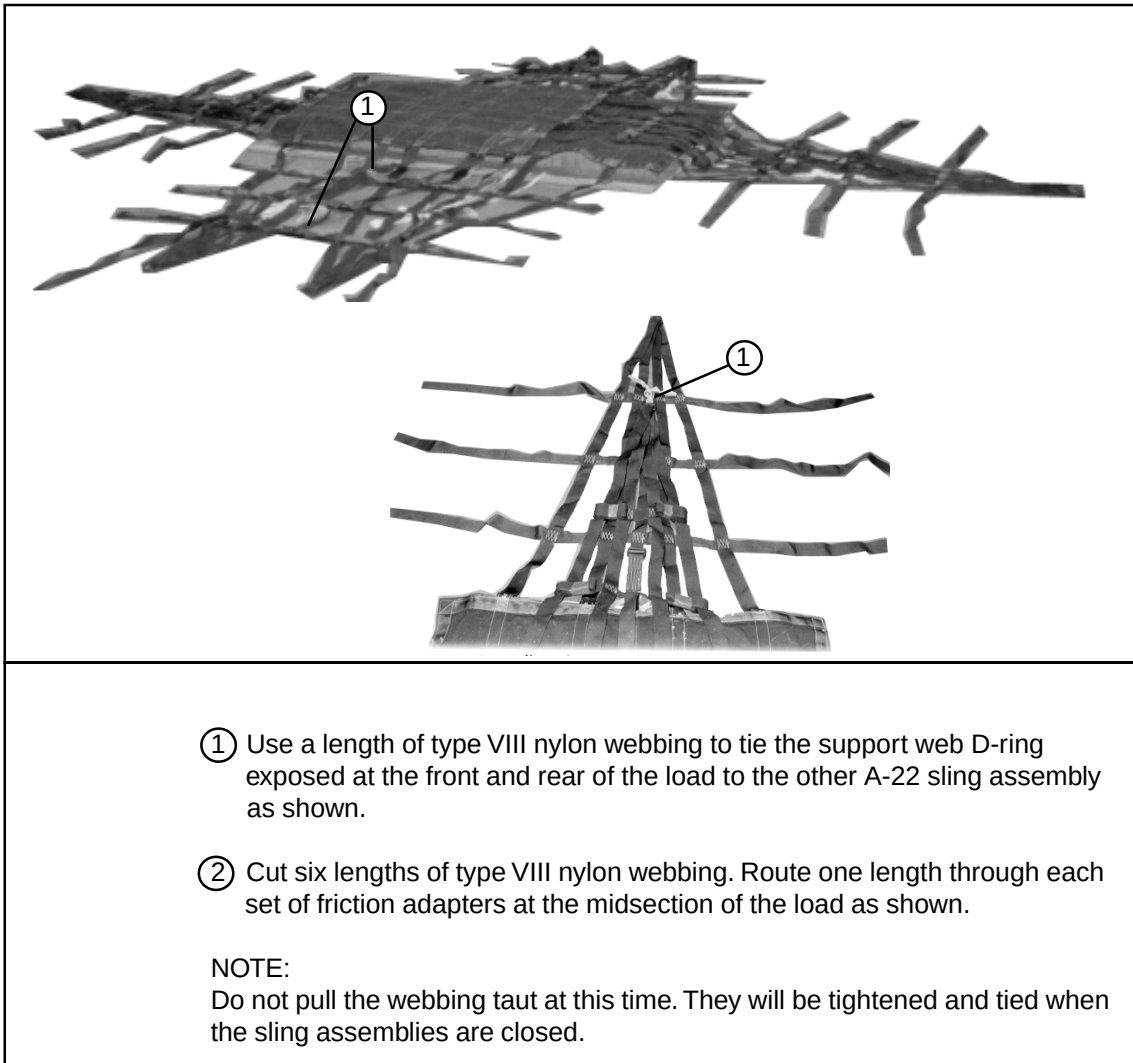


Figure 3-3. A-22 Sling Assemblies Joined

POSITIONING A-22 CARGO COVERS AND HONEYCOMB

3-4. Lay two A-22 cargo bag covers on the sling assemblies. Set the honeycomb on the covers as shown in Figure 3-4.

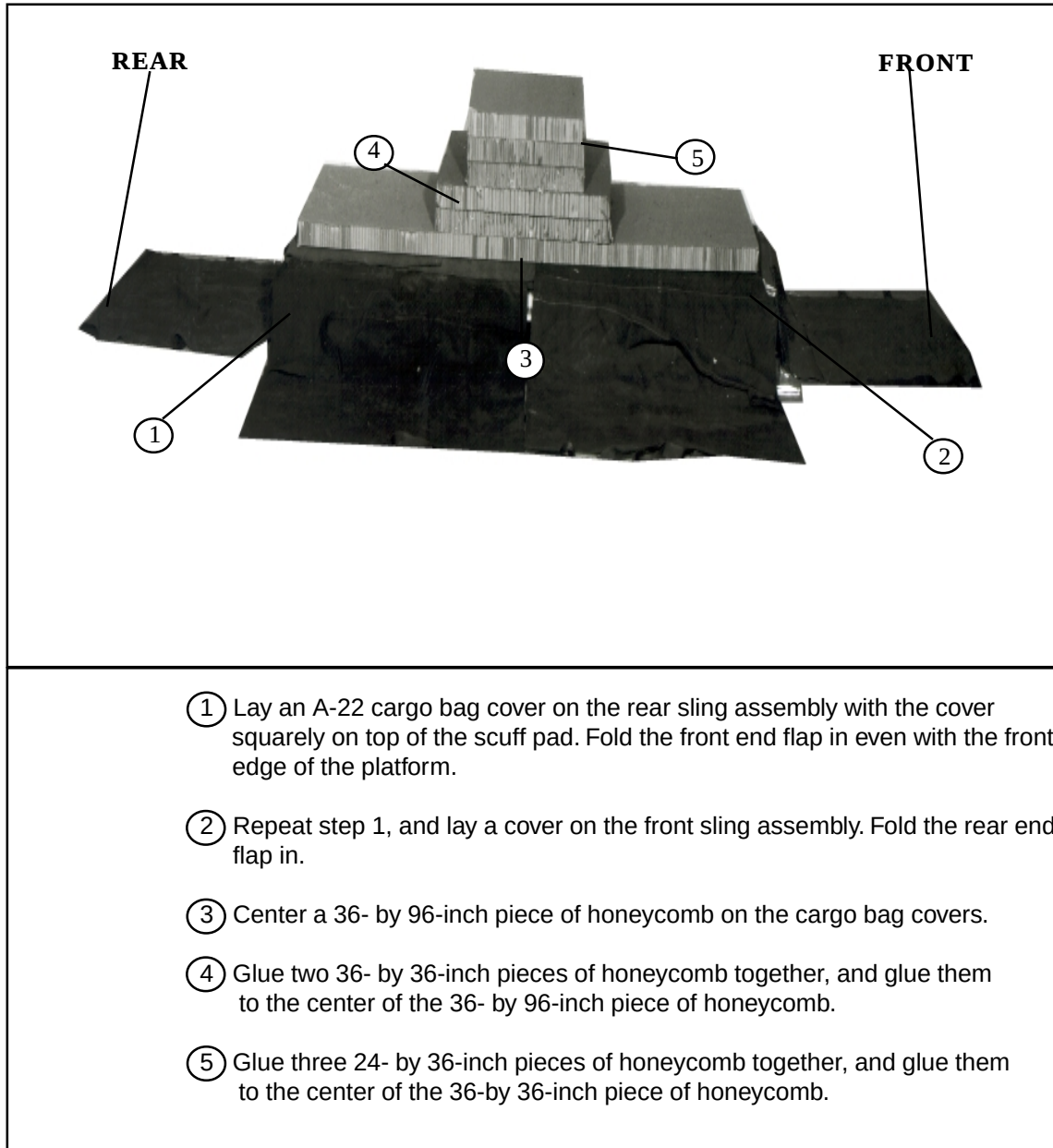


Figure 3-4. Cargo Covers and Honeycomb Positioned on Platform

PREPARING, POSITIONING AND PROTECTING MOTORCYCLES

3-5. Prepare the two motorcycles as outlined in Chapter 2. Set them on the honeycomb as shown in Figure 3-5.

- Tie honeycomb protectors to the motorcycles as shown in Figure 3-6.

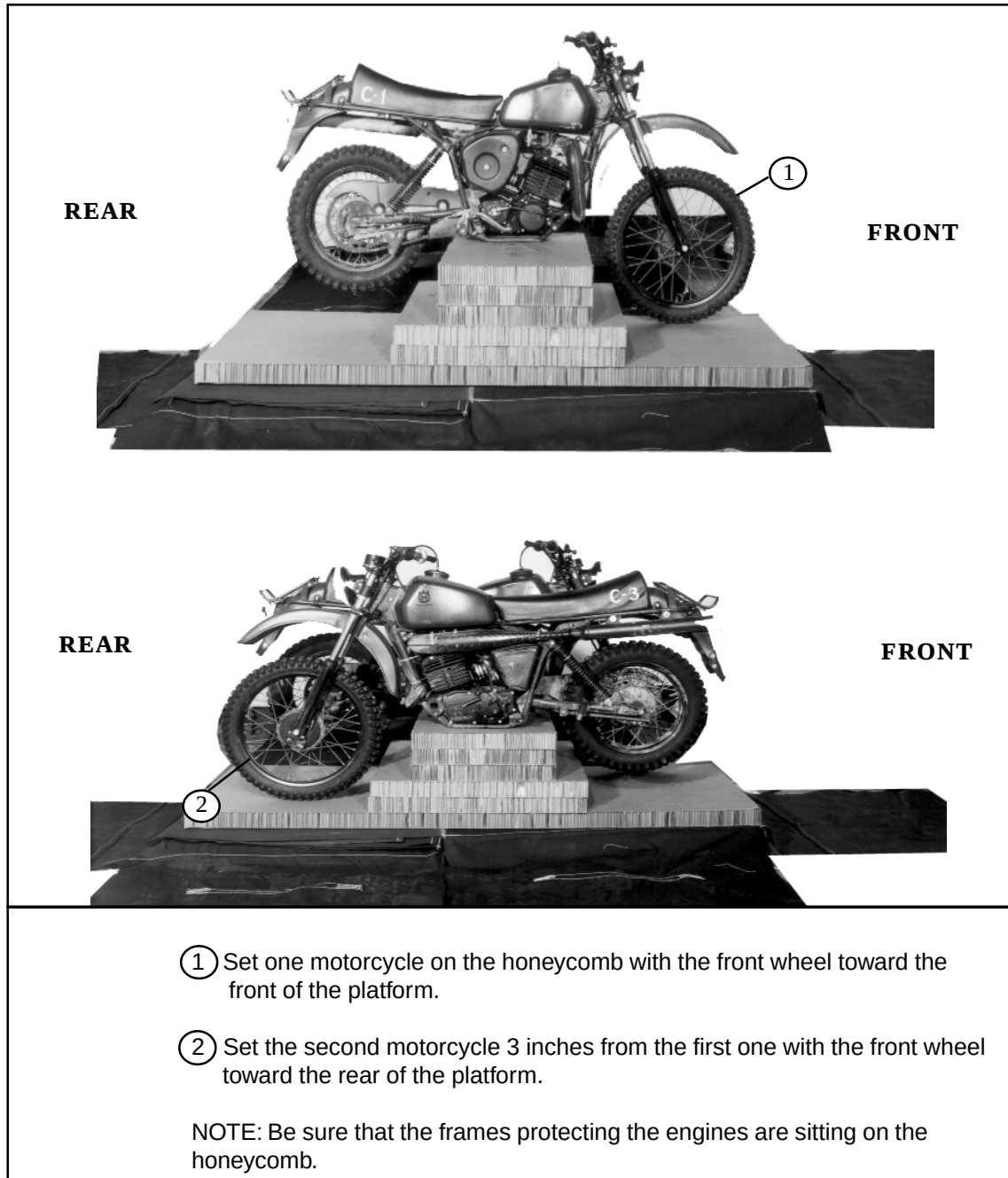


Figure 3-5. Motorcycles Placed on Honeycomb

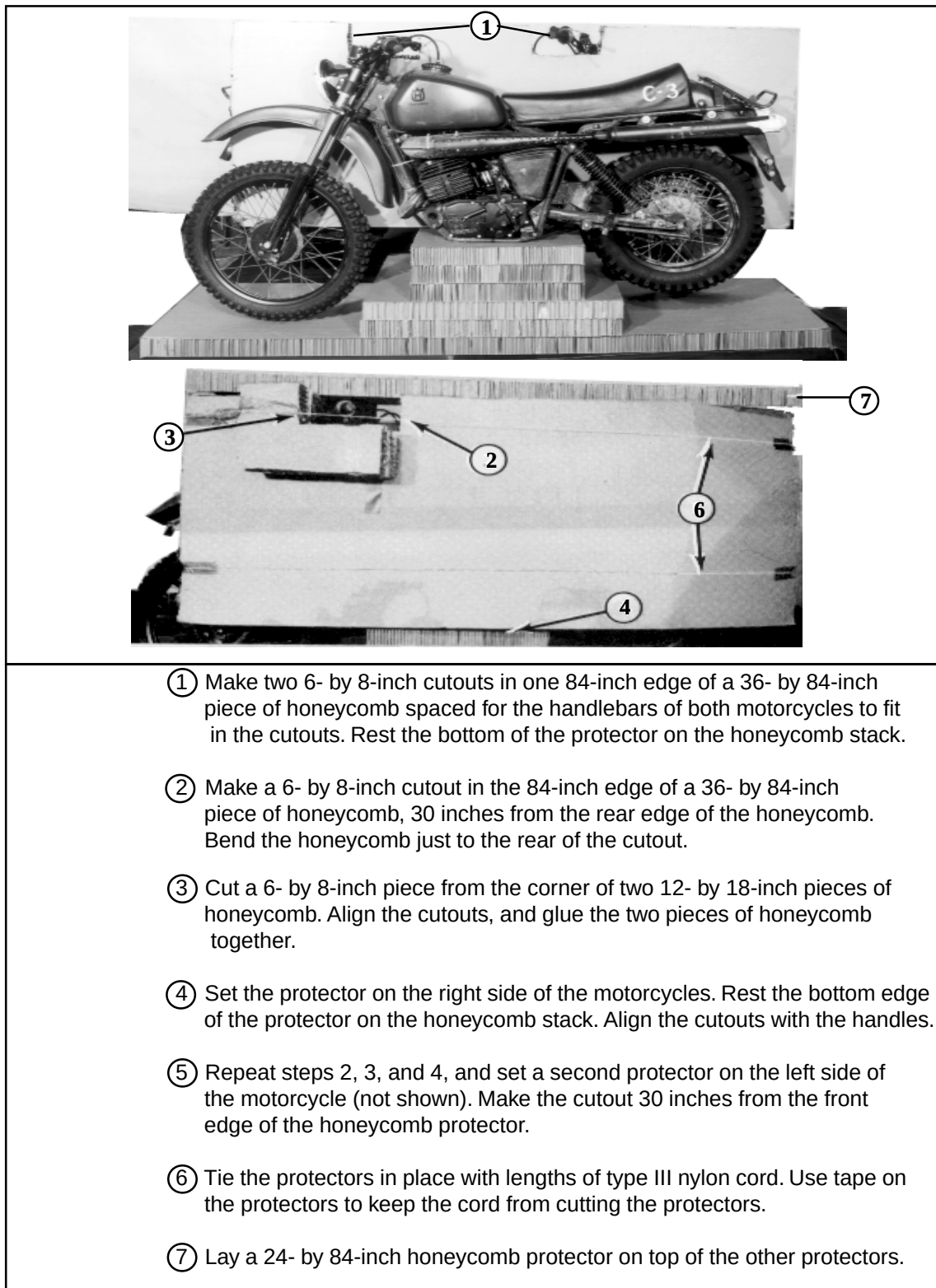


Figure 3-6. Honeycomb Protectors Prepared and Tied to Motorcycles

CLOSING CARGO BAG

3-6. Close the A-22 cargo bags as outlined in FM 10-500-3/TO 13C7-1-11 and with the exceptions shown in Figures 3-7 through 3-10.

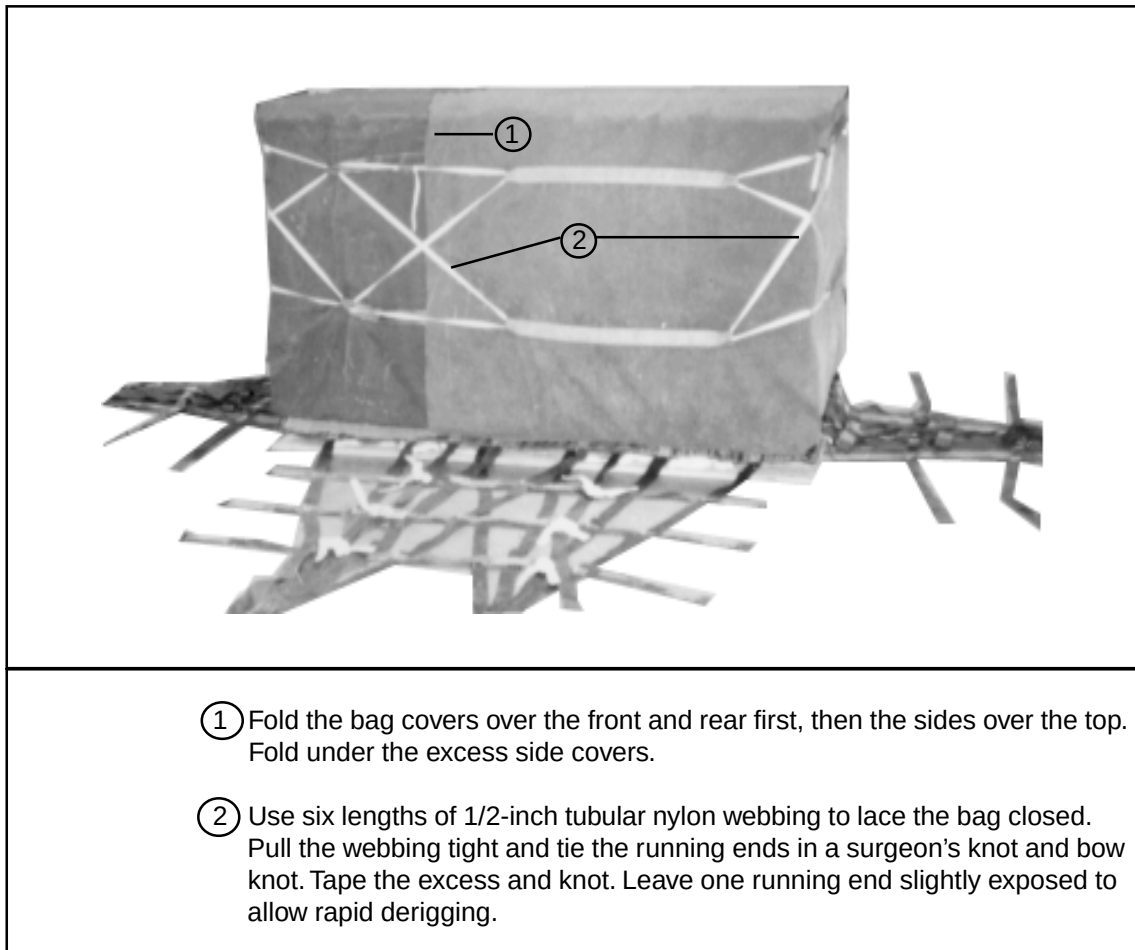


Figure 3-7. Cargo Bags Closed

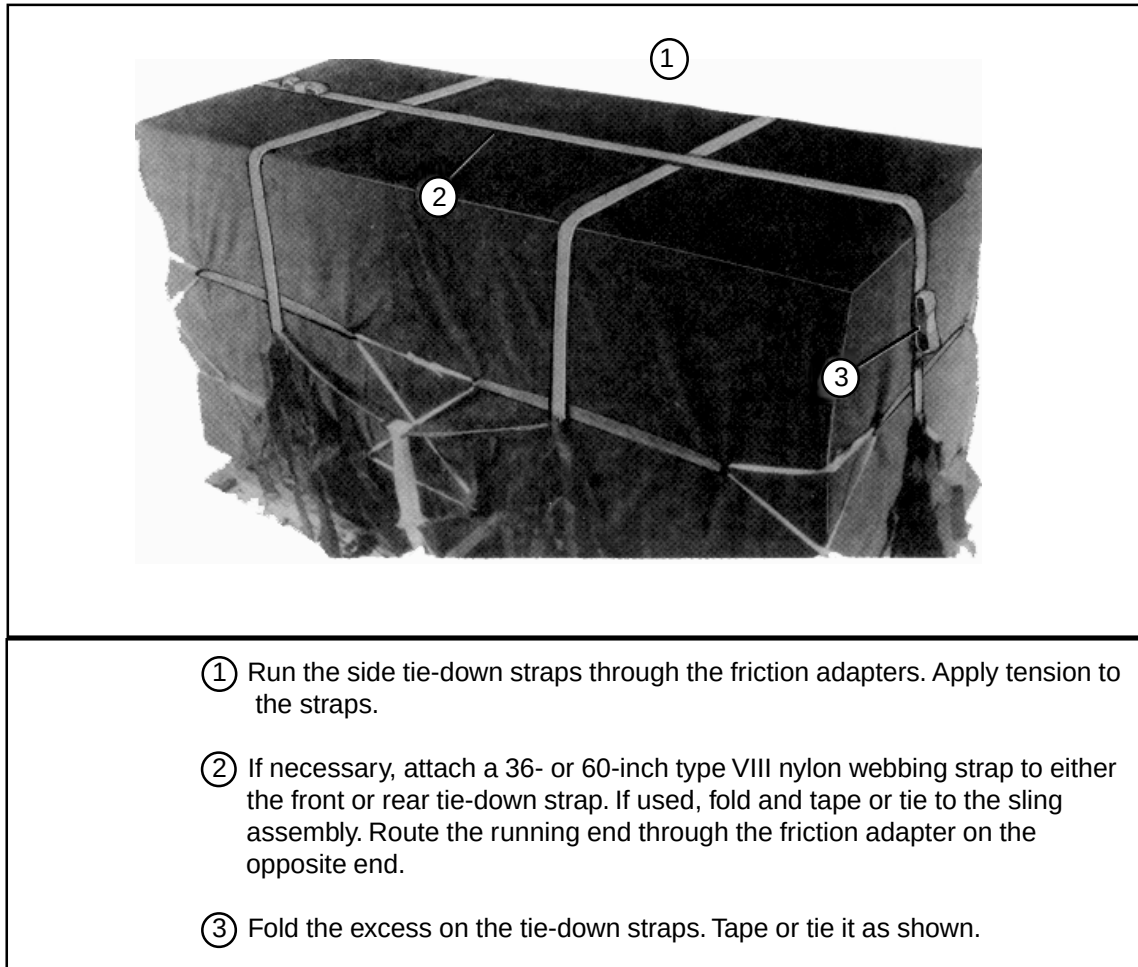
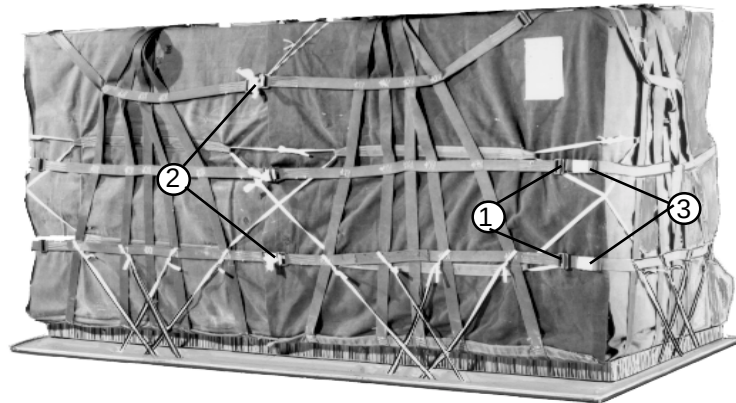


Figure 3-8. Cargo Bags Tie-down Straps Secured



- ① Lay the remaining portions of the sling assemblies over the load. Route the lateral straps through the friction adapters.
- ② Tighten the center friction adapters and type VIII nylon webbing so that the middle suspension web on each container is vertical. Install a knot in the running ends of the type VIII nylon webbing about 3 inches from the friction adapters.
- ③ Apply equal tension on the remaining lateral straps. Fold the excess and tape or tie it in place as shown.

NOTE:

If top lateral straps are on the top of the load, make sure they are tightened loosely.

Figure 3-9. Cargo Bags Lateral Straps Secured

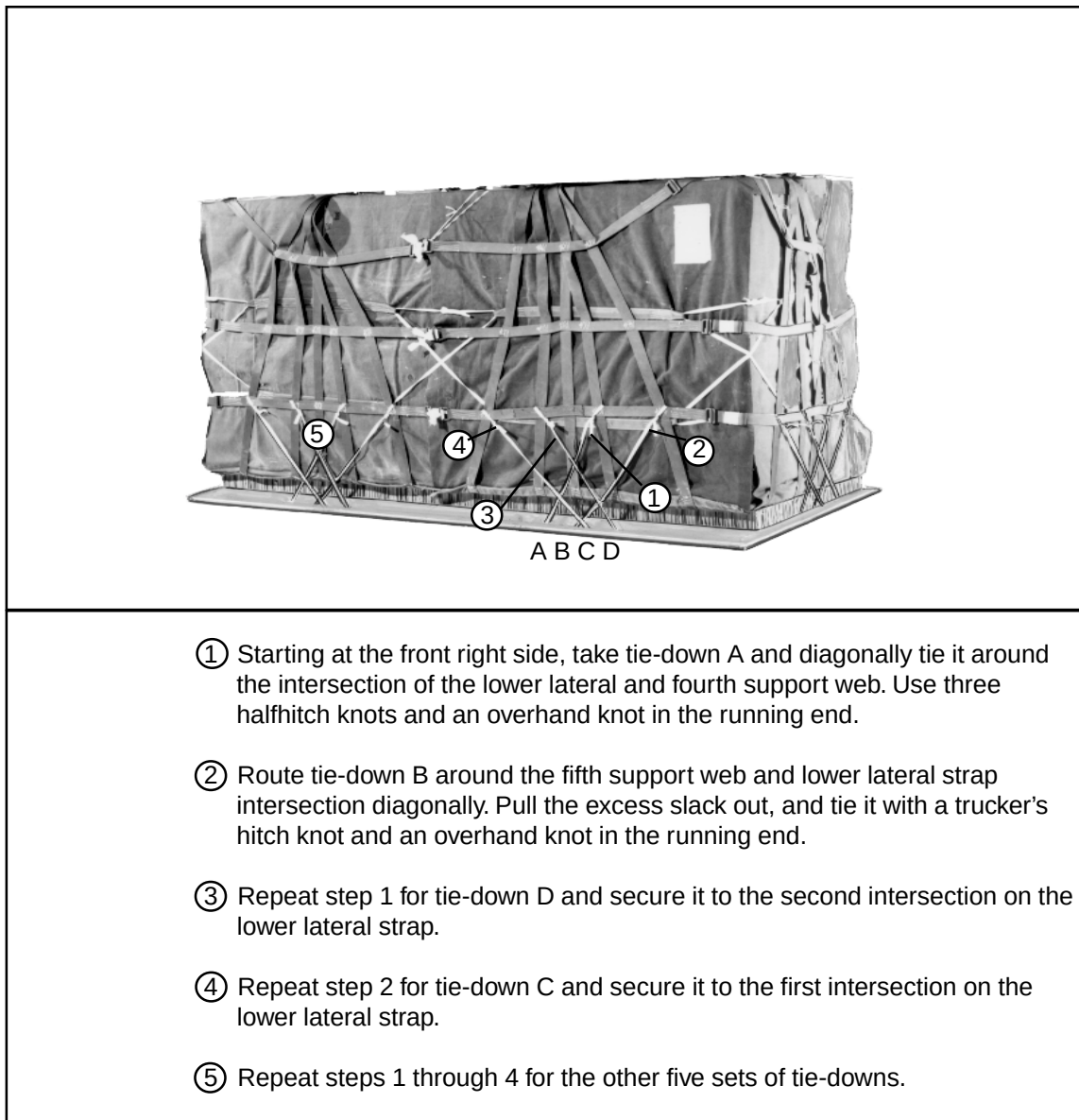


Figure 3-10. Skid Board Ties Secured

ATTACHING SUSPENSION SLINGS

3-7. Fit a suspension web to each support web D-ring. Fit two 3-foot slings to the suspension webs as shown in Figure 3-11.

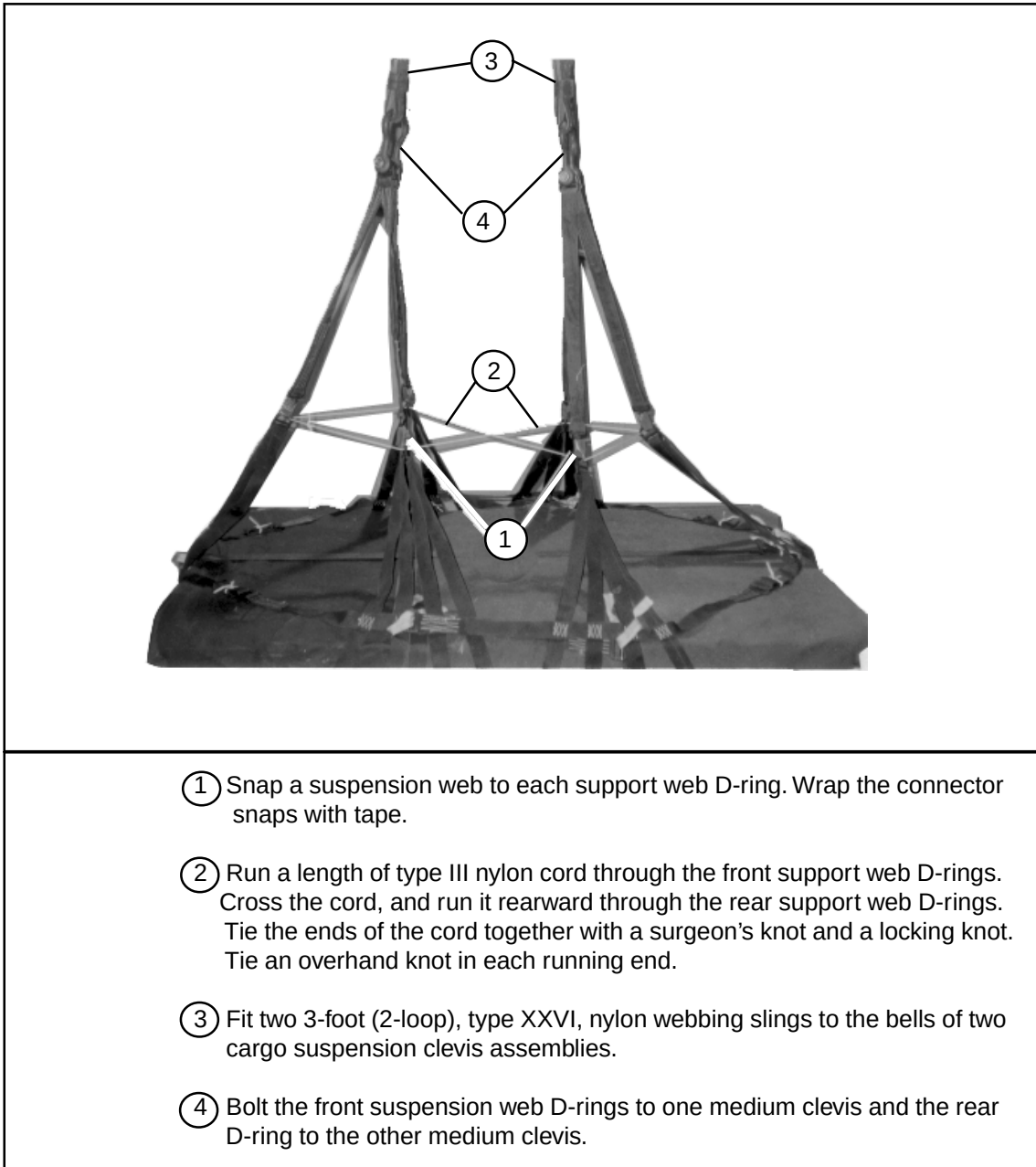


Figure 3-11. Suspension Slings Installed

PACKING A 15-FOOT CARGO EXTRACTION PARACHUTE

3-8. Pack a 15-foot cargo extraction parachute as shown in Figures 3-12 through 3-17 using the following items:

- One T-10 deployment bag with static line.
- Retainer bands.
- 1/4 inch cotton webbing.
- Ticket number 5 cotton thread.
- Two medium cargo suspension clevises.
- For parachute with a 36-inch adapter web: One 9-foot (2-loop), type XXVI, nylon sling and one type IV connector link.
- For parachute without a 36-inch adapter web: One 12-foot (2-loop), type XXVI, nylon sling and one 60-inch nylon webbing strap (shear strap).

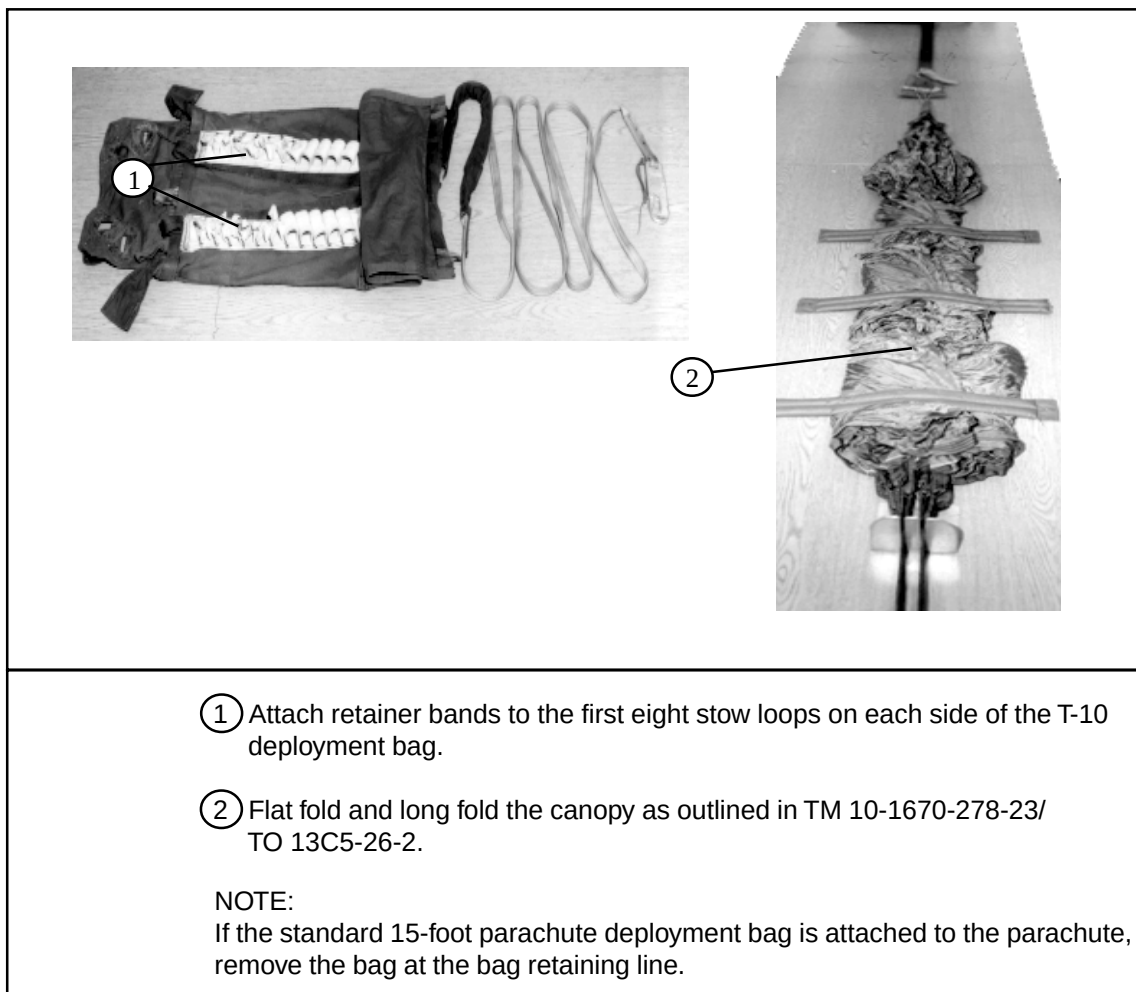


Figure 3-12. Retainer Bands Attached and Canopy Folded

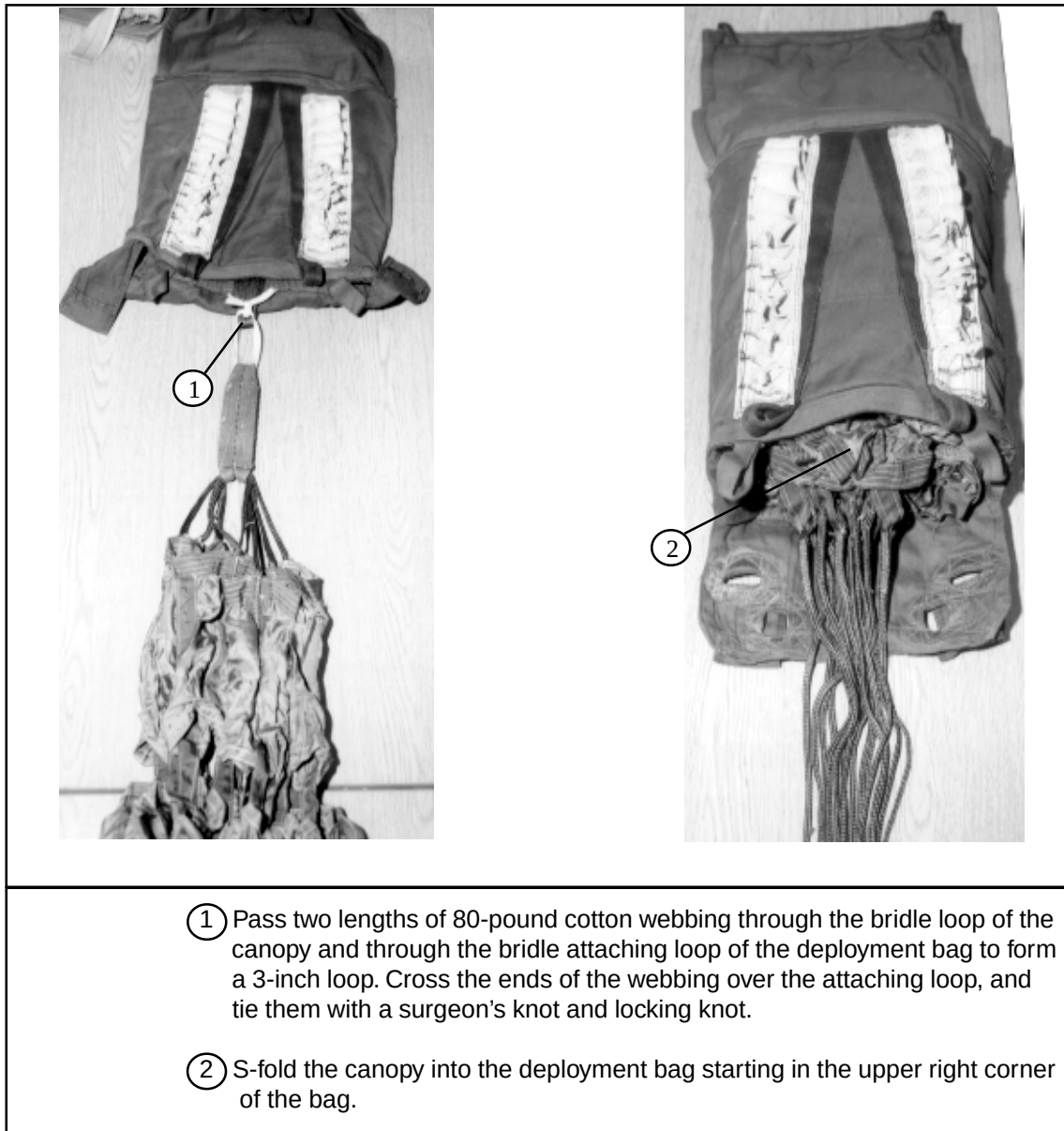


Figure 3-13. Deployment Bag Attached and Canopy Stowed

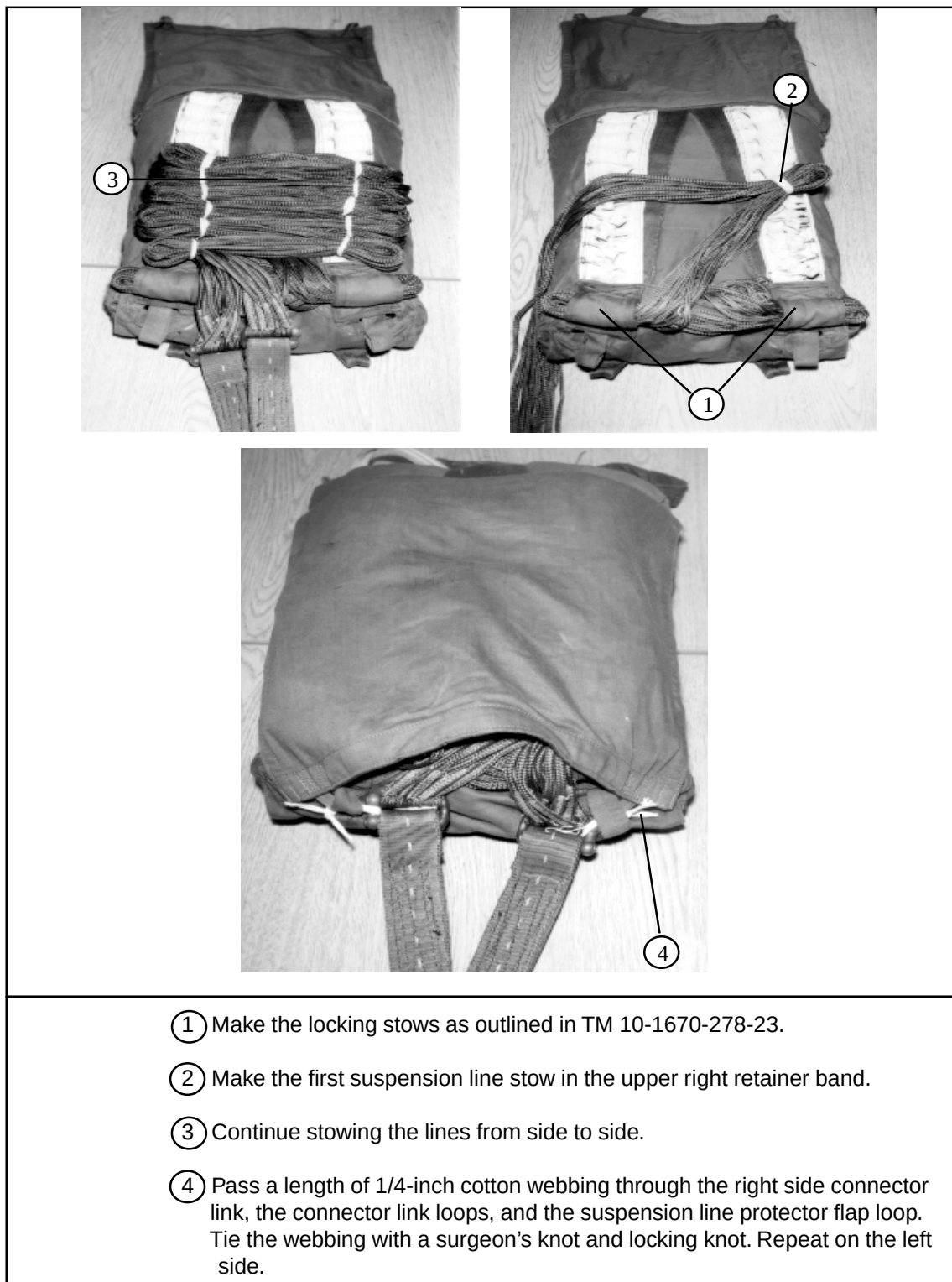
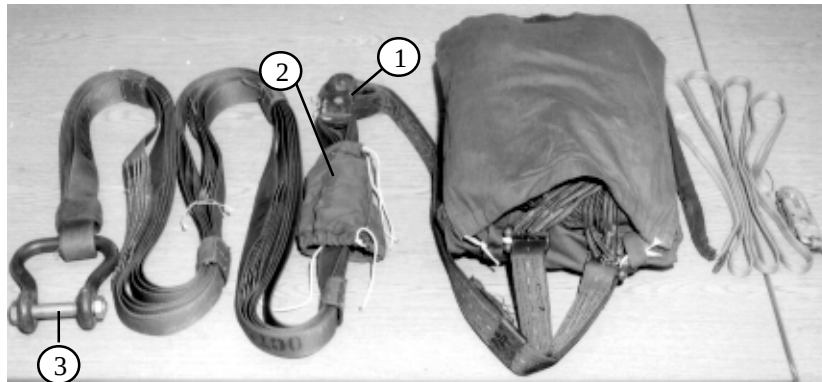
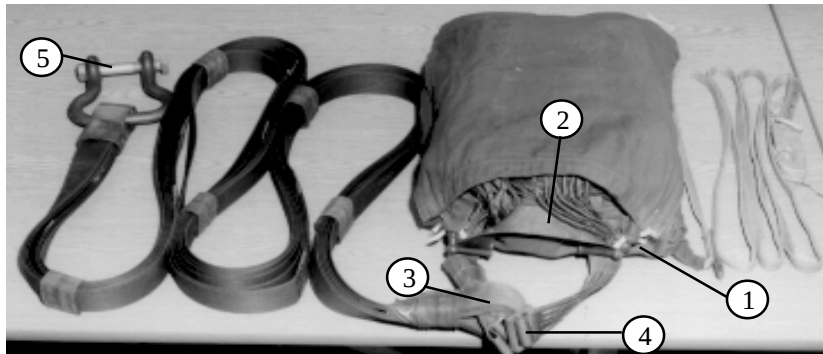


Figure 3-14. Locking and Suspension Line Stows Made and Connector Links Tied



- ① Attach a type IV link assembly or medium clevis to the 36-inch adapter web.
- ② Attach a 9-foot (2-loop), type XXVI, nylon webbing sling to the type IV link or medium clevis.
- ③ Bolt a medium suspension clevis (shown) or a type IV link assembly to the free end of the sling.

Figure 3-15. Deployment Line Installed on a 36-inch Adapter Web

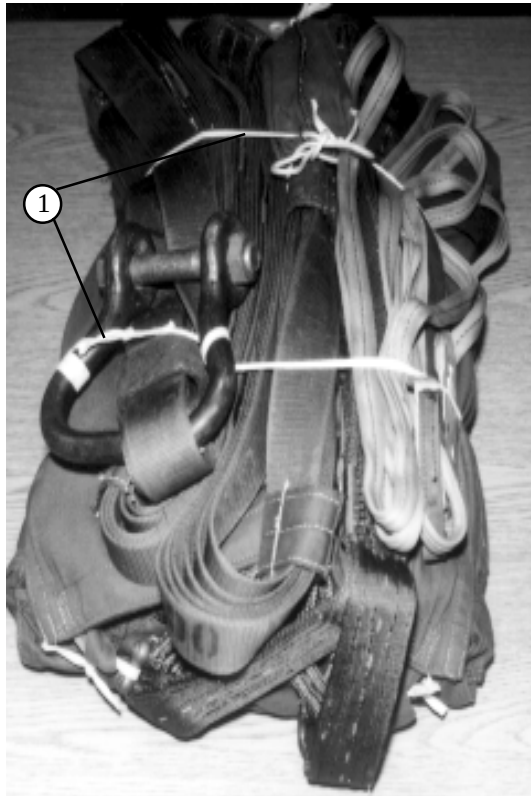


- ① Secure the parachute connector links as shown in step 4.
- ② Run one end of a 60-inch shear strap through both of the parachute connector links.
- ③ Run one end of the 60-inch shear strap through one end of a 12-foot (3-loop), type X, nylon sling.
- ④ Fasten the friction adapter, and adjust the shear strap to form a 12-inch loop. Tape the excess strap.
- ⑤ Bolt a medium suspension clevis (shown) or a type IV link assembly to the free end of the sling.

NOTE:

The above procedures are for a 15-foot cargo extraction parachute without a 36-inch adapter web.

Figure 3-16. Deployment Line Installed on a 60-inch Adapter Web



- ① S-fold the deployment line and static line. Place them on top of the deployment bag. Secure them in place with two lengths of 1/4-inch cotton webbing wrapped around the lines and bag.

Figure 3-17. Cargo Extraction Parachute Packed in a T-10 Deployment Bag

PREPARING AND STOWING A G-12 CARGO PARACHUTE AND THE 15-FOOT CARGO EXTRACTION

3-9. Prepare a G-12 cargo parachute. Stow it and the 15-foot cargo extraction parachute on the load as shown in Figure 3-18.

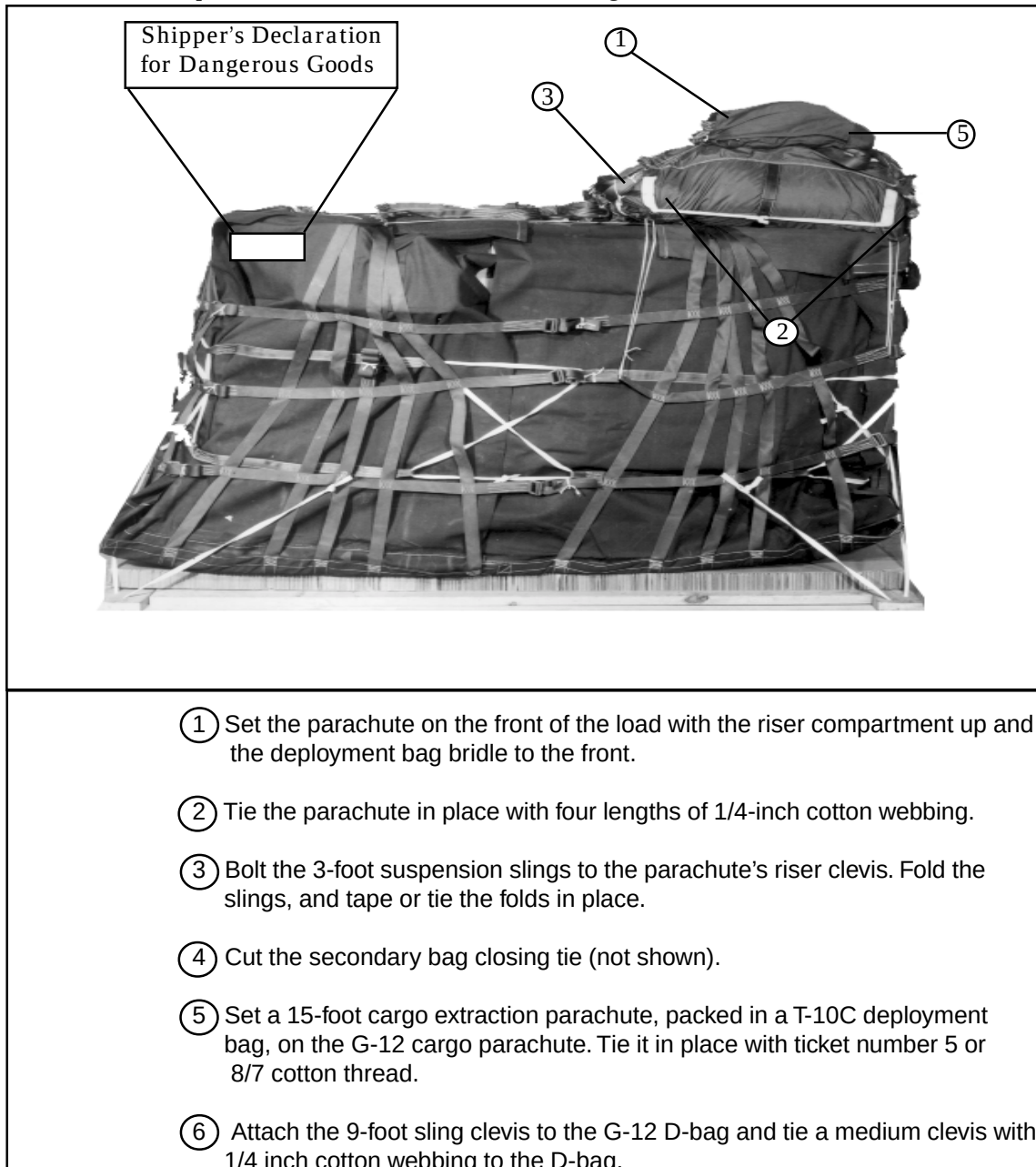


Figure 3-18. Parachutes Stowed on Motorcycles Rigged for a Low-Velocity Airdrop

MARKING RIGGED LOAD

3-10. Complete Shipper's Declaration for Dangerous Goods and securely attach it to the load as shown in Figure 3-19. Indicate on the form that the fuel tank has been prepared in accordance with AFJMAN 24-204/TM 38-250. If the load varies, the weight, height, and parachute requirements must be recomputed.

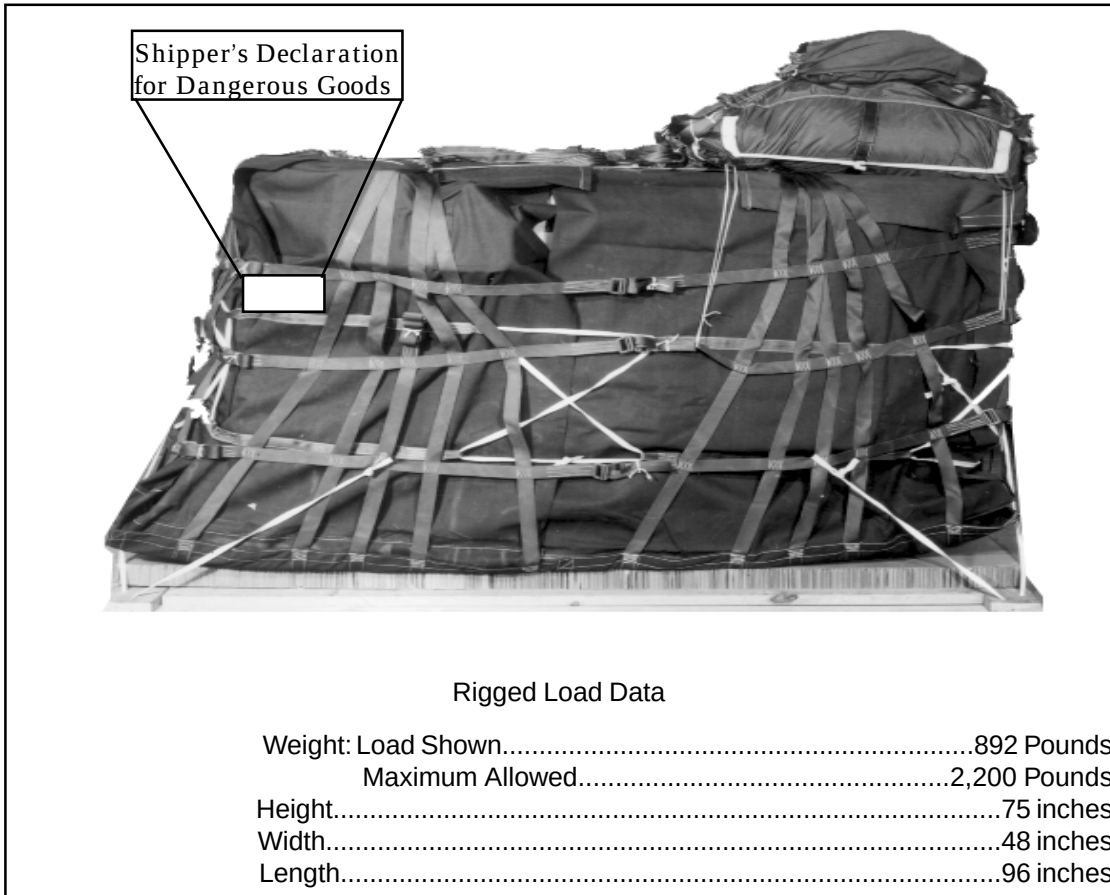


Figure 3-19. Motorcycles Rigged for Low-Velocity Airdrop

EQUIPMENT REQUIRED

3-9. The equipment needed to prepare and rig this load is listed in Table 3-1.

Table 3-1. Equipment Required for Rigging Two Motorcycles for Low-Velocity Airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	as required
1670-00-587-3421	A-22 cargo bags	2
1670-01-248-9502	*Bag, deployment, personnel parachute, T-10C	1
1670-00-568-0323	*Band, rubber, retainer parachute	as required
4030-00-678-8562	Clevis assembly, suspension, cargo medium 3/4"	4
4020-00-240-2146	Cord, nylon, type III, 550-lb	as required
1670-00-783-5988	*Link assembly, type IV	1
5510-00-220-6148	Lumber: 2- by 6- by 48-in 2- by 6- by 85-in	2 2
5315-00-010-4659	Nail, steel wire, common, 8d	as required
1670-00-753-3928	Pad, energy-dissipating honeycomb, 3- by 36- by 96-in 12- by 18-in 24- by 36-in 24- by 84-in 36- by 36-in 36- by 84-in 36- by 96-in	7 sheets (4) (3) (1) (2) (3) (2)

*These items are needed to pack the 15-foot cargo extraction parachute.

Table 3-1. Equipment Required for Rigging Two Motorcycles for Low-Velocity Airdrop (cont)

National Stock Number	Item	Quantity
1670-01-065-3755	Parachute: Cargo, G-12E	1
1670-01-063-3715	*Cargo, extraction, 15-ft	1
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	2
	Sling, cargo, airdrop, type XXVI, nylon webbing:	
1670-01-062-6301	3-ft (2-loop)	2
1670-01-062-6304	*9-ft (2-loop)(deployment line)	1
1670-00-998-0117	Static line, cargo parachute, breakaway-type	1
7510-00-266-5016	Tape, adhesive, 2-in	as required
8310-00-917-3945	Thread, cotton, ticket Number 5	as required
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch	as required
8305-00-268-2453	Nylon, tubular, 1/2-in, 1,000-lb	as required
8305-00-263-3591	Nylon, type VIII	as required

*These items are needed to pack the 15-foot cargo extraction parachute.

GLOSSARY

ACB	attitude control bar
AD	airdrop
AFB	Air Force base
AFJMAN	Air Force Joint Manual
AFR	Air Force regulation
AFTO	Air Force technical order
ALC	Airlift Logistics Center
attn	attention
C	change
cap	capacity
CEP	combat expendable platform
CB	center of balance
chap	chapter
d	penny
DA	Department of the Army
DC	District of Columbia
DD	Department of Defense
diam	diameter
EFTC	extraction force transfer coupling
fig	figure
FM	field manual
ft	foot/feet
gal	gallon
HQ	headquarters
in	inch
JAI	joint airdrop inspector
lb	pound
LV	low-velocity
MCRP	Marine Corps Reference Publication
mm	millimeter
NSN	national stock number
OVE	on-vehicular equipment
TM	technical manual
TO	technical order
TRADOC	US Army Training and Doctrine Command
US	United States
w	with
yd	yard

REFERENCES

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

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

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* Shipper's Declaration for Dangerous Goods has superseded DD Form 1387-2 (February 1982.) This revision reflects this change.

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By Order of the Secretary of the Army:

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