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MCRP 4-11.3A
TO 13C7-1-171

Airdrop of Supplies and Equipment: Rigging Ammunition Systems

MARCH 2016

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Airdrop of Supplies and Equipment: Rigging Ammunition Systems

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Preface

TM 4-48.15/MCRP 4-11.3A/TO 13C7-1-171 provides doctrinal guidance and direction for United States Army, United States Marine Corps, and United States Air Force units conducting aerial delivery operations. This manual provides information on how to prepare and rig ammunition systems. These ammunition systems are rigged for airdrop from a C-130 or C-17 aircraft.

The principal audience for TM 4-48.15/MCRP 4-11.3A/TO 13C7-1-171 is all members of the profession of arms. Commanders and staffs of Army, Marine Corps, and Air Force headquarters serving as joint task force or multinational headquarters should also refer to applicable joint or multinational doctrine concerning the range of military operations and joint or multinational forces. Trainers and educators throughout the Army, Marine Corps, and Air Force will also use this publication.

Commanders, staffs, and subordinates ensure that their decisions and actions comply with applicable United States, international, and in some cases host-nation laws and regulations. Commanders at all levels ensure that their Soldiers, Marines, and Airmen operate in accordance with the law of war and the rules of engagement. (See FM 27-10).

TM 4-48.15/MCRP 4-11.3A/TO 13C7-1-171 does not implement any STANAGs.

TM 4-48.15/MCRP 4-11.3A/TO 13C7-1-171TM 4-48.16/MCRP 4-11.3B/TO 13C7-18-41 uses joint terms where applicable. Selected joint and Army terms and definitions appear in both the glossary and the text. Terms for which TM 4-48.15/MCRP 4-11.3A/TO 13C7-1-171 is the proponent publication (the authority) are italicized in the text and marked with an asterisk (*) in the glossary. Terms and definitions for which TM 4-48.15/MCRP 4-11.3A/TO 13C7-1-171 is the proponent publication are boldfaced in the text. For other definitions shown in the text, the term is italicized and the number of the proponent publication follows the definition.

TM 4-48.15/MCRP 4-11.3A/TO 13C7-1-171 applies to the Active Army, Army National Guard/Army National Guard of the United States, United States Army Reserve, the total force Marine Corps, and United States Airforce units unless otherwise stated.

The proponent of TM 4-48.15/MCRP 4-11.3A/TO 13C7-1-171 is the United States Army Quartermaster School. The preparing agency is the G-3 Doctrine Division, USACASCOM. Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to Commander, United States Army Combined Arms Support Command and Fort Lee, ATTN: ATCL-TS, 2221 A Avenue, Fort Lee, Virginia 23801 or submit an electronic DA Form 2028 by e-mail to: usarmy.lee.tradoc.mbx.leee-cascom-doctrine@mail.mil. In addition to submission of DA Form 2028, provide same comments and recommendations in MilWiki for rapid dissemination to doctrine authors and for universal review at https://www.milsuite.mil.

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

Introduction

This revision to the TM publishing medium/nomenclature has been accomplished to comply with U.S. Army Training and Doctrince Command doctrine restructuring requirements. The title is slightly changed and the content of the manual(s) is nearly identical to that of the superseded manual(s) unless specifically noted changes are identified. There has been no change to procedural content in the main body. This special revision does not integrate any changes in Army doctrine since 29 May 1984 / 14 April 2000 / 3 October 1995 / 6 September 2007 and does alter the publication's original references.

DESCRIPTION OF ITEMS

The descriptions of the items rigged in this manual are given below:

Dragon or Dragon II Missiles

- Nine one-round containers are rigged in an A-22 cargo bag on a standard skid for a low-velocity airdrop.
- One 15-round container is rigged in an A-22 cargo sling on a standard skid for a low-velocity airdrop.
- Thirty-six one-round containers are rigged on an 8-foot type V platform for a low-velocity airdrop.
- Four 15-round containers are rigged on an 8-foot type V platform for a low-velocity airdrop.
- Four A-22 cargo bags with nine one-round containers in each A-22 cargo bag are rigged on an 8-foot type V platform for low-velocity airdrop.
- Four A-22 cargo slings with four 15-round containers are rigged on an 8-foot type V platform for low-velocity airdrop.

Javelin Missiles

- Rigging Two-Round A-7Adoor bundle for low-velocity airdrop.
- Rigging Four-Round A-7A door bundle for low-velocity airdrop.
- Rigging Nine-Round Container Delivery System (CDS) rigged in an A-22 stretch container for low-velocity airdrop.
- Rigging Javelin Missile Containers (plastic) in an A-22 container cargo bag assembly for low-velocity airdrop.
- Rigging thirty-Six Javelin Rounds as a mass supply load on a 12-foot type V, platform for low-velocity airdrop.
- Rigging Javelin Missile Containers (plastic) on an 8-foot, type V platform for low-velocity airdrop.
- Rigging Javelin Missile Containers on a 16-foot, type V platform for low-velocity airdrop.

Tow Systems And Missiles

- Rigging tow weapon system and missiles in an a-22 cargo bag.
- Rigging 12 Tow Missiles in an A-22 Cargo Bag.
- Rigging 12 Missile Overpacks in an A-22 Cargo Bag.
- Rigging Tow Missiles in ¼-Ton Cargo Trailer.
- Rigging Tow Missiles in Boxes.
- Rigging The Improved Target Acquisition System (Itas) In An M1121 Hmmwv Truck.
- Rigging M966, M1036, and M1121 Tow Carriers.

Mortars

- Rigging 120 Millimeter Mortar with 1 ¼-Ton Hmmwv Truck.
- Rigging Disassembled 120-Millimeter Mortar in 1 ¼-Ton Hmmwv Truck.

Stinger Missiles

- Rigging 1 ¼-Ton Truck with An Avenger Weapon System.
- Rigging 1 ¼-Ton Truck with An Avenger Weapon System And Section Box.
- Rigging Stinger Weapon Systems and Missiles In An A-22 Cargo Bag.
- Rigging Stinger Weapon Systems and Missiles In An A-21 Cargo Bag.
- Rigging 1 ¼-Ton Truck with Stinger Weapon Systems and Missiles.

SPECIAL CONSIDERATIONS

Special considerations for this manual are given below.

- The loads covered in this manual may include hazardous materials as defined in AFMAN 24-204/TM 38-250. If included, the hazardous materials must be packaged, marked, and labeled as required by AFMAN 24-204/TM 38-250.

CAUTION

Only ammunition listed in TM 4-48.16/MCRP 4-11.3B/TO 13C7-18-41 may be airdropped.

- A copy of this manual must be available to the joint airdrop inspectors during the before- and after-loading inspection in accordance with AR 59-4/OPNAVIST 4630.24D/AFJ 13-210(I)/MCO 13480.1C.

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Chapter 1

Rigging Dragon Missiles in an A-22 Cargo Bag

SECTION I-RIGGING NINE ONE-ROUND CONTAINERS

DESCRIPTION OF LOAD

1-1. Nine one-round containers (Figure 1-1) are rigged in an A-22 cargo bag on a standard skid. Each container is 47 ½ inches long, 16 inches wide, 16 inches high, and weighs 67 pounds. The rigged load uses either one G-12 or three G-14 cargo parachutes for low-velocity airdrop from a C-130 or C-17 aircraft.

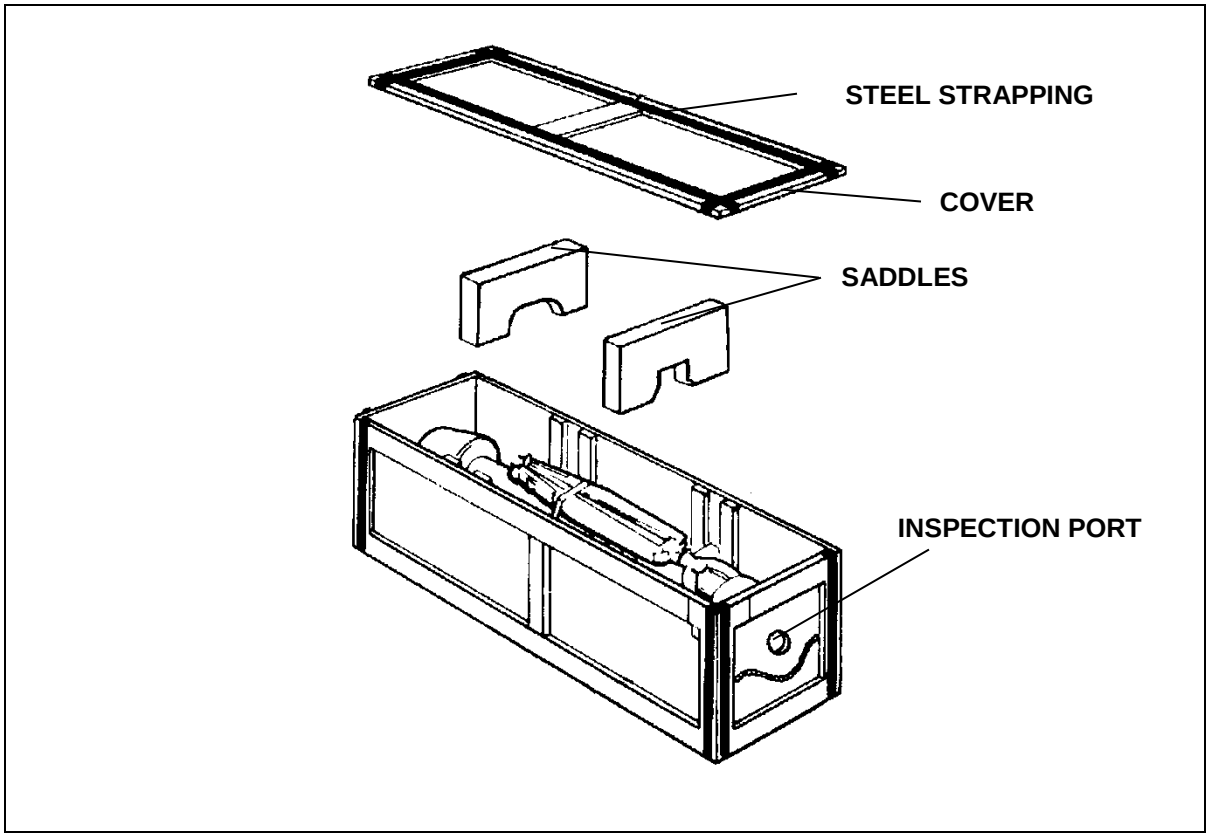
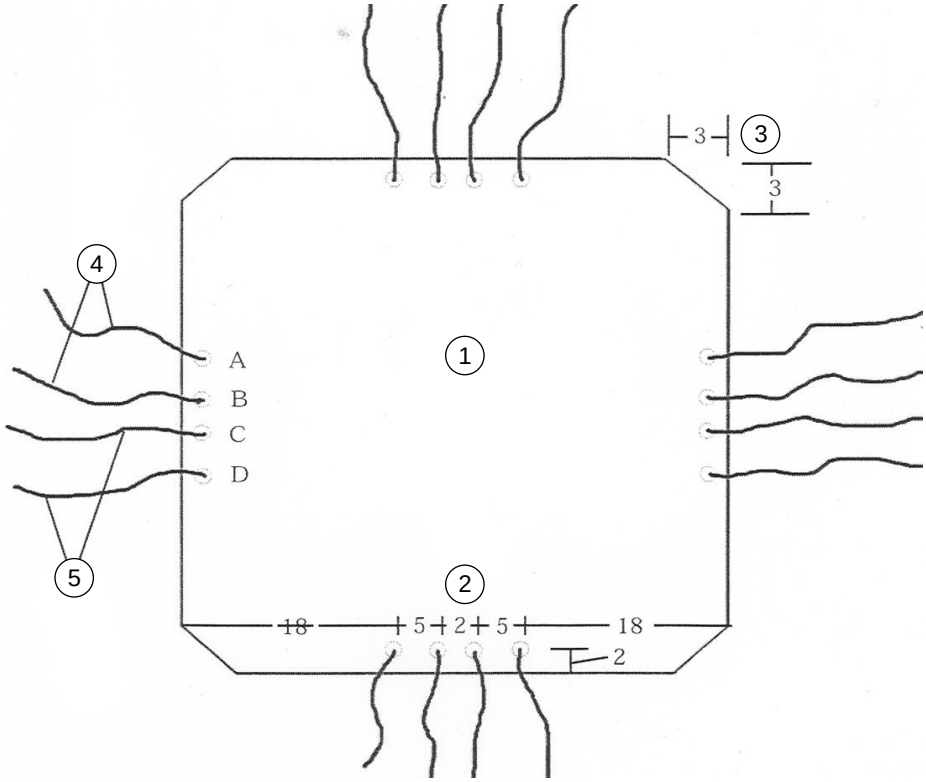


Figure 1-1. Dragon Missile in a One-Round Container

RIGGING LOAD

1-2. Rig nine one-round containers in an A-22 cargo bag according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figures 1-2 through 1-4.

Notes. 1. All dimensions are in inches.
2. This drawing is not drawn to scale.



① Place a 3/4- or 1- by 48- by 48-inch piece of plywood on a flat surface.

② Drill four 1/2-inch holes on each side as shown above.

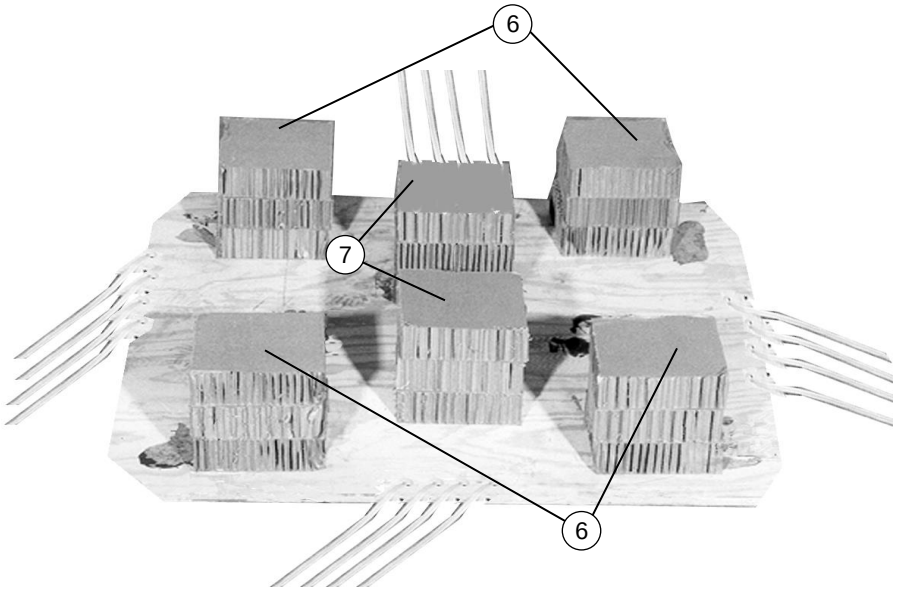
③ Measure 3 inches in from each corner of the skid board and make a diagonal cut.

④ Cut eight 8-foot lengths of 1/2-inch tubular nylon webbing. Route one length through hole A from the bottom and the other end through hole B from the bottom. Ensure the remaining ends are even.

⑤ Repeat step 4 for holes C and D and remaining sides.

Figure 1-2. Skid Prepared and Honeycomb Stacks Positioned

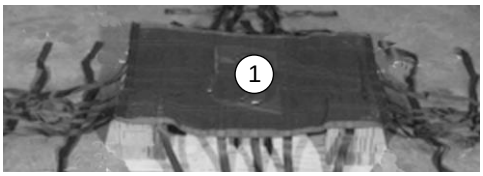
Note. All dimensions are in inches.



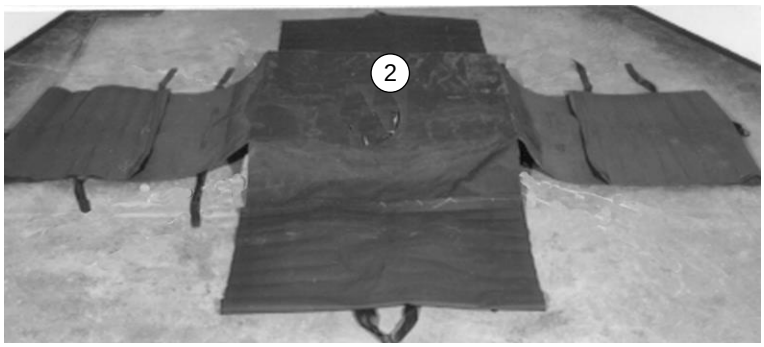
⑥ Make six honeycomb stacks using three layers of 9- by 9-inch honeycomb, and glue the layers together. Position and glue the corner stacks 3 inches in from the sides of the skid.

⑦ Position the center stacks 10 inches in from the skid board edges and center between the sides. Glue the stacks in place.

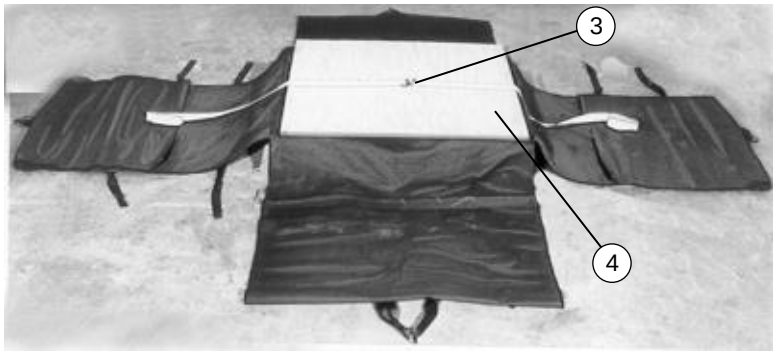
Figure 1-2. Skid Prepared and Honeycomb Stacks Positioned (Continued)



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



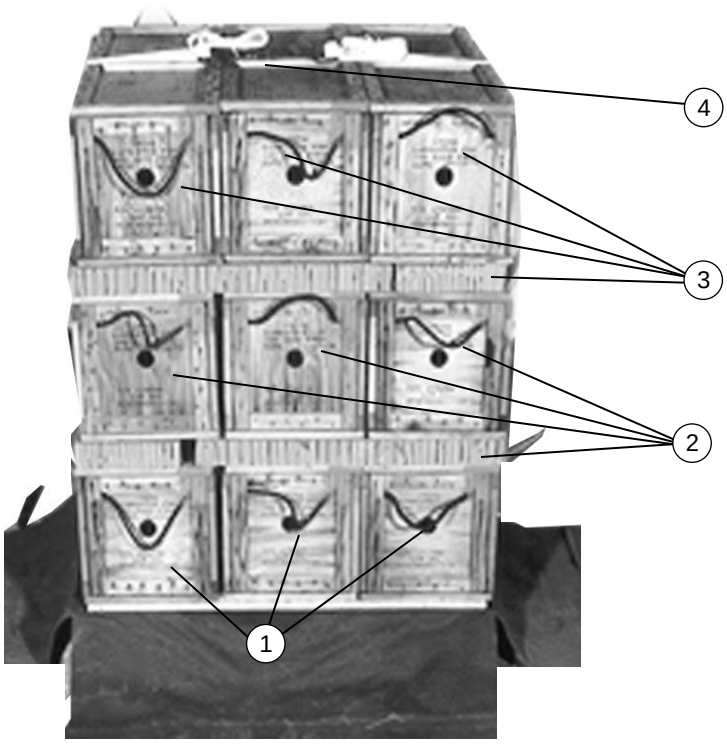
② Center the A-22 cover on the sling assembly with the outside of the cover down.



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

④ Form a 30-foot lashing according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and lay the strap across the center of the plywood from side to side.

Figure 1-3. Cargo Bag, Plywood, and Tiedown Strap Positioned



① Place three containers on the plywood so that the 47 ½-inch sides of the containers are parallel with the sides of the skid.

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 tiedown strap over the top of the stacked containers, and bind the ends together with two D-rings and a load binder.

Figure 1-4. Nine One-Round Containers Positioned

CLOSING CARGO BAG

1-3. Close the A-22 cargo bag according to the steps in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

INSTALLING PARACHUTES

1-4. Prepare and stow one G-12 cargo parachute with a 68-inch pilot parachute or three G-14 cargo parachutes according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Note. This rigged A-22 cargo bag weighs 863 pounds. It is 81 inches high, 53 ½ inches wide and 48 inches long.

EQUIPMENT REQUIRED

1-5. The equipment needed to rig nine one-round containers is listed in Table 1-1.

Table 1-1. Equipment Required for Rigging Nine One–Round Containers in an A-22 Cargo Bag for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste 1-gallon	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	As required
1670-00-217-2421	Link Assembly, parachute connector, removable, L Bar	3
1670-00-753-3928	Pad, energy-dissipating, honeycomb	2 sheets
1670-00-216-7297	Pilot Chute, cargo type, 68-in diam	1
1670-00-999-2658	Parachute, cargo, 34-foot, G-14	3
1670-01-065-3755	Parachute, cargo, 64-foot, G-12	1
5530-00-128-4981	Plywood, 3/4- by 48- by 48-inch	1 sheet
1670-00-883-1654	Skid, cargo bag, platform	1
1670-00-738-5878	Strap, connector, extraction, 60-inch	3
1670-00-738-5879	Strap, connector, extraction, 120-inch	3
8305-00-082-5752	Tape, adhesive, 2-inch	As required
8305-00-263-3591	Tie-down assembly, 15-foot	2
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
8305-00-082-5752	Nylon: Tubular, 1/2-inch	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

SECTION II-RIGGING ONE 15-ROUND CONTAINER

DESCRIPTION OF LOAD

1-6. One 15-round container (Figure 1-5) is rigged in an A-22 cargo sling on a standard skid. The container is 49 inches long, 37 inches wide, 67 inches high, and weighs 695 pounds. The rigged load uses either one G-12, or three G-14 cargo parachutes. The rigged load also uses four extra suspension webs.

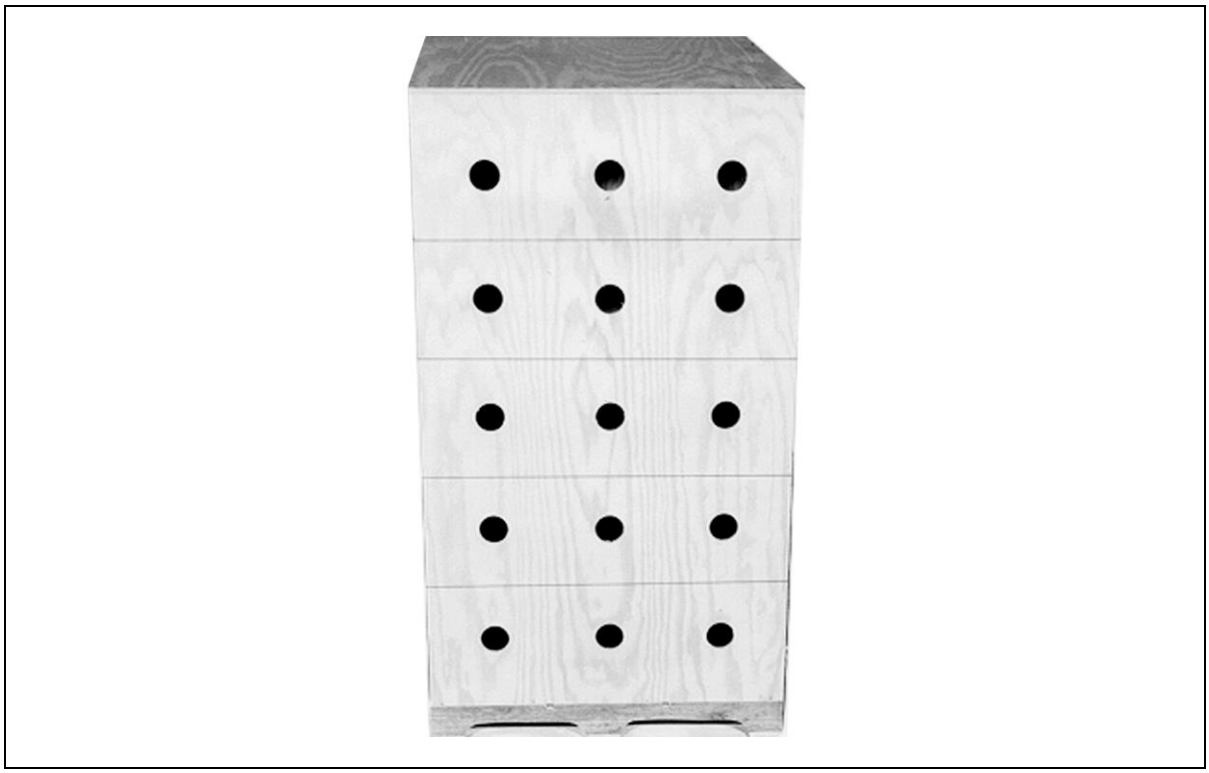
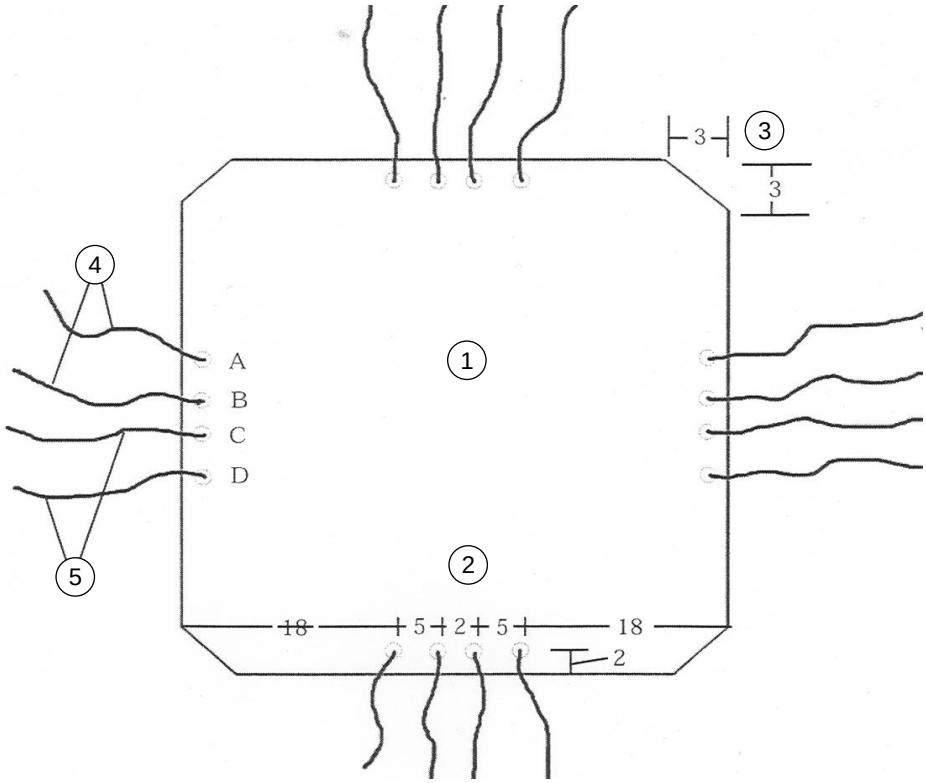


Figure 1-5. One 15-Round Dragon Missile Container

RIGGING LOAD

1-7. Rig one 15-round Dragon missile container in an A-22 cargo sling assembly according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figures 1-6 through 1-8.

Notes. 1. All dimensions are in inches.
2. This drawing is not drawn to scale.



① Place a 3/4- or 1- by 48- by 48-inch piece of plywood on a flat surface.

② Drill four 1/2-inch holes on each side as shown above.

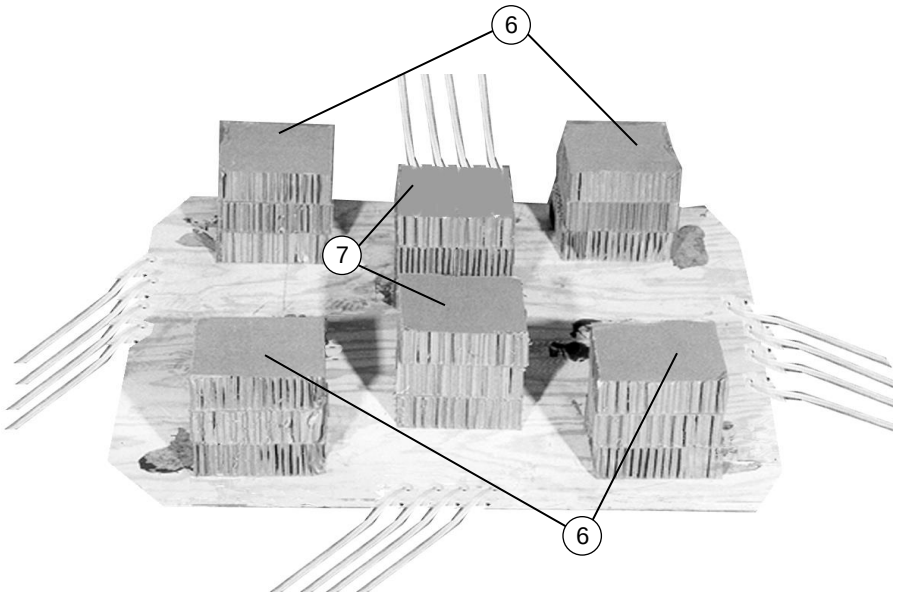
③ Measure 3 inches in from each corner of the skid board and make a diagonal cut.

④ Cut eight 8-foot lengths of 1/2-inch tubular nylon webbing. Route one length through hole A from the bottom and the other end through hole B from the bottom. Even the ends.

⑤ Repeat step 4 for holes C and D and remaining sides.

Figure 1-6. Skid Prepared and Honeycomb Stacks Positioned

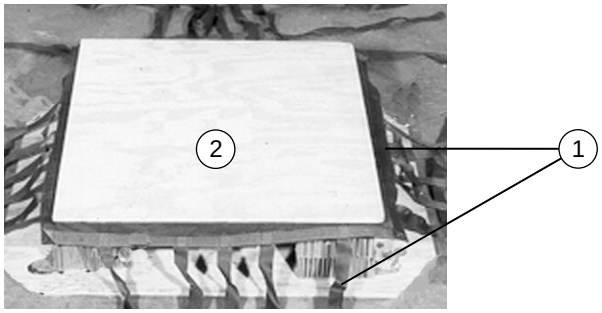
Note. All dimensions are in inches.



⑥ 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.

⑦ Position the center stacks 10 inches in from the skid board edges and center between the sides. Glue the stacks in place.

Figure 1-6. Skid Prepared and Honeycomb Stacks Positioned (Continued)

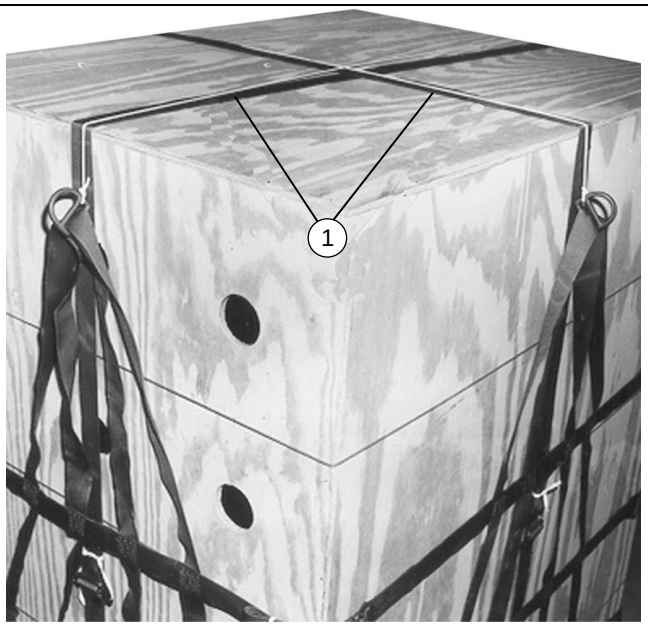


① Center the A-22 sling assembly on the stacks with the outside of the sling down and the long side of the scuff pad parallel with the side of the skid.

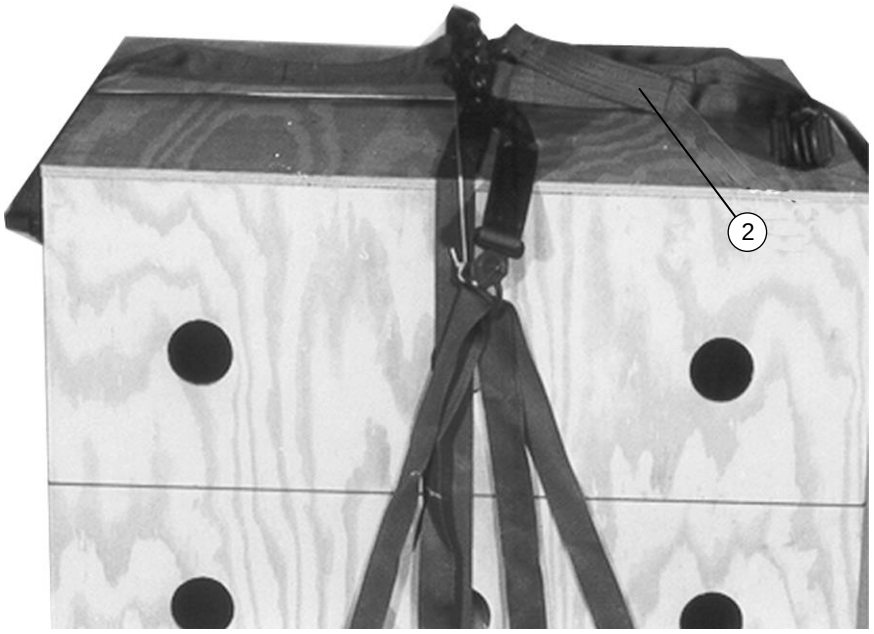
② Center a 3/4- by 38- by 48-inch piece of plywood on the scuff pad.

Note. Set the container on the plywood. Close the A-22 cargo sling by following the steps in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Figure 1-7. A-22 Cargo Sling and Plywood Positioned



① 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.



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

Figure 1-8. Container Positioned, and Cargo Sling Closed

CLOSING CARGO BAG

1-8. Close the A-22 cargo bag according to the steps in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

INSTALLING PARACHUTES

1-9. Prepare and stow one G-12 cargo parachute with a 68-inch pilot parachute or three G-14 cargo parachutes according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Note. This A-22 cargo sling weighs 925 pounds. It is 95 inches high, 53 ½ inches wide, and 49 inches long.

EQUIPMENT REQUIRED

1-10. The equipment needed to rig one 15-round container is listed in Table 1-2.

Table 1-2. Equipment Required for Rigging One 15-Round Container in an A-22 Cargo Bag 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	1
4030-00-678-8562	Clevis Assembly, suspension, cargo	1
4020-00-240-2146	Cord, nylon, type III	As required
1670-00-217-2421	Link Assembly, parachute connector, removable, L Bar	3
1670-00-753-3928	Pad, energy-dissipating, honeycomb	1 sheet
1670-00-216-7297	Pilot Chute, cargo type, 68-in diameter	1
1670-00-999-2658	Parachute, cargo, 34-ft, G-14	3
1670-01-065-3755	Parachute, cargo, 64-ft, G-12	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	8
8305-00-082-5752	Tape, adhesive, 2-inch	As required
8305-00-263-3591	Tie-down assembly, 15-foot	2
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
8305-00-082-5752	Nylon: Tubular, 1/2-inch	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Chapter 2

Rigging Dragon or Dragon II Missile Containers on an 8-Foot, Type V Platform for Low-Velocity Airdrop

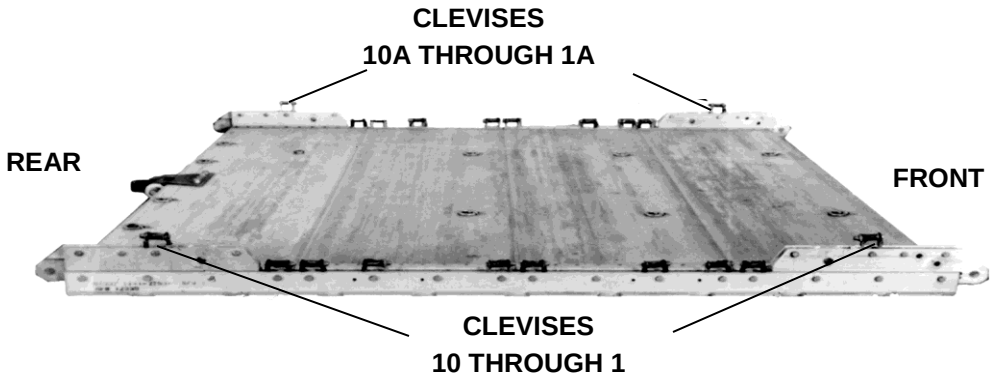
SECTION I-RIGGING 36 ONE-ROUND CONTAINERS

DESCRIPTION OF LOAD

2-1. Thirty-six Dragon II missiles in one-round containers are rigged on an 8-foot, type V platform with one G-11 cargo parachute for low-velocity airdrop (LVAD) from a C-130 or C-17 aircraft. Each container is 47 ½ inches long, 16 inches wide, 16 inches high, and weighs 67 pounds.

PREPARING PLATFORM

2-2. Prepare an 8-foot, type V platform using 4 tandem links and 20 clevises as shown in Figure 2-1.



Step:

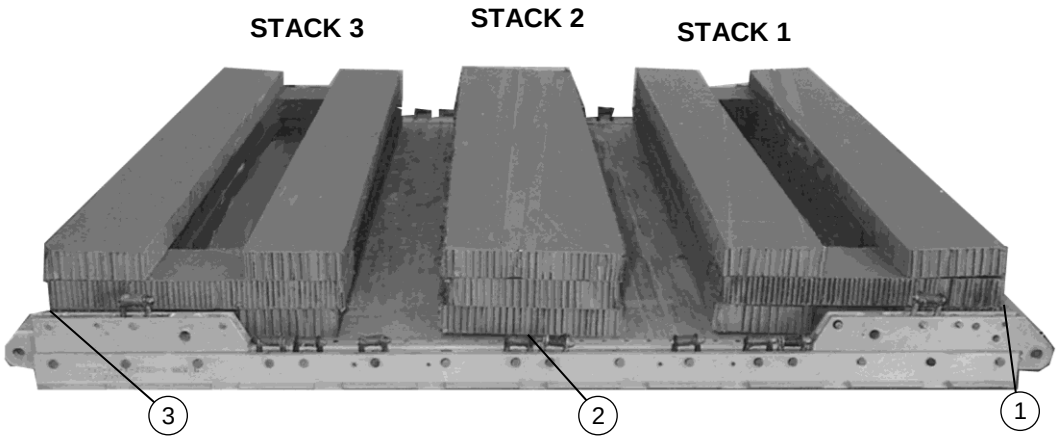
1. Inspect, or assemble and inspect, an 8-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
3. Install a tandem link to the rear of each platform side rail using holes 14, 15, and 16.
4. Install clevises on bushing 3 of each front tandem link.
5. Install clevises on bushing 3 of each rear tandem link.
6. Starting at the front of the right platform side rail, install clevises on the bushings bolted to holes 4, 5, 6, 8, 9, 11, 12, and 13. Repeat for the left side.
7. 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.
8. Label the tiedown rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 2-1. Platform Prepared

BUILDING AND PLACING HONEYCOMB STACKS

2-3. Prepare and position the honeycomb stacks as shown in Figure 2-2.

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



① Build the first 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 3rd layers)
2 pieces	10- by 76-inches	(2nd layer)
2 pieces	10- by 29-inches	(2nd layer bridge)

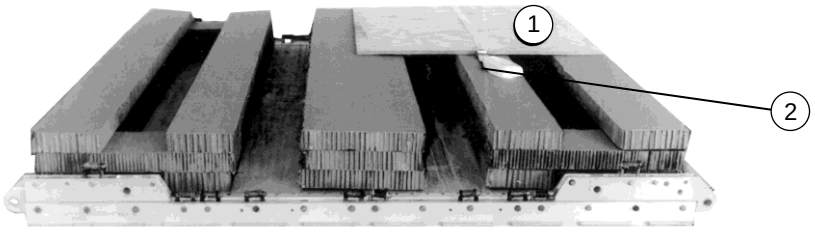
② Build the second stack by using three pieces of honeycomb (18- by 96-inch). Center the stack over the joint where the second and third panels join together and between the side rails.

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

Figure 2-2. Honeycomb Stacks Positioned

POSITIONING AND LASHING MISSILE CONTAINER GROUPS 1 THROUGH 4

2-4. Position and lash the missile container groups 1 through 4 as shown in Figures 2-3 through 2-5.



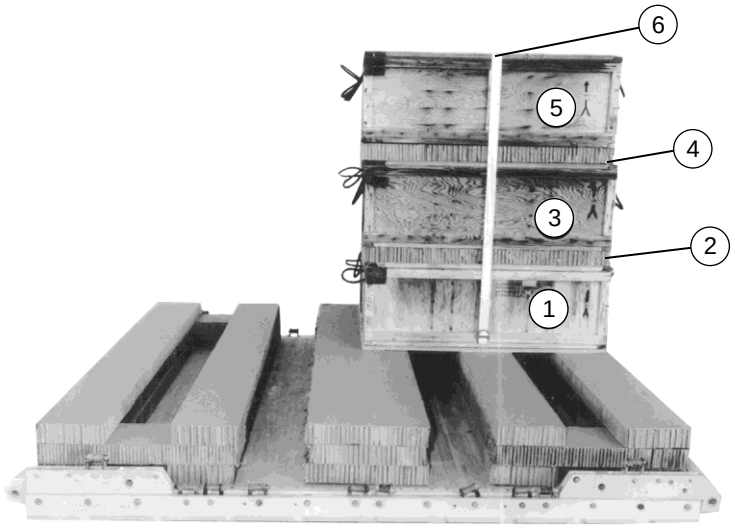
① Position a piece of 3/4- by 48- by 48-inch plywood on the first stack. Place the plywood so that the outside edges are flush with the outside edges of the first stack.

② Form a 30-foot lashing as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Lay the lashing across the center of the plywood.

Figure 2-3. Plywood and Lashing Positioned

CAUTION

Make sure 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.

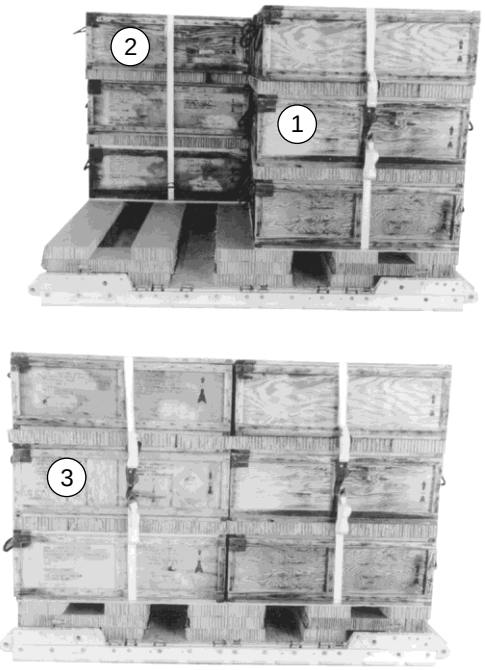
③ Set three more containers on the honeycomb layer.

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 2-4. First Missile Container Group Positioned, Stacked, and Lashed



① Position the second group of containers following the steps in Figures 2-3 and 2-4.

② Position the third group of containers following the steps in Figures 2-3 and 2-4; however, place the plywood on the center and third stacks and flush with the outside edge of the third stack.

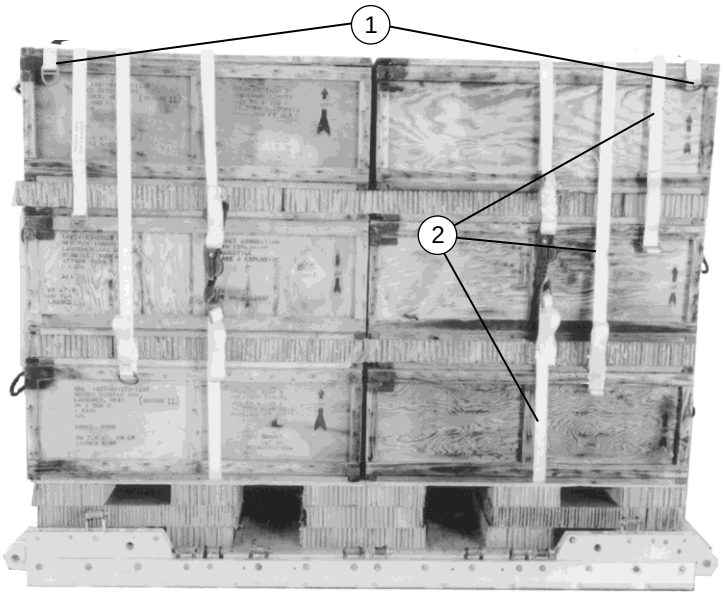
③ Position the fourth group of containers following the steps in Figures 2-3 and 2-4; however, place the plywood on the center and third stacks and flush with the outside edge of the third stack.

Figure 2-5. Missile Container Groups 2 and 3 and Positioned and Lashed

POSITIONING AND LASHING MISSILE CONTAINERS

2-5. Position the lashings as shown in Figure 2-6 and lash the containers to the platform as shown in Figures 2-7 through 2-9. Install and safety the lashings as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

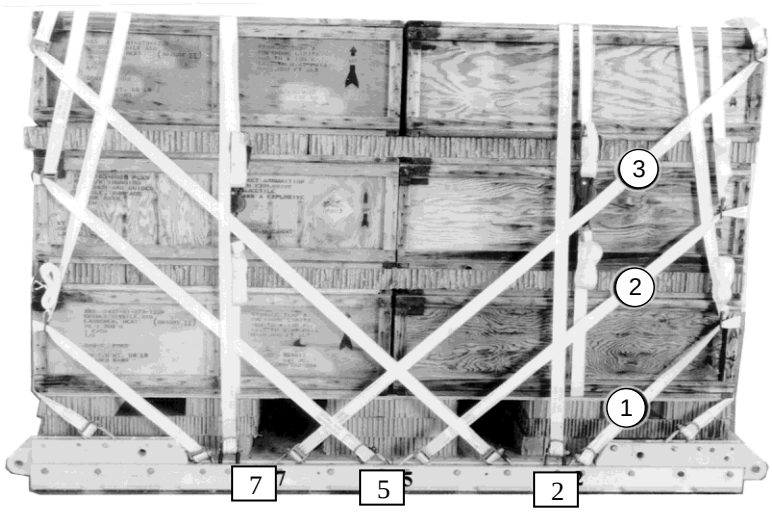
Note. Make sure all corners and sharp edges are padded.



① Form two 30-foot lashings as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/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.

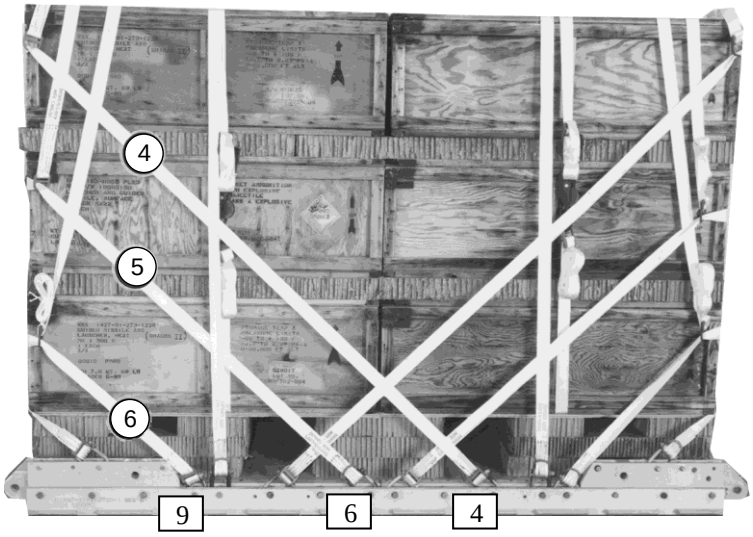
② Fit a D-ring to each lashing and adjust the length of the straps to center each D-ring with a layer of containers.

Figure 2-6. Lashings Positioned



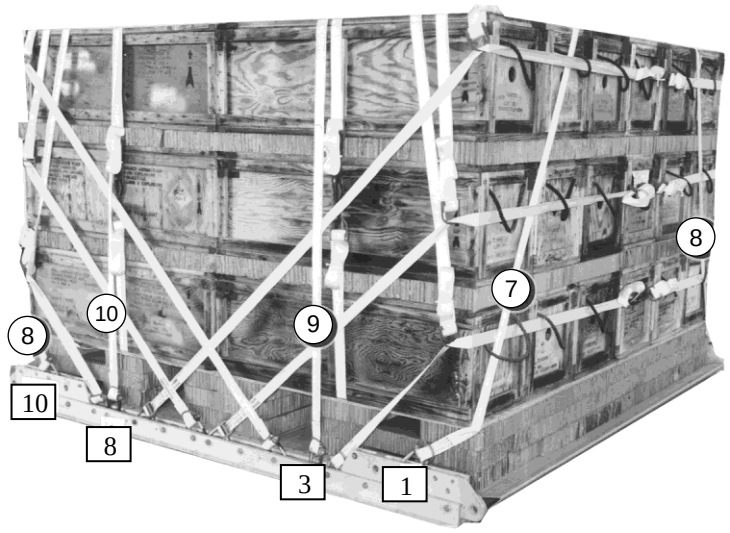
Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	2 and 2A	Run a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings through the D-rings and containers carrying handles centered on the bottom container layer. Secure the lashings on the front using two D-rings and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

Figure 2-8. Lashings 4 through 6 Installed

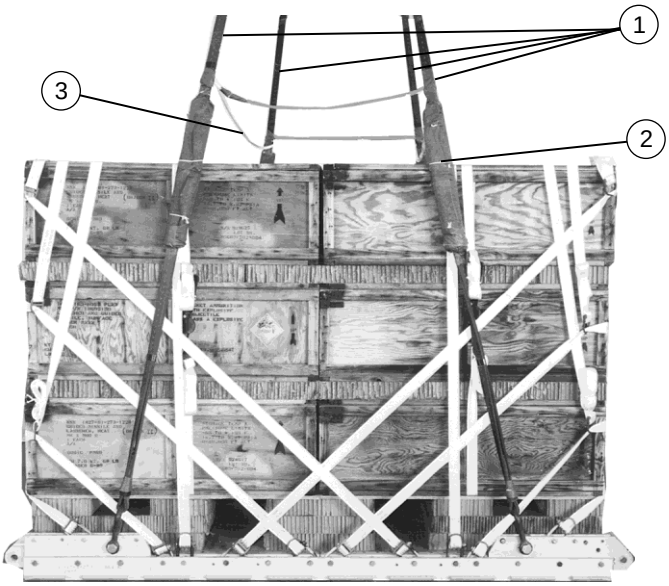


Lashing Number	*Tiedown Clevis Number*	*Instructions*
7	1 and 10A	Run a 15-foot lashing from clevis 1 and a 15-foot lashing from clevis 10A. Pass the lashings around the bottom ends of the containers and through the bottom and top containers carrying handles and up over the load. Secure the lashings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

Figure 2-9. Lashings 7 through 10 Installed

INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

2-6. 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 2-10.



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 and cloth back tape.

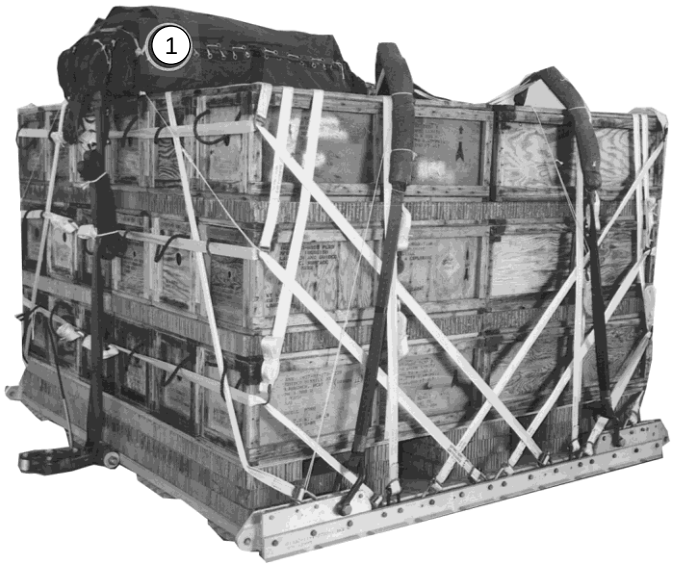
③ Raise the suspension slings above the load, and install a deadman's tie as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 2-10. Suspension Slings and Deadman's Tie Installed

STOWING CARGO PARACHUTE

2-7. Stow one G-11B cargo parachute as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-11.

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

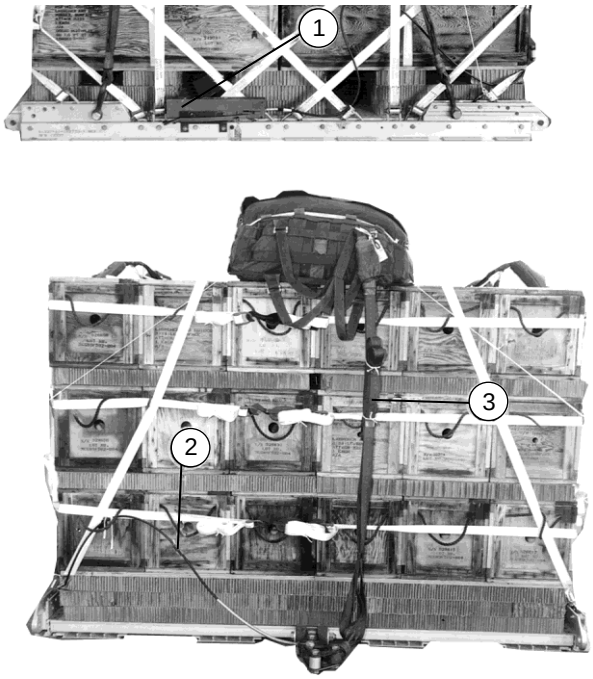


① Prepare, place, and secure one G-11B cargo parachute according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 2-11. Cargo Parachute Stowed and Secured to Load

INSTALLING EXTRACTION SYSTEM

2-8. Attach the components of the Extraction Force Transfer Coupling (EFTC) according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-12.



① Install the Extraction Force Transfer Coupling (EFTC) mounting brackets to the front mounting holes in the left platform rail. Install the EFTC actuator assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

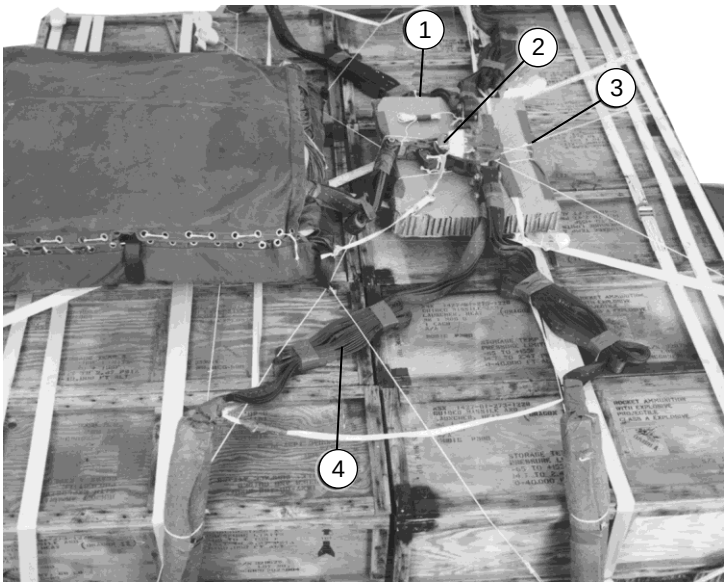
② Attach a 12-foot cable according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Safety the cable to the lashing with type I, 1/4-inch cotton webbing.

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 2-12. Extraction Force Transfer Coupling Installed

INSTALLING PARACHUTE RELEASE

2-9. Prepare, attach, and safety an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-13.



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 2-13. M-1 Cargo Parachute Release Installed

PLACING EXTRACTION PARACHUTE

2-10. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

2-11. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

MARKING RIGGED LOAD

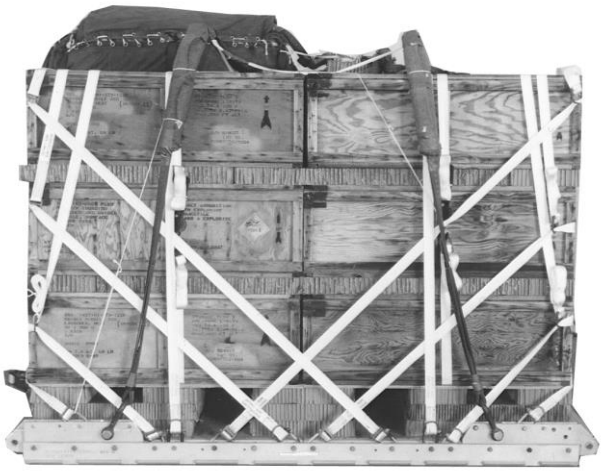
2-12. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, and as shown in Figure 2-14. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, center of balance (CB), and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

2-13. Use the equipment listed in Table 2-1 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

RIGGED LOAD DATA

Weight: Load shown ..... 3,960 pounds

Height ..... 83 inches

Width ..... 108 inches

Overall Length ..... 96 inches

Overhang: Front ..... 0 inches

Rear ..... 0 inches

Center of Balance (from front edge of the platform) ..... 50 inches

Extraction System with 12-foot cable (adds 18 inches to length of platform) ... Extraction Force Transfer Coupling (EFTC)

Figure 2-14. Thirty-Six One-Round Containers Rigged on an 8-Foot, Type V Platform for Low-Velocity Airdrop

Table 2-1. Equipment Required for Rigging 36 One-Round Dragon or Dragon II Missile Containers on an 8-Foot, Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-inch (medium) emergency restraint	2
4030-00-090-5354	1-inch (large)	5
4020-00-240-2146	Cord, nylon, type III	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with 12-foot cable	1
1670-00-360-0328	Cover, clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch thick	As required
1670-01-183-2678	Leaf, extraction line	1
	Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-foot (1-loop)	1
	Or	
1670-01-107-7652	160-foot (1-loop)	1
1670-01-064-4452	60-foot (1-loop), type XXVI for C-17 drogue line	1
	Link assembly, two-point:	
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	1
5310-00-232-5165	Nut, 1-inch, hexagonal	1
1670-00-003-1953	Plate, side 3 3/4-inch	1
5365-00-007-3414	Spacer, large	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb	9 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	1
1670-01-063-3715	Cargo, extraction, 15-foot	1
	Platform, airdrop, type V, 8-foot	
1670-01-353-8425	Bracket assembly, Extraction Force Transfer Coupling (EFTC)	1
1670-01-162-2376	Bracket assembly, extraction	1
1670-01-162-2372	Clevis assembly	20
1670-01-162-2381	Tandem link	4
5530-00-128-4981	Plywood, 3/4-inch	2 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
	ft = feet, in = inch, lb = pound, d = penny	

Table 2-1. Equipment Required for Rigging 36 One-Round Dragon or Dragon II Missile Containers on an 8-Foot, Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, cargo airdrop:	
	For deployment line:	
1670-00-753-3792	12-foot (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6301	3-foot (2-loop), type XXVI nylon webbing	4
	For suspension:	
1670-01-063-7761	16-foot (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap parachute release, multicut	1
7515-00-266-5016	Tape, adhesive, 2-inch	As required
7501-00-266-6710	Tape, masking	As required
1670-00-937-0271	Tie-down assembly, 15-foot	36
1670-01-483-8259	Towplate release mechanism (H-block) (C-17)	1
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-inch	As required
8305-00-263-3591	Type VIII webbing	As required
	ft = feet, in = inch, lb = pound, d = penny	

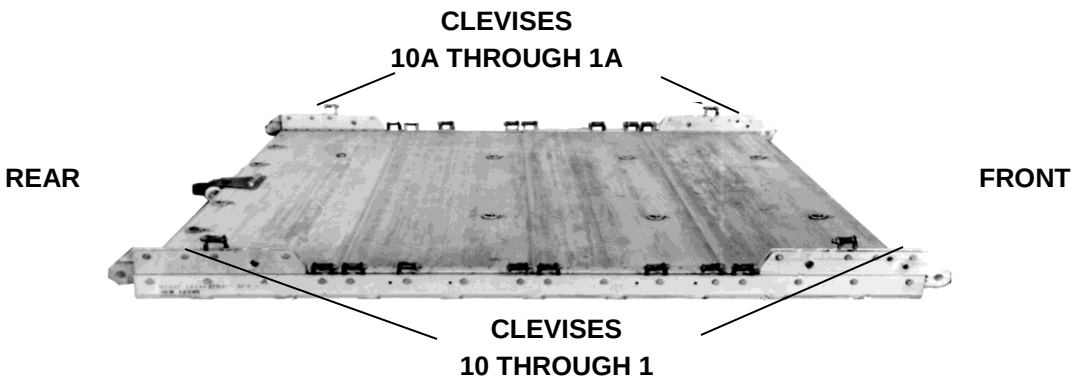
SECTION II-RIGGING FOUR 15-ROUND CONTAINERS

DESCRIPTION OF LOAD

2-14. Four Dragon or Dragon II missiles in 15-round containers are rigged on an 8-foot, type V airdrop platform with one G-11 cargo parachute for LVAD from a C-130 or C-17 aircraft. Each container is 49 inches long, 37 inches wide, 67 inches high, and weighs 695 pounds.

PREPARING PLATFORM

2-15. Prepare an 8-foot airdrop platform as shown in Figure 2-15.



Step:

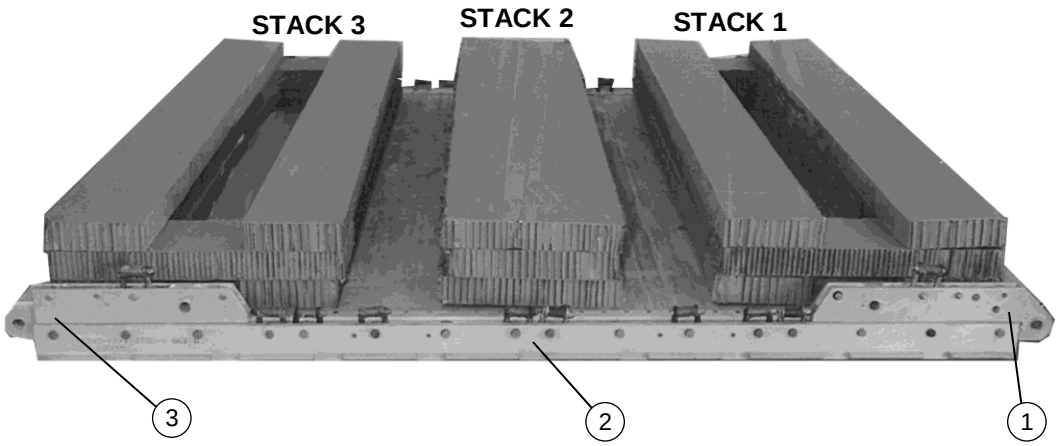
1. Inspect, or assemble and inspect, an 8-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
3. Install a tandem link to the rear of each platform side rail using holes 14, 15, and 16.
4. Install clevises on bushing 3 of each front tandem link.
5. Install clevises on bushing 3 of each rear tandem link.
6. Starting at the front of the right platform side rail, install clevises on the bushings bolted to holes 4, 5, 6, 8, 9, 11, 12, and 13. Repeat for the left side.
7. 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.
8. Label the tiedown rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 2-15. Platform Prepared

BUILDING AND PLACING HONEYCOMB STACKS

2-16. Prepare and position the honeycomb stacks as shown in Figure 2-16.

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



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

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

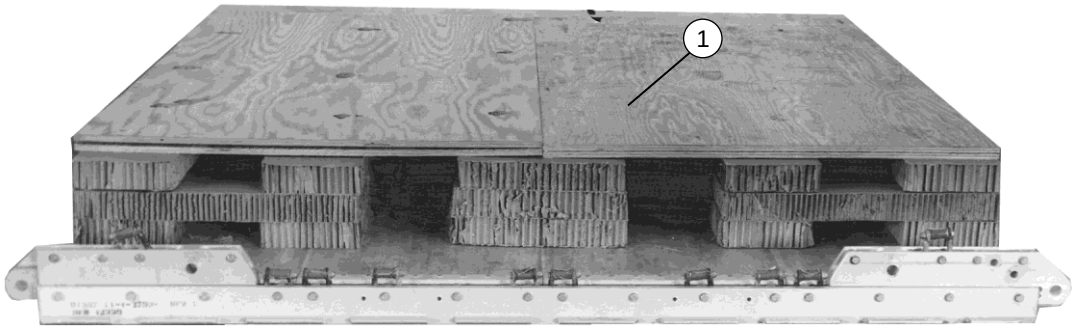
② Build the second stack by using three pieces of honeycomb (18- by 80-inch). Center the stack over the joint where the second and third panels join together and between the side rails.

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

Figure 2-16. Honeycomb Stacks Positioned

POSITIONING THE PLYWOOD

2-17. Position plywood on honeycomb stacks as shown in Figure 2-17.



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

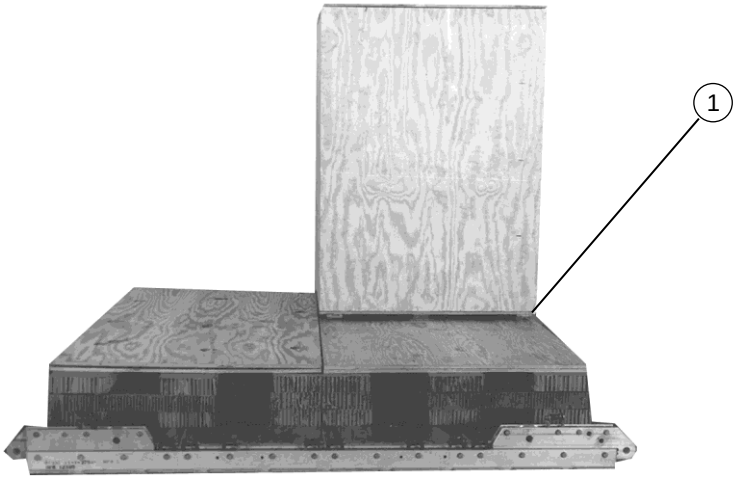
Figure 2-17. Plywood Positioned

POSITIONING MISSILE CONTAINERS

2-18. Place four 15-round containers on the platform as shown in Figures 2-18 and 2-19.

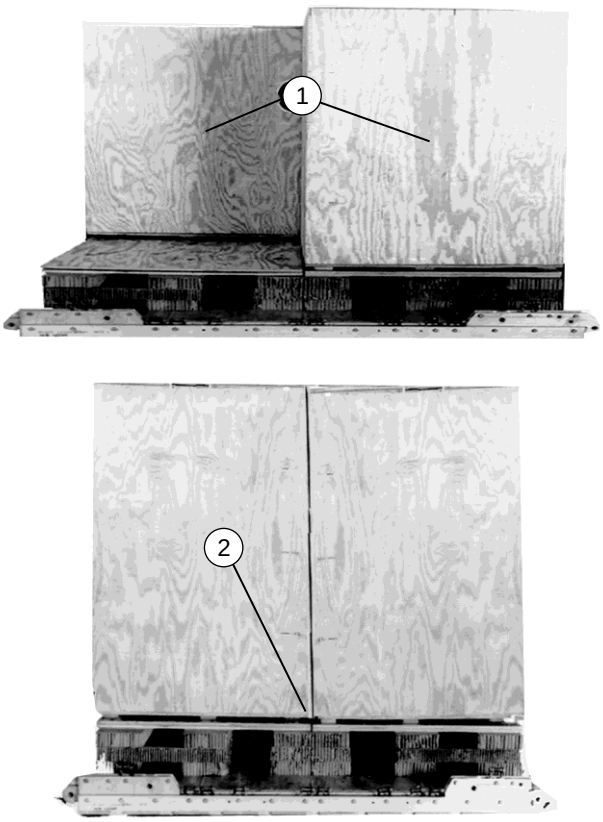
CAUTION

Make sure the inspection port holes in the missile containers face the front and rear of the platform: the inspection port holes face the rear of the platform in the container groups.



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

Figure 2-18. 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.

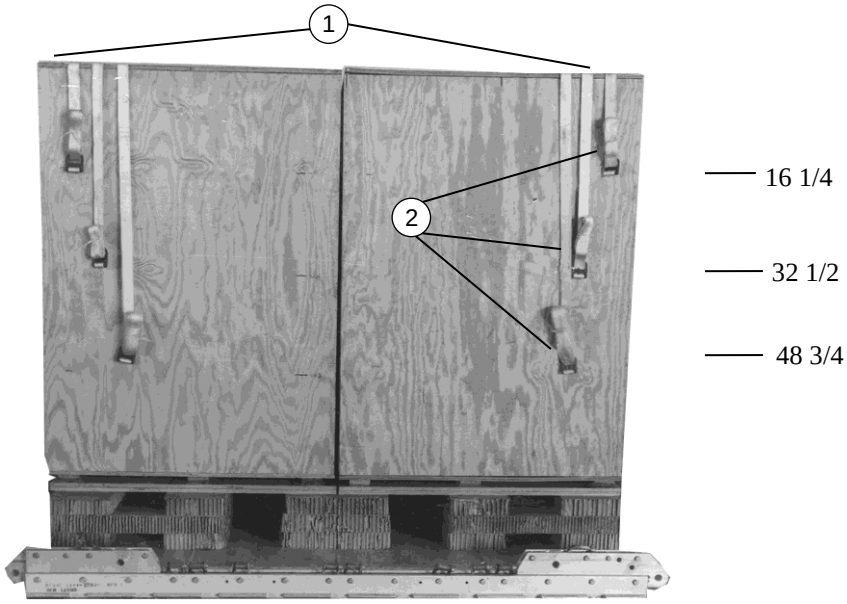
② Place the fourth container on the platform with the container overhanging the rear edge of the platform by 1 inch.

Figure 2-19. Missile Containers 2, 3, and 4 Positioned

POSITIONING AND LASHING MISSILE CONTAINERS

2-19. Position the lashings as shown in Figure 2-20 and lash the containers to the platform as shown in Figures 2-21 through 2-23. Install and safety the lashings as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

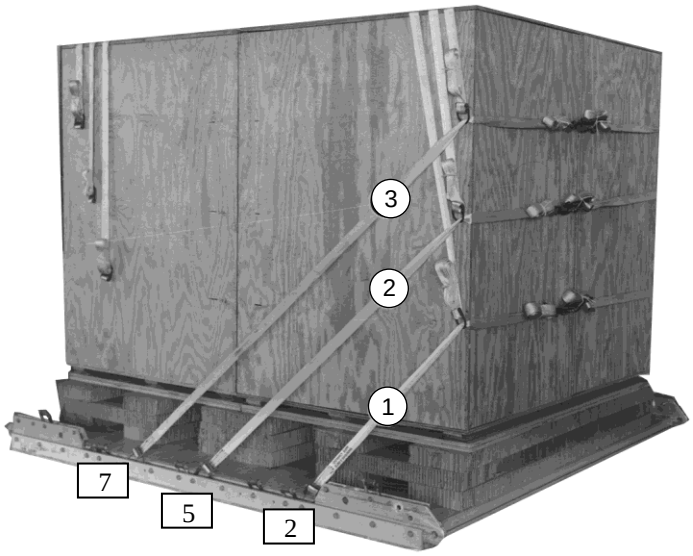
Note: All dimensions are in inches.



① Form two 30-foot lashings as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/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.

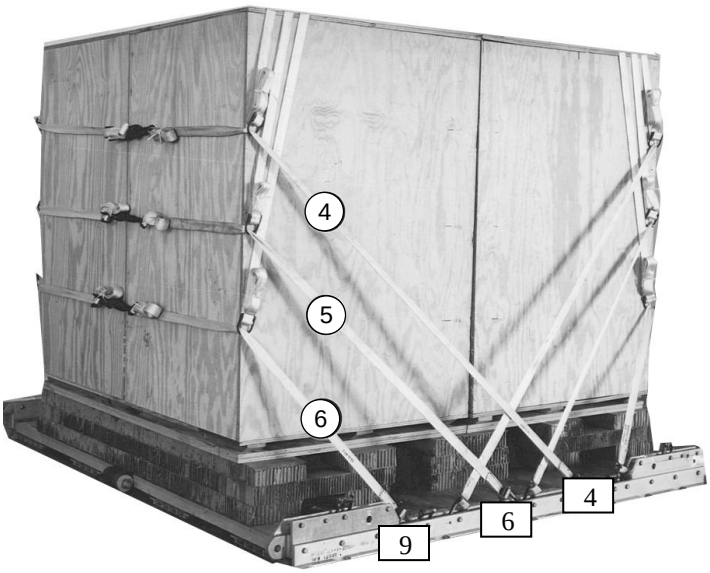
② Fit a D-ring to each lashing, and adjust the length of the lashings and D-rings at intervals of 16 1/4 inches from the top of containers.

Figure 2-20. Lashings Installed



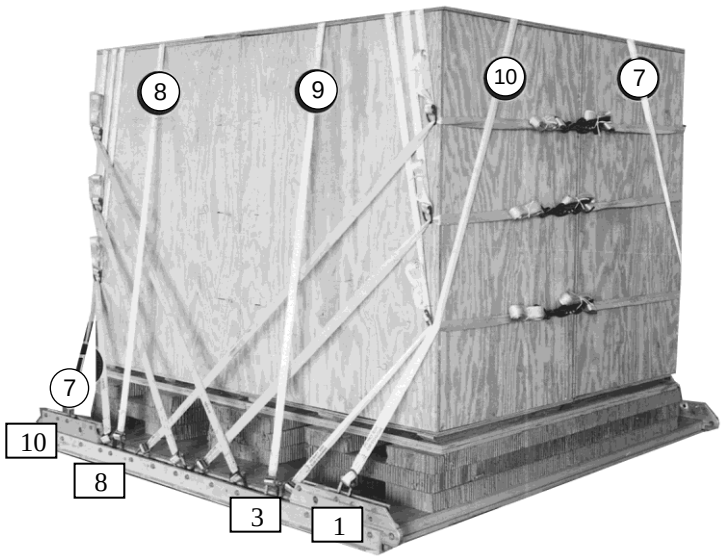
Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	2 and 2A	Route a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings through the D-rings. Secure the lashings on the front using two D-rings and a load binder.
2	5 and 5A	Route a 15-foot lashing from clevis 5 and 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	Route 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 2-21. Lashings 1 Through 3 Installed



Lashing Number	*Tiedown Clevis Number*	*Instructions*
4	4 and 4A	Route 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	Route 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	Route 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 2-22. Lashings 4 Through 6 Installed

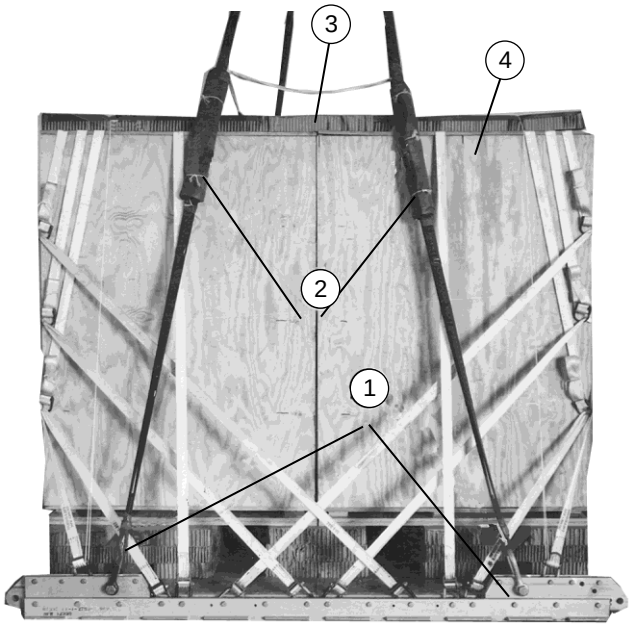


Lashing Number	*Tiedown Clevis Number*	*Instructions*
7	10 and 1A	Run a 15-foot lashing through clevis 10 and a 15-foot lashing from clevis 1A. Pass the lashings around ends of the containers and up over the load. Secure the lashings on the top using two D-rings and a load binder. Safety the lashings to the bottom D-rings with type I, ¼-inch cotton webbing
8	8 and 8A	Run a 15-foot lashing through 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 through 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 through 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, ¼-inch cotton webbing.

Figure 2-23. Lashings 7 Through 10 Installed

INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

2-20. Install and safety four 16-foot (2-loop), type XXVI nylon slings and four large clevises as shown in Figure 2-24.



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 cloth back adhesive tape.

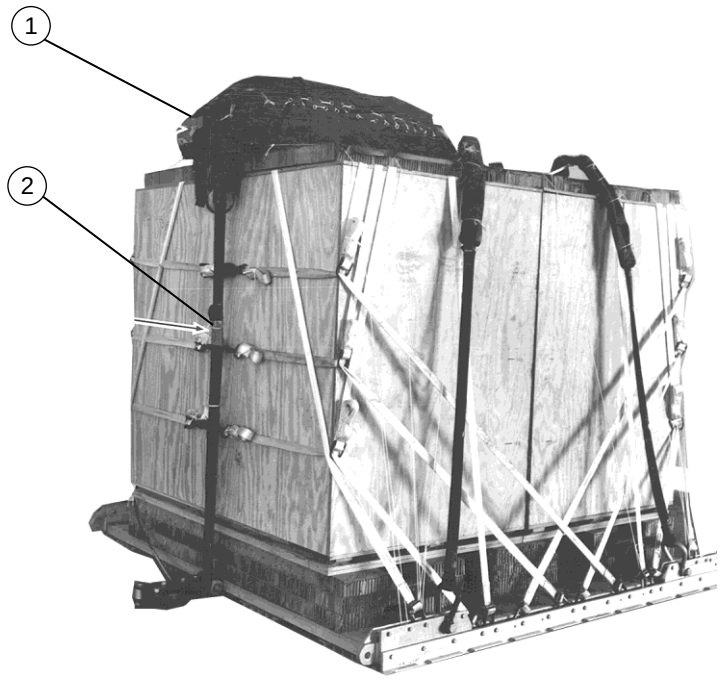
③ Raise the suspension slings above the load, and install a deadman's tie as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

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 to convenient places on the load.

Figure 2-24. Suspension Slings and Deadman's Tie Installed

STOWING CARGO PARACHUTE

2-21. Stow one G-11B cargo parachute according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-25.



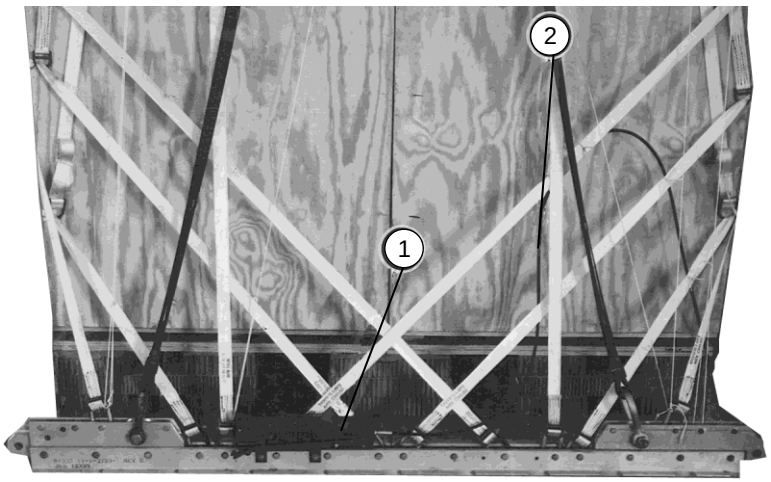
① Prepare, place, and secure one G-11B cargo parachute according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

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 2-25. Cargo Parachute Stowed and Secured to Load

INSTALLING EXTRACTION SYSTEM

2-22. Attach the EFTC according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-26.



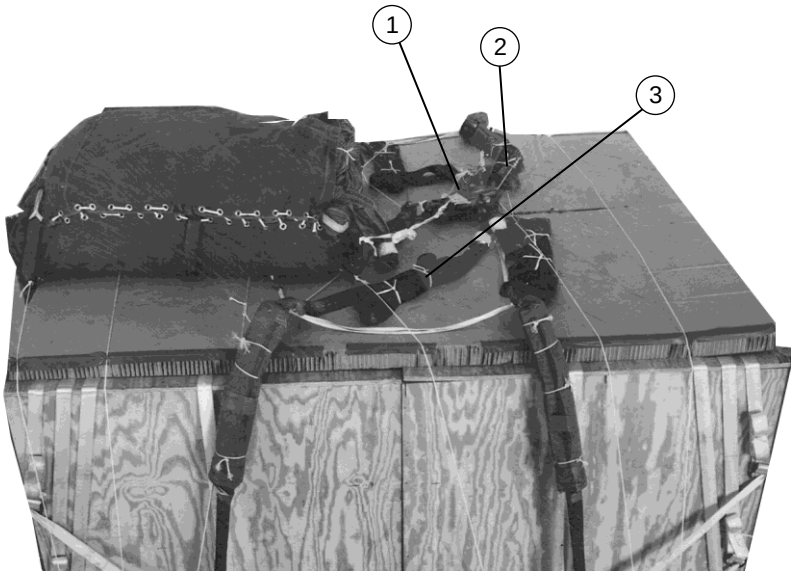
① Install the Extraction Force Transfer Coupling (EFTC) actuator mounting brackets to the front holes in the left platform rail. Install the EFTC actuator assembly to the brackets according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

② Install a 12-foot cable according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Safety the cable to the lashing with type I, 1/4-inch cotton webbing.

Figure 2-26. Extraction Force Transfer Coupling Installed

INSTALLING PARACHUTE RELEASE

2-23. Prepare, attach, and safety an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-27.



① Prepare and install an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. 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. Secure with type I, 1/4-inch cotton webbing.

Figure 2-27. M-1 Cargo Parachute Release Installed

PLACING EXTRACTION PARACHUTE

2-24. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Place the extraction parachute and line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

2-25. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

MARKING RIGGED LOAD

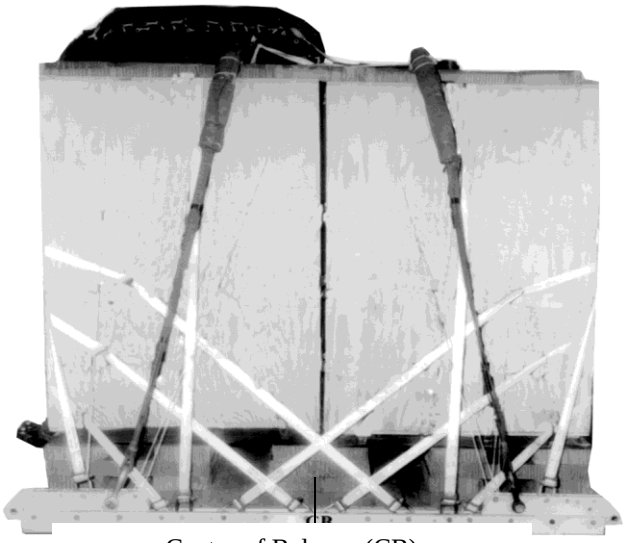
2-26. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 2-28. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

2-27. Use the equipment listed in Table 2-2 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

RIGGED LOAD DATA

Weight: Load shown.....4,460 pounds

Height .....83 inches

Width .....108 inches

Overall Length.....98 inches

Overhang: Front .....1 inch

Rear .....1 inch

Center of Balance (from front edge of the platform) .....51 inches

Extraction System with 12-foot cable (adds 18 inches to length of platform) .. Extraction Force Transfer Coupling (EFTC)

Figure 2-28. Four 15-Round Containers Rigged on an 8-Foot, Type V Platform for Low-Velocity Airdrop

Table 2-2. Equipment Required for Rigging Four 15-Round Dragon or Dragon II Missile Containers on an 8-Foot, Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-inch (medium) emergency restraint	2
4030-00-090-5354	1-inch (large)	5
4020-00-240-2146	Cord, nylon, type III	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with 12-foot cable	1
1670-00-360-0328	Cover, clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-foot (1-loop)	1
	Or	
1670-01-107-7652	160-foot (1-loop)	2
1670-01-064-4452	60-foot (1-loop), type XXVI for C-17 drogue line	1
	Link assembly, two-point:	
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	1
5310-00-232-5165	Nut, 1-inch, hexagonal	1
1670-00-003-1953	Plate, side 3 3/4-inch	1
5365-00-007-3414	Spacer, large	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb	9 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	1
1670-01-063-3715	Cargo, extraction, 15-foot	1
	Platform, airdrop, type V, 8-foot	
1670-01-353-8425	Bracket assembly, Extraction Force Transfer Coupling (EFTC)	1
1670-01-162-2376	Bracket assembly, extraction	1
1670-01-162-2372	Clevis assembly	20
1670-01-162-2381	Tandem link	4
5530-00-128-4981	Plywood, 3/4-inch	4 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 2-2. Equipment Required for Rigging Four 15-Round Dragon or Dragon II Missile Containers on an 8-Foot, Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, cargo airdrop:	
	For deployment line:	
1670-00-753-3792	12-foot (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6301	3-foot (2-loop), type XXVI nylon webbing	1
	For suspension:	
1670-01-063-7761	16-foot (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap parachute release, multicut	1
7515-00-266-5016	Tape, adhesive, 2-inch	As required
7501-00-266-6710	Tape, masking	As required
1670-00-937-0271	Tie-down assembly, 15-foot	28
1670-01-483-8259	Towplate release mechanism (H-block) (C-17)	1
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-inch	As required
8305-00-263-3591	Type VIII webbing	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

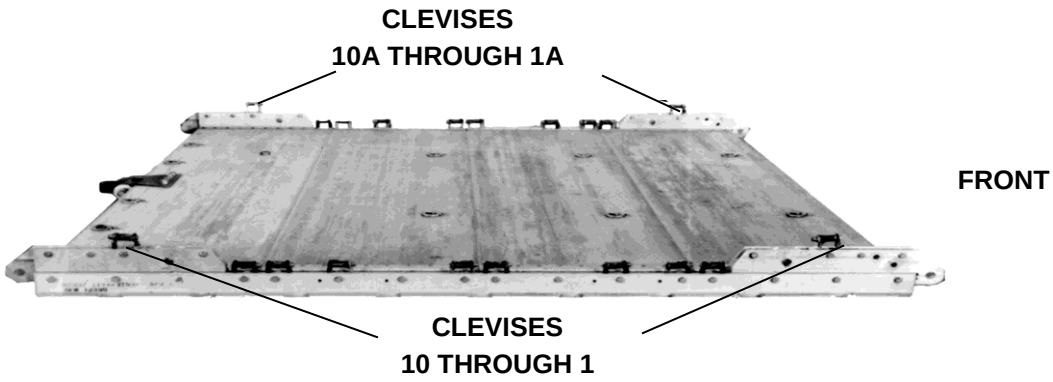
SECTION III-RIGGING FOUR A-22 CARGO BAGS WITH ONE-ROUND CONTAINERS

DESCRIPTION OF LOAD

2-28. 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 LVAD from a C-130 or C-17 aircraft. Each A-22 cargo bag with missile containers is 48 inches long, 48 inches wide, and weighs 693 pounds.

PREPARING PLATFORM

2-29. Prepare an 8-foot, type V airdrop platform as shown in Figure 2-29.



Step:

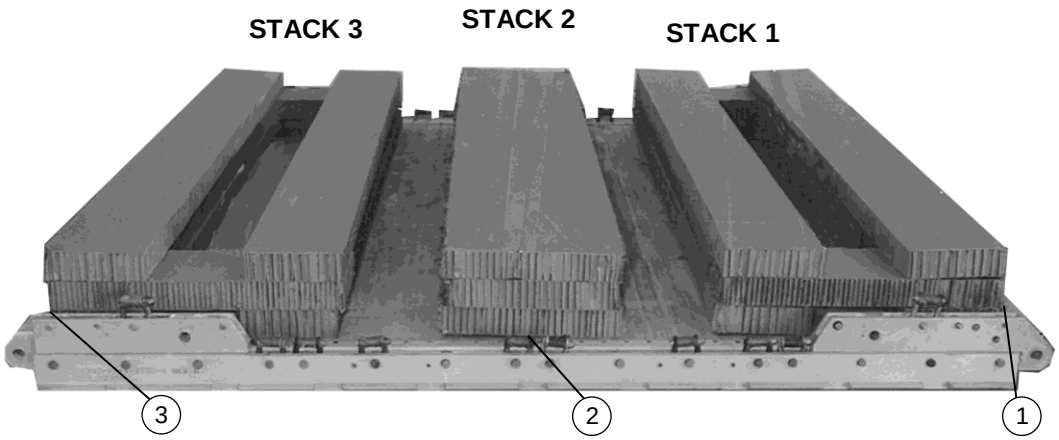
1. Inspect, or assemble and inspect, an 8-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
3. Install a tandem link to the rear of each platform side rail using holes 14, 15, and 16.
4. Install clevises on bushing 3 of each front tandem link.
5. Install clevises on bushing 3 of each rear tandem link.
6. Starting at the front of the right platform side rail, install clevises on the bushings bolted to holes 4, 5, 6, 8, 9, 11, 12, and 13. Repeat for the left side.
7. 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.
8. Label the tiedown rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 2-29. Platform Prepared

BUILDING AND PLACING HONEYCOMB STACKS

2-30. Prepare and position the honeycomb stacks as shown in Figure 2-30.

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



① Build the first 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 3rd layers)
2 pieces	10- by 76-inches	(2nd layer)
2 pieces	10- by 29-inches	(2nd layer bridge)

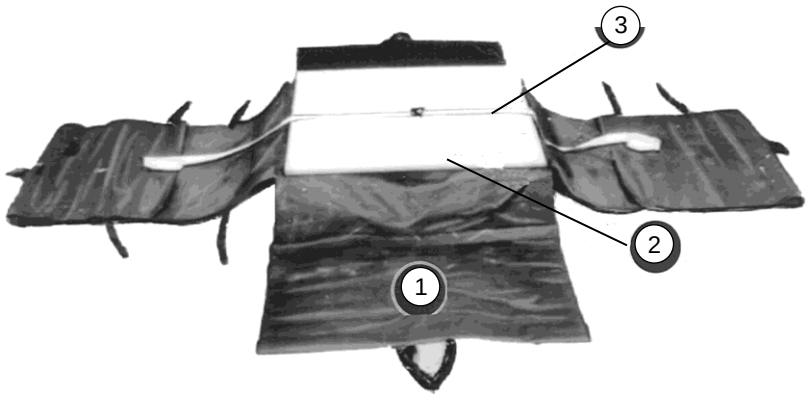
② Build the second stack by using three pieces of honeycomb (18- by 96-inch). Center the stack over the joint where the second and third panels join together and between the side rails.

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

Figure 2-30. Honeycomb Stacks Positioned

PREPARING LOAD

2-31. Prepare four A-22 cargo bags with nine one-round containers as shown in Figures 2-31 and 2-32; however, do not use the skid or skid honeycomb. Close the A-22 cargo bags by following the steps in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.



① Center the A-22 cover on the sling assembly (with the outside of the cover down).

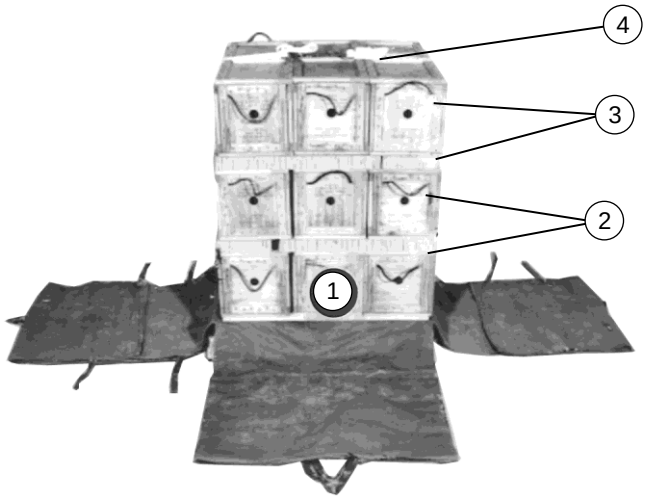
② Center a 3/4- by 48- by 48-inch piece of plywood on the cover.

③ Form a 30-foot lashing according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and lay the strap across the center of the plywood from side to side.

Figure 2-31. Cargo Bag, Plywood, and Lashing Positioned

CAUTION

Make sure 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 3/4- by 48- by 48-inch plywood on the A-22 cover.

② Place a layer of one piece of 36- by 48-inch honeycomb and one piece of 12- by 48-inch honeycomb 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.

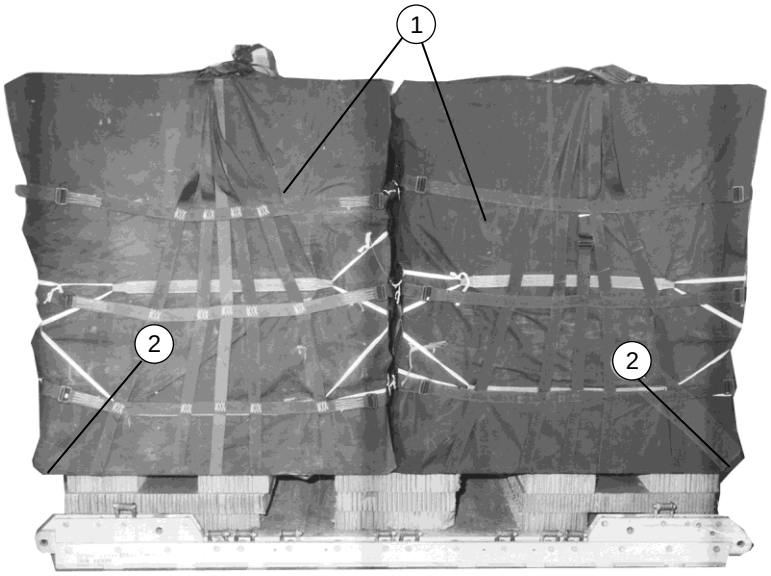
Figure 2-32. Nine One-Round Containers Positioned

POSITIONING THE LOAD

2-32. Place the four A-22 containers on the platform as shown in Figure 2-33.

CAUTION

Make sure the inspection port holes in the missile containers face the front and rear of the platform.



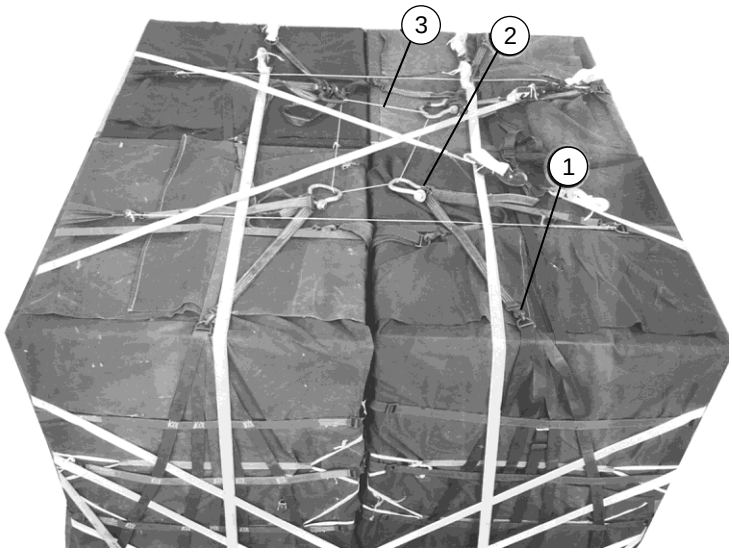
① Place the four A-22 cargo bags on the honeycomb stacks, centering them from side to side and from front to rear on the honeycomb.

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

Figure 2-33. Cargo A-22 Containers Positioned

SECURING SUSPENSION WEBS AND LASHING CONTAINERS

2-33. Secure the suspension webs as shown in Figure 2-34. Lash the A-22 cargo bags to the platform as shown in Figures 2-35 through 2-37. Install the lashings as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

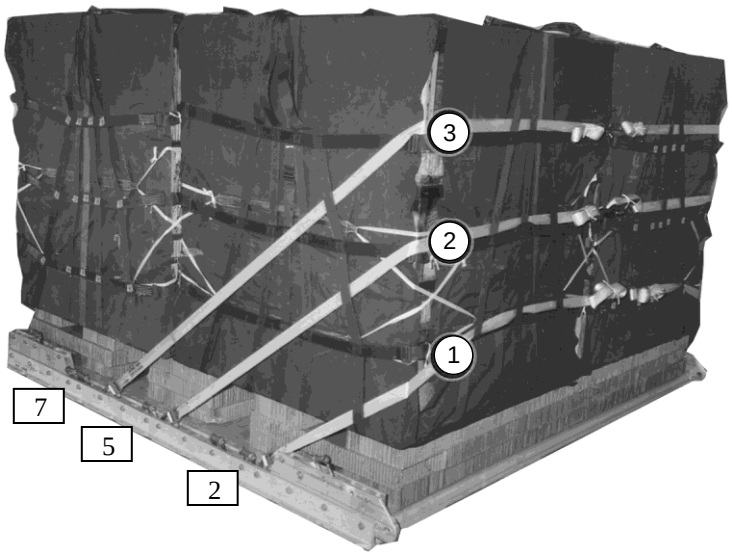


① Attach all suspension webs as shown. Route the hook on the strap fastener from outside to inside. The gate on the strap fastener must face inside.

② Place the suspension web D-rings on the bolt of a large suspension clevis.

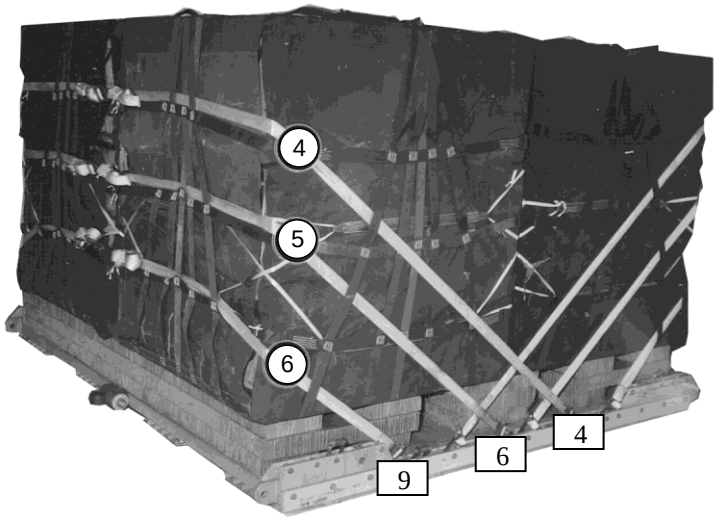
③ Secure the cargo clevises with type III nylon cord.

Figure 2-34. Lashings Installed



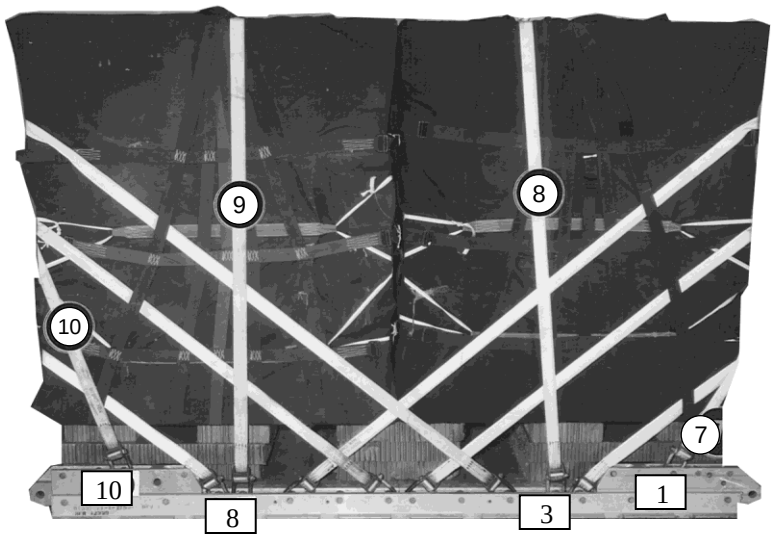
Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	2 and 2A	Route a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings underneath the A-22 webbing on the sides and around the front of the load. Secure the lashings on the front using two D-rings and a load binder.
2	5 and 5A	Route 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	Route 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 2-35. Lashings 1 Through 3 Installed



Lashing Number	*Tiedown Clevis Number*	*Instructions*
4	4 and 4A	Route 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	Route 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	Route 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 2-36. Lashings 4 Through 6 Installed

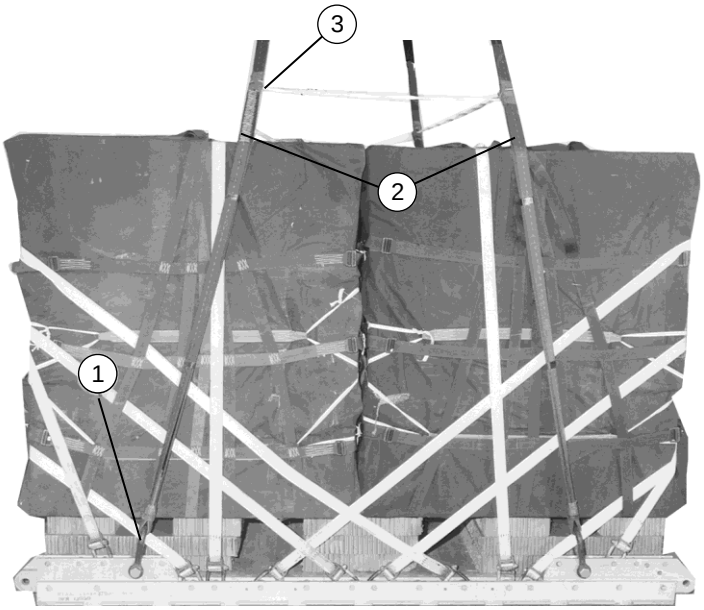


Lashing Number	*Tiedown Clevis Number*	*Instructions*
7	1 and 10A	Route a 15-foot lashing from clevis 1 and a 15-foot lashing from clevis 10A. Pass the lashings around the front and rear of the load and up over the top of the load. Secure the lashings on the top using two D-rings and a load binder.
8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

Figure 2-37. Lashings 7 Through 10 Installed

INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

2-34. Install and safety four 16-foot (2-loop), type XXVI nylon slings as shown in Figure 2-38.



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.

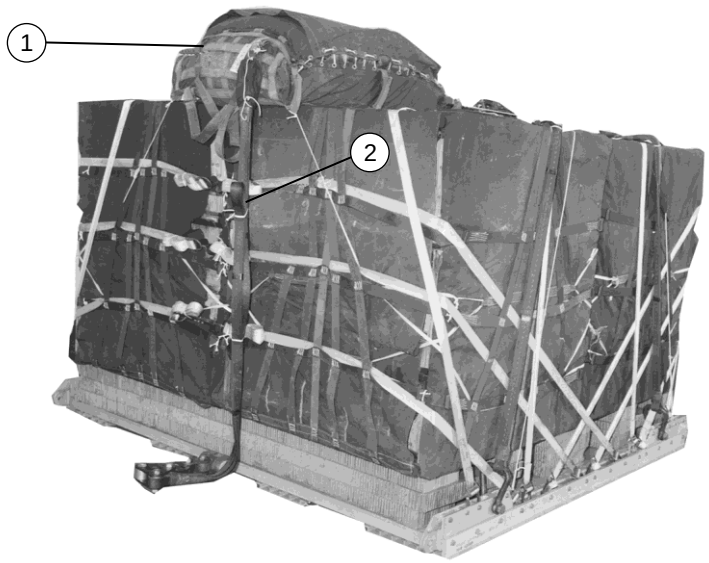
② Use four pieces of felt padding (approximately 18 by 6-inches) to pad the slings. Secure the felt to the sling with type III nylon cord and cloth back adhesive tape.

③ Raise the four suspension slings above the load, and install a deadman's tie as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 2-38. Suspension Slings and Deadman's Tie Installed

STOWING CARGO PARACHUTE

2-35. Stow one G-11 cargo parachute according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-39.



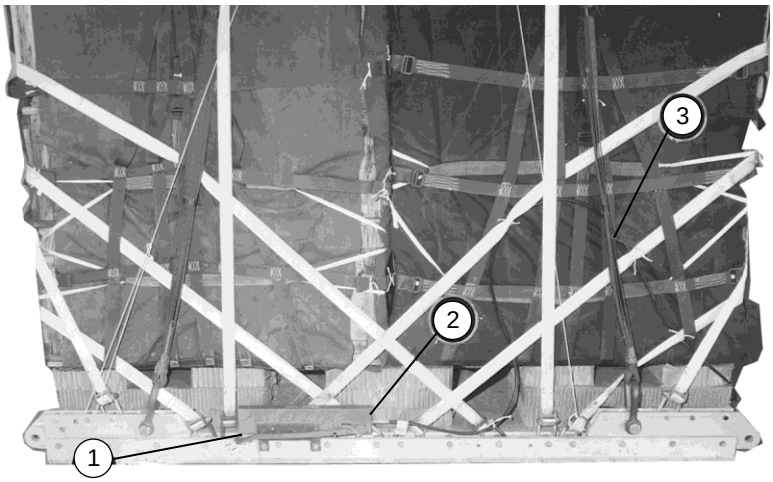
① Prepare, place, and secure one G-11 cargo parachute according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

② Use a 12-loop (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 2-39. Cargo Parachute Stowed and Secured to Load

INSTALLING EXTRACTION SYSTEM

2-36. Attach the components of the EFTC according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-40.



① Attach the Extraction Force Transfer Coupling (EFTC) mounting brackets to the front holes on the left rail.

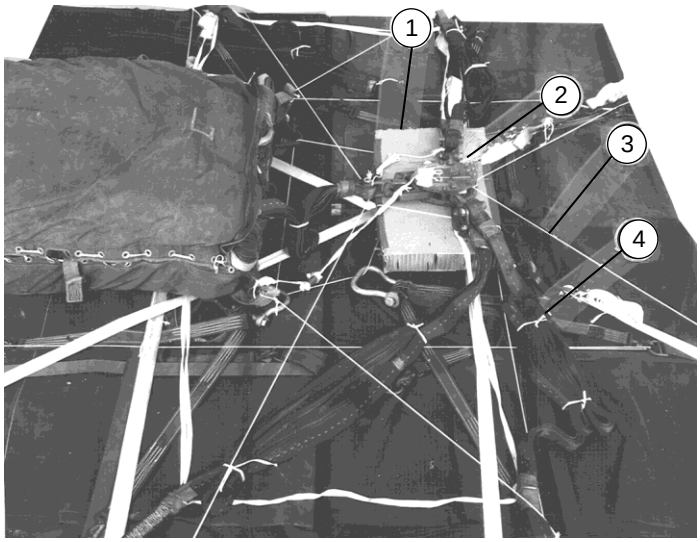
② Install the actuator according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

③ Install and safety a 12-foot cable according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5

Figure 2-40. Extraction Force Transfer Coupling Installed

INSTALLING PARACHUTE RELEASE

2-37. Prepare, attach, and safety an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-41.



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 2-41. M-1 Cargo Parachute Release Installed

PLACING EXTRACTION PARACHUTE

2-38. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

2-39. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

MARKING RIGGED LOAD

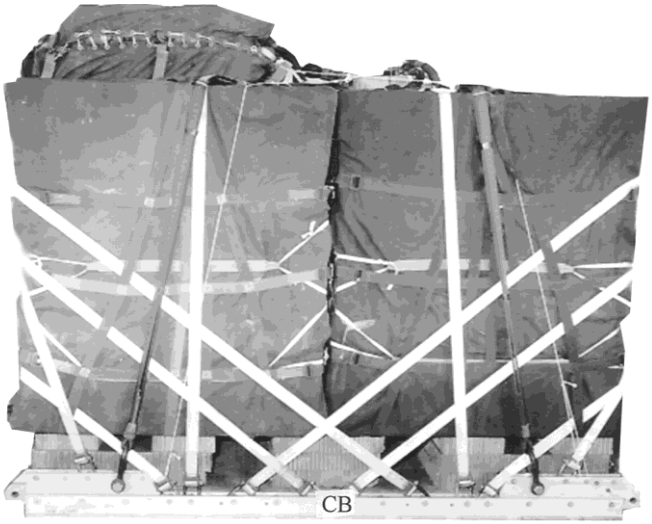
2-40. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 2-42. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

2-41. Use the equipment listed in Table 2-3 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

RIGGED LOAD DATA

Weight: Load shown ..... 4,040 pounds

Height ..... 83 inches

Width ..... 108 inches

Overall Length ..... 98 inches

Overhang: Front ..... 1 inch

Rear ..... 1 inch

Center of Balance (from front edge of the platform) ..... 50 inches

Extraction System with 12-foot cable (adds 18 inches to length of platform) ... Extraction Force Transfer Coupling (EFTC)

Figure 2-42. One-Round Containers Rigged in Four A-22 Cargo Bags on an 8-Foot, Type V Platform for Low-Velocity Airdrop

Table 2-3. Equipment Required for Rigging One -Round Dragon or Dragon II Missile Containers in Four A-22 Cargo Bags on an 8-Foot, Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
8465-00-587-3421	Bag, cargo, aerial delivery, type A-22	4
	Clevis, suspension:	
4030-00-678-8562	3/4-inch (medium) emergency restraint	2
4030-00-090-5354	1-inch (large)	9
4020-00-240-2146	Cord, nylon, type III	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with 12-foot cable	1
1670-00-360-0328	Cover, clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-foot (1-loop)	1
	Or	
1670-01-107-7652	160-foot (1-loop)	2
1670-01-064-4452	60-foot (1-loop), type XXVI for C-17 drogue line	1
	Link assembly, two-point:	
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	1
5310-00-232-5165	Nut, 1-inch, hexagonal	1
1670-00-003-1953	Plate, side 3 3/4-inch	1
5365-00-007-3414	Spacer, large	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb	10 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	1
1670-01-063-3715	Cargo, extraction, 15-foot	1
	Platform, airdrop, type V, 8-foot	
1670-01-353-8425	Bracket assembly, Extraction Force Transfer Coupling (EFTC)	1
1670-01-162-2376	Bracket assembly, extraction	1
1670-01-162-2372	Clevis assembly	20
1670-01-162-2381	Tandem link	4
5530-00-128-4981	Plywood, 3/4-inch	2 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 2-3. Equipment Required for Rigging One -Round Dragon or Dragon II Missile Containers in Four A-22 Cargo Bags on an 8-Foot, Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, cargo airdrop:	
	For deployment line:	
1670-00-753-3792	12-foot (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6301	3-foot (2-loop), type XXVI nylon webbing	1
	For suspension:	
1670-01-063-7761	16-foot (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap parachute release, multicut	1
7515-00-266-5016	Tape, adhesive, 2-inch	As required
7501-00-266-6710	Tape, masking	As required
1670-01-4838259	Towplate release mechanism (H-block) (C-17)	1
1670-00-937-0271	Tie-down assembly, 15-foot	28
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-inch	As required
8305-00-263-3591	Type VIII webbing	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

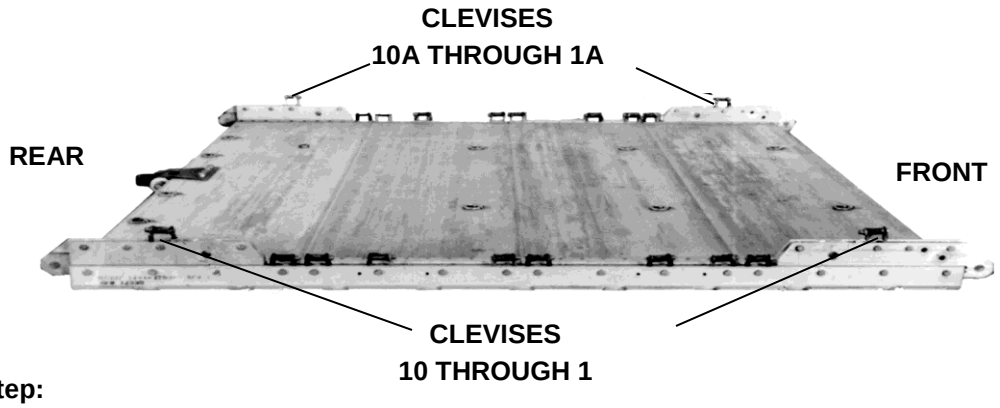
SECTION IV-RIGGING FOUR 15-ROUND CONTAINERS

DESCRIPTION OF LOAD

2-42. 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-11 cargo parachute for low-velocity airdrop (LVAD) from a C-130 or C-17 aircraft. Each container is 49 inches long, 37 inches wide, 67 inches high, and weighs 695 pounds.

PREPRARING PLATFORM

2-43. Prepare an 8-foot airdrop platform as shown in Figure 2-43.



Step:

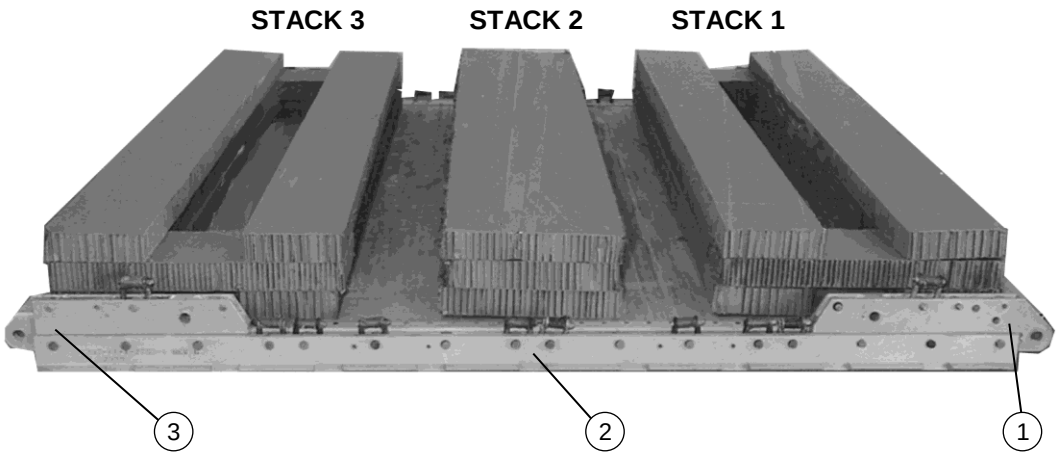
1. Inspect, or assemble and inspect, an 8-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
3. Install a tandem link to the rear of each platform side rail using holes 14, 15, and 16.
4. Install clevises on bushing 3 of each front tandem link.
5. Install clevises on bushing 3 of each rear tandem link.
6. Starting at the front of the right platform side rail, install clevises on the bushings bolted to holes 4, 5, 6, 8, 9, 11, 12, and 13. Repeat for the left side.
7. 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.
8. Label the tiedown rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 2-43. Platform Prepared

BUILDING AND PLACING HONEYCOMB STACKS

2-44. Prepare and position the honeycomb stacks as shown in Figure 2-44.

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



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

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

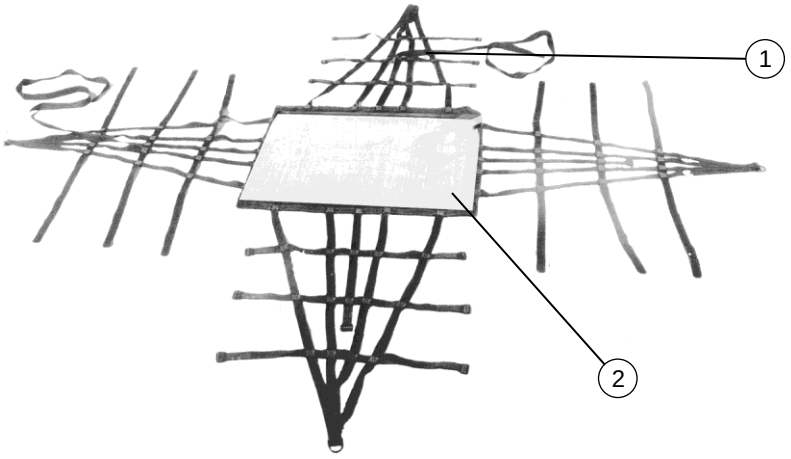
② Build the second stack by using three pieces of honeycomb (18- by 80-inch). Center the stack over the joint where the second and third panels join together and between the side rails.

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

Figure 2-44. Honeycomb Stacks Positioned

PREPARING THE LOAD

2-45. Prepare four A-22 cargo slings with four 15-round containers as shown in Figures 2-45 and 2-46. However, do not use the skid or skid honeycomb. Close the A-22 slings by following steps in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

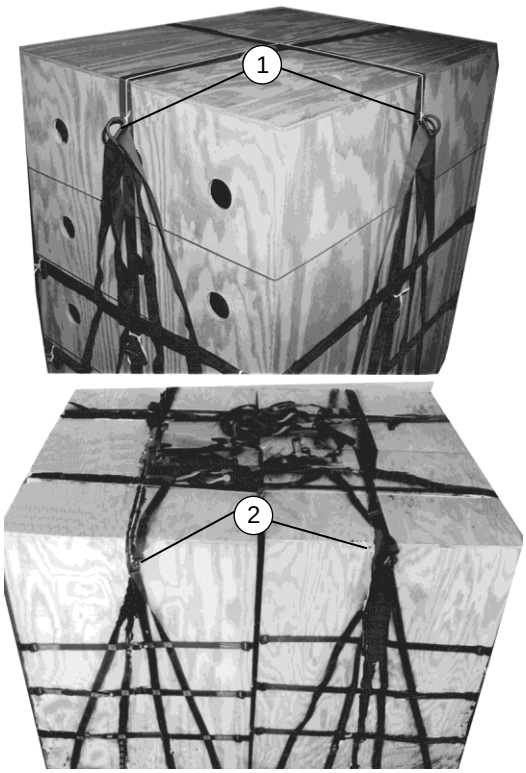


① Position the A-22 sling assembly by following the procedures outlined in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

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

Note. Set the container on the plywood. Close the A-22 cargo sling by following the steps in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Figure 2-45. Cargo Sling and Plywood Positioned



① Tie the D-ring on the support web to the front 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 straps faces inward. Tape all connector snaps.

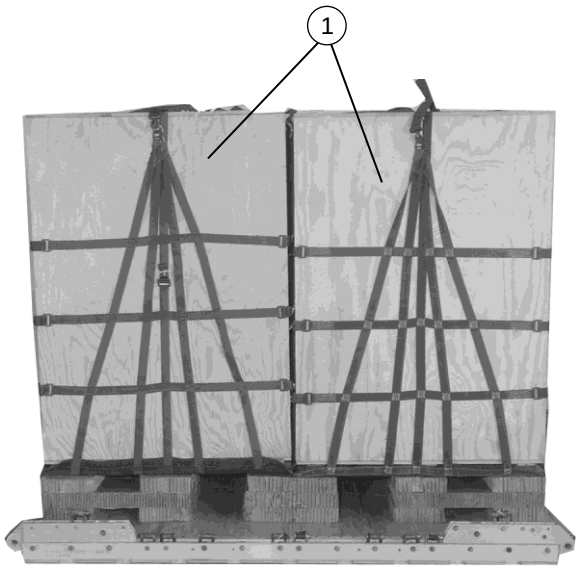
Figure 2-46. Containers Positioned and Cargo Slings Closed

POSITIONING LOAD

2-46. Place the four A-22 cargo slings with four 15-round containers on the honeycomb stacks as shown in Figure 2-47.

CAUTION

Make sure the inspection port holes in the missile containers face the front and rear of the platform: the inspection port holes face the rear of the platform in the container groups.

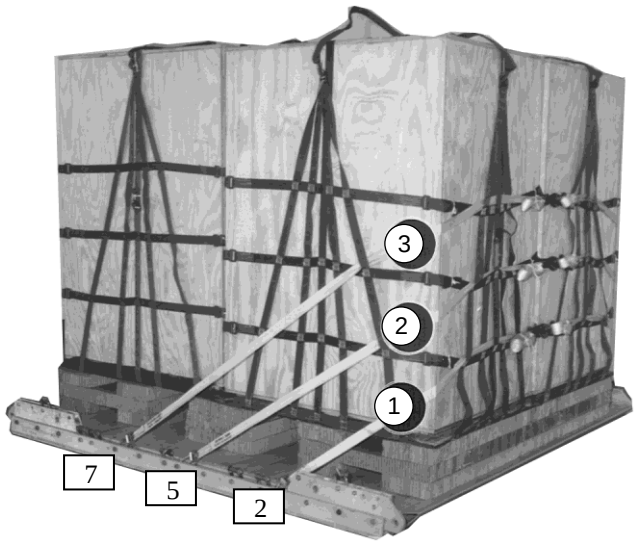


① Place four A-22 cargo slings on the honeycomb, centering them from side to side and from front to rear on the platform.

Figure 2-47. Missile Containers Positioned

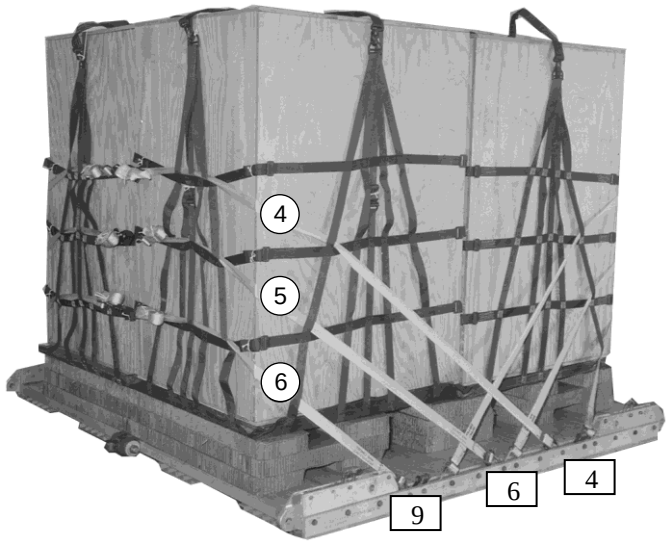
LASHING MISSILE CONTAINERS

2-47. Lash the containers to the platform as shown in Figures 2-48 through 2-50. Install and safety the lashings as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .



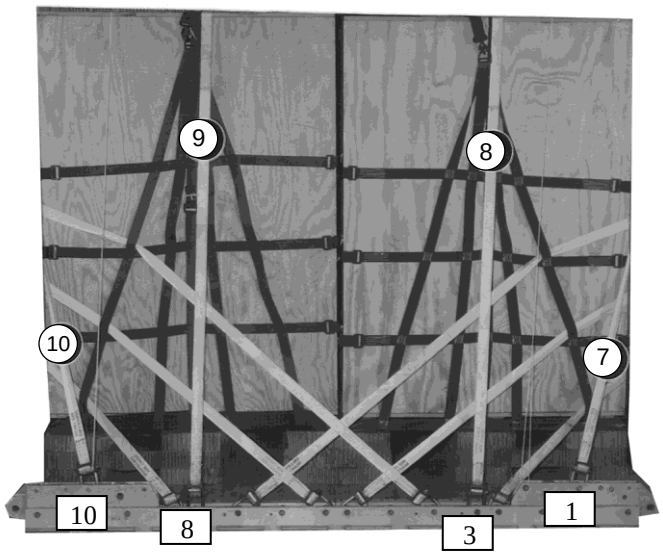
Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	2 and 2A	Route a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings underneath the A-22 webbing on the sides and around the front of the load. Secure the lashings on the front using two D-rings and a load binder.
2	5 and 5A	Route 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	Route 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 2-48. Lashings 1 Through 3 Installed



Lashing Number	*Tiedown Clevis Number*	*Instructions*
4	4 and 4A	Route 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	Route 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	Route 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 2-49. Lashings 4 Through 6 Installed

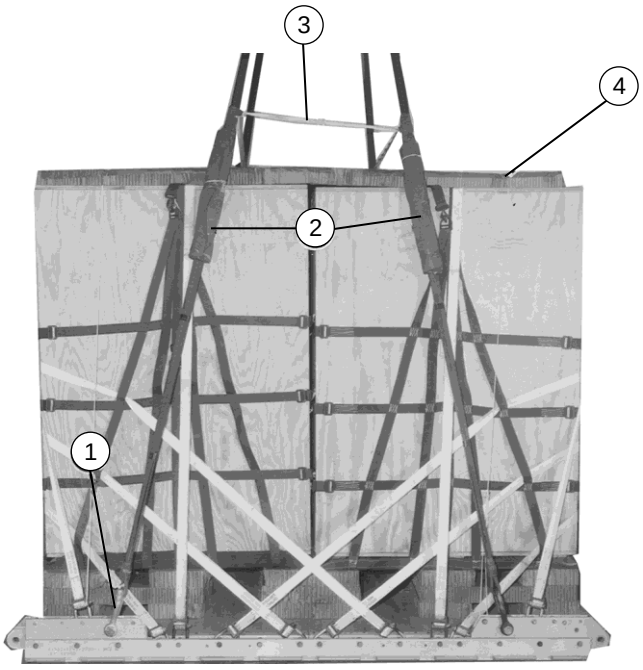


Lashing Number	*Tiedown Clevis Number*	*Instructions*
7	1 and 10A	Route a 15-foot lashing from clevis 1 and a 15-foot lashing from clevis 10A. Pass the lashings around the front and rear of the load and up over the top of the load. Secure the lashings on the top using two D-rings and a load binder.
8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

Figure 2-50. Lashings 7 Through 10 Installed

INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

2-48. 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 each of the four tandem links as shown in Figure 2-51.



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.

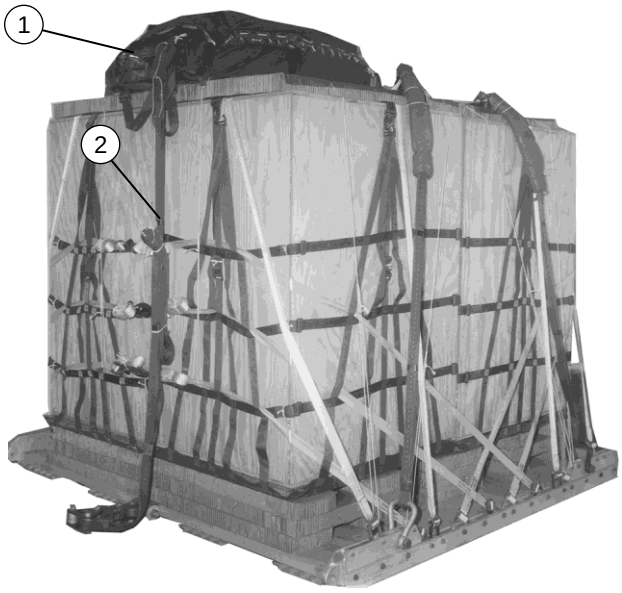
③ Raise the four suspension slings above the load, and install a deadman's tie as outlined in to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

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 2-51. Suspension Slings and Deadman's Tie Installed

STOWING CARGO PARACHUTE

2-49. Stow one G-11 cargo parachute according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-52.



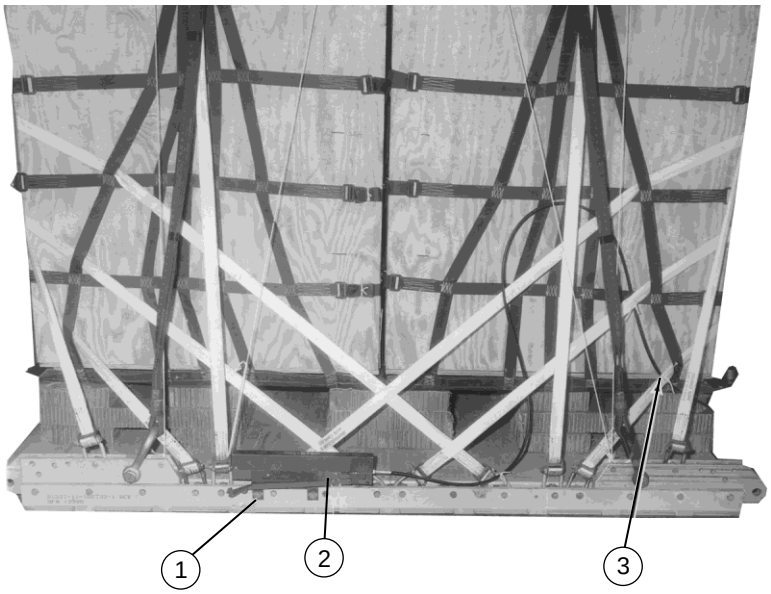
① Prepare, place, and secure one G-11 cargo parachute according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

② Use a 12-loop (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 2-52. Cargo Parachute Stowed and Secured to Load

INSTALLING EXTRACTION SYSTEM

2-50. Attach the components of the EFTC according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-53.



① Attach the Extraction Force Transfer Coupling (EFTC) mounting brackets to the front holes on the left rail.

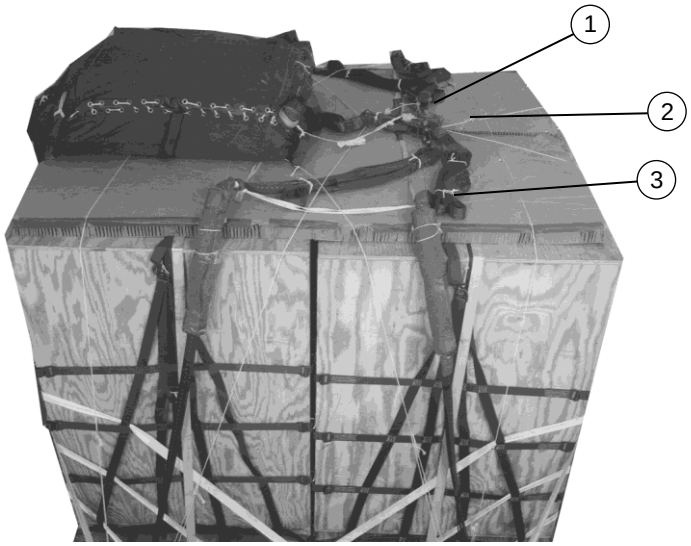
② Install the actuator according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

③ Install a 12-foot cable according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Safety the cable to the lashing with type I, 1/4-inch cotton webbing.

Figure 2-53. Extraction Force Transfer Coupling Installed

INSTALLING PARACHUTE RELEASE

2-51. Prepare, attach, and safety an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 2-54.



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 2-54. M-1 Cargo Parachute Release Installed

PLACING EXTRACTION PARACHUTE

2-52. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

2-53. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

MARKING RIGGED LOAD

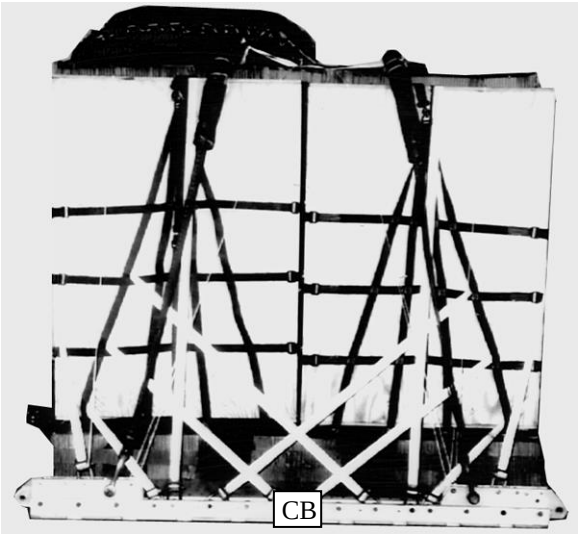
2-54. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, and as shown in Figure 2-55. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

2-55. Use the equipment listed in Table 2-4 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/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

Overall Length ..... 96 inches

Overhang: Front ..... 0 inches

Rear ..... 0 inches

Center of Balance (from front edge of the platform) ..... 51 inches

Extraction System with 12-foot cable (adds 18 inches to length of platform) ... Extraction Force Transfer Coupling (EFTC)

Figure 2-55. Four Fifteen-Round Containers Rigged in A-22 Cargo Slings on Type V Platform for Low-Velocity Airdrop

Table 2-4. Equipment Required for Rigging Four 15 -Round Dragon or Dragon II Missile Containers in Four A-22 Cargo Slings on an 8-Foot, Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
8465-00-587-3421	Bag, cargo, aerial delivery, type A-22	4
	Clevis, suspension:	
4030-00-678-8562	3/4-inch (medium) emergency restraint	2
4030-00-090-5354	1-inch (large)	5
4020-00-240-2146	Cord, nylon, type III	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer with 12-foot cable	1
1670-00-360-0328	Cover, clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
8305-00-958-3685	Felt, 1/2-inch thick	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-foot (1-loop)	1
	Or	
1670-01-107-7652	160-foot (1-loop)	2
1670-01-064-4452	60-foot (1-loop), type XXVI for C-17 drogue line	1
	Link assembly, two-point:	
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	1
5310-00-232-5165	Nut, 1-inch, hexagonal	1
1670-00-003-1953	Plate, side 3 3/4-inch	1
5365-00-007-3414	Spacer, large	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb	8 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	1
1670-01-063-3715	Cargo, extraction, 15-foot	1
	Platform, airdrop, type V, 8-foot	
1670-01-353-8425	Bracket assembly, Extraction Force Transfer Coupling (EFTC)	1
1670-01-162-2376	Bracket assembly, extraction	1
1670-01-162-2372	Clevis assembly	20
1670-01-162-2381	Tandem link	4
5530-00-128-4981	Plywood, 3/4-inch	2 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1

Table 2-4. Equipment Required for Rigging Four 15 -Round Dragon or Dragon II Missile Containers in Four A-22 Cargo Slings on an 8-Foot, Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, cargo airdrop:	
	For deployment line:	
1670-00-753-3792	12-foot (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6301	3-foot (2-loop), type XXVI nylon webbing	5
	For suspension:	
1670-01-063-7761	16-foot (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap parachute release, multicut	1
7515-00-266-5016	Tape, adhesive, 2-inch	As required
7501-00-266-6710	Tape, masking	As required
1670-00-937-0271	Tie-down assembly, 15-foot	20
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-inch	As required
8305-00-263-3591	Type VIII webbing	As required

Chapter 3

Rigging the Advanced Antitank Weapon System-Medium (Javelin) for Low-Velocity Airdrop

SECTION I-RIGGING TWO-ROUND A-7A DOOR BUNDLE

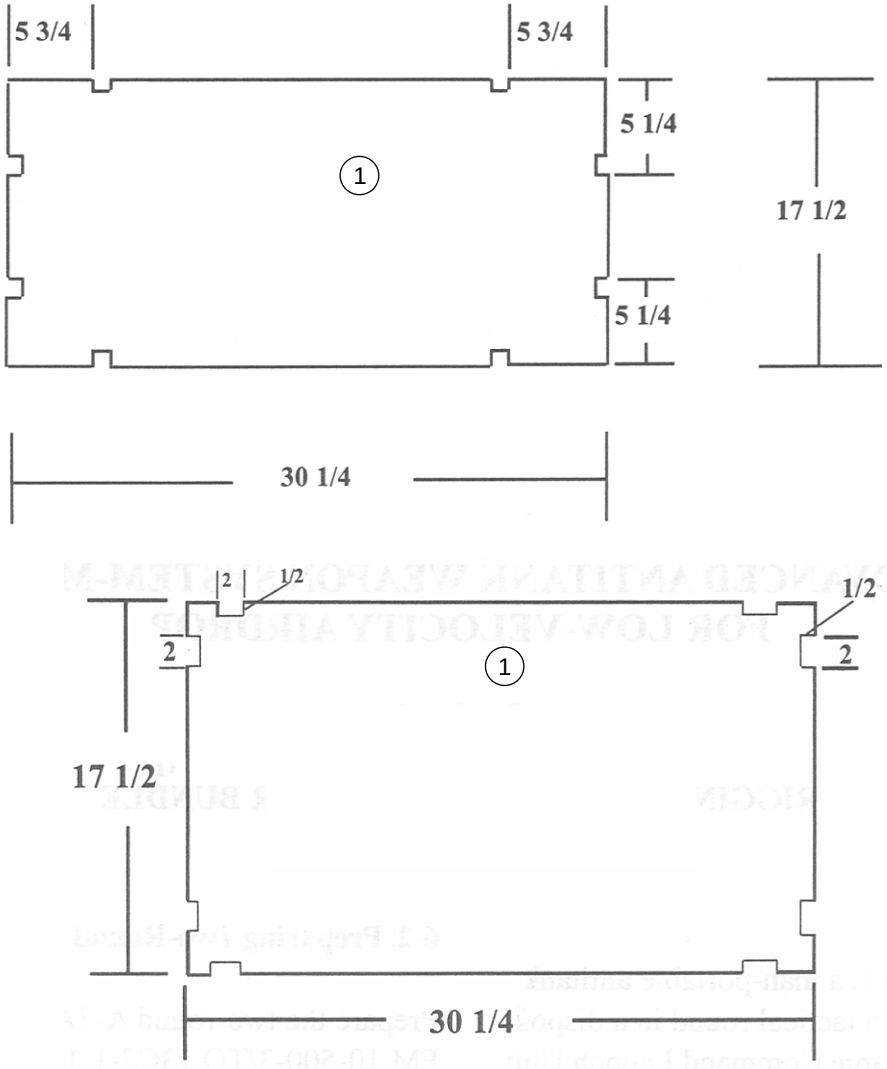
DESCRIPTION OF LOAD

3-1. 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 CLU 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-17 aircrafts. The Javelin two-round A-7A door bundle has an approximate rigged weight of 146 pounds. It has an approximate 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 T-10 cargo parachute.

PREPARING TWO-ROUND A-7A DOOR BUNDLE

3-2. Prepare the two-round A-7A door bundle according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-1.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.

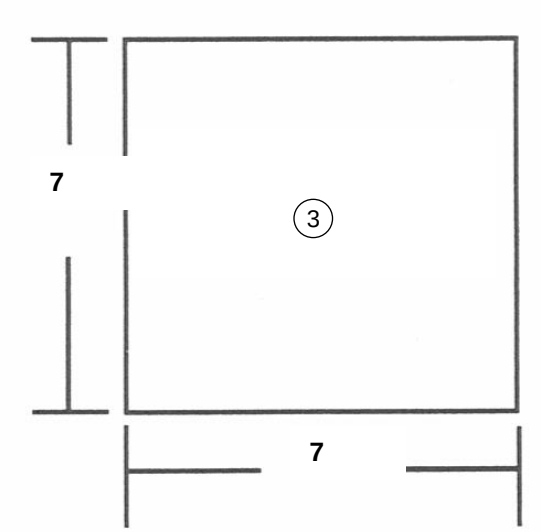


① Cut two 17 1/2- by 30 1/4-inch pieces of 3/4-inch plywood with eight 1/2-inch by 2-inch cutouts. Pad and tape sharp edges of the cutout.

② Cut two 17 1/2- by 30 1/4-inch pieces of honeycomb. (Not shown)

Figure 3-1. Two-Round A-7A Door Bundle Prepared

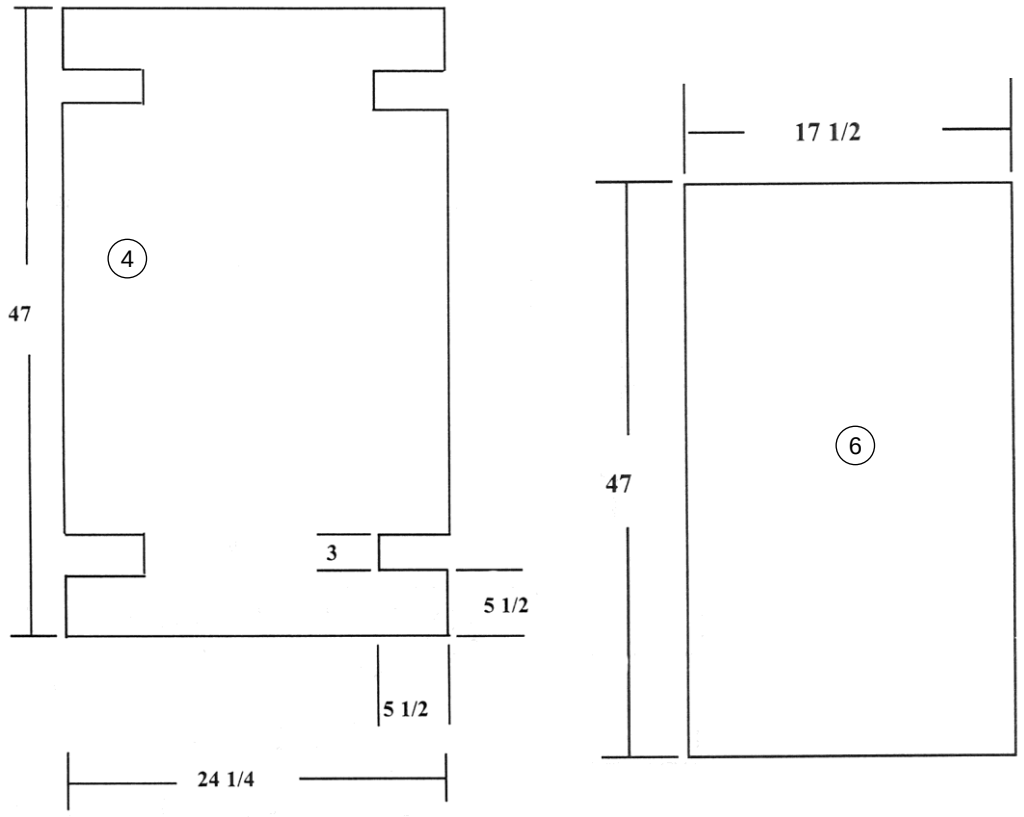
Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



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

Figure 3-1. Two-Round A-7A Door Bundle Prepared (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



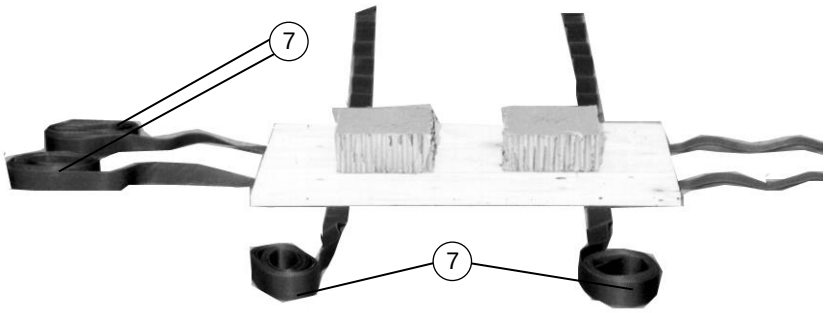
④ Cut two 3/4- by 24 1/4- by 47-inch pieces of plywood with four 3- by 5 1/2-inch cutouts. Pad and tape sharp edges of the cutouts.

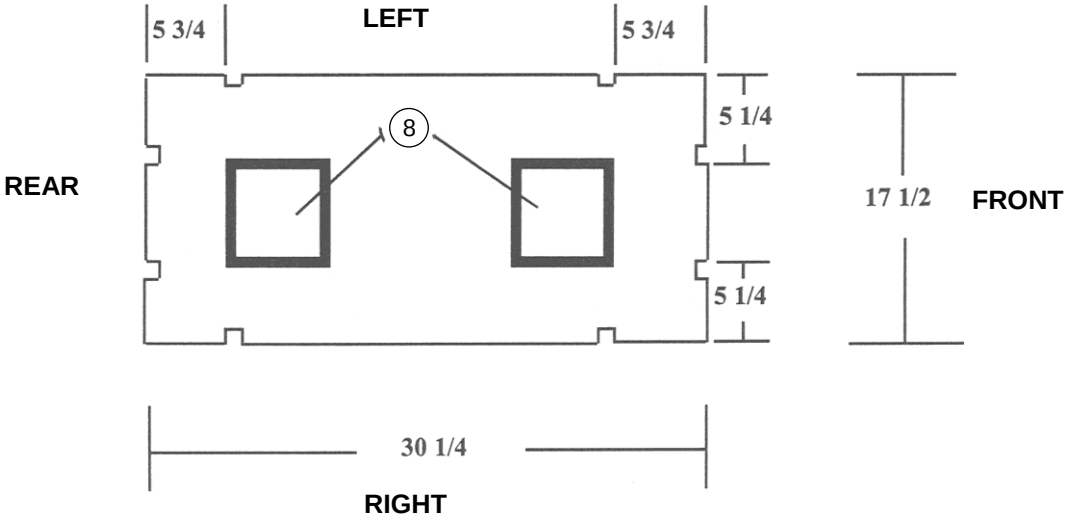
⑤ Cut two pieces of honeycomb to match step 4. (Not shown)

⑥ Cut two 17 ½- by 47-inch pieces of honeycomb.

Figure 3-1. Two-Round A-7A Door Bundle Prepared (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.

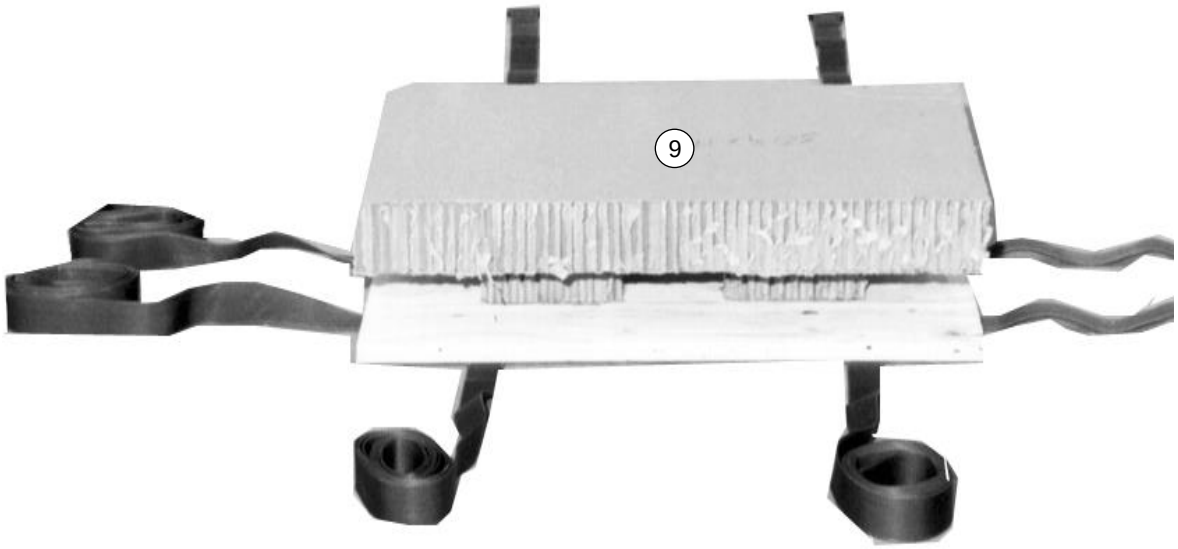




⑦ Position four A-7A straps under one of the 17 1/2- by 30 1/4-inch pieces of plywood. Position each strap about 5 inches from each edge of the platform.

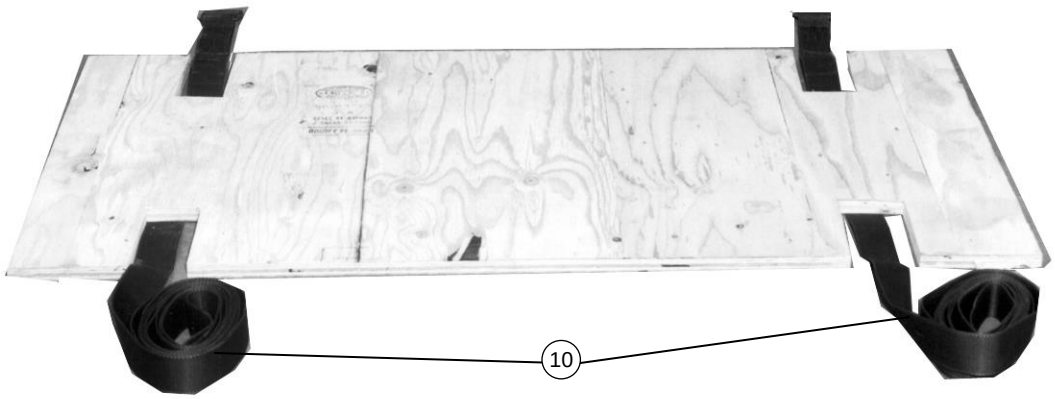
⑧ Position and glue the two 7- by 7-inch pieces of honeycomb on top of the plywood. Each piece should be 5 1/4 inches from the right and left edges of the plywood. Each piece should also be 5 3/4 inches from the forward edge and 5 3/4 inches from the rear edge of the plywood.

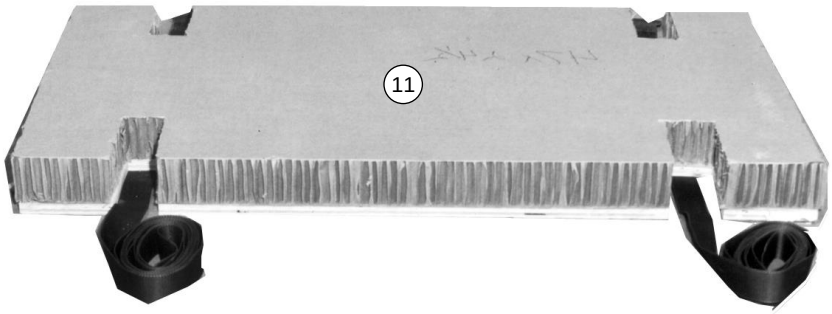
Figure 3-1. Two-Round A-7A Door Bundle Prepared (Continued)



⑨ Position and glue one of the 17 ½-inch by 30 ¼-inch pieces of honeycomb centered on the plywood in step 8.

Figure 3-1. Two-Round A-7A Door Bundle Prepared (Continued)

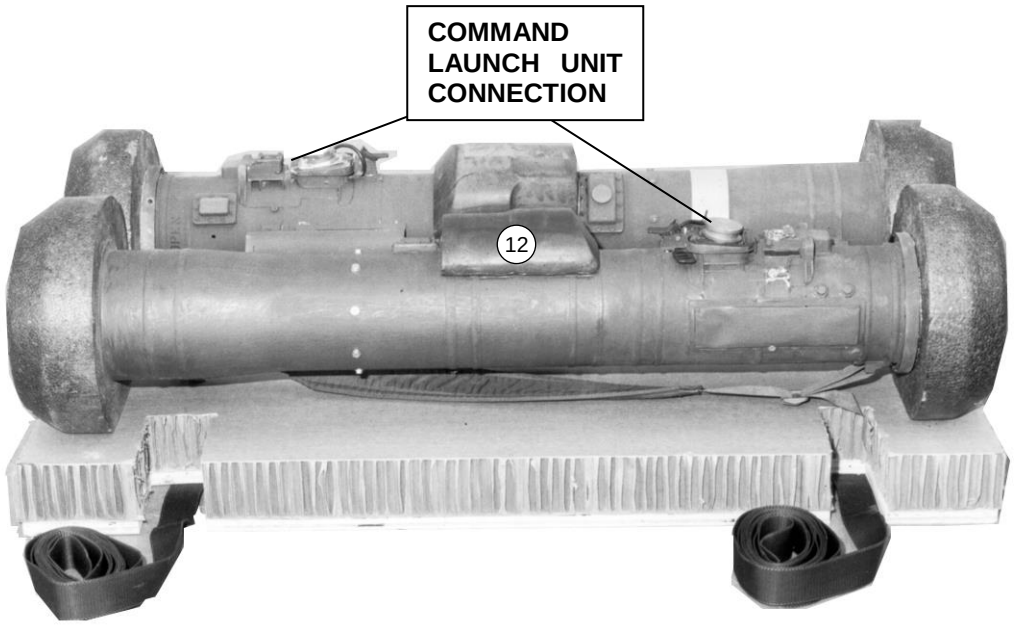




⑩ Position two A-7A straps, one in each set of cutouts on the 24 ¼-inch by 47-inch piece of plywood.

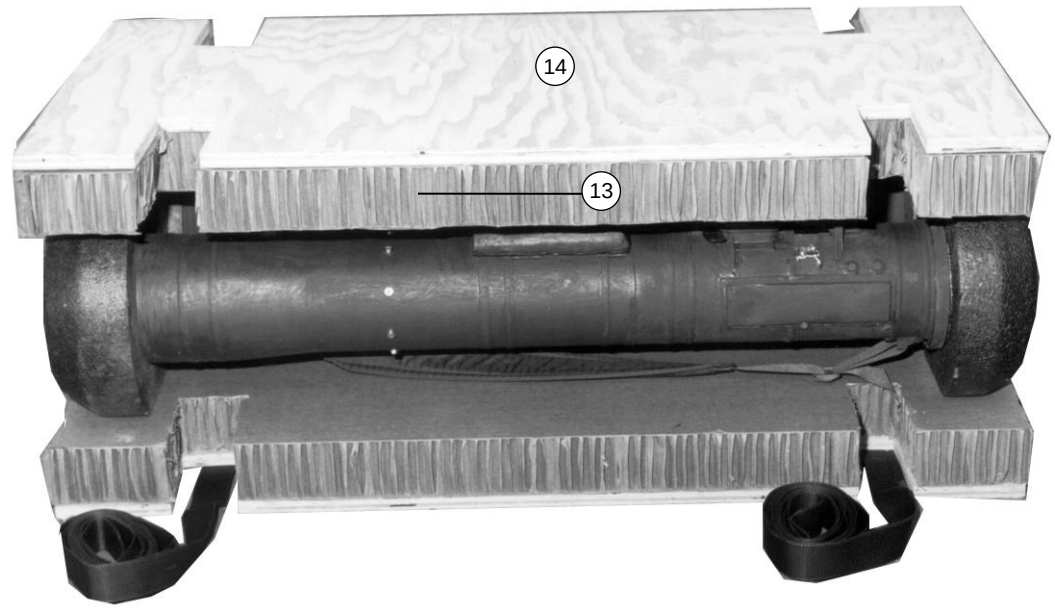
⑪ Position and glue one of the matching pieces of honeycomb on the top of the plywood in step 10.

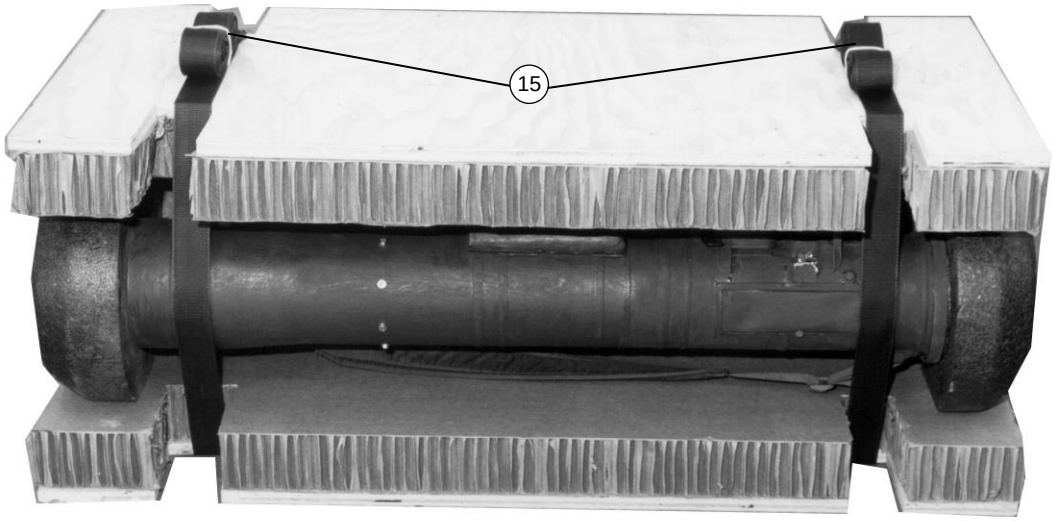
Figure 3-1. Two-Round A-7A Door Bundle Prepared (Continued)



⑫ With the CLU 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 3-1. Two-Round A-7A Door Bundle Prepared (Continued)



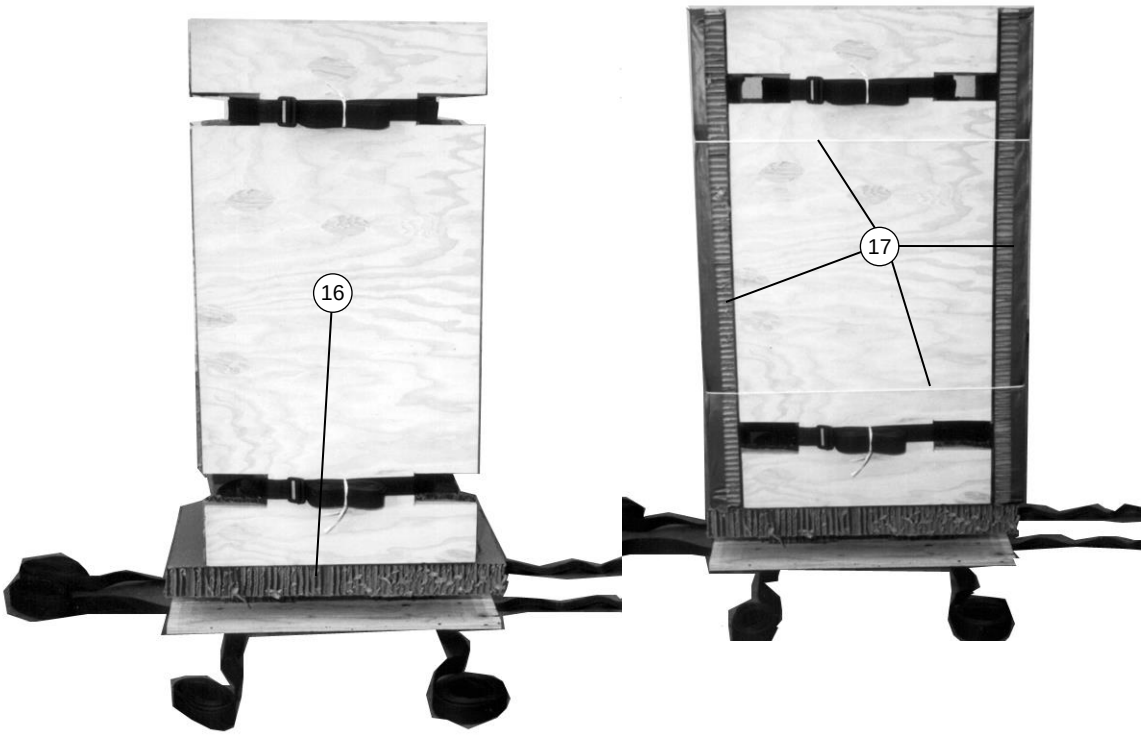


⑬ Position the other piece of 24 ¼- by 47-inch honeycomb with the cutouts evenly on top of the launch tubes.

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

⑮ Secure the A-7A straps. Fold and secure excess straps with one turn single type I, 1/4-inch cotton webbing.

Figure 3-1. 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- 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 3-1. Two-Round A-7A Door Bundle Prepared (Continued)



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

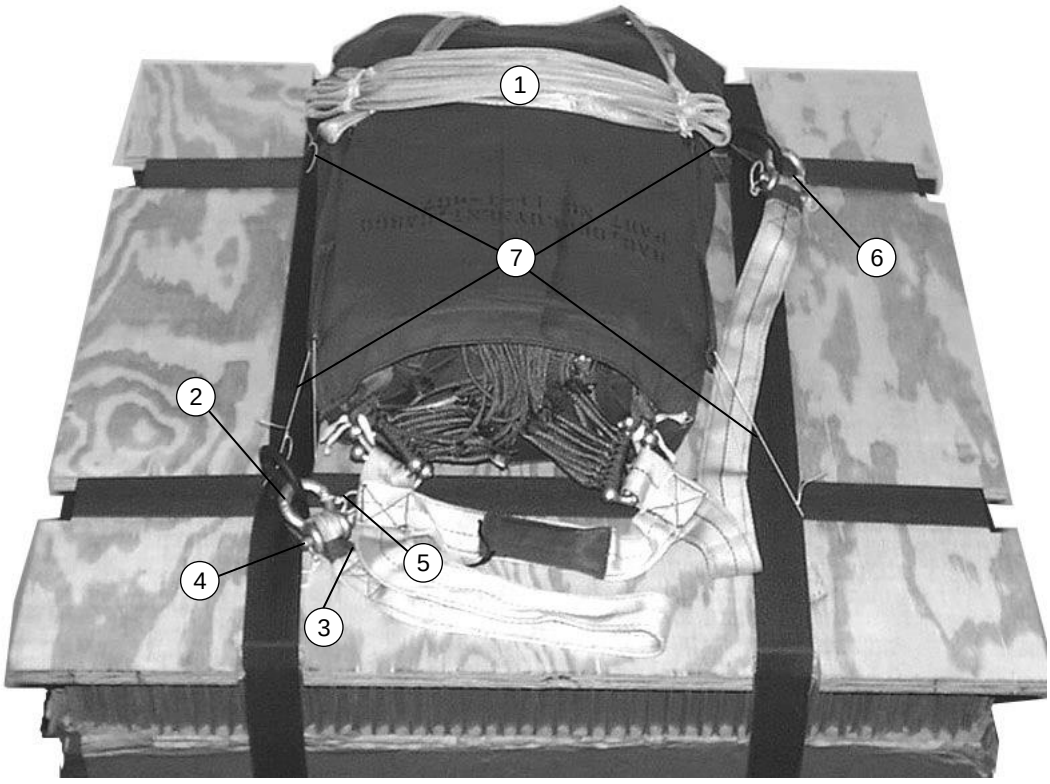
⑲ Position and glue one 17 1/2- by 30 1/4-inch piece of plywood on the honeycomb.

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 3-1. Two-Round A-7A Door Bundle Prepared (Continued)

ATTACHING PARACHUTE TO LOAD

3-3. Attach a T-10 cargo parachute as shown in Figure 3-2.



① Center the parachute on top of the load between the D-rings.
② Place the bell portion of a small clevis on one D-ring.
③ Place the loop end of a riser between the clevis arms.
④ Insert the clevis pin through the holes in the clevis arms and the loop of the riser.
⑤ Install the cotter pin. Spread the ends of the cotter pin to secure it in place.
⑥ Attach the other riser to the other D-ring as described in steps 1 through 5.
⑦ Secure the parachute from the retainer straps to the A-7A straps with lengths of ticket number 8/7 cotton thread.

Figure 3-2. Parachute Attached to Load

MARKING RIGGED LOAD

3-4. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 3-3. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods) and affix to load.

EQUIPMENT REQUIRED

3-5. Use the equipment in Table 3-1 to rig this load.

CAUTION

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



RIGGED LOAD DATA

Weight: Load shown	146 pounds
Height	65 1/2 inches
Width	17 1/2 inches
Overall Length	30 1/4 inches
Parachute	T-10 Cargo

Figure 3-3. Javelin Two-Round A-7A Door Bundle Rigged

Table 3-1. Equipment Required for Rigging the Javelin Two-Round A-7A Door Bundle for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
4020-00-240-2146	Cord, nylon, type III, 550-pound	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	3 sheets
	Parachute:	
No NSN	T-10 cargo with 20-foot Universal Static Line for C-17	1
5530-00-128-4981	Plywood, 3/4- by 48- by 96-inches	2 sheets
1670-00-251-1153	Sling, assembly, cargo, airdrop, A-7A	6
8310-01-102-4487	Strap parachute release, multicut	1
7501-00-266-6710	Tape, masking	As required
7515-00-266-5016	Thread, cotton, ticket 8/7	As required
8305-00-268-2411	Webbing, cotton, 1/4-in, 80-pound	As required

SECTION II-RIGGING FOUR-ROUND A-7A DOOR BUNDLE

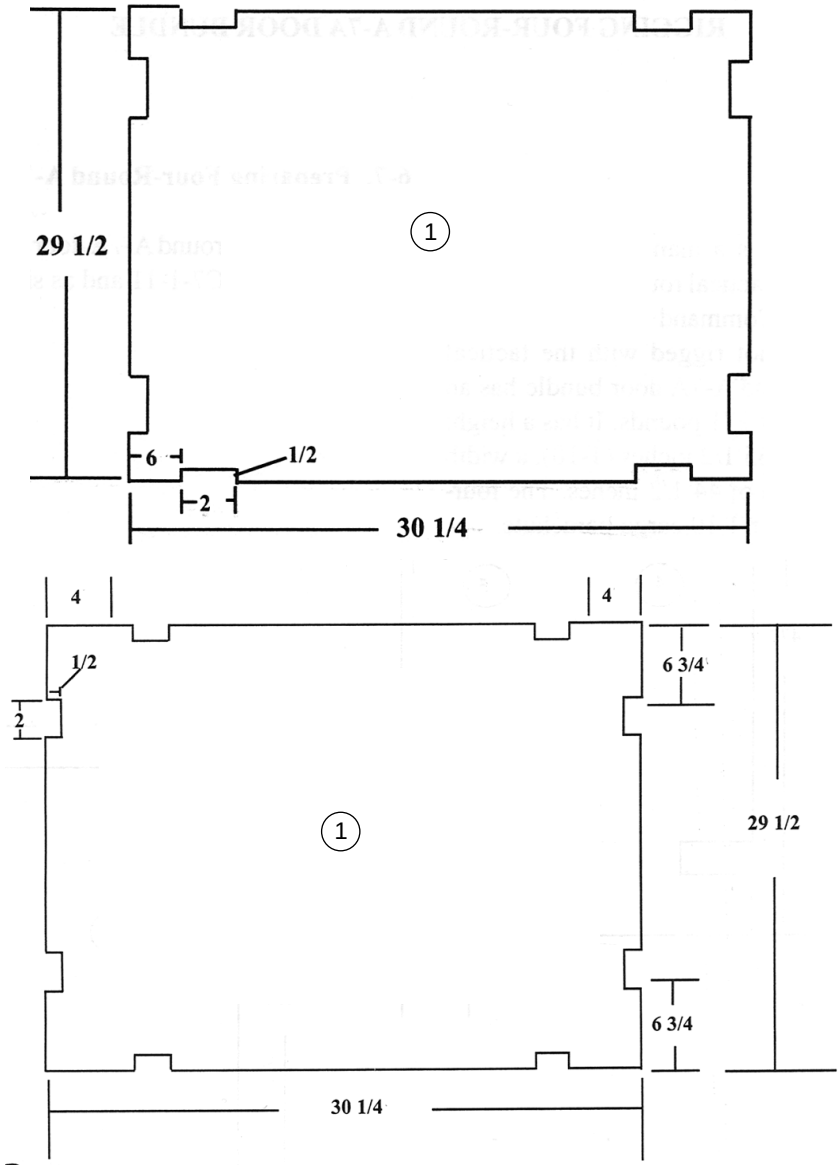
DESCRIPTION OF LOAD

3-6. 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 CLU 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 an approximate height of 57 1/2 inches (G-14) and 65 ½ inches (T-10), a width of 37 1/2 inches and a length of 44 1/4 inches. The four-round bundle uses the G-14 or T-10 cargo parachute.

PREPARING FOUR-ROUND A-7A DOOR BUNDLE

3-7. Prepare the four-round A-7A door bundle according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-4.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.

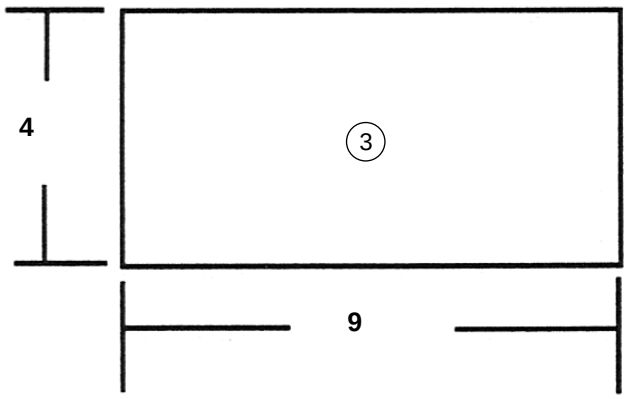


① Cut two 29 1/2- by 30 1/4-inch pieces of 3/4-inch plywood with eight 2-inch cutouts. Pad and tape sharp edges of the cutout.

② Cut two 29 1/2- by 30 1/4-inch pieces of honeycomb. (Not shown)

Figure 3-4 Four -Round A-7A Door Bundle Prepared

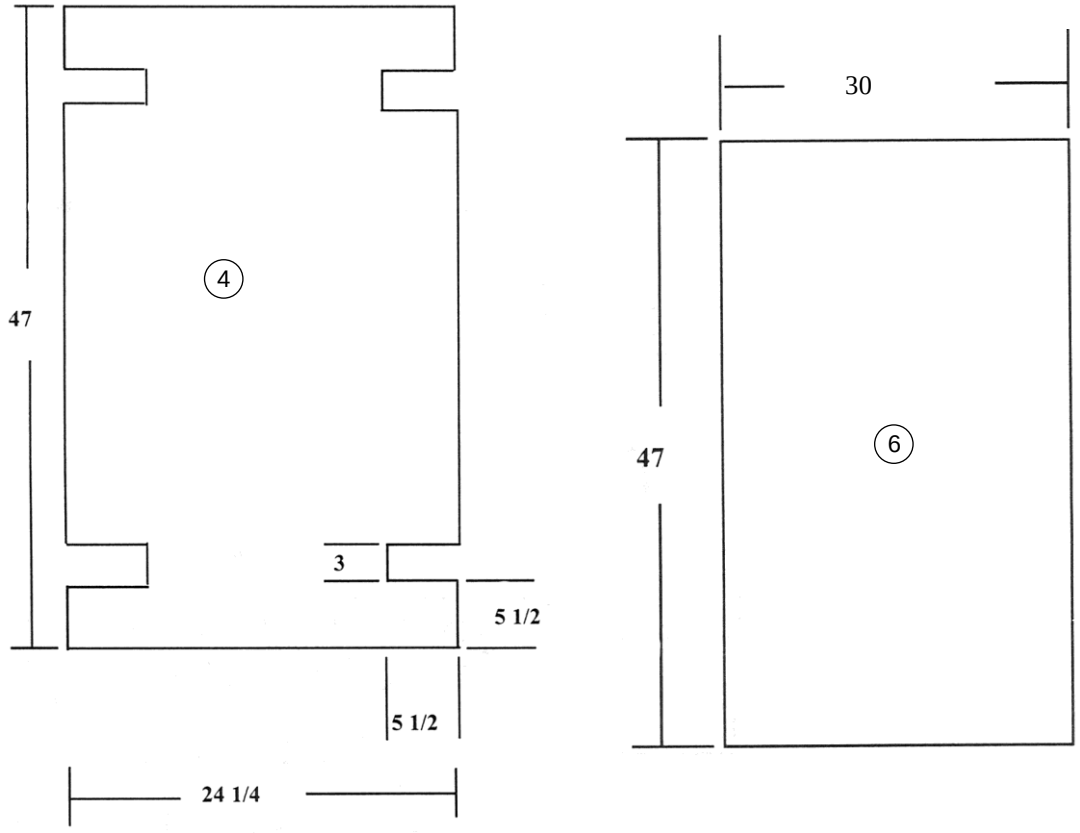
Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



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

Figure 3-4. Four-Round A-7A Door Bundle Prepared (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



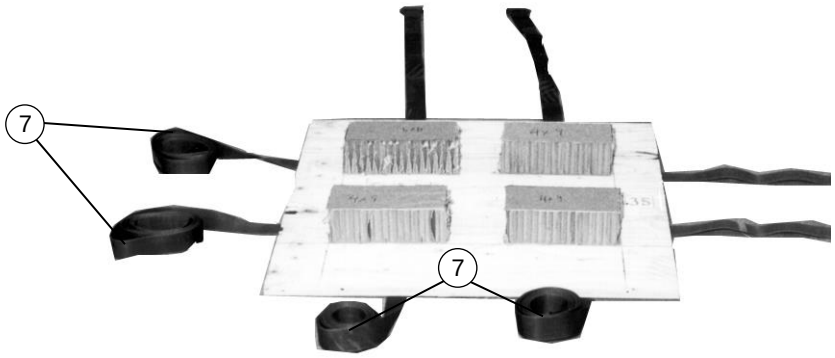
④ Cut three 3/4- by 24 1/4- by 47-inch pieces of plywood with four 3- by 5 1/2-inch cutouts. Pad and tape sharp edges of the cutouts.

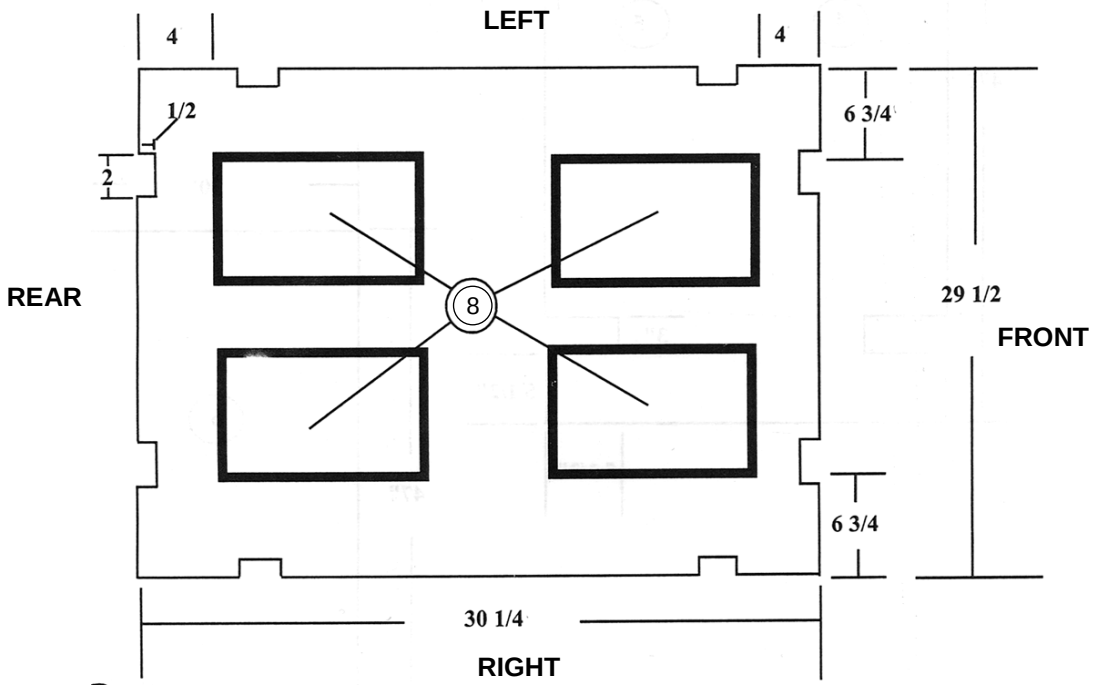
⑤ Cut two pieces of honeycomb to match those prepared in step 4. (Not shown)

⑥ Cut two 30- by 47-inch pieces of honeycomb.

Figure 3-4. Four-Round A-7A Door Bundle Prepared (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.





⑦ Position four A-7A straps under one of the 29 1/2- by 30 1/4-inch pieces of plywood. Position each strap in each set of cutouts of the plywood.

⑧ Position and glue the four 4- 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 plywood and the rear pieces should be 4 inches from the rear edge of the plywood.

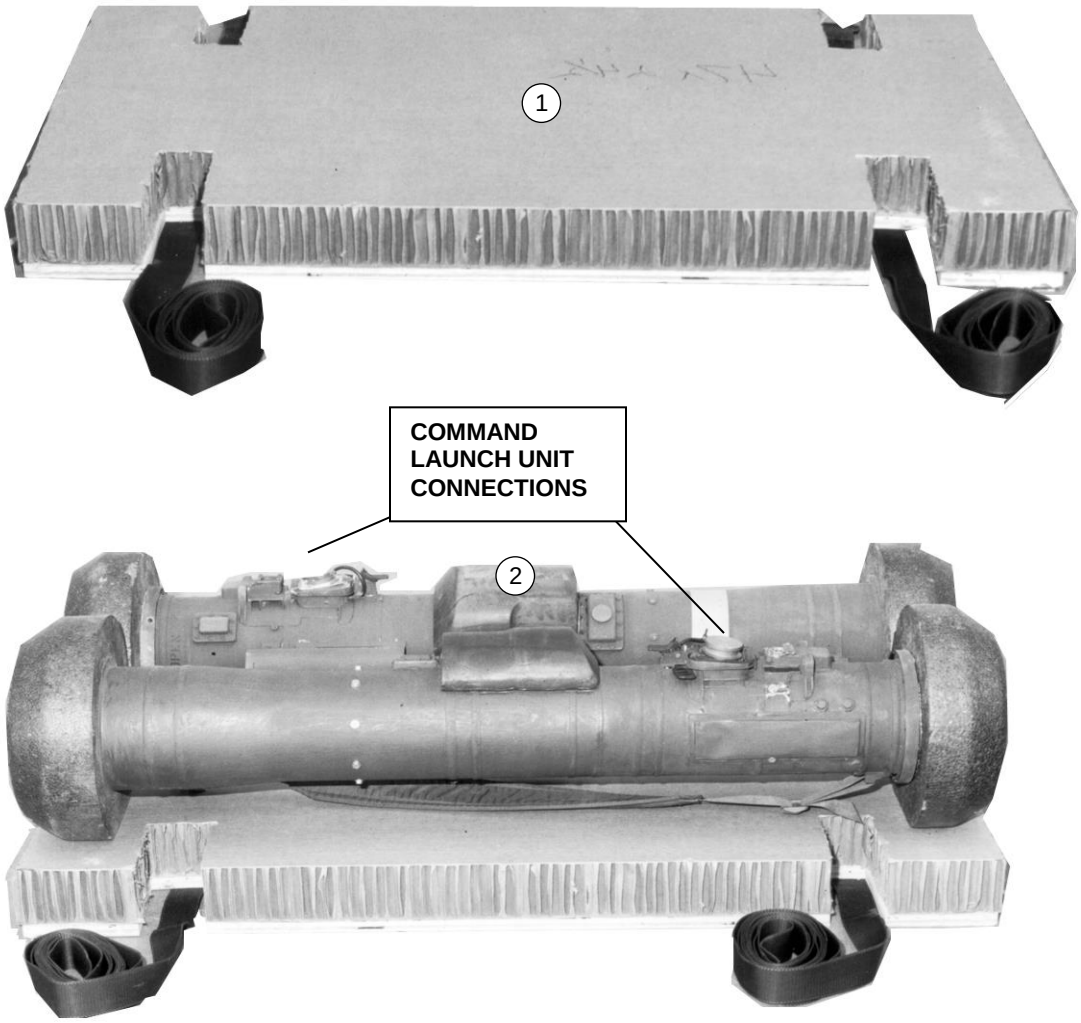
Figure 3-4. Four-Round A-7A Door Bundle Prepared (Continued)



⑨ Position and glue one of the 29 1/2- 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- by 47-inch piece of plywood

Figure 3-4. Four-Round A-7A Door Bundle Prepared (Continued)



① Position and glue one of the matching pieces of honeycomb on the top of the plywood in step 10.

② 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 unit face inward.

Figure 3-4. Four-Round A-7A Door Bundle Prepared (Continued)

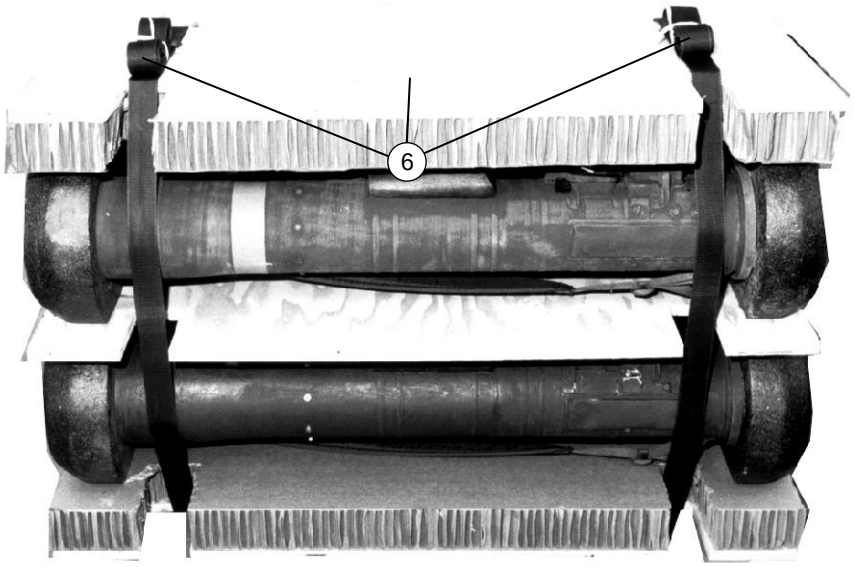


③ Position the other piece of 24 1/4-inch by 47-inch plywood with the cutouts evenly on top of the launch tubes.

④ Position two more rounds on top of the plywood as outlined in step 12.

Figure 3-4. Four-Round A-7A Door Bundle Prepared (Continued)

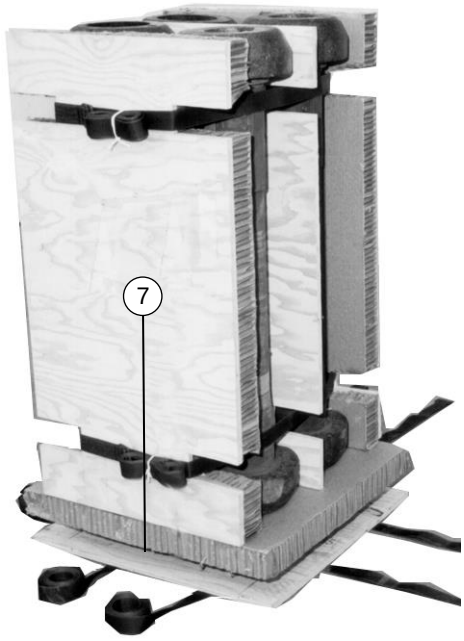


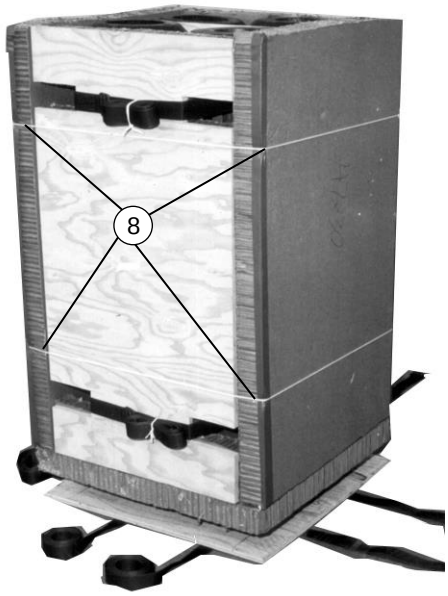


⑤ Position a piece of 24 1/4- by 47-inch honeycomb with the cutouts evenly on top of the launch top.

⑥ Position and glue the matching piece of plywood on top of the honeycomb. Secure the A-7A straps.

Figure 3-4. Four-Round A-7A Door Bundle Prepared (Continued)

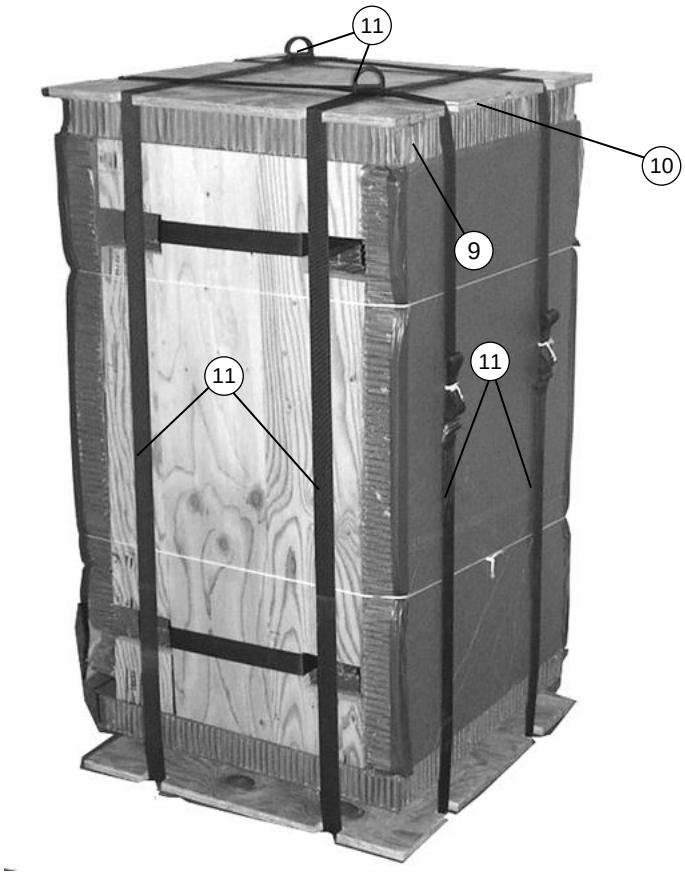




⑦ Using the materials from steps 7 through 9 as a base, position the materials from steps 10 through 16 on one end centered on the base.

⑧ 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 3-4. Four-Round A-7A Door Bundle Prepared (Continued)



⑨ Position one 29 1/2- by 30 1/4-inch piece of honeycomb on top of the load.

⑩ Position and glue one 29 1/2- by 30 1/4-inch piece of plywood on the honeycomb.

⑪ 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 3-4. Four-Round A-7A Door Bundle Prepared (Continued)

ATTACHING PARACHUTE

3-8. Attach a T-10 cargo parachute as shown in paragraph 3-3, Figure 3-2 or a G-14 cargo parachute as shown in Figure 3-5.



① 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.

② 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 3-5. Parachute Attached to Load

MARKING RIGGED LOAD

3-9. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 3-6. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods) and affix to load.

EQUIPMENT REQUIRED

3-10. Use the equipment in Table 3-2 to rig this load.

CAUTION

Mark the load “Door Bundle Only, Do Not Drop From ATF Ramp”



RIGGED LOAD DATA

Weight: Load shown ..... 271 pounds

Height ..... 57 1/2 inches (G-14)

..... 65 1/2 inches (T-10)

Width..... 37 1/2 inches

Overall Length ..... 44 1/2 inches (Plus the length of a G-14)

Parachute ..... T-10 or G-14

Figure 3-6. Javelin Four-Round A-7A Door Bundle Rigged (G-14)

Table 3-2. Equipment Required for Rigging the Javelin Four-Round A-7A Door Bundle for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
4020-00-240-2146	Cord, nylon, type III, 550-pound	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	3 sheets
	Parachute:	
No NSN	T-10 cargo with 20-foot Universal Static Line for C-17	1
5530-00-128-4981	Plywood, 3/4- by 48- by 96-inches	2 sheets
1670-00-251-1153	Sling, assembly, cargo, airdrop, A-7A	6
8310-01-102-4487	Strap parachute release, multicut	2
7501-00-266-6710	Tape, masking	As required
7515-00-266-5016	Thread, cotton, ticket 8/7	As required
8305-00-268-2411	Webbing, cotton, 1/4-in, 80-pound	As required

SECTION III-RIGGING NINE-ROUND CONTAINER DELIVERY SYSTEM (CDS) RIGGED IN AN A-22 CONTAINER

DESCRIPTION OF LOAD

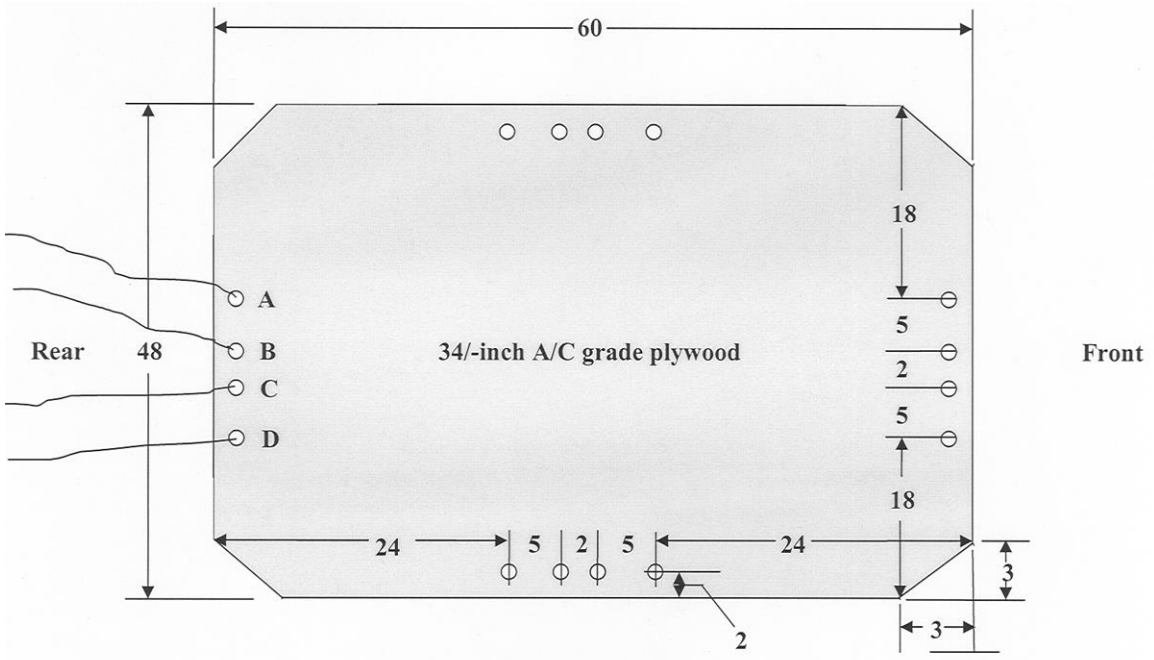
3-11. The Javelin Missile System is a man-portable antitank weapon system made up of a tactical round in a disposable launch tube and a reusable Command Launch Unit (CLU). The CLU is not rigged with the tactical rounds. The Javelin missile system rigged in an A-22 container has an approximate rigged weight of 810 pounds. It has an approximate 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.

PREPARING SKID BOARD AND TIES

3-12. Construct and prepare the skid board, and ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-7. Use the measurements in this manual if they should differ from TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Note. These dimensions and instructions are load specific.

Note.
1. Drawing not to scale.
2. All dimensions are given in inches.
3. Always use A/C grade plywood.



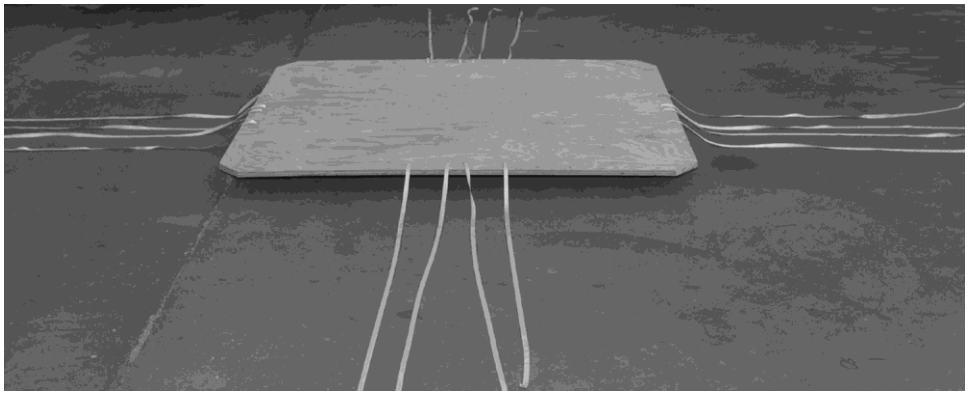
Step:

1. Construct and prepare a skid board as shown above.

Note. These instructions are load specific.

Figure 3-7. Skid Board and Ties Prepared

Note.
1. Drawing not to scale.
2. All dimensions are given in inches.
3. Always use A/C grade plywood.



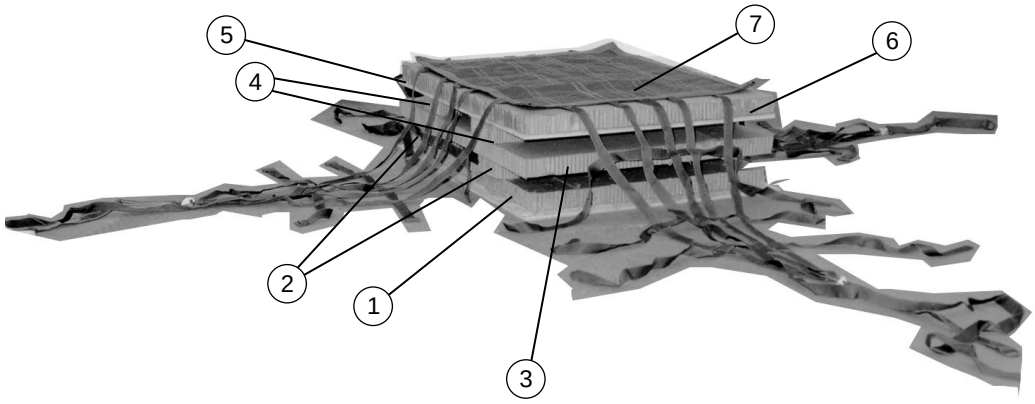
Step:

2. Cut and place a ¾- by 48- by 60-inch piece of A/C grade plywood on a flat surface.
3. Drill sixteen ½-inch holes as shown.
4. Measure 3 inches in from each corner of the skid board and make a diagonal cut.
5. Prepare and route the skid board ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-11 and as described below.
6. Cut sixteen, 10-foot lengths of ½-inch tubular, nylon webbing. Route one length through hole A from the bottom and the other through hole B from the bottom. Even the ends.
7. Repeat step 6 for holes C and D and the remaining sides.

Figure 3-7. Skid Board and Ties Prepared (Continued)

PREPARING AND POSITIONING HONEYCOMB AND A-22 SLING ASSEMBLIES

3-13. Prepare and position honeycomb and position two A-22 sling assemblies on the load according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-8.



① Cut a 44- by 56-inch piece of honeycomb and center it on the plywood.

② Cut two 5- by 56-inch pieces of honeycomb and place each piece on top of the honeycomb 12 inches from each edge.

③ Cut a 44- by 56-inch piece of honeycomb and place it on top of the two previous pieces centered.

④ Repeat step 2.

⑤ Cut a 3/4- by 44- by 56-inch piece of plywood and place it on top of the two previous pieces centered.

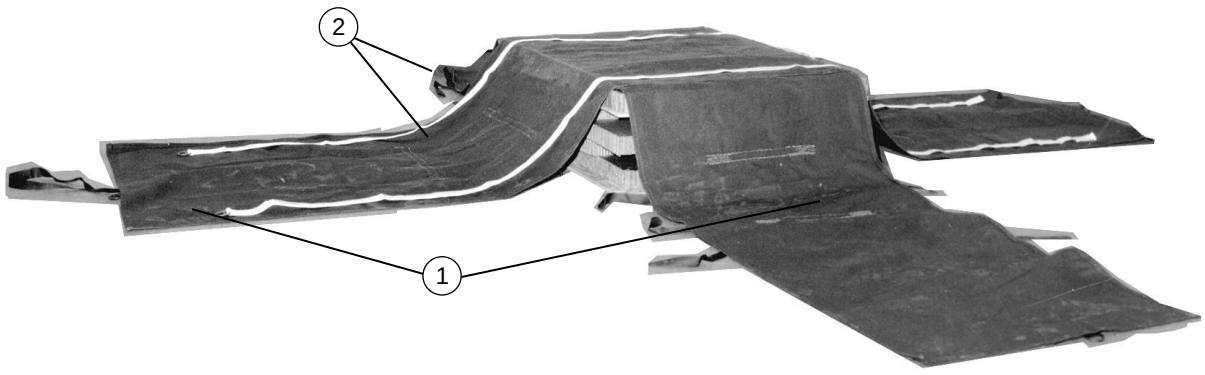
⑥ Repeat step 1 and place the honeycomb on top of the plywood.

⑦ Position the sling assemblies and make the appropriate ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Figure 3-8. Honeycomb and A-22 Sling Assemblies Positioned

POSITIONING COVERS AND A-7A STRAPS

3-14. Position two covers and two A-7A straps on top of the sling assemblies as shown in Figure 3-9.

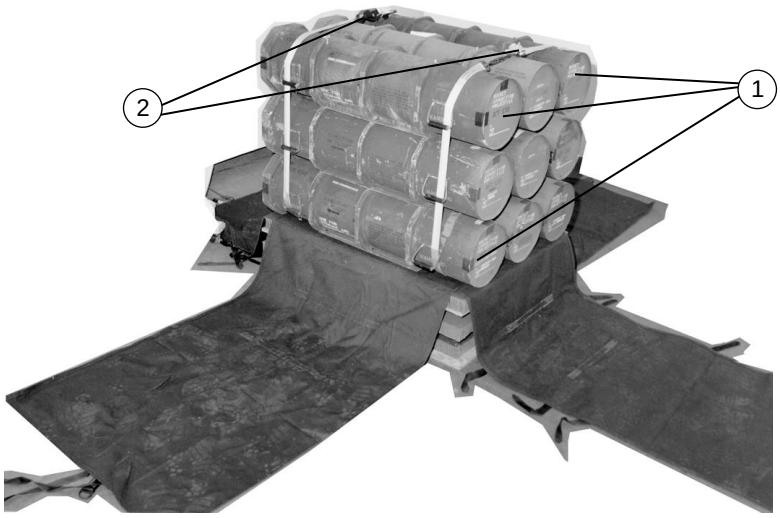


① Position one cover to the front and the other cover to the rear of the load.
② Place two tiedown lashings approximately 10 inches from each edge of the 59 inch side

Figure 3-9. Covers and A-7A Straps Positioned

POSITIONING AND SECURING JAVELIN MISSILES

3-15. Position nine Javelin missiles and secure them as shown in Figure 3-10.



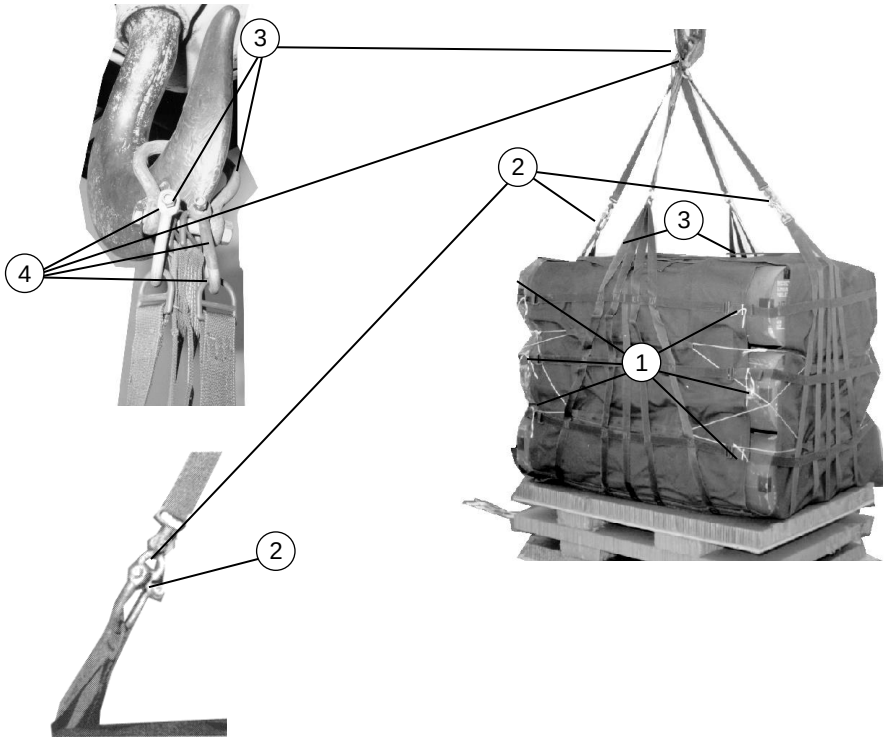
① Place nine Javelin missiles on the load as shown above.

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 3-10. Javelin Missiles Positioned and Secured

SECURING THE LATERAL STRAPS AND INSTALLING SUSPENSION SLINGS

3-16. Secure the lateral straps according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and install the suspension slings as shown in Figure 3-11.



① Secure the lateral straps according to TM 4-48.03/MCRP 4-11.3C/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.

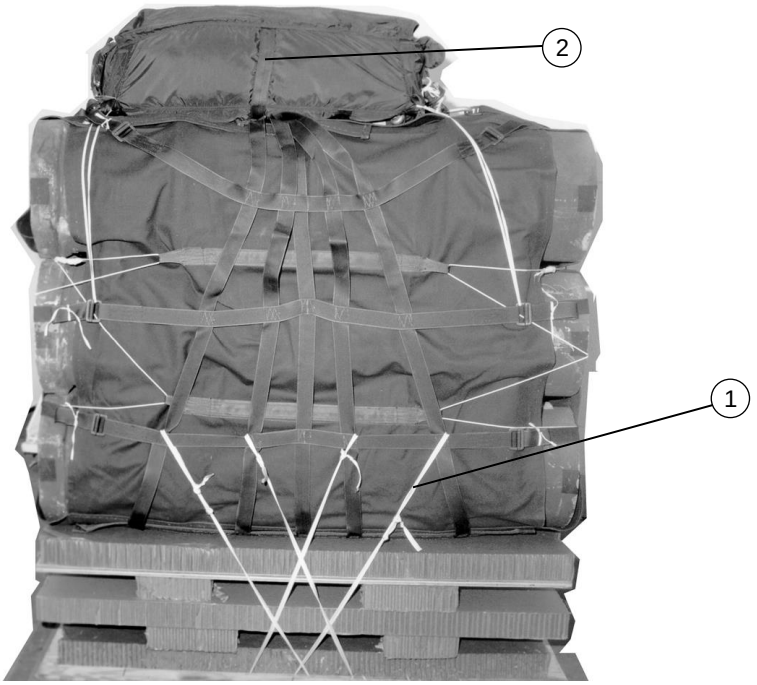
③ On the other connector straps attach a medium clevis.

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 3-11. Lateral Straps Secured and Suspension Slings Installed

SECURING SKID BOARD TIES AND INSTALLING PARACHUTE

3-17. Secure the skid board ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11. Install a G-12E cargo parachute as shown in Figure 3-12.



① Secure the skid board ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

② Install one G-12E cargo parachute according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Figure 3-12. Skid Board Ties Secured and Parachute Installed

MARKING RIGGED LOAD

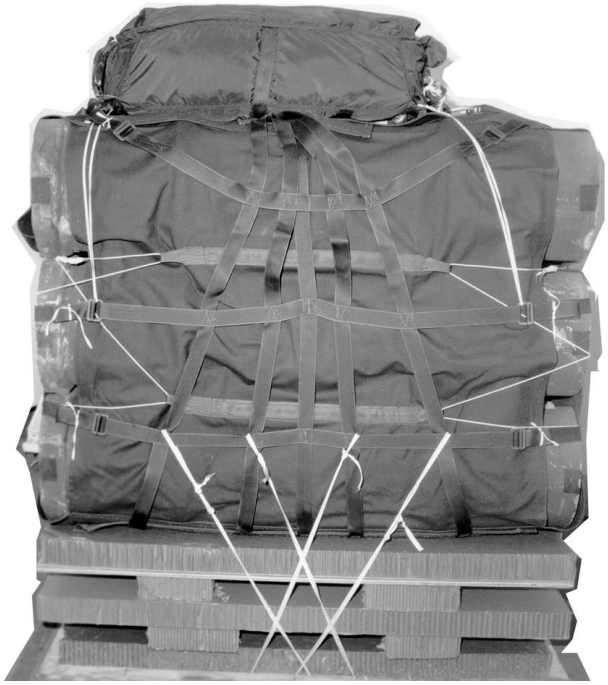
3-18. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 3-13. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods) and affix to load.

EQUIPMENT REQUIRED

3-19. Use the equipment in Table 3-3 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



RIGGED LOAD DATA

Weight: Load shown	810 pounds
Height	65 1/2 inches
Width	48 inches
Overall Length	60 inches
Parachute	G-12E

Figure 3-13. Javelin Nine-Round Container delivery system in an A-22 Container Rigged

Table 3-3. Equipment Required for Rigging the Javelin Nine-Round Container Delivery System on an A-22 Container for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
4030-00-678-8562	Clevis, suspension, 3/4-inch (medium)	2
4020-00-240-2146	Cord, nylon, type III, 550-pound	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	3 sheets
	Parachute:	
1670-01-065-3755	G-12 cargo	1
5530-00-128-4981	Plywood, 3/4- by 48- by 96-inches	2 sheets
1670-00-937-0271	Tie-down, assembly 15-foot	2
1670-01-062-6301	Sling, cargo, airdrop, 3-foot (2-loop)	2
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-inch	As required
8305-00-263-3591	Type VIII	As required

SECTION IV-RIGGING JAVELIN MISSILE CONTAINERS (PLASTIC / LC-RSSC) IN AN A-22 CONTAINER CARGO BAG ASSEMBLY FOR LOW-VELOCITY AIRDROP

DESCRIPTION OF LOAD

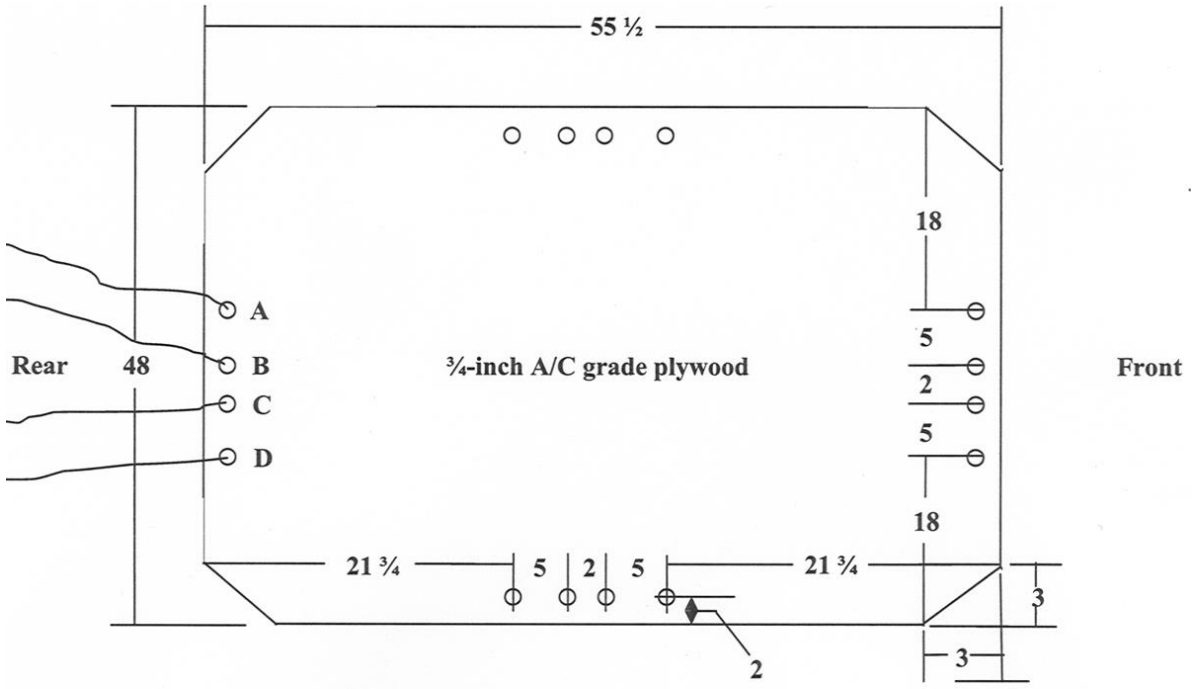
3-20. The Javelin Missile System (Plastic Containers / LC-RSSC) is a man-portable surface to surface anti-tank missile made up of a tactical round in a disposable launch tube. The Javelin nine-round missile system is rigged in an A-22 cargo bag for low-velocity airdrop on a ¾- by 48- by 55 ½ -inch skid board. The load uses one G-12E cargo parachute with a 68-inch pilot parachute only. Each missile is 20 inches in diameter, 55 ½ inches in length and weighs approximately 96 pounds. The load has an approximate suspended weight of 1061 pounds. It has a total height of 85 inches, a width of 48 inches and a length of 55 ½ inches. The load has a total rigged weight of 1189 pounds.

PREPARING SKID BOARD AND TIES

3-21. Construct and prepare a skid board, and ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-14. Use the measurements in this manual if they should differ from TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Note. These dimensions and instructions are load specific.

Notes.
1. Drawing not to scale.
2. All dimensions are given in inches.
3. Always use A/C grade plywood.



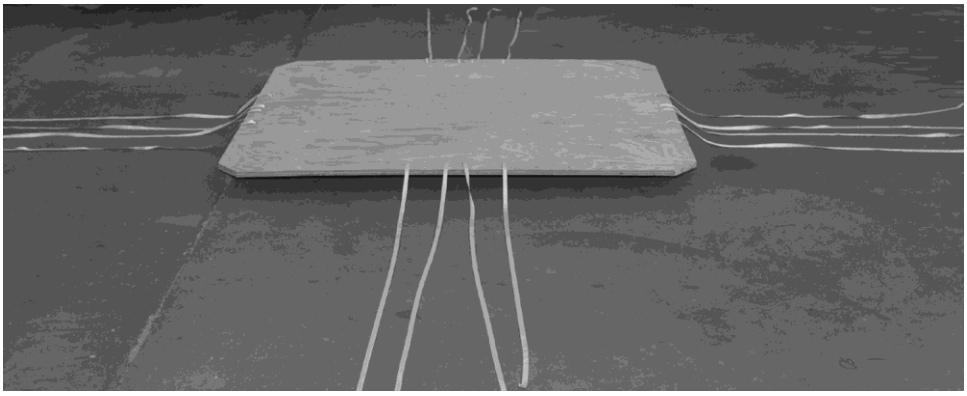
Step:

1. Construct and prepare a skid board as shown above.

Note. These instructions are load specific.

Figure 3-14. Skid Board and Ties Prepared

Notes.
1. Drawing not to scale.
2. All dimensions are given in inches.
3. Always use A/C grade plywood.



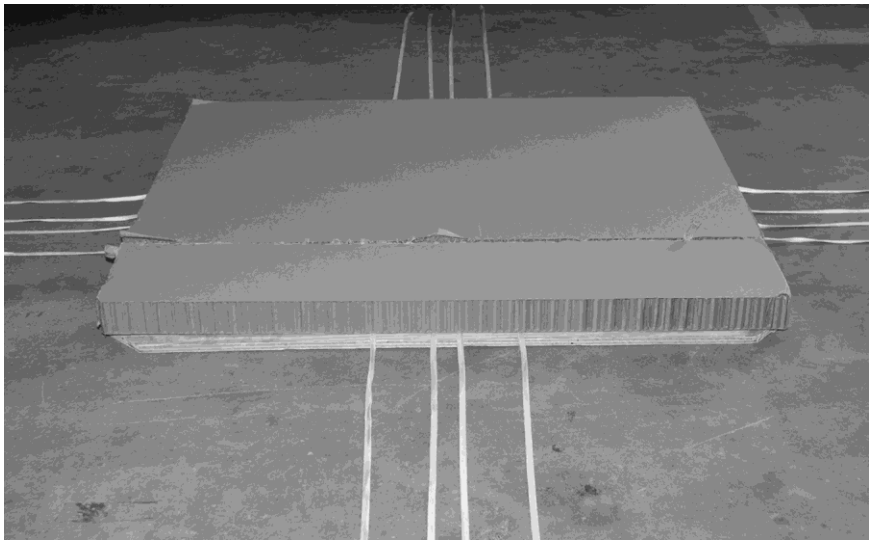
Step:

2. Cut and place a ¾- by 48- by 55 1/2-inch piece of A/C grade plywood on a flat surface.
3. Drill sixteen ½-inch holes.
4. Measure 3 inches in from each corner of the skid board and make a diagonal cut.
5. Prepare and route the skid board ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as described below.
6. Cut eight each, 10-foot lengths of ½-inch tubular, nylon webbing. Route one length through hole A from the bottom and the other through hole B from the bottom. Even the ends.
7. Repeat step 6 for holes C and D and the remaining sides.

Figure 3-14. Skid Board and Ties Prepared (Continued)

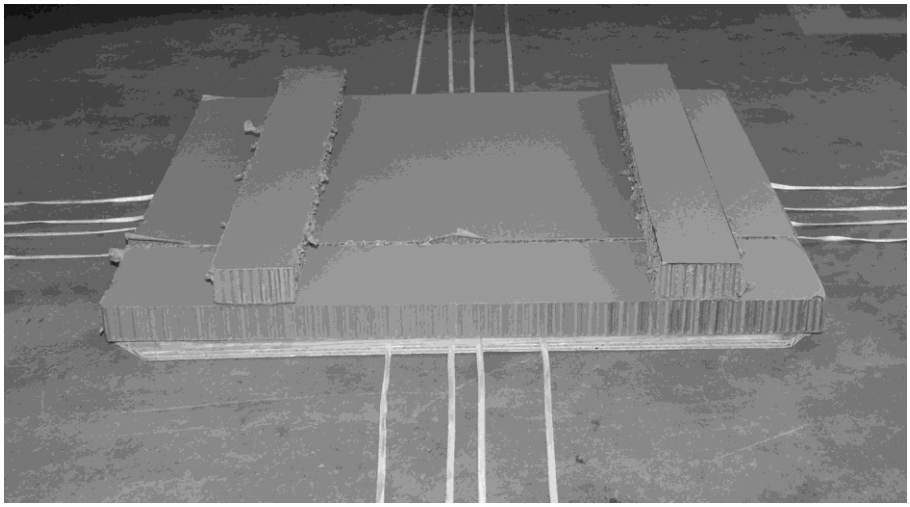
PREPARING AND POSITIONING HONEYCOMB STACK

3-22. Prepare the honeycomb and position the honeycomb stack as shown in Figure 3-15. Cut two pieces of honeycomb 36 by- 55 ½-inches, two pieces of honeycomb 8- by 55 ½-inches, six pieces of honeycomb 6 by- 44-inches, two pieces of 40 ½ by- 44 by- ¾-inch A/C grade plywood, and one 44 by- 55 ½-inch by- ¾- A/C grade plywood.



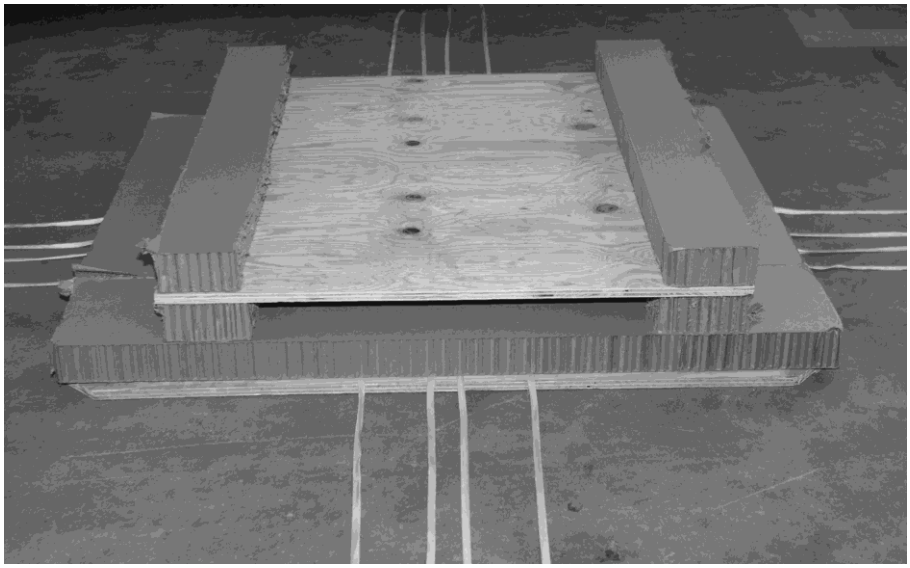
Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
1	1	36	55 ½	Honeycomb	Form a base stack 44- by 55 ½. Center and glue the pieces on the skid board. Ensure the 55 ½ -inch edges of the honeycomb pieces are flush and facing the 55 ½ -inch edge of the skid board.
	1	8	55 ½	Honeycomb	Used to form the base stack in the previous step.

Figure 3-15. Honeycomb Stack Prepared and Positioned



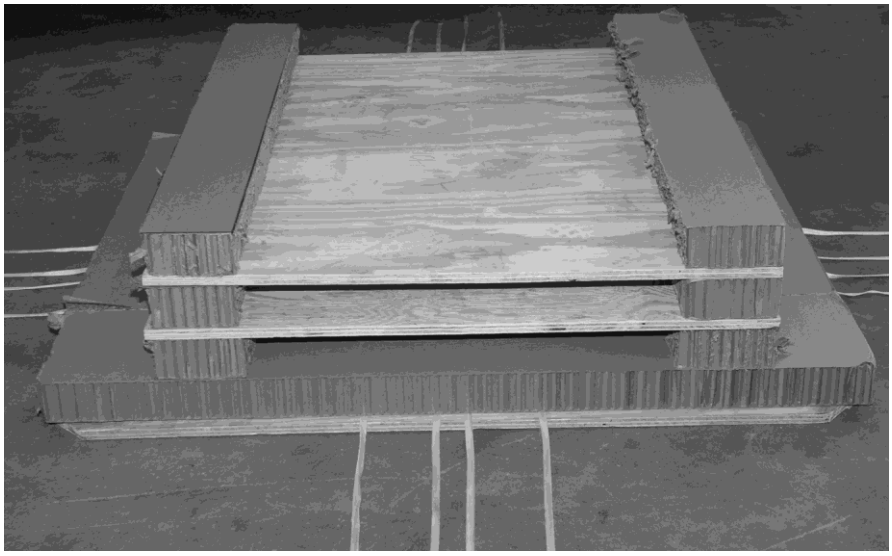
Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
	2	44	6	Honeycomb	Position and glue one the pieces 6-inches from one of the 44-inch edges of the base stack. Position and glue the second piece 9-inches from the opposite edge of the base stack. Ensure the 6-inch edges are flush along the 55 ½-inch edges.

Figure 3-15. Honeycomb Stack Prepared and Positioned (Continued)



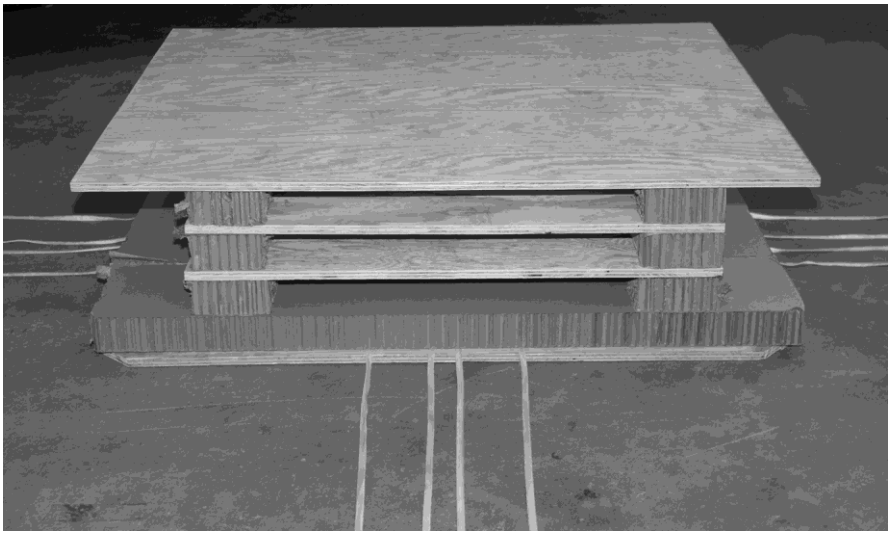
Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
	1	44	40 ½	¾-inch Plywood	Center and glue the plywood piece on top of the previously positioned honeycomb pieces. Ensure the 44-inch edges are flush.
	2	44	6	Honeycomb	Position and glue each piece flush along the 44-inch edge of the previously positioned plywood piece. Ensure the 6-inch edges are flush along the 40 ½-inch edges.

Figure 3-15. Honeycomb Stack Prepared and Positioned (Continued)



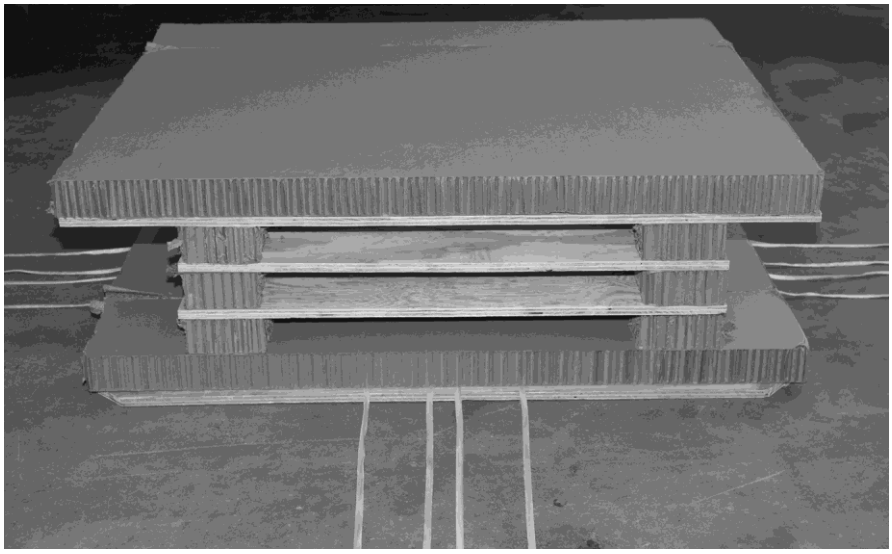
Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
	1	44	40 ½	¾-inch Plywood	Center and glue the plywood piece on top of the previously positioned honeycomb pieces. Ensure the 44-inch edges are flush.
	2	44	6	Honeycomb	Position and glue each piece flush along the 44-inch edge of the previously positioned plywood piece. Ensure the 6-inch edges are flush along the 40 ½-inch edges.

Figure 3-15. Honeycomb Stack Prepared and Positioned (Continued)



Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
	1	44	55 ½	¾-inch Plywood	Center and glue the plywood piece on top of the previously positioned honeycomb pieces. Ensure the piece is aligned with the honeycomb base stack.

Figure 3-15. Honeycomb Stack Prepared and Positioned (Continued)

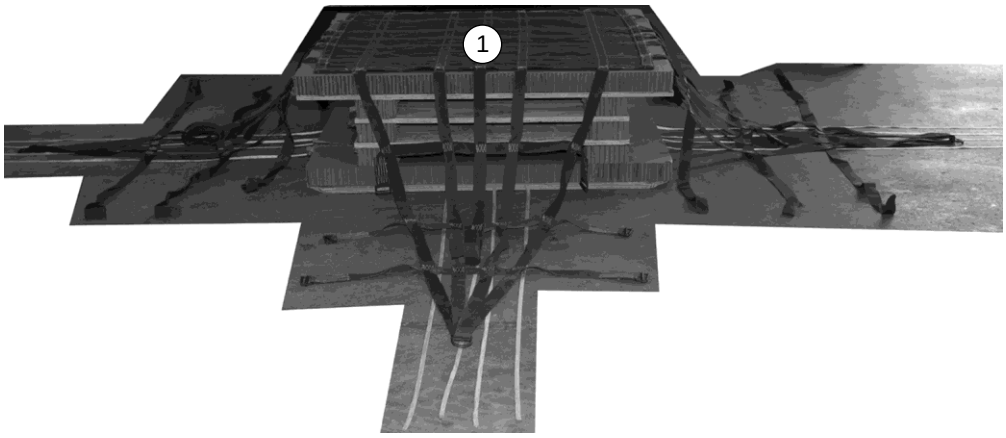


Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
	1	36	55 ½	Honeycomb	Form a top stack 44- by 55 ½. Center and glue the pieces on top of the previous positioned plywood piece. Ensure the 55 ½ -inch edges of the honeycomb pieces are flush and facing the 55 ½ -inch edge of the plywood.
	1	8	55 ½	Honeycomb	Used to form the top stack in the previous step.

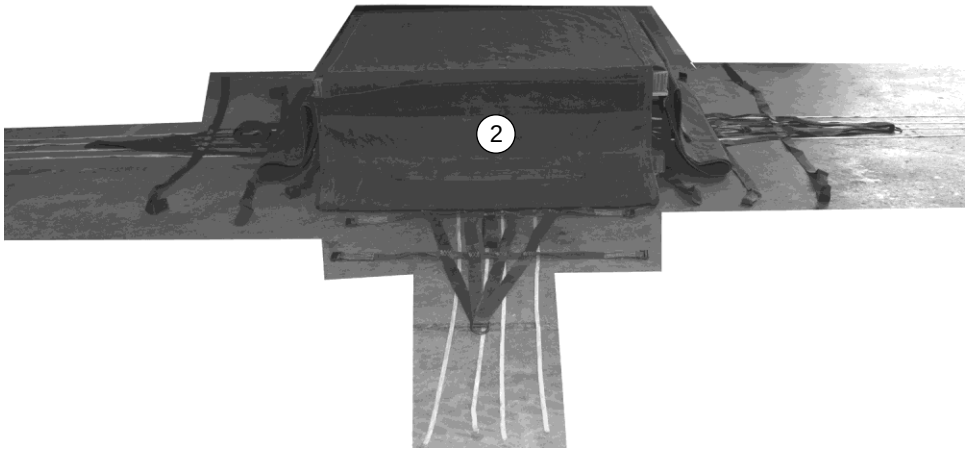
Figure 3-15. Honeycomb Stack Prepared and Positioned (Continued)

POSITIONING A-22 CARGO BAG SLING, COVER AND LOAD

3-23. Position and prepare the A-22 cargo bag sling and cover according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-16.

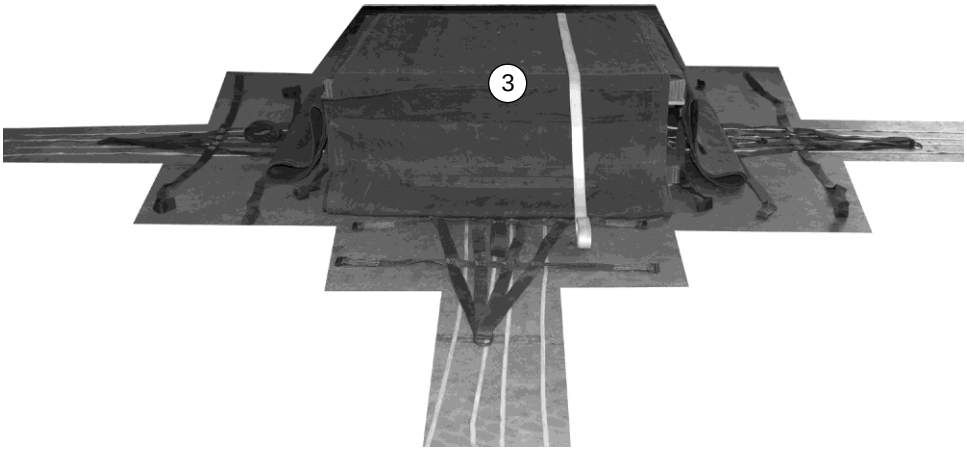


① Center the A-22 cargo bag sling facing down on the honeycomb. When the webbing is laid facing down, the webbing sewn to the scuff pad will be on the bottom.



② Center the A-22 cargo bag cover on the sling assembly (required).

Figure 3-16. A-22 Cargo Bag Sling, Cover and Load Positioned

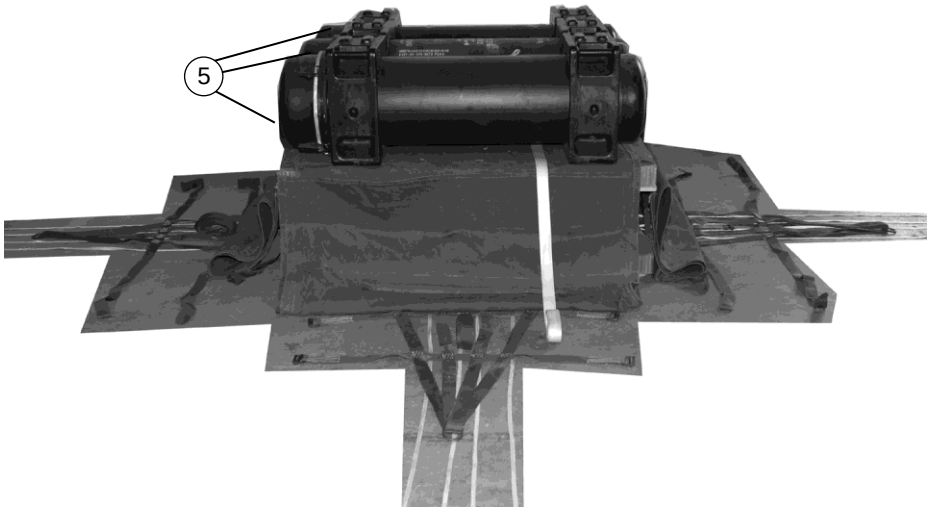


③ Position a 15-foot Dacron lashing 6-inches to the left or right of the center of the honeycomb stack. Ensure the lashing is positioned parallel along the 44-inch edge of the honeycomb stack (used to secure Javelin stack 1 and stack 2 after placement).

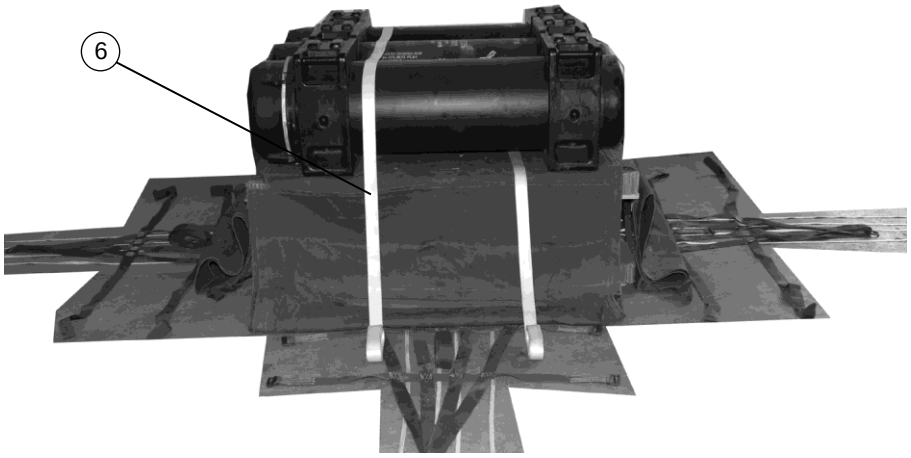


④ When positioning the Javelin missiles, ensure the direction of flight arrow is facing toward the front of the skid board along the 44-inch edge of the honeycomb stack.

Figure 3-16. A-22 Cargo Bag Sling, Cover and Load Positioned (Continued)

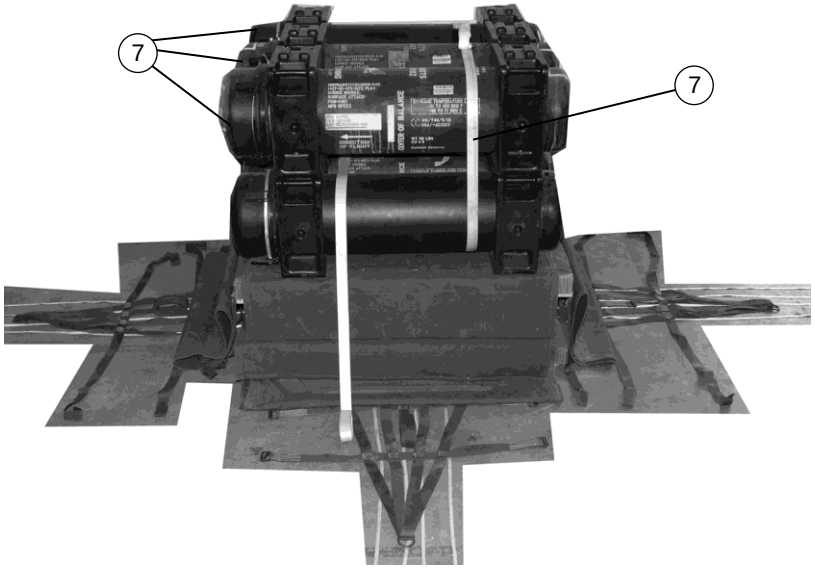


⑤ Center and position three Javelin missiles on the load so that the stacking lugs of the missile cases are aligned over the 44- by 6-inch honeycomb blowouts.

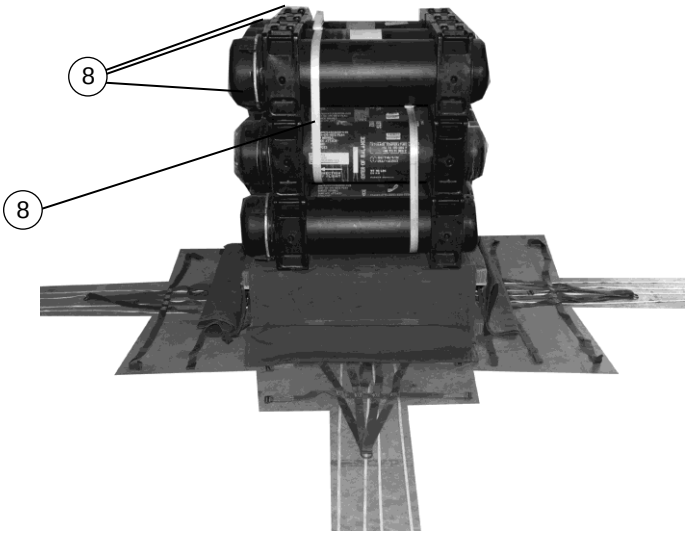


⑥ Position a second 15-foot Dacron lashing across the top of the first row of Javelin missiles approximately 6-inches from center and to the opposite side of the first Dacron lashing that was used to secure Javelin stack 2 and 3 after placement.

Figure 3-16. A-22 Cargo Bag Sling, Cover and Load Positioned (Continued)



⑦ Center and position three more Javelin missiles on top of the first three containers (aligning the stacking lugs) to form a second row. Secure the first (bottom) lashing around the containers and secure on top using a D-ring and loadbinder.

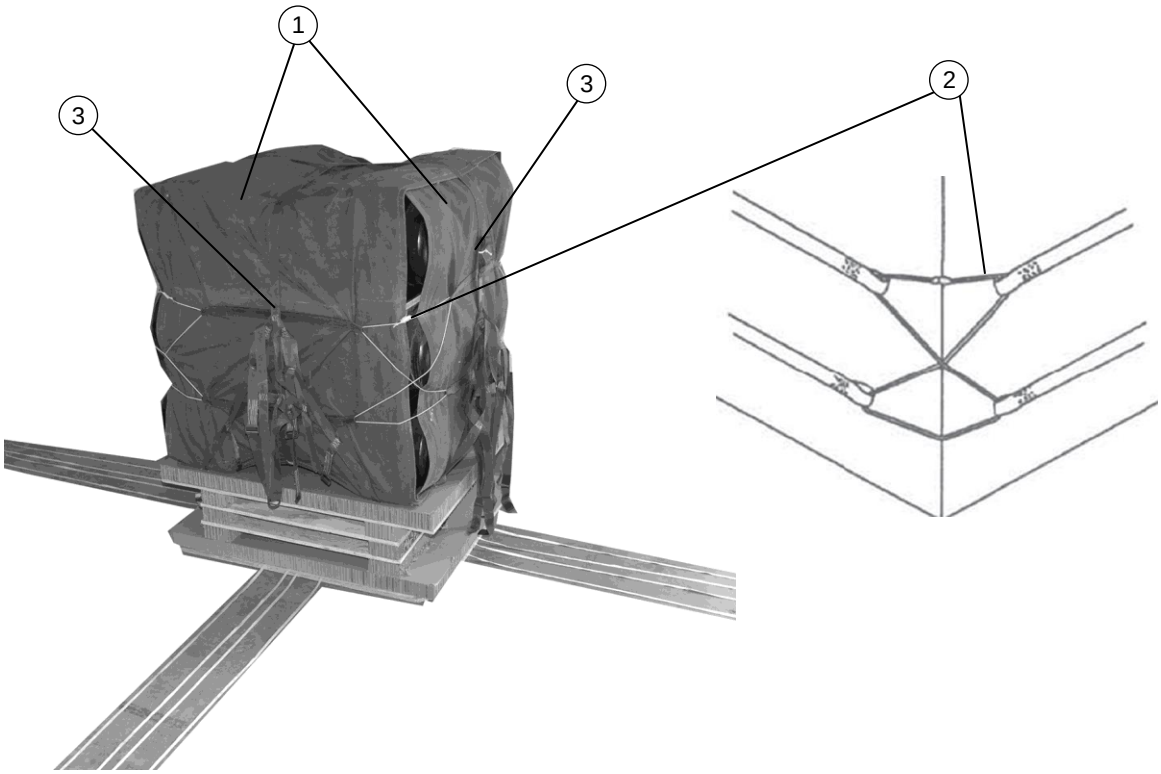


⑧ Center and position three more Javelin missiles on top of the second row of containers (aligning the stacking lugs) to form a third row. Secure the second (top) lashing around the second and third row of containers and secure on top using a D-ring and loadbinder.

Figure 3-16. A-22 Cargo Bag Sling, Cover and Load Positioned (Continued)

SECURING THE A-22 BAG COVER AND SLING ASSEMBLY

3-24. Secure the A-22 cargo bag sling and cover according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-17.



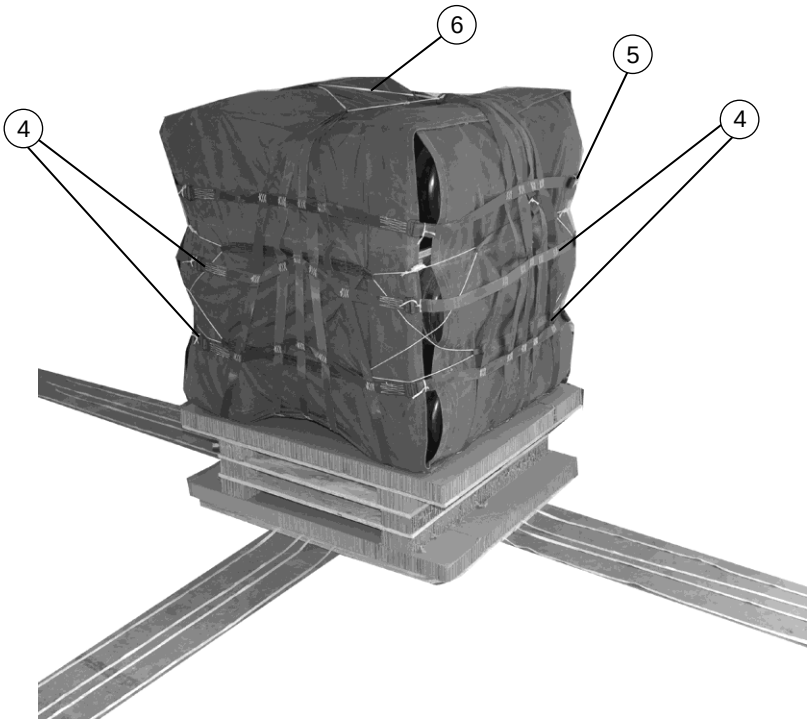
① Bring up sides to cover the load. Fold under any side that will obstruct the bag cover securing ties.

② Using a length of type III nylon cord, route the cord as shown above. Pull it tight and make a surgeon's knot and bow knot. Secure the knot and excess with masking tape. Make sure one running end is exposed.

Note. The middle support web should remain vertical.

③ Bring the short tie-down strap over the load and route it through the friction adapter. Route the long tie-down strap the same way. Apply tension to the friction adapter and fold the excess webbing. Secure the excess using 1/4 -inch cotton webbing.

Figure 3-17. A-22 Bag Cover and Sling Assembly Secured



Note. The friction adapters cannot be on the corners.

④ Route the two lower lateral straps through the friction adapter. Apply uniform tension and secure the excess using ¼-inch cotton webbing.

⑤ Route the top lateral strap around the load sides. Apply uniform tension and secure the excess using ¼-inch cotton webbing.

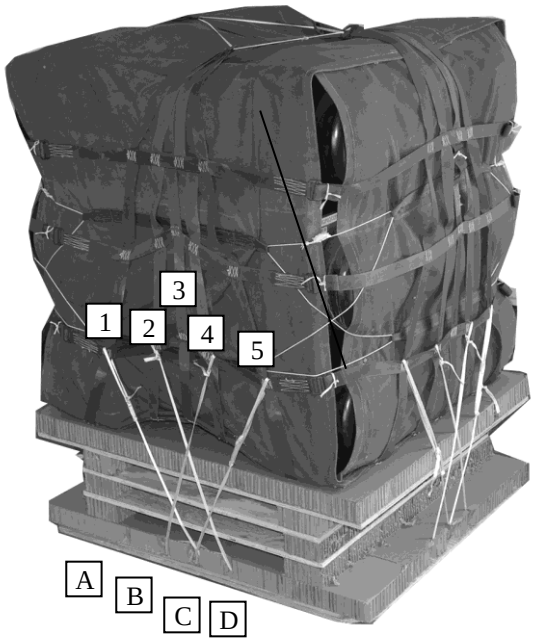
⑥ Pass a length of type I, 1/4-inch cotton webbing through each rectangle portion of the suspension web D-rings and tie the ends together with a surgeon's knot and locking knot.

Figure 3-17. A-22 Bag Cover and Sling Assembly Secured (Continued)

SECURING THE SKID BOARD TO A-22 CARGO BAG

3-25. Secure the skid board ties to the A-22 cargo bag according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-18.

Note. When tightening skid board tie, make sure excess tension is not applied causing the sewn portion at the intersection of lateral straps and support web to separate.



Steps:

1. Starting at the left side take tie-down A and diagonally tie it around the intersection of lower lateral strap and fourth support web. Use three half-hitch knots and an overhand knot in the running end according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.
2. Route tie-down B around the fifth support web and lower lateral strap intersection diagonally. Pull the excess slack out and tie it with a trucker's hitch knot and an overhand knot in the running end. Cut excess webbing, leaving end approximately 6 inches long according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.
3. Repeat step 1 for skid board tie D and secure it to the second intersection on the lower lateral strap according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.
4. Repeat step 2 for skid board tie C, and secure it to the first intersection on the lower lateral strap according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.
5. Repeat steps 1 through 4 for the other skid board ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Figure 3-18. Skid Board Secured to the A-22 Cargo Bag

ATTACHING THE SUSPENSION WEBS

3-26. Attach the suspension webs to the A-22 cargo bag sling according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as described below.

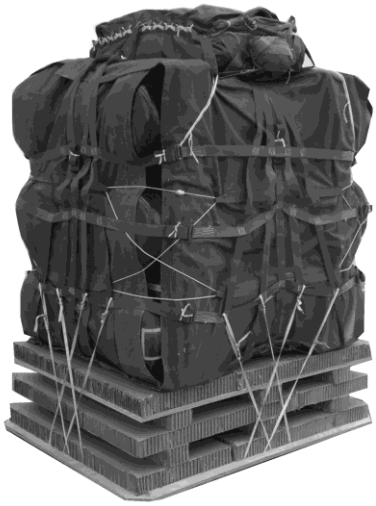
- Attach a suspension web to each D-ring of the cargo sling. Route the snap fasteners from outside to inside. Wrap masking tape around the snap fastener.

Note. Prior to securing the suspension webs with masking tape ensure the webs are not twisted.

- Tape all suspension webs together near the free end using masking tape.
- Tape all suspension webs together 2 inches above the snap fasteners using masking tape.

ATTACHING AND SECURING THE G-12E CARGO PARACHUTE

3-27. Attach and secure the cargo parachute to the load according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 and as shown in Figure 3-19.



Note. Any overhang must be placed to the front or rear of the container; overhang to the left or right will not fit in the Centerline Vertical Restraint System or logistic rails.

Steps:

1. Place a G-12E cargo parachute on the load. When the front and rear have been designated, the parachute sides should run parallel to the front and rear.
2. Place the four D-rings of the suspension webs on the clevis bolt. Replace the nut.
3. Secure the parachute to the load using one turn single of type I, 1/4-inch cotton webbing.

Note. Ensure that a 68-inch pilot parachute is attached and secured to the G-12E cargo parachute according to TM 10-1670-281-23&P/TO 13C5-32-2/NAVAIR 13-1-32.

Figure 3-19. G-12E Cargo Parachute Attached and Secured

MARKING RIGGED LOAD

3-28. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 3-20. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods) and affix to load.

EQUIPMENT REQUIRED

3-29. Use the equipment in Table 3-4 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

RIGGED LOAD DATA

Weight: Load shown	1,189 pounds
Suspended Weight	1,061 pounds
Height	85 inches
Width	48 inches
Overall Length	55 1/2 inches
Parachute	G-12E only with a 68-inch pilot parachute

Figure 3-20. Javelin Missile Containers (Plastic) in an A-22 Stretch Container Cargo Bag Rigged for Low-Velocity Airdrop

Table 3-4. Equipment Required for Rigging the Javelin Missile Containers (Plastic) in an A-22 Stretch Container Cargo Bag for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gal	As required
4030-00-678-8562	Clevis, suspension, 3/4-in (medium)	1
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	4 sheets
	Parachute:	
1670-01-065-3755	G-12E cargo	1
5530-00-128-4981	Plywood, 3/4- by 48- by 96-in	2 sheets
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-in	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

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Chapter 4

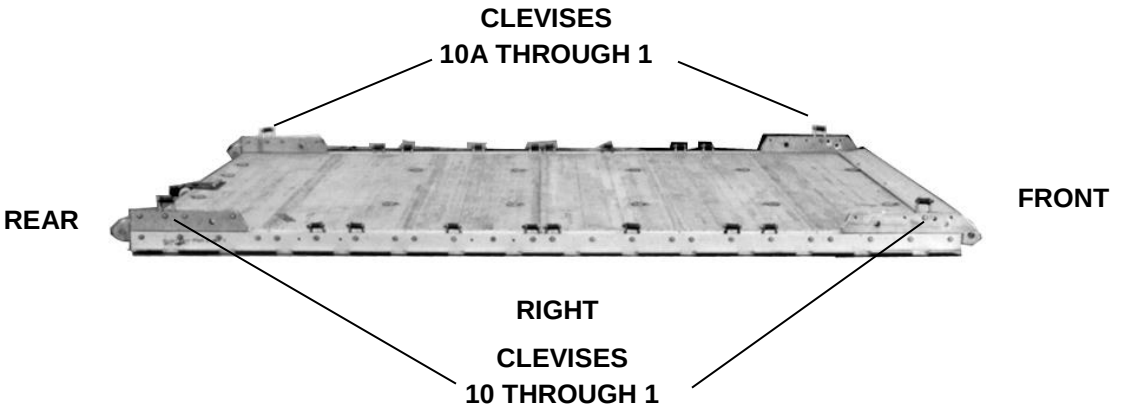
Rigging Thirty-Six Javelin Rounds as a Mass Supply Load on a 12-Foot, Type V Airdrop Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

4-1. 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 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.

PREPARING PLATFORM

4-2. Prepare a 12-foot, type V platform as shown in Figure 4-1.



4. **Step:**

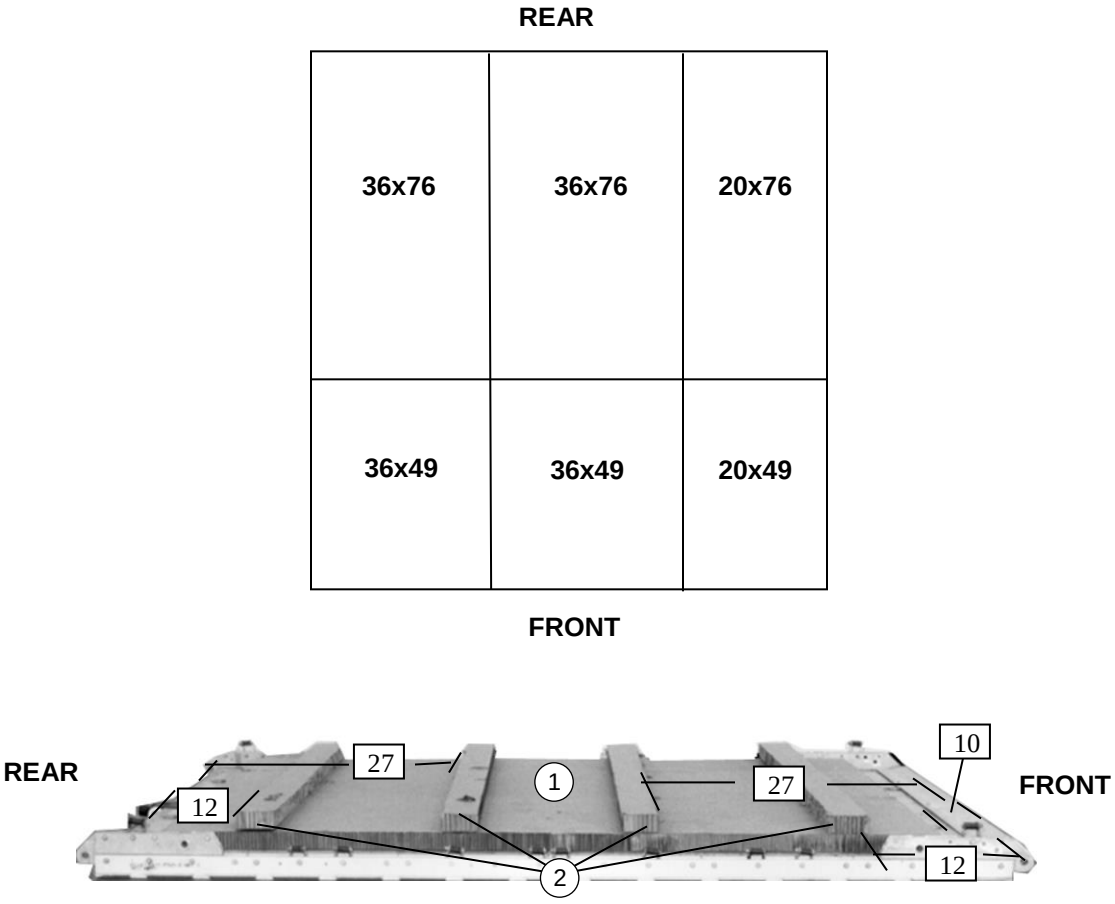
   1. Inspect, or assemble and inspect, a 12-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
   2. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
   3. Install a tandem link to the rear of each platform side rail using holes 22, 23, and 24.
   4. Install clevises on bushing 2 of each front tandem link.
   5. Install clevises on bushing 3 of each rear tandem link.
   6. Starting at the front of the right platform side rail, install clevises on the bushings bolted to holes 6, 7, 10, 12, 13, 15, 18, and 19. Repeat for the left side.
   7. 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.
   8. Label the tiedown rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 4-1. Platform Prepared

BUILDING AND POSITIONING HONEYCOMB STACKS

4-3. Build and position the honeycomb stacks as shown in Figure 4-2.

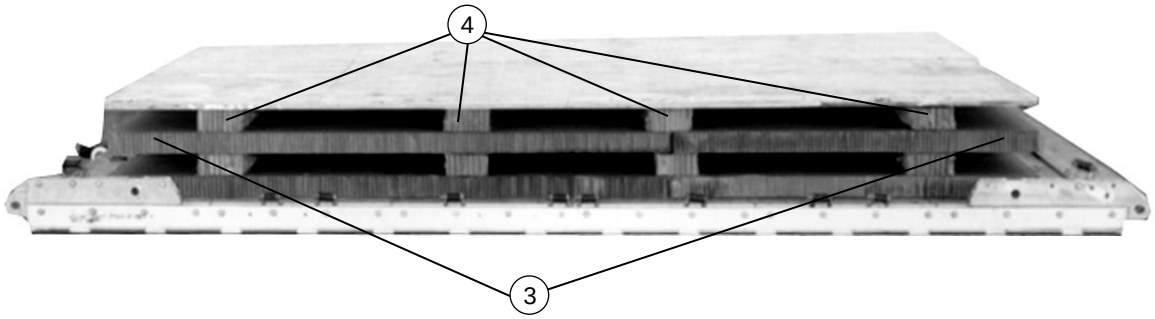
Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



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- 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 4-2. Honeycomb Stacks Built and Positioned

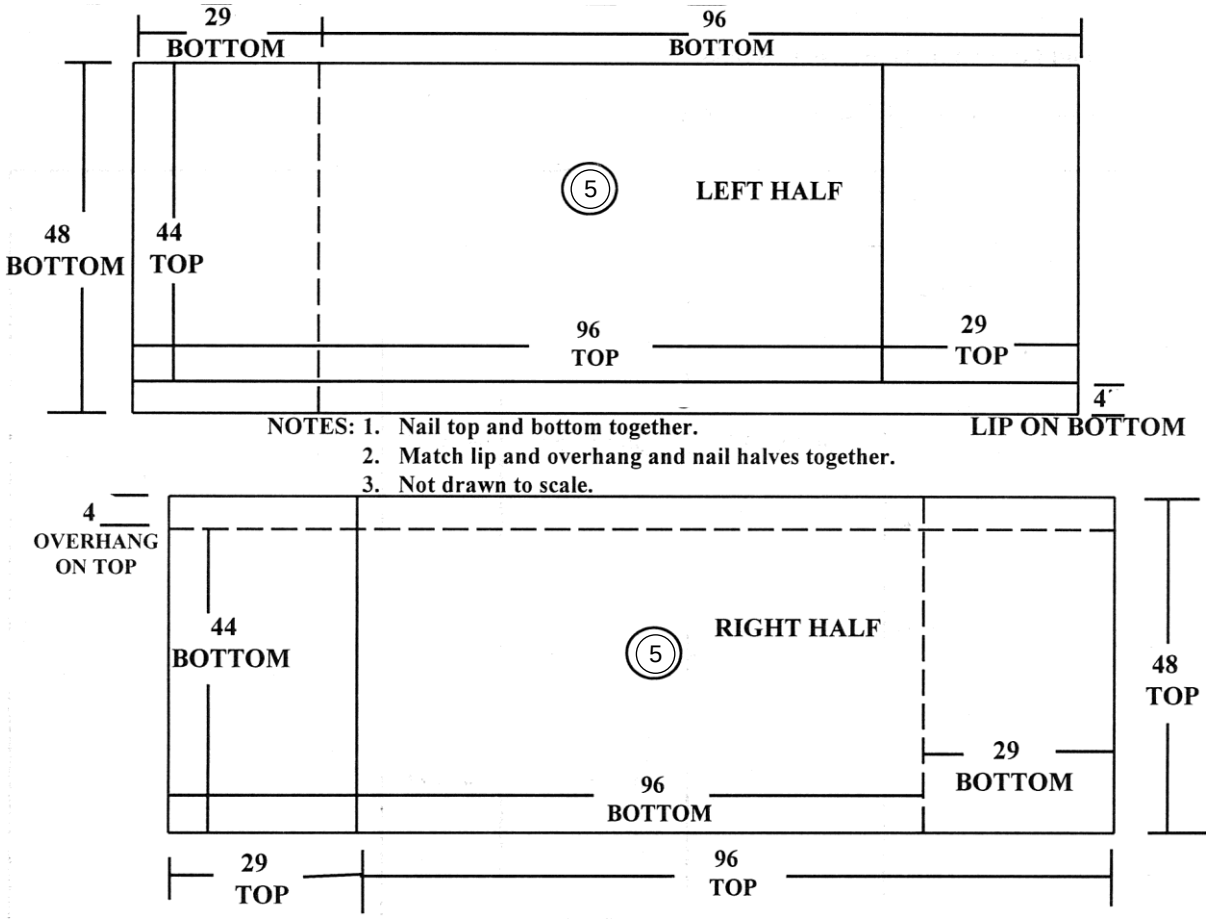


③ Cut, glue and position a third layer of honeycomb as described in step 1.

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

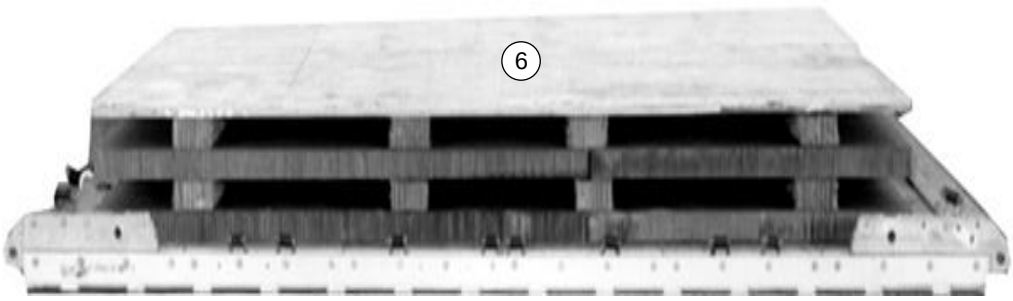
Figure 4-2. Honeycomb Stacks Built and Positioned (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



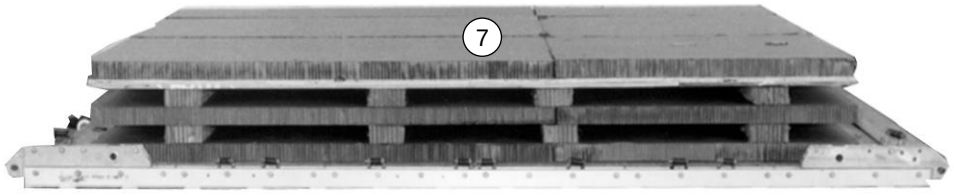
⑤ The fifth layer is constructed of doubled 3/4-inch plywood. Using two 48- by 96-inch pieces of 3/4-inch plywood, cut two 48- by 29-inch pieces, two 44- by 49-inch pieces and two 44- by 96-inch pieces. Nail the plywood together as shown in the above diagrams. Position one 48- by 96-inch piece of plywood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

Figure 4-2. Honeycomb Stacks Built and Positioned (Continued)



⑥ Glue and position the plywood centered on top of the honeycomb.

Figure 4-2. Honeycomb Stacks Built and Positioned (Continued)

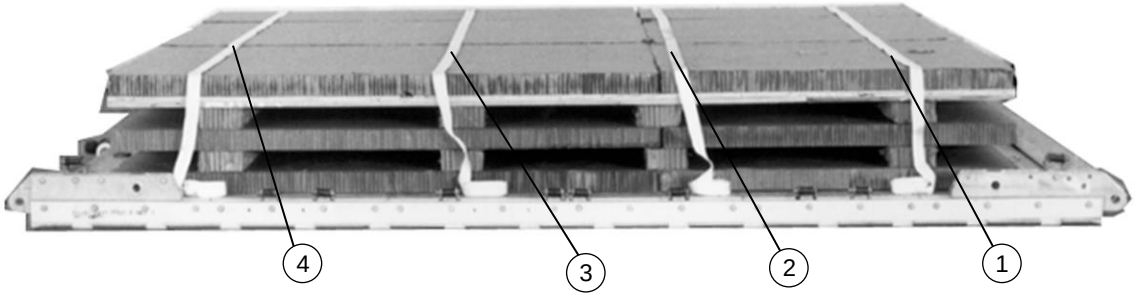


⑦ Form another layer of honeycomb on top of the plywood as described in step 1.

Figure 4-2. Honeycomb Stacks Built and Positioned (Continued)

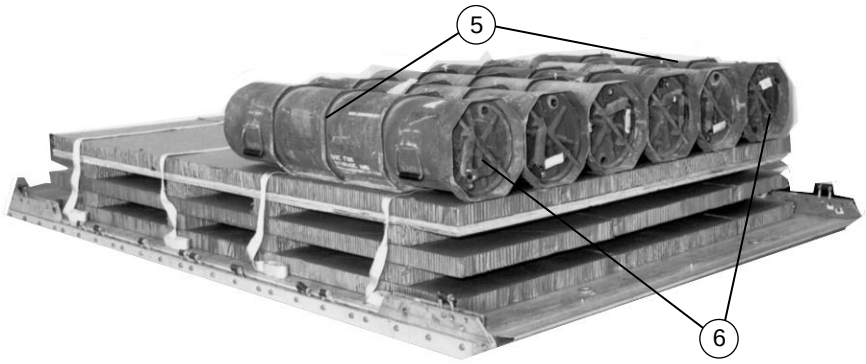
POSITIONING AND SECURING JAVELIN ROUNDS

4-4. Position and secure 36 Javelin rounds as shown in Figure 4-3.



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.

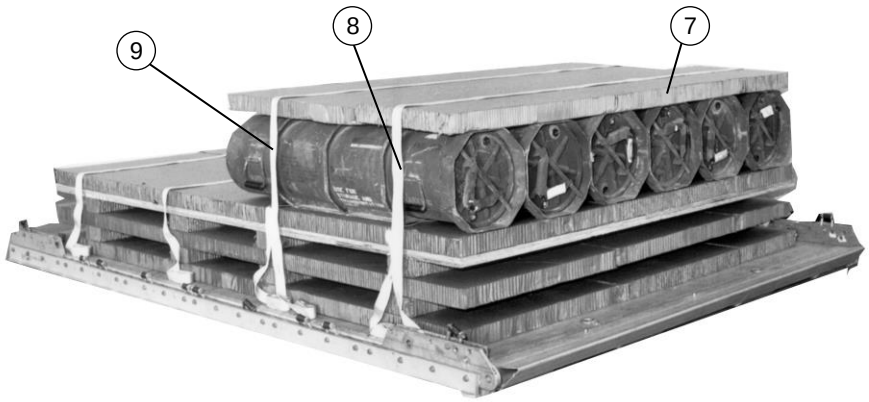
Figure 4-3. Javelin Rounds Positioned and Secured



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

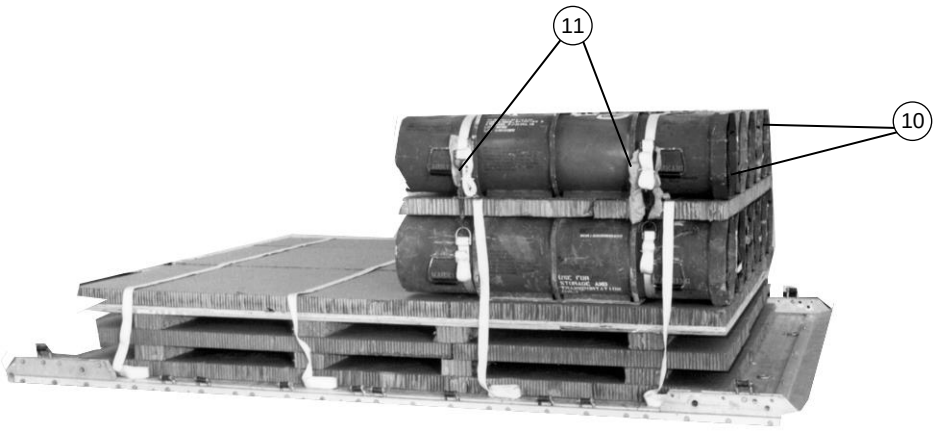
⑥ Position the container opening ends to the front of the platform.

Figure 4-3. Javelin Rounds Positioned and Secured (Continued)



⑦ Cut and position a 59- by 92-inch piece of honeycomb centered on top of the containers.
⑧ Pre-position one 30-foot lashing 16 inches from the front edge of the honeycomb.
⑨ Pre-position a second 30-foot lashing 40 inches from the front of the honeycomb.

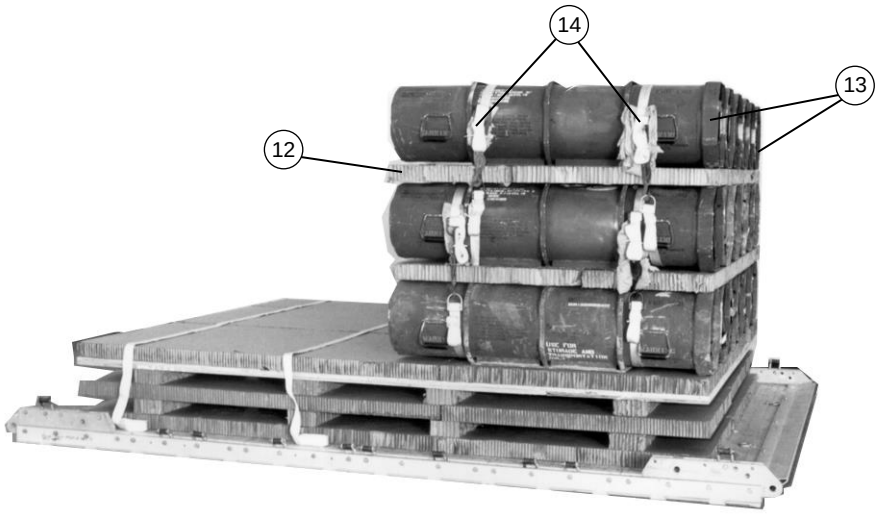
Figure 4-3. Javelin Rounds Positioned and Secured (Continued)



⑩ Position six more containers as described in step 5.

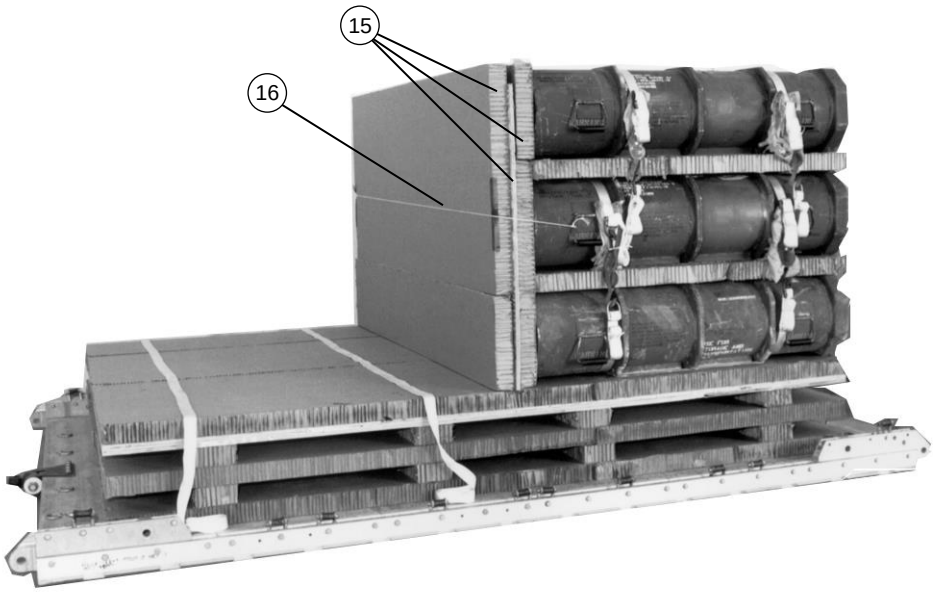
⑪ Secure all twelve containers with the front two pre-positioned lashings from steps 1 and 2.

Figure 4-3. Javelin Rounds Positioned and Secured (Continued)



⑫ Cut and position another 59- 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.

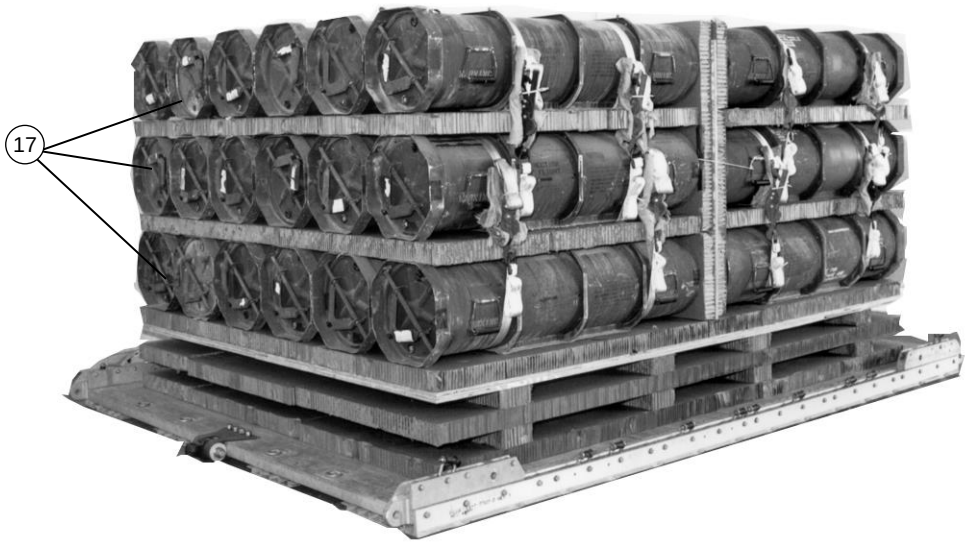
Figure 4-3. Javelin Rounds Positioned and Secured (Continued)



⑮ Position two layers of 51- by 92-inch honeycomb with a 3/4- by 48- by 92-inch pieces of 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 4-3. Javelin Rounds Positioned and Secured (Continued)



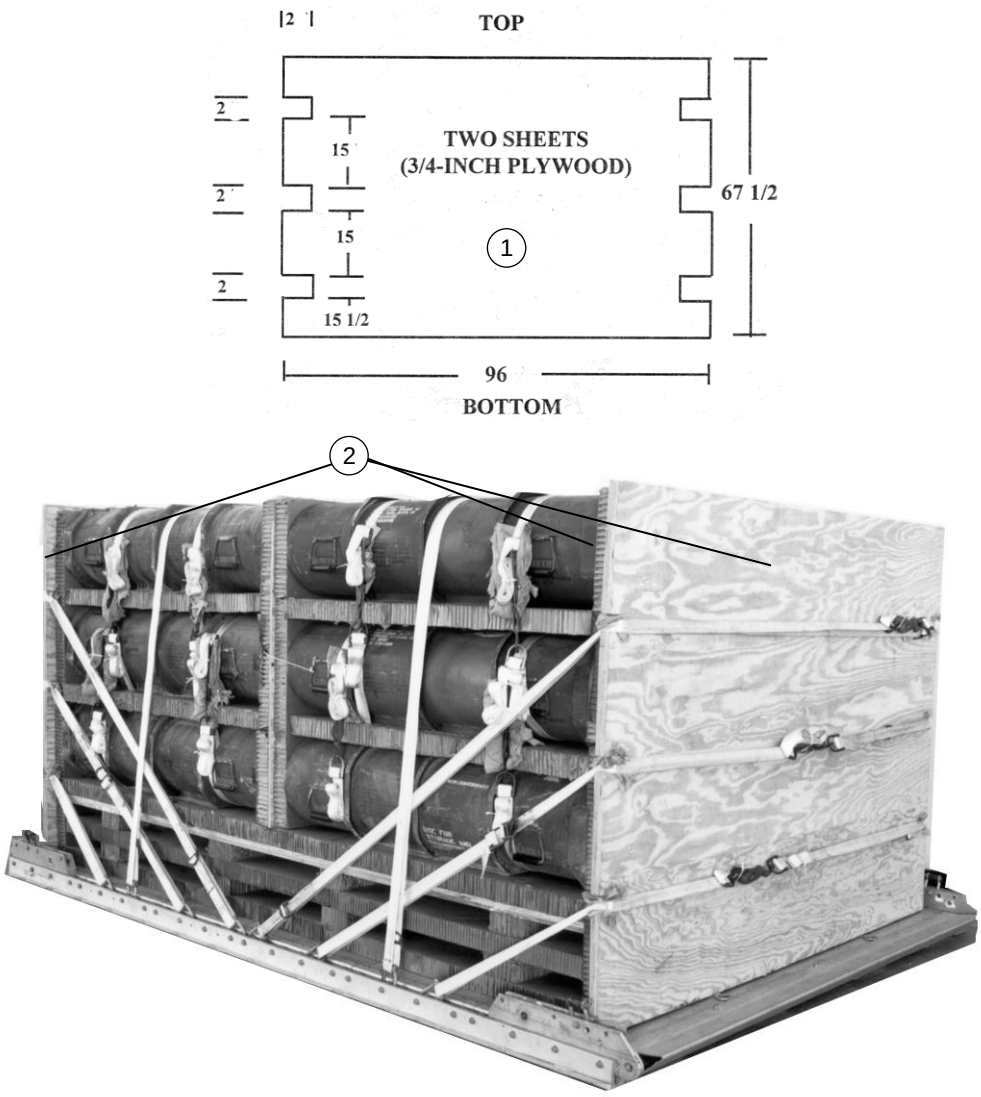
⑰ Position and secure 18 more containers on the platform following steps 5 through 14. Place the containers with the open ends to the rear of the platform and make the measurements from the rear edge of the platform honeycomb.

Figure 4-3. Javelin Rounds Positioned and Secured (Continued)

LASHING LOAD TO PLATFORM

4-5. Lash the load to the platform as shown in Figure 4-4.

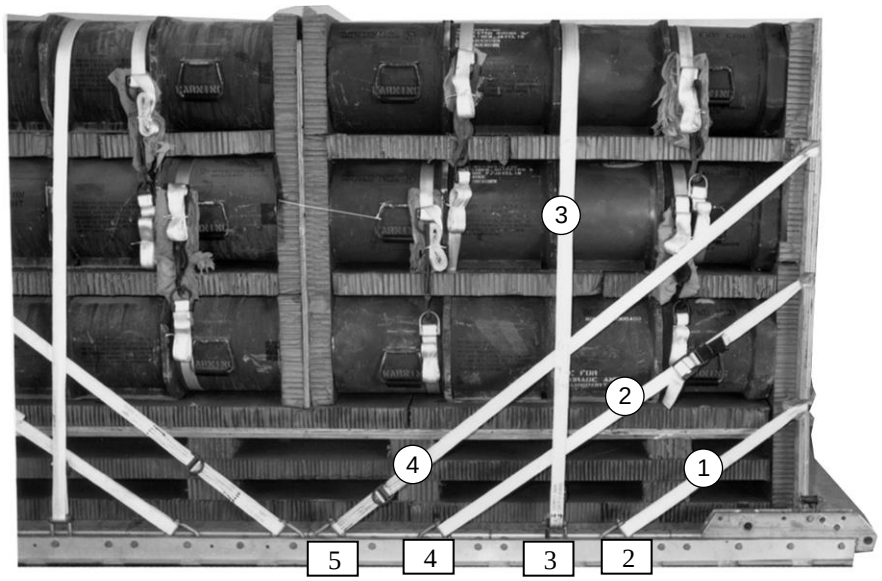
Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



① Cut two endboards as shown in the diagram above.

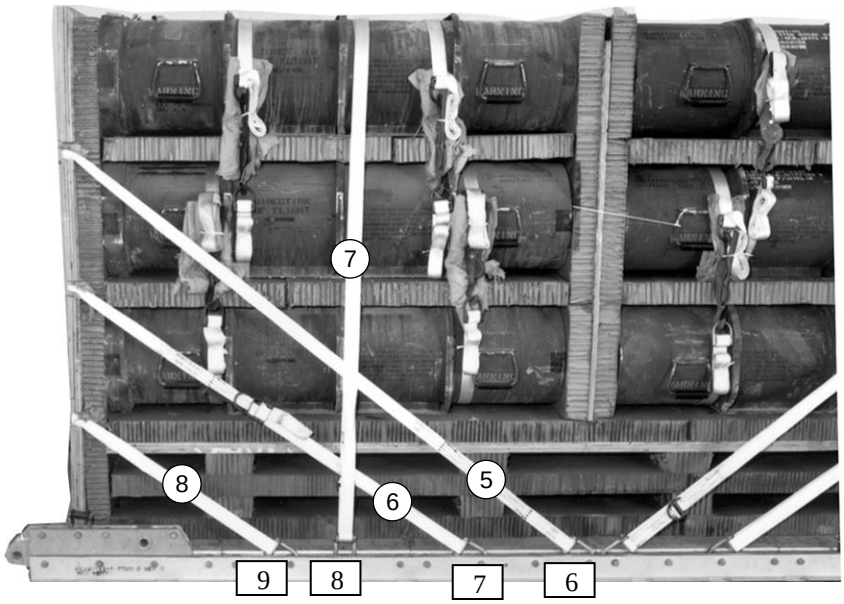
② Cut two pieces of 36- by 92-inch honeycomb and two pieces of 31 1/2- by 96-inch honeycomb and place one piece of each size on each end of the load with one endboard.

Figure 4-4. Load Lashed to Platform



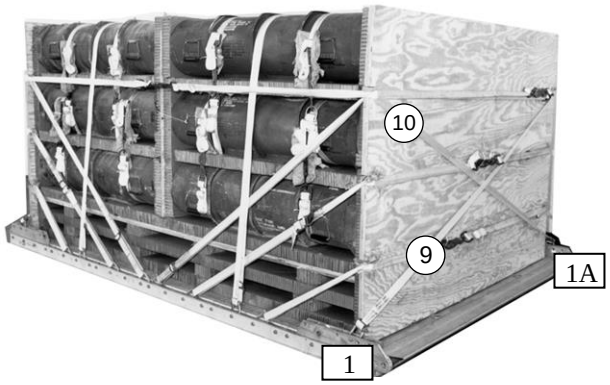
Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	2 and 2A	Run a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A. Pass the lashings through the bottom notch of the front end board. Secure the lashings on the front using two D-rings and a load binder.
2	4 and 4A	Run a 15-foot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

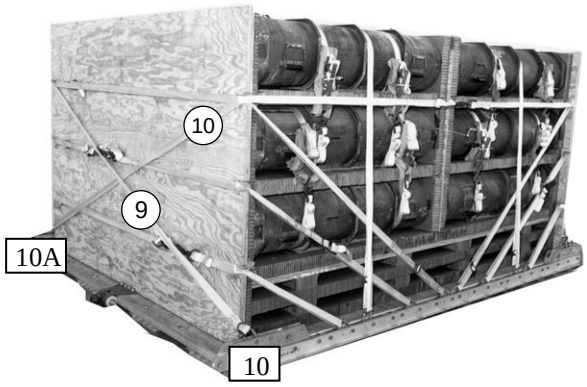
Figure 4-4. Load Lashed to Platform (Continued)



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 4-4. Load Lashed to Platform (Continued)



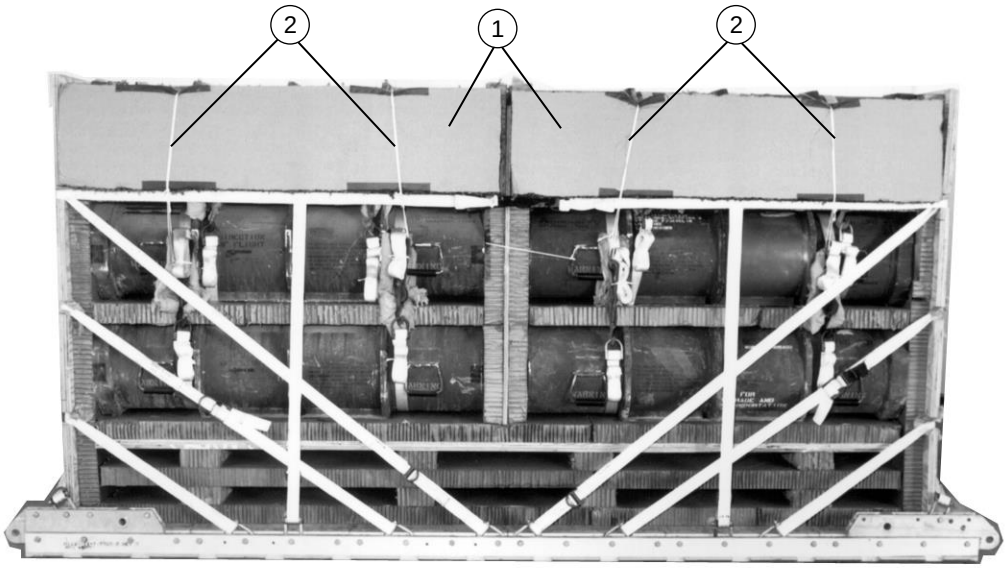


Lashing Number	*Tiedown Clevis Number*	*Instructions*
9	1 and 10	Run a 15-foot lashing through clevis 1 and its own D-ring. Pass the running end up through the top left side notch of the front end board. Run another 15-foot lashing through clevis 10 and its own D-ring. Pass the running end up through 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 4-4. Load Lashed to Platform (Continued)

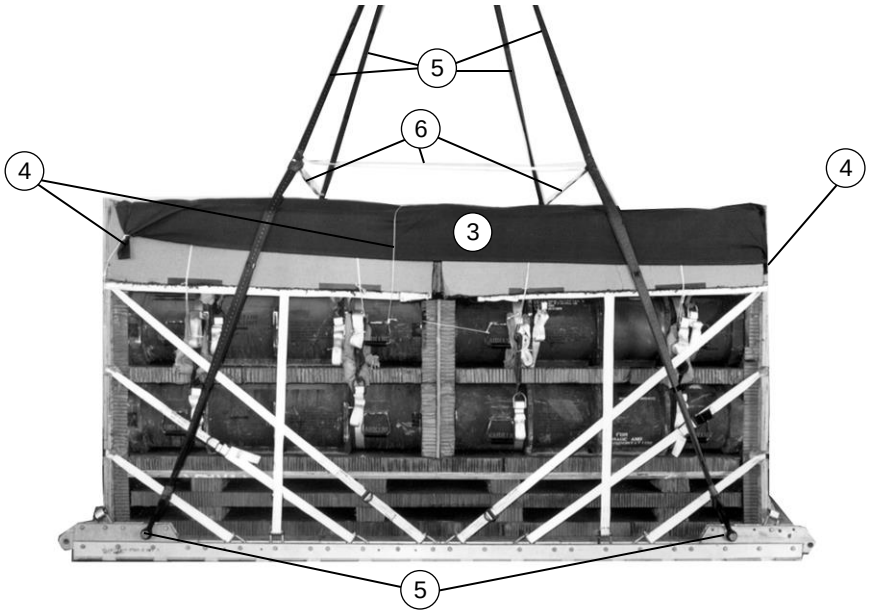
COVERING LOAD, INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

4-6. Cover the load and install the suspension slings as shown in Figure 4-5.



① Cut four 18- 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 4-5. 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.

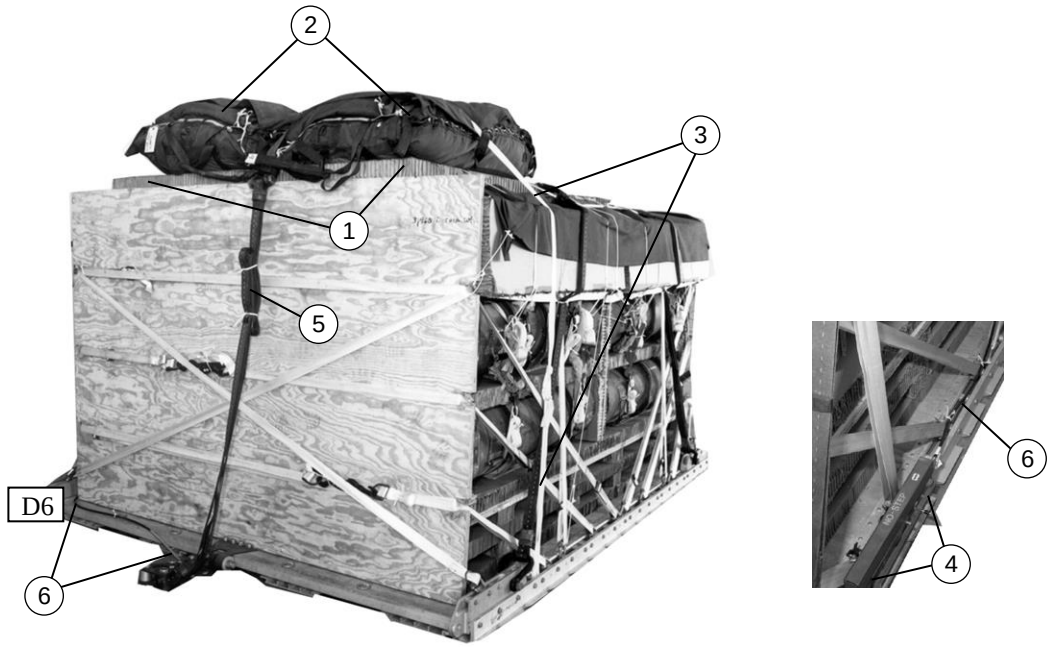
⑤ Attach a large clevis to each of four 16-foot (2-loop), type XXVI nylon suspension slings and attach each large clevis to each of the four tandem links.

⑥ Raise the slings and install the deadman's tie according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 4-5. Load Covered and Suspension Slings and Deadman's Tie Installed (Continued)

STOWING CARGO PARACHUTES AND INSTALLING EXTRACTION SYSTEM

4-7. Stow two G-11 cargo parachutes and install the EFTC according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .



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-11 cargo parachutes on the load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/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 Extraction Force Transfer Coupling (EFTC) bracket, install the components of the EFTC according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

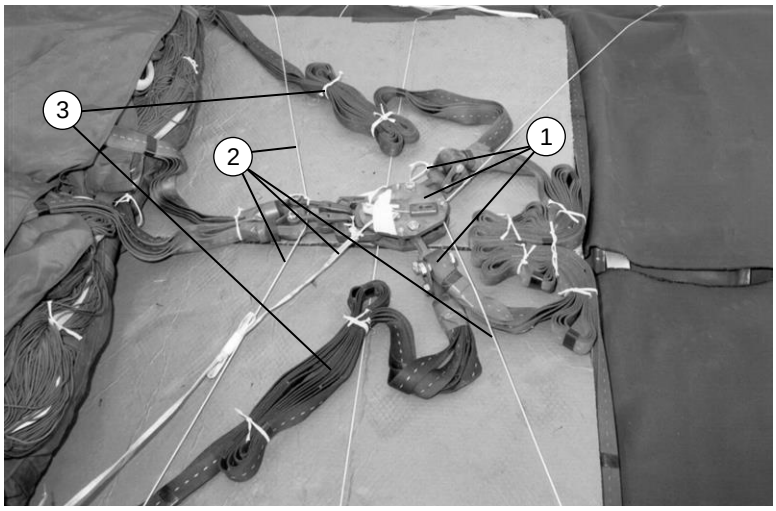
⑤ Attach a 9-foot (2-loop), type XXVI nylon sling to be used as a deployment line.

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 4-6. Cargo Parachutes Stowed and Extraction System Installed

INSTALLING PARACHUTE RELEASE

4-8. Prepare, attach, and safety an M-1 release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 4-7.



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 4-7. M-1 Cargo Parachute Installed

PLACING EXTRACTION PARACHUTE

4-9. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

4-10. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

MARKING RIGGED LOAD

4-11. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 4-8 complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

4-12. Use the equipment listed in Table 4-1 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

RIGGED LOAD DATA

Weight: Load shown ..... 5,976 pounds

Height ..... 86 inches

Width ..... 108 inches

Overall Length ..... 166 inches

Overhang: Front ..... 0 inches

Rear ..... 0 inches

Center of Balance (from front edge of the platform) ..... 94 inches

Extraction System with 16-foot cable (adds 18 inches to length of platform) ... Extraction Force Transfer Coupling (EFTC)

Figure 4-8. Thirty-Six Javelin Rounds in Containers Rigged on a 12-Foot, Type V Platform for Low-Velocity Airdrop

Table 4-1. Equipment Required for Rigging 36 Javelin Rounds in Containers on a 12-Foot, Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-inch (medium) emergency restraint	2
4030-00-090-5354	1-inch (large)	4
4020-00-240-2146	Cord, nylon, type III	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer with 16-foot cable	1
1670-00-360-0328	Cover, clevis, large	5
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction, type XXVI nylon webbing:	
1670-01-064-4452	60-foot (1-loop)	1
1670-01-107-7651	160-foot (1-loop)	1
1670-01-064-4452	60-foot (1-loop), type XXVI for C-17 drogue line	1
	Link assembly, two-point:	
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	1
5310-00-232-5165	Nut, 1-inch, hexagonal	1
1670-00-003-1953	Plate, side 3 3/4-inch	1
5365-00-007-3414	Spacer, large	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb	9 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	1
1670-01-063-3716	Cargo, extraction, 22-foot	1
	Platform, airdrop, type V, 12-foot	
1670-01-353-8425	Bracket assembly, Extraction Force Transfer Coupling (EFTC)	1
1670-01-162-2372	Bracket assembly, extraction	1
1670-01-162-2376	Clevis assembly	20
1670-01-162-2381	Tandem link	4
5530-00-128-4981	Plywood, 3/4-inch	9 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 4-1. Equipment Required for Rigging 36 Javelin Rounds in Containers on a 12-Foot, Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, cargo airdrop:	
	For deployment line:	
1670-00-753-3792	9-foot (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6301	3-foot (2-loop), type XXVI nylon webbing	2
	For suspension:	
1670-01-063-7761	16-foot (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap parachute release, multicut	1
7515-00-266-5016	Tape, adhesive, 2-inch	As required
7501-00-266-6710	Tape, masking	As required
1670-00-937-0271	Tie-down assembly, 15-foot	28
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-inch	As required
8305-00-263-3591	Type VIII webbing	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Chapter 5

Rigging Javelin Missile Containers

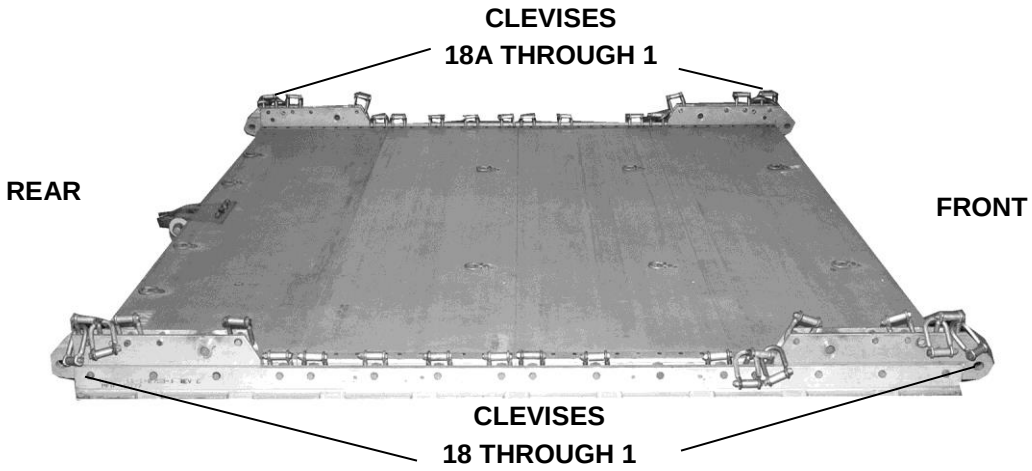
SECTION I-RIGGING JAVELIN MISSILE CONTAINERS (PLASTIC) ON AN 8-FOOT, TYPE V PLATFORM

DESCRIPTION OF LOAD

5-1. The guided missile, surface, attack Javelin (plastic) container mass supply load is rigged on an 8-foot type V platform. The rigged weight is 6,620 pounds. Each individual missile container weighs approximately 96 pounds. The load is rigged with 36 Javelin containers. The height of the load is 94 inches, length is 125 inches and the width is 108 inches. The accompanying load has a weight of 6,336 pounds. The load is rigged with two G-11 cargo parachutes.

PREPARING PLATFORM

5-2. Prepare an 8-foot, type V platform as shown in Figure 5-1.



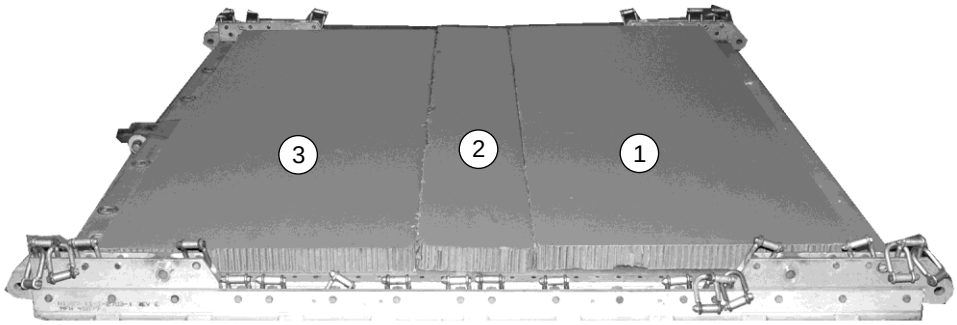
Step:

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 to the front of each platform side rail using holes 1, 2, and 3.
3. Install a tandem link to the rear of each platform side rail using holes 14, 15, and 16.
4. Install clevises on bushings 1 (triple) 2, and 4 of each front tandem link.
5. Install clevises on bushings 1, 3, and 4 (triple) of each rear tandem link.
6. Starting at the front of the right platform side rail, install clevises on the bushings bolted to holes 4 (triple), 5, 7, 8, 9, 10, 11, 12, and 13. Repeat on the left side.
7. Starting at the front of the platform, number the clevises 1 through 18 on the right side, and 1A through 18A on the left side.
8. Label the tiedown rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 5-1. Platform Prepared

PREPARING AND PLACING HONEYCOMB ON PLATFORM

5-3. Prepare and place honeycomb on the platform as shown in Figure 5-2.

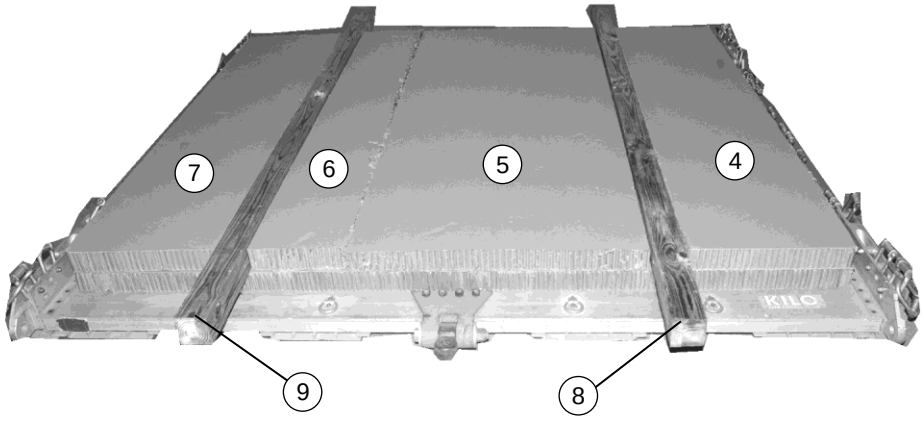


① Cut a 36- by 96-inch piece of honeycomb. Center and position the honeycomb widthwise 5 1/2 inches from the front edge of the platform.

② Cut a 13- by 96-inch piece of honeycomb. Center and position the honeycomb flush with the honeycomb previously positioned in step 1.

③ Cut a 36- by 96-inch piece of honeycomb. Center and position the honeycomb flush with the honeycomb previously positioned in step 2.

Figure 5-2. Honeycomb Prepared and Placed on Platform



④ Cut a 20- by 85-inch piece of honeycomb. Position the piece lengthwise with the 85-inch edge flush with the honeycomb previously positioned in steps 1, 2, and 3 to the right side of the load.

⑤ Cut a 36- by 85-inch piece of honeycomb. Position the piece lengthwise and flush with both 36- by 96-inch pieces placed in steps 1 and 3. Leave a 4 inch space between pieces.

⑥ Cut a 12- by 85-inch piece of honeycomb. Position the piece lengthwise and flush with the 36- by 85-inch piece and both 36- by 96-inch pieces placed in steps 1 and 3.

⑦ Cut a 20- by 85-inch piece of honeycomb. Position the piece lengthwise with the 85-inch edge flush with the honeycomb previously positioned in steps 1, 2, and 3 to the left side of the load. Leave a 4 inch space between pieces.

⑧ Cut 4- by 4- by 115-inch piece of lumber. Position the lumber between the honeycomb pieces placed in steps 4 and 5. Ensure the lumber is centered evenly on the load from front to rear.

⑨ Prepare a second piece of lumber the same as in step 8 and position between the honeycomb pieces prepared in steps 6 and 7.

Figure 5-2. Honeycomb Prepared and Placed on Platform (Continued)

PREPARING HONEYCOMB STACKS

5-4. Prepare honeycomb stacks 1 and 2 as shown in Figure 5-3.

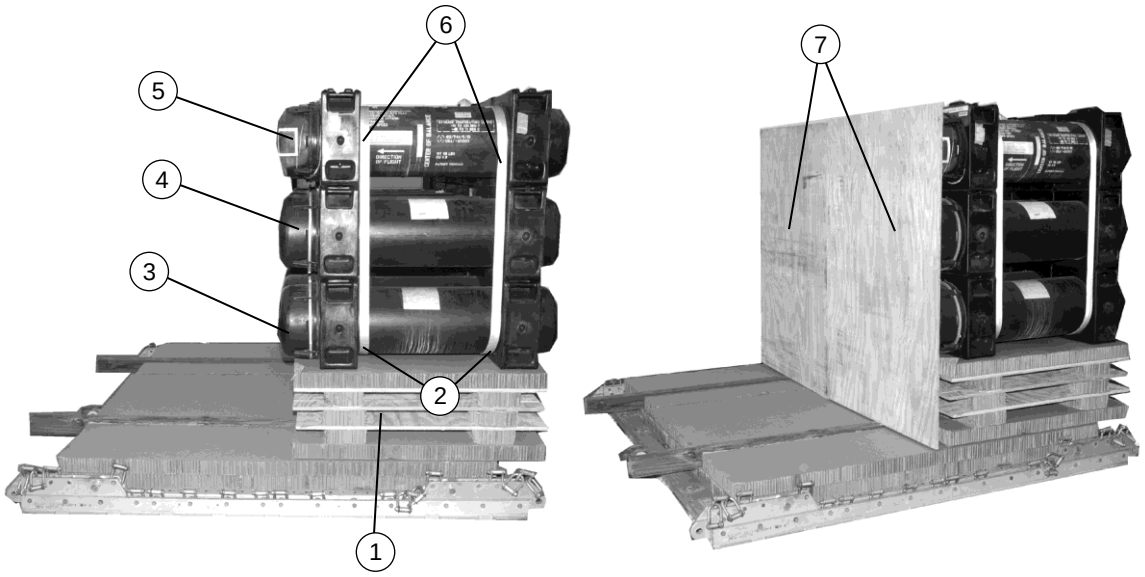


Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
1 and 2	1	24	48	Honeycomb	Cut a piece to start to form the base.
	2	36	48	Honeycomb	Cut the pieces and position to the outside of the 48- by 24-inch piece of honeycomb.
	2	8	96	Honeycomb	Cut pieces and glue 6 inches from the front and rear on top of the previous step.
	1	96	48	3/4-inch plywood	Glue the plywood on top of the 8- by 96-inch pieces of honeycomb.
	2	8	96	Honeycomb	Cut pieces and glue 6 inches from the front and the rear on top of the plywood.
	1	96	48	3/4-inch plywood	Glue the plywood on top of the 8- by 96-inch pieces of honeycomb.
	2	8	96	Honeycomb	Cut pieces and glue 6 inches from the front and the rear on top of the plywood.
	1	96	48	3/4-inch plywood	Glue the plywood on top of the 8- by 96-inch pieces of honeycomb
	1	24	48	Honeycomb	Glue centered on top of the 96- by 48-inch plywood.
	2	36	48	Honeycomb	Cut the pieces and position to the outside of the 48- by 24-inch piece of honeycomb.

Figure 5-3. Honeycomb Stacks 1 and 2 Prepared

POSITIONING AND SECURING JAVELINS ON STACK 1

5-5. Position and secure the Javelins on stack 1 as shown in Figure 5-4.



① Position honeycomb stack 1, 4 1/2 inches and centered from the forward end of the 4- by 4- by 115-inch piece of lumber.

② Pre-position two 30-foot lashings on top of stack 1, 10 inches from the front and rear edge.

③ Position six Javelin containers centered on top of stack 1.

④ Position six Javelin containers on top of the Javelin containers from step 3.

⑤ Position six Javelin containers on top of the Javelin containers from step 4.

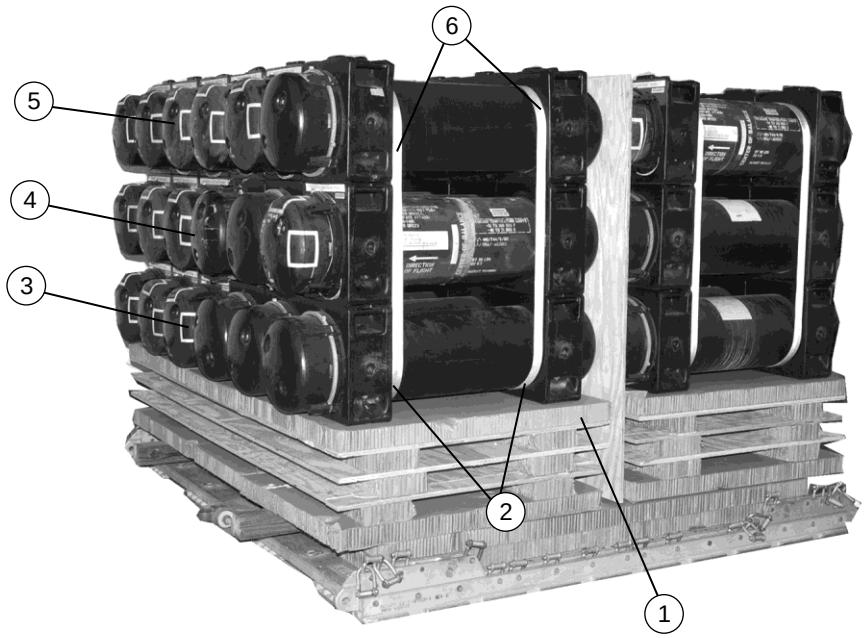
⑥ Secure the two pre-positioned 30-foot lashings around the Javelin containers and load bind on top of the cell using two D-rings and a load binder.

⑦ Position two 3/4- by 48- by 68- plywood pieces side-by-side to the rear of stack 1. Ensure the 68-inch sides of each piece of plywood are flush.

Figure 5-4. Javelins Positioned and Secured on Stack 1

POSITIONING AND SECURING JAVELINS ON STACK 2

5-6. Position and secure the Javelins on stack 2 as shown in Figure 5-5.



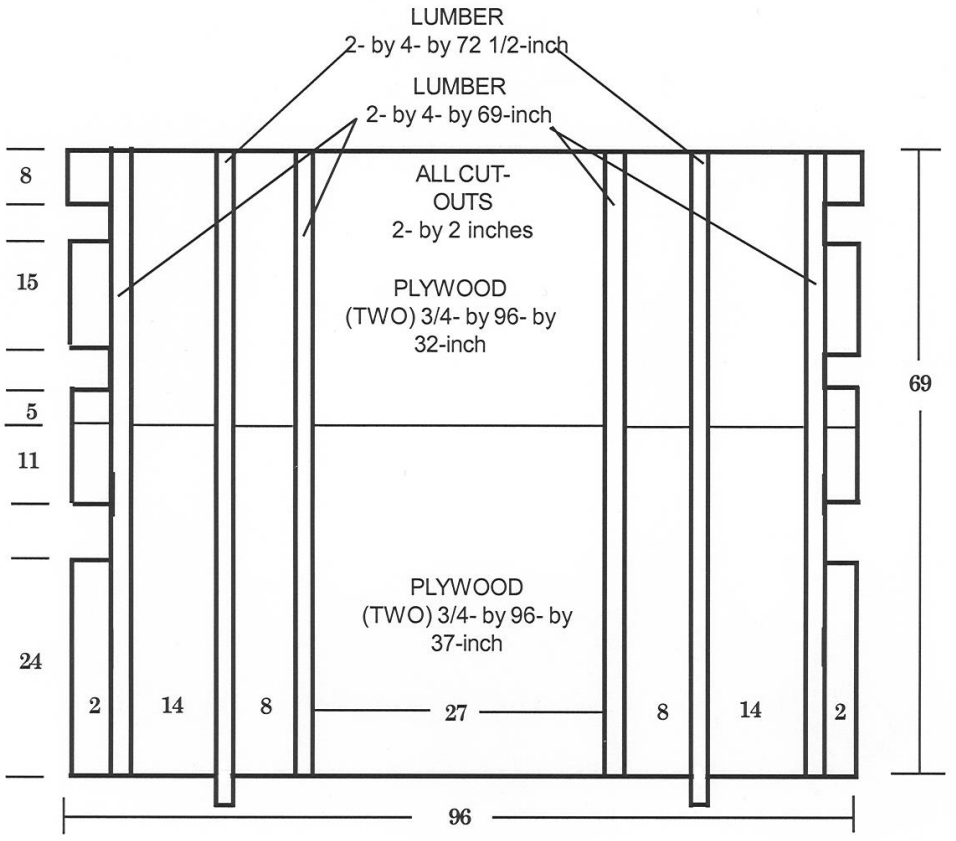
① Position honeycomb stack 2, 6 inches and centered from the rear of honeycomb stack 1.
② Pre-position two 30-foot lashings on top of stack 2, 10 inches from the front and rear edge.
③ Position six Javelin containers centered on top of stack 2.
④ Position six Javelin containers on top of the Javelin containers from step 3.
⑤ Position six Javelin containers on top of the Javelin containers from step 4.
⑥ Secure the two pre-positioned 30-foot lashings around the Javelin containers and load bind on top of the cell using two D-rings and a load binder.

Figure 5-5. Javelins Positioned and Secured on Stack 2

CONSTRUCTING FRONT ENDBOARD

5-7. Construct the front endboard as shown in Figure 5-6.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.
3. Use 8d nails.



Steps:

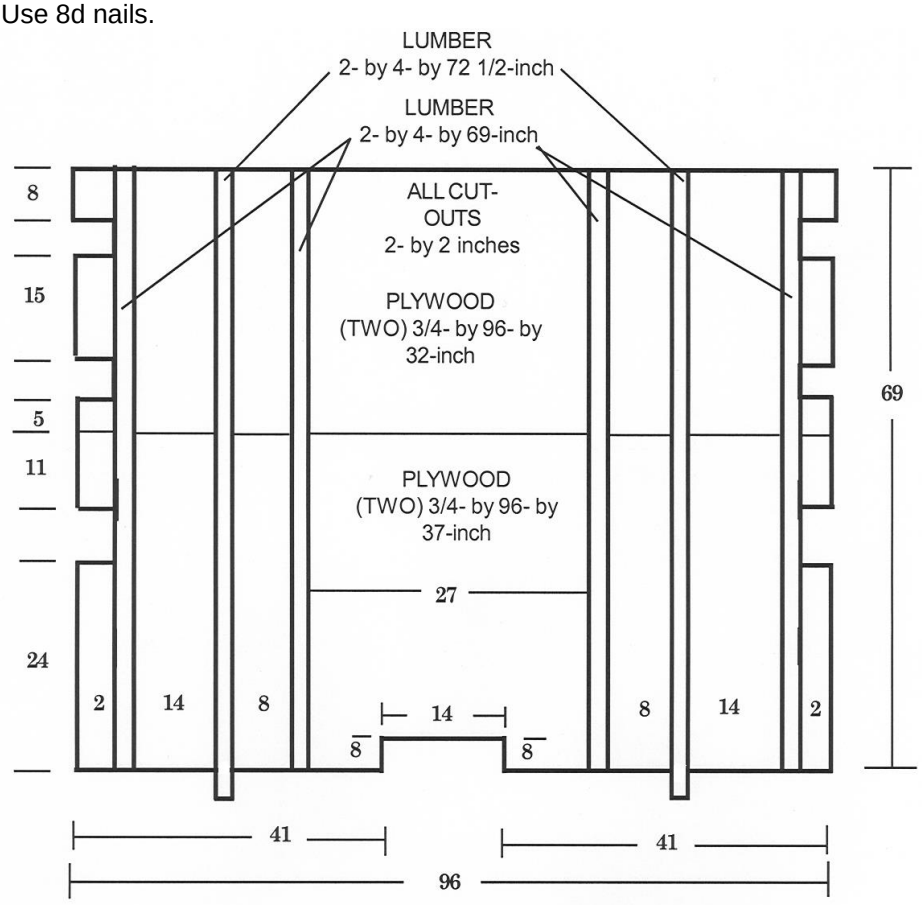
1. Cut two 3/4- by 96- by 32-inch pieces of plywood.
2. Cut two 3/4- by 96- by 37-inch pieces of plywood.
3. Cut six 2- by 2-inch cutouts on each of the four pieces of plywood.
4. Cut four 2- by 4- by 69-inch pieces of lumber.
5. Cut two 2- by 4- by 72 1/2-inch pieces of lumber.
6. Nail two pieces of plywood flush together using the six 2- by 4-inch pieces of lumber with 8d nails as shown above to make an endboard. Repeat this step to make two endboards.

Figure 5-6. Front Endboard Constructed

CONSTRUCTING REAR ENDBOARD

5-8. Construct the rear endboard as shown in Figure 5-7.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.
3. Use 8d nails.



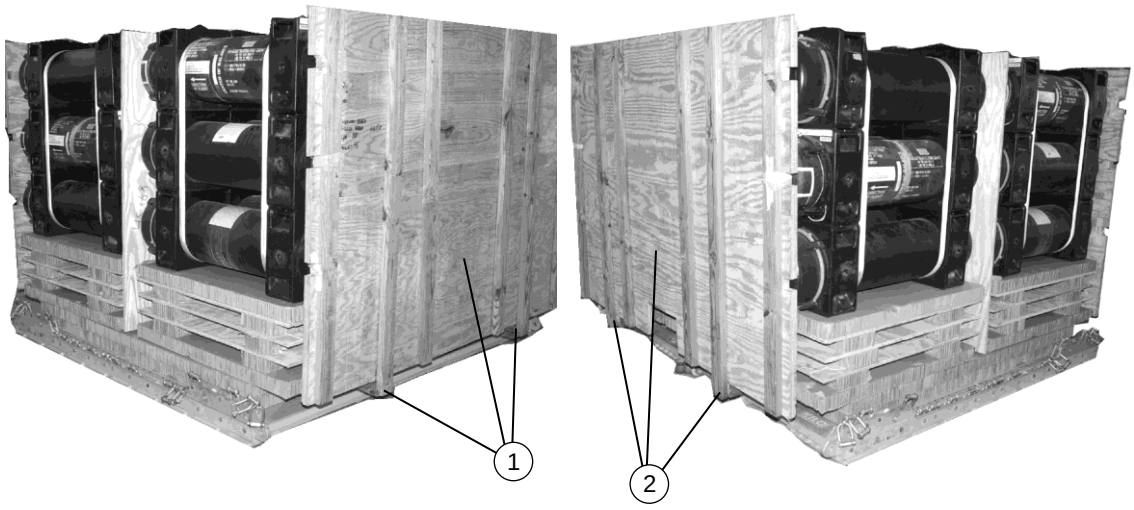
Steps:

1. Cut two 3/4- by 96- by 32-inch pieces of plywood.
2. Cut two 3/4- by 96- by 37-inch pieces of plywood.
3. Cut an 8- by 14-inch cutout on the two 3/4- by 96- by 37-inch pieces of plywood.
4. Cut six 2- by 2-inch cutouts on each of the four pieces of plywood.
5. Cut four 2- by 4- by 69-inch pieces of lumber.
6. Cut two 2- by 4- by 72 1/2-inch pieces of lumber.
7. Nail two pieces of plywood flush together using the six 2- by 4-inch pieces of lumber with 8d nails as shown above to make an endboard. Repeat this step to make two endboards.

Figure 5-7. Rear Endboard Constructed

POSITIONING FRONT AND REAR ENDBOARDS

5-9. Position the front and rear endboards as shown in Figure 5-8.



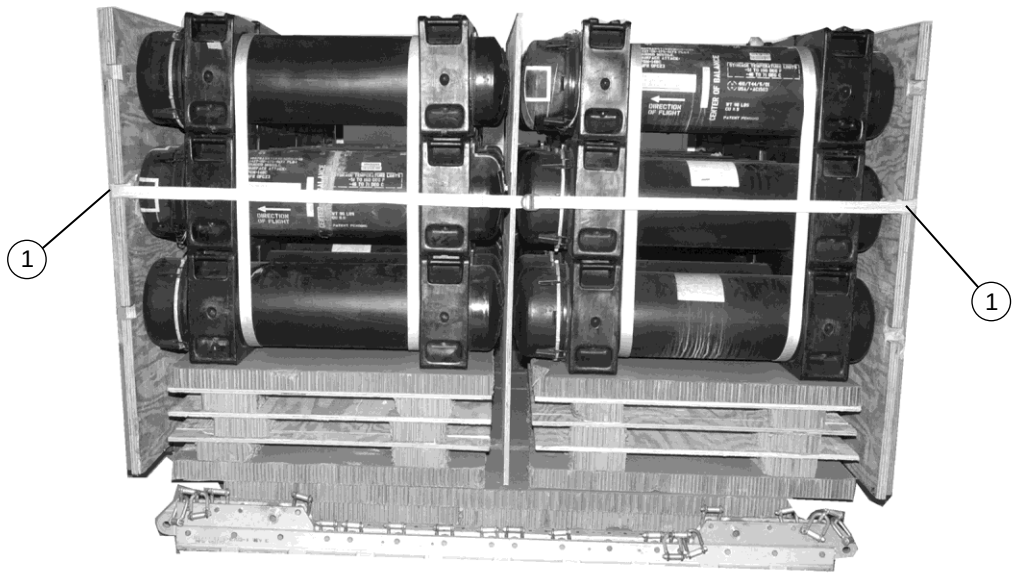
① Position the front endboard to the front of stack 1. Nail the 2- by 4- by 72 1/2 -inch pieces of lumber to the 4- by 4- by 115-inch pieces of lumber using 16d cement coated nails.

② Position the rear endboard to the rear of stack 2. Nail the 2- by 4- by 72 1/2-inch pieces of lumber to the 4- by 4- by 115-inch pieces of lumber using 16d cement coated nails.

Figure 5-8. Front and Rear Endboard Positioned

FRONT AND REAR ENDBOARDS SECURED WITH LASHING

5-10. Secure the front and rear endboards as shown in Figure 5-9.



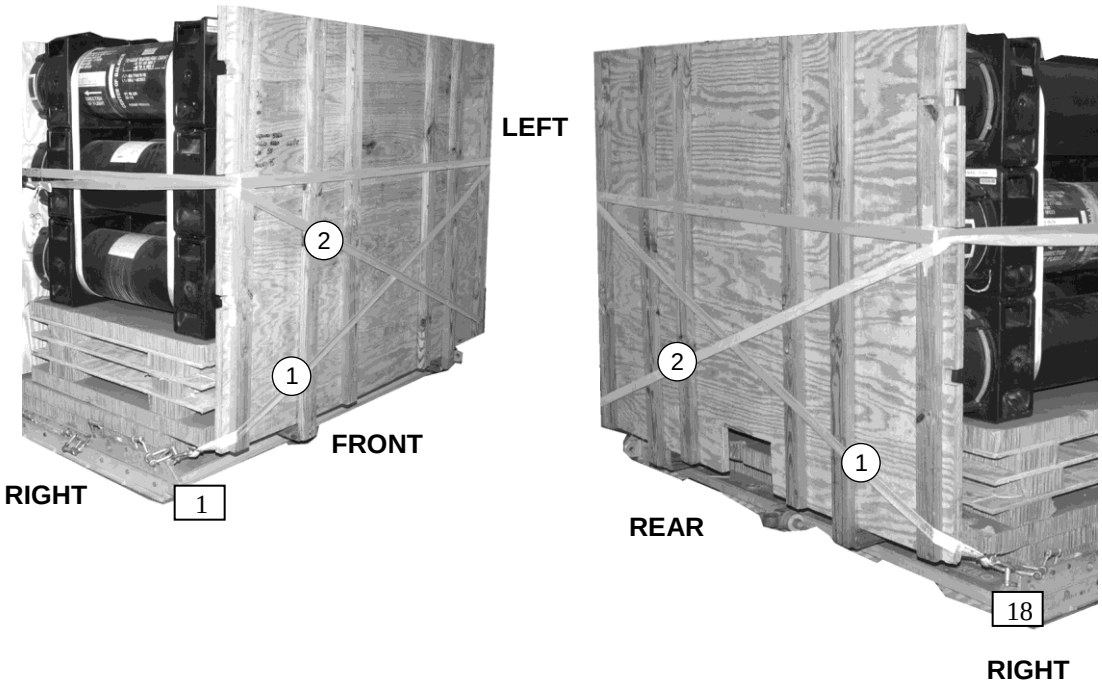
① Assemble a 45-foot lashing according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Route the lashing around the load through the middle cutouts of the front and rear end boards and secure on the front left side of the load using two D-rings and a load binder.

Figure 5-9. Front and Rear Endboards Secured

LASHING LOAD TO PLATFORM

5-11. Lash the load to the platform as shown in Figure 5-10.

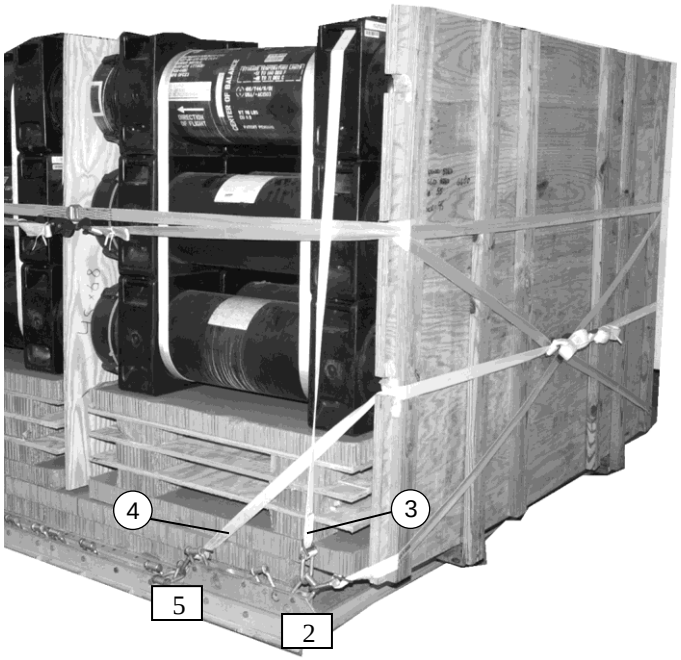
Note. Pad all cutouts with cellulose wadding where the lashings make contact.



Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	1 and 18	Route a 15-foot lashing through clevis 1 and through its own D-ring. Route a 15-foot lashing through clevis 18 and through its own D-ring. Run the free end from clevis 1 around the right bottom corner of the front endboard to the center left cutout of the front endboard. Run the free end from clevis 18 around the right bottom corner of the rear endboard to the left center cutout of the rear endboard. Secure the free ends to the lashings with two D-rings and a load binder centered on the left side of the load.
2	1A and 18A	Route a 15-foot lashing through clevis 1A and through its own D-ring. Route a 15-foot lashing through clevis 18A and through its own D-ring. Run the free end from clevis 1A around the left bottom corner of the front endboard to the center right cutout of the front endboard. Run the free end from clevis 18A around the left bottom corner of the rear endboard to the center right cutout of the rear endboard. Secure the free ends with two D-rings and a load binder centered on the right side of the load.

Figure 5-10. Load Lashed to Platform

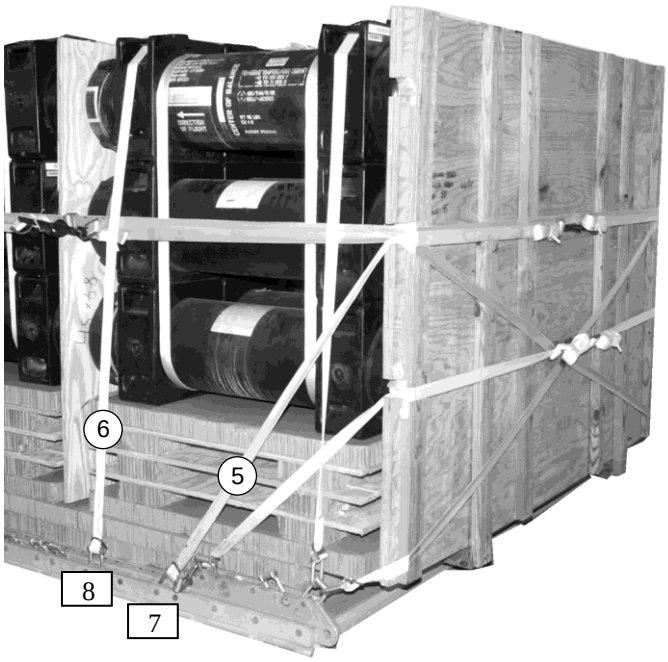
Note. Pad all cutouts with cellulose wadding where the lashings make contact.



Lashing Number	*Tiedown Clevis Number*	*Instructions*
3	2 and 2A	Route a 15-foot lashing through clevis 2 and through its own D-ring. Route a 15-foot lashing through clevis 2A and through its own D-ring. Run the free end of the lashing from clevis 2 through the right top carrying handle of the Javelin container on the front right side of stack 1. Run the free end of the lashing from clevis 2A through the left top carrying handle of the Javelin container on the front left side of stack 1. Secure the free ends with two D-rings and a load binder centered on the top of the load.
4	5 and 5A	Route a 15-foot lashing through clevis 5 and through its own D-ring. Route a 15-foot lashing through clevis 5A and through its own D-ring. Run the free end from clevis 5 around the bottom right cutout of the front endboard. Run the free end from clevis 5A around the bottom left cutout of the front endboard. Secure the free ends with two D-rings and a load binder centered on the front endboard.

Figure 5-10. Load Lashed to Platform (Continued)

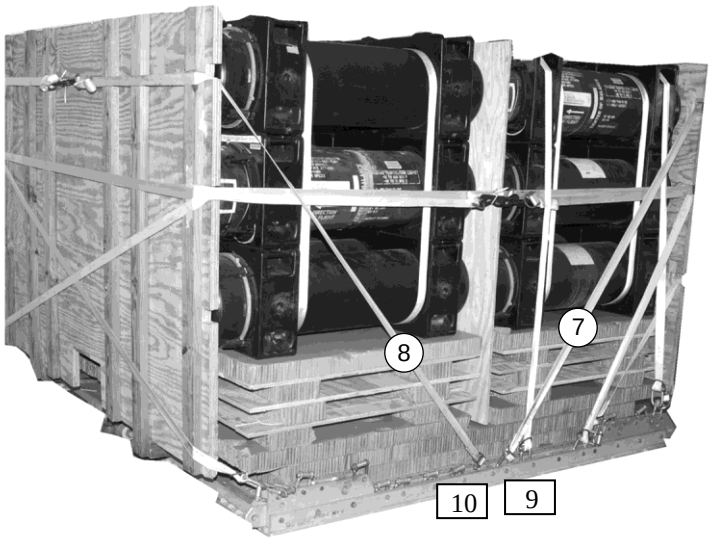
Note. Pad all cutouts with cellulose wadding where the lashings make contact.



Lashing Number	*Tiedown Clevis Number*	*Instructions*
5	7 and 7A	Route a 15-foot lashing through clevis 7 and through its own D-ring. Route a 15-foot lashing through clevis 7A and through its own D-ring. Run the free end from clevis 7 around the center right cutout of the front endboard. Run the free end from clevis 7A around the center left cutout of the front endboard. Secure the free ends with two D-rings and a load binder centered on the front endboard.
6	8 and 8A	Route a 15-foot lashing through clevis 8 and through its own D-ring. Route a 15-foot lashing through clevis 8A and through its own D-ring. Run the free end of the lashing from clevis 8 through the right top carrying handle of the Javelin container on the rear right side of stack 1. Run the free end of the lashing from clevis 8A through the left top carrying handle of the Javelin container on the rear left side of stack 1. Secure the free ends with two D-rings and a load binder centered on the top of the load.

Figure 5-10. Load Lashed to Platform (Continued)

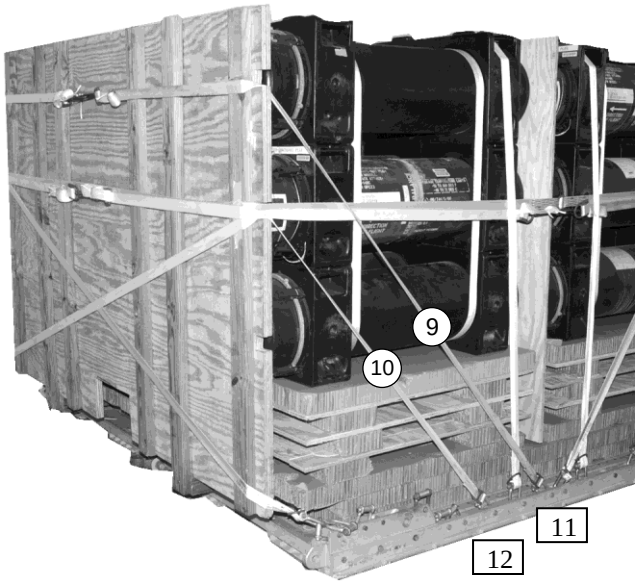
Note. Pad all cutouts with cellulose wadding where the lashings make contact.



Lashing Number	*Tiedown Clevis Number*	*Instructions*
7	9 and 9A	Route a 15-foot lashing through clevis 9 and through its own D-ring. Route a 15-foot lashing through clevis 9A and through its own D-ring. Run the free end from clevis 9 around the top right cutout of the front endboard. Run the free end from clevis 9A around the top left cutout of the front endboard. Secure the free ends with two D-rings and a load binder centered on the front endboard.
8	10 and 10A	Route a 15-foot lashing through clevis 10 and through its own D-ring. Route a 15-foot lashing through clevis 10A and through its own D-ring. Run the free end from clevis 10 around the top right cutout of the rear endboard. Run the free end from clevis 10A around the top left cutout of the rear endboard. Secure the free ends with two D-rings and a load binder centered on the rear endboard.

Figure 5-10. Load Lashed to Platform (Continued)

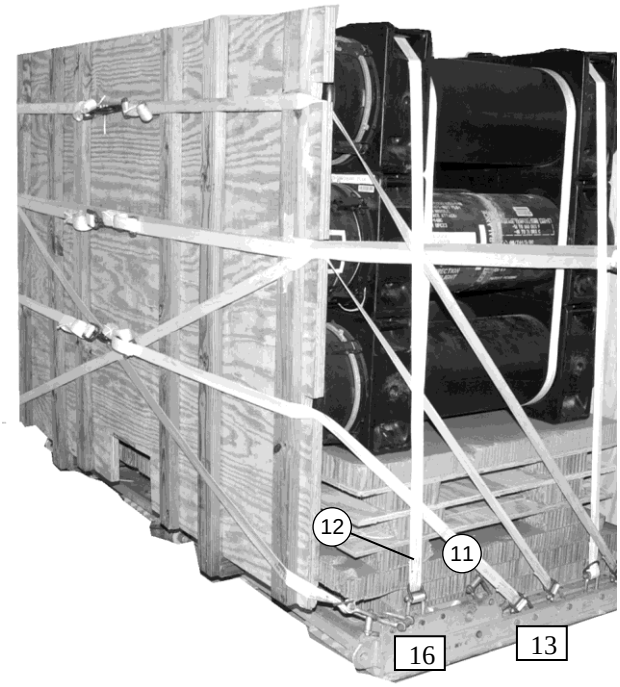
Note. Pad all cutouts with cellulose wadding where the lashings make contact.



Lashing Number	*Tiedown Clevis Number*	*Instructions*
9	11 and 11A	Route a 15-foot lashing through clevis 11 and through its own D-ring. Route a 15-foot lashing through clevis 11A and through its own D-ring. Run the free end of the lashing from clevis 11 through the right top carrying handle of the Javelin container on the front right side of stack 2. Run the free end of the lashing from clevis 11A through the left top carrying handle of the Javelin container on the front left side of stack 2. Secure the free ends with two D-rings and a load binder centered on the top of the load.
10	12 and 12A	Route a 15-foot lashing through clevis 12 and through its own D-ring. Route a 15-foot lashing through clevis 12A and through its own D-ring. Run the free end from clevis 12 around the center right cutout of the rear endboard. Run the free end from clevis 12A around the center left cutout of the rear endboard. Secure the free ends with two D-rings and a load binder centered on the rear endboard.

Figure 5-10. Load Lashed to Platform (Continued)

Note. Pad all cutouts with cellulose wadding where the lashings make contact.

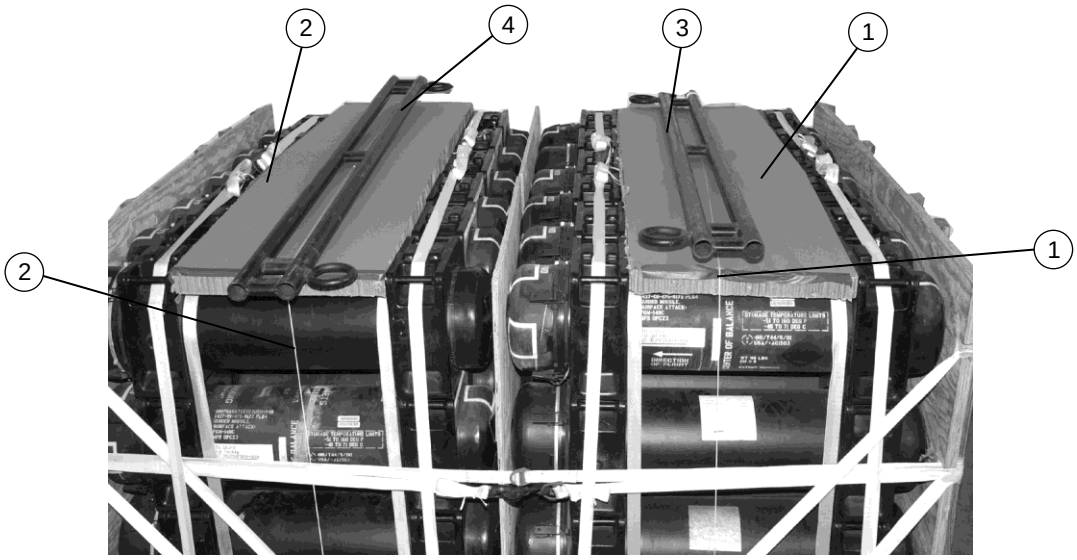


Lashing Number	*Tiedown Clevis Number*	*Instructions*
11	13 and 13A	Route a 15-foot lashing through clevis 13 and through its own D-ring. Route a 15-foot lashing through clevis 13A and through its own D-ring. Run the free end from clevis 13 around the bottom right cutout of the rear endboard. Run the free end from clevis 13A around the bottom left cutout of the rear endboard. Secure the free ends with two D-rings and a load binder centered on the rear endboard.
12	16 and 16A	Route a 15-foot lashing through clevis 16 and through its own D-ring. Route a 15-foot lashing through clevis 16A and through its own D-ring. Run the free end of the lashing from clevis 16 through the right top carrying handle of the Javelin container on the rear right side of stack 2. Run the free end of the lashing from clevis 16A through the left top carrying handle of the Javelin container on the rear left side of stack 2. Secure the free ends with two D-rings and a load binder centered on the top of the load.

Figure 5-10. Load Lashed to Platform (Continued)

POSITIONING THE FRONT AND REAR ATTITUDE CONTROL BAR (ACB)

5-12. Position the front and rear ACB as shown in Figure 5-11.



① Position a 27- by 91-inch piece of honeycomb between the carrying handles of the Javelin containers of stack 1. Secure in place to a convenient point on the load using type III nylon cord.

② Position a second 27- by 91-inch piece of honeycomb between the carrying handles of the Javelin containers of stack 2. Secure in place to a convenient point on the load using type III nylon cord.

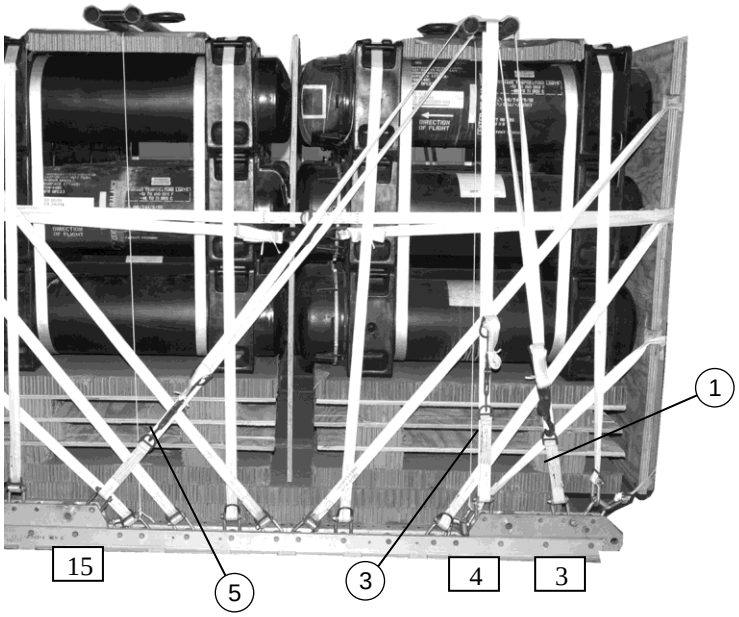
③ Position an attitude control bar (ACB) centered on top of the honeycomb on stack 1 with the rings of the ACB facing towards the rear of the load.

④ Position an ACB centered on top of the honeycomb on stack 2 with the rings of the ACB facing towards the front of the load.

Figure 5-11. Front and Rear ACB Positioned

LASHING THE FRONT ACB TO HONEYCOMB STACK 1

5-13. Lash the front ACB to stack 1 as shown in Figure 5-12.

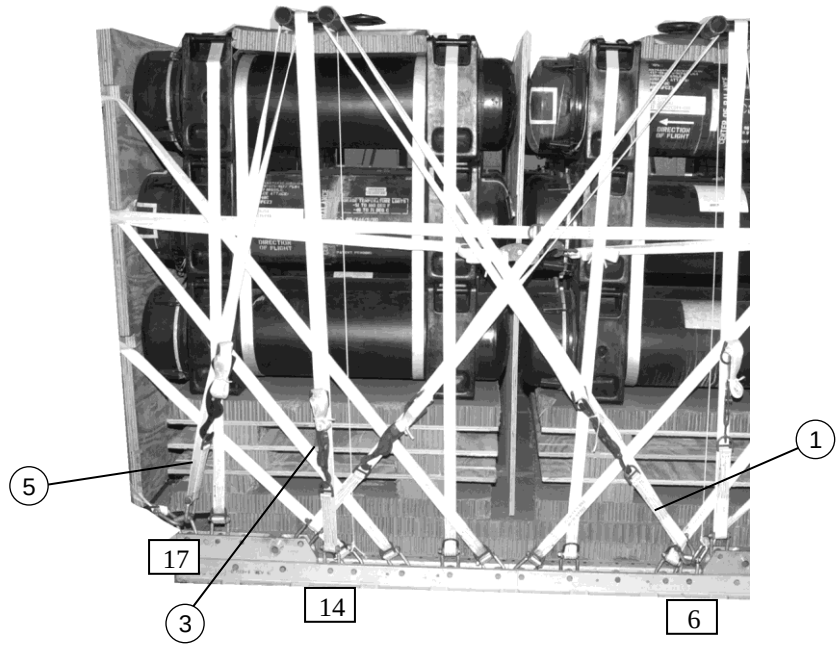


Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	3	Route a 15-foot lashing through clevis 3, upward through the front bar of the front Attitude control bar (ACB), and back to clevis 3. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
2	3A	Route a 15-foot lashing through clevis 3A, upward through the front bar of the front ACB, and back to clevis 3A. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
3	4	Route a 15-foot lashing through clevis 4, upward through the middle portion of the front ACB, and back to clevis 4. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
4	4A	Route a 15-foot lashing through clevis 4A, upward through the middle portion of the front ACB, and back to clevis 4A. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
5	15	Route a 15-foot lashing through clevis 15, upward through the rear bar of front ACB, and back to clevis 15. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
6	15A	Route a 15-foot lashing through clevis 15A, upward through the rear bar of front ACB, and back to clevis 15A. Attach a D-ring and load binder. TIGHTEN all lashings at this time.

Figure 5-12. Front ACB Lashed to Honeycomb Stack 1

LASHING THE REAR ACB TO HONEYCOMB STACK 2

5-14. Lash the rear ACB to stack 2 as shown in Figure 5-13.

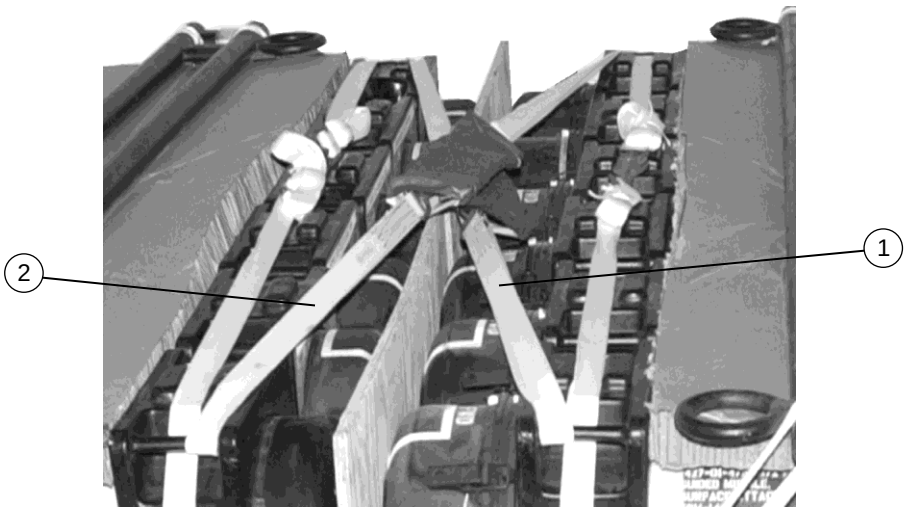


Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	6	Route a 15-foot lashing through clevis 6, upward through the front bar of the rear Attitude control bar (ACB), and back to clevis 6. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
2	6A	Route a 15-foot lashing through clevis 6A, upward through the front bar of the rear ACB, and back to clevis 6A. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
3	14	Route a 15-foot lashing through clevis 14, upward through the middle portion of the rear ACB, and back to clevis 14. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
4	14A	Route a 15-foot lashing through clevis 14A, upward through the middle portion of the rear ACB, and back to clevis 14A. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
5	17	Route a 15-foot lashing through clevis 17, upward through the rear bar of the rear ACB, and back to clevis 17. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
6	17A	Route a 15-foot lashing through clevis 17A, upward through the rear bar of the rear ACB, and back to clevis 17A. Attach a D-ring and load binder. TIGHTEN all lashings at this time.

Figure 5-13. Rear ACB Lashed to Honeycomb Stack 2.

SECURING PLYWOOD BETWEEN STACK 1 AND STACK 2

5-15. Secure the plywood between stacks 1 and 2 as shown in Figure 5-14.



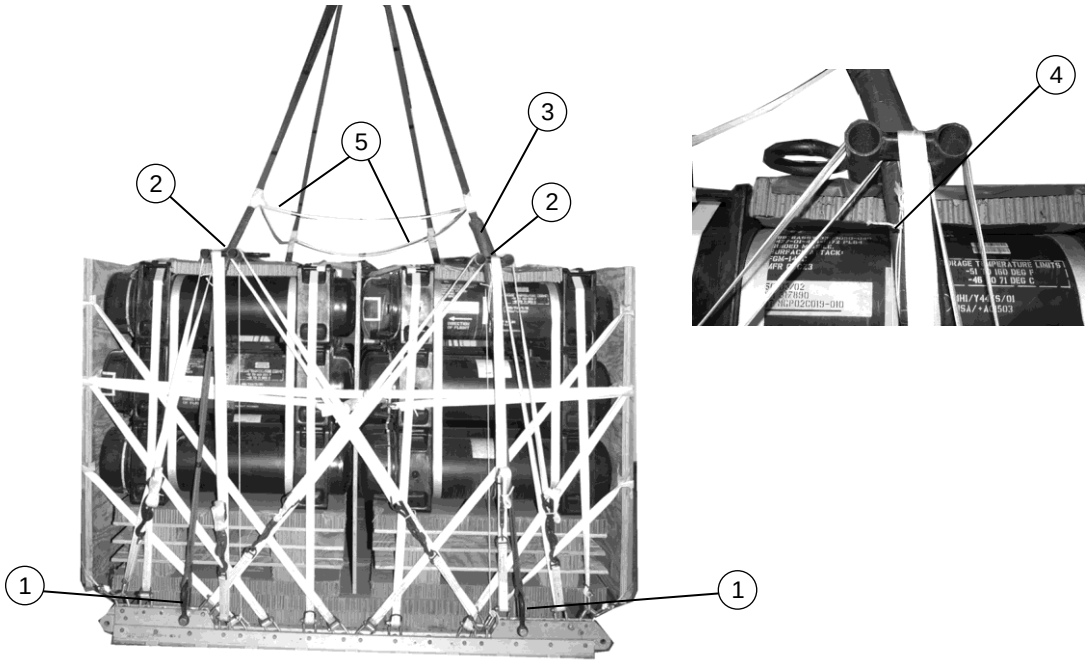
① Route a 15-foot lashing through the carrying handle of the rear right Javelin container of stack 1. Continue to route the lashing over the top of the 3/4- by 48- by 68-inch piece of plywood to the left side of the platform. Route the free end of the 15-foot lashing through carrying handle of the front left Javelin container of stack 2. Secure the lashing with a D-ring and load binder in the center of the load. Pad the load binder handle with felt and secure in place using type III, nylon cord or 2-inch cloth-back adhesive tape.

② Route a 15-foot lashing through the carrying handle of the front right Javelin container of stack 2. Continue to route the lashing over the top of the 3/4- by 48- by 68-inch piece of plywood to the left side of the platform. Route the free end of the 15-foot lashing through carrying handle of the rear left Javelin container of stack 1. Secure the lashing with a D-ring and load binder in the center of the load. Pad the load binder handle with felt and secure in place using type III, nylon cord or 2-inch cloth-back adhesive tape.

Figure 5-14. Plywood Between Stack 1 and 2 Secured

INSTALLING SUSPENSION SLINGS

5-16. Install the suspension slings and deadman's tie as shown in Figure 5-15.



① Attach a 16-foot (2-loop), type XXVI nylon webbing sling to each tandem link with a large clevis.

② Route the free ends of each sling up through their corresponding attitude control bar (ACB) holes.

③ Pad the slings with felt where the sling makes contact with the load and Attitude control bar (ACB). Tape the felt with 2-inch adhesive tape 12 inches above and 12 inches below the ACB.

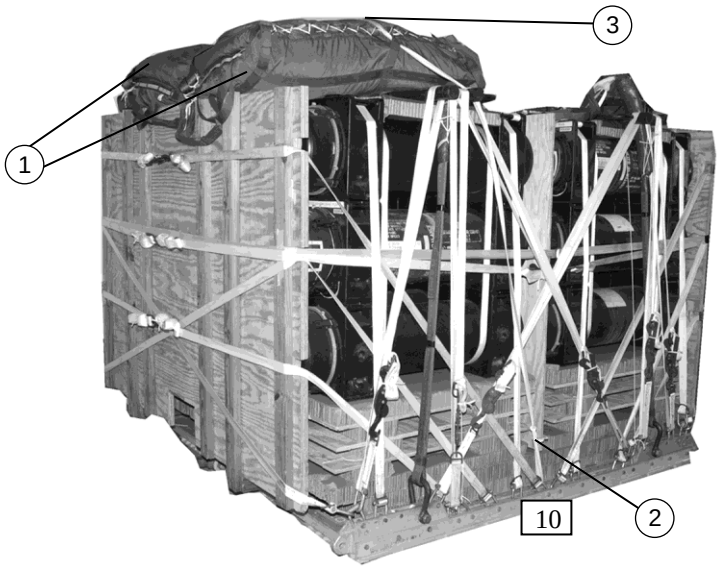
④ Secure the bottom portion of the padded sling to the ACB with a length of type III nylon cord.

⑤ Raise the slings and install the deadman's tie according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 5-15. Suspension Slings and Deadman's Tie Installed

PREPARING AND STOWING CARGO PARACHUTES

5-17. Prepare and stow the cargo parachutes as shown in Figure 5-16.



① Prepare, position, and stow two G-11 cargo parachutes on top of the parachute platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

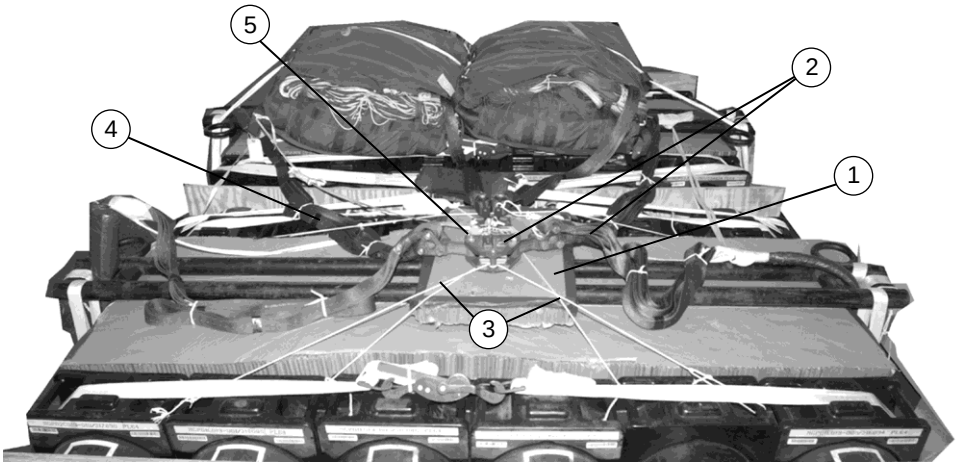
② Install the restraint using type VIII nylon webbing on clevises 10 and 10A according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

③ Install the guillotine knife multi-cut parachute release straps according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 5-16. Cargo Parachutes Prepared and Stowed

INSTALLING THE RELEASE SYSTEM

5-18. Prepare, attach, and safety an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 5-17.



① Position an 18- by 24-inch piece of honeycomb centered on top of the front Attitude control bar (ACB) to be used as a release platform. Tape the edges and secure the honeycomb using type III, nylon cord to a convenient point on the load.

② Prepare and install the M-1 cargo parachute release on top of the platform release on stack 1. Attach the suspension slings and riser extensions according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

③ Safety the top and bottom of the release to convenient places on the load with type III nylon cord according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

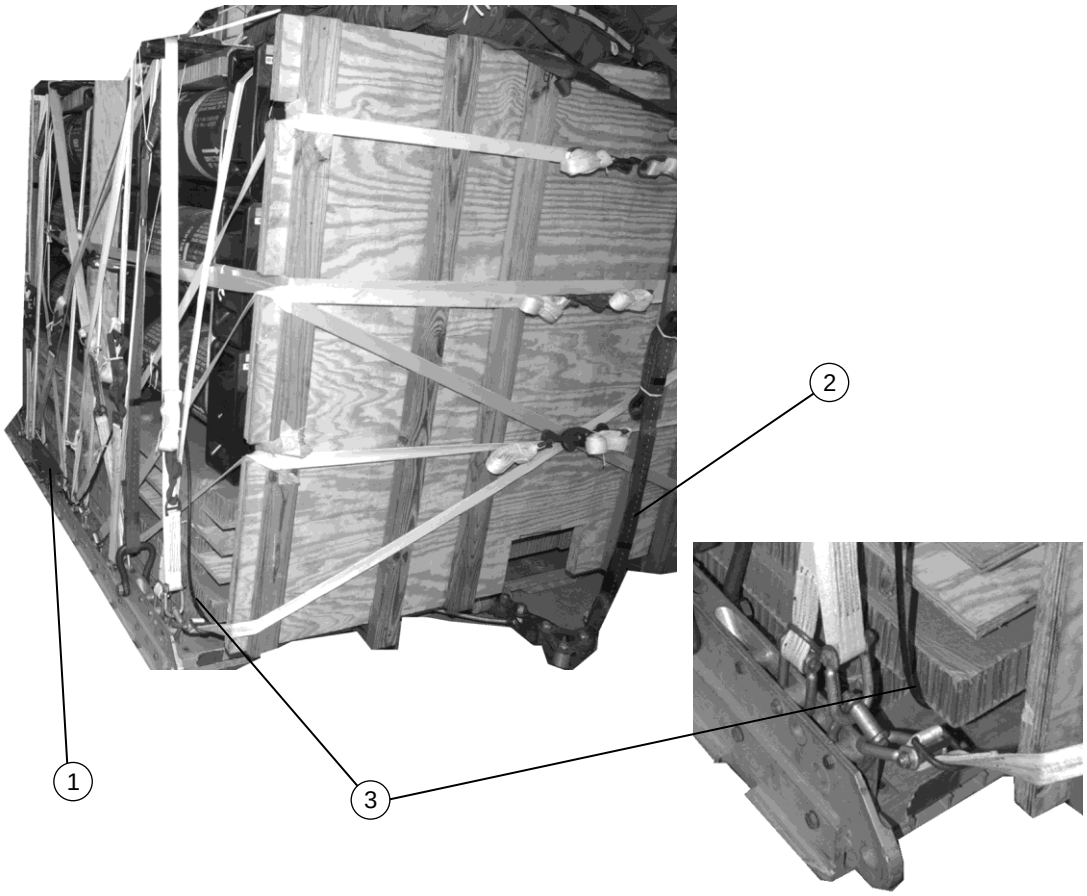
④ S-fold and tie any excess suspension slings with one turn of type I, 1/4-inch cotton webbing.

⑤ Tie the arming wire lanyard to the parachute carrying handles and fold and tape the excess.

Figure 5-17. Cargo Parachute Release Installed

INSTALLING THE EXTRACTION SYSTEM

5-19. Install the extraction system as shown in Figure 5-18.



① Install the components of the Extraction Force Transfer Coupling (EFTC) according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Use the rear mounting holes for the EFTC brackets.

② Attach a 9-foot (2-loop), type XXVI nylon sling to be used as a deployment line.

Note. Ensure the cable is routed below honeycomb stack 2.

③ Use a 12-foot EFTC cable and safety the cable in several convenient places on the platform with one turn of type I, 1/4-inch cotton webbing.

Figure 5-18. Extraction System Installed

PLACING EXTRACTION PARACHUTE

5-20. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

5-21. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

MARKING RIGGED LOAD

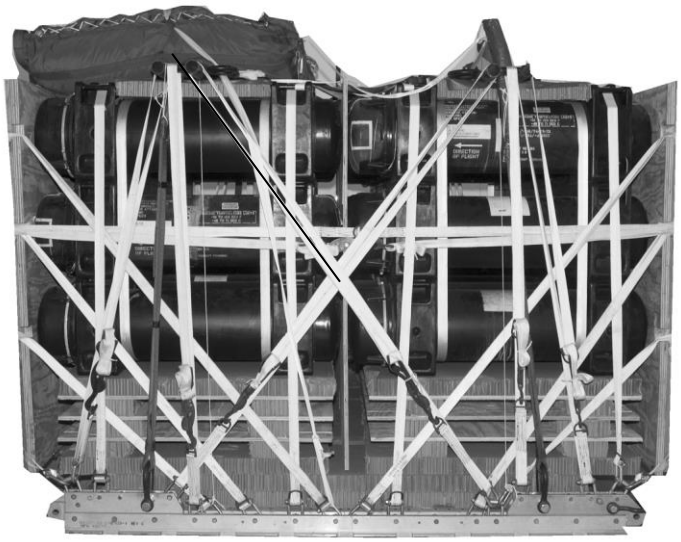
5-22. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 5-19. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

5-23. Use the equipment listed in Table 5-1 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

RIGGED LOAD DATA

Weight: Load shown.....6,620 pounds

Height .....94 inches

Width .....108 inches

Overall Length.....125 inches

Overhang: Front .....11 inches

Rear .....18 inches

Center of Balance (from front edge of the platform) .....54 inches

Extraction System with 12-foot cable (adds 18 inches to length of platform) .. Extraction Force Transfer Coupling (EFTC)

Figure 5-19. Javelin Missile Containers (Plastic) Rigged on an 8-Foot, Type V Platform for Low-Velocity Airdrop

Table 5-1. Equipment Required for Rigging Javelin Missile Containers (Plastic) on an 8-Foot, Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
1670-00-003-4389	Bar, attitude control	2
	Clevis, suspension:	
4030-00-678-8562	3/4-inch (medium) emergency restraint	4
4030-00-090-5354	1-inch (large)	5
4020-00-240-2146	Cord, nylon, type III	As required
1670-00-434-5797	Coupling, airdrop, extraction force transfer with 12-foot cable	1
1670-00-360-0328	Cover, clevis, large	2
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-foot (3-loop)	1
	Or	
1670-01-107-7651	140-foot (3-loop)	2
1670-01-064-4452	60-foot (1-loop), type XXVI for C-17 drogue line	1
	Link assembly, two-point:	
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	1
5310-00-232-5165	Nut, 1-inch, hexagonal	1
1670-00-003-3454	Plate, side 3 3/4-inch	1
5365-00-007-3414	Spacer, large	1
510-00-220-6146	Lumber, 2-by 4- by 96	As required
	Nail	
5315-00-010-4657	6d	As required
5315-00-753-3883	16d	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	17 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	2
1670-01-063-3716	Cargo, extraction, 22-foot	1
	Platform, airdrop, type V, 8-foot	
1670-01-353-8425	Bracket assembly, Extraction Force Transfer Coupling (EFTC)	1
1670-01-162-2372	Bracket assembly, extraction	1
1670-01-162-2376	Clevis assembly	36
1670-01-162-2381	Tandem link	4
5530-00-128-4981	Plywood, 3/4-inch	16 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 5-1. Equipment Required for Rigging Javelin Missile Containers (Plastic) on an 8-Foot, Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-062-6304	9-foot (2-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6302	3-foot (2-loop), type XXVI nylon webbing	4
	For suspension:	
1670-01-063-7761	16-foot (2-loop), type XXVI nylon webbing	4
1670-00-040-8219	Strap parachute release, multicut	2
7515-00-266-5016	Tape, adhesive, 2-inch	As required
7501-00-266-6710	Tape, masking	As required
1670-00-937-0271	Tie-down assembly, 15-foot	48
	Webbing:	
8305-00-268-2411	Cotton, 1/4-inch, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-inch	As required
8305-00-263-3591	Type VIII webbing	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

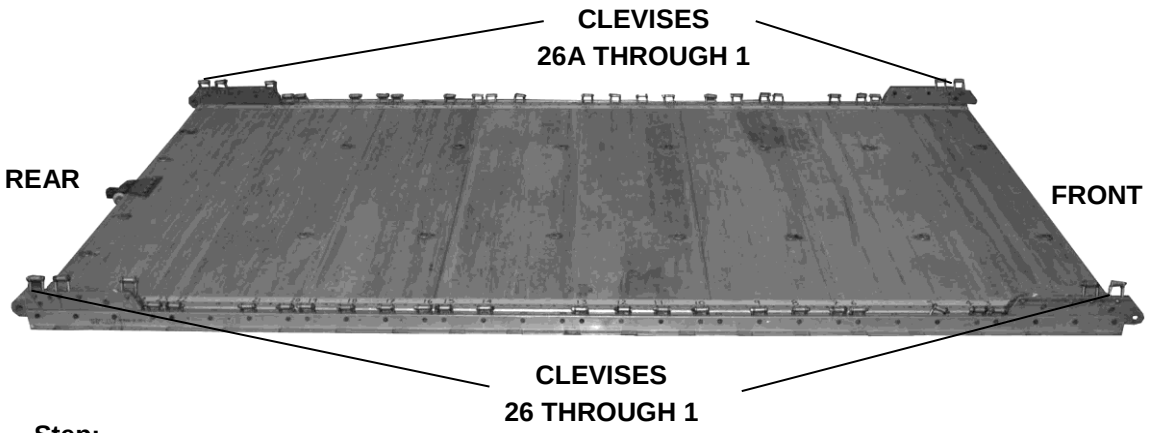
SECTION II-RIGGING JAVELIN MISSILE CONTAINERS ON A 16-FOOT, TYPE V PLATFORM

DESCRIPTION OF LOAD

5-24. The guided missile, surface, attack Javelin (plastic) container mass supply load is rigged on a 16-foot, type V platform. The rigged weight is 10,380 pounds. Each individual missile container weighs approximately 96 pounds. The load is rigged with 66 Javelin containers. The height of the load is 94 inches, length is 192 inches and the width is 108 inches. The accompanying load has a weight of 6,336 pounds. The load is rigged with two G-11 cargo parachutes.

PREPARING PLATFORM

5-25. Prepare a 16-foot, type V platform as shown in Figure 5-20.



Step:

1. Inspect, or assemble and inspect, a 16-foot, type V platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
3. Install a tandem link to the rear of each platform side rail using holes 30, 31, and 32.
4. Install clevises on bushings 1 and 2 of each front tandem link.
5. Install clevises on bushings 1, 3, and 4 of each rear tandem link.
6. Starting at the front of each platform side rail, install clevises on bushings bolted to holes 4, 5, 6, 8, 9, 10, 11, 13, 14, 15, 16, 19, 20, 21, 22, 23, 24, 25, 26, 28, and 29.
7. Starting at the front of the platform, number the clevises 1 through 26 on the right side, and 1A through 26A on the left side.
8. Label the tiedown rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 5-20. Platform Prepared

PREPARING HONEYCOMB STACKS

5-27. Prepare honeycomb stacks 1, 2, and 3 as shown in Figure 5-21.

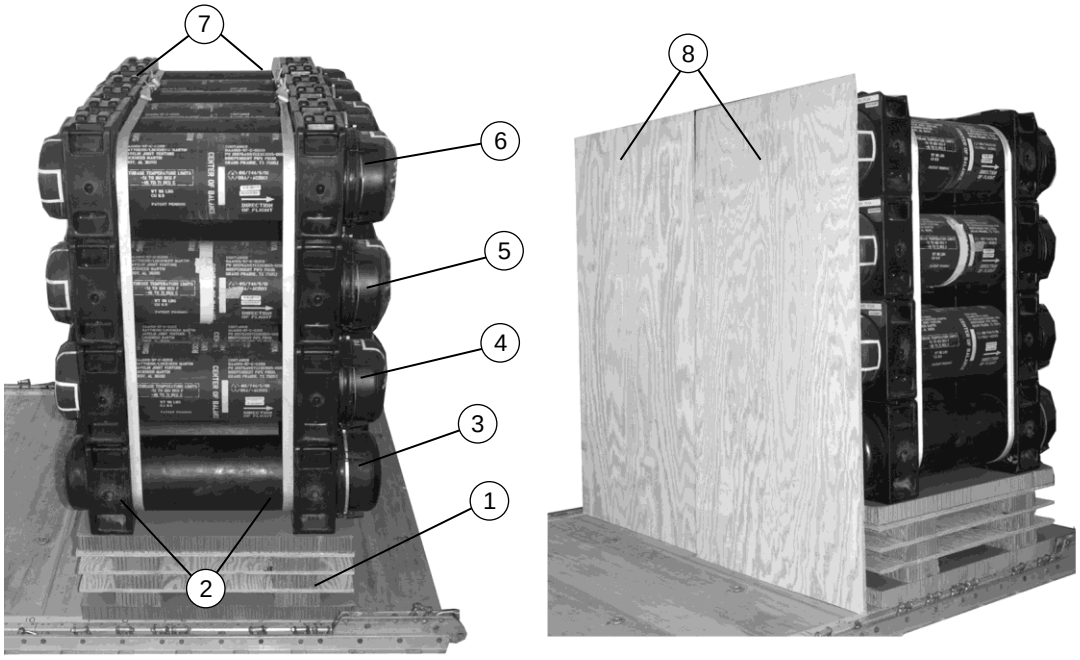


Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
1,2,and 3	1	24	48	Honeycomb	Cut a piece to start to form the base.
	2	36	48	Honeycomb	Cut the pieces and position to the outside of the 48- by 24-inch piece of honeycomb.
	2	8	92	Honeycomb	Cut pieces and glue 6 inches from the front and rear on top of the previous step.
	1	96	48	3/4-inch plywood	Glue the plywood on top of the 8- by 92-inch pieces of honeycomb.
	2	8	96	Honeycomb	Cut pieces and glue 6 inches from the front and the rear on top of the plywood.
	1	96	48	3/4-inch plywood	Glue the plywood on top of the 8- by 92-inch pieces of honeycomb.
	2	8	96	Honeycomb	Cut pieces and glue 6 inches from the front and the rear on top of the plywood.
	1	96	48	3/4-inch plywood	Glue the plywood on top of the 8- by 92-inch pieces of honeycomb.
	1	24	48	Honeycomb	Glue centered on top of the 92- by 48-inch plywood.
	2	36	48	Honeycomb	Cut the pieces and position to the outside of the 48- by 24-inch piece of honeycomb.

Figure 5-21. Honeycomb Stacks 1, 2, and 3 Prepared

POSITIONING AND SECURING JAVELINS ON STACK 1

5-28. Position and secure the Javelins on stack 1 as shown in Figure 5-22.



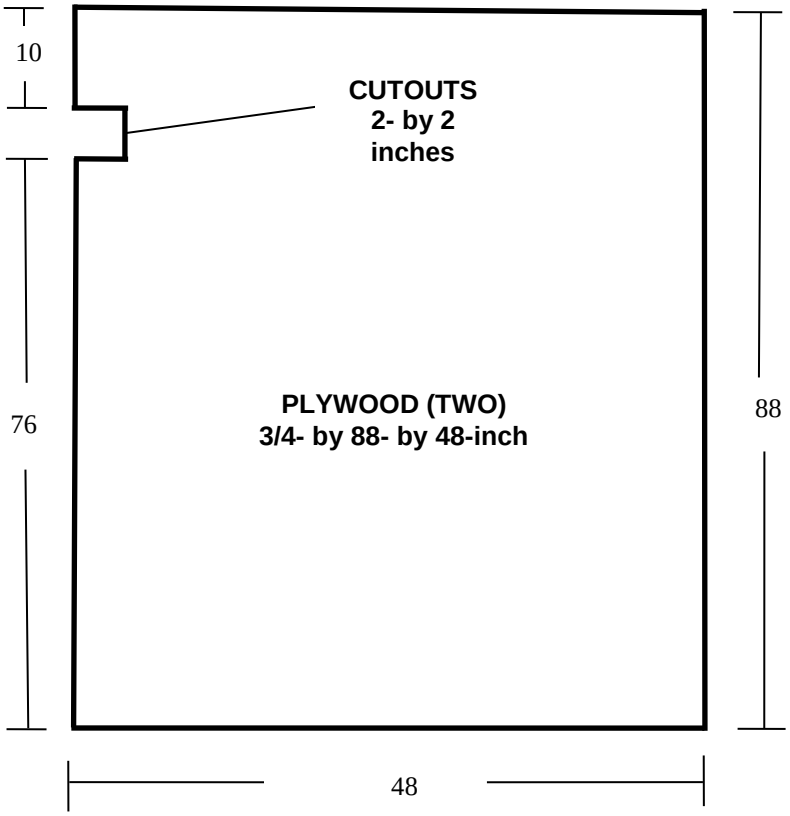
① Position stack 1, 16 inches and centered from the front edge of the platform.
② Pre-position two 30-foot lashings, 10 inches from each end of stack 1.
③ Position six Javelin containers on top of the stack 1.
④ Position six Javelin containers on top of the Javelins from step 3.
⑤ Position six Javelin containers on top of the Javelins from step 4.
⑥ Position six Javelin containers on top of the Javelins from step 5.
⑦ Secure the two pre-positioned lashings around the stack and secure the stack with two D-rings and a load binder on top of the Javelin containers.
⑧ Position two 3/4- by 48- by 88-inch pieces of plywood side-by-side to the rear of stack 1.

Figure 5-22. Javelins Positioned and Secured on Stack 1

CONSTRUCTING ENDBOARD FOR STACK 2

5-29. Construct an endboard for the rear of stack 2 as shown in Figure 5-23.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



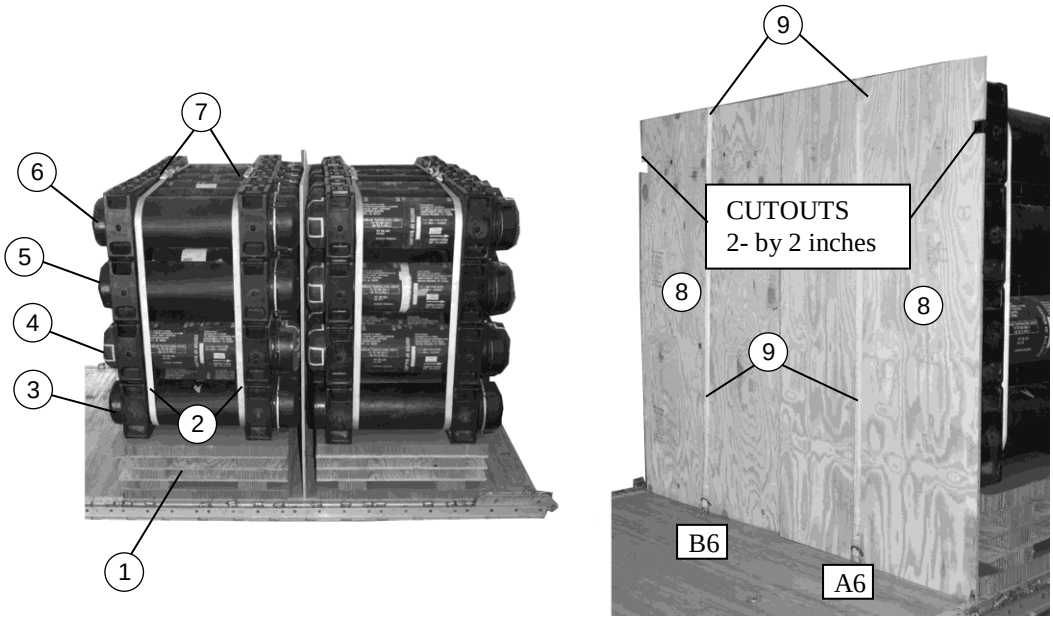
Step:

1. Cut two 3/4- by 48- by 88-inch pieces of plywood.
2. Make one 2- by 2-inch cutout on each endboard as shown.

Figure 5-23. Endboard Constructed for Stack 2

POSITIONING AND SECURING JAVELINS AND PLACING ENDBOARDS ON STACK 2

5-30. Position and secure the Javelins on stack 2 as shown in Figure 5-24.



① Position stack 2, 8 inches and centered from the rear of stack 1.

② Pre-position two 30-foot lashings, 10 inches from each end of stack 2.

③ Position six Javelin containers on top of stack 2.

④ Position six Javelin containers on top of the Javelins from step 3.

⑤ Position six Javelin containers on top of the Javelins from step 4.

⑥ Position six Javelin containers on top of the Javelins from step 5.

⑦ Secure the two pre-positioned lashings around the stack and secure the stack with two D-rings and a load binder on top of the Javelin containers.

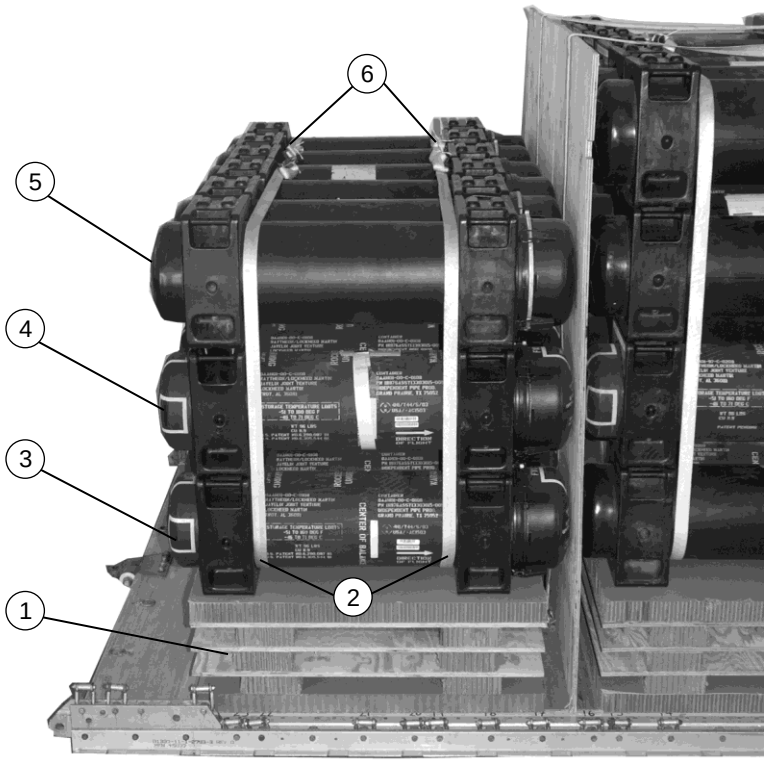
⑧ Place the endboards against the rear of stack 2 with the cutouts facing the right and left sides of the platform.

⑨ Route a 15-foot lashing through platform tie-down rings A6 and B6 and through their own D-rings. Route the lashings up and over the endboards to be secured later.

Figure 5-24. Javelins Positioned and Secured and Endboards Placed on Stack 2

POSITIONING AND SECURING JAVELINS ON STACK 3

5-31. Position and secure the Javelins on stack 3 as shown in Figure 5-25.



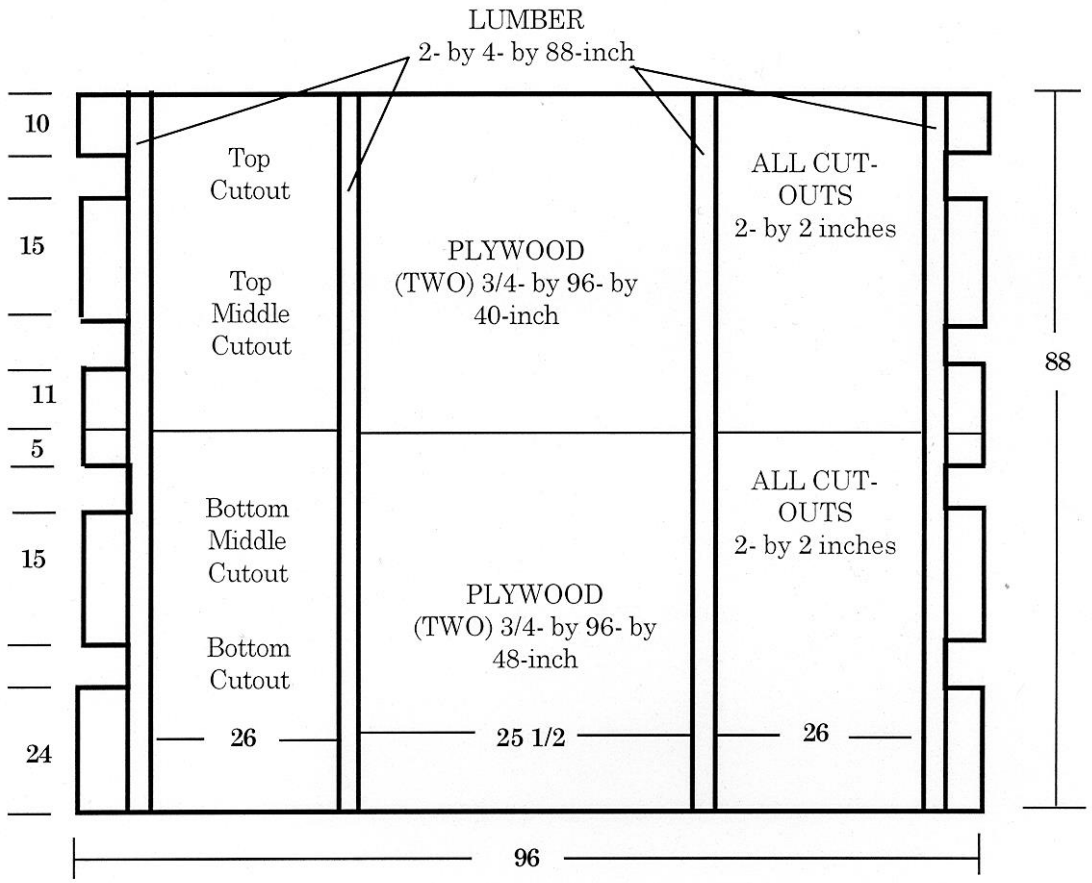
① Position stack 3, eight inches and centered from the rear of stack 2.
② Pre-position two 30-foot lashings, 10 inches from each end of stack 3.
③ Position six Javelin containers on top of stack 3.
④ Position six Javelin containers on top of the Javelins from step 3.
⑤ Position six Javelin containers on top of the Javelins from step 4.
⑥ Secure the two pre-positioned lashings around the stack and secure the stack with two D-rings and a load binder on top of the Javelin containers.

Figure 5-25. Javelins Positioned and Secured on Stack 3

CONSTRUCTING FRONT ENDBOARD

5-32. Construct the front endboard as shown in Figure 5-26.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.
3. Use 8d nails.



Step:

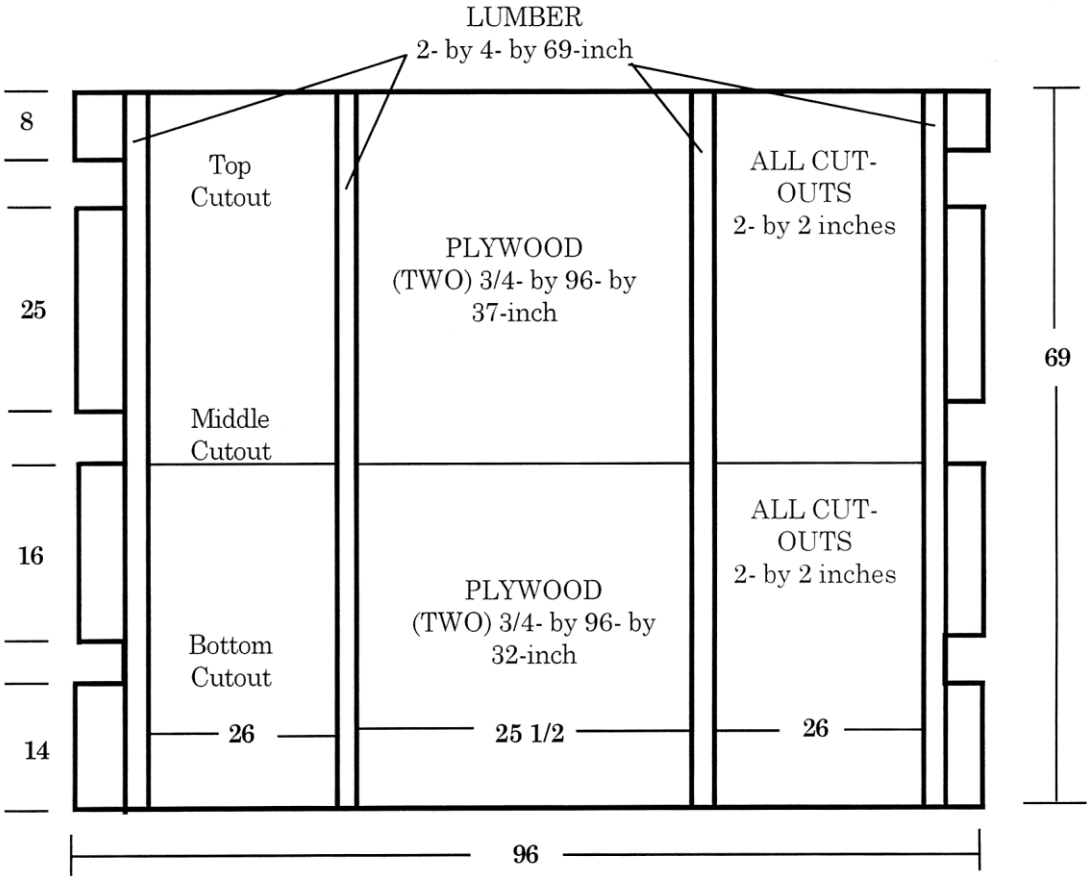
1. Cut two 3/4- by 96- by 40-inch pieces of plywood.
2. Cut two 3/4- by 96- by 48-inch pieces of plywood.
3. Cut four 2- by 2-inch cutouts on each of the four pieces of plywood.
4. Cut eight 2- by 4- by 88-inch pieces of lumber.
5. Nail four pieces of plywood flush together using four 2- by 4- by 88-inch pieces of lumber with 8d nails as shown above to make an endboard. Repeat this step to make two endboards.

Figure 5-26. Front Endboard Constructed

CONSTRUCTING REAR ENDBOARD

5-33. Construct the rear endboard as shown in Figure 5-27.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.
3. Use 8d nails.



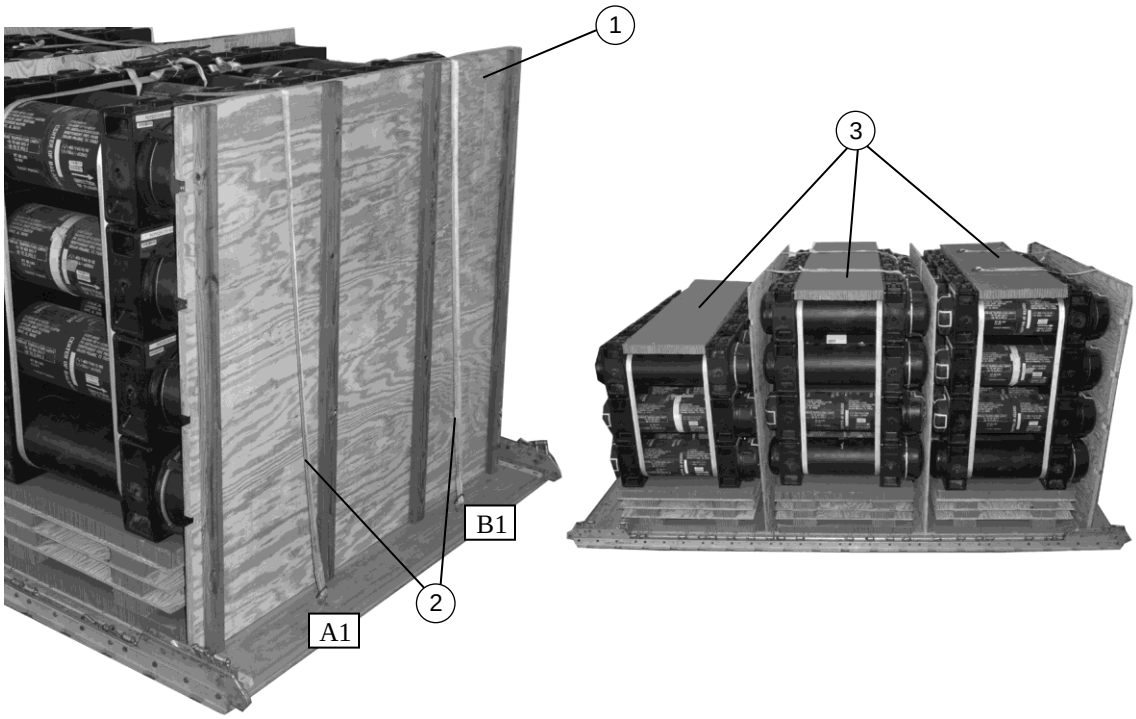
Step:

1. Cut two 3/4- by 96- by 37-inch pieces of plywood.
2. Cut two 3/4- by 96- by 32-inch pieces of plywood.
3. Cut 2- by 2-inch cutouts on each of the four pieces of plywood as shown above.
4. Cut four 2- by 4- by 69-inch pieces of lumber.
5. Nail two pieces of plywood flush together using four 2- by 4- by 69-inch pieces of lumber with 8d nails as shown above to make an endboard. Repeat this step to make two endboards.

Figure 5-27. Rear Endboard Constructed

POSITIONING AND SECURING FRONT ENDBOARD AND POSITIONING REAR ENDBOARD

5-34. Position and secure the front endboard and position the rear endboard as shown in Figure 5-28.

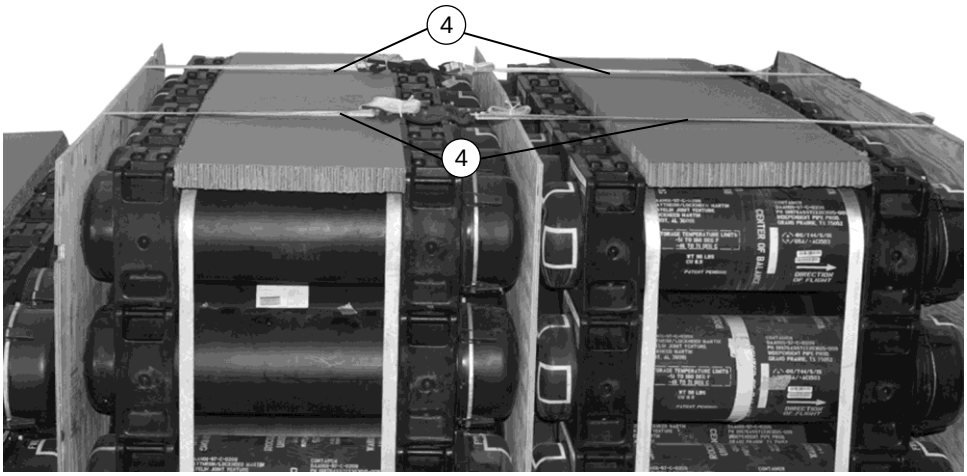


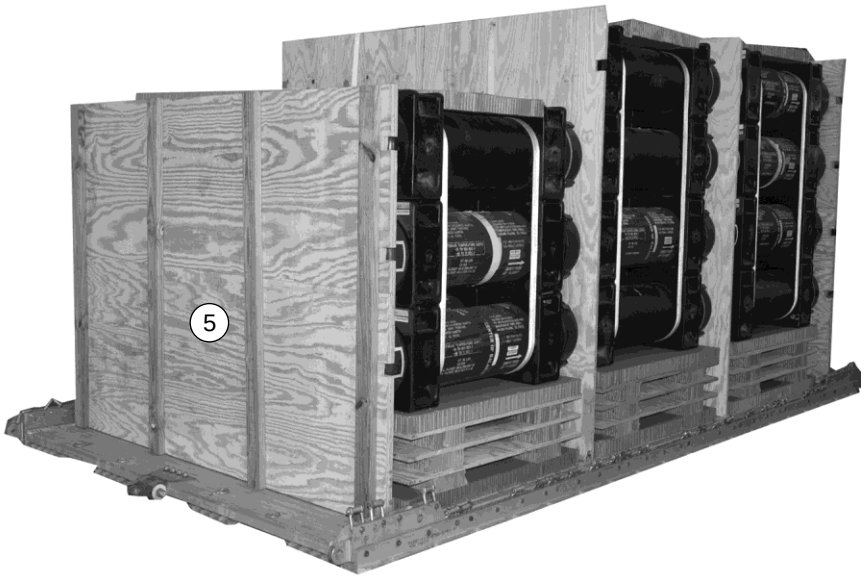
① Position the front endboard on the front of stack 1.

② Route a 15-foot lashing through platform tie-down rings A1 and B1 and through their own D-rings. Route the lashings up and over the endboards to be secured later.

③ Cut three 27- by 92-inch pieces of honeycomb. Position one piece on top of each stack between the handles.

Figure 5-28. Front Endboard Positioned and Secured and Rear Endboard Positioned





④ Secure the pre-routed lashing of clevis A1 to A6 and clevis B1 to B6 on the top of the front of stack two with two D-rings and load binder.

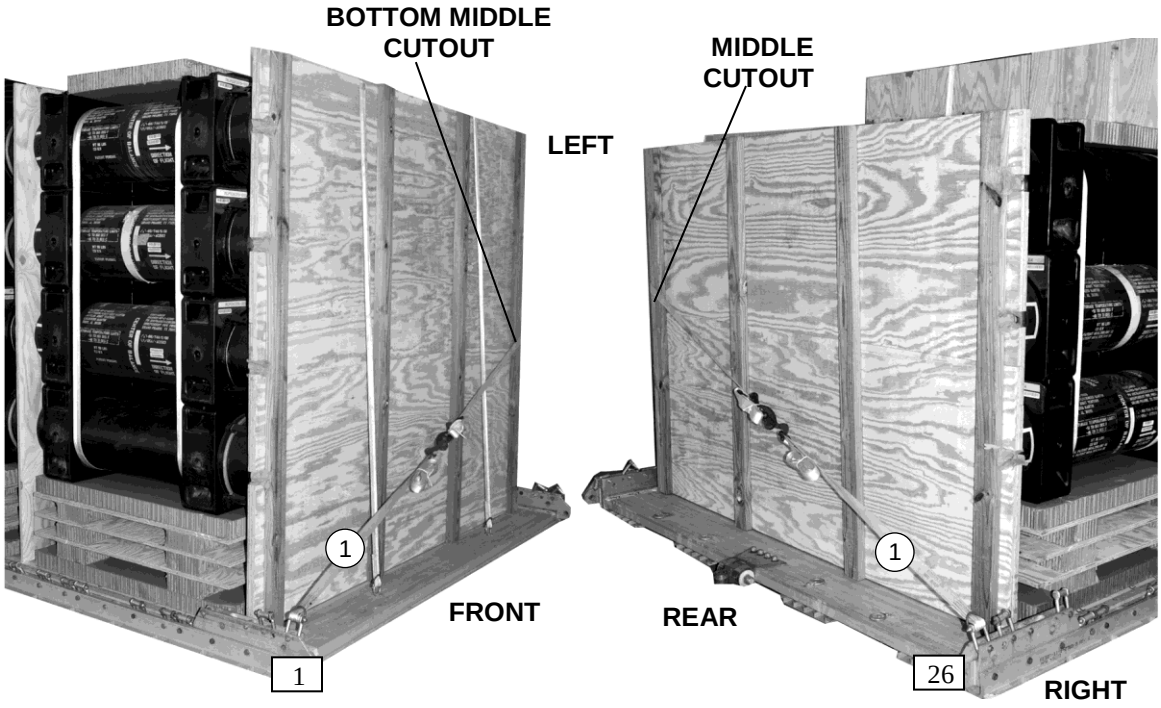
⑤ Position the rear endboard to the rear of stack 3 with the 2- by 4-inch piece of lumber side to the outside rear of the load.

Figure 5-28. Front Endboard Positioned and Secured and Rear Endboard Positioned (Continued)

LASHING LOAD TO PLATFORM

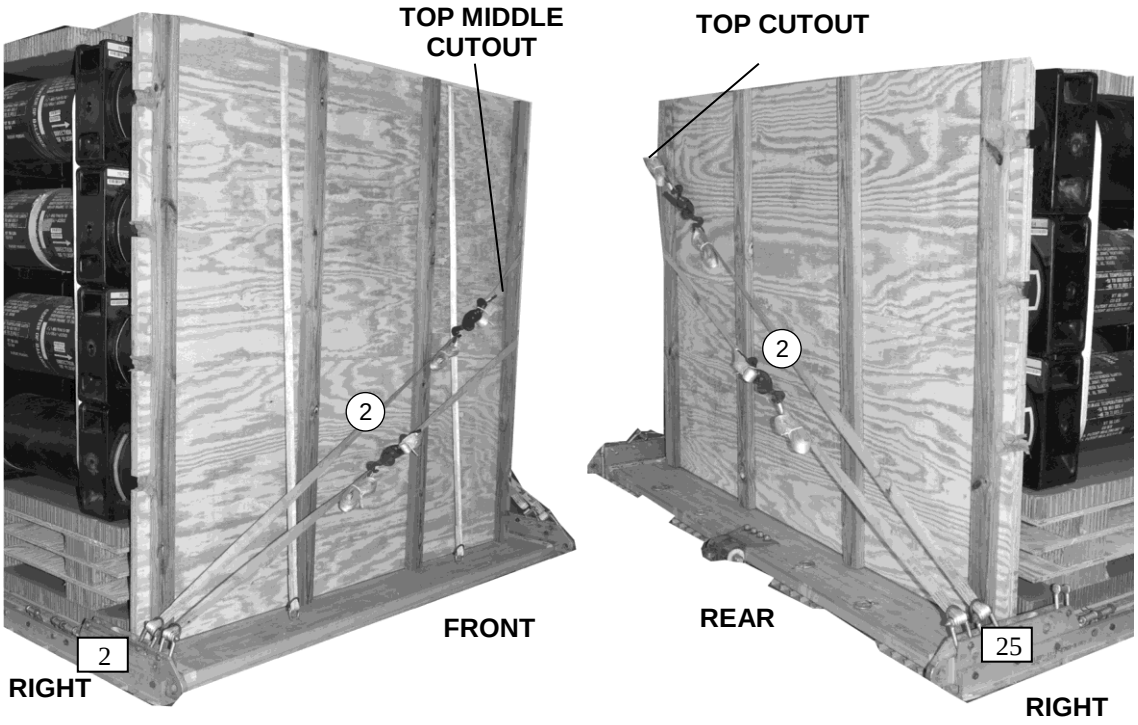
5-35. Lash the load to the platform as shown in Figure 5-29.

Note. Pad all cutouts with cellulose wadding where the lashings make contact.



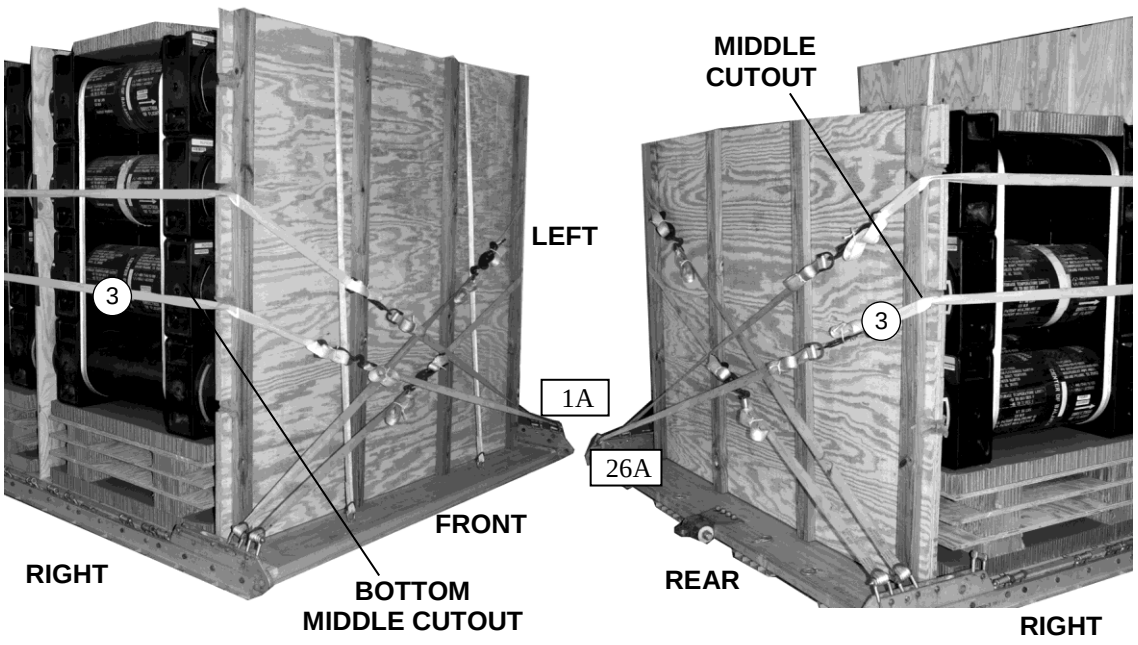
Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	1 and 26	Route a 15-foot lashing through clevis 1 and through its own D-ring. Route a 15-foot lashing through clevis 26 and through its own D-ring. Form a 30-foot lashing on the left side of the platform. Run the free end to the bottom middle cutout of the front endboard and the other free end to the left middle cutout of the rear endboard. Secure the free ends to the lashings from 1 and 26. Position the load binder in the center of the endboards temporarily until lashing 19 when the load binder will be repositioned.

Figure 5-29. Load Lashed to Platform



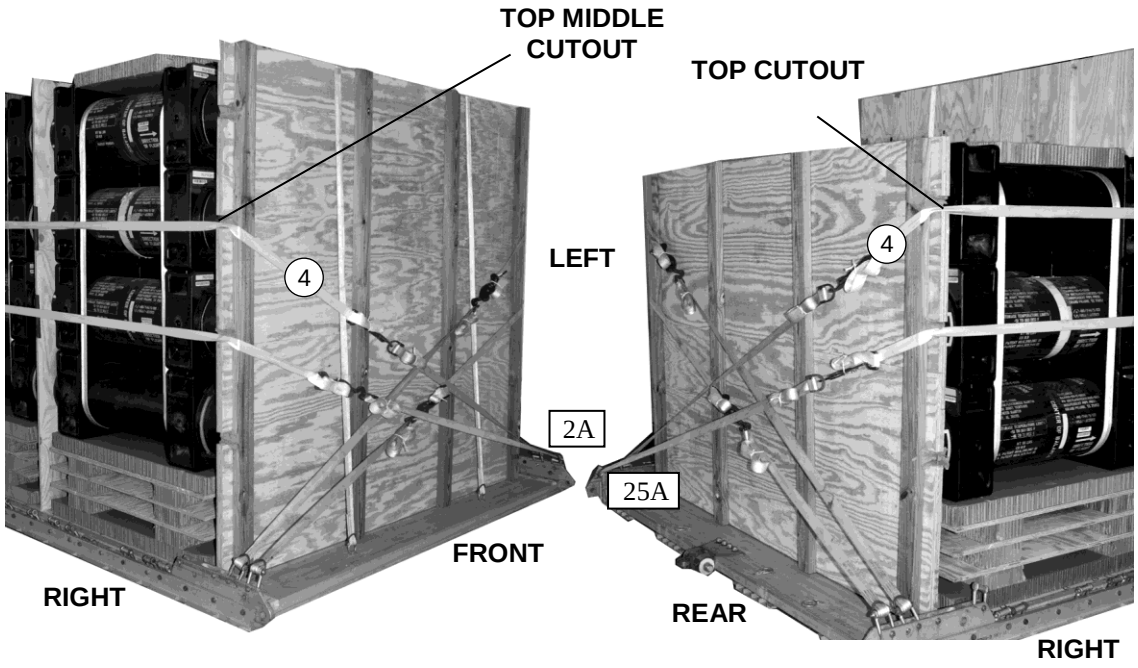
Lashing Number	*Tiedown Clevis Number*	*Instructions*
2	2 and 25	Route a 15-foot lashing through clevis 2 and through its own D-ring. Route a 15-foot lashing through clevis 25 and through its own D-ring. Form a 30-foot lashing on the left side of the platform. Run the free end to the top middle cutout of the front endboard and the other free end to the left top cutout of the rear endboard. Secure the free ends to the lashings from 2 and 25. Position the load binders to the upper left side of the endboards.

Figure 5-29. Load Lashed to Platform (Continued)



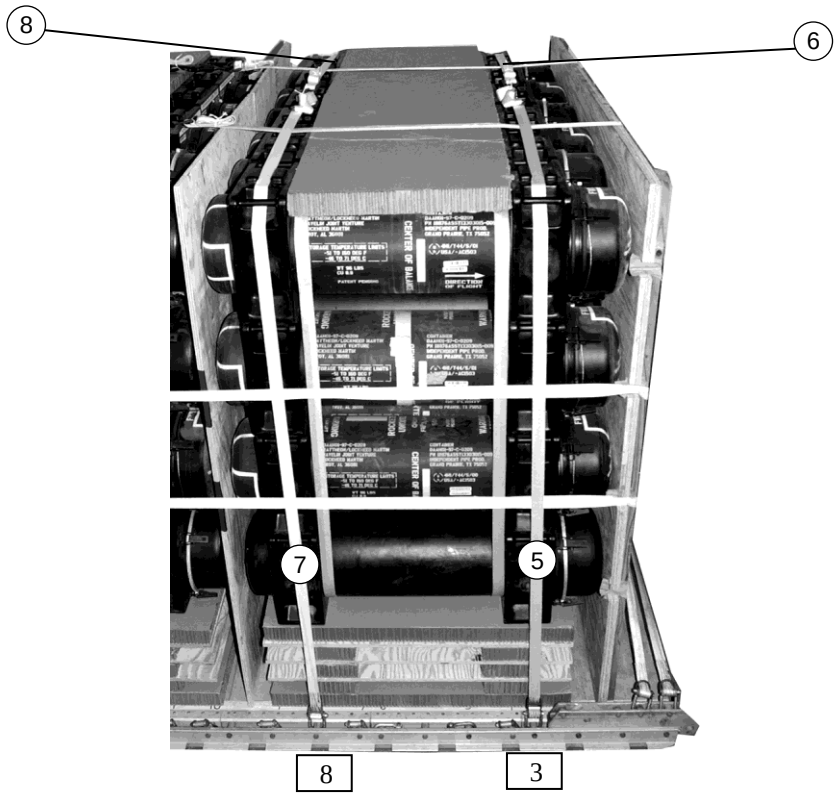
Lashing Number	*Tiedown Clevis Number*	*Instructions*
3	1A and 26A	Route a 15-foot lashing through clevis 1A and through its own D-ring. Route a 15-foot lashing through clevis 26A and through its own D-ring. Form a 30-foot lashing on the right side of the platform. Run the free end to the bottom middle cutout of the front endboard and the other free end to the right middle cutout of the rear endboard. Secure the free ends to the lashings from 1A and 26A. Position the load binders to the right side of the endboards.

Figure 5-29. Load Lashed to Platform (Continued)



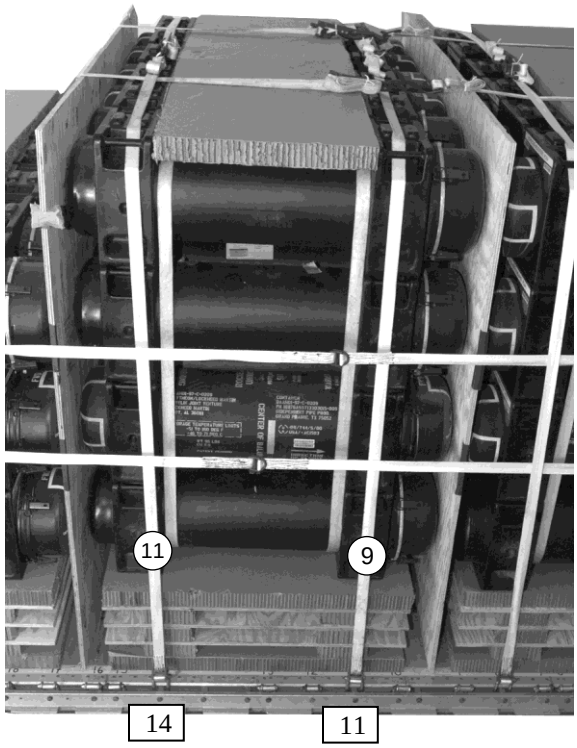
Lashing Number	*Tiedown Clevis Number*	*Instructions*
4	2A and 25A	Route a 15-foot lashing through clevis 2A and through its own D-ring. Route a 15-foot lashing through clevis 25A and through its own D-ring. Form a 30-foot lashing on the right side of the platform. Run the free end to the top middle cutout of the front endboard and the other free end to the right top cutout of the rear endboard. Secure the free ends to the lashings from 2A and 25A. Position the load binders to the right side of the endboards.

Figure 5-29. Load Lashed to Platform (Continued)



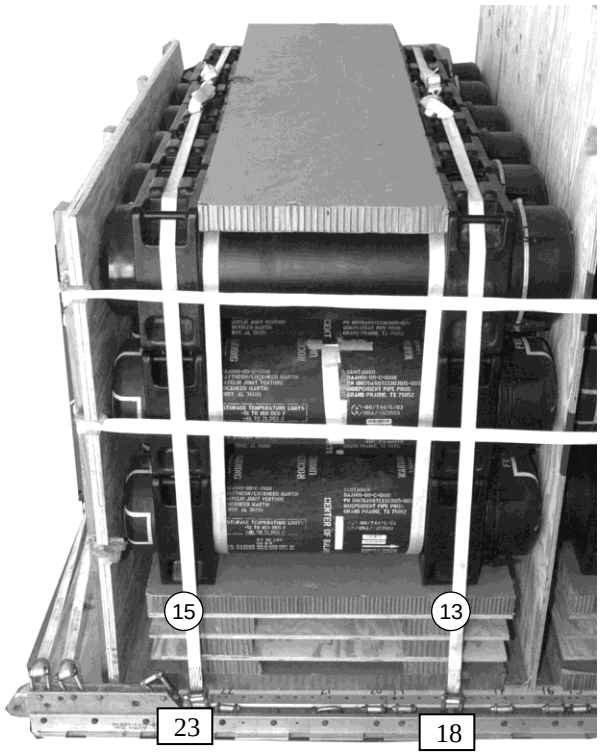
Lashing Number	*Tiedown Clevis Number*	*Instructions*
5	3	Route a 15-foot lashing through clevis 3 and through its own D-ring. Route the lashing upward through the top right front outside carrying handles of stack 1.
6	3A	Route a 15-foot lashing through clevis 3A and through its own D-ring. Route the lashing upward through the top left front outside carrying handles of stack 1. Secure the lashing to lashing 5 on the top front center of stack 1 with two D-rings and a load binder.
7	8	Route a 15-foot lashing through clevis 8 and through its own D-ring. Route the lashing upward through the top right rear outside carrying handles of stack 1.
8	8A	Route a 15-foot lashing through clevis 8A and through its own D-ring. Route the lashing upward through the top left rear outside carrying handles of stack 1. Secure the lashing to lashing 7 on the top rear center of stack 1 with two D-rings and a load binder.

Figure 5-29. Load Lashed to Platform (Continued)



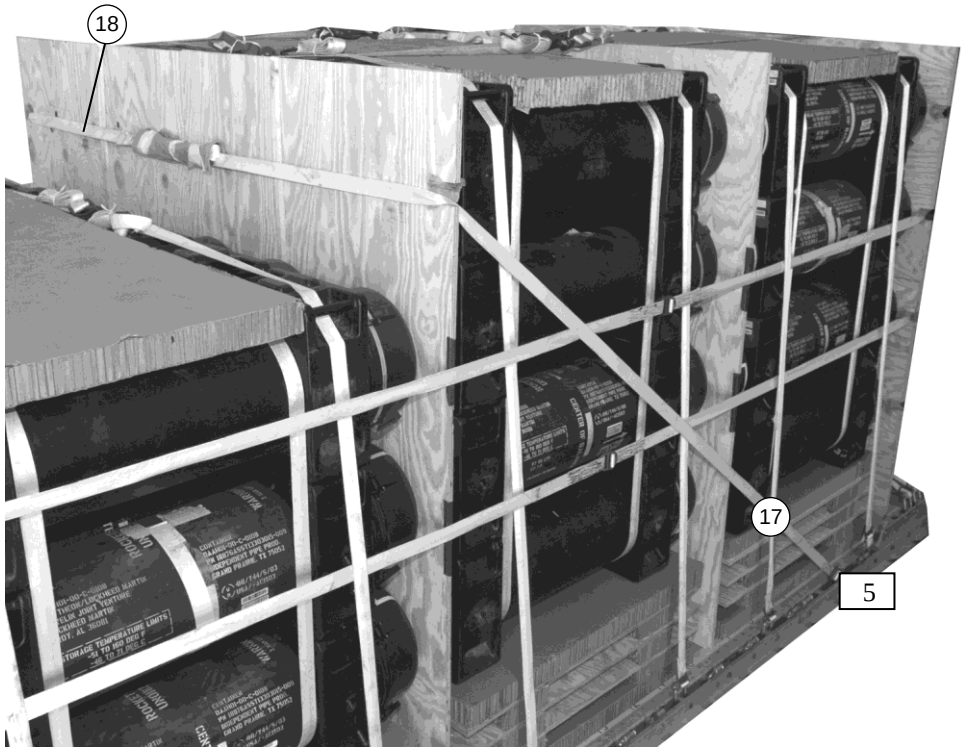
Lashing Number	*Tiedown Clevis Number*	*Instructions*
9	11	Route a 15-foot lashing through clevis 11 and through its own D-ring. Route the lashing upward through the top right front outside carrying handles of stack 2.
10	11A	Route a 15-foot lashing through clevis 11A and through its own D-ring. Route the lashing upward through the top left front outside carrying handles of stack 2. Secure the lashing to lashing 9 on the top front center of stack 2 with two D-rings and a load binder.
11	14	Route a 15-foot lashing through clevis 14 and through its own D-ring. Route the lashing upward through the top right rear outside carrying handles of stack 2.
12	14A	Route a 15-foot lashing through clevis 14A and through its own D-ring. Route the lashing upward through the top left rear outside carrying handles of stack 2. Secure the lashing to lashing 11 on the top rear center of stack 2 with two D-rings and a load binder.

Figure 5-29. Load Lashed to Platform (Continued)



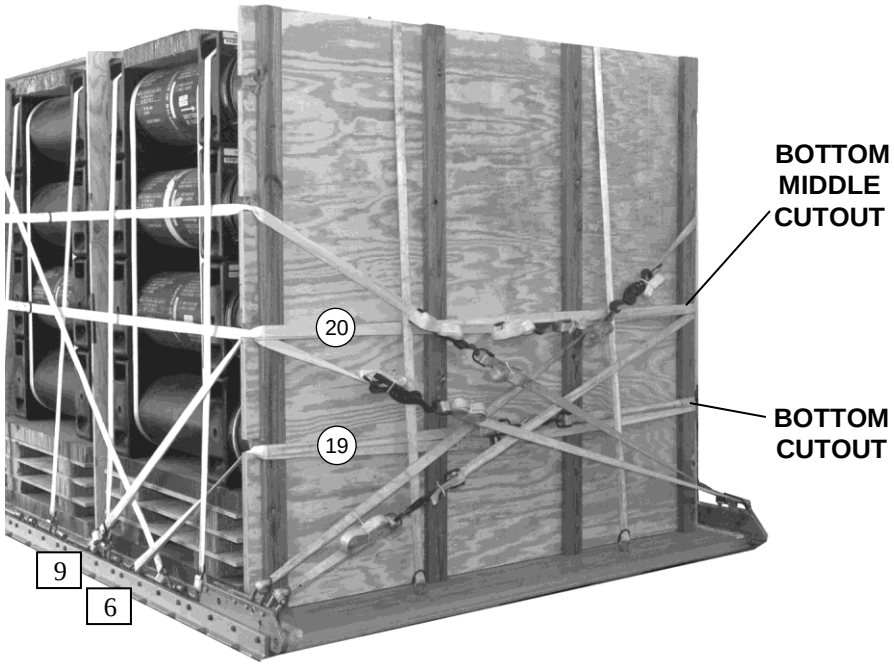
Lashing Number	*Tiedown Clevis Number*	*Instructions*
13	18	Route a 15-foot lashing through clevis 18 and through its own D-ring. Route the lashing upward through the top right front outside carrying handles of stack 3.
14	18A	Route a 15-foot lashing through clevis 18A and through its own D-ring. Route the lashing upward through the top left front outside carrying handles of stack32. Secure the lashing to lashing 13 on the top front center of stack 3 with two D-rings and a load binder.
15	23	Route a 15-foot lashing through clevis 23 and through its own D-ring. Route the lashing upward through the top right rear outside carrying handles of stack 3.
16	23A	Route a 15-foot lashing through clevis 23A and through its own D-ring. Route the lashing upward through the top left rear outside carrying handles of stack 2. Secure the lashing to lashing 15 on the top rear center of stack 3 with two D-rings and a load binder.

Figure 5-29. Load Lashed to Platform (Continued)



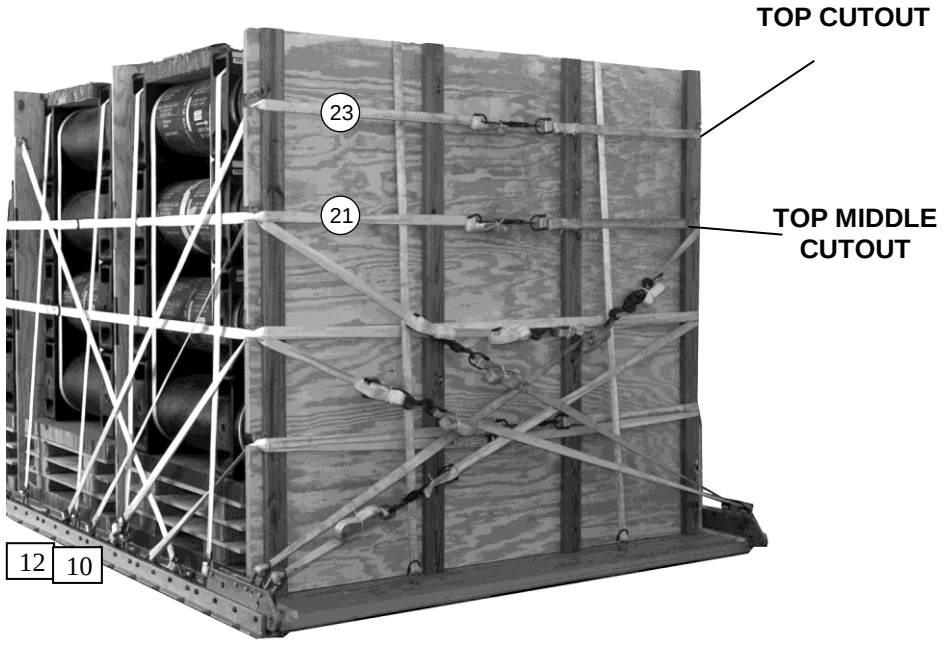
Lashing Number	*Tiedown Clevis Number*	*Instructions*
17	5	Route a 15-foot lashing through clevis 5 and through its own D-ring. Route the lashing through the cutout on the right side of the endboard to the rear of stack 2.
18	5A	Route a 15-foot lashing through clevis 5A and through its own D-ring. Route the lashing through the cutout on the left side of the endboard to the rear of stack 2. Secure the lashing to lashing 17 in the center of the endboard behind stack 2 with two D-rings and a load binder. Pad the load binder with cellulose wadding and tape.

Figure 5-29. Load Lashed to Platform (Continued)



Lashing Number	*Tiedown Clevis Number*	*Instructions*
19	6 and 6A	Form a 30-foot lashing. Route a free end through clevis 6, through the right bottom cutout of the front endboard, across the front of the endboard, through the left bottom cutout of the front endboard, through clevis 6A, back to the left bottom cutout of the front endboard. Secure the free ends of the lashing with two D-rings and a load binder in the center of the front endboard. **Reposition load binders on lashing 1 from the front side of the load to the lower right side and from the rear side of the load to the upper left side.**
20	9 and 9A	Form a 45-foot lashing. Route a free end through clevis 9, through the bottom middle cutout of the front endboard, across the front of the endboard, through the left bottom middle cutout of the front endboard, through clevis 9A, back through the bottom middle cutout of the front end board. Secure the free ends of the lashing with two D-rings and a load binder to the center of the front endboard.

Figure 5-29. Load Lashed to Platform (Continued)



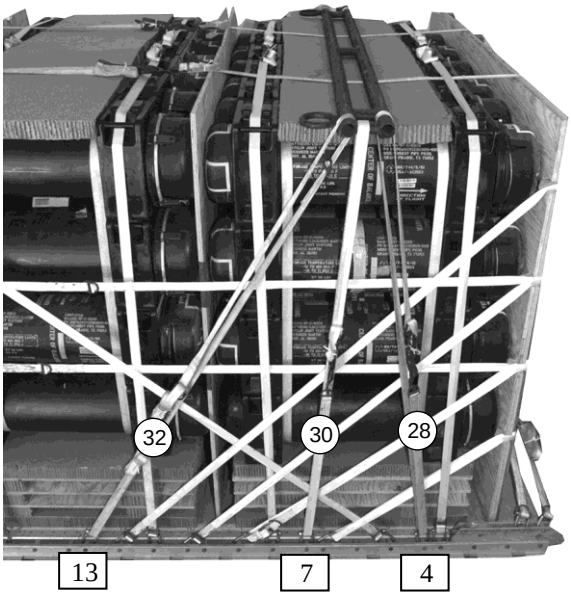
Lashing Number	*Tiedown Clevis Number*	*Instructions*
21	10	Route a 15-foot lashing through clevis 10 and through its own D-ring. Route the lashing upward through the right top middle cutout of the front endboard.
22	10A	Route a 15-foot lashing through clevis 10A and through its own D-ring. Route the lashing to the left top middle cutout of the front endboard. Secure the lashing to lashing 21 in the center of the front endboard with two D-rings and a load binder.
23	12	Route a 15-foot lashing through clevis 12 and through its own D-ring. Route the lashing upward through the right top cutout of the front endboard.
24	12A	Route a 15-foot lashing through clevis 12A and through its own D-ring. Route the lashing to the left top cutout of the front endboard. Secure the lashing to lashing 23 in the center of the front endboard with two D-rings and a load binder.

Figure 5-29. Load Lashed to Platform (Continued)



Lashing Number	*Tiedown Clevis Number*	*Instructions*
25	16 and 16A	Form a 45-foot lashing. Route a free end through clevis 16, through the right top cutout of the rear endboard, across the rear of the endboard, through the left top cutout of the rear endboard , through clevis 16A, back to the left top cutout of the rear endboard. Secure the free ends of the lashing with two D-rings and a load binder in the center of the rear endboard.
26	17 and 17A	Form a 45-foot lashing. Route a free end through clevis 17, through the right middle cutout of the rear endboard, across the rear of the endboard, through the left middle cutout of the rear endboard, through clevis 17A, back to the left middle cutout of the rear endboard. Secure the free ends of the lashing with two D-rings and a load binder in the center of the rear endboard.
27	20 and 20A	Form a 45-foot lashing. Route a free end through clevis 20, through the right bottom cutout of the rear endboard, across the rear of the endboard, through the left bottom cutout of the rear endboard, through clevis 20A, back to the left bottom cutout of the rear endboard. Secure the free ends of the lashing with two D-rings and a load binder in the center of the rear endboard.

Figure 5-29. Load Lashed to Platform (Continued)

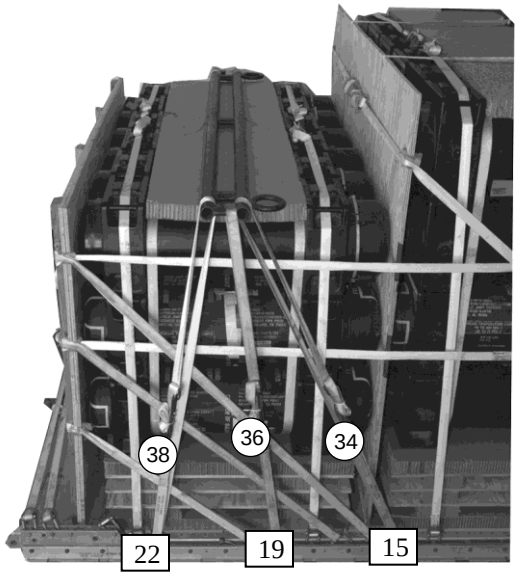


Step:

1. Position the Attitude control bar (ACB) on top of the honeycomb on stack 1 with the rings of the ACB facing toward the rear of the load.

Lashing Number	*Tiedown Clevis Number*	*Instructions*
28	4	Route a 15-foot lashing through clevis 4, upward through the front bar of the front ACB, and back to clevis 4. Attach a D-ring and a load binder. DO NOT TIGHTEN at this time.
29	4A	Route a 15-foot lashing through clevis 4A, upward through the front bar of the front ACB, and back to clevis 4A. Attach a D-ring and a load binder. DO NOT TIGHTEN at this time.
30	7	Route a 15-foot lashing through clevis 7, upward through the middle portion of the front ACB, and back to clevis 7. Attach a D-ring and a load binder. DO NOT TIGHTEN at this time.
31	7A	Route a 15-foot lashing through clevis 7A, upward through the middle portion of the front ACB, and back to clevis 7A. Attach a D-ring and a load binder. DO NOT TIGHTEN at this time.
32	13	Form a 30-foot lashing. Route a 30-foot lashing through clevis 13, upward through the rear bar of the front ACB, and back to clevis 13. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
33	13A	Form a 30-foot lashing. Route a 30-foot lashing through clevis 13A, upward through the rear bar of the front ACB, and back to clevis 13A. Attach a D-ring and load binder. TIGHTEN all lashings at this time.

Figure 5-29. Load Lashed to Platform (Continued)



Step:

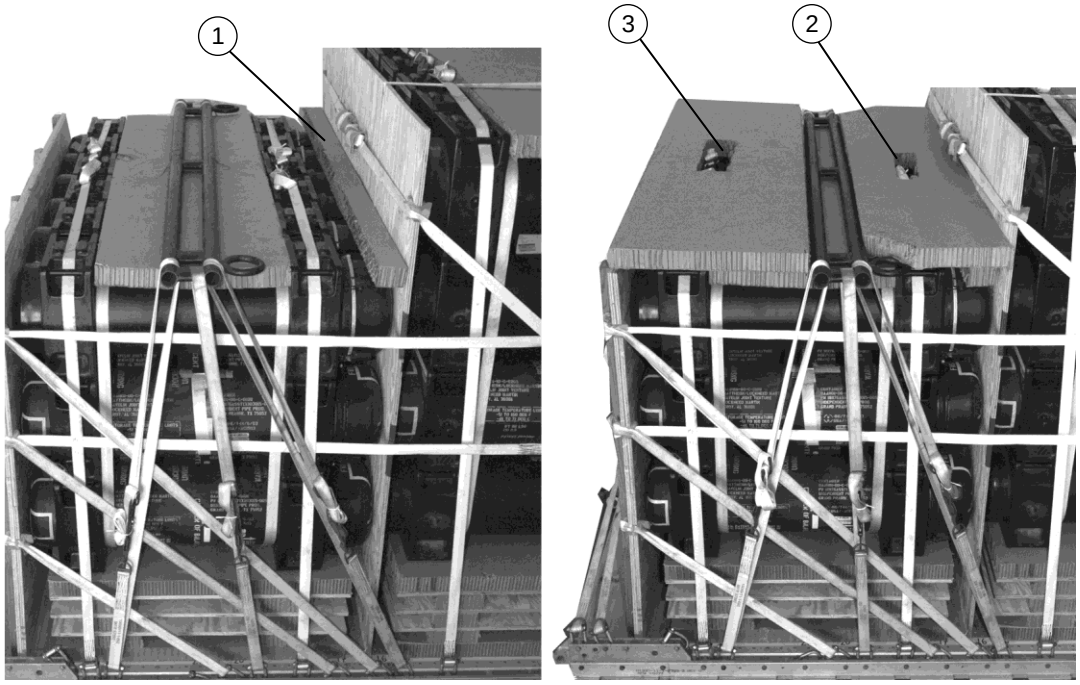
2. Position the Attitude control bar (ACB) centered on top of the honeycomb on stack 3 with the rings of the ACB facing toward the front of the load.

Lashing Number	*Tiedown Clevis Number*	*Instructions*
34	15	Route a 15-foot lashing through clevis 15, upward through the front bar of the rear ACB, and back to clevis 15. Attach a D-ring and a load binder. DO NOT TIGHTEN at this time.
35	15A	Route a 15-foot lashing through clevis 15A, upward through the front bar of the rear ACB, and back to clevis 15A. Attach a D-ring and a load binder. DO NOT TIGHTEN at this time.
36	19	Route a 15-foot lashing through clevis 19, upward through the middle portion of the rear ACB, and back to clevis 19. Attach a D-ring and a load binder. DO NOT TIGHTEN at this time.
37	19A	Route a 15-foot lashing through clevis 19A, upward through the middle portion of the rear ACB, and back to clevis 19A. Attach a D-ring and a load binder. DO NOT TIGHTEN at this time.
38	22	Route a 15-foot lashing through clevis 22, upward through the rear bar of the rear ACB, and back to clevis 22. Attach a D-ring and load binder. DO NOT TIGHTEN at this time.
39	22A	Route a 15-foot lashing through clevis 22A, upward through the rear bar of the rear ACB, and back to clevis 22A. Attach a D-ring and load binder. TIGHTEN all lashings at this time.

Figure 5-29. Load Lashed to Platform (Continued)

BUILDING AND LASHING PARACHUTE PLATFORM TO LOAD

5-36. Build and lash the parachute platform to the load as shown in Figure 5-30.

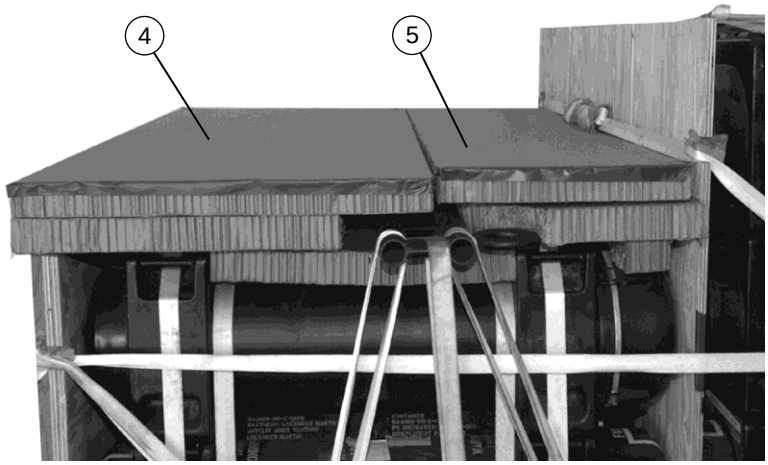


① Cut a 4- by 96-inch piece of honeycomb. Position it flush against the rear of the endboard behind stack 2.

② Cut a 20- by 96-inch piece of honeycomb. Position the piece flush against the rear endboard of stack 2. Cut away the outside edges of the honeycomb to expose the rings of the Attitude control bar (ACB). Make a cutout for the lashing underneath the honeycomb.

③ Cut a 28- by 96-inch piece of honeycomb. Position the piece flush with the rear of the ACB. Make a cutout for the lashing underneath the honeycomb.

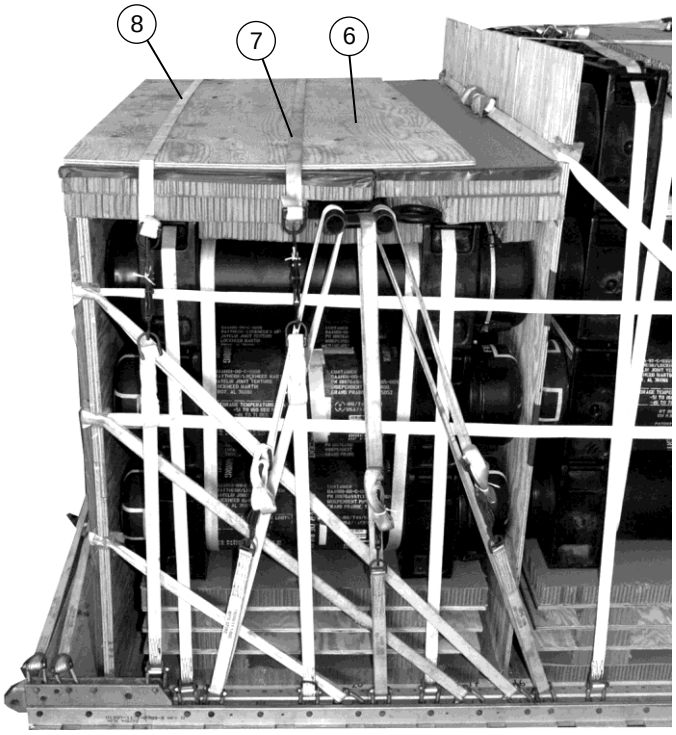
Figure 5-30. Parachute Platform Built and Lashed to Load



④ Cut a 22- by 96-inch piece of honeycomb. Tape the outside edge with 2-inch adhesive tape. Position it flush against the rear endboard of stack 2.

⑤ Place a 36- by 96-inch piece of honeycomb flush against the 22- by 96-inch piece of honeycomb after taping the outside edge with 2-inch adhesive tape.

Figure 5-30. Parachute Platform Built and Lashed to Load (Continued)



⑥ Position a 3/4- by 48- by 96-inch piece of plywood on top of the honeycomb installed. Make sure that the rear edge of the plywood is flush with the rear edge of the rear endboard.

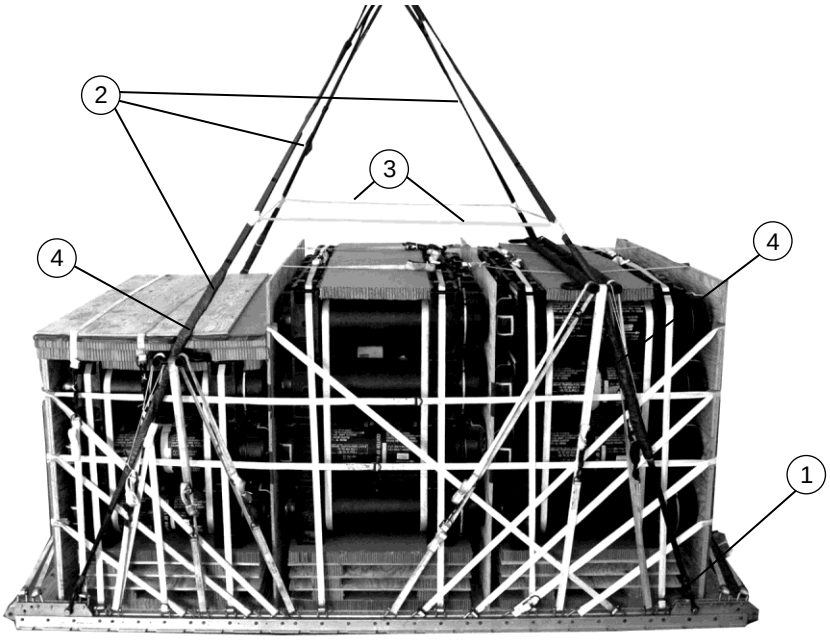
⑦ Route a 15-foot lashing through clevis 21A and through its own D-ring. Continue to route the lashing over the top of the 48- by 96-inch piece of plywood to the right side of the platform. Route a 15-foot lashing through clevis 21 and through its own D-ring. Attach the lashing from clevis 21 and 21A together on the right side of the load with two D-rings and a load binder.

⑧ Route a 15-foot lashing through clevis 24A and through its own D-ring. Continue to route the lashing over the top of the 48- by 96-inch piece of plywood to the right side of the platform. Route a 15-foot lashing through clevis 24 and through its own D-ring. Attach the lashing from clevis 24 and 24A together on the right side of the load with two D-rings and a load binder.

Figure 5-30. Parachute Platform Built and Lashed to Load (Continued)

INSTALLING SUSPENSION SLINGS AND DEADMAN'S TIE

5-37. Install the suspension slings and deadman's tie as shown in Figure 5-31.



① Pass one end of a 16-foot (2-loop), type XXVI nylon suspension sling through the bell portion of a large suspension clevis. Bolt the clevis to the suspension hole of the right front tandem link.

② Install on the left front tandem link and the right rear and left rear tandem links a 16-foot (2-loop), type XXVI nylon suspension sling as in step 1.

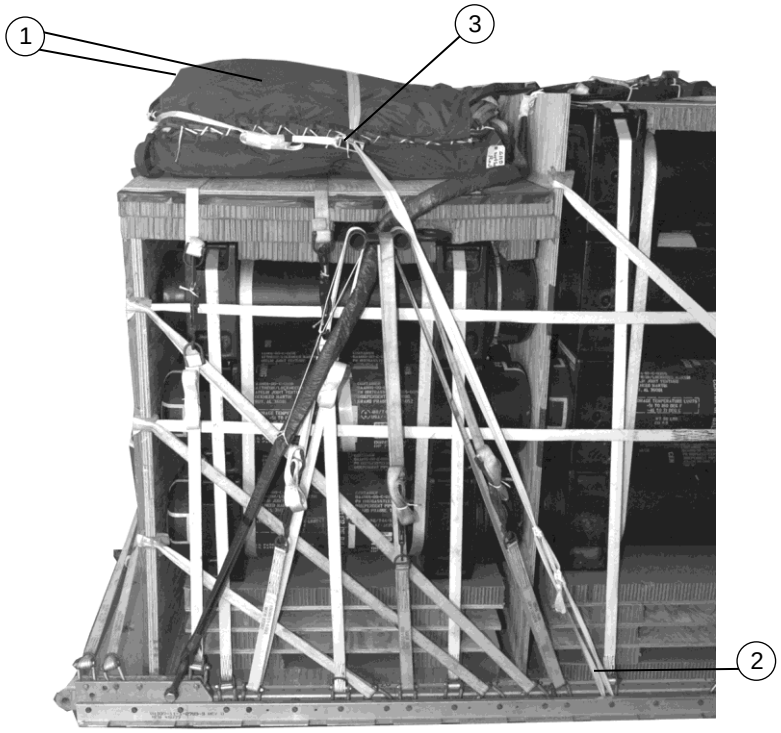
③ Raise the slings and install the deadman's tie according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

④ 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 cloth back adhesive tape.

Figure 5-31. Suspension Slings and Deadman's Tie Installed

PREPARING AND STOWING CARGO PARACHUTES

5-38. Prepare and stow the cargo parachutes as shown in Figure 5-32.



① Prepare, position, and stow two G-11 cargo parachutes on top of the parachute platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

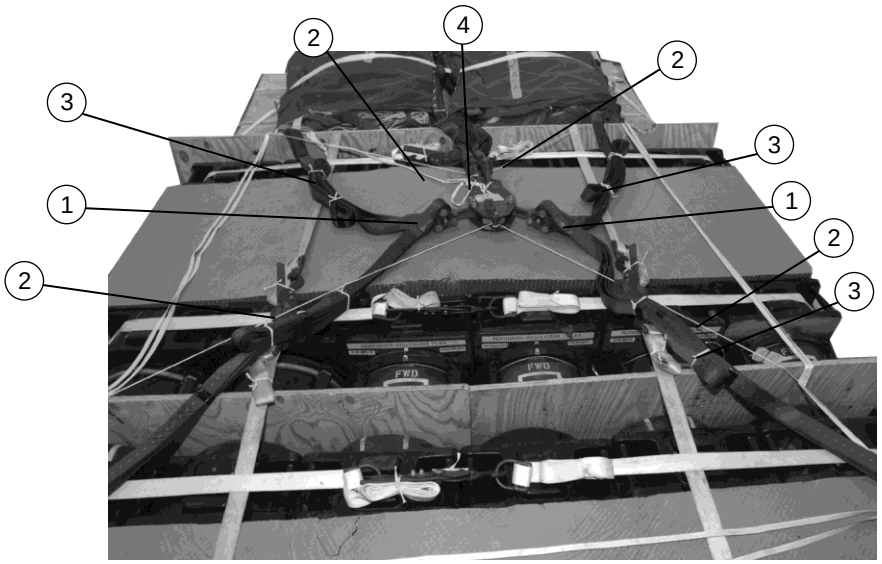
② Install the restraint using type VIII nylon webbing on bushings 23 and 23A according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

③ Install the guillotine knife multi-cut parachute release straps according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 5-32. Cargo Parachutes Prepared and Stowed

INSTALLING THE RELEASE SYSTEM

5-39. Prepare, attach, and safety an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 5-33.



① Prepare and install the M-1 cargo parachute release on top of the honeycomb on stack 2. Attach the suspension slings and riser extensions according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

② Safety the top and bottom of the release to convenient places on the load with type III nylon cord according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

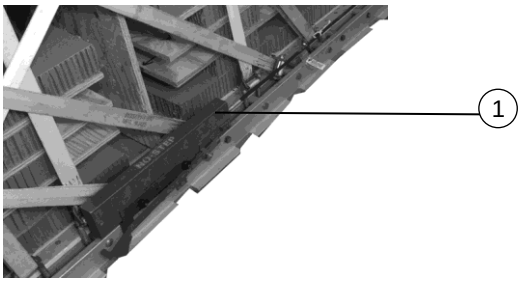
③ S-fold and tie any excess suspension slings with one turn of type I, 1/4-inch cotton webbing.

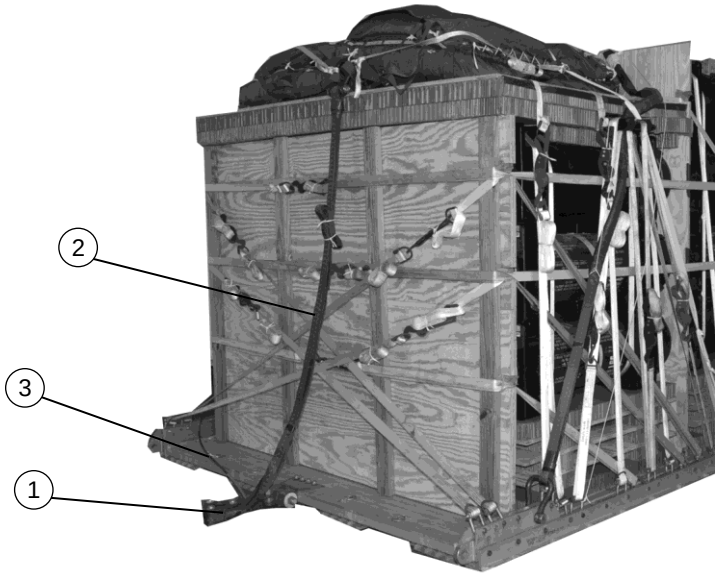
④ Tie the arming wire lanyard to the parachute carrying handles and fold and tape the excess.

Figure 5-33. Cargo Parachute Release Installed

INSTALLING THE EXTRACTION SYSTEM

5-40. Install the extraction system as shown in Figure 5-34.





① Install the components of the Extraction Force Transfer Coupling (EFTC) according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Use the rear mounting holes for the EFTC brackets.

② Attach a 9-foot (2-loop), type XXVI nylon sling to be used as a deployment line.

③ Use a 16-foot EFTC cable and safety the cable in several convenient places on the platform with one turn of type I, 1/4-inch cotton webbing.

Figure 5-34. Extraction System Installed

PLACING EXTRACTION PARACHUTE

5-41. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Place the extraction parachute and line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

5-42. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

MARKING RIGGED LOAD

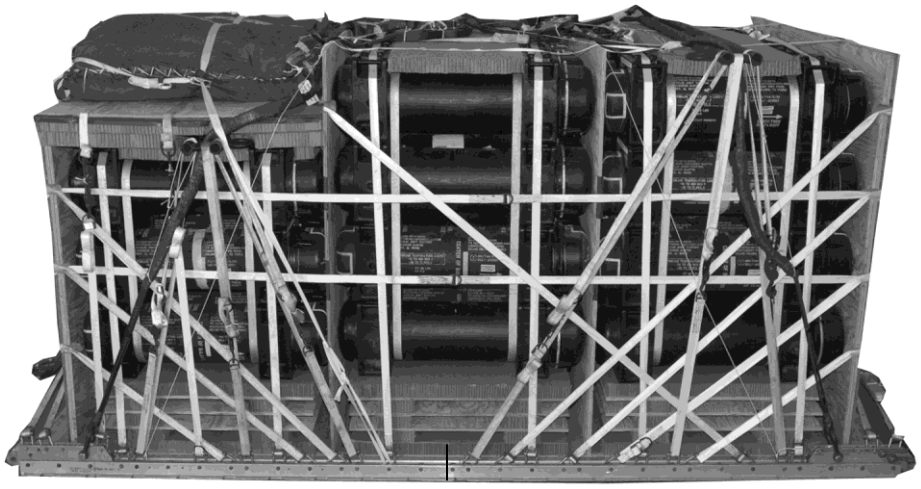
5-43. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 5-35. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

5-44. Use the equipment listed in Table 5-2 to rig this load.

CAUTION

Make the final rigger inspection required by AR 59-4 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

RIGGED LOAD DATA

Weight: Load shown ..... 10,380 pounds

Height ..... 94 inches

Width ..... 108 inches

Overall Length ..... 192 inches

Overhang: Front ..... 0 inches

Rear ..... 0 inches

Center of Balance (from front edge of the platform) ..... 94 inches

Extraction System with 16-foot cable (adds 18 inches to length of platform) ... Extraction Force Transfer Coupling (EFTC)

Figure 5-35. Javelin Missile Containers (Plastic) Rigged on a 16-Foot, Type V Platform for Low-Velocity Airdrop

Table 5-2. Equipment Required for Rigging Javelin Missile Containers on a 16-Foot, Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, paste, 1-gallon	As required
1670-00-003-4389	Bar, attitude control	2
	Clevis, suspension:	
4030-00-678-8562	3/4-inch (medium) emergency restraint	4
4030-00-090-5354	1-inch (large)	6
4020-00-240-2146	Cord, nylon, type III	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer with 16-foot cable	1
1670-00-360-0328	Cover, clevis, large	2
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
1670-01-183-2678	Leaf, extraction line	2
	Line, extraction, type XXVI nylon webbing:	
1670-01-062-6313	60-foot (3-loop)	1
	Or	
1670-01-107-7651	140-foot (3-loop)	2
1670-01-064-4452	60-foot (1-loop), type XXVI for C-17 drogue line	1
	Link assembly, two-point:	
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	1
5310-00-232-5165	Nut, 1-inch, hexagonal	1
1670-00-003-3454	Plate, side 3 3/4-inch	1
5365-00-007-3414	Spacer, large	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb	10 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	2
1670-01-063-3716	Cargo, extraction, 22-foot	1
	Platform, airdrop, type V, 16-foot	
1670-01-353-8425	Bracket assembly, Extraction Force Transfer Coupling (EFTC)	1
1670-01-162-2372	Bracket assembly, extraction	1
1670-01-162-2376	Clevis assembly	34
1670-01-162-2381	Tandem link	4
5530-00-128-4981	Plywood, 3/4-inch	10 sheets
1670-01-097-8816	Release, cargo parachute, M-1	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 5-2. Equipment Required for Rigging Javelin Missile Containers on a 16-Foot, Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, cargo airdrop:	
	For deployment line:	
1670-01-063-7761	16-foot (3-loop), type XXVI nylon webbing	1
1670-01-062-6304	For lifting:	
1670-01-063-7760	9-foot (2-loop), type XXVI nylon webbing	2
	11-foot (2-loop), type XXVI nylon webbing	2
1670-01-062-6302	For riser extension:	
	20-foot (2-loop), type XXVI nylon webbing	2
1670-01-063-7761	For suspension:	
1670-00-040-8219	16-foot (2-loop), type XXVI nylon webbing	4
7515-00-266-5016	Strap parachute release, multicut	2
1670-00-937-0271	Tape, adhesive, 2-inch	As required
7501-00-266-6710	Tape, masking	As required
	Tie-down assembly, 15-foot	34
8305-00-268-2411	Webbing:	
	Cotton, 1/4-inch, type I	As required
8305-00-082-5752	Nylon:	
8305-00-263-3591	Tubular, 1/2-inch	As required
	Type VIII webbing	As required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Chapter 6

Rigging TOW Weapon Systems and Missiles in A-22 Cargo Bags

SECTION I-RIGGING TOW WEAPON SYSTEM AND MISSILES IN AN A-22 CARGO BAG FOR LOW-VELOCITY AIRDROP

DESCRIPTION OF LOAD

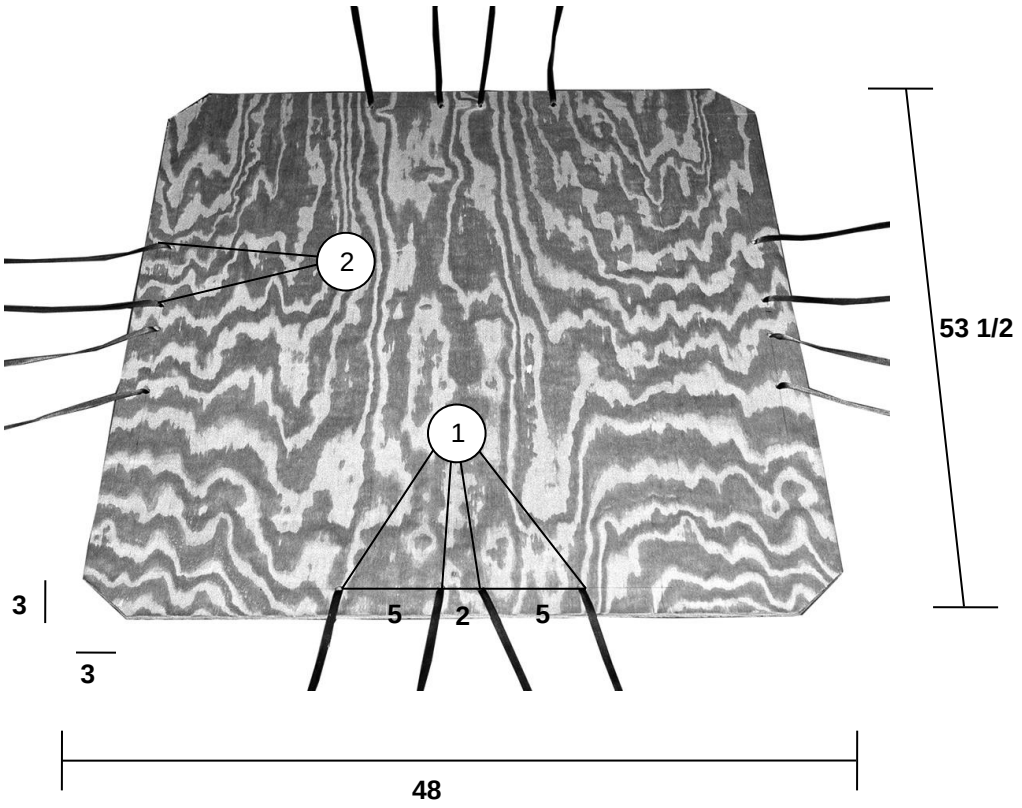
6-1. The TOW weapon system consists of the launcher, launch tube, and power pack. It can be rigged with eight missiles in an A-22 cargo bag for low-velocity airdrop. The load requires one G-12E or three G-14 cargo parachutes.

RIGGING A-22 CARGO

6-2. Rig the TOW weapon system and eight missiles in the A-22 cargo bag as described below.

- Prepare the skid board as shown in Figures 6-1 and 6-2.
- Lay out the A-22 cargo bag as shown in Figure 6-3.
- Pack the TOW weapon system and missiles as shown in Figures 6-4 through 6-7.

Note. All dimensions are in inches.



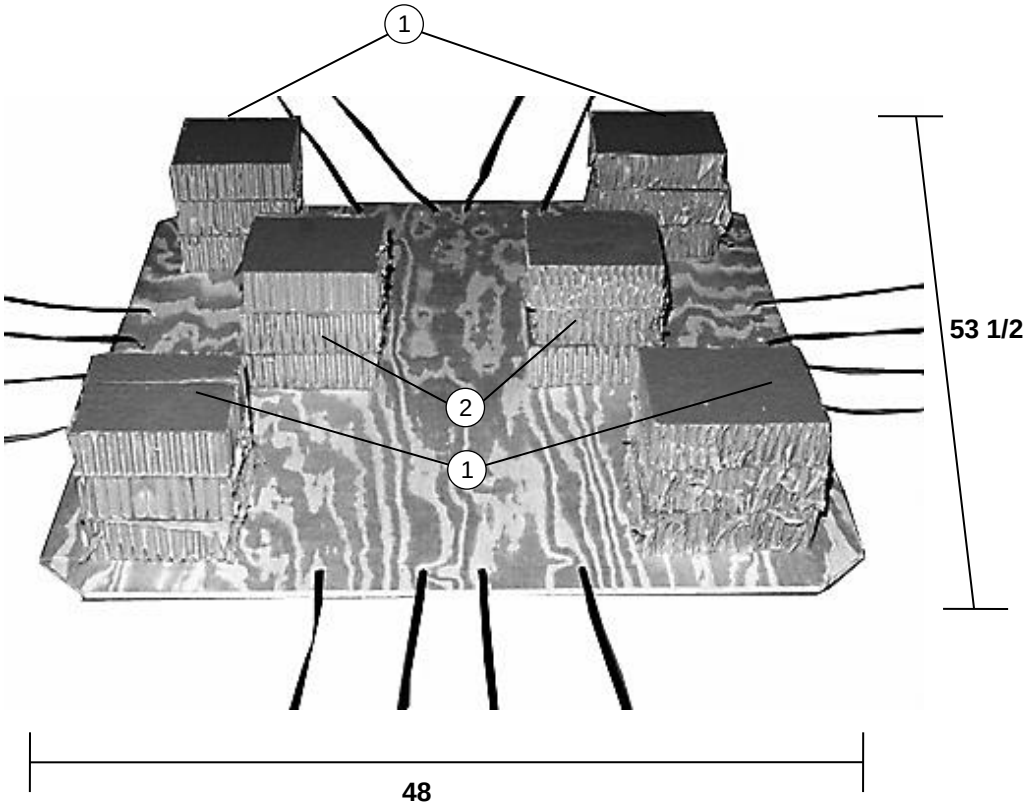
① Center and drill four ½-inch holes two inches on center from each edge of the skid board as shown. Cut the corners of the skid board as shown in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Note. The distances between holes are measured on center.

① Install an 8-foot length on ½-inch tubular nylon webbing through each pair of holes.

Figure 6-1. Skid Prepared

Note. All dimensions are in inches.

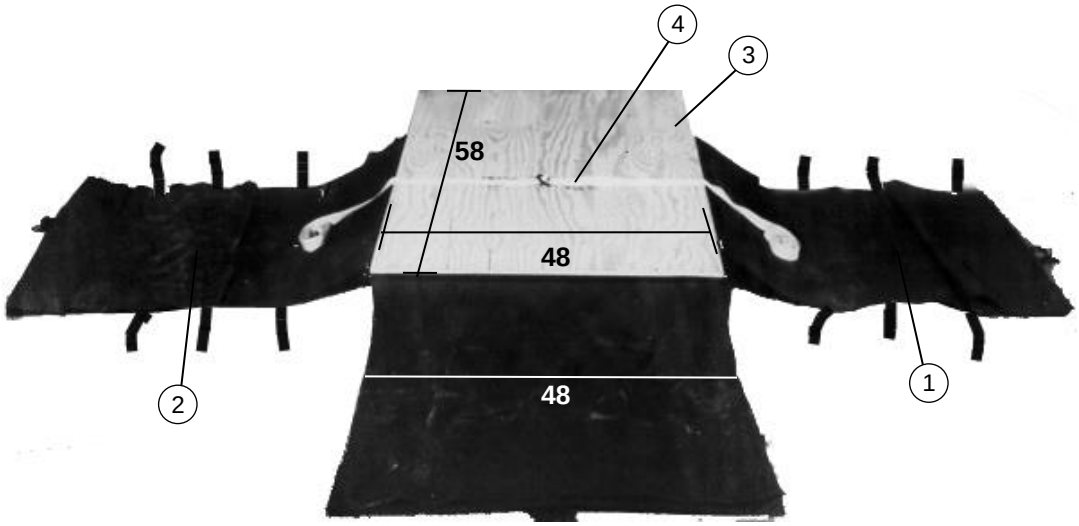


① Make six three-layer stacks of honeycomb from eighteen 9- by 9-inch pieces. Glue the layers together. Place a stack of honeycomb at each corner of the plywood 3 inches from each edge.

② Center the two remaining stacks of honeycomb on the plywood 10 inches from each long edge.

Figure 6-2. Honeycomb Positioned on the Skid

Note. All dimensions are in inches.



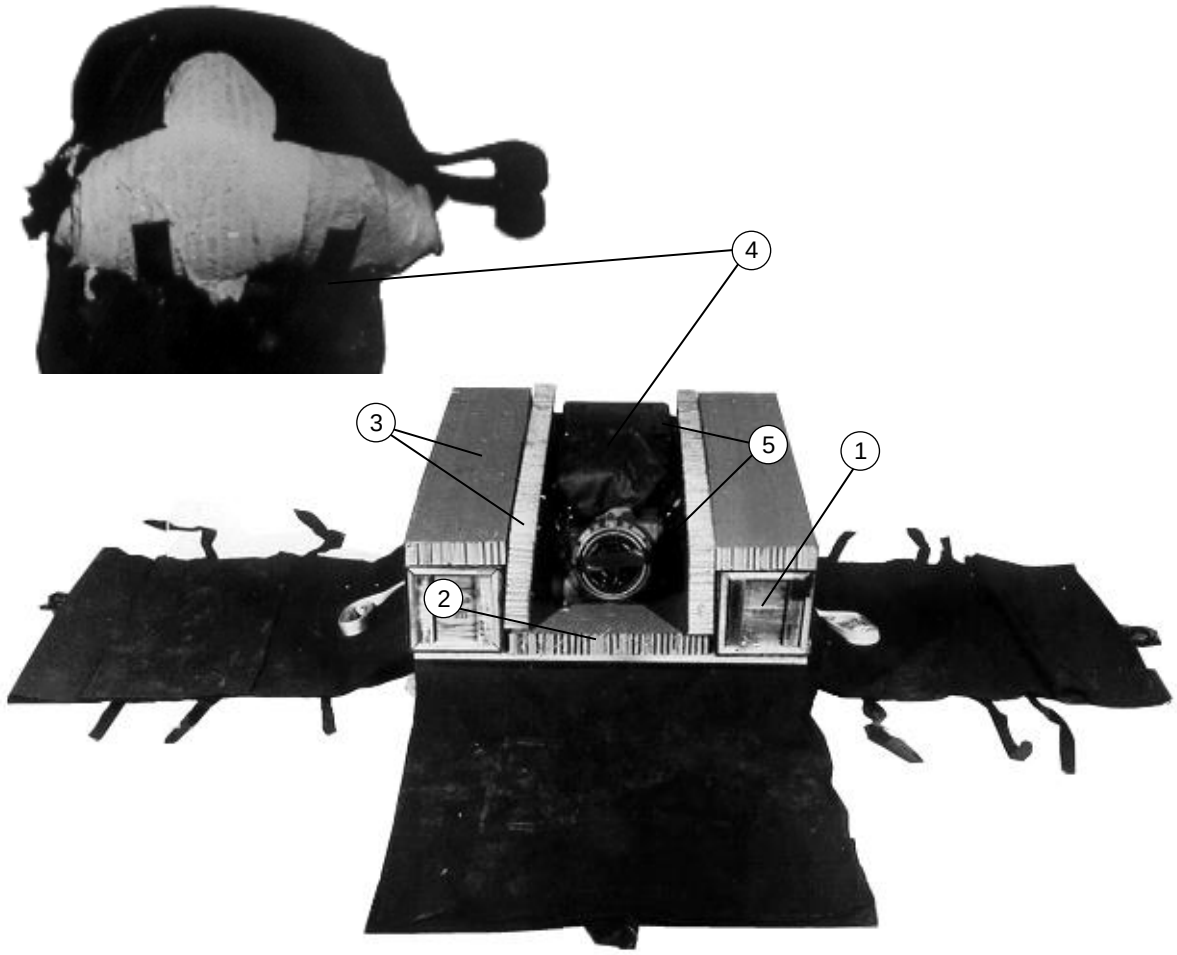
① Lay the A-22 sling assembly on the honeycomb stacks.

② Center the A-22 cover, outside down, on the sling assembly, with the long panel over the long tiedown strap.

③ Center a 3/4- by 48- by 58-inch piece of plywood on the A-22 cover.

④ Make a 30-foot lashing according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, and lay it across the plywood.

Figure 6-3. A-22 Cargo Bag Prepared for the TOW Missile System



① Set two boxed missiles on the plywood, one even with each 58-inch edge.

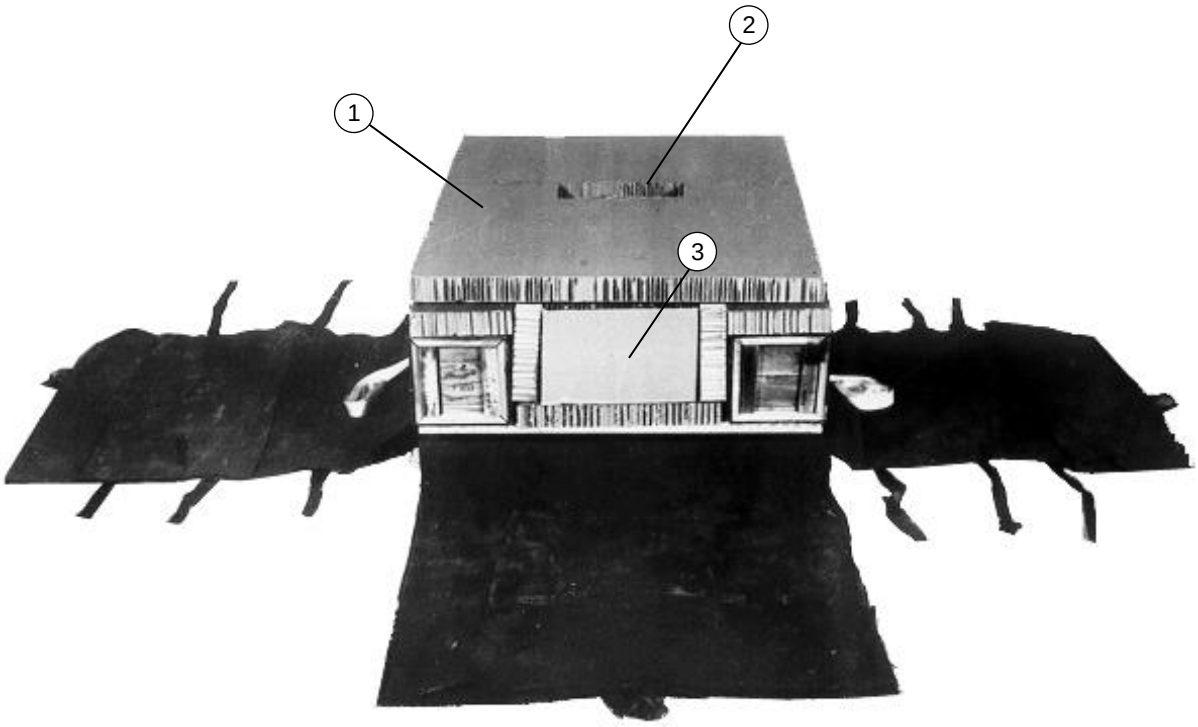
② Lay a 24- by 58-inch piece of honeycomb between the missiles.

③ Place a 12- by 58-inch piece of honeycomb on each boxed missile and one against the inside of each box.

④ Wrap in sight in cellulose wadding and place it in its case, if available (inset above). Lay it on the honeycomb between the missiles.

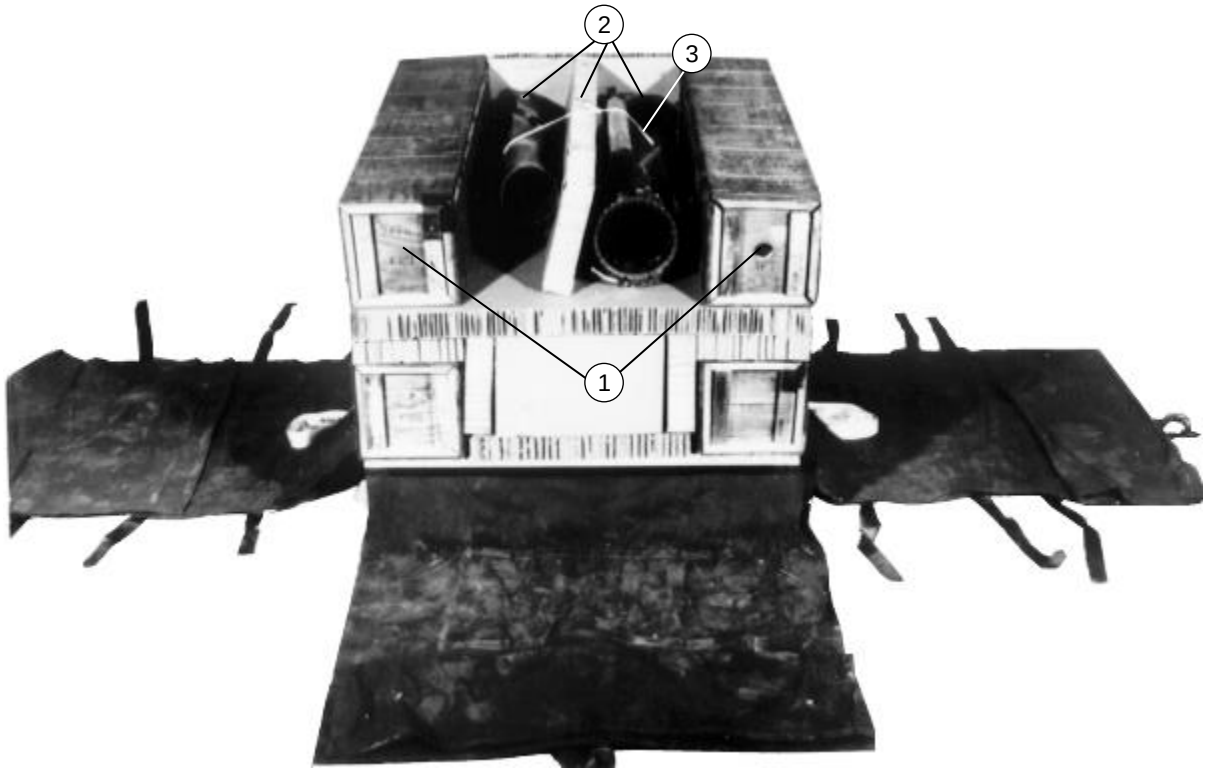
⑤ Set the power pack and sight traversing unit on the honeycomb with the sight.

Figure 6-4. Missiles, Sight Traversing Unit, Sight, and Power Pack Stored



① Place a 48- by 58-inch layer of honeycomb on top of the load.
② Make a 6- by 18-inch cutout in the honeycomb to keep the honeycomb from touching the sight.
③ Place a piece of honeycomb, cut to fit, at each end of the equipment.

Figure 6-5. Honeycomb Placed on Top of the Load

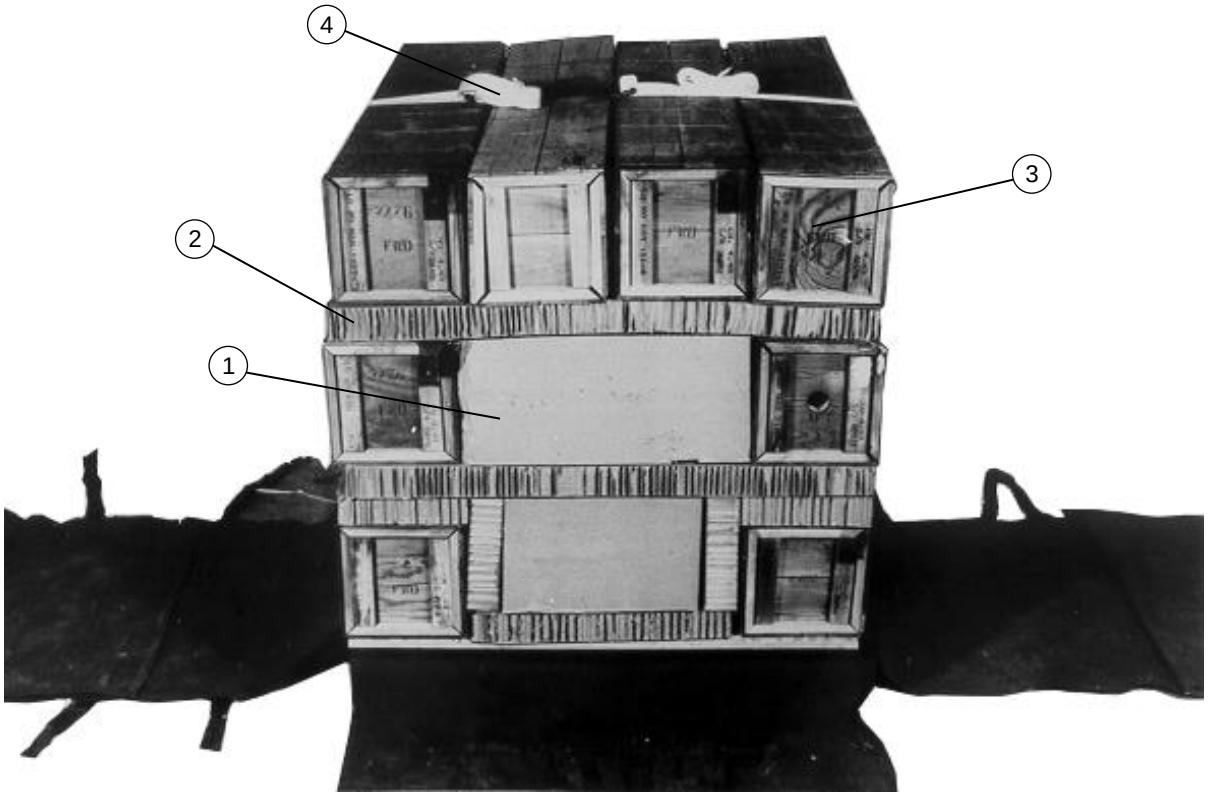


① Set the two boxed missiles on the honeycomb even with each 58-inch edge.

② Lay the tripod and launch tube between the missiles. Place a 12- by 52-inch piece of honeycomb between them.

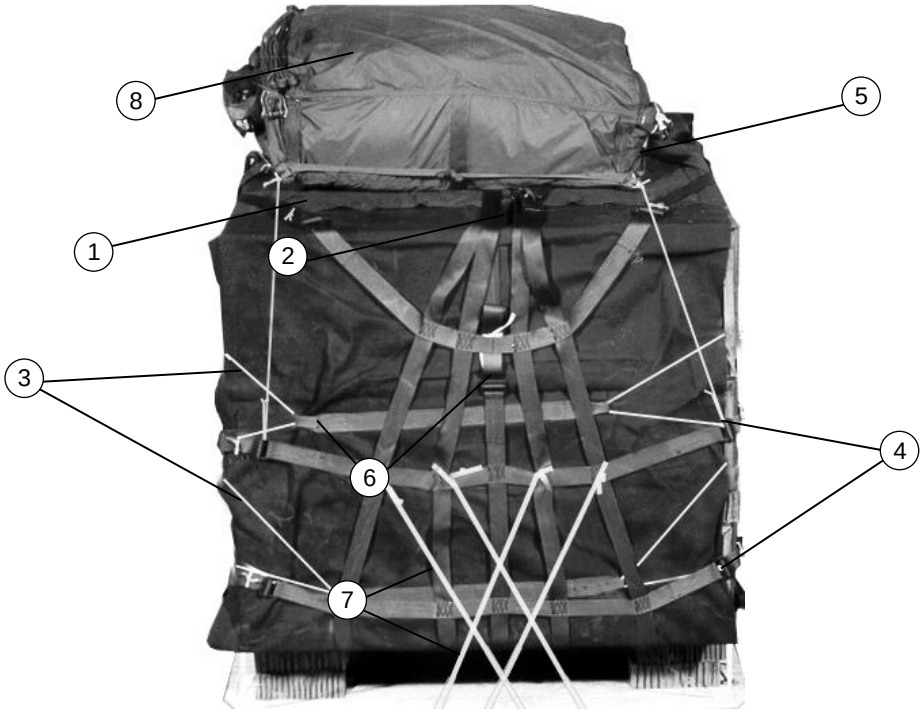
③ Tie the tripod, launch tube, and honeycomb together with ½-inch tubular nylon webbing.

Figure 6-6. Missiles, Tripod, and Launch Tube Stowed



① Place a piece of honeycomb, cut to fit, at each end of the equipment.
② Place a 48- by 58-inch layer of honeycomb on top of the load.
③ Set four boxed missiles on the honeycomb.
④ Bind the load together with the 30-foot lashing, two D-rings, and a loadbinder.

Figure 6-7. Load Completed and Bound Together



① Bring the A-22 cover up over the load, and fold excess material under as necessary.

② Pass the A-22 tiedown straps up over the load. Fasten and tighten the straps.

③ Lace each corner of the cover through the lacing loops with type III nylon cord to form a figure eight.

④ Fasten the lateral straps together around the A-22 cover. Pass the upper lateral straps around the top of the corners.

⑤ Attach the suspension webs to the D-rings of the support webs with the open side of the snaps facing inward. Tape the snaps to the D-rings.

⑥ Adjust all straps to make the sling assembly fit snugly. Pull the suspension webs to their full height. Adjust the upper lateral straps to prevent binding the upper part of the support web. Fold all excess straps and tie the folds with type I, ½-inch cotton webbing.

⑦ Make the skid board ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

⑧ Prepare, attach, and safety one G-12E cargo parachute (with a 68-inch pilot parachute), or three G-14 cargo parachutes to the load according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Figure 6-8. Cargo Bag Secured and Parachutes Installed

MARKING THE RIGGED LOAD

6-3. Mark the rigged load as described in Chapter 1, TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11, using the data given in Figure 6-9. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods).

CAUTION

Make the final inspection required by TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 before the load leaves the rigging site.



RIGGED LOAD DATA

Weight	.....	1,217 pounds
Width	.....	48 inches
Height	.....	72 inches
Length	.....	58 inches

Figure 6-9. TOW Weapon System and Missiles Rigged in an A-22 Cargo Bag for Low-Velocity Airdrop

EQUIPMENT REQUIRED

6-4. The equipment required to rig this load is listed in Table 6-1.

Table 6-1. Equipment Required to Rig the TOW Weapon System and Eight Missiles in A-22 Cargo Bag

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, Paste, 1-gallon	As Required
1670-00-587-3421	Bag, Cargo, Aerial Delivery, A-22	1
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb	3 Sheets
1670-01-065-3751	Parachute, Cargo, 64-ft diameter, G-12E or	1
1670-00-999-2658	Parachute, Cargo, G-14	3
1670-00-216-7297	Parachute, Pilot, 68-inch diameter	1
5530-00-914-5118	Plywood, 1-in thick	1
	48- by 53 ½-inch	
	48- by 58-inch	
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
8310-00-917-3945	Thread, Cotton, Ticket Number 8/7 (Ticket Nr 5)	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot	2
8305-00-268-2411	Webbing, Type I, Cotton, ¼-inch	As Required
8305-00-082-5752	Webbing, Nylon, Tubular, ½-inch	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

SECTION II-RIGGING 12 TOW MISSILES IN AN A-22 CARGO BAG FOR LOW-VELOCITY AIRDROP

DESCRIPTION OF LOAD

6-5. This load consists of 12 TOW missiles in overpacks. The 12 missiles are rigged in a standard A-22 cargo bag. The load requires one G-12E or three G-14 cargo parachutes.

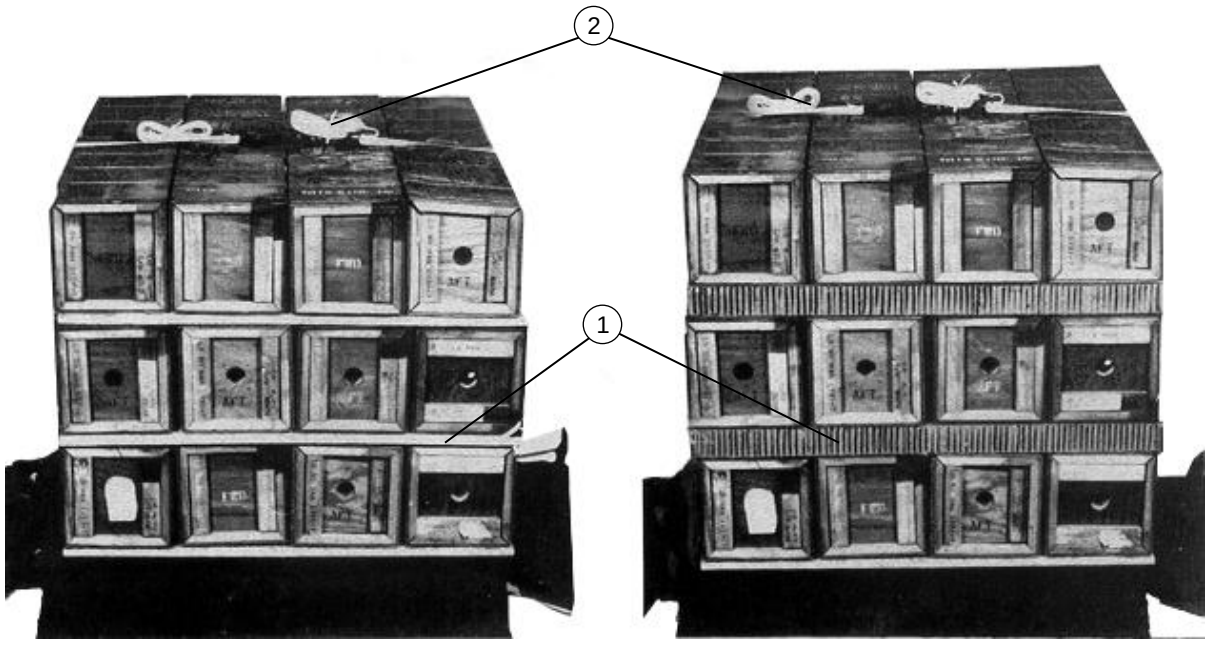
RIGGING A-22 CARGO BAG

6-6. Rig 12 TOW missiles in the A-22 cargo bag as described below.

- Prepare the skid board and A-22 cargo bag as shown in Figure 6-1 and 6-2 of Section I.
- Pack the missiles as shown in Figure 6-10.
- Close and secure the A-22 cargo bag as shown in Figure 6-11.

ATTACHING CARGO PARACHUTES

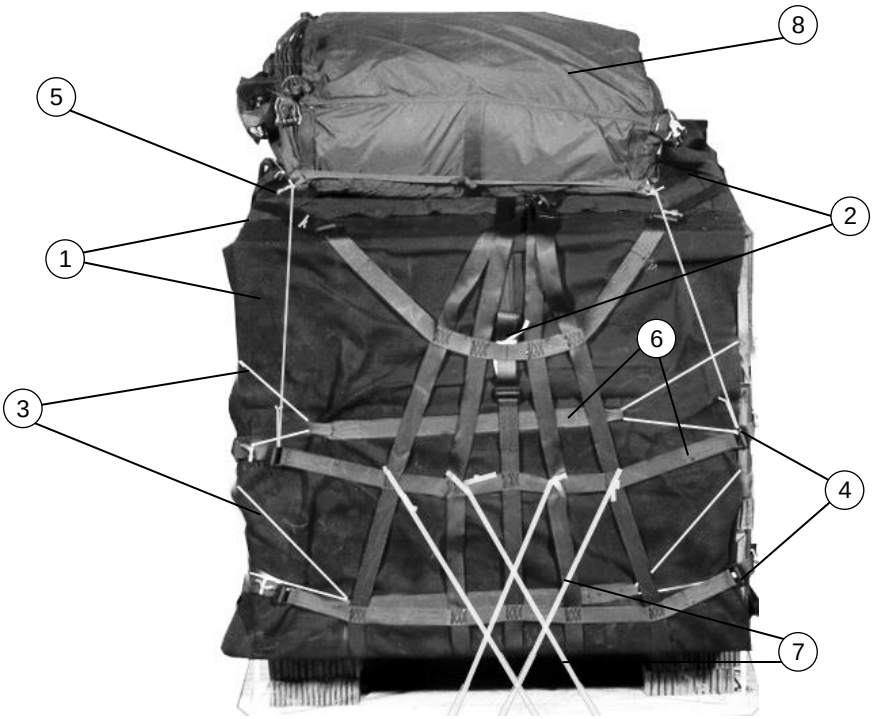
6-7. Prepare and attach one G-12E cargo parachute or three G-14 cargo parachutes as shown in Figure 6-11, and according to TM 4-48.03/TO 13C7-1-11.



① Place the twelve TOW missiles as shown on the A-22 cargo bag. Place a 48- by 58-inch layer of ¾-inch plywood or honeycomb between each layer of missiles. Figure 2-10 shows both honeycomb and plywood. Do not use both honeycomb and plywood between the layers in the same A-22 bag.

② Bind the missiles together with a 30-foot lashing, two D-rings, and a loadbinder.

Figure 6-10. Twelve TOW Missiles Loaded on the A-22 Cargo Bag



① Bring the A-22 cover up over the load, and fold excess material under as necessary.

② Pass the A-22 tiedown straps up over the load. Fasten and tighten the straps.

③ Lace each corner of the cover through the lacing loops with type III nylon cord to form a figure eight.

④ Fasten the lateral straps together around the A-22 cover. Pass the upper lateral straps around the top of the corners.

⑤ Attach the suspension webs to the D-rings of the support webs with the open side of the snaps facing inward. Tape the snaps to the D-rings.

⑥ Adjust all straps to make the sling assembly fit snugly. Pull the suspension webs to their full height. Adjust the upper lateral straps to prevent binding the upper part of the support web. Fold all excess straps and tie the folds with type I, ½-inch cotton webbing.

⑦ Make the skid board ties according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

⑧ Prepare, attach, and safety one G-12E cargo parachute (with a 68-inch pilot parachute), or three G-14 cargo parachutes to the load according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Figure 6-11. A-22 Cargo Bag Secured

MARKING THE RIGGED LOAD

6-8. Mark the rigged load as described in Chapter 1, TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods).

CAUTION

Make the rigger inspection described in Chapter 1, TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 before the load leaves the rigging site.



RIGGED LOAD DATA

Weight	.....	1,394 pounds
Width	.....	48 inches
Height	.....	69 inches
Length	.....	58 inches

Figure 6-12. Twelve TOW Missiles Rigged in an A-22 Cargo Bag for Low-Velocity Airdrop

EQUIPMENT REQUIRED

6-9. The equipment required to rig this load is listed in Table 6-2.

Table 6-2. Equipment Required to Rig Twelve TOW Missiles in an A-22 Cargo Bag for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, Paste, 1-gallon	As Required
1670-00-587-3421	Bag, Cargo, Aerial Delivery, A-22	1
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb	2 Sheets
1670-01-065-3751	Parachute, Cargo, 64-foot diameter, G-12E or	1
1670-00-999-2658	Parachute, Cargo, G-14	3
1670-00-216-7297	Parachute, Pilot, 68-inch diameter	1
5530-00-914-5118	Plywood, 1- by 48- by 53 ½-inch	1
5530-00-128-4981	Plywood, ¾- by 48- by 58-inch (add two if honeycomb is not used)	
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
8310-00-917-3945	Thread, Cotton, Ticket Number 8/7 (Ticket Nr 5)	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot	2
8305-00-268-2411	Webbing, Type I, Cotton, 1-4-inch	As Required
8305-00-082-5752	Webbing, Nylon, Tubular, ½-inch	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

SECTION III-RIGGING 12 MISSILE OVERPACKS IN AN A-22 CARGO BAG FOR HIGH-VELOCITY AIRDROP

DESCRIPTION OF LOAD

6-10. This load consists of 12 TOW missiles in overpacks. The 12 missiles are rigged in a standard A-22 cargo bag. The load requires one 26-foot, high-velocity cargo parachute.

RIGGING A-22 CARGO BAG

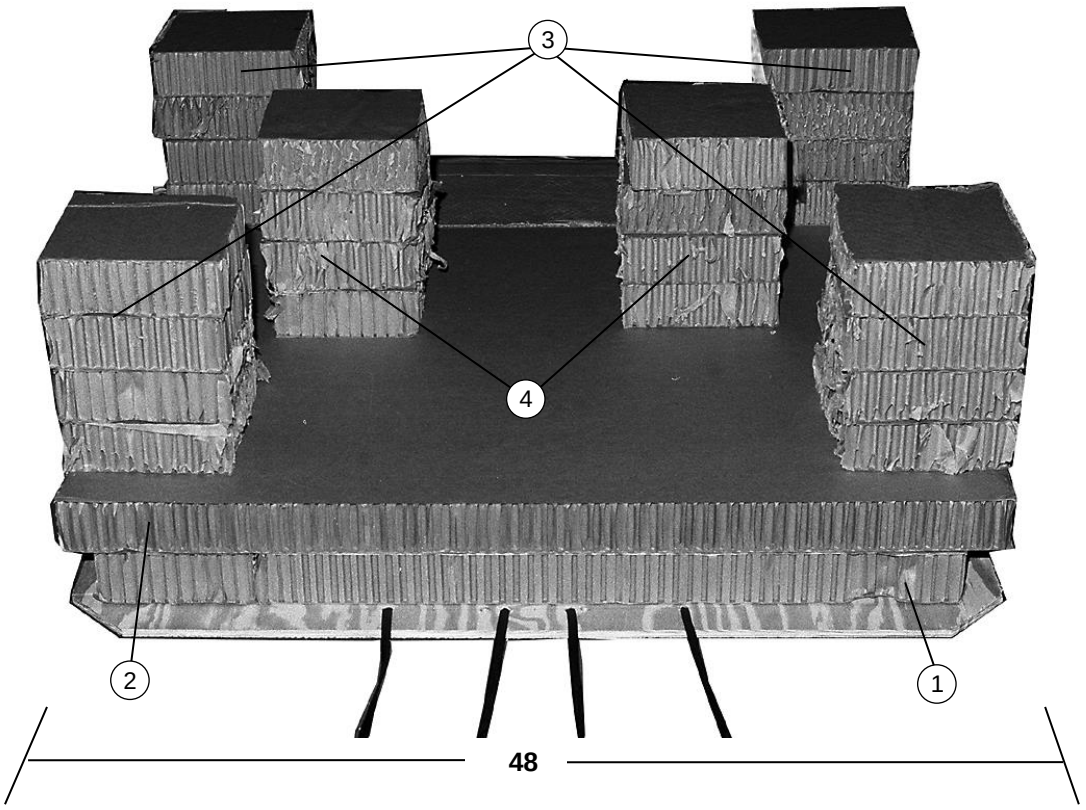
6-11. Rig the A-22 cargo bag as described below.

- Prepare the skid and honeycomb as shown in Figure 6-13.
- Position and secure the missiles as shown in Figure 6-14.
- Finish rigging the A-22 cargo bag as shown in Figure 6-15 and according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

ATTACHING CARGO PARACHUTE

6-12. Prepare and attach one 26-foot, high-velocity cargo parachute as shown in Figure 6-16, and according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Note All dimensions are in inches.



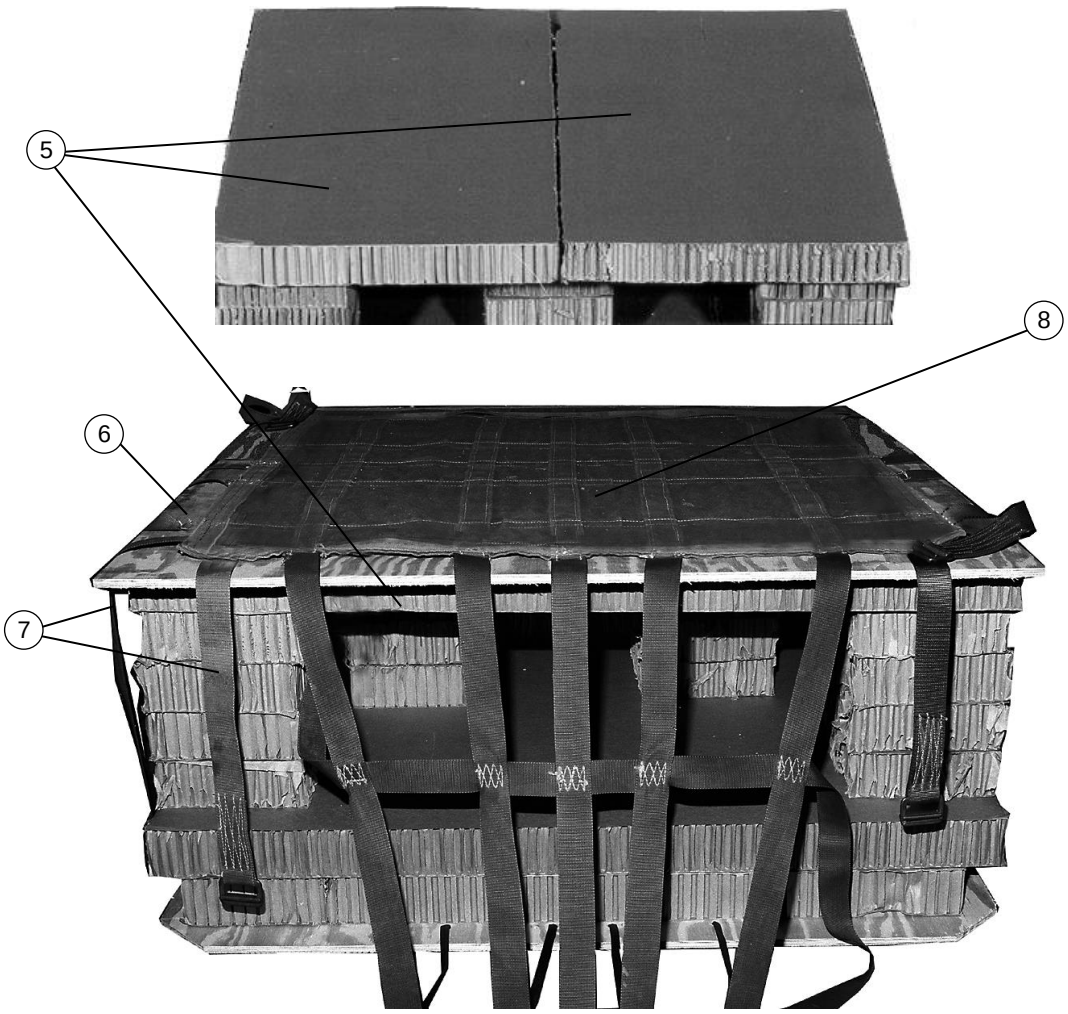
① Use one 8- by 48-inch and one 36- by 48-inch piece of honeycomb to form a layer of 44- by 48-inch honeycomb. Center the honeycomb on the skid board with the 44-inch edges along the 48-inch sides of the skid board.

② Use one 12- by 48-inch and one 36- by 48-inch piece of honeycomb to form a layer of 48- by 48-inch honeycomb. Center and glue this layer on the layer made in step 1 above.

③ Glue four 9- by 9-inch pieces of honeycomb together to make each of six stacks. Glue four of these stacks three inches from the ends, and flush with the left and right sides of the base.

④ Center two 9- by 9-inch stacks along the left and right sides, 10 inches from the left and right edges of the base.

Figure 6-13. Skid and Honeycomb Prepared



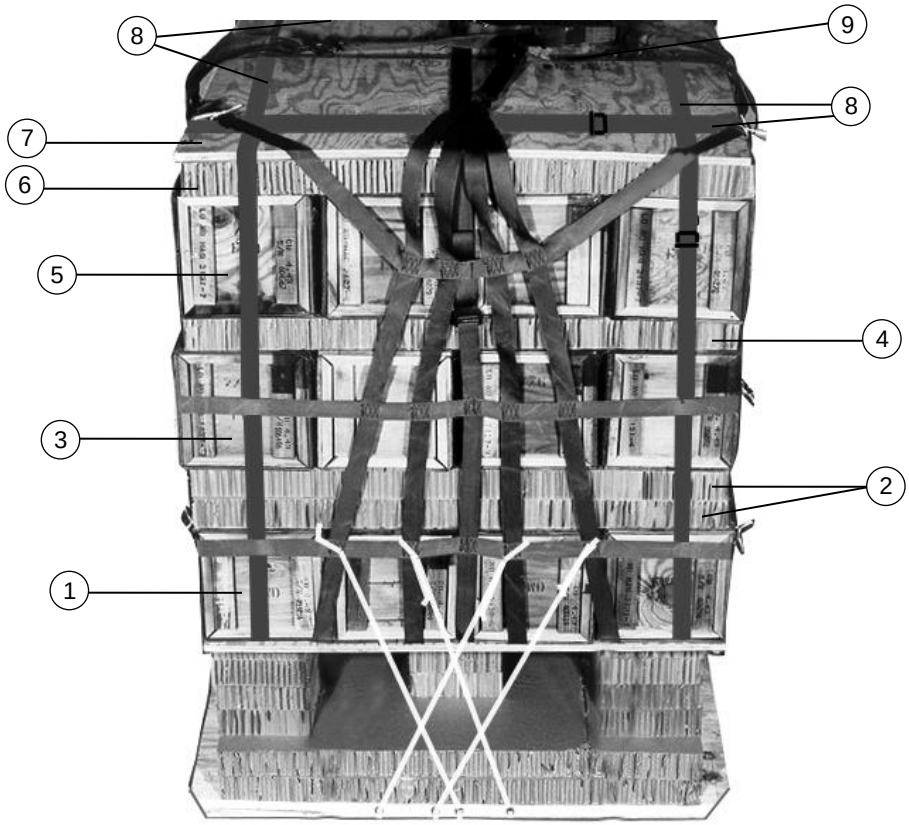
⑤ Center and glue two 24- by 48-inch pieces of honeycomb on top of the 9- by 9-inch stacks.

⑥ Center a ¾- by 48- by 58-inch piece of plywood on top of the honeycomb. Place the 58-inch side of the plywood parallel to the 53 ½-inch side of the skid board.

⑦ Lay an A-7A strap along each side of the plywood, 6 inches from each edge.

⑧ Set the sling assembly on the plywood and A-7A straps.

Figure 6-13. Skid and Honeycomb Prepared (Continued)



① Place four missiles on the scuff pad.
② Place two layers of honeycomb on the missiles. Use a 36- by 48-inch and a 22- by 48-inch piece of honeycomb to form each layer.
③ Place four missiles on the layers of honeycomb.
④ Place one 48- by 58-inch layer of honeycomb on the missiles.
⑤ Place four missiles on the layer of honeycomb.
⑥ Place one 48- by 58-inch layer of honeycomb over the missiles.
⑦ Place a 48- by 58-inch piece of plywood on top of the load.
⑧ Secure the four A-7A straps from under the scuff pad on top of the load.
⑨ Close the A-22 cargo bag according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

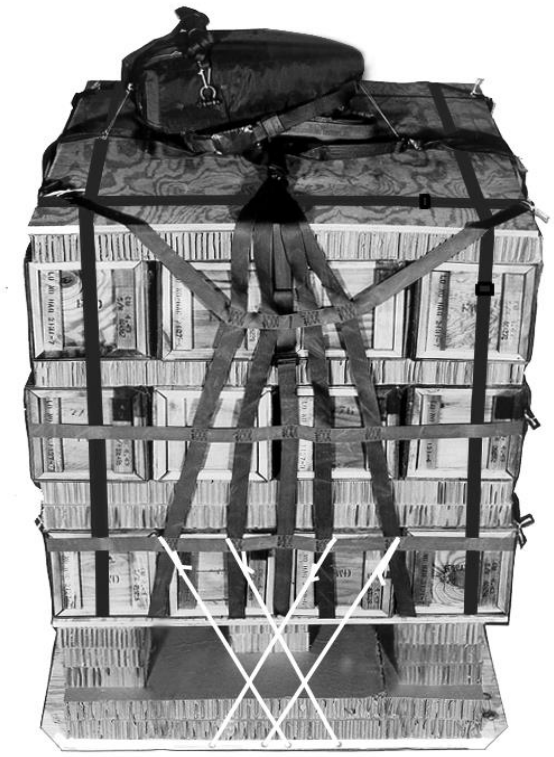
Figure 6-14. Missiles Positioned and Secured

MARKING THE RIGGED LOAD

6-13. Mark the rigged load as described in Chapter 1, TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11, using the data given in Figure 6-15. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods).

CAUTION

Make the final inspection required by Chapter 1, TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 before the load leaves the rigging site.



RIGGED LOAD DATA

Weight	.....	1,359 pounds
Width	.....	48 inches
Height	.....	83 inches
Length	.....	58 inches

Figure 6-15. Twelve TOW Missiles Rigged in an A-22 Cargo Bag for High-Velocity Airdrop

EQUIPMENT REQUIRED

6-14. The equipment required to rig this load is listed in Table 6-3.

Table 6-3. Equipment Required to Rig Twelve TOW Missiles in Overpacks in an A-22 Cargo Bag for High-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, Paste, 1-gallon	As Required
1670-00-587-3421	Bag, Cargo, Aerial Delivery, A-22	1
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb	5 Sheets
1670-00-872-6109	Parachute, Cargo, High-Velocity, 26-foot	1
5530-00-914-5118	Plywood, 1- by 48- by 53 ½-inch	1
5530-00-128-4981	Plywood, ¾- by 48- by 58-inch	2
1670-00-251-1153	Strap, A-7A	4
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
8310-00-917-3945	Thread, Cotton, Ticket Number 8/7 (Ticket Nr 5)	As Required
8305-00-268-2411	Webbing, Type I, Cotton, ¼-inch	As Required
8305-00-082-5752	Webbing, Nylon, Tubular, ½-inch	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Chapter 7

Rigging TOW Missiles in ¼-ton Cargo Trailer for Low-Velocity Airdrop

DESCRIPTION OF LOAD

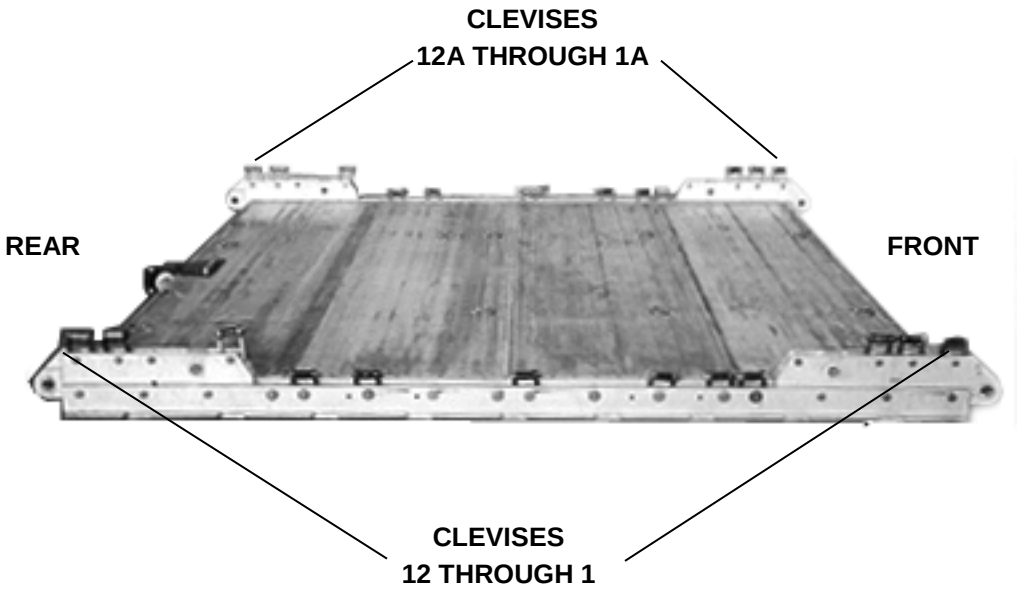
7-1. The M416, ¼-ton cargo trailer with eight boxed missiles is rigged on an 8-foot, type V airdrop platform for low-velocity airdrop. The load requires one G-11 cargo parachute. Each missile in its box weighs 87 pounds, and is 57 ½ inches long, 12 inches high and 12 inches wide. The M416 with missiles weighs 1170 pounds. It is 109 inches long, 61 inches wide and 44 inches high. The accompanying load consists of eight boxes of 105-millimeter ammunition. It weighs 588 pounds.

PREPARING PLATFORM

7-2. Prepare an 8-foot, type V airdrop platform as shown in Figure 7-1.

- Inspecting Platform. Inspect, or, assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
- Installing Tandem Links. Install tandem links as shown in Figure 7-1.
- Attaching and Numbering Clevises. Attach and number 24 clevis assemblies as shown in Figure 7-1.

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



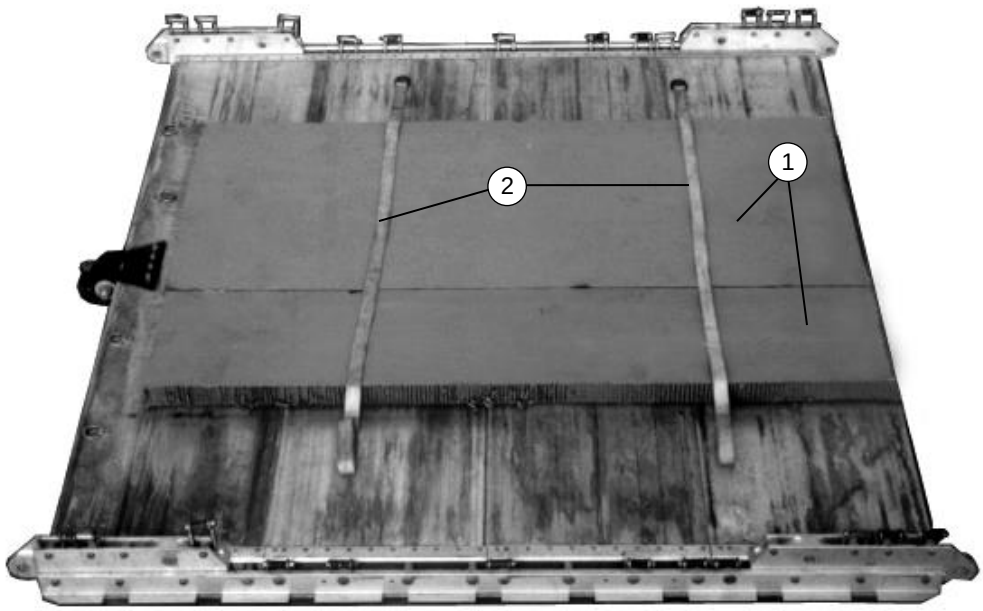
Steps:

1. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
2. Install a tandem link to the rear of each platform side rail using holes 14, 15, and 16.
3. Install a clevis on bushings 1, 2 and 3 on each front tandem link.
4. Install a clevis on bushings 1, 3, and 4 on each rear tandem link.
5. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 4, 5, 6, 8, 11, and 12.
6. Starting at the front of the platform, number the clevises 1 through 12 on the right side and 1A through 12A on the left side.

Figure 7-1. Platform Prepared

STOWING ACCOMPANYING LOAD

7-3. Place the honeycomb and stow the accompanying load as shown in Figure 7-2.



① Position one piece of 18- by 86-inch honeycomb and one piece of 36- by 86-inch honeycomb side- by side to form one layer on the front edge of the platform.

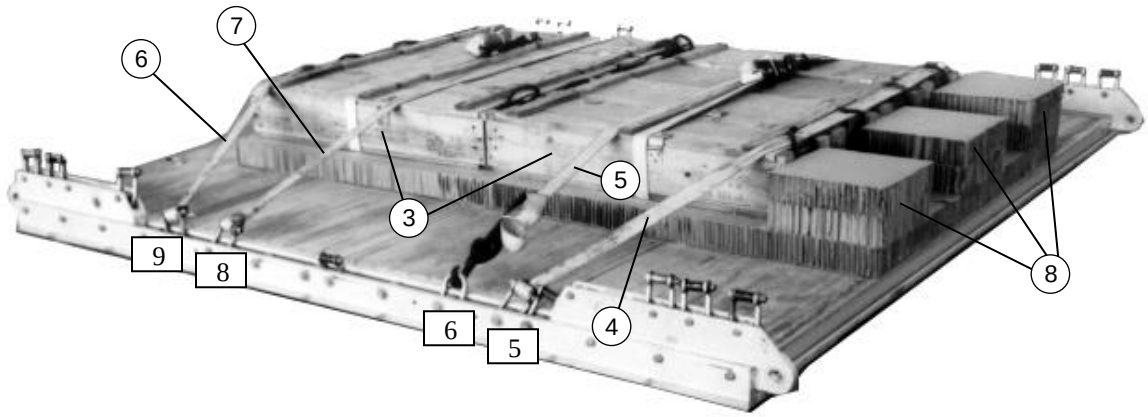
② Position two 15-foot lashings on the honeycomb as shown for use as binding lashings.

Figure 7-2. Accompanying Load Stowed

Note. Other boxed ammunition may be used for the load. Adapt the honeycomb and lashings for the ammunition rigged.

NOTICE OF EXCEPTION

Exception to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 is granted to rig ammunition on one layer of honeycomb.



③ Position eight boxes on the honeycomb as shown so that the four rearmost boxes are flush with the rear edge of the honeycomb. Secure the binding lashings placed in step 2 around the boxes.

④ Run a 15-foot lashing through clevis 5 and through its own D-ring. Bring the lashing through the front box carrying handles and fasten it to clevis 5A with a D-ring and a load binder.

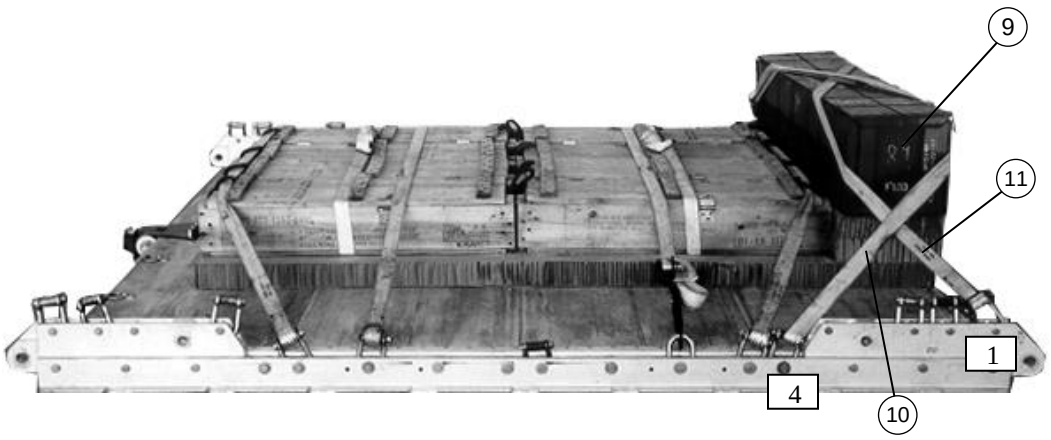
⑤ Run a 15-foot lashing through clevis 6A and through its own D-ring. Bring the lashing over the top of the front boxes and fasten it to clevis 6 with a D-ring and a load binder.

⑥ Run a 15-foot lashing through clevis 9 and through its own D-ring. Bring the lashing through the rear box carrying handles and fasten it to clevis 9A with a D-ring and a load binder.

⑦ Run a 15-foot lashing through clevis 8 and through its own D-ring. Bring the lashing over the top of the rear boxes and fasten it to clevis 8A with a D-ring and a load binder.

⑧ Evenly space and glue three two-layer stacks of 12- by 12-inch honeycomb to the front edge of the base honeycomb.

Figure 7-2. Accompanying Load Stowed (Continued)



⑨ Center one boxed TOW missile on the 12- by 12-inch stacks of honeycomb.

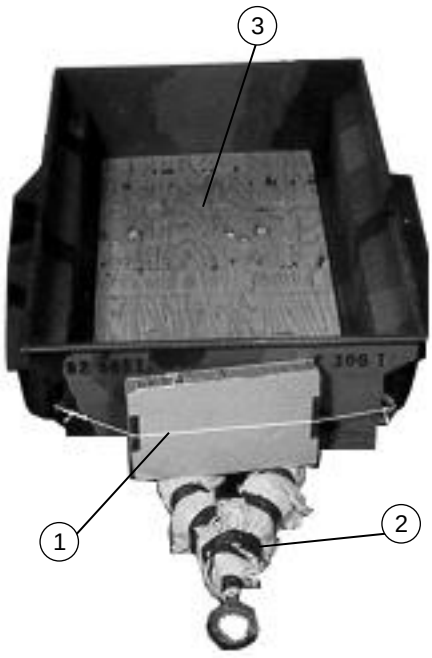
⑩ Center the D-rings of a 30-foot lashing on top of the box. Run a free end of the lashing through clevis 4, around the front of the box, over the center of the box, and around the back of the box to clevis 1A. Run the other free end of the lashing through clevis 1A. Secure the ends of the lashing with two D-rings and a load binder on the left side.

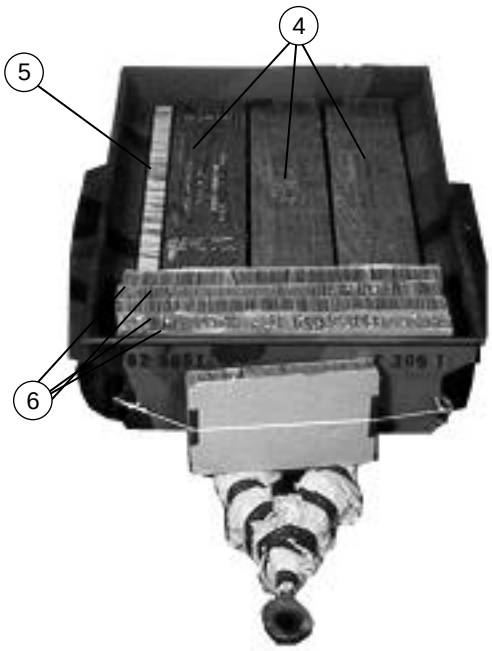
⑪ Run a 15-foot lashing through clevis 1 and through its own D-ring, around the rear of the box, over the center of the box, and around the front of the box to clevis 4A. Fasten the lashing to clevis 4A with a D-ring and a load binder.

Figure 7-2. Accompanying Load Stowed (Continued)

PREPARING MISSILES AND TRAILER

7-4. Prepare the missiles and trailer as shown in Figure 7-3.





① Tie the hand brake in the unlocked position with type III nylon cord. Cover the brake with a 14- by 24-inch piece of honeycomb, and tie in place with type III nylon cord.

② Fold the inter-vehicular cable. Tie the cable and chains to the drawbar with type III nylon cord. Pad the drawbar with cellulose wadding, and tape the wadding in place.

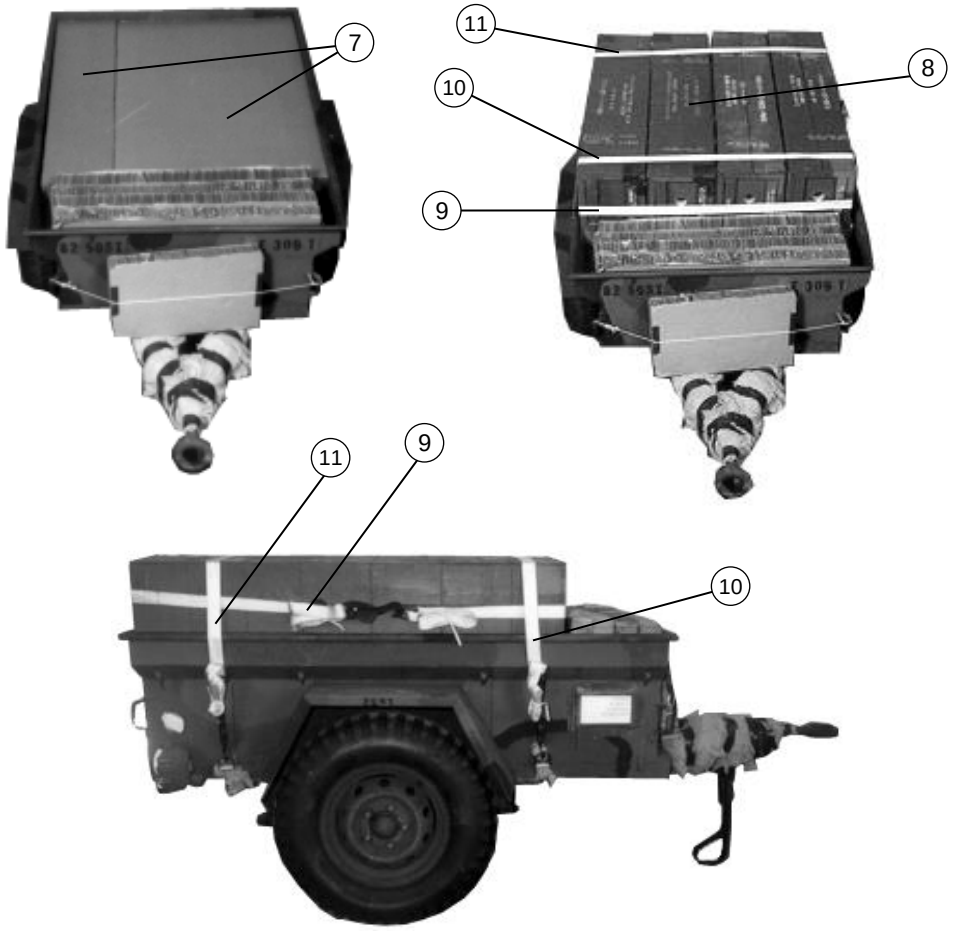
③ Place a ¾- by 36- by 70-inch piece of plywood in the trailer bed.

④ Place three boxed missiles against the rear wall of the trailer.

⑤ Place one 11- by 57-inch piece of honeycomb along one side of the missiles.

⑥ Set four 18- by 42-inch pieces of honeycomb in front of the missiles.

Figure 7-3. Missiles and Trailer Prepared



⑦ Place one 36- by 57-inch and one 12- by 57-inch piece of honeycomb on top of the missiles.

⑧ Set four boxed missiles on top of the honeycomb against the rear wall of the trailer.

⑨ Bind the top four missiles together with a 30-foot lashing.

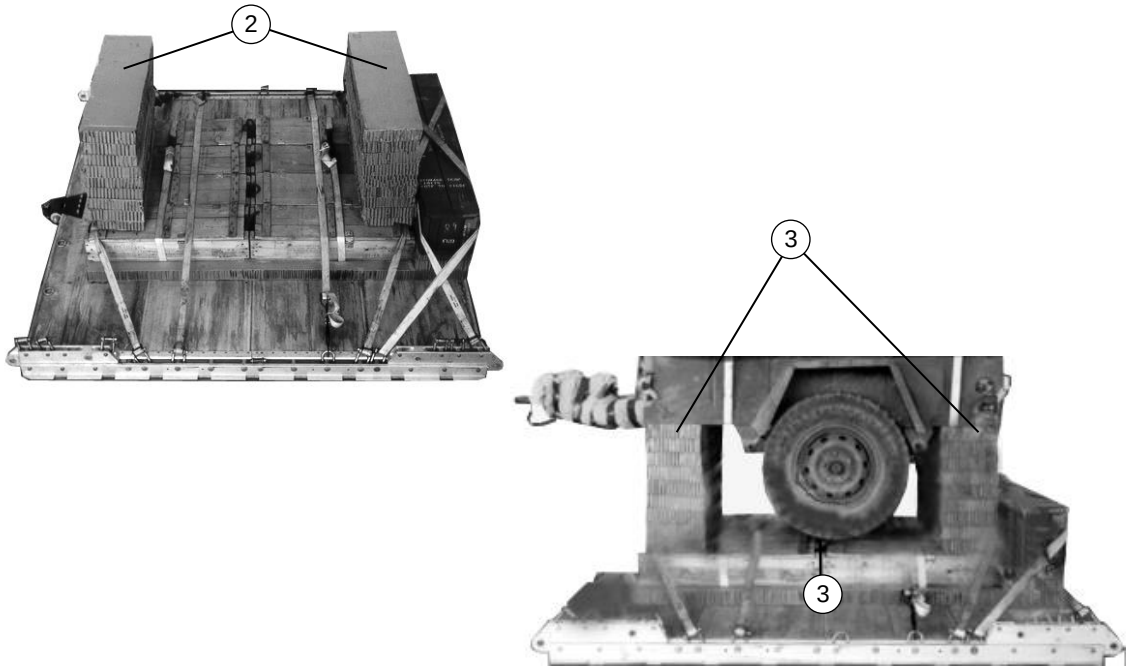
⑩ Pass a 15-foot lashing around the front of the missiles and under the trailer just ahead of the front spring brackets. Fasten the lashing with a D-ring and a load binder on the side of the trailer.

⑪ Pass a 15-foot lashing around the rear of the missiles and under the trailer just behind the rear spring brackets. Fasten the lashing with a D-ring and a load binder on the side of the trailer.

Figure 7-3. Missiles and Trailer Prepared (Continued)

PLACING HONEYCOMB STACKS AND PLACING THE TRAILER

7-5. Place the honeycomb stacks on the accompanying load, and place the trailer on the stacks as shown in Figure 7-4.



① Glue together two nine-layer stacks of 42- by 12-inch honeycomb.

② Set the stacks centered at each end of the ammunition boxes, flush with the front and rear edges. Make indentations in the bottom of the honeycomb, if necessary, to allow for the cleats on the box tops.

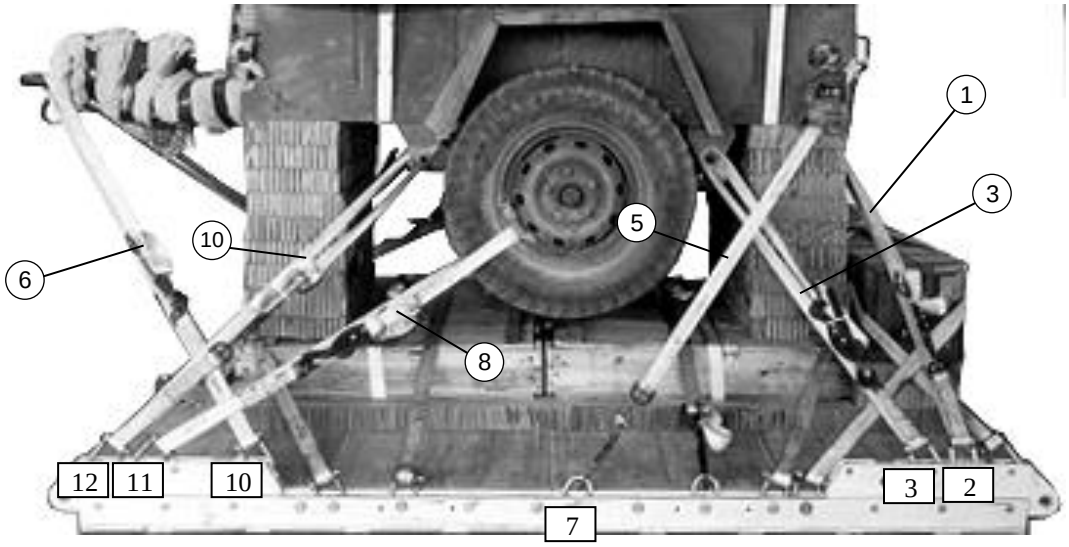
Note. The boxes may vary from those shown. The distance between the front edge of the front stack and the rear edge of the rear stack should be 72 inches.

③ Set the trailer on the stacks so that the rear edge of the trailer is 15 inches from the front edge of the platform. Be sure that the trailer rests squarely on the stacks as shown.

Figure 7-4. Honeycomb Stacks Placed and the Trailer Placed on the Stacks

LASHING TRAILER

7-6. Lash the trailer to the platform as shown in Figure 7-5.

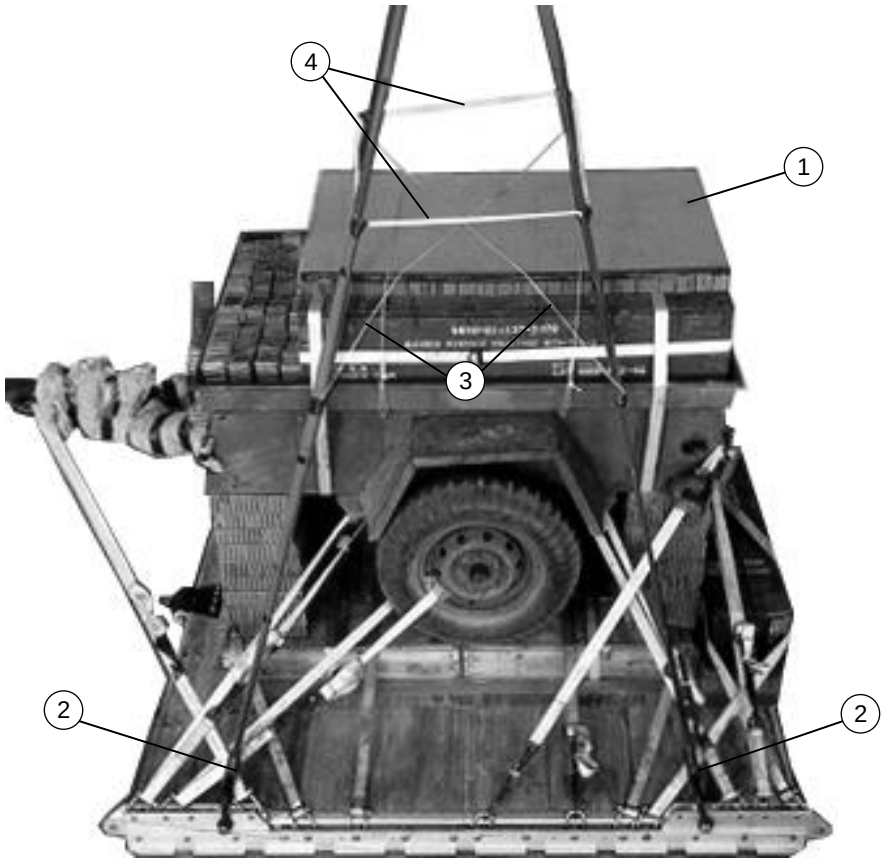


Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
1	2	Through right rear handle.
2	2A	Through left rear handle.
3	3	Through rear spring bracket.
4	3A	Through rear spring bracket.
5	7 and 7A	Through clevis 7A, through both rear handles, to clevis 7.
6	10	Through lunette.
7	10A	Through lunette.
8	11	Through left wheel. (Pad the wheel opening.)
9	11A	Through right wheel. (Pad the wheel opening.)
10	12	Through front spring bracket.
11	12A	Through front spring bracket.

Figure 7-5. Lashings Installed

INSTALLING SUSPENSION SLINGS

7-7. Install four 12-foot, 2-loop, type XXVI nylon webbing slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 7-6.



① Place a 36- by 56-inch piece of honeycomb on top of the missiles in the trailer. Tape the edges of the honeycomb. Tie the honeycomb in place with type III nylon cord.

② Attach a 12-foot, (2-loop), type XXVI nylon webbing sling to each tandem link with a large clevis.

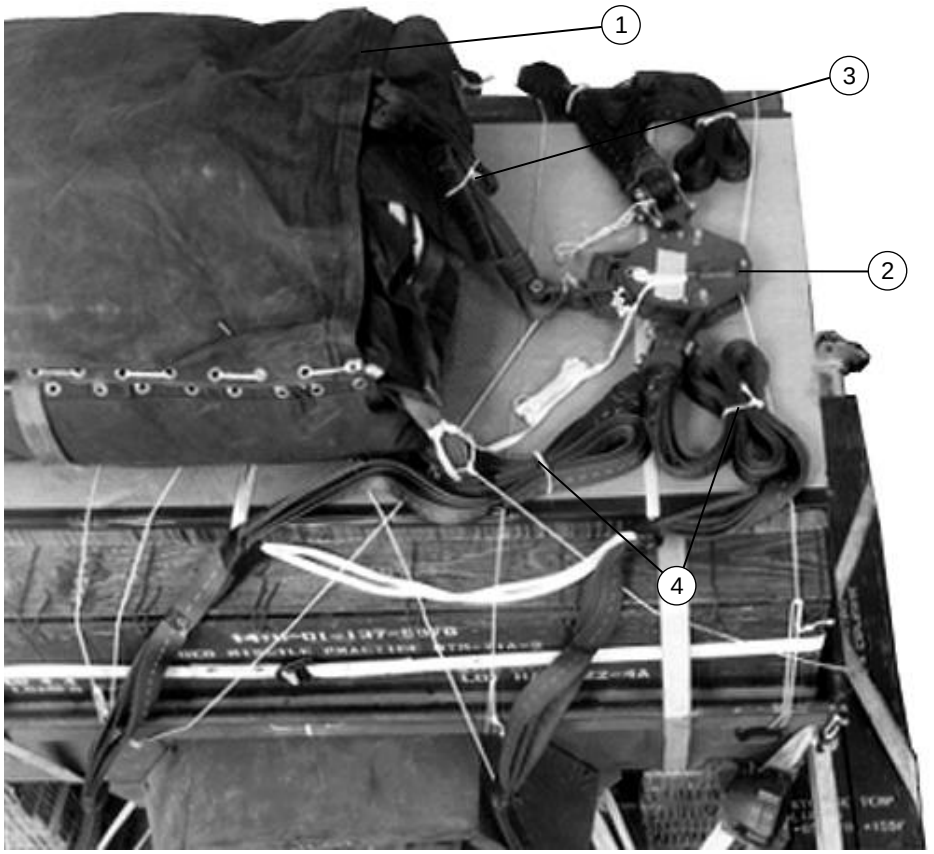
③ Tie the right front and left rear slings together with type III nylon cord. Tie the right rear and left front slings together in the same way.

④ Raise the suspension slings and install the deadman's tie according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 7-6. Suspension Slings Installed

INSTALLING CARGO PARACHUTE AND RELEASE ASSEMBLY

7-8. Install one G-11 cargo parachute and an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 7-7.



① Install one G-11 cargo parachute on the rear part of the honeycomb installed in Figure 7-6.

② Center an M-1 cargo parachute release in front of the parachute, and attach the parachute riser and suspension slings.

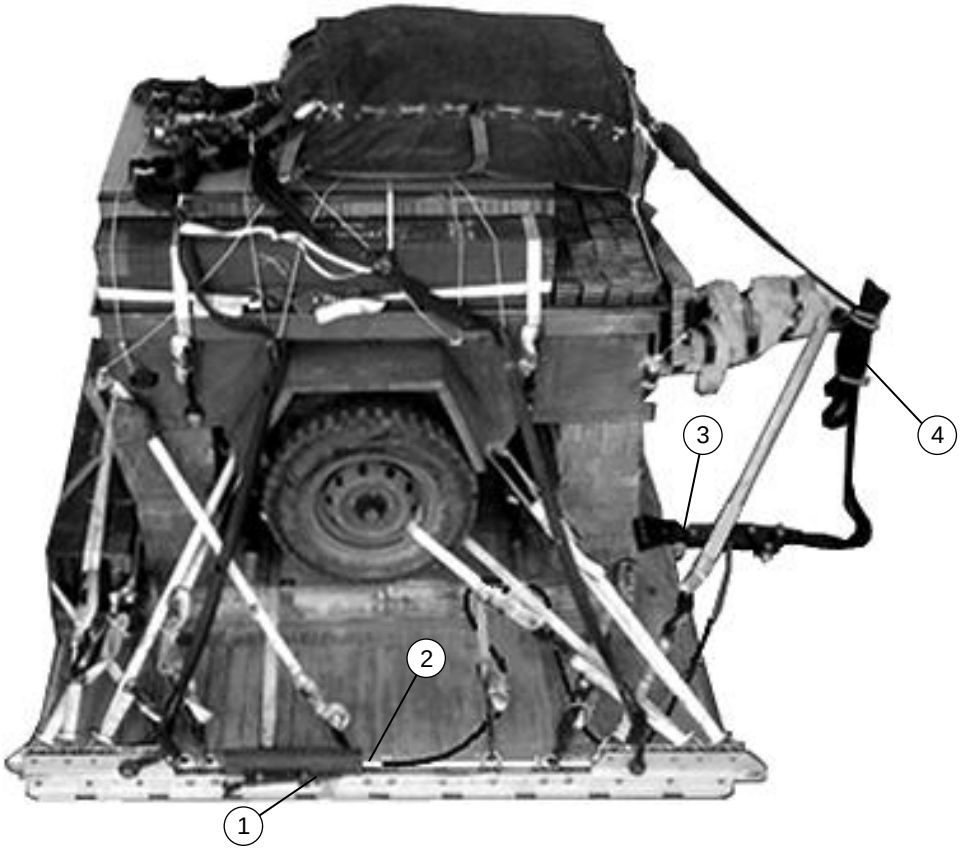
③ Fold any excess parachute riser, and tie the folds with type I, ½-inch cotton webbing.

④ Fold any excess suspension sling, and tie the folds with type I, ½-inch cotton webbing.

Figure 7-7. G-11 Cargo Parachute and M-1 Release Installed

INSTALLING EXTRACTION SYSTEM

7-9. Install the EFTC extraction system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, and as shown in Figure 7-8.



① Bolt the Extraction Force Transfer Coupling (EFTC) mounting brackets in the front mounting holes on the left platform rail.

② Install a 12-foot cable to the actuator. Install the actuator to the brackets.

③ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.

④ Install a 9-foot, (2-loop), type XXVI nylon webbing sling as the deployment line. S-fold the excess and tie it in two places with type I, ¼-inch cotton webbing.

Figure 7-8. Extraction Force Transfer Coupling Installed

INSTALLING EXTRACTION PARACHUTE

7-10. Select the extraction line and extraction parachute needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

7-11. Select and install provisions for emergency restraints according to the emergency aft restraints requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

MARKING RIGGED LOAD

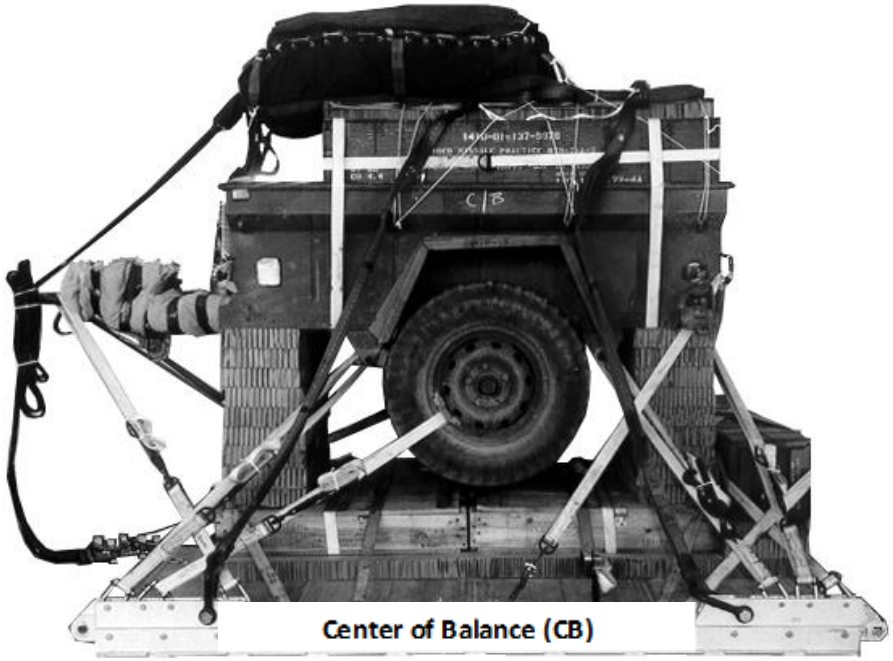
7-12. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, and as shown in Figure 7-9. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, tip-off curve, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

7-13. Use the equipment listed in Table 7-1 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Rigged Load Data

Weight:	Load Shown……..……..	3,480 pounds
	Maximum……..	5,250 pounds
Height	……	87 inches
Width	……..…	108 inches
Length	……..…	124 inches
Overhang:	Front…… …	0 inches
	Rear…….....	25 inches
CB (from front edge of platform)	……	51 inches
Extraction System (adds 18 inches) to length of platform)	……	Extraction Force Transfer Coupling EFTC

Figure 7-9. M416 Trailer with Eight TOW Missiles Rigged for Low-Velocity Airdrop

Table 7-1. Equipment Required for Rigging the M416 Trailer with Eight TOW Missiles for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, Paste, 1-gallon	As Required
4030-00-090-5954	Clevis, Suspension, 1-inch (large)	5
4030-00-678-8562	Clevis, Suspension, ¾-inch (medium)	2
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
8135-00-664-6958	Cushioning Material, Cellulose Wadding	As Required
1670-01-183-2678	Leaf, Extraction Line (Line Bag)	3
	Line, Drogue (for C-17)	
1670-01-064-4452	60-foot (1-loop), Type XXVI	1
	Line, Extraction	
1670-01-064-4452	For C-130: 60-foot (1-loop), Type XXVI	1
1670-01-107-7652	For C-141: 160-foot (1-loop), Type XXVI	1
	For C-5:	
1670-01-107-7652	160-foot (1-loop), Type XXVI	1
1670-01-107-7652	For C-17: 160-foot (1-loop), Type XXVI	1
	Link Assembly:	
1670-00-783-5988	Type IV (for C-17)	1
	Two-point, 3 ¾-inch	1
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	(2)
5310-00-232-5165	Nut, 1-inch, hexagonal	(2)
1670-00-003-1953	Plate, side, 3 ¾-inch	(2)
5365-00-007-3414	Spacer, large	(2)
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 7-1. Equipment Required for Rigging the M416 Trailer with Eight TOW Missiles for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb, 3- by 36- by 96-inch	8 Sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	1
1670-01-063-3715	Cargo Extraction, 15-foot	1
1670-01-063-3715	Drogue, 15-foot (for C-17)	1
	Platform, Airdrop, Type V, 8-foot	
1670-01-353-8425	Bracket Assembly, Coupling	(1)
1670-01-162-2372	Clevis Assembly, Type V	(24)
1670-01-353-8424	Extraction Bracket Assembly	(1)
1670-01-162-2381	Link, Tandem, Suspension Link Assembly	(4)
5530-00-128-4981	Plywood, ¾- by 48- by 96-inch	1
1670-01-097-8816	Release, Cargo Parachute, M-1	1
	Sling, Cargo Airdrop	
	For Suspension:	
1670-01-062-6303	12-foot (2-loop), type XXVI Nylon Webbing	4
	For Deployment:	
1670-01-062-6304	9 foot (2-loop), Type XXVI Nylon Webbing	1
1670-00-998-0116	Strap, Parachute Release, Single	1
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot	29
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, type	As Required
8305-00-082-5752	Nylon, Tubular, ½-inch	As Required
8305-00-261-8585	Type VIII	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Chapter 8

Rigging TOW Missiles in Boxes in on a Type V Platform for Low-Velocity Airdrop

SECTION I –RIGGING MISSILES IN FOUR A-22 CARGO BAGS ON A TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

DESCRIPTION OF LOAD

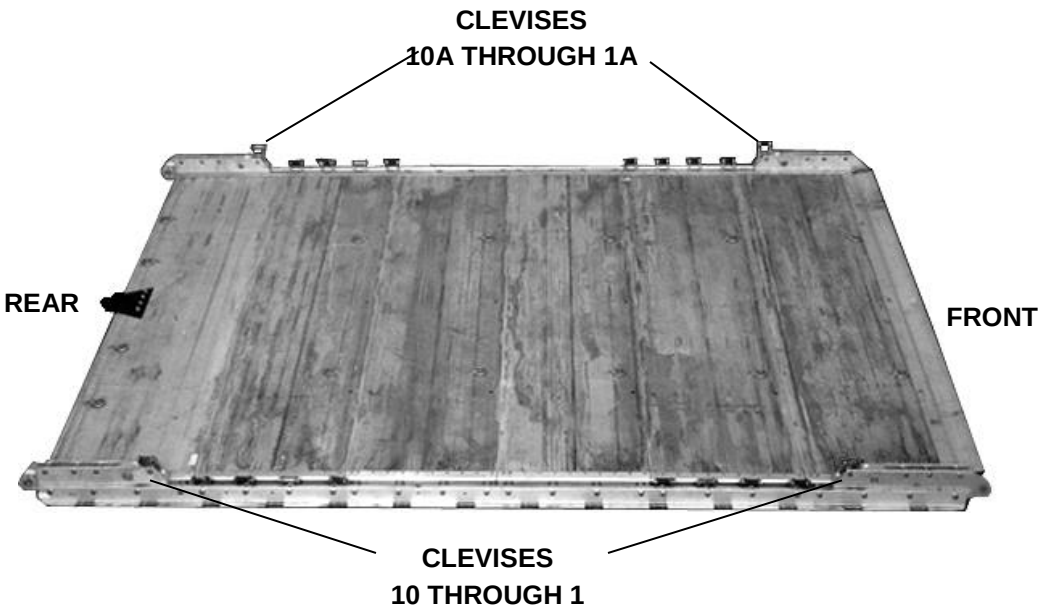
8-1. Forty-eight boxed missiles are rigged twelve each in four A-22 cargo bags on a 12-foot, type V airdrop platform. Each boxed missile weighs 87 pounds and is 57 ½ inches long, 12 inches high, and 12 inches wide. This load requires two G-11 cargo parachutes.

PREPARING PLATFORM

8-2. Prepare a 12-foot, type V airdrop platform as described below.

- Inspecting Platform. Inspect, or, assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
- Installing Tandem Links. Install tandem links as shown in Figure 8-1.
- Attaching and Numbering Clevises. Attach and number 20 clevis assemblies as shown in Figure 8-1.

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



Step:

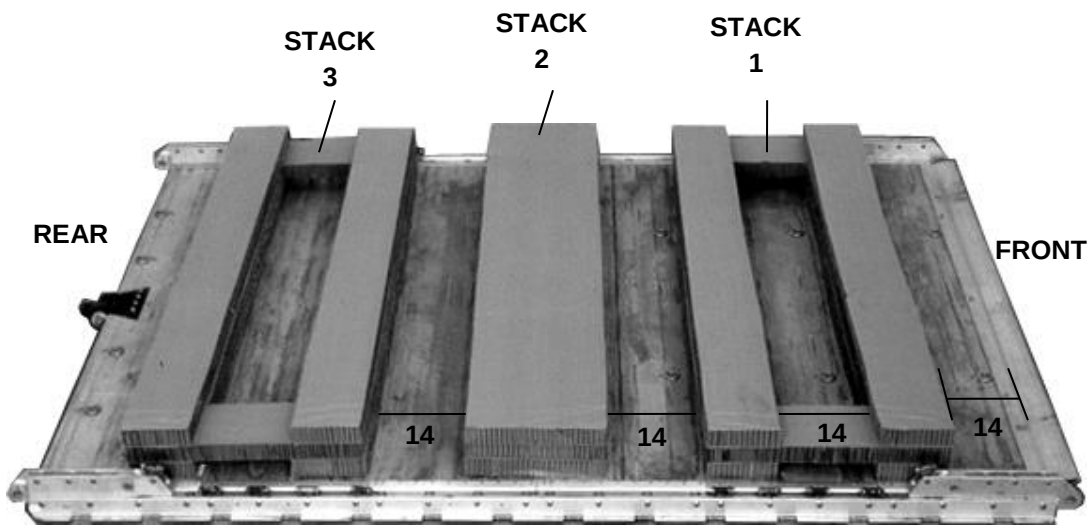
1. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
2. Install a tandem link to the rear of each platform side rail using holes 22, 23, and 24.
3. Install a clevis on bushing 4 on each front tandem link.
4. Install a clevis on bushing 1 on each rear tandem link.
5. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 5, 6, 7, 8, 17, 18, 19, and 20.
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.

Figure 8-1. Platform Prepared

BUILDING AND PLACING HONEYCOMB STACKS

8-3. Build the honeycomb stacks and place them on the platform as shown in Figure 8-2.

Note All dimensions are in inches.

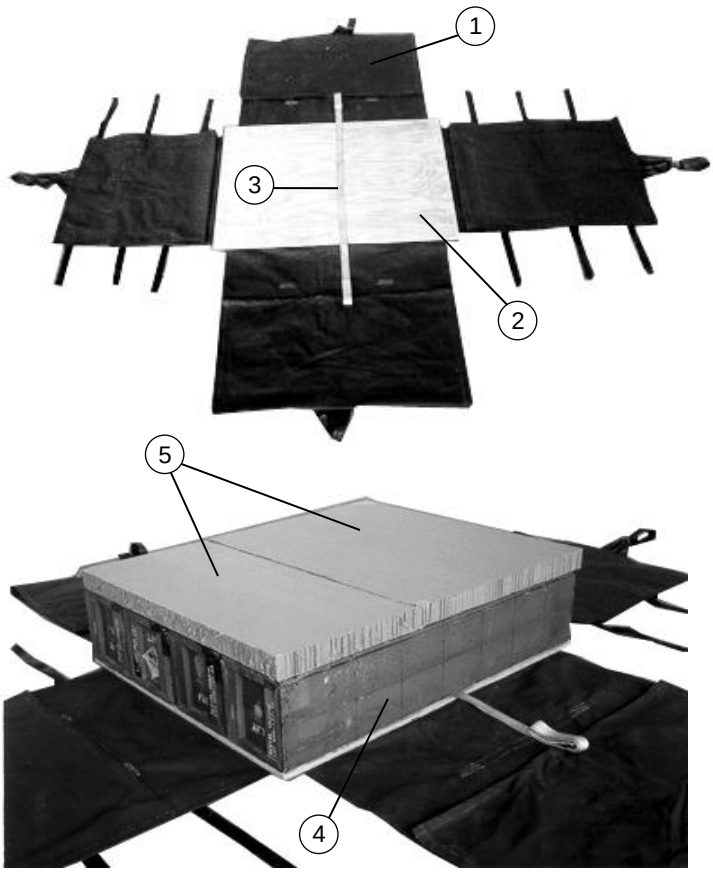


Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
1	2	96	10	Honeycomb	Place one piece 14 inches from the front edge of the platform. Place another piece 14 inches from the first piece.
	2	10	34	Honeycomb	Place one piece over each end of the two base pieces as a bridge.
	2	76	10	Honeycomb	Place flush over each base piece, filling the space between the two bridge pieces.
	2	96	10	Honeycomb	Place flush over each end of the stack.
2	3	96	20	Honeycomb	Glue layers flush together and center 14 inches from stack 1.
3	2	96	10	Honeycomb	Place one piece 14 inches from stack 2. Place another piece 14 inches from the first piece.
	2	10	34	Honeycomb	Place one piece over each end of the two base pieces as a bridge.
	2	76	10	Honeycomb	Place flush over each base piece, filling the space between the two bridge pieces.
	2	96	10	Honeycomb	Place flush over each end of the stack.

Figure 8-2. Honeycomb Stacks Prepared and Positioned

PLACING MISSILES IN A-22 CARGO BAGS

8-4. Place the missiles in four A-22 cargo bags as shown in Figure 8-3. Close the A-22 cargo bag according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11, and as shown in Figure 8-4.



① Position an A-22 cargo bag on a flat surface with the outside of the cover and the webbing facing down.

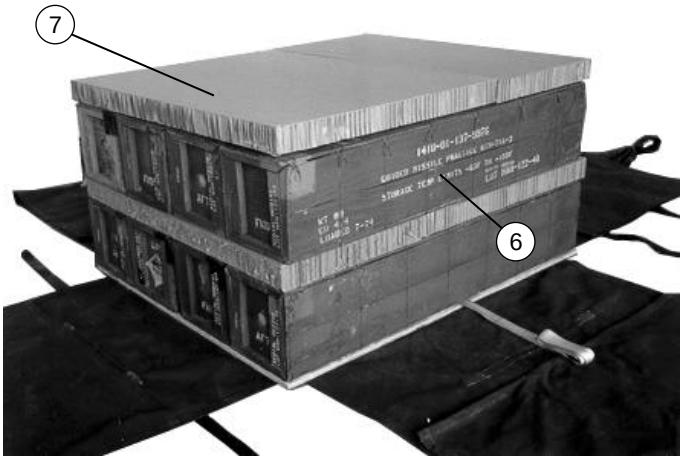
② Place a ¾- by 48- by 58-inch piece of plywood on top of the A-22 cargo bag.

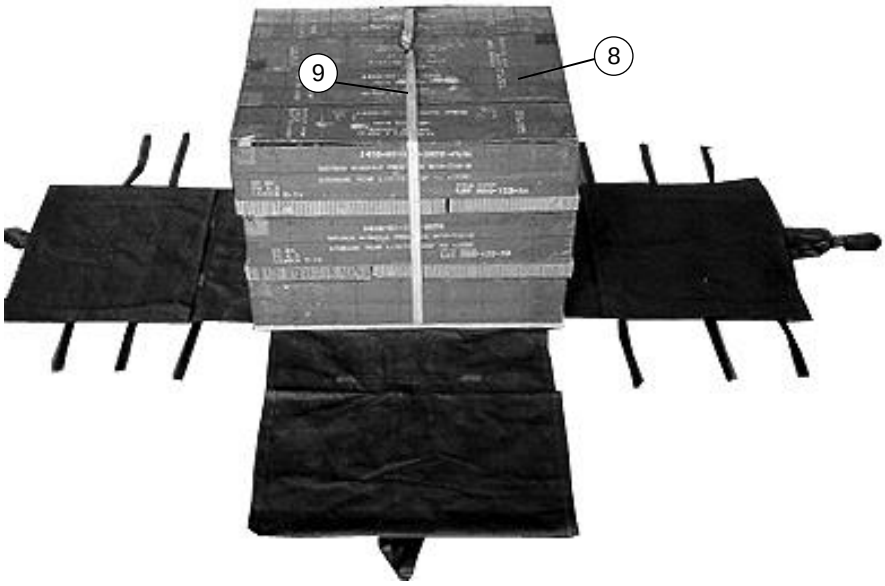
③ Lay a 15-foot lashing across the shorter dimension of the plywood.

④ Set four boxed missiles on top of the lashing and the plywood.

⑤ Cover the missiles with one 36- by 48-inch piece and one 22- by 48-inch piece of honeycomb.

Figure 8-3. Missiles Placed in A-22 Cargo Bag





⑥ Place four boxed missiles on top of the honeycomb.

⑦ Form another layer of honeycomb as was done in step 5 above.

⑧ Place four boxed missiles on top of the second layer of honeycomb.

⑨ Bind the missiles together with the lashing positioned in step 3 above, using a D-ring and a load binder.

Figure 8-3. Missiles Placed in A-22 Cargo Bag (Continued)





① Close the A-22 cover, and secure the corners with ½-inch tubular nylon webbing.

② Secure the A-22 cargo net at each corner and on top of the load. Fold any excess webbing, and tie it with type I, ¼-inch cotton webbing.

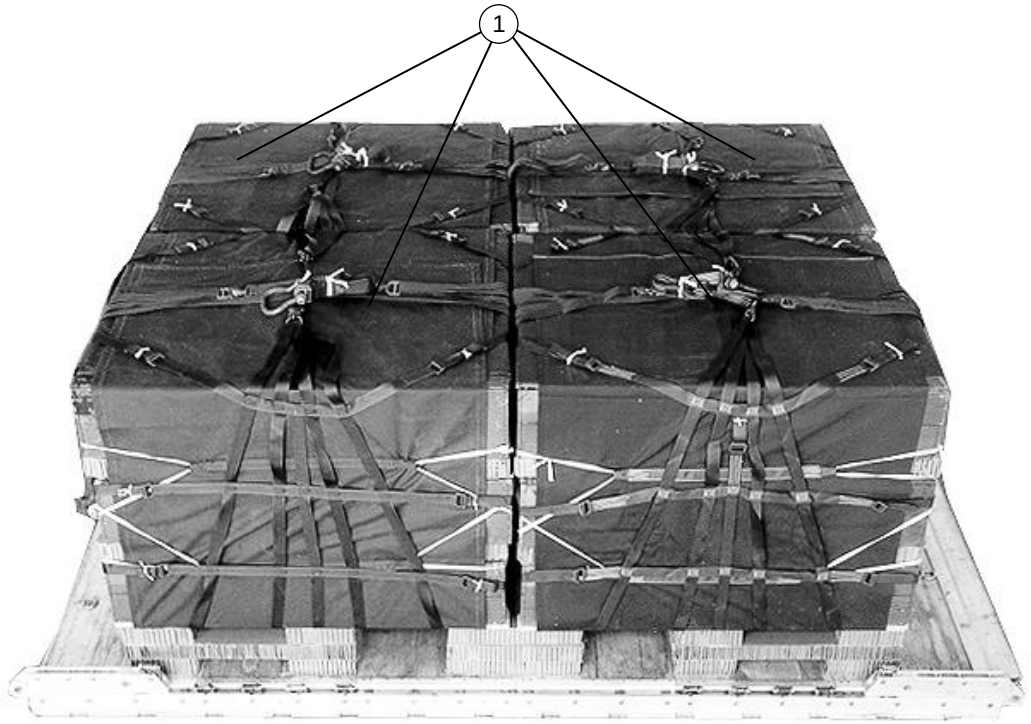
③ Attach a medium clevis to the suspension web D-rings. Secure the clevis to the top center straps of the A-22 with ½-inch tubular nylon webbing.

④ Tape the suspension webs together, and secure them to the top center strap with ½-inch tubular nylon webbing.

Figure 8-4. A-22 Cargo Bag Closed

PLACING MISSILES IN A-22 CARGO BAGS ON PLATFORM

8-5. Place the A-22 cargo bags on the honeycomb stacks as shown in Figure 8-5.

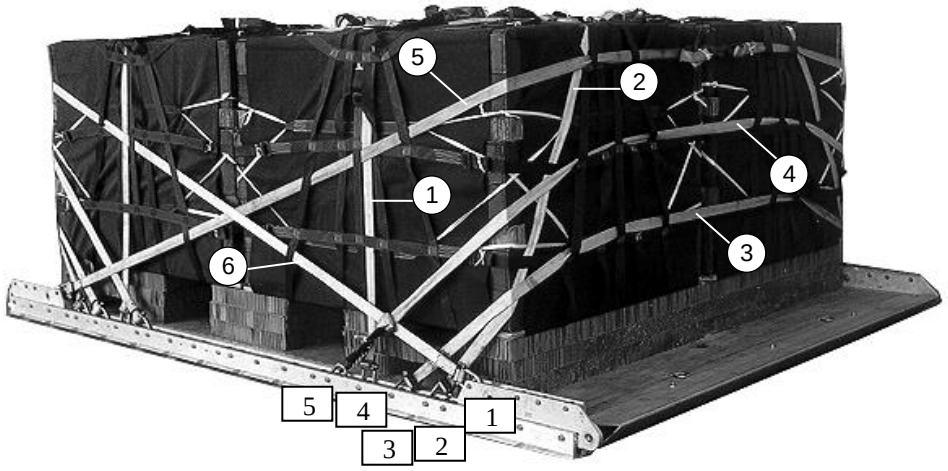


① Center the A-22 cargo bags on the platform with their 58-inch sides parallel to the platform side rails.

Figure 8-5. Missiles in A-22 Cargo Bags Positioned on Platform

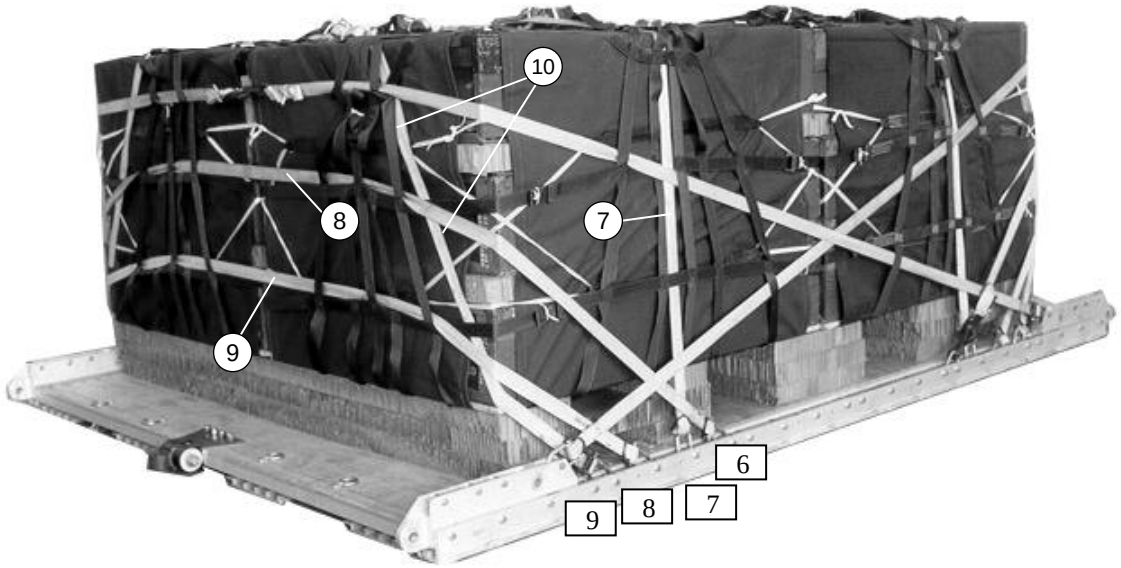
LASHING LOAD

8-6. Lash the A-22 cargo bags to the platform as shown in Figures 8-6 and 8-7.



Lashing Number	*Tiedown Clevis Numbers*	*Instructions*
		Pass Lashing:
1	4 and 4A	Through clevis 4 and through its own D-ring. Pass a second lashing through clevis 4A and its own D-ring. Pass the lashings over the top of the load (under the webbing) and through the medium clevis. Secure the lashings with two D-rings and a load binder on top of the load.
2	2 and 9A	Through clevis 2 and through its own D-ring. Pass a second lashing through clevis 9A and its own D-ring. Route the lashings over the load under the webbing. Secure the lashings on top of the load with two D-rings and a load binder.
3	3 and 3A	Through clevis 3 and its own D-ring. Pass the lashing around the front of the load under the webbing. Attach the lashing to clevis 3A with a D-ring and a load binder.
4	5 and 5A	Through clevis 5A and its own D-ring. Pass the lashing around the front of the load under the webbing. Attach the lashing to clevis 5 with a D-ring and a load binder.
5	10 and 10A	Through clevis 10 and through its own D-ring. Pass the lashings around the front of the load under the webbing. Secure the lashings with two D-rings and a load binder.
6	1 and 1A	Through clevis 1 and through its own D-ring. Pass a second lashing through clevis 1A and its own D-ring. Pass the lashings around the rear of the load under the webbing. Secure the lashings with two D-rings and a load binder.

Figure 8-6. Lashings 1 Through 6 Installed

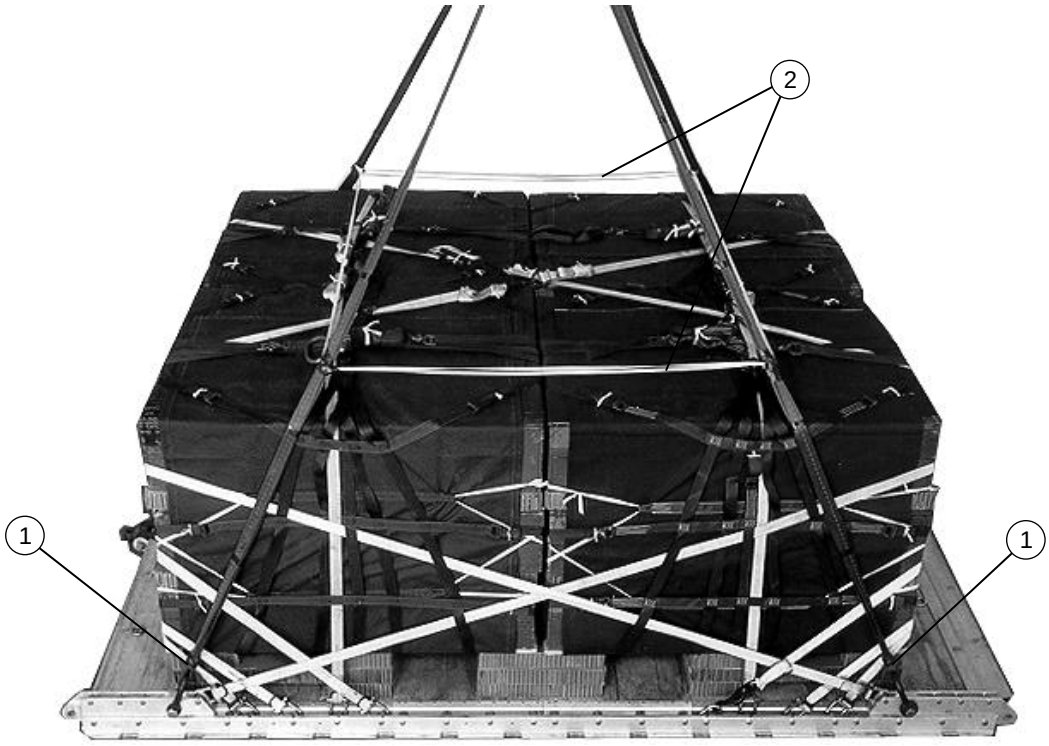


Lashing Number	*Tiedown Clevis Numbers*	*Instructions*
		Pass Lashing:
7	7 and 7A	Through clevis 7 and its own D-ring. Pass a second lashing through clevis 7A and its own D-ring. Pass the lashings over the top of the load (under the webbing) and through the medium clevis. Secure the lashings with two D-rings and a load binder on top of the load.
8	6 and 6A	Through clevis 6 and its own D-ring. Pass the lashing around the rear of the load under the webbing. Attach the lashing to clevis 6A with a D-ring and a load binder.
9	8 and 8A	Through clevis 8 and its own D-ring. Pass the lashing around the rear of the load under the webbing. Attach the lashing to clevis 8A with a D-ring and a load binder.
10	9 and 2A	Through clevis 9 and its own D-ring. Pass a second lashing through clevis 2A and its own D-ring. Pass the lashings around the end and over the top of the load under the webbing. Secure the lashings with two D-rings and a load binder on top of the load.

Figure 8-7. Lashings 7 Through 10 Installed

INSTALLING SUSPENSION SLINGS

8-7. Install four 12-foot (2-loop), type XXVI nylon webbing slings as suspension slings. Install and safety the slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 8-8.



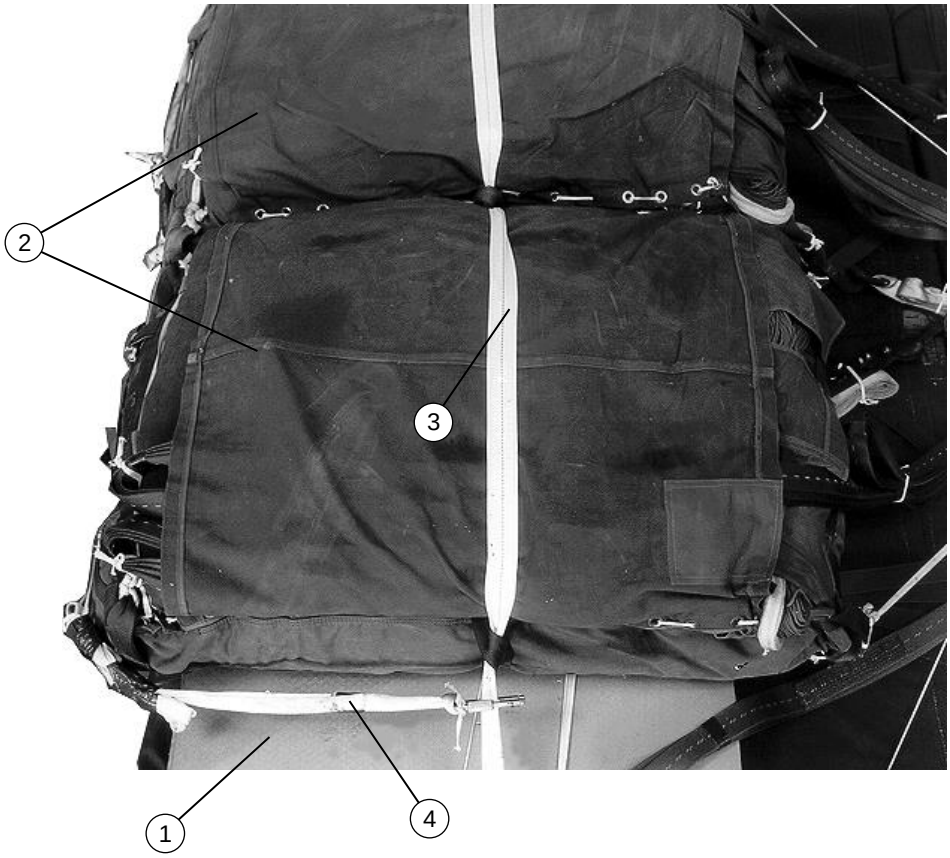
① Attach a 12-foot (2-loop), type XXVI nylon webbing sling to each of the four tandem links using a large clevis.

② Raise the suspension slings above the load and install the deadman's tie as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 8-8. Suspension Slings Installed

INSTALLING CARGO PARACHUTES

8-8. Install two G-11 cargo parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 8-9.



① Secure a 36- by 96-inch piece of honeycomb along the rear edge of the load with type III nylon cord. Tape the honeycomb where the type III nylon cord touches.

② Place two G-11 cargo parachutes on the parachute stowage platform.

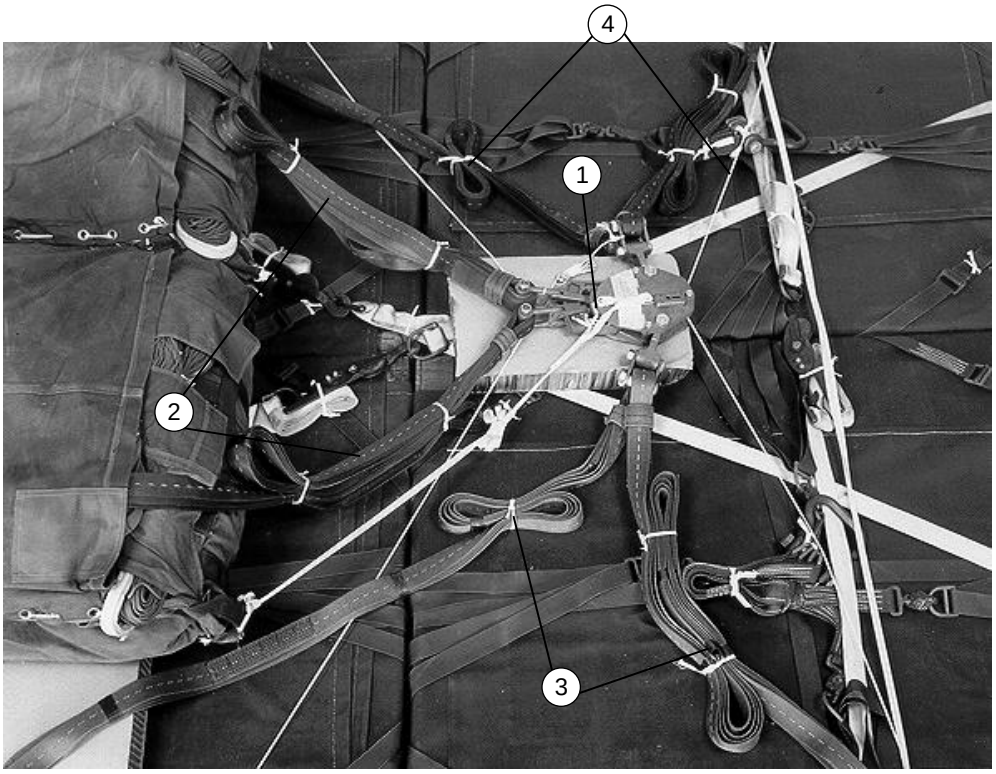
③ Restrain the parachutes with type VIII nylon webbing to clevises 8 and 8A.

④ Install the parachute release straps according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 8-9. G-11 Cargo Parachutes Installed

INSTALLING RELEASE SYSTEM

8-9. Install the M-1 cargo parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 8-10.



① Center a piece of honeycomb on top of the load, and place an M-1 cargo parachute release on the honeycomb. Attach the parachute riser extension and suspension slings.

② Fold any excess parachute riser, and tie the folds with type I, ¼-inch cotton webbing.

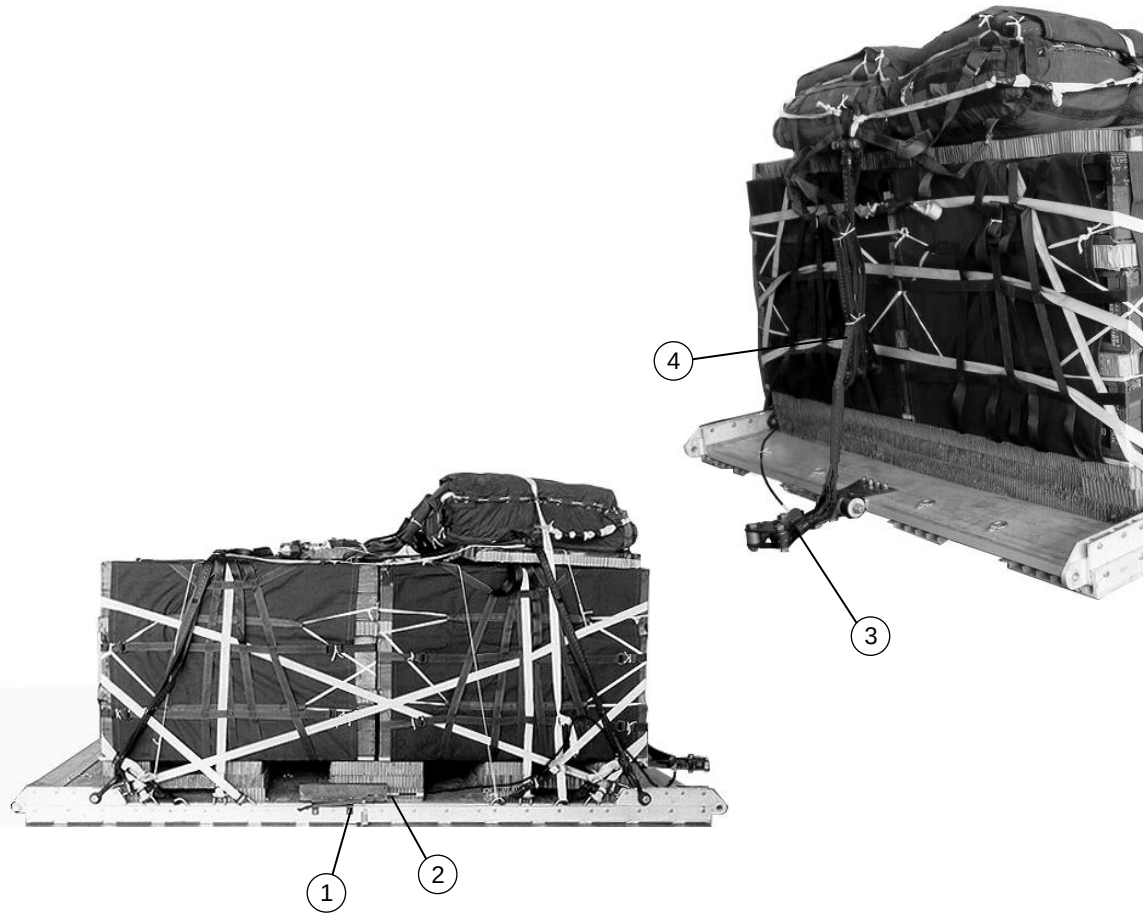
③ Fold any excess suspension sling, and tie the folds with type I, ½-inch cotton webbing.

④ Safety the release to the load with type III nylon cord.

Figure 8-10. M-1 Cargo Parachute Release Installed

INSTALLING EXTRACTION SYSTEM

8-10. Install the Extraction Force Transfer Coupling (EFTC) extraction system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, and as shown in Figure 8-11.



① Bolt the Extraction Force Transfer Coupling (EFTC) mounting brackets in the rear mounting holes on the left platform rail.

② Install a 12-foot cable to the actuator. Install the actuator to the brackets.

③ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.

④ Install a 9-foot, (2-loop), type XXVI nylon webbing sling as the deployment line. S-fold the excess and tie it in two places with type I, ¼-inch cotton webbing.

Figure 8-11. Extraction Force Transfer Coupling Installed

INSTALLING EXTRACTION PARACHUTE

8-11. Select the extraction line and extraction parachute needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Place the extraction parachute and extraction line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

8-12. Select and install provisions for emergency restraints according to the emergency aft restraints requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

MARKING RIGGED LOAD

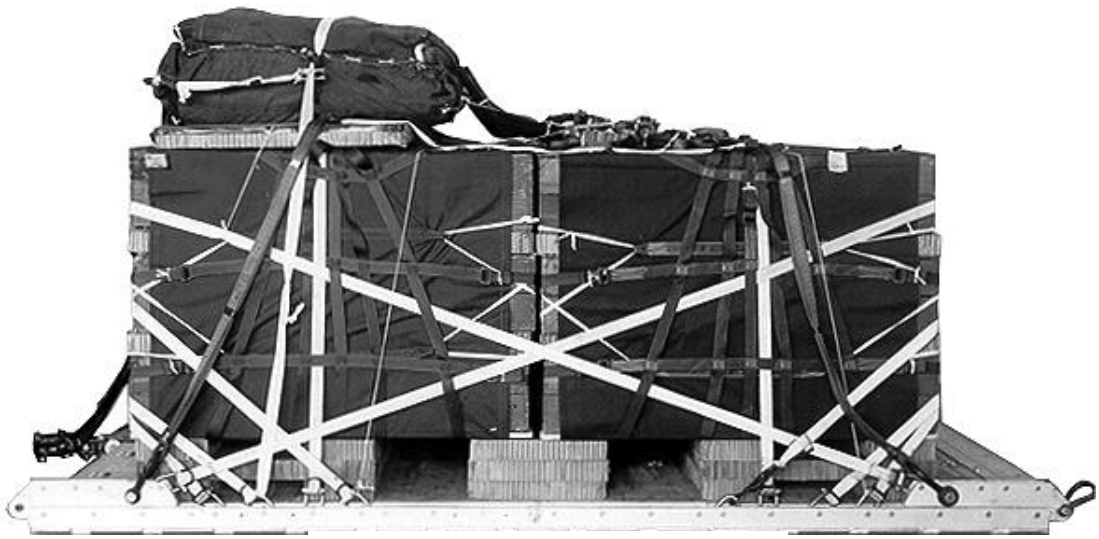
8-13. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 8-12. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, tip-off curve, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

8-14. Use the equipment listed in Table 8-1 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

Rigged Load Data

Weight:	Load Shown…….	6,600 pounds
	Maximum……	7,100 pounds
Height	……..	75 inches
Width	……..	108 inches
Length	……..	165 inches
Overhang:	Front……	0 inches
	Rear ……	18 inches
center of balance (CB) (from front edge of platform)	……..	77 inches
Extraction System (adds 18 inches to length of platform)	……..	Extraction Force Transfer Coupling (EFTC)

Figure 8-12. TOW Missiles Rigged in A-22 Cargo Bags on a 12-Foot Type V Platform for Low-Velocity Airdrop

Table 8-1. Equipment Required for Rigging TOW Missiles in A-22 Cargo Bags on a 12-Foot Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive Paste, 1-gallon	As Required
1670-00-587-3421	Bag, Cargo, A-22	4
	Clevis Suspension	
4030-00-090-5354	1-inch (large)	7
4030-00-678-8562	¾-inch (medium)	6
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
1670-00-434-5783	Coupling, Airdrop, Extraction Force Transfer w/ Cable, 12-ft	1
	Cover:	
1670-00-360-0328	Clevis, Large	1
1670-00-360-0329	Link, Type IV	3
1670-01-183-2678	Leaf, Extraction Line (Line Bag)	3
	Line, Drogue (for C-17)	
1670-01-064-4452	60-foot (1-loop), Type XXVI	1
	Line, Extraction	
1670-01-064-4452	For C-130: 60-foot (1-loop), Type XXVI	1
1670-01-107-7652	For C-141: 160-foot (1-loop), Type XXVI	1
1670-01-107-7652	For C-5: 160-foot (1-loop), Type XXVI	1
1670-01-107-7652	For C-17: 160-foot (1-loop), Type XXVI	1
	Link Assembly:	
1670-00-783-5988	Type IV	3
	Two-Point, 3 ¾-inch (For C-17)	1
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	(2)
5310-00-232-5165	Nut, 1-inch, hexagonal	(2)
1670-00-003-1953	Plate, Side, 3 ¾-inch	(2)
5365-00-007-3414	Spacer, Large	(2)
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb, 3- by 36- by 96-inch	16 Sheets
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 8-1. Equipment Required for Rigging TOW Missiles in A-22 Cargo Bags on a 12-Foot Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Parachute:	
1670-01-016-7841	Cargo, G-11B	2
1670-01-063-3715	Cargo Extraction, 15-foot	1
1670-01-063-3715	Drogue, 15-foot (For C-17)	1
	Platform, Airdrop, Type V, 12-foot	
1670-01-353-8425	Bracket Assembly, Coupling	(1)
1670-01-162-2372	Clevis Assembly, Type V	(20)
1670-01-354-8424	Extraction, Bracket Assembly	(1)
1670-01-162-2381	Link, Tandem, Suspension Link Assembly	(4)
1670-01-097-8816	Release, Cargo Parachute, M-1	1
	Sling, Cargo Airdrop	
	For Suspension:	
1670-01-062-6303	12-foot (2-loop), Type XXVI Nylon Webbing	4
	For Deployment:	
1670-01-062-6304	9-foot (2-loop), Type XXVI Nylon Webbing	1
	For Riser Extension:	
1670-01-062-6302	20-foot (2-loop), Type XXVI Nylon Webbing	2
1670-00-998-0116	Strap, Parachute Release, Single or	1
5340-00-040-8219	Strap, Parachute Release, Multi-cut	2
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot	21
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, type I	As Required
8305-00-082-5752	Nylon, Tubular, ½-inch	As Required
8305-00-261-8585	Type VIII	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

SECTION II –RIGGING MISSILES ON A TYPE V PLATFORM FOR LOW-VELOCITY AIRDROP

DESCRIPTION OF LOAD

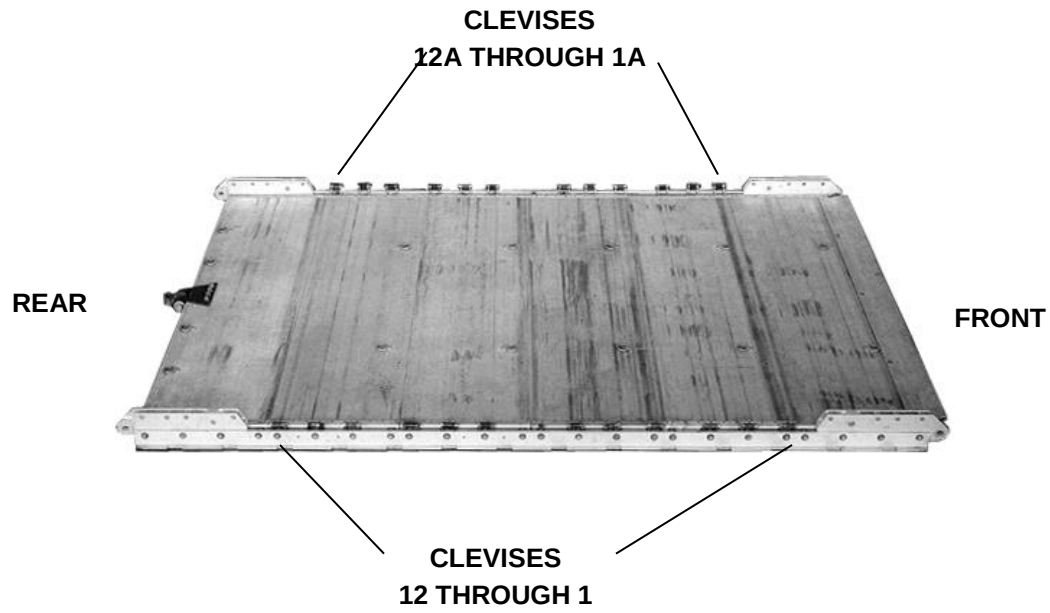
8-15. Forty-eight boxed missiles are rigged on a 12-foot, type V airdrop platform. Each boxed missile weighs 87 pounds and is 57 ½ inches long, 12 inches high and 12 inches wide. This load requires two G-11 cargo parachutes.

PREPARING PLATFORM

8-16. Prepare a 12-foot, type V airdrop platform as described below.

- Inspecting Platform. Inspect, or, assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
- Installing Tandem Links. Install tandem links as shown in Figure 8-13.
- Attaching and Numbering Clevises. Attach and number 24 clevis assemblies as shown in Figure 8-13.

Note. Measurements given in this load are from the front edge of the platform, NOT from the front edge of the nose bumper. The nose bumper may or may not be installed.



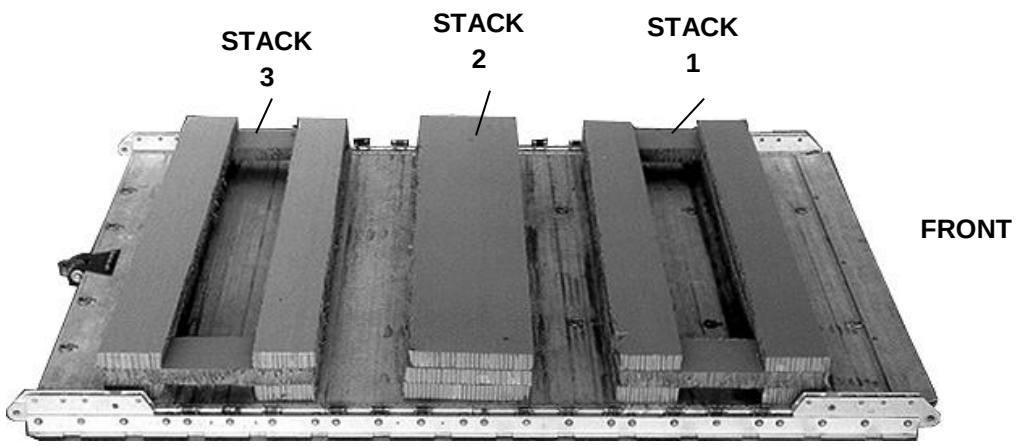
Steps:

1. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
2. Install a tandem link to the rear of each platform side rail using holes 22, 23, and 24.
3. Starting at the front of each platform side rail, install clevises on the bushings bolted on holes 5, 6, 7, 9, 10, 11, 14, 15, 16, 18, 19, and 20.
4. Starting at the front of the platform, number the clevises 1 through 12 on the right side and 1A through 12A on the left side.

Figure 8-13. Platform Prepared

BUILDING AND PLACING HONEYCOMB STACKS

8-17. Build the honeycomb stacks and place them on the platform as shown in Figure 8-14.

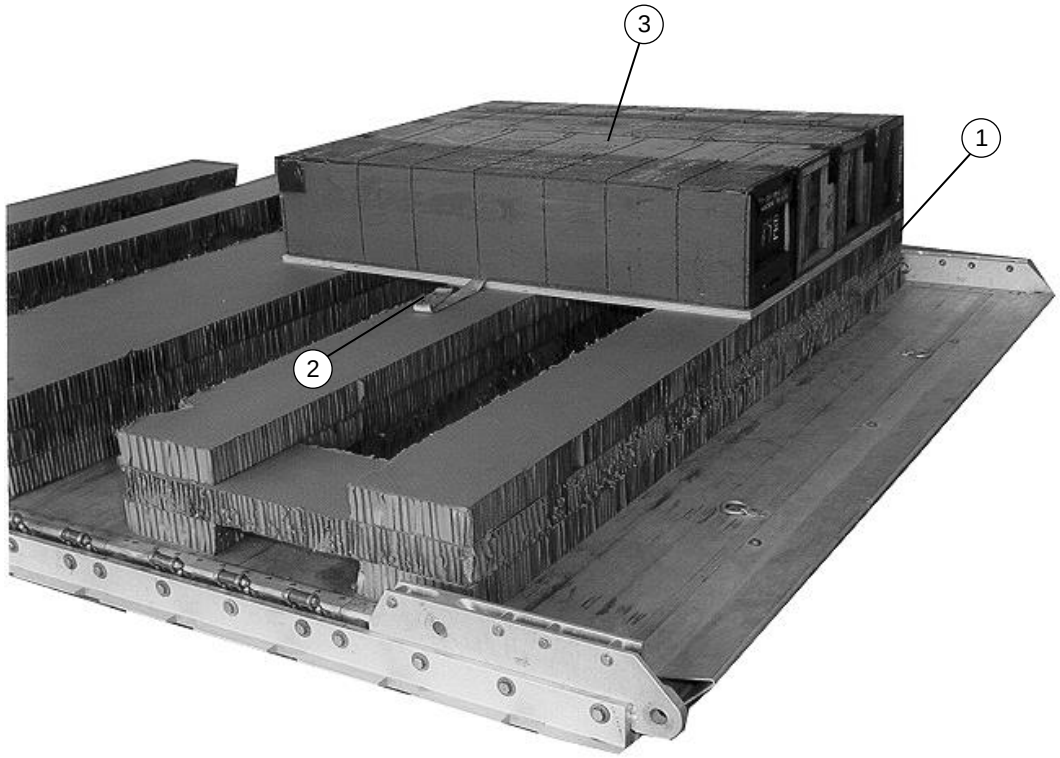


Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
1	2	96	10	Honeycomb	Place one piece 14 inches from the front edge of the platform. Place another piece 14 inches from the first piece.
	2	10	34	Honeycomb	Place one piece over each end of the two base pieces as a bridge.
	2	76	10	Honeycomb	Place flush over each base piece, filling the space between the two bridge pieces.
	2	96	10	Honeycomb	Place flush over each end of the stack.
2	3	96	20	Honeycomb	Glue layers flush together and center 14 inches from stack 1.
3	2	96	10	Honeycomb	Place one piece 14 inches from stack 2. Place another piece 14 inches from the first piece.
	2	10	34	Honeycomb	Place one piece over each end of the two base pieces as a bridge.
	2	76	10	Honeycomb	Place flush over each base piece, filling the space between the two bridge pieces.
	2	96	10	Honeycomb	Place flush over each end of the stack.

Figure 8-14. Honeycomb Stacks Prepared and Positioned

PLACING MISSILE BOXES ON PLATFORM

8-18. Place the missiles on the honeycomb stacks as shown in Figure 8-15. Place six 15-foot lashings over the stacks of boxes as shown in Figure 8-16.

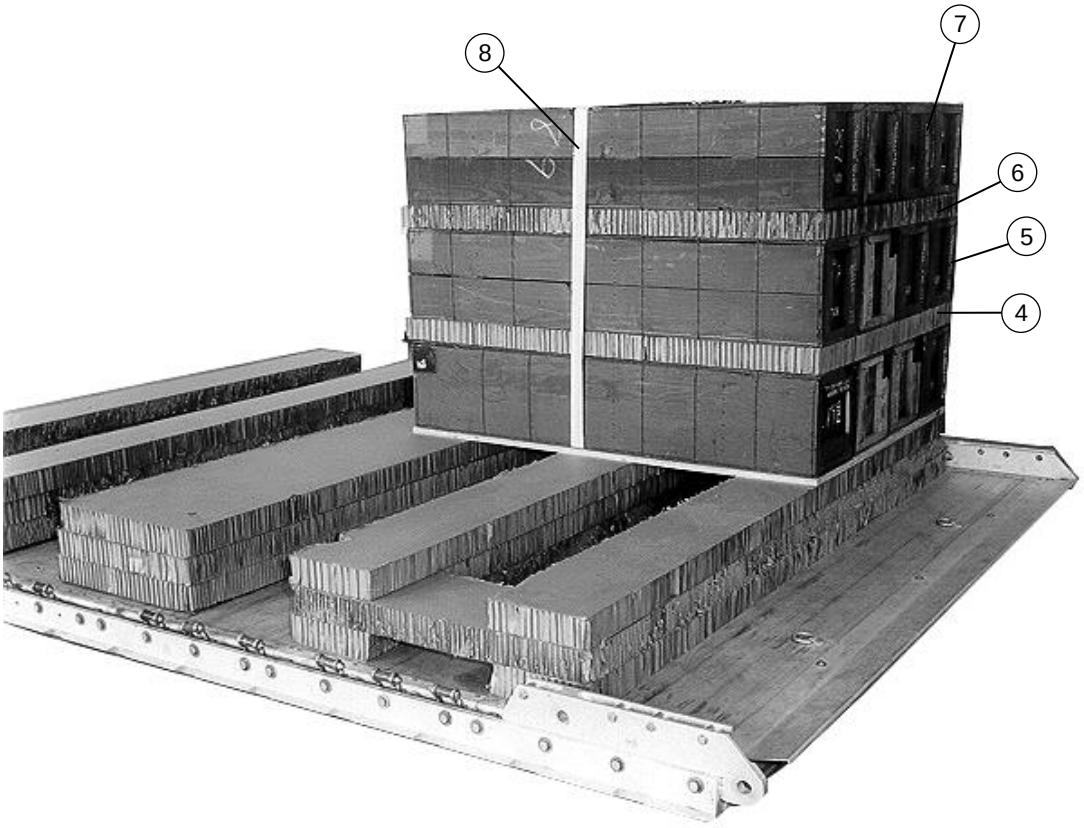


① Place a ¾- by 48- by 58-inch piece of plywood on top of stacks 1 and 2 so that it is flush with the front and left sides of stack 1.

② Lay a 15-foot lashing across the plywood.

③ Set four boxed missiles on the plywood.

Figure 8-15. Missile Boxes Placed on Honeycomb



④ Form a layer of honeycomb on top of the missiles with one 36- by 48-inch piece of honeycomb and one 22- by 48-inch piece of honeycomb.

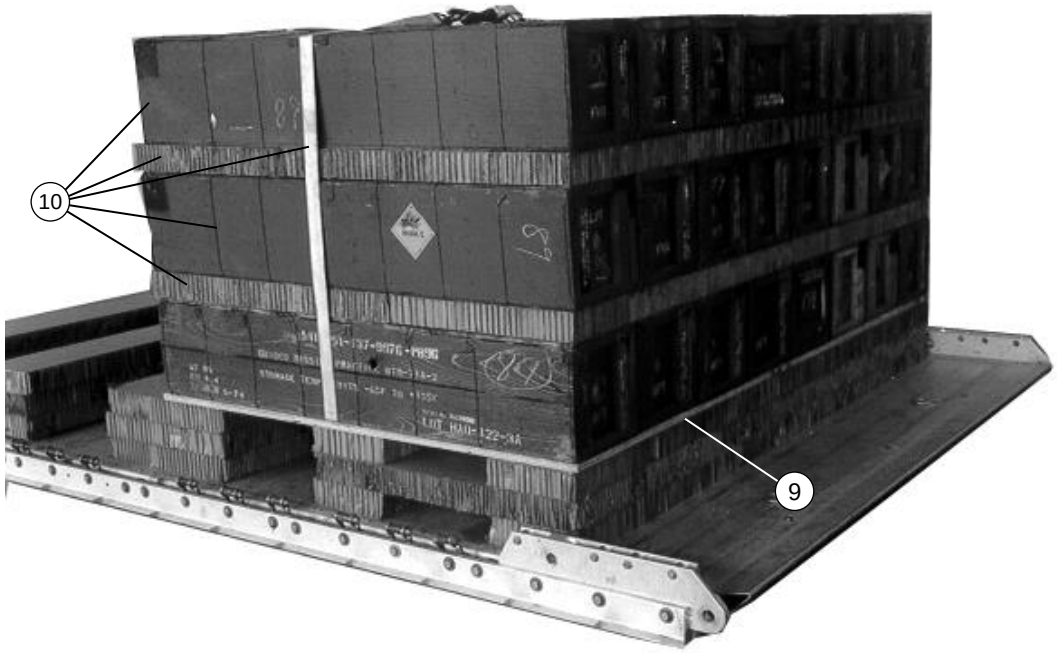
⑤ Place four boxed missiles on the honeycomb.

⑥ Cover the boxes with a layer of honeycomb constructed as in step 4 above.

⑦ Place four boxed missiles on the second layer of honeycomb.

⑧ Bind the missiles together with the lashing prepositioned in step 2 on the previous page.

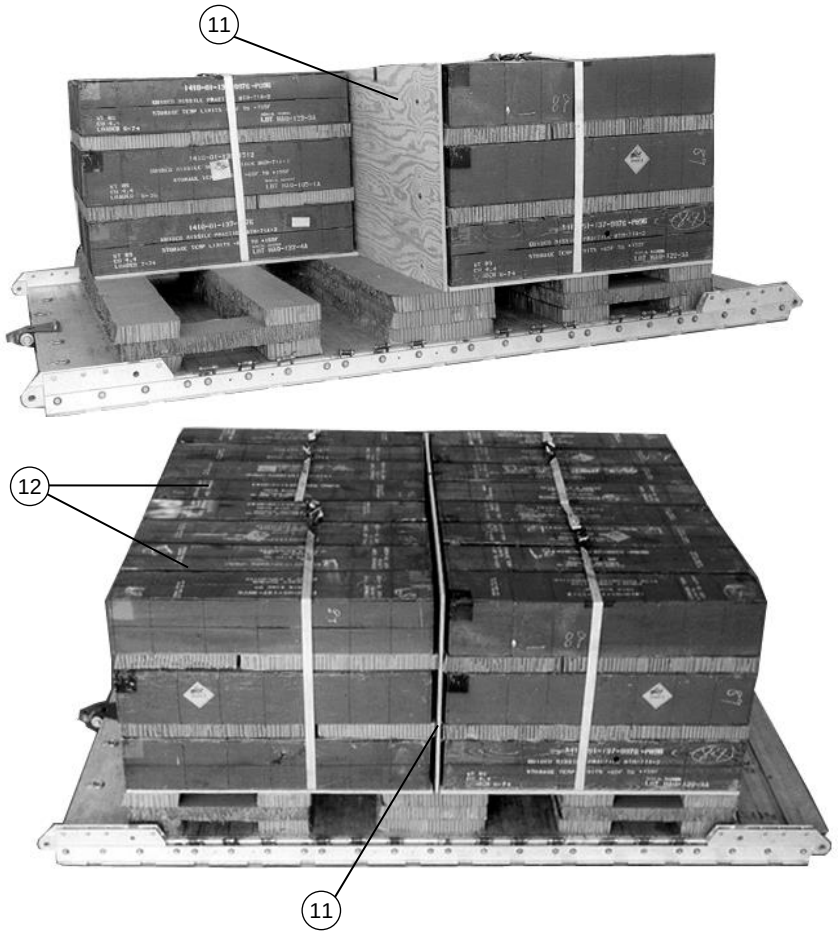
Figure 8-15. Missile Boxes Placed on Honeycomb (Continued)



⑨ Place a ¾- by 48- by 58-inch piece of plywood on top of stacks 1 and 2 so that it is flush with the front and right side of stack 1.

⑩ Repeat steps 2 through 8 to position another twelve boxed missiles on the platform.

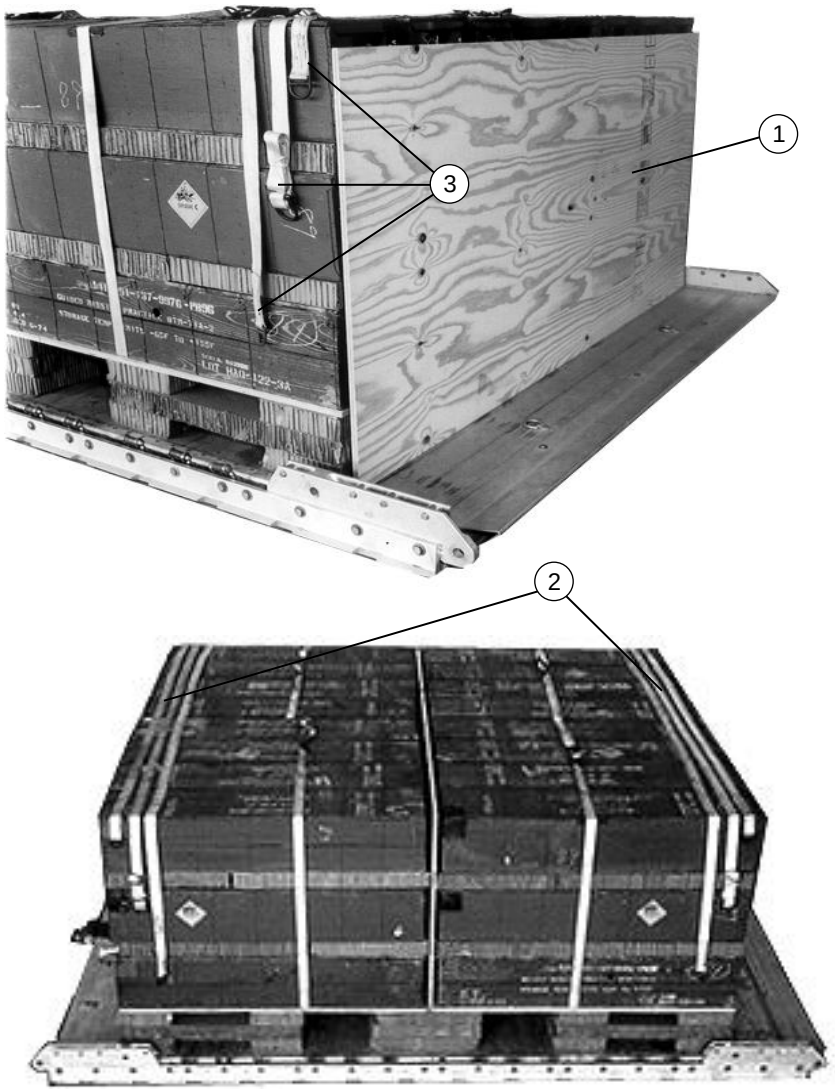
Figure 8-15. Missile Boxes Placed on Honeycomb (Continued)



⑪ Place a ¾- by 42- by 96-inch piece of plywood on edge on top of honeycomb stack 2 against the rear of the first two stacks of boxes.

⑫ Adapt steps 1 through 10 to rig the two rear stacks of 12 missiles each on the rear of the platform.

Figure 8-15. Missile Boxes Placed on Honeycomb (Continued)



① Place a ¾- by 48- by 96-inch piece of plywood against the front edge of the honeycomb stack 1 and the boxes. Place another ¾- by 48- by 96-inch piece of plywood against the rear edge of honeycomb stack 3 and the boxes.

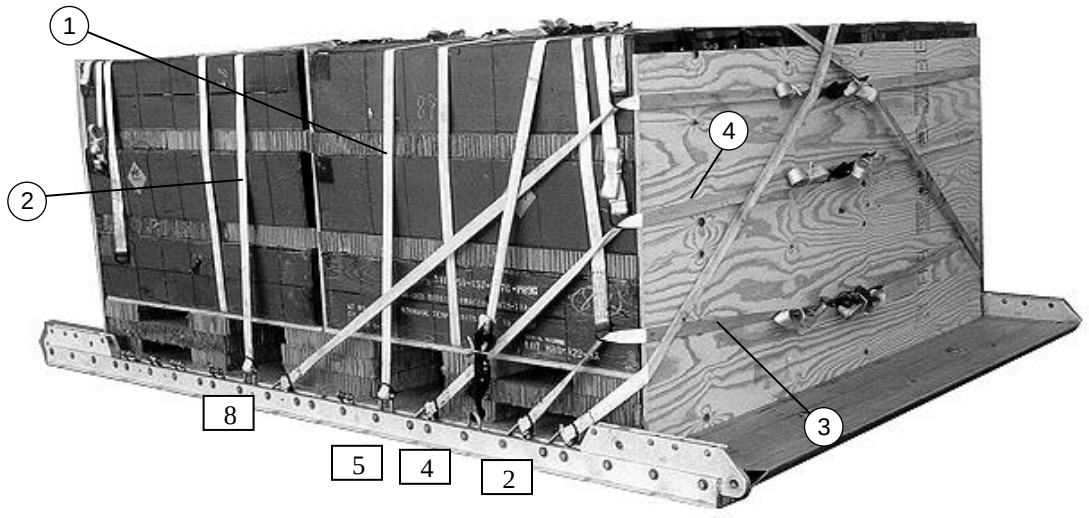
② Lay three 15-foot lashings side-by-side across the front edges of the boxes. Lay three 15-foot lashings side-by-side across the rear edges of the boxes.

③ Fit a D-ring onto the free end of each lashing. Adjust the D-rings on each side of the load so that a D-ring is at the center of each layer of boxes.

Figure 8-16. Lashings Place on Missile Boxes

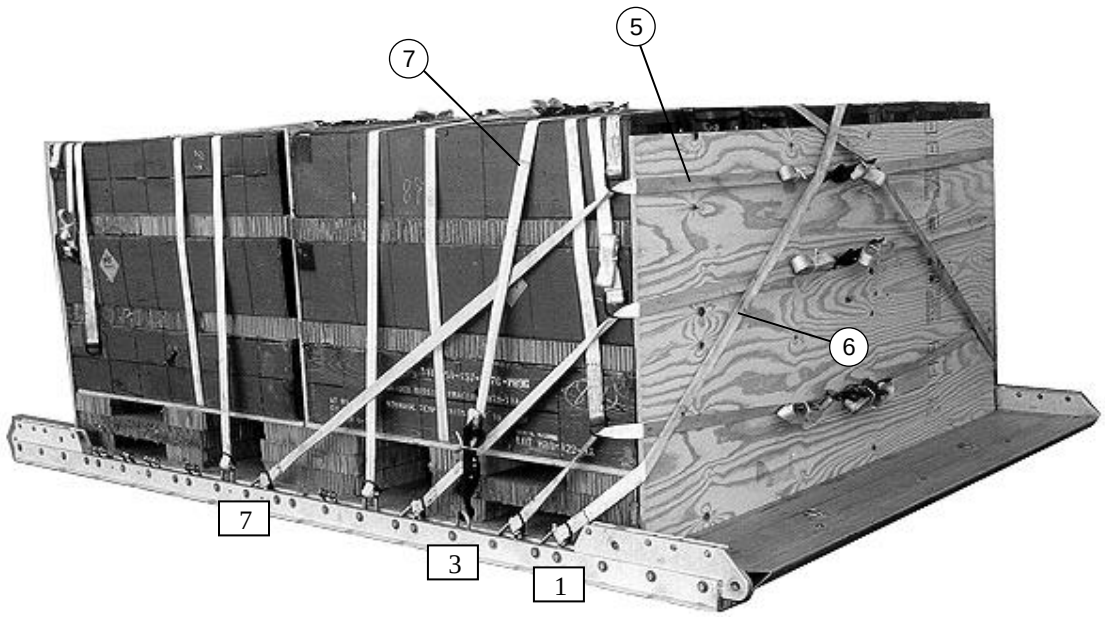
LASHING LOAD

8-19. Lash the A-22 cargo bags to the platform as shown in Figures 8-17 through 8-19. Secure the corner lashings as shown in Figure 8-20.



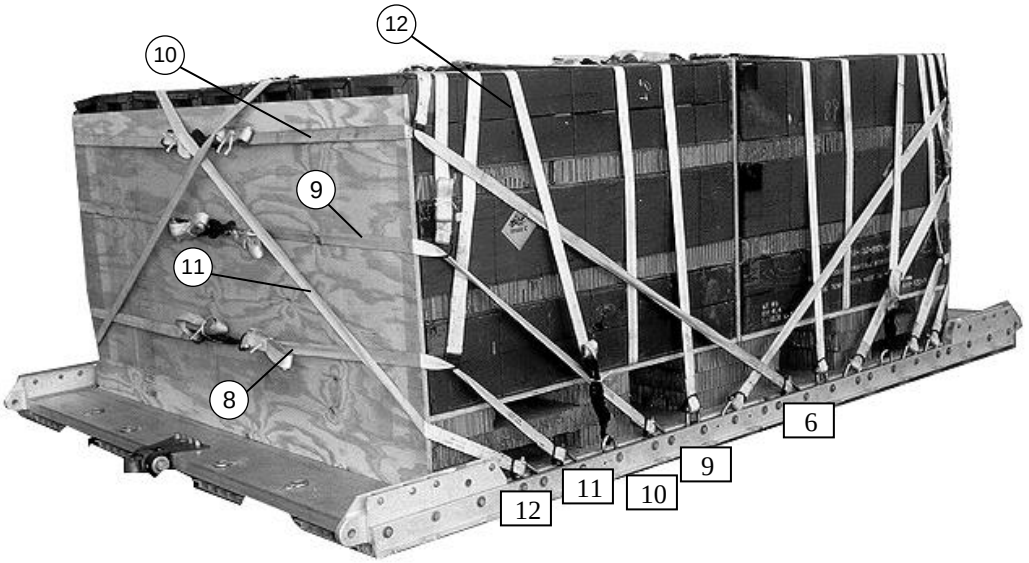
Lashing Number	*Tiedown Clevis Numbers*	*Instructions*
		Pass lashing:
1	5 and 5A	Through clevis 5 and its own D-ring. Pass a second lashing through clevis 5A and its own D-ring. Pass the lashings over the top of the load. Secure the lashing with two D-rings and a load binder on top of the load.
2	8 and 8A	Through clevis 8 and its own D-ring. Pass a second lashing through clevis 8A and its own D-ring. Pass the lashings over the top of the load. Secure the lashings with two D-rings and a load binder on top of the load.
3	2 and 2A	Through clevis 2 and its own D-ring. Pass a second lashing through clevis 2A and its own D-ring. Run each lashing through the D-ring at the bottom layer of boxes. Run each lashing to the front of the plywood. Secure the lashings in front with two D-rings and a load binder.
4	4 and 4A	Through clevis 4 and its own D-ring. Pass a second lashing through clevis 4A and its own D-ring. Run each lashing through D-ring at the middle layer of boxes. Run each lashing to the front of the plywood. Secure the lashings in front with two D-rings and a load binder.

Figure 8-17. Lashings 1 Through 4 Installed



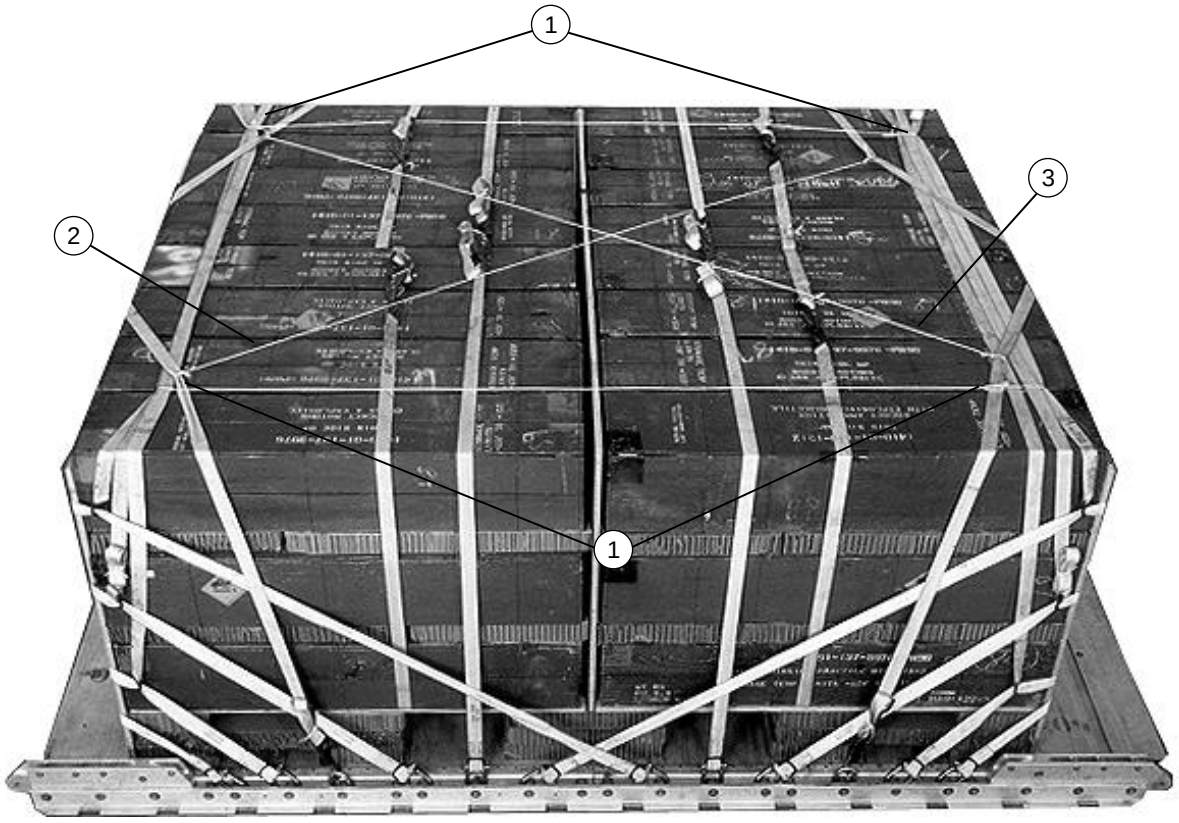
Lashing Number	*Tiedown Clevis Numbers*	*Instructions*
		Pass lashing:
5	7 and 7A	Through clevis 7 and its own D-ring. Pass a second lashing through clevis 7A and its own D-ring. Run each lashing through the D-ring at the top layer of boxes. Run each lashing to the front of the plywood. Secure the lashings in front with two D-rings and a load binder.
6	1 and 3A	Through clevis 1 and through its own D-ring. Run the lashing around the front of the plywood and over the top of the boxes. Attach a D-ring to the free end of the lashing and secure it to clevis 3A with a load binder.
7	1A and 3	Through clevis 1A and through its own D-ring. Run the lashing around the front of the plywood and over the top of the boxes. Attach a D-ring to the free end of the lashing and secure it to clevis 3 with a load binder.

Figure 8-18. Lashings 5 Through 7 Installed



Lashing Number	*Tiedown Clevis Numbers*	*Instructions*
		Pass lashing:
8	11 and 11A	Through clevis 11 and its own D-ring. Pass a second lashing through clevis 11A and its own D-ring. Run each lashing through the D-ring at the bottom layer of boxes. Run each lashing to the rear of the plywood. Secure the lashings in the rear with two D-rings and a load binder.
9	9 and 9A	Through clevis 9 and its own D-ring. Pass a second lashing through clevis 9A and its own D-ring. Run each lashing through the D-ring at the middle layer of boxes. Run each lashing to the rear of the plywood. Secure the lashings in the rear with two D-rings and a load binder.
10	6 and 6A	Through clevis 6 and its own D-ring. Pass a second lashing through clevis 6A and its own D-ring. Run each lashing through the D-ring at the top layer of boxes. Run each lashing to the rear of the plywood. Secure the lashings in the rear with two D-rings and a load binder.
11	12 and 10A	Through clevis 12 and through its own D-ring. Run the lashing around the rear of the plywood and over the top of the boxes. Attach a D-ring to the free end of the lashing and secure it to clevis 10A with a load binder.
12	10 and 12A	Through clevis 12A and through its own D-ring. Run the lashing around the rear of the plywood and over the top of the boxes. Attach a D-ring to the free end of the lashing and secure it to clevis 10 with a load binder.

Figure 8-19. Lashings 8 Through 12 Installed



① Tie the front and rear groups of support lashings installed in Figure 8-16 to each other over the top of the load on each side with type III nylon cord.

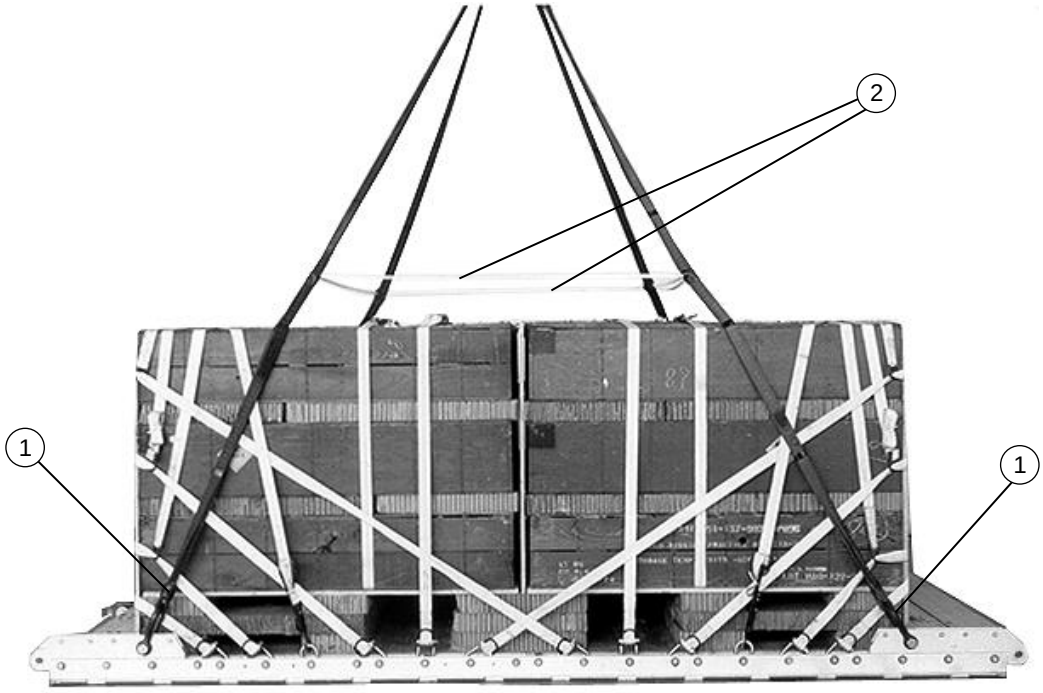
② Secure lashing 6 to lashing 12 with a length of type III nylon cord.

③ Secure lashing 7 to lashing 11 with a length of type III nylon cord.

Figure 8-20. Lashings Secured

INSTALLING SUSPENSION SLINGS

8-20. Install four 12-feet (2-loop), type XXVI nylon webbing slings as suspension slings. Install and safety the slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 8-21.



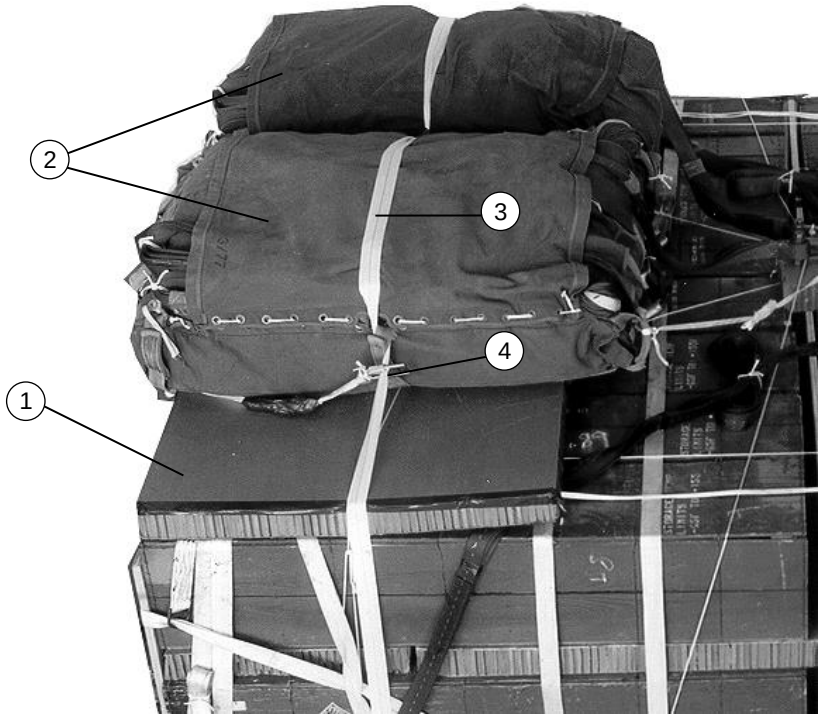
① Attach a 12-foot (2-loop), type XXVI nylon webbing sling to each of the four tandem links using a large clevis.

② Raise the suspension slings above the load and install the deadman's tie as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 8-21. Suspension Slings Installed

INSTALLING CARGO PARACHUTES

8-21. Install two G-11 cargo parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 8-22.



① Secure a 36- by 96-inch piece of honeycomb along the rear edge of the load with type III nylon cord. Tape the honeycomb where the type III nylon cord touches.

② Place two G-11 cargo parachutes on the parachute stowage platform.

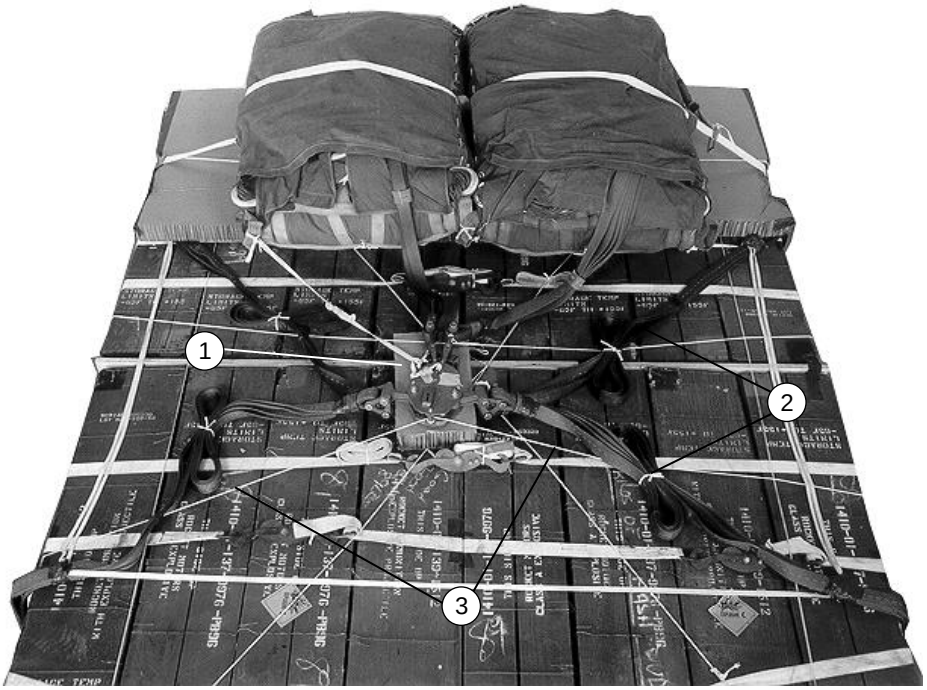
③ Restrain the parachutes with type VIII nylon webbing to clevises 8 and 8Al.

④ Install the parachute release straps according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 8-22. Cargo Parachutes Installed

INSTALLING RELEASE SYSTEM

8-22. Install the M-1 cargo parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 8-23.



① Center a piece of honeycomb on top of the load, and place an M-1 cargo parachute release on the honeycomb. Attach the parachute riser extension and suspension slings.

② Fold any excess suspension sling, and tie the folds with type I, ¼-inch cotton webbing.

③ Safety the release to the load with type III nylon cord.

Figure 8-23. Cargo Parachute Release Installed

INSTALLING EXTRACTION SYSTEM

8-23. Install the Extraction Force Transfer Coupling (EFTC) extraction system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5, and as shown in Figure 8-11. Use the front mounting holes in the left platform side rail to install the EFTC actuator mounting brackets. Install a 12-foot cable, and a 9-foot, (2-loop), type XXVI sling as a deployment line.

INSTALLING EXTRACTION PARACHUTE

8-24. Select the extraction line and extraction parachute needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Place the extraction parachute and extraction line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

8-25. Select and install provisions for emergency restraints according to the emergency aft restraints requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

MARKING RIGGED LOAD

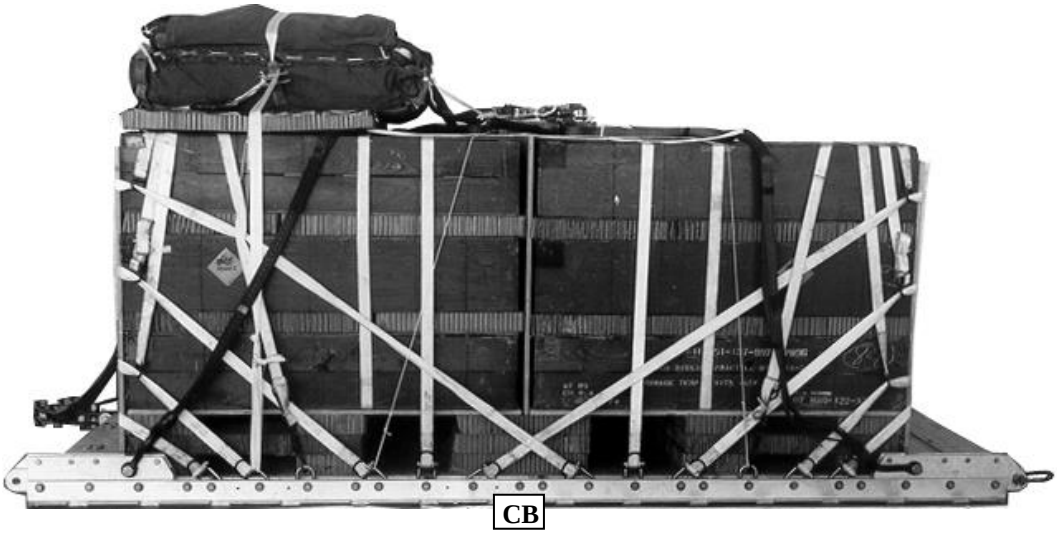
8-26. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 8-24. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, tip-off curve, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

8-27. Use the equipment listed in Table 8-2 to rig this load.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Rigged Load Data

Weight:	Load Shown…….……	6650 pounds
	Maximum……..……..……..	7,100 pounds
Height	……	75 inches
Width	……	108 inches
Length	……	165 inches
Overhang:	Front……..	0 inches
	Rear……..	18 inches
Center of Balance (front edge of platform)	…….....	77 inches
Extraction System (adds 18 inches to length of platform)	…….....	

Figure 8-24. TOW Missiles Rigged on a 12-Foot Type V Platform for Low-Velocity Airdrop

Table 8-2. Equipment Required for Rigging TOW Missiles on a 12-Foot Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive Paste, 1-gallon	As Required
	Clevis, Suspension	
4030-00-090-5354	1-inch (Large)	7
4030-00-678-8562	¾-inch, Medium	2
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
1670-00-434-5783	Coupling, Airdrop, Extraction Force Transfer w/ Cable, 12-ft	1
	Cover:	
1670-00-360-0328	Clevis, Large	3
1670-00-360-0329	Link, Type IV	3
1670-01-183-2678	Leaf, Extraction Line (Line Bag)	3
	Line, Drogue (For C-17)	
1670-01-064-4452	60-foot (1-loop), Type XXVI	1
	Line, Extraction	
1670-01-064-4452	For C-130: 60-foot (1-loop), Type XXVI	1
1670-01-107-7652	For C-141: 160-foot (1-loop), Type XXVI	1
1670-01-107-7652	For C-5: 160 foot (1-loop), Type XXVI	1
1670-01-107-7652	For C-17: 160-foot (1-loop), Type XXVI	1
	Link Assembly:	
1670-00-783-5988	Type IV	3
	Two-point, 3 ¾-inch (C-17)	1
5306-00-435-8994	Bolt, 1-inch diameter, 4-inch long	(2)
5310-00-232-5165	Nut, 1-inch hexagonal	(2)
1670-00-003-1953	Plate, Side, 3 ¾-inch	(2)
5365-00-007-3414	Spacer, Large	(2)
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb, 3- by 36- by 96-inch	18 Sheets

Table 8-2. Equipment Required for Rigging TOW Missiles on a 12-Foot Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Parachute:	2
1670-01-016-7841	Cargo, G-11B	
1670-01-063-3715	Cargo Extraction, 15-foot	1
1670-01-063-3715	Drogue, 15-foot (C-17)	1
	Platform, Airdrop, Type V, 12-foot	
1670-01-353-8425	Bracket Assembly, Coupling	(1)
1670-01-162-2372	Clevis Assembly, Type V	(24)
1670-01-354-8424	Extraction Bracket Assembly	(1)
1670-01-162-2381	Link, Tandem, Suspension Link Assembly	(4)
5530-00-128-4981	Plywood, ¾- by 48- by 96-inch	7 Sheets
1670-01-097-8816	Release, Cargo Parachute, M-1	1
	Sling, Cargo Airdrop	
	For Suspension	
1670-01-062-6303	12-foot (2-loop), Type XXVI Nylon Webbing	4
	For Deployment	
1670-01-062-6304	9-foot (2-loop), Type XXVI Nylon Webbing	1
	For Riser Extension:	
1670-01-062-6302	20-foot (2-loop), Type XXVI Nylon Webbing	2
1670-00-998-0116	Strap, Parachute Release, Single or	1
5340-00-040-8219	Strap, Parachute Release, Multicut	2
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot	30
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, Type I	As Required
8305-00-082-5752	Nylon, Tubular, ½-inch	As Required
8305-00-261-8585	Type VIII	As Required

Chapter 9

Rigging the Improved Target Acquisition System (ITAS) in an M1121 HMMWV Truck for Low-Velocity Airdrop

DESCRIPTION OF LOAD

9-1. The ITAS is an aiming system for the TOW missile. Another aiming system is shown in Chapter 6. The ITAS consists of the Fire Control Sub system (FCS), Traversing Unit (TU), Target Acquisition Subsystem (TAS), and Battery Power Source (BPS). Rig the ITAS in the M1121 or M966 HMMWV truck as shown in this chapter. Use TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111 to rig the truck on a 16-foot, type V airdrop platform.

PREPARING PLATFORM, HONEYCOMB, AND TRUCK

9-2. Prepare the platform, three honeycomb stacks, and the M966 OR M1211 truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

- Inspect, assemble, and install clevises on a 16-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22, and as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.
- Prepare three honeycomb stacks as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.
- Prepare the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

RIGGING IT AS IN HMMWV TRUCK

9-3. Rig the components of the ITAS in the truck as shown in Figure 9-1.

COMPLETING THE LOAD

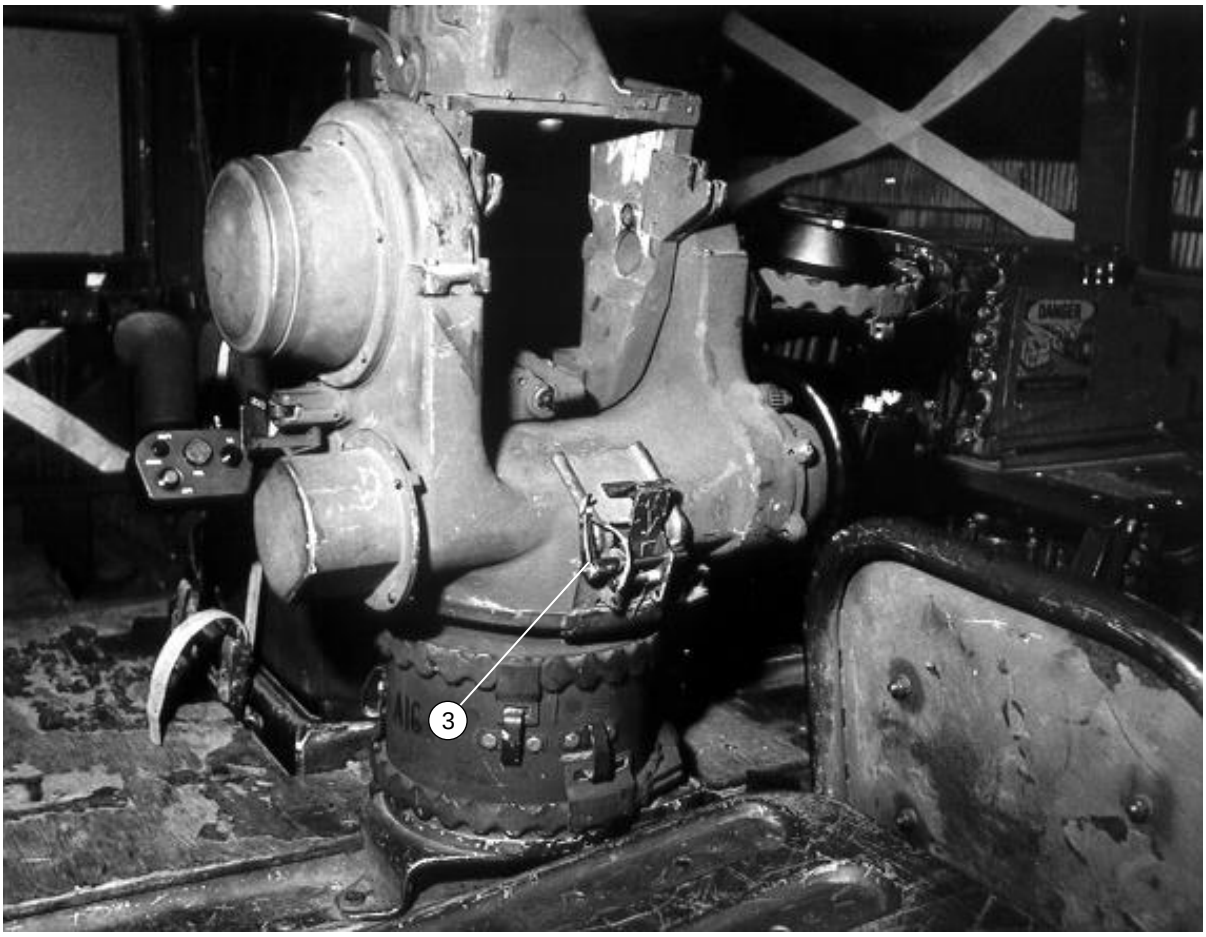
9-4. Finish rigging the M966 OR M1121 HMMWV truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.



① Place the Fire Control Sub System upside down in its storage bag.

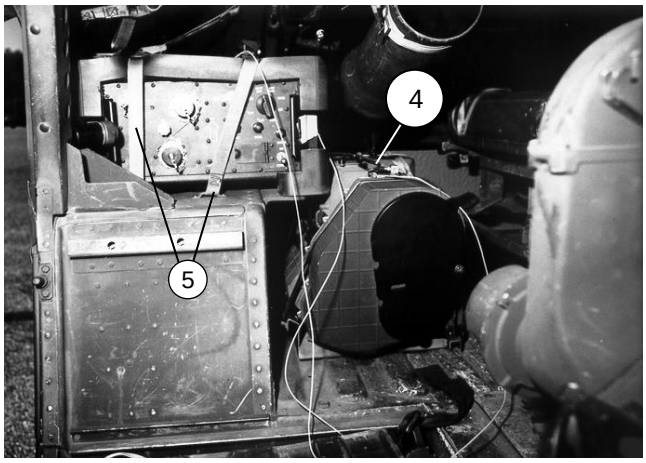
② Place the Fire Control Sub System in its bag flush on the gunner's stand and secure it in place with the straps provided.

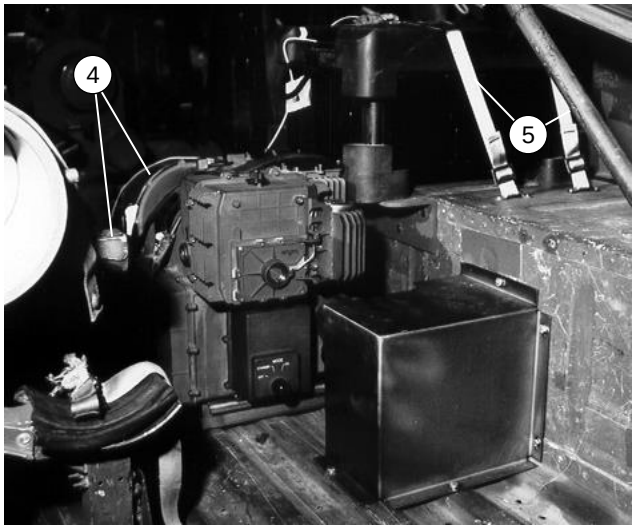
Figure 9-1. ITAS Components Rigged in Truck



③ Position the Tranversing Unit in its mounting bracket and secure it with the clips provided.

Figure 9-1. ITAS Components Rigged in Truck (Continued)





④ Position the Target Acquisition Subsystem into its mounting bracket, being sure that the binocular subassembly fits into its protective housing. Secure the Target Acquisition Subsystem with the two straps provided.

⑤ Place the rubber mounts on the Battery Power Source. Position it on its mounting bracket, and secure it with the two straps provided.

Figure 9-1. ITAS Components Rigged in Truck (Continued)

Chapter 10

Rigging M966, M1036, and M1121 TOW Carriers for Low-Velocity Airdrop on a Type V Platform

DESCRIPTION OF LOAD

10-1. The unrigged M966 TOW carrier (Figure 10-1) is described in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. The truck is rigged on a 16-foot, type V airdrop platform for low-velocity airdrop. An accompanying load weighing a minimum of 800 pounds and a maximum of 2,000 pounds must be rigged in the truck. The load requires two G-11 cargo parachutes. The M1036 is the same truck with the addition of a winch, and is rigged the same as the M966. The M1121 is a heavier version of the TOW carrier, but is rigged in the same way as the M966 and M1036.

PREPARING PLATFORM

10-2. Prepare a 16-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13C7-52-22. Install four tandem links and 18 load tiedown clevises according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

Note. You will need TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111 to rig this load.



Figure 10-1. M966 TOW Carrier

PREPARING AND POSITIONING HONEYCOMB STACKS

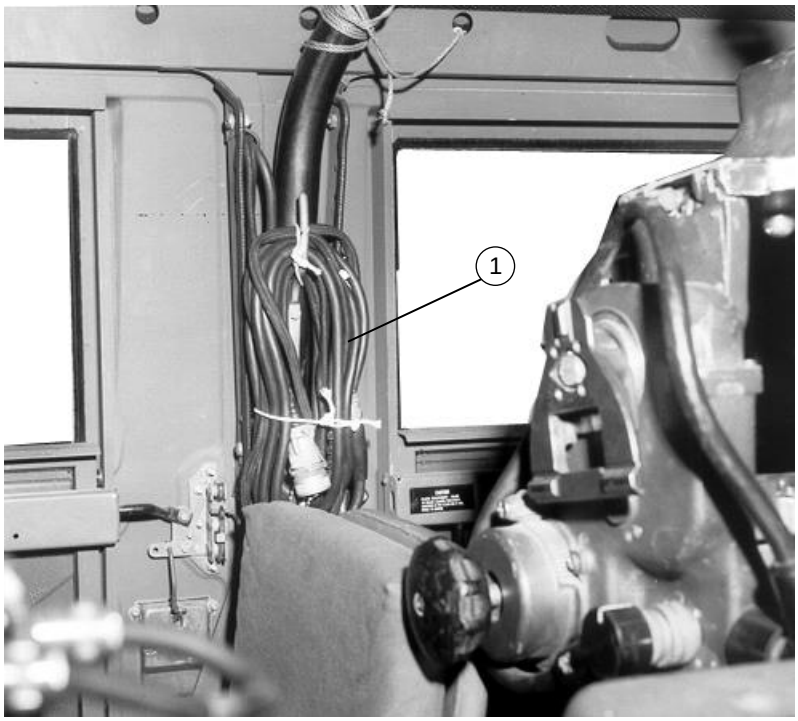
10-3. Build the honeycomb stacks as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. Position the stacks on the platform as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

PREPARING TRUCK

10-4. Prepare the truck as described in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. Use the closed-body preparation procedures given in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

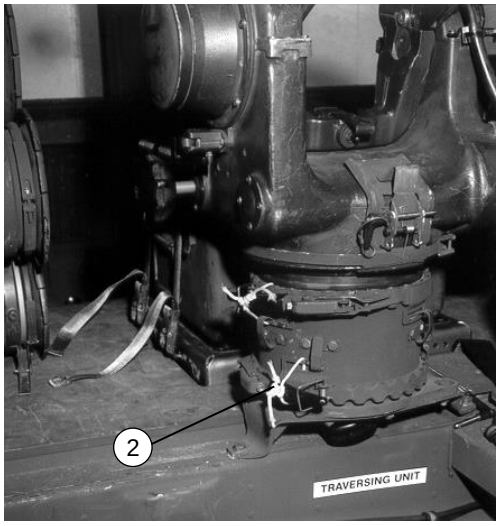
STOWING ACCOMPANYING LOAD AND SECURING DOORS

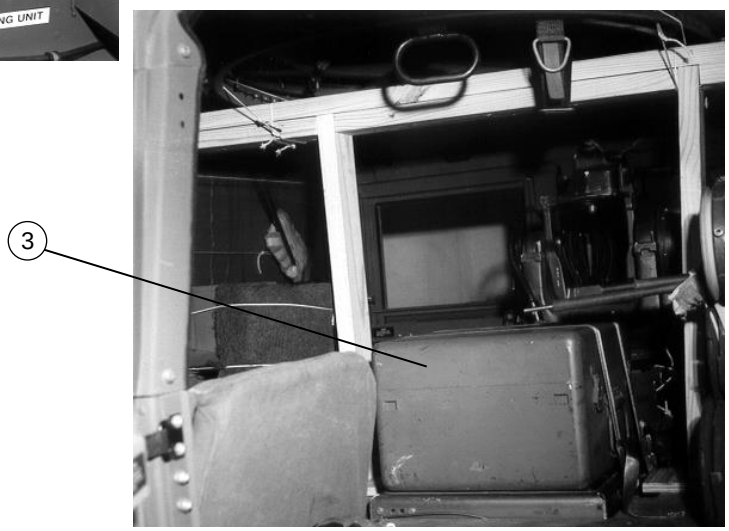
10-5. Prepare and stow the TOW equipment as shown in Figure 10-2 below. Secure the hatch cover as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.



① Disconnect the Tube launched, Optically-tracked, Wire guided system power cables, roll them, and tie them with type III nylon cord to convenient places in the truck.

Figure 10-2. TOW Equipment Prepared and Stowed





(2) Place the traversing unit on its stand. Fasten the securing straps provided, and safety the latches with type III nylon cord.

(3) Place the missile guidance system box in its rack, and secure it with the straps provided.

Figure 10-2. TOW Equipment Prepared and Stowed (Continued)



④ Place the bore sight collimator on the shelf in the right rear part of the truck. Secure the collimator with the retainer straps.

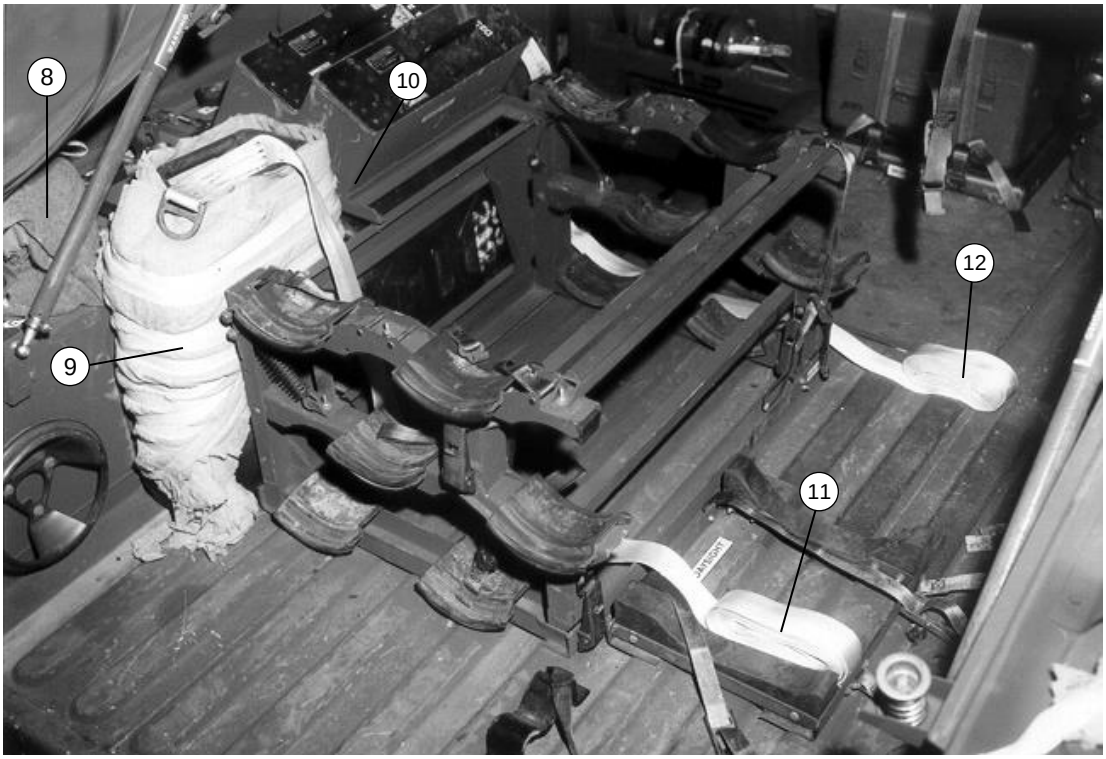
⑤ Place the infrared night sight set on the shelf in the right rear part of the truck next to the bore sight collimator. Secure the night sight set with the retainer straps.

⑥ Place the night sight battery set on the floor in the right rear part of the truck. Secure the battery set with the retainer straps.

⑦ Place the battery power conditioner on the floor in the right rear part of the truck. Secure the battery power conditioner with the retainer straps.

Note. Pad the equipment shown above, as necessary, with cellulose wadding to prevent the equipment from rubbing against the body of the truck.

Figure 10-2. TOW Equipment Prepared and Stowed (Continued)



⑧ Place the highway emergency kit in the left rear part of the truck. Tie the kit in place with type III nylon cord.

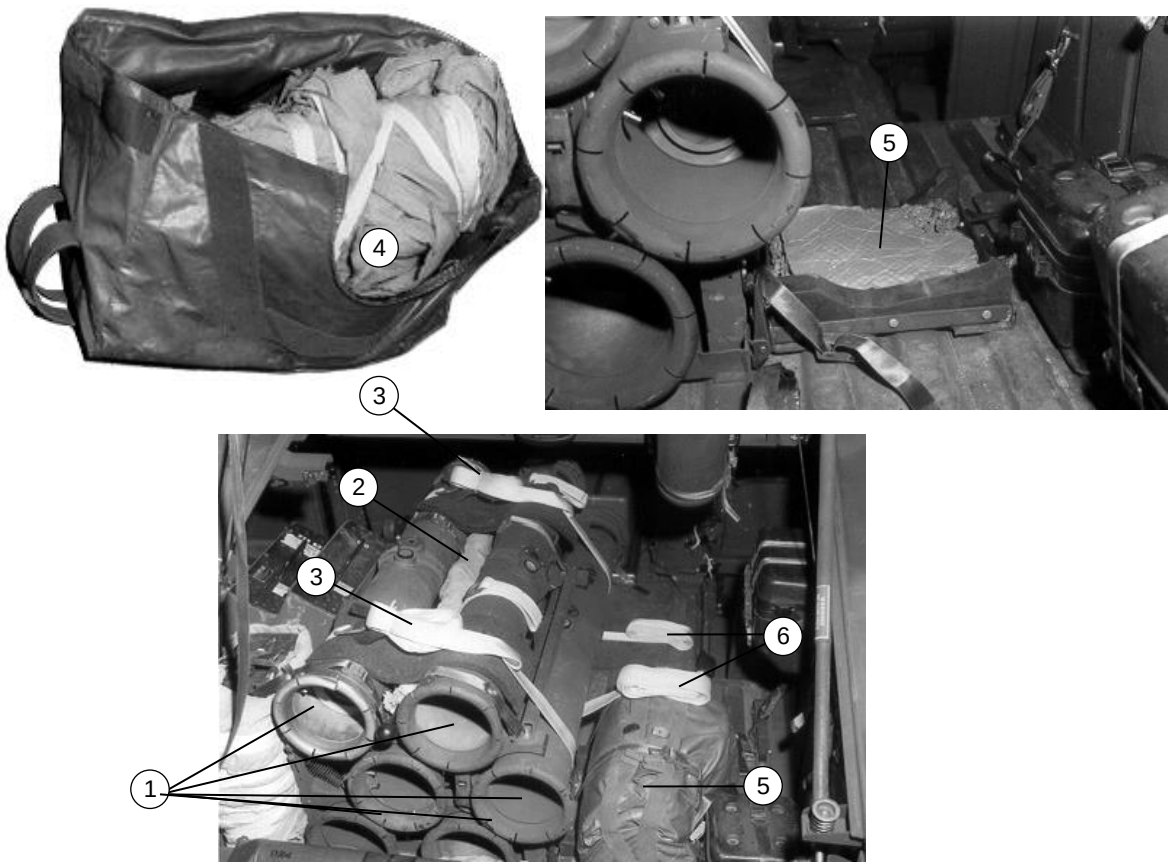
⑨ Secure the M100 SDS within the optional chemical-resistant mounting bracket.

⑩ Place the missile guidance system battery packs in their racks. Secure them in place with their fasteners.

⑪ Position a 15-foot lashing under the rear of the TOW missile rack.

⑫ Position a 15-foot lashing under the front of the TOW missile rack, and in front of the rack support.

Figure 10-2. TOW Equipment Prepared and Stowed (Continued)



① Place six TOW missiles in the rack with the nose ends to the front. Secure them with the straps provided.

② Wrap the radio antenna with cellulose wadding, and place it between the top two missiles.

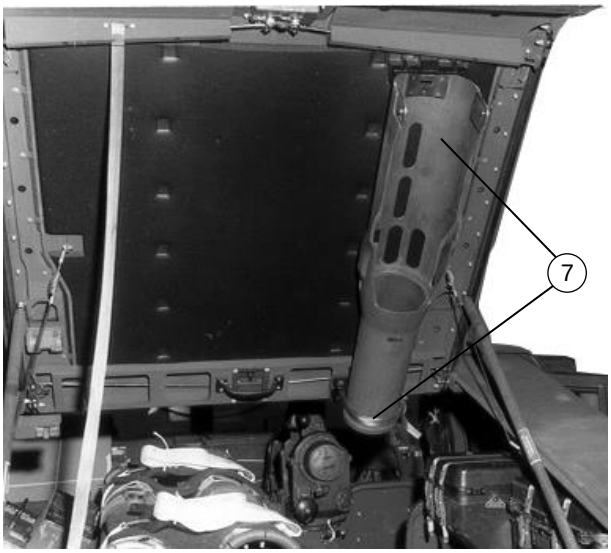
③ Fasten the pre-positioned lashings over the missiles. Pad the missiles with felt under the load binders.

④ Pad the optical sight generously with cellulose wadding and place it in its bag.

⑤ Cut a piece of honeycomb to fit in the sight bracket. Place the sight bag in the bracket, and secure it with the straps provided.

⑥ Run two 15-foot lashings around the right three missiles.

Figure 10-2. TOW Equipment Prepared and Stowed (Continued)



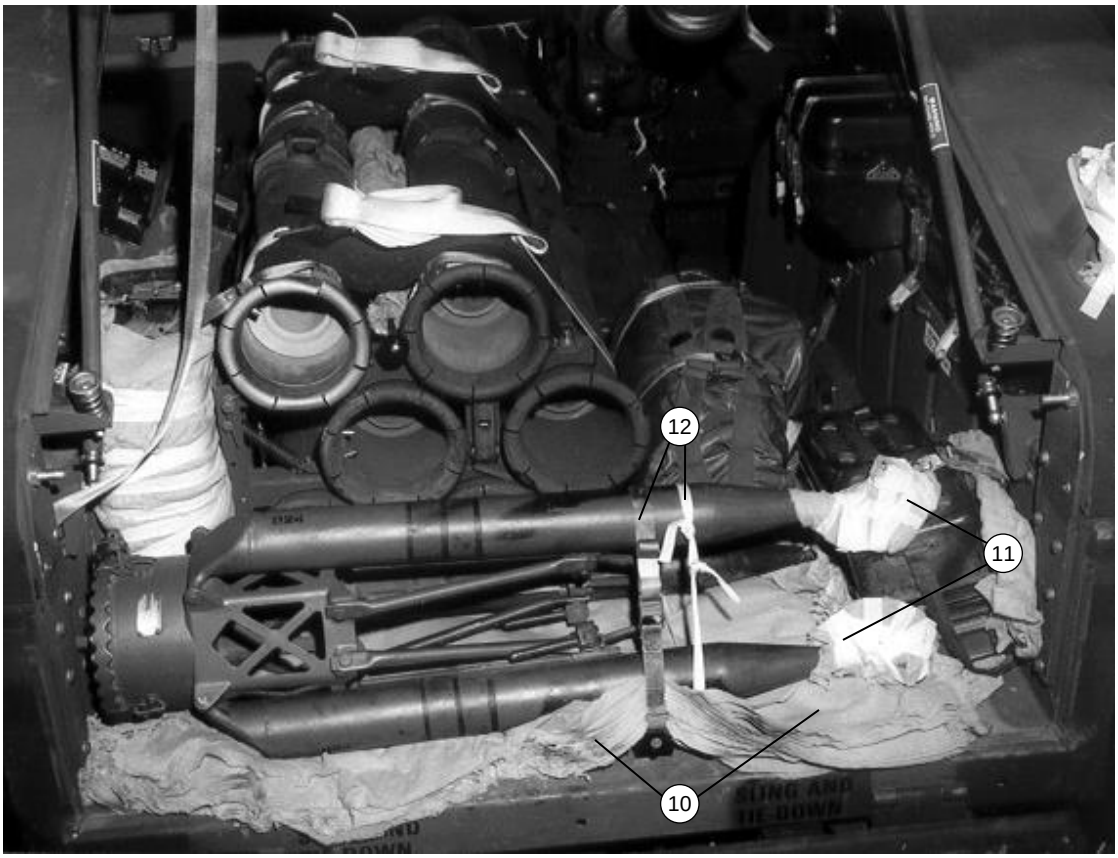


⑦ Place the missile launcher tube in its rack on the hatch cover. Secure it with the strap provided.

⑧ Lay the camouflage net bags to the right of the missiles.

⑨ Secure the camouflage net bags to the missiles with the lashings pre-positioned in step 8 above. Fasten the load binders against the bags, and not against the missiles.

Figure 10-2. TOW Equipment Prepared and Stowed (Continued)



⑩ Pad the tripod storage area with cellulose wadding.

⑪ Place the tripod in its storage rack. Pad the legs with cellulose wadding where they touch the battery power conditioner.

⑫ Secure the tripod in place with the retainer strap and a length of ½-inch tubular nylon webbing.

Figure 10-2. TOW Equipment Prepared and Stowed (Continued)

LIFTING AND POSITIONING TRUCK AND INSTALLING DRIVE-OFF AIDS

10-6. If drive-off aids are to be used, install them on the platform as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. Install lifting slings on the truck and position the truck on the honeycomb stacks as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. Install the drive-off aids to the rear wheels of the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

LASHING TRUCK

10-7. Lash the truck to the platform with fifteen 15-foot tiedown assemblies as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111, and according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

INSTALLING AND SAFETYING SUSPENSION SLINGS

10-8. Install and safety four 16-foot (2-loop), type XXVI nylon suspension slings as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

STOWING CARGO PARACHUTES

10-9. Stow two G-11 cargo parachutes on the load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

INSTALLING PARACHUTE RELEASE

10-10. Prepare and install an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

INSTALLING EXTRACTION SYSTEM

10-11. Install the Extraction Force Transfer Coupling (EFTC) extraction system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

10-12. Install provisions for emergency restraints according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

PLACING EXTRACTION PARACHUTE

10-13. Select the extraction parachute and extraction line needed, using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Rig the extraction line in a line bag according to TM 10-1670-286-20/TO 13C5-41. Place the extraction parachute and extraction line on the load for installation in the air craft.

MARKING RIGGED LOAD

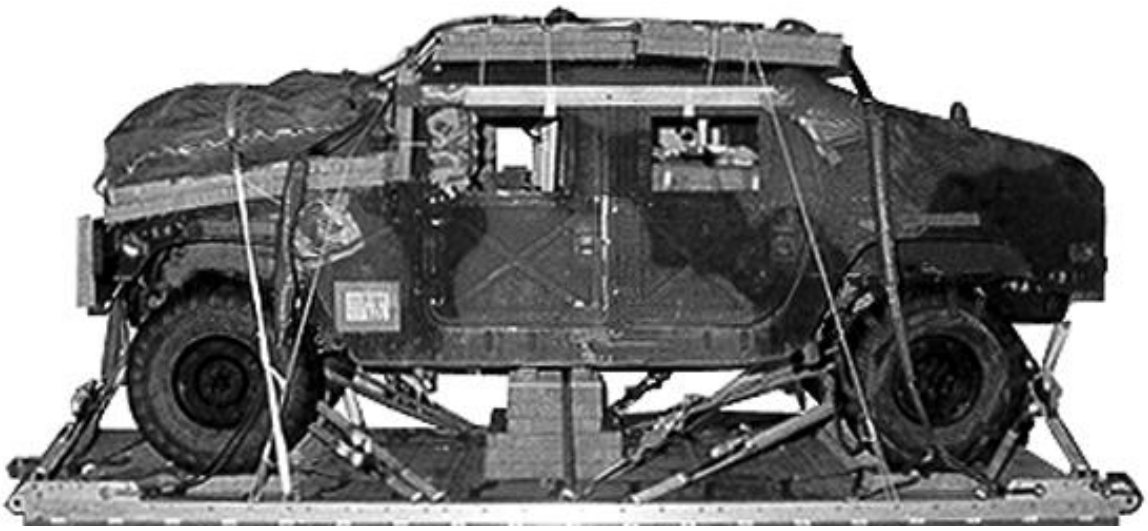
10-14. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 , and as shown in Figure 10-3. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

10-15. Use the equipment listed in Table 10-1 to rig this load. The equipment for rigging the accompanying load is included in Table 10-1.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

Rigged Load Data

Weight:	Load Shown……	8,810 pounds
	Maximum Load Allowed……	10,500 pounds
Height (with two G-11 parachutes)	……..	91 inches
Width	……..	108 inches
Length	……..	215 inches
Overhang:	Front……	0 inches
	Rear……..	18 inches
Center of Balance (from front edge of platform)	……..	102 inches

Figure 10-3. M966 TOW Carrier Rigged for Low-Velocity Airdrop

Table 10-1. Equipment Required for Rigging the M966 TOW Carrier for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, Paste, 1-gallon	As Required
4030-00-090-5354	Clevis, Suspension, 1-in (Large)	8
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
1670-00-434-5785	Coupling, Airdrop, Extraction Force Transfer w/ Cable, 16-ft	1
	Cover:	
1670-00-360-0328	Clevis, Large	1
1670-00-360-0329	Link, Type IV	3
8135-00-664-6958	Cushioning Material, Packaging, Cellulose Wadding	As Required
8305-00-958-3685	Felt, ½-inch thick	As Required
1670-01-183-2678	Leaf, Extraction Line (Line Bag)	2
	Line, Drogue (for C-17)	
1670-01-064-4452	60-ft (1-loop), Type XXVI	1
	Line, Extraction	
1670-01-062-6313	60-ft (3-loop), Type XXVI (for C-130)(Use w/140-ft for C-5)	1
1670-01-107-7651	140-ft (3-loop), type XXVI (for C-141B, C-5, or C-17)	1
1670-00-783-5988	Link Assembly:	3
	Type IV	(1)
5306-00-435-8994	Two-Point, ¾-inch	2
5310-00-252-5165	Bolt, 1-inch diameter, 4-inch long	2
1670-00-003-1953	Nut, 1-inch, hexagonal	2
5365-00-007-3414	Plate, Side, 3 ¾-inch	2
	Spacer, Large	
5510-00-220-6146	Lumber:	
5510-00-220-6448	2- by 4-inch	As Required
5510-00-220-6274	2- by 6-inch	As Required
	4- by 4-inch	As Required
5315-00-010-4659	Nail, Steel Wire, 8d	As Required
1670-00-753-3928	Pad, Energy-Dissipating (Honeycomb) 3- by 36- by 96-inch	11 Sheets
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 10-1. Equipment Required for Rigging the M966 TOW Carrier for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	2
	Cargo Extraction	
1670-01-063-3716	22-ft	1
1670-01-063-3715 1	Drogue (for C-17) 15-ft	1
	Platform, Airdrop, Type V, 16-ft	
1670-01-353-8425	Bracket Assembly, Coupling	(1)
1670-01-162-2372	Clevis Assembly, Type V	(20)
1670-01-354-8424	Extraction Bracket Assembly	(1)
1670-01-162-2381	Tandem Link Assembly (Multipurpose Link)	(4)
5530-00-128-4981	Plywood, ¾-inch	3 Sheets
1670-01-097-8816	Release, Cargo Parachute, M-1	1
	Sling, Cargo, Airdrop	
	For Suspension:	
1670-01-063-7761	16-ft (2-loop), Type XXVI Nylon Webbing	4
	For Lifting:	
1670-01-062-6304	9-ft (2-loop), type XXVI Nylon Webbing	2
1670-01-062-6303	12-ft (2-loop), Type XXVI Nylon Webbing	2
	For Deployment:	
1670-01-062-6304	9-ft (2-loop), Type XXVI Nylon Webbing	1
	For Riser Extension:	
1670-01-062-6302	20-ft (2-loop), Type XXVI Nylon Webbing	2
5340-00-040-8219	Strap, Parachute Release, Multi-Cut, comes w/3 knives	2
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot	27
1670-00-431-8486	Vehicle, Drive-off Aids	2
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, Type I	As Required
8305-00-082-5752	Nylon, Tubular, ½-inch	As Required
8305-00-263-3591	Type VII	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

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Chapter 11

Rigging 120-Millimeter Mortar with 1 ¼-Ton HMMWV Truck on a 28-Foot Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

11-1. The M-120 120-millimeter mortar is rigged in its trailer-mounted configuration with a 1 ¼-ton HMMWV-series truck and thirty boxes of 120-millimeter ammunition. The load is rigged on a 28-foot, Type V airdrop platform with three G-11B cargo parachutes for low-velocity airdrop from a C-130, C-141, or C-5 aircraft. The mortar weighs 760 pounds, is 45 inches in height, 94 inches in length and 60 inches in width. The height is not reducible. Thirty boxes of 120-mm ammunition weighing 2,700 pounds are rigged on the platform. Ammunition and crew equipment weighing up to 1,800 pounds may be stowed in the truck.

Note. Any HMMWV-Series truck with the cargo/troop carrier configuration may be rigged on this load.

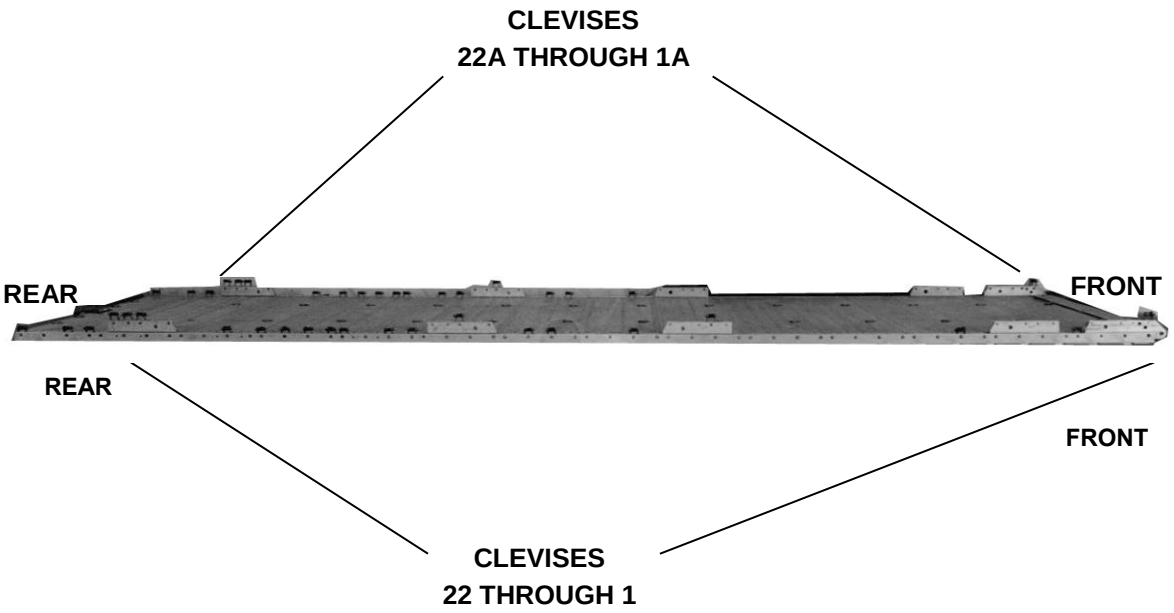
PREPARING PLATFORM

11-2. Prepare a 28-foot, type V airdrop platform as described below.

- Inspecting Platform. Inspect, or assemble and inspect, the platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
- Installing Suspension Links. Install the suspension links on assembled platforms according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .
- Installing Tandem. Install a tandem link on the front of each rail as shown in Figure 11-1.
- Installing and Numbering Clevises. Bolt and number 44 clevis assemblies as shown in Figure 11-1.

Note. If the Platform must be assembled, install the suspension links when assembling the platform. See Figure 11-1 for the location of the suspension links.

Note. Measurements given in this chapter are from the front edge of the platform.



Step:

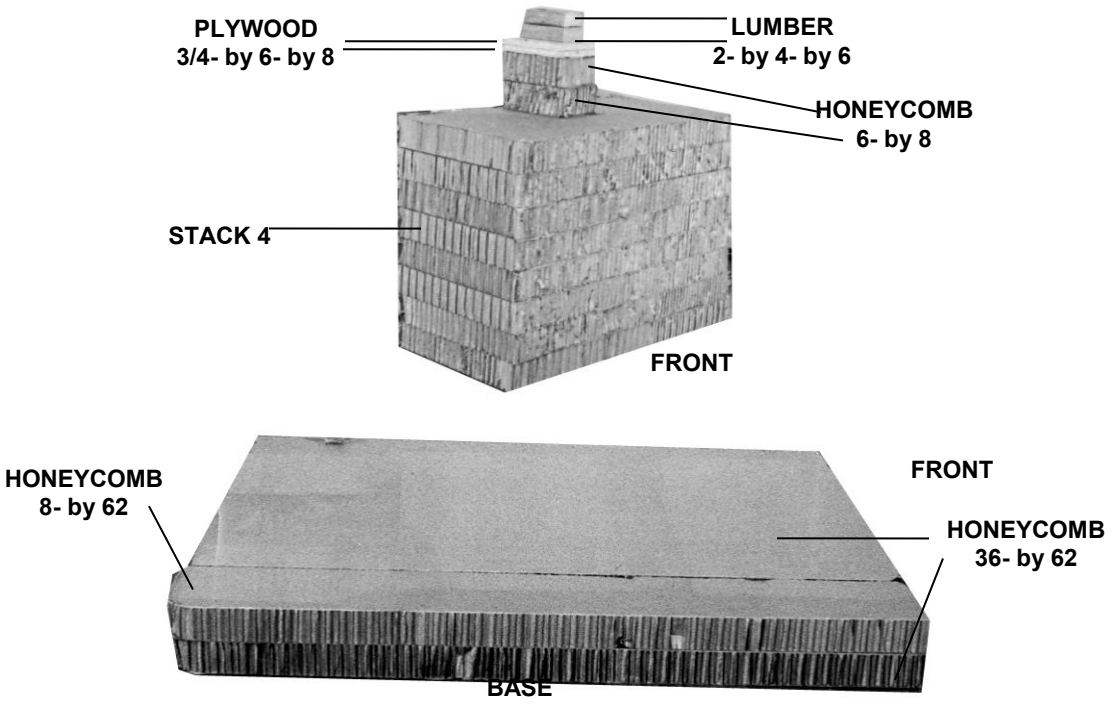
1. Install a tandem link on the front of each platform side rail using holes 1, 2, and 3.
2. Install four suspension links to each side rail using bushing holes 6, 7, 8, 22, 23, 24, 33, 34, and 35, 49, 50, and 51.
3. Install a clevis on bushing 1 on each front tandem link.
4. Install a clevis on bushing 2 on the second set of suspension links.
5. Install a clevis on bushing 2 on the third set of suspension links.
6. Install a clevis on bushings 2, 3, and 4 on the fourth set of suspension links.
7. Starting at the front of the platform, install clevises on each platform side rail using the bushings bolted on holes 4, 10, 26, 30, 31, 37, 38, 40, 41, 42, 43, 44, 46, 53, 54, and 56.
8. Starting at the front of the platform, number the clevises bolted to the right side rail from 1 through 44 and those bolted to the left side rail from 1A through 44A.
9. Label the tiedown rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 11-1. Platform Prepared

PREPARING HONEYCOMB STACKS

11-3. Prepare the honeycomb stacks for the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. These stacks will number 1, 2, and 3. Prepare the honeycomb stacks for the mortar and accompanying ammunition as shown in Figures 11-2 and 11-3.

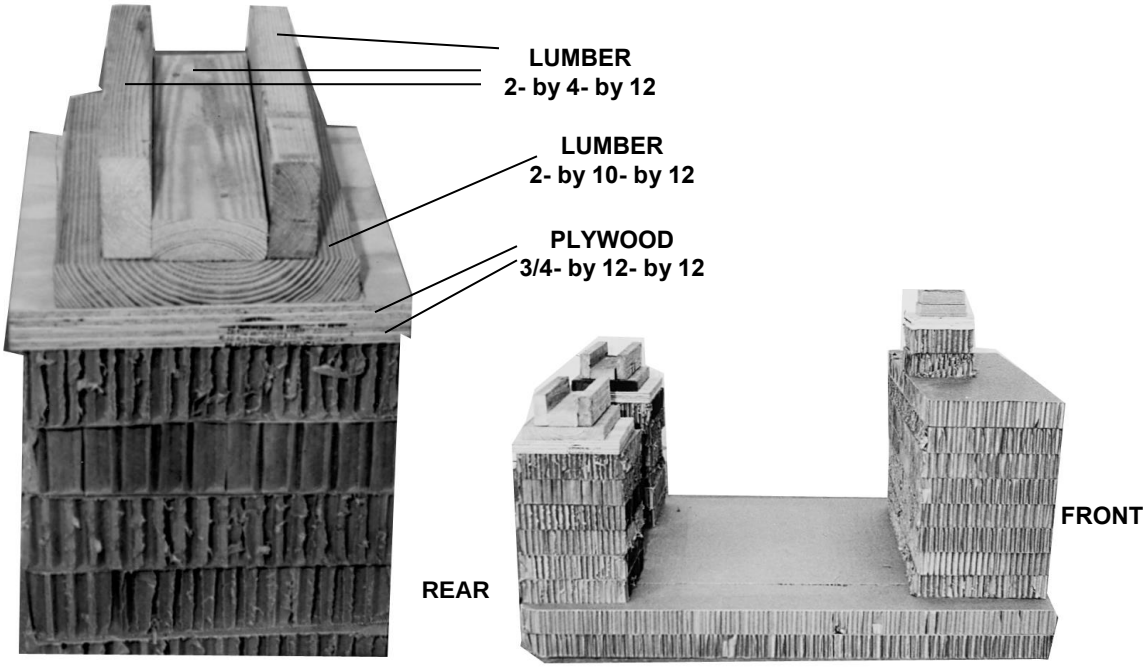
Note. 1. The front and rear sides will not be glued to the base at this time.
2. All measurements are in inches.



Stack Number	*Pieces*	*Width (inches)*	*Length (inches)*	*Material*	*Instructions*
4	2	36	62	Honeycomb	Alternate layers to form a two-layer base
	2	8	62	Honeycomb	
	8	36	16	Honeycomb	Stack pieces flush
	2	6	8	Honeycomb	Stack flush and center the 6-inch side along the rear edge of stack.
	2	6	8	¾-inch Plywood	Place on top of 6- by 8-inch pieces of honeycomb.
	2	4	6	2- by 4-inch Lumber	Center the lumber flat on top of the plywood.

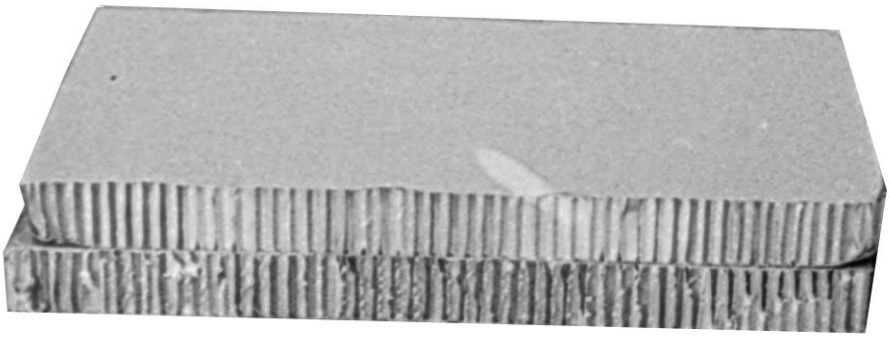
Figure 11-2. Stack 4 Prepared

Note. 1. Stack 4 is shown assembled for reference purposes only. The front and rear sides of the stack are not to be glued to the base at this time.
2. All measurements are in inches.

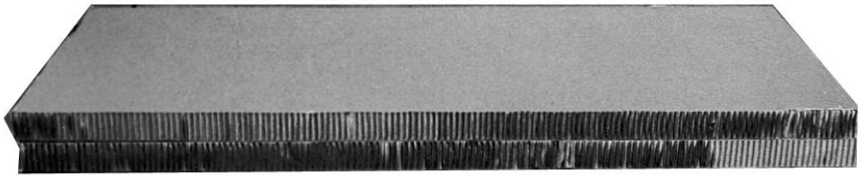


Stack Number	*Pieces*	*Width (inches)*	*Length (inches)*	*Material*	*Instructions*
4	12	12	12	Honeycomb	Form two stacks of six layers each.
	4	12	12	¾-inch Plywood	Place two pieces on top of each 12- by 12-inch stack of honeycomb.
	2	12	10	2- by 10-inch lumber	Center and nail a piece on each of the 12- by 12-inch pieces of plywood.
	6	12	4	2- by 4-inch Lumber	2- by 4- inch lumber on the 2- by 10-inch pieces. Nail a piece on edge along each side of the pieces nailed flat.

Figure 11-2. Stack 4 Prepared (Continued)



STACK 5 AND STACK 6



STACK 7

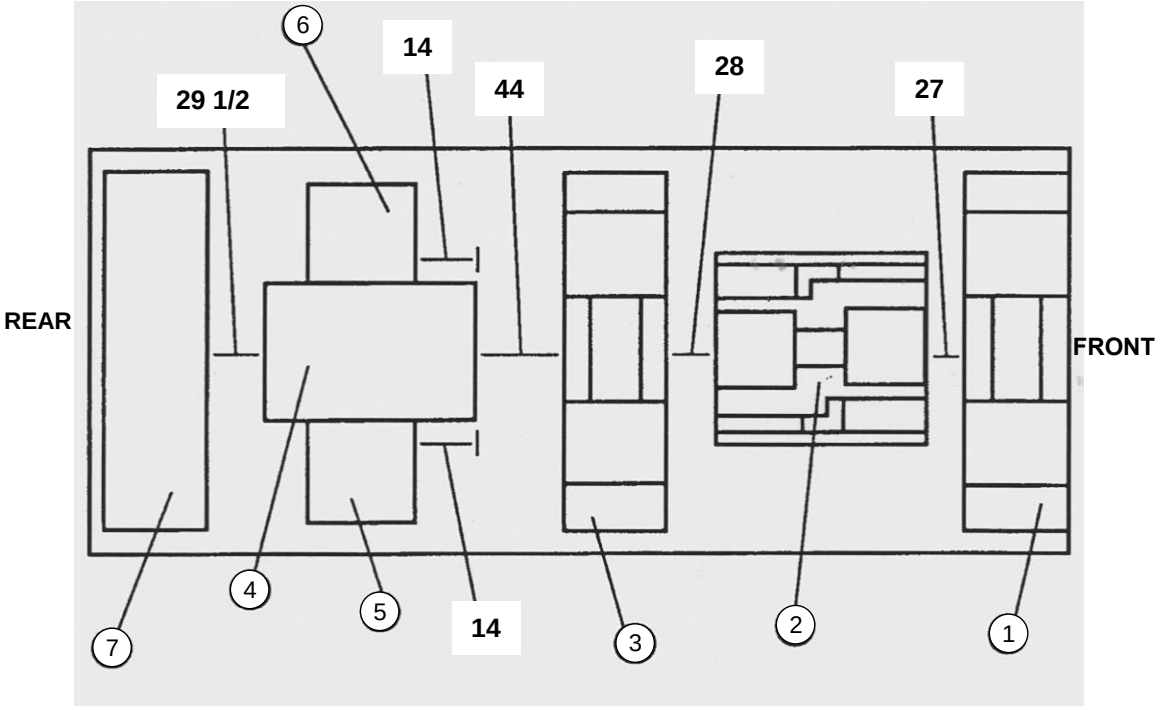
Stack Number	*Pieces*	*Width (inches)*	*Length (inches)*	*Material*	*Instructions*
5 & 6	2	20	36	Honeycomb	Form stack.
7	2	82	32	Honeycomb	Form stack.

Figure 11-3. Stacks 5, 6 and 7 Prepared

POSITIONING HONEYCOMB STACKS AND DRIVE-OFF AIDS

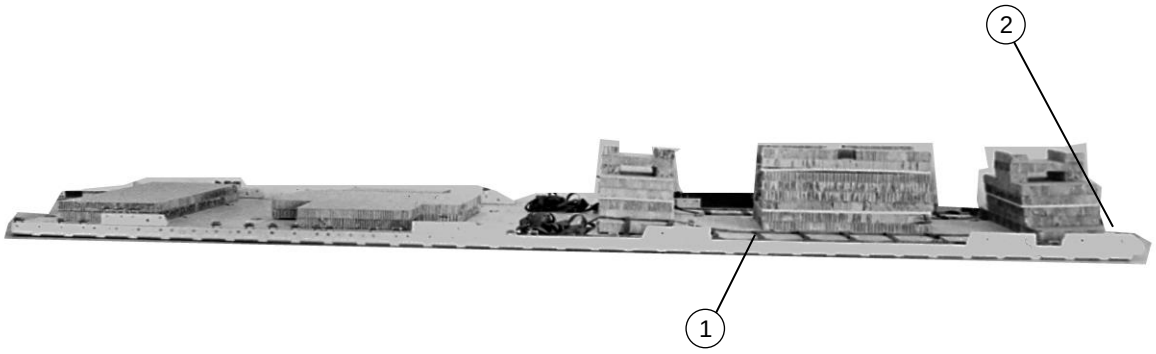
11-4. Position the honeycomb stacks as shown in Figure 11-4. Position the drive-off aids as described in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-5.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



Stack Number	*Position of Stack on Platform*
	Place stack:
1	Centered and flush with the front edge of the platform.
2	Centered and 27 inches to the rear of stack 1.
3	Centered and 28 inches to the rear of stack 2.4
4	(Base only) Centered and 44 inches to the rear of stack 3.
5	Flush against the right side of stack 4 on a 36-inch side and 14 inches from the front edge of stack 4.
6	Flush against the left side of stack 4 on a 36-inch side and 14 inches from the front edge of stack 4.
7	Centered and 29 ½ inches to the rear of stack 4.

Figure 11-4. Honeycomb Stacks Placed on Platform



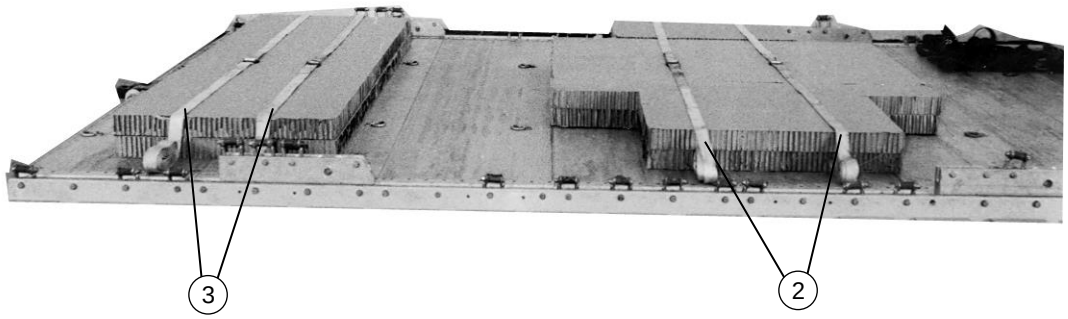
① Position the drive-off aids on the platform as outlined in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Place the drive-off aids under stack 1 and over stack 3.

② Pass a length of type V or 1-inch tubular nylon webbing through the second bushing on each tandem link, through the end loop of the drive-off aid, and through the nearest tie-down ring. Secure the ends of the webbing as shown in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Figure 11-5. Drive-Off Aids Positioned

POSITIONING ACCOMPANYING LOAD ON PLATFORM

11-5. Position and secure thirty boxes of 120-mm ammunition on the platform as shown in Figure 11-6.

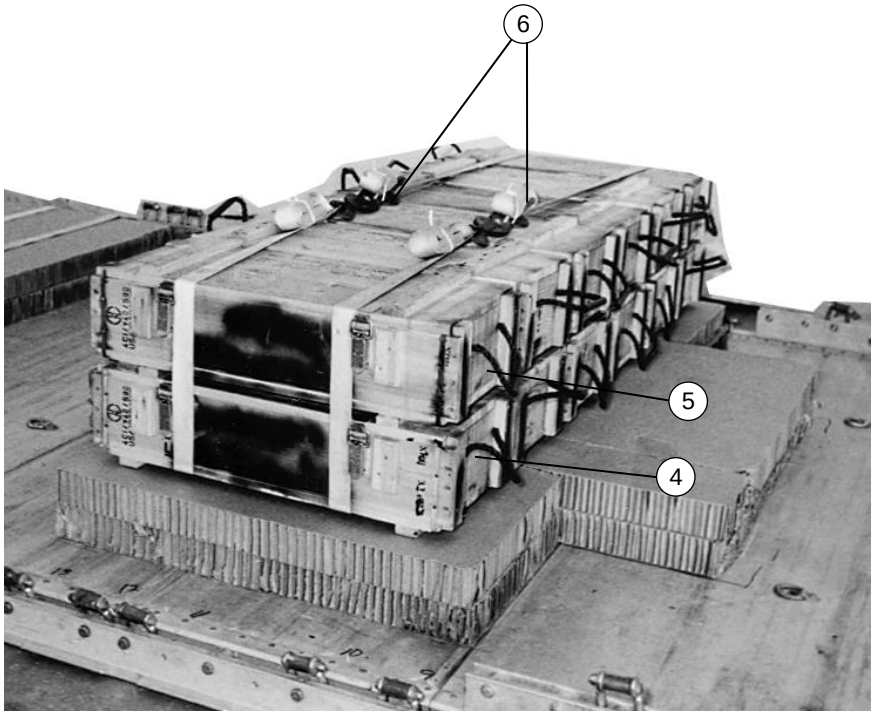


① Form four 30-foot lashings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

② Position two 30-foot lashings across stacks 4, 5, and 6. The front lashing will be 22 inches from the front edge of stack 4. The rear lashing will be 18 inches from the front lashing.

③ Position two 30-foot lashings across stack 7. The front lashing will be 8 inches from the front edge of stack 7. The rear lashing will be 16 inches from the front lashing.

Figure 11-6. Accompanying Load Positioned and Secured

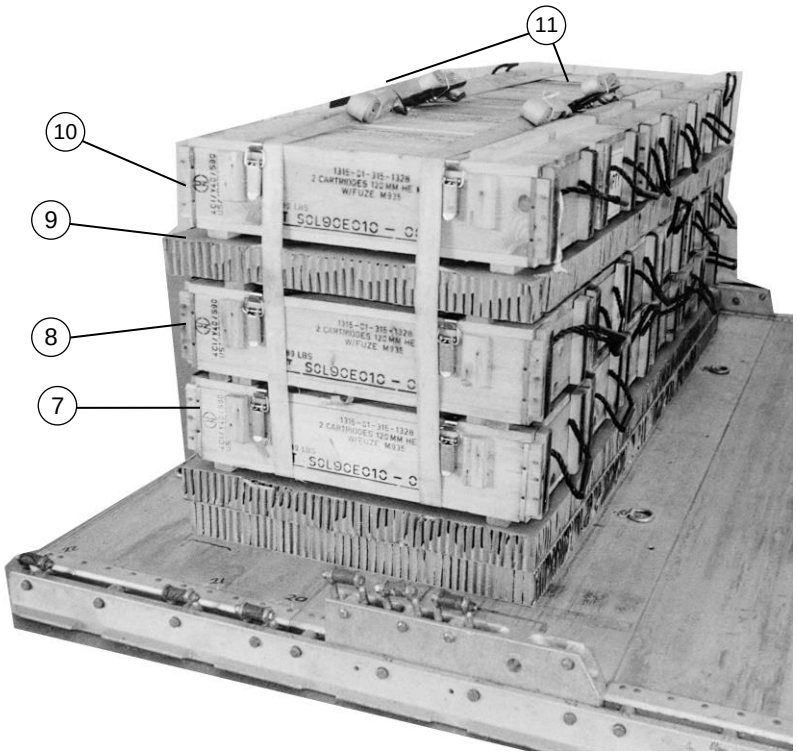


④ Place six boxes of ammunition on the lashings pre-positioned on honeycomb stacks 4, 5, and 6. Make sure the first box of ammunition is 2 inches from the left edge of stack 6.

⑤ Place six boxes of ammunition on top of the boxes placed in step 4.

⑥ Secure each lashing on top of the ammunition boxes with a load binder and two D-rings.

Figure 11-6. Accompanying Load Positioned and Secured (Continued)



⑦ Place six boxes of ammunition on the lashings pre-positioned on honeycomb stack 7. Make sure the first box of ammunition is flush with the left edge of stack 7.

⑧ Place six boxes of ammunition on top of the boxes placed in step 7.

⑨ Place a 82- by 32-inch piece of honeycomb on top of the boxes of ammunition.

⑩ Place six boxes of ammunition on top of the honeycomb.

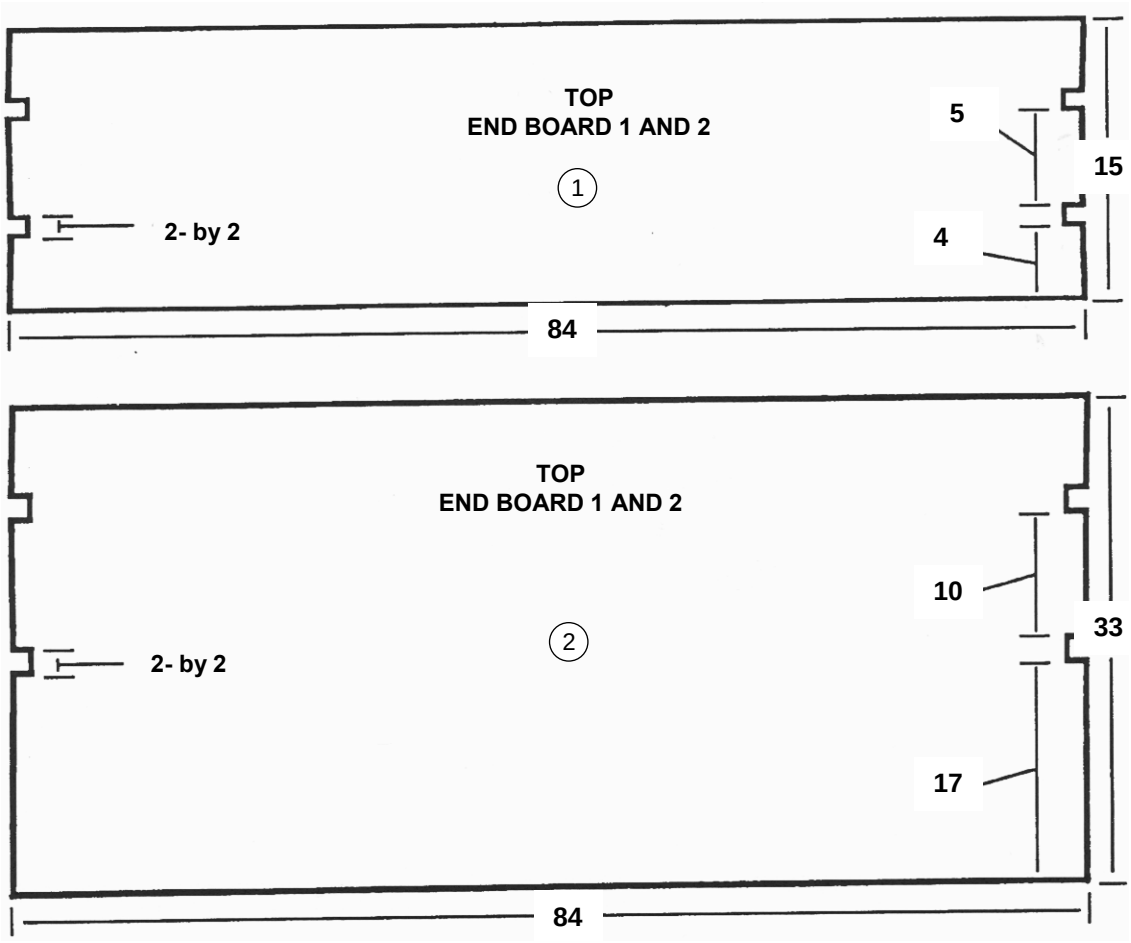
⑪ Secure the lashings on top of the boxes with a load binder and two D-rings.

Figure 11-6. Accompanying Load Positioned and Secured (Continued)

BUILDING ENDBOARDS AND LASHING AMMUNITION

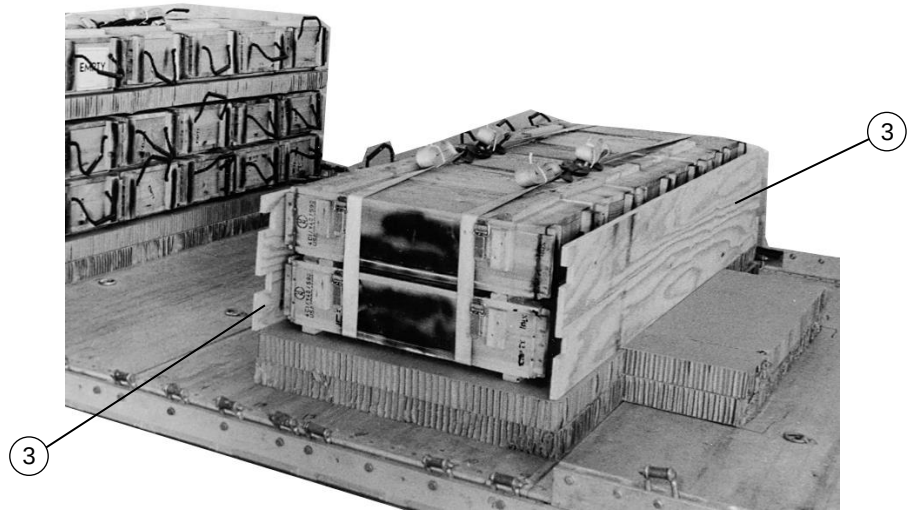
11-6. Build and position four Endboards as shown in Figure 11-7. Lash the ammunition to the platform as shown in Figure 11-8. Place and glue the front and rear sides of stack 4 as shown in Figure 11-9.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



① Cut two 84- by 15-inch pieces of ¾-inch plywood. Make cutouts as shown.
② Cut two 84- by 33-inch pieces of ¾-inch plywood. Make cutouts as shown.

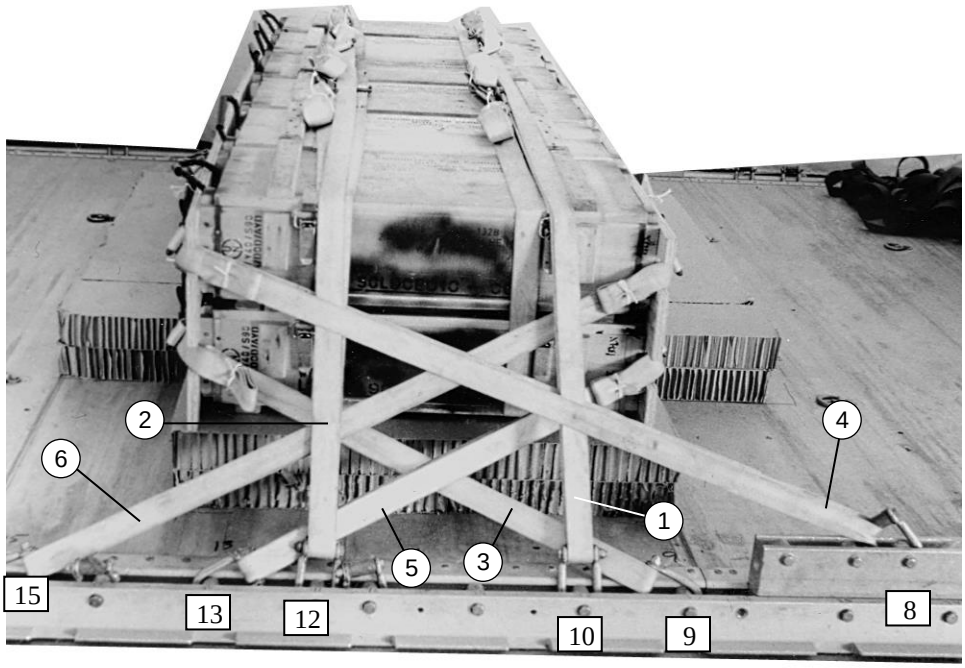
Figure 11-7. Endboards Built and Positioned





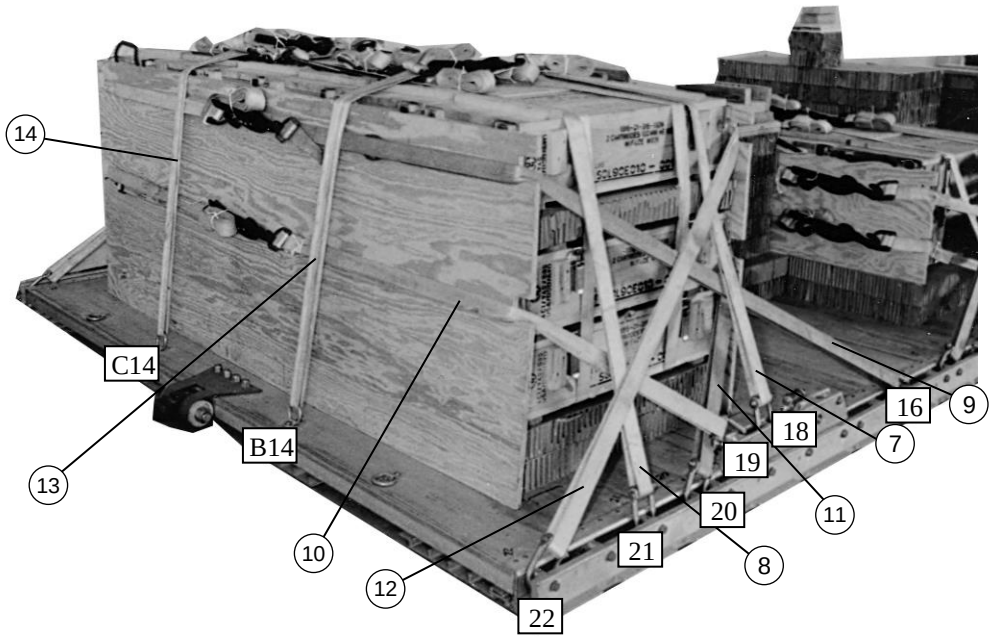
③ Position end boards 1 and 2 against the front and rear of the first stack of ammunition boxes.
④ Position end boards 3 and 4 against the front and rear of the second stack of ammunition boxes.

Figure 11-7. Endboards Built and Positioned (Continued)



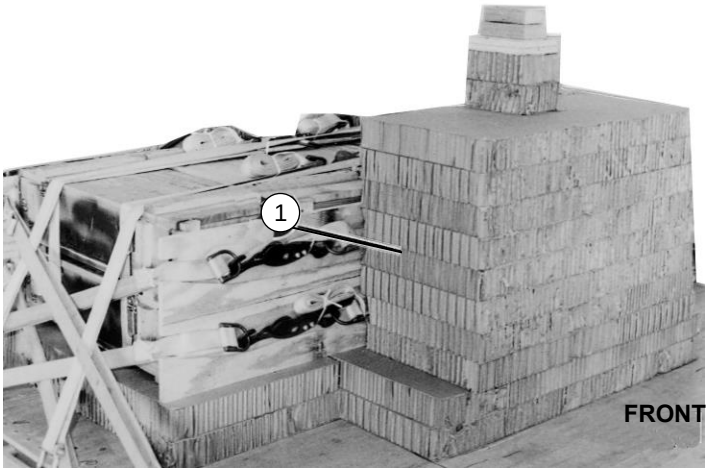
Lashing Number	*Tie-down Clevis Number*	*Instructions*
		Pass lashing:
*1	10 and 10A	Over ammunition boxes, through clevises, secure lashing on top of boxes.
*2	12 and 12A	Over ammunition boxes, through clevises, secure lashing on top of boxes.
*3	9 and 9A	Through bottom notches of end board 2, through clevises, secure lashing on right rear of end board.
*4	8 and 8A	Through top notches of end board 2, through clevises, secure lashing on right rear of end board.
*5	13 and 13A	Through bottom notches of end board 1, through clevises, secure lashing on right front of end board.
*6	15 and 15A	Through top notches of end board 1, through clevises, secure lashing on front of end board.
*Denotes 30-foot lashings		

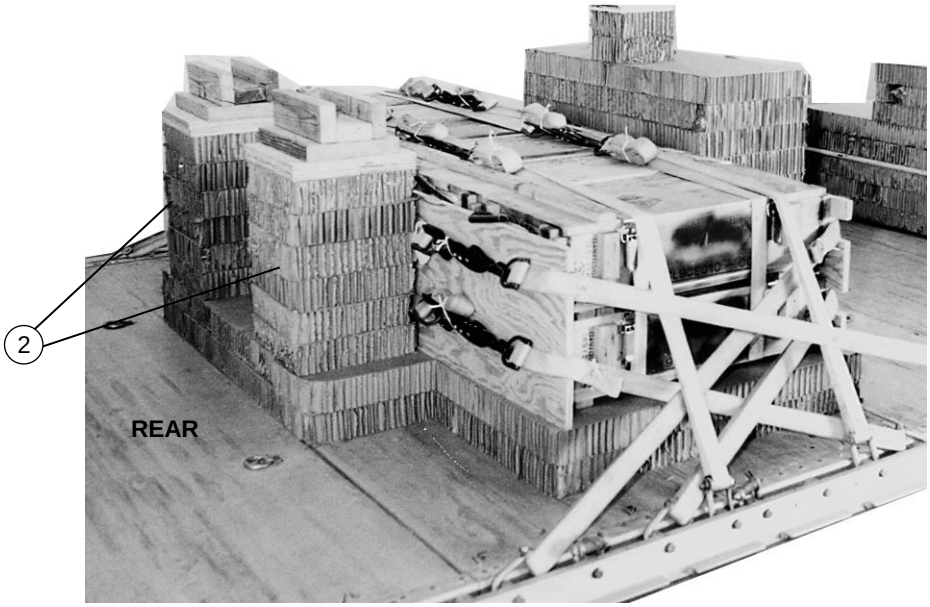
Figure 11-8. Ammunition Lashed



Lashing Number	*Tie-down Clevis Number*	*Instructions*
		Pass lashing:
*7	18 and 18A	Over ammunition boxes, through clevises, secure lashing on top of boxes.
*8	21 and 21A	Over ammunition boxes, through clevises, secure lashing on top of boxes.
**9	16 and 16A	Through top notches of end board 4, through clevises, secure lashing on rear of end board.
*10	19 and 19A	Through top notches of end board 4, through clevises secure lashing on rear of end board.
*11	20 and 20A	Through bottom notches of end board 3, through clevises, secure lashing on front of end board.
*12	22 and 22A	Through top notches of end board 3, through clevises, secure lashing on front of end board.
*13	A13 and B14	Over ammunition boxes, through tie-down rings, secure lashing on top of boxes.
*14	B13 and C14	Over ammunition boxes, through tie-down rings, secure lashing on top of boxes.
*Denotes 30-foot lashings **Denotes 45-foot lashings		

Figure 11-8. Ammunition Lashed (Continued)





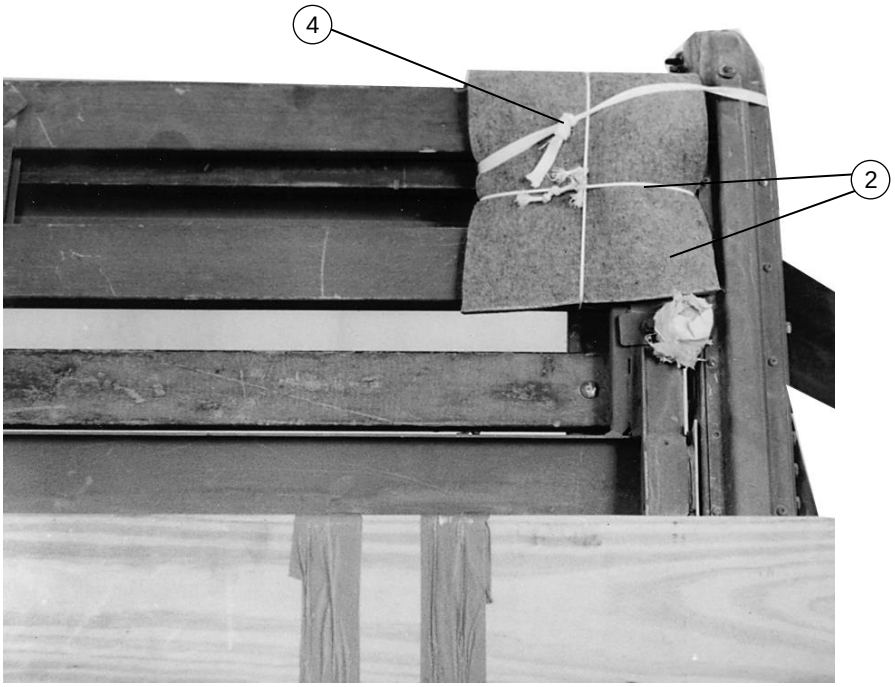
① Place and glue the front end of stack 4 flush with the front edge of the base and centered as shown.

② Place and glue the rear ends of stack 4 flush with the rear edge of the base and 5 inches from the left and right sides, facing as shown.

Figure 11-9. Front and Rear of Stack 4 Placed

PREPARING TRUCK

11-7. Prepare the truck according to TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111 and as shown in Figure 11-10 of this manual. Adapt the procedures in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111 to stow the ammunition and crew equipment in the truck.



① Place the sideboards flush with the rear of the truck (not shown).

② Fold a 10- by 20-inch piece of felt over the top forward section of the right side rail. Secure the felt in place using a piece of type III nylon cord.

③ Repeat step 2 for the left side of the truck (not shown).

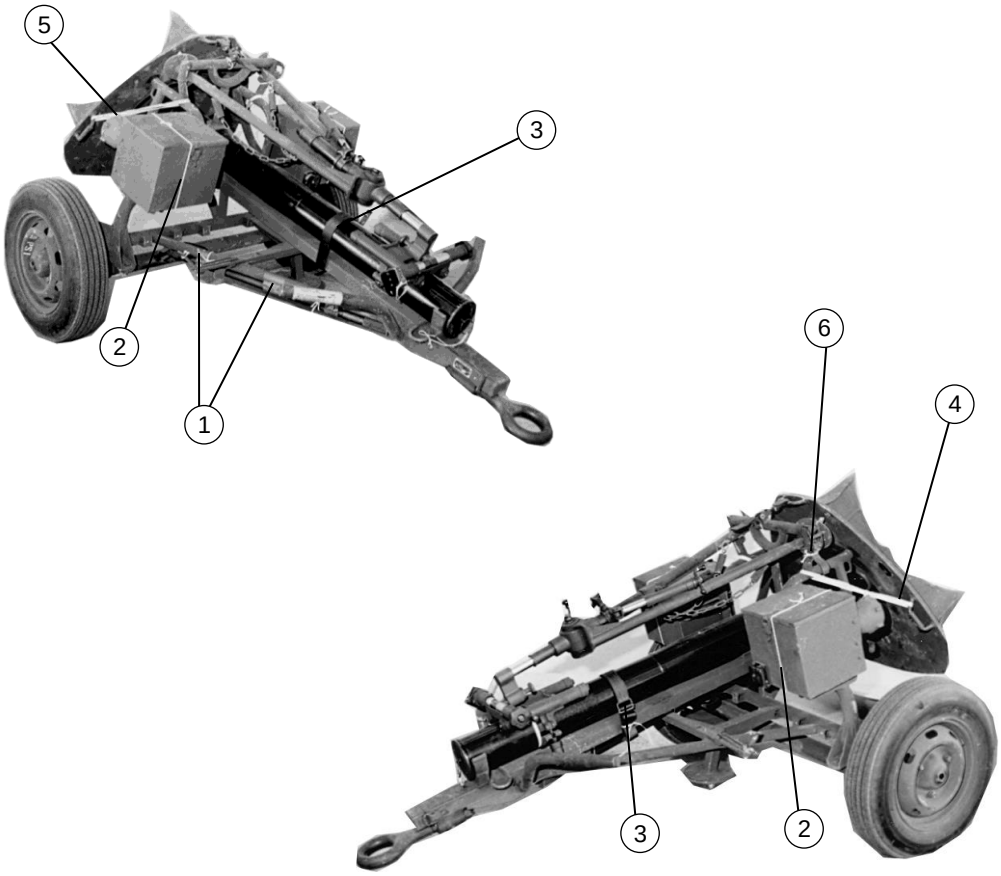
④ Pass a length of ½-inch tubular nylon webbing through the side rail and around the roof support frame. Secure the ends of the webbing with a surgeons knot and locking knot.

⑤ Repeat step 4 for the left side of the truck (not shown).

Figure 11-10. Truck Prepared

PREPARING MORTAR

11-8. Prepare the mortar as shown in Figure 11-11.



① Secure the cleaning staff sections to the support frame using tape and type III nylon cord.

② Safety each tool box with a length of type III nylon cord.

③ Fasten an A-7A strap around the barrel and trailer frame.

④ Run a length of ½-inch tubular nylon webbing through the right base plate handle and around the right side support bar. Secure the ends with a surgeons knot and locking knot.

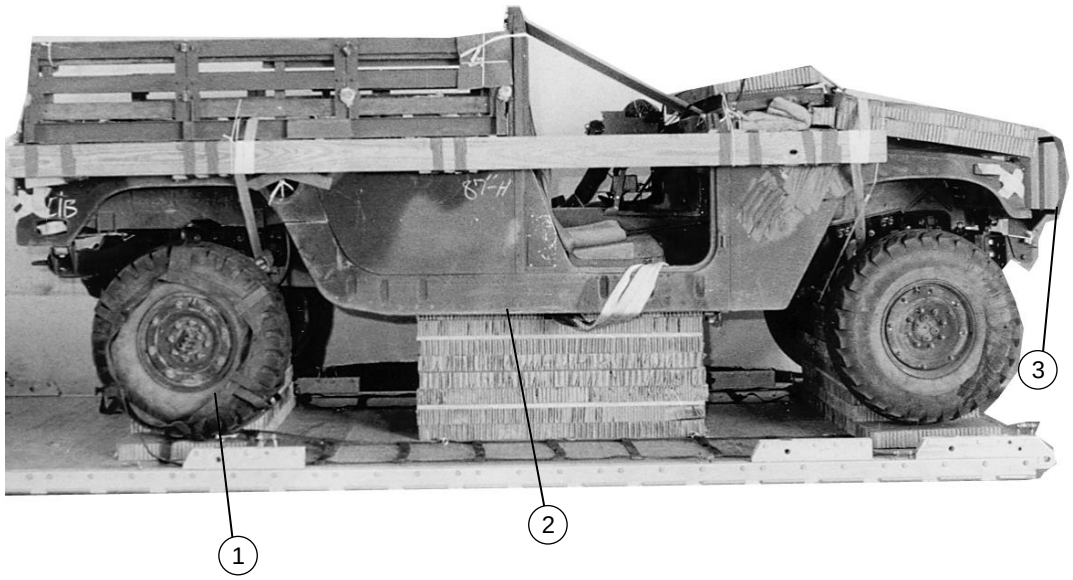
⑤ Repeat step 4 for the left side of the mortar.

⑥ Safety the tripod latch closed with a length of type III nylon cord.

Figure 11-11. Mortar Prepared

LIFTING AND POSITIONING TRUCK AND INSTALLING DRIVE-OFF AIDS

11-9. Install the lifting slings on the truck as explained in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. Position the truck on the platform and install the drive-off aids as shown in Figure 11-12. Figure 11-14 shows the entire load positioned on the platform.



① Suspend the truck far enough over the stacks to install the drive-off aids to the rear wheels. Wind the drive-off aids around the rear wheels until the drive-off aids are under slight tension. Tie the end loop of each drive-off aid to the nearest cross-piece with type I, ¼-inch cotton webbing.

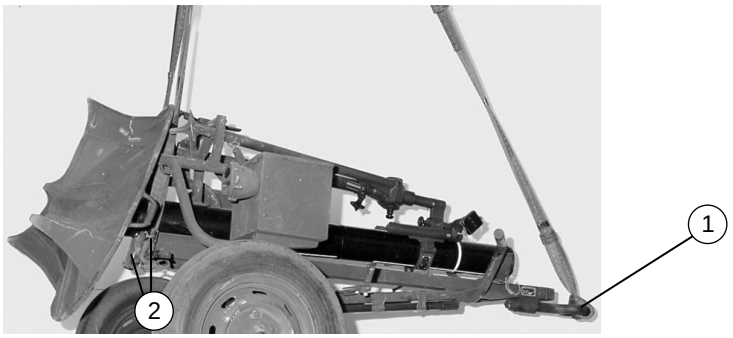
② Be sure that the suspension cross members of the truck rest solidly on stacks 1 and 3. Be sure that the frame rails rest on stack 2.

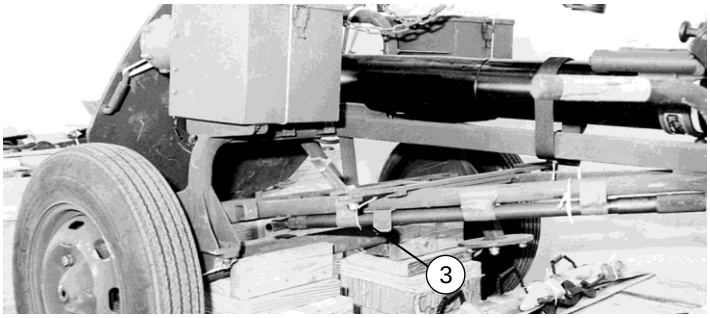
③ Allow the truck to overhang the front edge of the platform 10 ½ inches.

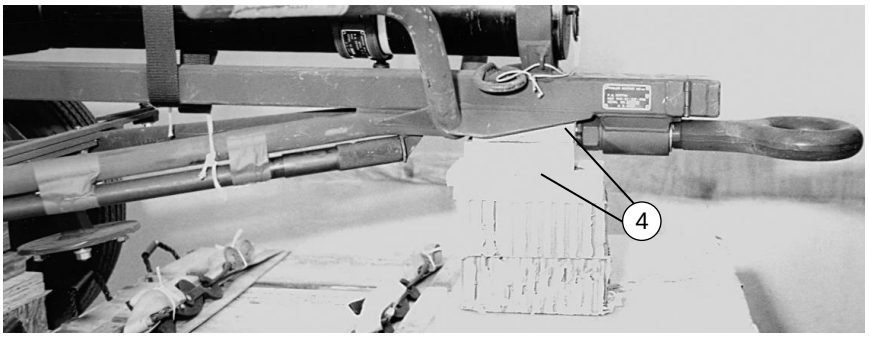
Figure 11-12. Truck Placed and Drive-Off Aids Installed

LIFTING AND POSITIONING MORTAR

11-10. Lift and position the mortar as shown in Figure 11-13.







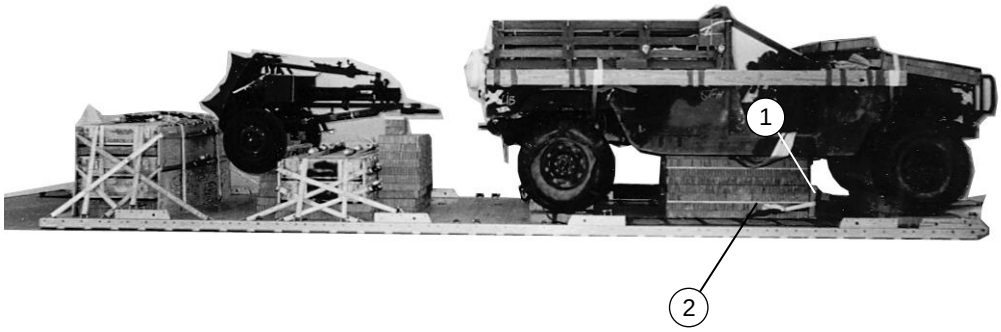
① Girth hitch an 11-foot (2-loop), type XXVI nylon webbing sling around the lunette.

② Place an end loop of a 9-foot (2-loop), type XXVI nylon webbing sling around the carrying handle behind each rear wheel.

③ Place the mortar onto stack 4, with the base plate to the rear. Set the axle in the channel provided.

④ Be sure that the wood blocks at the front of stack 4 fit into the depression in the trailer tongue behind the lunette.

Figure 11-13. Mortar Lifted and Positioned



① Place a 12- by 42-inch piece of honeycomb on edge against the front of stack 2.

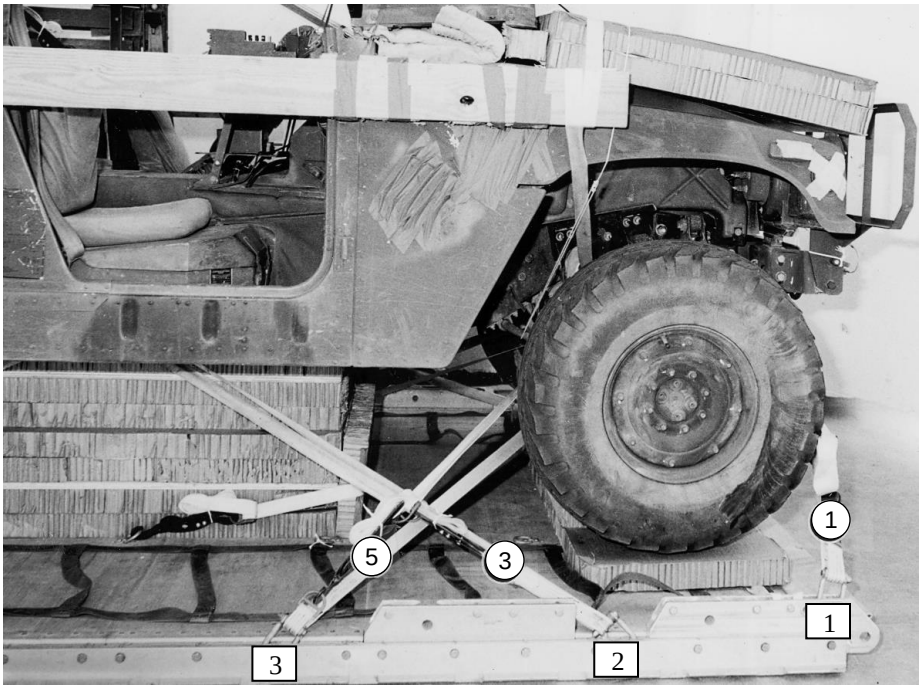
② Run a 15-foot lashing through tie-down ring B5 and through its own D-ring. Run the lashing around the honeycomb placed in step 1. Secure the lashing to tie-down ring A5 with a D-ring and a load binder.

Figure 11-14. Load Positioned on Platform and Restraint Lashing Placed

LASHING TRUCK AND MORTAR

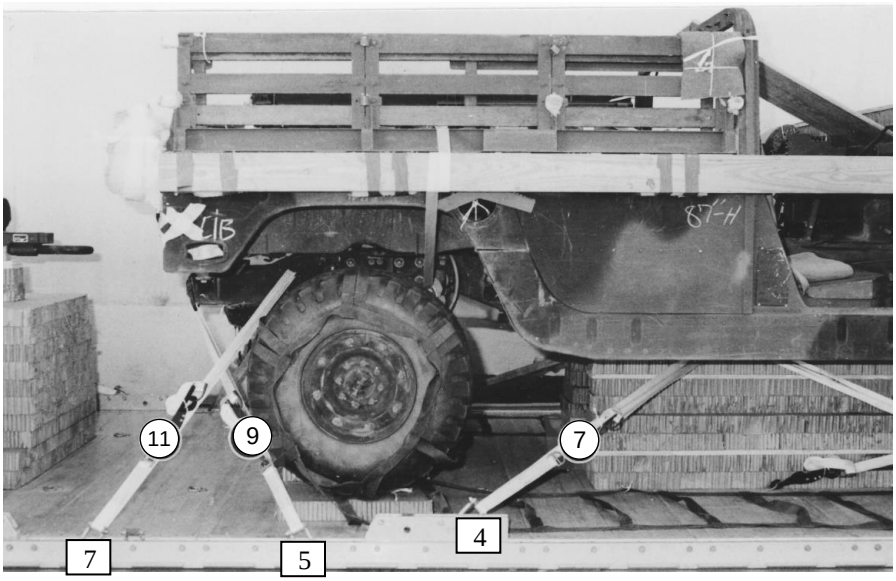
11-11. Lash the truck and the mortar to the platform as shown in Figure 11-15. Install the lashings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

Note. Four lashings for the truck are pre-positioned in according with TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.



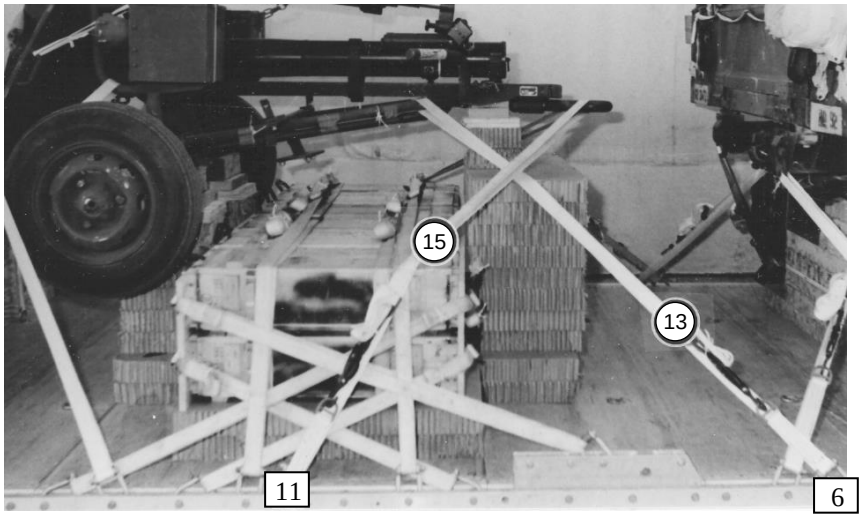
Lashing Number	*Tie-down Clevis Number*	*Instructions*
		Pass lashing:
1	1	Through tie-down bracket on end of right frame rail.
2	1A	Through tie-down bracket on end of left frame rail.
*3	2	Around right frame rail cross member.
*4	2A	Around left frame rail cross member.
5	3	Around right lower control arm.
6	3A	Around left lower control arm.
*Denotes pre-positioned lashings.		

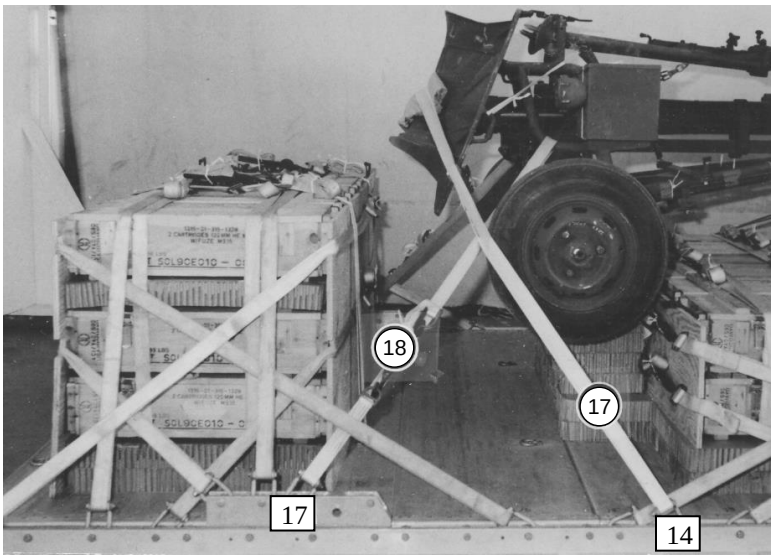
Figure 11-15. Lashings Installed



Lashing Number	*Tie-down Clevis Number*	*Instructions*
		Pass lashing:
*7	4	Around right frame rail cross member.
*8	4A	Around left frame rail cross member.
9	5	Through right rear lifting shackle.
10	5A	Through left rear lifting shackle.
11	7	Through tie-down bracket behind right rear coil springs.
12	7A	Through tie-down bracket behind left rear coil spring.
*Denotes pre-positioned lashings.		

Figure 11-15. Lashings Installed (Continued)



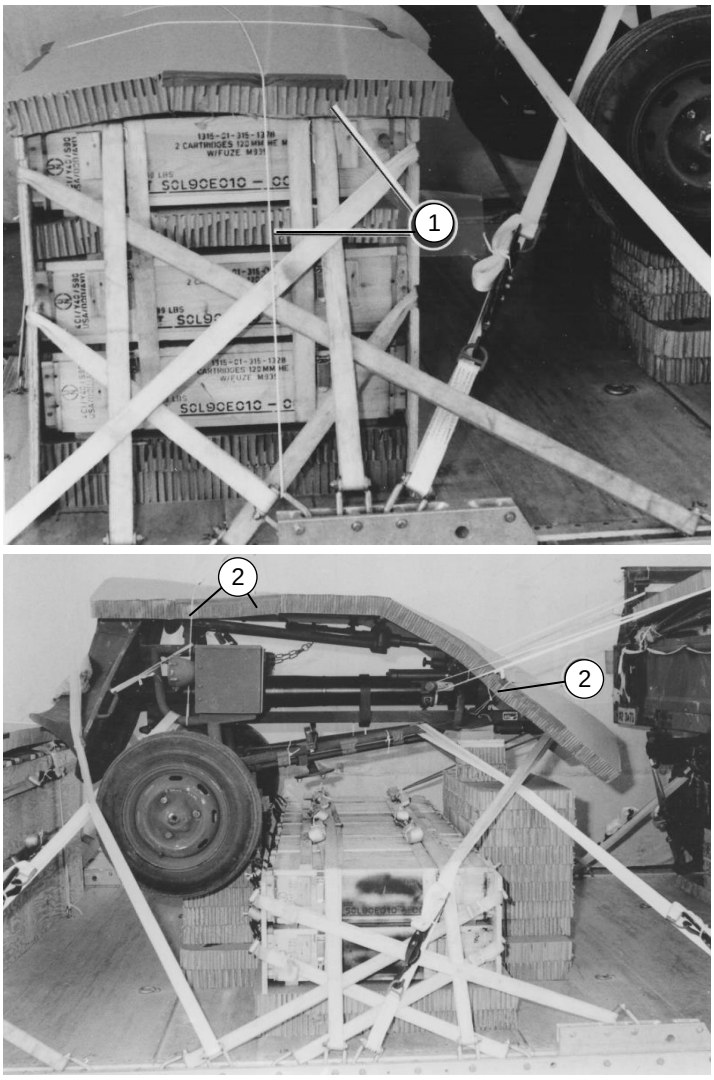


Lashing Number	*Tie-down Clevis Number*	*Instructions*
		Pass lashing:
13	6	Around trailer frame, right side.
14	6A	Around trailer frame, left side.
15	11	Through trailer lunette.
16	11A	Through trailer lunette.
*17	14 and 14A	Over center of base plate, through both clevises
18	17	Around trailer support behind tool box, right side.
19	17A	Around trailer support behind tool box, left side.
*Denotes 30-foot lashing		

Figure 11-15. Lashings Installed (Continued)

INSTALLING PROTECTIVE HONEYCOMB, LOAD COVER AND SAFETY TIES

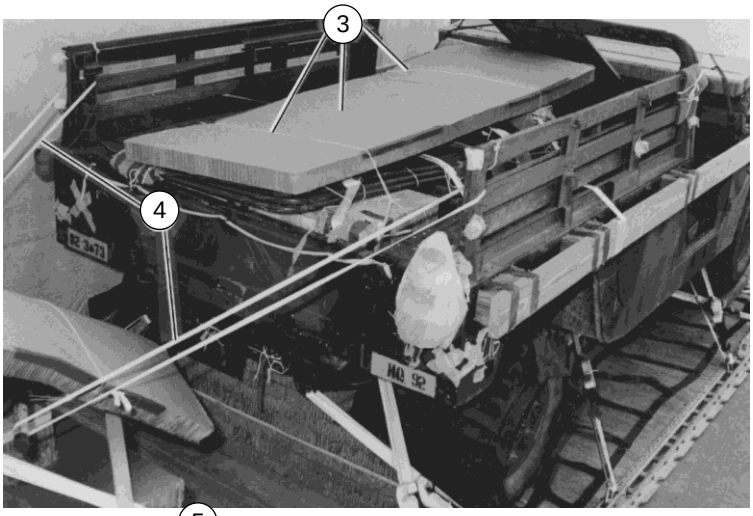
11-12. Install protective honeycomb, cover, and safety ties as shown in Figure 11-16.

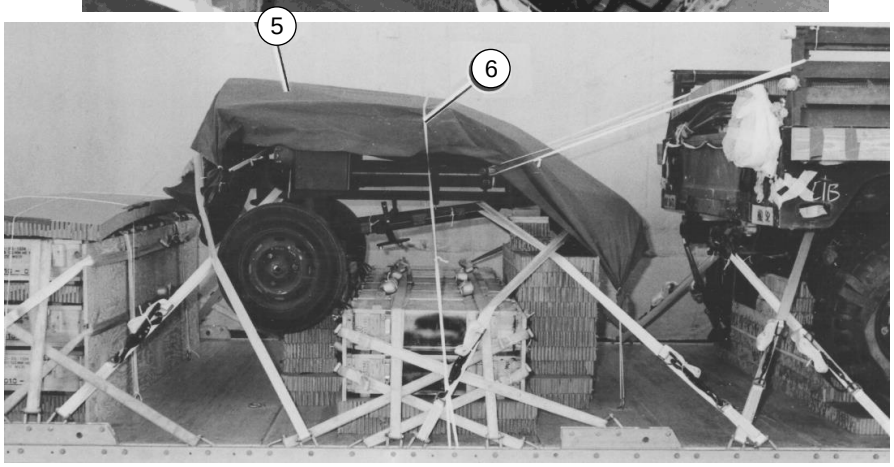


① Place a 36- by 81-inch piece of honeycomb on top of the boxes of ammunition. Secure the honeycomb to convenient points with type III nylon cord.

② Place a 96- by 36-inch piece of honeycomb over the mortar. Secure the honeycomb to the trailer with type III nylon cord.

Figure 11-16. Honeycomb, Cover and Ties Installed





③ Place a 96- by 36-inch piece of honeycomb over the load in the truck. Secure the honeycomb to convenient points with type III nylon cord.

④ Tie a loop of ½-inch tubular nylon webbing snugly around the trailer lifting handles and around the rear uprights on the truck side rails.

⑤ Tie a 5- by 9-foot load cover over the mortar with type III nylon cord. Tie the cover in the front to the nearest tie-down rings.

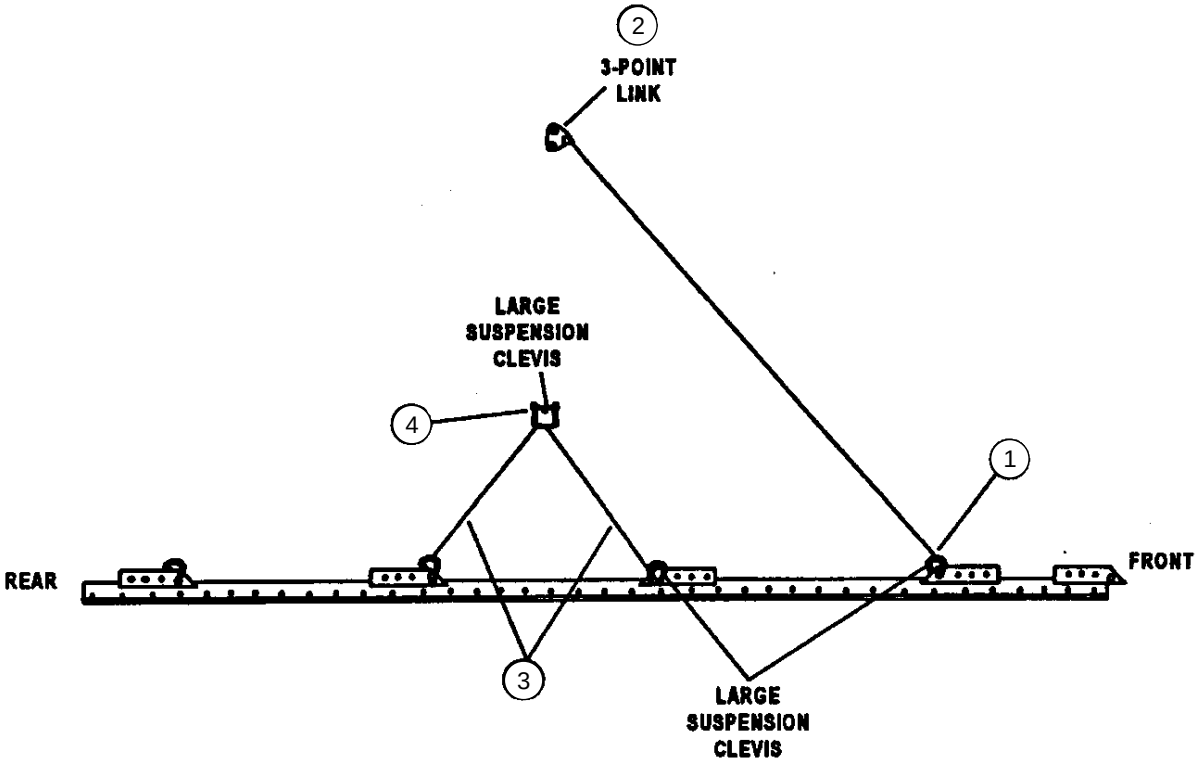
⑥ Tie a length of ½-inch tubular nylon webbing over the mortar from bushing 39 to bushing 39A.

Figure 11-16. Honeycomb, Cover, and Ties Installed (Continued)

INSTALLING AND SAFETYING SUSPENSION SLINGS

11-13. Install the suspension slings as shown in Figure 11-17 and according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Pad and safety the suspension slings as shown in Figure 11-18.

Note. This drawing is not to scale.



① Attach a 16-foot (2-loop), type XXVI nylon webbing sling to each front suspension link with a large suspension clevis.

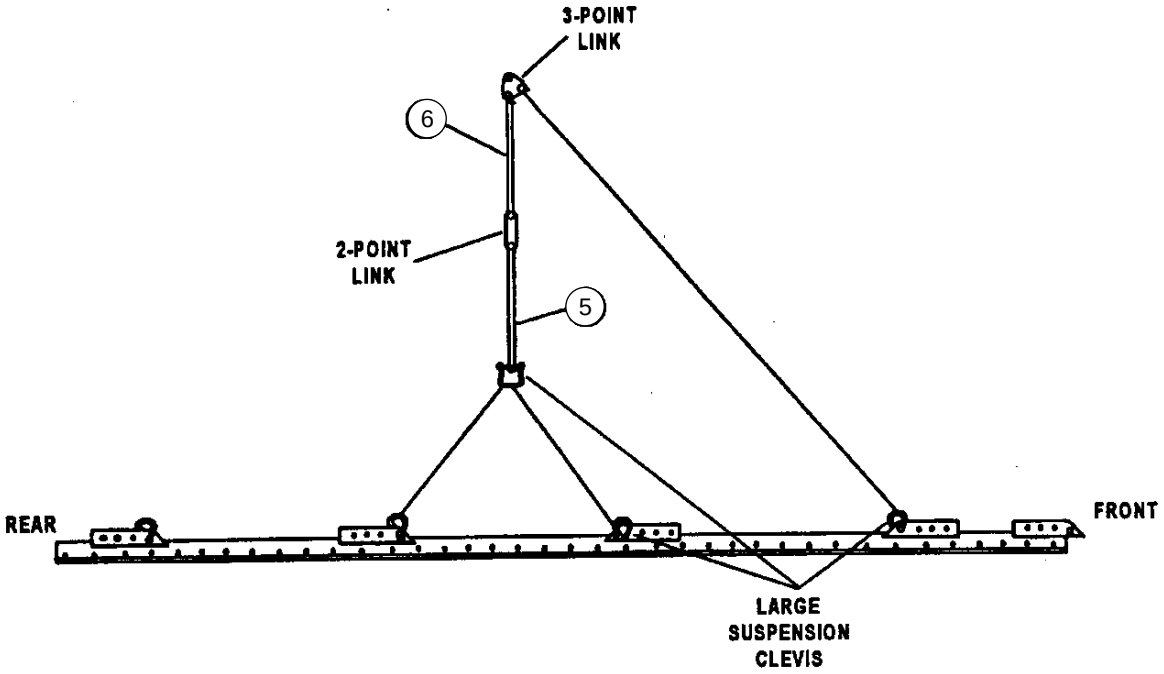
② Attach a 3-point link to the free end of each 16-foot sling.

③ Attach a 3-foot (2-loop), type XXVI nylon webbing sling to each second and third suspension link with a large suspension clevis.

④ Place both of the 3-foot slings on each side into the bell portion of a large suspension clevis.

Figure 11-17. Suspension Slings Installed

Note. This drawing is not to scale.

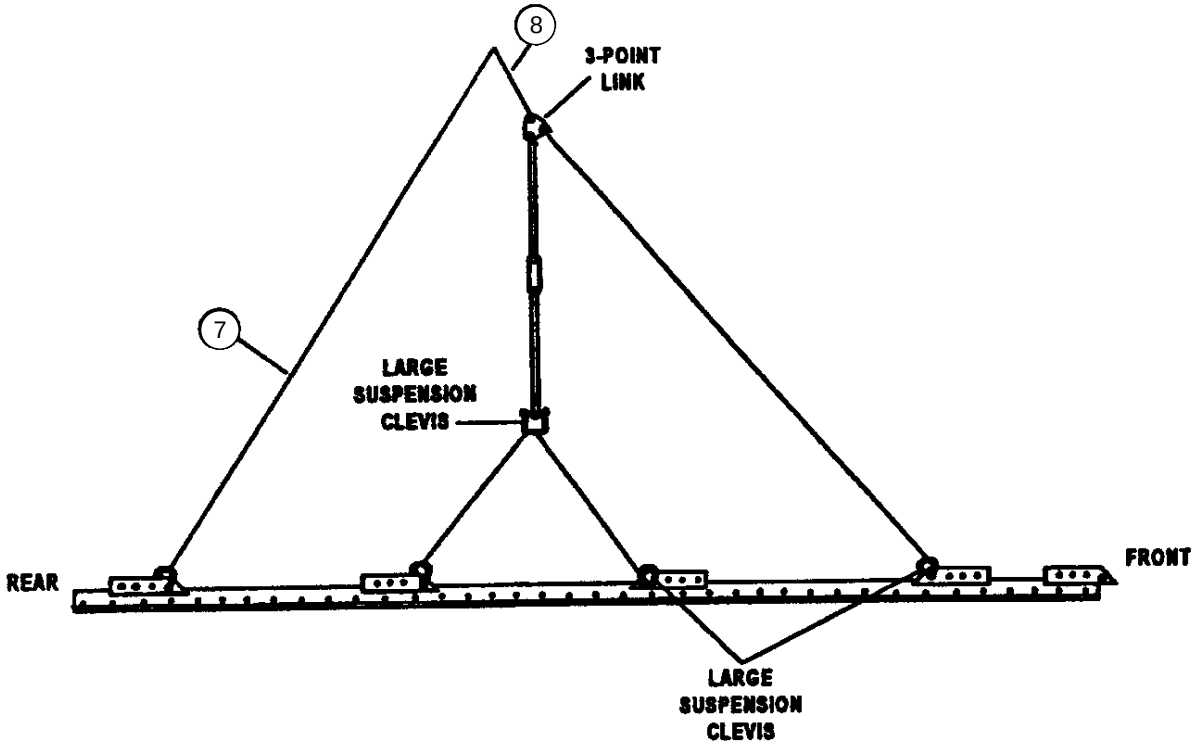


⑤ Pass an 11-foot (2-loop), type XXVI nylon webbing sling through a 5 ½-inch two point link. Bolt both end loops to the large suspension clevis used in step 4.

⑥ Pass an 11-foot (2-loop), type XXVI nylon webbing sling through the 5 ½-inch two-point link used in step 5. Attach both end loops to the three-point link on the front suspension sling.

Figure 11-17. Suspension Slings Installed (Continued)

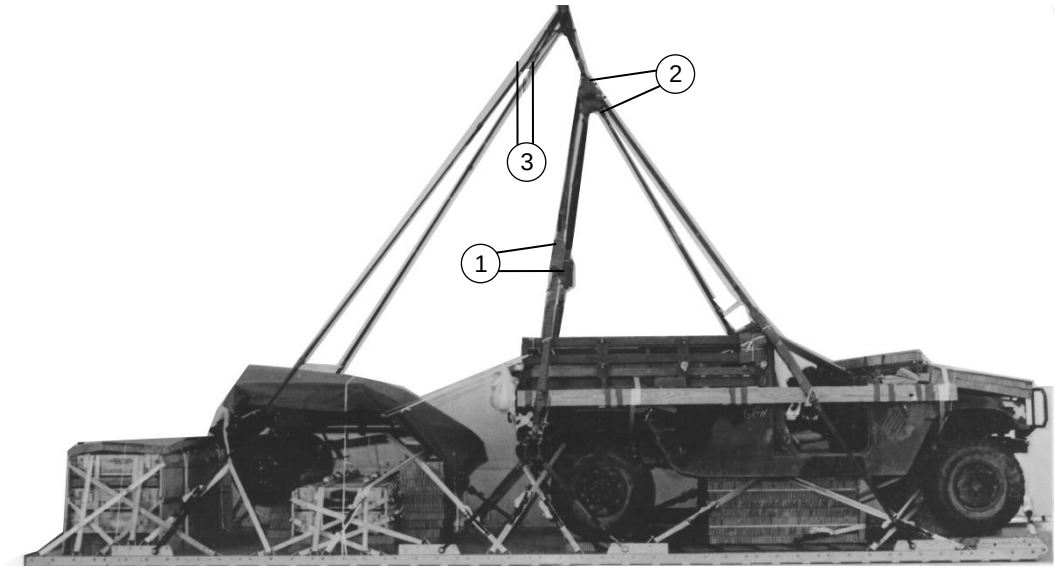
Note. This drawing is not to scale.

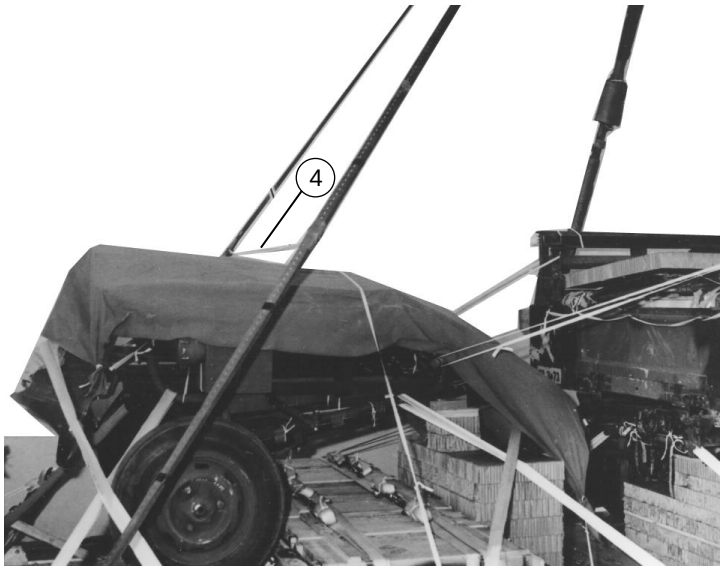


⑦ Attach a 20-foot (2-loop), type XXVI nylon webbing sling to each rear suspension link with a large suspension clevis.

⑧ Attach a 3-foot (2-loop), type XXVI nylon webbing sling to the top spacer of each three –point link.

Figure 11-17. Suspension Slings Installed (Continued)





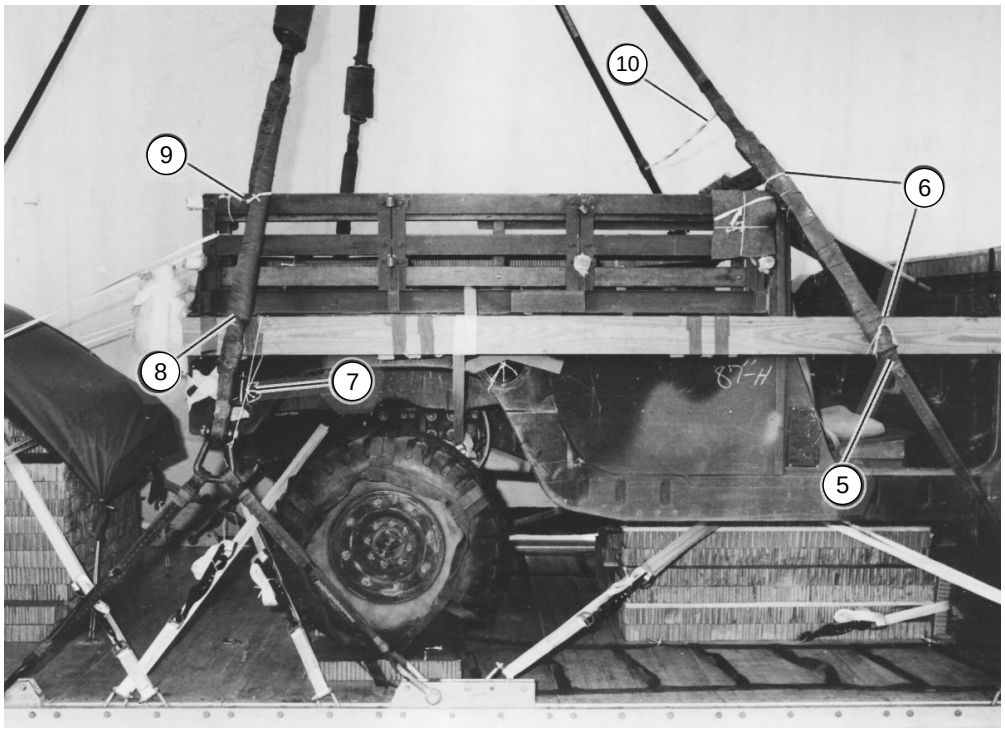
① Pad the two-point links with felt taped in place.

② Pad the three-point links with felt taped in place.

③ Attach the rear suspension slings and the 3-foot slings joining the front and center suspension slings to the crane hook. Raise the suspension slings.

④ Safety tie the rear suspension slings to each other 6 inches above the load with a double length of ½-inch tubular nylon webbing. Adapt the procedures in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 to tie and tape the webbing.

Figure 11-18. Suspension Slings Padded and Safety



⑤ Pad the front suspension sling 51 inches from the clevis with a 6- by 38-inch piece of felt. Tape the felt in place.

⑥ Safety tie the padded portion of the front slings to the roof support frame and to the body sideboards of the truck with type I, ¼-inch cotton webbing.

⑦ Safety tie the large clevis of the center slings to the truck using type III nylon cord.

⑧ Pad the center suspension sling 17 inches from the large clevis with a 6- by 38-inch piece of felt.

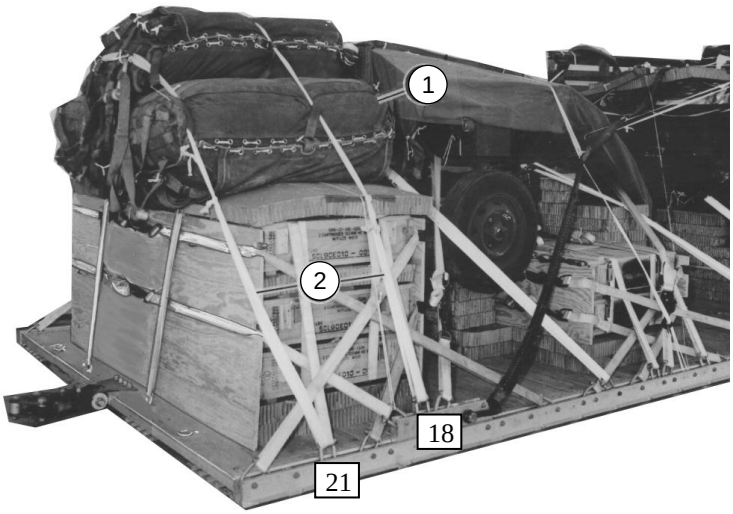
⑨ Safety tie the padded portion of the center slings to the truck side rails with type I, ¼-inch cotton webbing.

⑩ Safety tie the front slings to each other 6 inches above the load with a double length of 1/2 –inch tubular nylon webbing. Adapt the procedures in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 to tie and tape the webbing.

Figure 11-18. Suspension Slings Padded and Safety (Continued)

STOWING CARGO PARACHUTES

11-14. Stow three G-11B cargo parachutes on the load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-19.



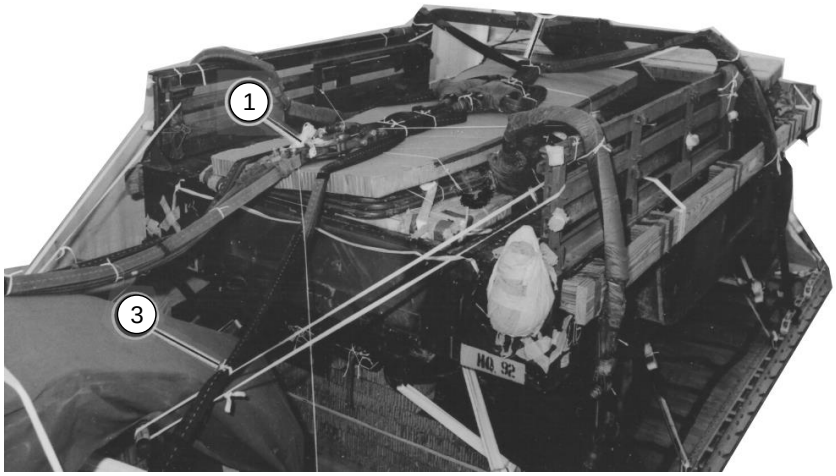
① Prepare and install three G-11B cargo parachutes on the load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

② Restrain the cargo parachutes to the platform with two lengths of type VIII nylon webbing according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . The front restraint strap to clevises 18 and 18A. Tie the rear restraint strap to clevises 21 and 21A.

Figure 11-19. Parachutes Stowed

INSTALLING RELEASE SYSTEM

11-15. Prepare and install the M-1 release system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-20.



① Prepare and install an M-1 cargo parachute release assembly according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Place the M-1 release on the honeycomb pre-positioned in the bed of the truck.

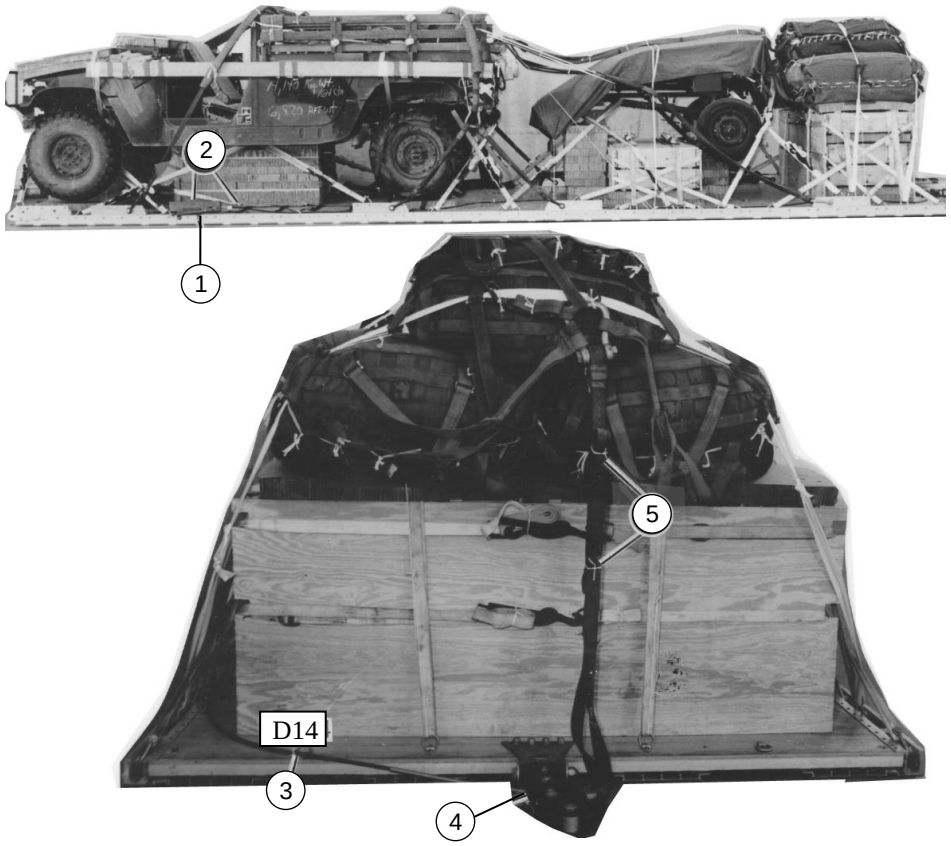
② Fold the suspension slings. Secure the folds with lengths of type I, ¼-inch cotton webbing.

③ Tie the rear suspension slings to the 1/2 –inch tubular nylon webbing placed in Figure 11-16, step 4 with type I, ¼-inch cotton webbing.

Figure 11-20. Release System Installed

INSTALLING EXTRACTION SYSTEM

11-16. Install the Extraction Force Transfer Coupling (EFTC) extraction system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-21.



① Attach the mounting brackets to the front mounting holes on the left platform side rail.

② Install the 28-foot cable to the actuator. Install the actuator to the brackets according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

③ Safety the cable to adjacent lashings and to tie-down ring D14 with type I, ¼-inch cotton webbing.

④ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.

⑤ Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line.

Figure 11-21. Extraction Force Transfer Coupling Installed

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

11-17. Install provisions for emergency restraints according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

PLACING CARGO EXTRACTION PARACHUTE

11-18. Select the extraction parachute as described below.

- C-130 Aircraft. Place a 22-foot cargo extraction parachute and a 60-foot (3-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.
- C-141 Aircraft. Place a 22-foot cargo extraction parachute and a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.
- C-5 Aircraft. Place a 22-foot cargo extraction parachute and 5 ½ inch, two-point link assembly on the load for installation in the aircraft. See TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 for extraction line requirements.

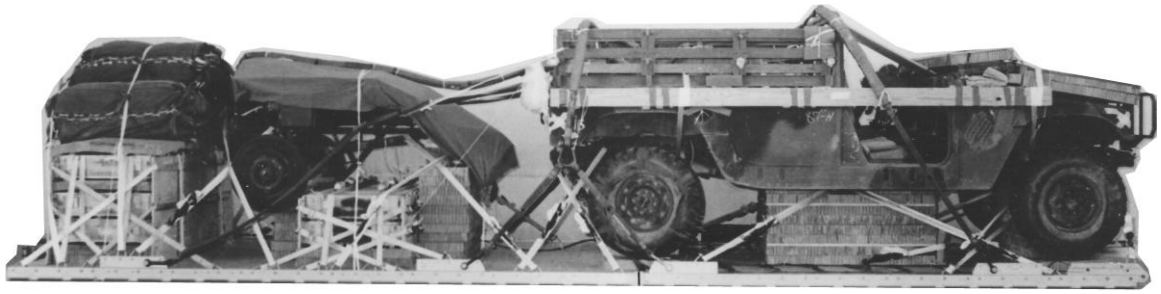
Note. A sling/extraction line bag must be used.

MARKING RIGGED LOAD

11-19. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 11-22. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

RIGGED LOAD DATA

Weight:	Load shown……....	14,140 pounds
	Maximum Load Allowed……	15,750 pounds
Height	……...	87 inches
Width	……	108 inches
Length	……	363 inches
Overhang:	Front……..	10 ½ inches
	Rear……	5 inches
Center of Balance (from the front edge of platform)	…….	164 inches
Extraction System	……..……..	Extraction Force Transfer Coupling (EFTC)

Figure 11-22. 120-MM Mortar and 1 ¼-ton Truck Rigged for Low-Velocity Airdrop on a Type V Platform

EQUIPMENT REQUIRED

11-20. Use the equipment listed in Table 11-1 to rig this load.

Table 11-1. Equipment Required for Rigging 120-MM Mortar and 1 ¼-Ton Truck for Low-Velocity Airdrop on a Type V Platform

National Stock Number	*Item*	*Quantity*
1670-00-162-4981	Adapter, Coupling, Extraction Force Transfer Coupling (EFTC)	2
5365-00-405-9293	Spacer	2
8040-00-273-8713	Adhesive, Paste, 1-gallon	As Required
	Clevis, Suspension:	
4030-00-678-8562	¾-inch (medium)	8
4030-00-090-5354	1-inch (large)	11
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
1670-00-157-6527	Coupling, Airdrop, Extraction Force Transfer w 28-ft cable	1
	Cover:	
1670-00-360-0328	Clevis, Large	3
1670-00-360-0329	Link Assembly (Type IV)	3
8135-00-664-6958	Cushioning Material, Packaging, Cellulose Wadding	As Required
8305-00-958-3685	Felt, ½-inch Thick	As Required
1670-01-183-2678	Leaf, Extraction Line	As Required
	Line, Extraction:	2
1670-01-062-6313	60-ft (3-loop), Type XXVI Nylon Webbing	1
1670-01-107-7651	140-ft (3-loop), Type XXVI Nylon Webbing	1
	Link Assembly:	
	Two-Point	
5306-00-435-8994	Bolt, 1-inch diameter 4-in long	4
5310-00-232-5165	Nut, 1-inch, hexagonal	4
1670-00-003-1953	Plate, Side, 3 ¾-inch	4
1670-00-003-1954	Plate, Side, 5 ½-inch	4
5365-00-007-3414	Spacer, Large	4
1670-00-783-5988	Type IV	2
	Lumber:	
5510-00-220-6146	2- by 4-inch	4 Linear Feet
5510-00-220-6148	2- by 6-inch	13 Linear Feet
5510-00-220-6248	2- by 10-inch	1 Linear Feet
5315-00-010-4657	Nail, Steel Wire, Common, 6d	As Required
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb	
	3- by 36- by 96-inch	22 Sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	3
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 11-1. Equipment Required for Rigging 120-MM Mortar and 1 ¼-ton Truck for Low-Velocity Airdrop on a Type V Platform (Continued)

National Stock Number	*Item*	*Quantity*
	Cargo Extraction	
1670-01-063-3716	22-ft	1
	Platform, AD, Type V, 28-ft	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis Assembly	(46)
1670-01-162-2376	Extraction Bracket Assembly	(1)
1670-01-247-2389	Suspension Link	(8)
1670-01-162-2381	Tandem Link	(2)
5530-00-128-4981	Plywood, ¾-inch	4 Sheets
1670-00-251-1153	A-7A	1
	For Deployment Line:	
1670-01-062-6304	9-ft (2-loop), Type XXVI Nylon Webbing	1
	For Riser Extensions:	
1670-01-062-6302	20-ft (2-loop), type XXVI Nylon Webbing	6
	For Lifting:	
1670-01-062-6304	9-ft (2-loop), Type XXVI Nylon Webbing	4
1670-01-063-7760	11-ft (2-loop), Type XXVI Nylon Webbing	1
1670-01-062-6303	12-ft (2-loop), Type XXVI Nylon Webbing	6
	For Suspension Slings:	6
1670-01-062-6301	3 ft (2-loop), Type XXVI Nylon Webbing	4
1670-01-063-7760	11 ft (2-loop), Type XXVI Nylon Webbing	2
1670-01-062-6302	20 ft (2-loop), Type XXVI Nylon Webbing	2
1670-00-998-5116	Strap, Parachute Release w/Fastener and Guillotine Knife	2
8305-00-074-5124	Tape, Adhesive, 2-inch	As Required
1670-00-937-0271	Tie-down Assembly, 15-ft	73
1670-00-431-8486	Vehicle, Drive-Off Aid	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, Type I	As Required
	Nylon:	
	Tubular:	
8305-00-082-5752	½-inch or	As Required
8305-00-268-2453	½-inch	As Required
8305-00-264-6151	1-inch	As Required
	Type V	As Required
8305-00-263-3591	Type VIII	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

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Chapter 12

Rigging Disassembled 120-Millimeter Mortar in 1 ¼-Ton HMMWV Truck on a 16-Foot Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

12-1. The unrigged 1 ¼-ton HMMWV truck is described in Chapter 1 of TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. The truck is rigged on a 16-foot, type V airdrop platform with two G-11B cargo parachutes for low-velocity airdrop from a C-130 or C-17 aircraft. The disassembled mortar, weighing 317 pounds, is included in the accompanying load, which is not to exceed 2,000 pounds. The maximum rigged weight of this load is 10,000 pounds.

PREPARING PLATFORM

12-2. Prepare a 16-foot, type V platform using four tandem links and 20 clevis assemblies as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

PREPARING AND POSITIONING HONEYCOMB STACKS

12-3. Prepare and position the honeycomb stacks as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

PREPARING TRUCK

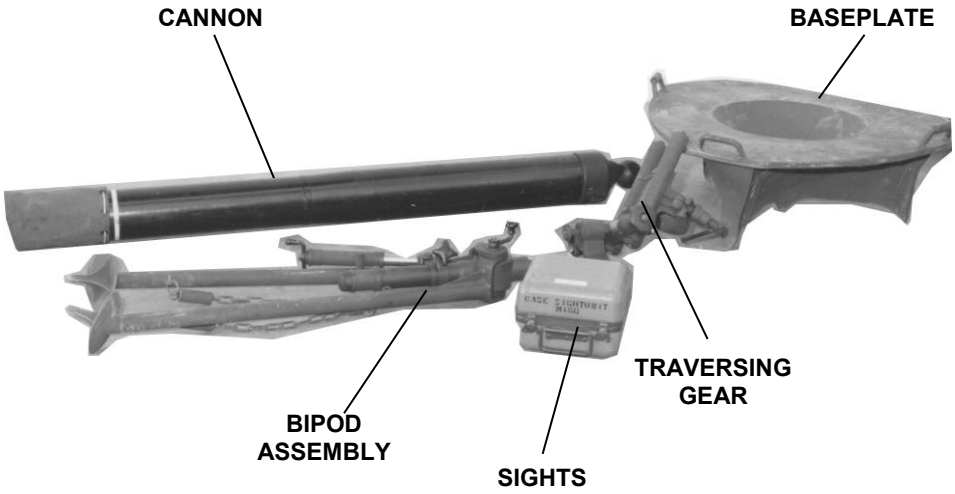
12-4. Prepare the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

STOWING ACCOMPANYING LOAD

12-5. Stow the accompanying load as shown in Figure 12-1 of this manual.

CAUTION

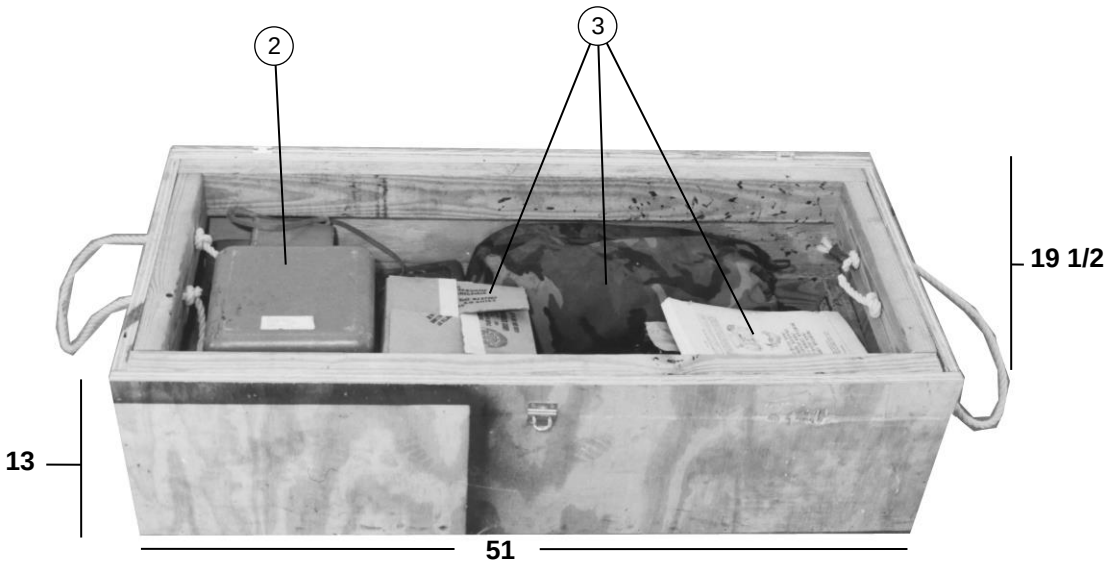
Only ammunition listed in TM 4-48.16/TO 13C7-18-41 may be airdropped. Package, mark and label hazardous material according to AFMAN 24-204/TM 38-250.



① Be sure all the components shown are present.

Figure 12-1. Accompanying Load Stowed

Note. 1. The parts box must not exceed the dimensions shown.
2. All dimensions are in inches.

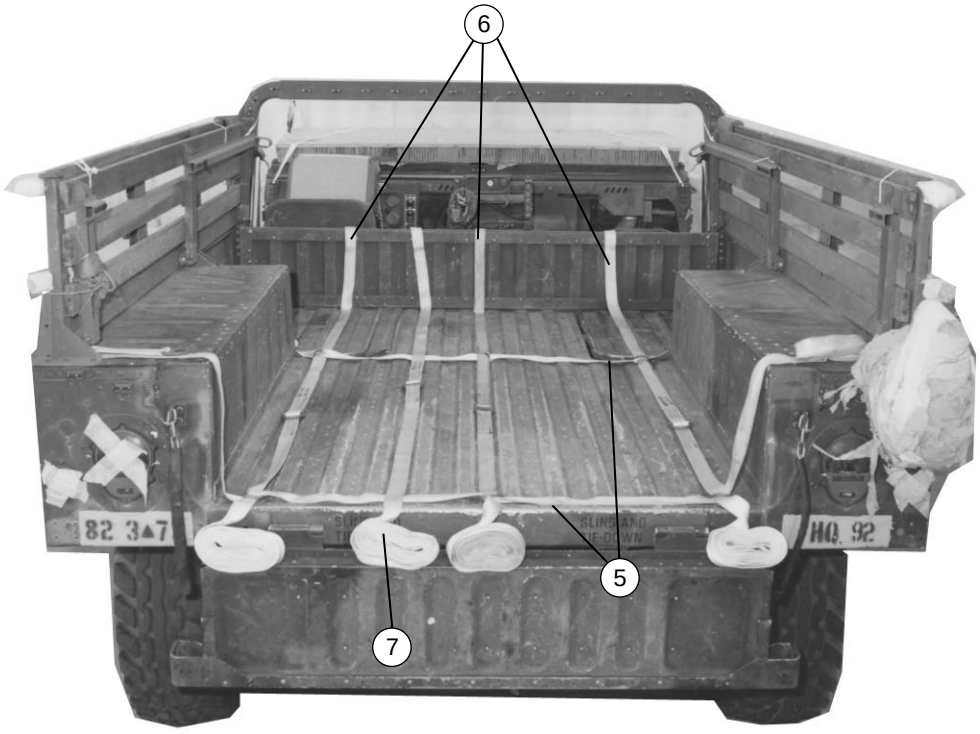


② Place the sight case in the parts box.

③ Place tools and spare parts in the parts box.

④ Pad the items in the parts box with cellulose wadding. Secure the parts box (not shown).

Figure 12-1. Accompanying Load Stowed (Continued)

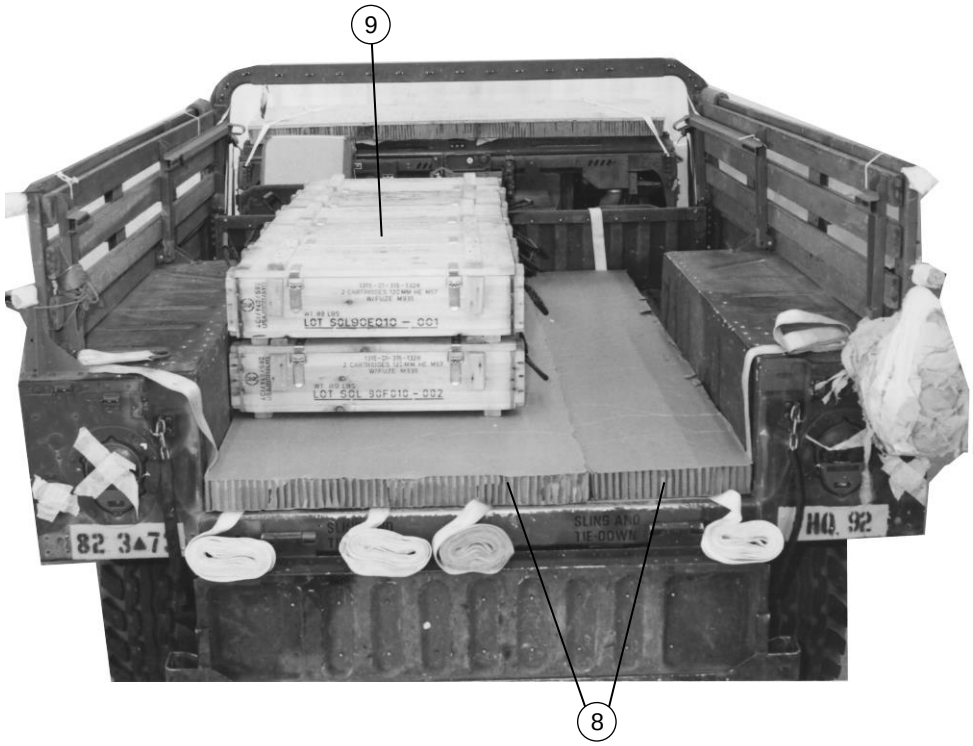


⑤ Lay two 15-foot lashings width-wise across the cargo bed, passing them through the center and rear tie-down rings in the cargo bed floor.

⑥ Form three 30-foot lashings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Lay the lashings lengthwise across the cargo bed, passing them through the left, right, and center tie-down rings in the cargo bed floor.

⑦ Form an additional 30-foot lashing. Place the lashing lengthwise between the left and center tie-down rings.

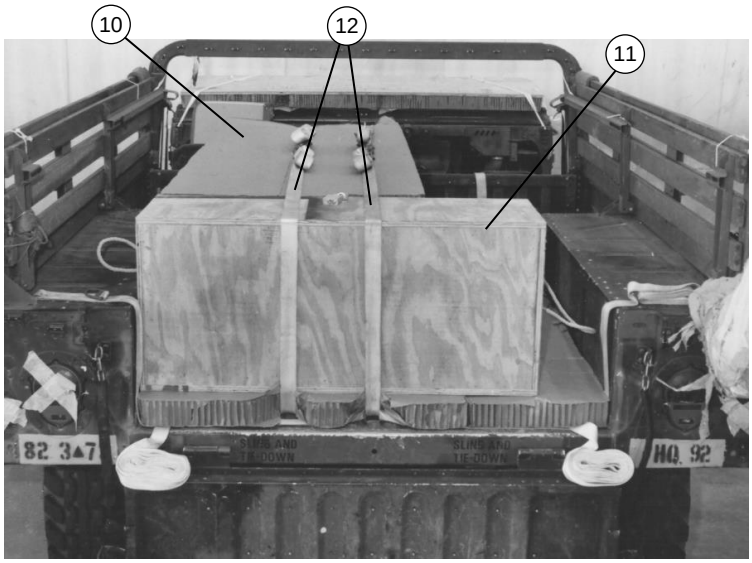
Figure 12-1. Accompanying Load Stowed (Continued)

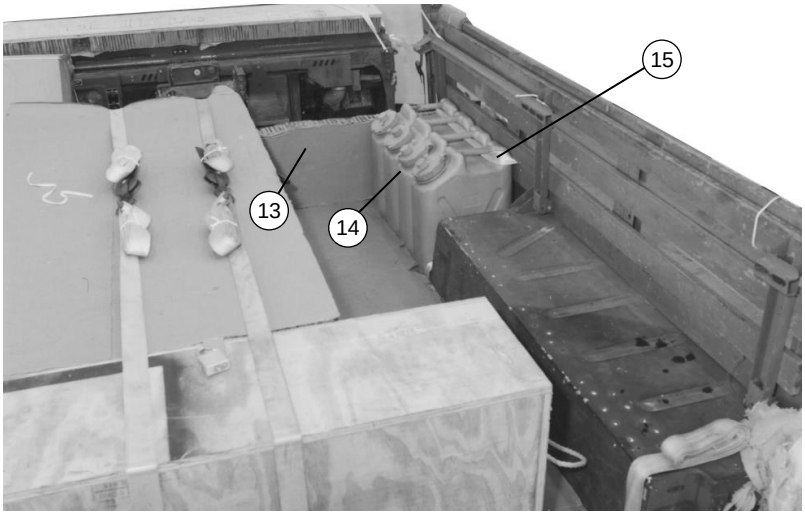


⑧ Cover the cargo bed using two pieces of honeycomb to make a 40- by 80-inch layer.

⑨ Place 10 boxes of ammunition on the left side of the cargo bed as shown.

Figure 12-1. Accompanying Load Stowed (Continued)





⑩ Place a 32- by 68-inch piece of honeycomb on top of the boxes.

⑪ Position the parts box flush against the boxes of ammunition.

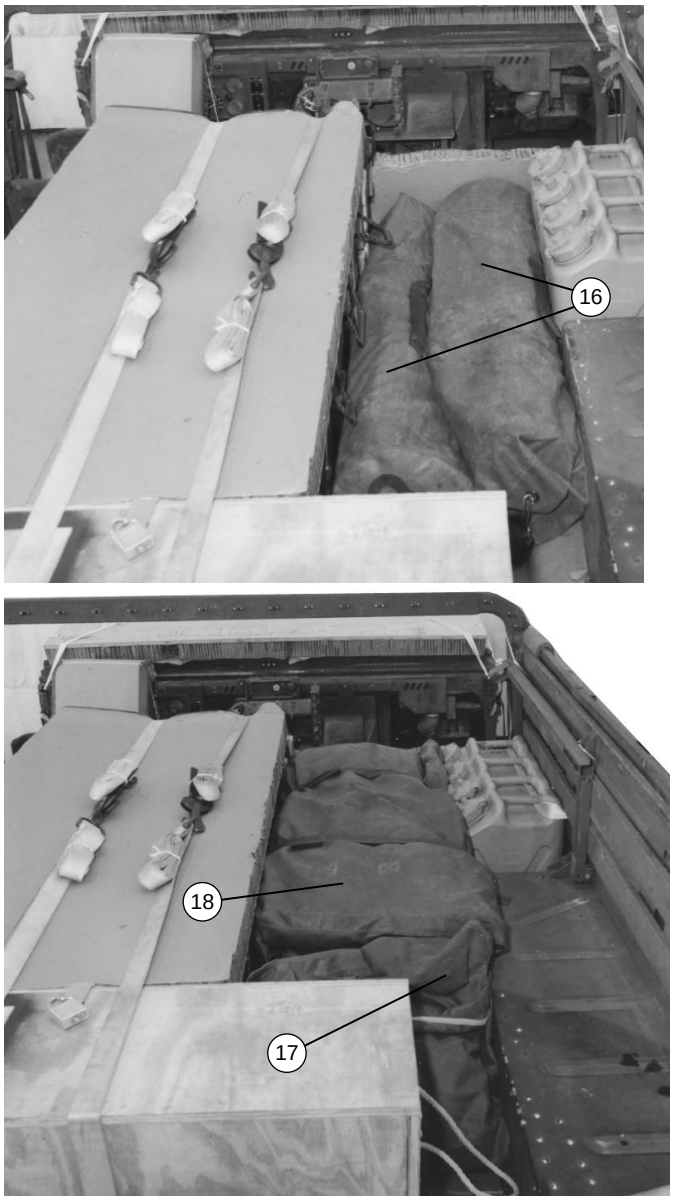
⑫ Secure the center prepositioned lashings around the boxes of ammunition and parts box.

⑬ Place a 34- by 14-inch piece of honeycomb against the right front wall.

⑭ Place four cans of water or fuel in the right front corner.

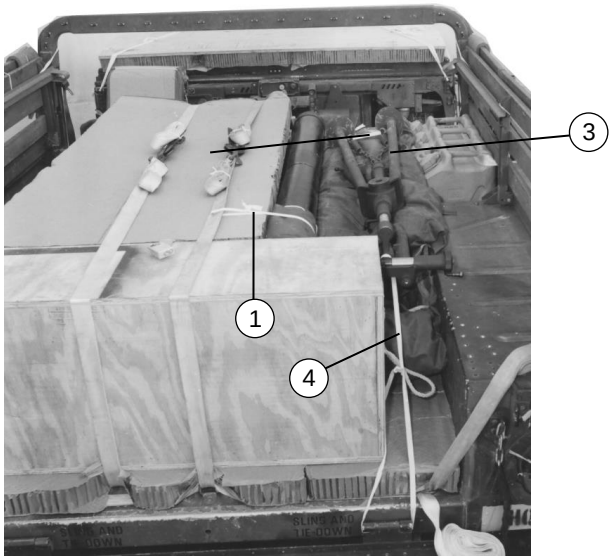
⑮ Pass a 15-foot lashing through the can handles and around the uprights on the side rails. Secure the lashing on the outside.

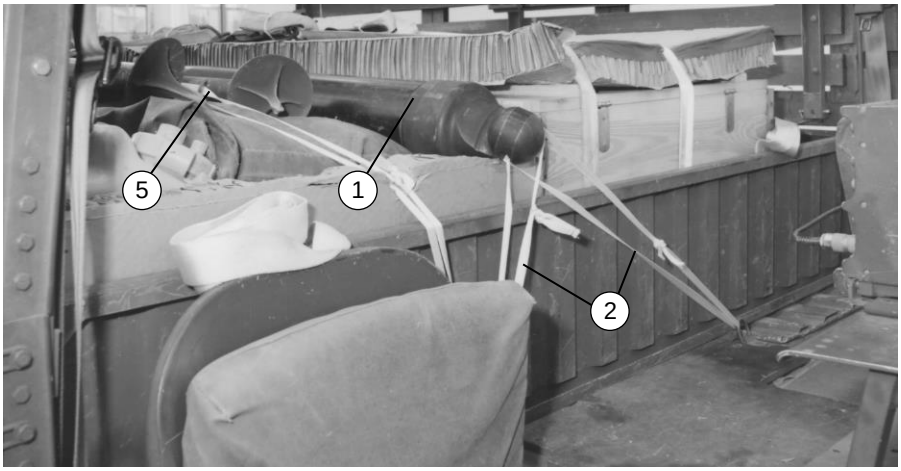
Figure 12-1. Accompanying Load Stowed (Continued)



⑯ Position two camouflage pole bags between the ammunition boxes and cans.
⑰ Fold the cargo cover. Place the cover between the pole sets and the parts box.
⑱ Position a camouflage net bag on top of the pole bags.

Figure 12-1. Accompanying Load Stowed (Continued)





① Position the mortar tube on top of the net bag and against the ammunition boxes with the breech cap to the front. Tie the tube to the center lashing with ½-inch tubular nylon webbing.

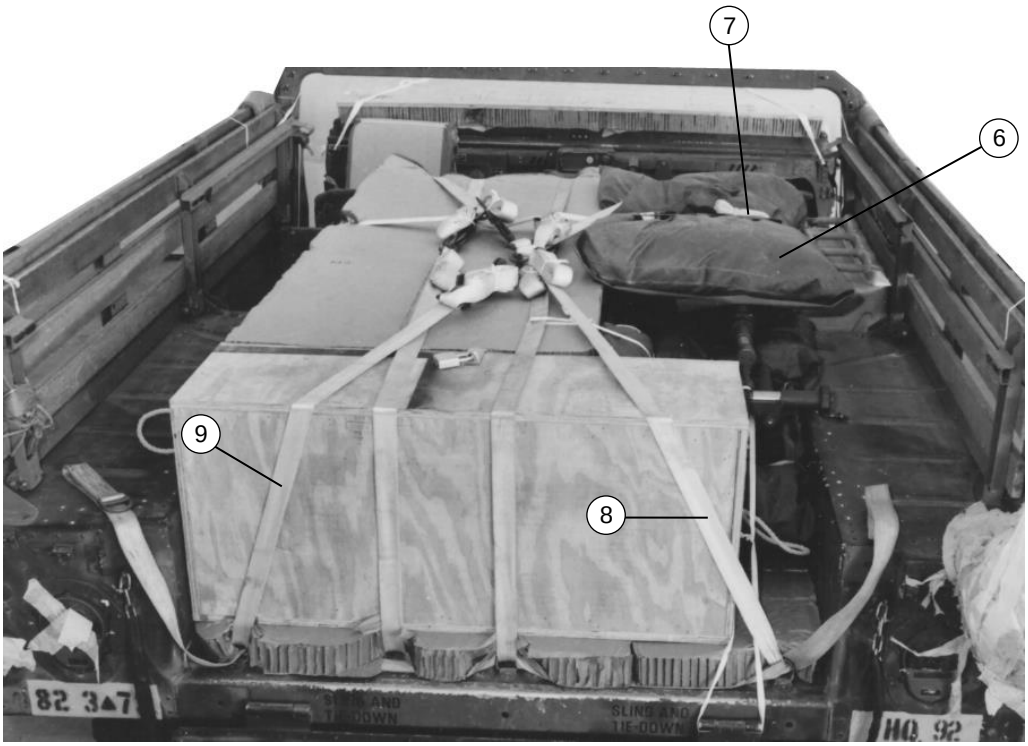
② Secure the mortar by passing two lengths of ½-inch tubular nylon webbing through the breech cap cross bore hole and to both front tie-down rings.

③ Place the bipod on the net bag with the extensions to the front, and the buffer assembly on the cargo cover.

④ Pass a length of ½-inch tubular nylon webbing around the traversing gear assembly and around the tailgate hinge, and tie securely.

⑤ Pass a length of ½-inch tubular nylon webbing through both bipod extension rings and tie the webbing to the right front tie-down ring.

Figure 12-1. Accompanying Load Stowed (Continued)



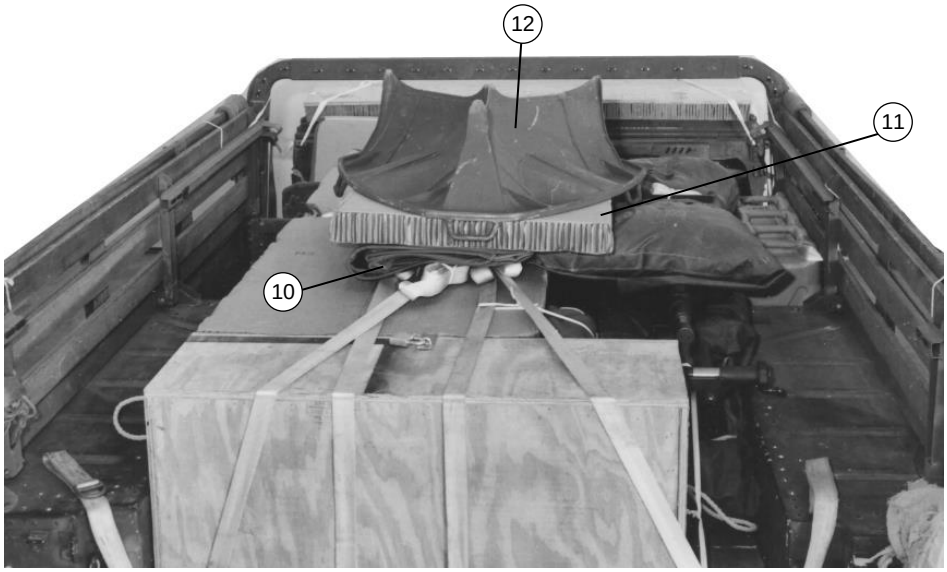
⑥ Position a second camouflage net set on top of the bipod and mortar tube.

⑦ Secure the front 15-foot lashing placed in step 5 on top of the second camouflage net.

⑧ Join the left front and right rear 30-foot lashings placed in step 6 with two D-rings and a load binder.

⑨ Join the left rear and right front 30-foot lashings placed in step 6 with two D-rings and a load binder.

Figure 12-1. Accompanying Load Stowed (Continued)

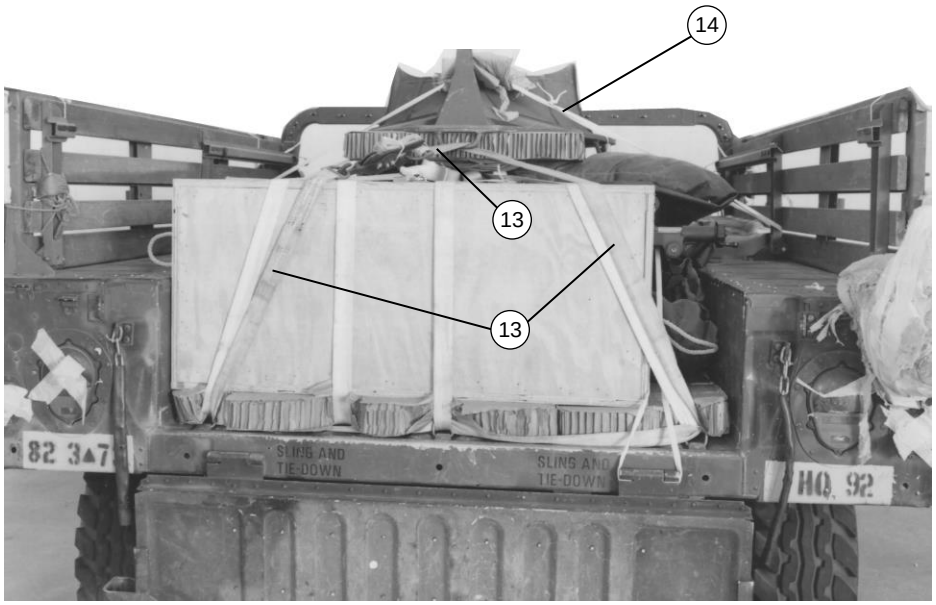


⑩ Position the truck cab cover on top of the load binders of the secured lashings.

⑪ Position a 31- by 36-inch piece of honeycomb on top of the cab cover.

⑫ Center the mortar baseplate on the honeycomb with the center carrying handle facing down and to the rear.

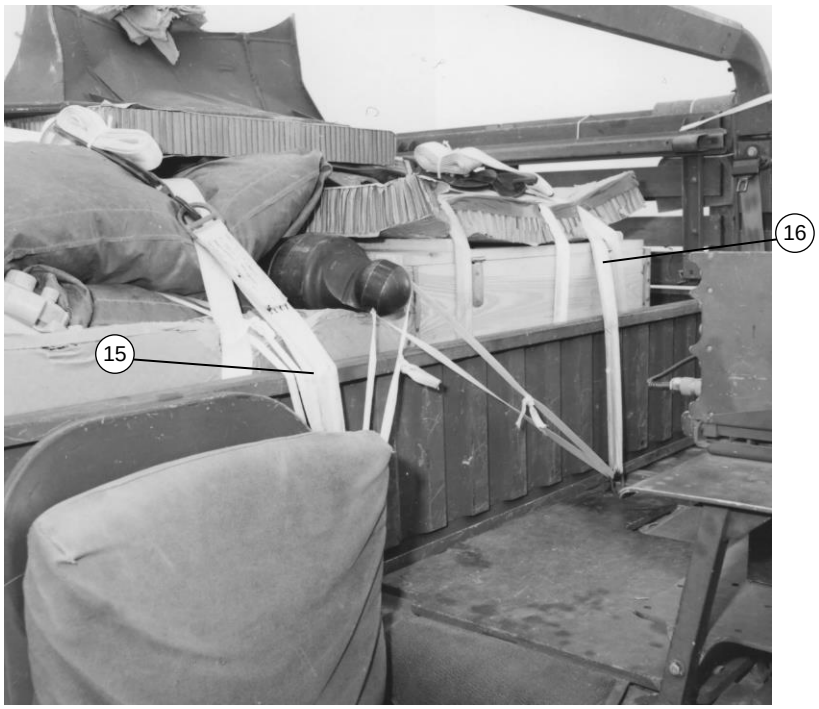
Figure 12-1. Accompanying Load Stowed (Continued)



⑬ Pass the rear lashing placed in step 5 over the parts box and through the center carrying handle of the baseplate. Secure the lashing with a D-ring and a load binder.

⑭ Pass a double length of ½-inch tubular nylon webbing over the baseplate and secure the webbing to the left and right side rails of the truck. Pad the baseplate with cellulose wadding.

Figure 12-1. Accompanying Load Stowed (Continued)



⑮ Pass a 15-foot lashing through the right carrying handle of the baseplate and through the right front cargo tie-down ring. Secure the lashing with a load binder and a D-ring.

⑯ Pass a 15-foot lashing through the left carrying handle of the baseplate and through the left front cargo tie-down ring. Secure the lashing with a load binder and D-ring.

Figure 12-1. Accompanying Load Stowed (Continued)



⑰ Position the bows of the truck on the left side of the cargo bed. Secure the bows to the side rails using type III nylon cord.

⑱ Close the tailgate. Secure it to the chain brackets with a single length of ½-inch tubular nylon webbing.

Figure 12-1. Accompanying Load Stowed (Continued)

INSTALLING DRIVE-OFF AIDS ON PLATFORM

12-6. Install the drive-off aids on the platform as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

LIFTING AND POSITIONING TRUCK AND INSTALLING DRIVE-OFF AIDS

12-7. Install the lifting slings and position the truck on the platform as described in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. Install the drive-off aids and honeycomb restraint lashing as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

LASHING TRUCK

12-8. Lash the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

INSTALLING, PADDING, AND SAFETYING SUSPENSION SLINGS

12-9. Install, pad, and safety the suspension slings as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

STOWING CARGO PARACHUTES

12-10. Stow the cargo parachutes on the load as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

INSTALLING PARACHUTE RELEASE

12-11. Prepare and install an M-1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

INSTALLING EXTRACTION SYSTEM

12-12. Install the extraction system as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINTS

12-13. Install provisions for emergency restraints according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

PLACING EXTRACTION PARACHUTE

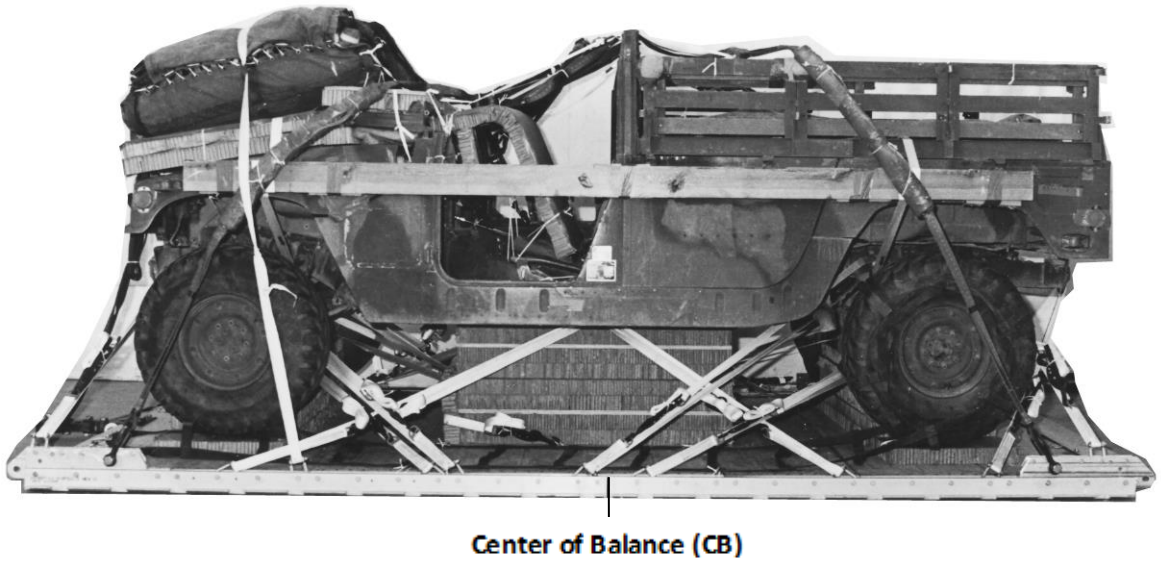
12-14. Place the extraction parachute as described below.

- C-130 Aircraft. Place a 22-foot cargo extraction parachute and a 60-foot (3-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.
- C-141 Aircraft. Place a 22-foot cargo extraction parachute and a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line on the load for installation in the aircraft.
- C-5 Aircraft. Place a 22-foot cargo extraction parachute and a two-point 5 ½-inch link assembly on the load for installation in the aircraft. See TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 for extraction line requirements.

Note. A sling/extraction line bag must be used.

MARKING RIGGED LOAD

12-15. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 12-2. Complete DD Form 1387-2, Special Handling Data/Certification and securely attach it to the load. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.



RIGGED LOAD DATA

Weight:	Load Shown…….	9,950 pounds
	Maximum Load Allowed……	10,000 pounds
Height (with two G-11B parachutes)	……...	86 inches
Width	……...	108 inches
Length	……...	215 inches
Overhang:	Front……	0 inches
	Rear……..	0 inches
Center of Balance (from front edge of platform)	……..	95 inches

Figure 12-2. 1 ¼-ton HMMWV Truck with 120-Millimeter Mortar Rigged for Low-Velocity Airdrop

EQUIPMENT REQUIRED

12-16. Use the equipment listed in Table 12-1 to rig this load.

Table 12-1. Equipment Required for Rigging 120-MM Mortar in 1 ¼-Ton Truck for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, Paste, 1-gallon	As Required
	Clevis, Suspension	
4030-00-678-8562	¾-inch (medium)	6
4030-00-090-5354	1-inch (large)	5
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
1670-00-434-5758	Coupling, Airdrop, Extraction Force Transfer w 16-ft Cable	1
1670-00-360-0329	Cover, Link Assembly, Type IV	3
8135-00-664-6958	Cushioning Material, Packaging, Cellulose Wadding	As Required
8305-00-958-3685	Felt, ½-inch thick	As Required
1670-01-183-2678	Leaf, Extraction (2 ea used for line bag)	2
	Line Extraction:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	1
1670-01-107-7651	140-ft (3-loop), type XXVI nylon webbing (for C-141)	1
	Link Assembly	
	Two-point: (for C-130)	1
5306-00-435-8994	Bolt, 1-in diam, 4-in long	(2)
5310-00-232-5165	Nut, 1-inch	(2)
1670-00-003-1953	Plate, side, 3 ¾-inch	(2)
5365-00-007-3414	Spacer, large	(2)
1670-00-783-5988	Type IV	3
5510-00-220-6148	Lumber, 2- by 6-inch	As Required
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb, 3- by 36- by 96-inch	13 Sheets
	Parachute:	
	Cargo:	
1670-01-016-7841	G-11B	2
	Cargo Extraction	
1670-01-063-3716	22-ft or	1
1670-00-687-5458	22-ft (C-130 only)	1
	Platform, AD, Type V, 16-ft	1
	Bracket:	
1670-01-162-2375	Inside Extraction Force Transfer Assembly	(1)
1670-01-162-2374	Outside Extraction Force Transfer Assembly	(1)
1670-01-162-2372	Clevis, Assembly (Type V)	(20)
1670-01-162-2376	Extraction Bracket Assembly	(1)
1670-01-162-2381	Tandem Link (Multi-Purpose)	(4)

ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter

Table 12-1. Equipment Required for Rigging 120-MM Mortar in 1 ¼-Ton Truck for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
5530-00-128-4981	Plywood, ¾-inch	As Required
1670-01-097-8816	Release, Cargo Parachute, M-1	1
	Sling, Cargo, Airdrop:	
	For Deployment Line:	
1670-01-062-6304	9-ft (2-loop), Type XXVI Nylon Webbing	1
	For Lifting:	
1670-01-062-6304	9-ft (2-loop), Type XXVI Nylon Webbing	2
1670-01-062-6303	12-ft (2-loop), Type XXVI Nylon Webbing	2
	For Riser Extension:	
1670-01-062-6302	20-ft (2-loop), Type XXVI Nylon Webbing	2
	For Suspension:	
1670-01-063-7761	16-ft (2-loop), Type XXVI Nylon Webbing	4
1670-00-040-8219	Strap, Parachute Release, Multi-cut, Comes w 3 knives	2
7510-00-266-5016	Tape, Adhesive, 2-in	As Required
1670-00-937-0271	Tiedown Assembly, 15-ft	35
1670-00-431-8486	Vehicle Drive-off Aid	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, Type I	As Required
8305-00-082-5752	Nylon, Tubular, ½-in, 1,000 lb natural	As Required
8305-00-268-2455	Nylon, Tubular, 1-in, 4,000-lb, olive drab	As Required
8305-00-263-3591	Nylon, Type VIII, 3,600 lb	As Required

ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter

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Chapter 13

Rigging 1 ¼-Ton Truck with an Avenger Weapon System on a 28-Foot, Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

13-1. The Avenger is a turret-configured weapon system mounted on a modified M1097-11/4-HMMWV-series truck. There are two configurations of the system, the Avenger without the Environmental Control Unit (ECU) mounted on a modified M1097-series truck and the Avenger with an upgraded ECU mounted on a modified M1097-series truck. The Avenger is shown in Figure 13-1 in the travel position. The weapons consist of two missile pods, a 50-caliber machine gun, and guidance system. The Avenger may be dropped with or without the Stinger missiles or trainer missile in the launch pods. The turret and section box are removed from the truck and rigged on a 28-foot type V platform with the truck. This load requires three G-11 parachutes.

PREPARING PLATFORM

13-2. Prepare a 28-foot, type V airdrop platform as shown in Figure 13-2.

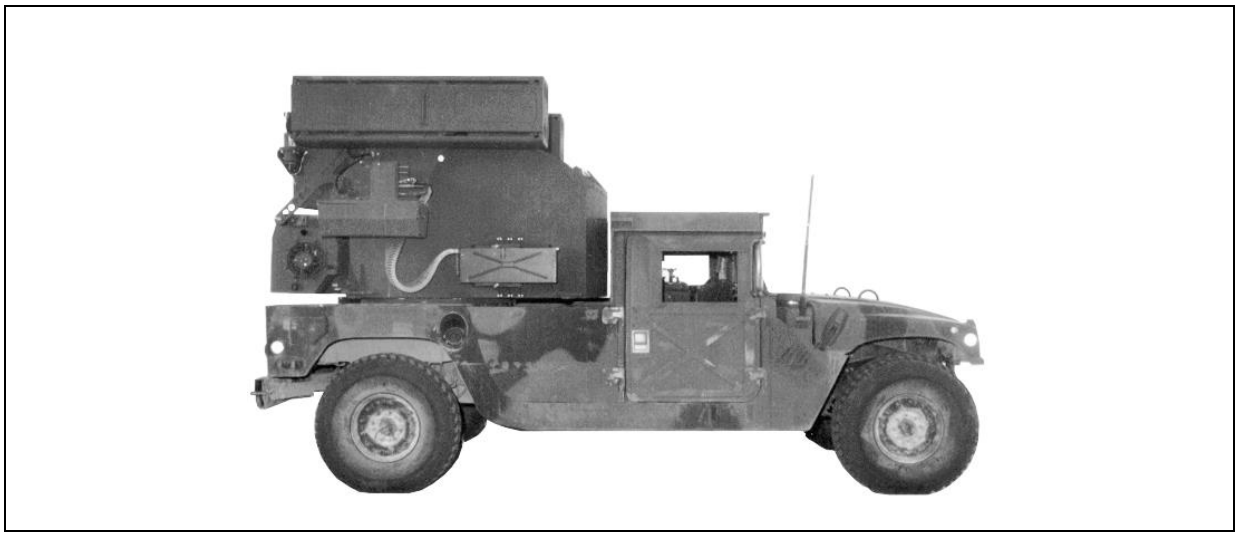
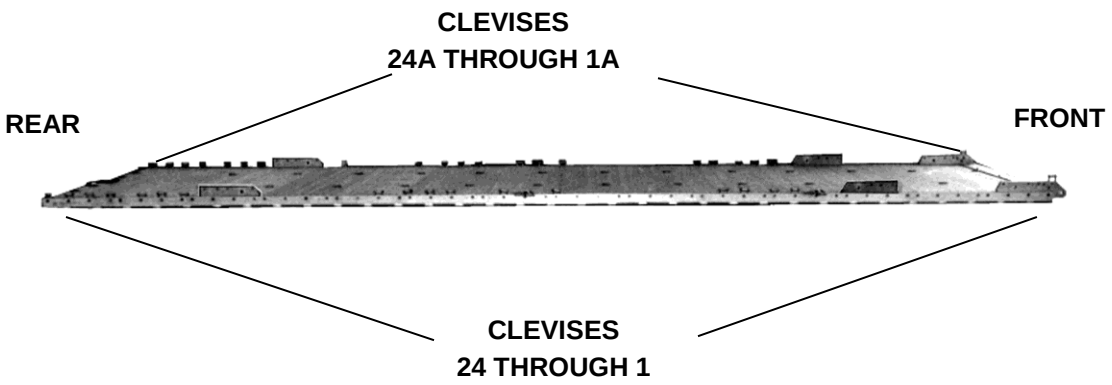


Figure 13-1. Avenger Air Defense Weapon System with ECU on M1097 Truck



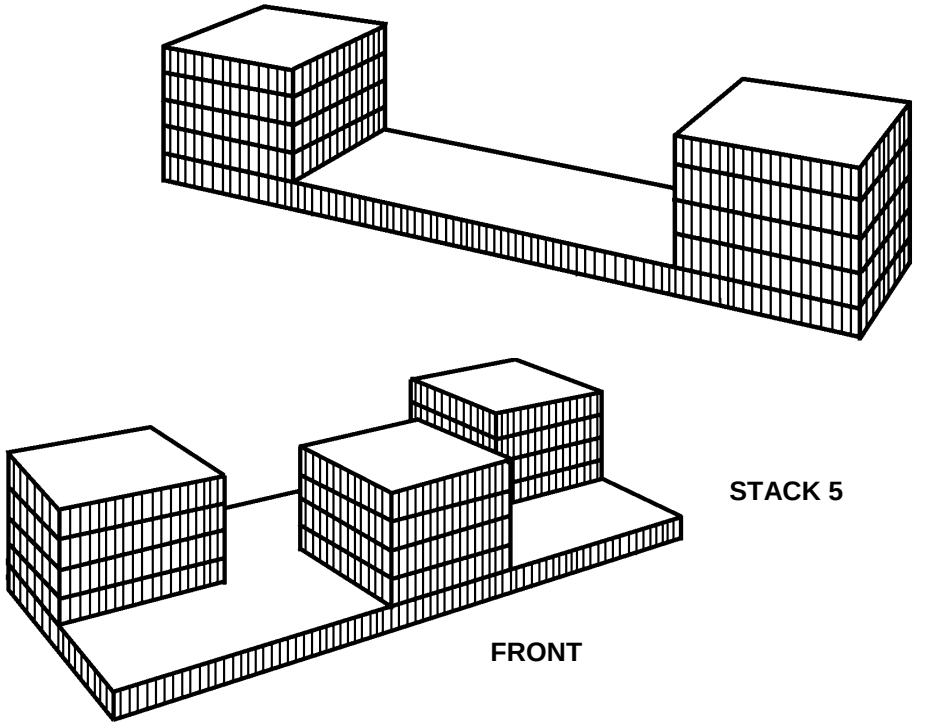
Step:

10. Inspect, or assemble and inspect, a 28-foot, type V airdrop platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
11. Install a suspension link to the right and left platform side rails using holes 10, 11, and 12.
12. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
13. Install a suspension link to the right and left platform side rails using holes 45, 46, and 47.
14. Install a clevis on bushing 1 of each tandem link.
15. Starting at the front of each platform side rail, install clevises on the bushings bolted to holes 14 (triple clevis), 15, 16, 18, 19, 28, 30 (triple clevis), 31, 34, 35, 36, 38, 49, 50, 51 (double clevis), 51A (triple clevis), 53, 54 (triple clevis), 54A (double clevis), 55, and 56.
16. Starting at the front of the platform, number the clevises 1 through 24 on the right side, and 1A through 24A on the left side.
17. Label the tie-down rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 13-2. Platform Prepared

PREPARING AND POSITIONING HONEYCOMB STACKS AND STRONGBACK

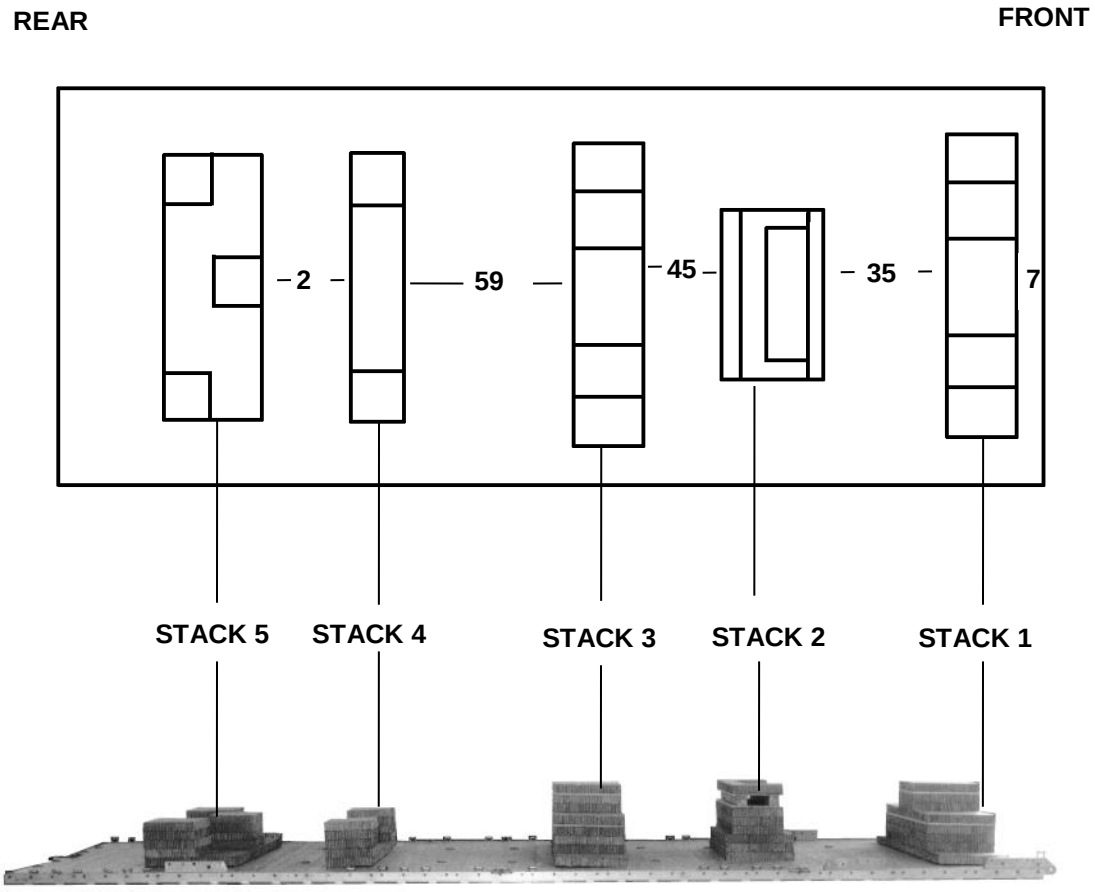
13-3. Prepare honeycomb stacks 1, 2, and 3 for the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. Prepare honeycomb stacks 4 and 5 for the turret as shown in Figure 13-3. Position the honeycomb stacks as shown in Figure 13-4. Construct the strongback as shown in Figure 13-5. Position the strongback on the honeycomb stacks and install the drive off aid on the platform as shown in Figure 13-6.



Stack Number	*Pieces*	*Width (inches)*	*Length (inches)*	*Material*	*Instructions*
4	1	72	16	Honeycomb	This is the base.
	8	16	16	Honeycomb	Glue four pieces flush with each end of the base.
5	1	72	36	Honeycomb	This is the base.
	4	16	16	Honeycomb	Center and glue flush with the front edge of the base.
	8	18	18	Honeycomb	Glue four pieces flush with each rear corner of the base.

Figure 13-3. Stacks 4 and 5 Prepared

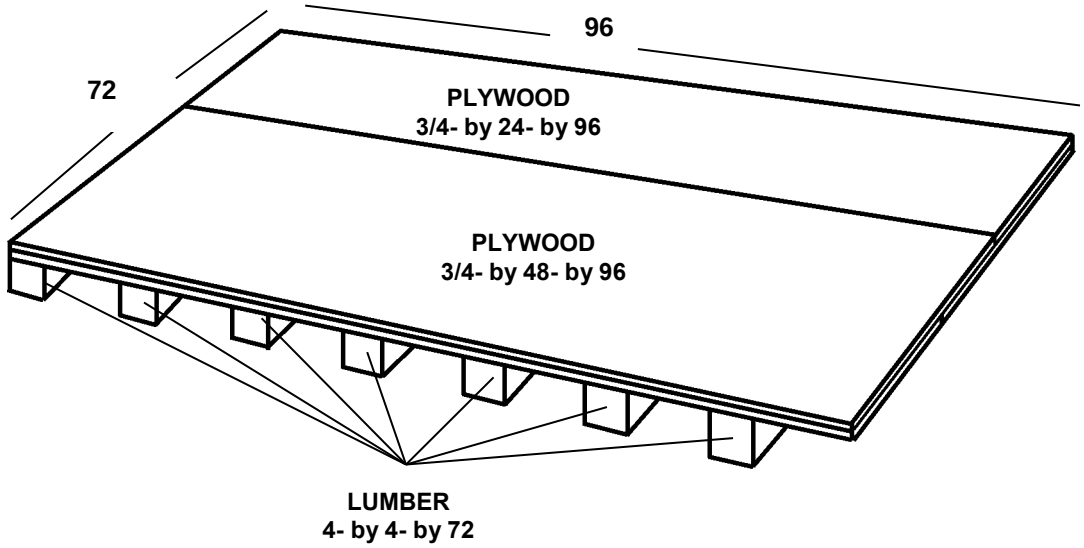
Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



Stack Number	*Position of Stack on Platform*
	Place stack:
1	Centered 7 inches from the front of the platform.
2	Centered 35 inches from stack 1.
3	Centered 45 inches from stack 2.
4	Centered 59 inches from stack 3.
5	Centered 26 inches from stack 4.

Figure 13-4. Honeycomb Stacks Positioned on Platform

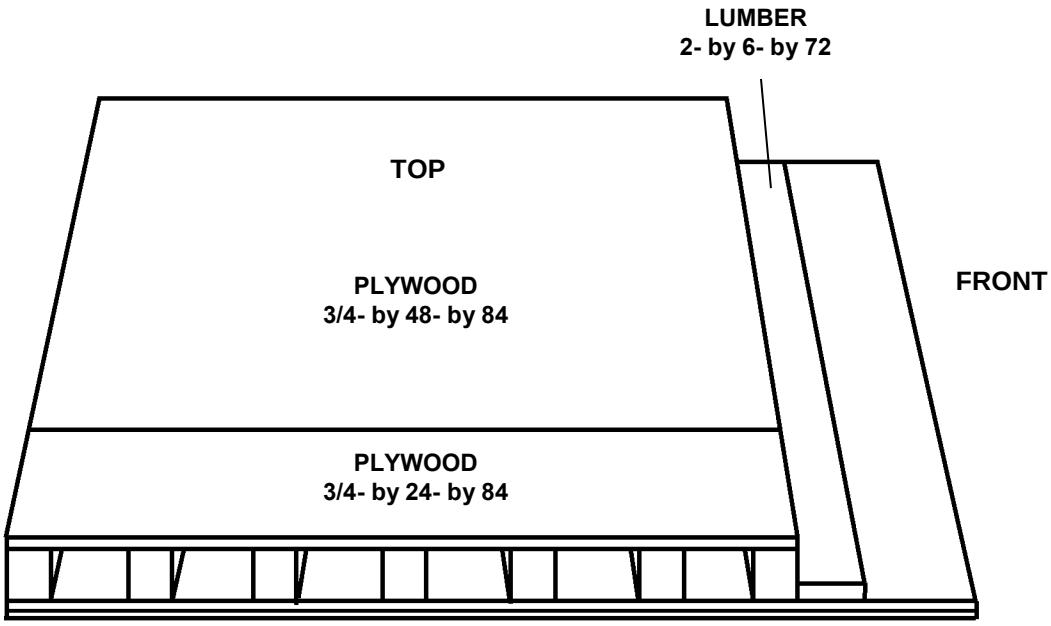
Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



Strongback	*Pieces*	*Width (inches)*	*Length (inches)*	*Material*	*Instructions*
	2	48	96	¾-in Plywood	Alternate pieces and nail plywood together forming a two layer 72-in x 96-in base.
	2	24	96	¾-in Plywood	
	7	72		4-in x 4-in Lumber	Place a piece under the base flush with one end. Place another under the base 12 inches from the opposite end. Space the remaining five pieces evenly between the first two pieces. Align all pieces with the outside edges of the base and nail each piece to the base through the plywood.

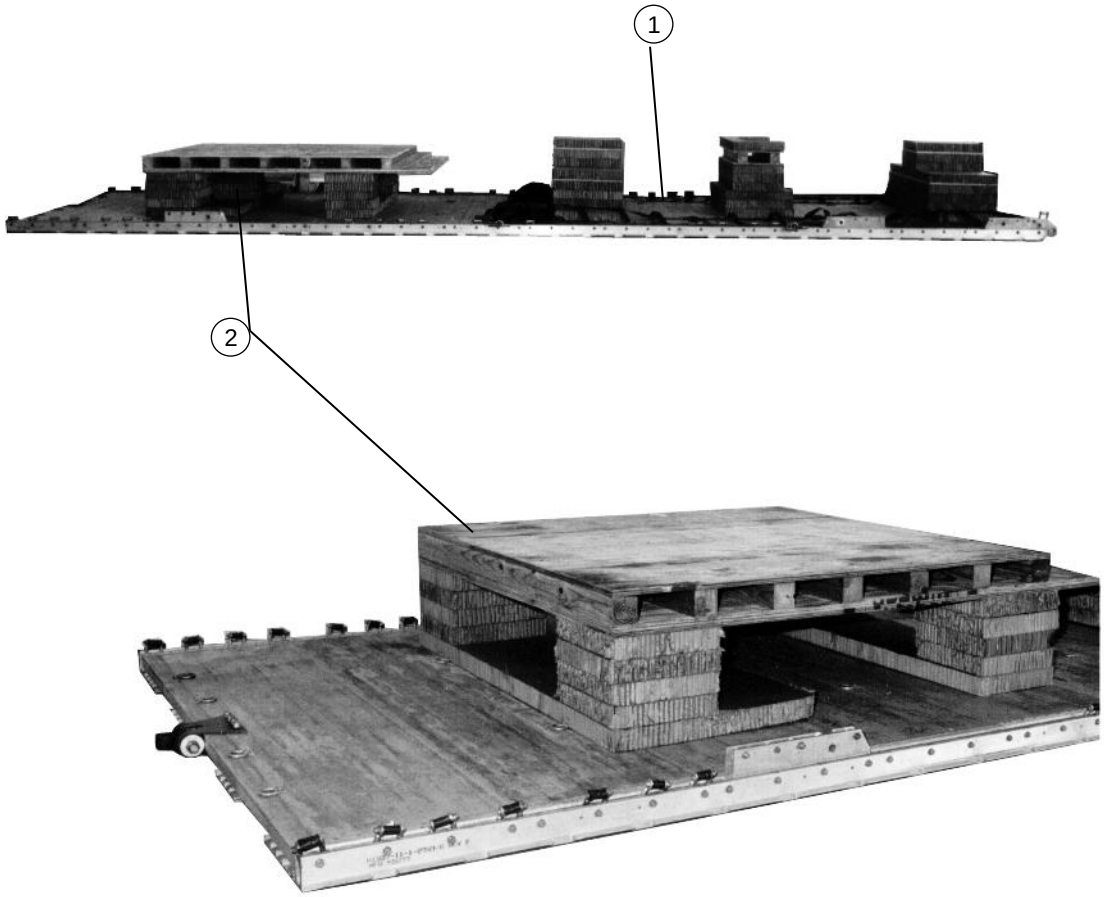
Figure 13-5. Strongback Prepared

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



Strongback	*Pieces*	*Width (inches)*	*Length (inches)*	*Material*	*Instructions*
	1	48	84	¾-in Plywood	Nail flush with lumber and base on left side.
	1	24	84	¾-in Plywood	Nail flush with lumber and base on right side.
	1	72		2-in x 6-in Lumber	Nail to base flush against first piece of 4-in x 4-in lumber.

Figure 13-5. Strongback Prepared (Continued)



① Install the drive off aid using tiedown rings A1 and B1 according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Extend the drive off aid toward the rear of the platform over the bottom layer of honeycomb on stacks 1 and 3.

② Set the strongback on stacks 4 and 5. Align the rear of the strongback with the rear of stack 5.

Figure 13-6. Strongback Set on Stacks 4 and 5 and Drive Off Aid Installed on Platform

PREPARING TRUCK

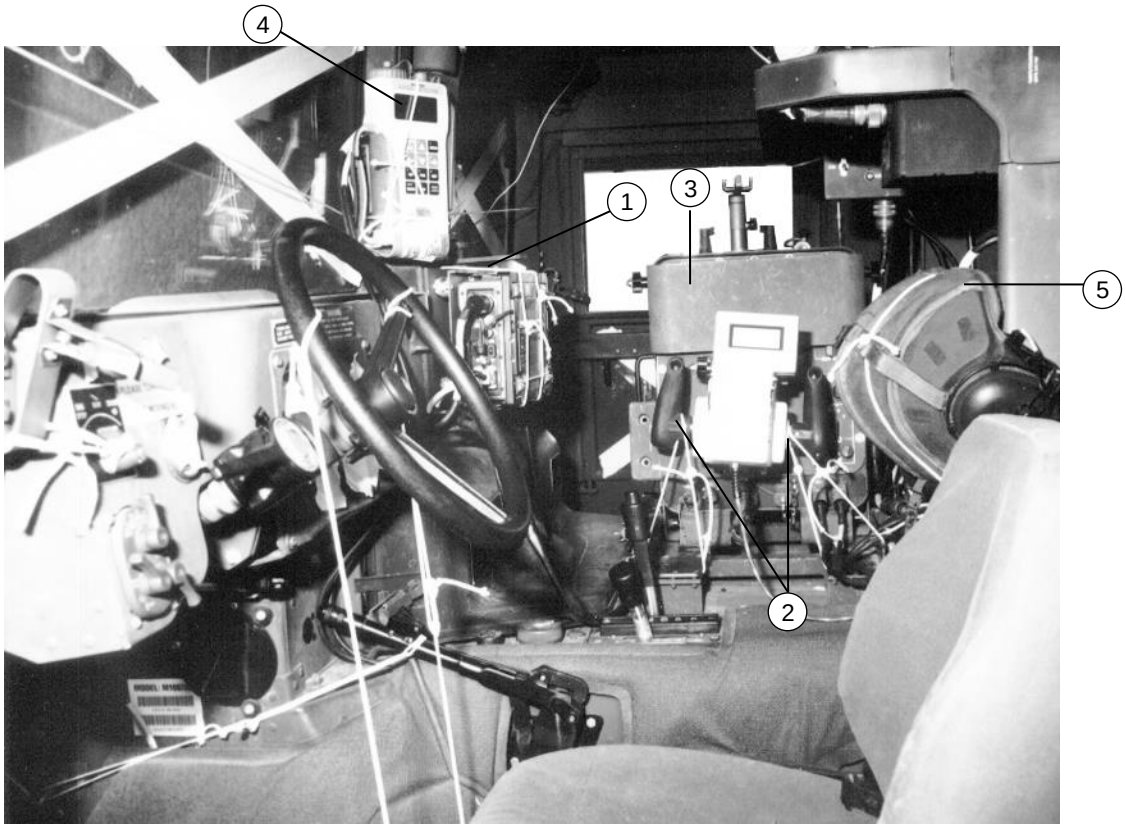
- The Avenger turret must be removed from the truck before preparing the truck. Prepare the truck and its underside as described in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111, and as shown in Figure 13-7.

CAUTION

1. Allow only Avenger crew personnel to prepare the turret for removal.
2. Secure and account for the turret mounting bolts. Tape the bolts to the inside of the brass collection box.

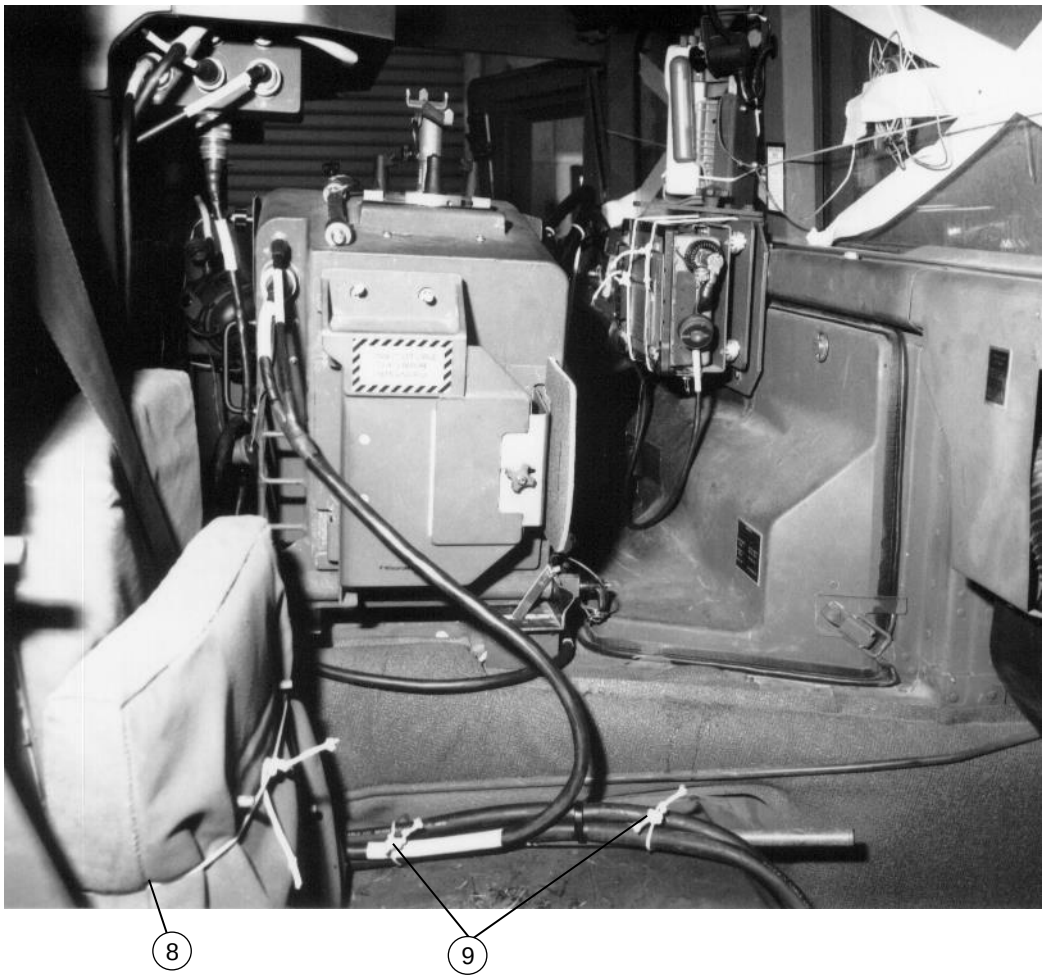
WARNING

Remove all jewelry before working around electrical and mechanical equipment. Jewelry may conduct high voltage electricity resulting in serious injury.



① Lower the sunscreen on the targeting console and sure with type III nylon cord.
② Ensure the remote control unit is secured in place with the pins provided and safety tied on each side with type III nylon cord.
③ Lower the sunscreen over the monitor.
④ Safety tie the Global Positioning System (GPS) in place with type III nylon cord.
⑤ Secure the driver's headset with type III nylon cord.
⑥ Secure the azimuth indicator and pointer assembly in place (if required) (not shown).
⑦ Safety tie the remote control table to its bracket with type III nylon cord (if required) (not shown).

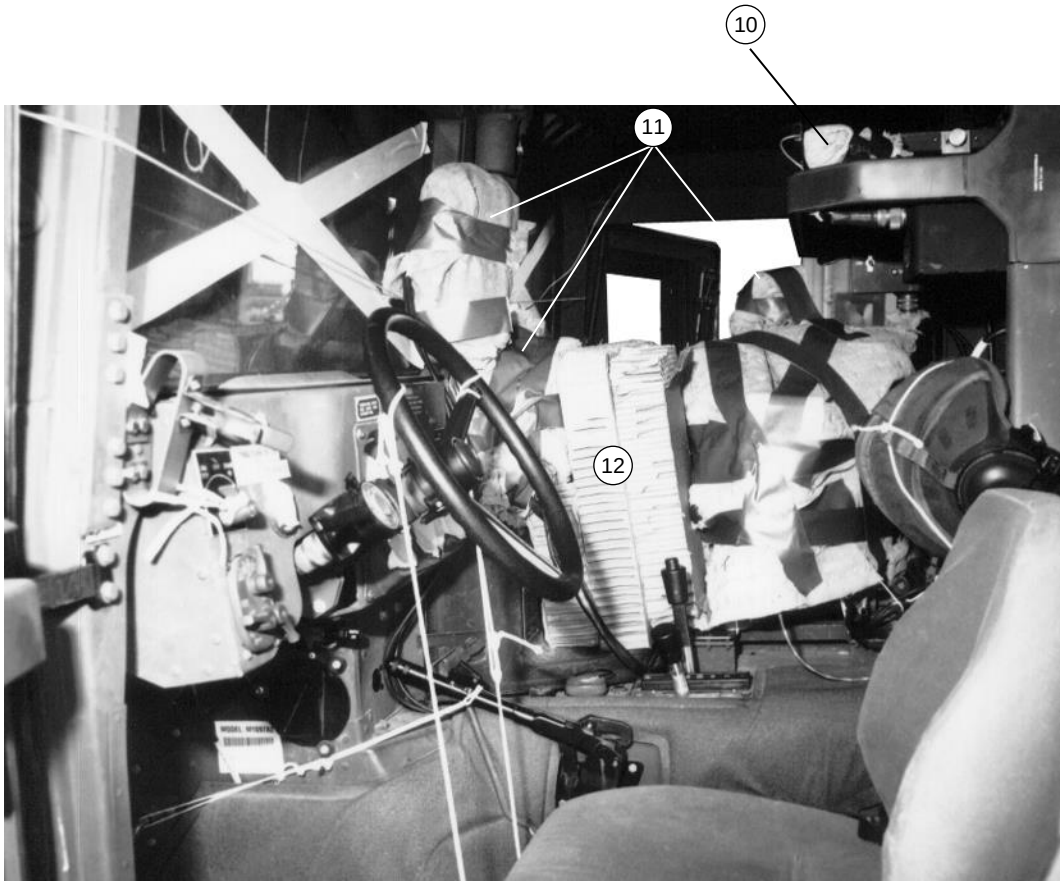
Figure 13-7. Truck Prepared



⑧ Fold up the seat bottom of the passenger's seat and secure it to the back of the seat with type III nylon cord.

⑨ Secure the slave cables and antennae to the passenger seat frame with type III nylon cord.

Figure 13-7. Truck Prepared (Continued)

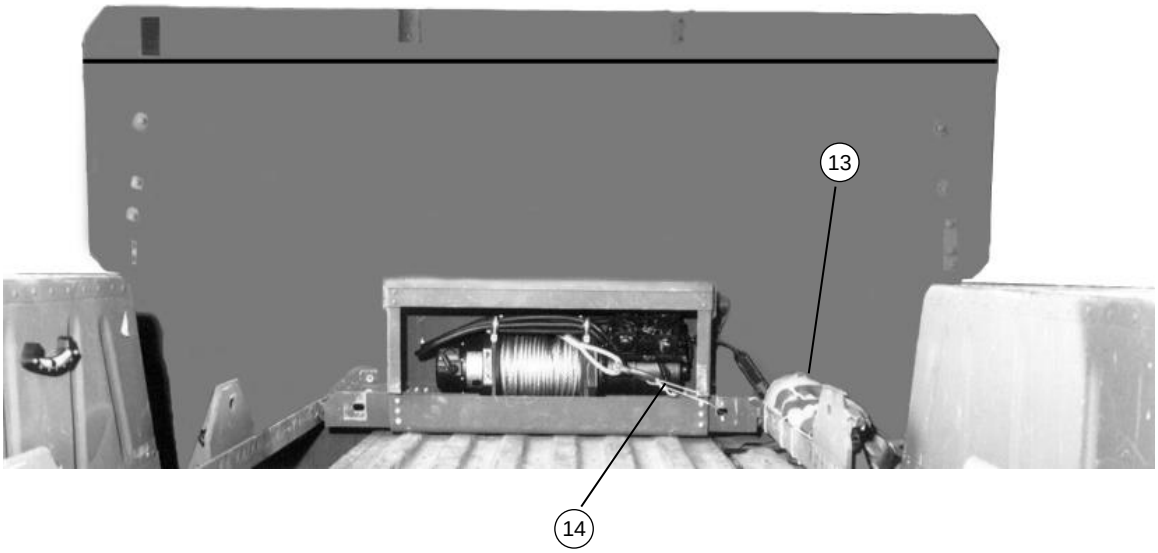


⑩ Secure the top mount radio with type III nylon cord. Wrap the radio with cellulose padding and secure the cellulose padding with tape.

⑪ Wrap the remote control unit, the targeting console, the GPS, and hand navigation system with cellulose padding. Secure the cellulose padding with tape.

⑫ Cut-to-fit and place honeycomb between the monitor and the targeting console.

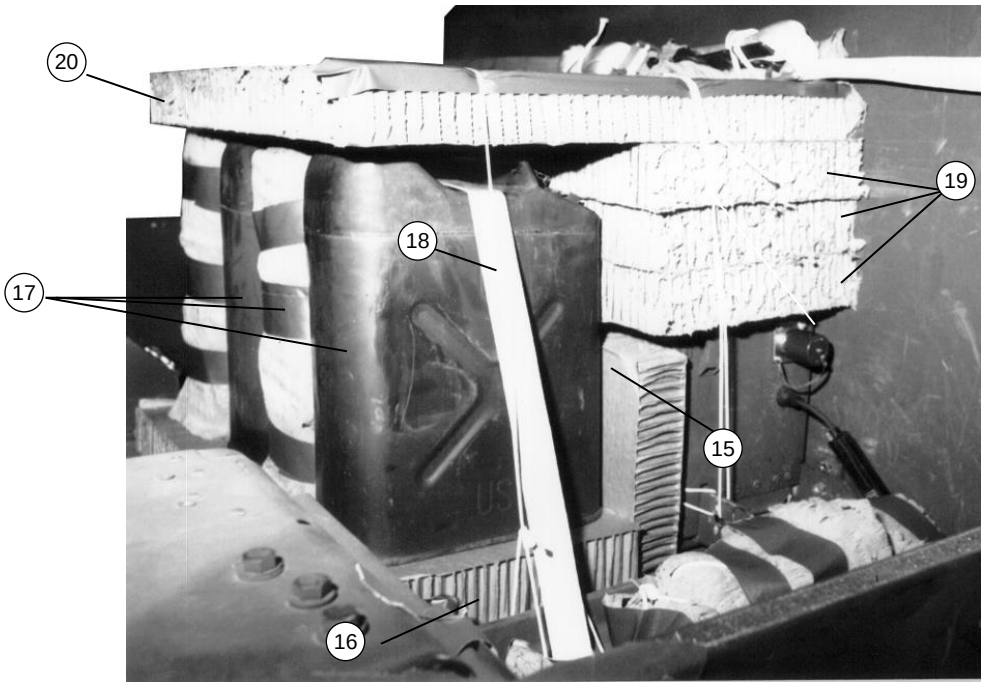
Figure 13-7. Truck Prepared (Continued)



⑬ Wrap the control cables in the truck bed with cellulose padding and secure the cellulose padding with tape. Tie the wrapped cables to the turret frame with type III nylon cord.

⑭ Secure the winch cable to the winch frame with type III nylon cord.

Figure 13-7. Truck Prepared (Continued)



⑮ Place a 28- by 12-inch piece of honeycomb on edge against the winch frame (if rigging the Avenger w/o a winch frame, place a 40- by 13- inch piece of honeycomb on edge in front of the winch and tape the honeycomb to the cargo floor).

⑯ Place a 32- by 16-inch piece of honeycomb on the cargo floor in front of the honeycomb placed in step 15.

⑰ Pad two fuel cans with cellulose padding and secure the padding with tape. Alternate and place two fuel cans and two water cans flush on the honeycomb.

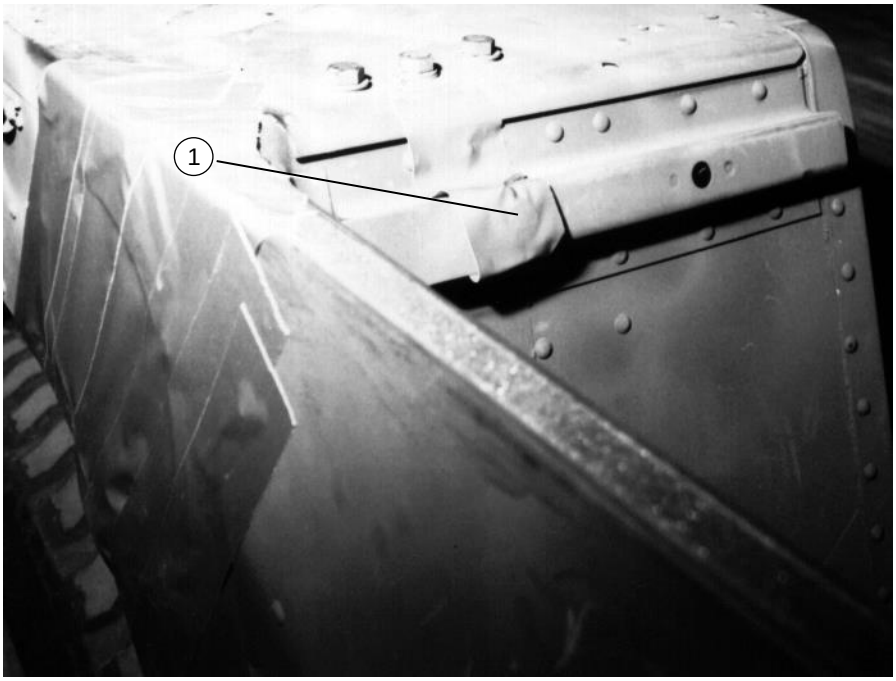
⑱ Pass a 15-foot lashing through the handles and under the rails of the turret frame on both sides. Close the load binder on one of the sides.

⑲ Place three 32- by 14-inch pieces of honeycomb on top of the winch in front of the cans (use 40- by 12-inch pieces for the Avenger w/o winch frame).

⑳ Place a 32- by 28-inch piece of honeycomb on top of the cans and honeycomb placed in step 19. Tape the side edges of the honeycomb. Secure the honeycomb with two lengths of type III nylon cord to the turret frame.

Note. When rigging the Avenger without winch frame, place a piece of honeycomb on each side of the winch.

Figure 13-7. Truck Prepared (Continued)



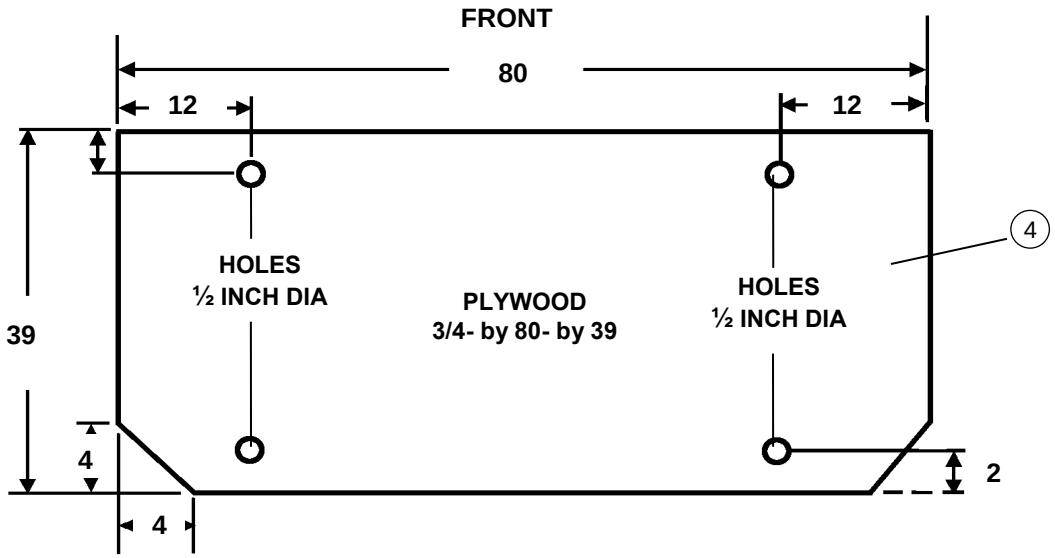
① Secure the rear door pins with tape.

② Place the camouflage net bag against the cans. Tie the net bag to the rails with three lengths of type III nylon cord (if required) (not shown).

③ Tape all lights and reflectors (not shown).

Figure 13-7. Truck Prepared (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.

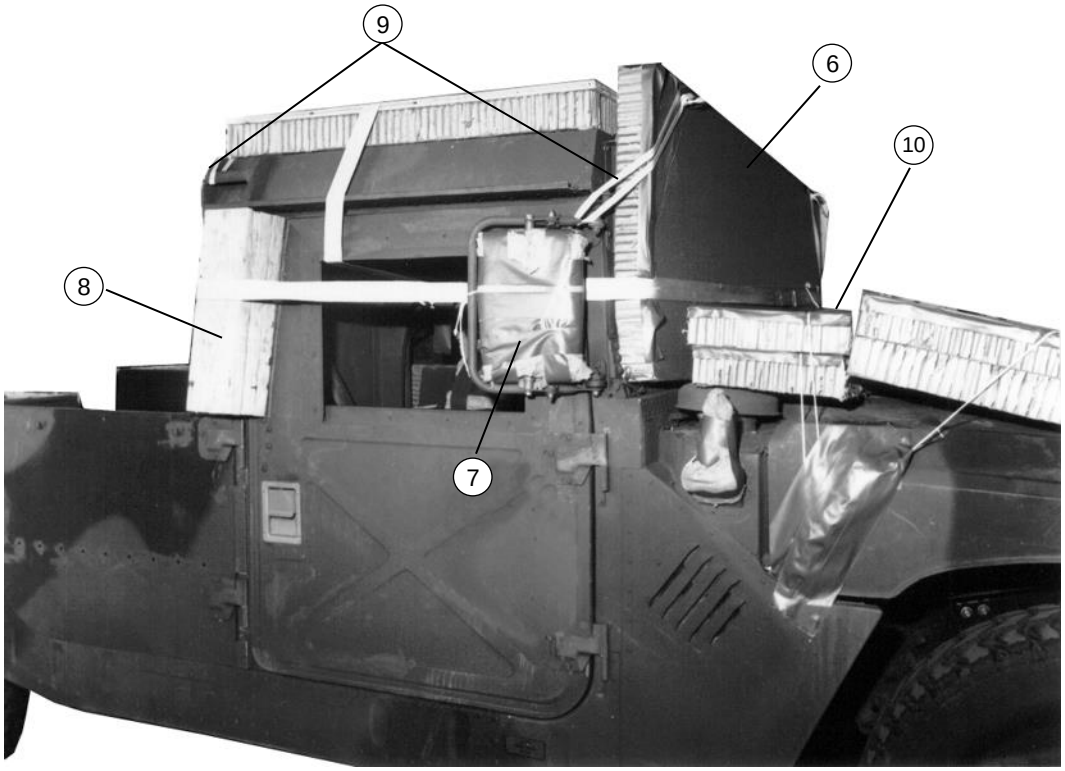




④ Fabricate a roof protector by making cuts and ½-inch holes as shown in an 80- by 39-inch piece of ¾-inch plywood. Glue an 80- by 36-inch piece of honeycomb to the plywood, flush along the front edge.

⑤ Place the roof protector on the roof, honeycomb side down as shown. Route a 30-foot lashing through the open windows and under the radio mount. Close the load binder on top of the roof protector.

Figure 13-7. Truck Prepared (Continued)



⑥ Place an 83- by 23-inch piece of honeycomb against the windshield and tape the outside edges.

⑦ Pad the mirrors with cellulose padding and secure the padding with tape. Fold the mirrors to the side.

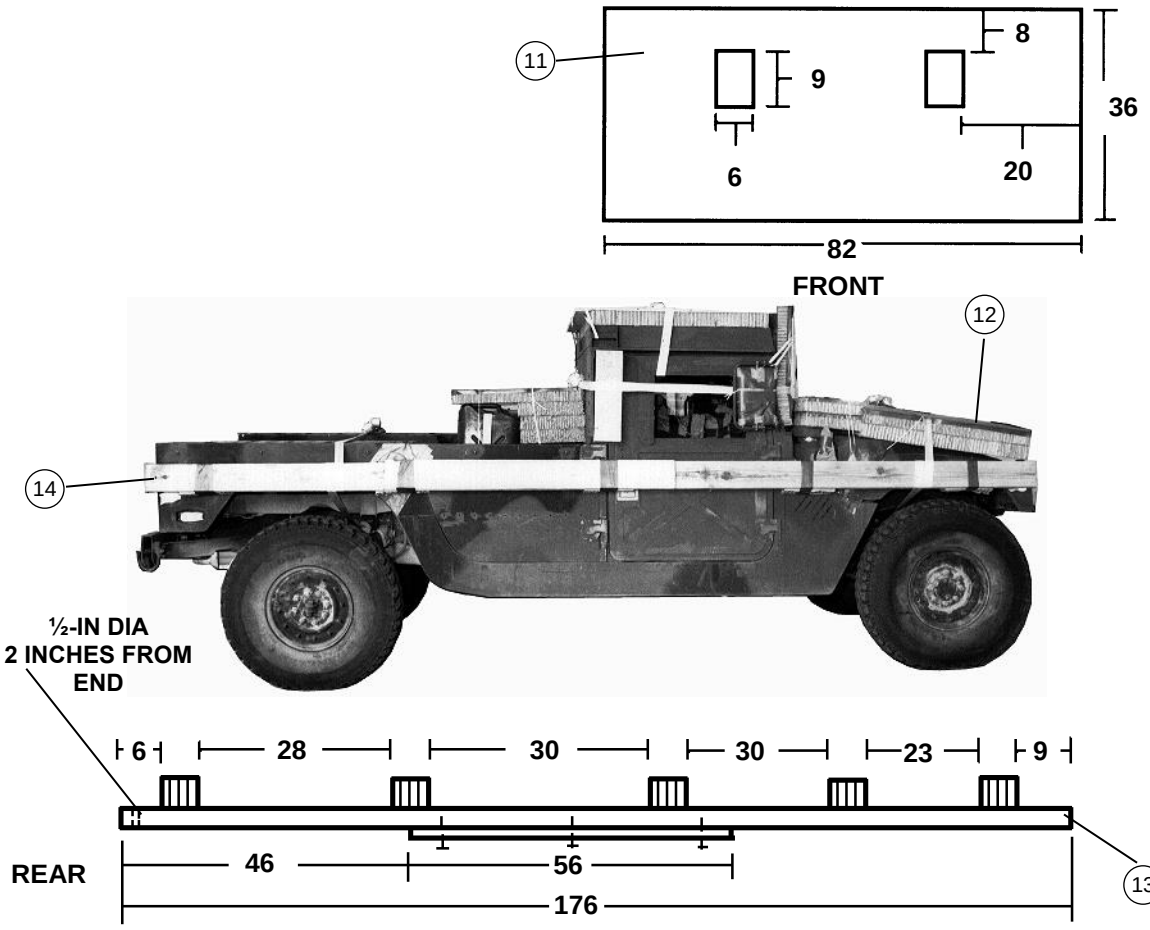
⑧ Make two spacers each of three pieces of 2- by 8- by 18-inch lumber and a layer of 10- by 22-inch felt. Nail the lumber together and glue the felt to one side of the spacer. Place a spacer vertically behind each door window. Route a 30-foot lashing around the windshield, through the mirror brackets, over the spacers, and close the load binder behind the cab.

⑨ Tie the front of the roof protector to the mirror brackets by routing a length of ½-inch tubular nylon webbing through the ½-inch hole in the roof protector and around the mirror bracket. Tie the rear of the roof protector to the handles on the roof by routing a length of ½-inch tubular nylon webbing through the rear holes of the roof protector and around the roof handle.

⑩ Cut two 82- by 12-inch pieces of honeycomb and tape the 12-inch edges. Tie the two pieces of honeycomb to the hood in front of the honeycomb covering the windshield with a length of type III nylon cord.

Figure 13-7. Truck Prepared (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



⑪ Make cutouts as shown above in two 82- by 36-inch pieces of honeycomb and tape the outside edges.

⑫ Tie the honeycomb over the hood with type III nylon cord. Make two ties front to rear and two ties side to side. Tape the hood latches.

⑬ Fabricate two sideboards by nailing a 2- by 6- by 56-inch piece of lumber flush with and 46 inches from the rear edge of a 2- by 6- by 176-inch piece of lumber. Glue five 5 ½- by 10-inch pieces of honeycomb to the other side of the 176-inch piece, spaced as shown. Drill a ½-inch hole, centered and 2 inches from the rear of the board.

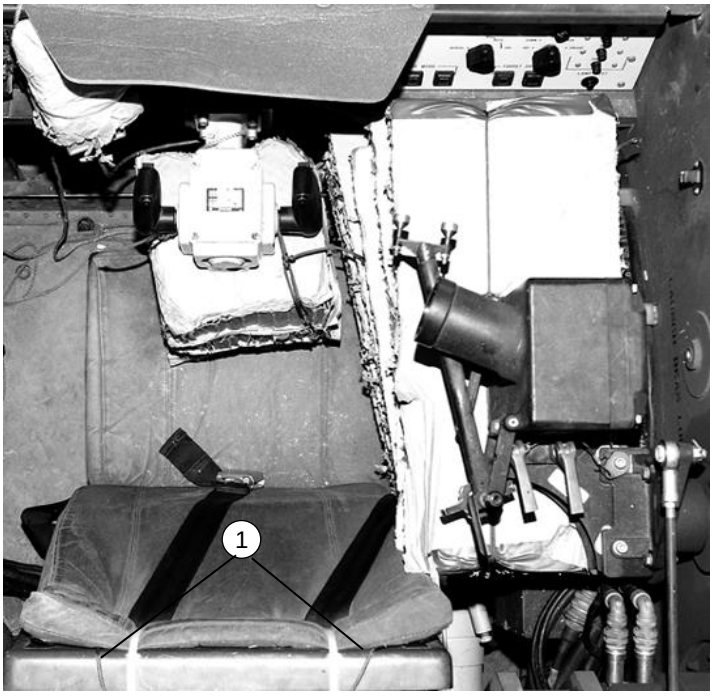
⑭ Secure the sideboards to each side of the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

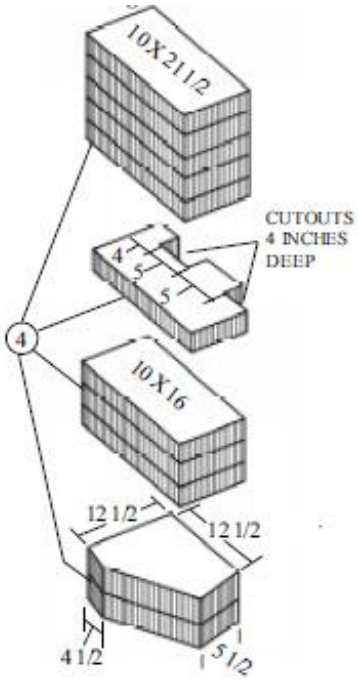
Figure 13-7. Truck Prepared (Continued)

PREPARING TURRET

13-4. Prepare the turret as shown in Figure 13-8.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.





① Lower the seat to the lowest position and tie the seat and seat back to the seat frame with type III nylon cord.

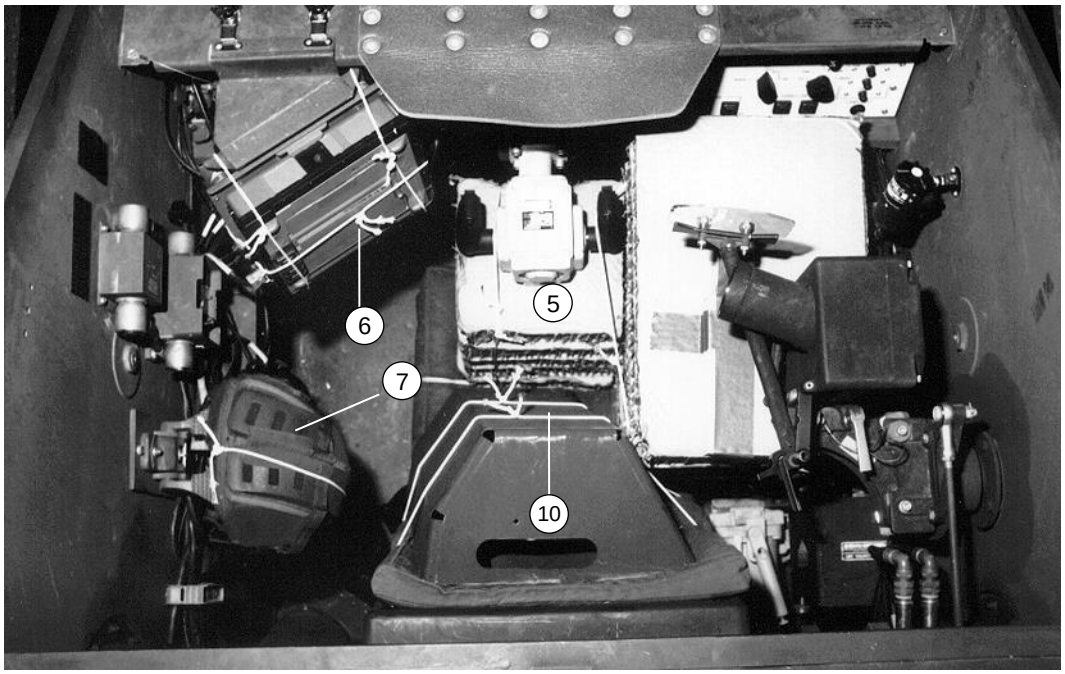
② Remove the azimuth and elevation pins and place them in the clips provided (on older, unmodified turrets) (not shown).

③ Remove the pins from the optical sight bracket and lift the sight to the side (not shown).

④ Cut two 12 1/2- by 12 1/2-inch pieces of honeycomb. Make a 5 1/2-inch mark on one side and a 4 1/2-inch mark on the next edge. Cut a diagonal line between the marks. Place the pieces on the turret floor to accommodate the seat brace. Cut three 10- by 16-inch pieces and place on top of the previously placed honeycomb. Cut a 12- by 18-inch piece of honeycomb. On the 18-inch side make a 4-inch deep by 5-inch wide cutout, 4-inches from the end. Make a second cutout, 4-inches deep by 4-inches wide, 5-inches from the first cutout. Place the layer on the honeycomb stack. Cut five 10- by 21 1/2-inch pieces of honeycomb and glue together. Place these layers on the honeycomb stack. Secure the optical sights in the brackets with the pins. Secure the honeycomb stack with type III nylon cord.

NOTE: The stacks under the optical sights may vary in number and size due to different configurations of the turret wiring systems.

Figure 13-8. Turret Prepared



⑤ Glue together five 10- by 10-inch pieces of honeycomb. Place the stack under the hand station and secure in place with type III nylon cord

⑥ Secure the control display terminal in its bracket with type III nylon cord.

⑦ Secure the operator's headset with type III nylon cord or place and secure in the brass collection tray.

⑧ Remove the flash suppressor and the brass collection tray from the 50-caliber machine gun (not shown).

⑨ Tape the turret mounting bolts inside the brass collection tray. Pad the flash suppressor with cellulose padding and tie to the inside of the tray with type III nylon cord (not shown).

⑩ Pad the Interrogator Friendly or Foe (IFF) with cellulose padding and place in the brass collection tray. Fill the empty space with honeycomb (not shown)

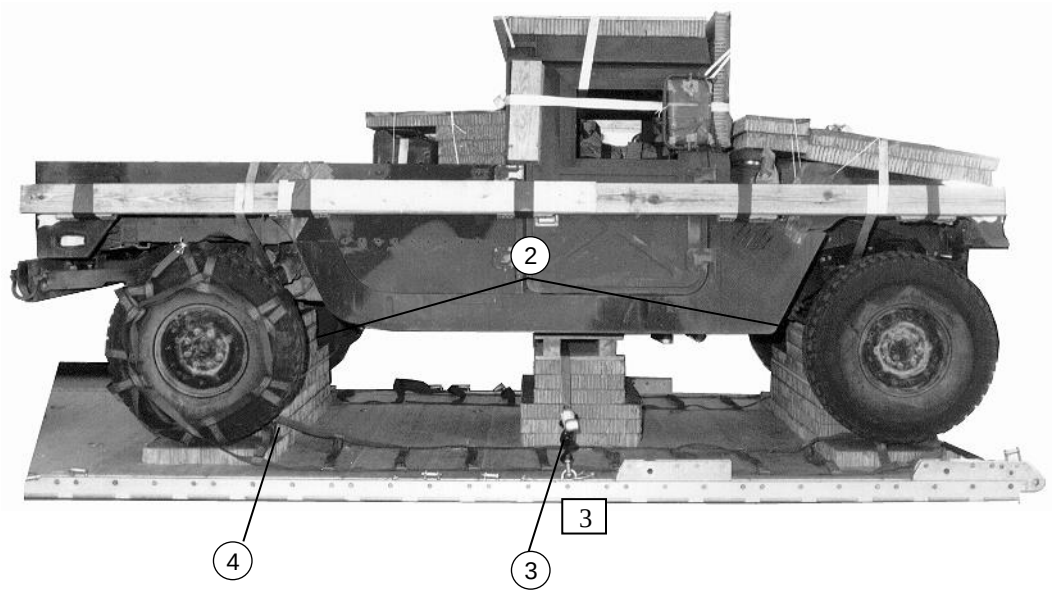
⑪ Secure the brass collection tray to the seat with two lengths of type III nylon cord. Secure all loose cables and objects with type III nylon cord (not shown).

⑫ Close the canopy and install the road cover if available (not shown).

Figure 13-8. Turret Prepared (Continued)

POSITIONING TRUCK ON PLATFORM AND INSTALLING THE DRIVE OFF AID

13-5. Position the truck on the platform and install the drive off aid as shown in Figure 13-9.



① Attach a 9-foot (2-loop), type XXVI nylon webbing sling to each front airlift bracket with a medium clevis. Attach a 12-foot (2-loop), type XXVI nylon webbing sling to each lifting shackle located on the outside ends of rear bumper (not shown). Remove the lift kit after the truck is positioned on the platform.

② Position the truck on honeycomb stacks 1, 2, and 3 with the front of the truck aligned with the front edge of the platform.

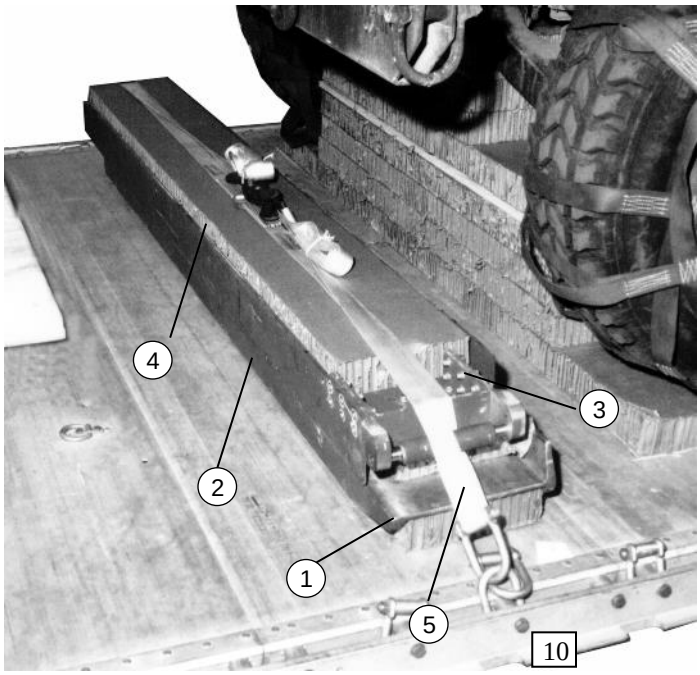
③ Route a lashing through clevis 3A, back through its own D-ring, through the center hole of stack 2, and connect the load binder to clevis 3.

④ Adapt the procedures shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111 to install the drive off aid on the truck.

Figure 13-9. Truck Positioned and Drive Off Aid Installed

LASHING RAMPS TO PLATFORM

13-6. Lash the ramps used for mounting the Avenger turret as shown in Figure 13-10.



① Center an 80- by 10-inch piece of honeycomb between clevises 10 and 10A.

② Place one ramp over the honeycomb. Place a second 80- by 10-inch piece of honeycomb on top of the ramp.

③ Place the second ramp on top of the honeycomb placed in step 2 with the roller facing the opposite way from the roller of the first ramp.

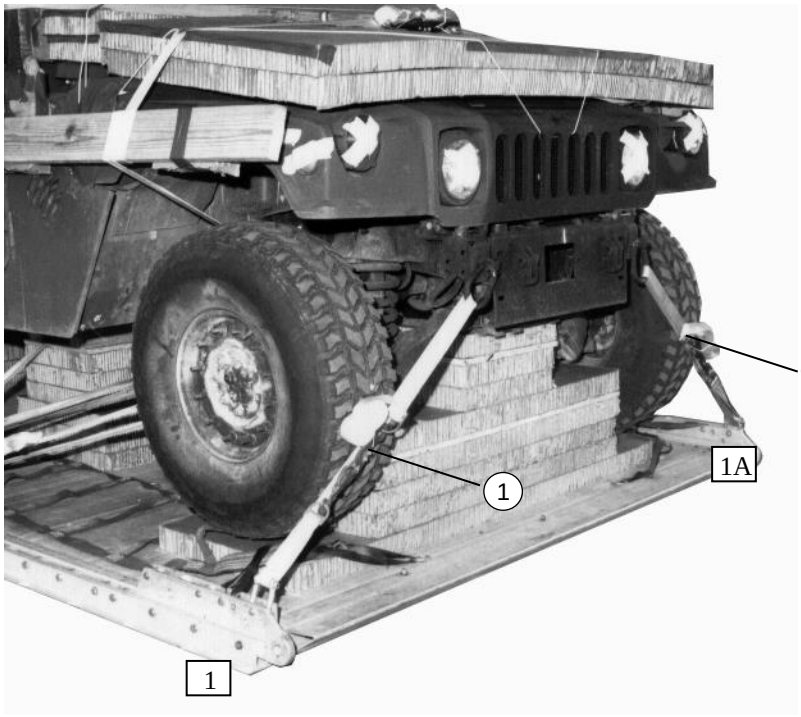
④ Place an 80- by 10-inch piece of honeycomb on top of the second ramp.

⑤ Route a 30-foot lashing through clevis 10, through the roller, over the honeycomb and ramps, through the roller on the opposite side, and through clevis 10A. Close the load binder on top of the honeycomb and ramps.

Figure 13-10. Ramps Lashed to Platform

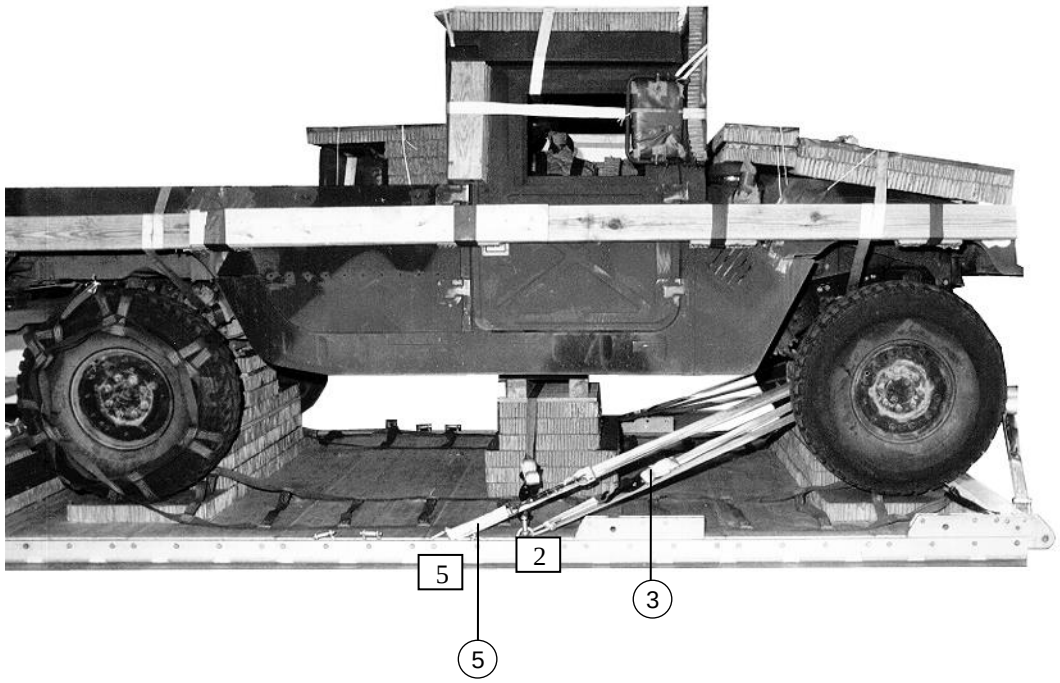
LASHING TRUCK

13-7. Lash the truck to the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and route the lashings as shown in Figure 13-11.



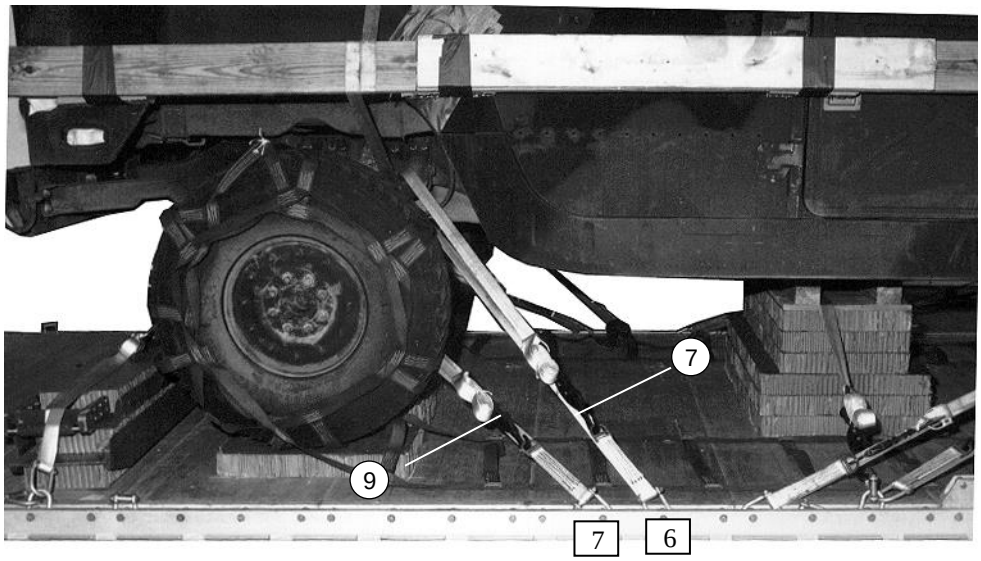
Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
1	1	Through front truck tiedown, right side.
2	1A	Through front truck tiedown, left side.

Figure 13-11. Truck Lashed to Platform



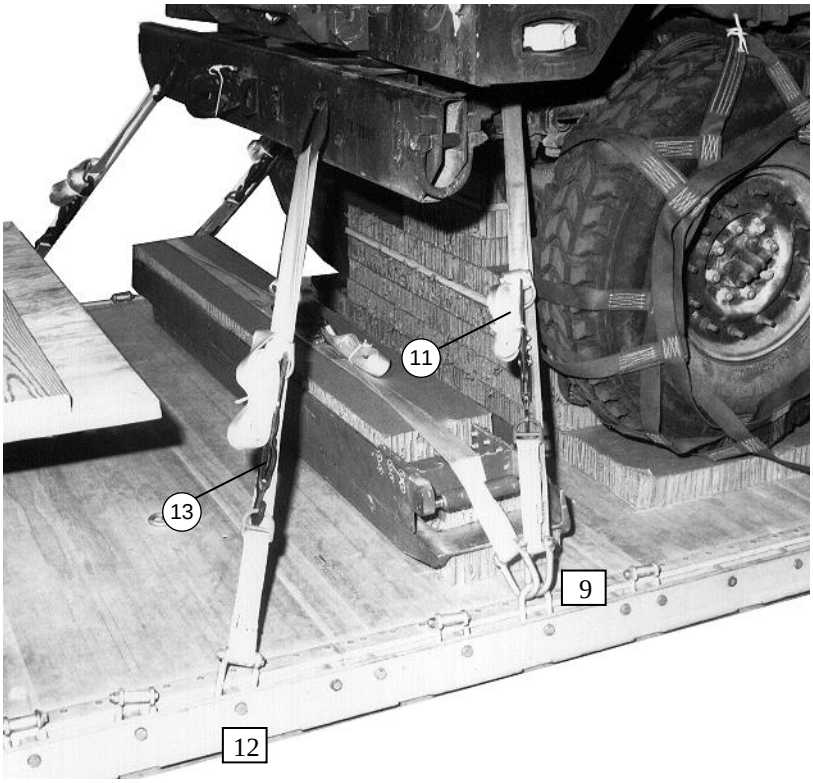
Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
3	2	Around lower front control arm, right side.
4	2A	Around lower front control arm, left side.
5	5	To tiedown bracket behind front coil spring, right side.
6	5A	To tiedown bracket behind front coil spring, left side.

Figure 13-11. Truck Lashed to Platform (Continued)



Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
7	6	Through tiedown bracket in front of rear coil spring, right side.
8	6A	Through tiedown bracket in front of rear coil spring, left side.
9	7	Around rear lower control arm, right side.
10	7A	Around rear lower control arm, left side.

Figure 13-11. Truck Lashed to Platform (Continued)

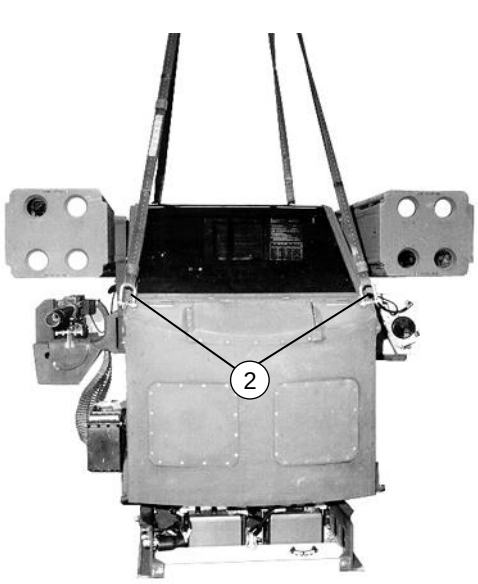


Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
11	9	Through tiedown bracket behind the rear coil springs, right side.
12	9A	Through tiedown bracket behind the rear coil spring, left side.
13	12	Through rear truck tiedown, right side.
14	12A	Through rear truck tiedown, left side.

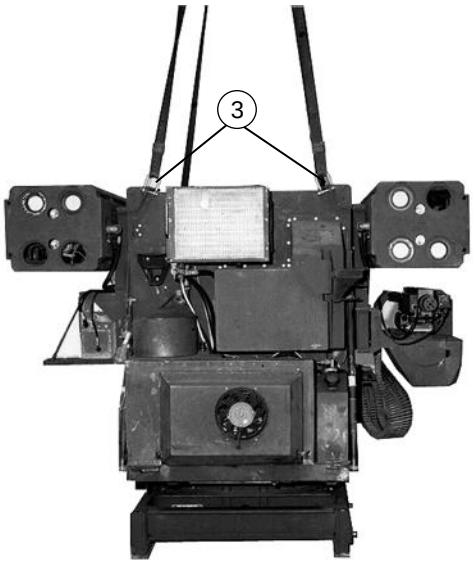
Figure 13-11. Truck Lashed to Platform (Continued)

POSITIONING AND PREPARING THE TURRET ON THE PLATFORM

13-8. Position and prepare the turret on the platform as shown in Figure 13-12.



FRONT



REAR

Note. These photos show an unmodified turret. The modified turret is positioned using the same lift kit and lift provision.

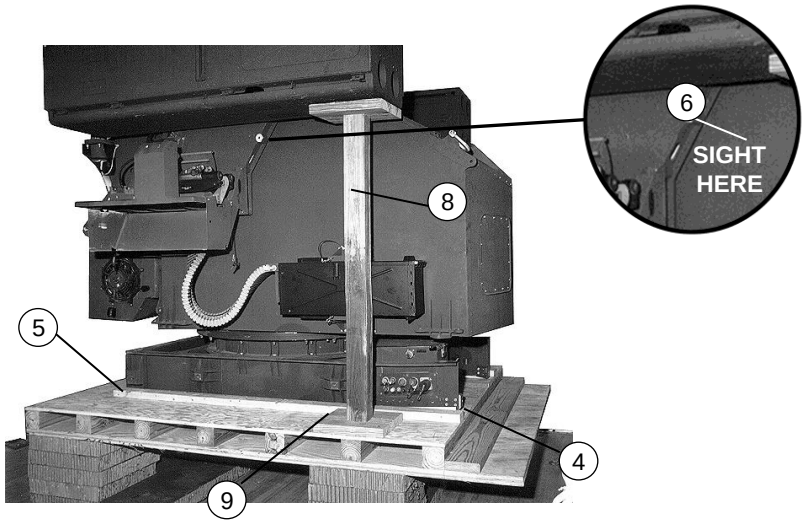
① Ensure the turret is in the locked position.

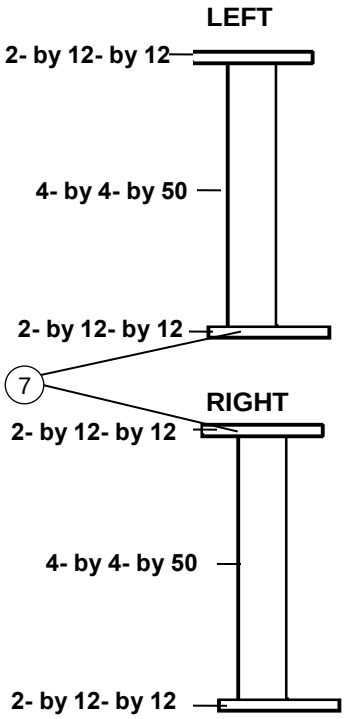
② Attach an 11-foot (2-loop), type XXVI nylon webbing sling to each front lift provision with a platform clevis.

③ Attach a 9-foot (2-loop), type XXVI, nylon webbing sling to each rear lift provision with a platform clevis.

Figure 13-12. Turret Positioned and Prepared

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.





Note. The 4- by 4 is offset 2 inches right from the center of the base on right pod support.

④ Position the turret facing forward, centered and one inch from the forward edge of the strongback. Remove the lift kit and leave the platform clevises on the front lift points of the turret.

⑤ Nail a 2- by 4- by 73-inch piece of lumber to the top of the strongback flush along each side of the weapon system mount.

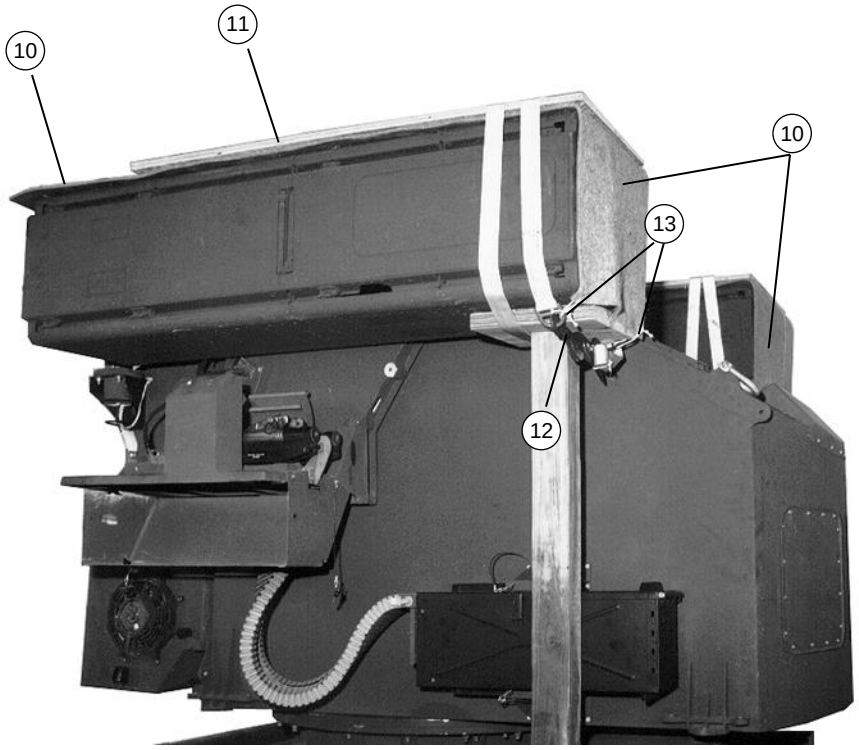
⑥ Ensure the system is at mechanical zero by sighting through the silver colored metal hole on the exterior of the turret. If the exterior hole and the interior hole are aligned you can see either the inside wall of the turret or the locking pin protruding through the two holes. Either situation achieves mechanical zero.

⑦ Build two missile pod supports as shown above.

⑧ Place a support under each missile pod. Align the front edge of the support with the front edge of the pod. Align the outside edges of the supports with the outside edges of the strongback.

⑨ Nail the bottom of the pod supports to the load spreader. Drive a nail through each corner of the support bottoms and bend the nails under the top layer of plywood.

Figure 13-12. Turret Positioned and Prepared (Continued)



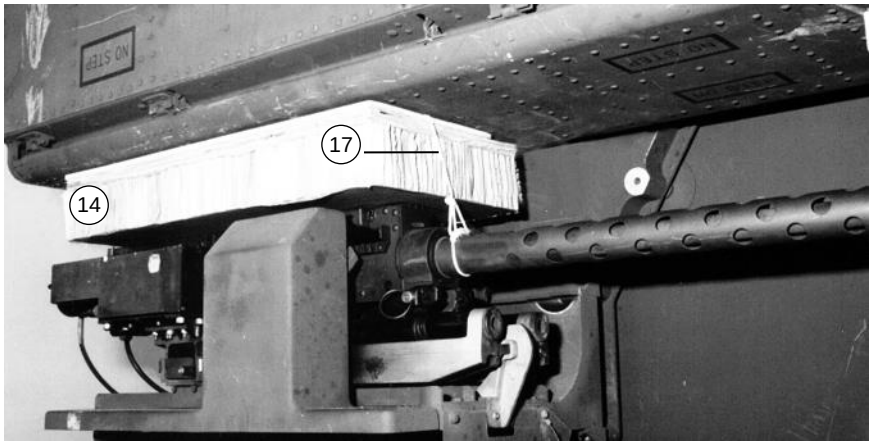
⑩ Place an 80- by 18-inch piece of ½-inch felt over each pod, extending the front edge of the ½-inch felt down to the front lower edge of the pod.

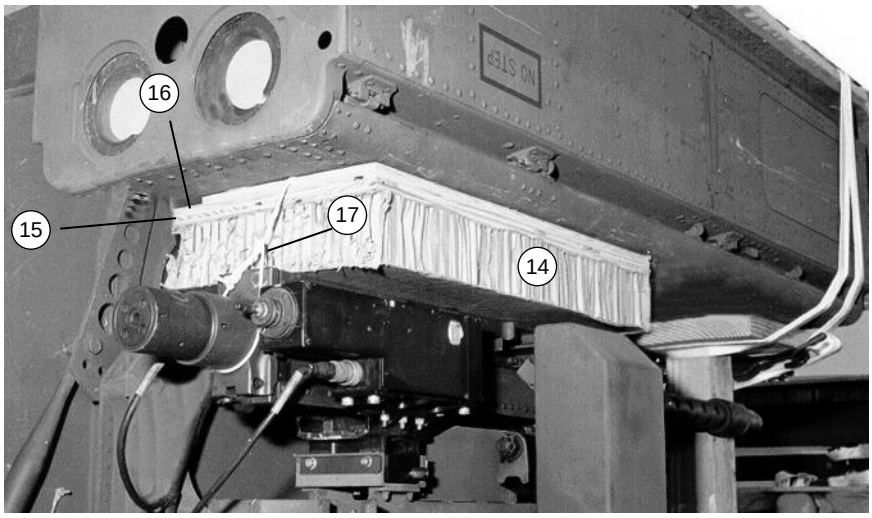
⑪ Place a ¾- by 18- by 48-inch piece of plywood over the ½-inch felt on each pod. Align the front edge of the plywood with the front edge of the pod.

⑫ Beginning at the front inside edge of each pod support, wrap a 15-foot lashing over the pod and behind the support upright. Pass the lashing over the pod and secure it so the loadbinder is in front of the upright and under the top piece of the support.

⑬ Punch a hole in each front corner of the ½-inch felt placed in step 10 above. Tie the front corners of the ½-inch felt to the D-rings on the lashings with type III nylon cord.

Figure 13-12. Turret Positioned and Prepared (Continued)





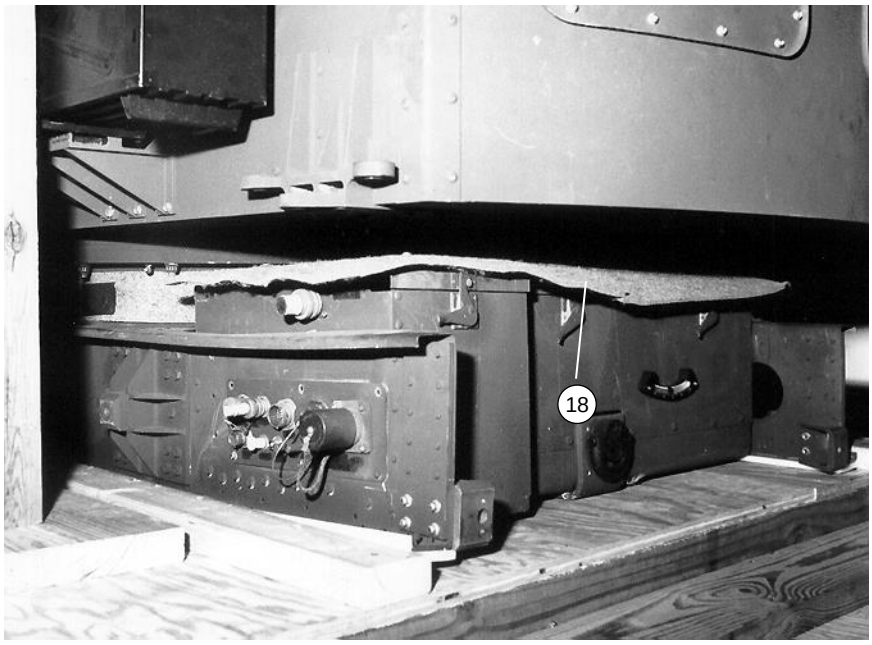
⑭ Center a 24- by 12-inch piece of honeycomb on top of the gun.

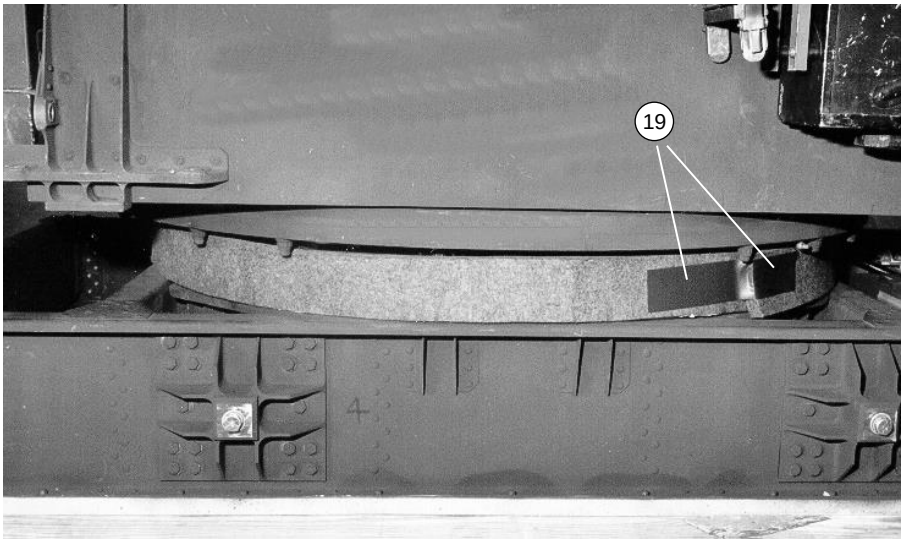
⑮ Place a 24- by 12- by ¾-inch piece of plywood flush on the honeycomb.

⑯ Place a 24- by 9 ½- by ¼-inch piece of plywood over the plywood placed in step 15 above. Place this piece flush with the outside edges of the other pieces.

⑰ Secure these pieces to the gun with type III nylon cord.

Figure 13-12. Turret Positioned and Prepared (Continued)





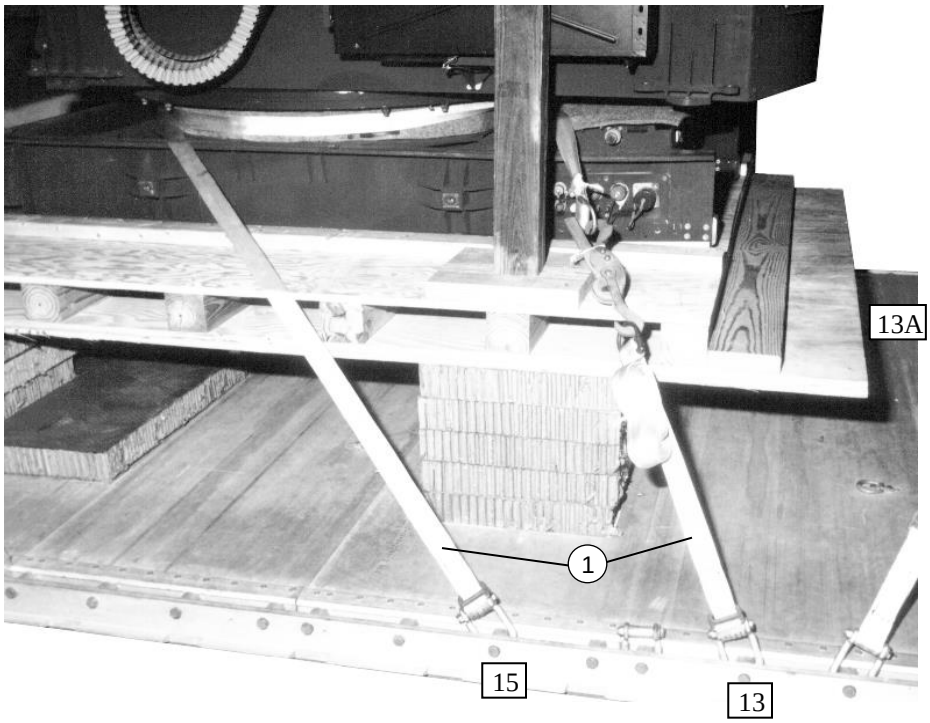
⑱ Cover the battery case with a 16- by 34-inch piece of ½-inch felt.

⑲ Pad the turret base with three 3- by 48-inch pieces of ½-inch felt. Overlap and tape the pieces in place.

Figure 13-12. Turret Positioned and Prepared (Continued)

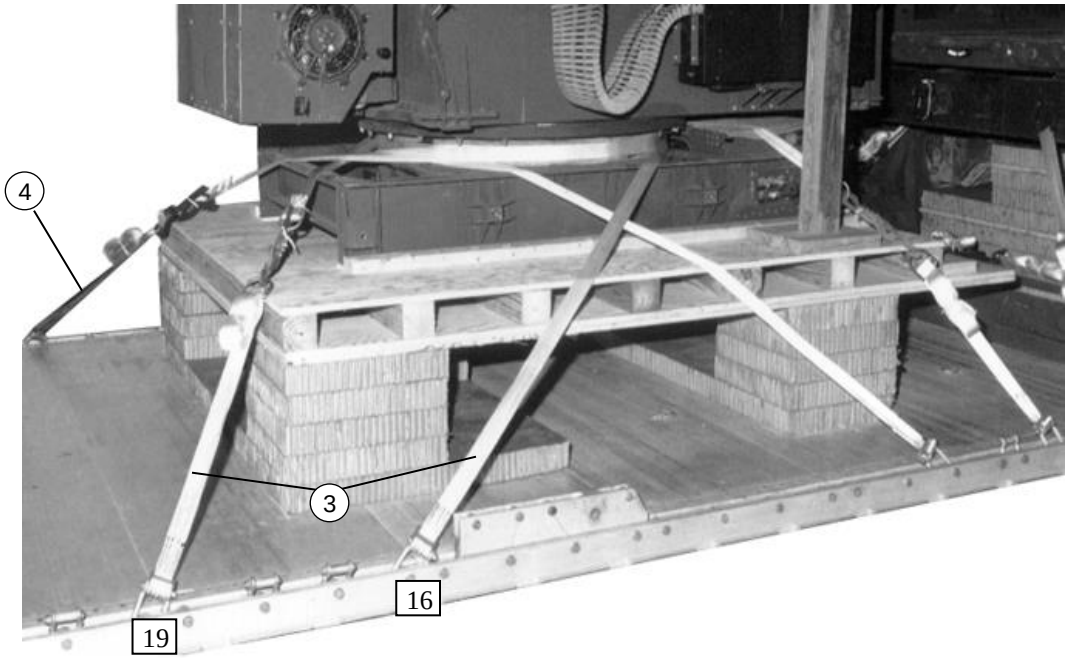
LASHING TURRET

13-9. Lash the turret to the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 13-13. Lash the turret to the strongback as shown in Figure 13-14.



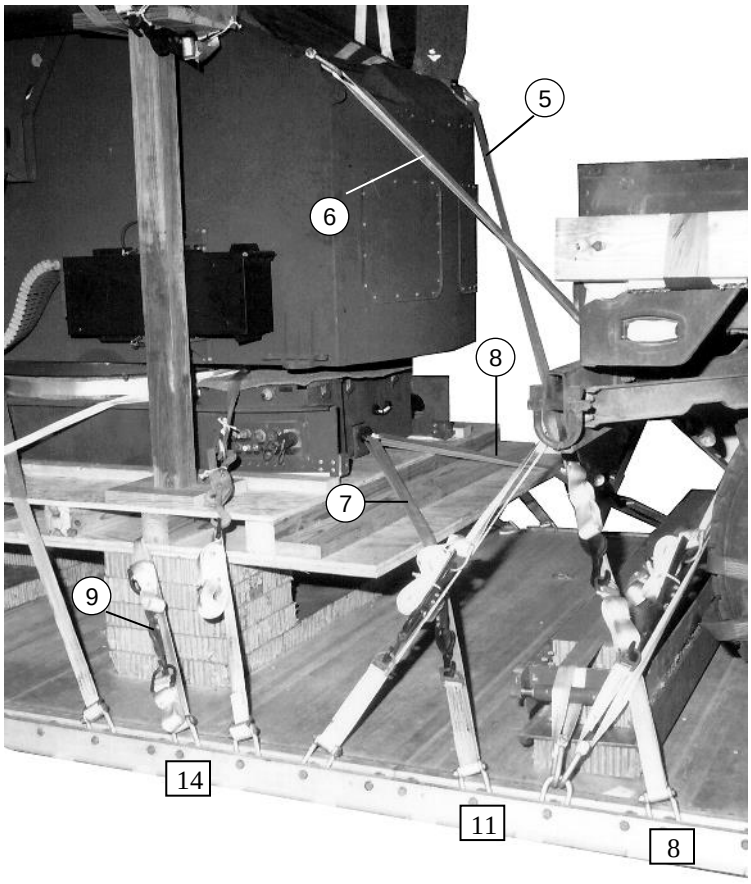
Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	13 and 15	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing from clevis 15 around the padded turret base. Secure both lashings together with two D-rings and a loadbinder.
2	13A and 15A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing from clevis 15A around the padded turret base. Secure both lashings together with two D-rings and a loadbinder.

Figure 13-13. Turret Lashed



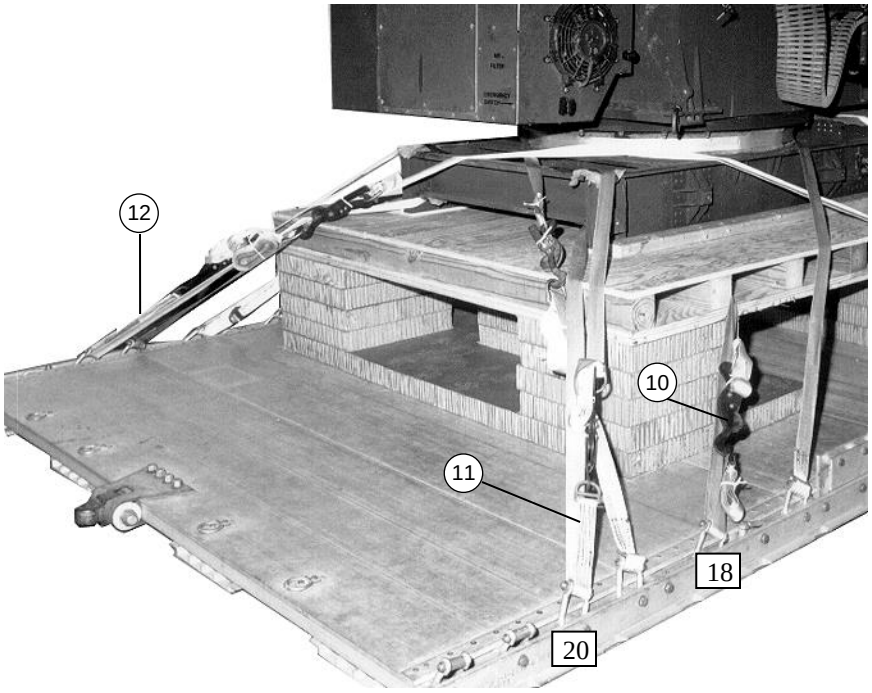
Lashing Number	*Tiedown Clevis Number*	*Instructions*
3	19 and 16	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing from clevis 19 around the padded turret base. Secure both lashings together with two D-rings and a loadbinder.
4	19A and 16A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing from clevis 19A around the padded turret base. Secure both lashings together with two D-rings and a loadbinder.

Figure 13-13. Turret Lashed (Continued)



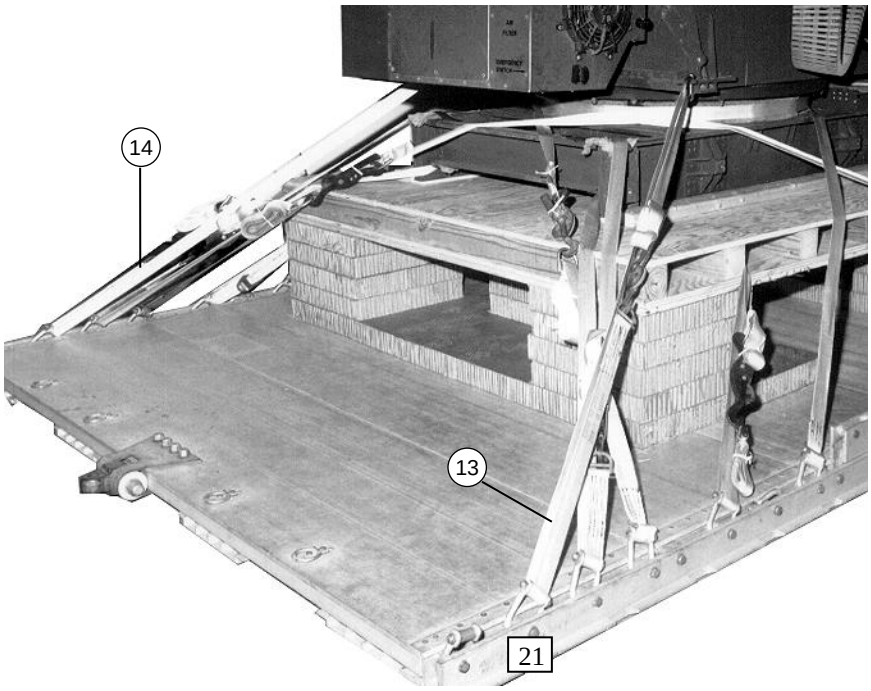
Lashing Number	*Tiedown Clevis Number*	*Instructions*
5	8	Pass a 30-foot lashing through the left front lift provision on top of the turret.
6	8A	Pass a 30-foot lashing through the right front lift provision on top of the turret.
7	11	Pass lashing through the winch clevis.
8	11A	Pass lashing through the winch clevis.
9	14 and 14A	Pass a 30-foot lashing through clevis 14, through the second hole in the strongback, through clevis 14A, and back through the second hole in the strongback. Secure both lashings together with two D-rings and a loadbinder.

Figure 13-13. Turret Lashed (Continued)



Lashing Number	*Tiedown Clevis Number*	*Instructions*
10	18 and 18A	Pass a 30-foot lashing through clevis 18, through the fifth hole in the strongback, through clevis 18A, and back through the fifth hole in the strongback. Secure both lashings together with two D-rings and a loadbinder.
11	20	Pass lashing around crossbeam on turret base, right side.
12	20A	Pass lashing around crossbeam on turret base, left side.

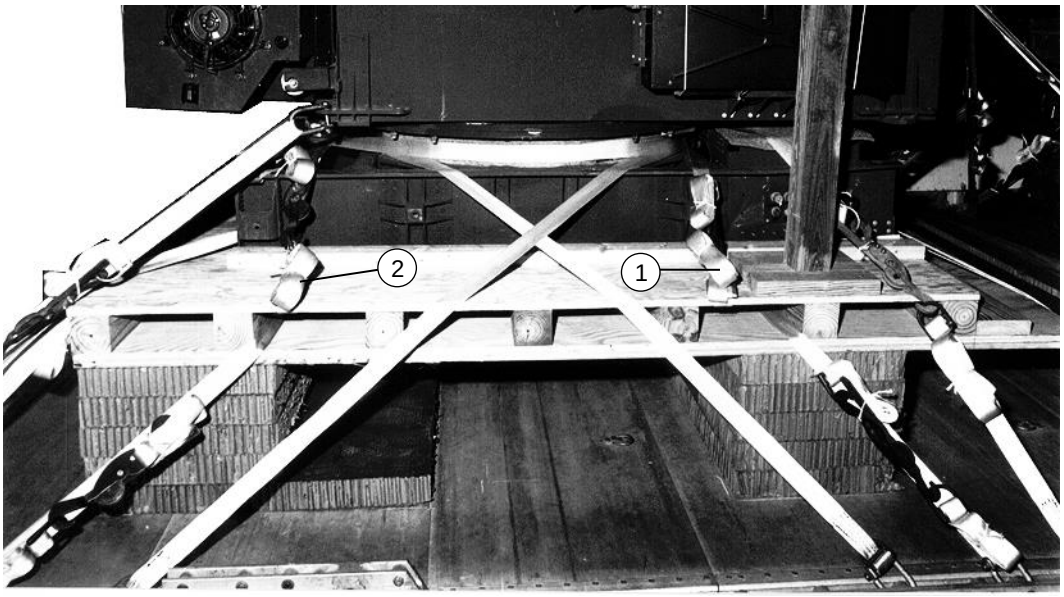
Figure 13-13. Turret Lashed (Continued)



Note. When rigging the Avenger without an ECU, install the platform clevises in the rear lifting points located on the top right and left sides of the turret. Lashings 13 and 14 are 30-foot lashings and are routed through the platform clevises previously installed.

Lashing Number	*Tiedown Clevis Number*	*Instructions*
13	21	Attach a platform clevis to the lower right rear mounting hole. Pass a lashing through the tiedown clevis.
14	21A	Attach a platform clevis to the lower left rear mounting hole. Pass a lashing through the tiedown clevis.

Figure 13-13. Turret Lashed (Continued)



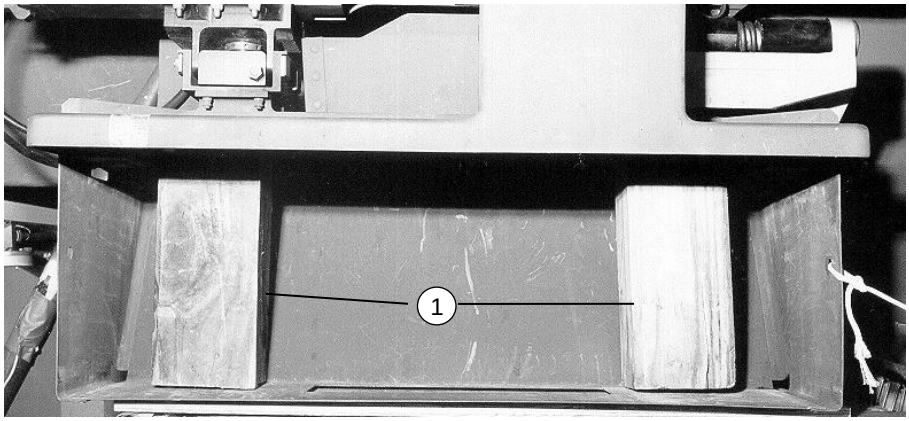
① Pass a 30-foot lashing through the second hole in the strongback and back over the turret base. Secure the lashing on the right with two D-rings and a loadbinder.

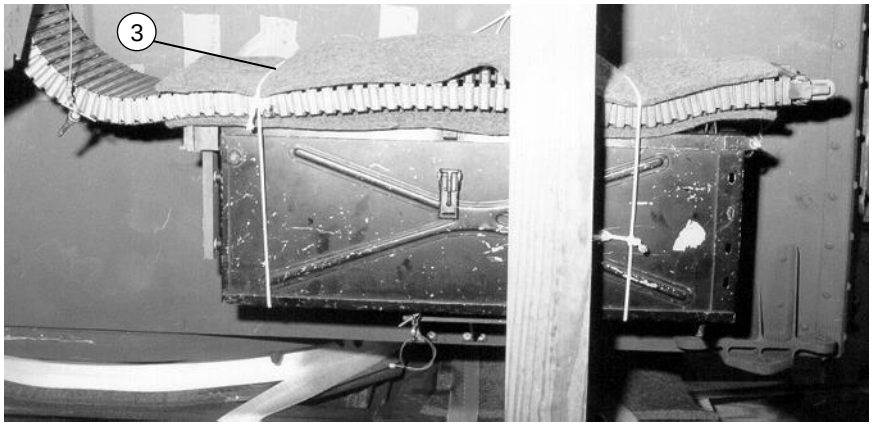
② Pass a 30-foot lashing through the fifth hole in the strongback and back over the turret base. Secure the lashing on the right with two D-rings and a loadbinder.

Figure 13-14. Turret Lashed to Platform

INSTALLING SUPPORTS FOR GUNS, LASER RANGE FINDER, AND ENVIRONMENTAL CONTROL UNIT

13-10. Install the honeycomb supports for the gun as shown in Figure 13-15. Install the support for the environmental control unit as shown in Figure 13-17. Install the honeycomb supports for the laser range finder (LRF) as shown in Figure 13-16. Install the support for the unmodified environmental control unit as shown in Figure 13-18.





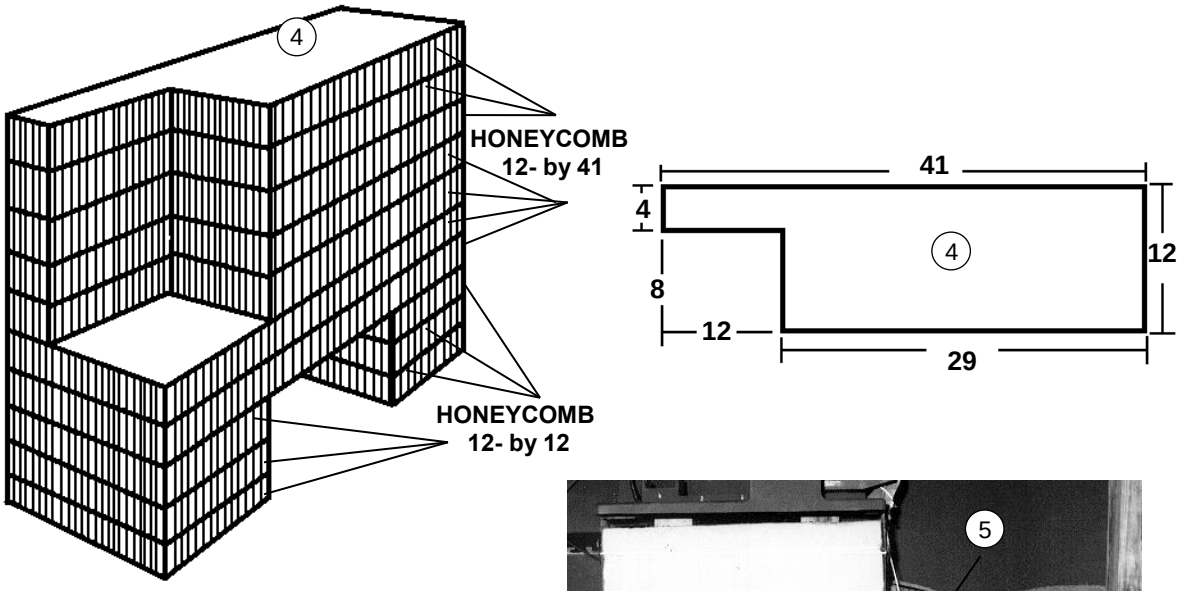
① Place two 8 ¼-inch pieces of 4- by 4-inch lumber vertically in the brass collection tray bracket.

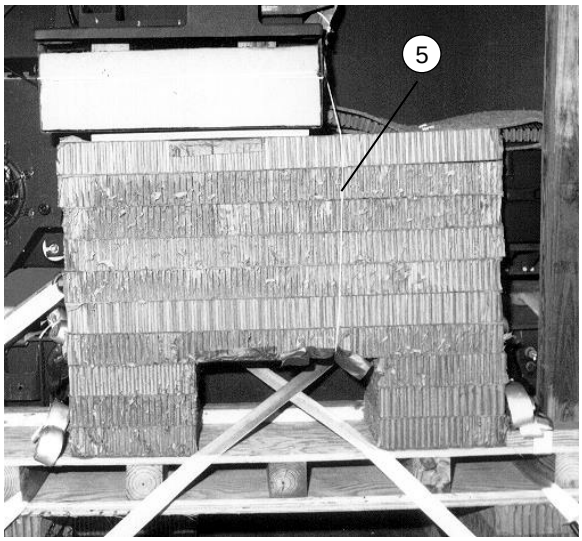
② Place a 7- by 25-inch piece of honeycomb in the brass collection tray, over the lumber placed in step 1, and secure it in place with type III nylon cord (not shown).

③ Disconnect the ammunition feed chute from the gun and the ammunition box. Pad the chute on both sides with ½-inch felt, and tie it to the top of the box with type III nylon cord.

Figure 13-15. Gun Supported

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



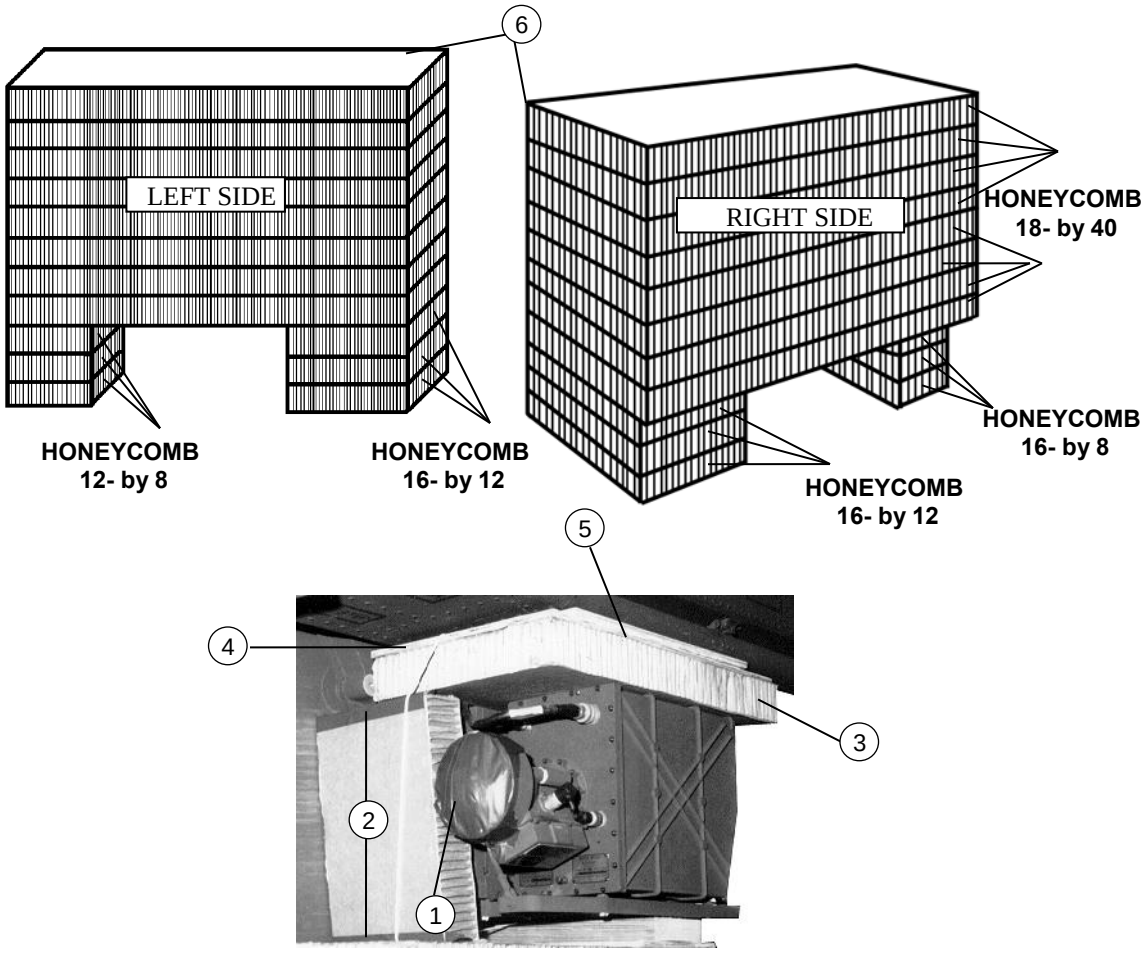


④ Build the gun support stack as shown.

⑤ Place the honeycomb stack under the gun, with the cutout area flush against the ammunition box. Place a 20- by 10- by ¾-inch piece of plywood between the support stack and the gun. Tie the stack to convenient points with type III nylon cord. Tape the honeycomb where the type III nylon contacts the edges to prevent cutting.

Figure 13-15. Gun Supported (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



① Cover the laser range finder (LRF) lens with the lens cap or cellulose padding and tape.

② Tape the edges of an 11- by 16-inch piece of honeycomb and place between the turret and the LRF.

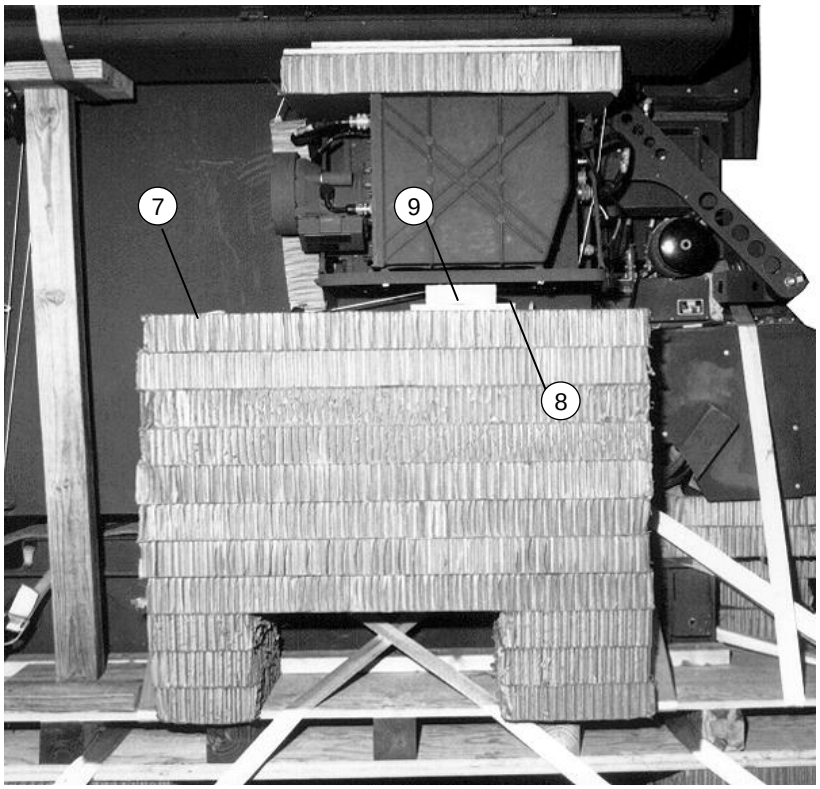
③ Place a 16- by 26-inch piece of honeycomb on top of the Laser Range Finder.

④ Place a 16- by 26- by ½-inch piece of plywood on top of the honeycomb in step 3.

⑤ Center and align the outside edges of an 8- by 21- by ½-inch piece of plywood over the plywood placed in step 4. Secure the honeycomb and plywood placed above with type III nylon cord.

⑥ Build the Laser Range Finder support stack as shown.

Figure 13-16. LRF Supported



⑦ Place the Laser Range Finder support stack under the Laser Range Finder with the notched portion toward the turret.

⑧ Center an 8- by 19- by ½-inch piece of plywood under the Laser Range Finder. Align the outside edge with the Laser Range Finder bracket.

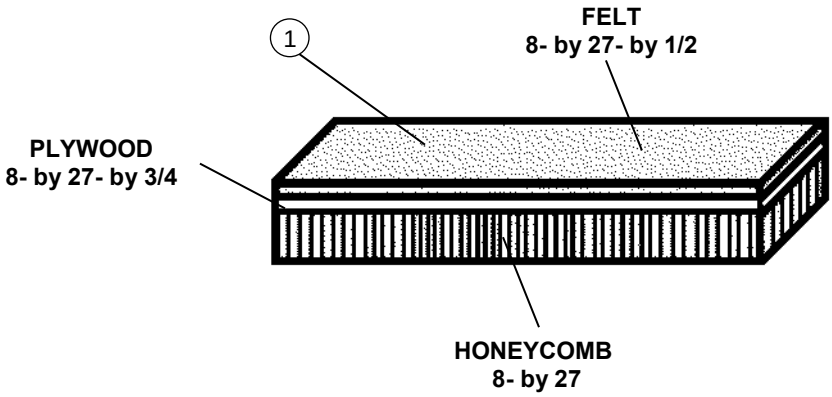
⑨ Center a 16-inch piece of 2- by 6-inch lumber between the plywood placed in step 8 and Laser Range Finder bracket. If the plywood and lumber do not fit snugly, shim with ¼-inch plywood.

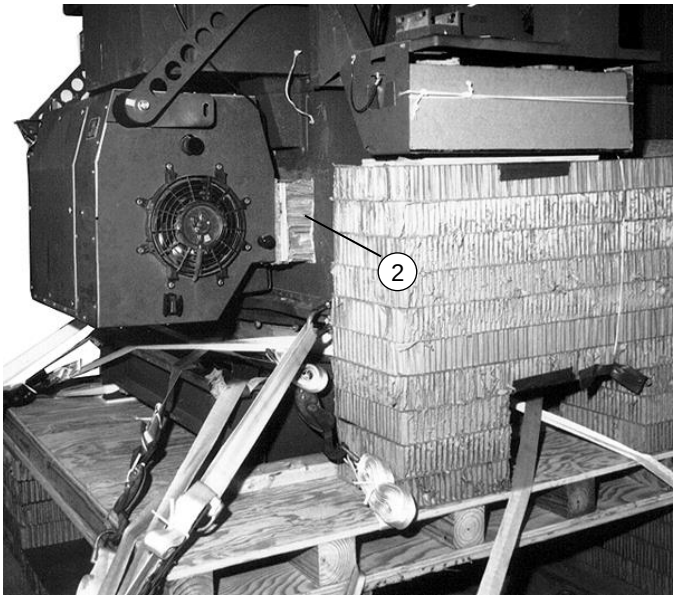
Figure 13-16. LRF Supported (Continued)

Notes. 1. When rigging the Avenger without the modified Environmetal Control Unit, omit pages 13-41 and 13-42.

2. All dimensions are in inches.

3. This drawing is not to scale.



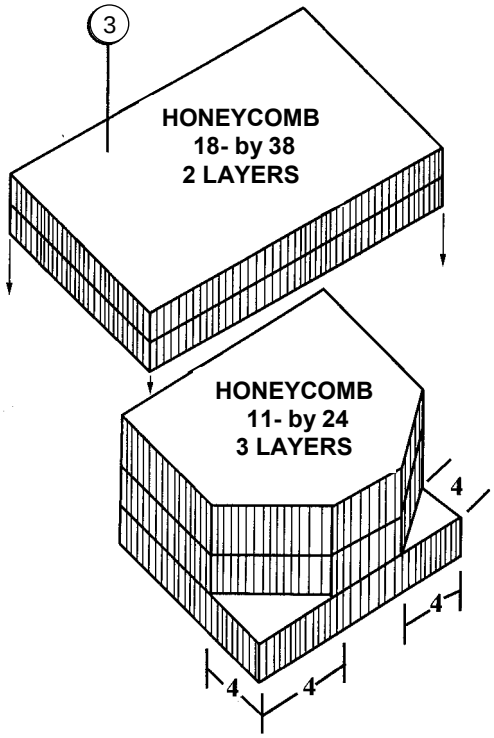


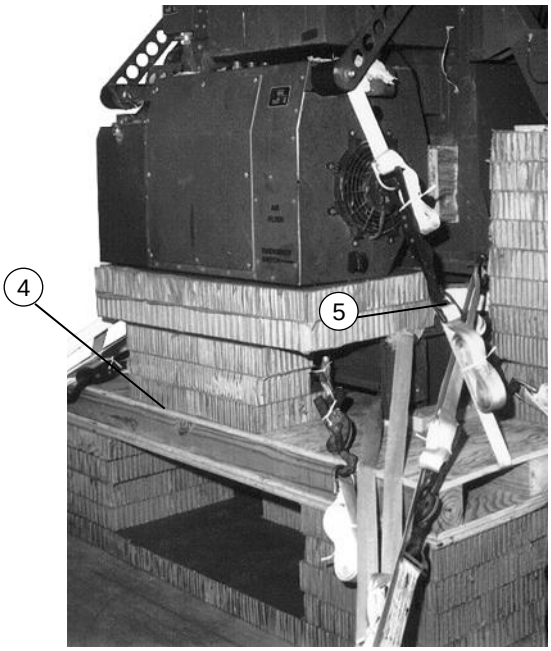
① Build the honeycomb, plywood, and felt shack as shown. Glue and nail pieces together as required.

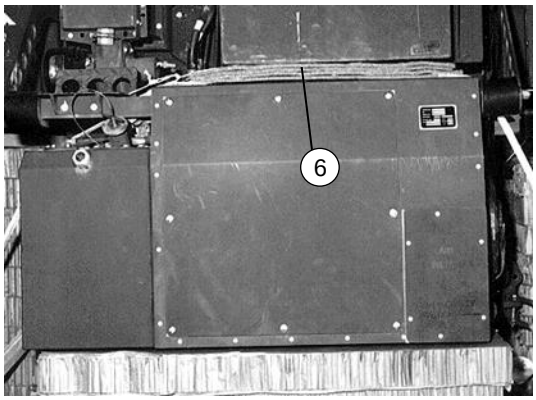
② Place the stack assembled in step one between the Environmental Control Unit and the turret base.

Figure 13-17. Modified ECU Supported

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.







④ Build the Environmental Control Unit support stack as shown. Center and glue the top two layers of honeycomb on top of the bottom three layers.

⑤ Place the Environmental Control Unit support stack under the Environmental Control Unit aligning the rear of the stack with the rear of the strongback.

⑥ Route a 30-foot lashing through the sixth hole of the strongback and over the Environmental Control Unit.

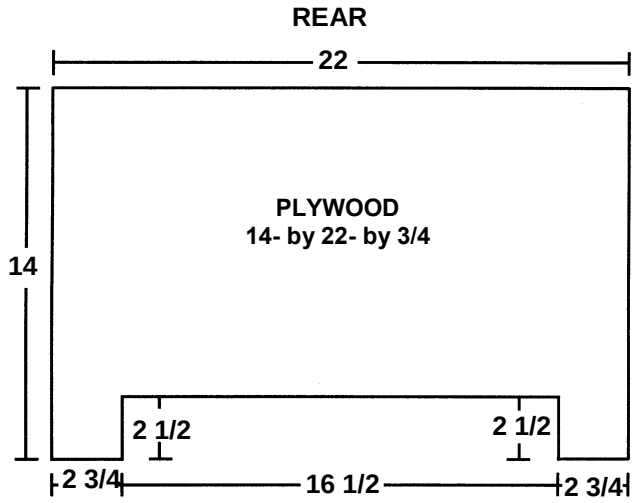
⑦ Place pieces of ½-inch felt to fill the area between the primary power unit and Environmental Control Unit.

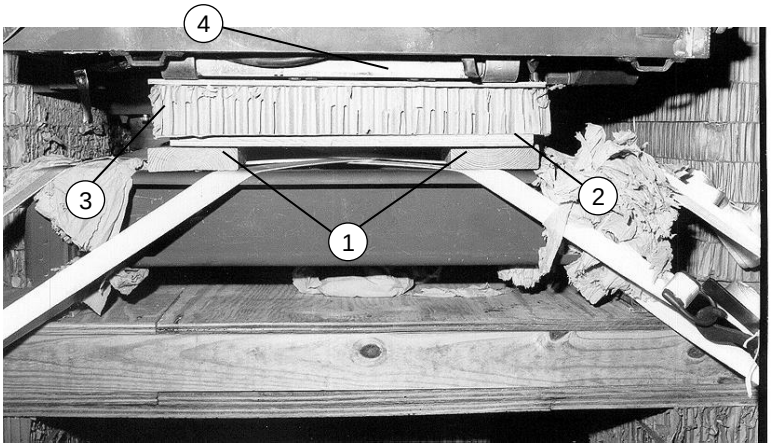
Figure 13-17. Modified ECU Supported (Continued)

Notes. 1. When rigging the Avenger without the modified Environmental Control Unit, use these procedures.

2. All dimensions are in inches.

3. This drawing is not to scale.





① Place two 12-inch pieces of 2- by 6-inch lumber 13 inches apart on the turret base under the Environmental Control Unit.

② Center a piece of ¾-inch plywood cut as shown over the lumber, with the cutout facing the front.

③ Center a 10- by 24-inch piece of honeycomb over the plywood.

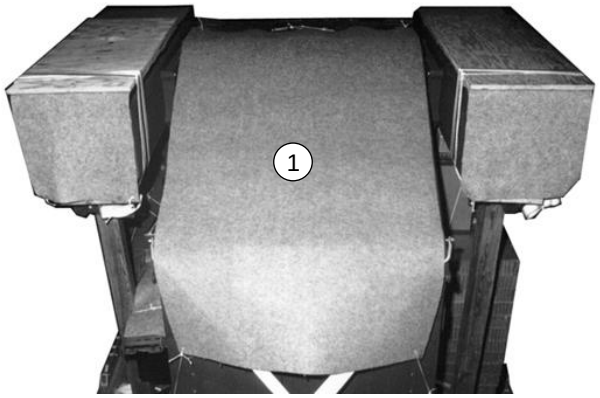
④ Fit a 10- by 24-inch piece of ¼-inch plywood in the remaining space. Be sure the fit of these pieces is snug. If not, wedge another piece of ¼-inch plywood in the space.

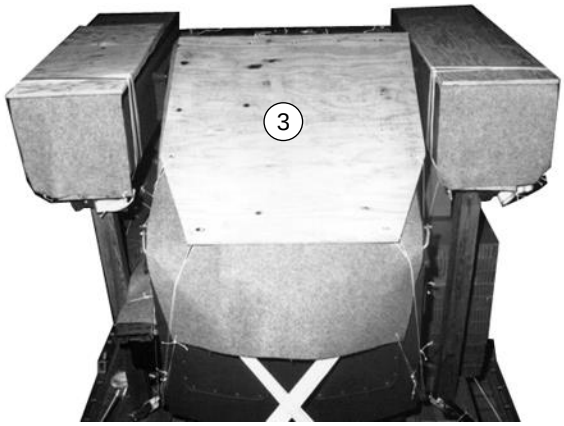
Figure 13-18. Unmodified ECU Supported

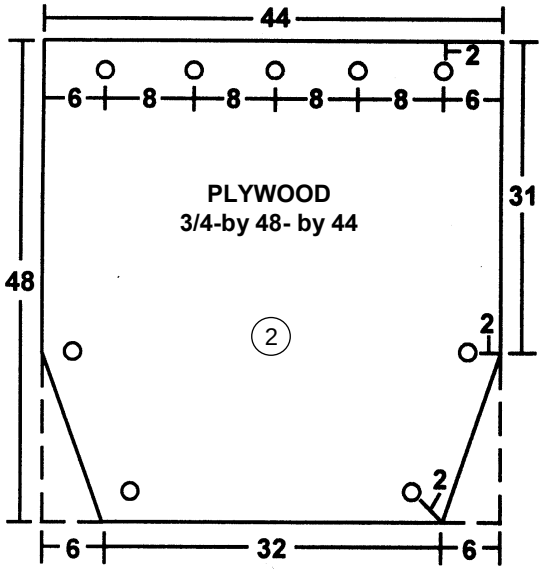
COVERING TURRET CANOPY

13-11. Install the canopy protection board and the load cover as shown in Figure 13-19.

Notes. 1. All holes are ½ inch.
2. All dimensions are in inches.
3. This drawing is not to scale.





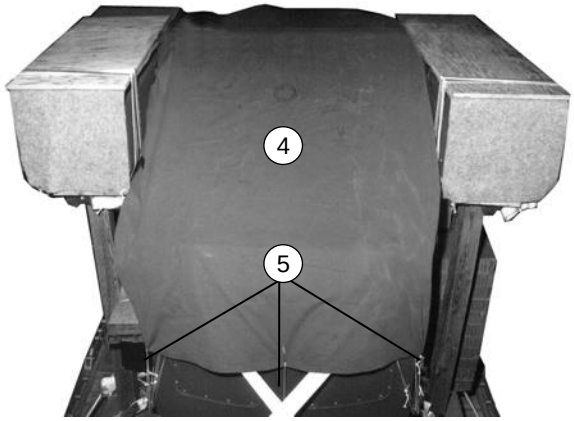


① Place a ½- by 43- by 72-inch piece of ½-inch felt over the canopy with the front edge of the ½-inch felt over hanging the front edge of the turret 16 inches. Punch holes in the corners of the ½-inch felt and secure it to convenient points with type III nylon cord.

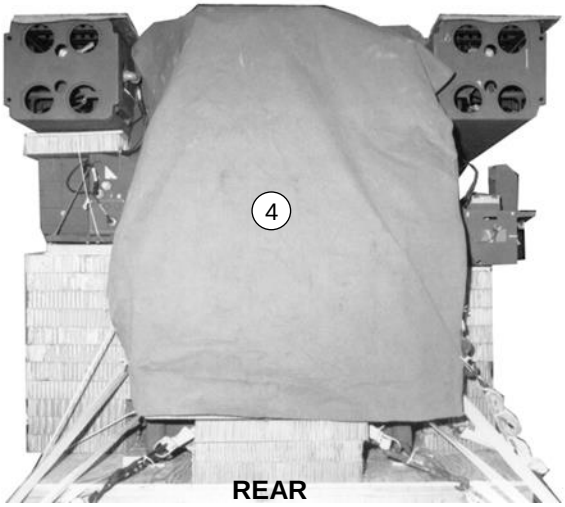
② Make the canopy protection board with ¾-inch plywood as shown.

③ Place the protection board over the ½-inch felt as shown. Ensure the front edge covers the Interrogator Friendly or Foe (IFF) antenna. Secure the protection board to convenient points with type III nylon cord.

Figure 13-19. Canopy Protected



FRONT

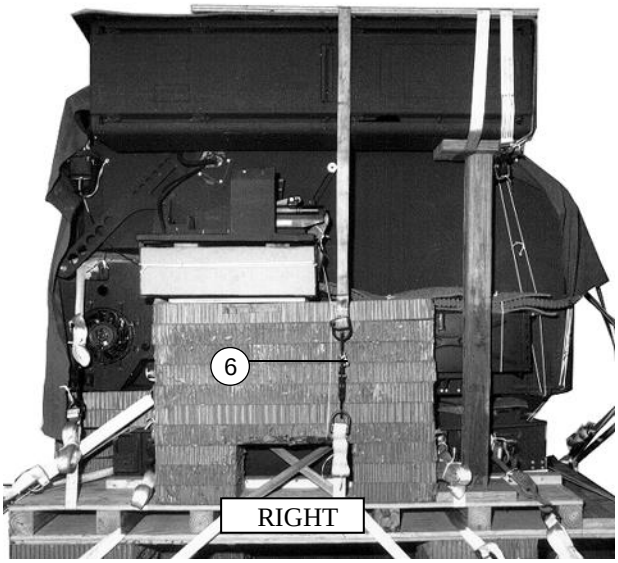


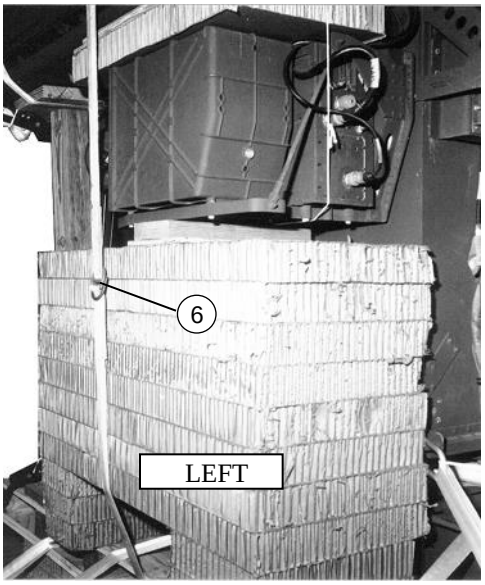
REAR

④ Place a load cover 58 inches wide and 165 inches long over the turret. Extend the rear edge of the cover to the bottom of the Environmental Control Unit base.

⑤ Tie the cover to convenient points on the load with type III nylon cord.

Figure 13-19. Canopy Protection (Continued)



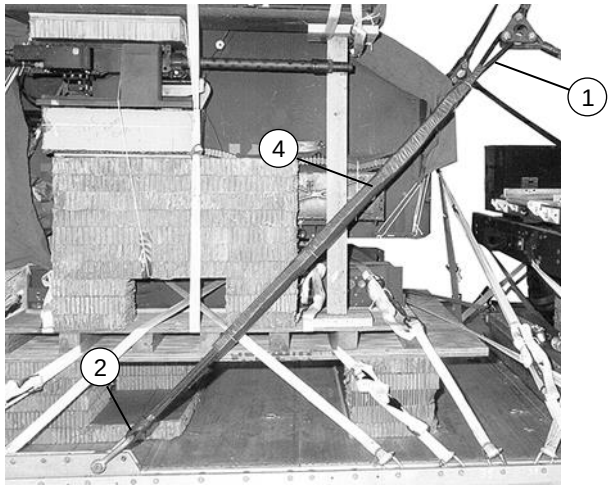


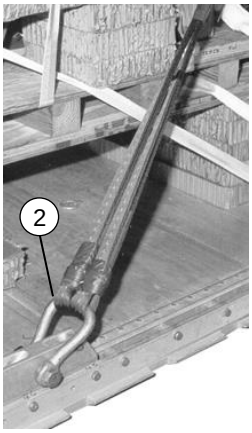
⑥ Pass a 30-foot lashing through the third hole in the strongback and over the top of the turret. Ensure the D-rings and loadbinder are positioned on the honeycomb support stack and not against metal.

Figure 13-19. Canopy Protected (Continued)

SUSPENSION SLINGS INSTALLED AND SAFETIED

13-12. Install and safety the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 13-20.





① Pass a 16-foot (2-loop), type XXVI nylon webbing sling around one point of a 3-point link.

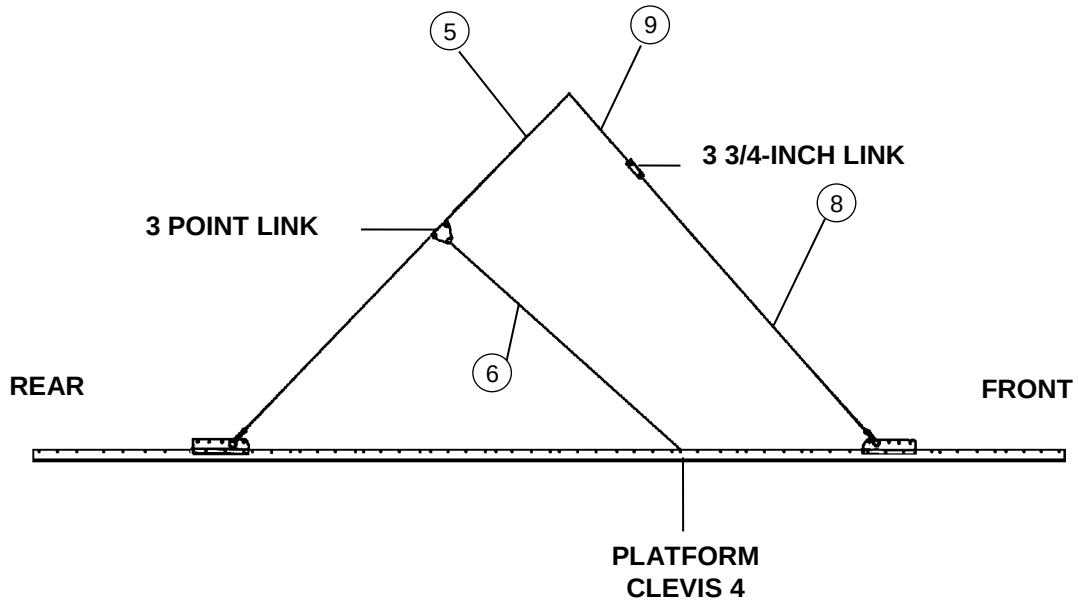
② Place both ends of the sling on the bell portion of a large suspension clevis. Bolt the clevis on the right rear suspension link.

③ Repeat steps 1 and 2 on the left side.

④ Pad the rear suspension slings from 30 inches above the clevises to 90 inches above the clevises with ½-inch felt. Tape the ½-inch felt in place.

Figure 13-20. Suspension Slings Installed and Safetied

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



⑤ Attach a 9-foot (2-loop), type XXVI nylon webbing sling to the top point of each 3-point link.

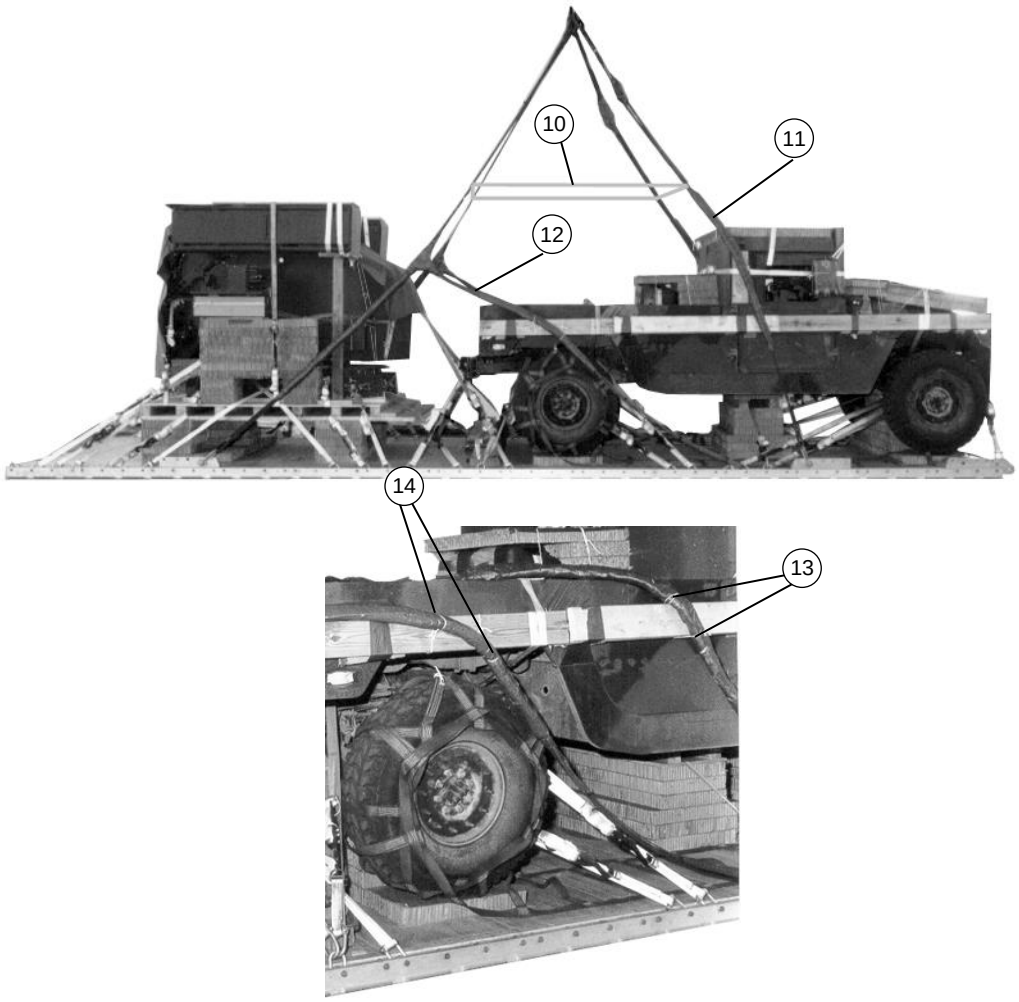
⑥ Attach an 11-foot (2-loop), type XXVI nylon webbing sling to the third point (inside point) of the 3-point link. Attach the other end of the sling to platform clevis 4.

⑦ Repeat the procedures in step 6 on the left side and attach the sling to platform clevis 4A.

⑧ Attach a 12-foot (2-loop), type XXVI nylon webbing sling to each front suspension link with a large suspension clevis. Attach the other end of the 12-foot slings to a 3 ¾-inch link.

⑨ Attach a 3-foot (2-loop), type XXVI nylon webbing sling to the other end of the 3 ¾-inch link installed in step 8. Pad the 3 ¾-inch links with ½-inch felt and secure the ½-inch felt with tape.

Figure 13-20. Suspension Slings Installed and Safetied (Continued)



⑩ Raise the suspension slings and install the deadman's tie to the front and rear slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

⑪ Pad the front suspension slings from a point 32 inches above the suspension clevises to a point 96 inches above the clevises with ½-inch felt. Tape the ½-inch felt in place.

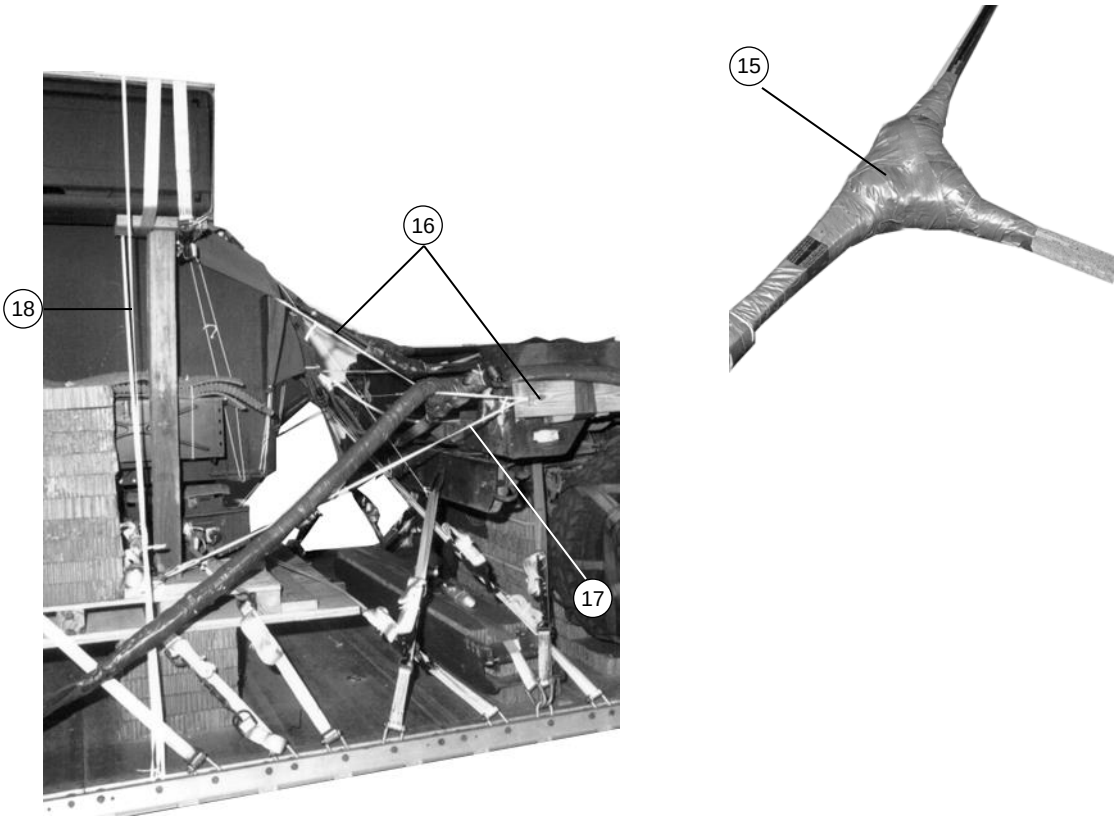
⑫ Pad the center suspension slings from a point 60 inches above the platform clevises to a point 108 inches above the platform clevises with ½-inch felt. Tap the ½-inch felt in place.

⑬ Tie the front suspension slings to the sideboards on the truck with type III nylon cord.

⑭ Tie the center suspension slings to the sideboards on the truck with type III nylon cord.

Figure 13-20. Suspension Slings Installed and Safetied (Continued)

Note. The ½-inch tubular nylon webbing ties in steps 16, 17, and 18 must be routed under all the suspension slings. These ties serve as guides for the suspension slings.



⑮ Pad the 3-point link with cellulose wadding and tape.

⑯ Route a length of ½-inch tubular nylon webbing from the ½-inch hole in the end of the right sideboard to the right, top, front lift provision. Repeat the procedure on the left side using the ½-inch hole in the left rear sideboard and the left, top, front lift provision.

⑰ Route a length of ½-inch tubular nylon webbing from the ½-inch hole in the end of the right sideboard to the D-ring of the lashing going through the second hole in the strongback. Repeat the procedure on the left side using the ½-inch hole in the left rear sideboard and the D-ring of the lashing going through the second hole in the strongback.

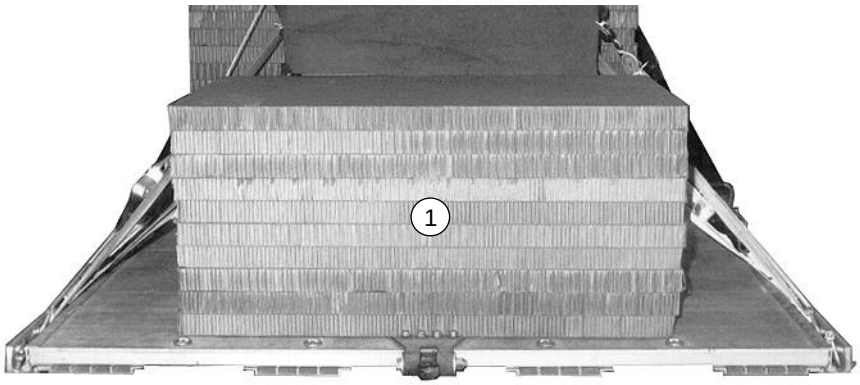
⑱ Route a length of ½-inch tubular nylon webbing from bushing 39, around the right weapon pod, and secure the webbing to bushing 39. Repeat the procedure on the left side using bushing 39A.

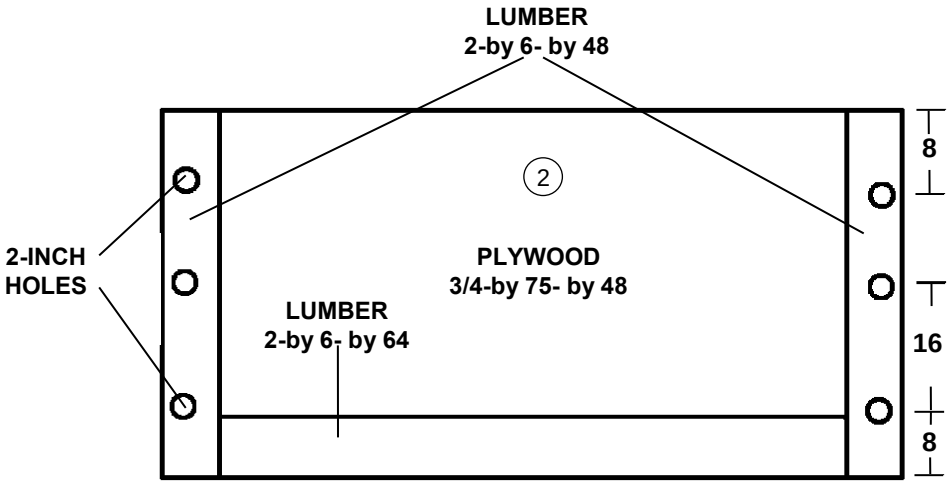
Figure 13-20. Suspension Slings Installed and Safetied (Continued)

STOWING CARGO PARACHUTES

13-13. Stow three G-11 cargo parachutes on this load. Build and install the parachute stowage platform as shown in Figure 13-21. Install the parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 13-22.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches

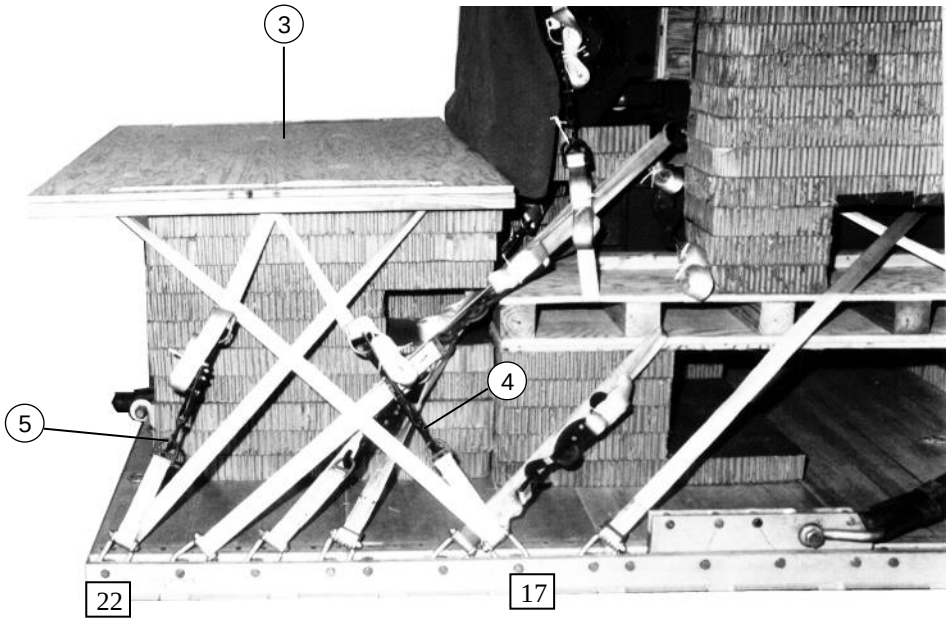




① Center ten pieces of 36- by 64-inch honeycomb against the rear of the strongback. Cut a channel in the bottom layer of honeycomb for the extraction bracket, if necessary. Notch layers 6 and 7 to allow for the lashings. Glue the layers together.

② Build the parachute stowage platform with ¾-inch plywood and 2- by 6-inch lumber as shown. Nail the plywood to the 2- by 6-inch lumber.

Figure 13-21. Parachute Stowage Platform Built and Installed

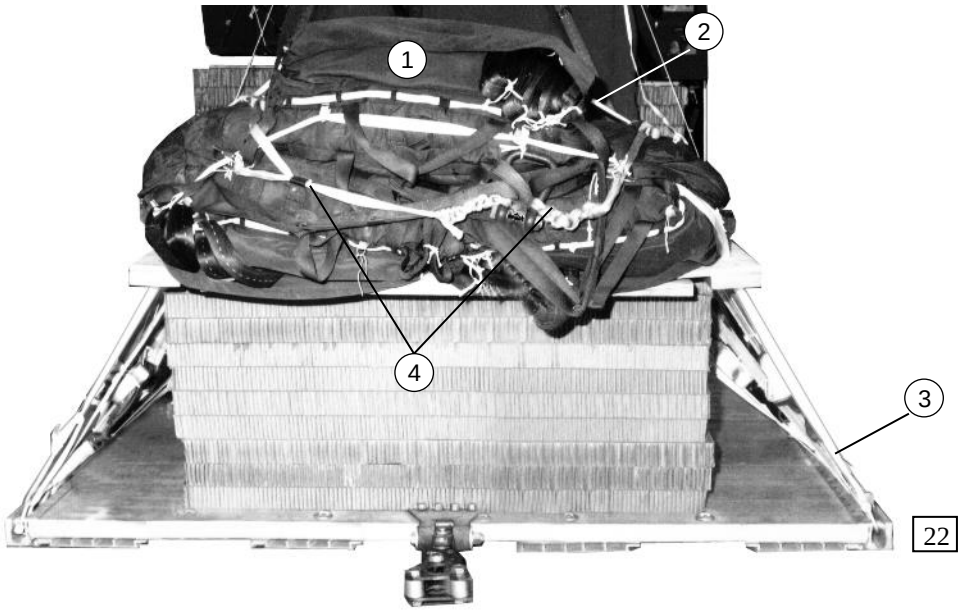


③ Place the parachute stowage platform on the honeycomb so it overhangs the rear of the honeycomb by 10 inches.

④ Lash the parachute stowage platform to clevises 17 and 17A through the center and rear holes on each side.

⑤ Lash the parachute stowage platform to clevises 22 and 22A through the center and front holes on each side.

Figure 13-21. Parachute Stowage Platform Built and Installed (Continued)



① Prepare, install, and restrain three G-11 cargo parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

② Tie the front parachute restraint strap to bushings 52 and 52A.

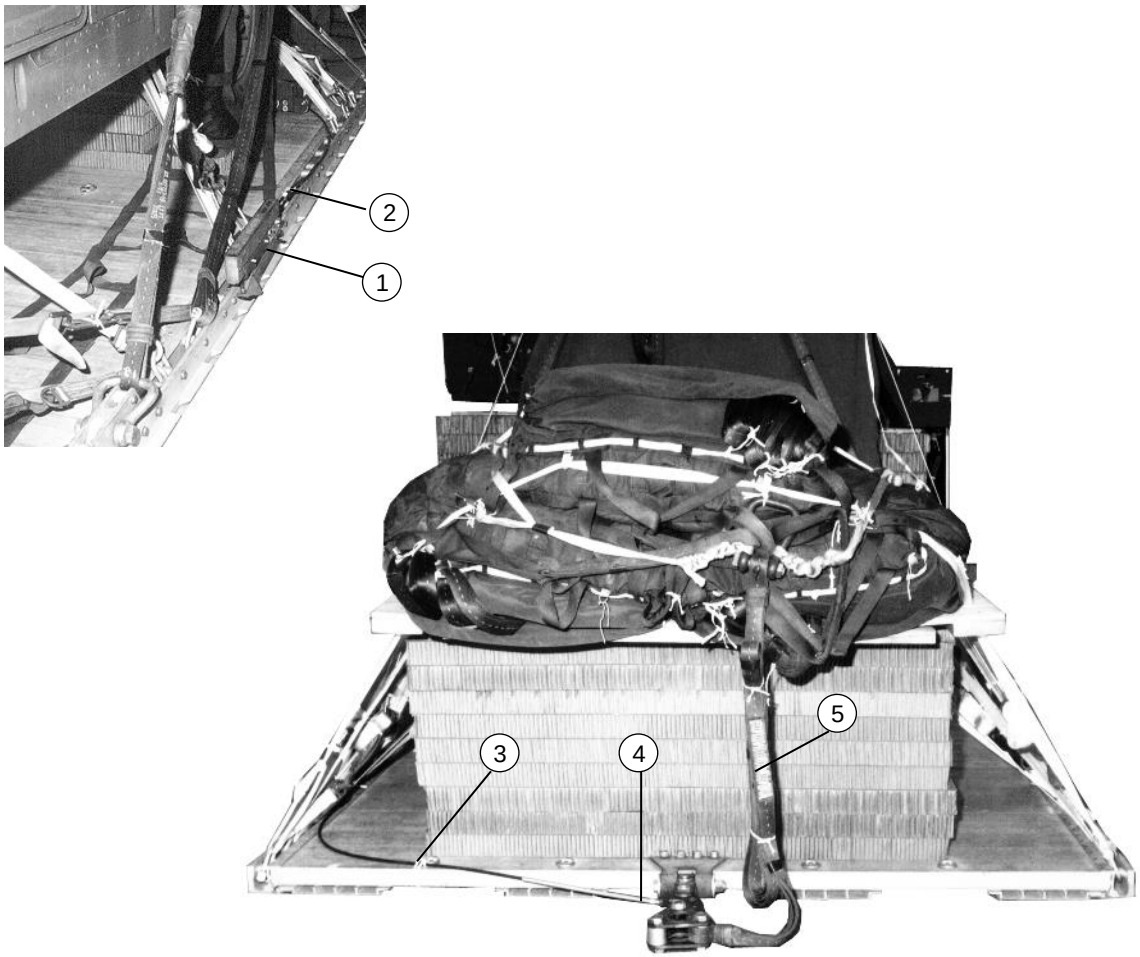
③ Tie the rear parachute restraint strap clevises to 22 and 22A.

④ Install the parachute release strap according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 13-22. Cargo Parachutes Installed

INSTALLING EXTRACTION SYSTEM

13-14. Install the Extraction Force Transfer Coupling (EFTC) extraction system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 13-23.

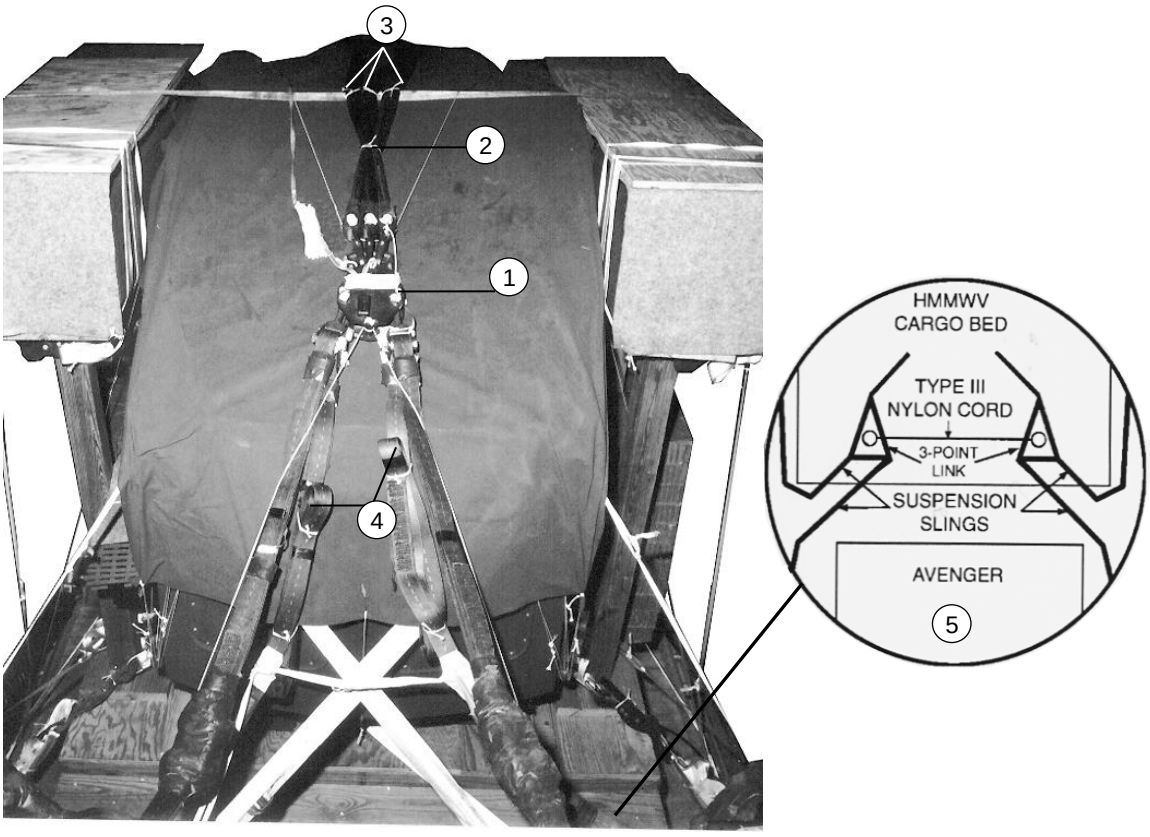


① Attach the mounting brackets to the rear mounting holes in the left platform side rail.
② Install a 28-foot cable to the actuator. Install the actuator to the brackets.
③ Safety the cable to points on the platform with type I, ¼-inch cotton webbing.
④ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.
⑤ Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line.

Figure 13-23. Extraction Force Transfer Coupling Installed

INSTALLING RELEASE SYSTEM

13-15. Prepare and install an M1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 13-24.



① Prepare an M1 cargo parachute release and center it on the turret canopy. Attach it to the suspension slings and parachute risers, and tie it to convenient points on the load with type III nylon cord.

② Tie the parachute riser extensions together with type I, ¼-inch cotton webbing.

③ Tie each of the riser extensions to the lashing running across the top of the turret with type I, ¼-inch cotton webbing.

④ S-fold the suspension slings and secure the folds with type I, ¼-inch cotton webbing.

⑤ Safety tie the 3-point links, as close as possible, together towards the center of the platform with a length of type III nylon cord (see insert).

Figure 13-24. Release System Installed

PLACING EXTRACTION PARACHUTE

13-16. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 . Place the extraction parachute and extraction line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINT

13-17. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

MARKING RIGGED LOAD

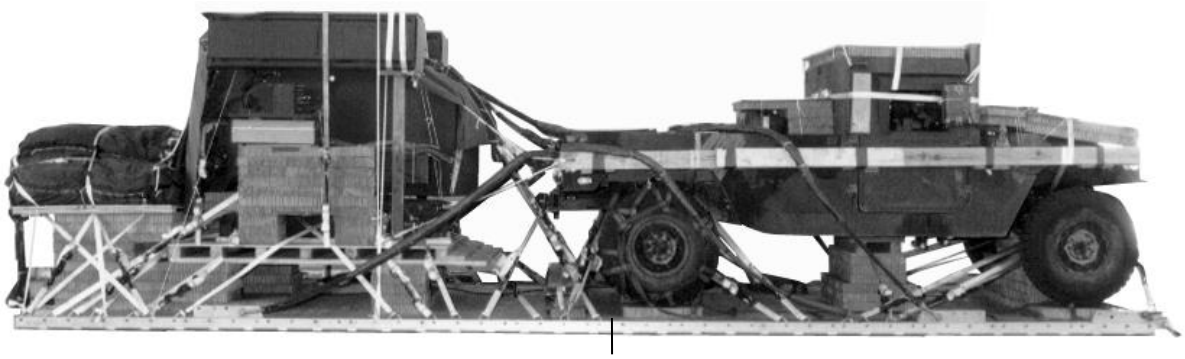
13-18. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 13-25. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods) and affix it to the load. If the load varies from the one shown, the weight, height, center of balance (CB), tipoff curve, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

13-19. Use the equipment listed in Table 13-1 to rig the load shown in Figure 13-25.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



RIGGED LOAD DATA		
Weight	……	14,182 pounds
Maximum Weight	……	15,750 pounds
Height	……	95 inches
Width	……	108 inches
Overall Length	……	354 inches
Overhang:	Front……	0 inches
	Rear Extraction Force Transfer Coupling (EFTC)……..	18 inches
Center of Balance (from front edge of the platform)	……	176 inches
Extraction System	……	EFTC

Figure 13-25. Avenger Air Defense Weapon System with ECU and M1097A2 Truck, Rigged on a 28-Foot Type V Platform for Low-Velocity Airdrop

Table 13-1. Equipment Required for Rigging the Avenger Air Defense Weapon System with ECU on M1097A2 Truck on a 28-Foot Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
1670-00-162-4981	Adapter, Coupling, Extraction Force Transfer Coupling (EFTC)	2
8040-00-273-8713	Adhesive Paste, 1-gallon	As Required
1670-01-035-6054	Bridle, Extraction Line, Leaf (C-17 only)	1
	Clevis Suspension:	
4030-00-678-8562	¾-inch (medium)	4
4030-00-090-5354	1-inch (large)	5
8305-00-242-3593	Cloth, Cotton Duck, 60-inches	As Required
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
1670-01-423-4102	Coupling, Airdrop Extraction Force Transfer, w/28-ft cable	1
1670-00-360-0328	Cover, Clevis	9
1670-00-360-0329	Cover, Link Assembly (Type IV)	3
8135-00-664-6958	Cushioning Material, Packaging, Cellulose Wadding	As Required
1670-01-344-0825	Drive Off Aid, Airdrop	1
8305-00-958-3685	Felt, ½-inch thick	As Required
1670-01-183-2678	Leaf, Extraction Line (Line Bag) (add 2 for C-17)	2
	Line Extraction:	
1670-01-062-6313	60-foot (3-loop), Type XXVI (for C-130)	1
1670-01-107-7651	140-foot (3-loop), Type XXVI (for C-141)	1
1670-01-107-7651	140-foot (3-loop), Type XXVI, (for C-5 between fuselage stations 1427-1971)	1
1670-01-107-7651	140-foot (3-loop), Type XXVI and	1
1670-01-062-6313	60-foot (3-loop), Type XXVI, (for C-5 between fuselage stations 707-1426)	1
1670-01-107-7651	140-foot (3-loop), Type XXVI (for C-17)	1
1670-01-064-4452	60-foot (1-loop), Type XXVI (for C-17), (Drogue Line)	1
1670-00-783-5988	Link Assembly, Type IV (add 1 for C-17)	3
	Link Assembly, Two-Point:	
5306-00-435-8994	Bolt, 1-inch diameter, 4-inches long (add 2 for C-5)	4
5310-00-232-5165	Nut, 1-inch (add 2 for C-5)	4
1670-00-003-1954	Plate, Side, 3 ¾-inch (add 2 for C-5)	4
5365-00-007-3414	Spacer, Large (add 2 for C-5)	4
1670-01-307-0155	Link, Assembly, Coupling, Three-Point	2
	Lumber:	
5510-00-220-6146	2- by 4- by 73-inch	2
5510-00-220-6148	2- by 6- by 13-inch	2
	2- by 6- by 16-inch	2
	2- by 6- by 56-inch	2
	2- by 6- by 64-inch	1
5510-00-220-6246	2- by 8- by 18-inch	2
5510-00-220-6250	2- by 12- by 12-inch	4
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 13-1. Equipment Required for Rigging the Avenger Air Defense Weapon System with ECU on M1097A2 Truck on a 28-Foot Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
5510-00-220-6274	Lumber:	
	4- by 4- by 8 ½-inch	2
	4- by 4- by 43-inch	2
	4- by 4- by 50-inch	2
	4- by 4- by 72-inch	7
5315-00-010-4659	Nail, Steel, Common, 8D	As Required
5315-00-753-3885	Nail, Steel, Common, 16D	As Required
1670-00-753-3928	Pad, Energy-Dissipating (Honeycomb)	
	3- by 36- by 96-inches	30 Sheets
	5 ½- by 10-inch	(10)
	7- by 25-inch	(1)
	8- by 16-inch	(3)
	8- by 27-inch	(1)
	10- by 10-inch	(5)
	10- by 24-inch	(1)
	10- by 80-inch	(1)
	11- by 16-inch	(1)
	11- by 24-inch	(3)
	12- by 12-inch	(6)
	12- by 16-inch	(3)
	12- by 18-inch	(10)
	12- by 24-inch	(1)
	12- by 28-inch	(1)
	12- by 41-inch	(7)
	12- by 82-inch	(2)
	13- by 40-inch	(1)
	14- by 32-inch	(3)
	16- by 16-inch	(12)
	16- by 26-inch	(1)
	16- by 32-inch	(1)
	16- by 72-inch	(1)
	18- by 38-inch	(2)
	18- by 40-inch	(8)
	18- by 43-inch	(4)
	20- by 24-inch	(6)
	23- by 83-inch	(1)
	24- by 54-inch	(8)
	24- by 80-inch	(2)
	26- by 43-inch	(3)
	28- by 32-inch	(1)
	36- by 64-inch	(10)
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 13-1. Equipment Required for Rigging the Avenger Air Defense Weapon System with ECU on M1097A2 Truck on a 28-Foot Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
1670-00-753-3928	Pad, Energy-Dissipating (Honeycomb)	
	36- by 72-inch	(1)
	36- by 80-inch	(1)
	36- by 82-inch	(2)
1670-01-016-7841	Parachute, Cargo, G-11	3
	Parachute, Cargo, Extraction:	
1670-01-063-3716	22-ft	1
1670-01-063-3715	15-ft (C-17 only)	1
	Platform, Airdrop, Type V, 28-ft	
1670-01-162-2372	Clevis Assembly (Type V)	(54)
1670-01-162-2376	Extraction Bracket Assembly	(1)
1670-01-247-2389	Link, Suspension Bracket, Type V	(4)
1670-01-162-2381	Tandem Link Assembly (Multipurpose Link)	(2)
	Plywood:	
5530-00-129-7721	¼-inch:	
	9 ½- by 24-inch	1
5530-00-129-7777	½-inch	
	8- by 19-inch	1
	8- by 21-inch	1
	16- by 26-inch	1
5530-00-128-4981	¾-inch:	8 Sheets
	8- by 8-inch	(2)
	8- by 27-inch	(1)
	10- by 20-inch	(1)
	12- by 24-inch	(1)
	14- by 22-inch	(1)
	18- by 43-inch	(2)
	18- by 48-inch	(2)
	20- by 24-inch	(2)
	24- by 54-inch	(2)
	24- by 84-inch	(1)
	24- by 96-inch	(2)
	39- by 80-inch	(1)
	44- by 48-inch	(1)
	48- by 75-inch	(1)
	48- by 84-inch	(1)
	48- by 96-inch	(2)
1670-01-097-8816	Release, Cargo Parachute, M-1	1
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 13-1. Equipment Required for Rigging the Avenger Air Defense Weapon System with ECU on M1097A2 Truck on a 28-Foot Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	Sling, Cargo, Airdrop:	
	For Deployment Line:	
1670-01-062-6304	9-ft (2-loop), Type XXVI	1
	For Riser Extensions:	
1670-01-062-6302	20-ft (2-loop), Type XXVI	6
	For Lifting:	
1670-01-062-6304	9-ft (2-loop), Type XXVI	2
1670-01-062-6303	12 ft (2-loop), Type XXVI	2
1670-01-063-7760	11-ft (2-loop), Type XXVI	2
	For Suspension Slings:	
1670-01-062-6301	3 ft (2-loop), Type XXVI	2
1670-01-062-6304	9 ft (2-loop), Type XXVI	2
1670-01-063-7760	11 ft (2-loop), Type XXVI	2
1670-01-062-6303	12-ft (2-loop), Type XXVI	2
1670-01-063-7761	16-ft (2-loop), Type XXVI	2
5340-00-040-8219	Strap, Parachute, Release, Multi-Knife	2
7501-00-266-5016	Tape, Adhesive, 2-inch	As Required
1670-00-937-0271	Tiedown Assembly, 15-ft	63
TBD	Towplate Release Mechanism (H-Block) (C-17 only)	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, Type I	As Required
8305-00-082-5752	Nylon, Tubular, ½-inch	As Required
8305-00-263-3598	Nylon, Type VIII	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

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Chapter 14

Rigging 1 ¼-Ton Truck with an Avenger Weapon System and Section Box on a 28-Foot, Type V Platform for Low-Velocity Airdrop

DESCRIPTION OF LOAD

14-1. The Avenger is a turret-configured weapon system mounted on a modified M1097 1 ¼-ton, HMMWV-series truck. There are two configurations of the system, the Avenger without the Environmental Control Unit (ECU) mounted on a modified M1097-series truck and the Avenger with an upgraded ECU mounted on a modified M1097-series truck. The Avenger shown in Figure 14-1 is in the travel position. The weapons consist of two missile pods, a 50-caliber machine gun, and guidance system. The Avenger may be dropped with or without the Stinger missiles or trainer missile in the launch pods. The turret and section box are removed from the truck and rigged on a 28-foot type V platform with the truck. This load requires three G-11 parachutes.

PREPARING PLATFORM

14-2. Prepare a 28-foot, type V airdrop platform as shown in Figure 14-2.

Note. Measurements given in this load are from the front edge of the platform, NOT from the front edge of the nose bumper. The nose bumper may or may not be installed.

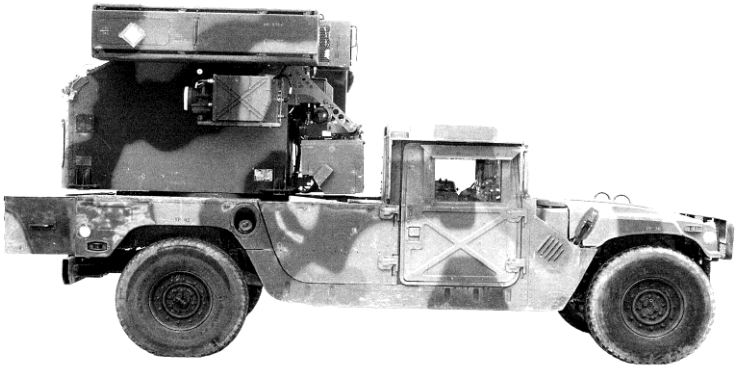
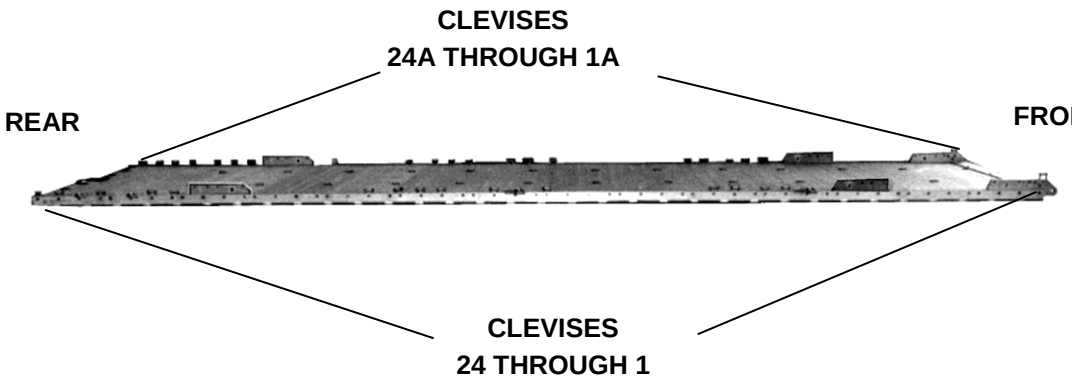


Figure 14-1. Avenger Air Defense Weapon System with Section Box and ECU on M1097 Truck



Step:

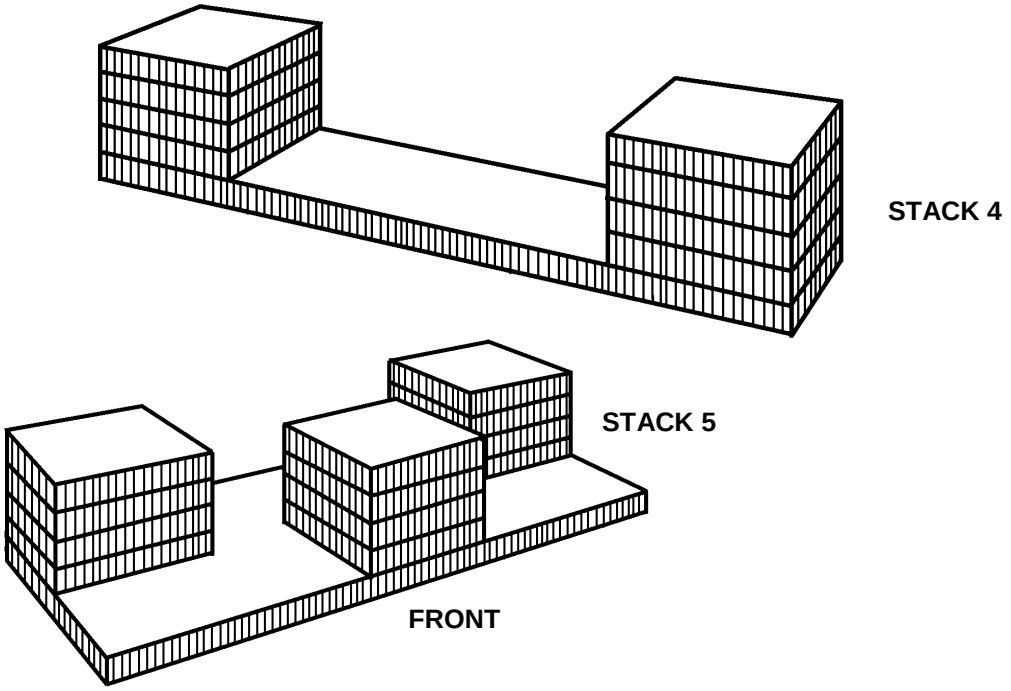
1. Inspect, or assemble and inspect, a 28-foot, type V airdrop platform as outlined in TM 10-1670-268-20&P/TO 13C7-52-22.
2. Install a suspension bracket to the right and left platform side rails using holes 10, 11, and 12.
3. Install a tandem link to the front of each platform side rail using holes 1, 2, and 3.
4. Install a suspension bracket to the right and left platform side rails using holes 45, 46, and 47.
5. Install a clevis on bushing 1 of each tandem link.
6. Starting at the front of each platform side rail, install clevises on the bushings bolted to holes 14 (triple clevis), 15, 16, 18, 19, 28, 30 (triple clevis), 31, 34, 35, 36, 38, 49, 50, 51 (double clevis), 51A (triple clevis), 53, 54 (triple clevis), 54A (double clevis), 55, and 56.
7. Starting at the front of the platform, number the clevises 1 through 24 on the right side, and 1A through 24A on the left side.
8. Label the tie-down rings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 14-2. Platform Prepared

PREPARING AND POSITIONING HONEYCOMB STACKS AND STRONGBACK

14-3. Prepare honeycomb stacks 1, 2, and 3 for the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. Prepare honeycomb stacks 4 and 5 for the turret as shown in Figure 14-3. Position the honeycomb stacks as shown in Figure 14-4. Construct the strongback as shown in Figure 14-5. Position the strongback on the honeycomb stacks as shown in Figure 14-6 and install the drive off aid on the platform.

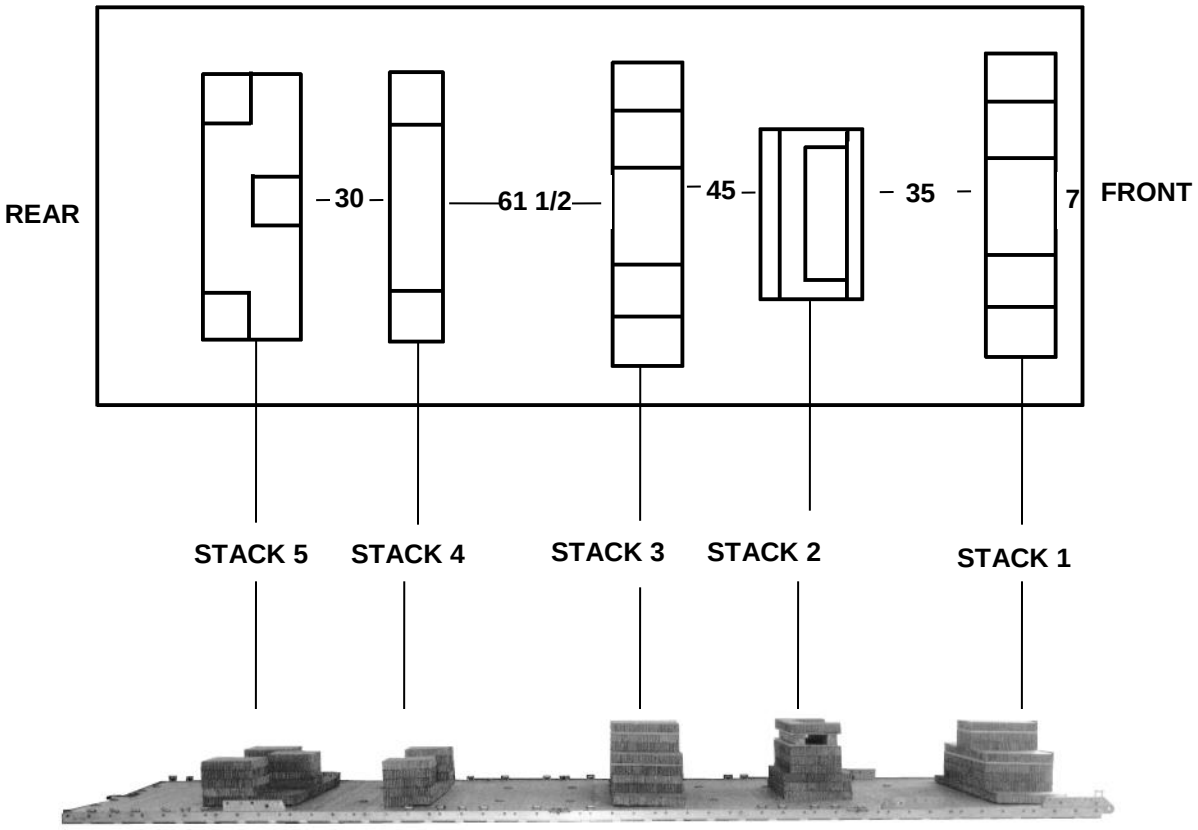
Note. This drawing is not to scale.



Stack Number	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
4	1	72	16	Honeycomb	This is the base.
	8	16	16	Honeycomb	Glue four pieces flush with each end of the base.
5	1	72	36	Honeycomb	This is the base.
	4	16	16	Honeycomb	Center and glue flush with the front edge of the base.
	8	18	18	Honeycomb	Glue four pieces flush with each rear corner of the base.

Figure 14-3. Stacks 4 and 5 Prepared

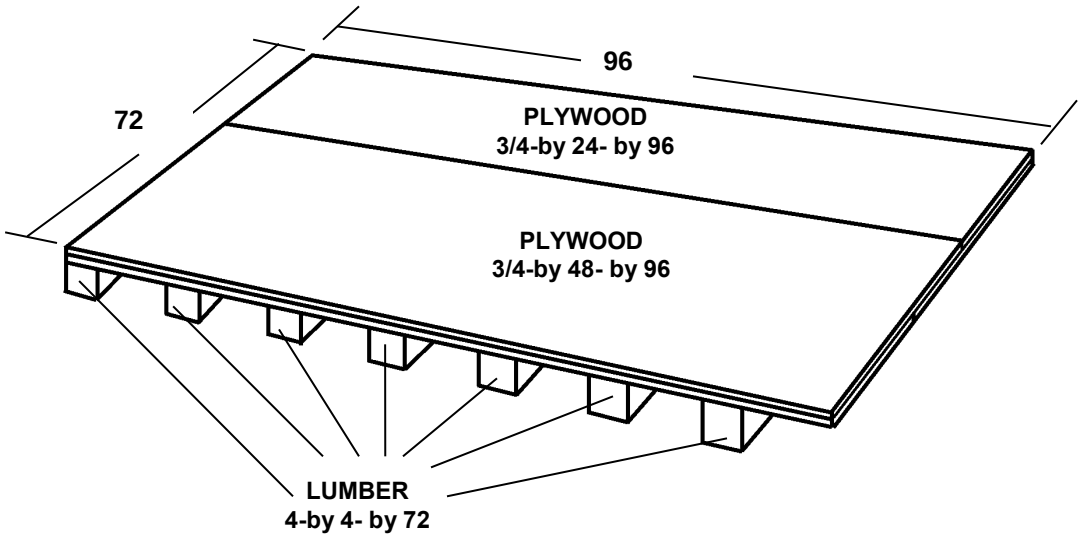
Notes. 1. This drawing is not to scale.
2. All dimensions are given in inches.



Stack Number	*Position of Stack on Platform*
	Place stack:
1	Centered 7 inches from the front of the platform.
2	Centered 35 inches from stack 1.
3	Centered 45 inches from stack 2.
4	Centered 61 ½ inches from stack 3.
5	Centered 30 inches from stack 4.

Figure 14-4. Honeycomb Stacks Positioned on Platform

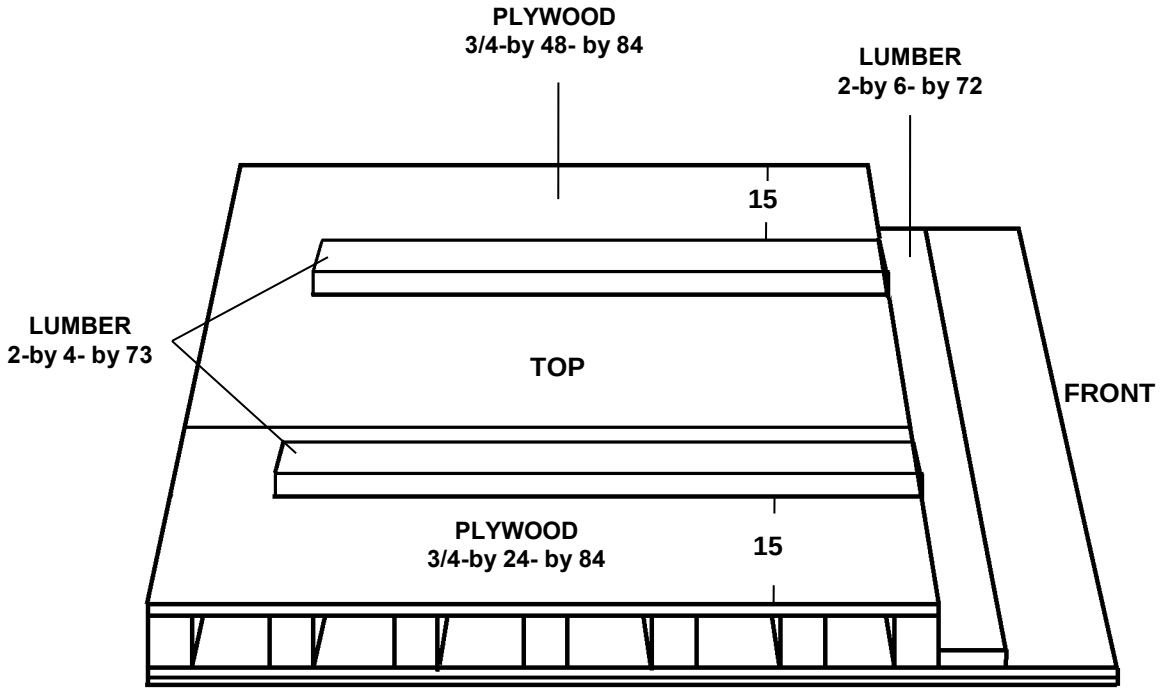
Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



Strongback	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
	2	48	96	¾-in Plywood	Alternate pieces and nail plywood together forming a two layer 72-in x 96-in base.
	2	24	96	¾-in Plywood	
	7	72		4-in x 4-in Lumber	Place one piece the base flush with one end. Place another piece under the base 12 inches from the opposite end. Space the remaining five pieces evenly between the first two pieces. Align all pieces with the outside edges of the base and nail each piece to the base through the plywood with 16d nails.

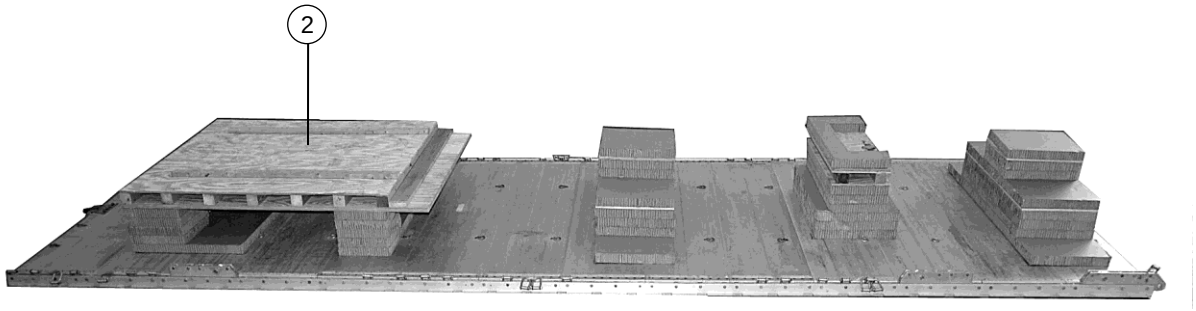
Figure 14-5. Strongback Prepared

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



Strongback	*Pieces*	*Width (Inches)*	*Length (Inches)*	*Material*	*Instructions*
	1	48	84	¾-in Plywood	Nail flush with lumber and base on left side.
	1	24	84	¾-in Plywood	Nail flush with lumber and base on right side.
	1		72	2-in x 6-in Lumber	Nail to base flush against first piece of 4-in x 4-in lumber.
	2		73	2-in x 4-in Lumber	Nail to base flush against front edge of top plywood, 15 inches in from each side.

Figure 14-5. Strongback Prepared (Continued)



① Install the drive off aid using tiedown rings A1 and B1 according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 (not shown). Extend the drive off aid toward the rear of the platform over the bottom layer of honeycomb on stacks 1 and 3 as shown in Figure 14-6.

② Set the strongback on stacks 4 and 4. Align the rear of the strongback with the rear of stack 5.

Figure 14-6. Strongback Set on Stacks 4 and 5

PREPARING TRUCK

14-4. The Avenger turret and section box must be removed from the truck before preparing the truck.

CAUTION

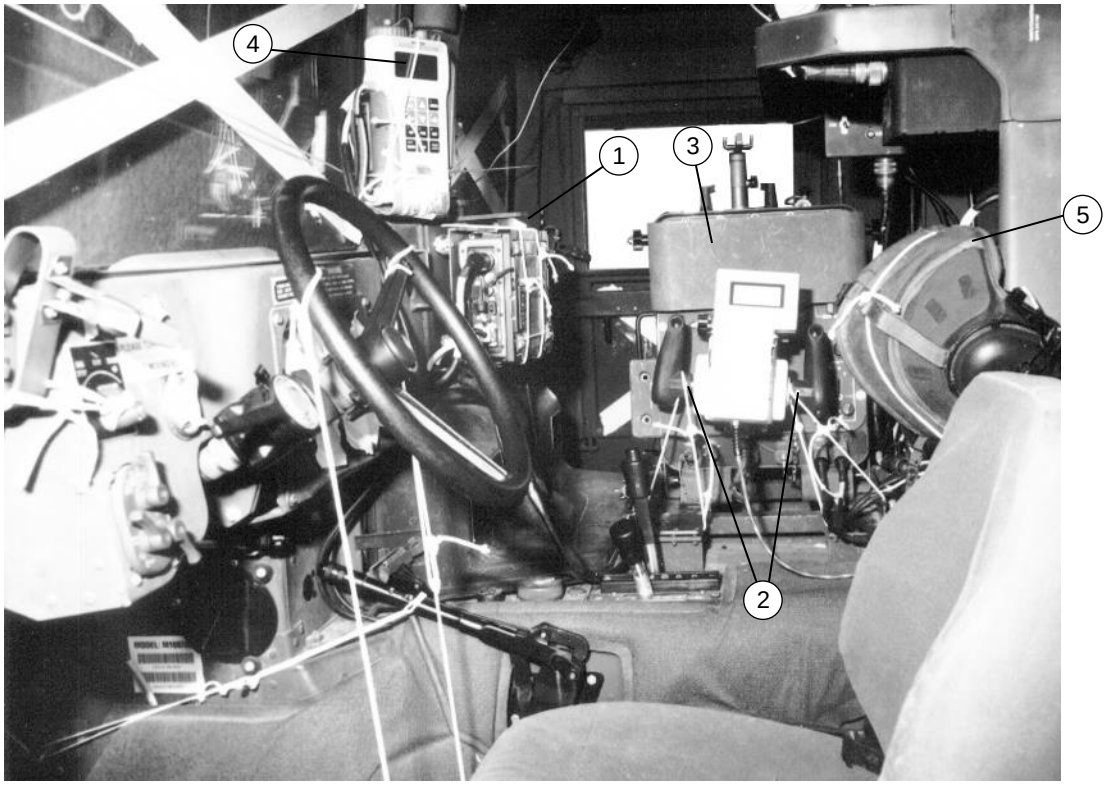
1. Allow only Avenger crew personnel to prepare the turret for removal.
2. Secure and account for the turret mounting bolts. Tape the bolts to the inside of the brass collection box.

14-5. Prepare the truck as outlined:

- Prepare the truck as described in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.
- Prepare the underside of the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.
- Further prepare the truck as shown in Figure 14-7.

WARNING

Remove all jewelry before working around electrical and mechanical equipment. Jewelry may conduct high voltage electricity resulting in serious injury.



① Lower the sunscreen on the targeting console and secure with type III nylon cord.

② Ensure the remote control unit is secured in place with the pins provided and safety tied on each side with type III nylon cord.

③ Lower the sunscreen over the monitor.

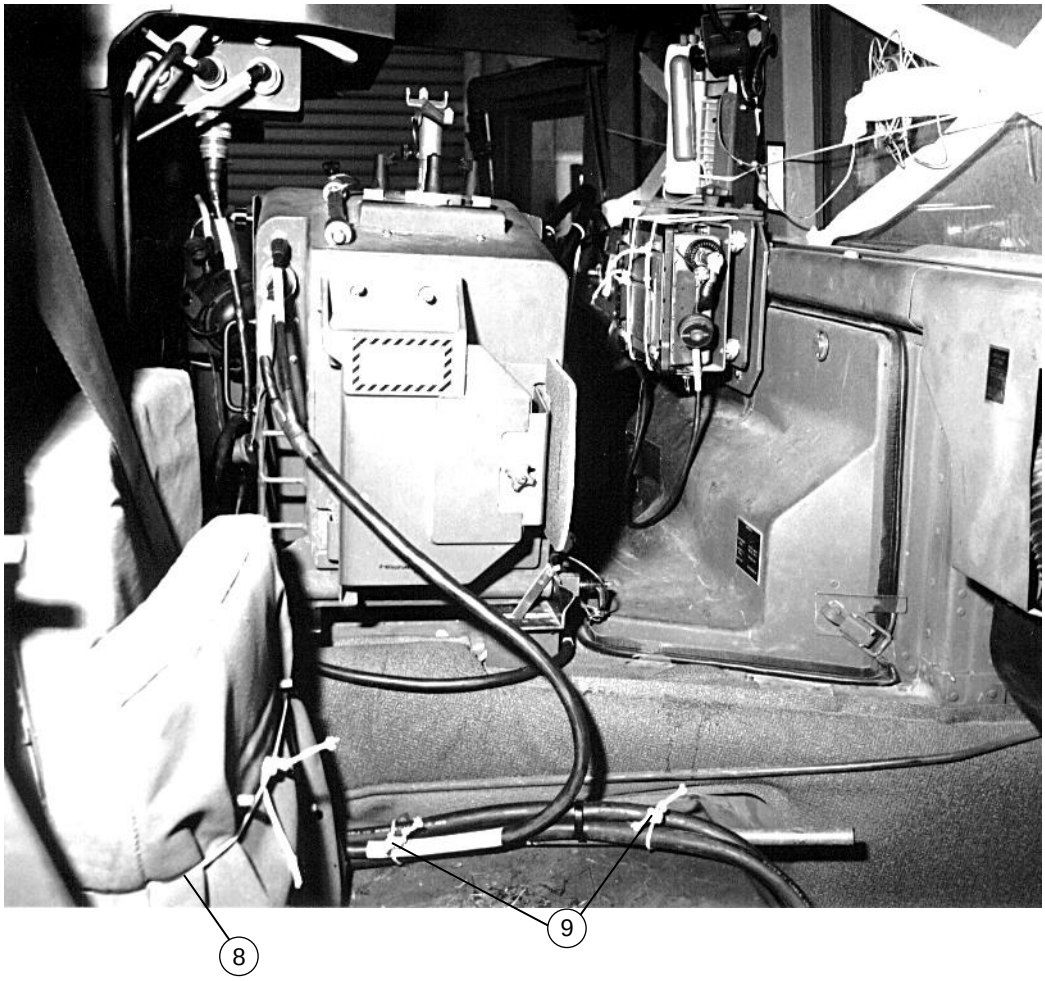
④ Safety tie the Global Positioning System (GPS) in place with type III nylon cord.

⑤ Secure the driver's headset with type III nylon cord.

⑥ Secure the azimuth indicator and pointer assembly in place with type III nylon cord (if required) (not shown).

⑦ Safety tie the remote control cable to its bracket with type III nylon cord (if required) (not shown).

Figure 14-7. Truck Prepared



⑧ Fold up the seat bottom of the passenger's seat and secure it to the back of the seat with type III nylon cord.

⑨ Secure the slave cables and antenna to the passenger seat frame with type III nylon cord.

Figure 14-7. Truck Prepared (Continued)



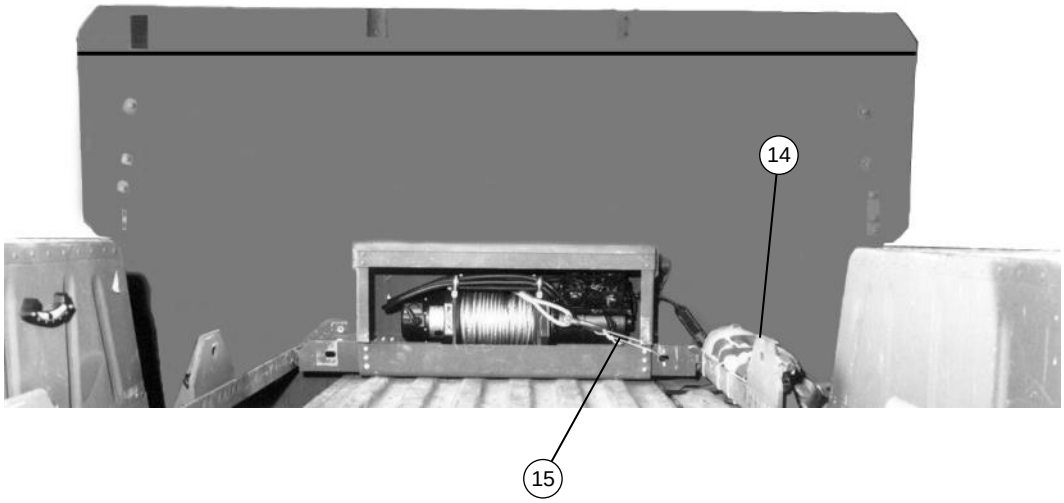
⑩ Secure the top mount radio with type III nylon cord. Wrap the radio with cellulose padding and secure the cellulose padding with tape (if required) (not shown).

⑪ Wrap the remote control unit, the targeting console, the GPS, and hand navigation system with cellulose padding. Secure the cellulose padding with tape.

⑫ Cut to fit and place honeycomb between the monitor and the targeting console.

⑬ Secure a case of Meal Ready to Eat (MREs) to the driver's seat with type III nylon cord.

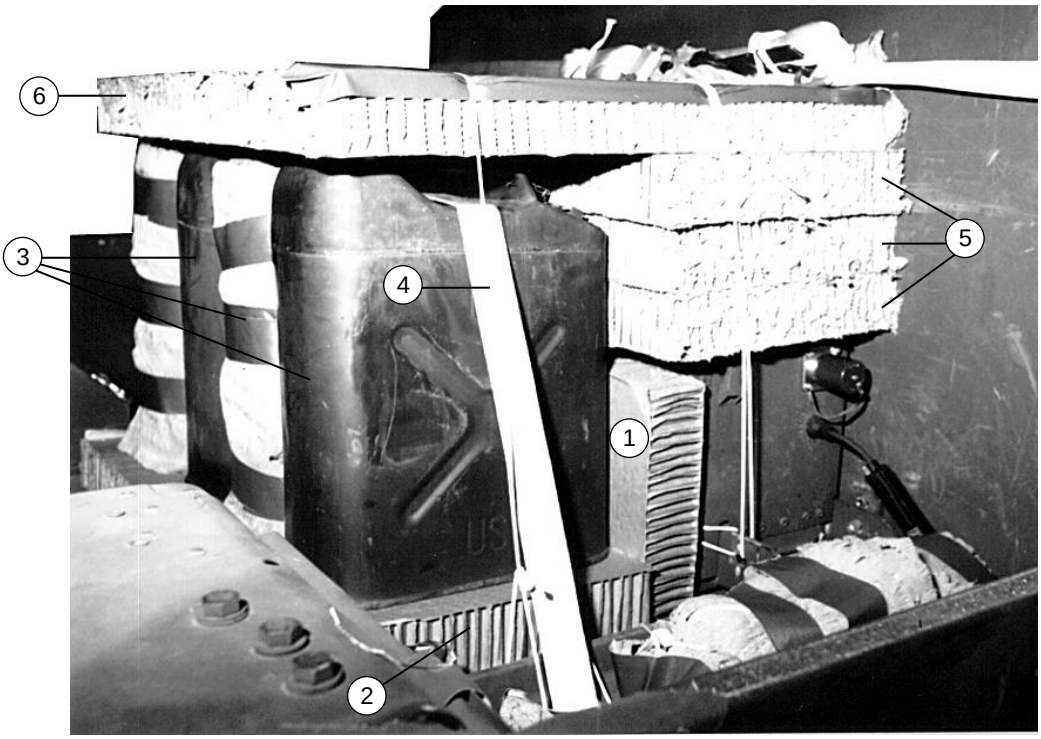
Figure 14-7. Truck Prepared (Continued)



⑭ Wrap the control cables in the truck bed with cellulose padding and secure the cellulose padding with tape. Tie the wrapped cables to the turret frame with type III nylon cord.

⑮ Secure the winch cable to the winch frame with type III nylon cord.

Figure 14-7. Truck Prepared (Continued)



① Place a 28- by 12-inch piece of honeycomb on edge against the winch frame (if rigging the Avenger without a winch frame, place a 40- by 13-inch piece of honeycomb on edge in front of the winch and tape the honeycomb to the cargo floor).

② Place a 32- by 16-inch piece of honeycomb on the cargo floor in front of the honeycomb placed in step 16.

③ Pad two fuel cans with cellulose padding and secure the padding with tape. Alternate and place two fuel cans and two water cans flush on the honeycomb.

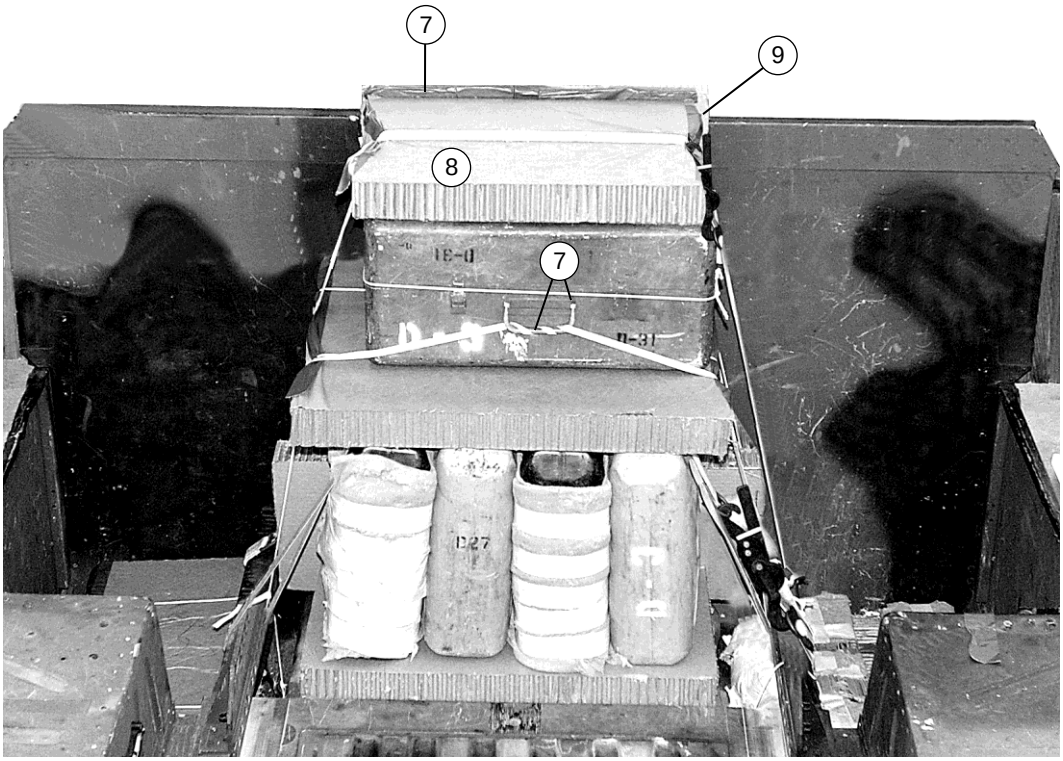
④ Pass a 15-foot lashing through the handles and under the rails of the turret frame on both sides. Close the load binder on one of the sides.

⑤ Place three 32- by 14-inch pieces of honeycomb on top of the winch in front of the cans (use 40- by 12-inch pieces for the Avenger without winch frame).

⑥ Place a 32- by 28-inch piece of honeycomb on top of the cans and honeycomb placed in step 18. Tape the side edges of the honeycomb. Secure the honeycomb with two lengths of type III nylon cord to the turret frame.

Note. When rigging the Avenger without the winch frame, place a piece of honeycomb on each side of the winch.

Figure 14-7. Truck Prepared (Continued)

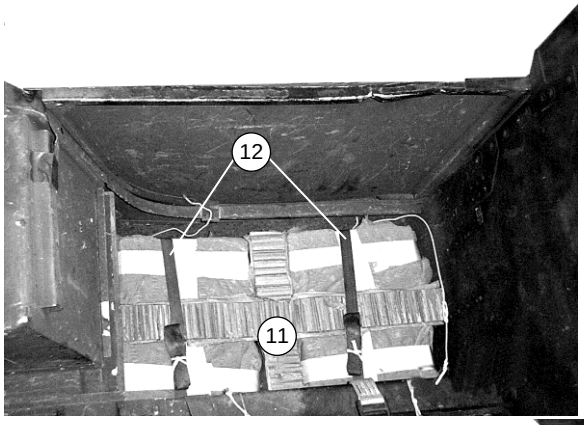


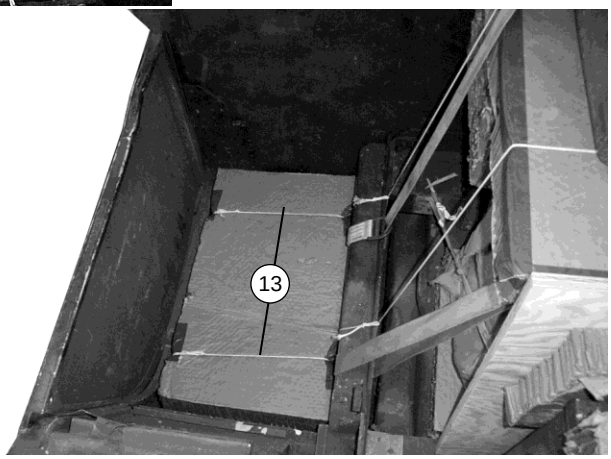
⑦ Place a 15- by 18-inch piece of honeycomb centered, upright against the cab on top of the 32- by 28-inch piece of honeycomb. Place the Stinger trigger switch box on top of the 32- by 28-inch piece of honeycomb on top of the fuel cans. Secure the 15- by 18-inch piece of honeycomb to the Stinger trigger switch box with type III nylon cord. Secure the handle of the box to the turret frame with ½-inch tubular nylon webbing.

⑧ Tape the edges of a 24- by 24-inch piece of honeycomb and place it on top of the Stinger trigger switch box. Secure the honeycomb to the turret frame with type III nylon cord.

⑨ Route a 15-foot lashing around each side of the turret frame and through its own D-ring. Route one lashing over the top of the honeycomb placed in step 23. Bring the other lashing up and load bind the two lashings on the side of the Stinger trigger switch box.

Figure 14-7. Truck Prepared (Continued)





⑩ Route two lengths of ½-inch tubular nylon webbing through the hooks in the bottom of each seat well. Cut to fit and place a piece of honeycomb in the bottom of each seat well ensuring the running ends of the ½-inch tubular nylon webbing are accessible. Cut two 60-inch lengths of 1-inch tubular nylon webbing and place across the width of the honeycomb in each seat well approximately 6-inches from each end (not shown).

⑪ Wrap eight cans of .50 caliber ammunition with cellulose padding and secure the padding with masking tape. Place four cans of ammunition in each seat well. Place honeycomb between ammunition cans. Cut the honeycomb to fit.

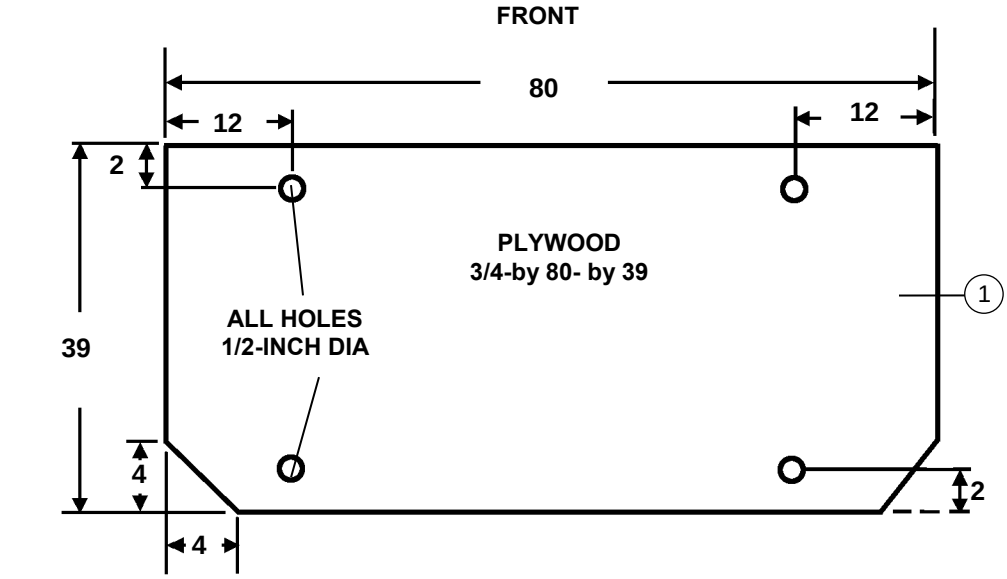
⑫ Secure the cans of ammunition together with the 1-inch tubular nylon webbing installed in step 25.

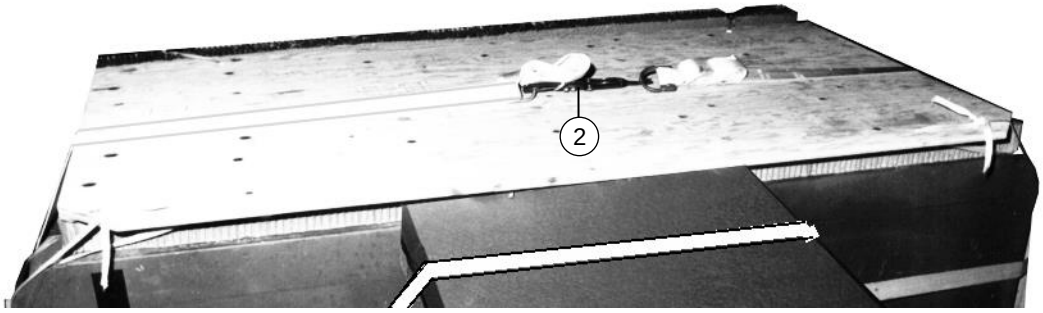
⑬ Cut to fit and place a piece of honeycomb on top of the ammunition cans in each seat well and secure with the ½-inch tubular nylon webbing installed in step 25.

⑭ Place the camouflage net bag against the cans. Tie the net bag to the rails with three lengths of type III nylon cord (if required) (not shown).

Figure 14-7. Truck Prepared (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.

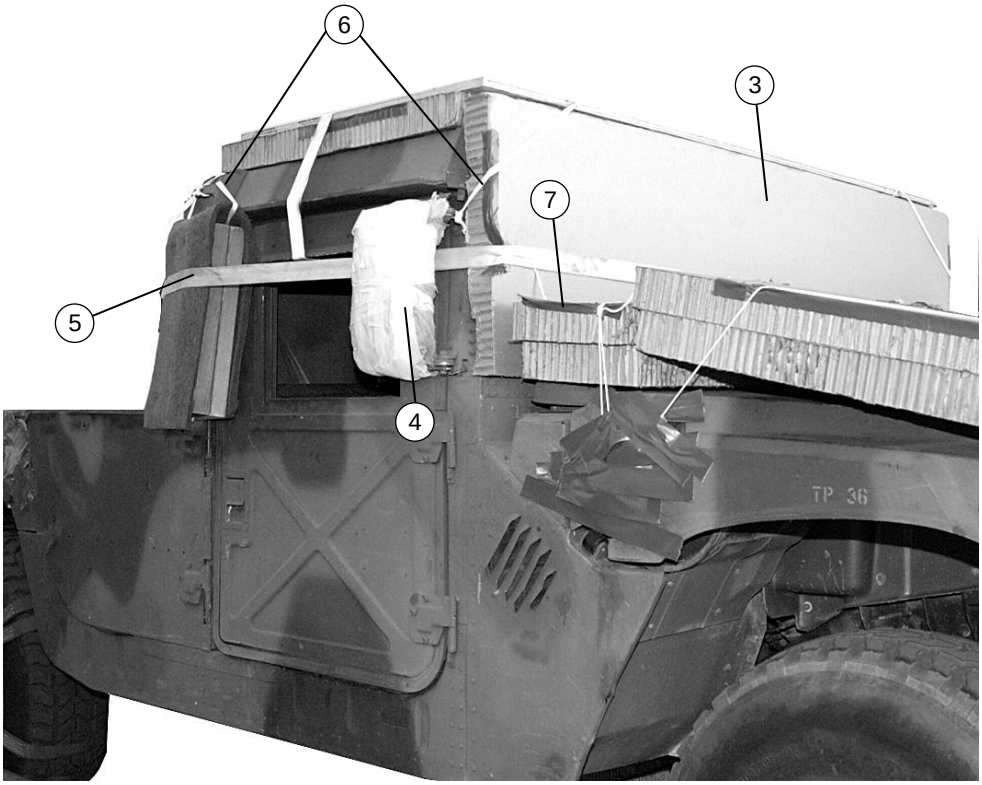




① Fabricate a roof protector by making cuts and ½-inch holes as shown in an 80- by 39-inch piece of ¾-inch plywood. Glue an 80- by 36-inch piece of honeycomb to the plywood, flush along the front edge.

② Place the roof protector on the roof, honeycomb side down as shown. Route a 30-foot lashing through the open windows and under the radio mount. Close the load binder on top of the roof protector.

Figure 14-7. Truck Prepared (Continued)



③ Place an 83- by 23-inch piece of honeycomb against the windshield and tape the outside edges.

④ Pad the mirrors with cellulose padding and secure the padding with tape. Fold the mirrors to the side.

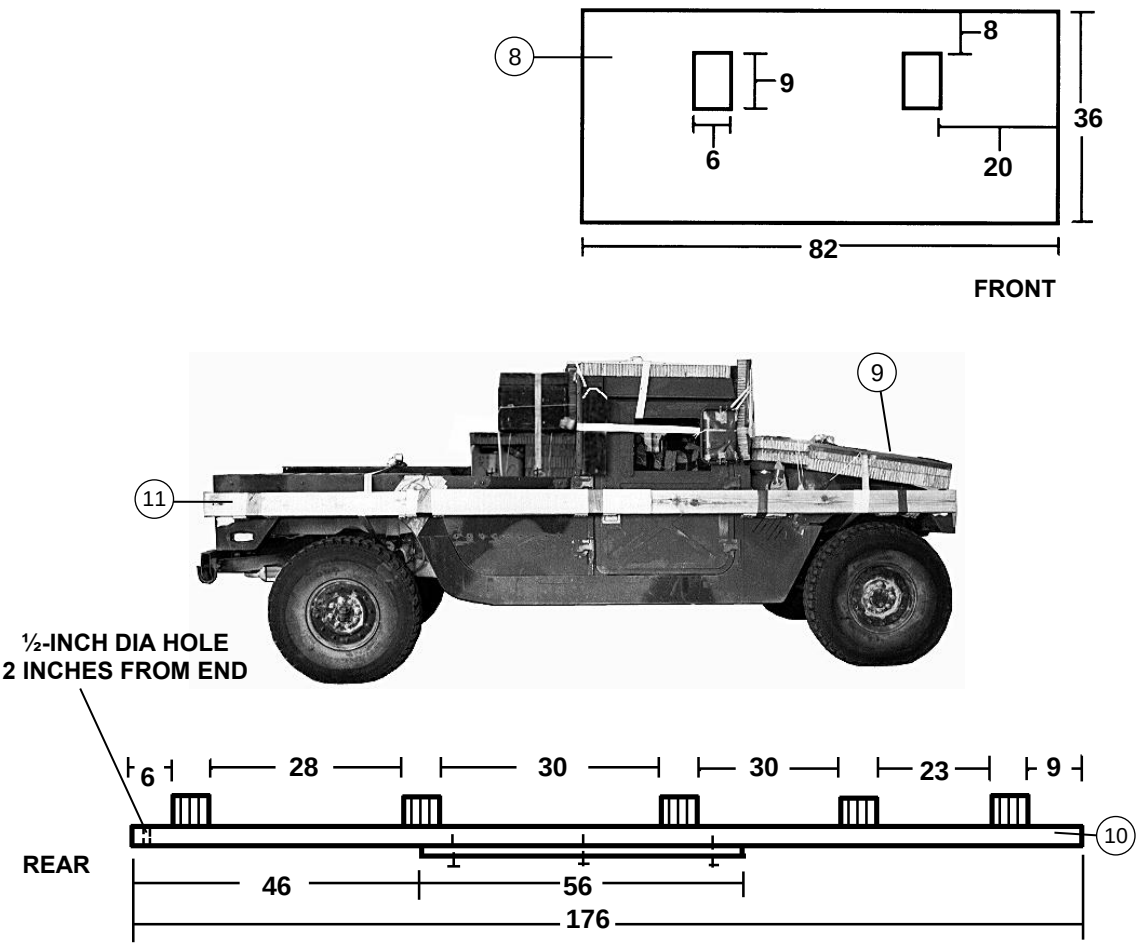
⑤ Make two spacers each of three pieces of 2- by 8- by 18-inch lumber and place a layer of 10- by 42-inch felt vertically around the spacers. Nail the lumber and felt on both sides. Place a spacer vertically behind each door window. Route a 30-foot lashing around the windshield, through the mirror brackets, over the spacers, and close the load binder behind the cab.

⑥ Tie the front of the roof protector to the mirror brackets by routing a length of ½-inch tubular nylon webbing through the ½-inch hole in the roof protector and around the mirror bracket. Tie the rear of the roof protector to the handles on the roof by routing a length of ½-inch tubular nylon webbing through the rear holes of the roof protector and around the roof handle.

⑦ Cut two 82- by 12-inch pieces of honeycomb and tape the 12-inch edges of the top layer. Tie the two pieces of honeycomb to the hood in front of the honeycomb covering the windshield with a length of type III nylon cord.

Figure 14-7. Truck Prepared (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



⑧ Make cutouts as shown above in two 82- by 36-inch pieces of honeycomb and tape the outside edges.

⑨ Tie the honeycomb over the hood with type III nylon cord. Make two ties front to rear and two ties side to side. Tape the hood latches (not shown).

⑩ Fabricate two sideboards by nailing a 2- by 6- by 56-inch piece of lumber flush with and 46 inches from the rear edge of a 2- by 6- by 176-inch piece of lumber. Glue or tape five 5 ½- by 10-inch pieces of honeycomb to the other side of the 176-inch piece, spaced as shown. Drill a ½-inch hole, centered and 2 inches from the rear of the board.

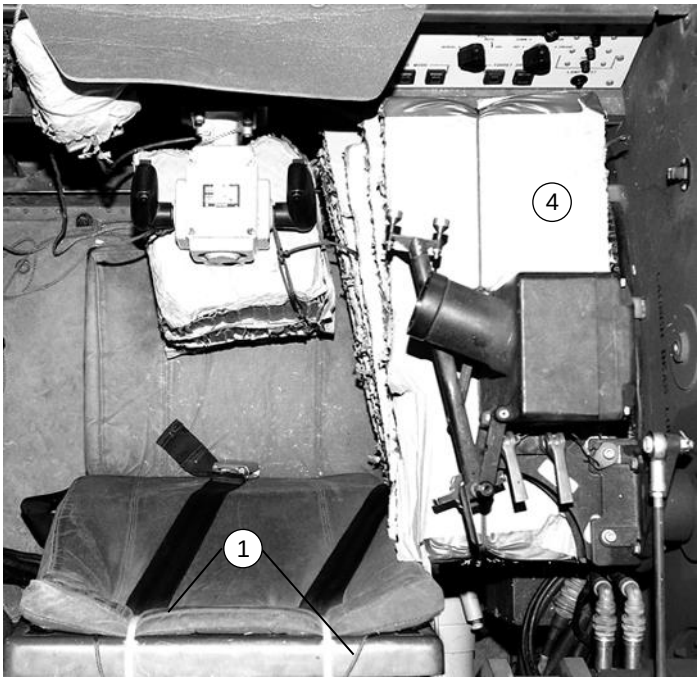
⑪ Secure the sideboards to each side of the truck as shown in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

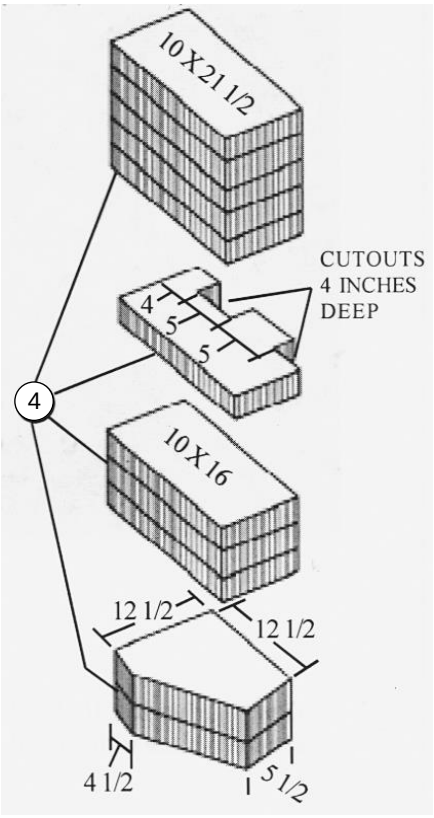
Figure 14-7. Truck Prepared (Continued)

PREPARING TURRET

14-6. Prepare the turret as shown in Figure 14-8.

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.





① Lower the seat to the lowest position and tie the seat and seat back to the seat frame with type III nylon cord.

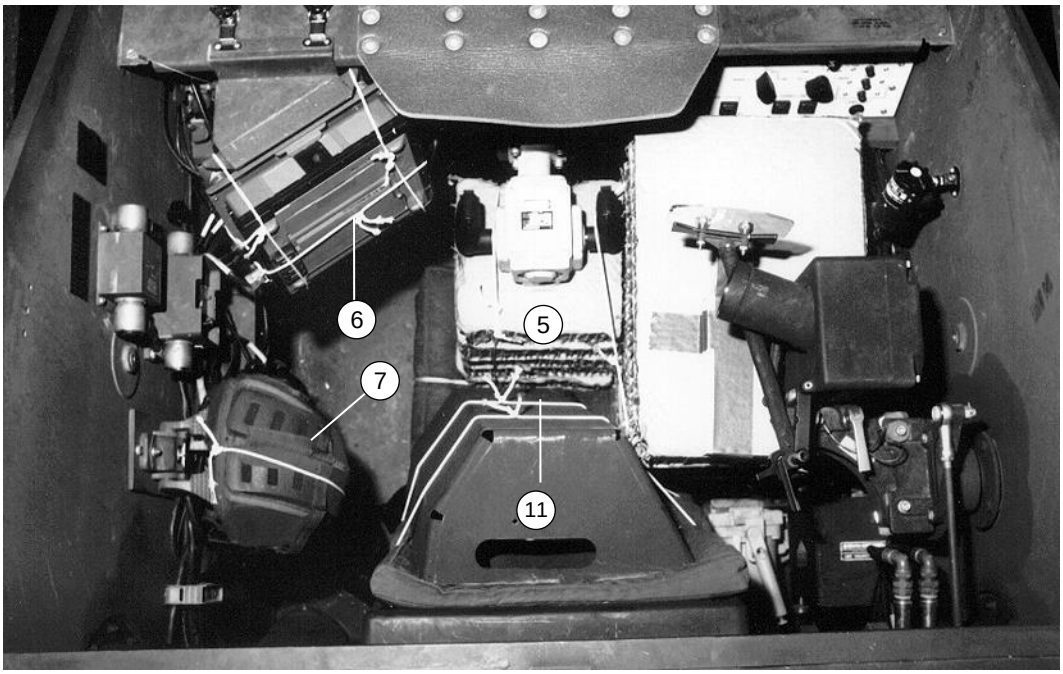
② Remove the azimuth and elevation pins and place them in the clips provided (on older, unmodified turrets) (not shown).

③ Remove the pins from the optical sight bracket and lift the sight to the side (not shown).

④ Cut two 12 ½- by 12 ½-inch pieces of honeycomb. Make a 5 ½-inch mark on one side and a 4 ½-inch mark on the next edge. Cut a diagonal line between the marks. Place the pieces on the turret floor to accommodate the seat brace. Cut three 10- by 16-inch pieces and place on top of the previously placed honeycomb. Cut a 12- by 18-inch piece of honeycomb. On the 18-inch side make a 4-inch deep by 5-inch wide cutout, 4 inches from the end. Make a second cutout, 4-inches deep by 4-inches wide, 5 inches from the first cutout. Place the layer on the honeycomb stack. Cut five 10- by 21 ½-inch pieces of honeycomb and glue together. Place these layers on the honeycomb stack. Secure the optical sights in the brackets with the pins. Secure the honeycomb stack with type III nylon cord.

Note. The stacks under the optical sights may vary in number and size due to different configurations of the turret wiring systems

Figure 14-8. Turret Prepared



⑤ Glue together five 10- by 10-inch pieces of honeycomb. Place the stack under the hand station and secure in place with type III nylon cord.

⑥ Secure the control display terminal in its bracket with type III nylon cord.

⑦ Secure the operator's headset with type III nylon cord or place and secure in the brass collection tray.

⑧ Remove the flash suppressor and the brass collection tray from the .50-caliber machine gun (not shown).

⑨ Tape the turret mounting bolts inside the brass collection tray. Pad the flash suppressor with cellulose padding and tie to the inside of the tray with type III nylon cord (not shown).

⑩ Pad the Interrogator Friendly or Foe (IFF) with cellulose padding and place in the brass collection tray. Fill the empty space with honeycomb (not shown).

⑪ Secure the brass collection tray to the seat with two lengths of type III nylon cord.

⑫ Secure all loose cables and objects with type III nylon cord (not shown).

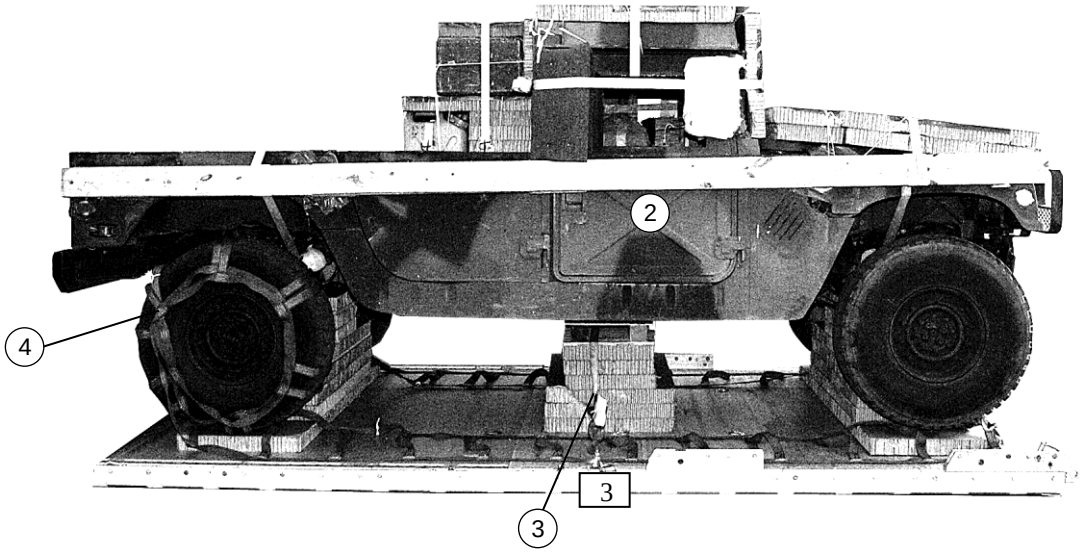
⑬ Close the canopy and install the road cover if available (not shown).

Figure 14-8. Turret Prepared (Continued)

POSITIONING TRUCK ON PLATFORM AND INSTALLING THE DRIVE OFF AID

14-7. Position the truck on the platform and install the drive off aid as shown in Figure 14-9.

Note. Vehicle may be airdropped with or without the brush guard.



① Attach a 9-foot (2-loop), type XXVI nylon webbing sling to each front airlift bracket with a medium clevis. Attach a 12-foot (2-loop), type XXVI nylon webbing sling to each lifting shackle located on the outside ends of rear bumper (not shown). Remove the lift kit after the truck is positioned on the platform.

② Position the truck on honeycomb stacks 1, 2, and 3 with the front bumper of the truck aligned with the front edge of the platform.

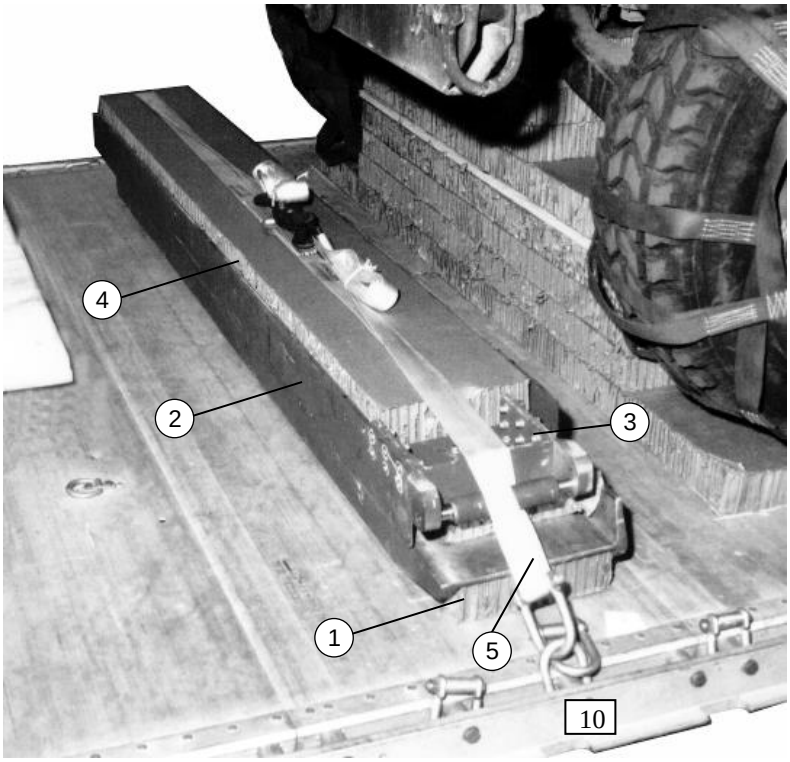
③ Route a lashing through clevis 3A, back through its own D-ring, through the center hole of stack 2, and connect the load binder to clevis 3.

④ Adapt the procedures shown in TM 4-48.17/TO 13C7-1-111 to install the drive off aid on the truck.

Figure 14-9. Truck Positioned and Drive Aid Installed

LASHING RAMPS TO PLATFORM

14-8. Lash the ramps, used for mounting the Avenger turret, to the platform as shown in Figure 14-10.



① Center an 80- by 10-inch piece of honeycomb between clevises 10 and 10A.

② Place one ramp over the honeycomb. Place a second 80- by 10-inch piece of honeycomb on top of the ramp.

③ Place the second ramp on top of the honeycomb placed in step 2 with the roller facing the opposite way from the roller of the first ramp.

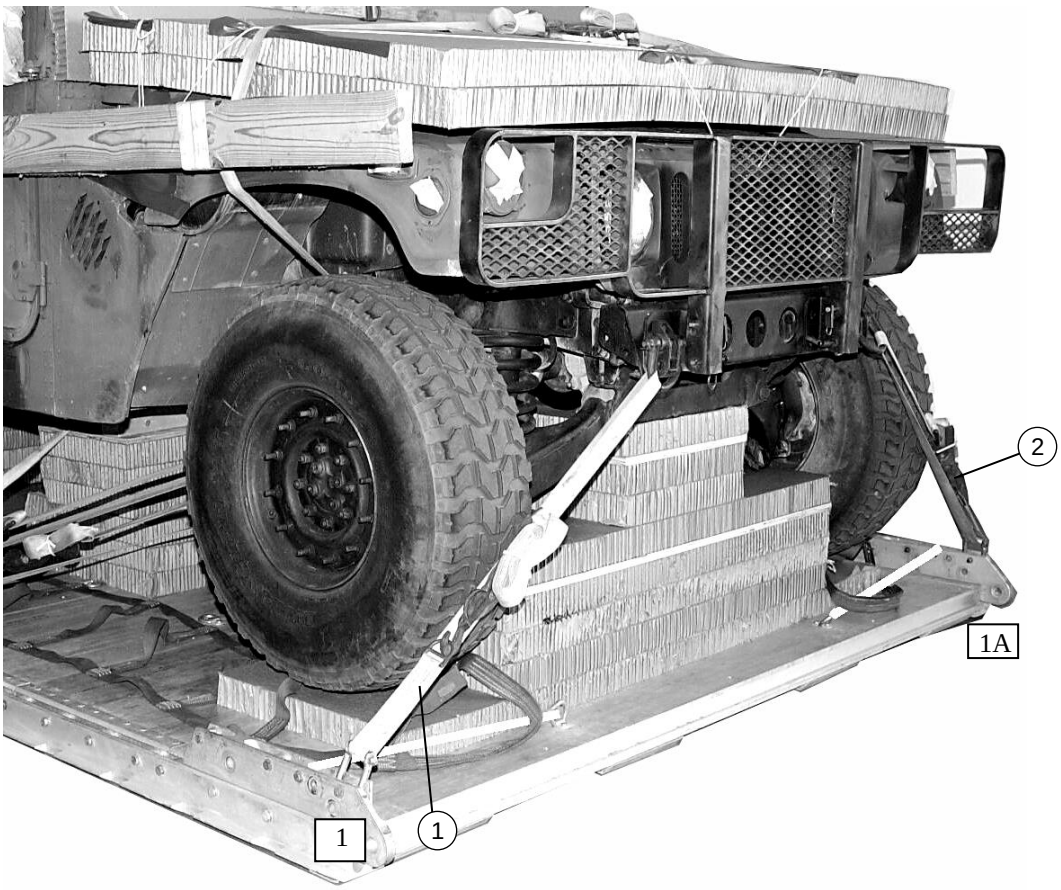
④ Place an 80- by 10-inch piece of honeycomb on top of the second ramp.

⑤ Route a 30-foot lashing through clevis 10, through the roller, over the honeycomb and ramps, through the roller on the opposite side, and through clevis 10A. Close the load binder on top of the honeycomb and ramps.

Figure 14-10. Ramps Lashed to Platform

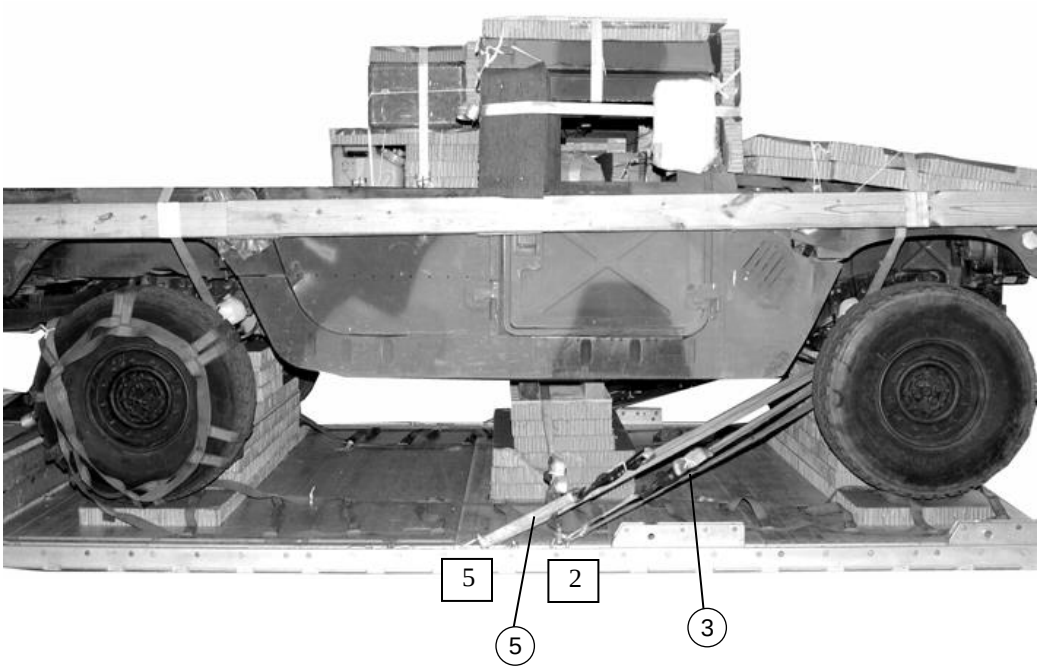
LASHING TRUCK

14-9. Lash the truck to the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and route the lashings as shown in Figure 14-11.



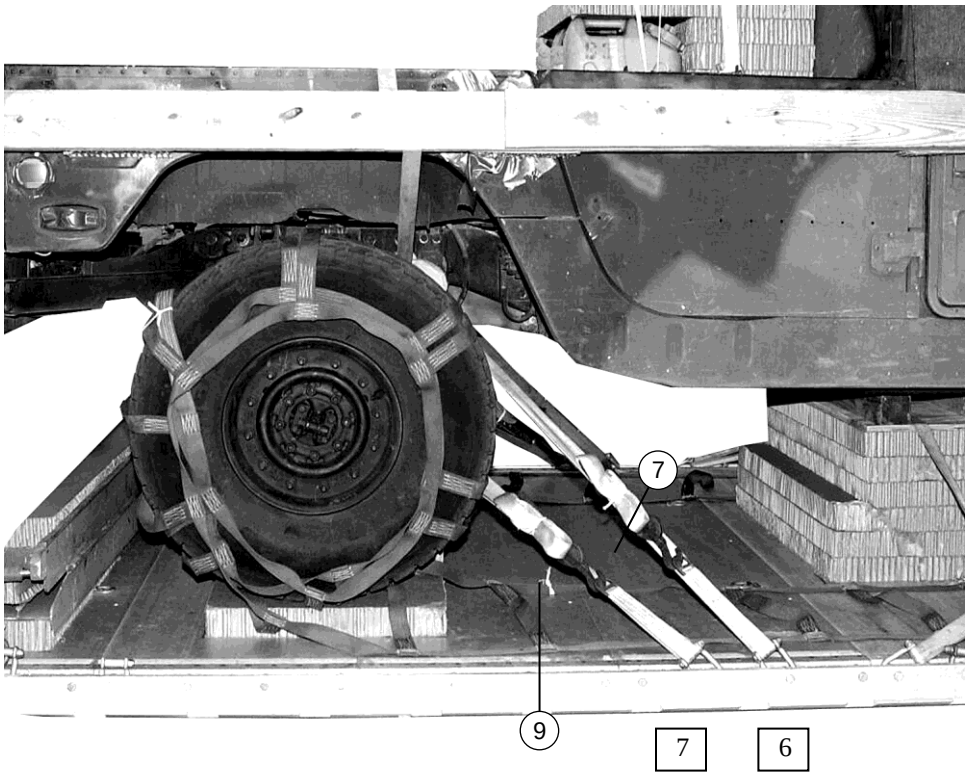
Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
1	1	Through front truck tiedown, right side.
2	1A	Through front truck tiedown, left side.

Figure 14-11. Truck Lashed to Platform



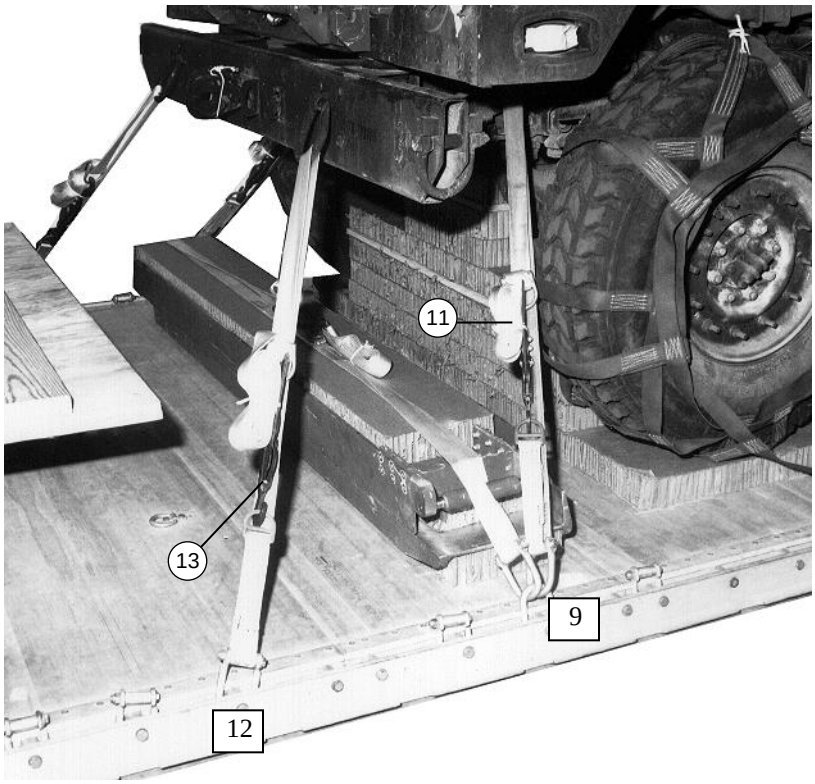
Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
3	2	Around lower front control arm, right side.
4	2A	Around lower front control arm, left side.
5	5	To tiedown bracket behind front coil spring, right side.
6	5A	To tiedown bracket behind front coil spring, left side.

Figure 14-11. Truck Lashed to Platform (Continued)



Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
7	6	Through tiedown bracket in front of rear coil spring, right side.
8	6A	Through tiedown bracket in front of rear coil spring, left side.
9	7	Around rear lower control arm, right side.
10	7A	Around rear lower control arm, left side.

Figure 14-11. Truck Lashed to Platform (Continued)



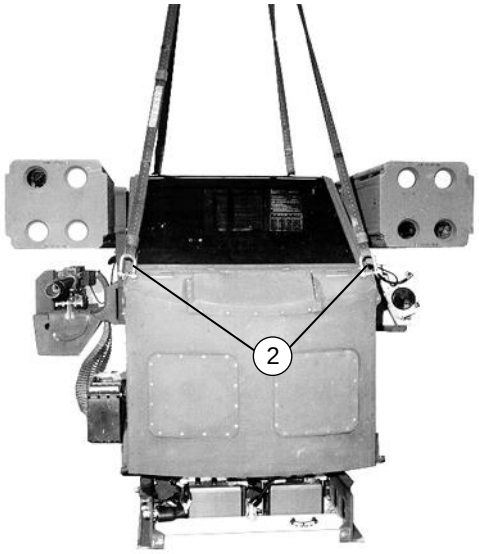
Lashing Number	*Tiedown Clevis Number*	*Instructions*
		Pass lashing:
11	9	Through tiedown bracket behind the rear coil spring, right side.
12	9A	Through tiedown bracket behind the rear coil spring, left side.
13	12	Through rear truck tiedown, right side.
14	12A	Through rear truck tiedown, left side.

Figure 14-11. Truck Lashed to Platform (Continued)

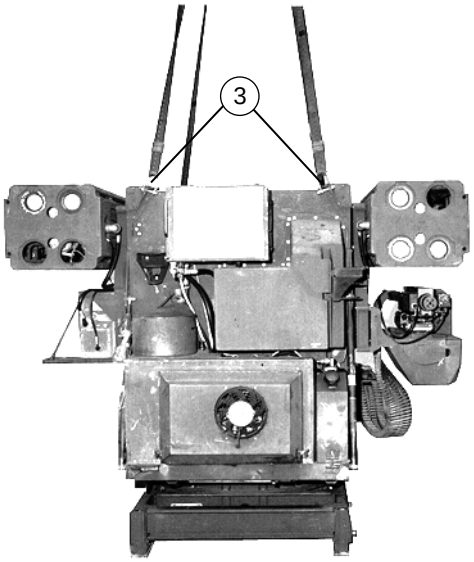
POSITIONING AND PREPARING THE TURRET ON THE PLATFORM

14-10. Position and prepare the turret on the platform as shown in Figure 14-12.

Note. The Stinger missiles or training missiles may be airdropped in the missile pods.



FRONT



REAR

Note. These photos show an unmodified turret. The modified turret is positioned.

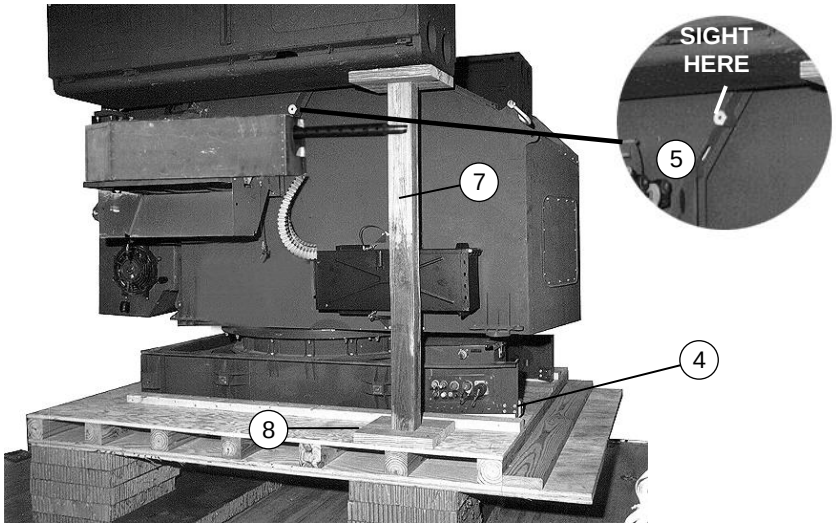
① Ensure the turret is in the locked position.

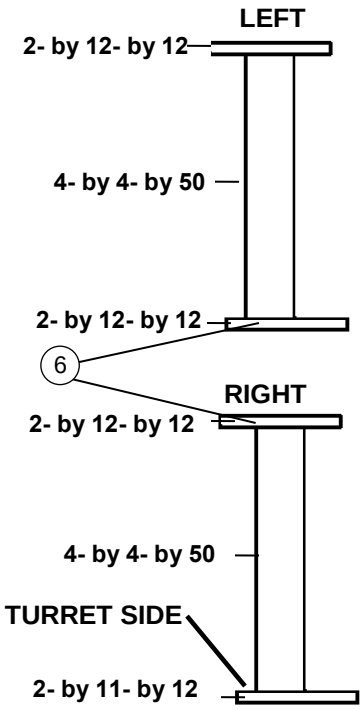
② Attach an 11-foot (2-loop), type XXVI nylon webbing sling to each front lift provision with a platform clevis.

③ Attach a 9-foot (2-loop), type XXVI, nylon webbing sling to each rear lift provision with a platform clevis.

Figure 14-12. Turret Positioned and Prepared

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.





Note.4- by 4 is offset 2 inches right from the center of the base on the right pod support.

④ Position the turret facing forward, centered and one inch from the forward edge of the strongback. Remove the lift kit and leave the platform clevises on the front lift points of the turret.

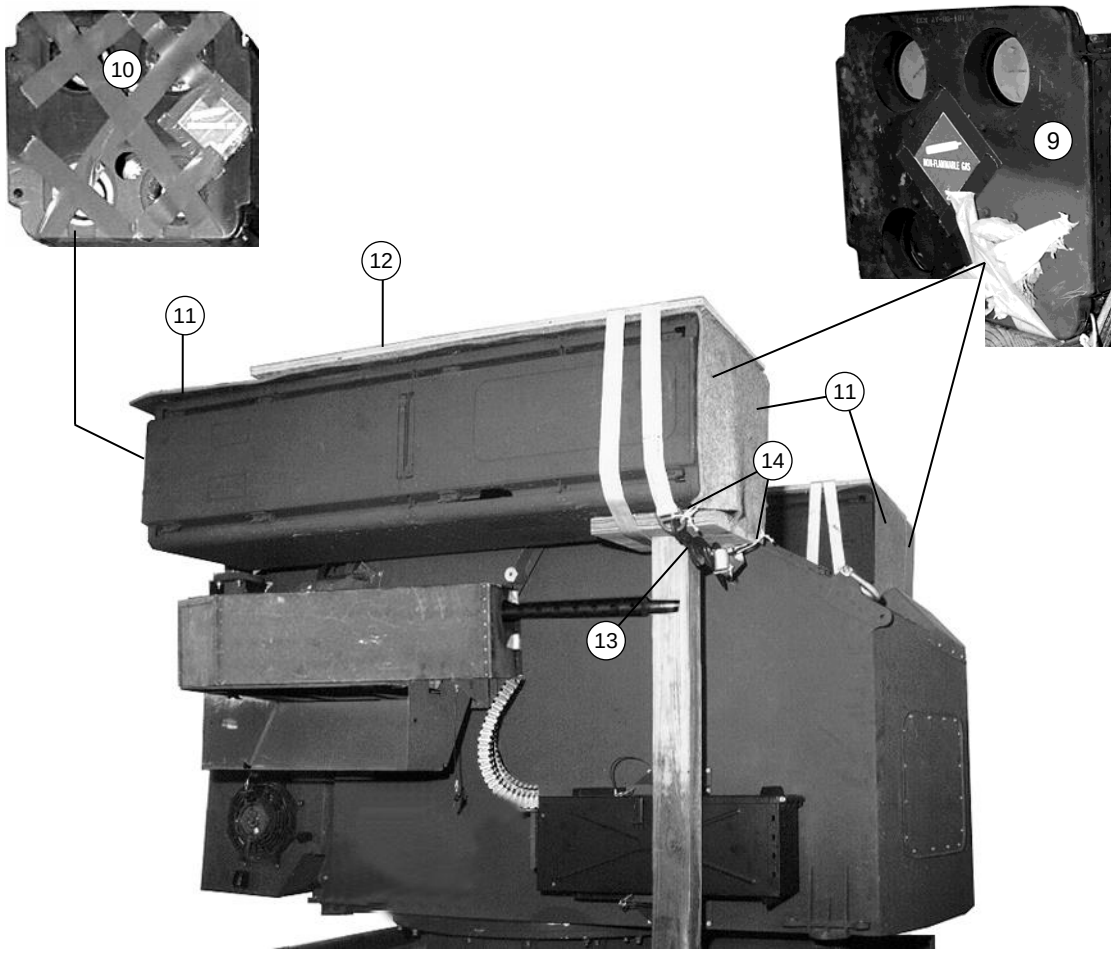
⑤ Ensure the system is at mechanical zero by sighting through the silver colored metal hole on the exterior of the turret. If the exterior hole and the interior hole are aligned you can see either the inside wall of the turret or the locking pin protruding through the two holes. Either situation achieves mechanical zero.

⑥ Build two missile pod supports as shown above.

⑦ Place a support under each missile pod. Align the front and inside edge of the support with the front and inside edge of the pod. Align the bottom outside edge of the supports with the outside edges of the strongback.

⑧ Nail the bottom of the pod supports to the load spreader. Drive a nail through each corner of the support bottoms and bend the nails under the top layer of plywood.

Figure 14-12. Turret Positioned and Prepared (Continued)



⑨ Pad the glass eye with cellulose padding and secure with adhesive tape.

⑩ Tape each hole on the rear of the pods with adhesive tape.

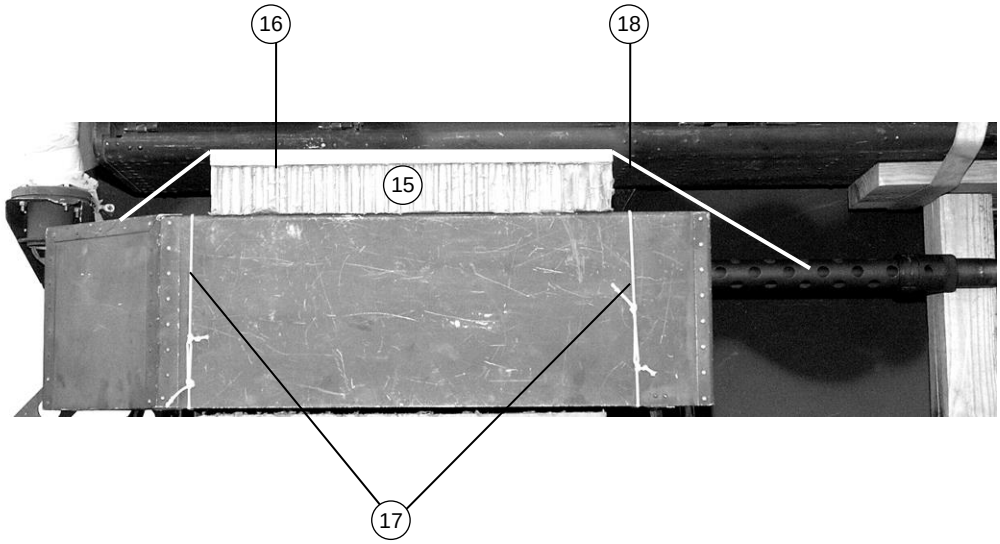
⑪ Place an 80- by 18-inch piece of ½-inch felt over each pod, extending the front edge of the ½-inch felt down to the front lower edge of the pod.

⑫ Place a ¾- by 18- by 48-inch piece of plywood over the ½-inch felt on each pod. Align the front edge of the plywood with the front edge of the pod.

⑬ Beginning at the front inside edge of each pod support, wrap a 15-foot lashing over the pod and behind the support upright. Pass the lashing over the pod and secure it so the load binder is in front of the upright and under the top piece of the support.

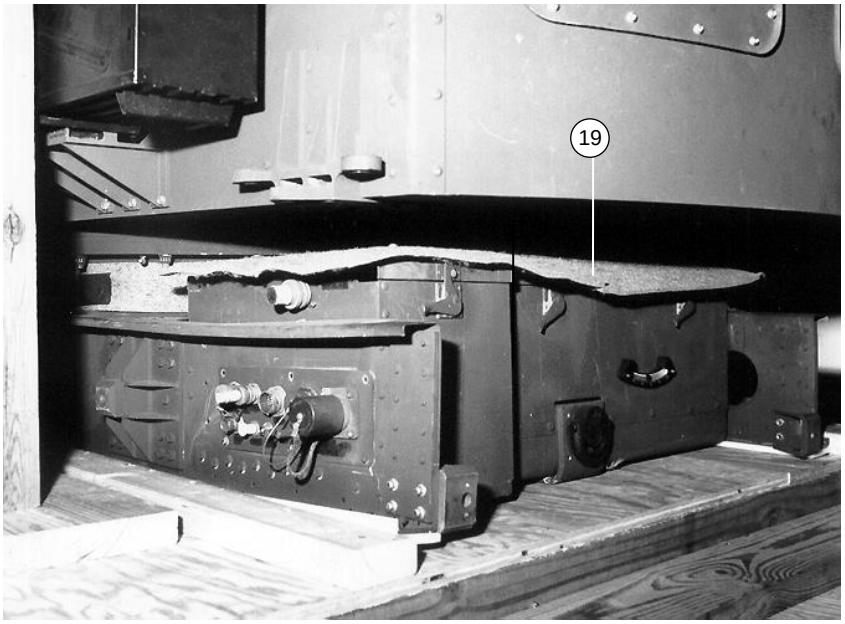
⑭ Punch a hole in each front corner of the ½-inch felt placed in step 11 above. Tie the front corners of the ½-inch felt to the D-rings on the lashings with type III nylon cord.

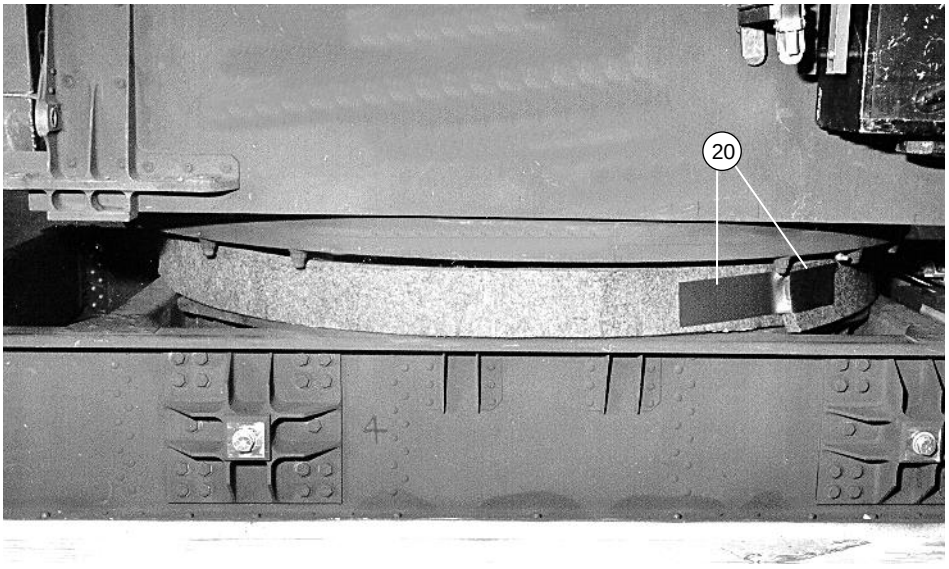
Figure 14-12. Turret Positioned and Prepared (Continued)



⑮ Center a 24- by 12-inch piece of honeycomb on top of the gun.
⑯ Place a 24- by 12- by ¾-inch piece of plywood flush on the honeycomb.
⑰ Secure the .50-caliber machine gun cover with type III nylon cord on each end.
⑱ Secure the pieces from steps 15 and 16 to the gun with type III nylon cord.

Figure 14-12. Turret Positioned and Prepared (Continued)





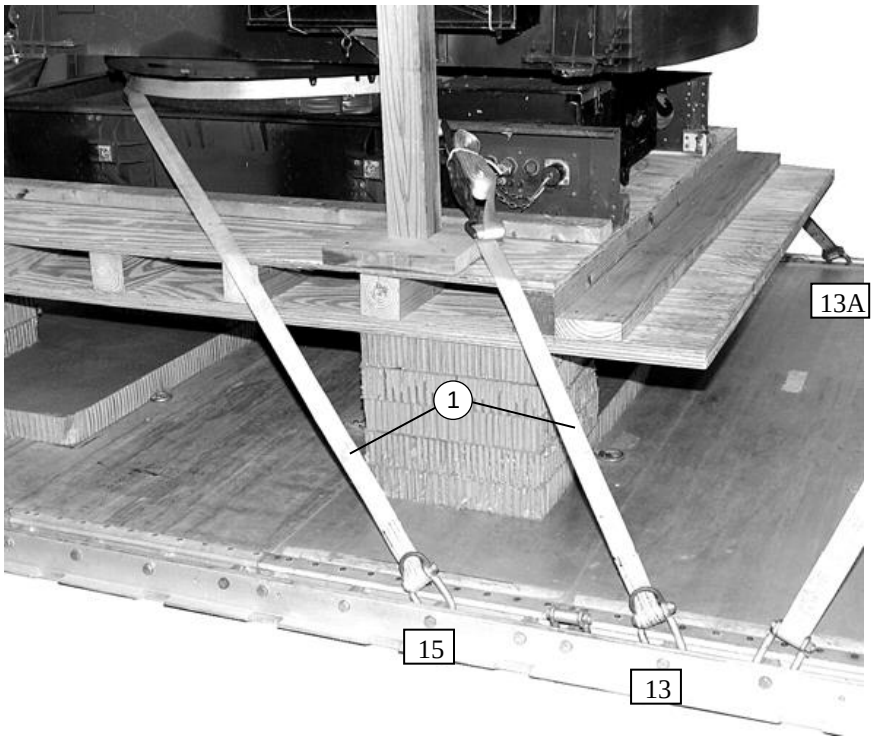
⑲ Prepare the batteries as required by AFMAN 24-204/TM 38-250. Cover the battery case with a 16- by 34-inch piece of ½-inch felt.

⑳ Pad the turret base with three 3- by 48-inch pieces of ½-inch felt. Overlap and tape the pieces in place.

Figure 14-12. Turret Positioned and Prepared (Continued)

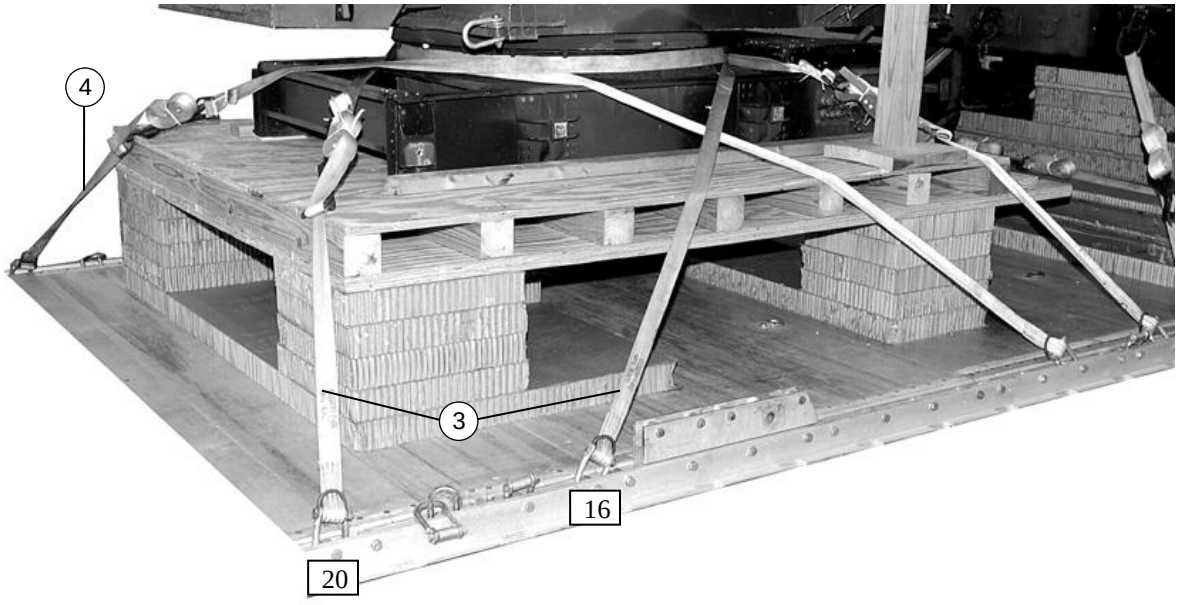
LASHING TURRET

14-11. Lash the turret to the platform according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 14-13.



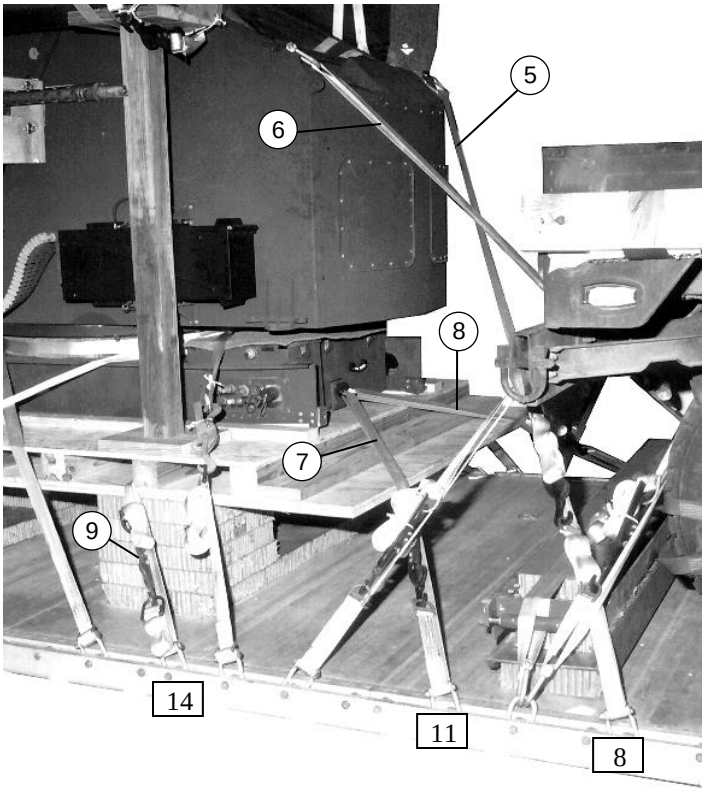
Lashing Number	*Tiedown Clevis Number*	*Instructions*
1	13 and 15	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing from clevis 15 around the padded turret base. Secure both lashings together with two D-rings and a load binder.
2	13A and 15A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing from clevis 15A around the padded turret base. Secure both lashings together with two D-rings and a load binder.

Figure 14-13. Turret Lashed



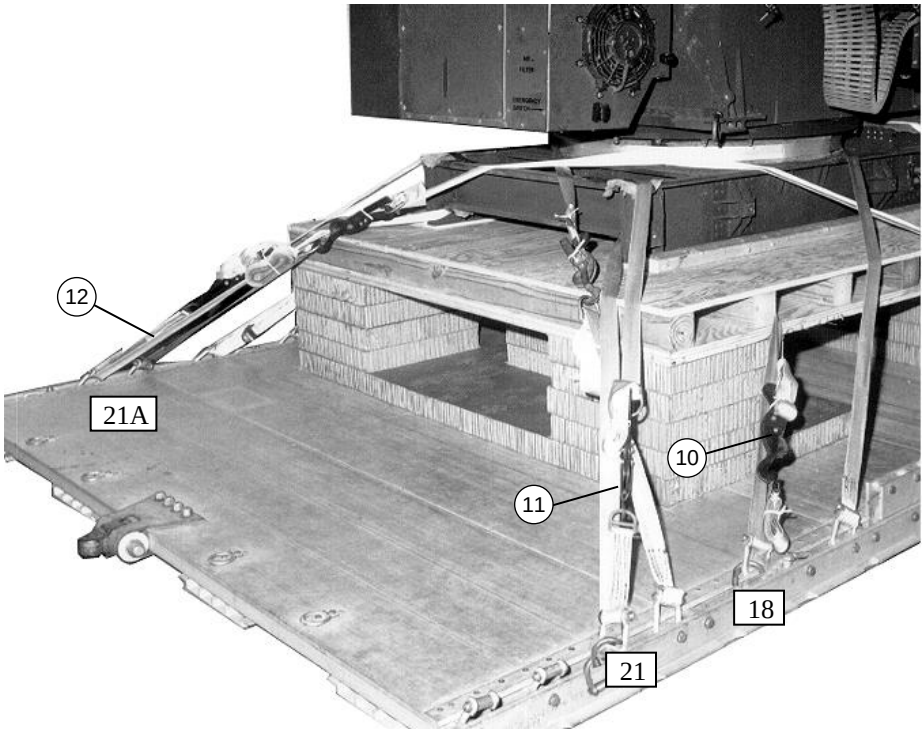
Lashing Number	*Tiedown Clevis Number*	*Instructions*
3	20 and 16	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing from clevis 16 around the padded turret base. Secure both lashings together with two D-rings and a load binder.
4	20A and 16A	Pass a 15-foot lashing through each clevis and through its own D-ring. Pass the lashing from clevis 16A around the padded turret base. Secure both lashings together with two D-rings and a load binder.

Figure 14-13. Turret Lashed (Continued)



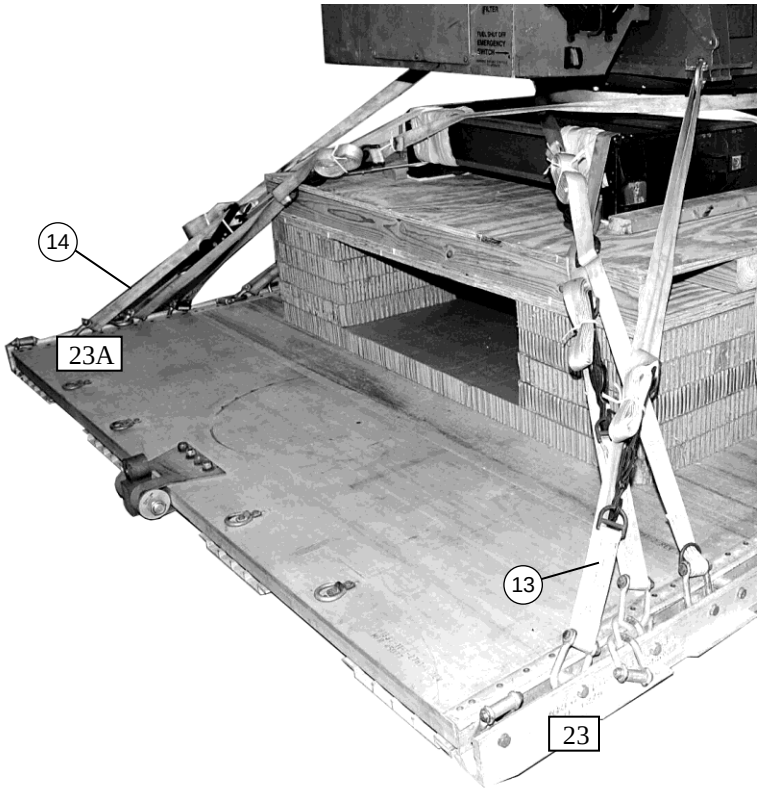
Lashing Number	*Tiedown Clevis Number*	*Instructions*
5	8	Pass a 30-foot lashing through the left front lift provision on top of the turret.
6	8A	Pass a 30-foot lashing through the right front lift provision on top of the turret.
7	11	Pass lashing through the winch clevis.
8	11A	Pass lashing through the winch clevis.
9	14 and 14A	Pass a 30-foot lashing through clevis 14, through the second hole in the strongback, through clevis 14A, and back through the second hole in the strongback. Secure both lashings together with two D-rings and a load binder.

Figure 14-13. Turret Lashed (Continued)



Lashing Number	*Tiedown Clevis Number*	*Instructions*
10	18 and 18A	Pass a 30-foot lashing through clevis 18, through the fifth hole in the strongback, through clevis 18A, and back through the fifth hole in the strongback. Secure both lashings together with two D-rings and a load binder.
11	21	Pass lashing around crossbeam on turret base, right side.
12	21A	Pass lashing around crossbeam on turret base, left side.

Figure 14-13. Turret Lashed (Continued)



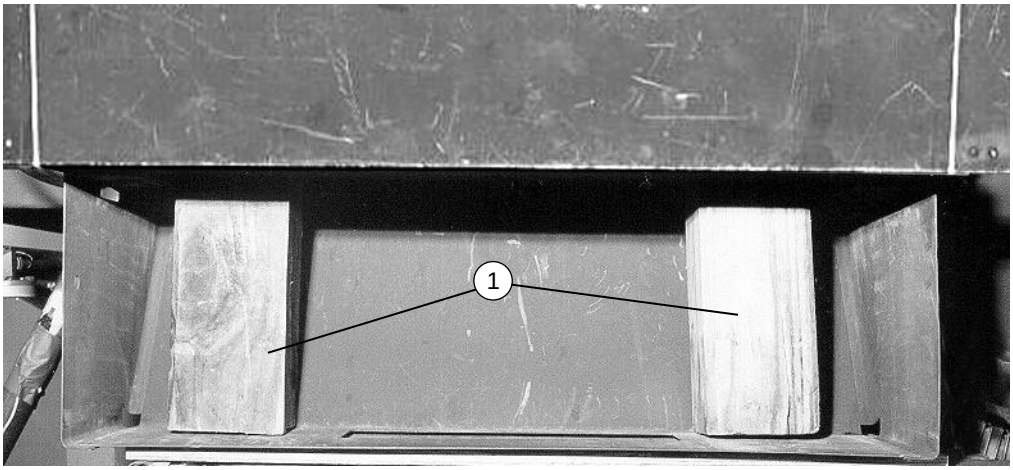
Note. When rigging the Avenger without an ECU, install the platform clevises in the rear lifting points location on the top right and left sides of the turret. Lashings 13 and 14 are 30-foot lashings and are routed through the platform clevises previously installed.

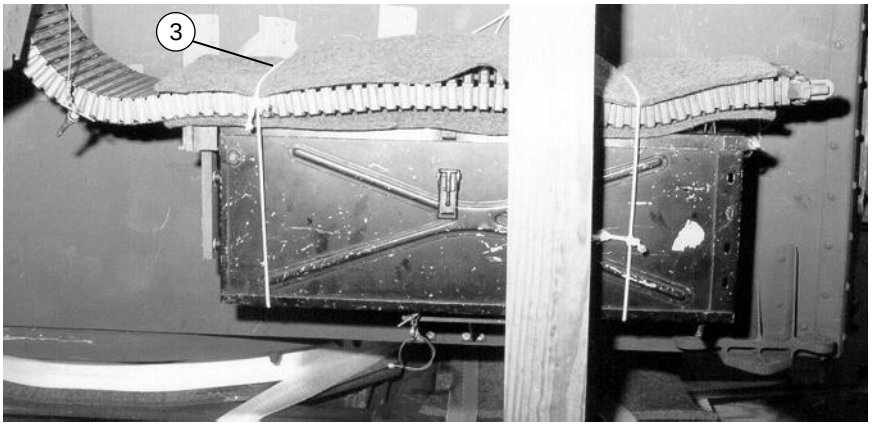
Lashing Number	*Tiedown Clevis Number*	*Instructions*
13	23	Attach a platform clevis to the lower right rear mounting hole. Pass a lashing through the tiedown clevis.
14	23A	Attach a platform clevis to the lower left rear mounting hole. Pass a lashing through the tiedown clevis.

Figure 14-13. Turret Lashed (Continued)

INSTALLING SUPPORTS FOR GUNS, LASER RANGE FINDER, AND ENVIRONMENTAL CONTROL UNIT

14-12. Install the honeycomb supports for the gun as shown in Figure 14-14. Install the support for the environmental control unit as shown in Figure 14-16. Install the honeycomb supports for the laser range finder (LRF) as shown in Figure 14-15. Install the support for the unmodified environmental control unit as shown in Figure 14-17.





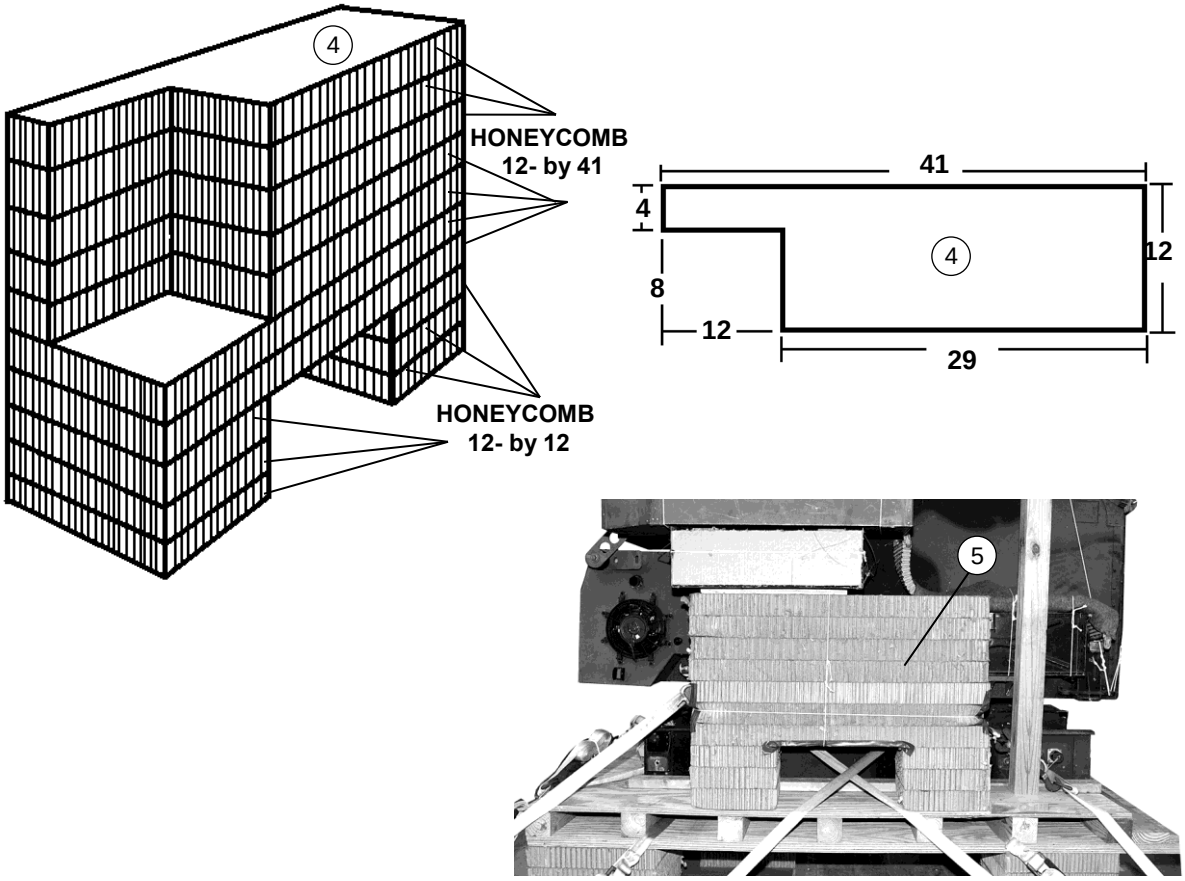
① Place two 8 ½-inch pieces of 4- by 4-inch lumber vertically in the brass collection tray bracket.

② Place a 7- by 25-inch piece of honeycomb in the brass collection tray, against the lumber placed in step 1, and secure it in place with type III nylon cord (not shown).

③ Disconnect the ammunition feed chute from the gun and the ammunition box. Pad the chute on both sides with ½-inch felt, and tie it to the top of the box with type III nylon cord.

Figure 14-14. Gun Supported

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.

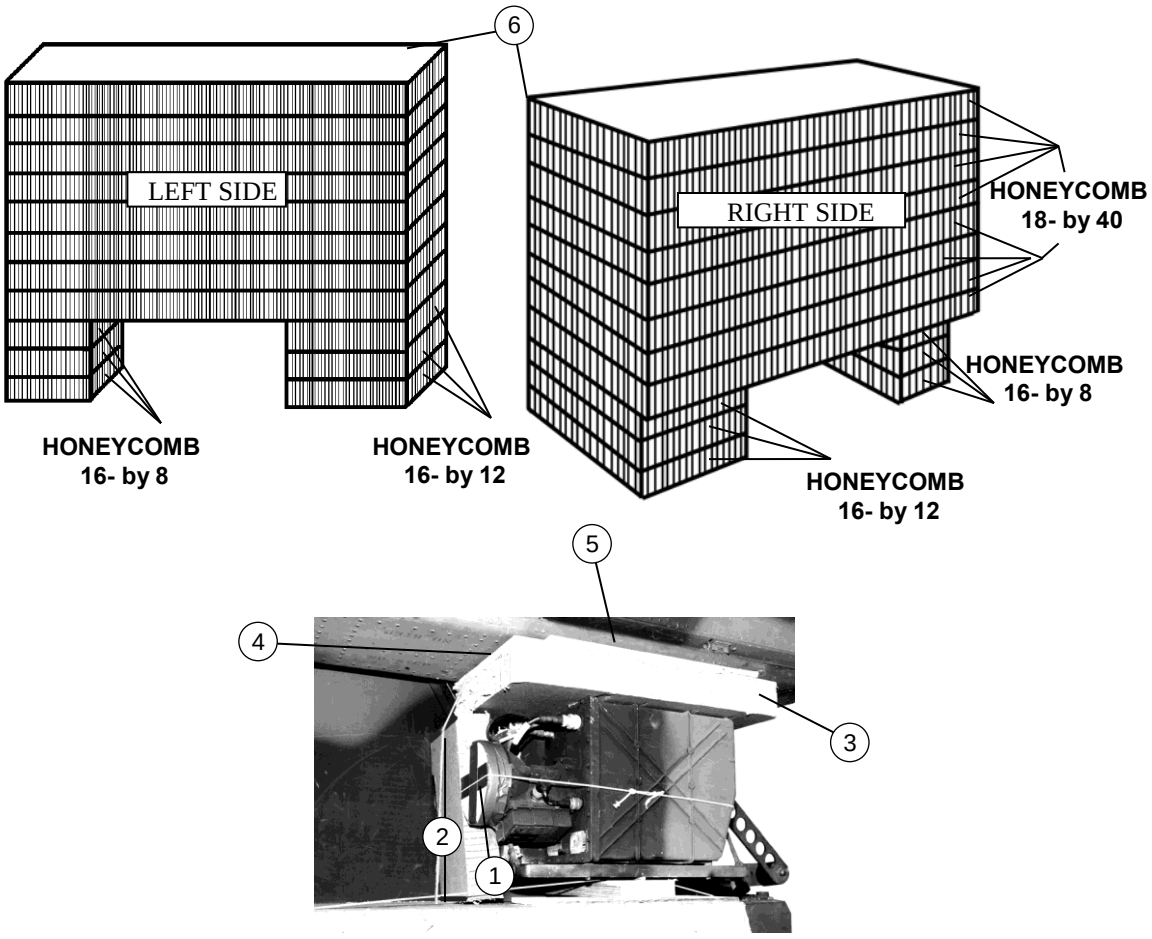


④ Build the gun support stack as shown.

⑤ Place the honeycomb stack under the gun, with the cutout area flush against the ammunition box. Place a 20- by 10- by ¾-inch piece of plywood between the support stack and the gun. Tie the stack to convenient points with type III nylon cord. Tape the honeycomb where the type III nylon cord contacts the edges to prevent cutting.

Figure 14-14. Gun Support (Continued)

Notes. 1. This drawing is not to scale.
2. All dimensions are in inches.



① Cover the Laser Range Finder (LRF) lens with the lens cap or cellulose padding and tape.

② Tape the edges of an 11- by 16-inch piece of honeycomb and place between the turret and the Laser Range Finder.

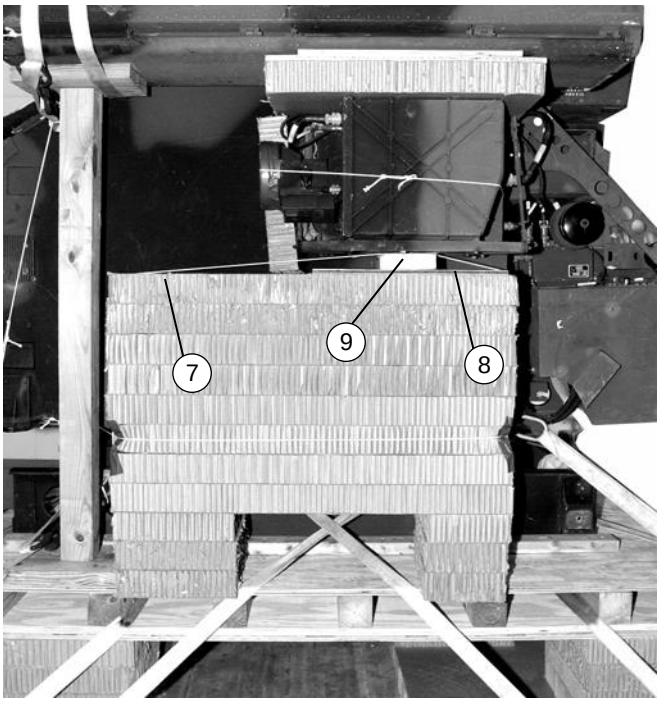
③ Place a 16- by 26-inch piece of honeycomb on top of the Laser Range Finder.

④ Place a 16- by 26- by ½-inch piece of plywood on top of the honeycomb in step 3.

⑤ Center and align the outside edges of an 8- by 21- by ½-inch piece of plywood over the plywood placed in step 4. Secure the honeycomb and plywood placed above with type III nylon cord.

⑥ Build the Laser Range Finder support stack as shown.

Figure 14-15. LRF Supported



⑦ Place the laser range finder (LRF) support stack under the Laser Range Finder with the notched portion toward the turret.

⑧ Center an 8- by 19- by ½-inch piece of plywood under the Laser Range Finder. Align the outside edge with the Laser Range Finder bracket.

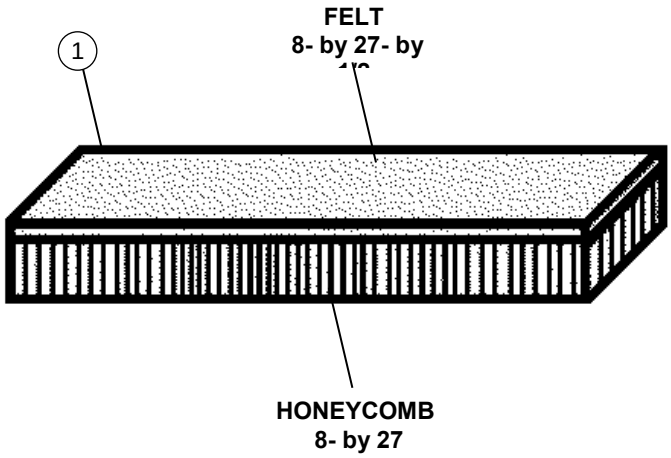
⑨ Center a 16-inch piece of 2- by 6-inch lumber between the plywood placed in step 8 and Laser Range Finder bracket. If the plywood and lumber do not fit snugly, shim with ¼-inch plywood.

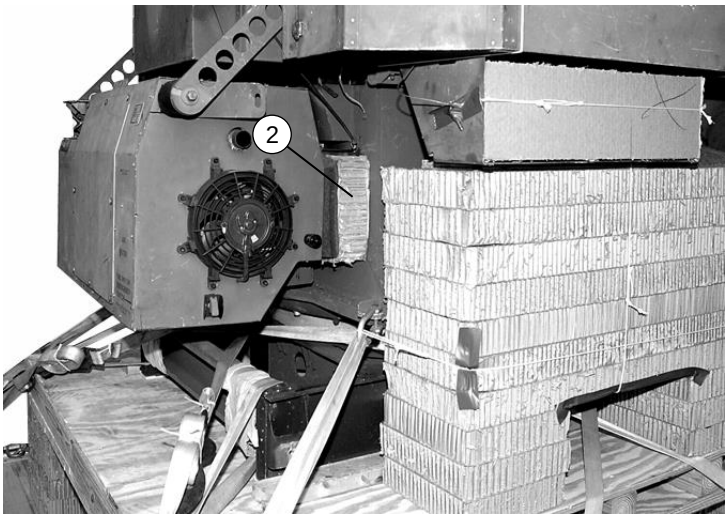
Figure 14-15. LRF Supported (Continued)

Notes. 1. When rigging the Avenger without the modified Environmental Control Unit, omit pages 14-41 and 14-42.

2. All dimensions are in inches.

3. This drawing is not to scale.



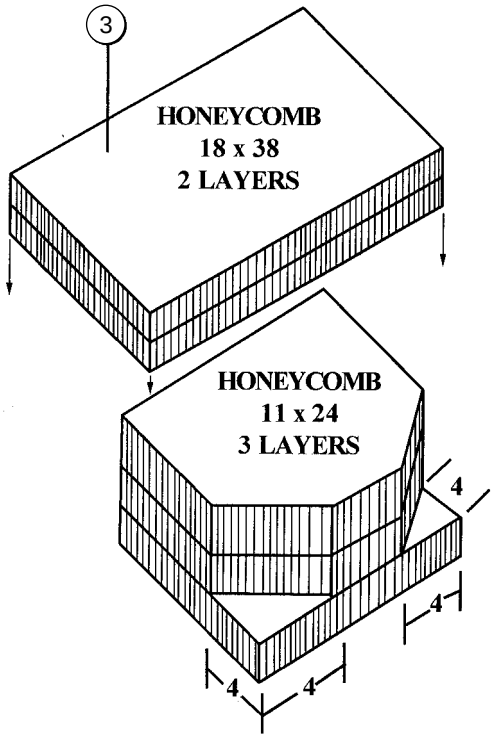


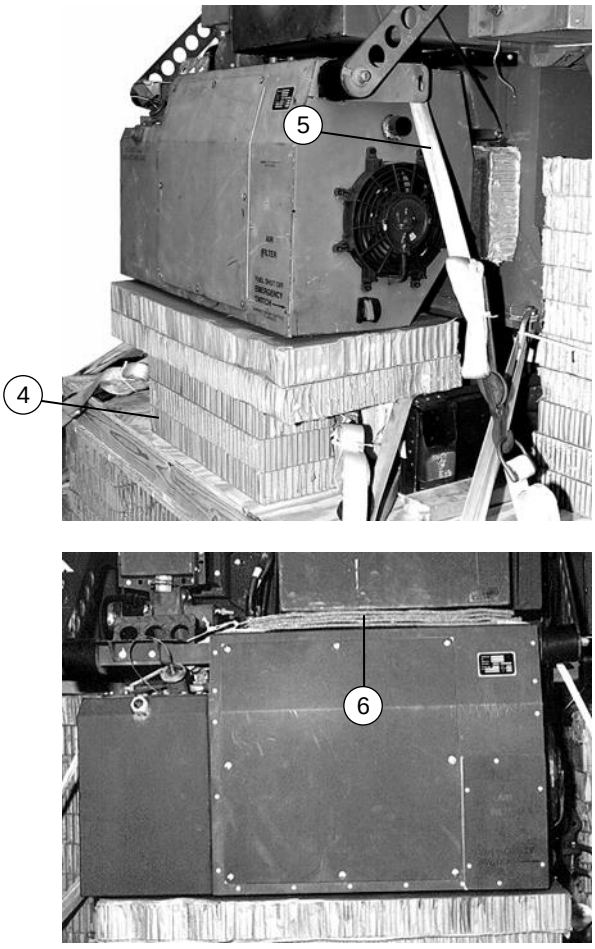
① Build the honeycomb and felt stack as shown. Glue pieces together as required.

② Place the stack assembled in step one between the Environmental Control Unit and the turret base. Place the felt side against the Environmental Control Unit.

Figure 14-16. Modified ECU Supported

Notes. 1. All dimensions are in inches.
2. This drawing is not to scale.





③ Build the Environmental Control Unit support stack as shown. Center and glue the top two layers of honeycomb on top of the bottom three layers.

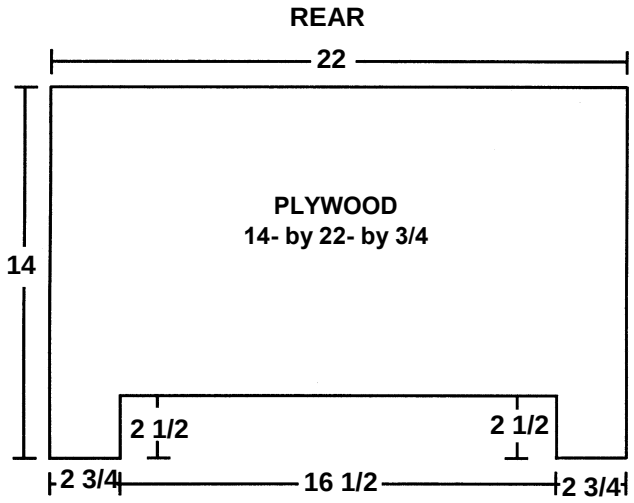
④ Place the Environmental Control Unit support stack under the Environmental Control Unit aligning the rear of the stack with the rear of the strongback.

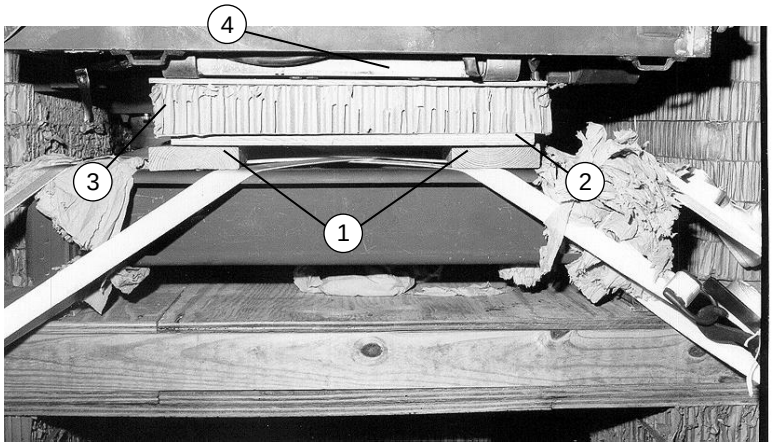
⑤ Route a 30-foot lashing through the sixth hole of the strongback and over the Environmental Control Unit.

⑥ Place pieces of 16- by 24- by ½-inch felt to fill the area between the primary power unit (PPU) and Environmental Control Unit.

Figure 14-16. Modified ECU Supported (Continued)

Notes. 1. When rigging the Avenger without the modified ECU, use these procedures.
2. All dimensions are in inches.
3. This drawing is not to scale.





① Place two 12-inch pieces of 2- by 6-inch lumber 13 inches apart on the turret base under the ECU.

② Center a piece of ¾-inch plywood cut as shown above over the lumber, with the cutout facing the front.

③ Center a 10- by 24-inch piece of honeycomb over the plywood.

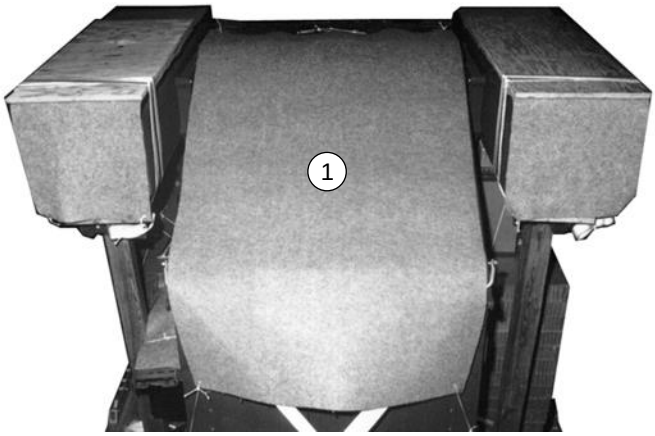
④ Fit a 10- by 24-inch piece of ¼-inch plywood in the remaining space. Be sure the fit of these pieces is snug. If not, wedge another piece of ¼-inch plywood in the space.

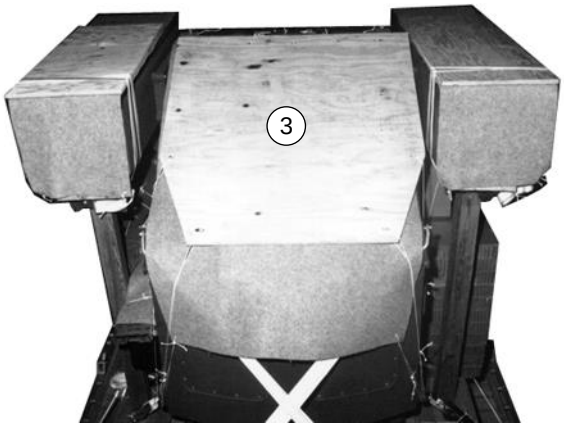
Figure 14-17. Unmodified ECU Supported

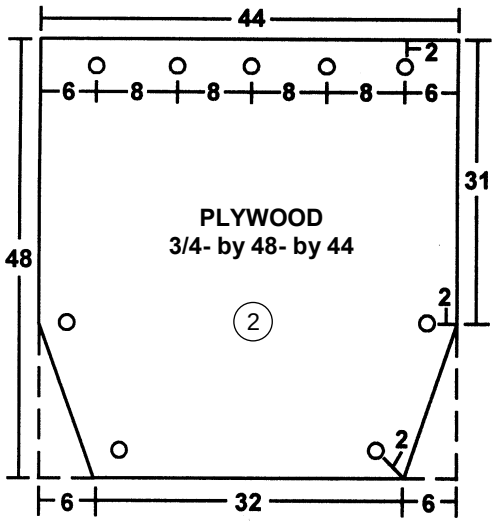
COVERING TURRET COMPANY

14-13. Install the canopy protection board and the load cover as shown in Figure 14-18.

Notes. 1. All holes are ½-inch.
2. All dimensions are in inches.
3. This drawing is not to scale.





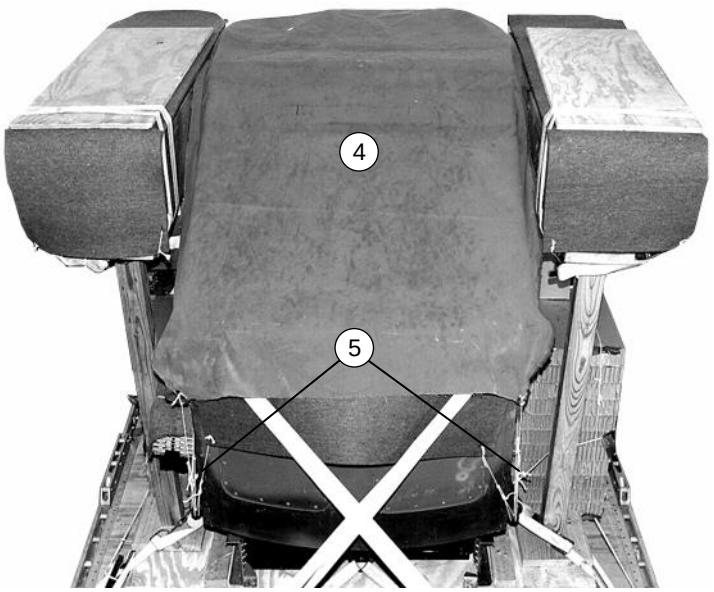


① Place a ½- by 43- by 72-inch piece of ½-inch felt over the canopy with the front edge of the ½-inch felt over hanging the front edge of the turret 16 inches. Punch holes in the corners of the ½-inch felt and secure it to convenient points with type III nylon cord.

② Make the canopy protection board with ¾-inch plywood as shown.

③ Place the protection board over the ½-inch felt as shown. Ensure the front edge covers the Interrogator Friendly or Foe (IFF) antenna. Secure the protection board to convenient points with type III nylon cord.

Figure 14-18. Canopy Protected



FRONT

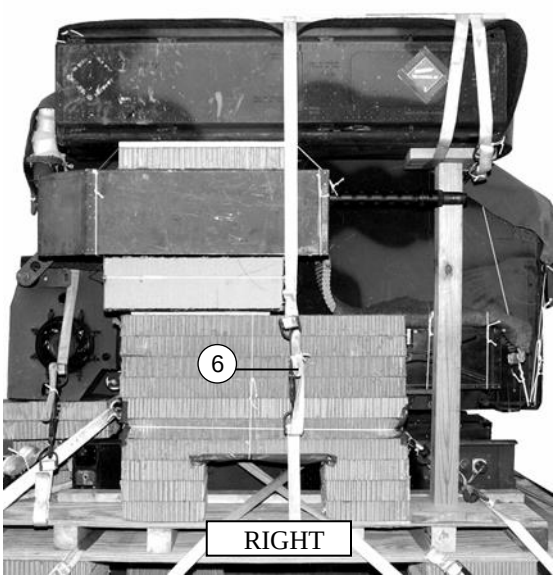


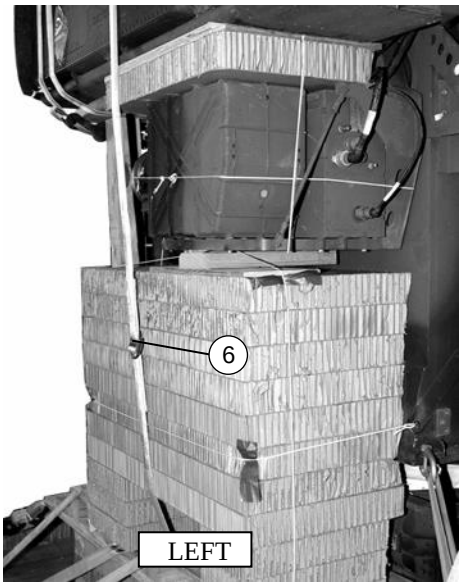
REAR

④ Place a load cover 58 inches wide and 165 inches long over the turret.

⑤ Tie the cover to convenient points on the load with type III nylon cord.

Figure 14-18. Canopy Protected (Continued)



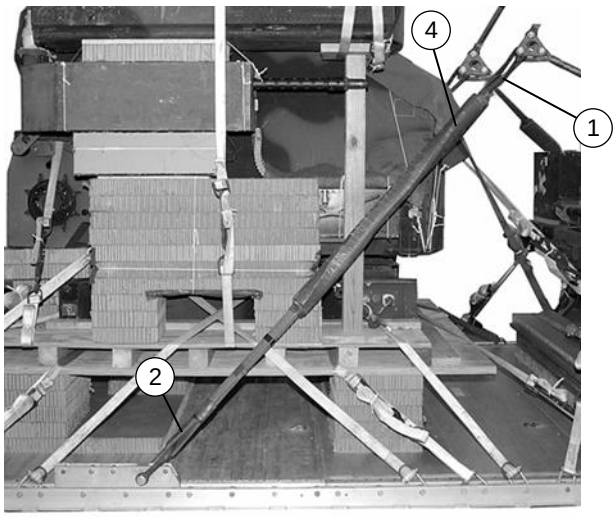


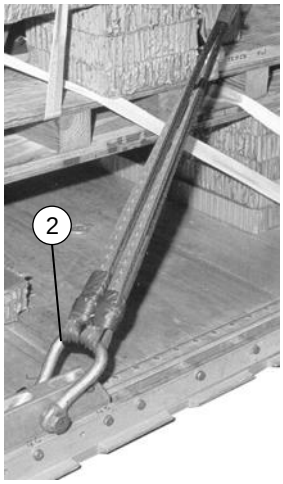
⑥ Pass a 30-foot lashing through the third hole in the strongback and over the top of the turret. Ensure the D-rings and load binder are positioned on the honeycomb support stack and not against metal.

Figure 14-18. Canopy Protected (Continued)

SUSPENSION SLINGS, DEADMAN'S TIE, AND SUSPENSION SLING SAFETY TIES INSTALLED

14-14. Install and safety the suspension slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 14-19.





① Pass a 16-foot (4-loop), type XXVI nylon webbing sling around one point of a 3-point link.

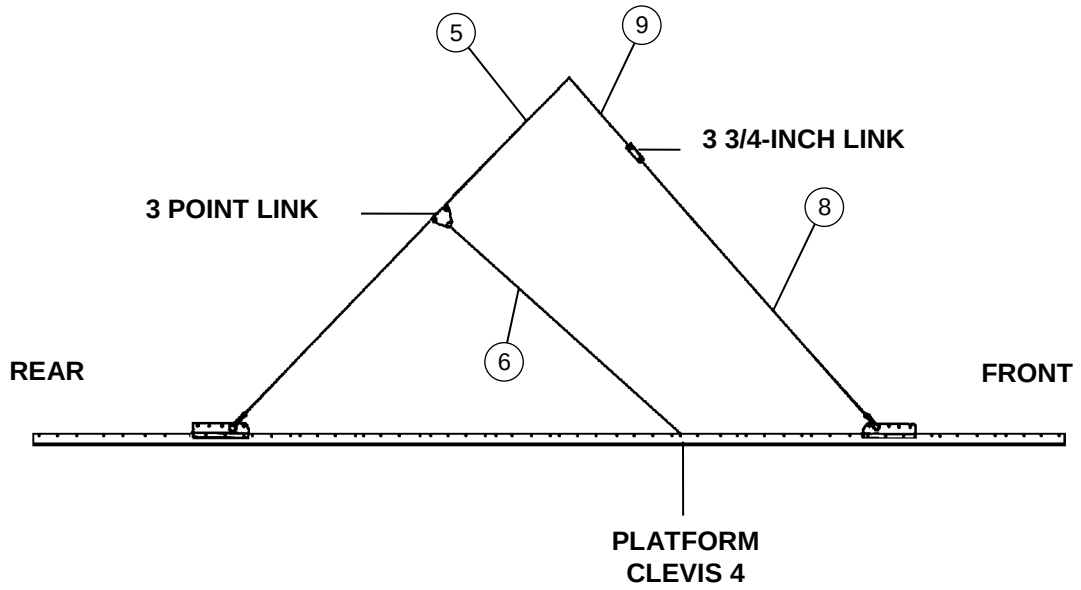
② Place both ends of the sling on the bell portion of a large suspension clevis. Bolt the clevis on the right rear suspension link.

③ Repeat steps 1 and 2 on the left side.

④ Pad the rear suspension slings from 30 inches above the clevises to 90 inches above the clevises with ½-inch felt. Tape the ½-inch felt in place.

Figure 14-19. Suspension Slings Installed and Safetied

Notes. 1. All dimensions are in inches.
……..2. This drawing is not to scale.



⑤ Attach a 9-foot (4-loop), type XXVI nylon webbing sling to the top point of each 3-point link.

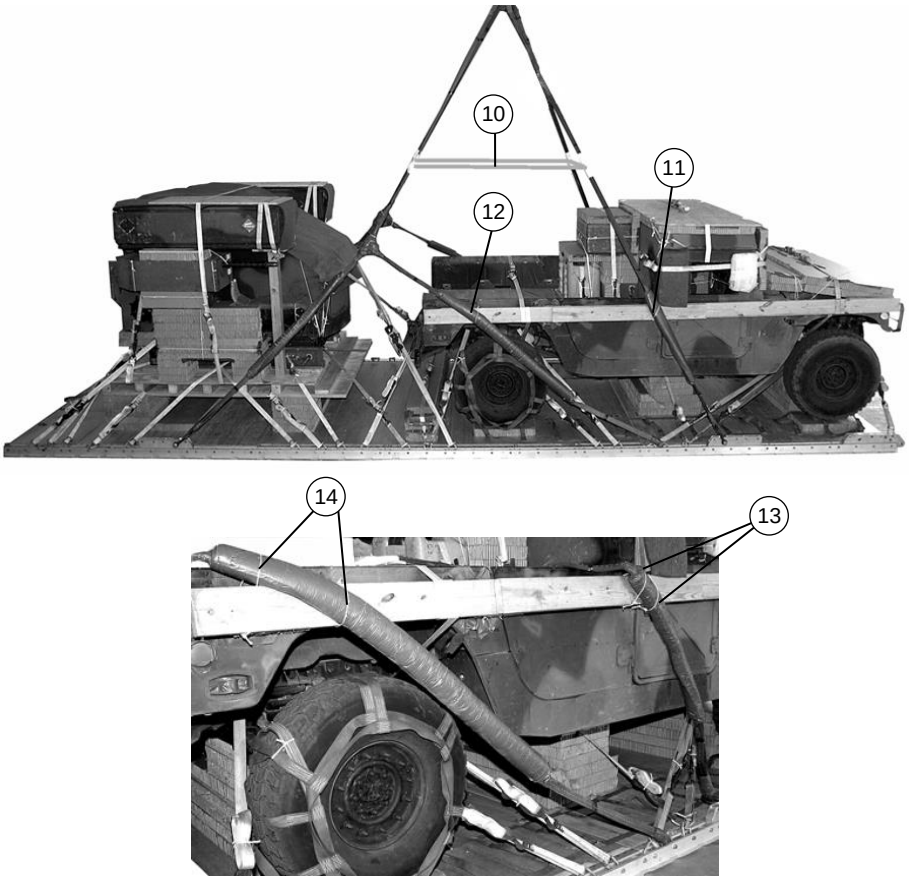
⑥ Attach an 11-foot (4-loop), type XXVI nylon webbing sling to the third point (inside point) of the 3-point link. Attach the other end of the sling to platform clevis 4.

⑦ Repeat the procedures in step 6 on the left side and attach the sling to platform clevis 4A.

⑧ Attach a 3-foot (4-loop), type XXVI nylon webbing sling to each front suspension link with a large suspension clevis. Attach the other end of the 3-foot slings to a 3 ¾-inch link.

⑨ Attach a 12-foot (4-loop), type XXVI nylon webbing sling to the other end of the 3 ¾-inch link installed in step 8.

Figure 14-19. Suspension Slings Installed and Safetied (Continued)



⑩ Raise the suspension slings and install the deadman's tie to the front and rear slings according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

⑪ Pad the front suspension slings from a point 32 inches above the suspension clevises to a point 96 inches above the platform clevises with ½-inch felt. Tape the ½-inch felt in place.

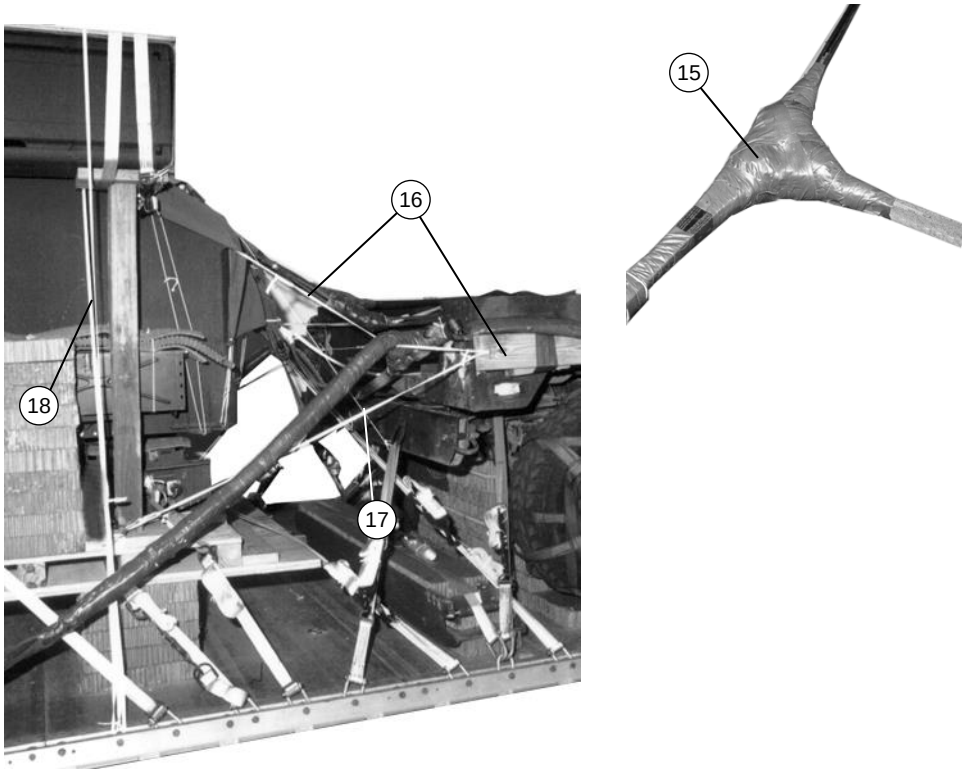
⑫ Pad the center suspension slings from a point 60 inches above the platform clevises to a point 108 inches above the platform clevises with ½-inch felt. Tape the ½-inch felt in place.

⑬ Tie the front suspension slings to the sideboards on the truck with type III nylon cord.

⑭ Tie the center suspension slings to the sideboards on the truck with type III nylon cord.

Figure 14-19. Suspension Slings Installed and Safetied (Continued)

Note. The ½-inch tubular nylon webbing ties in steps 16, 17, and 18 must be routed under all the suspension slings. These ties serve as guides for the suspension slings.



⑮ Pad the 3-point link with cellulose wadding and tape.

⑯ Route a length of ½-inch tubular nylon webbing from the ½-inch hole in the end of the right sideboard on the truck to the right, top, front lift provision. Repeat the procedure on the left side using the ½-inch hole in the left rear sideboard and the left, top, front lift provision.

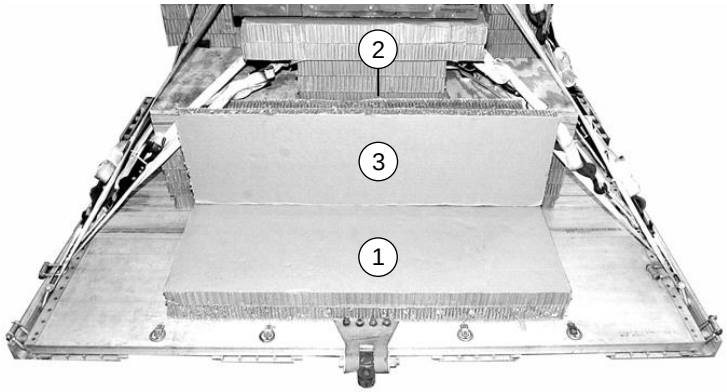
⑰ Route of length of ½-inch tubular nylon webbing from the ½-inch hole in the end of the right sideboard on the truck to the D-ring of the lashing going through the second hole in the strongback. Repeat the procedure on the left side using the ½-inch hole in the left rear sideboard and the D-ring of the lashing going through the second hole in its strongback.

⑱ Route a length of ½-inch tubular nylon webbing from bushing 39, around the right weapon pod, and secure the webbing to bushing 39. Repeat the procedure on the left side using bushing 39A.

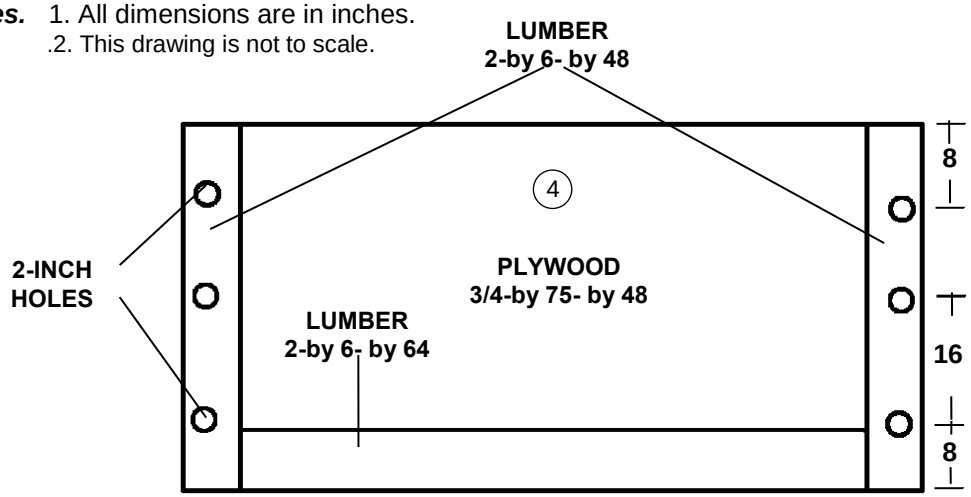
Figure 14-19. Suspension Slings Installed and Safetied (Continued)

STOWING CARGO PARACHUTES

14-15. Stow three G-11 cargo parachutes on this load. Build and install the parachute stowage platform as shown in Figure 14-20. Install the parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 14-21.



Notes. 1. All dimensions are in inches.
.2. This drawing is not to scale.



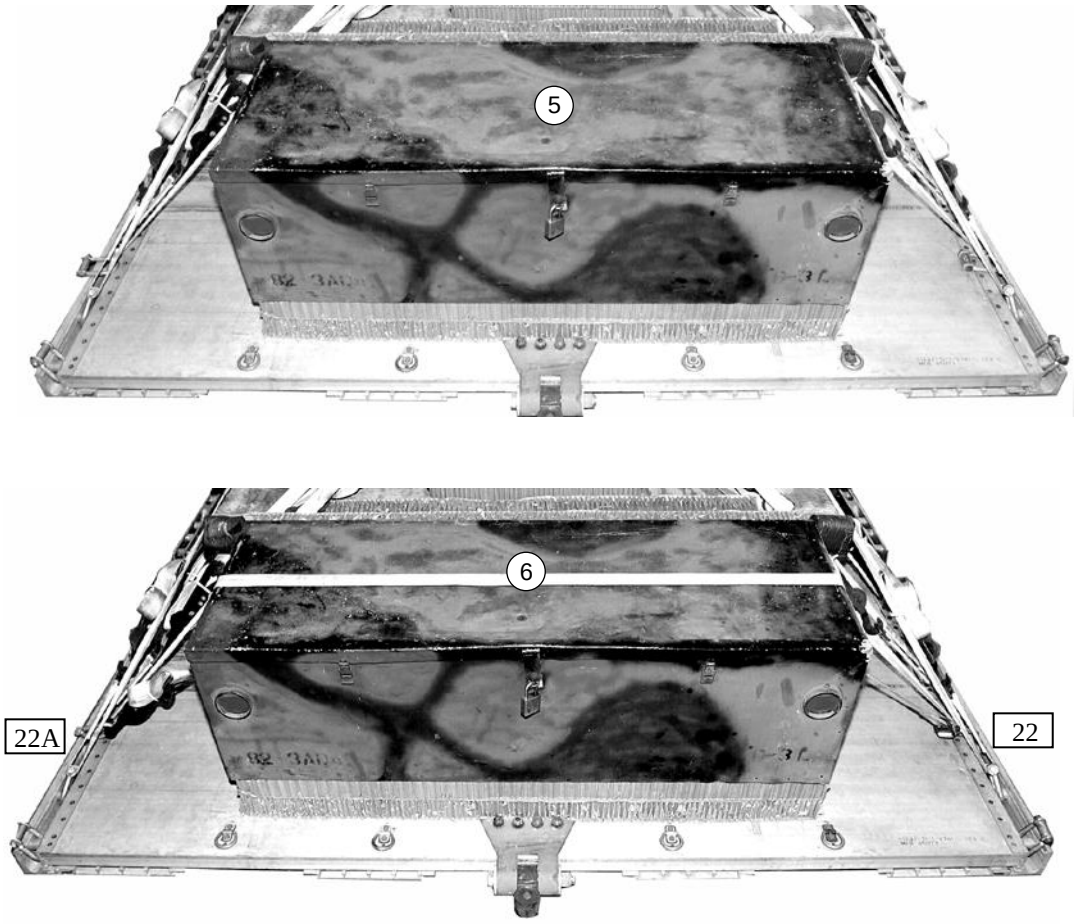
① Center two pieces of 27- by 60-inch honeycomb against the rear of stack 5.

② Place a 17- by 47 ½-inch piece of honeycomb upright against the strongback.

③ Place a 17- by 60-inch piece of honeycomb vertically against the honeycomb in step 2.

④ Build the parachute stowage platform with ¾-inch plywood and 2- by 6-inch lumber as shown. Nail the plywood to the 2- by 6-inch lumber.

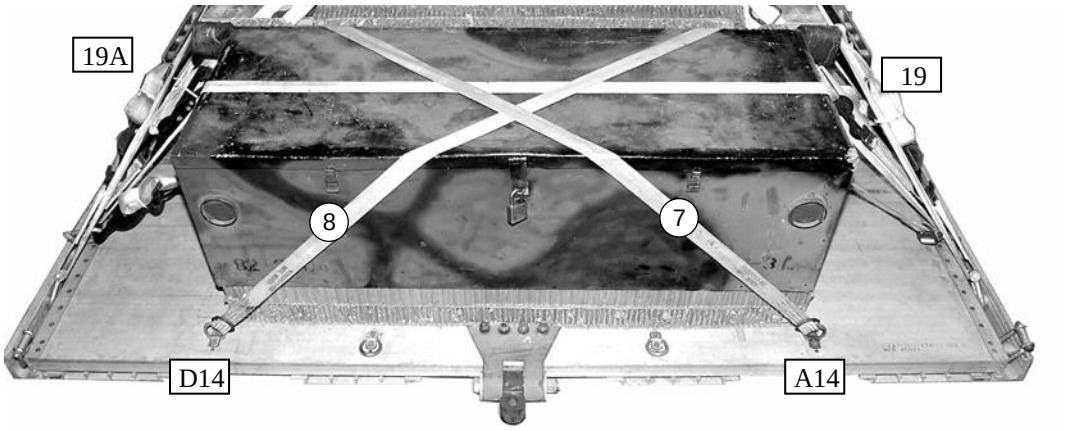
Figure 14-20. Parachute Stowage Platform Built and Installed

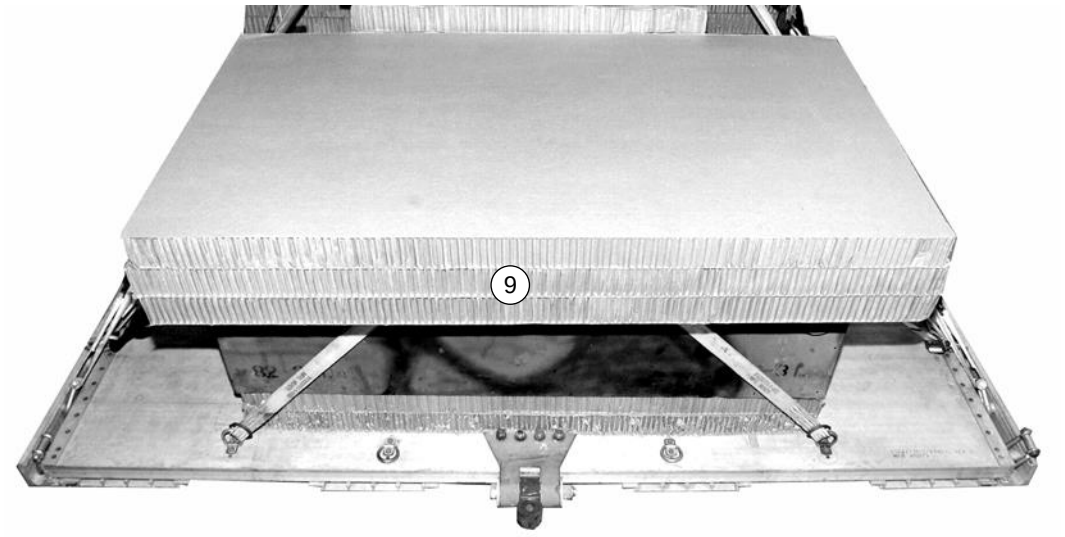


⑤ Center the section box on the 27- by 60-inch honeycomb against the vertical honeycomb. Tape all reflectors.

⑥ Route a 15-foot lashing through clevis 22 and through its own D-ring. Route the lashing up through the right box handle, over the top of the box, and down through the left box handle. Load bind to clevis 22A.

Figure 14-20. Parachute Stowage Platform Built and Installed (Continued)



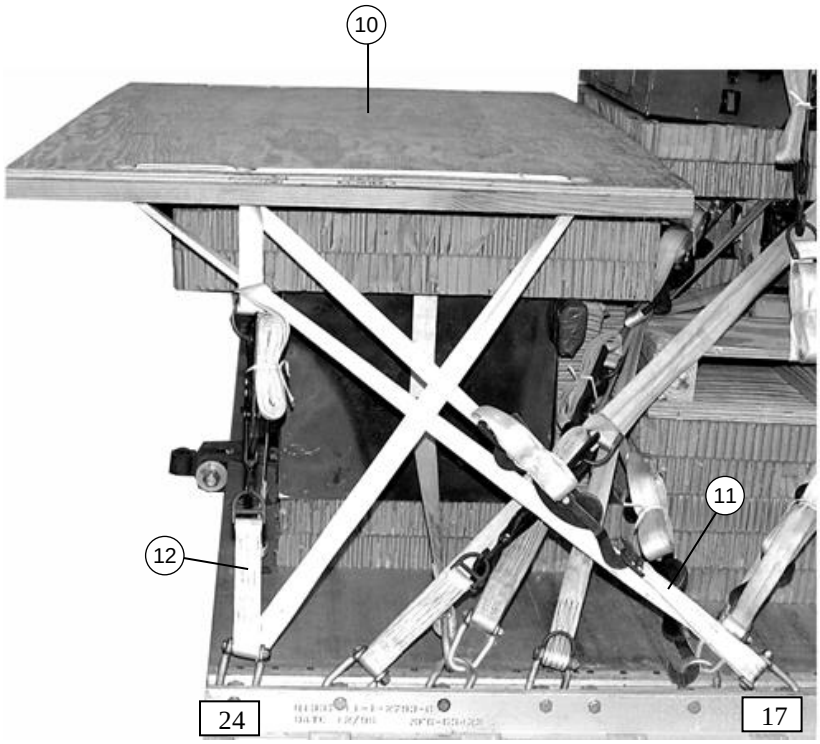


⑦ Route a 15-foot lashing through tiedown ring A14 and through its own D-ring. Route the lashing over the section box and load bind to clevis 19A.

⑧ Route a 15-foot lashing through tiedown ring D14 and through its own D-ring. Route the lashing over the section box and load bind to clevis 19.

⑨ Center three 36- by 64-inch pieces of honeycomb on top of the section box and flush against the rear of the Avenger.

Figure 14-20. Parachute Stowage Platform Built and Installed (Continued)

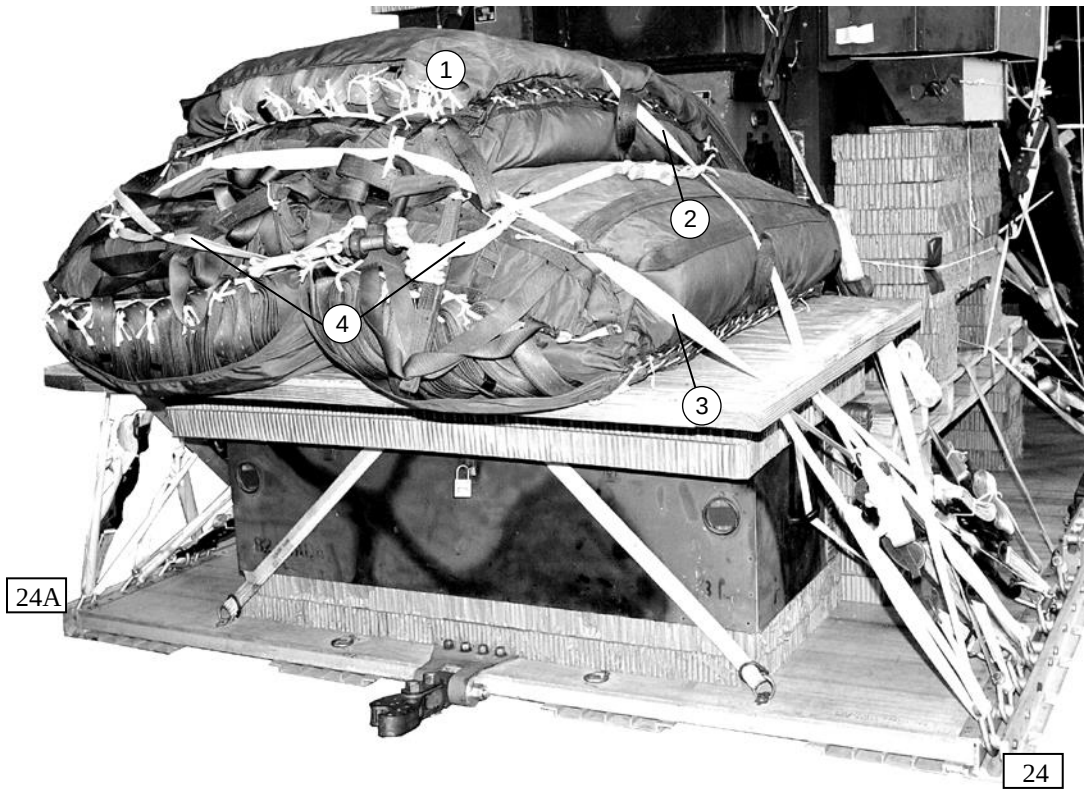


⑩ Place the parachute stowage platform on the honeycomb so it overhangs the rear of the honeycomb by 10 inches.

⑪ Lash the parachute stowage platform to clevises 17 and 17A through the center and rear holes on each side.

⑫ Lash the parachute stowage platform to clevises 24 and 24A through the center and front holes on each side.

Figure 14-20. Parachute Stowage Platform Built and Installed (Continued)



① Prepare, install, and restrain three G-11 cargo parachutes according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

② Tie the front parachute restraint strap to bushings 52 and 52A.

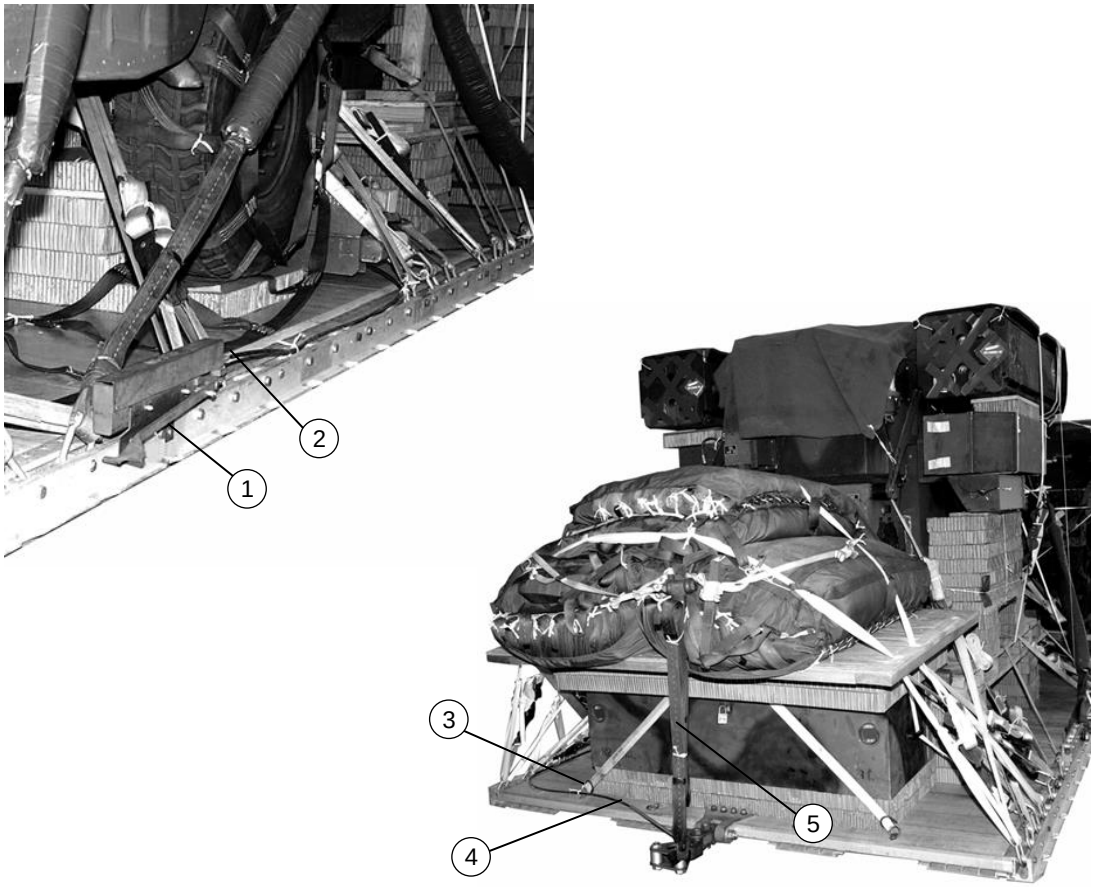
③ Tie the rear parachute restraint strap clevises 24 and 24A.

④ Install the parachute release strap according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

Figure 14-21. Cargo Parachutes Installed

INSTALLING EXTRACTION SYSTEM

14-16. Install the Extraction Force Transfer Coupling (EFTC) extraction system according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 14-22.

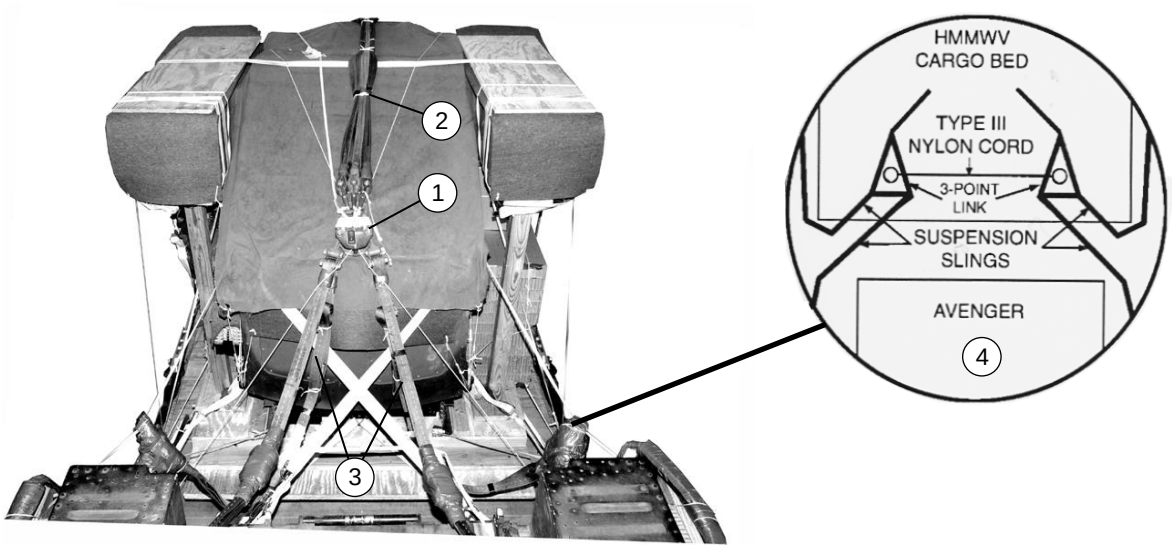


① Attach the mounting brackets to the front mounting holes in the left platform side rail.
② Install a 28-foot cable to the actuator. Install the actuator to the brackets.
③ Safety tie the cable to points on the platform with type I, ¼-inch cotton webbing.
④ Attach the latch assembly to the extraction bracket. Attach the cable to the latch assembly.
⑤ Install a 9-foot (2-loop), type XXVI nylon webbing sling as the deployment line.

Figure 14-22. Extraction Force Transfer Coupling Installed

INSTALLING RELEASE SYSTEM

14-17. Prepare and install an M1 cargo parachute release according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 14-23.



① *THE PROCEDURES IN THIS STEP ARE DIFFERENT FROM THOSE IN TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. A NOTICE OF EXCEPTION TO TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 IS GRANTED. THE PROCEDURES IN THIS STEP MUST BE FOLLOWED*. Prepare an M1 cargo parachute release and center it on the turret canopy. Remove the buffers from the cargo parachute release end of the suspension slings and attach the suspension slings and cargo parachute risers to the parachute release. Safety tie the cargo parachute release to convenient points on the load with type III nylon cord. The arming wire lanyard is 25-feet long.

② Tie the parachute riser extensions together with type I, ¼-inch cotton webbing.

③ S-fold the suspension slings and secure the folds with type I, ¼-inch cotton webbing.

④ Safety tie the 3-point links, as close as possible, together towards the center of the platform with a length of type III nylon cord (see insert).

Figure 14-23. Release System Installed

PLACING EXTRACTION PARACHUTE

14-18. Select the extraction parachute and extraction line needed using the extraction line requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft.

INSTALLING PROVISIONS FOR EMERGENCY RESTRAINT

14-19. Select and install the provisions for the emergency aft restraints according to the emergency aft restraint requirements table in TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5.

MARKING RIGGED LOAD

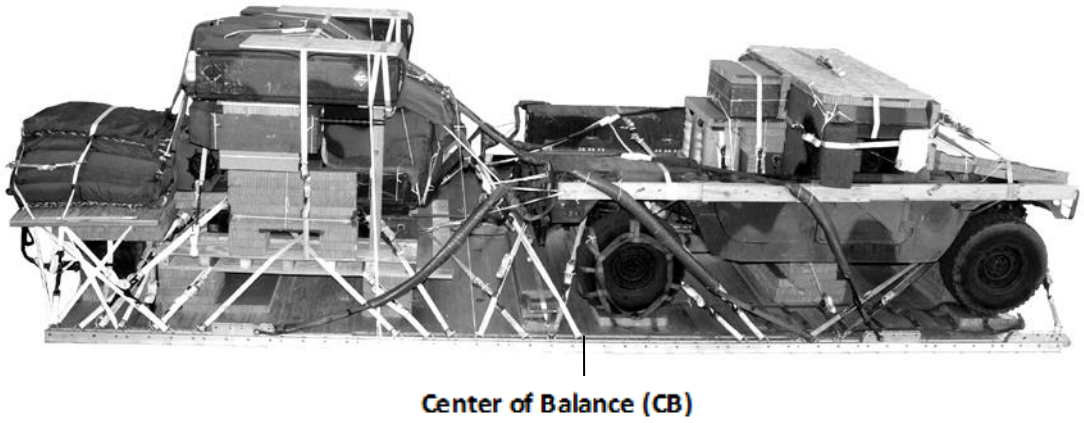
14-20. Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 14-24. Complete AMC IMT 1033 (Shipper's Declaration for Dangerous Goods) and affix it to the load. If the load varies from the one shown, the weight, height, center of balance (CB), tipoff curve, and parachute requirements must be recomputed.

EQUIPMENT REQUIRED

14-21. Use the equipment listed in Table 14-1 to rig the load shown in Figure 14-24.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



RIGGED LOAD DATA

Weight	……..	14,960 pounds (with Stinger or trainer missiles loaded)
Maximum Weight	……..	15,750 pounds
Height	……..	95 inches
Width	……..	108 inches
Overall Length	……..	356 inches
Overhang:	Front (brushguard)……	2 inches
	Rear Extraction Force Transfer Coupling (EFTC)……	18 inches
Center of Balance (from front edge of the platform)	……..	167 inches
Extraction System	……..	EFTC

Figure 14-24. Avenger Air Defense Weapon System, M1097A2 Truck, and Section Box, Rigged on a 28-Foot Type V Platform for Low-Velocity Airdrop

Table 14-1. Equipment Required for Rigging the Avenger Air Defense Weapon System with Section Box on M1097A2 Truck on a 28-Foot Type V Platform for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
1670-00-162-4981	Adapter, Coupling, Extraction Force Transfer Coupling (EFTC)	1
8040-00-273-8713	Adhesive, Paste, 1-gallon	As Required
1670-01-035-6054	Bridle, Extraction Line, Leaf (C-17 only)	1
	Clevis, Suspension:	
4030-00-678-8562	¾-inch (medium)	4
4030-00-090-5354	1-inch (large)	5
8305-00-880-8155	Cloth, Coated Green, 60-inches	As Required
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
1670-01-326-7309	Coupling, Airdrop Extraction Force Transfer, w/28-ft cable	1
1670-00-360-0328	Cover, Clevis	3
8135-00-664-6958	Cushioning Material, Packaging, Cellulose Wadding	As Required
1670-01-344-0825	Drive off Aid, Airdrop	1
8305-00-958-3685	Felt, ½-inch Thick	As Required
1670-01-183-2678	Leaf, Extraction Line (Line Bag) (add 2 for C-17)	2
	Line Extraction:	
1670-01-062-6313	60-foot (3-loop), Type XXVI (for C-130)	1
1670-01-107-7651	140-foot (3-loop), Type XXVI (for C-141)	1
1670-01-107-7651	140-foot (3-loop), Type XXVI, (for C-5 between fuselage stations 1427-1971)	1
1670-01-107-7651	140-foot (3-loop), Type XXVI and	1
1670-01-062-6313	60-foot (3-loop), Type XXVI, (for C-5 between fuselage stations 707-1426)	1
1670-01-107-7651	140-foot (3-loop), Type XXVI (for C-17)	1
1670-01-064-4452	60-foot (1-loop), Type XXVI (for C-17) (Drogue Line)	1
1670-00-783-5988	Link Assembly, Type IV (add 1 for C-17)	3
	Link Assembly, Two-Point:	
5306-00-435-8994	Bolt, 1-inch diameter, 4-inches long (add 2 for C-5)	10
5310-00-232-5165	Nut, 1-inch (add 2 for C-5)	10
1670-00-003-1953	Plate, Side, 3 ¾-inch (add 2 for C-5)	10
1670-01-307-0155	Link, Assembly, Coupling, Three-Point	2
	Lumber:	
5510-00-220-6146	2- by 4- by 73-inch	2
5510-00-220-6148	2- by 6- by 13-inch	2
	2- by 6- by 16-inch	2
	2- by 6- by 48-inch	2
	2- by 6- by 56-inch	2
	2- by 6- by 64-inch	1
	2- by 6- by 72-inch	1
	2- by 6- by 176-inch	2
5510-00-220-6246	2- by 8- by 18-inch	2
5510-00-220-6250	2- by 12- by 12-inch	4
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Table 14-1. Equipment Required for Rigging the Avenger Air Defense Weapon System with Section Box on M1097A2 Truck on a 28-Foot Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
5510-00-220-6274	Lumber:	
	4- by 4- by 8 ½-inch	2
	4- by 4- by 43-inch	2
	4- by 4- by 50-inch	2
	4- by 4- by 72-inch	7
5315-00-010-4659	Nail, Steel, Common, 8D	As Required
5315-00-753-3885	Nail, Steel, Common, 16D	As Required
1670-00-753-3928	Pad, Energy-Dissipating (Honeycomb)	
	3- by 36- by 96-inches	30 Sheets
1670-01-016-7841	Parachute, Cargo, G-11	3
	Parachute, Cargo, Extraction:	
1670-01-063-3716	22-foot	1
1670-01-063-3715	15-foot (C-17 only)	1
	Platform, Airdrop, Type V, 28-foot	
1670-01-162-2372	Clevis Assembly (Type V)	(70)
1670-01-162-2376	Extraction Bracket Assembly	(1)
1670-01-247-2389	Link, Suspension Bracket, Type V	(4)
1670-01-162-2381	Tandem Link Assembly (Multipurpose Link)	(2)
	Plywood:	
5530-00-129-7721	¼-inch:	
	9 ½- by 24-inch	1
5530-00-129-7777	½-inch	
	8- by 19-inch	1
	8- by 21-inch	1
	16- by 26-inch	1
5530-00-128-4981	¾-inch:	8 Sheets
	8- by 8-inch	(2)
	8- by 27-inch	(1)
	10- by 20-inch	(1)
	12- by 24-inch	(1)
	14- by 22-inch	(1)
	18- by 43-inch	(2)
	18- by 48-inch	(2)
	20- by 24-inch	(2)
	24- by 54-inch	(2)
	24- by 84-inch	(1)
	24- by 96-inch	(2)
	39- by 80-inch	(1)
	44- by 48-inch - ft = feet, in = inch,	(1)

Table 14-1. Equipment Required for Rigging the Avenger Air Defense Weapon System with Section Box on M1097A2 Truck on a 28-Foot Type V Platform for Low-Velocity Airdrop (Continued)

National Stock Number	*Item*	*Quantity*
	48- by 75-inch	(1)
	48- by 84-inch	(1)
	48- by 96-inch	(2)
1670-01-097-8816	Release, Cargo Parachute, M-1	1
	Sling, Cargo, Airdrop:	
	For Deployment Line:	
1670-01-062-6304	9-foot (2-loop), Type XXVI	1
	For Riser Extensions:	
1670-01-062-6313	60-foot, (3-loop), Type XXVI	3
	For Lifting:	
1670-01-062-6304	9-foot (2-loop), Type XXVI	2
1670-01-062-6303	12-foot (2-loop), Type XXVI	2
1670-01-063-7760	11-foot (2-loop), Type XXVI	2
	For Suspension Slings:	
1670-01-062-6306	3-foot (4-loop), Type XXVI	2
1670-01-062-6305	9-foot (4-loop), Type XXVI	2
1670-01-062-6310	11-foot (4-loop), Type XXVI	2
1670-01-062-6308	12-foot (4-loop), Type XXVI	2
1670-01-062-6308	16-foot (4-loop), Type XXVI	2
5340-00-040-8219	Strap, Parachute, Release, Multi-Knife	2
7501-00-266-5016	Tape, Adhesive, 2-inch	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot	63
1670-01-483-8259	Towplate Release Mechanism (H-Block) (C-17 only)	1
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, Type I	As Required
8305-00-082-5752	Nylon, Tubular, ½-inch	As Required
8305-00-263-3598	Nylon, Type VIII	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Chapter 15

Rigging Stinger Weapon Systems and Missiles in an A-22 Cargo Bag for Low-Velocity Airdrop

DESCRIPTION OF LOAD

15-1 Four Stinger weapon systems and two missiles are rigged in an A-22 cargo bag with a G-12E cargo parachute.

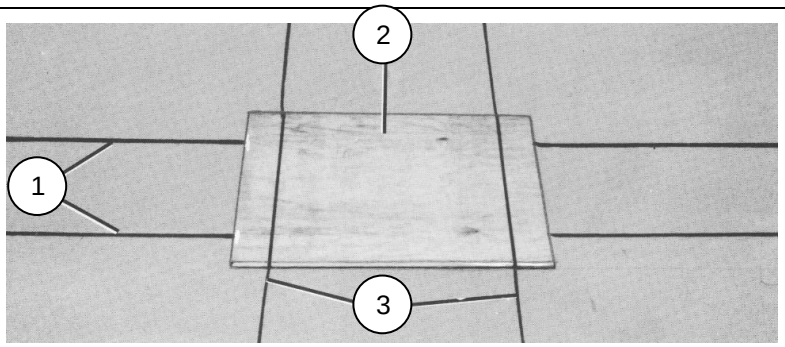
Note. This load can only be dropped in a single-stick configuration (non-Centerline Vertical Restraint System).

PREPARING SKID AND HONEYCOMB

15-2 Prepare the skid, honeycomb, cover and tiedown strap as shown in Figures 15-1 and 15-2.

POSITIONING WEAPONS AND MISSILES

15-3 Position the weapons, missiles and secure the A-22 cargo bag as shown in Figures 15-3 through 15-5.



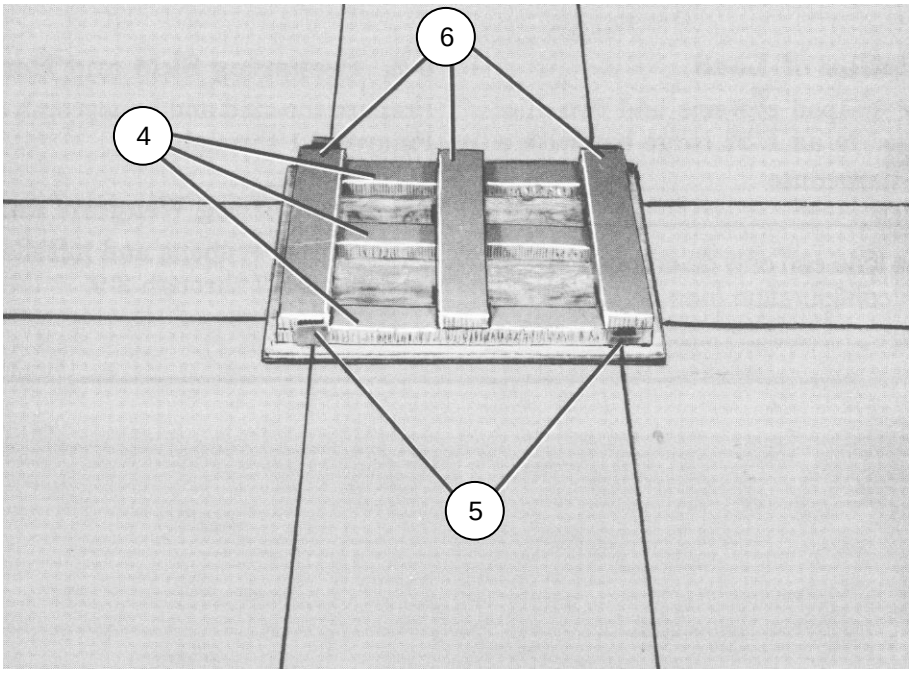
① Place two 15-foot lengths of steel strapping 36 inches apart.

Note. Be sure that the steel strapping is 6 inches from the outside edges of the plywood, measured from the outside edge of the steel strapping. Failure to maintain these distances will result in rejection of the load.

② Place a ¾- by 48- by 66-inch piece of plywood on top of and parallel to the steel strapping.

③ Place two 15-foot lengths of steel strapping on top of the plywood along the 48-inch sides and 56 inches apart.

Figure 15-1. Skid Prepared

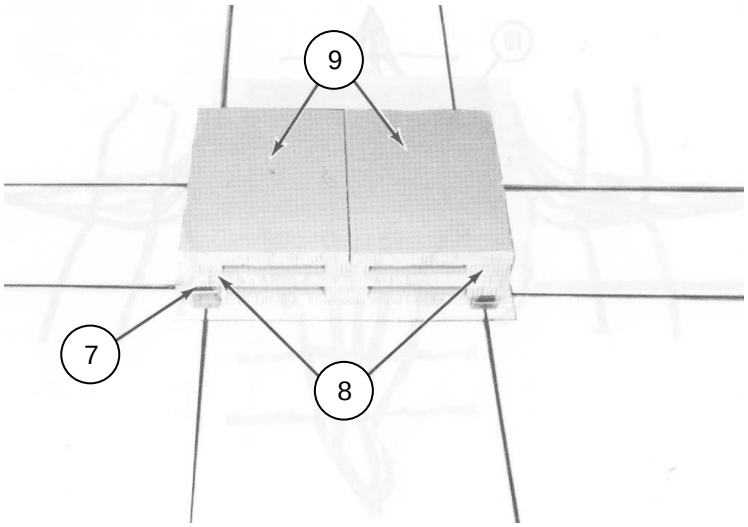


④ Glue three 6- by 62-inch pieces of honeycomb to the skid. Center the first piece of honeycomb on the skid and place the other two pieces 2 inches from the 66-inch side of the skid.

⑤ Set a piece of cardboard between the honeycomb and the steel strapping.

⑥ Glue three 8- by 44-inch pieces of honeycomb across the first layer of honeycomb. Center the first piece of honeycomb, and place the other two pieces flush with the ends of the first layer of honeycomb.

Figure 15-1. Skid Prepared (Continued)

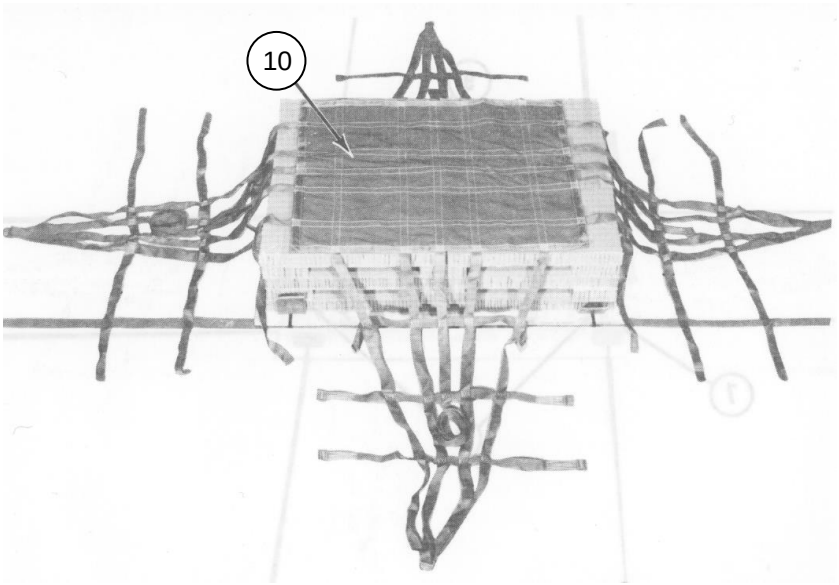


⑦ Glue three 6- by 62-inch pieces of honeycomb on the second layer of honeycomb the same as the first layer in step 4.

⑧ Glue three 8- by 44-inch pieces of honeycomb on the third layer of honeycomb the same as the second layer in step 6.

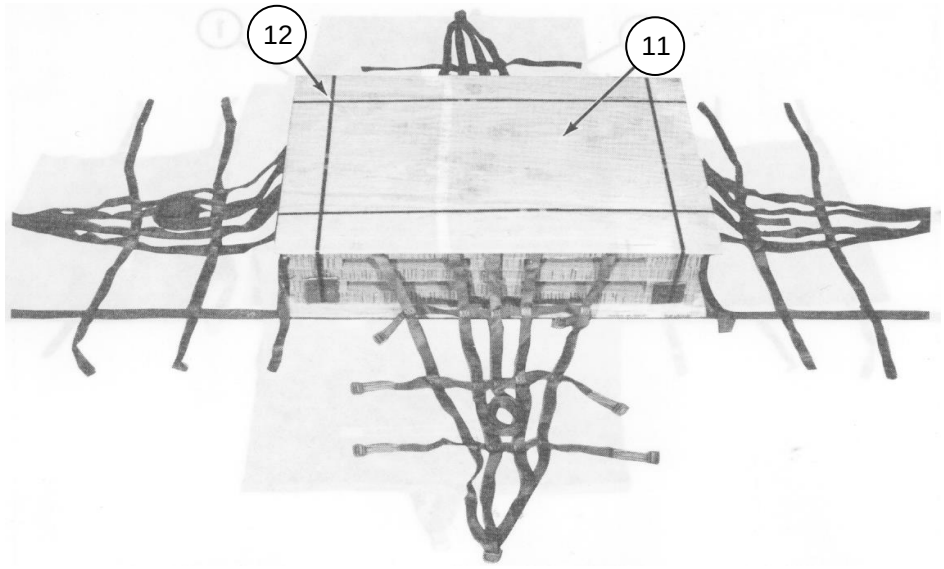
⑨ Glue two 31- by 44-inch pieces of honeycomb side by side on the fourth honeycomb layer.

Figure 15-1. Skid Prepared (Continued)



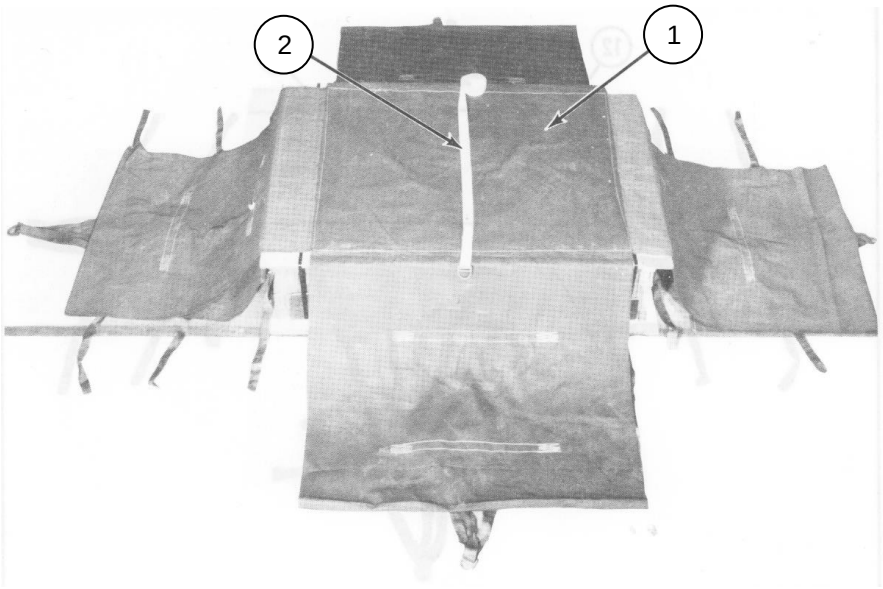
⑩ Center an A-22 cargo bag sling assembly on the top layer of honeycomb.

Figure 15-1. Skid Prepared (Continued)



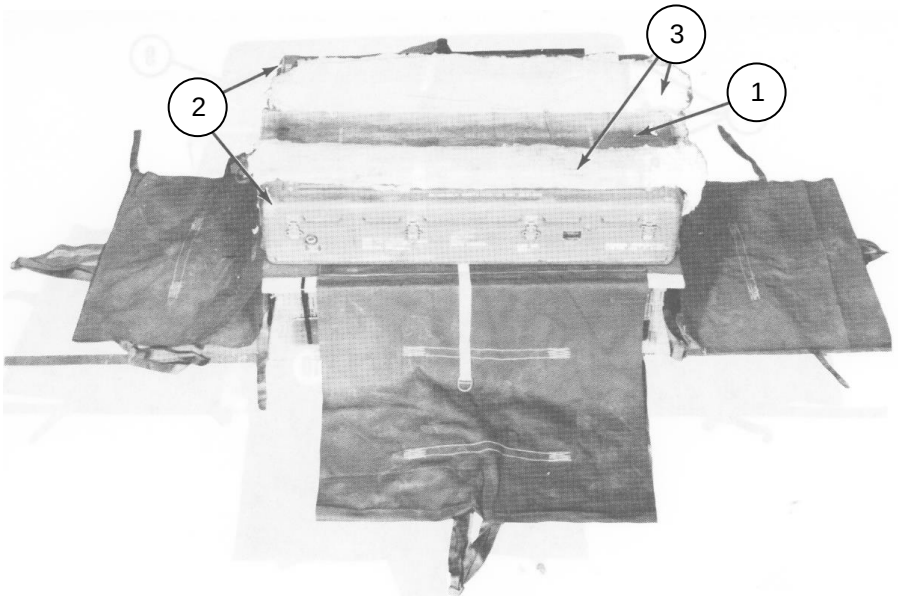
⑪ Place a ¾- by 48- by 66-inch piece of plywood on top of the sling assembly.
⑫ Bind the plywood, honeycomb, and sling together with the steel strapping.

Figure 15-1. Skid Prepared (Continued)



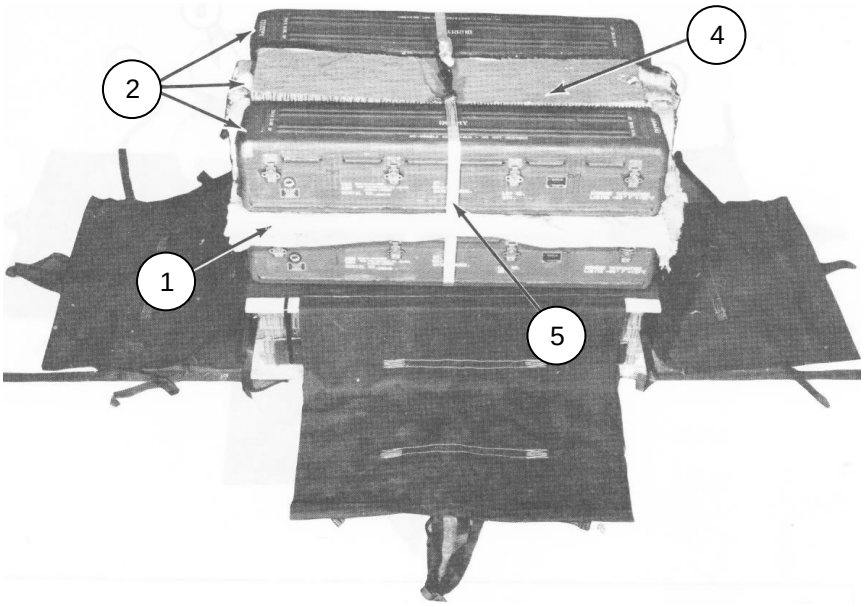
① Center the A-22 cargo bag cover on the skid.
② Center a 15-foot tiedown strap on the cover.

Figure 15-2. Cover and Tiedown Strap Placed



① Center a Stinger missile on the cover.
② Place a Stinger weapon system on each side of the missile.
③ Place two layers of cellulose wadding between the weapon systems and the missile.

Figure 15-3. One Missile and Two Weapon Systems Placed as First Layer



① Place two layers of cellulose wadding on top of the first layer of weapon systems and the missile.

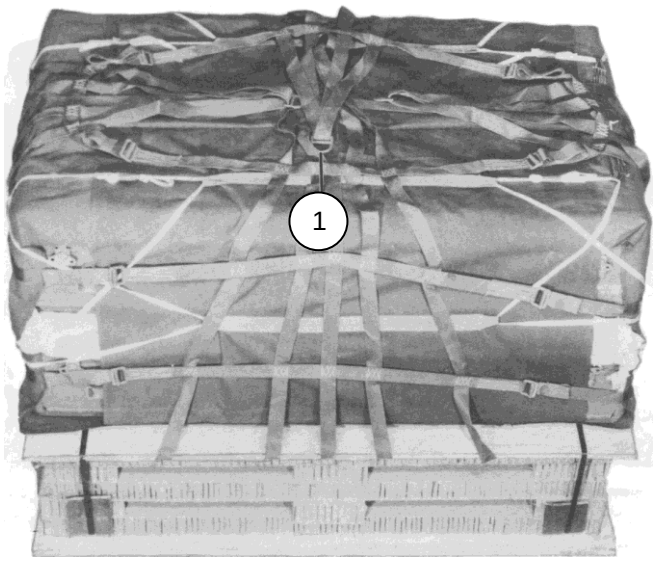
② Place a missile and two weapon systems on top of the first layer of weapon and missiles. Place them the same as in steps 3 and 4 of figure 15-7.

③ Place two layers of cellulose wadding between the weapon systems and the missile (not shown).

④ Place a 12- by 66-inch piece of honeycomb on top of the missile.

⑤ Bind the load together with the 15-foot tiedown strap.

Figure 15-4. One Missile and Two Weapon Systems Placed as Second Layer



① Close and secure the A-22 cargo bag according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

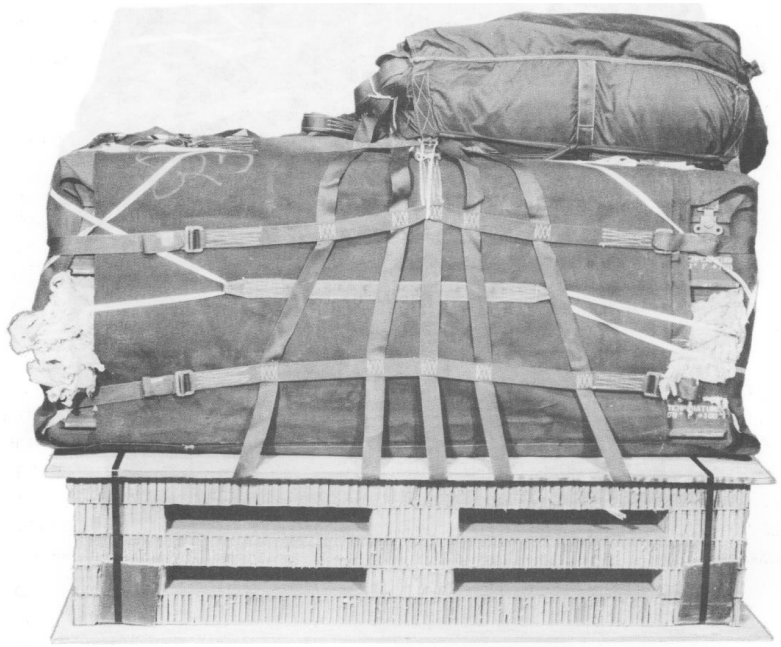
Figure 15-5. Cargo Bag Closed

ATTACHING CARGO PARACHUTES

15-4 Tape the suspension webs together, and attach a G-12E cargo parachute and a 68-inch pilot parachute (Figure 15-6) according to TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

RIGGED LOAD DATA

15-5 The rigged load data is given in Figure 15-6.



RIGGED LOAD DATA	
Weight	900 pounds
Height	59 inches
Width	48 inches
Length	69 inches

Figure 15-6. Stinger Weapon Systems and Missiles Rigged in an A-22 Cargo Bag for Low-Velocity Airdrop

EQUIPMENT REQUIRED

15-6 The equipment required to rig this load is listed in Table 15-1.

Table 15-1. Equipment Required for Rigging Stinger Weapon System and Missiles in A-22 Cargo Bag.

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, Paste, 1-gallon	As Required
1670-00-587-3421	Bag, Cargo, Airdrop, Type A-22	1
8135-00-664-6958	Cushioning Material, Packaging, Cellulose Wadding	As Required
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb	
	3- by 36- by 96-inch:	3
	6- by 62-inch	(6)
	8- by 44-inch	(6)
	12- by 66-inch	(1)
	31- by 44-inch	(2)
1670-01-065-3755	Parachute, Cargo, G-12E	1
1670-00-216-7297	Parachute, Pilot, 68-inch diameter	1
5530-00-128-4981	Plywood, ¾- by 48- by 66-inch	2
8135-00-283-0667	Strapping, Steel, 5/8-inch	60 foot
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
8310-00-917-3945	Thread, Cotton Ticket, 5, 8/7 Ply	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot, 10,000 lb	1
8305-00-268-2411	Webbing, Cotton, ¼-inch, 80-lb	As Required
8305-00-082-5752	Webbing, Nylon, Tubular, ½-inch	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

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Chapter 16

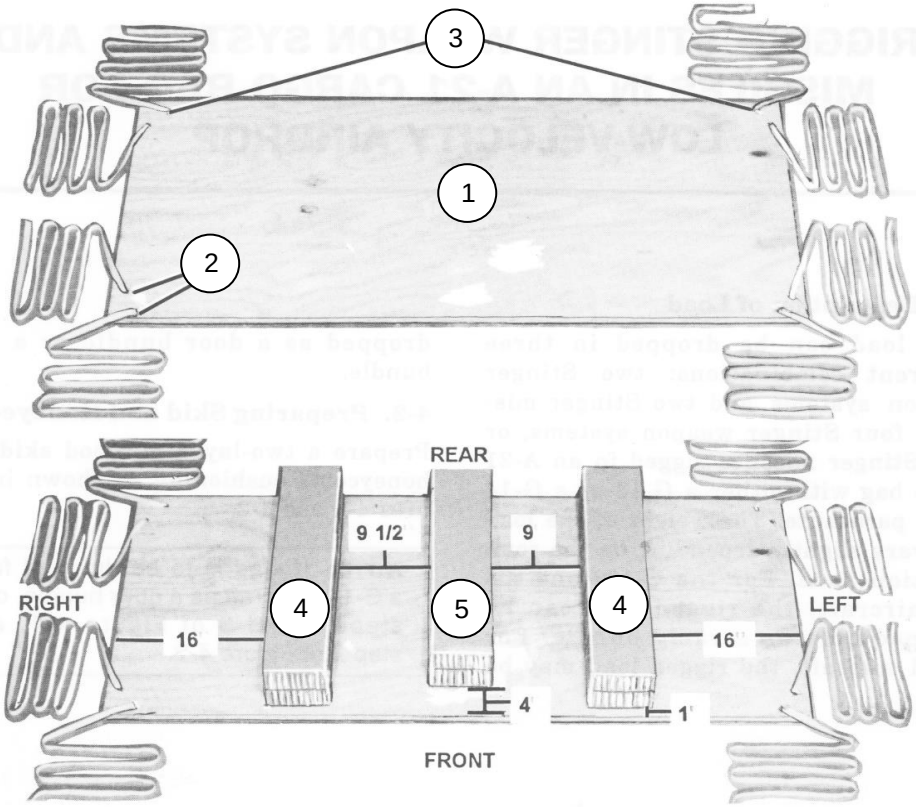
Rigging Stinger Weapon Systems and Missiles in an A-21 Cargo Bag for Low-Velocity Airdrop

DESCRIPTION OF LOAD

16-1 This load can be dropped in three different combinations: two Stinger weapon systems and two Stinger missiles; four Stinger weapon systems; or four Stinger missiles rigged in an A-21 cargo bag with either a G-13 or a G-14 cargo parachute. The weight of the load will vary slightly depending on the combination used. For the C-130 aircraft, the rigged load can be dropped only as a ramp bundle.

16-2 Prepare a two-layer plywood skid with honeycomb cushioning as shown in Figure 16-1 and 16-2.

Note. All dimensions are in inches.



① Use a ¾- by 28- by 68-inch piece of plywood as a skid.

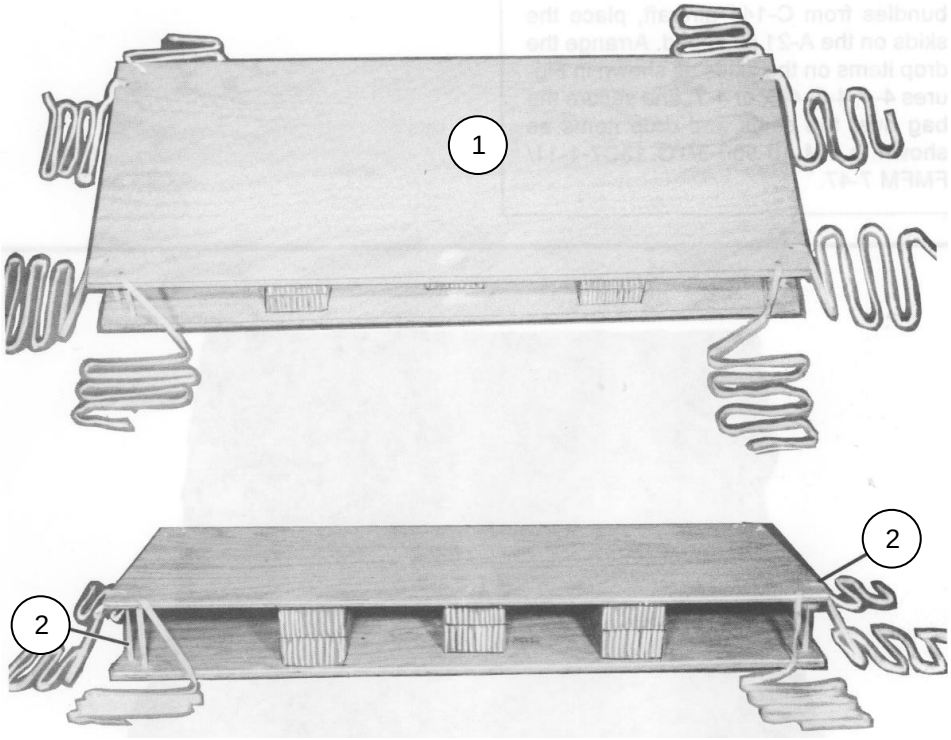
② Drill two ½-inch holes in each corner of the skid. Make the holes 2 inches from the corner and 1 inch from the edges.

③ Run a 16-foot length of ½-inch tubular nylon webbing up through the holes in each corner.

④ Cut four pieces of 6- by 26-inch honeycomb for the end stacks. Glue the layers of honeycomb together. Place the stacks using the dimensions given above. Glue the stacks to the skid.

⑤ Cut two pieces of 6- by 23-inch honeycomb for the center stack. Glue the layers of honeycomb together. Place the stacks using the dimensions given above. Glue the stacks to the skid.

Figure 16-1. Bottom Skid and Honeycomb Stacks Prepared and Placed



① Use a ¾- by 28- by 68-inch piece of plywood as the top skid. Prepare the skid according to step 2 in Figure 16-1. Glue it to the honeycomb stacks.

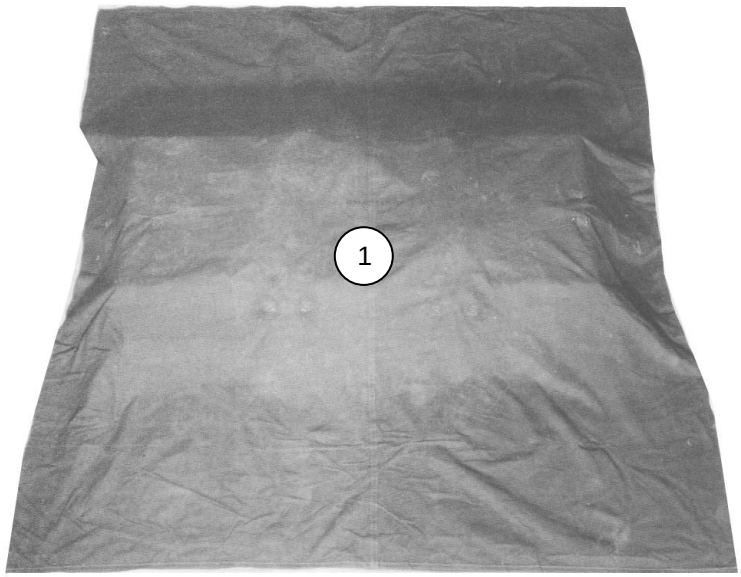
② Run the webbing from the corner holes in the bottom skid up through the corresponding corner holes in the top skid.

Figure 16-2. Top Skid Prepared and Glued to Honeycomb

RIGGING A-21 CARGO BAG

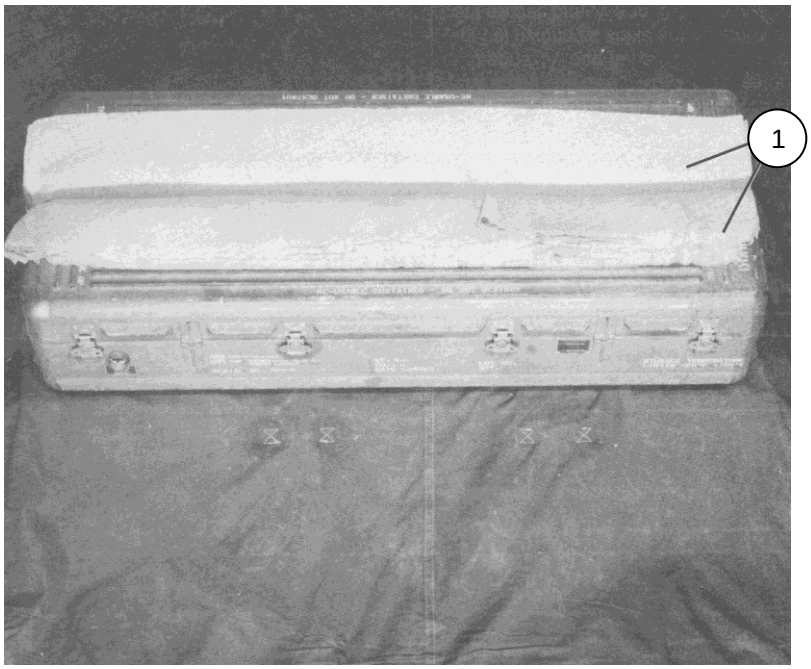
16-3Follow the procedures depending on the load configuration.

- Two Weapon Systems and Two Missiles. Position and secure two weapon systems and two missiles as shown in Figure 16-3 through 16-5.



① Position the sling assembly straps, scuff pad, and cover on the skids.

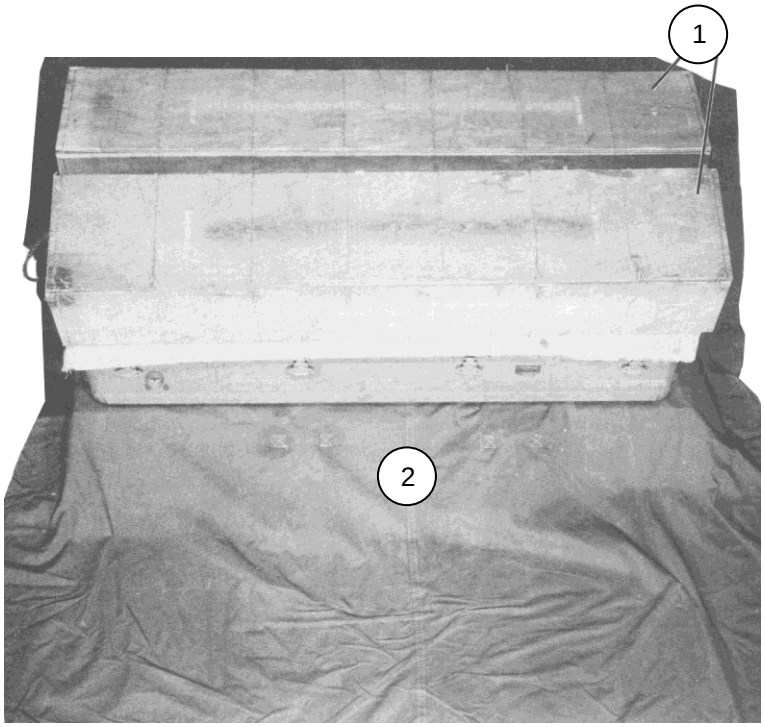
Figure 16-3. A-21 Sling Assembly and Cover Placed



① Center the weapon systems on the cover. Put two layers of cellulose wadding between the systems.

② Put two layers of cellulose wadding on top of the weapon systems (not shown).

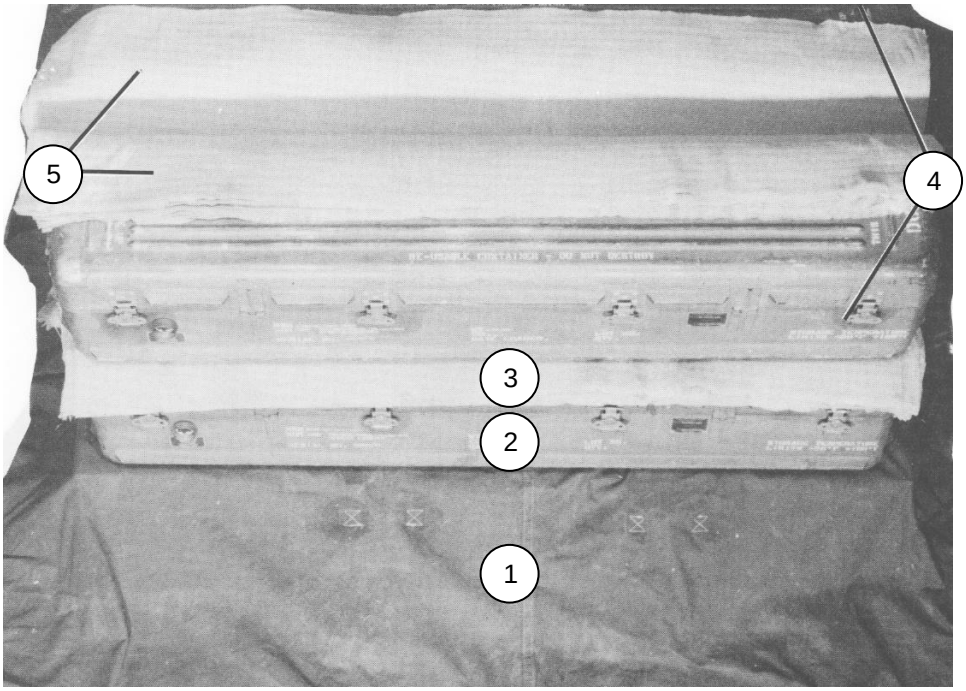
Figure 16-4. Two Weapon Systems Placed on A-21 Cargo Bag



① Set two missiles on top of the cellulose wadding and the weapon systems.
② Close the A-21 cargo bag as outlined in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

Figure 16-5. Two Missiles Placed on a A-21 Cargo Bag Cover

- Four Weapon Systems. Position and secure four weapon systems as shown in Figure 16-6.
- Four Missiles. Position and secure four missiles as shown in Figure 16-7.



① Lay the A-21 cargo bag over the top skid.

② Center two weapon systems on the cover, and pad between the two systems with two layers of cellulose wadding as shown in Figure 16-4.

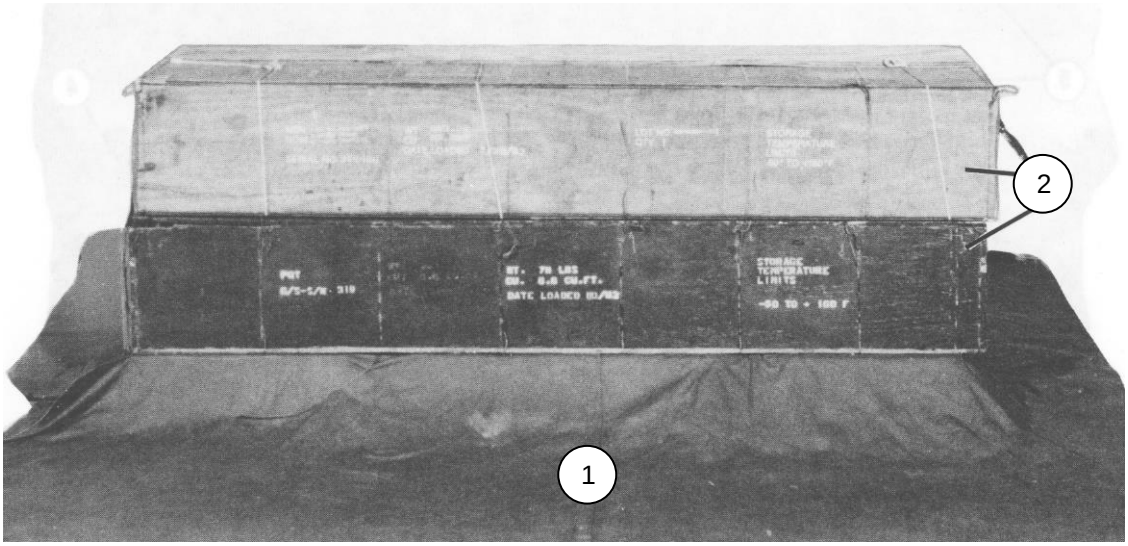
③ Put two layers of cellulose wadding on top of the weapon systems.

④ Align two more weapon systems on top of the first set of weapon systems.

⑤ Put two layers of cellulose wadding between the weapon systems in the top set as in step 2 above.

⑥ Close the A-21 cargo bag as outlined in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 (not shown).

Figure 16-6. Four Weapon Systems Placed on A-21 Cargo Bag Cover



① Lay the A-21 cargo bag over the top skid.
② Set four missiles on the cover (two per layer). Center the two layers on the cover.
③ Close the A-21 cargo bag as outlined in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11 (not shown).

Figure 16-7. Four Missiles Placed on A-21 Cargo Bag Cover

SECURING LOAD TO SKID

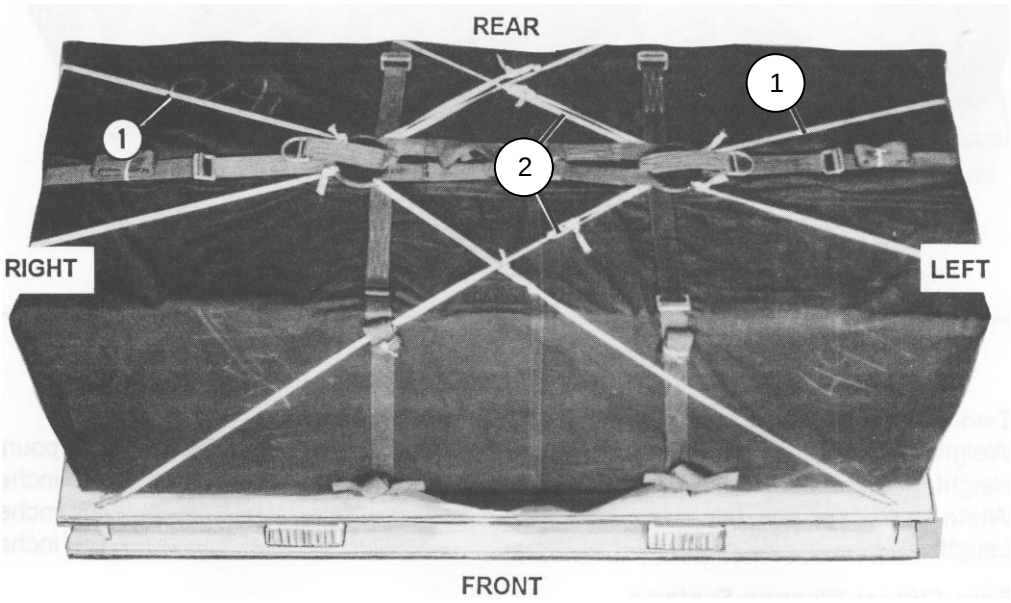
16-4 Secure the rigged A-21 cargo bag to the skid as shown in Figure 16-8.

ATTACHING CARGO PARACHUTE

16-5 Attach one G-13 or one G-14 cargo parachute (Figure 16-9) to the A-21 cargo bag as outlined in TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11.

RIGGED LOAD DATA

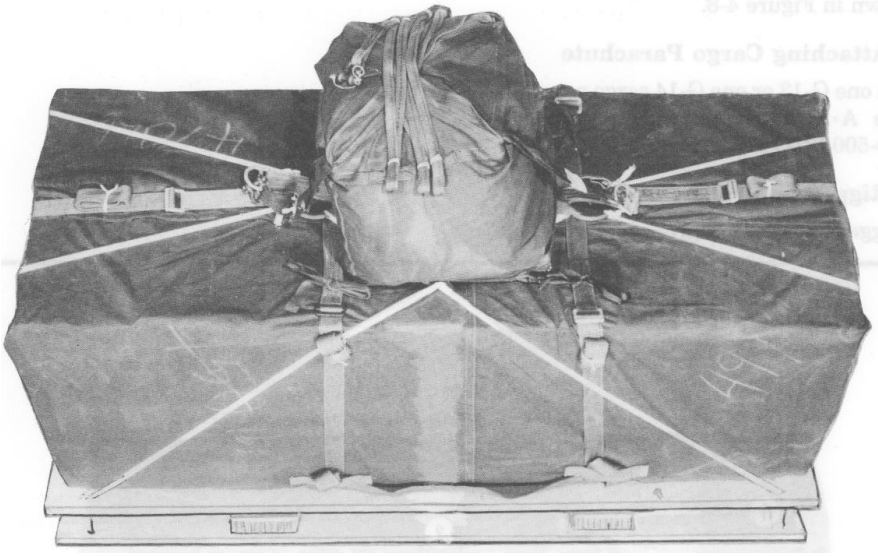
16-6 The rigged load data is given in Figure 16-9.



① Tie the left and right ends of the ½-inch tubular nylon webbing to the nearer O-ring.

② Cross the front and rear lengths of ½-inch tubular nylon webbing, and tie the ends to the opposite O-ring.

Figure 16-8. Rigged A-21 Cargo Bag Secured to Skid



RIGGED LOAD DATA		
Two Stinger Weapon Systems and Two Stinger Missiles		
Weight	……	465 pounds
Height	……	47 inches
Width	……	28 inches
Length	……	68 inches
Four Stinger Weapon Systems		
Weight	……	500 pounds
Height	……	48 inches
Width	……	28 inches
Length	……	68 inches
Four Stinger Missiles		
Weight	……	435 pounds
Height	……	48 inches
Width	……	28 inches
Length	……	68 inches

Figure 16-9. Rigged Load Data

EQUIPMENT REQUIRED

16-7The equipment required to rig this load is listed in Table 16-1.

Table 16-1. Equipment Required for Rigging Stinger Weapon System and Missiles in a A-22 Cargo Bag

National Stock Number	*Item*	*Quantity*
8040-00-273-8713	Adhesive, Paste, 1 gallon	As Required
1670-00-587-3421	Bag, Cargo, Aerial Delivery, Type A-22	1
8135-00-664-6958	Cushioning Material, Packaging, Cellulose Wadding	As Required
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb,	
	3- by 36- by 96-inch:	3
	6- by 62-inch	(6)
	8- by 44-inch	(6)
	12- by 66-inch	(1)
	31- by 44-inch	(2)
1670-01-065-3755	Parachute, Cargo, G-12E	1
1670-00-216-7297	Parachute, Pilot, 68-inch diameter	1
5530-00-128-4981	Plywood, ¾- by 48- by 66-inch	2
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
8310-00-917-3945	Thread, Cotton, Ticket No 5	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot	1
8135-00-283-0667	Strapping, Steel, 5/8-inch	60 foot
8305-00-268-2411	Webbing, Cotton, 80-lb	As Required
8305-00-082-5752	Webbing, Nylon, Tubular, ½-inch	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

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Chapter 17

Rigging 1 ¼-Ton Truck with Stinger Weapon Systems and Missiles for Low-Velocity Airdrop

DESCRIPTION OF LOAD

17-1 The M998, 1 ¼-ton truck (HMMWV), equipped with the stinger weapon system rack and loaded with six stinger weapon systems and items of truck equipment, is rigged on a 16-foot, type V platform. The load requires two G-11B cargo parachutes. The accompanying load rigged in the truck weighs 1,180 pounds.

PREPARING PLATFORM AND TRUCK

17-2 Prepare the platform and the M998 truck according to TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

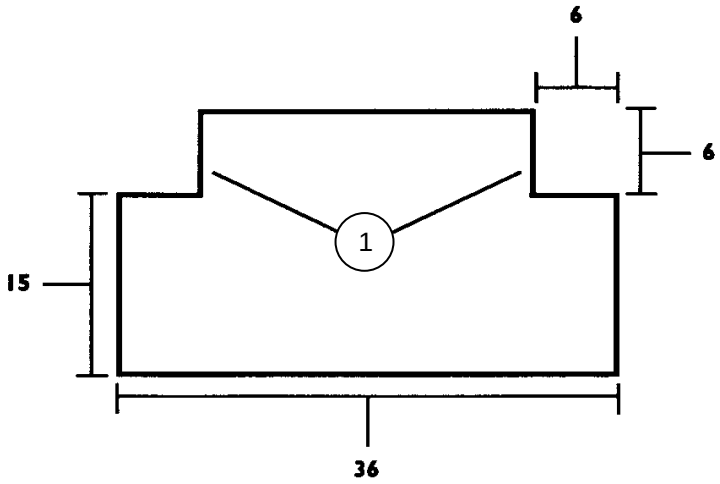
RIGGING WEAPON SYSTEMS AND TRUCK EQUIPMENT IN TRUCK

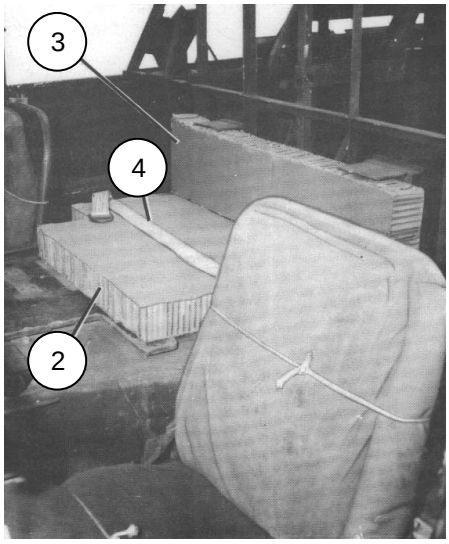
17-3 Secure the truck equipment to the truck as shown in Figure 17-1. Secure the weapon systems in their rack as shown in Figure 16-2. Secure the truck tailgate and install body side protection boards according to TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

LIFTING, POSITIONING, AND LASHING TRUCK

17-4 Lift, position, and lash the truck to the platform according to TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

Notes. 1. Drawing not to scale.
2. All dimensions are given in inches





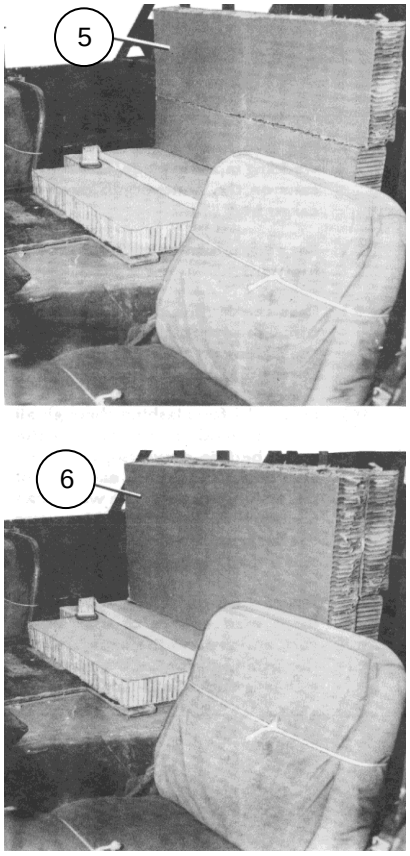
① Make 6- by 6-inch cutouts in a 21- by 36-inch piece of honeycomb as shown.

② Center the honeycomb behind the seats with the cutouts facing the front and the rear edge against the missile rack.

③ Place an 8- by 36-inch piece of honeycomb on top of the honeycomb placed in step 2 above and the two ledges on the missile rack.

④ Place a 15-foot lashing on the honeycomb.

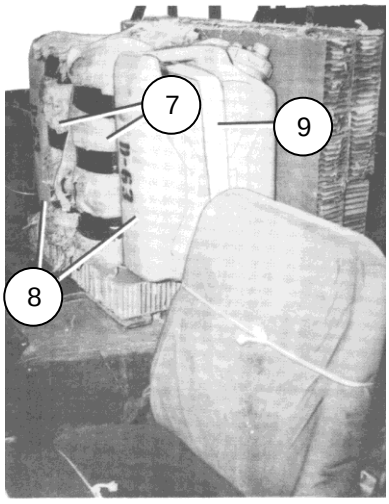
Figure 17-1. Truck Equipment Secured to Truck

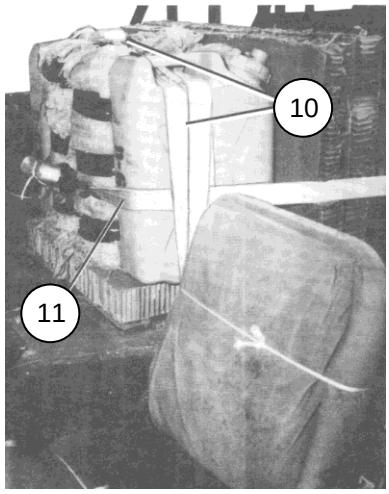


⑤ Place a 12- by 36-inch piece of honeycomb on edge over the honeycomb placed in step 3.

⑥ Place a 20- by 36-inch piece of honeycomb on edge against the honeycomb placed in steps 3 and 5.

Figure 17-1. Truck Equipment Secured to Truck (Continued)





⑦ Pad two fuel can with cellulose wadding taped in place. Center the cans on the honeycomb over the cargo bed.

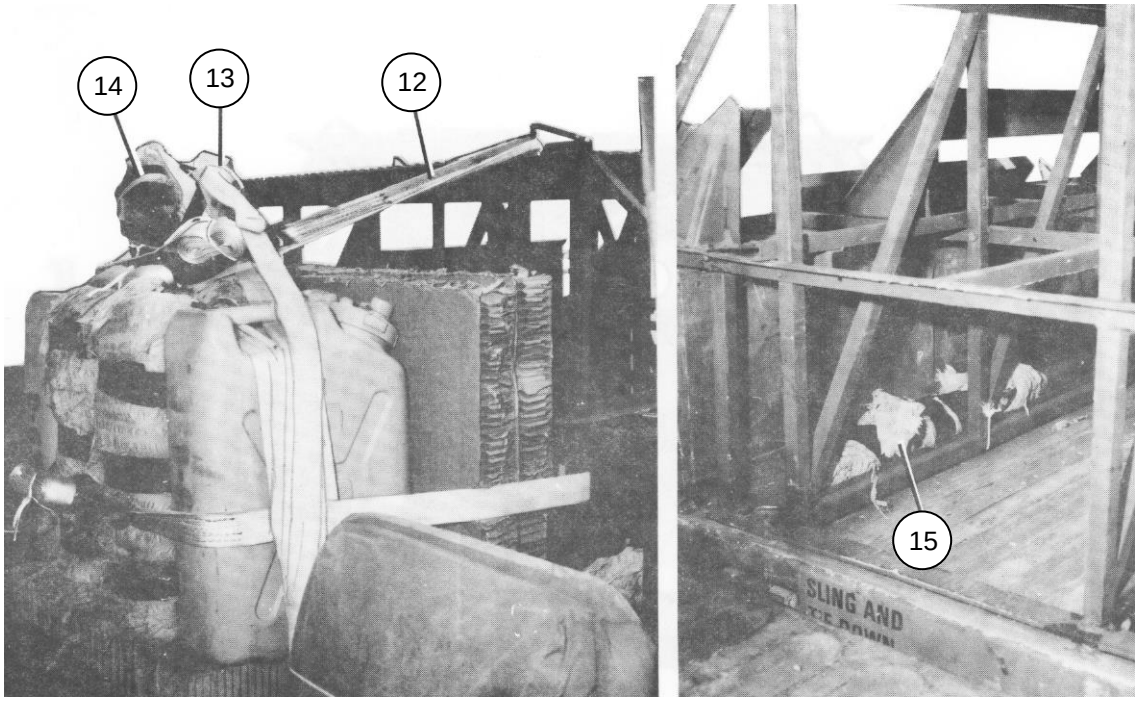
⑧ Set a water can on each side of the fuel cans.

⑨ Pass the lashing placed in step 4 through all the can handles. Fasten the lashing on the right side with a D-ring and a loadbinder.

⑩ Pass a 15-foot lashing through all the can handles and through the cargo bed tiedown rings on each side of the cans. Pass each end of the lashing through the water can handles. Fasten the lashing over the fuel can handles with a D-ring and a loadbinder.

⑪ Pass a 15-foot lashing around the front vertical bars of the missile rack and around the cans. Fasten the lashing in front of the cans with a D-ring and a loadbinder.

Figure 17-1. Truck Equipment Secured to Truck (Continued)



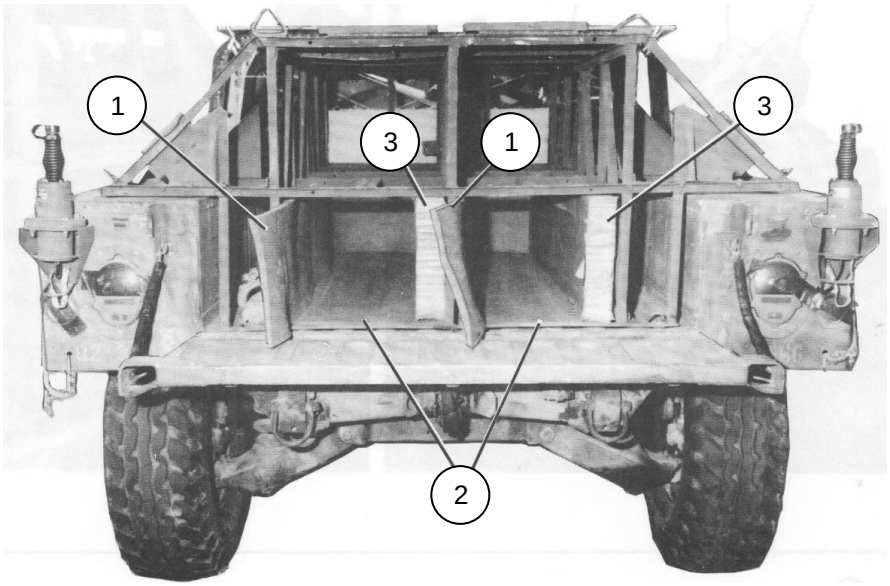
⑫ Pass a 15-foot lashing through the left tiedown provision on top of the rack and across the cans to the right cargo bed tiedown ring. Fasten the lashing over the cans with a D-ring and a loadbinder.

⑬ Pass a 15-foot lashing through the right tiedown provision on top of the rack and across the cans to the left cargo bed tiedown ring. Fasten the lashing over the cans with a D-ring and a loadbinder.

⑭ Remove the pioneer tools from their rack under the truck. Secure the rack with the straps provided (not shown). Pad the tools with cellulose wadding taped in place. Tie the tools to the right front vertical bar of the missile rack with ½-inch tubular nylon webbing.

⑮ Pad the radio antenna sections with cellulose wadding taped in place. Place them on the floor, and tie them to the left side of the rack with type III nylon cord.

Figure 17-1. Truck Equipment Secured to Truck (Continued)

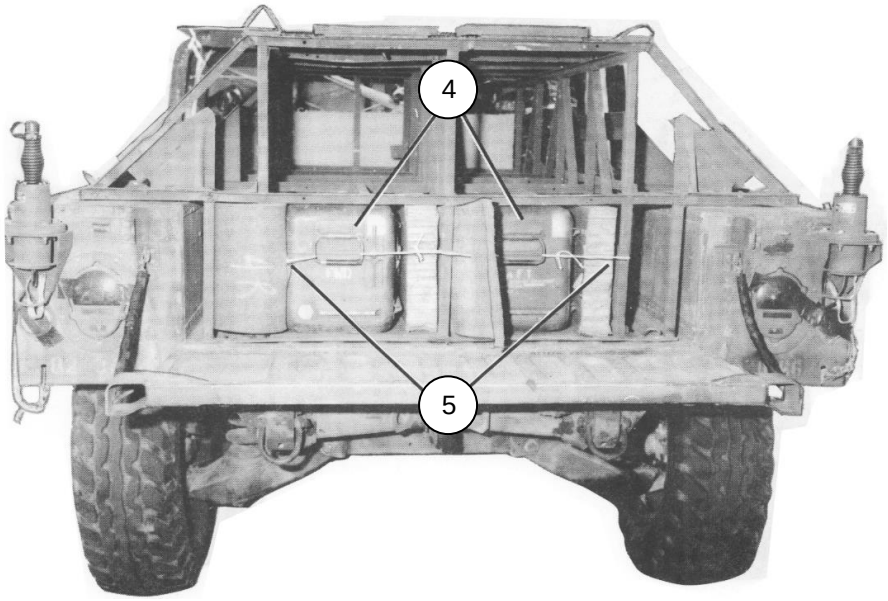


① Place a 13- by 100-inch piece of felt on edge against the left side of each lower rack compartment.

② Place one 16- by 66-inch piece of felt flat on the floor of each lower rack compartment.

③ Place one 13- by 66-inch piece of honeycomb on edge against the right side of each lower rack compartment.

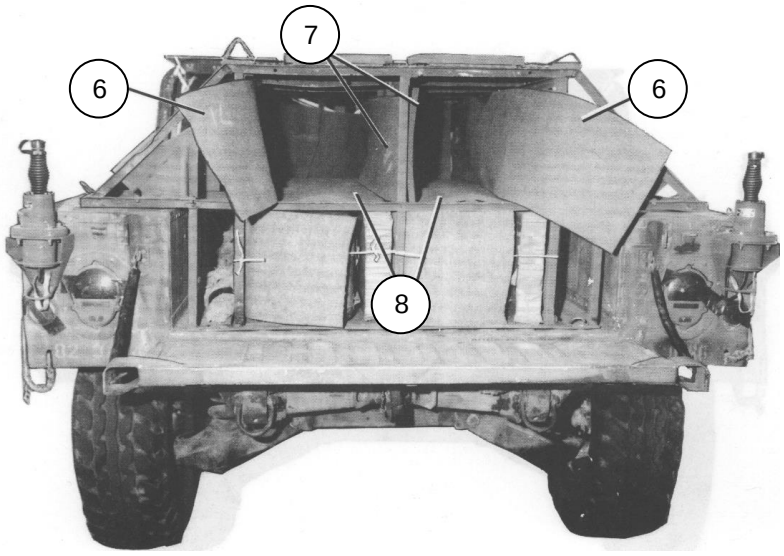
Figure 17-2. Weapon Systems Secured to Rack



④ Place a weapon system case in each lower rack compartment. Be sure that enough of the felt placed in step 1 remains outside the rear of each rack compartment to cover the end of the weapon system case when folded over.

⑤ Secure each weapon system case to the vertical rack bars at the rear with type III nylon cord tied to the case handles. Cut a slit in the felt to allow for the ties.

Figure 17-2. Weapon Systems Secured to Rack (Continued)

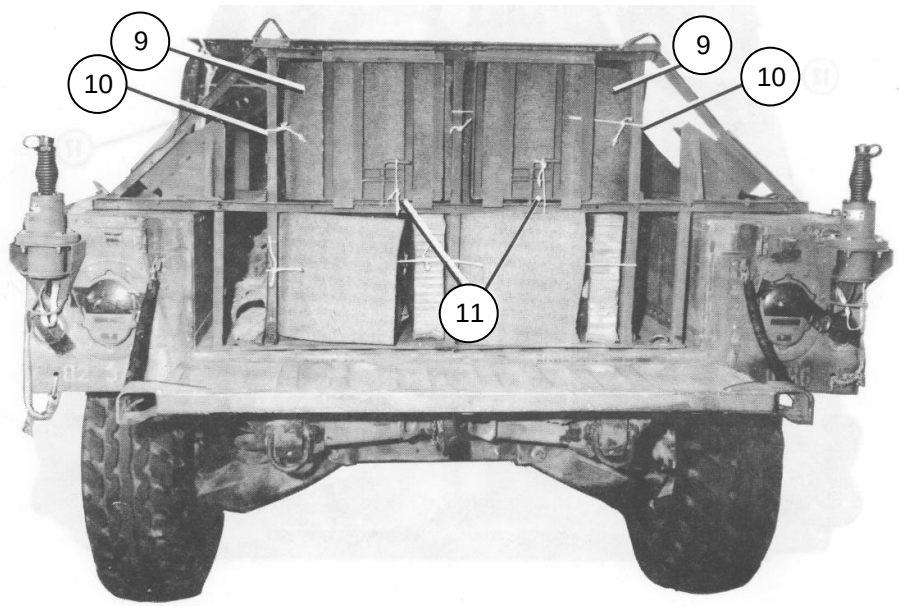


⑥ Place a 3- by 100-inch piece of felt on edge against the outside wall of each upper rack compartment.

⑦ Place a 13- by 66-inch piece of felt on edge against the inside wall of each upper rack compartment.

⑧ Place a 16- by 66-inch piece of felt flat on the floor of each upper rack compartment.

Figure 17-2. Weapon Systems Secured to Rack (Continued)

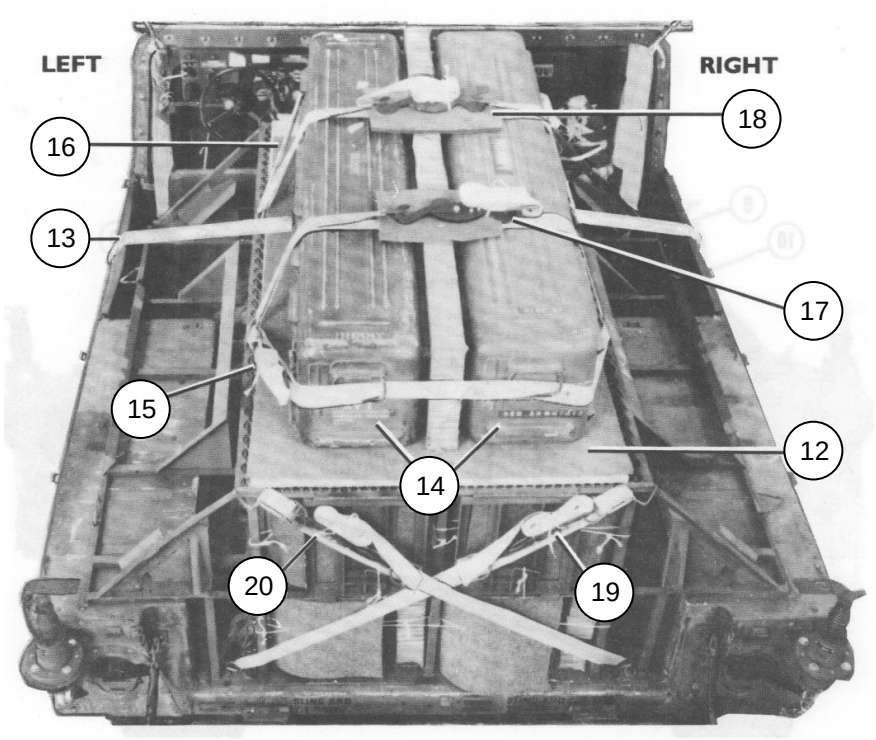


⑨ Place a weapon system case in each upper rack compartment. Be sure that enough of the felt placed in step 6 remains outside the rear of each rack compartment to cover the end of the weapon system case when folded over.

⑩ Secure each weapon system case to the vertical rack bars at the rear with type III nylon cord tied to the case handles. Cut a slit in the felt to allow for the ties.

⑪ Fold the felt over the weapon system cases in all four compartments. Close and latch the upper compartment doors, and secure the latches with type III nylon cord.

Figure 17-2. Weapon Systems Secured to Rack (Continued)



⑫ Drill a ½-inch hole in each corner of a 36- by 70-inch piece of ¾-inch plywood. Center the plywood on top of the missile rack, and tie the corners of the plywood to the rack with ½-inch tubular nylon webbing.

⑬ Pass a 30-foot lashing over the plywood and under the vehicle. Fasten the lashing under the vehicle with two D-rings and a loadbinder.

Note. This lashing is to secure the cage to the vehicle upon impact

⑭ Place a 36- by 66-inch piece of felt over the lashing and plywood. Center two weapon system cases over the plywood and felt with a 13- by 66-inch piece of honeycomb placed between the cases.

⑮ Pass a 15-foot lashing through the rear weapon system case handles and through the rear side tiedown provisions. Fasten the lashing on the left with a D-ring and a loadbinder.

Figure 17-2. Weapon Systems Secured to Rack (Continued)

⑯ Pass a 15-foot lashing through the front weapon system case handles and through the front side tiedown provisions. Fasten the lashing on the right with a D-ring and a loadbinder.

⑰ Pass a 15-foot lashing across the tops of the cases and through the rear side tiedown provisions. Fasten the lashing on top of the boxes with a D-ring and a loadbinder. Pad under the loadbinder with felt.

⑱ Pass a 15-foot lashing across the tops of the cases and through the front side tiedown provisions. Fasten the lashing on top of the boxes with a D-ring and a loadbinder. Pad under the loadbinder with felt.

⑲ Lash the left rear tiedown ring to the right upper tiedown provision on the rack with a 15-foot lashing, secured with a D-ring and a loadbinder.

⑳ Lash the right rear tiedown ring to the left upper tiedown provision on the rack in the same way as in step 19 above.

Note. Position the loadbinders on the lashings in steps 18 and 19 above so that they will not contact the tailgate when it is closed.

Figure 17-2. Weapon Systems Secured to Rack (Continued)

INSTALLING AND SAFETYING SUSPENSION SLINGS

17-5 Install and safety the suspension slings according to TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

INSTALLING CARGO PARACHUTES, EXTRACTION SYSTEM, PROVISIONS FOR EMERGENCY RESTRAINTS, CARGO PARACHUTE RELEASE, AND CARGO EXTRACTION PARACHUTES

17-6 Finish rigging the load according to TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111 and TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 .

MARKING RIGGED LOAD

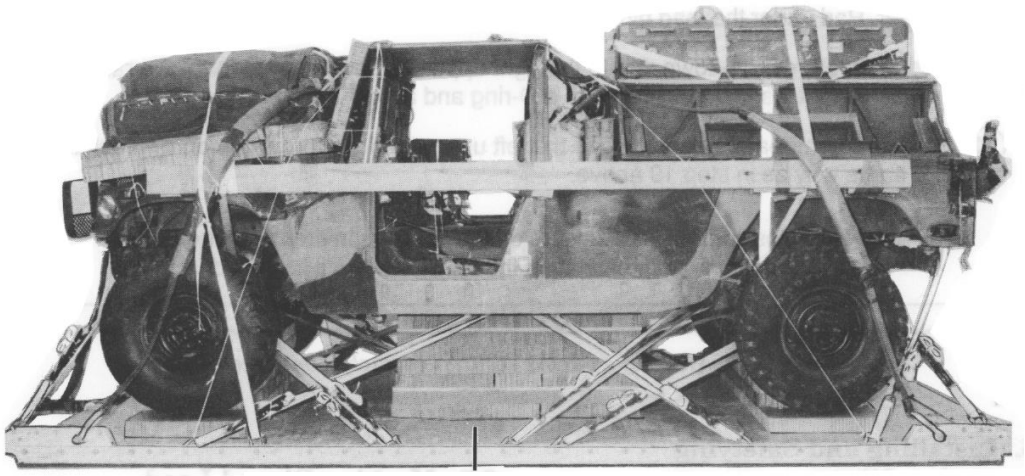
17-7 Mark the rigged load according to TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 and as shown in Figure 17-3.

EQUIPMENT REQUIRED

17-8 Use the equipment listed in Table 17-1 to rig six stinger weapon systems in a 1 ¼-ton HMMWV truck. Equipment for rigging the truck is listed in TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111.

CAUTION

Make the final rigger inspection required by TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5 before the load leaves the rigging site.



Center of Balance (CB)

RIGGED LOAD DATA

Weight:	Load Shown…….…	8,830 pounds
	Maximum Allowed……	9,500 pounds
Height (with two G-11 parachutes)	……	92 inches
Width	……	108 inches
Length (minus tandem links overhang)	……	192 inches
Overhang:	Front……	0 inches
	Rear……	0 inches
Center of Balance (from front edge of platform)	……	100 inches

Figure 17-3. M998, 1 ¼-Ton Truck with Six Stinger Weapon Systems Rigged for Low-Velocity Airdrop

Table 17-1. Equipment Required for Rigging Six Stinger Weapon Systems in the M998, 1 ¼-Ton Truck for Low-Velocity Airdrop

National Stock Number	*Item*	*Quantity*
4020-00-240-2146	Cord, Nylon, Type III, 550-lb	As Required
8135-00-664-6958	Cushioning, Material, Packaging, Cellulose Wadding	As Required
8305-00-958-3685	Felt, ½-inch thick	As Required
1670-00-753-3928	Pad, Energy-Dissipating, Honeycomb,	
	3- by 36- by 96-inch:	2 Sheets
	8- by 36-inch	(1)
	12- by 36-inch	(1)
	13- by 66-inch	(3)
	20- by 36-inch	(1)
	21- by 36-inch	(1)
5530-00-128-4981	Plywood, ¾-inch:	
	36- by 70-inch	1
7510-00-266-5016	Tape, Adhesive, 2-inch	As Required
1670-00-937-0271	Tiedown Assembly, 15-foot	13
	Webbing:	
8305-00-268-2411	Cotton, ¼-inch, Type 1	As Required
	Nylon, Tubular:	
8305-00-082-5752	½-inch	As Required
	ft = feet, in = inch, lb = pound, d = penny, gal= gallon, yd = yard, diam = diameter	

Glossary

ACB	Attitude control bar
AFMAN	Air Force manual
AFR	Air Force Regulation
AFTO	Air Force Technical Order
CB	center of balance
CDS	Container delivery system
EFTC	Extraction Force Transfer Coupling
FM	Field Manual
LVAD	low-velocity airdrop
MCRP	Marine Corps Reference Publication
MM	millimeter
NAVSEA	Naval Sea Systems Command
NSN	National Stock Number
TM	Technical Manual
TO	technical order
YD	yard

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References

REQUIRED PUBLICATIONS

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

ADRP 1-02. *Terms and Military Symbols*. 7 December 2015.

JP 1-02. *Department of Defense Dictionary of Military and Associated Terms*. 8 November 2010.

Marine Corps Order 3900.15B. *Marine Corps Expeditionary Force Development System (EFDS)*. 10 March 2008. Obtain at Marine Corps Publications Electronic Library Online: http://www.marines.mil/News/Publications/ELECTRONICLIBRARY.aspx.

RELATED PUBLICATIONS

These documents contain relevant supplemental information.

ARMY

Most Army doctrinal publications are available online: http://www.apd.army.mil.

FM 27-10, *The Law of Land Warfare*, 18 July 1956.

MULTI-SERVICE PUBLICATIONS

Most Army doctrinal publications are available online: http://www.apd.army.mil. Most Air Force doctrinal publications are available online: http://www.e-publishing.af.mil/.

AFMAN 24-204/TM 38-250/NAVSUP PUB 505/MCO P4030.19I/DLAI 4145.3 DCMAD1, CH3.4 (HM24), *Preparing Hazardous Materials for Military Air Shipments*, 03 December 2012

AR 59-4/OPNAVINST 4630.24C/AFJ 13-210(I)/MCO 13480.1B, *Joint Airdrop Inspection Records, Malfunction/Incident Investigations and Activity Reporting*, 8 April 2008

TM 4-48.02/MCRP 4-11.3J/NAVSEA SS400-AB-MMO-010 REV 1/TO 13C7-1-5. *Airdrop of Supplies and Equipment: Rigging Airdrop Platforms, Airdrop Derigging and Recovery Procedures, Reference Data for Airdrop Platform Loads*. 15 March 2016.

TM 4-48.03/MCRP 4-11.3C/TO 13C7-1-11. *Airdrop of Supplies and Equipment: Rigging Containers*. 15 March 2016.

TM 4-48.16/MCRP No 4-11.B/TO 13C7-18-41. *Airdrop of Supplies and Equipment: Rigging Ammunition*. 15 March 2016.

TM 4-48.17/MCRP 4-11.3M/TO 13C7-1-111. *Airdrop of Supplies and Equipment: Rigging High-Mobility Multipurpose Wheeled Vehicles (HMMWV)*. 15 March 2016.

TM 10-1670-268-20&P/TO 13C7-52-22. Organizational Maintenance Manual Including Repair Parts and Special Tools List for Type V Platform and Dual Row Airdrop Platform.15 September 2002.

TM 10-1670-281-23&P/TO 13C5-32-2/NAVAIR 13-1-32 Unit and Direct Support (DS) Maintenance Manual (Including Repair Parts and Special Tools List) for Parachute, Cargo Type: 64-foot Diameter Model G-12D and G-12E. 15 December 2013.

TM 10-1670-286-20/TO 13C5-2-41. Unit Maintenance Manual for Extraction Line Panel (Including Stowing Procedures). 15 March 2001.

PRESCRIBED FORMS

None.

REFERENCED FORMS

Unless otherwise indicated, DA Forms are available on the Army Publishing Directorate (APD) web site: www.apd.army.mil. Air Force forms are available at: http://www.e-publishing.af.mil/.

DD forms are available on the OSD web site:
http://www.dtic.mil/whs/directives/infomgt/forms/

AFTO Form 22. Technical Manual (TM) Change Recommendation and Reply

AMC IMT 1033, Shipper's AMC IMT 1033 (Shipper's Declaration for Dangerous Goods). Obtained at https://www.iata.org/whatwedo/cargo/dgr/Pages/shippers-declaration.aspx

DA Form 2028. Recommended Changes to Publications and Blank Forms

DD Form 1387-2. Special Handling Data/Certification

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(FM 10-550/TO 13C7-22-71; FM 10-500-29/TO 13C7-10-171; FM 10-500-45/TO 13C7-10-201; FM 4-20.152 /TO 13C7-22-61)

15 March 2016

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