

CHAPTER 5

RIGGING DUAL ROW AIRDROP SYSTEM (DRAS) M1025 / M1121 ARMAMENT/ TOW CARRIER HMMWV

DESCRIPTION OF LOAD

5-1. The HMMWV truck is rigged on a DRAS platform for DRAS 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 is rigged with three G-11D cargo parachutes.

- a.** The M1025 Armament Carrier (Figure 5-1). It weighs 5,960 pounds. It is 180 inches long, 85 inches wide and is 74 inches high.
- b.** The M1025A1 Armament Carrier. It weighs 6,140 pounds. It is 180 inches long, 85 inches wide and is 74 inches high.
- c.** The M1025A2 Armament Carrier. It weighs 6,780 pounds. It is 180 inches long, 85 inches wide and is 74 inches high.
- d.** The M1121 Tow Carrier. It weighs 7,900 pounds. It is 180 inches long, 85 inches wide and is 74 inches high.

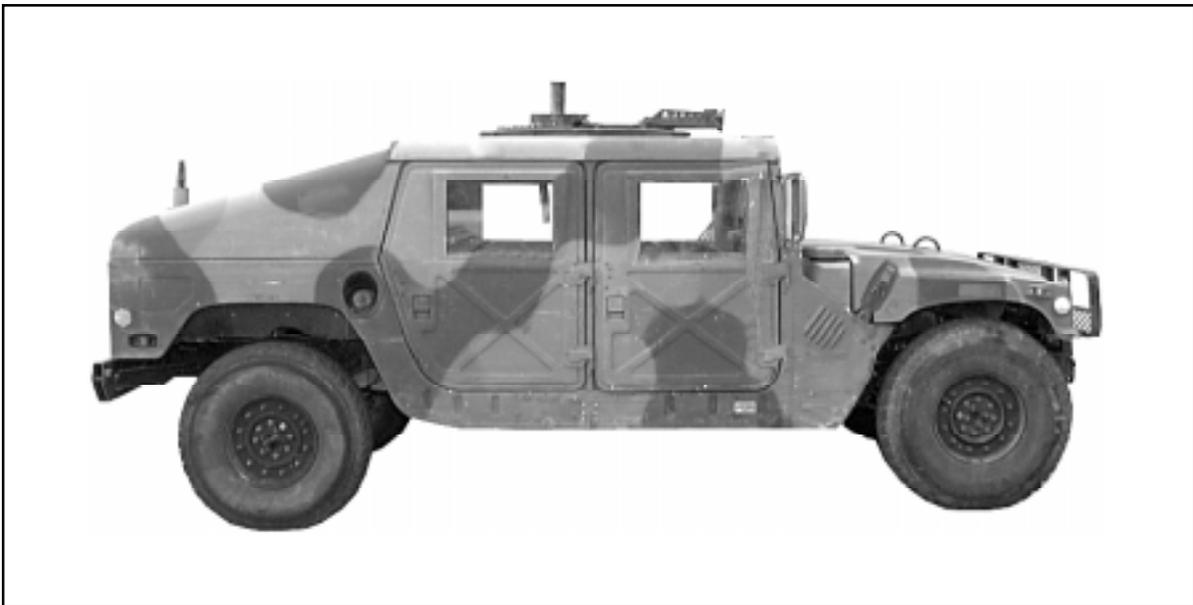


Figure 5-1. M1025/ M1121 Armament/ Tow Carrier HMMWV

PREPARING PLATFORM

5-2. Inspect, or assemble and inspect, a DRAS platform with outrigger assemblies, outrigger platform support weldments, and link assemblies according to TM 10-1670-268-20&P/TO 13C7-52-22, and as shown in Figure 4-2.

BUILDING AND PLACING HONEYCOMB STACK

5-3. Prepare the honeycomb stacks for the trucks as shown in Figure 4-3. Position the honeycomb stacks as shown in Figure 4-4.

INSTALLING OPTIONAL DRIVE-OFF AID ON PLATFORM

5-4. Install the drive-off aid as shown in Figure 3-5.

PREPARING M1025/M1121 TRUCK

5-5. Prepare the M1025/M1121 truck as described below.

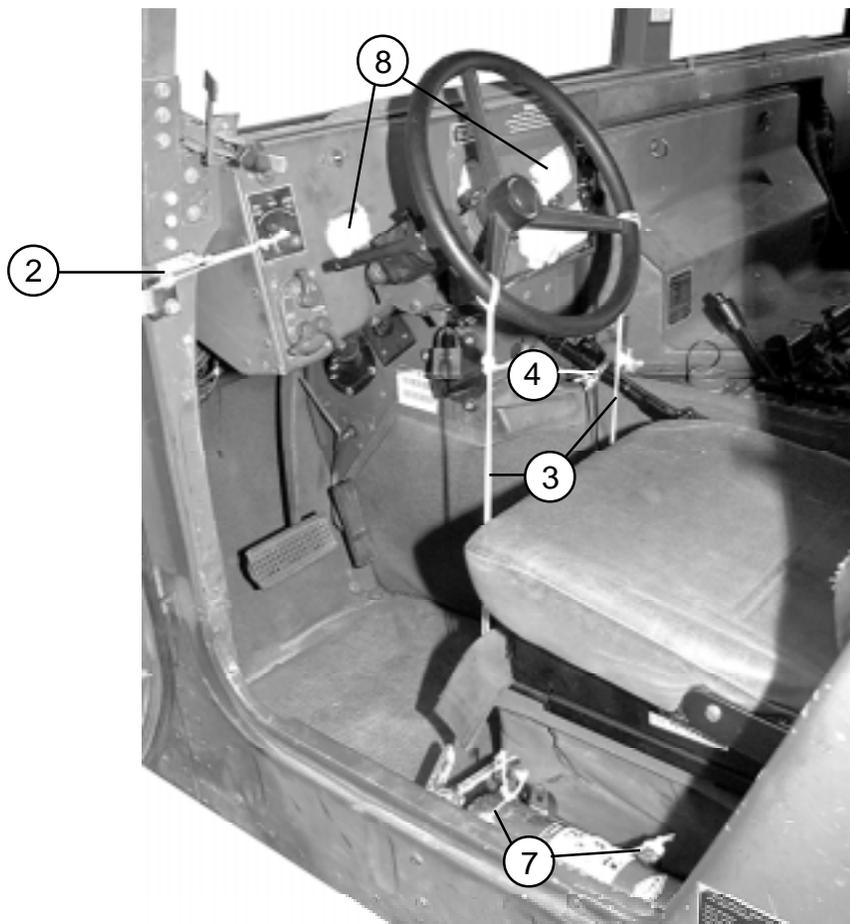
- a. Prepare the fuel tank as shown in Figures 4-5 and 4-6.

NOTE: Certain units may be authorized a waiver allowing 95% fuel. One way to verify the tank is 95% full is to fill the tank and withdraw 1 1/4 gallons with a hand pump.

CAUTION

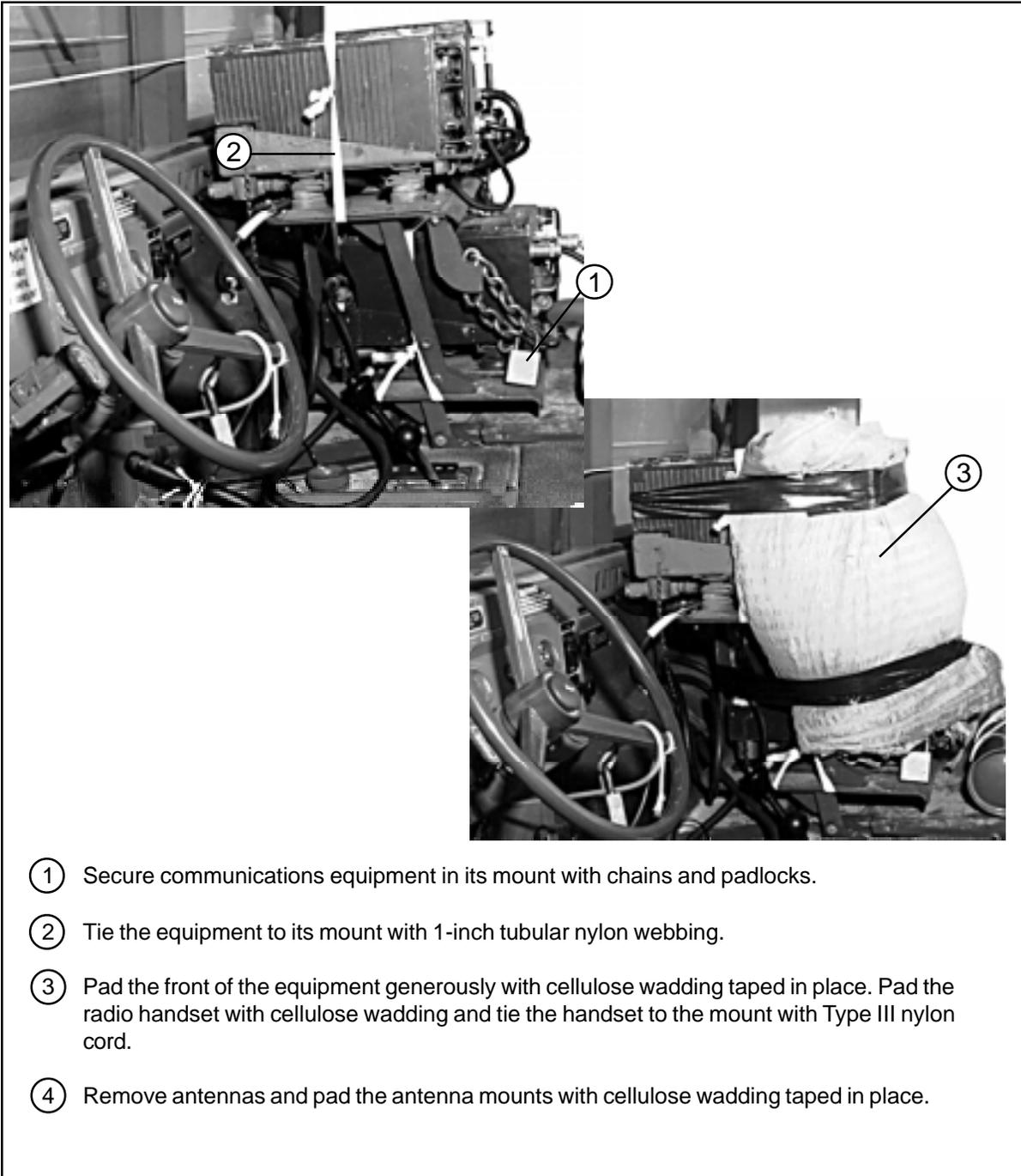
A full tank does not allow for expansion,
and is a danger to aircraft and air crew.

- b. Make sure the batteries and battery compartment comply with AFJMAN 24-204/TM 38-250.
- c. Prepare the cab of the truck as shown in Figure 5-2.
- d. Secure and pad radio equipment in the cab section as shown in Figure 5-3.
- e. Prepare the front of the trucks as shown in Figure 5-4.
- f. Prepare the turret housing as shown in Figure 5-5.
- g. Prepare and secure the pioneer tool kit according to TM 9-2320-280-10/TO 36A12-1A-2091-1/TM 2320-10/6 and as shown in Figure 4-10.
- h. Prepare the underside of the truck as shown in Figure 4-11.



- ① Pad the mirrors with cellulose wadding and tape (not shown).
- ② Tie the engine start switch in the engine stop position with Type I, 1/4-inch cotton webbing.
- ③ Tie the steering wheel to the seat frame in two places with Type III nylon cord, or use the retractable steering wheel locking cable. If the locking cable is used, secure it to the steering wheel with Type III nylon cord, not a padlock.
- ④ Tie the emergency brake handle in the off position with Type III nylon cord.
- ⑤ Place the transmission and four-wheel drive levers in the neutral position.
- ⑥ Tie the seat cushions to the seat frames with Type III nylon cord (not shown).
- ⑦ Tie the fire extinguisher and decontamination apparatus in place in its designated rack with two lengths of Type III nylon cord.
- ⑧ Tape all lights, reflectors, windshield and instrument panel gauges.

Figure 5-2. Cab Prepared



- ① Secure communications equipment in its mount with chains and padlocks.
- ② Tie the equipment to its mount with 1-inch tubular nylon webbing.
- ③ Pad the front of the equipment generously with cellulose wadding taped in place. Pad the radio handset with cellulose wadding and tie the handset to the mount with Type III nylon cord.
- ④ Remove antennas and pad the antenna mounts with cellulose wadding taped in place.

Figure 5-3. Communications Equipment Secured and Padded

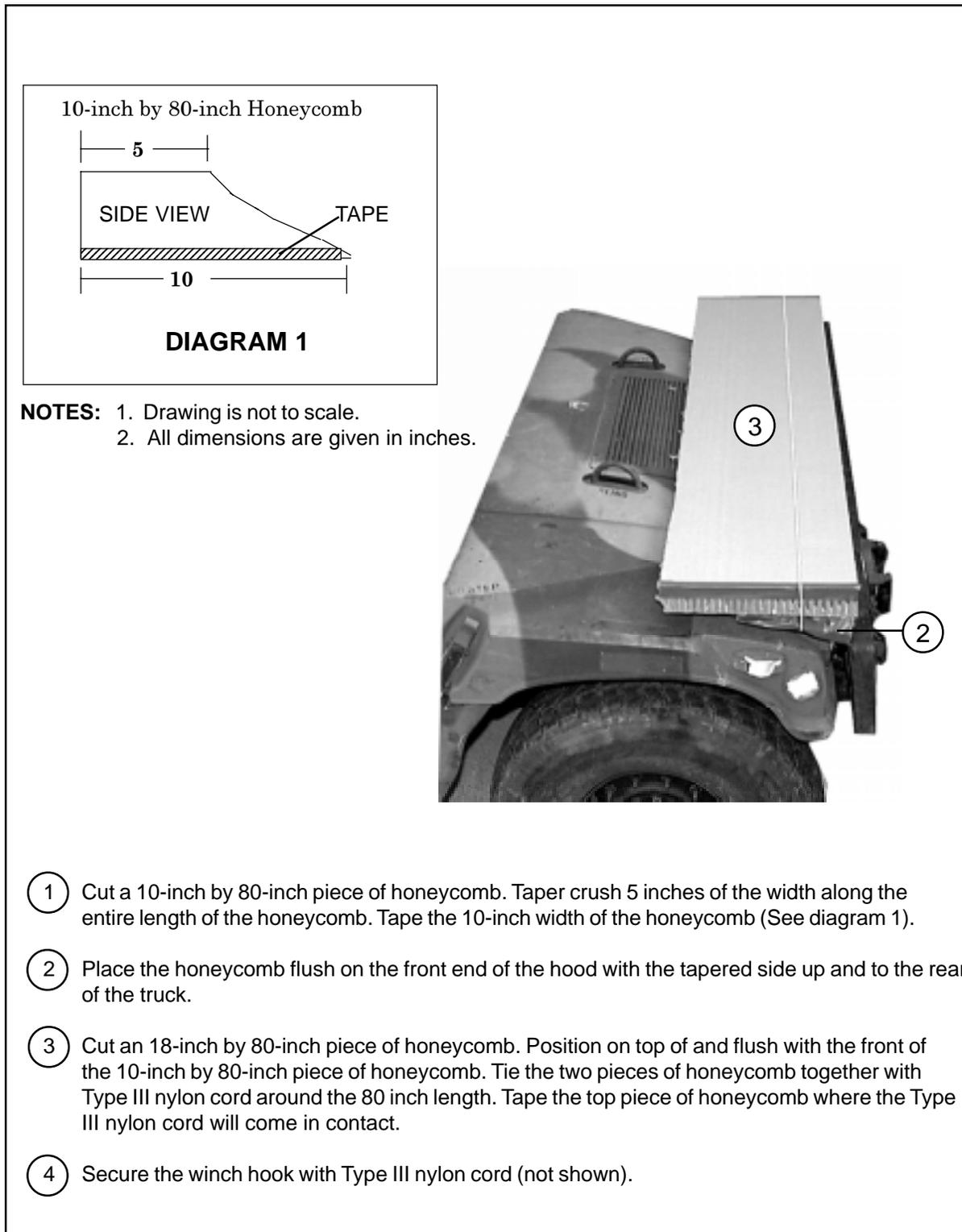


Figure 5-4. Front of Truck Prepared

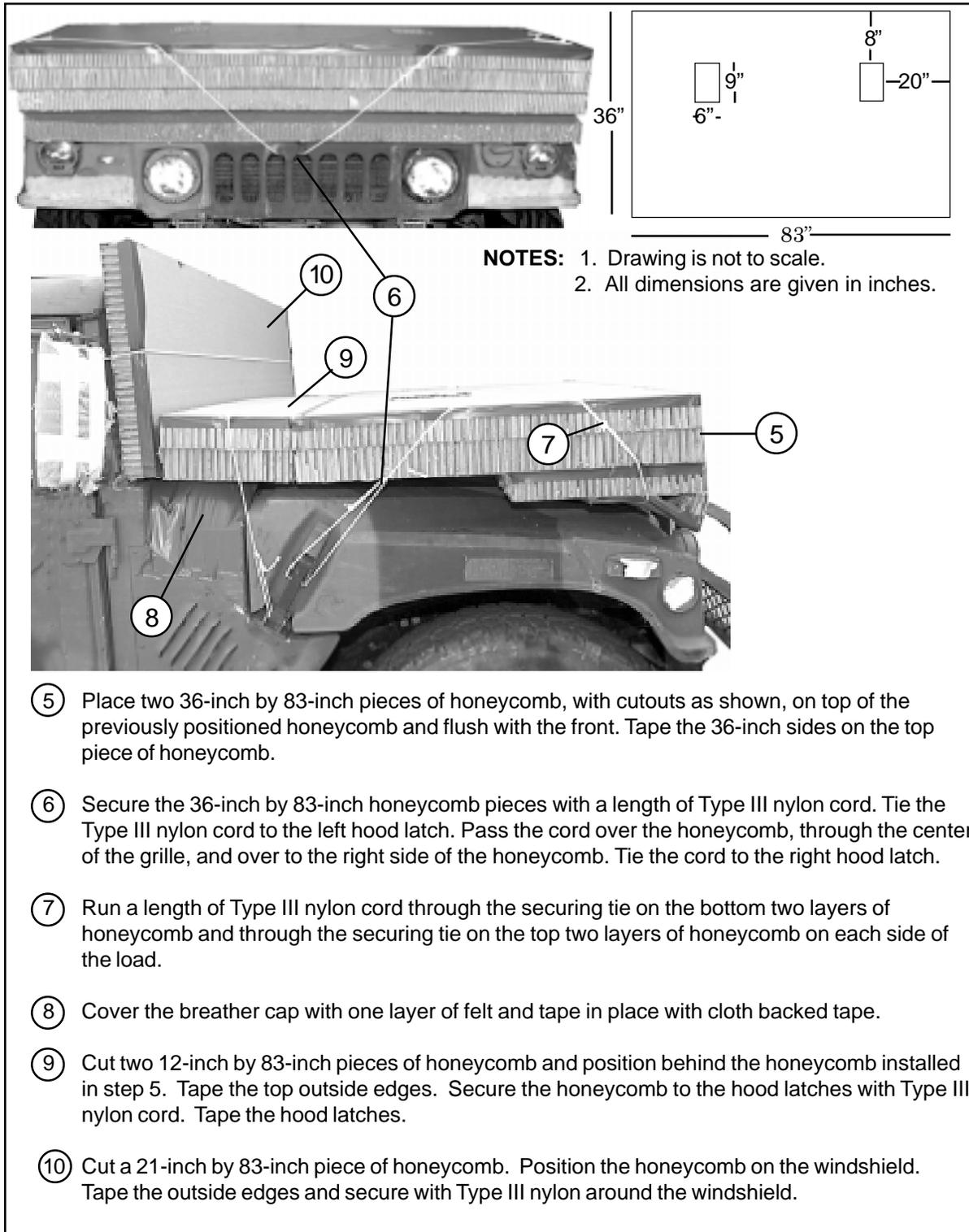


Figure 5-4. Front of Truck Prepared (Continued)

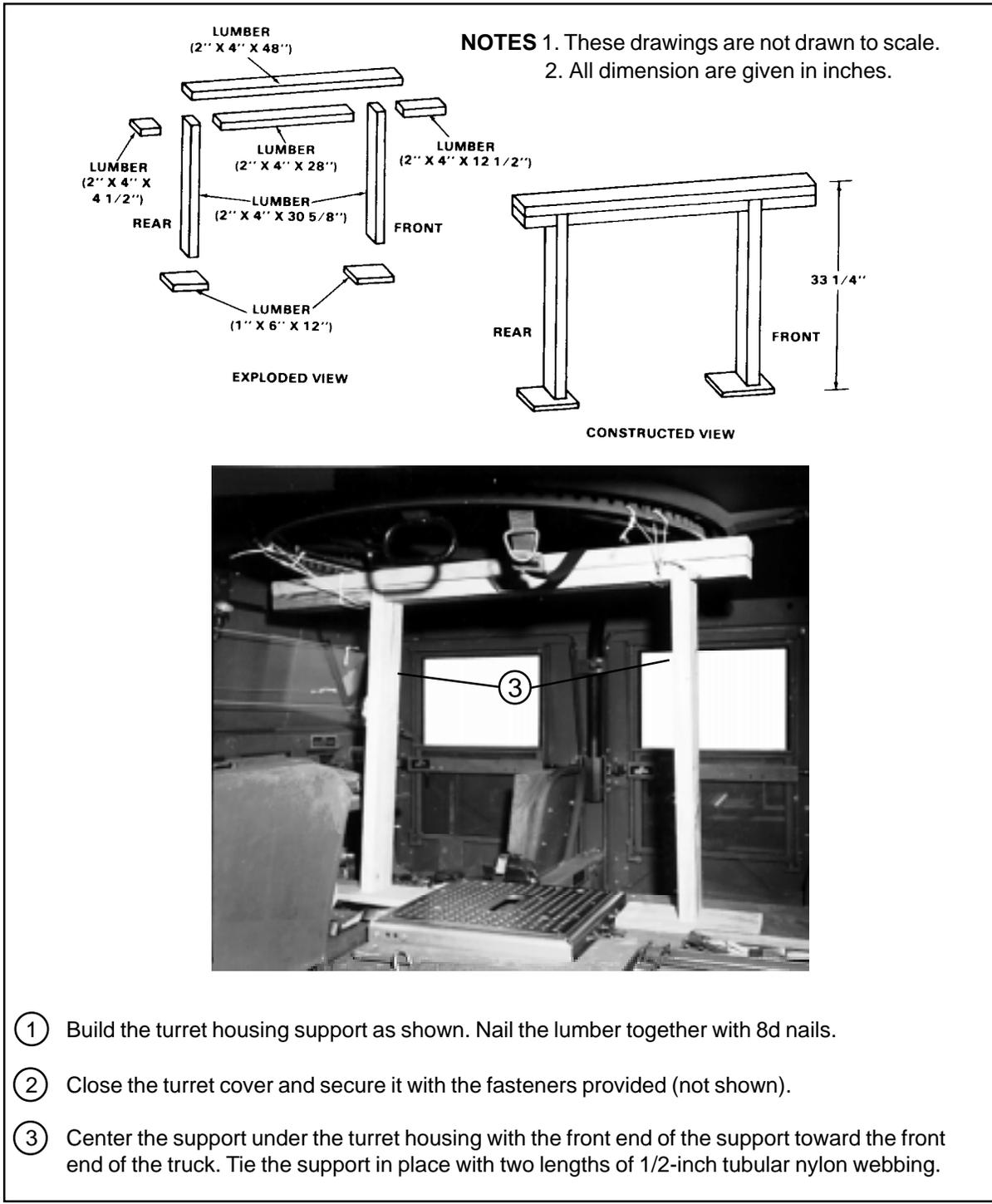


Figure 5-5. Turret Support Built and Placed

STOWING ACCOMPANYING LOAD ON M1025 ARMAMENT CARRIER

5-6. Use the procedures shown in Figure 5-6 to stow ten 105-millimeter ammunition boxes and truck equipment.

CAUTION
Load weight limits of 800-2,000 pounds and CB requirements given in Chapter 1 must be strictly observed.

NOTE: The accompanying load rigging procedures for the M1121 TOW Carrier differ from those for the M1025 procedures and are given in paragraph 5-7.

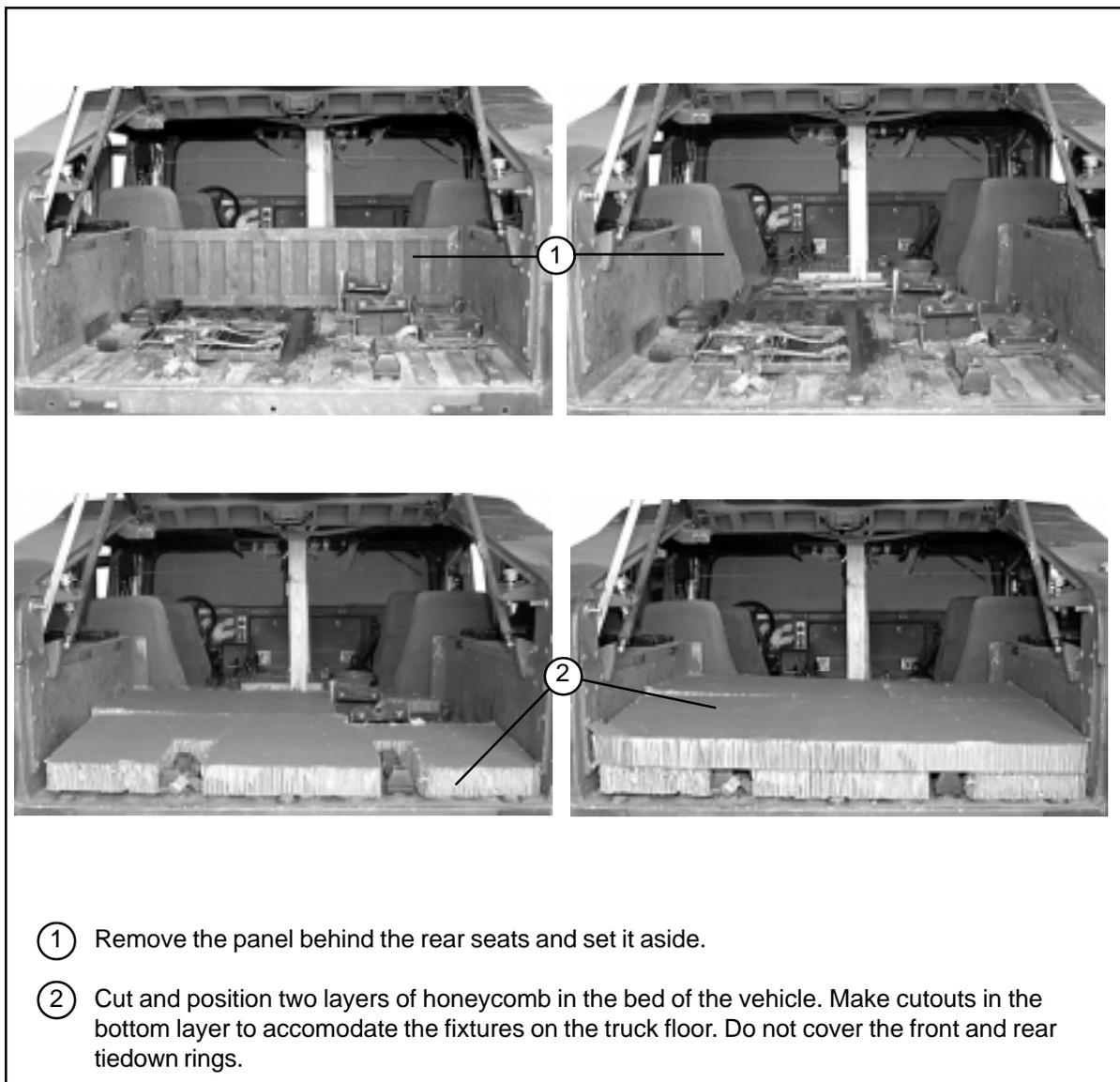
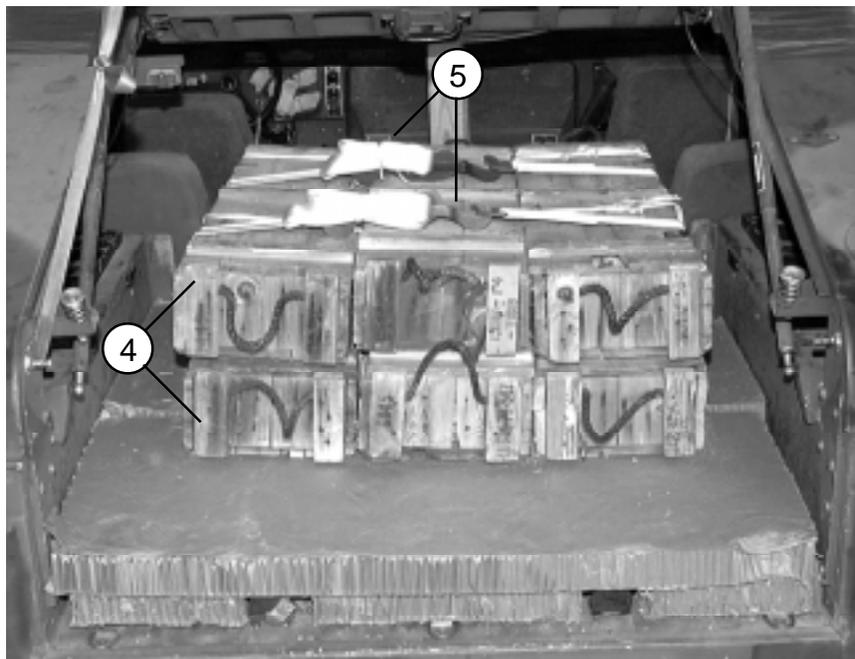
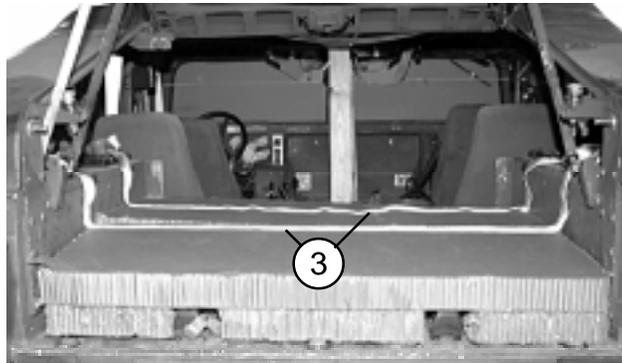
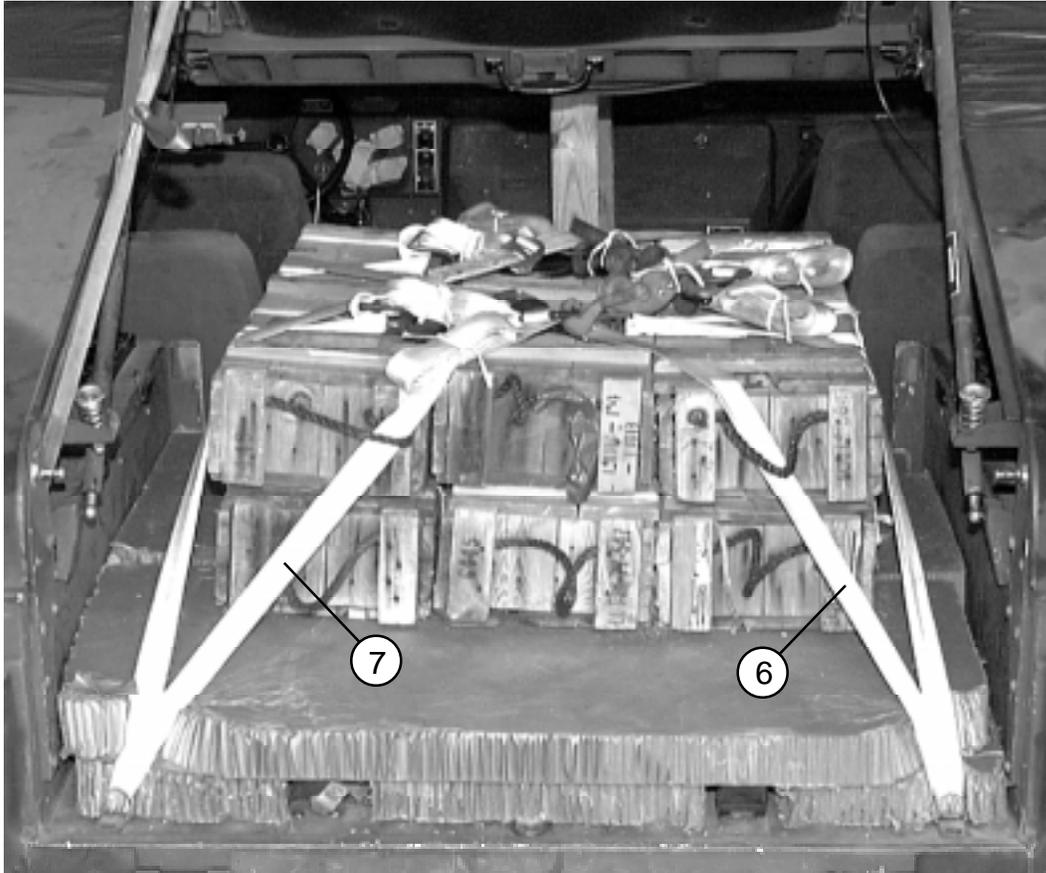


Figure 5-6. M1025 Accompanying Load Stowed



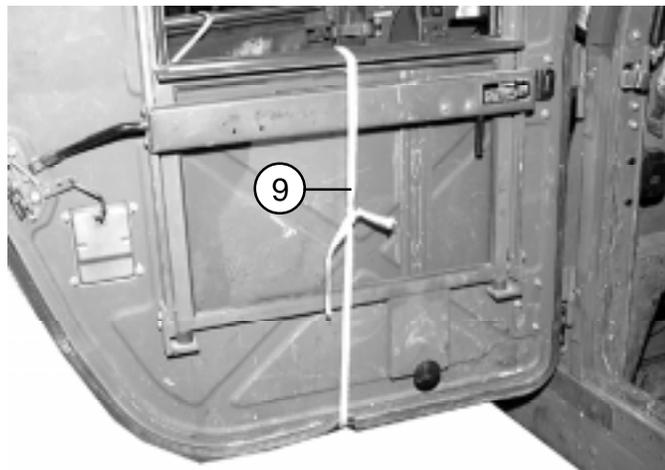
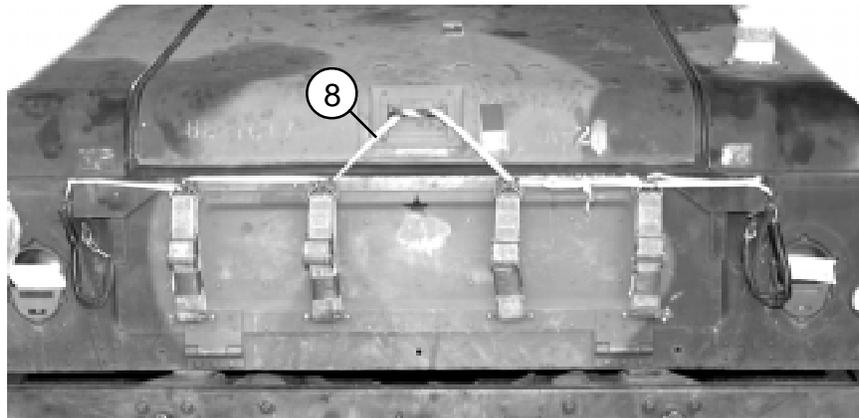
- ③ Position two lashings across the bed of the vehicle at 21-inches and 38-inches from the rear edge of the honeycomb.
- ④ Center two layers of three ammunition boxes on the lashings in step 3.
- ⑤ Secure the lashings placed in step 3 with D-rings and load binders.

Figure 5-6. M1025 Accompanying Load Stowed (continued)



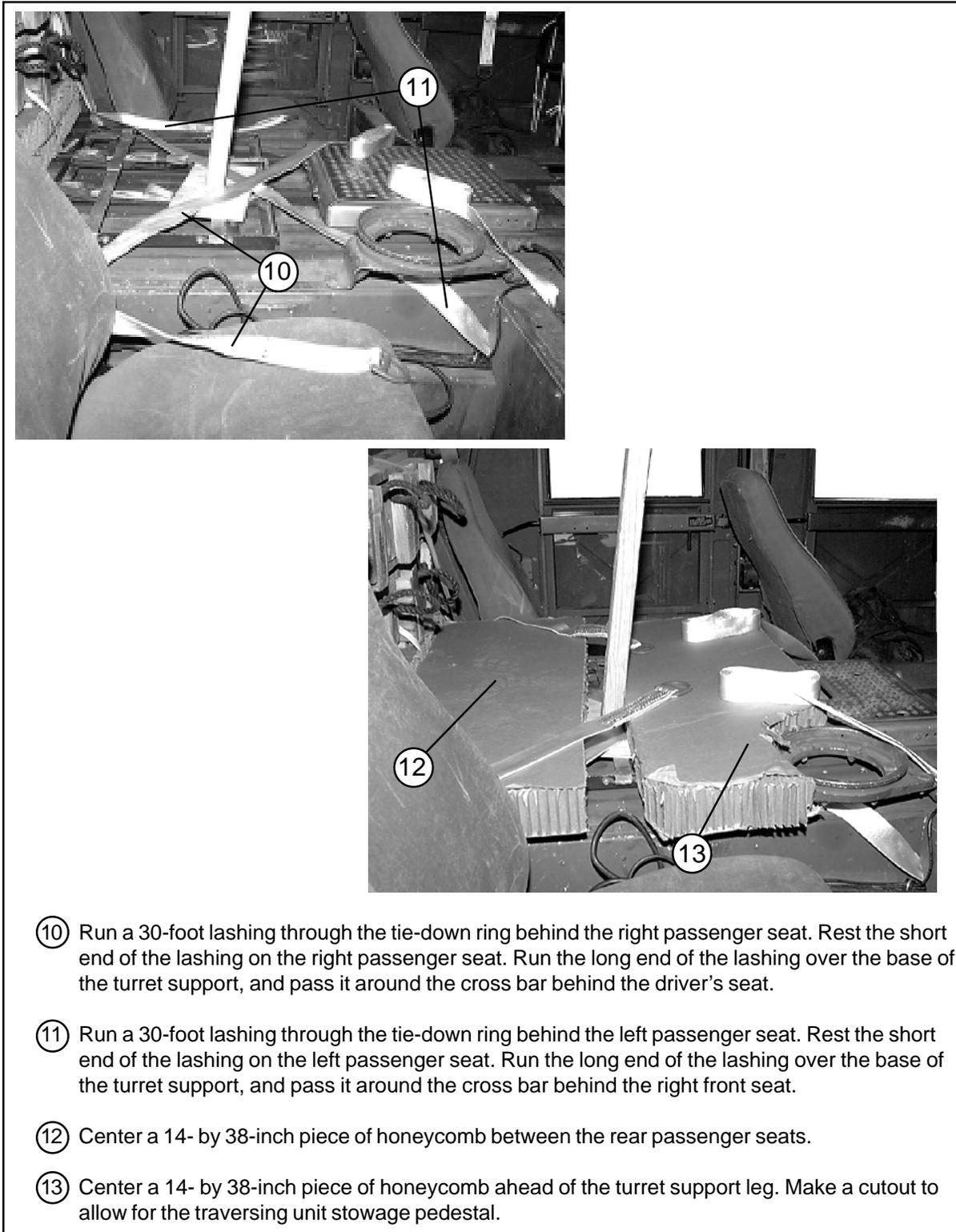
- ⑥ Route a 30-foot lashing through the right rear tiedown, over the ammunition boxes, and through the left front tiedown. Close the lashing with D-rings and a load binder on top of the boxes.
- ⑦ Route a 30-foot lashing through the left rear tiedown, over the ammunition boxes, and through the right front tiedown. Close the lashing with D-rings and a load binder on top of the boxes.

Figure 5-6. M1025 Accompanying Load Stowed (continued)



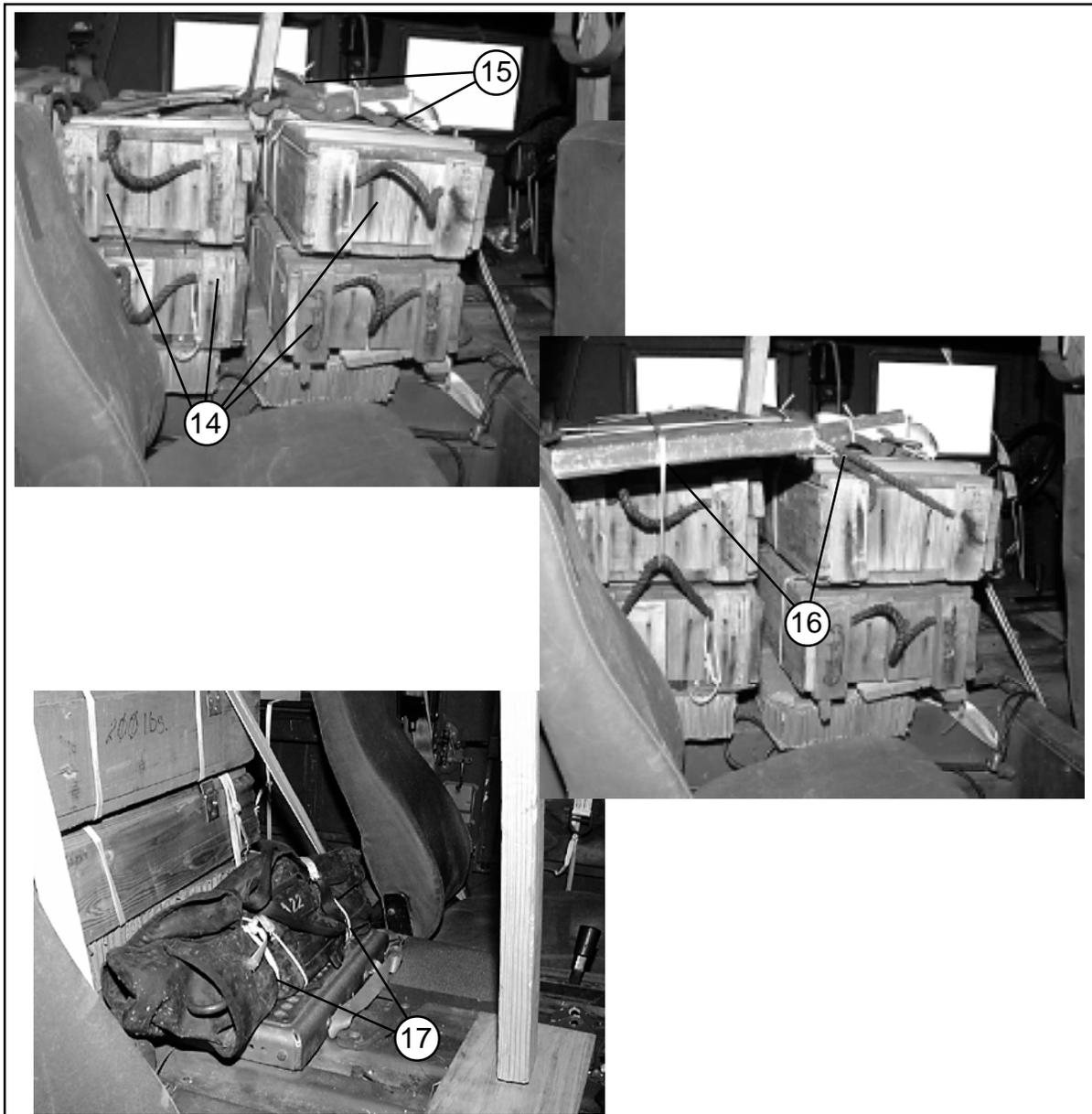
- ⑧ Close the tailgate and hatch. Secure the tailgate and hatch with a doubled length of 1/2-inch tubular nylon webbing.
- ⑨ Lower all windows. Secure all windows in the lowered position with a length of 1/2-inch tubular nylon webbing.

Figure 5-6. M1025 Accompanying Load Stowed (continued)



- ⑩ Run a 30-foot lashing through the tie-down ring behind the right passenger seat. Rest the short end of the lashing on the right passenger seat. Run the long end of the lashing over the base of the turret support, and pass it around the cross bar behind the driver's seat.
- ⑪ Run a 30-foot lashing through the tie-down ring behind the left passenger seat. Rest the short end of the lashing on the left passenger seat. Run the long end of the lashing over the base of the turret support, and pass it around the cross bar behind the right front seat.
- ⑫ Center a 14- by 38-inch piece of honeycomb between the rear passenger seats.
- ⑬ Center a 14- by 38-inch piece of honeycomb ahead of the turret support leg. Make a cutout to allow for the traversing unit stowage pedestal.

Figure 5-6. M1025 Accompanying Load Stowed (continued)



- ⑭ Center two ammunition boxes over each of the honeycomb pieces placed in steps 12 and 13.
- ⑮ Secure the lashings placed in steps 10 and 11 over the ammunition boxes.
- ⑯ Tie the panel removed in step 1 over the ammunition boxes with 1/2-inch tubular nylon webbing tied to the box carrying handles.
- ⑰ Secure the jack to the gunner's platform with 1/2-inch tubular nylon webbing.

Figure 5-6. M1025 Accompanying Load Stowed (continued)

STOWING ACCOMPANYING LOAD IN M1121 TOW CARRIER

5-7. Use the procedures shown in Figure 5-7 to stow mission and truck equipment weighing 800-2000 pounds. An 800-pound load is shown here.

NOTE: The accompanying load rigging procedures for the M1025 Armament Carrier are different from the M1121 procedures and are given in paragraph 5-6.

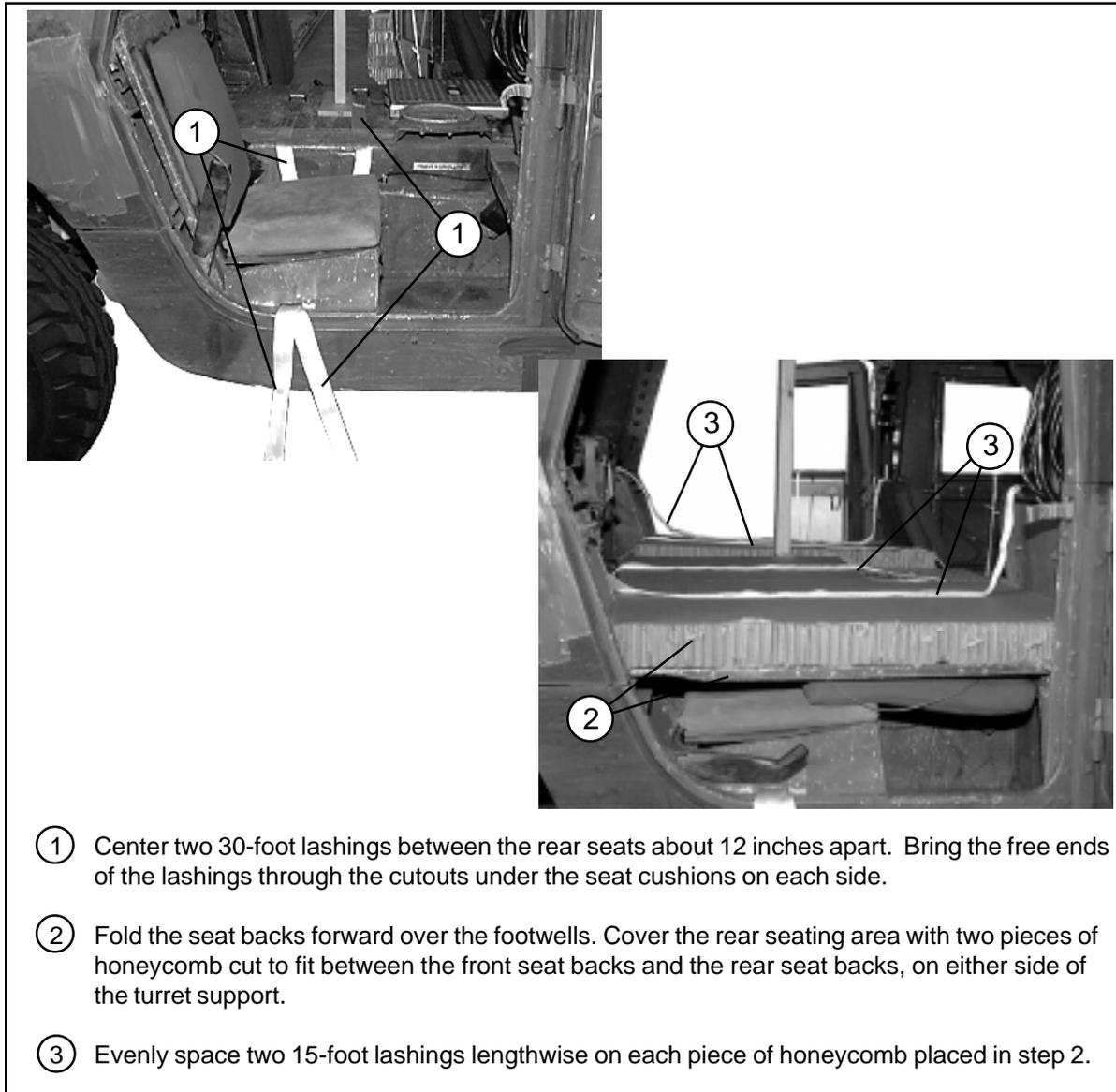
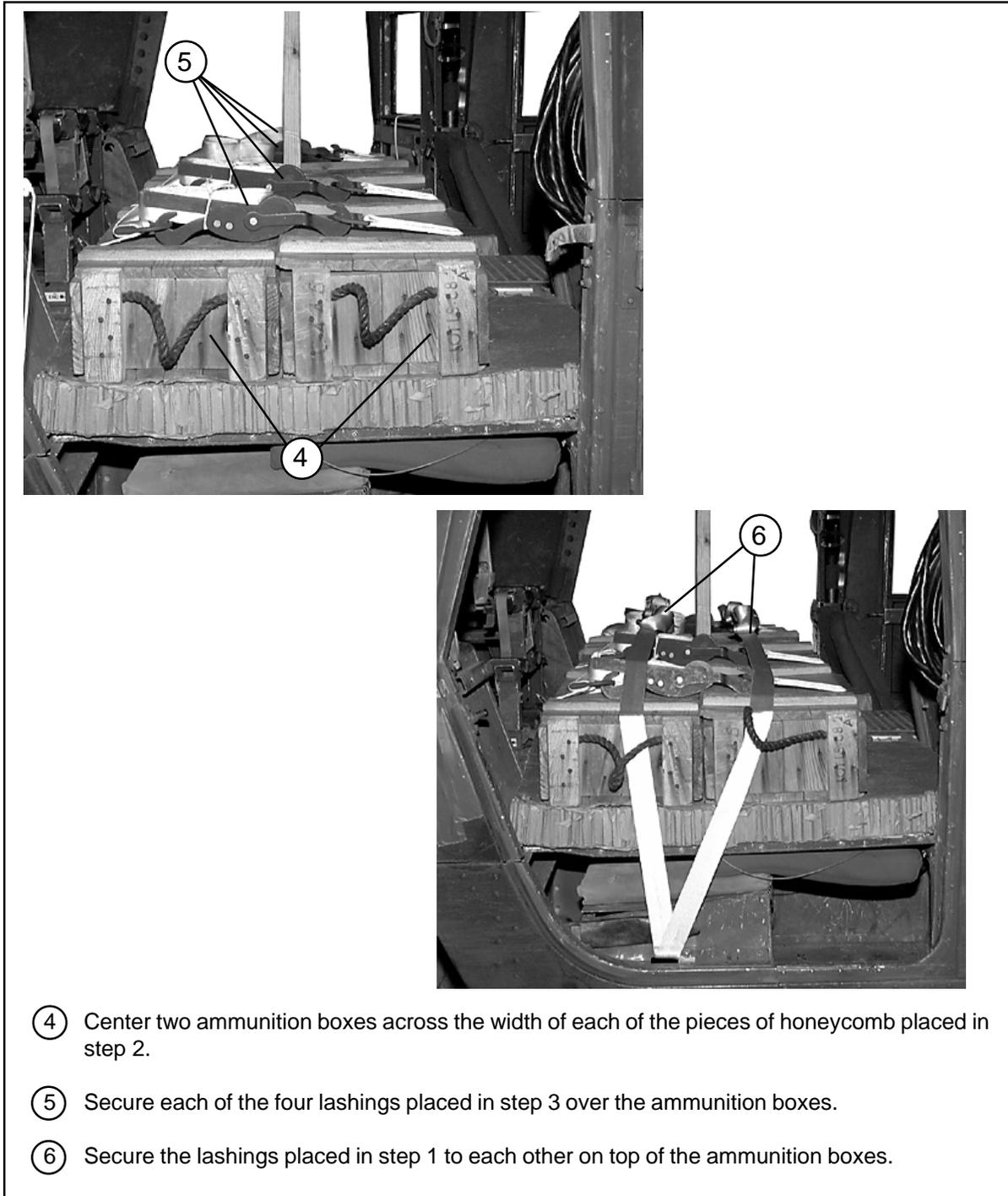


Figure 5-7. Accompanying Load Stowed in M1121 TOW Carrier



- ④ Center two ammunition boxes across the width of each of the pieces of honeycomb placed in step 2.
- ⑤ Secure each of the four lashings placed in step 3 over the ammunition boxes.
- ⑥ Secure the lashings placed in step 1 to each other on top of the ammunition boxes.

Figure 5-7. Accompanying Load Stowed in M1121 TOW Carrier (continued)

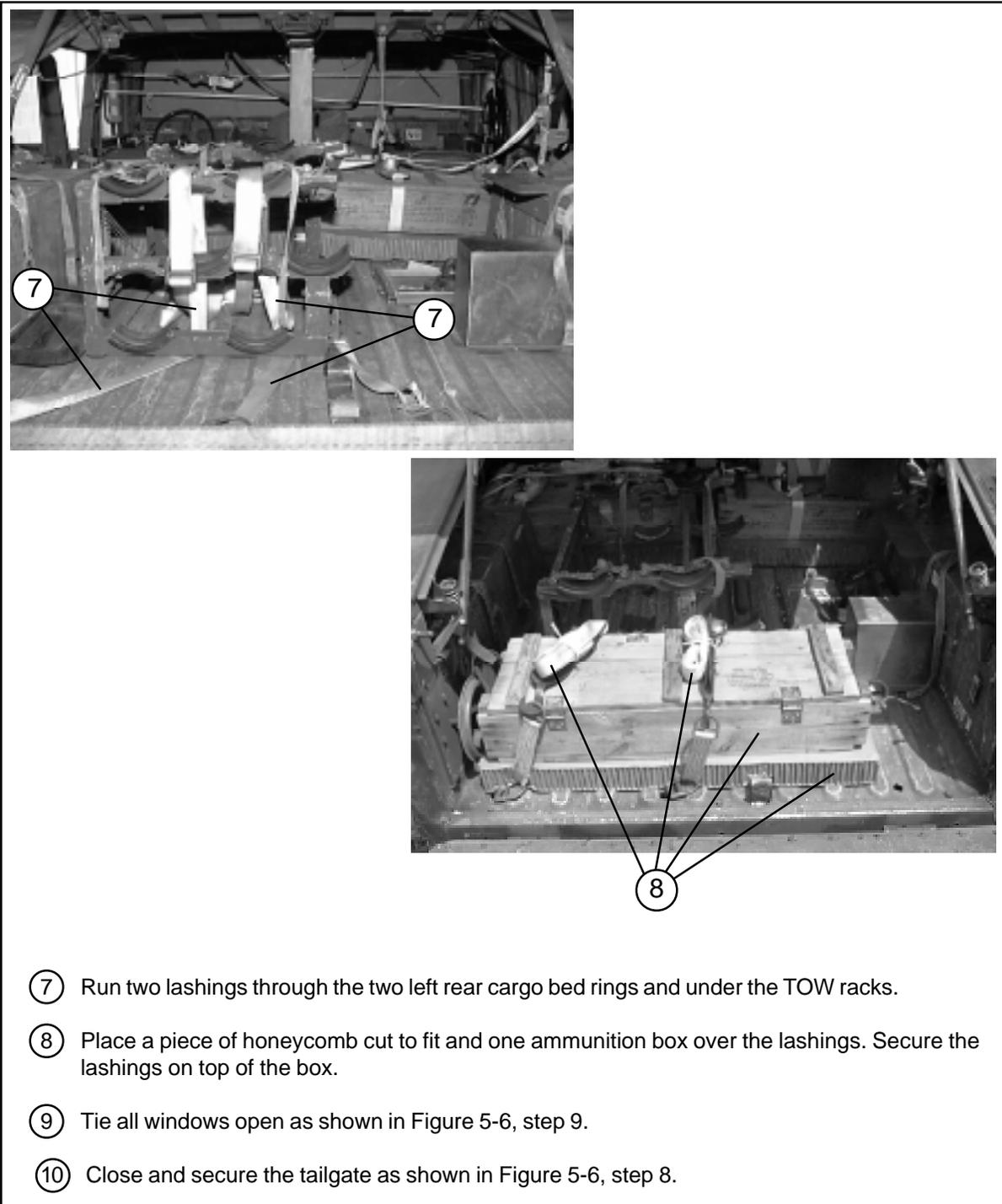


Figure 5-7. Accompanying Load Stowed in M1121 TOW Carrier (continued)

PREPARING ROOF OF TOW CARRIERS

5-8. Prepare the roof of the M1025 and M1121 TOW carriers as shown in Figure 5-8.

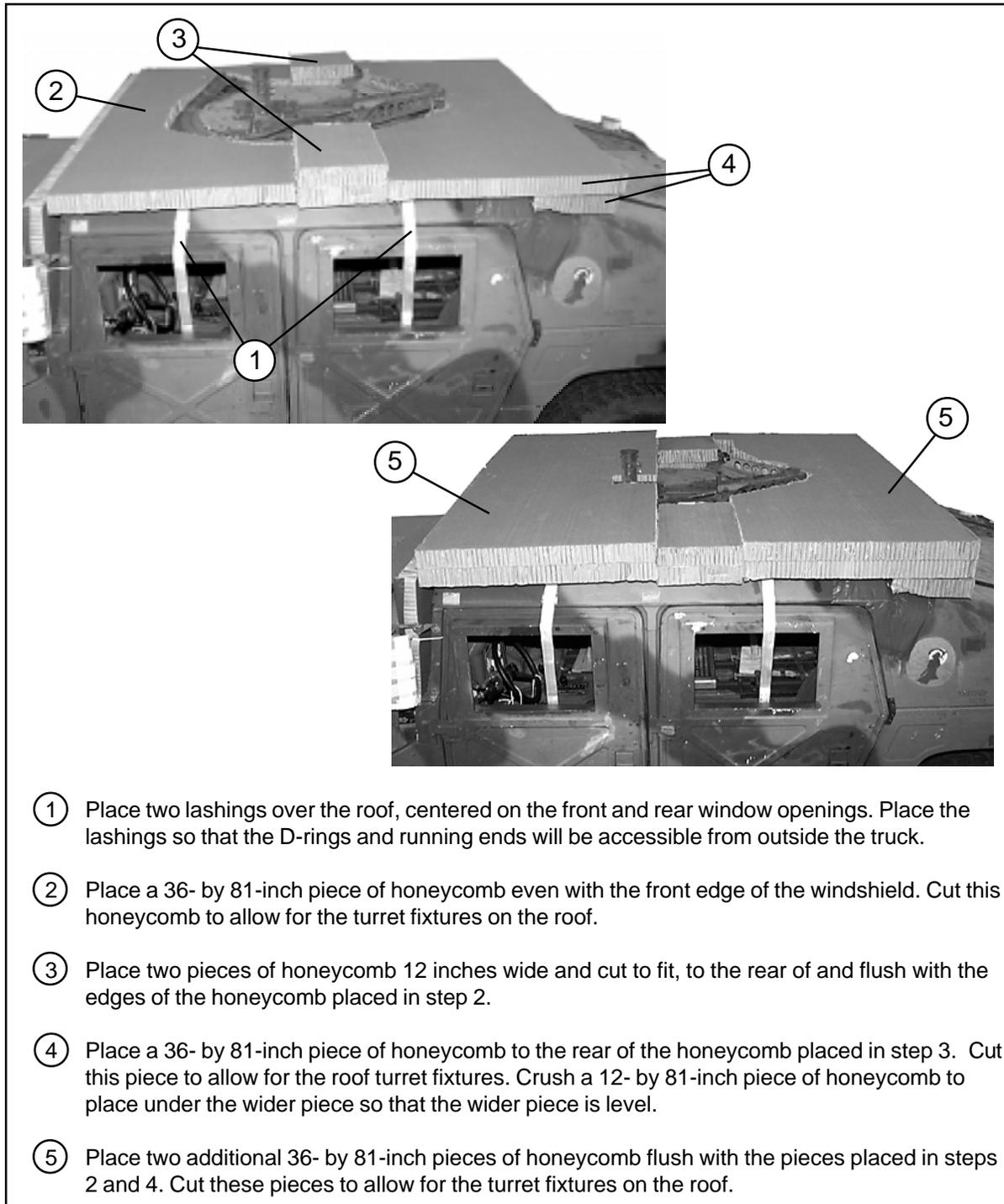
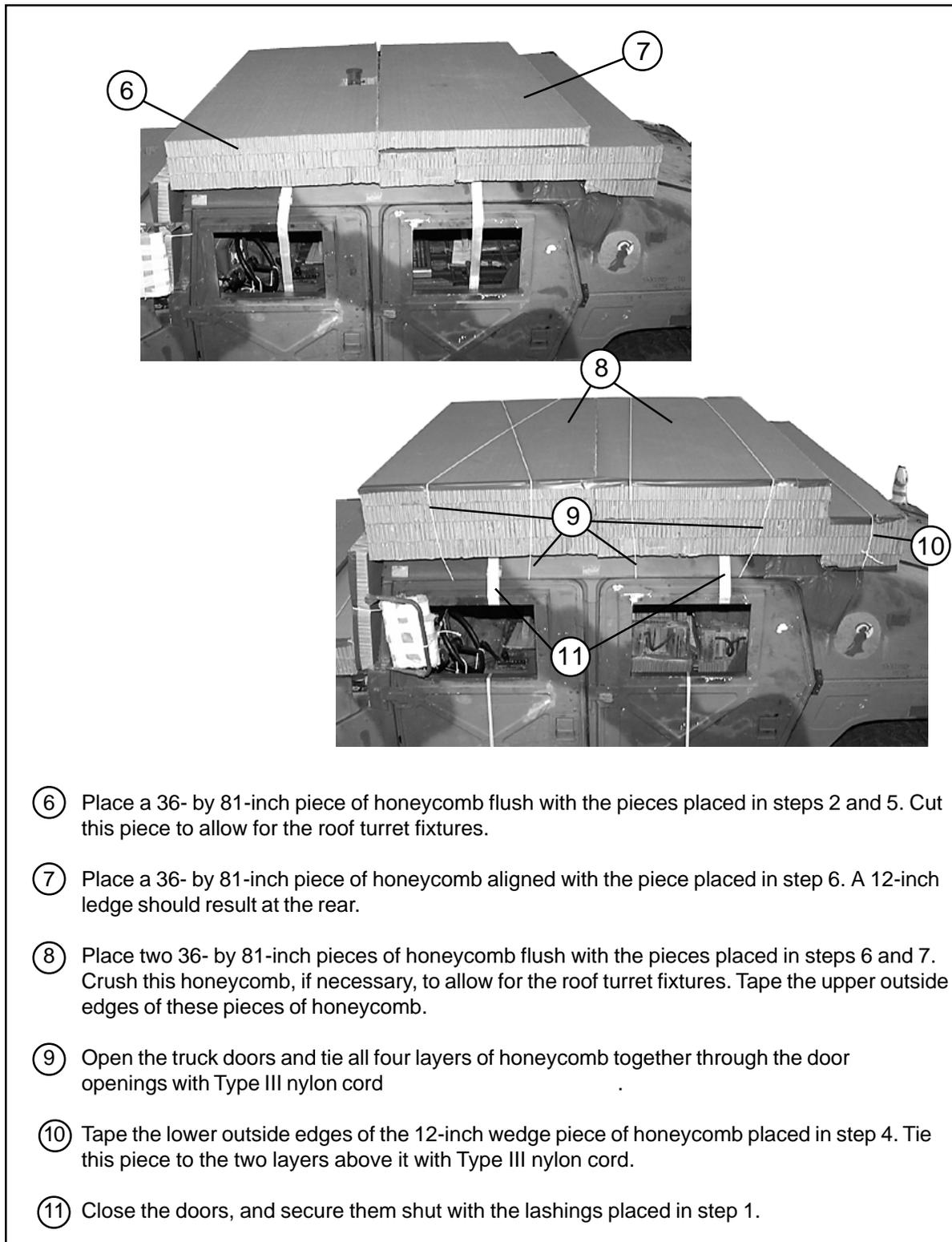


Figure 5-8. TOW Carrier Roof Prepared



- ⑥ Place a 36- by 81-inch piece of honeycomb flush with the pieces placed in steps 2 and 5. Cut this piece to allow for the roof turret fixtures.
- ⑦ Place a 36- by 81-inch piece of honeycomb aligned with the piece placed in step 6. A 12-inch ledge should result at the rear.
- ⑧ Place two 36- by 81-inch pieces of honeycomb flush with the pieces placed in steps 6 and 7. Crush this honeycomb, if necessary, to allow for the roof turret fixtures. Tape the upper outside edges of these pieces of honeycomb.
- ⑨ Open the truck doors and tie all four layers of honeycomb together through the door openings with Type III nylon cord
- ⑩ Tape the lower outside edges of the 12-inch wedge piece of honeycomb placed in step 4. Tie this piece to the two layers above it with Type III nylon cord.
- ⑪ Close the doors, and secure them shut with the lashings placed in step 1.

Figure 5-8. TOW Carrier Roof Prepared (continued)

LIFTING AND POSITIONING TRUCK AND INSTALLING OPTIONAL DRIVE-OFF AIDS

5-9. Install the lifting slings and position the truck on the honeycomb stacks as shown in Figure 4-13. Attach the optional drive-off aids to the wheels of the truck as shown in Chapter 3 of this manual. Position the truck on the platform as shown in Figure 5-9.

LASHING TRUCK

5-10. Lash the truck to the platform as shown in Figures 5-10 and 5-11.

INSTALLING SUSPENSION SLINGS AND ATTITUDE CONTROL SYSTEM

5-11. Construct and inspect the Attitude Control System (ACS) according to Chapter 3. Position the ACS and suspension slings as shown in Figure 5-12. Secure the ACS according to Chapter 3 and as shown in Figures 5-13 and 5-14. Complete the suspension slings, pad the links, and safety tie the slings as shown in Figure 5-15.

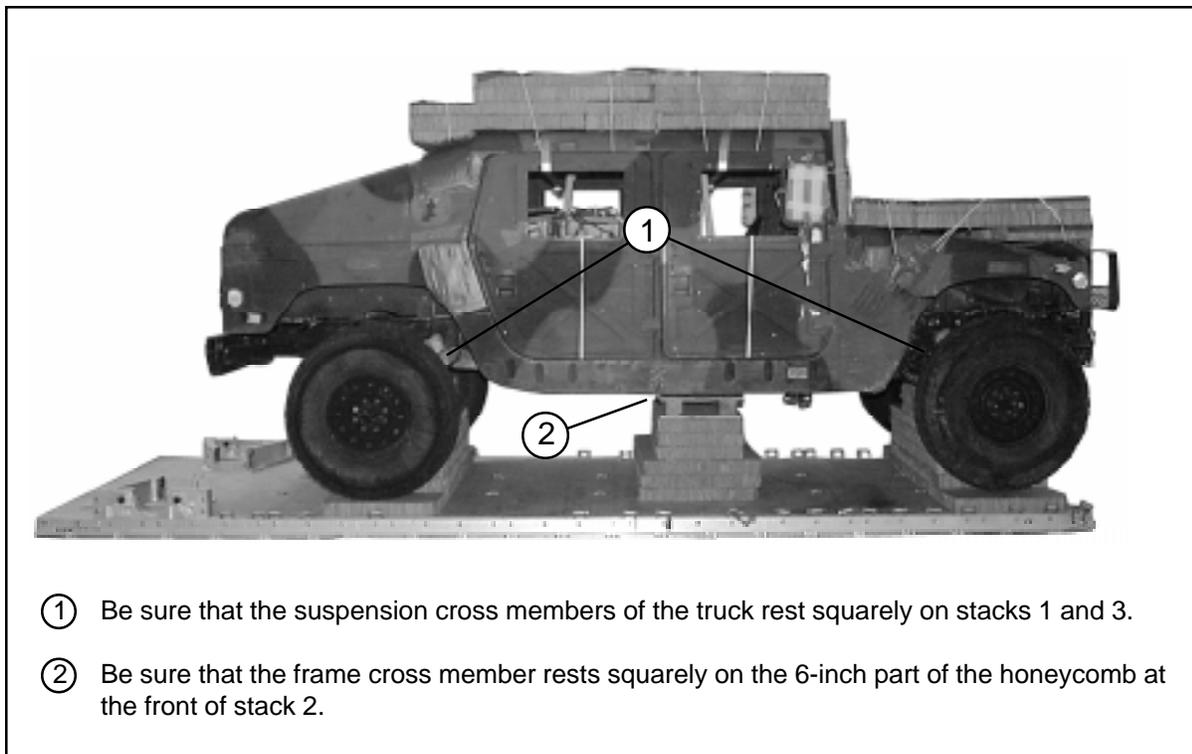
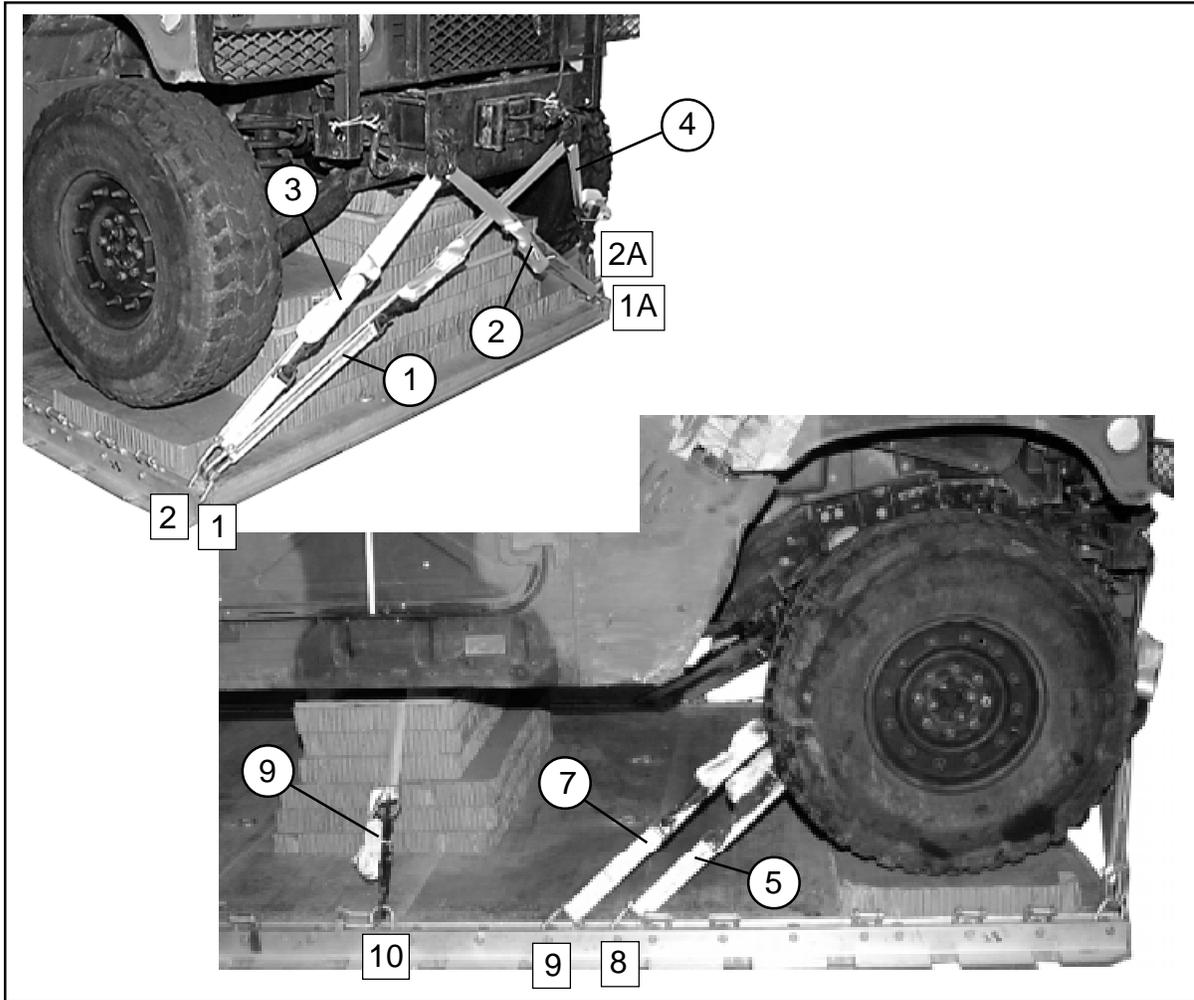
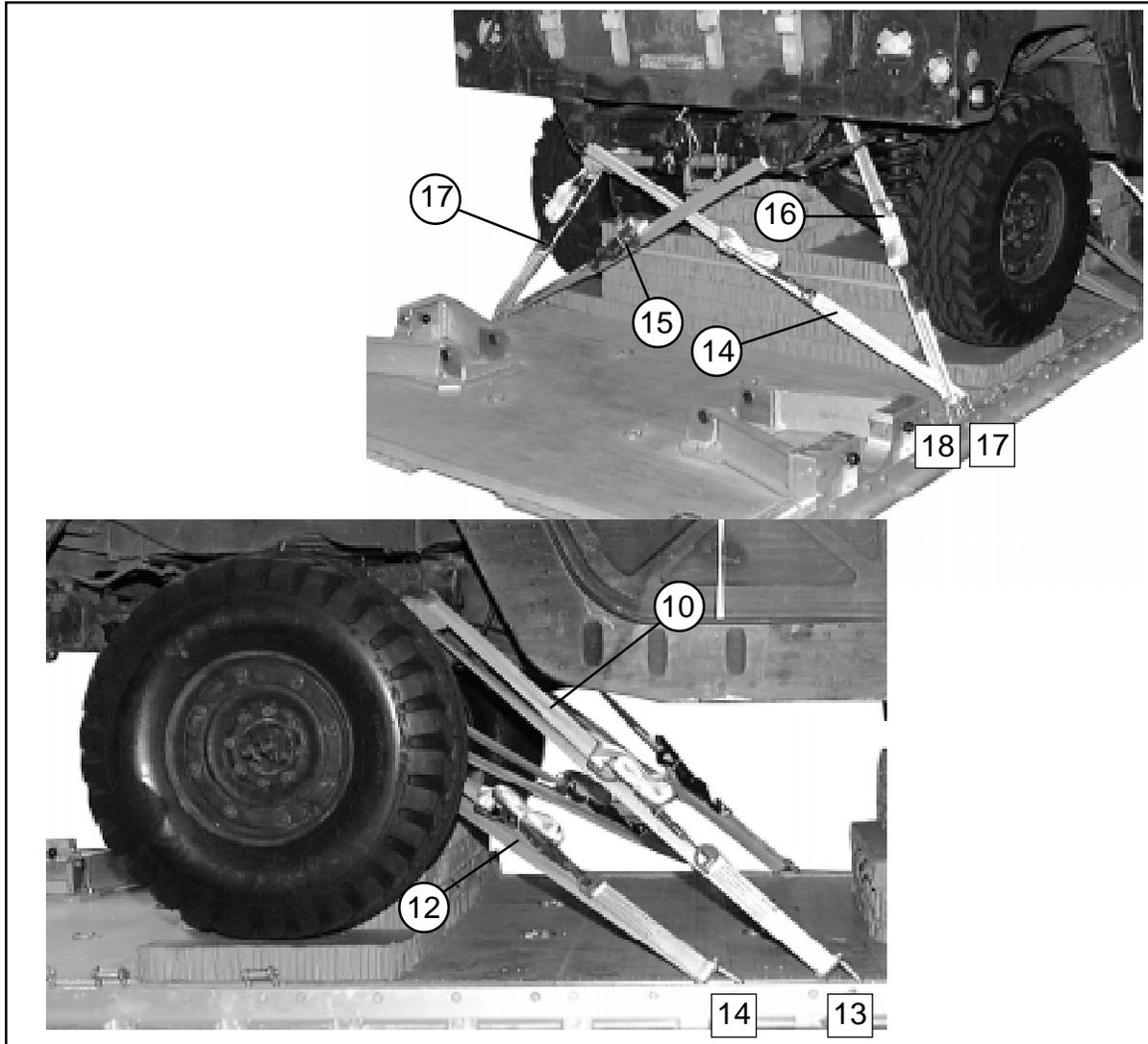


Figure 5-9. M1025 Armament Carrier Positioned on Platform



Lashing Number	Tie-down Clevis Number	Instructions
1	1	Pass lashing: Through left front tie-down provision.
2	1A	Through right front tie-down provision.
3	2	Through right front tie-down provision.
4	2A	Through left front tie-down provision.
5	8	Around right front lower control arm.
6	8A	Around left front lower control arm.
7	9	Through tie-down bracket behind right front coil spring.
8	9A	Through tie-down bracket behind left front coil spring.
9	10 and 10A	Pass a 15-foot lashing through clevis 10A and through its own D-ring. Pass the lashing through the hole in stack 2. Attach the lashing to clevis 10 with a load binder.

Figure 5-10. Lashings 1 Through 9 Installed



Lashing Number	Tie-down Clevis Number	Instructions
10	13	Pass lashing: Through tie-down bracket in front of right rear coil spring.
11	13A	Through tie-down bracket in front of left rear coil spring.
12	14	Around right rear lower control arm.
13	14A	Around left rear lower control arm.
14	17	Through left rear tie-down provision.
15	17A	Through right rear tie-down provision.
16	18	Through right rear tie-down provision behind the coil spring.
17	18A	Through left rear tie-down provision behind the coil spring.

Figure 5-11. Lashings 10 Through 17 Installed

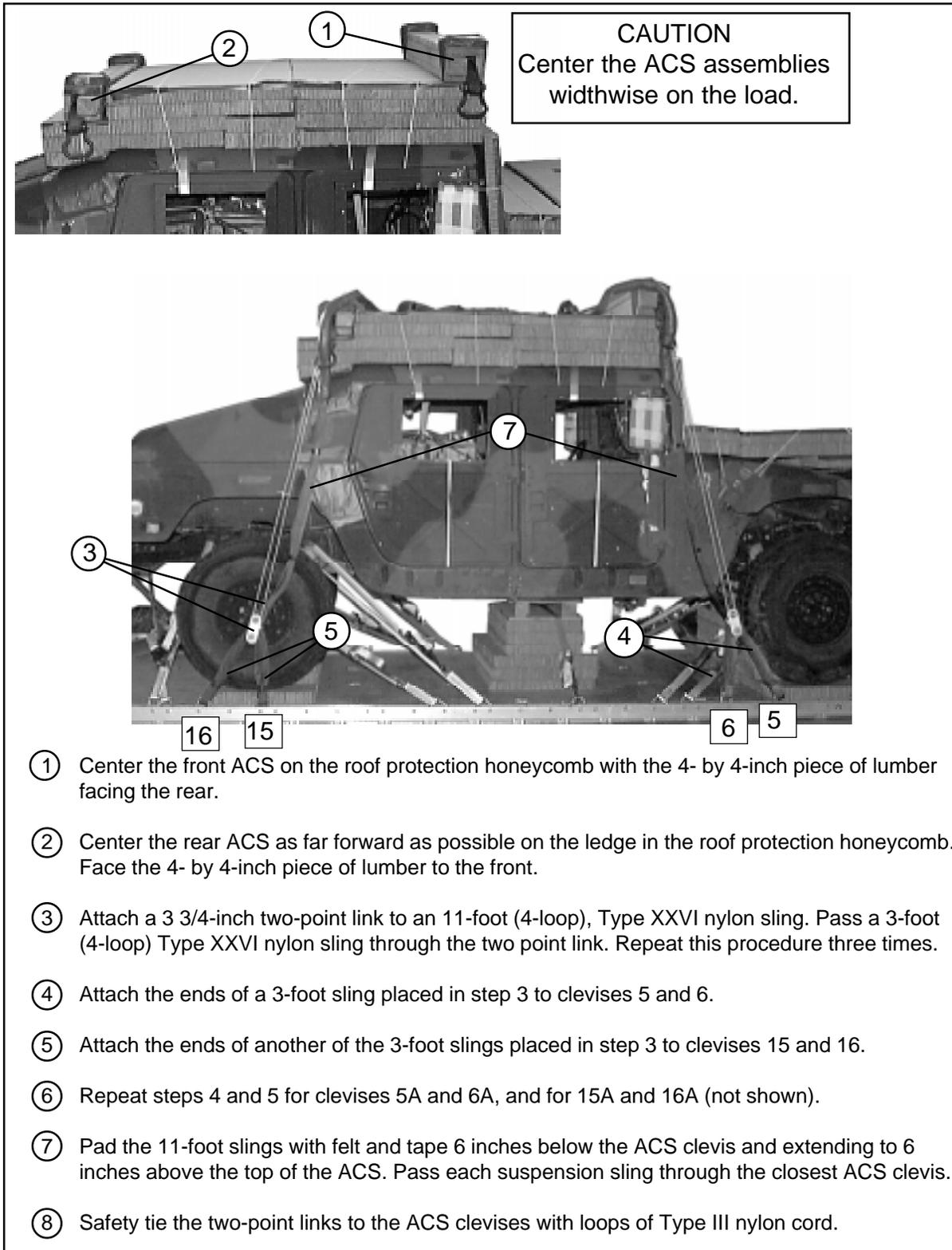
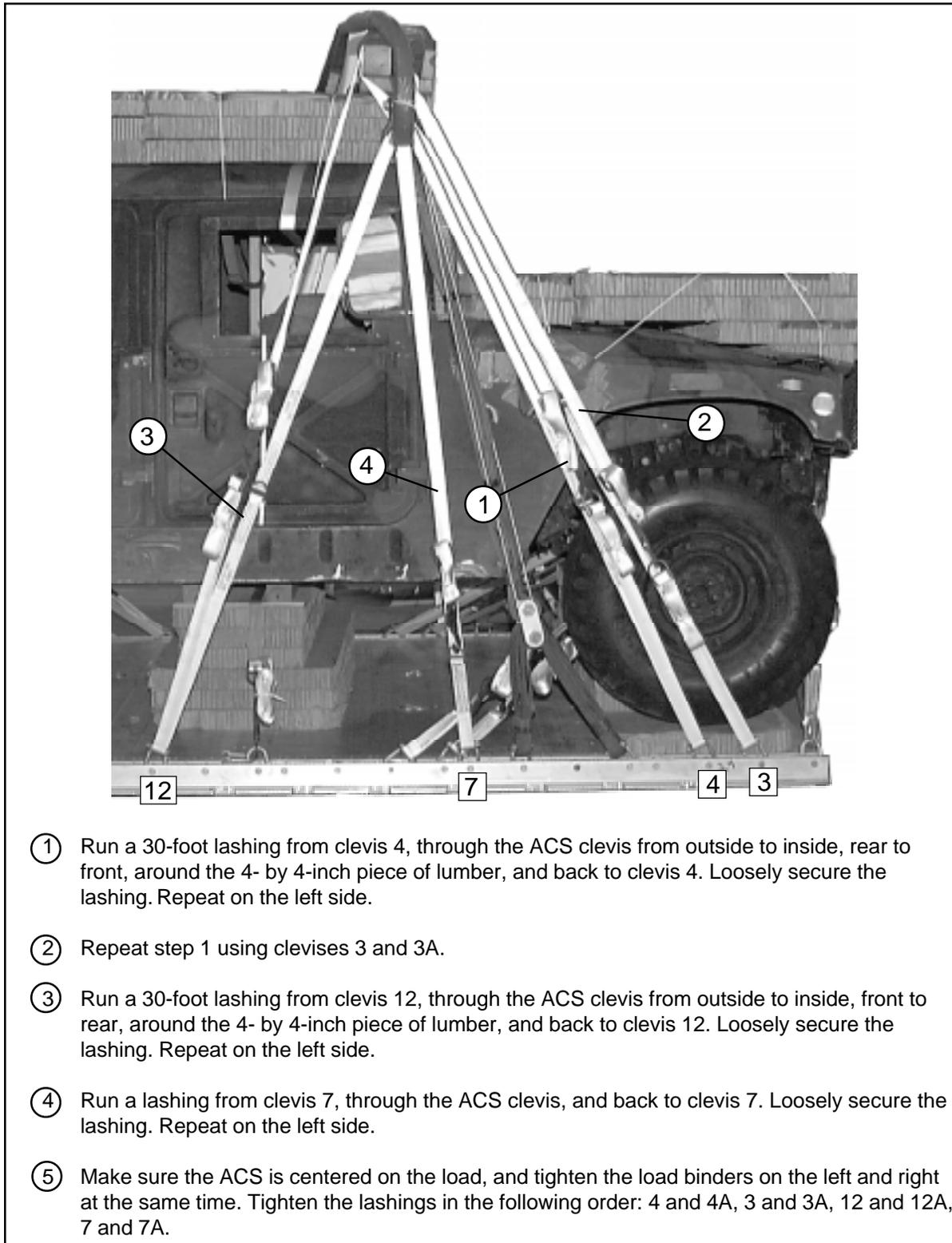
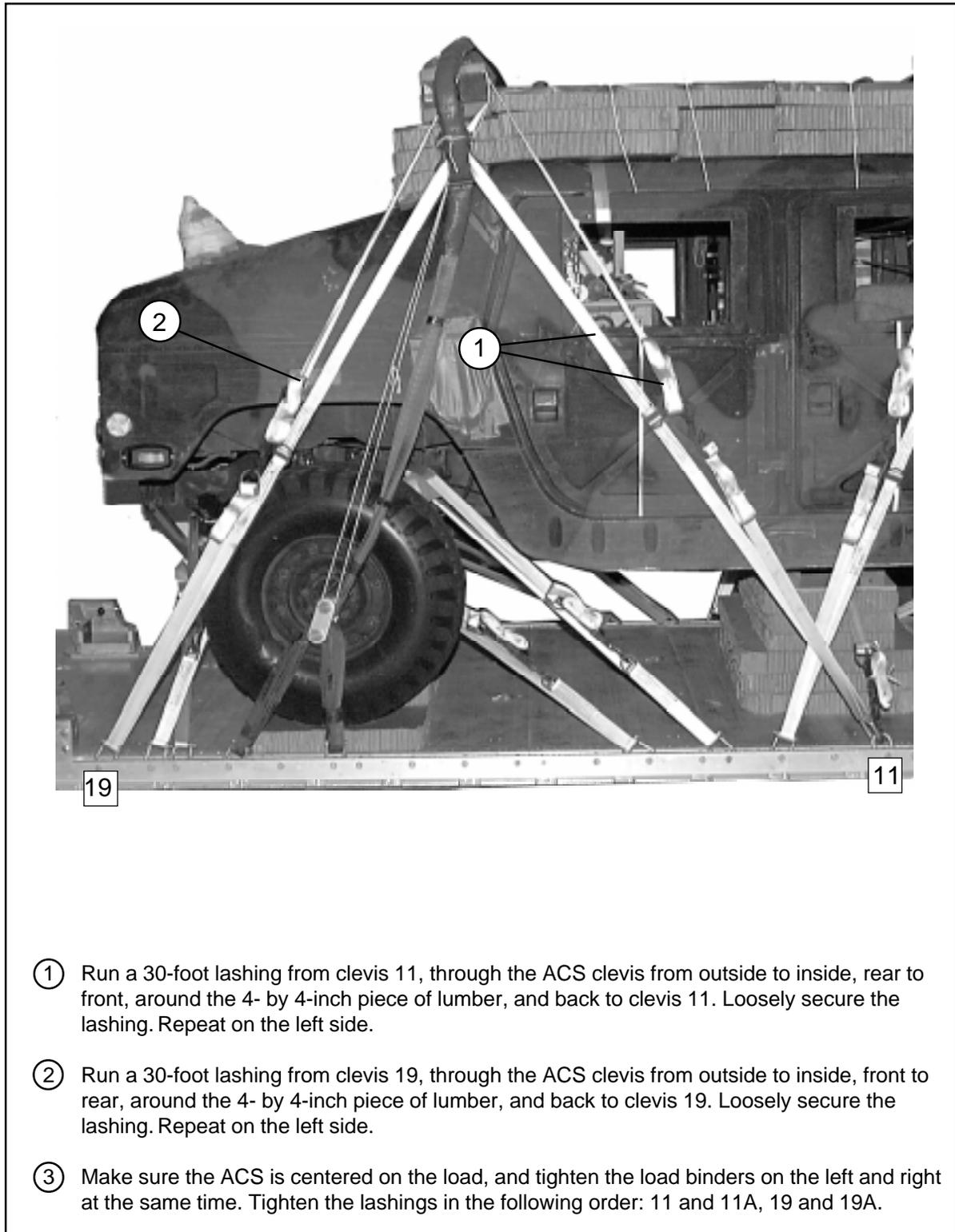


Figure 5-12. Front and Rear ACS Installed, and Suspension Slings Installed



- ① Run a 30-foot lashing from clevis 4, through the ACS clevis from outside to inside, rear to front, around the 4- by 4-inch piece of lumber, and back to clevis 4. Loosely secure the lashing. Repeat on the left side.
- ② Repeat step 1 using clevises 3 and 3A.
- ③ Run a 30-foot lashing from clevis 12, through the ACS clevis from outside to inside, front to rear, around the 4- by 4-inch piece of lumber, and back to clevis 12. Loosely secure the lashing. Repeat on the left side.
- ④ Run a lashing from clevis 7, through the ACS clevis, and back to clevis 7. Loosely secure the lashing. Repeat on the left side.
- ⑤ Make sure the ACS is centered on the load, and tighten the load binders on the left and right at the same time. Tighten the lashings in the following order: 4 and 4A, 3 and 3A, 12 and 12A, 7 and 7A.

Figure 5-13. Front ACS Secured



- ① Run a 30-foot lashing from clevis 11, through the ACS clevis from outside to inside, rear to front, around the 4- by 4-inch piece of lumber, and back to clevis 11. Loosely secure the lashing. Repeat on the left side.
- ② Run a 30-foot lashing from clevis 19, through the ACS clevis from outside to inside, front to rear, around the 4- by 4-inch piece of lumber, and back to clevis 19. Loosely secure the lashing. Repeat on the left side.
- ③ Make sure the ACS is centered on the load, and tighten the load binders on the left and right at the same time. Tighten the lashings in the following order: 11 and 11A, 19 and 19A.

Figure 5-14. Rear ACS Secured

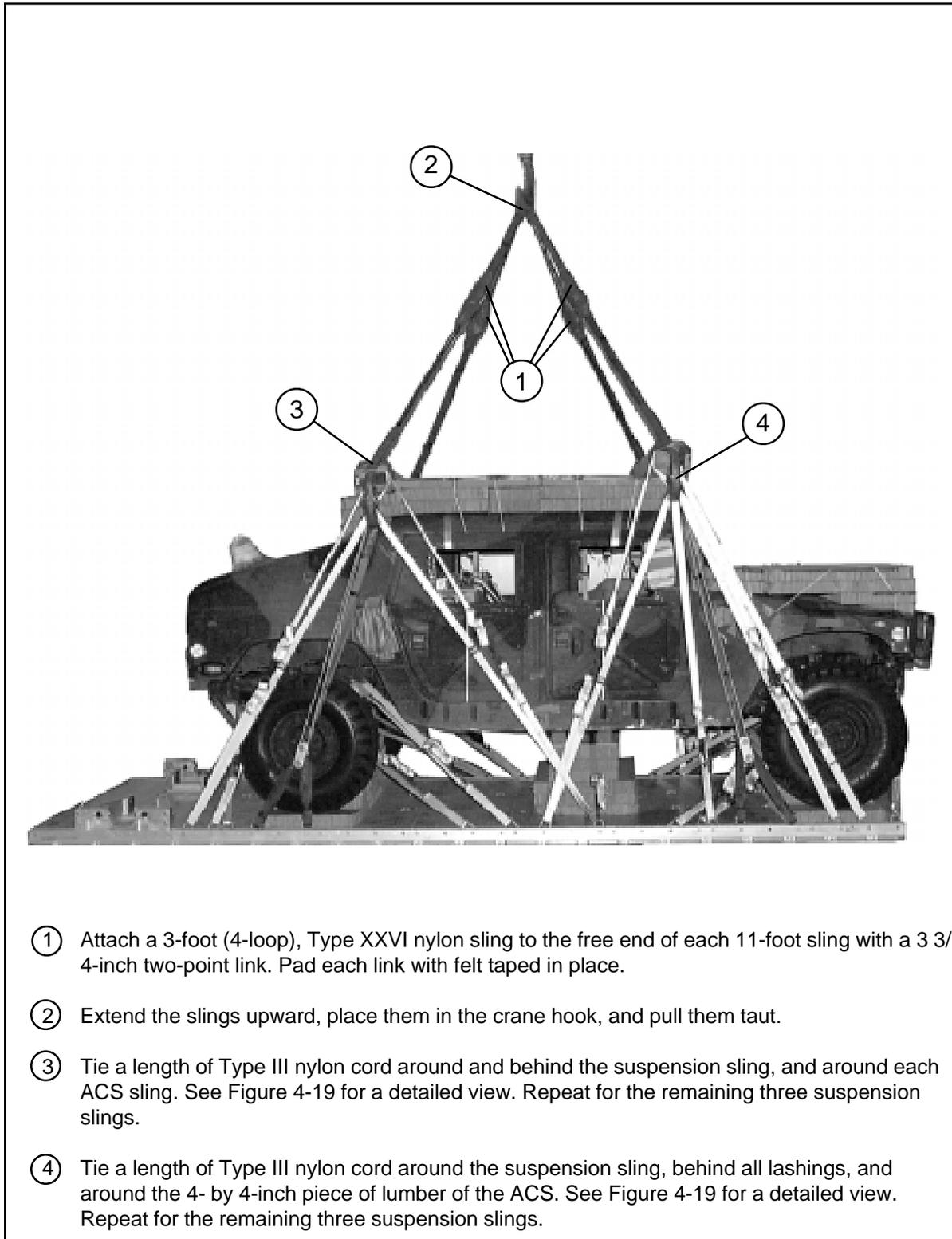


Figure 5-15. Suspension Slings Completed, Raised, Padded, and Secured

INSTALLING OUTRIGGER ASSEMBLIES

5-12. Assemble, install, and safety tie the mast and foot assemblies on the DRAS platform as shown in Chapter 3, Figures 3-33 through 3-36, steps 1 through 3.

STOWING CARGO PARACHUTES

5-13. Prepare, stow, and restrain three G-11D cargo parachutes on the hood of the truck as shown in Chapter 3, and in Figure 5-16.

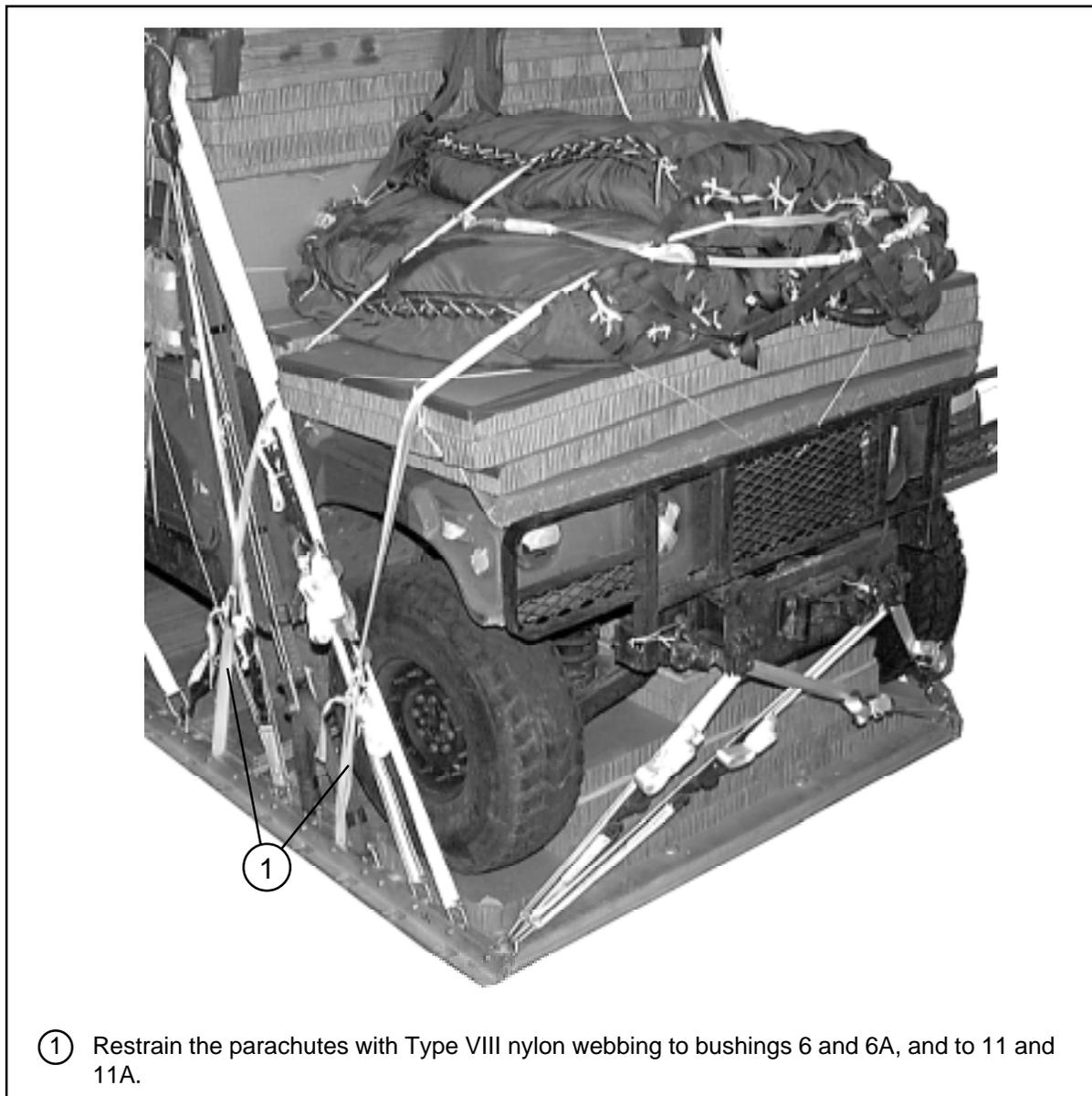


Figure 5-16. Cargo Parachutes Installed

STOWING DEPLOYMENT PARACHUTE

5-14. Prepare, stow, and install the deployment parachute according to Chapter 3, Section IV, and as shown in Figure 5-17.



Figure 5-17. Deployment Parachutes Installed

INSTALLING M-1 RELEASE SYSTEM

5-15. Prepare and install the M-1 parachute release system according to Chapter 3, and as shown in Figure 5-18.

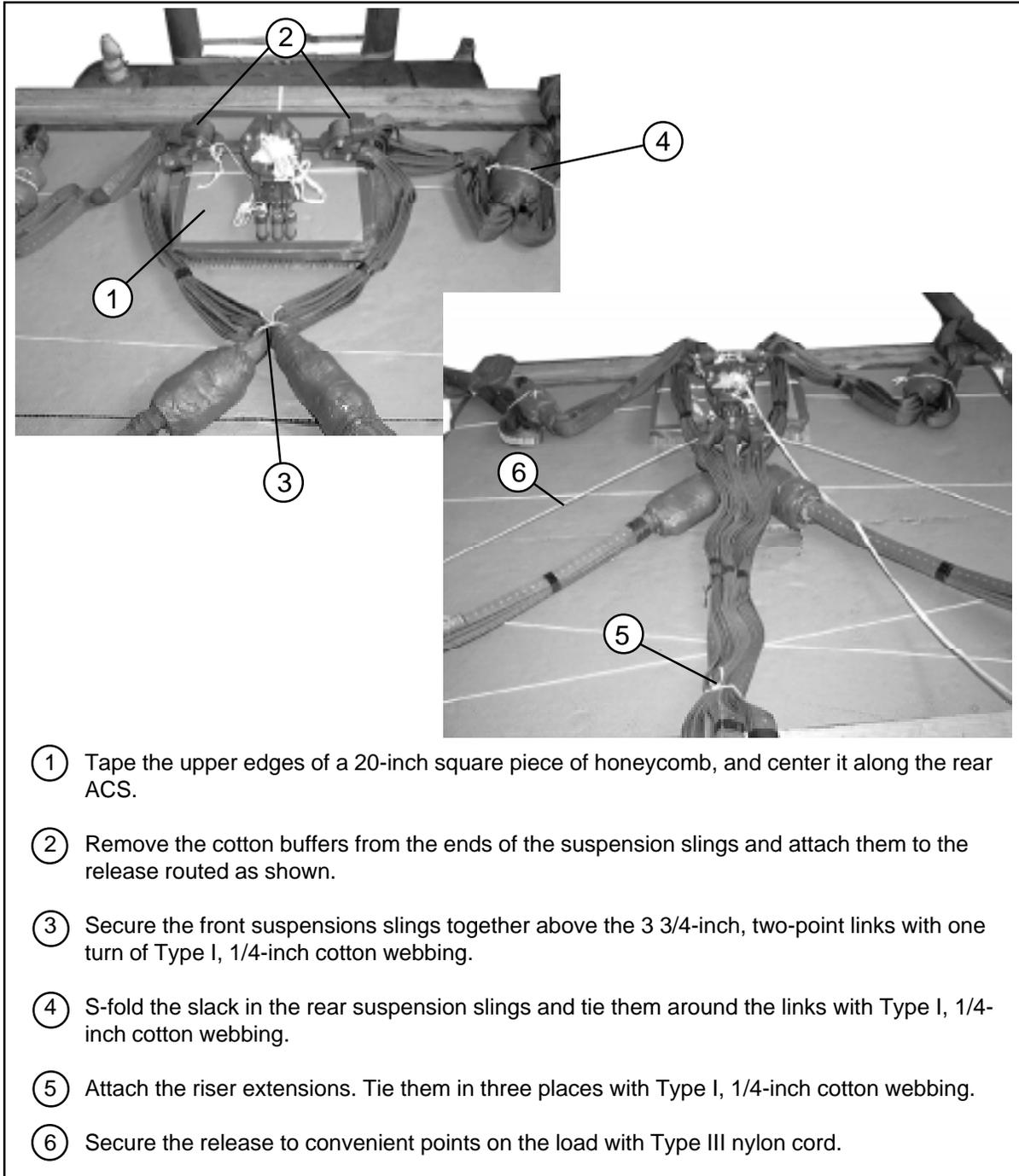
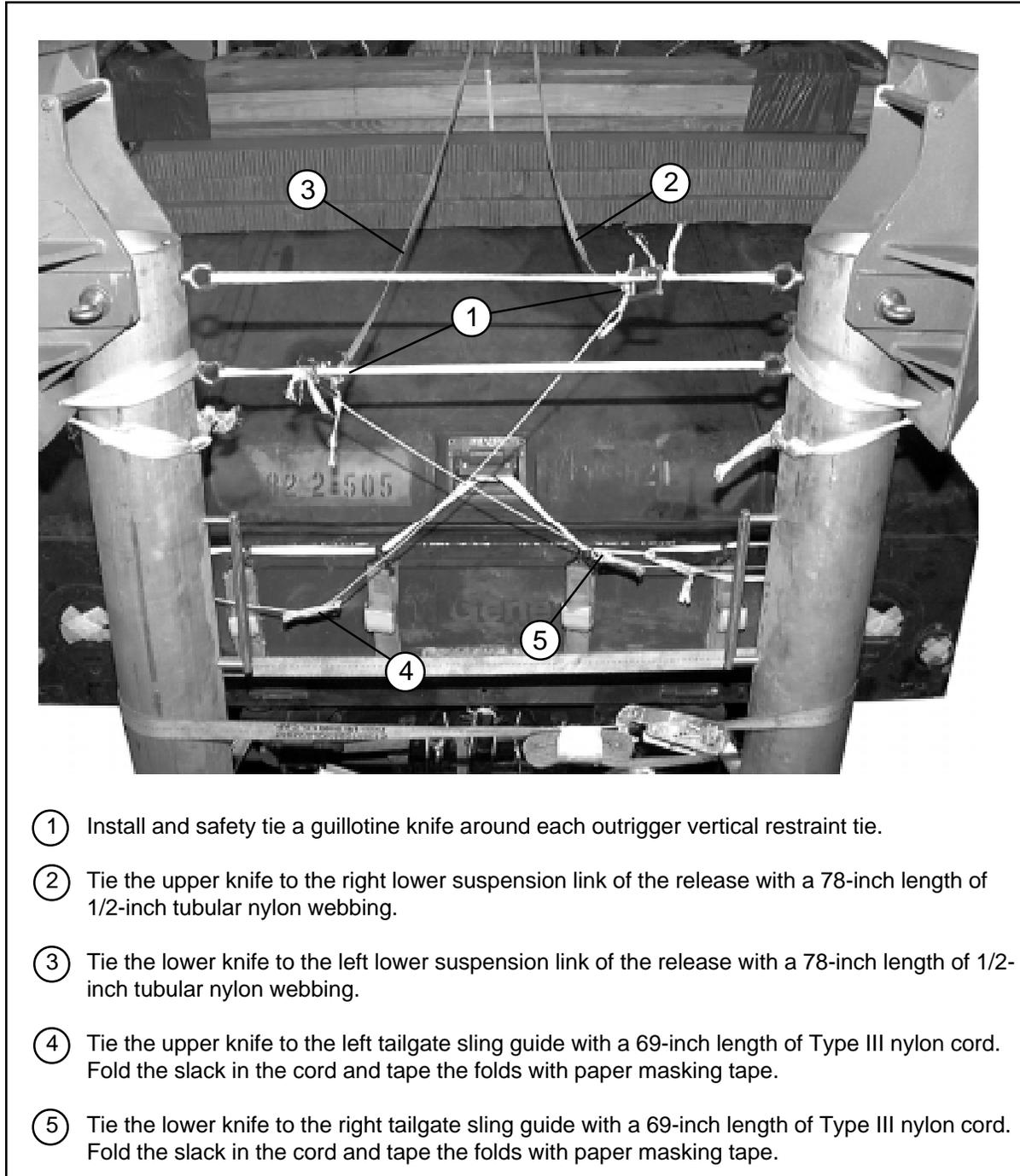


Figure 5-18. M-1 Cargo Parachute Release Installed

INSTALLING MAST RELEASE KNIVES

5-16. Install the mast release knives according to Chapter 3, Figure 3-36, steps 4 through 10 and as shown in Figure 5-19.



- ① Install and safety tie a guillotine knife around each outrigger vertical restraint tie.
- ② Tie the upper knife to the right lower suspension link of the release with a 78-inch length of 1/2-inch tubular nylon webbing.
- ③ Tie the lower knife to the left lower suspension link of the release with a 78-inch length of 1/2-inch tubular nylon webbing.
- ④ Tie the upper knife to the left tailgate sling guide with a 69-inch length of Type III nylon cord. Fold the slack in the cord and tape the folds with paper masking tape.
- ⑤ Tie the lower knife to the right tailgate sling guide with a 69-inch length of Type III nylon cord. Fold the slack in the cord and tape the folds with paper masking tape.

Figure 5-19. Mast Release Knives Installed

MARKING RIGGED LOAD

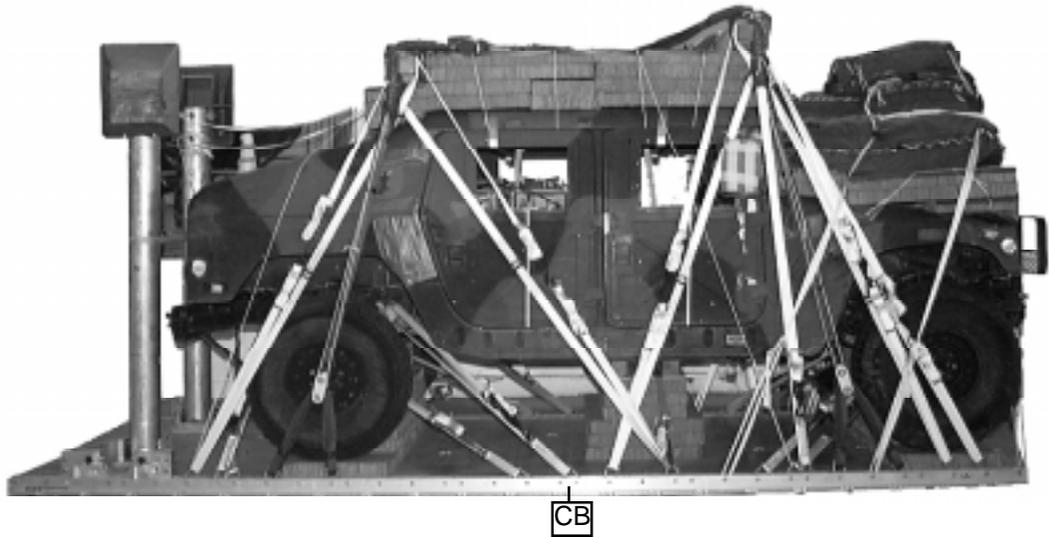
5-17. Mark the rigged load according to Chapter 3 and as shown in Figures 5-20 and 5-21.

EQUIPMENT REQUIRED

5-18. The equipment required to rig this load is given in Table 5-1.

CAUTION

Make the final rigger inspection required by Chapter 3 of this manual before the load leaves the rigging site.



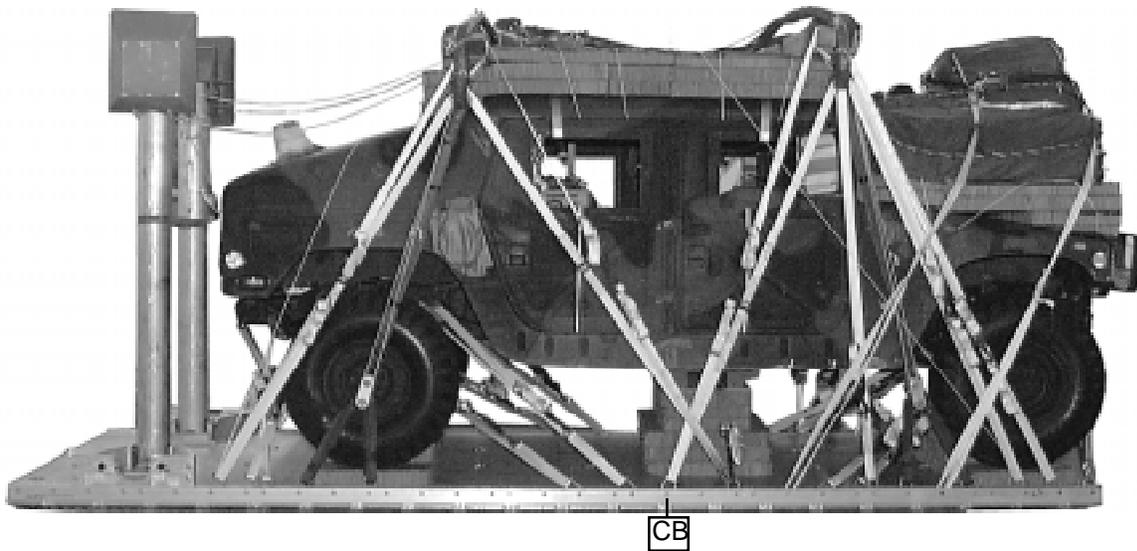
RIGGED LOAD DATA, M1025

Weight: Load shown	12,637 pounds
Maximum load allowed	12,637 pounds
Height (with three G-11D parachutes)	98 inches
Width.....	94 inches
Length (overall)	229 inches
Overhang: Front	13 inches
Rear	0 inches
CB (from front edge of platform)	94 inches

Figure 5-20. M1025 Armament Carrier Rigged for Dual Row Airdrop

CAUTION

Make the final rigger inspection required by Chapter 3 of this manual before the load leaves the rigging site.



RIGGED LOAD DATA, M1121

Weight: Load shown	10,455 pounds
Maximum load allowed	12,637 pounds
Height (with three G-11D parachutes)	98 inches
Width.....	94 inches
Length (overall)	224 inches
Overhang: Front.....	8 inches
Rear	0 inches
CB (from front edge of platform)	86 inches

Figure 5-21. M1121 TOW Carrier Rigged for Dual Row Airdrop

Table 5-1. Rigging M1025 Armament Carrier and M1121 TOW Carrier on a Dual Row Platform for Dual Row Airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive paste, 1-gal	As required
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
4030-00-090-5354	Clevis, large	1
4030-00-678-8562	Clevis, medium	4
	Link assembly:	
	Two-point, 3 3/4-in (for C-17)	9
5306-00-435-8994	Bolt, 1-in diam, 4-in long	18
5310-00-232-5165	Nut, 1-in, hexagonal	18
1670-00-003-1953	Plate, side, 3 3/4-in	18
5365-00-007-3414	Spacer, large	18
	Lumber:	
5510-00-220-6146	2- by 4-in	As required
5510-00-220-6148	2- by 6-in	As required
5510-00-220-6274	4- by 4-in	As required
5530-00-618-8073	Plywood, 3/4-in	5 sheets
	Nail, steel wire, common,	
5315-00-010-4659	8d	As required
5315-00-010-4662	12d	As required
1670-00-753-3928	Pad, energy dissipating, honeycomb, 3- by 36- by 96-in	16 sheets
000-00-000-0000	Static line assembly release away	1
	Parachute:	
	Cargo:	
1670-01-016-7481	G-11D	3
	Cargo extraction:	
1670-00-040-8135	28-foot	1
	Platform, Dual Row, 18-foot	1
1670-01-485-1656	Panel assembly, main	1
1670-01-485-1654	Rail, DRAS	2
1670-01-486-1342	Roller Pad, DRAS	2
1670-01-162-2372	Clevis assembly	38
1670-01-097-8816	Release, cargo parachute, M-1	1

Table 5-1. Rigging M1025 Armament Carrier and M1121 TOW Carrier on a Dual Row Platform for Dual Row Airdrop (continued)

National Stock Number	Item	Quantity
	Sling, cargo airdrop	
	For suspension:	
1670-01-062-6310	11-ft (4-loop), type XXVI nylon webbing	4
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	8
	For deployment:	
1670-01-062-6306	3-ft (4-loop), type XXVI nylon webbing	1
	For riser extension:	
1670-01-062-6313	60-ft (3-loop), type XXVI nylon webbing	2
	For ACS:	
1670-01-063-7761	16-ft (2-loop), type XXVI nylon webbing	2
	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
1670-00-040-8219	Strap, parachute release, multicut	2
1670-00-937-0271	Knife release,cargo (guillotine)	2
1670-01-487-5464	Outrigger assembly	2
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	51
1670-00-725-1437	Tie-down, Cargo, Aircraft, (CGU-1B)	1
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
8305-00-082-5752	Tubular, 1/2-in	As required
8305-00-263-3591	Type VIII	8 yds