

Chapter 3

Rigging TOW Missiles in 1/4-ton Cargo Trailer for Low-velocity Airdrop

DESCRIPTION OF LOAD

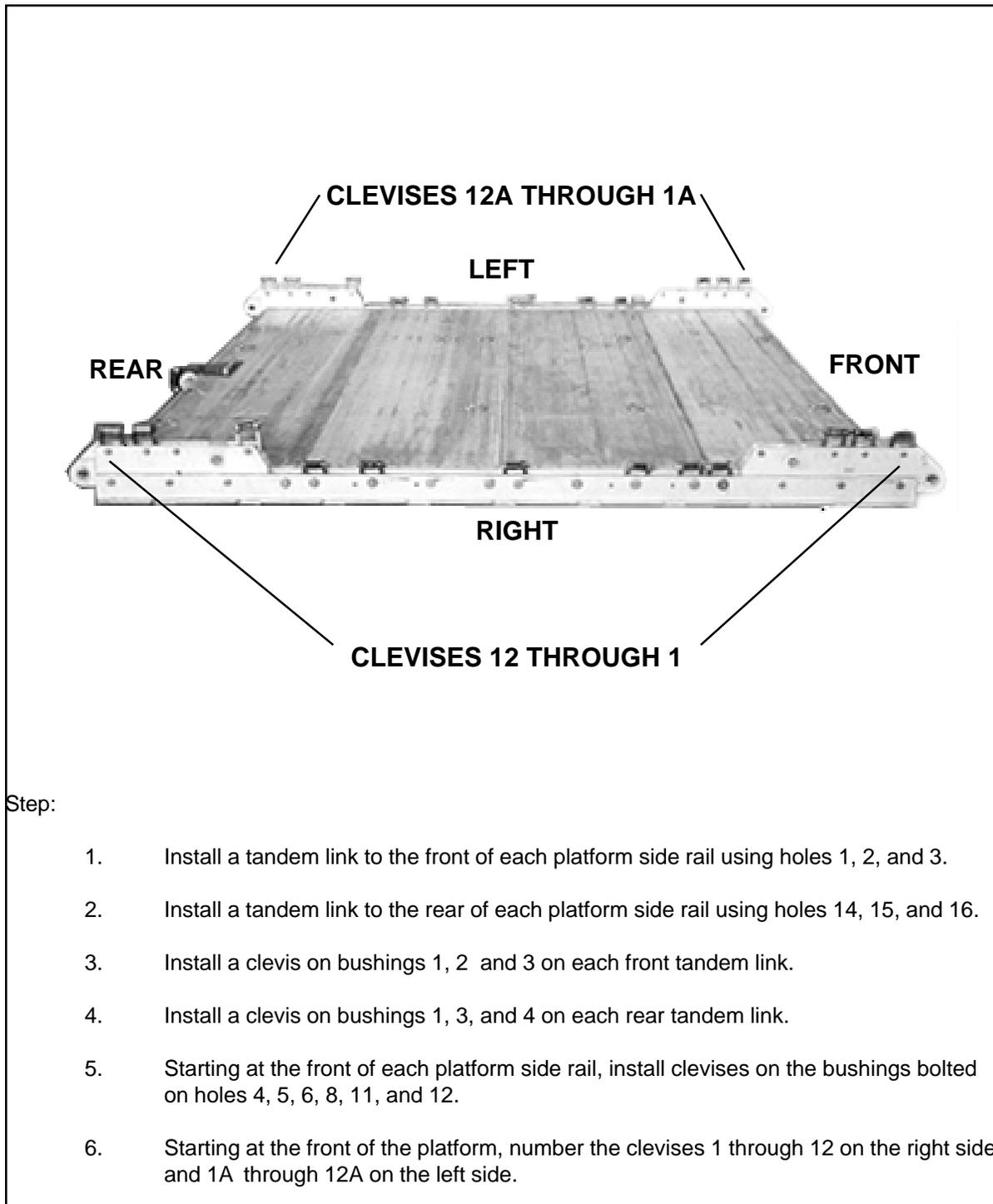
3-1. The M416, 1/4-ton cargo trailer with eight boxed missiles is rigged on an 8-foot, type V airdrop platform for low-velocity airdrop. The load requires one G-11 cargo parachute. Each missile in its box weighs 87 pounds, and is 57 1/2 inches long, 12 inches high and 12 inches wide. The M416 with missiles 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

- 3-2. Prepare an 8-foot, type V airdrop platform as shown in Figure 3-1.
- a. Inspecting Platform. Inspect, or, assemble and inspect, the platform according to TM 10-1670-268-20&P/TO 13C7-52-22.
 - b. Installing Tandem Links. Install tandem links as shown in Figure 3-1.
 - c. Attaching and Numbering Clevises. Attach and number 24 clevis assemblies as shown in Figure 3-1.

NOTES:

- 1. The nose bumper may or may not be installed.**
- 2. 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 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 3-1. Platform Prepared

Stowing Accompanying Load

3-3. Place the honeycomb and stow the accompanying load as shown in Figure 3-2.

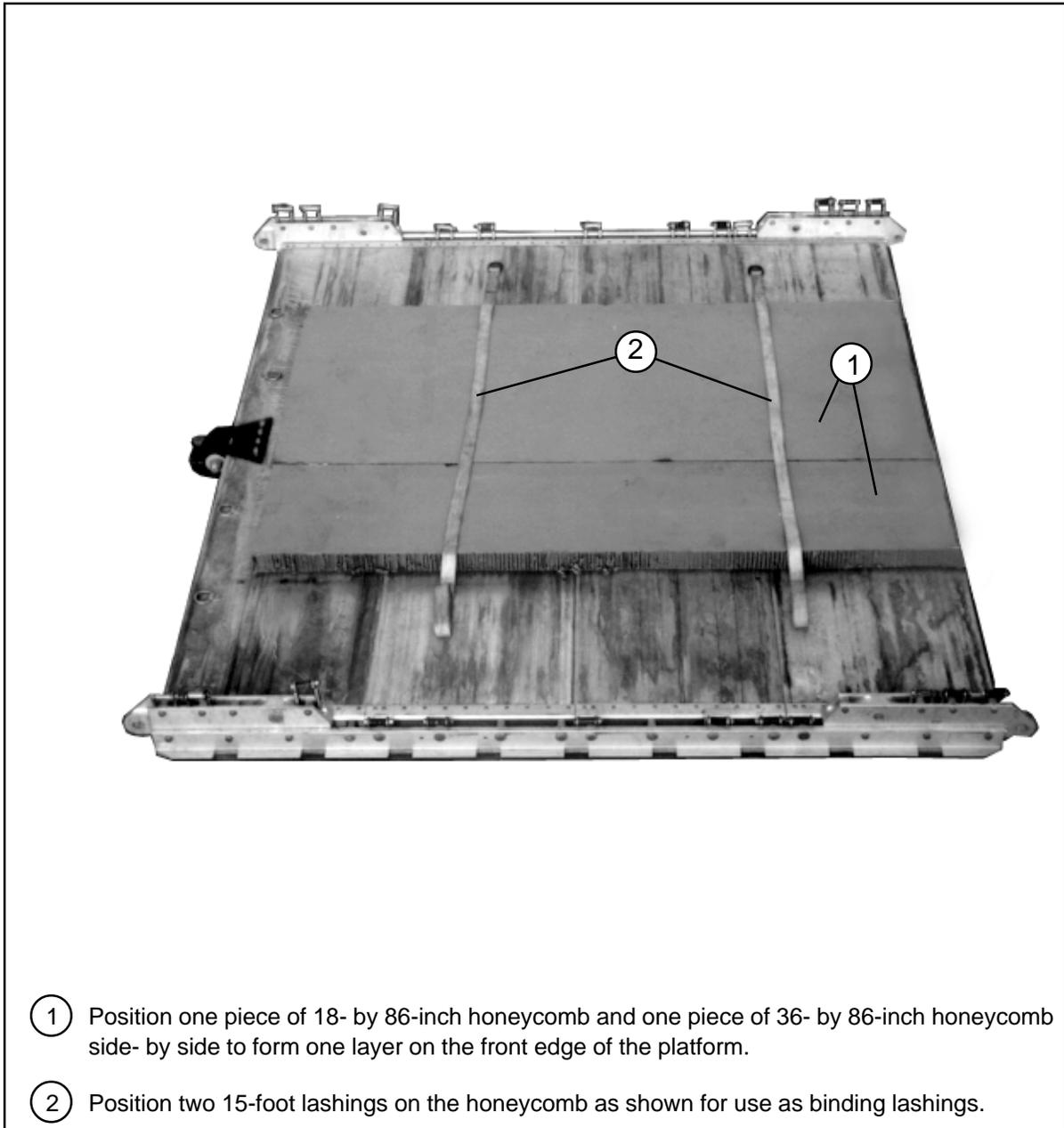
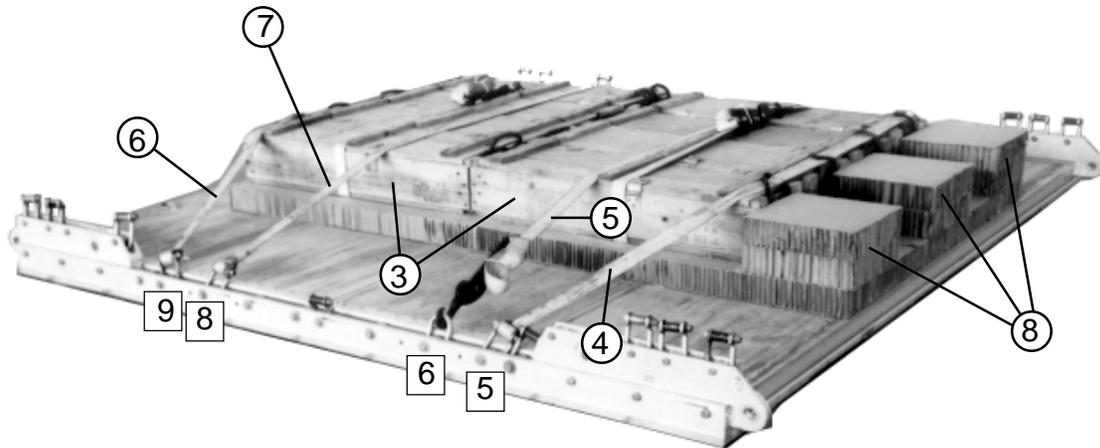


Figure 3-2. Accompanying Load Stowed

**Note: Other boxed ammunition may be used for this load.
Adapt the honeycomb and lashings for the ammunition rigged.**

Notice of Exception: Exception to FM 10-500-2/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 3-2. Accompanying Load Stowed (continued)

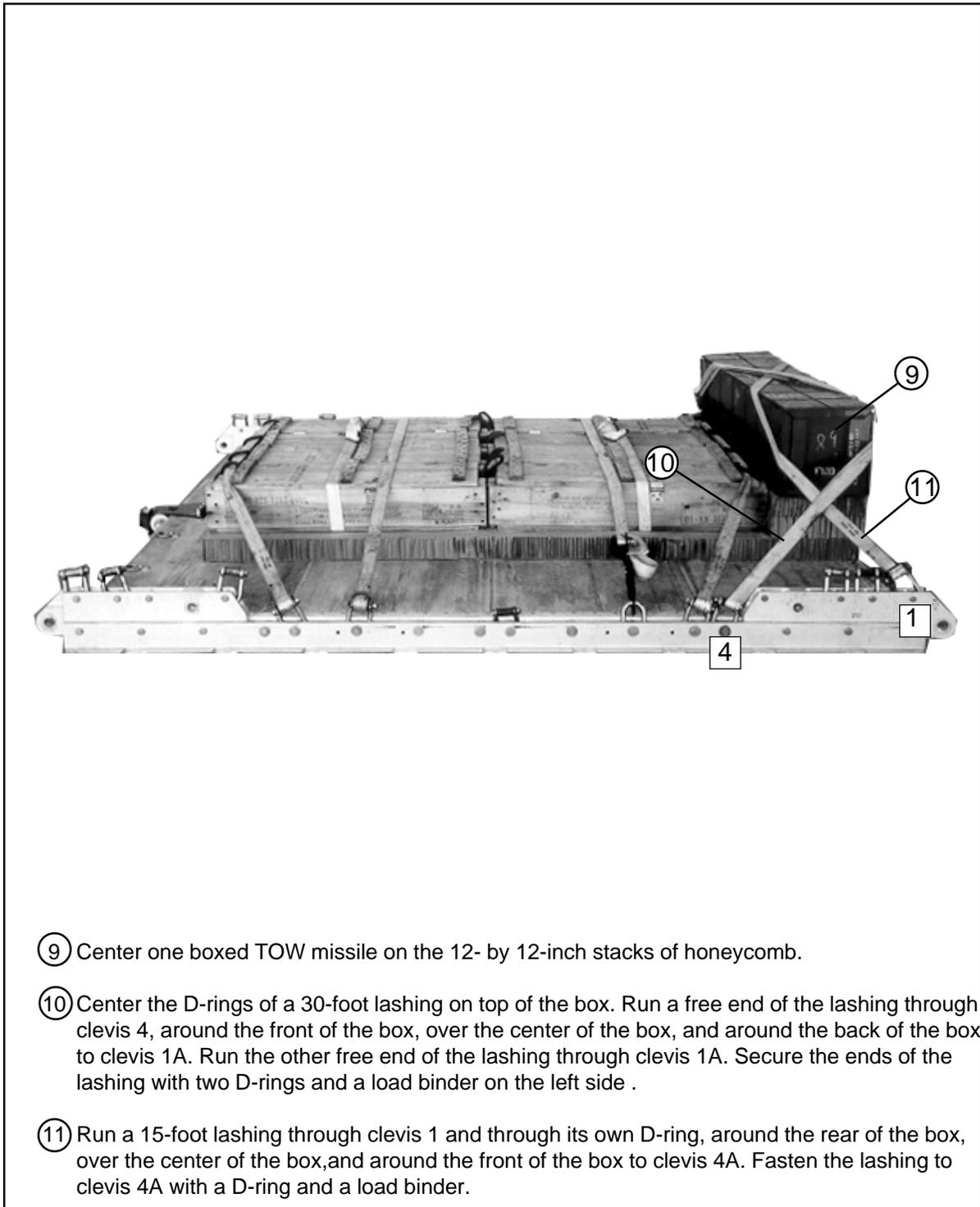


Figure 3-2. Accompanying Load Stowed (continued)

Preparing Missiles and Trailer

3-4. Prepare the missiles and trailer as shown in Figure 3-3.

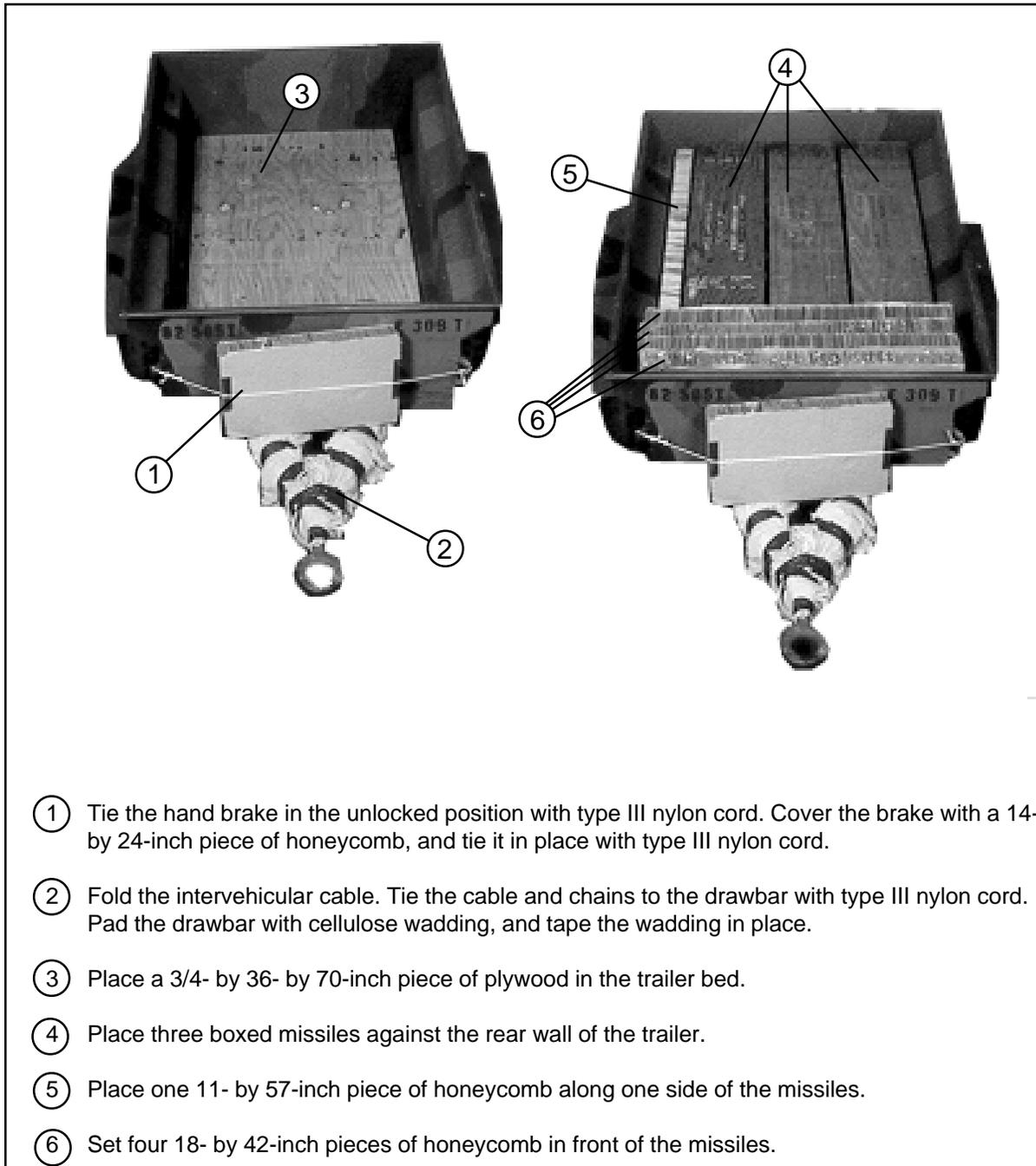
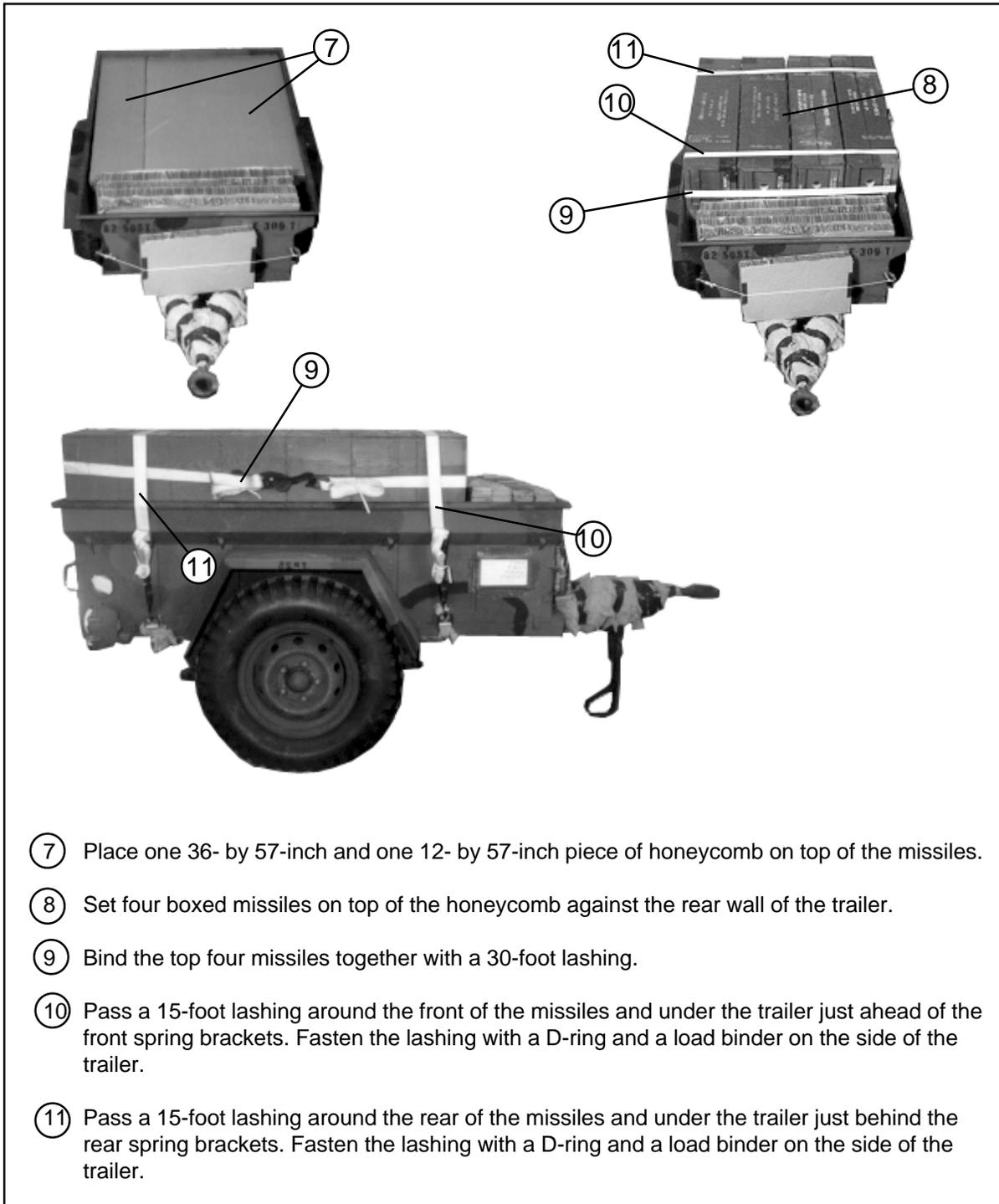


Figure 3-3. Missiles and Trailer Prepared



- 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 3-3. Missiles and Trailer Prepared (continued)

Placing Honeycomb Stacks and Placing the Trailer

3-5. Place the honeycomb stacks on the accompanying load, and place the trailer on the stacks as shown in Figure 3-4.

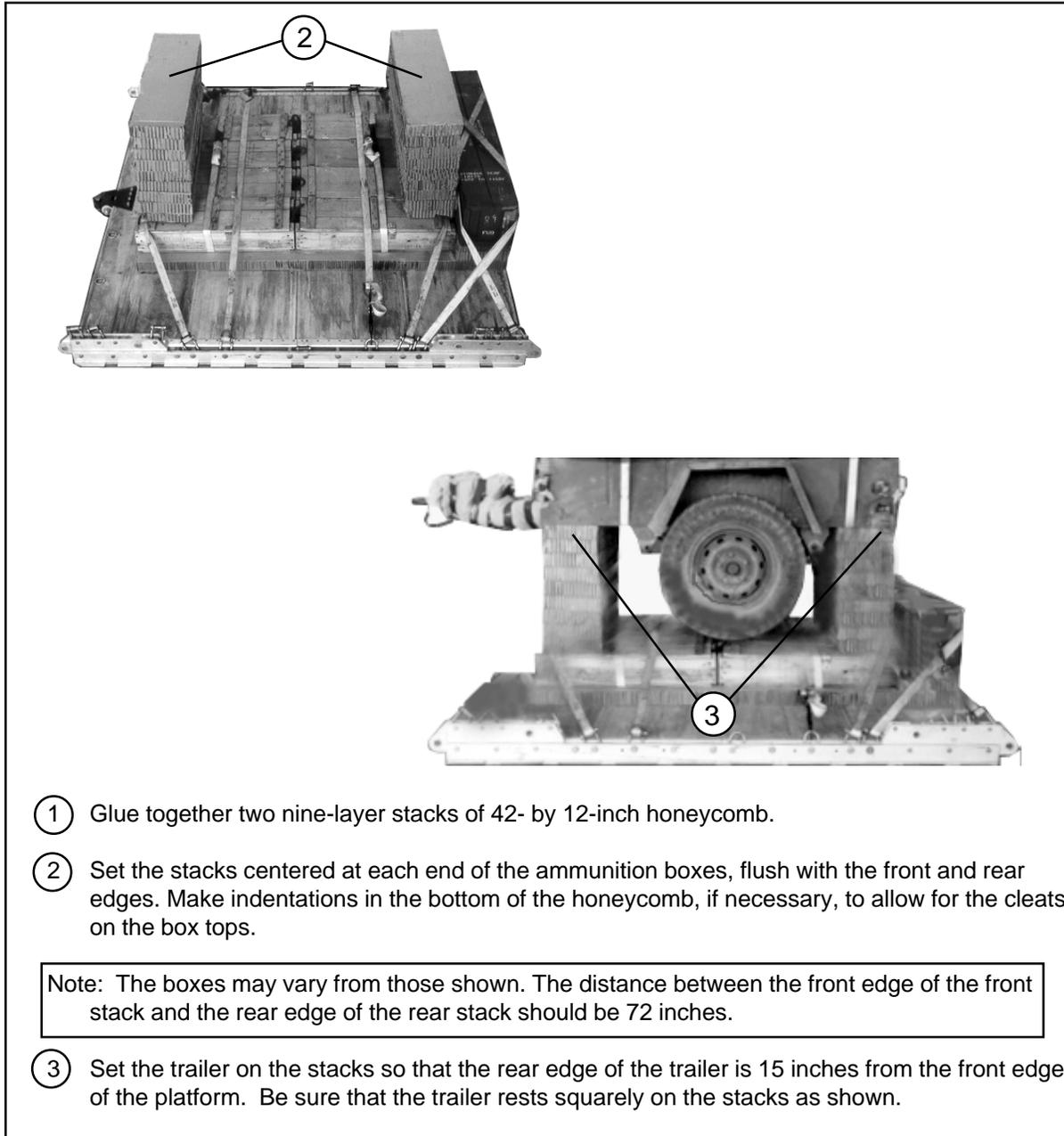
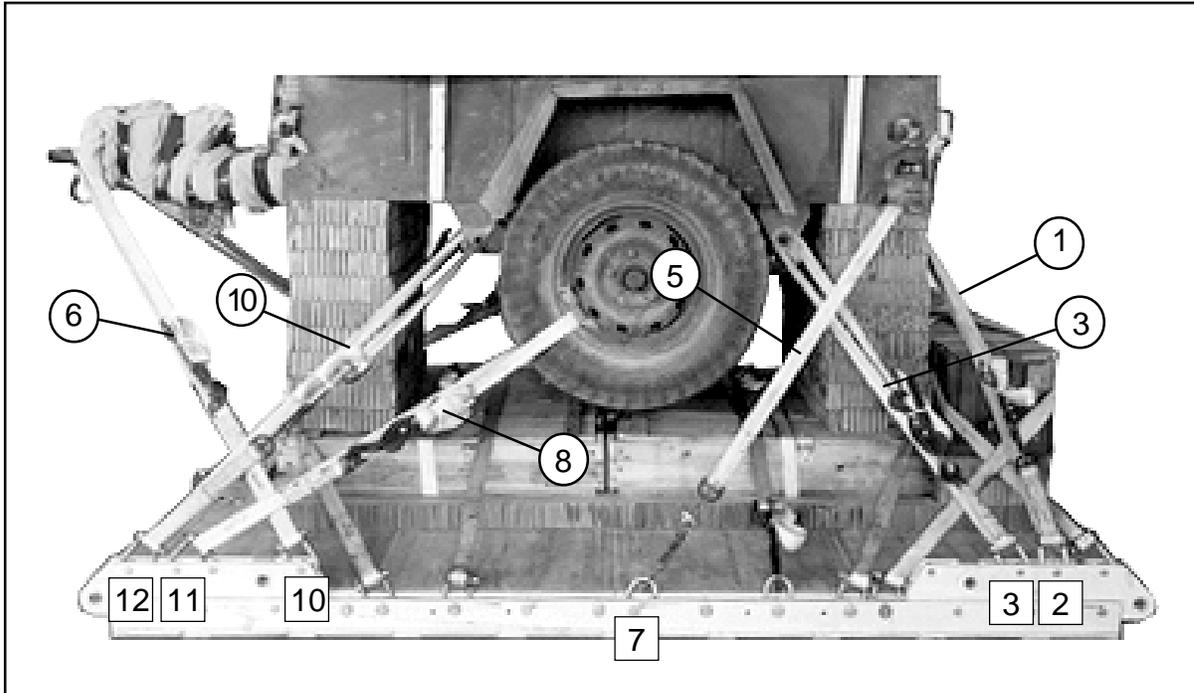


Figure 3-4. Honeycomb Stacks Placed and the Trailer Placed on the Stacks

Lashing Trailer

3-6. Lash the trailer to the platform as shown in Figure 3-5.



Lashing Number	Tie-down Clevis Number	Instructions
1	2	Pass lashing:
2	2A	Through right rear handle.
3	3	Through left rear handle.
4	3A	Through rear spring bracket.
5	7 and 7A	Through rear spring bracket.
6	10	Through clevis 7A, through both rear handles, to clevis 7.
7	10A	Through lunette.
8	11	Through lunette.
9	11A	Through left wheel. (Pad the wheel opening.)
10	11A	Through right wheel. (Pad the wheel opening.)
11	12	Through front spring bracket.
12	12A	Through front spring bracket.

Figure 3-5. Lashings Installed

Installing Suspension Slings

3-7. Install four 12-foot, 2-loop, type XXVI nylon webbing slings according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 3-6.

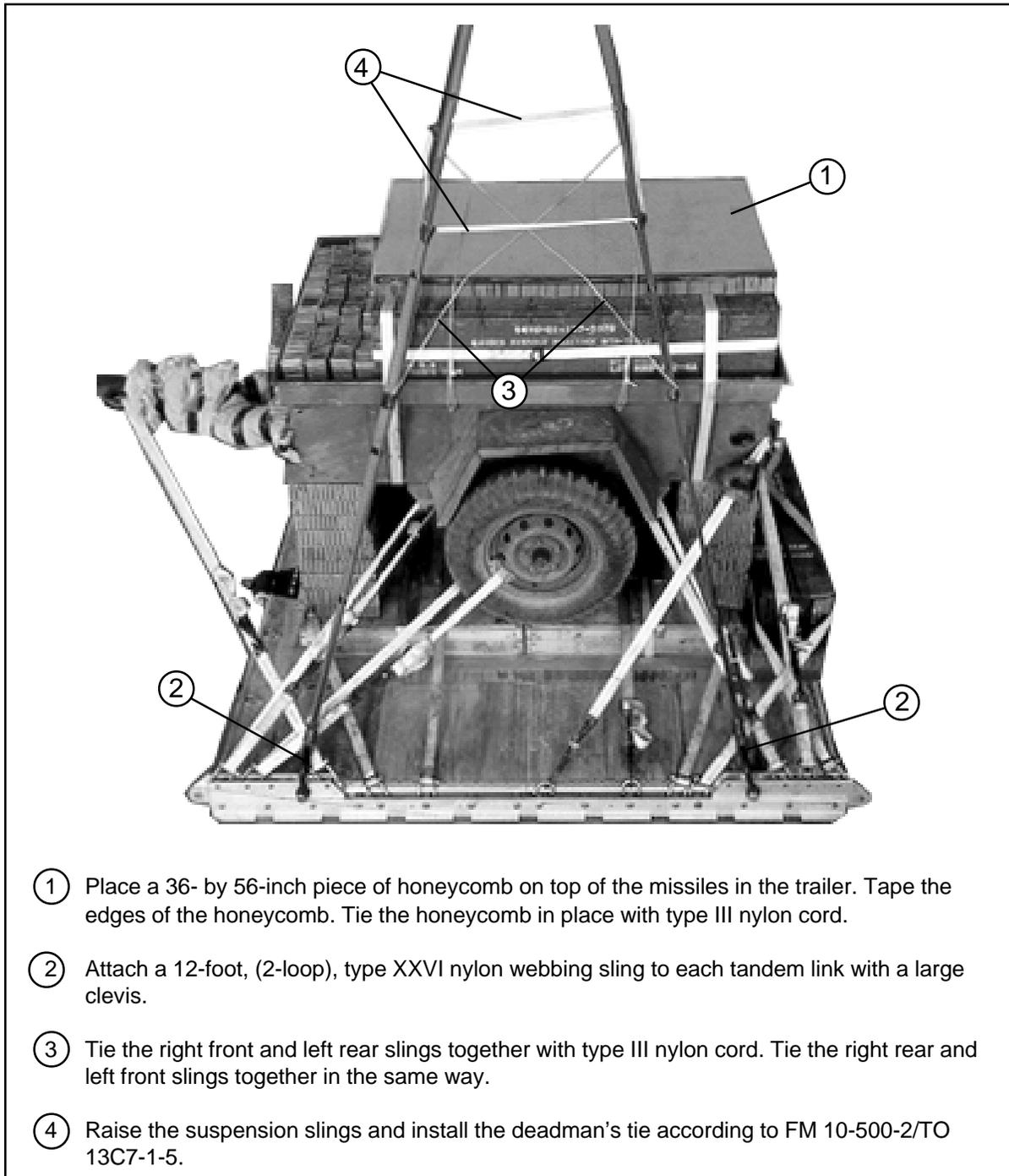
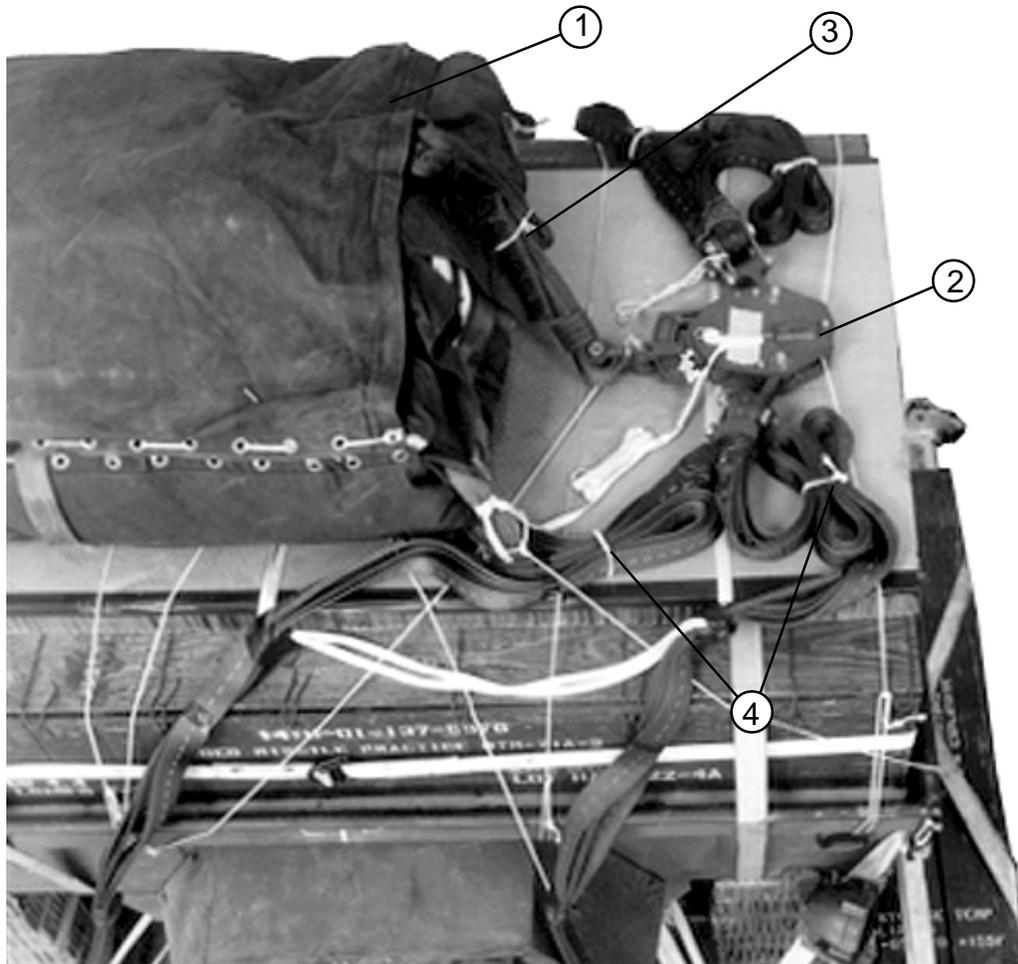


Figure 3-6. Suspension Slings Installed

Installing Cargo Parachute and Release Assembly

3-8. Install one G-11 cargo parachute and an M-1 cargo parachute release according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 3-7.



- ① Install one G-11 cargo parachute on the rear part of the honeycomb installed in Figure 3-6.
- 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, 1/4-inch cotton webbing.
- ④ Fold any excess suspension sling, and tie the folds with type I, 1/4-inch cotton webbing.

Figure 3-7. G-11 Cargo Parachute and M-1 Release Installed

Installing Extraction System

3-9. Install the EFTC extraction system according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 3-8.

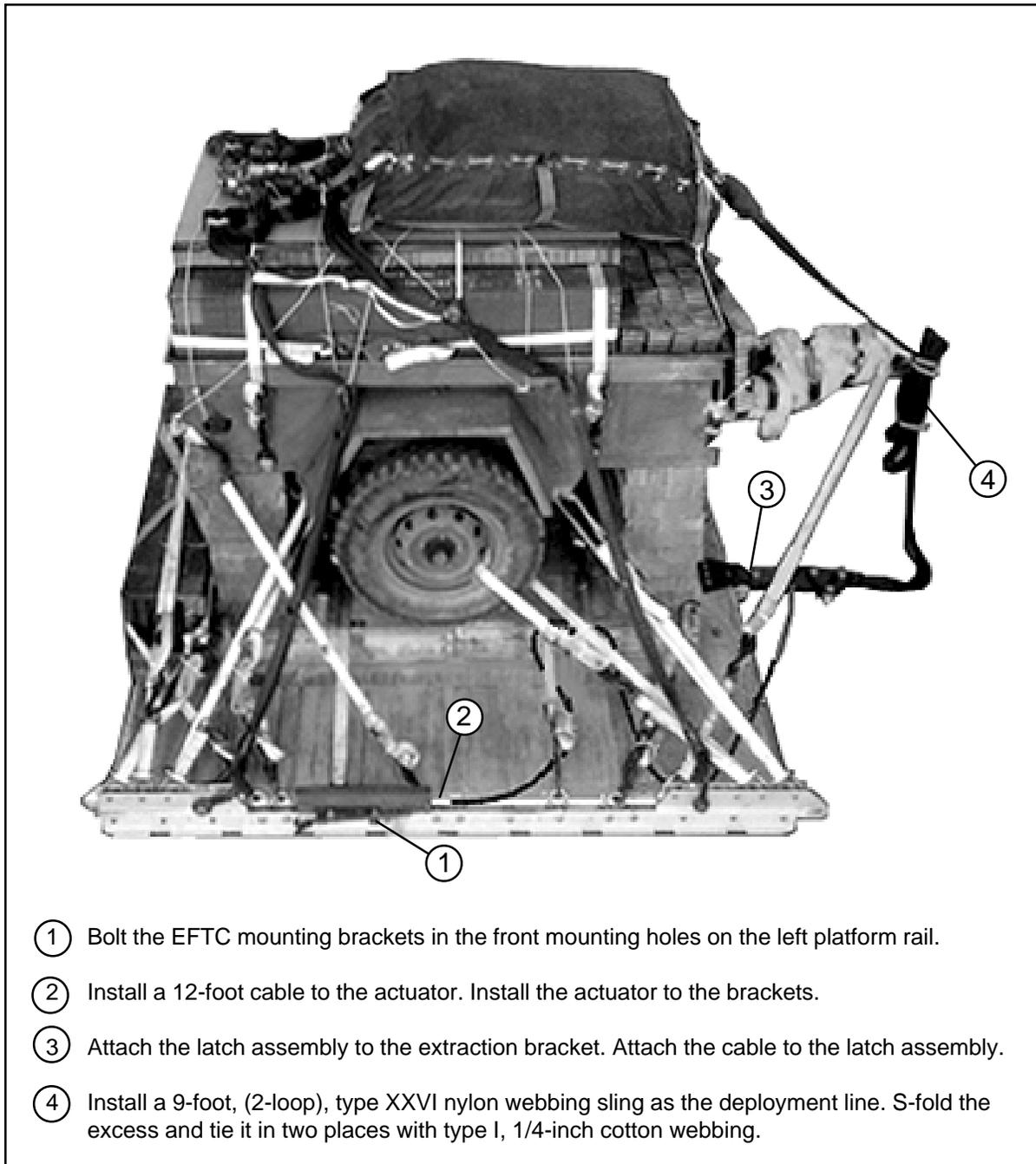


Figure 3-8. EFTC Installed

Installing Extraction Parachute

3-10. Select the extraction line and extraction parachute needed using the extraction line requirements table in FM 10-500-2/TO 13C7-1-5. Place the extraction parachute and extraction line on the load for installation in the aircraft.

Installing Provisions for Emergency Restraints

3-11. Select and install provisions for emergency restraints according to the emergency aft restraints requirements table in FM 10-500-2/TO 13C7-1-5.

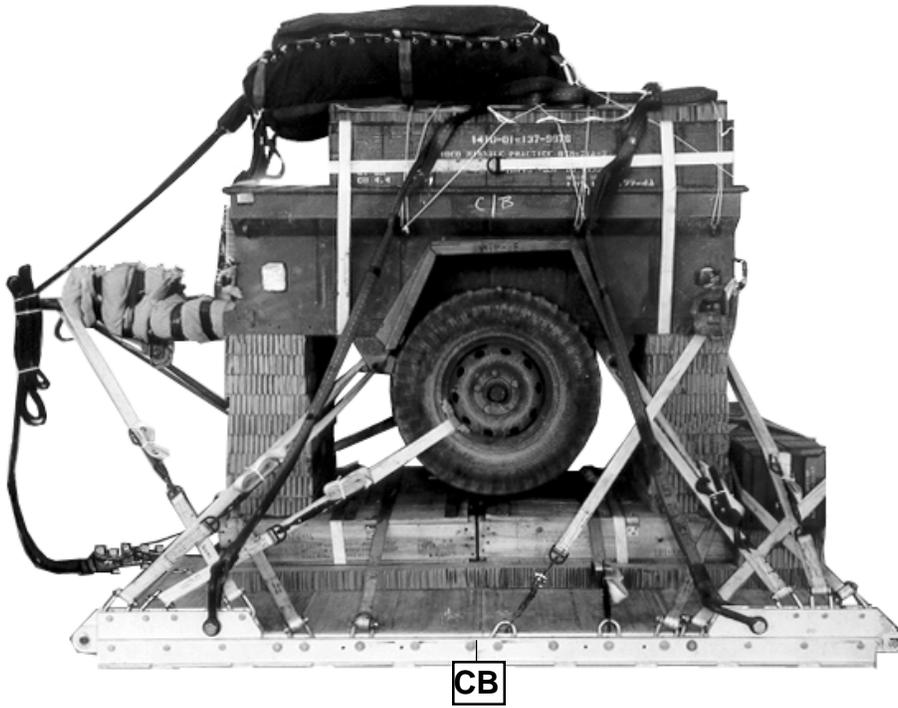
Marking Rigged Load

3-12. Mark the rigged load according to FM 10-500-2/TO 13C7-1-5, and as shown in Figure 3-9. Complete the 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

3-13. Use the equipment listed in Table 3-1 to rig this load.

CAUTION
 Make the final rigger inspection required by FM 10-500-2/
 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)	EFTC

Figure 3-9. M416 Trailer with Eight TOW Missiles Rigged for Low-Velocity Airdrop

Table 3-1. 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-gal	As required
4030-00-090-5354	Clevis, suspension, 1-in (large)	5
4030-00-678-8562	Clevis, suspension, 3/4-in (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-ft (1-loop), type XXVI	1
	Line, extraction	
1670-01-064-4452	For C-130: 60-ft (1-loop), type XXVI	1
1670-01-107-7652	For C-141: 160-ft (1-loop), type XXVI	1
	For C-5:	
1670-01-107-7652	160-ft (1-loop), type XXVI	1
1670-01-107-7652	For C-17: 160-ft (1-loop), type XXVI	1
	Link assembly:	
1670-00-783-5988	Type IV (for C-17)	1
	Two-point, 3 3/4-in	1
5306-00-435-8994	Bolt, 1-in diam, 4 in long	(2)
5310-00-232-5165	Nut, 1-in, hexagonal	(2)
1670-00-003-1953	Plate, side, 3 3/4-in	(2)
5365-00-007-3414	Spacer, large	(2)

Table 3-1. 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-in	8 sheets
	Parachute:	
1670-01-016-7841	Cargo, G-11B	1
1670-01-063-3715	Cargo extraction, 15-ft	1
1670-01-063-3715	Drogue, 15-ft (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, 3/4- by 48- by 96-in	1 sheet
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop	
	For suspension:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing	4
	For deployment:	
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing	1
1670-00-998-0116	Strap, parachute release, single	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	29
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type	As required
8305-00-082-5752	Nylon, tubular, 1/2-in	As required
8305-00-261-8585	Type VIII	As required