

CHAPTER 7

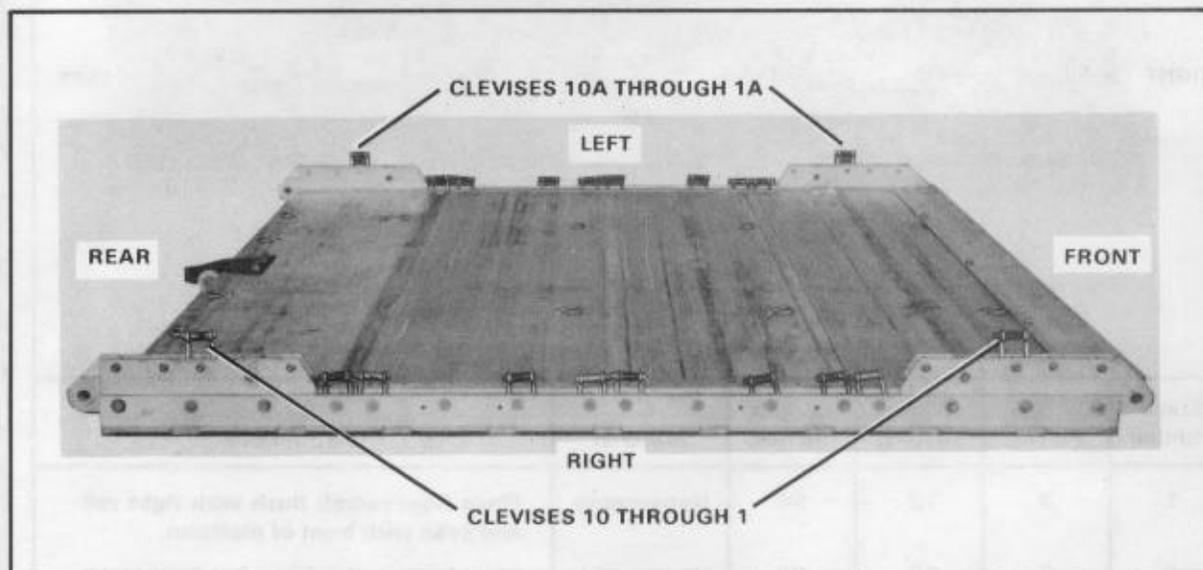
RIGGING SHILLELAGH MISSILES FOR LOW-VELOCITY AIRDROP ON A TYPE V PLATFORM

7-1. Description of Load

Forty-two Shillelagh missiles in their containers are rigged on an 8-foot, type V platform with two G-11A or two G-11B cargo parachutes. Each missile in its container weighs 116 pounds.

7-2. Preparing Platform

Prepare an 8-foot, type V airdrop platform using four tandem links and 20 tiedown clevises as shown in Figure 7-1.



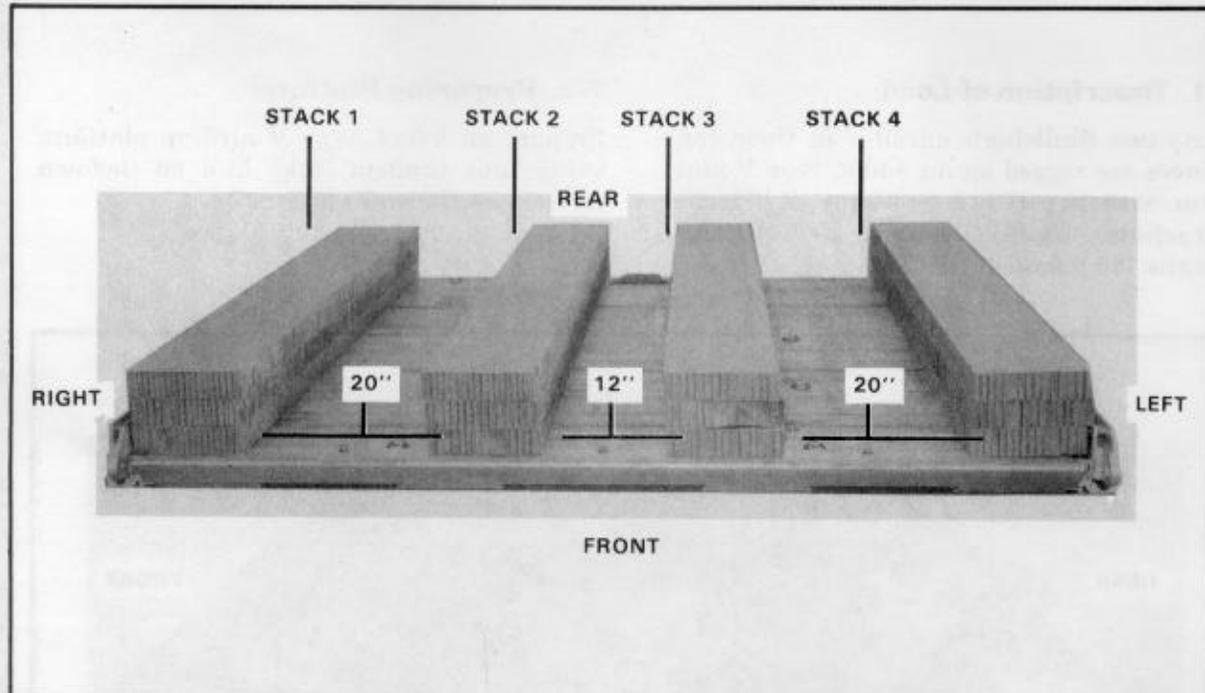
Step:

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

Figure 7-1. Platform prepared

7-3. Building and Placing Honeycomb Stacks

Build four honeycomb stacks and place them on the platform as shown in Figure 7-2.

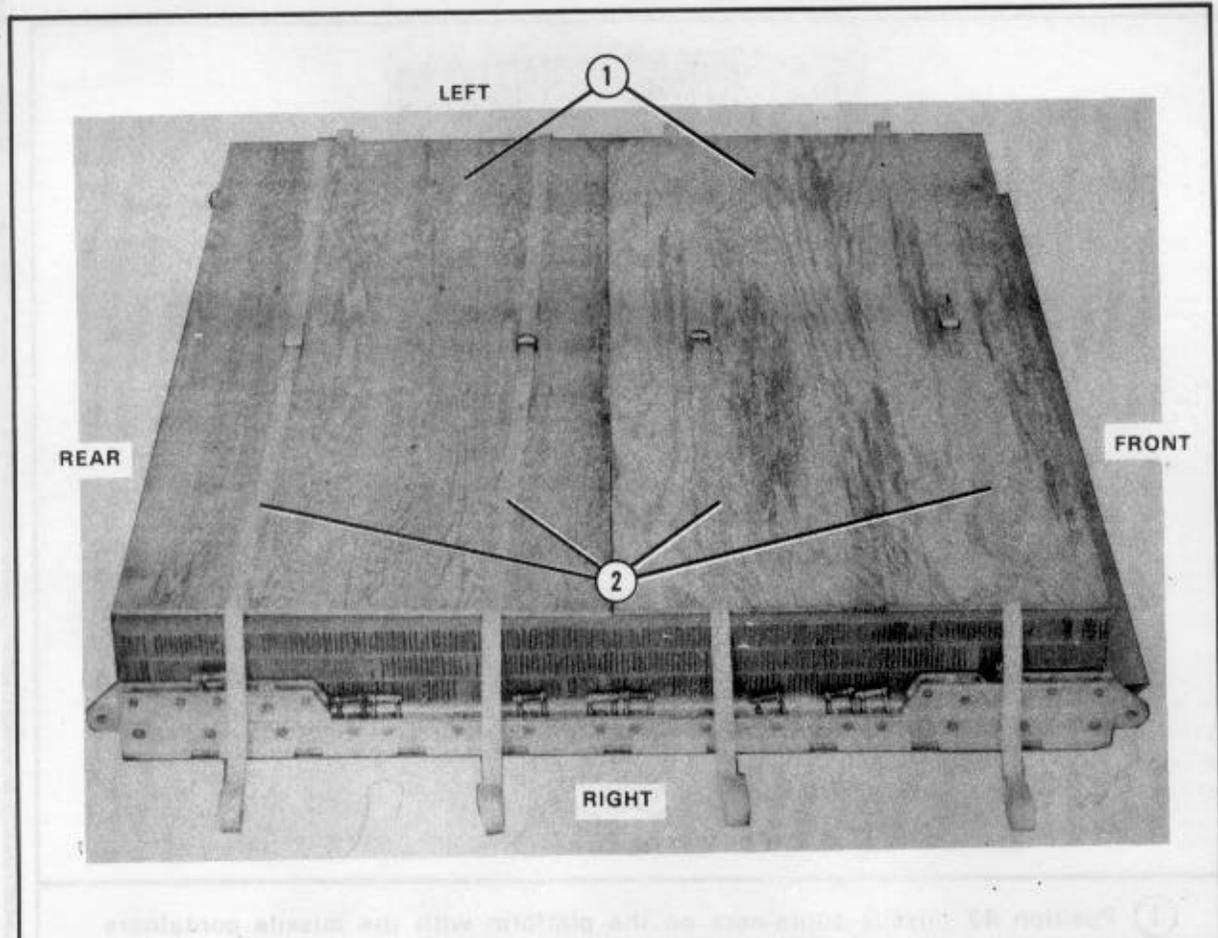


Stack Number	Pieces	Width (Inches)	Length (Inches)	Material	Instructions
1	3	12	96	Honeycomb	Place honeycomb flush with right rail and even with front of platform.
2	3	12	96	Honeycomb	Place honeycomb 20 inches from stack 1 and even with front of platform.
3	3	12	96	Honeycomb	Place honeycomb 12 inches from stack 2 and even with front of platform.
4	3	12	96	Honeycomb	Place honeycomb 20 inches from stack 3 and even with front of platform.

Figure 7-2. Honeycomb stacks prepared and placed on platform

7-4. Installing Plywood and Lashings

Install plywood and lashings on the honeycomb stacks as shown in Figure 7-3.

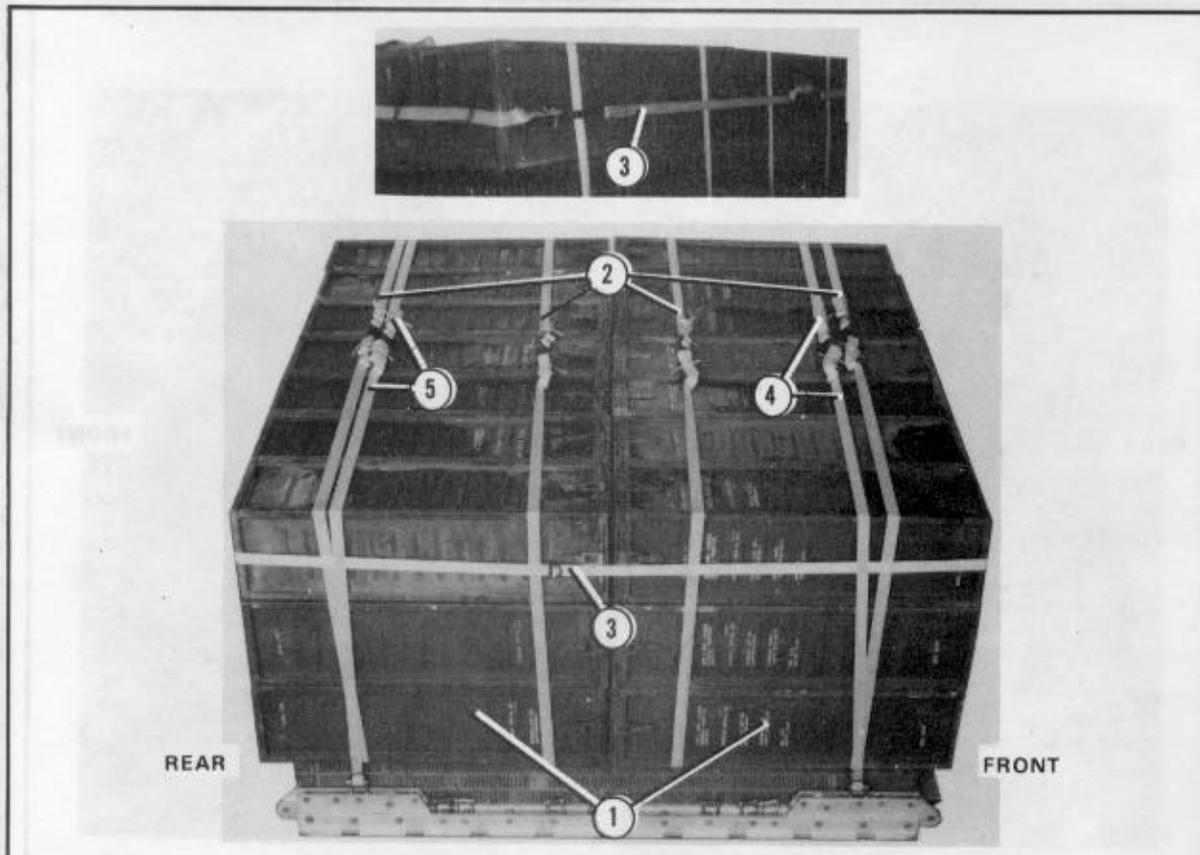


- ① Place two pieces of 1/2- by 48- by 96-inch plywood on the honeycomb stacks.
- ② Use eight 15-foot tiedown straps to form four 30-foot lashings according to FM 10-500/TO 13C7-1-5. Space straps evenly over the plywood as shown.

Figure 7-3. Plywood and lashings placed on honeycomb

7-5. Positioning and Lashing Missile Containers

Place the 42 missiles (in their containers) on the platform in rows of three, and bind them as shown in Figure 7-4.

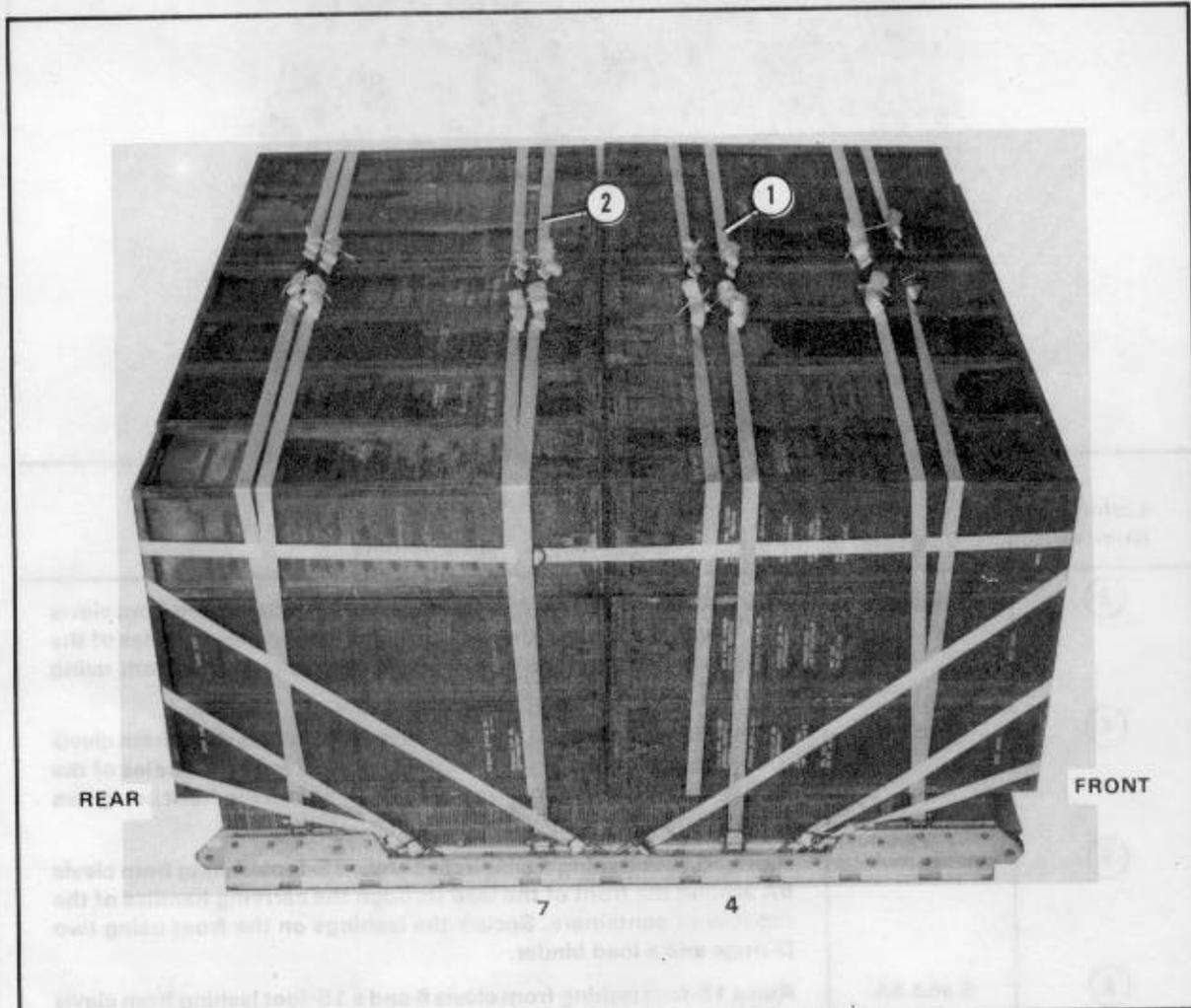


- ① Position 42 missile containers on the platform with the missile containers overhanging the front and rear edges of the platform by 4 1/2 inches.
- ② Bind the missile containers together with the 30-foot lashings. Secure each lashing on top of the containers with two D-rings and a load binder.
- ③ Form a 30-foot lashing as outlined in FM 10-500/TO 13C7-1-5. Pass one end of the 30-foot lashing through the top front carrying handles and the other end through the top rear carrying handles. Secure the ends of the 30-foot lashing using a 15-foot tiedown lashing, three D-rings, and two load binders.
- ④ Run a 15-foot lashing from clevis 1 and a 15-foot lashing from clevis 1A over the load. Secure the lashings on top of the load using two D-rings and a load binder.
- ⑤ Run a 15-foot lashing from clevis 10 and a 15-foot lashing from clevis 10A over the load. Secure the lashings on top of the load using two D-rings and a load binder.

Figure 7-4. Missile containers positioned and lashed

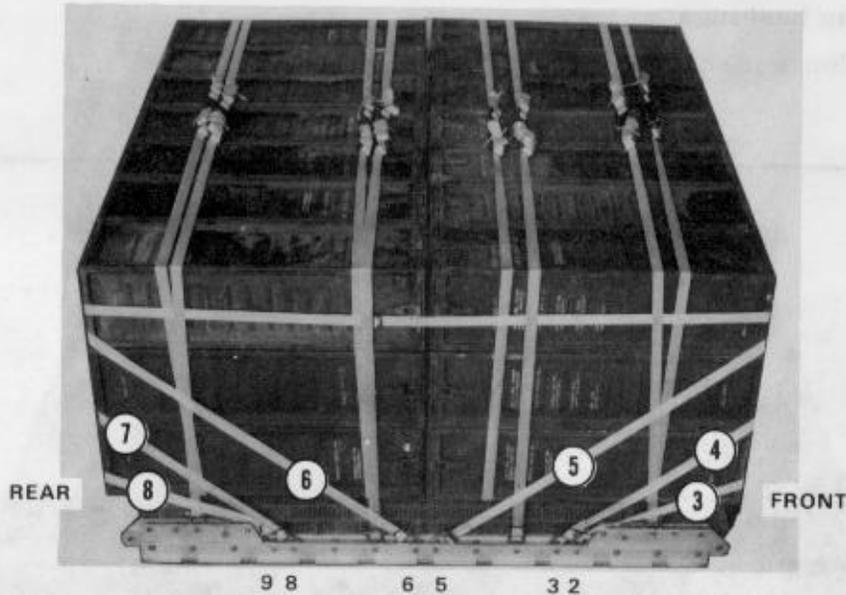
7-6. Installing Lashings

Install the lashings as shown in Figures 7-5 and 7-6.



Lashing Number	Tiedown Clevis Number	Instructions
①	4 and 4A	Run a 15-foot lashing from clevis 4 and a 15-foot lashing from clevis 4A over the load. Secure the lashings on top using two D-rings and a load binder.
②	7 and 7A	Run a 15-foot lashing from clevis 7 and a 15-foot lashing from clevis 7A over the load. Secure the lashings on top using two D-rings and a load binder.

Figure 7-5. Lashings 1 and 2 installed

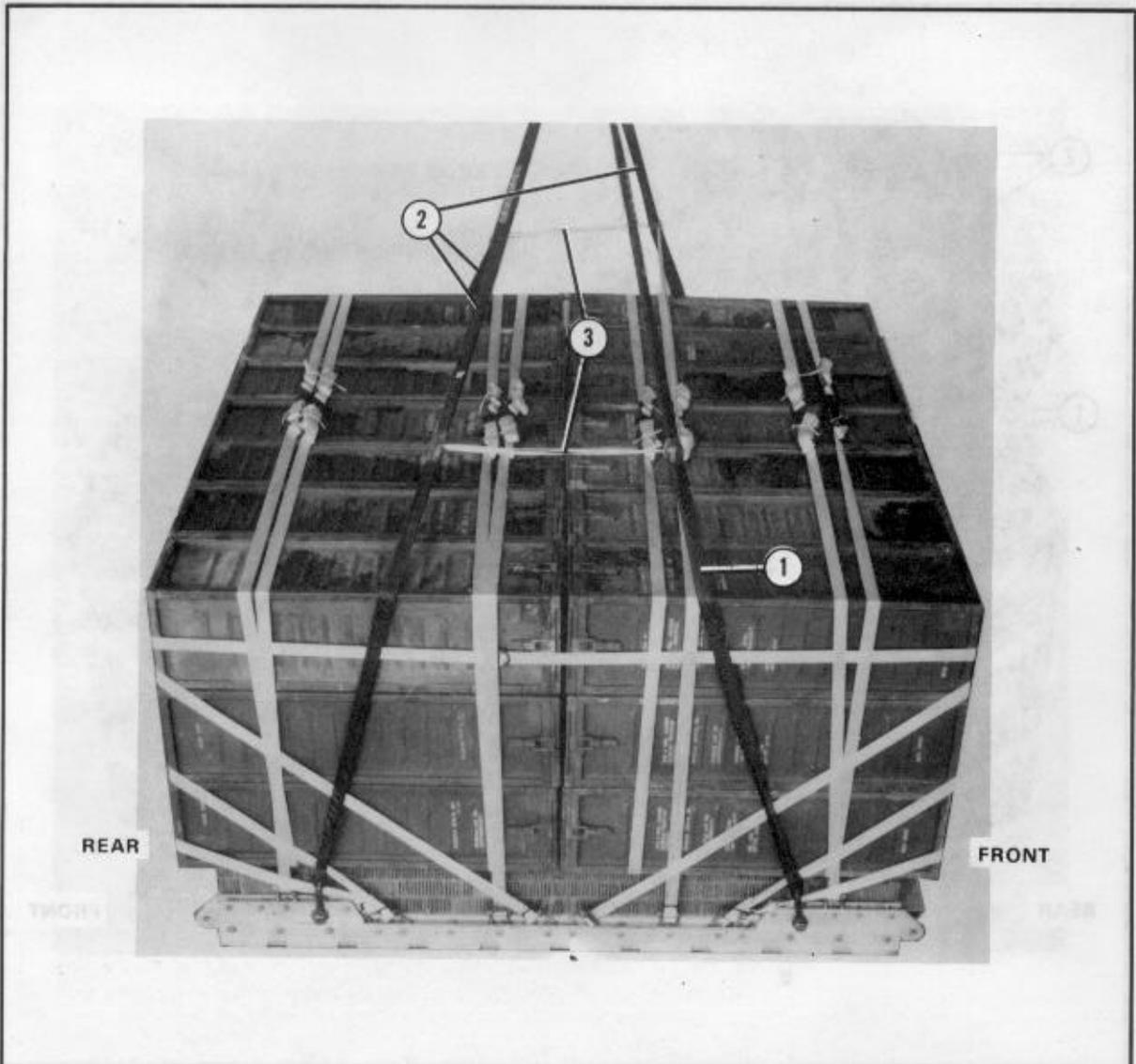


Lashing Number	Tiedown Clevis Number	Instructions
③	2 and 2A	Run a 15-foot lashing from clevis 2 and a 15-foot lashing from clevis 2A around the front of the load through the carrying handles of the bottom row of containers. Secure the lashings on the front using two D-rings and a load binder.
④	3 and 3A	Run a 15-foot lashing from clevis 3 and a 15-foot lashing from clevis 3A around the front of the load through the carrying handles of the center row of containers. Secure the lashings on the front using two D-rings and a load binder.
⑤	5 and 5A	Run a 15-foot lashing from clevis 5 and a 15-foot lashing from clevis 5A around the front of the load through the carrying handles of the top row of containers. Secure the lashings on the front using two D-rings and a load binder.
⑥	6 and 6A	Run a 15-foot lashing from clevis 6 and a 15-foot lashing from clevis 6A around the rear of the load through the carrying handles of the top row of containers. Secure the lashings on the rear using 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 around the rear of the load through the carrying handles of the center row of containers. Secure the lashings on the rear using 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 around the rear of the load through the carrying handles of the bottom row of containers. Secure the lashings on the rear using two D-rings and a load binder.

Figure 7-6. Lashings 3 through 8 installed

7-7. Installing Suspension Slings and Deadman's Tie

Install the suspension slings and the deadman's tie as shown in Figure 7-7.

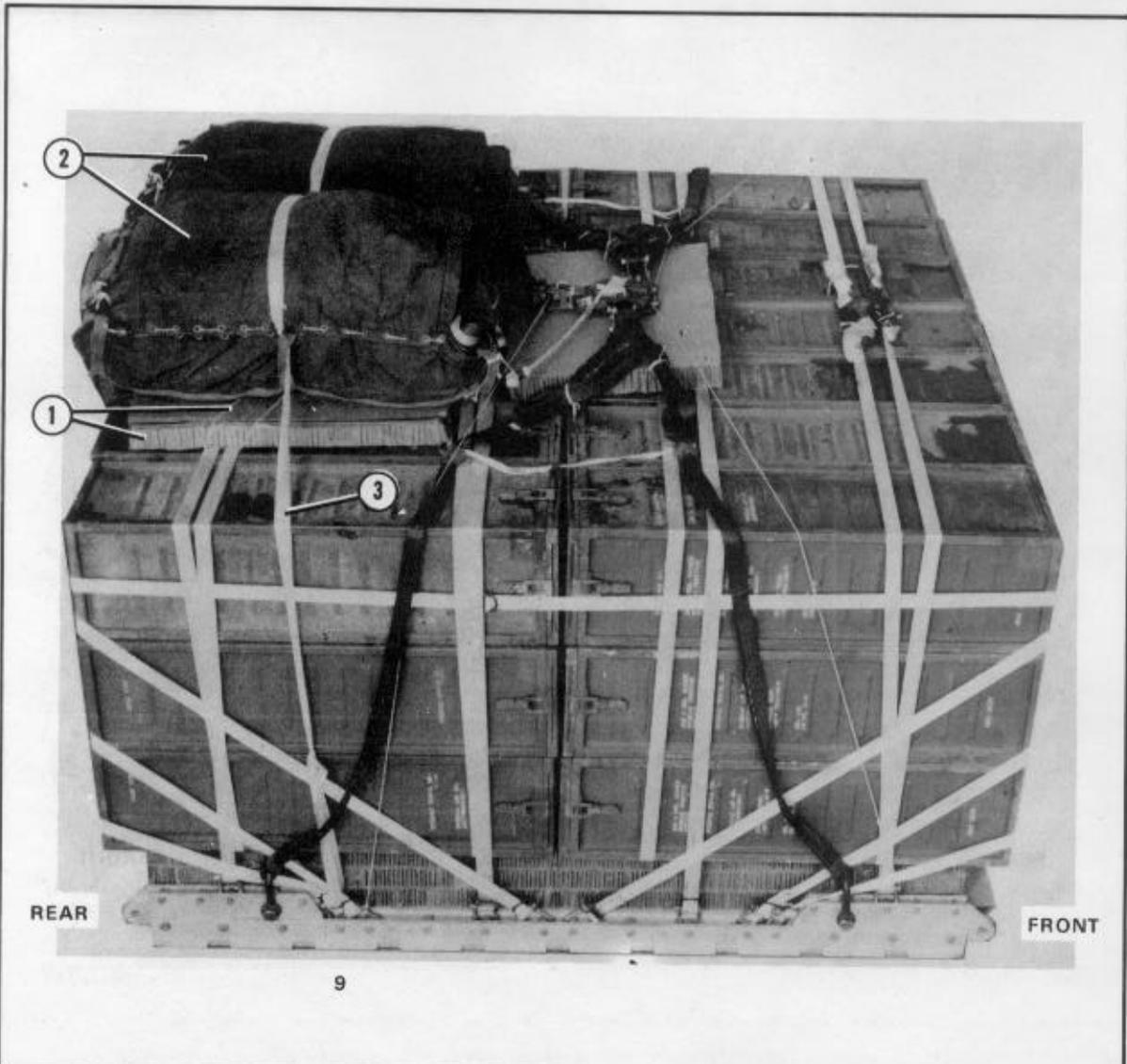


- ① Attach one 11-foot (4-loop), type XXVI nylon suspension sling to a large clevis. Attach the clevis to one of the tandem links.
- ② Repeat the same procedure for the other three tandem links.
- ③ Raise the four suspension slings above the load, and install a deadman's tie as outlined in FM 10-500/TO 13C7-1-5.

Figure 7-7. Suspension slings and deadman's tie installed

7-8. Stowing Cargo Parachutes

Stow two G-11A or G-11B cargo parachutes according to FM 10-500/TO 13C7-1-5 and as shown in Figure 7-8.

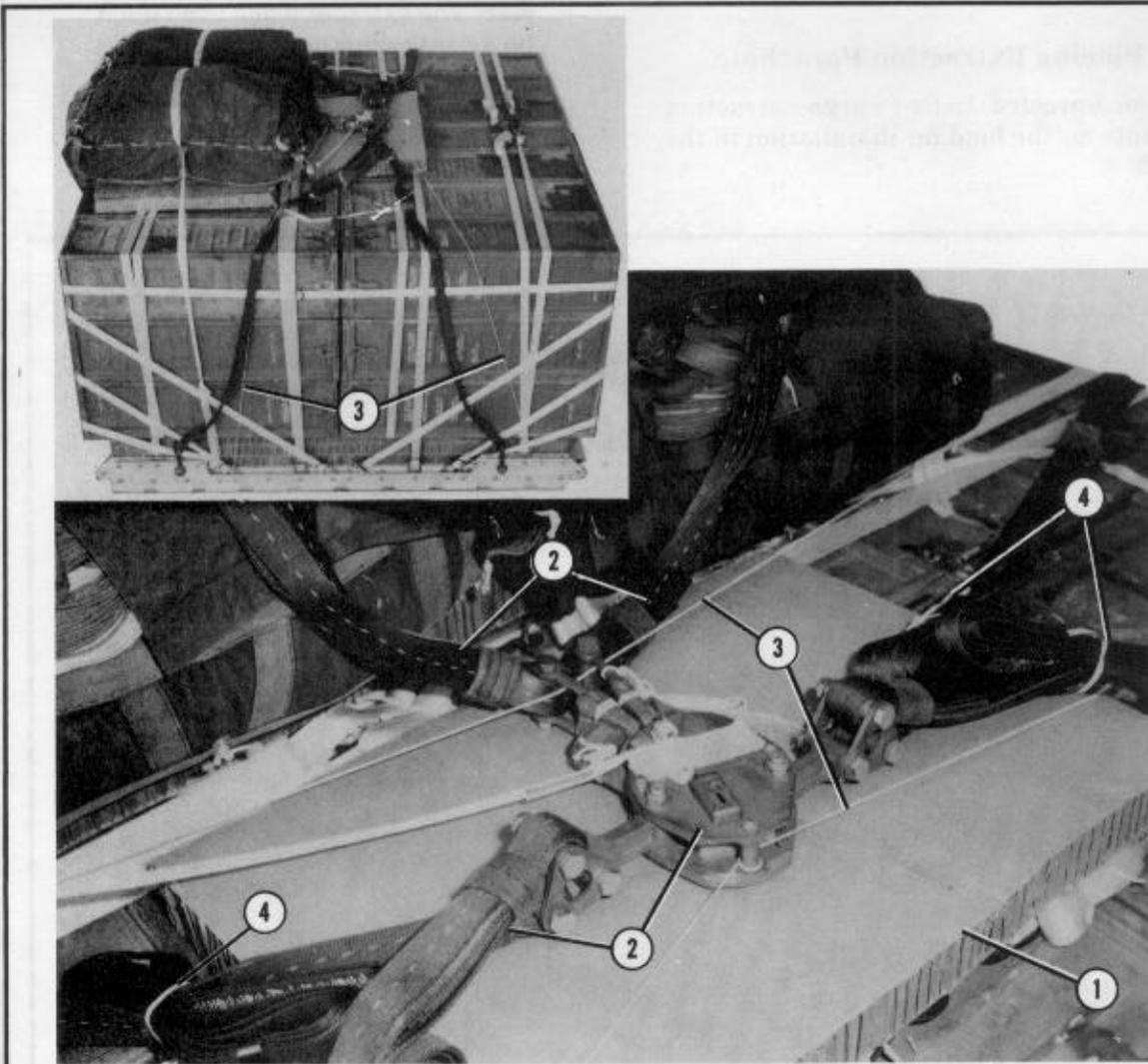


- ① Position a piece of 36- by 71-inch honeycomb on the top rear of the load. Secure the honeycomb with type III nylon cord.
- ② Place two G-11A or two G-11B cargo parachutes on top of the honeycomb, and secure them to the load as outlined in FM 10-500/TO 13C7-1-5.
- ③ Tie the parachute restraint strap to clevises 9 and 9A.

Figure 7-8. Parachutes stowed and secured to load

7-9. Installing Release System

Prepare, attach, and safety an M-1 cargo parachute release according to FM 10-500/TO 13C7-1-5 and as shown in Figure 7-9.



- ① Position a 25- by 25-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 any excess suspension slings.

Figure 7-9. M-1 cargo parachute release installed

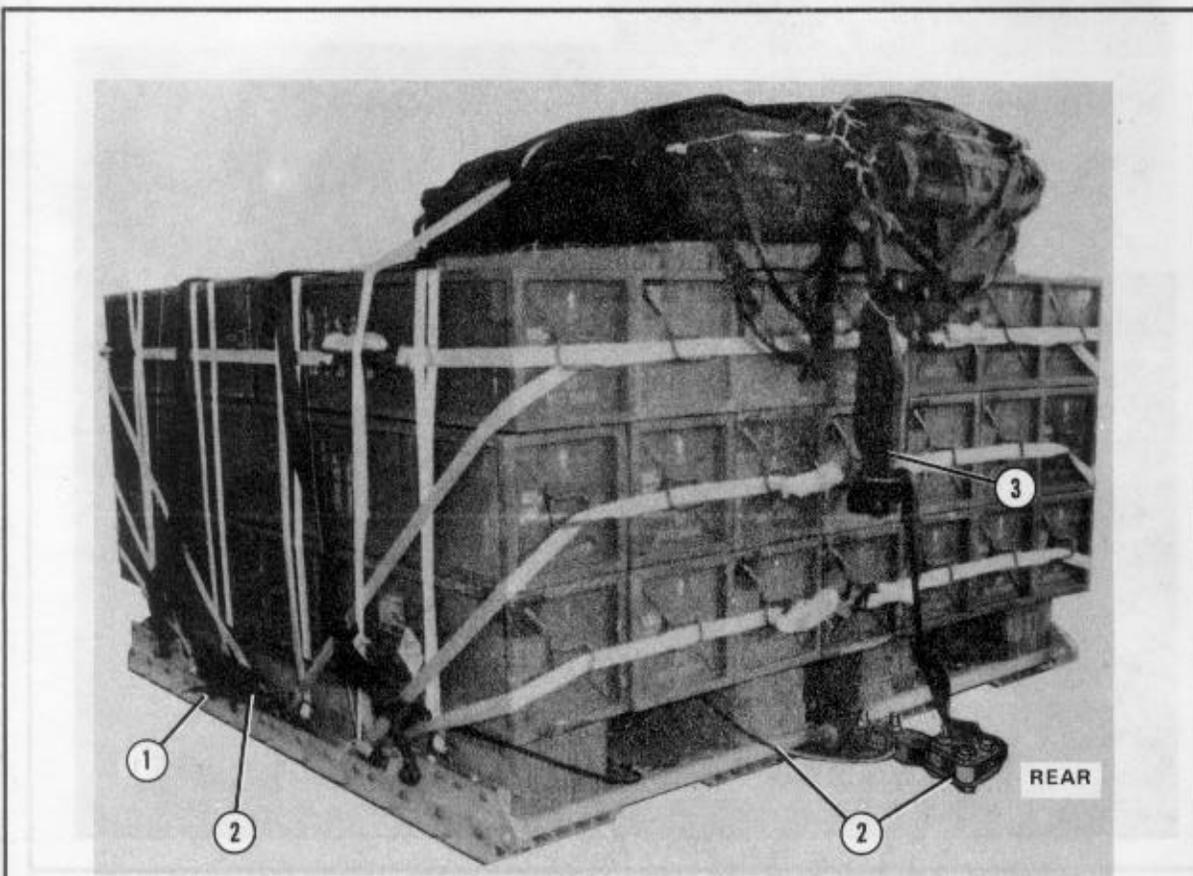
7-10. Installing Extraction System

Attach the EFTC to the load according to FM 10-500/TO 13C7-1-5 and as shown in Figure 7-10.

7-11. Placing Extraction Parachute

Place an unreefed 15-foot cargo extraction parachute on the load for installation in the aircraft.

NOTE: The C-141 aircraft requires that the extraction parachute must be packed with a 36-inch adapter web. The extraction line used must be a continuous length of 160-foot (1-loop), type XXVI nylon webbing extraction line. Shorter lines will not be joined to form this extraction line.



- ① Attach the type V actuator bracket to the front mounting holes on the left rail.
- ② Install the EFTC according to FM 10-500/TO 13C7-1-5.
- ③ Use a 12-foot (3-loop), type X or a 12-foot (2-loop), type XXVI nylon sling as a deployment line.

Figure 7-10. EFTC installed

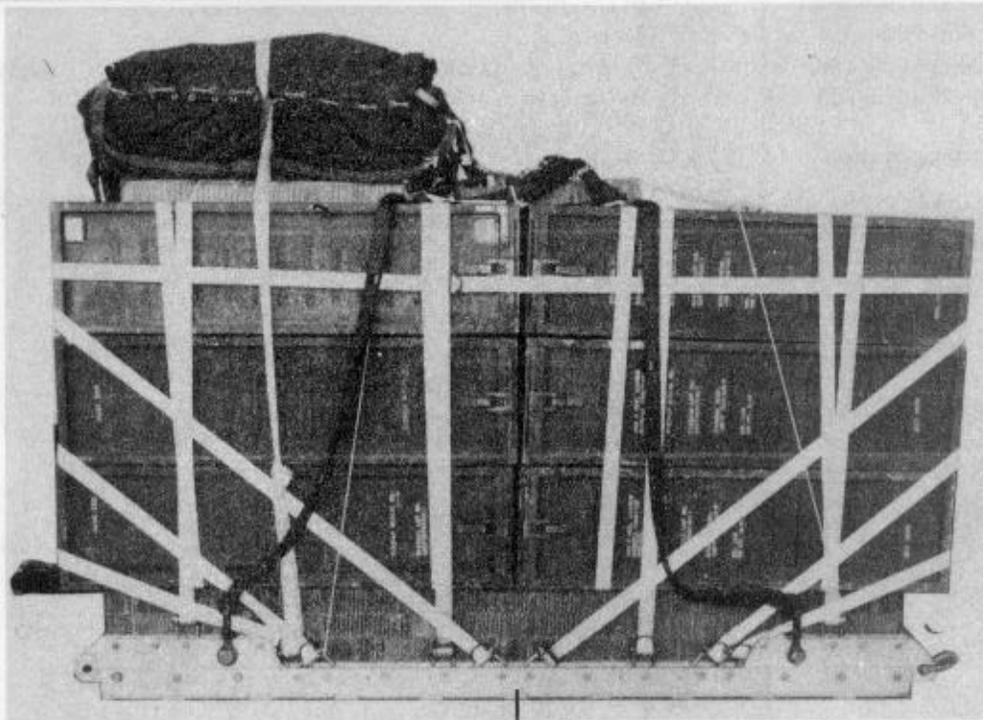
7-12. Installing Provisions for Emergency Restraints

Install one medium clevis in the front hole of each front tandem link as a provision for an emergency restraint.

7-13. Marking Rigged Load

Mark the rigged load as outlined in FM 10-500/TO 13C7-1-5 and as shown in Figure 7-11.

CAUTION
 Make the final rigger inspection required by FM 10-500/TO 13C7-1-5 before the load leaves the rigging site.



C B

RIGGED LOAD DATA

Weight: Load shown	6,450 pounds
Maximum allowed	3,900 pounds
Height	53 inches
Width	108 inches
Length	105 inches
Overhang: Front	4 1/2 inches
Rear	4 1/2 inches
CB (from front edge of platform)	51 inches

Figure 7-11. Shillelagh missiles rigged for low-velocity airdrop on a type V platform.

7-14. Equipment Required

Use the equipment listed in Table 7-1 to rig this load.

Table 7-1. Equipment required for rigging Shillelagh missiles for low-velocity airdrop on a type V airdrop platform

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
	Clevis, suspension:	
4030-00-678-8562	3/4-in (medium)	2
4030-00-090-5354	1-in (large)	5
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5783	Coupling, airdrop, extraction force transfer w 12-ft cable	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	5
1670-01-183-2678	Leaf, extraction line	1
	(sling/extraction line panel)	
	Line, extraction:	
1670-01-064-4452	60-ft (1-loop), type XXVI nylon webbing (for C-130)	1
1670-01-107-7652	160-ft (1-loop), type XXVI nylon webbing (for C-141)	1
1670-00-783-5988	Link assembly, type IV (Add one for C-141.)	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	6 sheets
	12- by 96-in	(12)
	25- by 25-in	(1)
	36- by 71-in	(1)
	Parachute:	
	Cargo:	
1670-00-269-1107	G-11A	2
	<u>or</u>	
1670-01-016-7841	G-11B	2
	Cargo extraction:	
1670-01-063-3715	15-ft	1
	<u>or</u>	
1670-00-052-1548	15-ft	1
	Platform, airdrop, type V, 8-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2385	Bumper, nose	(1)
1670-01-162-2372	Clevis, load tiedown	(20)

Table 7-1. Equipment required for rigging Shillelagh missiles for low-velocity airdrop on a type V airdrop platform (continued)

National Stock Number	Item	Quantity
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-162-2381	Tandem link assembly	(4)
	(Multipurpose link)	
5530-00-129-7777	Plywood, 1/2- by 48- by 96-in	2
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo, airdrop:	
	For deployment:	
1670-01-062-6303	12-ft (2-loop), type XXVI nylon webbing.....	1
	For riser extensions:	
1670-00-753-3794	20-ft (2-loop), type X nylon webbing	2
	<u>or</u>	
1670-01-062-6302	20-ft (2-loop), type XXVI nylon webbing.....	2
	For suspension slings:	
1670-01-062-6310	11-ft (4-loop), type XXVI nylon webbing.....	4
1670-00-040-8219	Strap, parachute release, w fastener and release knife	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
1670-00-937-0271	Tiedown assembly, 15-ft	27
	Webbing:	
8305-00-268-2411	Cotton, 80-lb	As required
8305-00-263-3591	Nylon, type VIII, 3,600-lb	7 yd

GLOSSARY

AFB	Air Force base	gal	gallon
AFR	Air Force regulation	HQ	headquarters
AFTO	Air Force technical order	in	inch
ALC	Air Logistics Center	LAPE	low-altitude parachute extraction
APERS	antipersonnel	lb	pound
AR	Army regulation	LRF	laser range finder
ARAAV	armored reconnaissance/ airborne assault vehicle	MAC	Military Airlift Command
ATTN	attention	MREs	meals, ready-to-eat
CB	center of balance	no	number
cir	circumference	NSN	national stock number
CVC	constant velocity cover	POL	petroleum, oils, and lubricants
d	penny	sec	second
DA	Department of the Army	SL/CS	static line/connector strap
DC	District of Columbia	TM	technical manual
DD	Department of Defense	TO	technical order
diam	diameter	TRADOC	United States Army Training and Doctrine Command
EFTA	extraction force transfer actuator	TVS	tactical visual system
EFTC	extraction force transfer coupling	US	United States
FM	field manual	w	with
ft	feet/foot	yd	yard

REFERENCES

AFR 55-40/AR 59-4	Joint Airdrop Inspection Records, Malfunction Investigations and Activity Reporting
AFR 71-4/TM 38-250	Packaging and Materials Handling: Preparing of Hazardous Materials for Military Air Shipments
FM 10-500/TO 13C7-1-5	Airdrop of Supplies and Equipment: Rigging Airdrop Platforms
FM 10-501/TO 13C7-1-11	Airdrop of Supplies and Equipment: Rigging Containers
FM 10-553/TO 13C7-18-41	Airdrop of Supplies and Equipment: Rigging Ammunition
TM 9-2350-230-10	Operator's Manual (Crew) for Armored Reconnaissance/Airborne Assault Vehicle, Full-Track, 152-mm Gun/Launcher M551 and M551A1
TM 10-1670-208-20&P/ TO 13C3-4-12	Organizational Maintenance Manual Including Repair Parts and Special Tools List for Platforms, Types II Modular and LAPES/Airdrop Modular
TM 10-1670-286-20/ TO 13C5-2-41	Unit Maintenance Manual for Sling/Extraction Line Panel (Including Stowing Procedures)
TM 10-1670-268-20&P/ TO 13C7-52-22	Organizational Maintenance Manual With Repair Parts and Special Tools List: Type V Airdrop Platform
AFTO Form 22	Technical Order Publication Improvement Report
DA Form 2028	Recommended Changes to Publications and Blank Forms
DD Form 1387-2	Special Handling Data/Certification

FM 10-515/TO 13C7-10-181

24 SEPTEMBER 1984

By Order of the Secretaries of the Army and the Air Force:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

DISTRIBUTION:

Active Army, ARNG, and USAR: To be distributed in accordance with DA Form 12-11A, Requirements for Airdrop of Supplies and Equipment (Qty rqr block no. 228).

Additional copies may be requisitioned from the US Army Adjutant General Publications Center, 2800 Eastern Boulevard, Baltimore, MD 21220.