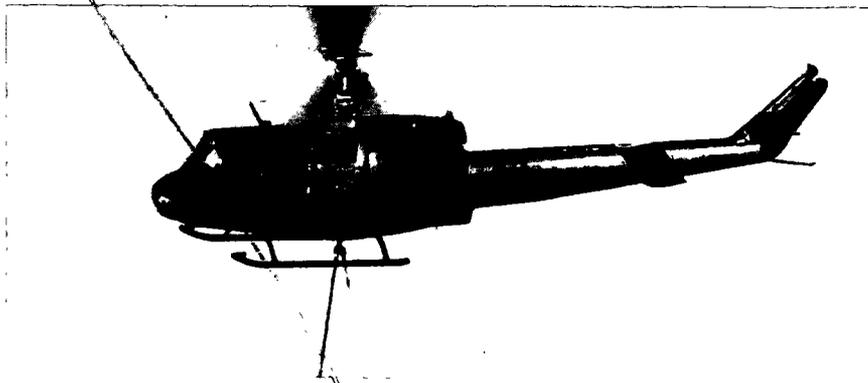
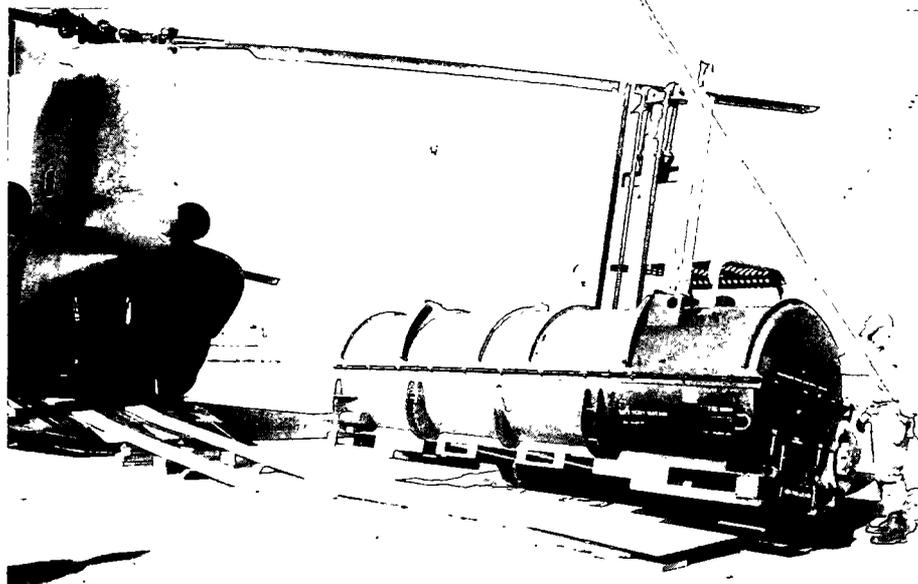


FM 55-375 3/5 by FM 55-375 ~~6 Jan 78~~  
Copy 2 15 Mar 84 FM 55-375

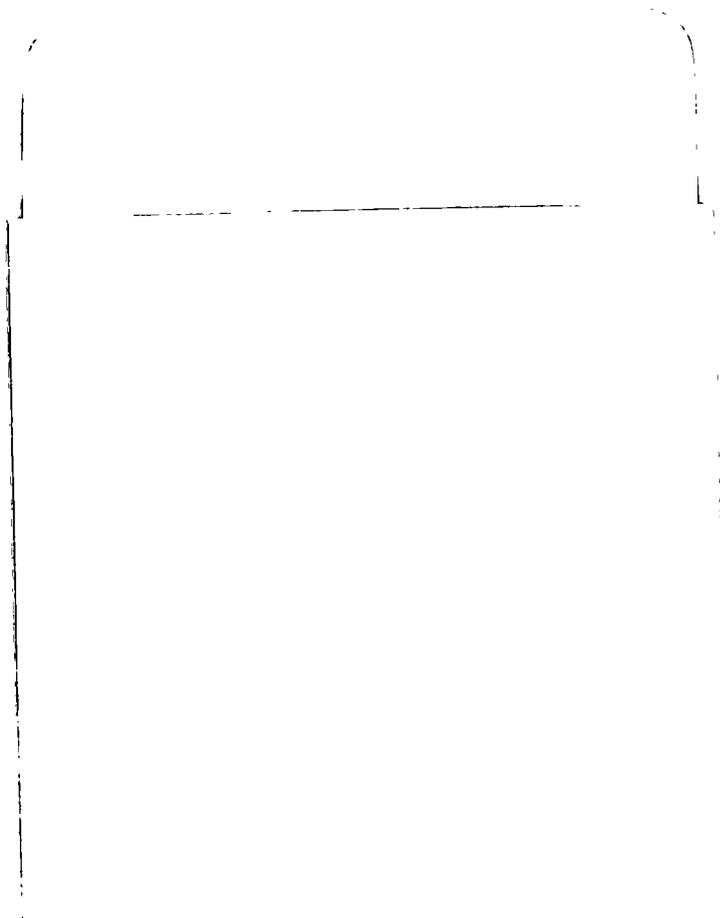
**FIELD MANUAL**



**AIR TRANSPORT PROCEDURES**  
**TRANSPORT OF PERSHING WARHEAD SECTION**  
**IN SHIPPING AND STORAGE CONTAINER, M483,**  
**BY US ARMY HELICOPTERS**



RETURN TO THE ARMY LIBRARY  
ROOM 12513 PENTAGON  
WASHINGTON, D.C. 20310



Fm 55-375  
15 Dec 79

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, DC, 15 December 1979

# Immediate Action INTERIM CHANGE

FM 55-375  
INTERIM CHANGE  
NO. 101  
Expires 15 December 1980

## AIR TRANSPORT PROCEDURES

### TRANSPORT OF PERSHING WARHEAD SECTION IN SHIPPING AND STORAGE CONTAINER, M483, BY US ARMY HELICOPTERS

This interim change is forwarded to the field to eliminate or modify a policy, procedure, or other specification that could result in loss of life, personal injury, or destruction of property; expires 1 year from date of publication and will be destroyed at that time unless sooner superseded by a formal printed change; is being distributed by 1st class mail through the publications pinpoint distribution system to all holders of FM 55-375; is, as an interim measure, issued in other than page-for-page format; and will be included in FM 55-375 when revised.

Page 2-1. Paragraph 2-1d(3) is added:

2-1d(3). The warhead section faces forward.

Page 2-1. Paragraph 2-2b is amended to delete "Tiedowns and slings will be inspected by a parachute rigger at least every 6 months. Under no condition will a sling be used beyond the 6-month date without inspection and recertification by a parachute rigger."

Page 3-1. Paragraph 3-1f is superseded as follows:

3-1f. The warhead section (front end of container) must be faced forward for internal air transport. (Tiedown diagrams in this manual show the container facing forward.) Container center of balance is approximately 83 inches (2.11 m) from the aft end and is marked on the container.

(MTT-TRC)

By Order of the Secretary of the Army:

Official:

J. C. PENNINGTON  
Major General, United States Army  
The Adjutant General

E. C. MEYER  
General, United States Army  
Chief of Staff

RETURN TO THE ARMY LIBRARY  
ROOM 1A512 PENTAGON  
WASHINGTON, D.C. 20310

#### DISTRIBUTION:

Active Army, ARNG, USAR: To be distributed in accordance with DA Form 12-31, Operator Maintenance requirements for CH-47B/C, CH-54A, CH-54B, UH-1B, UH-1C/M, UH-1D/H, plus: DA Form 12-34B, requirements for Air Transport Procedures: Nuclear Warheads and Projectiles and DA Form 12-35, Section III, Operator requirements for Pershing Weapon System.



/



/



FIELD MANUAL

NO. 55-375

HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, D. C., 6 January 1978

**AIR TRANSPORT PROCEDURES  
TRANSPORT OF PERSHING WARHEAD SECTION IN  
SHIPPING AND STORAGE CONTAINER, M483,  
BY US ARMY HELICOPTERS**

		Paragraph	Page
CHAPTER	1. INTRODUCTION		
	Purpose and scope .....	1-1	1-1
	Reporting of publication improvements .....	1-2	1-1
	2. GENERAL SAFETY AND SECURITY MATTERS		
	Warnings .....	2-1	2-1
	Operational precautions .....	2-2	2-1
	3. AIR TRANSPORTABILITY AND HANDLING DATA		
	General .....	3-1	3-1
	Time required .....	3-2	3-1
	4. TRANSPORT BY HELICOPTER		
	Internal transport .....	4-1	4-1
	External transport (emergency procedure) .....	4-2	4-9
APPENDIX	REFERENCES .....		A-1



## CHAPTER 1

### INTRODUCTION

---

#### 1-1. Purpose and Scope

a. This manual presents Department of the Army approved procedures for internal and external transport of the Pershing warhead section in the shipping and storage container, M483 (also referred to as "item"), by US Army helicopters. This manual pertains to the UH-1-series, CH-47, and CH-54 helicopters. Materials and qualified manpower needed to prepare, load, tie down, and unload, or to rig and derig, the item are prescribed herein. Where appropriate, metric equivalents are given in parentheses following the dimension or other measurement. References are shown in the appendix.

b. The internal transport procedures in this manual apply when the warhead section is transported by CH-47 helicopter or by universal military pod attached to the CH-54 helicopter. The described internal load of two warhead sections for the CH-47 is a maximum load. The external transport procedures apply when one warhead section is transported by UH-1-series helicopter having an allowable cargo load capacity equal to or greater than the weight of the load, or when one warhead section is transported by CH-47 or CH-54 helicopter. Additional internal cargo, includ-

ing different types of nuclear weapons and/or personnel within allowable load limits and restrictions prescribed by AR 50-5 and pertinent safety regulations (app), may be transported.

c. Times given to prepare, load, tie down, and unload, or to rig and derig, the loads described in this manual may vary, depending upon existing conditions.

d. The word "he" when used in this manual represents both the masculine and feminine genders unless only the feminine gender applies.

#### 1-2. Reporting of Publication Improvements

Users of this publication are encouraged to recommend changes and submit comments for its improvement. Comments should be prepared on DA Form 2028 (Recommended Changes to Publications and Blank Forms) and forwarded to Director, Military Traffic Management Command Transportation Engineering Agency, ATTN: MTT-TRP, PO Box 6276, Newport News, VA 23606 (electrically transmitted messages should be addressed to: DIRMTMCTEA FT EUSTIS VA//MTT-TRP//).



## CHAPTER 2

### GENERAL SAFETY AND SECURITY MATTERS

**WARNING.** The Pershing warhead section is not to be jettisoned under any circumstances.

#### 2-1. Warnings

The following warnings will be observed by personnel performing operations, procedures, and practices that are included or implied in this manual. Disregard for these warnings could result in personal injury or loss of life.

*a.* Prior to each nuclear cargo mission, the helicopter commander will be familiar with provisions of AR 50-5 and AR 95-27 and insure compliance therewith. In addition, he will become familiar with the security, safety, and technical peculiarities of the cargo that may affect air transport. Flight plans will include provisions for avoiding built-up and heavily populated areas. When transporting the warhead section in the universal military pod by CH-54 helicopter, the pod must be secured to the helicopter to preclude jettisoning the pod deliberately or inadvertently. Procedures for securing the pod to preclude jettisoning are prescribed in TM 55-1520-217-10/1, and TM 55-1520-217-10/2.

*b.* To determine compatibility of any other nuclear weapons or other cargo as authorized by chapter 4, AR 50-5, and chapter 1, AR 55-203, for transport with the warhead section, ordnance support channels must be consulted. Information on compatibility is contained in TM 39-45-51C and TM 38-250, which are distributed to major headquarters and to direct support and general support levels. Restrictions listed in TM 39-20-7 will not be exceeded when additional types of nuclear weapons are transported along with the warhead section.

*c.* Emergency destruction procedures for the warhead section are contained in TM 39-50-8. Normally, emergency-destruct materials will not be carried on the same helicopter as nuclear weapons. In the isolated case where operational necessity limits the availability of escort aircraft, the theater commander may authorize emergency destruct materials (including blasting caps) to be transported in the load-carrying helicopter. Such materials will be in packagings authorized for transportation, isolated from weapons as far as possible, and tied down so as to prevent movement. Only the number of destruct charges and blasting caps necessary to destroy the warhead section will be

carried aboard. Blasting caps in their container (recommend use of M2 or M19 series ammunition boxes) will be tied down separately and surrounded by a restrained sandbag barrier. Transport of electric blasting caps in helicopters is governed by paragraph C-26, TM 9-1300-206.

*d.* The warhead section will be loaded and tied down as prescribed in this manual except that it may be repositioned for helicopter operational reasons, or when loading additional nuclear weapons or other cargo and/or mission personnel. If a location other than that shown in the respective tiedown diagram is used, the helicopter commander must insure that—

(1) The number and load capacity of the tiedown devices are as prescribed in this manual.

(2) Tiedown devices restraining the item are secured to tiedown fittings in the same location relative to the item as those fittings used in the pertinent tiedown diagram. Required restraint will be provided when the depicted tiedown pattern is maintained.

#### 2-2. Operational Precautions

The following operational precautions will be observed during loading, rigging, tiedown, transport, and unloading of the item.

*a.* Web strap tiedown assemblies and cargo slings, as used to secure or sling-transport the items described in this manual, are limited to a maximum time of usage (useful life) of 36 months. The time of usage will commence at the time the tiedowns and slings are unpackaged for use by the using organization. At that time they will be marked, using stencil ink TT-I-1795 (any contrasting color), with the current date (month and year) in at least 1/2-inch-high letters near the hook end of the strap.

*b.* Prior to each usage, tiedowns and slings will be inspected for burns, tears, punctures, or cuts. Additionally, metal items will be inspected for improper operation, cracks, or distortion. If any of these conditions exist, or if the time of usage exceeds 36 months, the tiedowns or slings must be replaced. No strength testing of tiedowns or slings will be conducted. [Tiedowns and slings will be inspected by a parachute rigger at least every 6 months. Under no condition will a sling be used beyond the 6-month date without inspection, and recertification by a parachute rigger.] Additional storage, inspection, and maintenance criteria for tie-

downs and slings are prescribed by 55-450-series technical manuals (app).

c. Pad and tape tiedown assemblies and slings at points of contact with the item to prevent abrasion of webbing.

d. Movement of the warhead section container must be controlled to prevent damage to the item, helicopter, or pod. During winching of the container, a safety restraining device (web strapping or equivalent) should be used. Attach strapping to the item and pass the free end through a strap fastener (NSN 1670-00-360-0340 or equivalent), which is attached to a tiedown fitting in the forward part of the helicopter or pod. The free end of the strapping is then *manned outside and to the rear of the helicopter or pod*. As the container is winched, slack is taken out of the strapping so that the container will be restrained if the winch or cable fails. Safety restraining devices identified in paragraph 4-67, TM 55-450-15, may be used.

e. During winching operations, the area behind the container must be cleared of personnel, and only necessary personnel will be in the cargo compartment.

f. To prevent movement of parking shoring during

loading operations, secure a tiedown chain across cargo compartment forward of cargo tiedown location, and butt shoring against chain.

g. When attaching tiedown devices to cargo and to tiedown fittings, approximately equal tension must be maintained throughout tiedown arrangements. Tighten the tiedowns to prevent movement of cargo, and secure loose ends of straps. Tiedowns must be checked during flight and tightened as necessary.

h. Security and safety measures relative to guards, fire, or emergency destruction procedures, as established by pertinent publications (app), will be observed during all phases of air transport. All operations described herein will be in strict compliance with AR 50-101, TM 9-1300-206, and TM 9-1100-375-12.

i. The high noise level of helicopter engines and helicopter auxiliary power unit can cause permanent damage to ears. All personnel working in the vicinity will wear hearing protectors and avoid entering engine noise danger area. In addition, external cargo hookup personnel will wear goggles and protective headgear (hard hat, steel helmet, or flight helmet), and will use a static electricity discharge probe.

## CHAPTER 3

### AIR TRANSPORTABILITY AND HANDLING DATA

#### 3-1. General

a. The container, M483, with Pershing warhead section will normally be air-transported as an internal load. However, under emergency conditions, the item can also be transported as an external load (para 4-2). The determination that external transport is justifiable will be approved by the theater commander.

b. Dimensions, volume, and approximate weight of the container, M483 (fig 3-1), with Pershing warhead section are as follows:

Length	Width	Height	Volume	Weight*
168.0 in. (4.27 m)	52.5 in. (1.33 m)	55.5 in. (1.41 m)	280.0 cu ft (7.92 cu m)	2,877 lb (1,305 kg)

\*Weight of the empty container, M483, is approximately 2,180 pounds (989 kg).

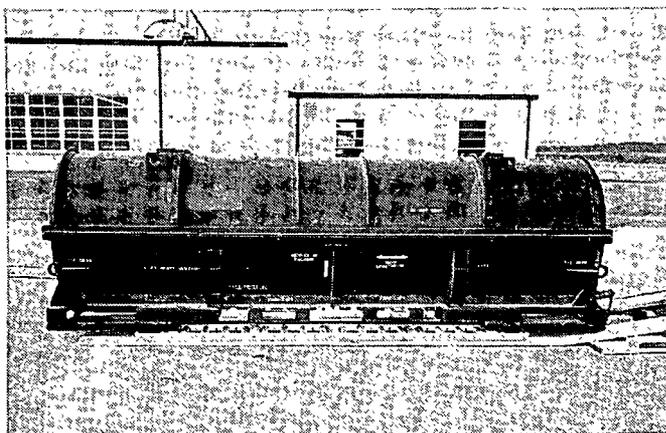


Figure 3-1. Shipping and storage container, M483, for Pershing warhead section.

c. The item is too large for internal transport by UH-1-series helicopters.

d. The typical internal loads shown are composed of one or two containers with warhead sections.

e. The typical external load shown is composed of one container with warhead section.

f. The container may be faced either forward or aft for air transport. (Tiedown diagrams in this manual show the container facing forward) Container center of balance is approximately 83 inches (2.11 m) from the aft end and is marked on the container.

g. The container must be inspected for damage other than minor scratches and abrasions. If container is damaged to such an extent that its contents or functions might be affected, notify the support unit and submit a report in accordance with chapter 5, AR 50-5.

h. Insure that bolts securing the container cover and base assemblies are tight, and that the manually operated pressure-equalizing valve (right hand valve on forward end of container) is closed by rotating clockwise.

i. If wheeled or roller conveyor sections are not available, the container may be winched on its skids over the shoring.

j. Plywood may be used as parking and rolling shoring in place of all or part of the 2- by 12-inch lumber shoring, except blocking shoring, as prescribed in paragraph 4-1. The plywood shoring must be at least one-half inch thick and 16 inches wide under each conveyor section to provide required distribution of container weight on helicopter or pod ramp and floor.

#### 3-2. Time Required

a. Four service members can prepare, load, and tie down each container in the helicopter or pod in approximately 30 minutes.

b. Four service members can unload each container from the helicopter or pod in approximately 15 minutes.



o



## CHAPTER 4

## TRANSPORT BY HELICOPTER

## 4-1. Internal Transport

a. *Materials and Procedures for Transporting one Pershing Warhead Section, in Container, M483, in CH-47 Helicopter.*

(1) *Materials.*

(a) *Parking shoring.* two pieces, 2- by 12-inch by 12-foot; two pieces, 2- by 12-inch by 8-foot.

(b) *Rolling shoring.* two pieces, 2- by 12-inch by 12-foot; four pieces, 2- by 12-inch by 8-foot.

(c) *Bridge shoring.* two sheets of plywood, 4- by 8-foot by 1/2-inch (may be used but is not required between container skids and conveyors).

(d) *Blocking shoring.* approximately 20 pieces, 2- by 12-inch by 2-foot; two pieces, 2- by 12- by 20-inch.

(e) *Wheeled or roller conveyor.* two sections, 10-foot (NSN 3910-00-903-1303), or equivalent.

(f) *Restraint straps.* two CGU-1/B tiedown devices, or equivalent.

(g) *Chain* (type used with C-2 or MB-1 tiedown device): two, 10,000-pound capacity, or equivalent.

(h) *Clevis assembly, suspension, air delivery* (NSN 1670-00-360-0304), or equivalent, as required.

(i) *Truck, forklift or crane.* one, load tested, 6,000-pound minimum capacity.

(2) *Loading.*

(a) Position rolling shoring and two helicopter auxiliary loading ramps to align with skids of container. Use parking shoring as rolling shoring.

(b) Position shoring and conveyors, rollers down, as shown in figure 4-1. Use 8-foot shoring on ramp and also as first extension into the cargo compartment. Place two 20-inch blocks between conveyors to maintain alignment while item is being towed into helicopter.

(c) Position container on the conveyors (fig. 4-2), using forklift or crane.

(d) Connect two CGU-1/B tiedown devices, and place them around the forward end of container and aft end of conveyors as shown in figure 4-2, to prevent container from being pulled off the conveyors during loading.

(e) Form a bridle by passing the chain through towing eyes on the container (fig. 4-2). Attach helicopter winch cable hook to the bridle, and safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch.

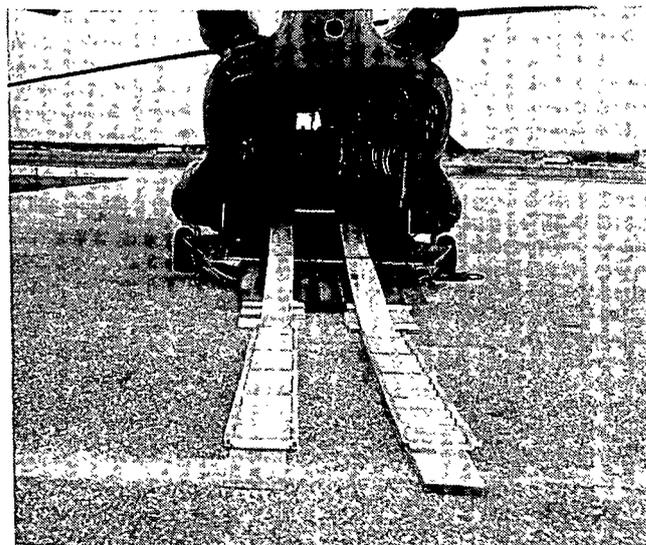


Figure 4-1. Rolling, blocking, and parking shoring and conveyors positioned for loading Pershing warhead section shipping and storage container, M483, into CH-47 helicopter.

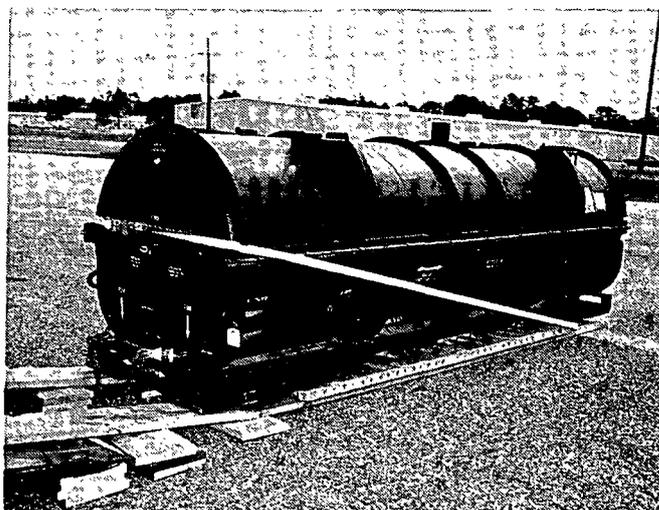


Figure 4-2. Pershing warhead section shipping and storage container, M483, restrained to conveyors. Note towing bridle attached to container.

(f) Place a wood block at ramp hinge, beneath towing cable, to protect helicopter floor.

(g) Position guides to adjust shoring, observe clearances, and signal winch operator as necessary.

(h) Winch container into helicopter. As the container approaches the crest of the ramp, the ramp may

be raised to floor-level position for ease of loading. Reposition rolling shoring for use as parking shoring.

(i) Winch container to its tiedown location, and apply fore and aft restraints.

(j) Release tension on winch cable. The bridle and cable may remain attached to the container for use

in unloading.

(k) Tie down the container (on the conveyors and shoring) in accordance with figure 4-3 and table 4-1. If container tiedown provisions are too large for direct attachment to the snap hook on tiedown device, use clevis assembly to make the attachment.

Table 4-1. Tiedown Data for One Pershing Warhead Section Shipping and Storage Container, M483, in CH-47 Helicopter.

design- nation	Tiedown fitting		Tiedown device*		Attach to item
	capacity in 1,000 lb	type	capacity in 1,000 lb		
A6	5	CGU-1/B	5		Left front tiedown ring
E6	5	CGU-1/B	5		Right front tiedown ring
A7	10	CGU-1/B	5		Left front container lift fixture
E7	10	CGU-1/B	5		Right front container lift fixture
A15	10	CGU-1/B	5		Left aft container lift fixture
E15	10	CGU-1/B	5		Right aft container lift fixture
A18	5	CGU-1/B	5		Left rear tiedown ring
E18	5	CGU-1/B	5		Right rear tiedown ring

\*MC-1 tiedown device may be used.

(l) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use the helicopter winch as a safety restraint when container is manhandled from the helicopter. Care must be exercised when container passes over ramp hinge. The container may also be manhandled onto the ramp when at floor-level position. The ramp, with container, is then lowered to rest on shoring (fig 4-1).

b. *Materials and Procedures for Transporting two Pershing Warhead Sections, in Containers, M483, in CH-47 Helicopter.*

(1) *Materials.*

(a) *Parking shoring.* four pieces, 2- by 12-inch by 12-foot; two pieces, 2- by 12-inch by 5-foot.

(b) *Rolling shoring.* four pieces, 2- by 12-inch by 8-foot; two pieces, 2- by 12-inch by 12-foot.

(c) *Bridge shoring.* four sheets of plywood, 4- by 8-foot by 1/2-inch (may be used but is not required between container skids and conveyors).

(d) *Blocking shoring.* approximately 20 pieces, 2- by 12-inch by 2-foot; four pieces, 2- by 12- by 20-inch.

(e) *Wheeled or roller conveyor.* four sections, 10-foot (NSN 3910-00-903-1303), or equivalent.

(f) *Restraint straps.* four CGU-1/B tiedown devices, or equivalent.

(g) *Chain (type used with C-2 or MB-1 tiedown device).* two, 10,000-pound capacity, or equivalent.

(h) *Clevis assembly, suspension, air delivery* (NSN 1670-00-360-0304), or equivalent, as required.

(i) *Truck, forklift or crane.* one, load-tested, 6,000-pound minimum capacity.

(2) *Loading.*

(a) Position rolling shoring and two helicopter auxiliary loading ramps to align with skids of container. Use parking shoring as rolling shoring.

(b) Position shoring and conveyors, rollers down, as shown in figure 4-1. Use 8-foot pieces on ramp and 5-foot pieces as first extension into the cargo compartment. Use four 12-foot pieces in cargo compartment, aligned with 5-foot pieces. Use two 12-foot pieces at ground level, and place forward ends on top of single block shoring. Place conveyors, rollers down, on ground-level shoring. Place two 20-inch blocks between each set of conveyors to maintain alignment while item is being towed into helicopter.

(c) Position container on the conveyors (fig 4-2), using forklift or crane.

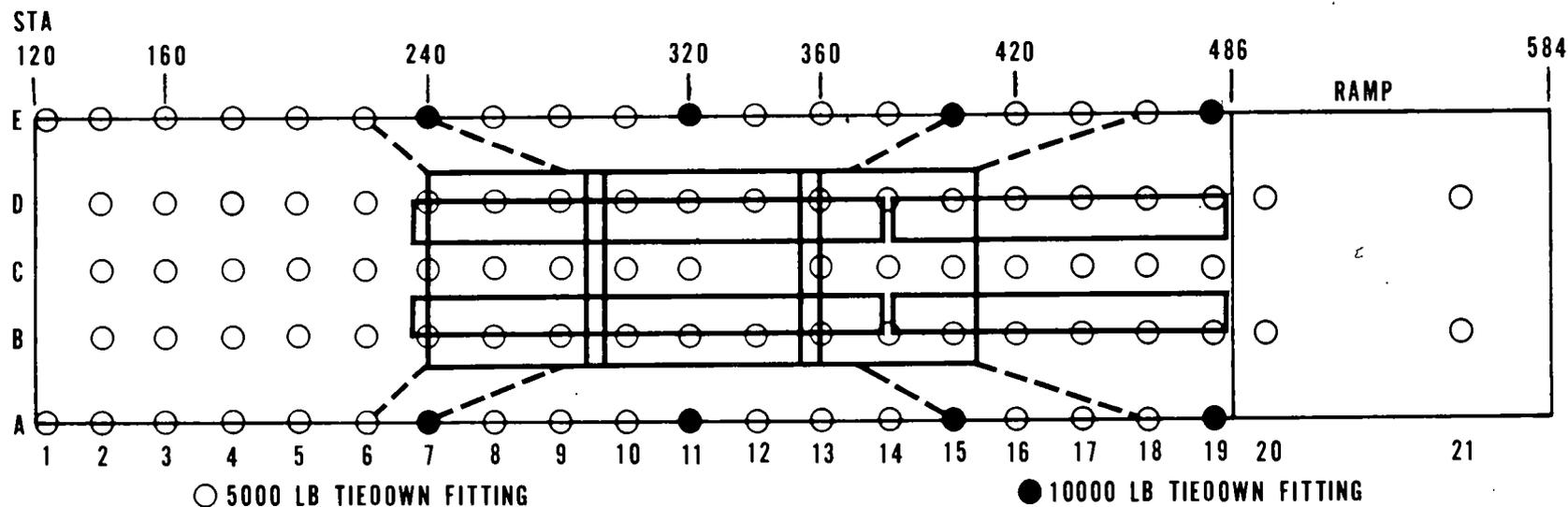
(d) Connect two CGU-1/B tiedown devices, and place them around the forward end of container and aft end of conveyors, as shown in figure 4-2, to prevent container from being pulled off the conveyors during loading.

(e) Form a bridle by passing chain through towing eyes on the container (fig 4-2). Attach helicopter winch cable hook to the bridle, and safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is equipped with a serviceable safety latch.

(f) Place a wood block at ramp hinge, beneath towing cable, to protect helicopter floor.

(g) Position guides to adjust shoring, observe clearances, and signal winch operator as necessary.

(h) Winch container into helicopter. As the container approaches the crest of the ramp, the ramp may be raised to floor-level position for ease of loading. Reposition rolling shoring for use as parking shoring.



NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360.

DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
CONTAINER, M483, WITH PERSHING WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	240	325	2877

Figure 4-3. Tiedown diagram for one PERSHING warhead section shipping and storage container, M483, in CH-47 helicopter.

(i) Winch container to its tiedown location, and apply fore and aft restraints.

(j) Disconnect winch cable hook, pass beneath first container, and attach hook to bridle on second container.

(k) Load second container as prescribed for first container.

(l) Release tension on winch cable. The bridle and cable may remain attached to the aft container for use in unloading.

(m) Tiedown the containers (on the conveyors and shoring) in accordance with figure 4-4 and table

4-2. If container tiedown provisions are too large for direct attachment to the snap hook on tiedown device, use clevis assembly to make the attachment. The ramp must be in closed position before completing tiedown of aft container.

(n) Use clevis assembly, as required, to facilitate attachment of cargo tiedown devices to tiedown fittings A1 and E1 (fig 4-4).

(o) Reposition materials required during unloading, and tie down as directed by the helicopter commander.

Table 4-2. Tiedown Data for Two Pershing Warhead Section Shipping and Storage Containers, M483, in CH-47 Helicopter

Item	Tiedown fitting		Tiedown device*			
	design- nation	capacity in 1,000 lb	type	capacity in 1,000 lb	Attach to item	
A	A1	5	CGU-1/B	5	Left front tiedown ring	
	E1	5	CGU-1/B	5	Right front tiedown ring	
	A2	5	CGU-1/B	5	Left front container lift fixture	
	E2	5	CGU-1/B	5	Right front container lift fixture	
	A10	5	CGU-1/B	5	Left aft container lift fixture	
	E10	5	CGU-1/B	5	Right aft container lift fixture	
	A13	5	CGU-1/B	5	Left rear tiedown ring	
	E13	5	CGU-1/B	5	Right rear tiedown ring	
	B	A9	5	CGU-1/B	5	Left front tiedown ring
		E9	5	CGU-1/B	5	Right front tiedown ring
A11		10	CGU-1/B	5	Left front container lift fixture	
E11		10	CGU-1/B	5	Right front container lift fixture	
A19		10	CGU-1/B	5	Left aft container lift fixture	
E19		10	CGU-1/B	5	Right aft container lift fixture	
B21		5**	CGU-1/B	5	Left rear tiedown ring	
D21		5**	CGU-1/B	5	Right rear tiedown ring	

\*MC-1 tiedown device may be used.

\*\* Attach tiedowns to fittings B21 and D21 after ramp is closed.

Note. If flight is continued after unloading only the aft container, the helicopter center of gravity must be recomputed and the forward container moved as necessary to insure that the helicopter is balanced for flight.

(3) *Unloading.* Unloading procedures are essentially the reverse of loading procedures. Use the helicopter winch as a safety restraint when containers are manhandled from the helicopter. Care must be exercised when containers pass over ramp hinge. Each container may also be manhandled onto the ramp when at floor-level position. The ramp, with container, is then lowered to rest on shoring (fig 4-1).

Note. When two containers, M483, are loaded in the CH-47 helicopter, passenger seats may not be available for nuclear weapon security personnel (two-man rule requirement), exclusive of crewmembers. Security requirements can be met by assigning armed Personnel Reliability Program (PRP) qualified crewmembers as courier of ficer and guard. If PRP security personnel exclusive of crew members are assigned, adequate seats with restraint belts must be provided (AR 95-1). Pilot will brief security personnel on where to locate themselves during in-flight emergencies.

c. *Materials and procedures for transporting one Pershing warhead section in container, M483, in CH-54 helicopter universal military pod in flight configuration.*

**Warning. Insure that the universal military pod is secured to the CH-54 helicopter to preclude jettisoning the pod either deliberately or inadvertently.**

(1) *Materials.*

(a) *Parking shoring.* four pieces, 2- by 12-inch by 12-foot.

(b) *Rolling shoring.* two pieces, 2- by 12-inch by 12-foot.

(c) *Bridge shoring.* two sheets of plywood, 4- by 8-foot by 1/2-inch (may be used but is not required between container and conveyors).

(d) *Blocking shoring.* approximately 36 pieces, 2- by 12- by 12-inch; two pieces, 2- by 12- by 20-inch.

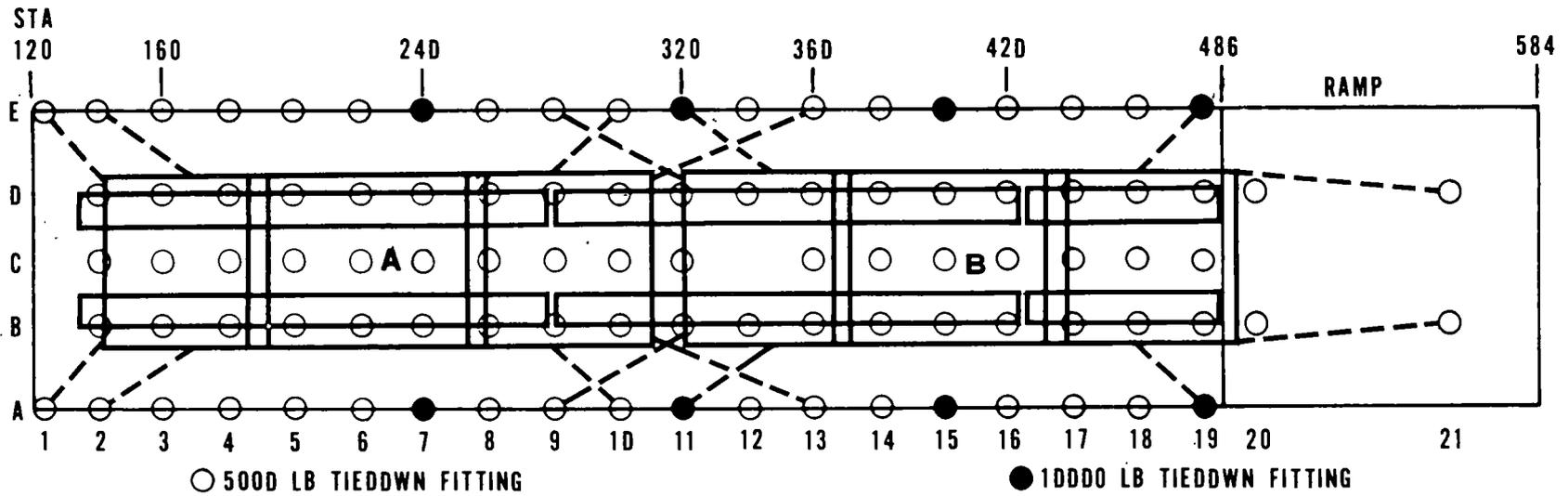
(e) *Wheeled or roller conveyor.* two sections, 10-foot (NSN 3910-00-903-1303), or equivalent.

(f) *Restraint straps.* two CGU-1/B tiedown devices, or equivalent.

(g) *Chain (type used with C-2 or MB-1 tiedown device).* three 10,000-pound capacity, or equivalent.

(h) *Clevis assembly, suspension, air delivery* (NSN 1670-00-360-0304), or equivalent as required.

(i) *Truck, forklift or crane.* one, load-tested,



NOTE: UTILITY HATCH DOOR IS LOCATED IN THE CENTER OF THE FLOOR BETWEEN STATIONS 320 AND 360

ITEM	DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPRX WT (LB)
			REFERENCE POINT	STATION		
A	CONTAINER, M483, WITH PERSHING WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	142	227	2877
B	CONTAINER, M483, WITH PERSHING WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	320	405	2877

Figure 4-4. Tiedown diagram for two PERSHING warhead section shipping and storage containers, M483, in CH-47 helicopter.

6,000-pound minimum capacity.

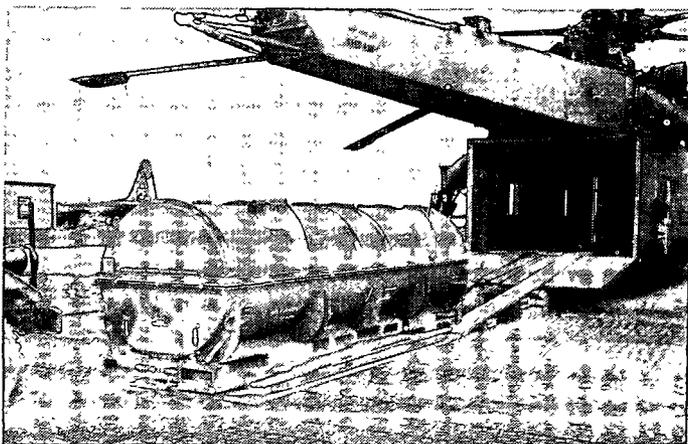
(j) *Truck wrecker, medium, 5-ton, 6 x 6, M543A2, with winch or suitable substitute.*

(k) *Snatch block, tackle, single-sheave. two, NSN 3940-00-239-0372, organic to the M543A2 wrecker, or equivalent block may be used.*

(l) *Plywood. two pieces, 1/2-inch by 2- by 2-foot, or equivalent.*

(2) *Loading.*

(a) *Position shoring and conveyors, rollers down, as shown in figure 4-5. Use 12-foot pieces on ramp on pod floor. Place two 20-inch blocks between conveyors to maintain alignment while item is being towed into pod. Use parking shoring as rolling shoring.*



*Figure 4-5. Pershing warhead shipping and storage container M483, positioned for loading into CH-54 helicopter universal military pod. Plywood may be used between container and conveyors but is not required*

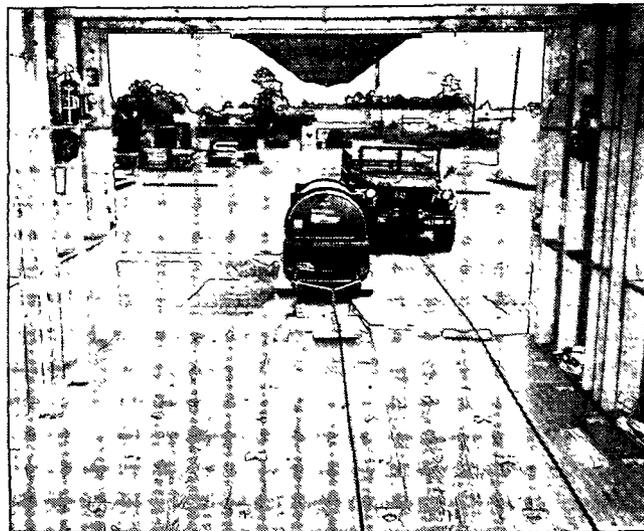
(b) *Position container on the conveyors (fig 4-5), using forklift or crane.*

(c) *Connect two CGU-1 tiedown devices, and place them around the forward end of container and aft end of conveyors (fig 4-2) to prevent container from being pulled off the conveyors during loading.*

(d) *Form a bridle by passing chain through towing eyes on container as shown in figure 4-6.*

(e) *Attach snatch blocks, using tiedown chains, to pod tiedown fittings, A1 and D1. Adjust chains to insure that container is winched down the centerline of the pod. Place plywood pieces beneath snatch blocks to protect floor. Winching diagram is shown in figure 4-7.*

(f) *Pass towing cable through opened snatch blocks, attach cable hook to bridle on container, and safety tie the hook to prevent accidental release. Safety tying the hook is not required when the hook is*



*Figure 4-6. Formation of bridle on shipping and storage container and attachment of truck winch cable hook. Note position of blocks at ramp hinge to protect floor from towing cable. (Shown is the M481-series container for SERGEANT warhead section).*

*equipped with a serviceable safety latch. Close and lock blocks. Place wood blocks beneath towing cable (fig 4-6) to protect pod floor.*

(g) *Position guides to adjust shoring, observe clearances and winching cable, and signal truck-winch operator as necessary.*

(h) *Winch container into the pod by either taking up on the truck winch or backing the truck with winch locked. Reposition rolling shoring for use as parking shoring.*

(i) *Winch container to its tiedown location, and apply fore and aft restraints.*

(j) *Tie down the container (on the conveyors and shoring) in accordance with figure 4-8 and table 4-3, and remove towing cable and blocks. If container tiedown provisions are too large for direct attachment to the snap hook on tiedown device, use clevis assembly to make the attachment.*

(k) *Reposition materials required during unloading, and tie down as directed by the helicopter commander.*

(3) *Unloading.* *Unloading procedures are essentially the reverse of loading procedures. Use winching cable as a safety restraint when container is manhandled from the pod. Care must be exercised when container passes over ramp hinge.*

*Note. See paragraph 4-1d for alternate materials and procedures when CH-54 is not in flight configuration.*

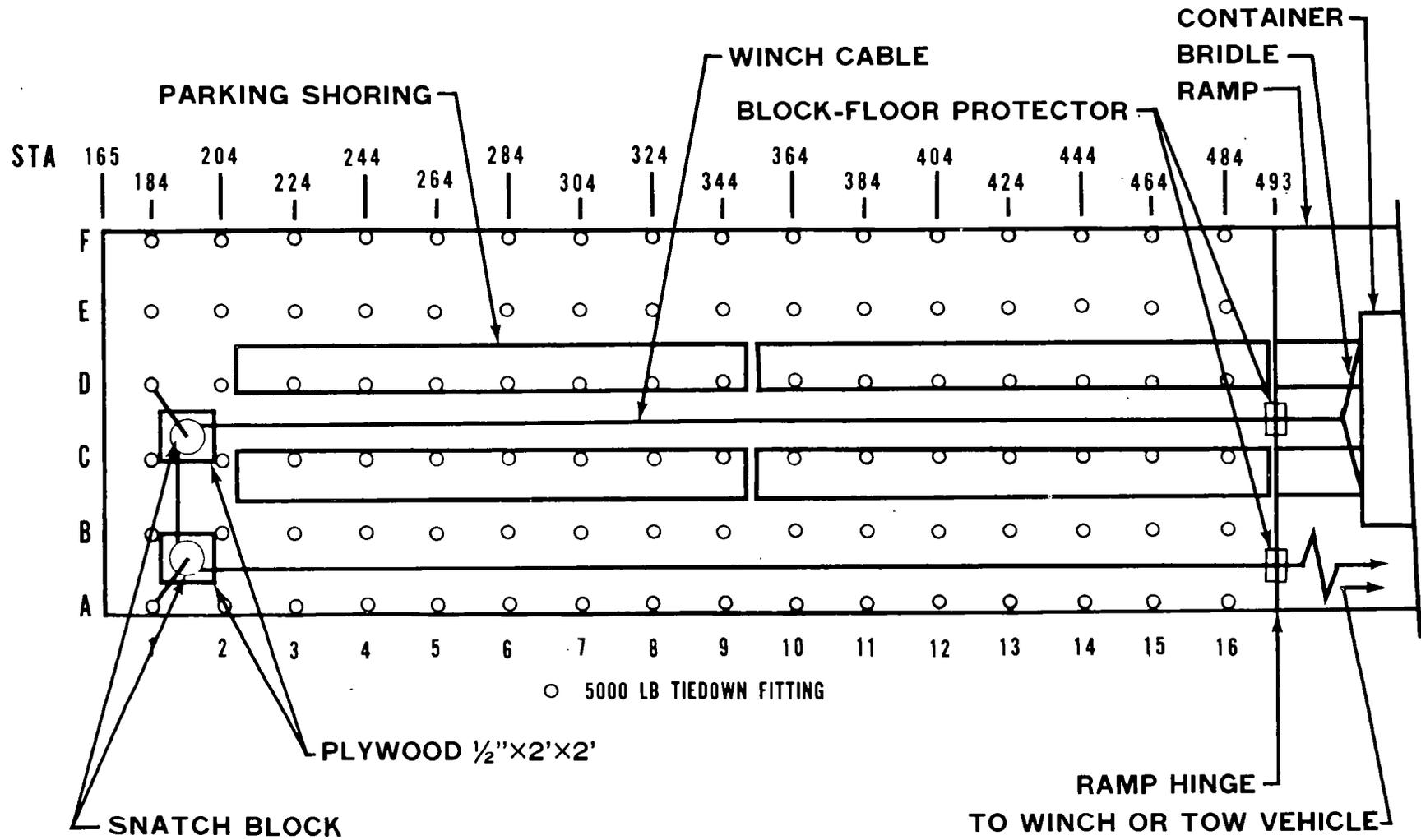
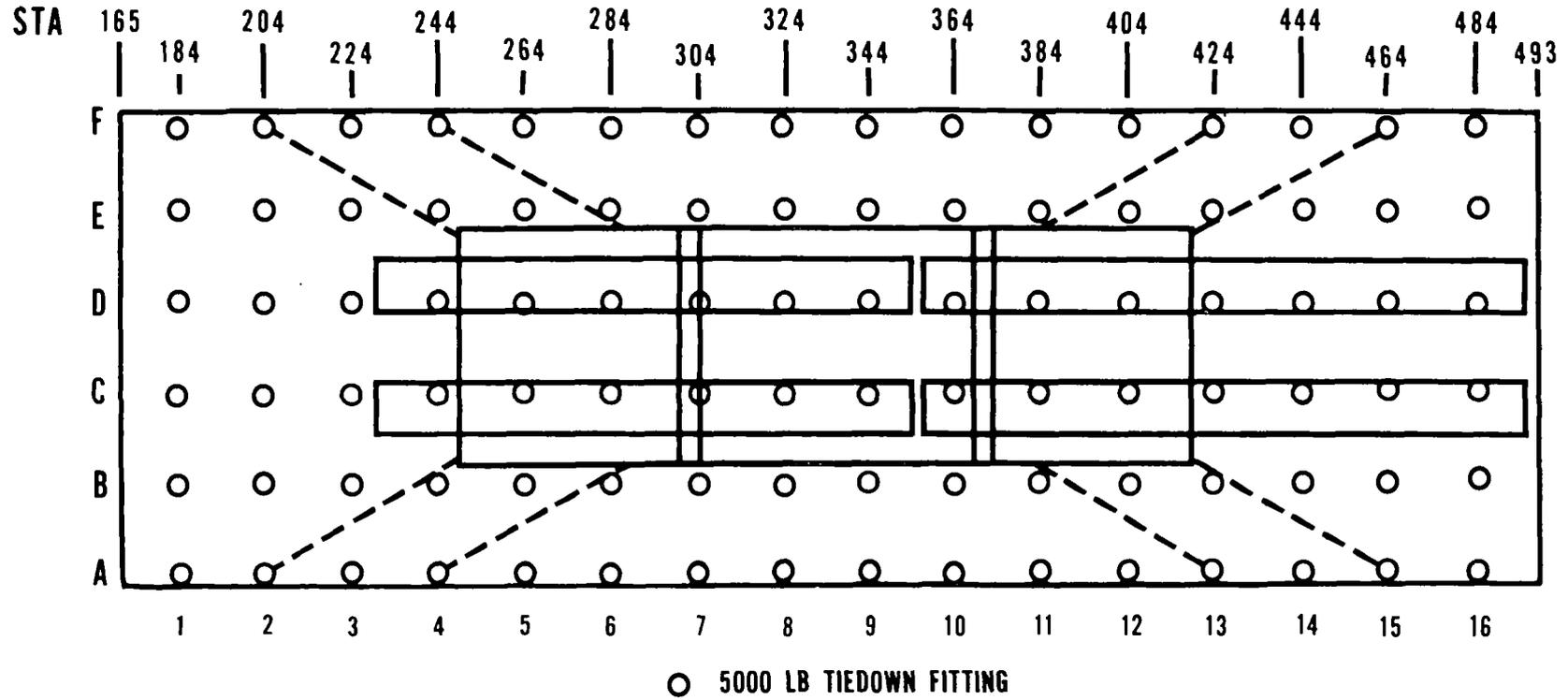


Figure 4-7. Winching diagram for loading PERSHING warhead section shipping and storage container, M483, into CH-54 helicopter universal military pod.



DESCRIPTION OF ITEM	ITEM FACING	LOCATION OF REFERENCE POINT		LOCATION OF CG (STA)	APPROX WT (LB)
		REFERENCE POINT	STATION		
CONTAINER, M483, WITH PERSHING WARHEAD SECTION	FORWARD	FORWARD EDGE OF CONTAINER	250	335	2877

Figure 4-8. Tiedown diagram for PERSHING warhead section shipping and storage container, M483, in CH-54 helicopter universal military pod.

Table 4-3. Tiedown Data for Pershing Warhead Section Shipping and Storage Container, M483, in CH-54, Helicopter Universal Military Pod

design- nation	Tiedown fitting		Tiedown device*		Attach to item
	capacity in 1,000 lb	type	capacity in 1,000 lb		
A2	5	CGU-1/B	5		Left front tiedown ring
F2	5	CGU-1/B	5		Right front tiedown ring
A4	5	CGU-1/B	5		Left front container lift fixture
F4	5	CGU-1/B	5		Right front container lift fixture
A13	5	CGU-1/B	5		Left aft container lift fixture
F13	5	CGU-1/B	5		Right aft container lift fixture
A15	5	CGU-1/B	5		Left rear tiedown ring
F15	5	CGU-1/B	5		Right rear tiedown ring

\*MC-1 tiedown device may be used

d. *Alternate Materials and Procedures for Transporting one Pershing Warhead Section in Container, M483, in CH-54 Helicopter Universal Military Pod With Pod in Other Than Flight Configuration.*

(1) The pod may be loaded and unloaded when—

(a) The helicopter (CH-54A only) is in a kneeled position.

(b) The pod four-wheel system is fully retracted and pod is resting on the ground.

(2) Procedures for loading and unloading the pod when in one of the configurations described in (1) above are the same as prescribed in 4-1c above. However, with the pod floor at lower levels, the ramp angle is reduced and less blocking shoring is required.

#### 4-2. External Transport (Emergency Procedure)

These procedures apply when the Pershing warhead shipping and storage container, M483, with or without warhead section, is rigged with one of the following sling systems for transport as an external load by UH-1-series, CH-47, or CH-54 helicopter.

**Warning.** The contents of paragraph 4-2 are for information and training purposes only and are not to be construed as authority for external transport by helicopter of the container, M483, with Pershing warhead section. Only dummy loads may be used for practice and/or training exercises. War reserve nuclear weapons shall not be moved by external transport except in emergency conditions (such as emergency evacuation from fire or flood) when the situation does not allow time to prepare and move the nuclear weapons by internal transport (para 4-1).

**Warning.** Always assume that a charge of static electricity is present on the helicopter. Use of some type of discharge apparatus (static probe) (fig 4-1, TM 55-450-19) to ground the hook and discharge electricity is necessary to prevent shock when the hook is touched. After discharge of electricity, the hook is grasped quickly and firmly and held, if possible, until the hookup is completed. If contact with the hook is lost after initial ground-

ing, the hook must be grounded again before it is touched. Do not use the load as a ground contact. After air delivery and before handling, again ground the load to discharge any accumulated/retained static electricity.

**Caution.** When performing external air transport by CH-54 helicopter, use a large metal clevis to attach the load to the cargo hook as a nylon sling ring will tend to adhere to the cargo hook beam and prevent release of the load. However, when performing similar transport by UH-1-series or CH-47 helicopter, use a nylon sling ring in lieu of a metal clevis to preclude damage to the cargo hook.

a. *Air Delivery Cargo Slings (Alternate Method).*

(1) *Materials.*

(a) *Sling legs.* four 20-foot, three-loop cargo slings (NSN 1670-00-823-5043) (each has rated capacity of 10,000 pounds).

(b) *Sling ring.* one 3-foot, three-loop cargo sling (NSN 1670-00-753-3788) (has rated capacity of 10,000 pounds), with link assembly, type IV (NSN 1670-00-783-5988).

(c) *Vertical riser.* one 9-foot, three-loop cargo sling (NSN 1670-00-753-3631) (has rated capacity of 10,000 pounds). For use with UH-1-series or CH-47 helicopter, if required. Vertical riser of equal or greater capacity, and at least six feet long may be substituted for the 9-foot, three-loop cargo sling.

(d) *Tape.* 2-inch pressure-sensitive (NSN 8135-00-266-5016), or equivalent.

(e) *Cushioning material.* cellulosic, longitudinally compressed (NSN 8135-00-664-6958), or equivalent.

(f) *Clevis assembly, medium.* four, air delivery (NSN 1670-00-678-8562), or equivalent.

(g) *Clevis assembly, large.* one, air delivery, type I (NSN 1670-00-090-5354), or equivalent. For use with CH-54 helicopter.

(2) *Preparation and rigging.*

(a) Use choker-hitch (fig 4-9) or clevis assembly to attach one 20-foot sling to each tiedown ring on container, and complete rigging as shown in figure 4-10.

Pad and tape sling legs at all points of contact with container to prevent sling abrasion. Four service members can rig the container (including vertical riser when used) in approximately 20 minutes.

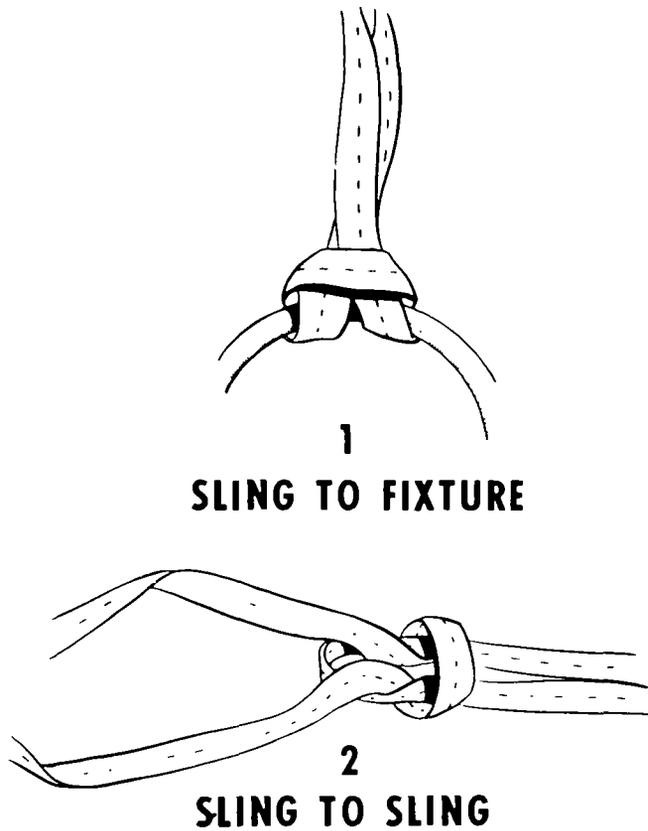


Figure 4-9. Formation of choker-hitch.

(b) Twist each sling leg once for each 3 feet of sling.

(c) Combine the free ends of the sling legs to form a single loop, and use basket hitch (fig 4-11) to attach loop to the 3-foot sling. Connect free ends of 3-foot sling with the link assembly, and safety tie the assembly to prevent accidental release. The 3-foot sling forms the apex for attachment to the helicopter cargo hook (UH-1-series and CH-47 helicopters). See caution above regarding transport by CH-54 helicopter.

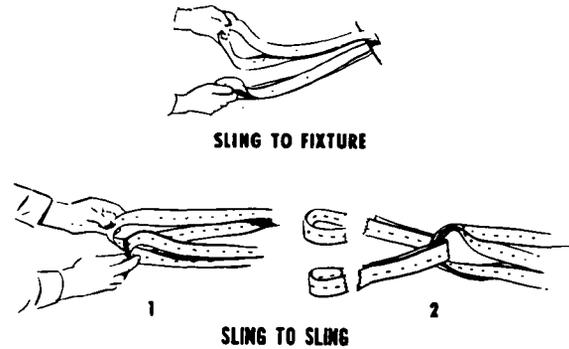


Figure 4-11. Formation of basket-hitch.

(d) Cluster and tape sling legs (breakaway technique) to prevent fouling during liftoff. Each sling leg may also be taped to the cover lift fixture on stacking bracket.

(e) In addition to the foregoing, the following procedure may be applicable when transporting the container by UH-1-series or CH-47 helicopter: choker-

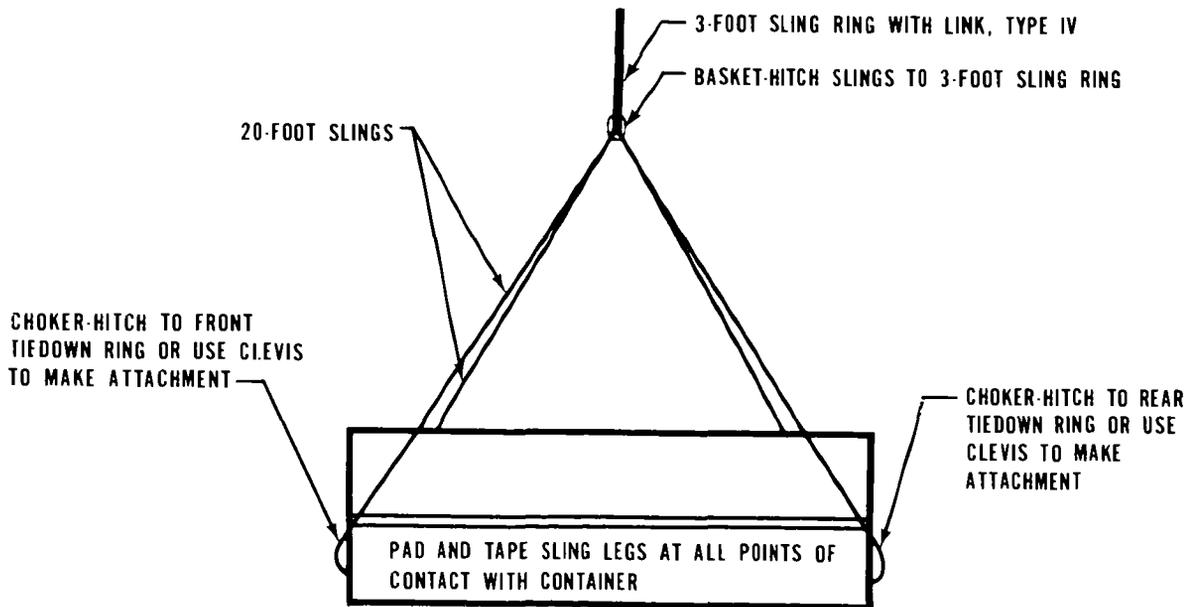


Figure 4-10. Rigging diagram for PERSHING warhead section shipping and storage container, M483.

hitch one end of the 9-foot cargo sling to loop of combined sling legs; then attach the 3-foot sling to the upper loop of the 9-foot sling. Connect free ends of the 3-foot sling with the link assembly, and safety tie the assembly to prevent accidental release. The 3-foot sling forms the apex for attachment to the helicopter cargo hook. The 9-foot sling (vertical riser) increases distance from cargo hook to load, and also dampens vibration tendencies.

(3) *Derigging.* Four service members can derig the container (including vertical riser when used) in approximately 5 minutes.

b. *Sling, Cargo, Nylon and Chain, Multiple Leg (Primary Method).*

(1) *Materials.*

(a) *Sling set.* one 23-foot, nylon and chain, four-leg sling (NSN 1670-00-902-3080) (has rated capacity of 15,000 pounds).

(b) *Sling ring.* one 3-foot, three-loop cargo sling (NSN 1670-00-753-3788) (has rated capacity of 10,000 pounds), with link assembly, type IV (NSN 1670-00-783-5988).

(c) *Vertical riser.* one 9-foot, three-loop cargo sling (NSN 1670-00-753-3631) (has rated capacity of 10,000 pounds). For use with UH-1-series or CH-47 helicopter, if required. Vertical riser of equal or greater capacity, and at least 6 feet long may be substituted for the 9-foot, three-loop cargo sling.

(d) *Tape.* 2-inch pressure-sensitive (NSN 8135-00-266-5016), or equivalent.

(e) *Cushioning material.* cellulosic, longitudinally compressed (NSN 8135-00-664-6958), or equivalent.

(f) *Clevis assembly, large.* one, air delivery, type I (NSN 1670-00-090-5354) or equivalent. For use with CH-54 helicopter.

(2) *Preparation and rigging.*

*Note.* Each nylon and chain sling leg is constructed of a 15-foot nylon web sling with a metal grab link on its lower end. The grab link is approximately 10 inches long and is equipped with a spring-loaded keeper. Attached to the lower or small end of the grab link is a hammer lock, which connects the chain leg to the grab link. The chain leg is approximately 6 feet long and has 64 links. The link at the free end is referred to as link number 1.

(a) Pass one sling chain leg through each tie-

down ring on container. Pad and tape sling legs at all points of contact with container to prevent abrasion. Four service members can rig the container (including vertical riser when used) in approximately 20 minutes.

(b) Form a hitch at each tiedown ring by passing the chain through the upper part of the grab link that attaches the chain to the nylon sling. Adjust chain length by forcing the selected link past the spring keeper into the lower part of the grab link to complete hitch. (Do not use link number 1 for completing the hitch). The spring keeper prevents the chain from sliding out of the grab link until the keeper is manually depressed and the chain is removed.

(c) The 12-inch ring of the sling forms the apex for attachment to the helicopter cargo hook (UH-1-series and CH-47 helicopters.) See Caution above regarding transport by CH-54 helicopter.

(d) Cluster and tape sling legs (breakaway technique) to prevent fouling during liftoff. Each sling leg may also be taped to the cover lift fixture on stacking bracket.

(e) In addition to the foregoing, the following procedure may be applicable when transporting the container by UH-1-series or CH-47 helicopter: choker-hitch one end of the 9-foot cargo sling to loop of combined sling legs; then attach the 3-foot sling to the upper loop of the 9-foot sling. Connect free ends of the 3-foot sling with the link assembly, and safety tie the assembly to prevent accidental release. The 3-foot sling forms the apex for attachment to the helicopter cargo hook. The 9-foot sling (vertical riser) increases distance from cargo hook to load, and also dampens vibration tendencies.

(3) *Derigging.* Depress spring-loaded keeper on grab link and remove chain leg from link and from each tiedown ring on the container. Four service members can derig the container (including vertical riser when used) in approximately 5 minutes.

c. *Sling, Helicopter, Cargo-Carrying External (Primary Method).* Rigging procedures using the sling, helicopter, cargo-carrying external (rated capacity of 10,000 pounds) (proposed NSN 1670-01-027-2902), for transport of the container, M483, will be published later.



## APPENDIX

### REFERENCES

#### 1. Army Regulations (AR)

10-16	US Army Nuclear Agency.
40-14	Control and Recording Procedures: Occupational Exposure to Ionizing Radiation.
50-5	Nuclear Weapons and Materiel: Nuclear Surety.
(C) 50-101	Safety Rules for the Operation of the Pershing la Nuclear Weapon System (U).
55-203	Movement of Nuclear Weapons, Nuclear Components, and Related Classified Non-nuclear Materiel.
95-1	Army Aviation: General Provisions and Flight Regulations.
95-27	Operational Procedures for Aircraft Carrying Dangerous Materials.
360-5	Army Information: Public Information Policies.
385-40	Accident Reporting and Records.
700-65	Nuclear Weapons and Nuclear Weapons Materiel.
740-1	Storage and Supply Activity Operations.

#### 2. Army Field Manuals (FM)

1-100	Army Aviation Utilization.
101-20	US Army Aviation Planning Manual.

#### 3. Army Technical Bulletins (TB)

(SRD) 9-1100-811-40	Security Classification of Nuclear Weapons Information (U).
385-2	Nuclear Weapons Firefighting Procedures.

#### 4. Army Technical Manuals (TM)

5-315	Fire Fighting and Rescue Procedures in Theaters of Operations.
9-1100-375-12	Operator and Organizational Maintenance: M28, M141, and M142 Atomic Warhead Sections; M95A1 Training Atomic Warhead Section.
9-1300-206	Ammunition and Explosives Standards.
38-250	Packaging and Materials Handling: Preparation of Hazardous Materials for Military Air Shipment.
(C) 39-0-1A	Numerical Index to Joint Atomic Weapons Publications (Including Related Publications) (Army Supplement)(U).
(SRD) 39-20-7	Nuclear Safety Criteria (U).
(CRD) 39-20-11	General Firefighting Guidance (U).
39-45-51	Transportation of Nuclear Weapons Materiel.
(SRD) 39-45-51A	Transportation of Nuclear Weapons Materiel (U).
39-45-51C	Transportation of Nuclear Weapons Materiel (Supplement): Military Criteria for Shipment.
(CRD) 39-50-8	Emergency Destruction of Nuclear Weapons (U).
55-450-8	Air Transport of Supplies and Equipment: External Transport Procedures.
55-450-11	Air Transport of Supplies and Equipment: Helicopter External Loads Rigged With Air Delivery Equipment.
55-450-12	Air Transport of Supplies and Equipment: Helicopter External Loads for Sling, Nylon and Chain, Multiple Leg.
55-450-15	Air Movement of Troops and Equipment (Nontactical).
55-450-18	Air Transport of Supplies and Equipment: Internal and External Loads, CH-47 Helicopter.

- 55-450-19 Air Transport of Supplies and Equipment: Helicopter External Lift Rigging Materiel, Techniques, and Procedures.
- 55-1520-209-10 Operator's Manual: Army Model, CH-47A Helicopter.
- 55-1520-210-10 Operator's Manual: Army Model, UH-1D/H Helicopter.
- 55-1520-217-10/1 Operator's Manual: Army Model, CH-54A Helicopters.
- 55-1520-217-10/2 Operator's Manual: Army Model CH-54B Helicopters.
- 55-1520-219-10 Operator's Manual: Army Model UH-1B Helicopter.
- 55-1520-220-10 Operator's Manual: Army Model UH-1C/M Helicopter.
- 55-1520-227-10 Operator's Manual: Army Model CH-47B and CH-47C Helicopters.

★ U.S. GOVERNMENT PRINTING OFFICE: 1977-703-128-528

By Order of the Secretary of the Army:

BERNARD W. ROGERS  
*General, United States Army*  
*Chief of Staff*

Official:

J. C. PENNINGTON  
*Brigadier General, United States Army*  
*The Adjutant General*

Distribution:

*Active Army, ARNG, USAR:* To be distributed in accordance with DA Form 12-31, Operator Maintenance requirements for CH-47B/C, CH-54A, CH-54B, UH-1B, UH-1 C/M, UH-1D/H, plus: DA Form 12-34B, requirements for Air Transport Procedures: Nuclear Warheads and Projectiles and DA Form 12-35, Section III, Operator requirements for Pershing Weapon System.

3000021338



DEPARTMENT OF THE ARMY  
US ARMY AG PUBLICATIONS CENTER  
2800 EASTERN BOULEVARD  
BALTIMORE MARYLAND 21220

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE \$300

POSTAGE AND FEES PAID  
DEPARTMENT OF THE ARMY  
DOD 314

FOURTH CLASS

