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Change 3

MULTISERVICE HELICOPTER SLING LOAD: SINGLE-POINT RIGGING PROCEDURES

1. This change adds several items that are certified for sling load in the single-point configuration.

2. The United States Marine Corps has changed the Short Title of this manual to MCRP 4-11.3E, Vol II. This Short Title will be included in the next revision of this manual.

3. The United States Air Force has changed the Publication Number of this manual to AFMAN 11-223(I), Vol II. This Publication Number will be included in the next revision of this manual.

4. Change FM 10-450-4, 30 May 1998, as follows:

Remove old pages	**Insert new pages**
iii through xi	iii through xii
2-1 and 2-2	2-1 and 2-2
2-7 and 2-8	2-7 and 2-8
2-23 and 2-24	2-23 and 2-24
	2-64.1 and 2-64.2
2-65 and 2-66	2-65 and 2-66
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4-3 and 4-4	4-3 and 4-4
6-1 and 6-2	6-1 and 6-2
6-29	6-29 through 6-31
7-1 and 7-2	7-1 and 7-2
	7-15 through 7-17
8-1 and 8-2	8-1 and 8-2
	8-52.1 through 8-52.4
	8-83 through 8-85
11-1 through 11-4	11-1 through 11-4
	11-21 and 11-22
13-11 and 13-12	13-11 and 13-12
14-1 and 14-2	14-1 and 14-2
	14-13 through 14-16
A1 and A2	A1 and A2
Glossary-1 and Glossary-2	Glossary-1 and Glossary-2

5. New or changed material is identified by a vertical (▌) bar in the margin opposite the changed material.

6. File this transmittal sheet in the front of the publication.

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CHAPTER 2

CERTIFIED SINGLE-POINT RIGGING PROCEDURES FOR WHEELED VEHICLES

2-1. INTRODUCTION

This chapter contains rigging procedures for single-point wheeled vehicle loads that have been certified for sling load. Each rigging procedure is found in a paragraph that includes a description of the load, materials required for rigging, and steps to complete the procedure. An applicability paragraph is also a part of each paragraph and identifies the certified loads. The certified single-point rigging procedures for wheeled vehicles are in this section. Paragraphs 2-2 through 2-39 give detailed instructions for rigging loads.

NOTES:

1. Reach Pendants may be used on all single point loads. A static discharge person is not required when using a Reach Pendant.

2. Canvas tops and doors should be removed and stowed inside the vehicle if time allows. These items may be damaged if the airspeed exceeds 100 knots.

2-2. M996/M997/M997A2 Truck, Ambulance, (HMMWV)

a. Applicability. The following items in Table 2-1 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 2-1. Truck, Ambulance, (HMMWV)

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
Truck, Ambulance, M996, HMMWV	7,400	10K	80/30	UH-60 / 60 CH-47 / 110
Truck, Ambulance, M997, HMMWV	7,400	10K	80/30	UH-60 / 80 CH-47 / 75
Truck, Ambulance, M997A2, HMMWV	10,300	25K	65/24	CH-47 / 75

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

OR

(2) Sling set (25,000-pound capacity).

(3) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(4) Cord, nylon, Type III, 550-pound breaking strength.

(5) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(6) Spreader bar assembly (component of vehicle).

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Fold the mirrors forward in front of the windshield and tie together with Type III nylon cord. Tape the windshield in an X formation from corner to corner.

(b) Remove the spreader bar from under the right-hand seat inside the ambulance.

(c) Secure all equipment inside the rear compartment with tape, nylon cord, and/or lashings. Close and secure the door.

(d) Secure all other equipment inside the vehicle with tape, nylon cord, and/or lashings. Close and secure the doors.

(e) Make sure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(f) Engage the vehicle parking brake. Place the transmission in neutral.

(g) Make sure that the front wheels are pointed straight ahead. Tie down the steering wheel using the securing device attached under the dashboard.

(h) Secure the Red Cross insignia covers in the closed position.

(i) Remove the keeper from the spreader bar and extend the bar so the holes line up. Reinstall pin and engage keeper. Use the sighting hole in the tube to assist in aligning holes for the pin. See top view insert in Figure 2-1.

(j) Position the spreader bar across the rear end of the vehicle roof. Attach the spreader bar check cables to the eyebolts located on the aft exterior sidewall of the rear compartment. See rear view insert in Figure 2-1.

(k) Install lift provisions on the outer ends of the rear bumper by removing the tie-down provisions located inboard of the bumper ends and installing them on the outer ends of the rear bumper, if necessary.

(2) Rigging. Rig the load according to the steps in Figure 2-1.

NOTE: Hookup of this load presents substantial risk of damage to the load or injury to the hookup personnel. Use of a reach pendant is recommended for this load.

(3) Hookup. The hookup team stands on the roof of the vehicle. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

2-4. M998/M1037 Modified (GVW 9,400 lbs)/M1038/M1097/M1097A2 Truck, Cargo, 1 1/4-ton (HMMWV)

a. Applicability. The following items in Table 2-3 are certified for all helicopters with suitable lift capacity by the US Army Natick Soldier Systems Center:

Table 2-3. 1 1/4-Ton Cargo Truck (HMMWV)

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
Truck, 1 1/4-ton, HMMWV, M998/M1038	7,700	10K 15K 40K	80/3 60/3 53/3	CH-47 / 90 CH-53 See Note 1 UH-60 See Note 2
Truck, 1 1/4-ton, HMMWV, M998A1	7,500	10K 15K 40K	80/3 60/3 53/3	CH-47 / 90 CH-53 See Note 1 UH-60 See Note 2
Truck, 1 1/4-ton, HMMWV, M998 with AN/MRC110-A Radio Set	7,700	10K 15K 40K	80/3 60/3 53/3	CH-47 / 90 CH-53 See Note 1 UH-60 See Note 2
Truck, 1 1/4-ton, HMMWV, Modified , (GVW 9,400 lbs), M1037	9,400	10K 15K	80/3 60/3	90
Truck, 1 1/4-ton, Heavy HMMWV, Cargo Variant, M1097	10,001	25K	60/10	90
Truck, 1 1/4-ton, Heavy HMMWV, Cargo Variant, M1097A2	10,300	25K	60/10	90
Integrated System Control (ISYSCON), Support Carrier/Radio,Truck, 1 1/4-ton, Heavy HMMWV, M1097.	10,300	25K	60/10	90

WARNING

THIS CARGO VEHICLE (M1037 MODIFIED, 9,400-LB GVW) SHOULD NOT BE CONFUSED WITH THE SHELTER CARRIER (M1037, 8,600-LB GVW). THE M1037 MODIFIED HAS IMPROVED LIFT PROVISIONS WHICH ALLOWS IT TO BE LIFTED AT HIGHER GROSS VEHICLE WEIGHTS.

NOTES:

1. Recommended airspeed for CH-53E when using the 15,000-pound multileg sling set is 100 knots. Recommended airspeed for the CH-53E when using the 40,000-pound capacity sling set is 105 knots.

2. For vehicle weights up to 7,300 pounds, the recommended maximum airspeed for the UH-60 is 100 knots. For loads weighing above 7,300 pounds the recommended maximum airspeed is 70 knots. Coordinate closely with the aviation unit as to the vehicle weight including all gear carried on the vehicle.

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity or 25,000-pound capacity for the UH-60 and CH-47).

OR

(2) Multileg sling set (15,000-pound capacity or 40,000-pound capacity for the CH-53E only).

(3) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(4) Cord, nylon, Type III, 550-pound breaking strength.

(5) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(6) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Fold mirrors forward in front of the windshield for added protection and tie together with Type III nylon cord. If installed, remove canvas covering over the bed of the truck. Remove the doors. Tape the windshield in an X formation from corner to corner. If time permits, fold canvas top and tie to windshield for added protection.

(b) Secure all equipment and cargo inside the vehicle with tape, nylon cord, or lashings. Remove antennas and stow inside vehicle.

(c) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(d) Engage the vehicle parking brake and put the transmission in neutral.

(e) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel, using the securing device attached under the dashboard.

(2) Rigging. Rig the load according to the steps in Figure 2-3.

(3) Hookup. The hookup team stands in the bed of the vehicle. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

Table 2-9. Lightweight Multipurpose Shelter (LMS) (continued)

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIR SPEED (KNOTS)
Spare Equipment and Maintenance Shelter AN/TSQ-190 (V) 1	9,220	10K	40/3	120
Tactical Remote Sensor System (TRSS) Sensor Mobile Monitoring System (SMMS)	7,685	10K	40/3	120
Meteorological Measuring Set AN/TMQ-41	7,770 8,200	15K 10K	40/3 40/3	120 120
Air Defense Communications Platform AN/MSQ-124	10,000	10K	40/3	120
Forward Area Air Defense Command Control System AN/TSQ-182	9,800	10K	40/3	100
Forward Area Air Defense Command Control System AN/TSQ-183	7,561	10K	40/3	100
Forward Area Air Defense Command Control System AN/TSQ-184	7,297	10K	40/3	100
Mobile Radio Broadcasting Subsystem (MRBS)	9,746	10K	40/3	120
Mobile Radio (MR) Cargo Vehicle	9,907	10K	40/3	120
Mobile Television Broadcasting Subsystem (MTBS)	9,295	10K	40/3	120
Mobile Television (MT) Cargo Vehicle	9,637	10K	40/3	120
Common Ground Station, Joint Surveillance Target Attack Radar (JSTAR) System	10,300	25K 15K	32/5 40/3	120
Advanced Field Artillery Tactical Data Systems (AFATADS), System #1, RWS with a CHS-2 AN/GYG-3(V)1	8,882	10K	50/3	100
Marine Expeditionary Force Intelligence Analysis System S1	9,194	15K	40/3	100
Marine Expeditionary Force Intelligence Analysis System S2	9,126	15K	40/3	100
Tactical Control and Analysis Center	9,300	15K	40/3	100

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity or 25,000-pound capacity).

(a) Chain length, part number 38850-00053-101, for a 10,000-pound capacity sling set or chain length, part number 38850-00053-102, for a 25,000-pound capacity sling set (4 each).

(b) Coupling link, part number 577-0615, for a 10,000-pound sling set or coupling link, part number 664241, for a 25,000-pound sling set (4 each).

OR

(2) Multileg sling set (15,000-pound capacity for the CH-53E only).

(a) Additional chain lengths from 15,000-pound capacity sling sets (8 each).

(b) Additional coupling links from 15,000-pound capacity sling sets (8 each).

(3) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(4) Cord, nylon, Type III, 550-pound breaking strength.

(5) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(6) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Extend the sling leg chains by connecting one additional chain length to each chain on a 10,000-, 25,000-or 40,000-pound capacity sling set with coupling links. Connect two additional chain lengths to each chain on the 15,000-pound multileg sling set chain with coupling links.

(b) Fold mirrors forward in front of the windshield for added protection and tie together with Type III nylon cord.

(c) Secure the shelter to the truck using wire rope or tie-down assemblies.

(d) Secure all equipment inside the shelter with tape, nylon cord, or lashings; close and secure shelter vents and door with nylon cord or tape.

(e) Secure environmental control unit cover with tape.

(f) Disconnect the power cord from the rear panel and secure it to the rear platform with Type III nylon cord. Lower the power panel door and secure the door.

(g) Secure all equipment and cargo inside the vehicle with tape, nylon cord, or lashings. Secure the doors shut if installed.

(h) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(i) Engage the vehicle parking brake and put the transmission in neutral.

(j) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel, using the securing device attached under the dashboard.

(k) Tape the windshield in an X formation from corner to corner.

(l) Install the lift provisions on the outer ends of the rear bumper by removing the tiedown provisions located inboard of the bumper end and installing them on the outer ends of the rear bumper.

(m) Remove the upper antenna mounting bracket if installed.

(2) Rigging. Rig the load according to the steps in Figure 2-9.

NOTE: Hookup of this load presents substantial risk of damage to the load or injury to the hookup personnel. Use of a reach pendant is recommended for this load.

(3) Hookup. The hookup team stands on top of the shelter. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the

2-28.1. M1097A2 (HMMWV) with Advanced Field Artillery Tactical Data System (AFATDS) Full Size Soft Top Installation Kit (STIK)

a. Applicability. The following items in Table 2-27.1 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 2-27.1. M1097A2 (HMMWV) with Advanced Field Artillery Tactical Data System (AFATDS) Full Size Soft Top Installation Kit (STIK)

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
System 2: CHS-2 AN/GYG-3(V)1, with SINCGARS AN/VRC-90, AN/VRC-92, and EPLRS installed in the bed. AN/VRC-92 installed in cab.	8,103	10K	50/3	100
System 3: CHS-2 AN/GYG-3(V)3, with SINCGARS AN/VRC-90, AN/VRC-92, and EPLRS installed in the bed. AN/VRC-92 installed in cab.	8,366	10K	50/3	100
System 4: 2 each AN/GYK-37(V)2, with SINCGARS AN/VRC-89, AN/VRC-92, and EPLRS	7,790	10K	50/3	100

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

(a) Chain length, part number 38850-00053-101, from a 10,000-pound capacity sling set (4 each).

(b) Coupling link, NSN 4010-01-231-3388, from a 10,000-pound sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo, tiedown, CGU-1/B (2 each).

(6) Sling guides (included as part of the HMMWV STIK) (2 each).

c. Personnel. Two persons can prepare and rig the M1097A2 HMMWV in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Fold mirrors inward and tie together with Type III nylon cord. Remove the doors and secure to the seats with Type III nylon cord.

(b) Secure all equipment and cargo inside the truck and trailer with tiedown straps, tape, or Type III nylon cord.

(c) Ensure the fuel tank is not over 3/4 full. Inspect the fuel tank cap, oil filler cap, and battery caps for proper installation.

(d) Engage the vehicle parking brake and put the transmission in neutral.

(e) Ensure the front wheels are pointed straight

ahead. Tie down the steering wheel, using the securing device attached under the dashboard.

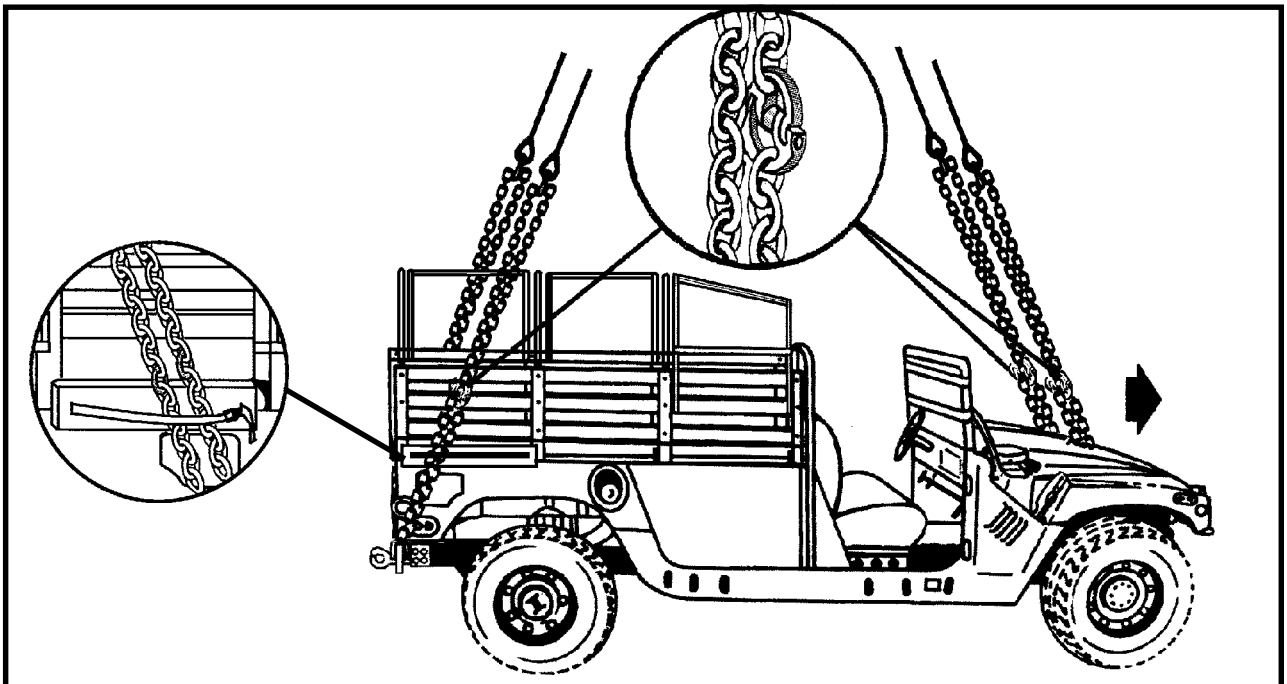
(f) Connect one additional chain length to each chain on each sling set with a coupling link.

(g) Ensure the STIK sling guides are properly installed.

(2) Rigging. Rig the load according to the steps in Figure 2-26.1.

(3) Hookup. The hookup team stands on top of the vehicle. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



1. Position apex fitting on top of the truck. Route outer sling legs 1and 2 to the front of the vehicle and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision that protrudes through the hood from inboard to outboard. Place the correct link from Table 2-27.1 in the grab hook. Repeat with sling leg 2 and the right front lift provision. Secure excess chain with tape or Type III nylon cord.

3. Loop the chain end of sling leg 3 through the left sling guide, through the left rear lift provision located on the outer ends of the rear bumper, and back through the left sling guide. Place the correct link from Table 2-27.1 in the grab hook. Repeat with sling leg 4 and the right sling guide and right rear lift provision. Secure excess chain with tape or Type III nylon cord.

4. Cluster and tie or tape (breakaway technique) all sling legs together on top of the vehicle to prevent entanglement during hookup and lift-off.

Figure 2-26.1. M1097A2 (HMMWV) with Advanced Field Artillery Tactical Data System (AFATDS) Full Size Soft Top Installation Kit (STIK)

2-29. M1113 Truck, Utility, Expanded Capacity (HMMWV) With Lightweight Multipurpose Shelter (LMS)

a. Applicability. The following items in Table 2-28 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 2-28. M1113 HMMWV with Lightweight Multipurpose Shelter (LMS)

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
AN/TTC-56 Single Shelter Switch (SSS)	11,500	25K	32/5	120
Digital Topographic Support System-Light (DTSS-L)	11,500	25K	32/5	100
Integrated System Control (ISYSCON), AN/TYQ-76B, (V)1, (V)2, and Degraded configurations	11,500	25K	32/5	100
Shadow Tactical Unmanned Vehicle (TUAV), Air Vehicle Transport	11,500	25K	32/5	100
Shadow Tactical Unmanned Vehicle (TUAV), Ground Control Station	11,500	25K	32/5	100
Shadow Tactical Unmanned Vehicle (TUAV), Maintenance Section Multifunctional	11,500	25K	32/5	100
Common Ground Station (CGS), Joint Surveillance Target Attack Radar (JSTAR) System (V)2	11,500	25K	32/5	100
Trojan Spirit Lite (V)3 Support Vehicle, AN/TSQ-226 (V)3	11,500	25K	35/3	100

b. Materials. The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity).

(a) Chain length, part number 38850-00053-102, from a 25,000-pound capacity sling set (4 each).

(b) Coupling link, part number 664241, from a 25,000-pound sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Extend the sling leg chains by connecting one additional chain length to each chain on a 25,000-pound capacity sling set with coupling links.

(b) Fold mirrors forward in front of the windshield for added protection and tie together with Type III nylon cord.

(c) Secure all equipment inside the shelter with tape, nylon cord, or lashings; close and secure shelter vents and door with nylon cord or tape.

(d) Secure environmental control unit cover with duct tape.

(e) Disconnect the power cord from the rear panel and secure it to the rear platform with Type III nylon cord. Lower the power panel door and secure the door.

(f) Secure all equipment and cargo inside the vehicle with tape, nylon cord, or lashings. Secure the doors shut if installed.

(g) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(h) Engage the vehicle parking brake and put the transmission in neutral.

(i) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel, using the securing device attached under the dashboard.

(j) Tape the windshield in an X formation from corner to corner.

(k) Install the lift provisions on the outer ends of the rear bumper.

(l) Remove the upper antenna mounting bracket if installed.

(2) Rigging. Rig the load according to the steps in Figure 2-27.

(3) Hookup. The hookup team stands on top of the shelter. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the cargo hook. The hookup team then carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

2-32. Prophet AN/MLQ-40 (V) on M1097 HMMWV

a. Applicability. The following items in Table 2-31 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 2-31. Prophet AN/MLQ-40 (V) on M1097 HMMWV

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Prophet AN/MLQ-40 (V) 1	10,000	10K	55/10	90
Prophet AN/MLQ-40 (V) 3	10,000	10K	55/10	90

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

(a) Chain length, part number 38850-00053-101, from a 10,000-pound capacity sling set (4 each).

(b) Coupling link, part number 577-0615, from a 10,000-pound sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Fold mirrors forward inward and tie together with Type III nylon cord.

(b) Ensure the Prophet cargo bed cover is secured to the truck. Secure all equipment and cargo inside the unit with tape, nylon cord, or lashings. Close and secure the door.

(c) Secure all equipment and cargo inside the vehicle with tape, nylon cord, or lashings. Roll up all the windows and secure the doors closed (if installed)

(d) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(e) Engage the vehicle parking brake and put the transmission in neutral.

(f) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel, using the securing device attached under the dashboard.

(g) Tape the windshield in an X formation from corner to corner.

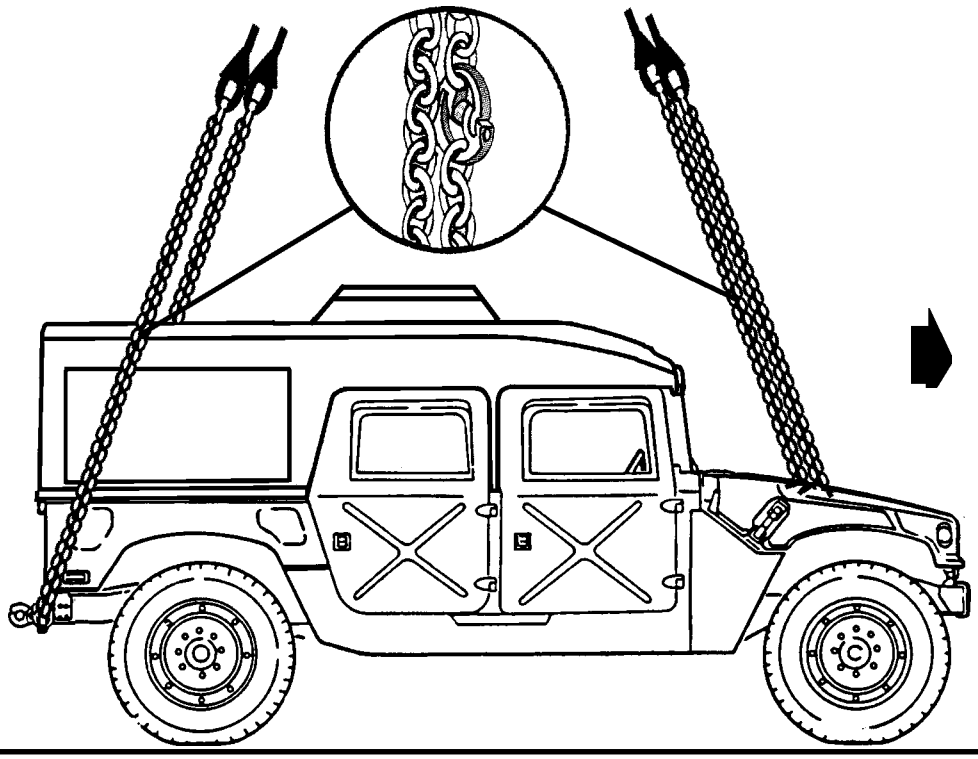
(h) Extend the sling leg chains by connecting one additional chain length to each chain on a 10,000-pound capacity sling set with coupling links.

(2) Rigging. Rig the load according to the steps in Figure 2-30.

(3) Hookup. The hookup team stands on top of the vehicle. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting on the cargo hook. The hookup team then

carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the vehicle roof. Route outer sling legs 1 and 2 to the front of the vehicle and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision that protrudes through the hood from inboard to outboard. Place the correct link from Table 2-31 in the grab hook. Repeat with sling leg 2 through the right front lift provision.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the outside end of the rear bumper. Place the correct link from Table 2-31 in the grab hook. Repeat with sling leg 4 through the right rear lift provision.

4. Secure all excess chain with tape or Type III nylon cord.

5. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

Figure 2-30. Prophet AN/MLQ-40 (V) on M1097 HMMWV

CAUTION

Do not use the lift shackles located near the center of the rear bumper for sling load lift provisions.

RIGGING STEPS

1. Position sling set 1 on top of the right vehicle with the bolt parallel to the length of the vehicle. Route sling legs 1 and 2 to the front of the vehicle and sling legs 3 and 4 to the rear. Sling legs 1 and 4 must be on the outside.

2. Route the chain end of sling leg 1 through the 4th opening in the front litter carrier, over the brush guard to the outside front lift provision. Loop the chain end through the outside front lift provision and back to the grabhook along the same path. Place link 3 in the grabhook.

3. Route the chain end of sling leg 2 through the 6th opening in the front litter carrier, over the brush guard to the inside front lift provision. Loop the chain end through the inside front lift provision and back to the grabhook along the same path. Place link 20 in the grabhook.

4. Route the chain end of sling leg 4 through the outside sling guide to the outside rear lift provision. Loop the chain end through the outside rear lift provision and back to the grabhook along the same path. Place link 30 in the grabhook.

5. Route the chain end of sling leg 3 through the inside sling guide to the inside rear lift provision. Loop the chain end through the inside rear lift provision and back to the grabhook along the same path. Place link 45 in the grabhook.

6. Position sling set 2 on top of the left vehicle with the bolt parallel to the length of the vehicle. Route sling legs 1 and 2 to the front of the vehicle and sling legs 3 and 4 to the rear. Sling legs 1 and 4 must be on the outside.

7. Route the chain end of sling leg 1 through the 4th opening in the front litter carrier, over the brush guard to the outside front lift provision. Loop the chain end through the outside front lift provision and back to the grabhook along the same path. Place link 3 in the grabhook.

8. Route the chain end of sling leg 2 through the 6th opening in the front litter carrier, over the brush guard to the inside front lift provision. Loop the chain end through the inside front lift provision and back to the grabhook along the same path. Place link 20 in the grabhook.

9. Route the chain end of sling leg 4 through the outside sling guide to the outside rear lift provision. Loop the chain end through the outside rear lift provision and back to the grabhook along the same path. Place link 30 in the grabhook.

10. Route the chain end of sling leg 3 through the inside sling guide to the inside rear lift provision. Loop the chain end through the inside rear lift provision and back to the grabhook along the same path. Place link 45 in the grabhook.

11. Route the additional apex fitting through apex fittings 1 and 2.

12. Secure all excess chain with tape or Type III nylon cord.

13. Cluster and tie or tape (breakaway technique) the sling legs in each sling set on top of the vehicle to prevent entanglement during hookup and lift-off.

14. Route a CGU-1/B cargo tiedown strap through the trailer hitch of both vehicles and connect the hooks together. Tighten the straps and secure the excess strap.

15. Route a CGU-1/B cargo tiedown strap through the inside front bar of the brush guard on both vehicles and connect the hooks together. Tighten the straps and secure the excess strap.

Figure 2-34. Two John Deere M-Gators, Model # VGM6X4D01001, Side by Side (Shotgun Method) (continued)

2-37. Air Traffic Navigation, Integration, and Control System (ATNAVICS) Radar Sensor Pallet on M1113 HMMWV

a. Applicability. The following item in Table 2-36 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 2-36. Air Traffic Navigation, Integration, and Control System (ATNAVICS) Radar Sensor Pallet on M1113 HMMWV

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
M1113 HMMWV with ATNAVICS Radar Sensor Pallet	11,500	25K	30/3	120

b. Materials. The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity).

(a) Additional chain lengths, part number 38850-00053-102, from a 25,000-pound capacity sling set (4 each).

(b) Coupling link, part number 664241, from a 25,000-pound capacity sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo, tiedown, CGI-1/B (as required).

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Fold the mirrors inward for added protection and tie together with Type III nylon cord. Remove the doors and secure the doors on the load with Type III nylon cord.

(b) Secure all equipment inside the unit with tape, Type III nylon cord or tiedown straps. Secure all vents, doors and latches with tape or Type III nylon cord.

(c) Secure all equipment and cargo inside the vehicle cab with tape, Type III nylon cord, or tiedown straps.

(d) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(e) Engage the vehicle parking brake and put the transmission in neutral.

(f) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel, using the securing device attached under the dashboard or Type III nylon cord.

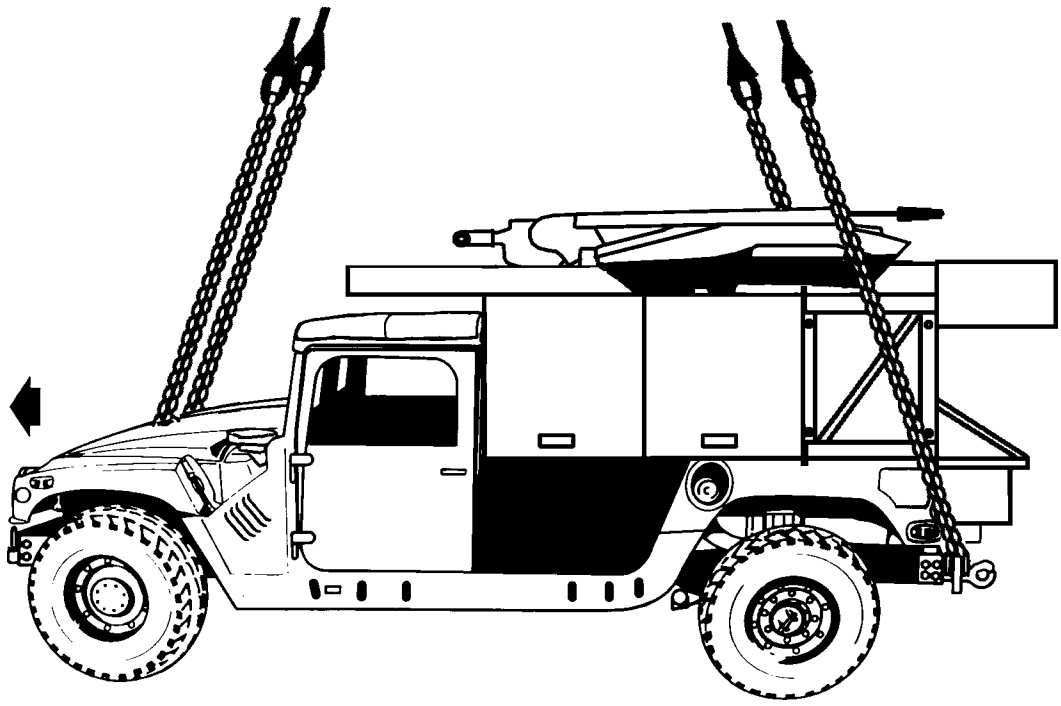
(g) Extend the sling leg chains by connecting one additional chain length to each chain on the 25,000-pound capacity sling set with coupling links.

(h) Install the sling leg guides on the rear corners of the radar sensor pallet as required in TM 11-584-381-23, chapter 2.

(2) Rigging. Rig the load according to the steps in Figure 2-35

(3) Hookup. The hookup team stands on the vehicle. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting on the cargo hook. The hookup team then carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position apex fitting on top of the truck. Route outer sling legs 1and 2 to the front of the vehicle and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision that protrudes through the hood from inboard to outboard. Place the correct link from Table 2-36 in the grab hook. Repeat with sling leg 2 and the right front lift provision. Secure excess chain with tape or Type III nylon cord.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the outer ends of the rear bumper. Place the correct link from Table 2-36 in the grab hook. Repeat with sling leg 4 and the right rear lift provision. Secure excess chain with tape or Type III nylon cord.

4. Cluster and tie or tape (breakaway technique) all sling legs together on top of the vehicle to prevent entanglement during hookup and lift-off.

Figure 2-35. Air Traffic Navigation, Integration, and Control System (ATNAVICS) Radar Sensor Pallet on M1113 HMMWV

2-38. Tactical Data Network (TDN) Gateway on M1097A1 HMMWV

a. Applicability. The following item in Table 2-37 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 2-37. Tactical Data Network (TDN) Gateway on M1097A1 HMMWV

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Tactical Data Network (TDN) Gateway on M1097A1 HMMWV	9,580	15K	30/3	100

b. Materials. The following materials are required to rig this load:

(1) Multileg sling set (15,000-pound capacity).

(a) Additional chain lengths, part number 3408-4, from a 15,000-pound capacity sling set (8 each).

(b) Coupling link, part number 31611, from a 15,000-pound capacity sling set (8 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Fold the mirrors inward for added protection and tie together with Type III nylon cord.

(b) Secure all equipment inside the unit with tape, Type III nylon cord or tiedown straps. Secure all vents, doors and latches with tape or Type III nylon cord.

(c) Secure all equipment and cargo inside the vehicle cab with tape, Type III nylon cord, or tiedown straps. Secure the doors shut, if installed.

(d) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(e) Engage the vehicle parking brake and put the transmission in neutral.

(f) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel, using the securing device attached under the dashboard or Type III nylon cord.

(g) Extend the sling leg chains by connecting one additional chain length to each chain on the15,000-pound capacity sling set with coupling links.

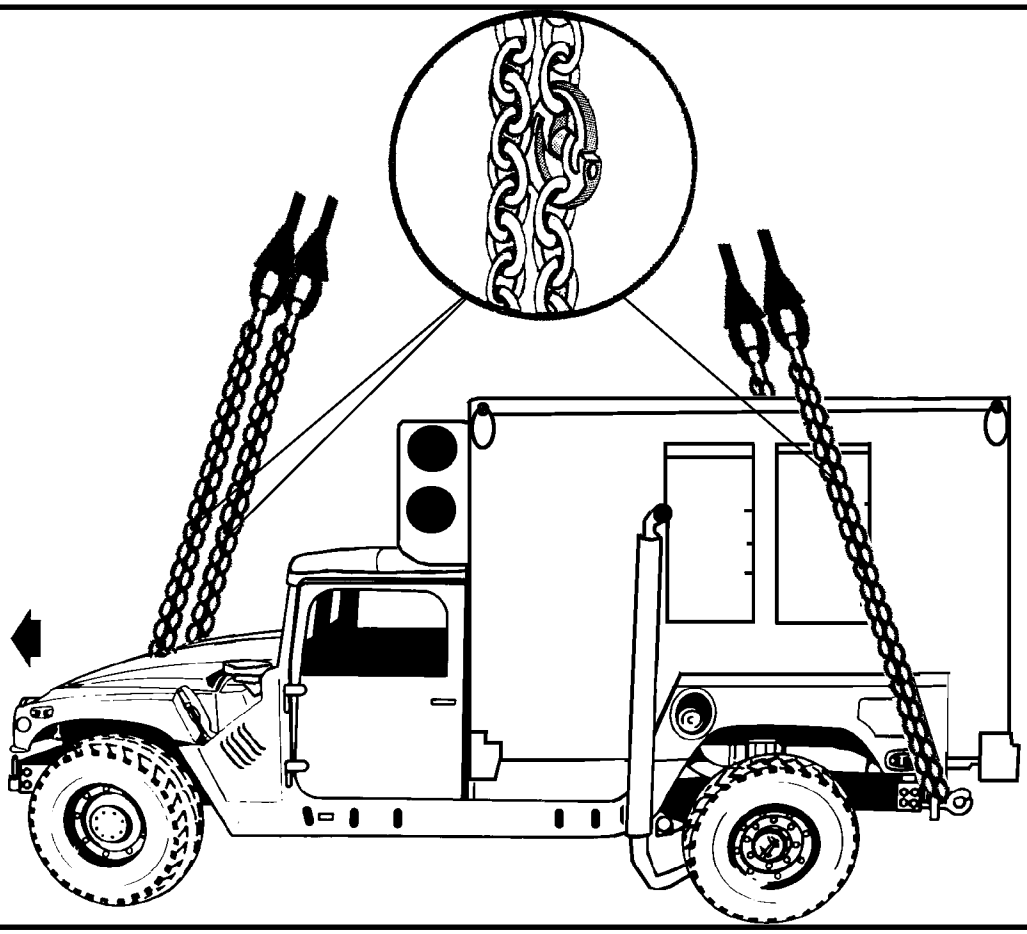
(h) Tape the windshield in an X formation from corner to corner.

(2) Rigging. Rig the load according to the steps in Figure 2-36.

(3) Hookup. The hookup team stands on the roof of the shelter. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting on the cargo hook. The hookup team then carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the sling legs.

When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position apex fitting on top of the truck. Route outer sling legs 1and 2 to the front of the vehicle and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision that protrudes through the hood from inboard to outboard. Place the correct link from Table 2-37 in the grab hook. Repeat with sling leg 2 and the right front lift provision. Secure excess chain with tape or Type III nylon cord.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the outer ends of the rear bumper. Place the correct link from Table 2-37 in the grab hook. Repeat with sling leg 4 and the right rear lift provision. Secure excess chain with tape or Type III nylon cord.

4. Cluster and tie or tape (breakaway technique) all sling legs together on top of the vehicle to prevent entanglement during hookup and lift-off.

Figure 2-36. Tactical Data Network (TDN) Gateway on M1097A1 HMMWV

2-39. Trojan Spirit Lite (V)2, Central Communications AN/TSQ-226 (V)2 on M1113 HMMWV

a. Applicability. The following item in Table 2-38 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 2-38. Trojan Spirit Lite (V)2, Central Communications AN/TSQ-226 (V)2 on M1113 HMMWV

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Trojan Spirit Lite (V)2, Central Communications AN/TSQ-226 (V)2 on M1113 HMMWV	11,500	25K	35/3	100

b. Materials. The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity).

(a) Additional chain lengths, part number 38850-00053-102, from a 25,000-pound capacity sling set (4 each).

(b) Coupling link, part number 664241, from a 25,000-pound capacity sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Fold the mirrors inward for added protection and tie together with Type III nylon cord.

(b) Secure all equipment inside on the pallet with tape, Type III nylon cord or tiedown straps. Secure all vents, doors and latches with tape or Type III nylon cord.

(c) Secure all equipment and cargo inside the vehicle cab with tape, Type III nylon cord, or tiedown straps. Secure the doors shut, if installed.

(d) Ensure the fuel tank is not over 3/4 full. Inspect fuel tank cap, oil filler cap, and battery caps for proper installation.

(e) Engage the vehicle parking brake and put the transmission in neutral.

(f) Ensure the front wheels are pointed straight ahead. Tie down the steering wheel, using the securing device attached under the dashboard or type III nylon cord.

(g) Extend the sling leg chains by connecting one additional chain length to each chain on the 25,000-pound capacity sling set with coupling links.

(h) Tape the windshield in an X formation from corner to corner.

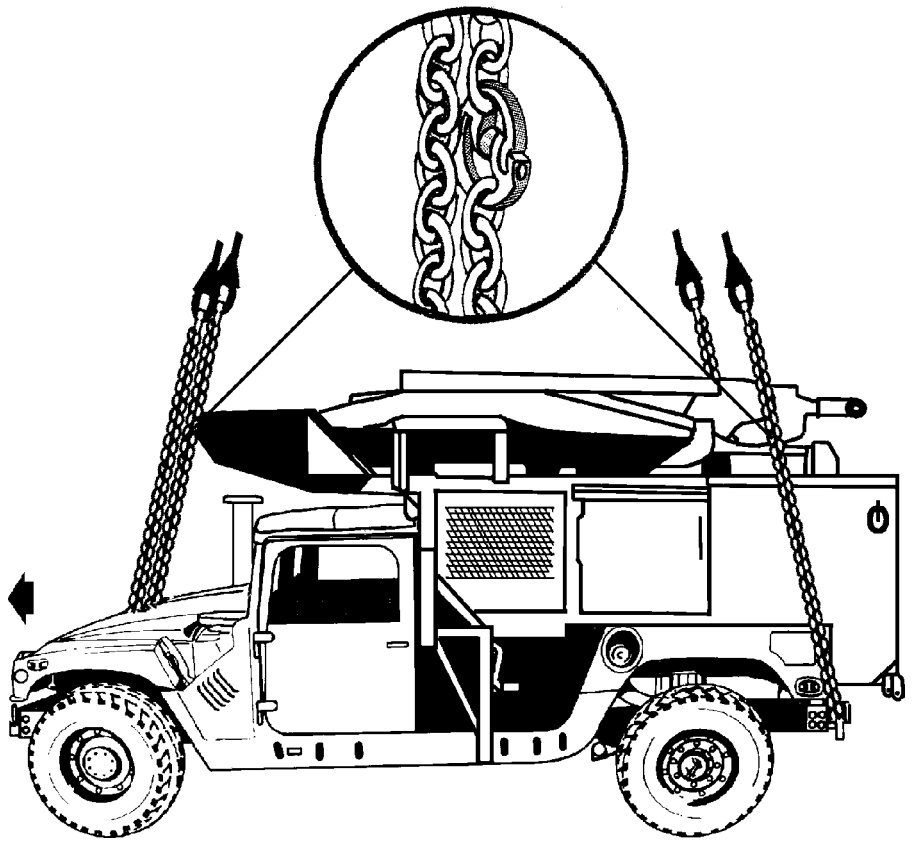
(i) Secure the rear lift provision in the up position with Type III nylon cord.

(2) Rigging. Rig the load according to the steps in Figure 2-37.

(3) Hookup. The hookup team stands on top of the vehicle. The static wand person discharges the static

electricity with the static wand. The hookup person places the apex fitting on the cargo hook. The hookup team then carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position apex fitting on top of the truck. Route outer sling legs 1and 2 to the front of the vehicle and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision that protrudes through the hood from inboard to outboard. Place the correct link from Table 2-37 in the grab hook. Repeat with sling leg 2 and the right front lift provision. Secure excess chain with tape or Type III nylon cord.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the outer ends of the rear bumper. Place the correct link from Table 2-37 in the grab hook. Repeat with sling leg 4 and the right rear lift provision. Ensure sling leg 4 is routed between the handholds on the right side of the system. Remove the slack from sling leg 4 and secure the sling leg to the front handhold with Type I, 1/4-inch cotton webbing. Secure excess chain with tape or Type III nylon cord.

4. Cluster and tie or tape (breakaway technique) all sling legs together on top of the vehicle to prevent entanglement during hookup and lift-off.

Figure 2-37. Trojan Spirit Lite (V)2, Central Communications AN/TSQ-226 (V)2 on M1113 HMMWV

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CHAPTER 3

CERTIFIED SINGLE-POINT RIGGING PROCEDURES FOR TRAILERS

3-1. INTRODUCTION

This chapter contains rigging procedures for single-point trailer loads that have been certified for sling load. Each rigging procedure is found in a paragraph that includes a description of the load, materials required for rigging, and steps to complete the procedure. An applicability paragraph is also a part of each paragraph and identifies the certified loads. The certified single-point rigging procedures for trailers are in this section. Paragraphs 3-2 through 3-33 give detailed instructions for rigging loads.

NOTE: Reach Pendants may be used on all single point loads. A static discharge person is not required when using a Reach Pendant.

3-2. M416 1/4 Ton Trailer

a. Applicability. The following item in Table 3-1 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 3-1. M416 1/4-Ton Trailer

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
M416 1/4-Ton Trailer	1,080	10K	3/3	90

WARNING

THE M416 1/4-TON TRAILER MUST HAVE A GROSS WEIGHT OF 800 POUNDS OR MORE. ADD ADDITIONAL WEIGHT OR CARGO TO ANY TRAILER WHICH WEIGHS LESS THAN 800 POUNDS.

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Tie down, CGU-1B or Dacron lashing and load binder.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Lower and lock the trailer support leg in the down position.

(b) Tape or tie the light cable firmly to the top of the drawbar.

(c) Load and lash the cargo in the bed of the trailer.

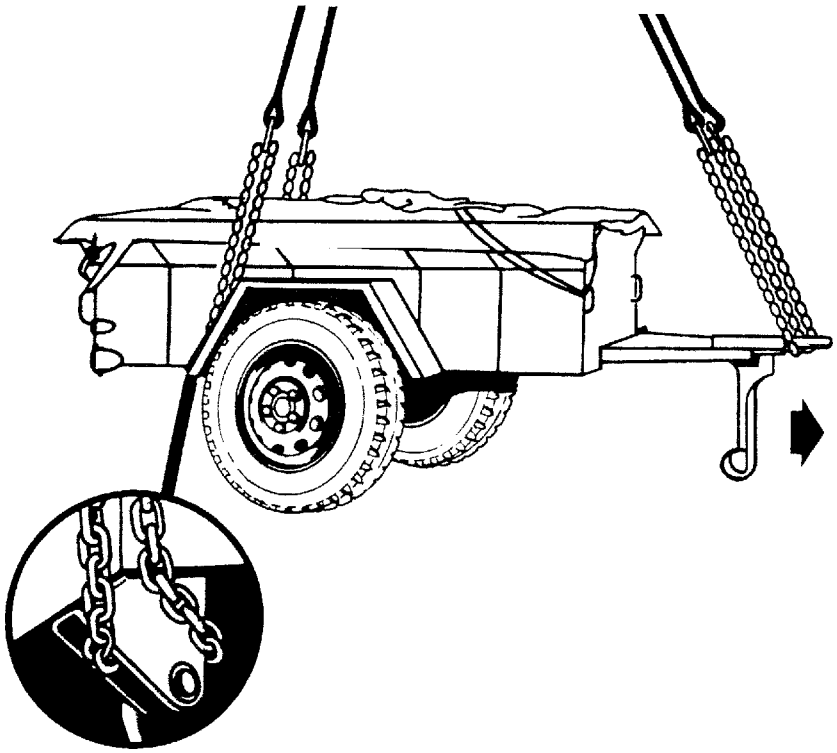
(d) Ensure the parking brake is set.

(2) Rigging. Rig the load according to the steps in Figure 3-1.

(3) Hookup. The hookup team stands in the bed of

the trailer. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then carefully dismounts the vehicle and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position apex fitting in the trailer bed. Route outer sling legs 1and 2 to the front of the trailer and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the lunette. Place the correct link from Table 3-1 in the grab hook. Repeat with sling leg 2 through the lunette.

3. Route the chain end of sling leg 3 around the left rear spring shackle mounting bracket. Place the correct link from Table 3-1 in the grab hook. Repeat with sling leg 4 around the right rear spring shackle mounting bracket.

4. Tape or tie (breakaway technique) the chains of legs 3 and 4 to the next-to-last tarpaulin hold-down hook on each side.

5. Cluster and tie or tape (breakaway technique) all sling legs together on top of the trailer to prevent entanglement during hookup and lift-off.

Figure 3-1. M416 1/4 Ton Trailer

3-16. MKT-90/MKT-95/MKT-99 Field Kitchen Trailer

a. Applicability. The following items in Table 3-15 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 3-15. MKT-90/MKT-95/MKT-99 Field Kitchen Trailer

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
MKT-90	5,730	10K	3/11	70
MKT-95	6,731	10K	3/11	70
MKT-99	6,731	10K	3/11	70

NOTE: Only MKT-90 versions equipped with internal spreader bars (PIP No. 1-85-08-2802) may be sling loaded. The data plate next to the item data plate must contain an etched helicopter.

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

(a) Chain length, part number 38850-00053-101, from a 10,000-pound capacity sling set (4 each).

(b) Coupling link, part number 577-0615, from a 10,000-pound sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

c. Personnel. Two persons can prepare and rig this load in 20 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Extend the sling leg chains by connecting one additional chain length to each chain on a 10,000-pound capacity sling set with coupling links.

(b) Secure all items in their proper storage location before closing the unit.

(c) Configure the MKT for ground transportation according to the operator's instructions.

(d) Retract and stow all landing legs. Secure each landing leg with Type III nylon cord.

(e) Lower the lunette as far as possible by adjusting the llanding wheel hand screw. Do not retract the landing wheel.

(f) Secure all chains, hoses, and cables with Type III nylon cord to the trailer drawbar.

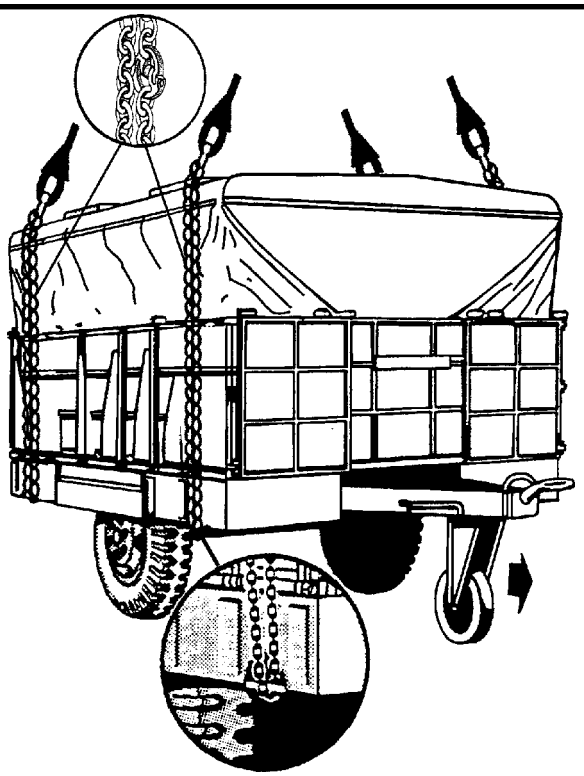
(g) Engage both trailer parking brakes and ensure the front support leg is down.

(h) Secure loose canvas with tape.

(2) Rigging. Rig the load according to the steps in Figure 3-15.

(3) Hookup. The hookup team stands on top of the trailer. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the cargo hook. The hookup team then carefully dismounts the trailer and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

CAUTION

While on the roof of the trailer, stay in front of the trailer axle. Moving behind the axle may cause the trailer to tip rearwards, causing possible injury to personnel and damage to the load.

1. Position the apex fitting on the roof of the trailer. Route outer sling legs 1 and 2 to the front of the trailer (lunette end) and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision located in the trailer frame. Place the correct link from Table 3-15 in the grab hook. Repeat with sling leg 2 through the right front lift provision. The lift provisions are in the form of cutouts in the frame.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the rear of the trailer frame. Place the correct link from Table 3-15 in the grab hook. Repeat with sling leg 4 through the right rear lift provision.

4. Secure all excess chain with tape or Type III nylon cord.

5. Pad each sling where it contacts the edge of the roof. Secure the padding with tape or Type III nylon cord.

6. Cluster and tie or tape (breakaway technique) all sling legs together on top of the container to prevent entanglement during hookup and lift-off.

Figure 3-15. MKT-90/MKT-95/MKT-99 Field Kitchen Trailer

3-31. Assault Command Post With High Mobility Wheel Set

a. Applicability. The following items in Table 3-30 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 3-30. Assault Command Post With High Mobility Wheel Set

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Assault Command Post (ACP), Housed in Expandable Light Airmobile Shelter (ELAMS), with High Speed Mobile Wheel Set	13,240	25K	ECU is Front 3/3	80
Upgraded, Assault Command Post (ACP), Housed in Expandable Light Airmobile Shelter (ELAMS), with High Speed Mobile Wheel Set	14,600	25K	ECU is Front 3/3	80

b. Materials. The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Ensure manufacturer approved tiedown assemblies (2 each) are in place between the shelter and each wheel set.

(b) Remove all antennas and secure inside the shelter.

(c) Secure all lids, doors, and caps with tape or Type III nylon cord.

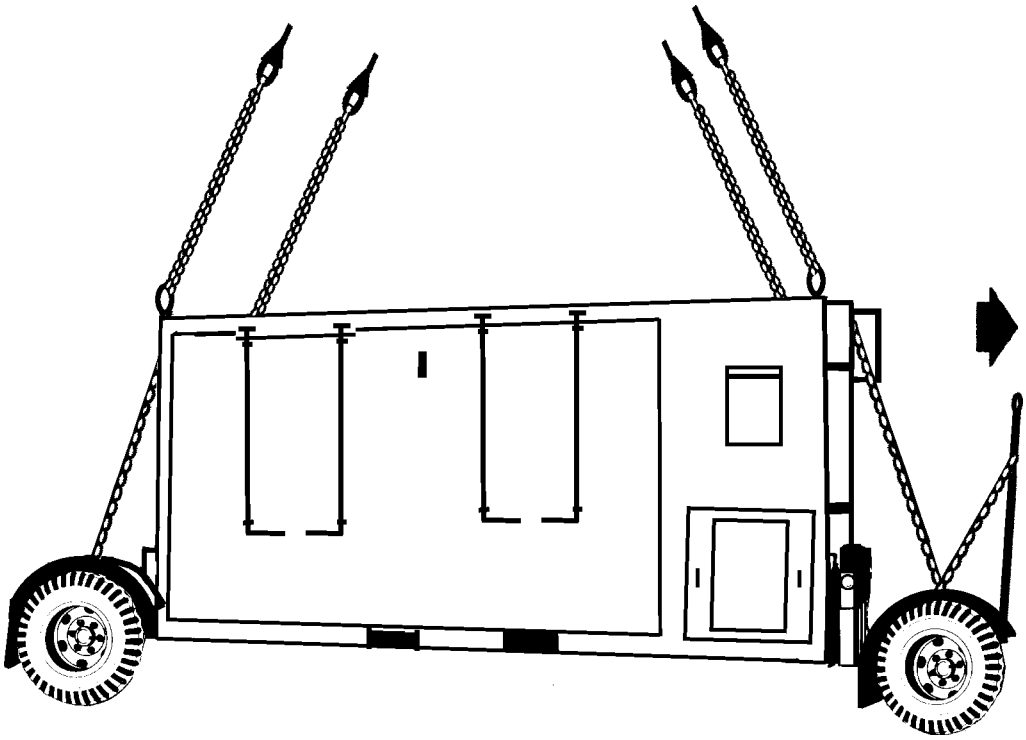
(d) Secure all loose equipment inside the shelter with tape, lashings, or Type III nylon cord.

(e) Secure the tow bar in the up position.

(2) Rigging. Rig the load according to the steps in Figure 3-30.

(3) Hookup. The hookup team stands on the roof of the shelter. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting on the cargo hook. The hookup team then carefully dismounts the trailer and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the shelter. Route outer sling legs 1 and 2 to the front of the shelter (lunette end) and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision located on the top left front corner of the shelter (lunette end) . Place the correct link from Table 3-30 in the grab hook. Repeat with sling leg 2 through the top right front lift provision.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the top left rear corner of the shelter. Place the correct link from Table 3-30 in the grab hook. Repeat with sling leg 4 through the top right rear lift provision.

4. Secure all excess chain with tape or Type III nylon cord.

5. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

Figure 3-30. Assault Command Post With High Mobility Wheel Set

3-32. Trailer Support System With Expeditionary Shelter

a. Applicability. The following item in Table 3-31 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 3-31. Trailer Support System (TSS) With Expeditionary Shelter

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Trailer Support System (TSS 2000655) on Crash-Out-Package System (COPS) Trailer with Base-X Expeditionary Shelter	4,320	25K	20/5	80

Caution
The fuel tank must have the modified cap to prevent fuel from leaking through the fuel cap vent. If the cap is not modified the tank must be drained.

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

(a) Chain length, part number 38850-00053-101, from a 10,000-pound capacity sling set (4 each).

(b) Coupling link, NSN 4010-01-231-3388, from a 10,000-pound sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Spreader Bar Assembly (component of M996/M997 HMMWV ambulance)(NSN 4910-01-313-8839)(2 each).

(6) Strap, cargo tiedown, CGU-1/B (as required).

c. Personnel. Two persons can prepare and rig this load in 20 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Extend the sling leg chains by connecting one additional chain length to each chain on a 10,000-pound capacity sling set with coupling links.

(b) Engage both trailer parking brakes.

(c) Secure all chains, hoses, and cables with Type III nylon cord to the trailer drawbar.

(d) Secure tents and all loose equipment with CGU-1/B cargo tiedown straps.

(e) Close and secure all doors, latches, and caps with tape or Type III nylon cord.

(f) Secure or remove and stow the intake duct cover.

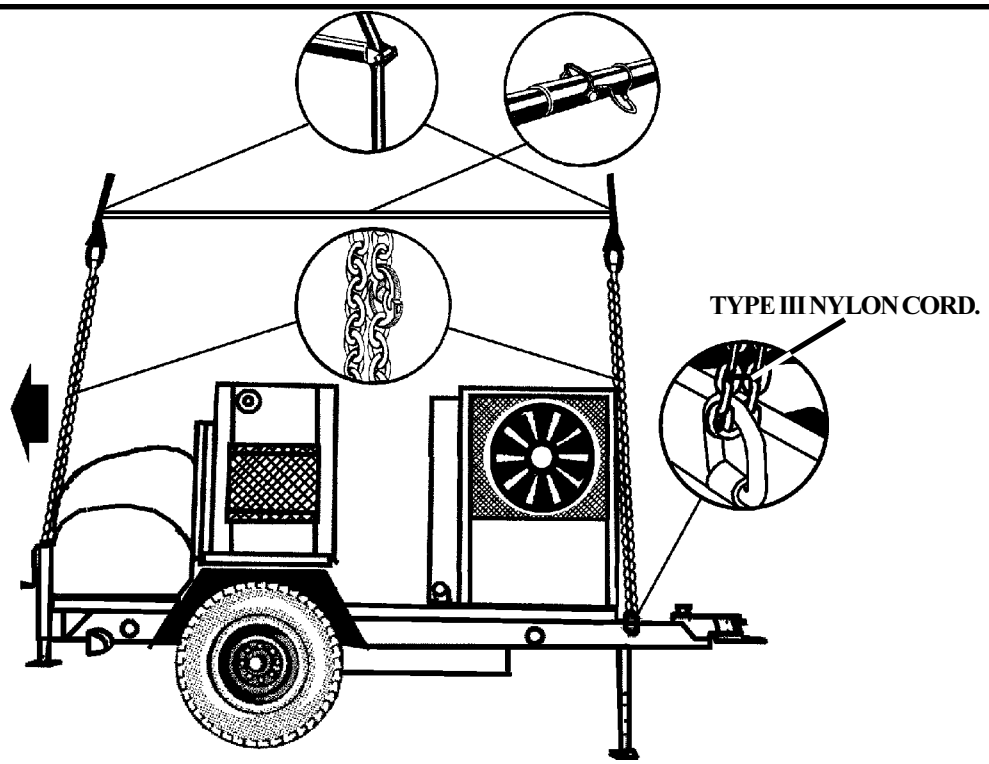
(g) Fully retract the stabilizer legs.

(h) Lower the front jack so the lunette is close to the ground.

(2) Rigging. Rig the load according to the steps in Figure 3-31.

(3) Hookup. The hookup team stands on top of the trailer. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the cargo hook. The hookup team then carefully dismounts the trailer and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the trailer. Route outer sling legs 1 and 2 to the front of the trailer (lunette end) and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision located in the trailer frame. Place the correct link from Table 3-31 in the grab hook. Repeat with sling leg 2 through the right front lift provision. Secure the excess chain with tape or Type III nylon cord.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the rear of the trailer frame. Place the correct link from Table 3-31in the grab hook. Repeat with sling leg 4 through the right rear lift provision.

4. Raise the chain portion of each leg above the lift point and tie the links together with tape or Type III nylon cord.

5. Cluster and tie or tape (breakaway technique) all sling legs together on top of the trailer to prevent entanglement during hookup and lift-off.

Figure 3-31. Trailer Support System With Expeditionary Shelter

3-33. Shadow Tactical Unmanned Aerial Vehicle (TUAV), Launcher/Recovery Trailer (L/R-T)

a. Applicability. The following item in Table 3-32 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 3-32. Shadow Tactical Unmanned Aerial Vehicle (TUAV), Launcher/Recovery Trailer (L/R-T)

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Shadow Tactical Unmanned Aerial Vehicle (TUAV) Launcher/Recovery Trailer	4,100	10K	3/15	100

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Strap, cargo tiedown, CGU-1/B (as required).

c. Personnel. Two persons can prepare and rig this load in 20 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Lower and fully retract the trailer's rear landing legs. Secure the stowage straps with tape or Type III nylon cord.

(b) Ensure the rear lift provisions are positioned above the rear trailer landing legs.

(c) Lower the front jack so the lunette is close to the ground and secure with Type III nylon cord.

(d) Close and secure all doors, latches, and caps with tape or Type III nylon cord.

(e) Secure the beam support segments to the rails with Type III nylon cord.

(f) Secure the shuttle in the stowed position.

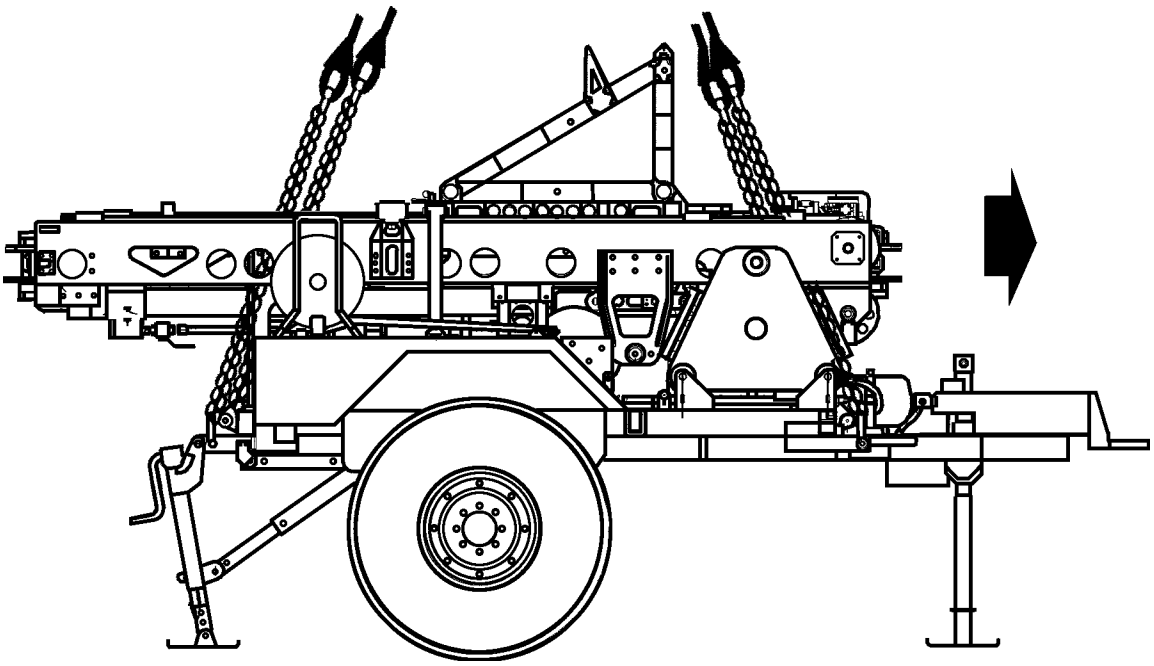
(g) Engage both trailer parking brakes.

(h) Secure all chains, hoses, and cables with Type III nylon cord to the trailer drawbar.

(2) Rigging. Rig the load according to the steps in Figure 3-32.

(3) Hookup. The hookup team stands on top of the trailer. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the cargo hook. The hookup team then carefully dismounts the trailer and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the trailer. Route outer sling legs 1 and 2 to the front of the trailer (lunette end) and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load. Ensure the sling legs are routed between the launcher rails.

2. Loop the chain end of sling leg 1 through the left front lift provision located in the trailer frame. Place the correct link from Table 3-32 in the grab hook. Repeat with sling leg 2 through the right front lift provision. Secure the excess chain with Type III nylon cord.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the rear of the trailer frame. Place the correct link from Table 3-32 in the grab hook. Repeat with sling leg 4 through the right rear lift provision.

4. Place the nylon rope of sling legs 1 and 3 in the guides on the end of spreader bar 1 and install the spreader bar guide retainer pins and keepers. Lay the spreader bar on left top of the load. Repeat with sling legs 2 and 4 with spreader bar 2 on the right side of the load.

5. Raise the chain portion of each leg until the chain is tight and secure each chain to the launch rail with Type I 1/4-inch cotton webbing.

6. Cluster and tie or tape (breakaway technique) all sling legs together on top of the launcher rails to prevent entanglement during hookup and lift-off.

Figure 3-32. Shadow Tactical Unmanned Aerial Vehicle (TUAV), Launcher/Recovery Trailer (L/R-T)

4-3. M200A1 Trailer-Mounted Power Units, Generators, and Power Plants

a. Applicability. The following items in Table 4-2 are certified for all helicopters with suitable lift capacity by the US Army Natick Soldier Systems Center:

Table 4-2. M200A1 Trailer-Mounted Power Units, Generators, and Power Plants

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
Generator set, 15 kW, 6113	5,119	10K	3/23	100
Generator set, 30 kW, CE301ACWK1	5,625	10K	3/28	100
Generator set, 45 kW, 52300	6,885	10K	3/30	100
Generator set, 60 kW, MEP-006A	7,347	10K	3/33	100
AN/MJQ-12A, Unit A, 60 kW, 50/60 Hz Power Unit with MEP 006A, 60 kW, 50/60 Hz, generator set with switch box	8,060	10K	10/3	90
AN/MJQ-12A, Unit B, 60 kW, 50/60 Hz Power Unit with MEP 806A, 60 kW, 50/60 Hz, generator set (no switch box)	7,980	10K	10/3	90
AN/MJQ-39, Unit A, 15 kW, 400 Hz Power Unit with MEP 814A, 15 kW, 400 Hz, generator set with switch box	5,255	10K	3/3	80
AN/MJQ-39, Unit B, 15 kW, 400 Hz Power Unit with MEP 814A, 15 kW, 400 Hz, generator set (no switch box)	5,255	10K	3/3	80
AN/MJQ-40, Unit A, 30 kW, 50/60 Hz Power Unit with MEP 805A, 30 kW, 50/60 Hz, generator set with switch box	6,100	10K	3/3	90
AN/MJQ-40, Unit B, 30 kW, 50/60 Hz Power Unit with MEP 805A, 30 kW, 50/60 Hz, generator set (no switch box)	6,100	10K	3/3	90
AN/MJQ-40B, Unit A, PU-803B/G, PU-804B/G	7,410	10K	3/3	110
AN/MJQ-40B, Unit B, PU-803B/G, PU-804B/G	7,410	10K	3/3	110

Table 4-2. M200A1 Trailer-Mounted Power Units, Generators, and Power Plants (continued)

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIR SPEED (KNOTS)
AN/MJQ-41, Unit A, 60 kW, 50/60 Hz Power Unit with MEP 806A, 60 kW, 50/60 Hz, generator set with switch box	6,720	10K	3/3	70
AN/MJQ-41, Unit B, 60 kW, 50/60 Hz Power Unit with MEP 806A, 60 kW, 50/60 Hz, generator set (no switch box)	6,720	10K	3/3	70
AN/MJQ-41B, Unit A, PU-805B/G, PU-806B/G	7,410	10K	3/3	90
AN/MJQ-41B, Unit B, PU-805B/G, PU-806B/G	7,410	10K	3/3	90
PU-405 A/M Power Unit, 15 kW, without acoustic suppression kit (ASK)	6,119	10K	3/33	100
PU-405 A/M Power Unit, 15 kW, with acoustic suppression kit (ASK)	6,740	10K	3/28	80
PU-406 B/M Power Unit, 30 kW, with acoustic suppression kit (ASK)	7,520	10K	3/28	80
PU-650 B/G, 60 kW , 50/60 Hz Power Unit with MEP 006A, 60 kW, 50/60 Hz generator set	7,800	10K	10/3	90
PU-707 A/M, 60 kW , 400 Hz Power Unit with MEP 115A, 60 kW, 400 Hz generator set	7,800	10K	10/3	90
PU-732 Power Unit, 15 kW, with acoustic suppression kit (ASK)	6,690	10K	3/28	80
PU-760 Power Unit, 30 kW, with acoustic suppression kit (ASK)	7,240	10K	3/28	80
PU-800, 15 kW, 400 Hz Power Unit with MEP 814A, 15 kW, 400 Hz, generator set	5,255	10K	3/3	80
PU-802, 15 kW, 50/60 Hz Power Unit with MEP 804A, 15 kW, 50/60 Hz, generator set	5,320	10K	3/3	80
PU-803, 30 kW, 50/60 Hz Power Unit with MEP 805A, 30 kW, 50/60 Hz, generator set	6,100	10K	3/3	90

CHAPTER 6

CERTIFIED SINGLE-POINT RIGGING PROCEDURES FOR HOWITZERS AND WEAPONS SYSTEMS

6-1. INTRODUCTION

This chapter contains rigging procedures for single-point howitzer and weapon system loads that have been certified for sling load. Each rigging procedure is found in a paragraph that includes a description of the load, materials required for rigging, and steps to complete the procedure. An applicability paragraph is also a part of each paragraph and identifies the certified loads. The certified single-point rigging procedures for truck and towed combination loads are in this section. Paragraphs 6-2 through 6-15 give detailed instructions for rigging loads.

NOTE: Reach Pendants may be used on all single point loads. A static discharge person is not required when using a Reach Pendant.

6-2. M101A1 105-MM Howitzer, with or without A-22 Cargo Bags

a. Applicability. The following items in Table 6-1 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 6-1. M101A1 105-MM Howitzer

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
M101A1 Howitzer	4,980	10K 15K 25K 40K	30/30 33/3 12/12 22/3	95
M101A1 Howitzer with one A-22 Cargo Bag	7,180	10K 15K 25K 40K	30/30 33/3 12/12 22/3	75
M101A1 Howitzer with two A-22 Cargo Bags	9,380	10K 15K 25K 40K	30/30 33/3 12/12 22/3	80
M101A1 Howitzer with three A-22 Cargo Bags	11,580	10K 15K 25K 40K	30/30 33/3 12/12 22/3	75

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000 or 25,000-pound capacity) (USA).

(2) Sling set (15,000 or 40,000-pound capacity) (USMC).

(3) Sling leg assembly (2,500-pound capacity) from a 10,000-pound sling set, one per A-22 container.

(4) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(5) Cord, nylon, Type III, 550-pound breaking strength.

(6) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(7) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable substitute.

(8) Tie-down strap, CGU/1B (as required).

(9) Bag, Cargo, A-22, as required.

(10) Apex fitting (10,000-pound capacity), one per A-22 container.

c. Personnel. Two persons can prepare and rig this load in 20 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Close and lock the breech.

(b) Close and secure the trails. Rotate the lunette to the down position. Secure the trail closing lock handle with Type III nylon cord or tape.

(c) Remove and secure the muzzle, breech, and tube covers.

(d) Pad or remove all sight mounts.

(e) Place the gun section equipment chest and other equipment on the trails and secure it with tie-down straps.

(f) Engage one hand brake.

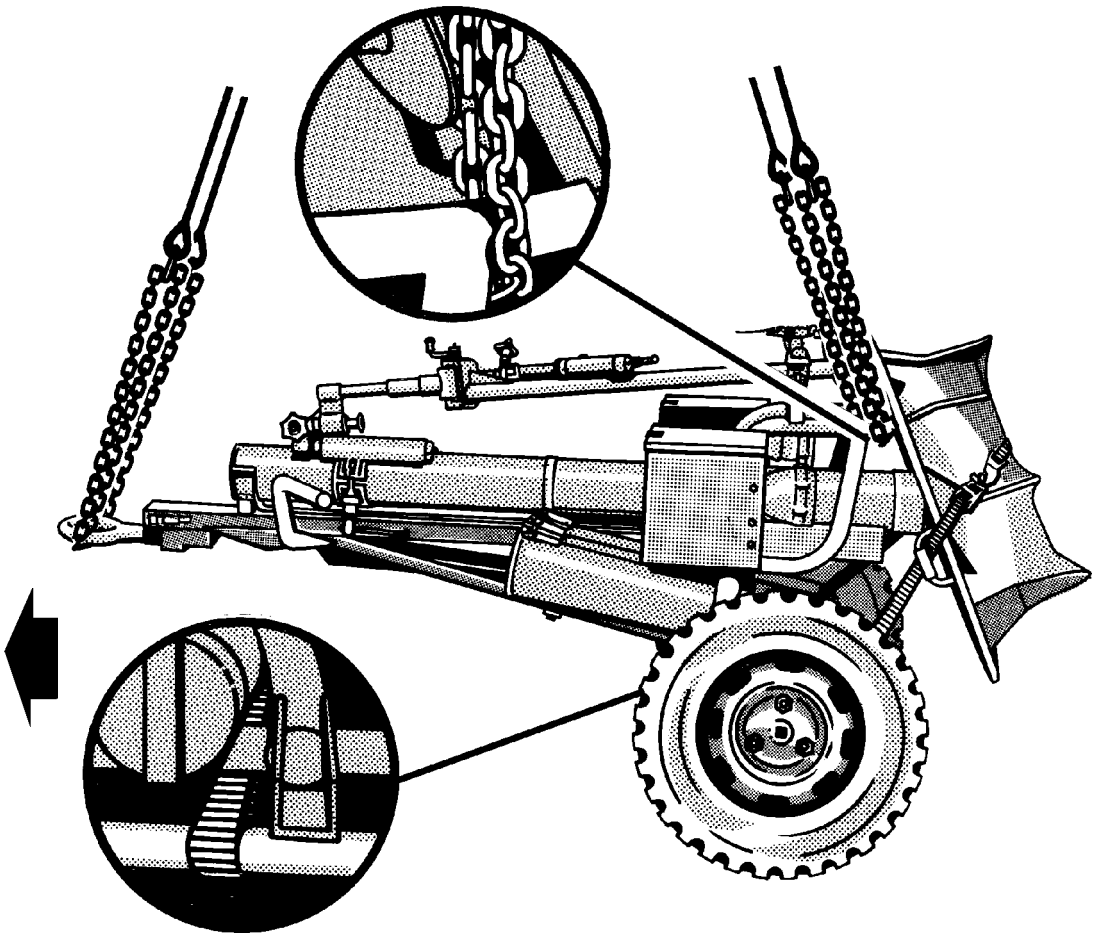
(g) Pad the gun tube above the cradle and around the forward edge of the recoil damper assembly. Secure the padding with tape or 1/4-inch cotton webbing.

(h) Pad the left and right trails aft of the traveling lock shaft area. Secure the padding with tape or 1/4-inch cotton webbing.

(2) Rigging. Rig the load according to the steps in Figure 6-1.

(3) Hookup. The hookup team stands on top of the trails or alongside the howitzer. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the helicopter but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the carriage. Route outer sling legs 1and 2 to the anchor points behind the base plate supports. Route inner sling legs 3 and 4 to the lunette. Sling legs 1 and 3 must be on the left side of the load. Sling legs 1 and 2 are on the rear of the load.

2. Route the chain end of sling leg 1 around the horizontal pipe on the left side of the carriage between the vertical pipe and the base plate. Place the correct link from Table 6-13 in the grab hook. Repeat with sling leg 2 and the right side of the carriage. Secure the excess chain with Type III nylon cord.

3. Route the chain end of sling leg 3 through the lunette. Place the correct link from Table 6-13 in the grab hook. Repeat with sling leg 4 on the lunette.

4. Cluster and tie or tape (breakaway technique) the grab hooks from sling legs 1 and 2 together on top of the bipod assembly and sling legs 3 and 4 together on top of the lunette to prevent entanglement during hookup and lift-off.

NOTE: Failure to use the proper breakaway technique in taping or tying the sling legs could result in damage to the load.

Figure 6-13. BMS-120 Battalion Mortar System

6-15. XM777, 155-mm, Lightweight Howitzer

a. Applicability. The following item in Table 6-14 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 6-14. XM777, 155-mm, Lightweight Howitzer

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
XM777, 155-mm, Lightweight Howitzer	9,300	15K	80/3	120

b. Materials. The following materials are required to rig this load:

(1) Sling set (15,000-pound capacity) with one additional web ring.

(a) Chain length, part number 34080-4, from a 15,000-pound capacity sling set (4 each).

(b) Coupling link, part number 31611, from a 15,000-pound capacity sling set (4 each).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 20 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Ensure the stabilizers are in the firing position.

(b) The spades may be in the up (stowed position) or down (firing position).

(c) Secure the air hoses and electrical cable to the supporting structure with Type III nylon cord.

(d) Stow and secure all equipment with tape or Type III nylon cord.

(e) Ensure the barrel is in the firing position.

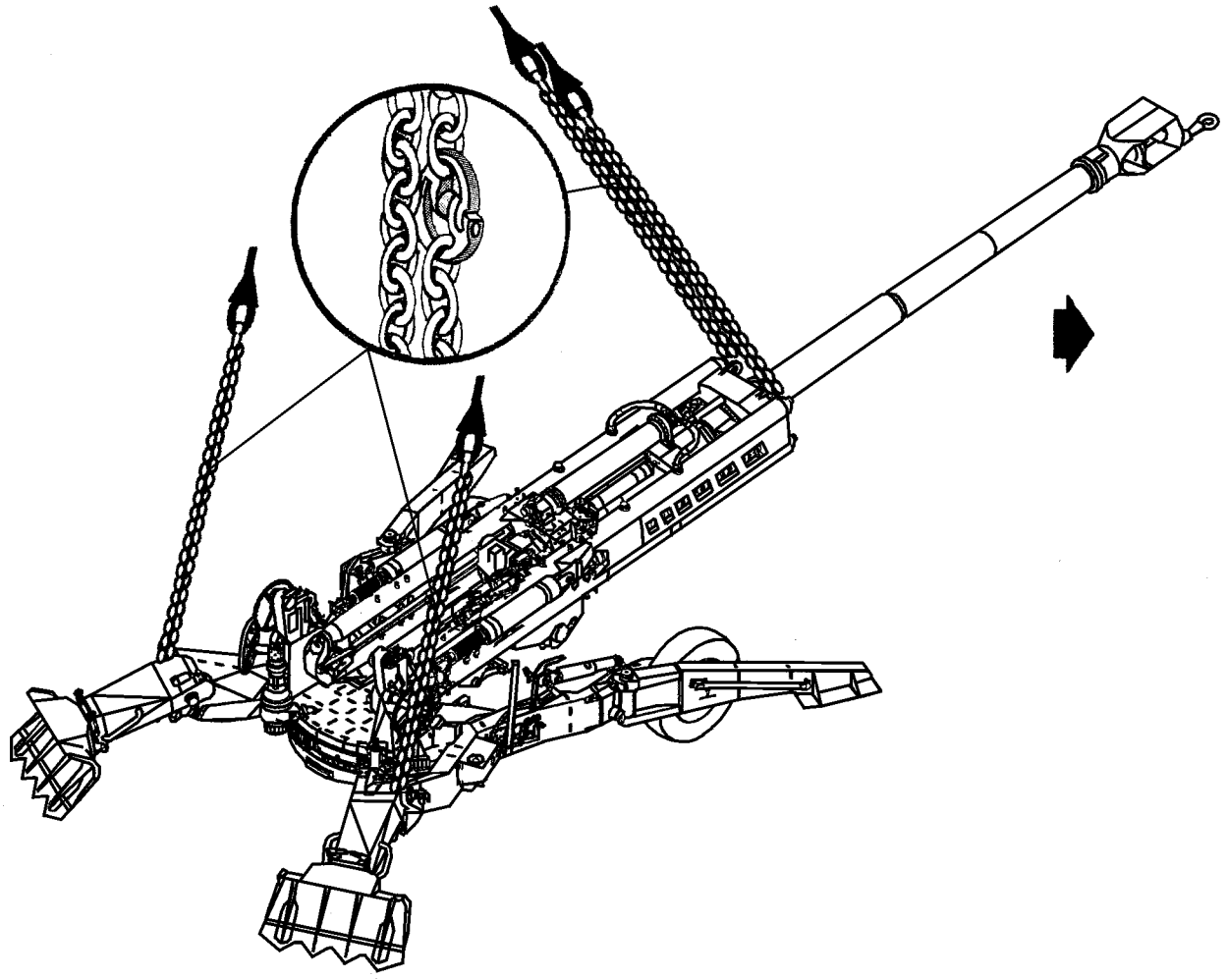
(f) Extend the sling leg chains by connecting one additional chain length to each chain on a 15,000-pound capacity sling set with coupling links.

(2) Rigging. Rig the load according to the steps in Figure 6-14.

(3) Hookup. The hookup team stands on top of the gun carriage. The static wand person discharges the static electricity with the static wand. The hookup person places the web ring onto the cargo hook. The hookup team then carefully dismounts the howitzer and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

NOTE: The helicopter must approach the howitzer over the spades.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the web ring on top of the forward end of the breech. Route outer sling legs 1 and 2 to the front of the howitzer and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision located on the left side of the barrel. Place the correct link from Table 6-14 in the grab hook. Repeat with sling leg 2 through the right front lift provision. Secure all excess chain with tape or Type III nylon cord.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the left side of the supporting frame near the left spade. Place the correct link from Table 6-14 in the grab hook. Repeat with sling leg 4 through the right rear lift provision.

4. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

Figure 6-14. XM777, 155-mm, Lightweight Howitzer

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CHAPTER 7

CERTIFIED SINGLE-POINT RIGGING PROCEDURES FOR GUIDED MISSILE SYSTEMS

7-1. INTRODUCTION

This chapter contains rigging procedures for single-point guided missile systems that have been certified for sling load. Each rigging procedure is found in a paragraph that includes a description of the load, materials required for rigging, and steps to complete the procedure. An applicability paragraph is also a part of each paragraph and identifies the certified loads. The certified single-point rigging procedures for guided missile systems are in this section. Paragraphs 7-2 through 7-9 give detailed instructions for rigging loads.

NOTE: Reach Pendants may be used on all single point loads. A static discharge person is not required when using a Reach Pendant.

7-2. M54A1/M54A2 Chaparral Launch Station

a. Applicability. The following items in Table 7-1 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 7-1. M54A1/M54A2 Chaparral Launch Station

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
M54A1 Launch Station	13,000	25K	10/3	100
M54A2 Launch Station	13,000	25K	10/3	100

b. Materials. The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 20 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Prepare the launch station for sling loading in accordance with TM 9-1425-2585-10-1.

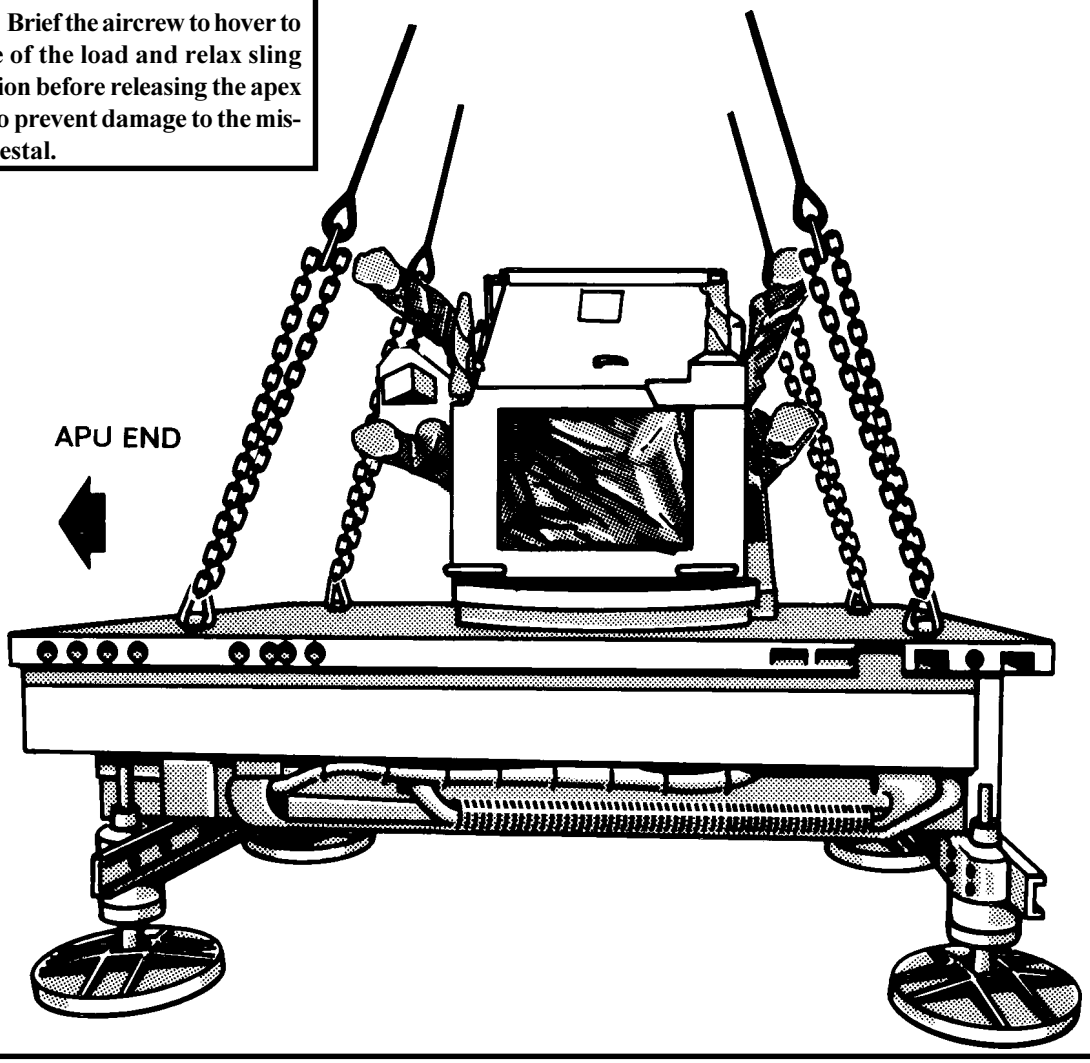
(b) Rotate the missile pedestal 90 degrees from the centerline to avoid sling interference.

(2) Rigging. Rig the load according to the steps in Figure 7-1.

(3) Hookup. The hookup team stands on the back of the gunner's compartment. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the helicopter but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).

NOTE: Brief the aircrew to hover to the side of the load and relax sling leg tension before releasing the apex fitting to prevent damage to the missile pedestal.



RIGGING STEPS

1. Position the apex fitting on top of the gunner's compartment. Route outer sling legs 1and 2 to the front of the load (main power unit end). Route inner sling legs 3 and 4 to the rear of the load. Sling legs 1 and 3 must be on the left side of the load.

2. Route the chain end of sling leg 1 through the left front lift provision located on the left front corner of the platform. Place the correct link from Table 7-1 in the grab hook. Repeat with sling leg 2 and the right front lift provision. Secure the excess chain with Type III nylon cord.

3. Route the chain end of sling leg 3 through the left rear lift provision located on the left rear corner of the platform. Place the correct link from Table 7-1 in the grab hook. Repeat with sling leg 4 on the right rear lift provision.

4. Cluster and tie or tape (breakaway technique) the sling legs together on top of the gunner's compartment to prevent entanglement during hookup and lift-off.

Figure 7-1. M54A1/M54A2 Chaparral Launch Station

7-9. Pedestal-Mounted Stinger on M1097/M1097A1/M1097A2 HMMWV (Avenger) with ECU/PPU and an Aluminum Airlift Bumper with or without Bustle Box Stowed on the Roof

a. Applicability. The following items in Table 7-8 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 7-8. Pedestal-Mounted Stinger (Avenger) with Aluminum Airlift Bumper

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Stinger, Pedestal-Mounted, with ECU/PPU on M1097 HMMWV (Avenger)	9,800	10K 15K	45/3 30/3	70
Stinger, Pedestal-Mounted, with ECU/PPU on M1097A1 HMMWV (Avenger)	9,800	10K 15K	45/3 30/3	70
Stinger, Pedestal-Mounted, with ECU/PPU on M1097A2 HMMWV (Avenger)	10,000 10,300 10,300	10K 15K 25K	45/3 30/3 35/3	70

CAUTION

These sling load rigging procedures are for Avengers that have the Aluminum Airlift Bumpers ONLY. Lift provisions on Steel Airlift Bumpers do not allow for adequate sling clearance.

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

(a) Chain length, part number 38850-00053-101, from a 10,000-pound capacity sling set (4 each).

(b) Coupling link, part number 577-0415, from a 10,000-pound sling set (4 each).

or

(2) Multileg sling set (15,000-pound capacity).

(a) Chain length, part number 34080-4 from a 15,000-pound capacity sling set (8 each).

(b) Coupling link, part number 31611, from a 15,000-pound sling set (8 each).

(3) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(4) Cord, nylon, Type III, 550-pound breaking strength.

(5) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(6) Strap, cargo, tiedown, CGU-1/B (2 each, or more as required to secure cargo).

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Fold the mirrors inward and tie together with Type III nylon cord.

(b) Ensure the Avenger fire unit is secured to the truck. Secure all equipment inside the fire unit with tape, tiedown straps, or Type III nylon cord; close and secure the door.

(c) Disconnect the standard vehicle mounted launcher connectors from the missile pods and secure them to the fire unit with tape or Type III nylon cord.

(d) Secure all equipment inside the vehicle with tape, Type III nylon cord, or tiedown straps. Roll up the windows. Close and secure the doors (if installed).

(e) Ensure the fuel tank is not over 3/4 full. Inspect the fuel tank, oil filter, and battery caps for proper installation.

(f) Place the transmission in neutral and set the parking brake.

(g) Ensure the front wheels are pointed straight ahead. Secure the steering wheel using the securing device attached under the dashboard or Type III nylon cord.

(h) Secure the bustle box to the box rack on the roof of the vehicle CGU-1/B tiedown straps (if needed).

(i) Tape the zippers on the missle pod covers (if applicable).

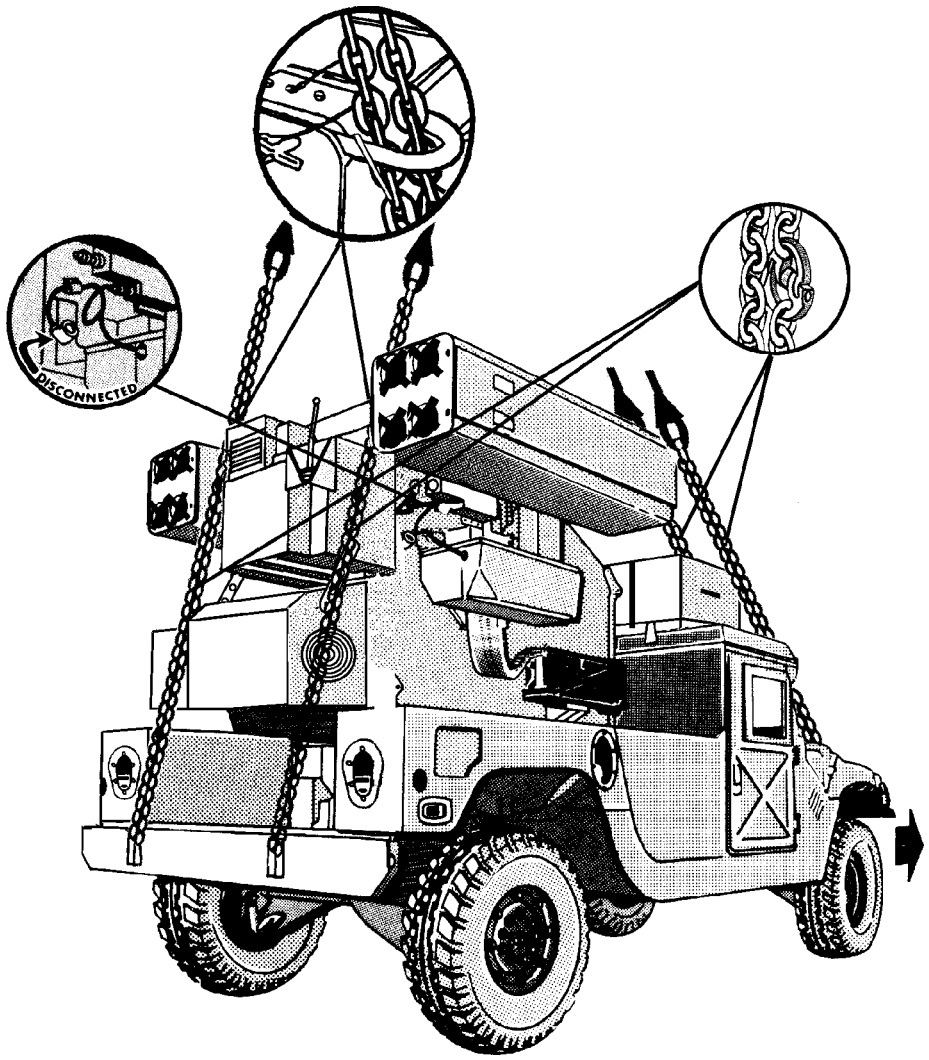
(j) Extend the sling leg chains by connecting one additional chain length to each chain on a 10,000-pound capacity sling set with coupling links and two chain lengths to each chain on a 15,000-pound capacity sling set with coupling links.

(2) Rigging. Rig the load according to the steps in Figure 7-8.

NOTE: Hookup of this load presents substantial risk of damage to the load or injury to the hookup personnel. Use of a reach pendant is recommended for this load.

(3) Hookup. The hookup team stands on top of the fire unit. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the helicopter but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the fire unit. Route outer sling legs 1and 2 to the front of the vehicle and inner sling legs 3 and 4 to the rear of the load. Ensure sling legs 1 and 3 are on the left side of the load.

2. Route the chain end of sling leg 1 through the left front lift provision that protrudes through the hood. Place the correct link from Table 7-8 in the grab hook. Repeat with sling leg 2 on the right front lift provision. Secure the excess chain with Type III nylon cord.

3. Route the chain end of sling leg 3 through the left rear sling guide. Loop the chain through the left rear lift provision located on the rear bumper. Route the chain back through the left sling guide. Place the correct link from Table 7-8 in the grab hook. Pull the chains tight and secure both sides of the chain to the sling guide with Type III nylon cord. Repeat with sling leg 4 using the right rear lift provision and sling guide.

4. Cluster and tie or tape (breakaway technique) the sling legs together on top of the fire unit to prevent entanglement during hookup and lift-off.

Figure 7-8. Pedestal-Mounted Stinger on M1097/M1097A1/M1097A2 HMMWV (Avenger) with ECU/PPU and an Aluminum Airlift Bumper with or without Bustle Box Stowed on the Roof

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CHAPTER 8

CERTIFIED SINGLE-POINT RIGGING PROCEDURES FOR ENGINEER EQUIPMENT

8-1. INTRODUCTION

This chapter contains rigging procedures for single-point lift of engineer equipment that has been certified for sling load. Each rigging procedure is found in a paragraph that includes a description of the load, materials required for rigging, and steps to complete the procedure. An applicability paragraph is also a part of each paragraph and identifies the certified loads. The certified single-point rigging procedures for engineer equipment are in this section. Paragraphs 8-2 through 8-41 give detailed instructions for rigging loads.

NOTE: Reach Pendants may be used on all single point loads. A static discharge person is not required when using a Reach Pendant.

8-2. T-3 Tractor, Crawler

a. Applicability. The following items in Table 8-1 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 8-1. T-3 Tractor, Crawler

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	RECOMMENDED AIRSPEED (KNOTS)
Tractor, Full-Tracked, JD550 with Roll Over Protection System (ROPS), Towing Winch and Hydraulic Angle Blade	16,662	25K	10/20	90

b. Materials. The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable substitute.

c. Personnel. Two persons can prepare and rig this load in 10 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Secure the operator's seat cushion to the seat frame with tape or Type III nylon cord.

(b) Remove both canopy lights, wrap in padding, and store in the toolbox.

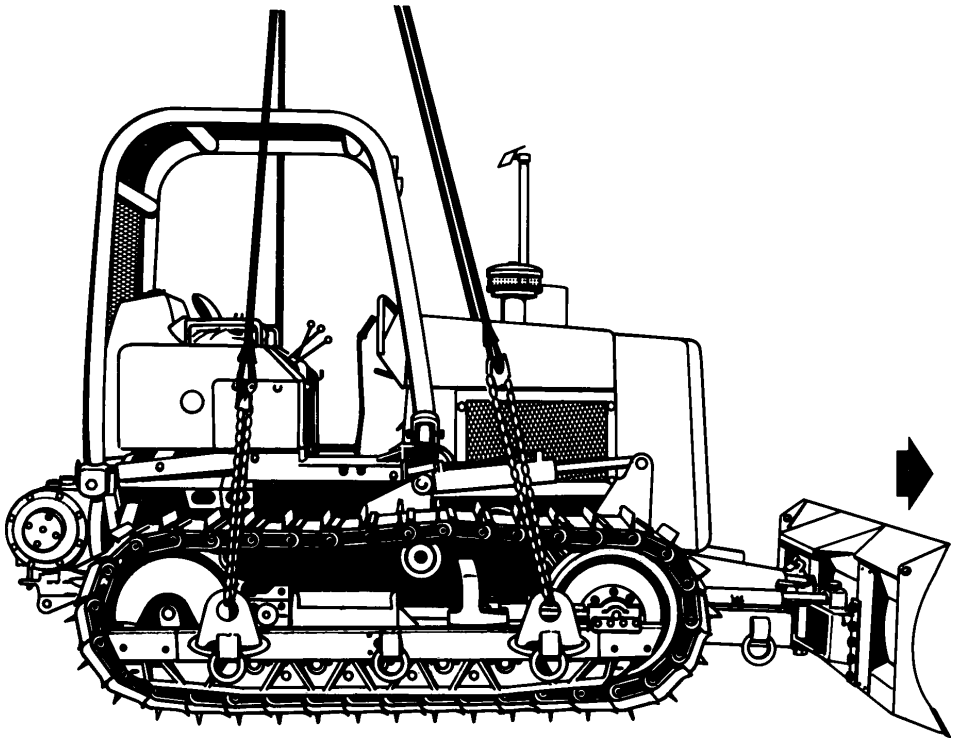
(c) Secure all loose covers and panels with tape.

(d) Place the transmission in neutral and start the engine. Raise the blade 12 inches above the ground and align the blade at a 90 degree angle to the tractor. Turn the engine off and tape the ignition key in place.

(2) Rigging. Rig the load according to the steps in Figure 8-1.

(3) Hookup. The hookup team stands on the engine cowl in front of the ROPS. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the load but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the ROPS. Route outer sling legs 1and 2 to the front of the load. Route inner sling legs 3 and 4 to the rear of the load. Sling legs 1 and 3 must be on the left side of the load.

2. Route the chain end of sling leg 1 through the left front lift provision located just aft of the front of the left track. Place the correct link from Table 8-1 in the grab hook. Repeat with sling leg 2 and the right front lift provision located on the right track. Secure the excess chain with Type III nylon cord.

3. Route the chain end of sling leg 3 through the left rear lift provision located forward of the left track rear wheel. Place the correct link from Table 8-1 in the grab hook. Repeat with sling leg 4 on the right rear lift provision located on the right track.

4. Cluster and tie or tape (breakaway technique) the sling legs together on top of the crew compartment to prevent entanglement during hookup and lift-off.

Figure 8-1. T-3 Tractor, Crawler

8-25.1. Extendable Boom Forklift (EBFL) (New Version)

a. Applicability. The following item in Table 8-24.1is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 8-24.1. Extendable Boom Forklift (EBFL) (New Version)

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Extendable Boom Forklift	28,400	40K	3/48 Cab Side 3/50 Boom Side	110

b. Materials. The following materials are required to rig this load:

(1) Sling set (40,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Tiedown strap, cargo, CGU-1/B (as required).

c. Personnel. Two persons can prepare and rig this load in 10 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Secure the forks against the carriage using the CGU-1/Bs.

(b) Set the parking brake.

(c) Place the gear selector lever in neutral.

(d) Tape the exhaust pipe end.

(e) Lower the boom and tilt the forks all the way back.

(f) Secure all latches on the windows with tape or Type III nylon cord.

(g) Tape the windshield wipers to the windshield.

(h) Tape all lights and mirrors.

(i) Secure all equipment in the cab with tape or Type III nylon cord.

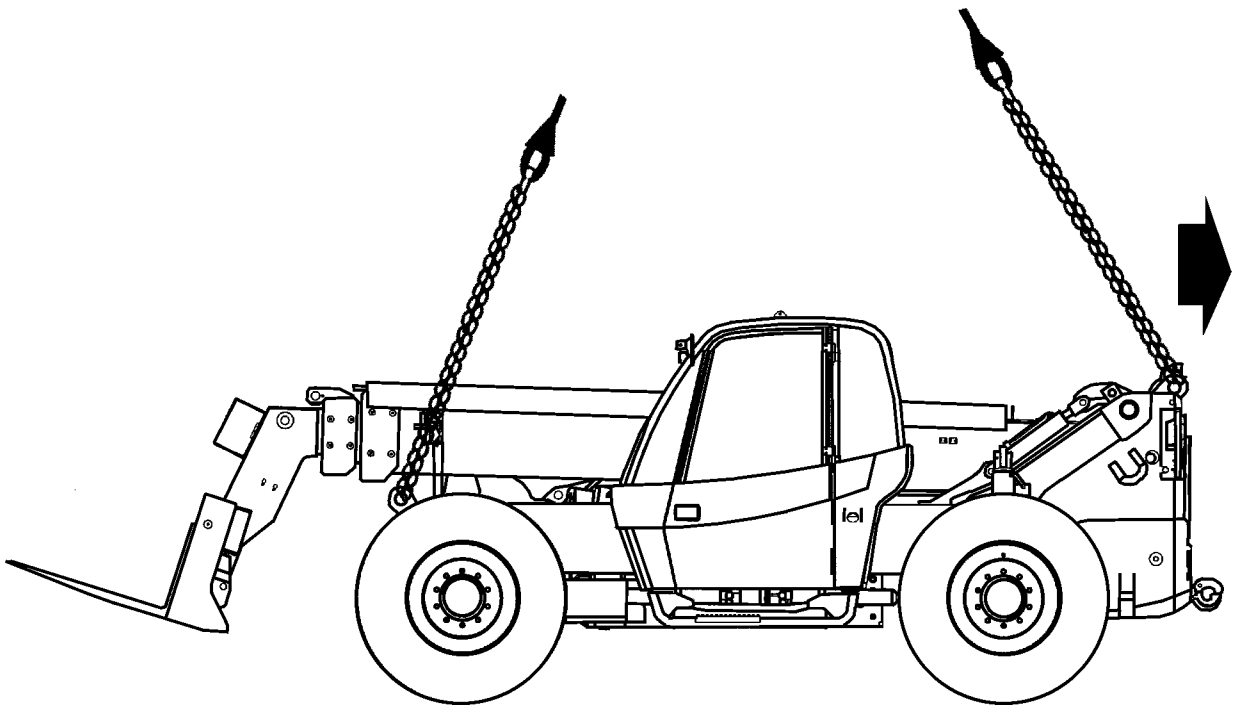
(j) Ensure the wheels are pointed straight ahead and secure the steering wheel with Type III nylon cord.

(k) Secure the engine cover with Type III nylon cord.

(2) Rigging. Rig the load according to the steps in Figure 8-24.1.

(3) Hookup. The hookup team stands on the side of the load. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the load but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the vehicle. Route outer sling legs 1 and 2 to the front of the EBFL and inner sling legs 3 and 4 to the rear of the EBFL. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision. Place the correct link from Table 8-24.1 in the grab hook. Repeat with sling leg 2 and the right front lift provision.

3. Loop the chain end of sling leg 3 through the left rear lift provision. Place the correct link from Table 8-24.1 in the grab hook. Repeat with sling leg 4 and the right rear lift provision. Secure excess chain with tape or Type III nylon cord.

4. Cluster and tie or tape (breakaway technique) all sling legs together on top of the vehicle to prevent entanglement during hookup and lift-off.

Figure 8-24.1. Extendable Boom Forklift (EBFL) (New Version)

8-25.2. Light Rough Terrain Forklift (LRTF)

a. Applicability. The following item in Table 8-24.2 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 8-24.2. Light Rough Terrain Forklift

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Light Rough Terrain Forklift	13,700	15K	25/3 Cab Side 30/3 Boom Side	110

b. Materials. The following materials are required to rig this load:

(1) Multileg sling set (15,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Tiedown strap, cargo, CGU-1/B (as required).

c. Personnel. Two persons can prepare and rig each load in 10 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Slide and secure the forks together in the middle of the carriage using CGU-1/Bs.

(b) Set the parking brake.

(c) Place the gear selector lever in neutral.

(d) Tape the exhaust pipe end.

(e) Secure all latches on the windows with tape or Type III nylon cord.

(f) Tape the windshield wipers to the windshield.

(g) Tape all lights and mirrors.

(h) Secure all equipment in the cab with tape or Type III nylon cord.

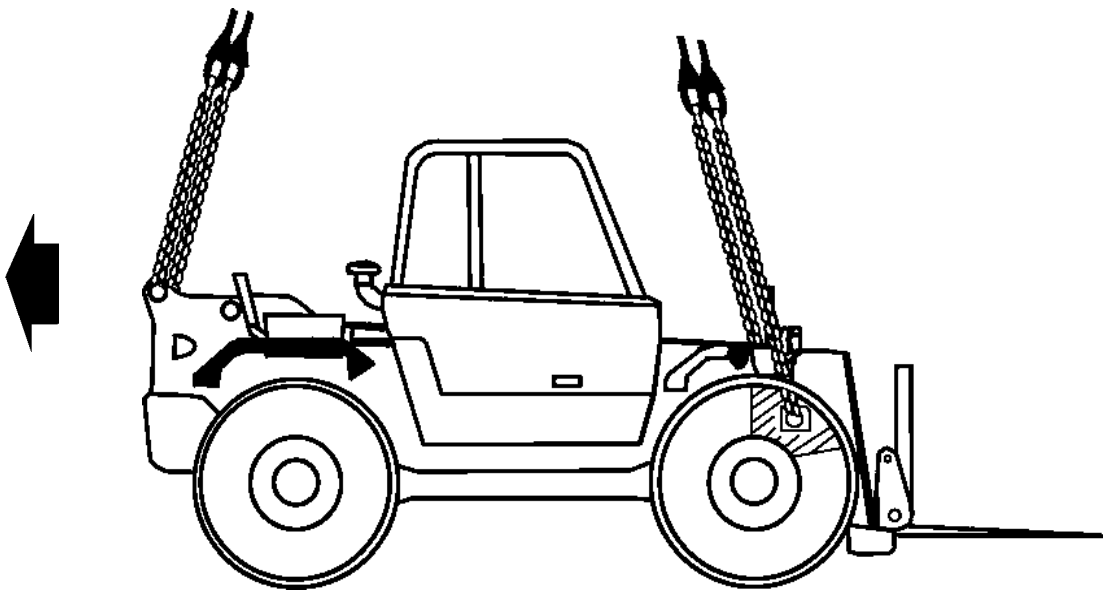
(i) Ensure the wheels are pointed straight ahead and secure the steering wheel with Type III nylon cord.

(j) Secure the engine cover with Type III nylon cord.

(2) Rigging. Rig the load according to the steps in Figure 8-24.2.

(3) Hookup. The hookup team stands on the side of the load. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the load but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the vehicle. Route outer sling legs 1 and 2 to the front of the EBFL and inner sling legs 3 and 4 to the rear of the EBFL. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision. Place the correct link from Table 8-24.2 in the grab hook. Repeat with sling leg 2 and the right front lift provision.

3. Loop the chain end of sling leg 3 through the left rear lift provision. Place the correct link from Table 8-24.2 in the grab hook. Repeat with sling leg 4 and the right rear lift provision. Secure excess chain with tape or Type III nylon cord.

4. Cluster and tie or tape (breakaway technique) all sling legs together on top of the vehicle to prevent entanglement during hookup and lift-off.

Figure 8-24.2. Light Rough Terrain Forklift

8-41. Bobcat 863 Skid-Steer Loader

a. Applicability. The following items in Table 8-40 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 8-40. Bobcat 863 Skid-Steer Loader

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Bobcat 863 Skid-Steer Loader with Construction and Industrial Bucket	6,870	25K	5/10	100
Bobcat 863 Skid-Steer Loader with Construction and Industrial Bucket and Tracks	7,720	25K	5/10	100
Bobcat 863 Skid-Steer Loader with Pallet Forks	7,235	25K	5/10	100
Bobcat 863 Skid-Steer Loader with Pallet Forks and Tracks	8,085	25K	5/10	100
Bobcat 863 Skid-Steer Loader with 36-inch Auger Bit	7,690	25K	5/10	100
Bobcat 863 Skid-Steer Loader with 36-inch Auger Bit and Tracks	8,540	25K	5/10	100
Bobcat 863 Skid-Steer Loader with Dozer Blade	7,770	25K	5/10	100
Bobcat 863 Skid-Steer Loader with Dozer Blade and Tracks	8,620	25K	5/10	100
Bobcat 863 Skid-Steer Loader with Angle Broom	7,910	25K	5/10	100
Bobcat 863 Skid-Steer Loader with Angle Broom and Tracks	8,760	25K	5/10	100

b. Materials. The following materials are required to rig this load:

(1) Sling set (25,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Tiedown strap, cargo, CGU-1/B (as required).

c. Personnel. Two persons can prepare and rig each load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Adjust the boom arm and attachment angles:

1. Tilt the construction and industrial bucket, pallet forks, dozer blade, or angle broom all the way up and lower the boom all the way down.

2. Tilt the 36-inch auger all the way up and adjust the boom height so the auger point is 8-12 inches off the ground.

(b) Secure the 36-inch auger bit and angle broom with CGU-1/B cargo tiedown straps as follows:

1. Swing the 36-inch auger bit all the way to the left and secure with a CGU-1/B cargo tiedown strap. Route the strap around the point of the bit and around the boom arm above the attachment connection. Tighten the strap (see insert Figure 8-40).

2. Route a CGU-1/B cargo tiedown stap around the left side of the angle broom and around the boom arm above the attachment connection. Repeat the above procedures on the right side. Tighten the straps.

(c) Detach any attachment hydraulic hoses and cover the ends with tape.

(d) Secure each control arm lever to the side of the roll over protection system (ROPS) with Type III nylon cord.

(e) Tie the rear lift provisions to the ROPS in the up position with Type III nylon cord.

(f) Ensure the fuel tank is not over 3/4 full. Inspect the fuel tank cap for proper installation.

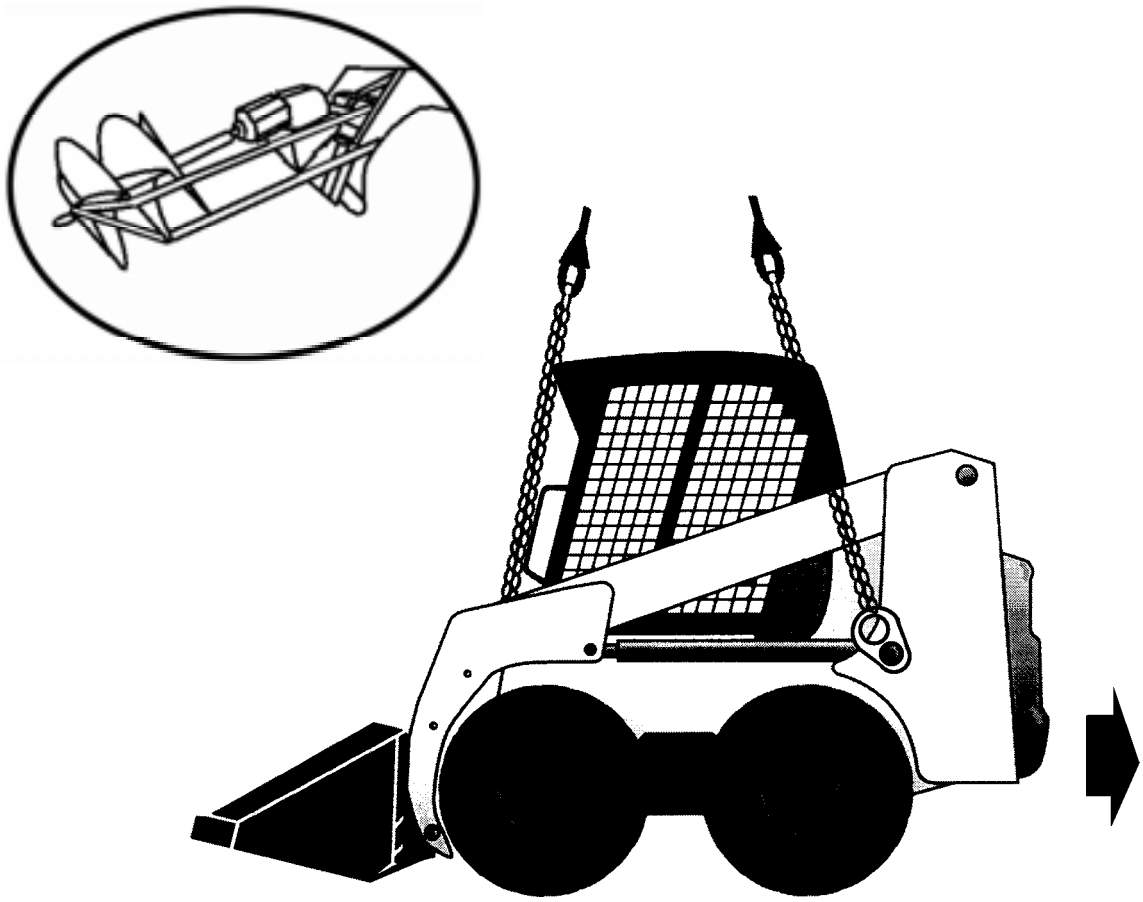
(g) Tape all windows, lights and reflectors.

(h) Tape the end of the exhaust pipe.

(2) Rigging. Rig the load according to the steps in Figure 8-40.

(3) Hookup. The hookup team stands on the rear of the load directly behind the ROPS. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the load but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the ROPS. Route outer sling legs 1 and 2 to the front of the vehicle and inner sling legs 3 and 4 to the rear of the vehicle. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision. Place the correct link from Table 8-40 in the grab hook. Repeat with sling leg 2 and the right front lift provision.

3. Loop the chain end of sling leg 3 through the left rear lift provision. Place the correct link from Table 8-40 in the grab hook. Repeat with sling leg 4 and the right rear lift provision. Secure excess chain with tape or Type III nylon cord.

4. Tie the grabhooks from the rear sling legs to the side of the ROPS with Type I, 1/4-inch cotton webbing.

5. Cluster and tie or tape (breakaway technique) all sling legs together on top of the vehicle to prevent entanglement during hookup and lift-off.

Figure 8-40. Bobcat 863 Skid-Steer Loader

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CHAPTER 11

CERTIFIED SINGLE-POINT RIGGING PROCEDURES FOR CONTAINERS

11-1. Introduction

This chapter contains rigging procedures for single-point lift of containers that have been certified for sling load. Each rigging procedure is found in a paragraph that includes a description of the load, materials required for rigging, and steps to complete the procedure. An applicability paragraph is also a part of each paragraph and identifies the certified loads. The certified single-point rigging procedures for containers are in this section. Paragraphs 11-2 through 11-12 give detailed instructions for rigging loads.

NOTE: Reach Pendants may be used on all single point loads. A static discharge person is not required when using a Reach Pendant.

11-2. Pershing II in Container

a. Applicability. The following items in Table 11-1 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 11-1. Pershing II in Container

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
Pershing II First Stage Section	14,410	25K	3/20	90
Pershing II Second Stage Section	10,158	25K	3/13	110
Pershing II Guidance and Control Adapter Section	3,500	10K	3/14	100
Pershing II Radar Section	1,708	10K	3/3	70

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000- or 25,000-pound capacity) (as required).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 10 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Ensure the container cover is securely fastened.

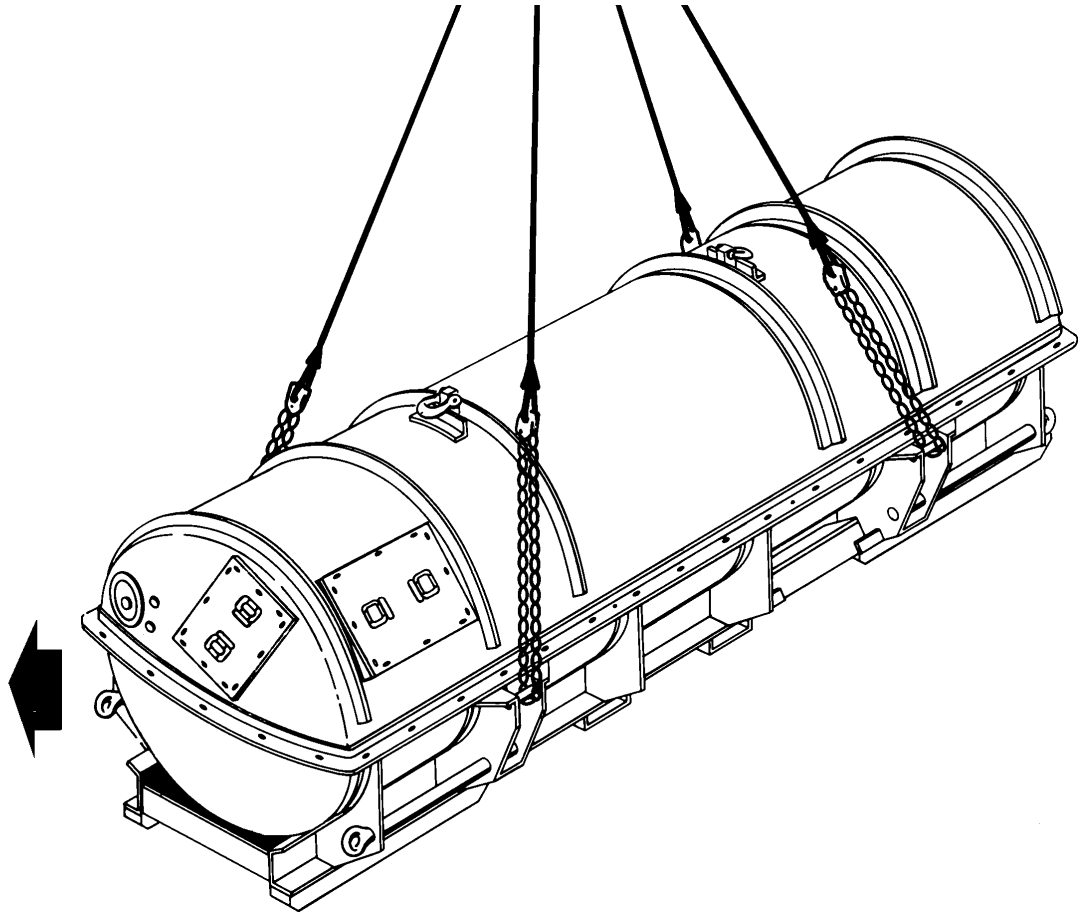
(b) Ensure the container skids and lift handles are serviceable.

(2) Rigging. Rig the load according to the steps in Figure 11-1.

(3) Hookup. The hookup team stands on top of the container. The static wand person discharges the static

electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the load but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position apex fitting on top of the container. Route outer sling legs 1 and 2 to the front of the container and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift handle. Place the correct link from Table 11-1 in the grab hook. Repeat with sling leg 2 on the right front lift provision.

3. Loop the chain end of sling leg 3 through the left rear lift handle. Place the correct link from Table 11-1 in the grab hook. Repeat with sling leg 4 on the right rear lift provision. Secure the excess chain with tape or Type III nylon cord.

4. Cluster and tie or tape (breakaway technique) all sling legs together on top of the container to prevent entanglement during hookup and lift-off.

Figure 11-1. Pershing II in Container

11-3. Shipping/Storage Containers

a. Applicability. The following items in Table 11-2 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 11-2. Shipping/Storage Containers

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
ISU-60 (Loaded)	11,650	25K	3/3	80
ISU-90 (Loaded)	11,900	25K	3/3	105
ISU-90 (Empty)	1,900	10K	3/3	65
ISU-60 with Jump Forward Arming and Refueling Point (FARP), Advanced Aviation Forward Area Refueling System (AAFARS)	4,000	10K	3/3	80

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000- or 25,000-pound capacity) (as required).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 10 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

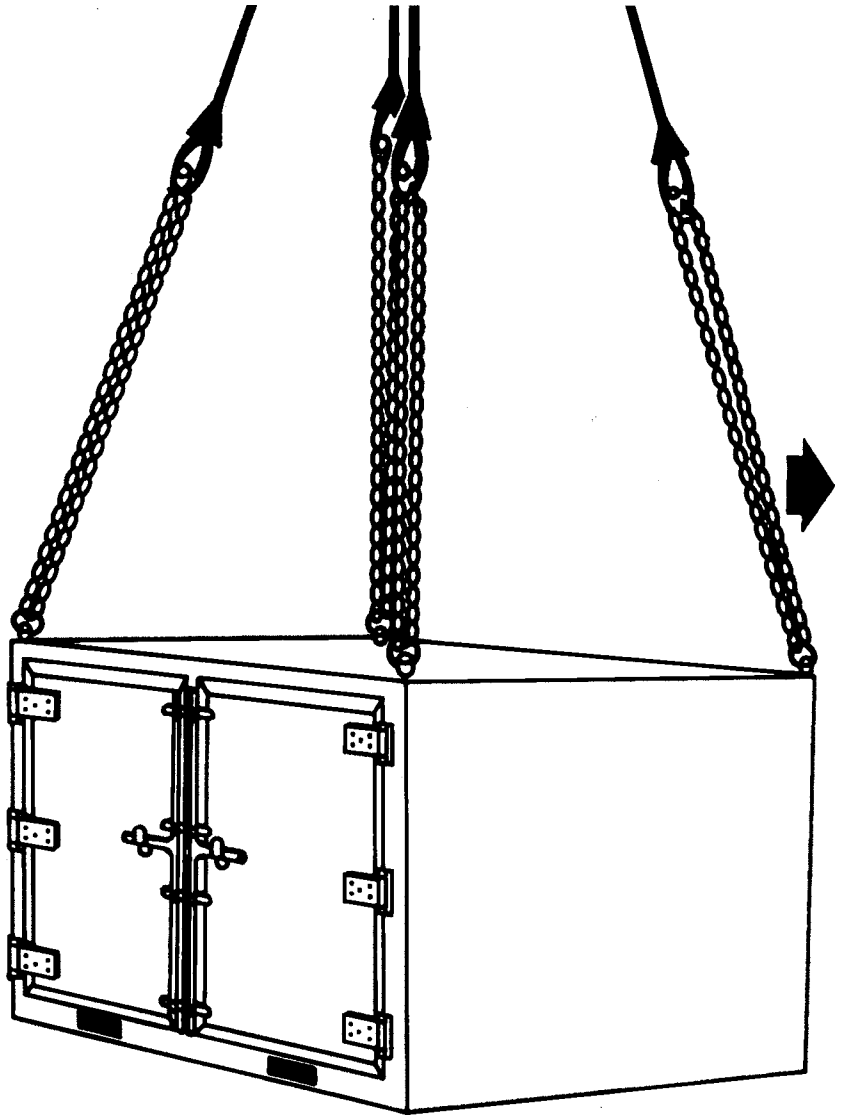
(a) Secure all cargo inside the container.

(b) Secure all doors in the secured and locked position.

(2) Rigging. Rig the load according to the steps in Figure 11-2

(3) Hookup. The hookup team stands on top of the container. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the load but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on the roof of the container. Route outer sling legs 1 and 2 to the front of the container and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision. Place the correct link from Table 11-2 in the grab hook. Repeat with sling leg 2 through the right front lift provision.

3. Loop the chain end of sling leg 3 through the left rear lift provision. Place the correct link from Table 11-2 in the grab hook. Repeat with sling leg 4 through the right rear lift provision.

4. Cluster and tie or tape (breakaway technique) all sling legs together on top of the container to prevent entanglement during hookup and lift-off.

Figure 11-2. Shipping/Storage Containers

11-12. Quadcons

a. Applicability. The following items in Table 11-11 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 11-11. Quadcons

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
One (1) Quadcon, Empty	1,764	10K	3/3	100
One (1) Quadcon, Loaded	7,000	10K	3/3	100
Two (2) Quadcons, Empty	3,528	10K	3/3	90
Two (2) Quadcons, Loaded	10,000 14,000	10K 25K	3/3	100

WARNING

WEIGHT IS RESTRICTED TO 7,000 POUNDS IN EACH QUADCON FOR SLING LOAD OPERATIONS. QUADCONS MUST BE CENTRALLY LOADED. ENSURE QUADCONS ARE LOADED TO SIMILAR WEIGHTS FOR MULTIPLE QUADCON CONFIGURATIONS. OFF CENTER LOADING OR OVERLOADING MAY RESULT IN ADVERSE FLIGHT CONDITIONS OR DAMAGE TO THE LOAD.

NOTE: Recommended airspeed will vary based on load configuration and the weight of the load inside the Quadcons.

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000- or 25,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

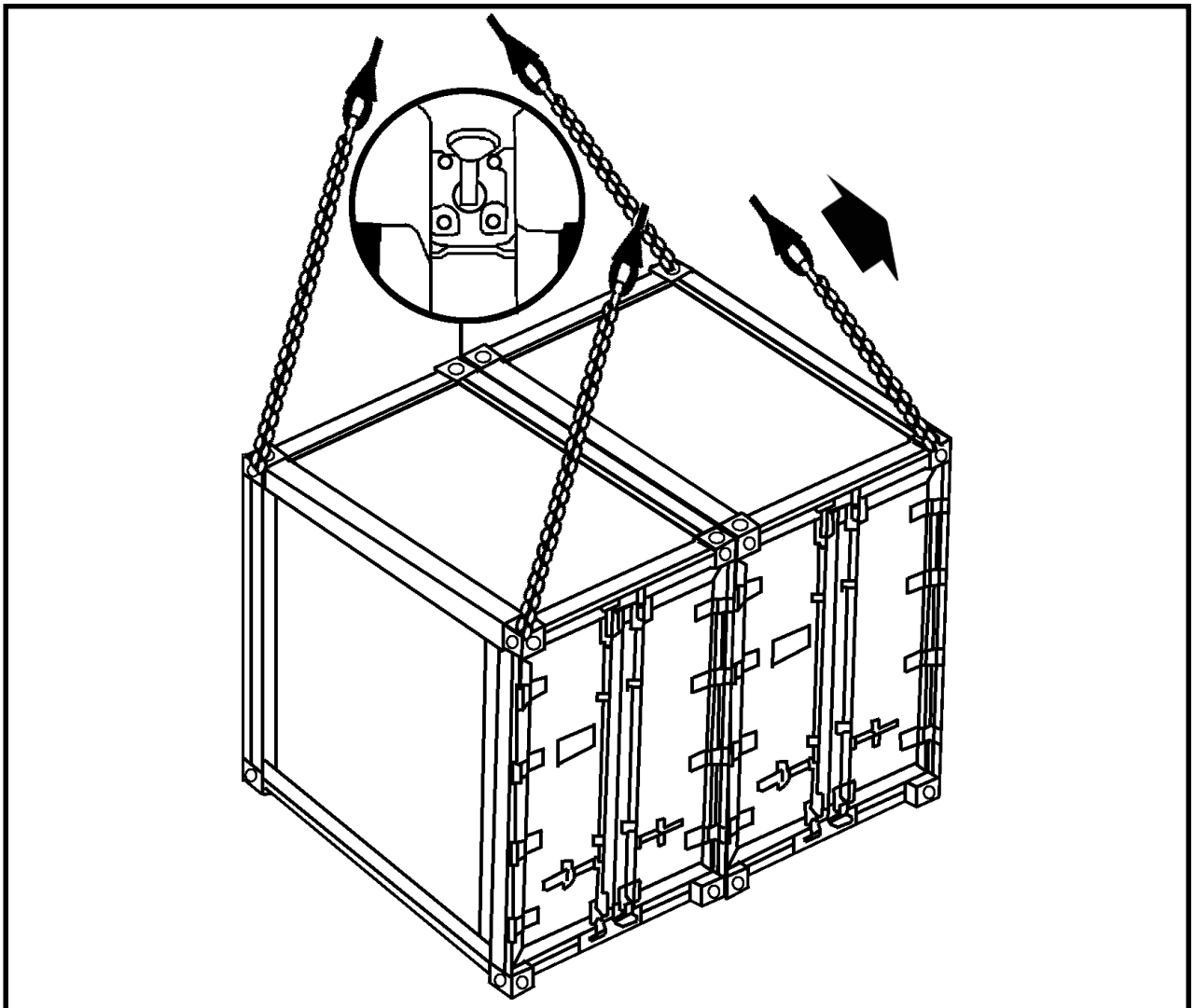
(a) Connect the Quadcons together using the manufacture' s approved rigid connecting link (Part No. Sealock 1046). Lock all connecting links and wrap with tape.

(b) Secure all cargo inside the container. Close and secure all doors in the locked position.

(2) Rigging. Rig the load according to the steps in Figure 11-11.

(3) Hookup. The hookup team stands on top of the container. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the load but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on the roof of the container. Route outer sling legs 1 and 2 to the front of the container and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 must be on the left side of the load.

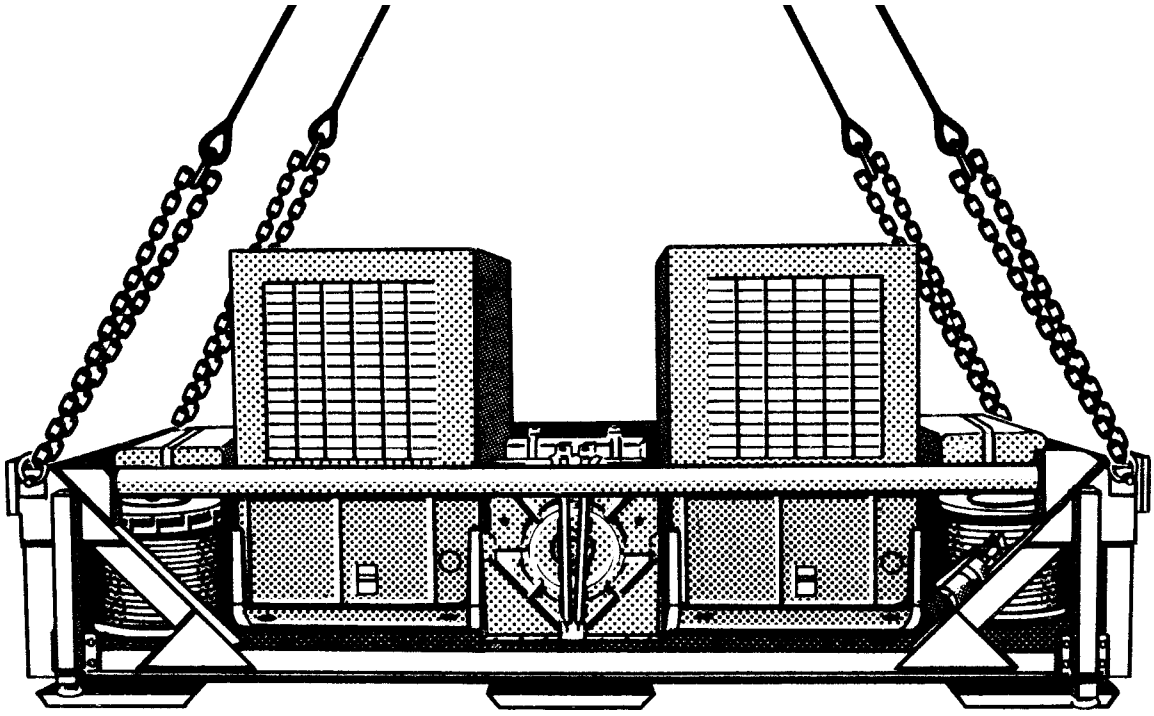
2. Loop the chain end of sling leg 1 through the left front lift provision located on the left front corner of the container . Place the correct link from Table 11-11 in the grab hook. Repeat with sling leg 2 through the right front lift provision.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the left rear corner of the container. Place the correct link from Table 11-11 in the grab hook. Repeat with sling leg 4 through the right rear lift provision.

4. Secure all excess chain with tape or Type III nylon cord.

5. Cluster and tie or tape (breakaway technique) all sling legs together on top of the container to prevent entanglement during hookup and lift-off.

Figure 11-11. Quadcons



RIGGING STEPS

1. Position apex fitting on top of the generators. Route outer sling legs 1 and 2 to the front of the pallet and inner sling legs 3 and 4 to the rear. Sling legs 1 and 3 should be on the left side of the load.

NOTE: Do not use the lift provisions on the generators.

2. Loop the chain end of sling leg 1 through the left front lift provision located on the pallet. Place the correct link from Table 13-5 in the grab hook. Repeat with sling leg 2 on the right front lift ring.

3. Loop the chain end of sling leg 3 through the left rear lift provision. Place the correct link from Table 13-5 in the grab hook. Repeat with sling leg 4 on the right rear lift ring.

4. Cluster and tie or tape (breakaway technique) all sling legs together on top of the unit to prevent entanglement during hookup and lift-off.

Figure 13-5. NATO Air Base Satcom (NABS) Power Pallet AN/TSC-85(V)2

13-7. Skid Mounted Tactical Quiet Generator Sets

a. Applicability. The following items in Table 13-6 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 13-6. Skid Mounted Tactical Quiet Generator Sets

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
MEP831, 3KW, 60HZ Generator Set	325	10K	3/3	80
MEP802A, 5KW, 60HZ Generator Set	890	10K	3/3	50
MEP812A, 5KW, 400HZ Generator Set	900	10K	3/3	50
MEP803A, 10KW, 60HZ Generator Set	1,180	10K	3/3	50
MEP813A, 10KW, 400HZ Generator Set	1,280	10K	3/3	50
MEP804A, 15KW, 50/60HZ Generator Set	2,125	10K	3/3	70
MEP814A, 15KW, 400HZ Generator Set	2,240	10K	3/3	70
MEP805A, 30KW, 50/60HZ Generator Set	3,005	10K	3/3	70
MEP805B, 30KW, 50/60HZ Generator Set	3,040	10K	3/3	70
MEP815A, 30KW, 400HZ Generator Set	3,015	10K	3/3	70
MEP815B, 30KW, 400HZ Generator Set	3,060	10K	3/3	70
MEP806A, 60KW, 50/60HZ Generator Set	3,760	10K	3/3	80
MEP806B, 60KW, 50/60HZ Generator Set	4,042	10K	3/3	80
MEP816A, 60KW, 400HZ Generator Set	3,850	10K	3/3	80
MEP816B, 60KW, 400HZ Generator Set	4,240	10K	3/3	80

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable substitute.

c. Personnel. Two persons can prepare and rig this load in 20 minutes.

d. Procedures. The following procedures apply to this load:

CHAPTER 14

CERTIFIED SINGLE-POINT RIGGING PROCEDURES FOR MISCELLANEOUS EQUIPMENT

14-1. Introduction

This chapter contains rigging procedures for single-point lift of miscellaneous equipment that has been certified for sling load. Each rigging procedure is found in a paragraph that includes a description of the load, materials required for rigging, and steps to complete the procedure. An applicability paragraph is also a part of each paragraph and identifies the certified loads. The certified single-point rigging procedures for miscellaneous equipment are in this section. Paragraphs 14-2 through 14-9 give detailed instructions for rigging loads.

NOTE: Reach Pendants may be used on all single point loads. A static discharge person is not required when using a Reach Pendant.

14-2. Forward Area Refueling Equipment (FARE)

a. Applicability. The following item in Table 14-1 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 14-1. Forward Area Refueling Equipment (FARE)

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/REAR	RECOMMENDED AIRSPEED (KNOTS)
Generator, 1.5KW, Fuel Hoses with Reels and Carrying Bags (2 each), Assembly Pump, Fire Extinguishers (3 each)	820	5K Cargo Net	N/A	60

b. Materials. The following materials are required to rig this load:

(1) Net, cargo (5,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Tiedown strap, cargo, CGU-1/B (4 each).

(6) Webbing, nylon, tubular, 1/2-inch, 1000-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 15 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Secure the two fire extinguishers to the inside frame of the fuel hose reels with 1/2-inch tubular nylon webbing. Secure the two fuel hose reels together with Type III nylon cord.

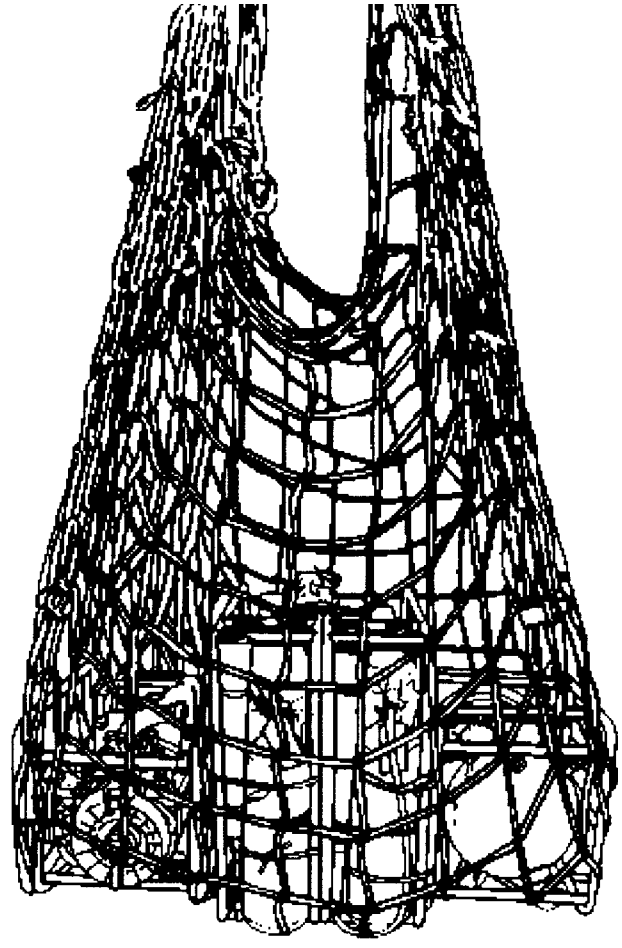
(b) Spread a 5,000-pound capacity cargo net on the ground. Center the two fuel hose reels on the net. Place the pump assembly on either side of the reels. Place the

1.5KW generator, with 5-gallon gas can attached, on the opposite side of the reels. Place fuel hose carrying bags in front of the reels. Secure the two carrying bags with the remaining fire extinguisher together with Type III nylon cord. Secure the carrying bag to the reels.

(2) Rigging. Rig the load according to the steps in Figure 14-1.

(3) Hookup. The hookup team stands along side the load. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the aircraft cargo hook. The hookup team then moves clear of the load but remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Inspect the net in accordance with FM 10-450-3.

2. Prepare and rig the net in accordance with FM 10-450-3.

Figure 14-1. Forward Area Refueling Equipment (FARE)

14-8. Container Roll-in/out Platform (CROP), Two Empty Platforms, Stacked

a. Applicability. The following item in Table 14-7 is certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 14-7. Container Roll-in/out Platform (CROP), Two Empty Platforms, Stacked

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Two CROPs, Empty, Stacked	7,300	10K	30/3	110

b. Materials. The following materials are required to rig this load:

(1) Sling set (10,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

(5) Felt sheet, cattle hair, Type IV, 1/2-inch or suitable padding.

c. Personnel. Two persons can prepare and rig this load in 10 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Ensure the load restraints are in the stowed position.

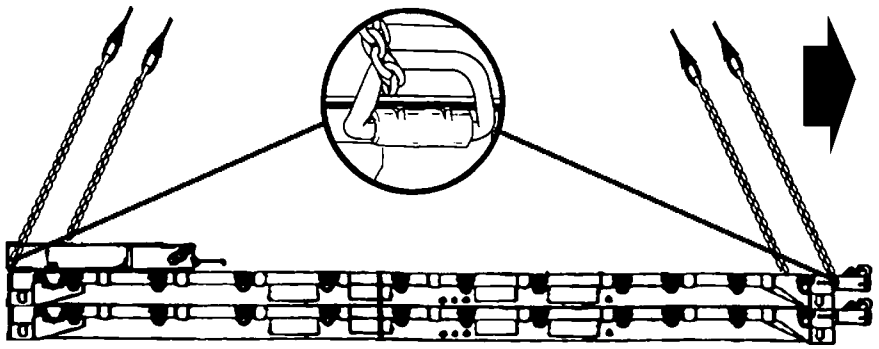
(b) Secure the A-frames in the down position.

(c) Stack the platforms with the A-frames at the same end and secure the platforms together with the straps provided with the platform (a minimum of two straps per platform are required). Ensure the straps have operational keepers on the hook ends. Secure the loose strap ends with tape or 1/4-inch cotton webbing.

(2) Rigging. Rig the load according to the steps in Figure 14-7.

(3) Hookup. The hookup team stands on the stacked platforms. The static wand person discharges the static electricity with the static wand. The hookup person places the apex fitting onto the cargo hook. The hookup team then carefully dismounts the platform and remains close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup team quickly exits the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the stacked platforms. Route outer sling legs 1 and 2 to the front of the platform and inner sling legs 3 and 4 to the rear (A-frame end). Sling legs 1 and 3 must be on the left side of the load.

2. Loop the chain end of sling leg 1 through the left front lift provision located on the top platform. Place the correct link from Table 14-7 in the grab hook. Repeat with sling leg 2 through the right front lift provision on the top platform.

3. Loop the chain end of sling leg 3 through the left rear lift provision located on the top platform. Place the correct link from Table 14-7 in the grab hook. Repeat with sling leg 4 through the right rear lift provision on the top platform.

4. Secure all excess chain with tape or Type III nylon cord.

5. Pad each chain where it contacts sharp edges on the platform. Secure the padding with tape or Type III nylon cord.

6. Cluster and tie or tape (breakaway technique) all sling legs together on top of the platforms to prevent entanglement during hookup and lift-off.

Figure 14-7. Container Roll-in/out Platform (CROP), Two Empty Platforms, Stacked

14-9. Special Operations Craft-Riverine (SOC-R) and Naval Special Warfare Rigid Inflatable Boat (NSWRIB) Trailer

a. Applicability. The following items in Table 14-8 are certified for all helicopters with suitable lift capacity by the US Army Soldier Systems Center:

Table 14-8. Special Operations Craft-Riverine (SOC-R) and Naval Special Warfare Rigid Inflatable Boat (NSWRIB) Trailer

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT / REAR	RECOMMENDED AIRSPEED (KNOTS)
Special Operations Craft-Riverine (SOC-R) Trailer	3,716	15K	5/3	50
Naval Special Warfare Rigid Boat (NSWRIB) Trailer	4,300	15K	5/3	50

b. Materials. The following materials are required to rig this load:

(1) Multileg sling set (15,000-pound capacity).

(2) Tape, adhesive, pressure-sensitive, 2-inch wide roll.

(3) Cord, nylon, Type III, 550-pound breaking strength.

(4) Webbing, cotton, 1/4-inch, 80-pound breaking strength.

c. Personnel. Two persons can prepare and rig this load in 10 minutes.

d. Procedures. The following procedures apply to this load:

(1) Preparation. Prepare the load using the following steps:

(a) Secure the utility box lid with Type III nylon cord.

(b) Lower the lunette close to the ground and secure it in place with a 5,000-pound tiedown strap and load binder.

(c) Secure safety chains, intervehicular electrical cables, and brake cables on top of the drawbar tape or Type III nylon cord.

(d) Engage the parking brake and secure it in the engaged position.

(e) Tape the rails on the trailer together to ensure the slings do not become entangled.

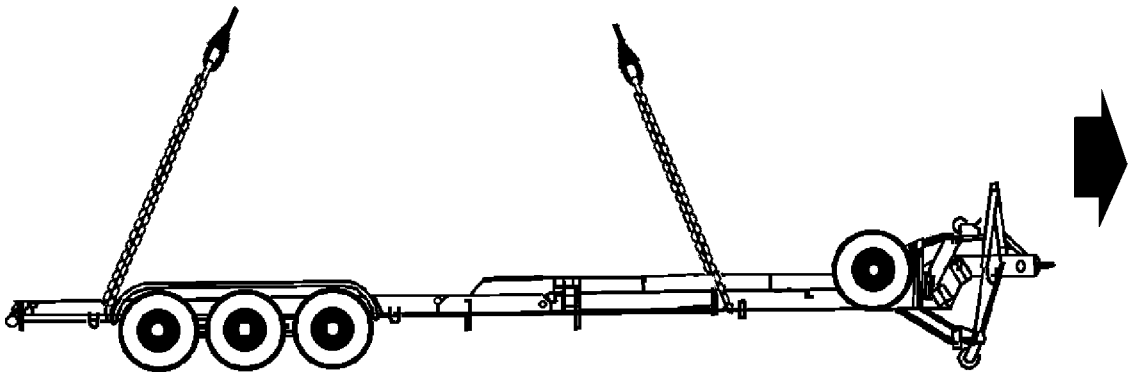
(f) Tape all lights.

(2) Rigging. Rig the load according to the steps in Figure 14-8.

NOTE: This load is flown with the lunette in front.

(3) Hookup. The hookup team stands next to the trailer. The static discharge person discharges the static electricity. The hookup person places the apex on the cargo hook. The hookup teams then carefully dismount the boat and remain close to the load as the helicopter removes slack from the sling legs. When successful hookup is assured, the hookup teams quickly exit the area underneath the helicopter to the designated rendezvous point.

(4) Derigging. Derigging is the reverse of the preparation and rigging procedures in steps d (1) and d (2).



RIGGING STEPS

1. Position the apex fitting on top of the trailer.

2. Loop the chain end of sling leg 1 around the main support frame in front of the tiedown provision on the left side of the trailer . Place the correct link from Table 14-8 in the grab hook. Repeat this step with sling leg 2 on the right side of the trailer.

3. Loop the chain end of sling leg 3 around the frame and through the lift provision on the left rear of the trailer. Place the correct link from Table 14-8 in the grab hook. Repeat this step with sling leg 4 on the right side of the trailer. Secure the excess chain with tape or Type III nylon cord.

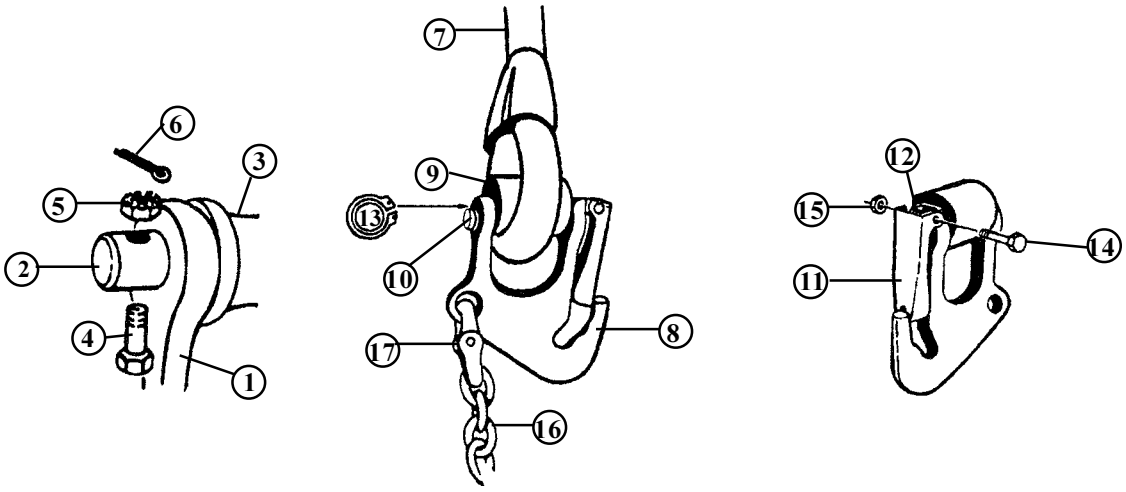
4. Raise the apex fittings above the load. Cluster and tie or tape (breakaway technique) the sling legs in each sling set together to prevent entanglement during hookup and lift-off.

Figure 14-8. Special Operations Craft-Riverine (SOC-R) and Naval Special Warfare Rigid Inflatable Boat (NSWRIB) Trailer

APPENDIX A

NATIONAL STOCK NUMBERS FOR SLINGS, NETS, AND SPARE PARTS

10,000-POUND CAPACITY SLING SET AND COMPONENTS



10,000- or 25,000-Pound Capacity Sling Set (Circled Numbers Correspond with NSNs of Identified Part)

	NSN	PART NUMBER	DESCRIPTION	Qty
	1670-01-027-2902	38850-00001-043	Sling Set Assembly Complete LIN T79003	1 ea
1	4030-01-048-4045	38850-00004-045	Apex Fitting Assembly	1 ea
2	5315-01-115-3482	38850-00008-101	Pin, Apex Fitting	1 ea
3	5365-01-235-0908	38850-00015-104	Spacer, Apex	1 ea
4	5306-00-944-1536	NAS1306-16D	Bolt	1 ea
5	5310-00-207-9274	AN 320C6	Nut, Castellated	1 ea
6	5315-00-2341864	MS 24665-302	Cotter Pin	1 ea
7	1670-01-047-6814	38850-00009-055	Rope Assembly, Black	4 ea
8	4030-01-048-4046	38850-00011-041	Grabhook Assembly	4 ea
9	5364-01-109-2543	38850-00015-101	Spacer, Grabhook	4 ea
10	5315-01-121-0497	38850-00008-103	Pin, Spacer	4 ea
11	4030-01-100-1684	38850-00017-101	Keeper, Grabhook	4 ea
12	5360-01-115-6833	38850-00019-101	Keeper, Spring	4 ea
13	5365-01-046-3670	MS 3217-1050	Snap Ring	4 ea
14	5306-00-771-7621	NAS 1303-21	Bolt, Shear	4 ea
15	5310-00-807-1467	MS 21042-3	Nut, Lock	4 ea
16	4010-01-058-4772	38850-00053-101	Chain, 8-foot Length	4 ea
17	4010-01-231-3388	5770415	Link, Coupling	4 ea
18	8460-00-606-8366	Mil-41835	Kit Bag, Flyer's	1 ea

25,000-POUND CAPACITY SLING SET AND COMPONENTS

	NSN	PART NUMBER	DESCRIPTION	Qty
	1670-01-027-2900	38850-00001-044	Sling Set Assembly Complete LIN T79009	1 ea
1	4030-01-048-4044	38850-00004-046	ShackleAssembly	1 ea
2	5315-01-119-9065	38850-00008-102	Pin, Apex Fitting	1 ea
3	1670-01-235-0907	38850-00015-105	Spacer, Apex	1 ea
4	5306-00-944-2659	NAS1306-22D	Bolt	1 ea
5	5310-00-207-9274	AN 320C6	Nut, Castellated	1 ea
6	5315-00-234-1864	MS 24665-302	Cotter Pin	1 ea
7	1670-01-047-6815	38850-00009-056	Rope Assembly	4 ea
8	4030-01-048-4047	38850-00011-046	Grabhook Assembly	4 ea
9	1670-01-109-2544	38850-00015-102	Spacer, Grabhook	4 ea
10	5315-01-121-2874	38850-00008-104	Pin, Spacer	4 ea
11	4030-01-100-1685	38850-00017-102	Latch, Safety Hook	4 ea
12	5360-01-115-6833	38850-00019-101	Keeper, Spring	4 ea
13	5365-00-261-3918	MS 3217-1075	Snap Ring	4 ea
14	5306-00-771-7621	NAS 1303-21	Bolt, Shear	4 ea
15	5310-00-807-1467	MS 21042-3	Expanded Washer	4 ea
16	4010-01-058-4771	38850-00053-102	Chain, 8-foot Length	4 ea
17	4010-01-041-9751	664241	Link, Coupling	4 ea
18	8460-00-606-8366	Mil-41835	Kit Bag, Flyer's	1 ea

GLOSSARY

ACRONYMS AND ABBREVIATIONS

AAFARS	advanced aviationforward area refueling system
ACP	assault command post
ADCGS	aviation direct current generator set
AETC	auxiliary equipment transportation container
AFATADS	advanced field artillery tactical data systems
AGPU	aviation ground power unit
ARL-C	airborne reconnaissance low-comint
ARL-I	airborne reconnaissance low-imagery
ASK	acoustic suppression kit
AS	aviation section
ATG	antenna transceiver group
ATNAVICS	air traffic navigation and control system
BIDS	biological integrated detection system
bn	battalion
BSTF	base shop test facility
BTU	British Thermal Unit
CAFSM	compressed air foam system, mobile
CBC	cargo bed cover
CFM	cubic feet per minute/cylinder filling module
CG	center of gravity
CGS	common ground station
CLFFK	company level field feeding kit
CMTH	contact maintenance truck, heavy
CONEX	container express
COPS	crash-out-package system
CROP	container roll-in/out platform
CWAR	continuous wave acquisition radar
DASC	direct air support central
DAMP	digital antenna mast program
DDSS	downsized direct support section
DDGM	downsized digital group multiplexer
DET	distributed explosive technology
DGM	digital group multiplexer
DOD	Department of Defense
DOM	desert operation motorcycle
DOT	desert operation trailer
DTSS-L	digital topographic support system-light
EALP	enclosure assembly launch pods
EBFL	extendable boom forklift
ECU	environmental control unit
EFOGM	enhanced fiber optic guided missile
ELAMS	expandable light airmobile shelter
EMI	electromechanical induction
EPLRS	enhanced position location reporting system
FAAR	forward area alerting radar
FARE	forward area refueling equipment
FARP	forward arming and refueling point
FMOGDS	field medical oxygen generation/distribution system
FOPS	falling objects protection system
FUPP	full-up power pack
GMLA	guided missile launch assembly
GPH	gallons per hour
GPM	gallons per minute
HATS	hardened army tactical shelter
HEMAT	heavy expanded mobility ammunition trailer
HMD	high mobility downsized
HMDA	high mobility digital group multiplexer assemblage
HMMH	high mobility materiel handler
H-HMMWV	heavy high-mobility multipurpose wheeled vehicle
HMMWV	high-mobility multipurpose wheeled vehicle
HMT	high mobility trailers
HSTRU	hydraulic system test and repair unit
HZ	hertz
IAS	intelligence analysis system
IEW	intelligence and electronic warfare
IFAV	interim fast attack vehicle
IMETS	integrated meteorological systems
ISO	International Organization of Standardization
ISYSCON	integrated system control
JSTAR	joint surveillance target attack radar
JTIDS	joint tactical information distribution system
KW	kilowatt(s)
LAV	light armored vehicle
LCAC	landing craft air cushioned
LHGXA	lightweight high gain x-band antenna
LIK	landing interface kit

LIN	line number
LMS	lightweight multipurpose shelter
LMTV	light medium tactical vehicle
L/R-T	launch recovery trailer
LRTF	light rough terrain forklift
LTACFIRE	lightweight tactical fire control system
LTR	light tactical floating raft bridge
LVAD	low velocity airdrop
MASINT	measurements and signature intelligence
MGB	medium girder bridge
MHG	meterological hydrogen generator
MICLIC	mine clearing line charge
MILSTD	military standard
MLRS	multiple launch rocket system
mm	millimeter
MOSLS	minimum operating strip lighting system
MOST	mobile oversnow transport
MR	mobile radio
MRBS	mobile radio broadcasting subsystem
MSFDCS	multiservice flight data collection sheet
MT	mobile television
MTBS	mobile television broadcasting subsystem
MTMCTEA	Military Traffic Management Command Transportation Engineering Agency
MTS	mobile-track system
MTV	medium tactical vehicle
NABS	NATO airbase satcom
NATO	North Atlantic Treaty Organization
NAVAIR	Naval Air Systems Command
NCS-E(D)	downsized net control system
NRDEC	Natick Research, Development, and Engineering Center
NSN	national stock number
NSWRIB	naval special warfare rigid inflatable boat
OC	operations central
OCG	operational control group
OGDM	oxygen generation/distribution module
OVE	operator vehicle equipment
PN	part number
POC	platoon operations center
PTO	pioneer tool outfit
QRSA	quick reaction satellite antenna
RIE	required individual equipment
RLST	remote landing site tower
ROPS	roll-over protection system
ROWPU	reverse osmosis water purification unit
RP/C	rocket pod/container
RT	rough terrain
SCAMP	self-propelled crane for Army aircraft maintenance and positioning
SCOTT	single channel objective tactical terminal
SDASS	special diver's air support system
SEE	small emplacement excavator
SICPS	standardized integrated command post systems
SIXCON	six-compartment container
SMART-T	secure mobile anti-jam tactical terminal
SMMS	sensor mobile monitoring system
SOC-R	special operation craft-riverine
SOMS-B	special operations media system
SPAM	shop, portable aircraft maintenance
SPEARR	small portable expeditionary aeromedical rapid response
SSC	Soldier Systems Center
SSS	single shelter switch
STIK	soft top installation kit
SUSV	small unit support vehicle
TAFDS	tactical airfield fuel dispensing system
TAMCN	Table of Authorized Material Control Number
TDN	tactical data network
TM	technical manual
TMS	tactical messaging system
TOW	tube launched, optically tracked, wireguided
TQG	tactical quiet generator
TRSS	tactical remote sensor system
TSS	tracked suspension system
TTCS	tactical terminal control system
TUAV	tactical unmanned vehicle
US	United States
USA	United States Army
USMC	United States Marine Corps