

## CHAPTER 13

### CERTIFIED DUAL-POINT RIGGING PROCEDURES FOR MISCELLANEOUS EQUIPMENT

#### 13-1. INTRODUCTION

This chapter contains rigging procedures for dual-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 dual-

point rigging procedures for miscellaneous equipment are in this section. Paragraphs 13-2 through 13-5 give detailed instructions for rigging loads.

**NOTE: Reach Pendants may be used on dual point loads. Place a Reach Pendant on each apex fitting. A static discharge person is not required when using a Reach Pendant.**

#### 13-2. Palletized Loading System (PLS), M1077 Flatrack, Loaded

**a. Applicability.** The following item in Table 13-1 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 13-1. Palletized Loading System (PLS), M1077 Flatrack, Loaded**

NOMENCLATURE	WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Palletized Loading System (PLS), M1077 Flatrack, Loaded	MIN: 6,500 MAX: 20,000	10K 25K	3/10 5/10	CH-47	120

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

(1) Sling set (10,000-pound capacity) with one additional apex fitting.

**OR**

(2) Sling set (25,000-pound capacity) with one additional apex fitting.

(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) PLS operating manual.

(7) 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:

**NOTE: During the following steps, observe all CAUTIONS and WARNINGS noted in the Operating Manual.**

(a) Position the load on the Flatrack, distributing the weight as evenly as possible.

(b) Restrain the cargo with CGU-1/B cargo tiedown straps.

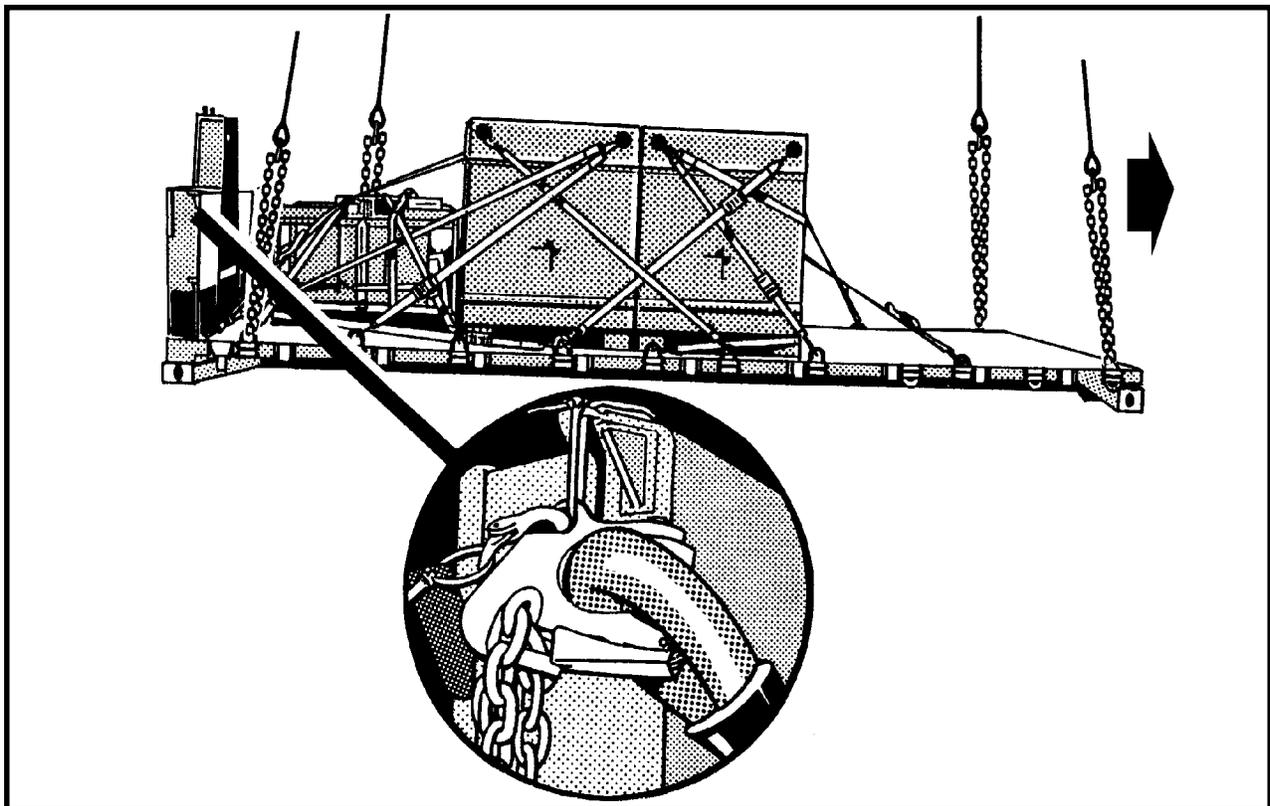
(2) **Rigging.** Rig the load according to the steps in Figure 13-1.

**NOTE: The A-frame end is considered the Aft end of the load.**

(3) **Hookup.** Two hookup teams stand on top of the load. The static discharge person discharges the static electricity. The forward hookup person, (non-A-frame end), places apex fitting 1 onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo

hook. The hookup teams then carefully dismount the pallet 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. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the load (non A-frame end).

2. Loop the chain end of the left and right sling legs through their respective lift provision (tiedown ring closest to the end). Place the correct link from Table 13-1 in the grab hook.

3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the load (A-frame end).

4. Loop the chain end of the left and right sling legs through their respective lift provision (tiedown ring closest to the end). Place the correct link from Table 13-1 in the grab hook. Secure the excess chain with tape or Type III nylon cord.

5. Tie (breakaway technique) the rear grab hooks to the A-frame.

6. 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 13-1. Palletized Loading System (PLS), M1077 Flatrack, Loaded

### 13-3. Palletized Loading System (PLS), M1077 Flatrack, Empty

**a. Applicability.** The following items in Table 13-2 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 13-2. Palletized Loading System (PLS), M1077 Flatrack, Empty**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Two M1077 Flatracks, Empty, Stacked	6,500	10K	3/10	CH-47	120
Three M1077 Flatracks, Empty, Stacked	9,750	10K	3/10	CH-47	120

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

- (1) Sling set (10,000-pound capacity) with one additional apex fitting.
- (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) PLS operating manual.

**c. Personnel.** Two persons can prepare and rig this load in 30 minutes.

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

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

**NOTE: During the following steps, observe all CAUTIONS and WARNINGS noted in the Operating Manual.**

(a) Position the flatracks one on top of the other, if required, and engage the twist locks as described in the

operating manual.

(b) Safety tie the twist lock handles with Type III nylon cord to an adjacent cargo tiedown provision.

(2) **Rigging.** Rig the load according to the steps in Figure 13-2.

**NOTE: The A-frame end is considered the Aft end of the load.**

**WARNING**  
**Ensure the slings are attached to the bottom-most lift provisions for load securement and stability.**

(3) **Hookup.** Two hookup teams stand on top of the load. The static discharge person discharges the static electricity. The forward hookup person (non-A-frame end) places apex fitting 1 onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the pallet 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).

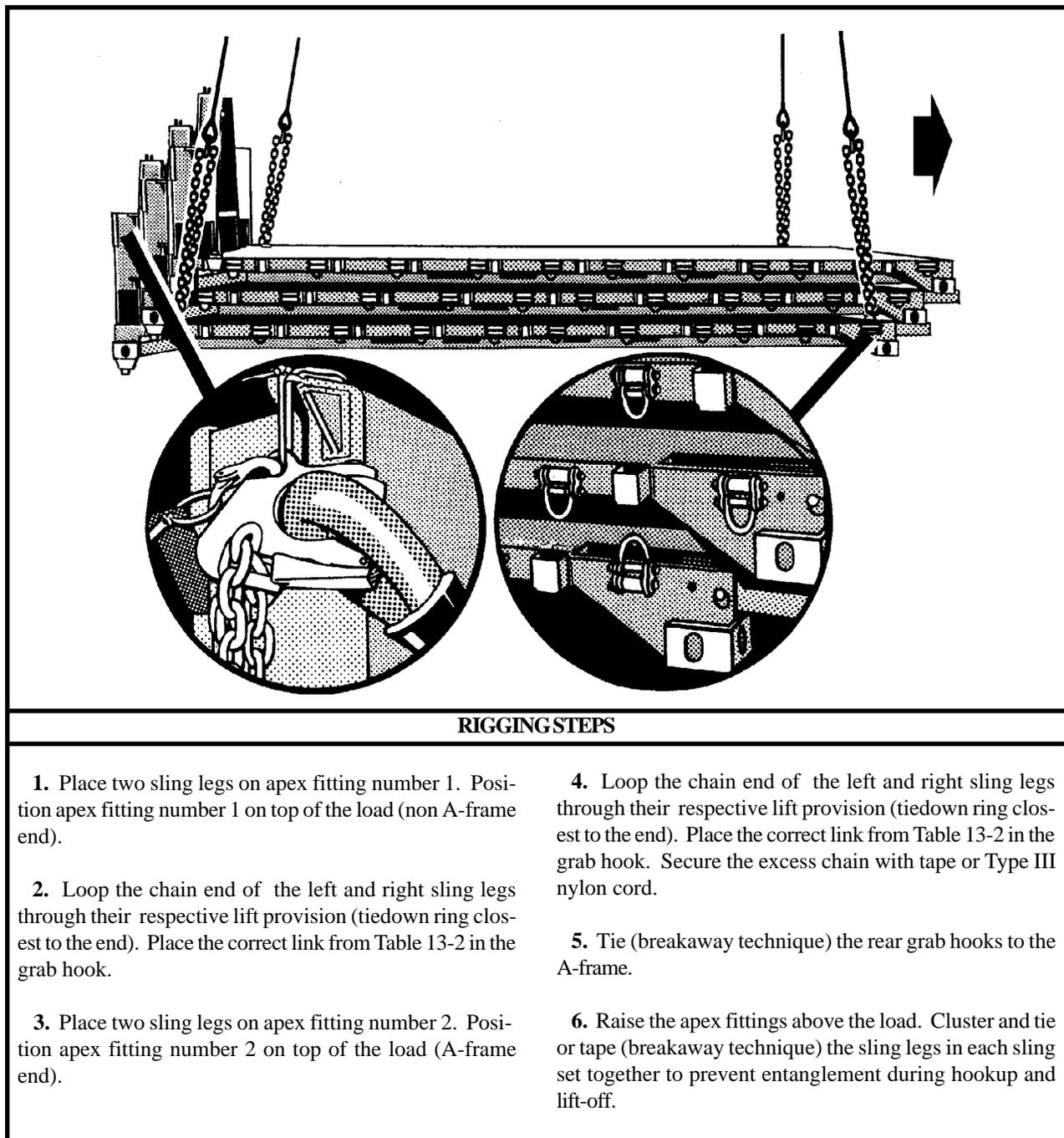


Figure 13-2. Palletized Loading System (PLS), M1077 Flatrack, Empty

## 13-4. Enhanced Palletized Loading System, Flatrack, Loaded

**a. Applicability.** The following item in Table 13-3 is certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 13-3. Enhanced Palletized Loading System, Flatrack, Loaded**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
Enhanced Palletized Loading System, Flatrack, Loaded	Min: 10,500 Max: 22,000	25K	3/20	CH-47	80

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

(1) Sling set (25,000-pound capacity) with one additional apex fitting.

(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) PLS operating manual.

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

**c. Personnel.** Two persons can prepare and rig this load in 30 minutes.

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

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

**NOTE: During the following steps, observe all CAUTIONS and WARNINGS noted in the operating manual.**

(a) PLS personnel raise the end walls in accordance with TM 9-3990-206-14&P. The twist locks must be in the stowage position.

(b) Position the load on the flatrack, distributing the weight as evenly as possible.

(c) Restrain the cargo with CGU-1/B cargo tiedown straps.

(2) **Rigging.** Rig the load according to the steps in Figure 13-3.

**NOTE: The A-frame end is considered the Aft end of the load.**

(3) **Hookup.** Two hookup teams stand on top of the load. The static discharge person discharges the static electricity. The forward hookup person (non-A-frame end) places apex fitting 1 onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the pallet 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).

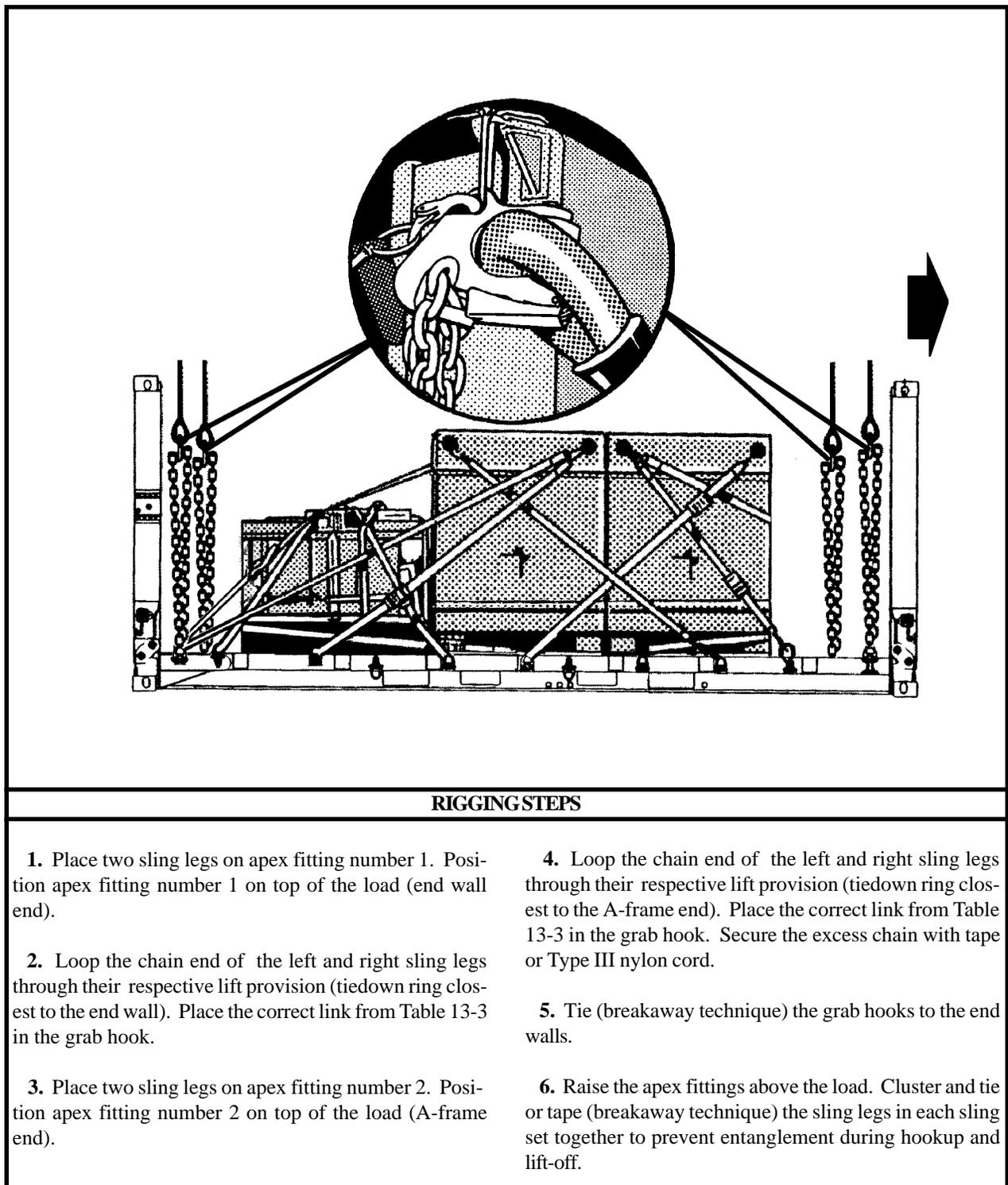


Figure 13-3. Enhanced Palletized Loading System, Flatrack, Loaded

### 13-5. Enhanced Palletized Loading System, Flatrack, Empty

**a. Applicability.** The following items in Table 13-4 are certified for the helicopter(s) listed in the following table by the US Army Soldier Systems Center:

**Table 13-4. Enhanced Palletized Loading System, Flatrack, Empty**

NOMENCLATURE	MAX WEIGHT (POUNDS)	SLING SET	LINK COUNT FRONT/ REAR	TYPE OF AIRCRAFT	RECOMMENDED AIRSPEED (KNOTS)
One Enhanced Flatrack, Empty	7,400	25K	3/20	CH-47	80
Two Enhanced Flatracks, Empty, Stacked	14,800	25K	3/20	CH-47	80

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

- (1) Sling set (25,000-pound capacity) with one additional apex fitting.
- (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) PLS operating manual.
- (6) Strap, cargo, tiedown, CGU-1/B (4 each).

**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:

**NOTE: During the following steps, observe all CAUTIONS and WARNINGS noted in the operating manual.**

- (a) PLS personnel should lower both end walls on all

enhanced flatracks in accordance with the operating manual.

(b) Position the flatracks one on top of the other, if required, and engage the twist locks as described in the operating manual.

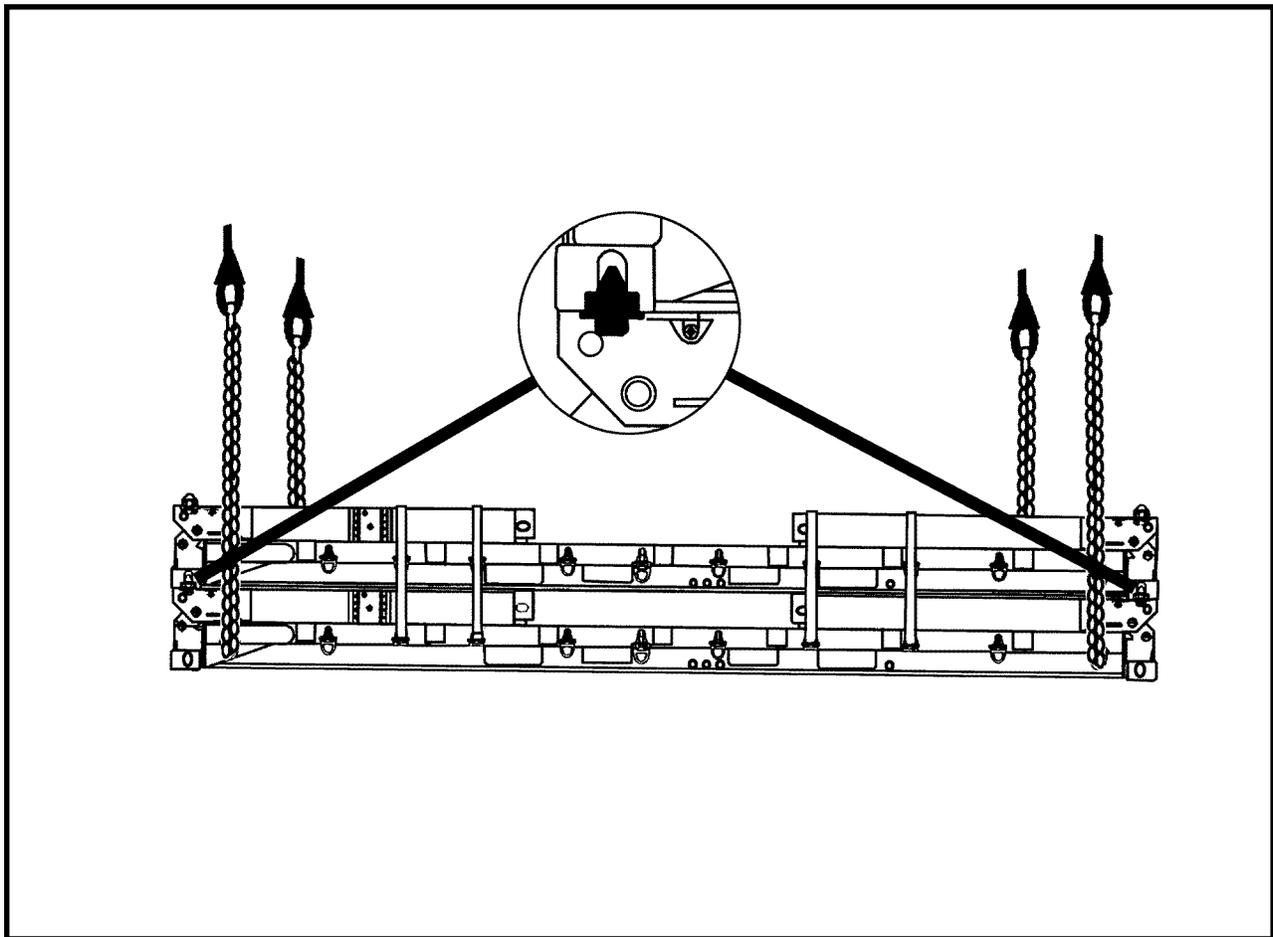
(c) Attach a tiedown strap on the fourth tiedown ring on the bottom flatrack. Route the strap over the end wall on the top flatrack and secure the strap to the fourth tiedown ring on the other side of the bottom flatrack. Tighten the strap and secure the excess with tape. Repeat this procedure using the third set of tiedown rings.

(d) Repeat the above procedure on the other end of the flatrack.

(2) **Rigging.** Rig the load according to the steps in Figure 13-4.

(3) **Hookup.** Two hookup teams stand on top of the load. The static discharge person discharges the static electricity. The forward hookup person places apex fitting 1 onto the forward cargo hook. The aft hookup person places apex fitting 2 onto the aft cargo hook. The hookup teams then carefully dismount the pallet 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. Place two sling legs on apex fitting number 1. Position apex fitting number 1 on top of the load.
2. Loop the chain end of the left and right sling legs through their respective lift provision on the bottom pallet (tiedown ring closest to the end). Place the correct link from Table 13-4 in the grab hook.
3. Place two sling legs on apex fitting number 2. Position apex fitting number 2 on top of the load.
4. Loop the chain end of the left and right sling legs through their respective lift provision on the bottom pallet (tiedown ring closest to the end). Place the correct link from Table 13-4 in the grab hook.
5. Tie (breakaway technique) the rear grab hooks to the A-frame.
6. 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 13-4. Enhanced Palletized Loading System, Flatrack, Empty*