

PART TWO RIGGING A-7A CONTAINER LOADS

CHAPTER 3 GENERAL INFORMATION AND PROCEDURES

3-1. A-7A Airdrop Cargo Sling Assembly

The A-7A airdrop cargo sling assembly consists of four D-rings and four identical sling straps. Each strap is 188 inches long and has a parachute harness

adapter (friction adapter) attached at one end. If needed, more than four straps may be used to secure loads. Figure 3-1 shows an A-7A airdrop cargo sling assembly.

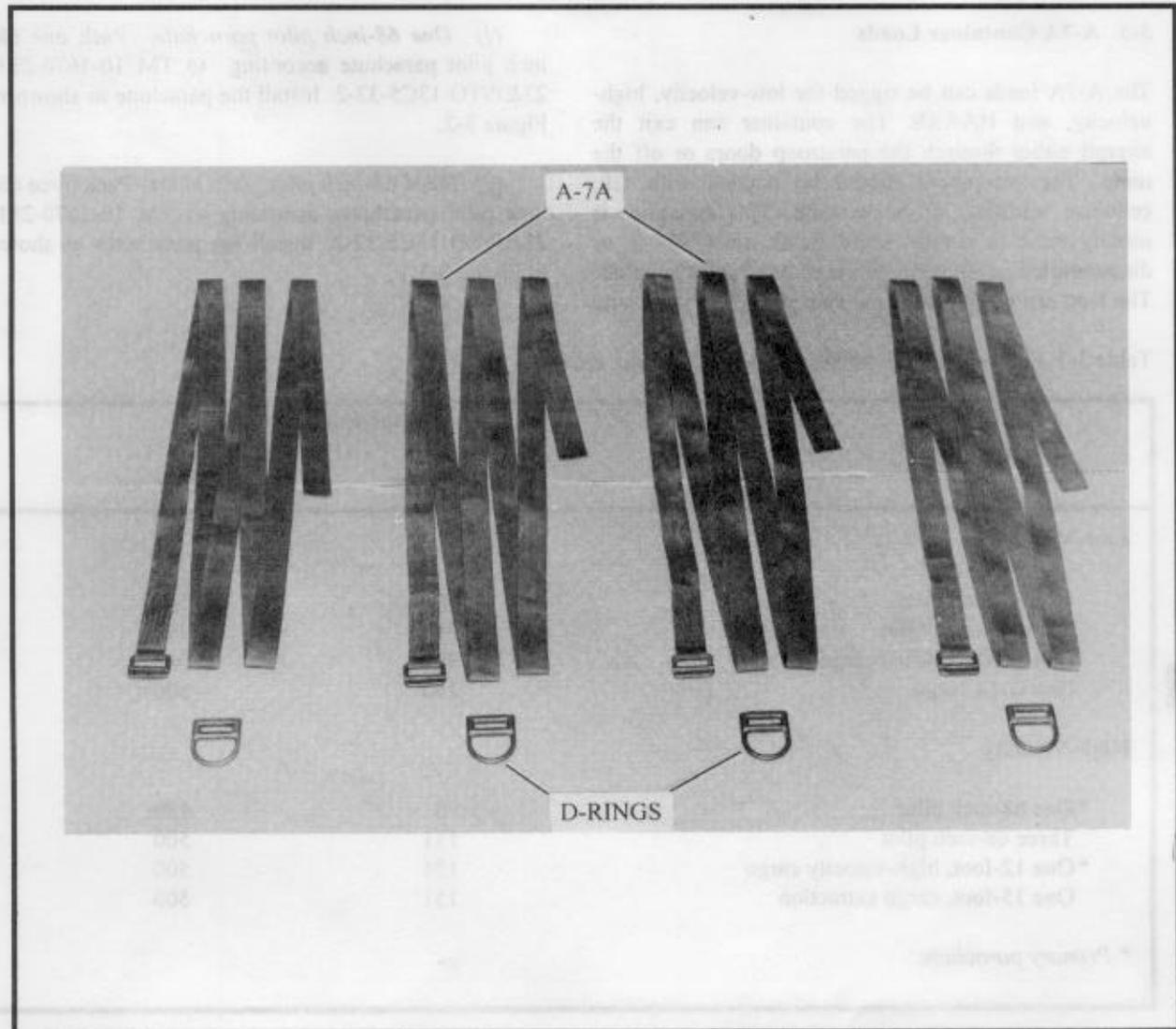


Figure 3-1. A-7A airdrop cargo sling assembly

3-2. Weight Limits

The maximum weight of this container will vary according to the number of straps, but must not exceed 500 pounds. When two straps are used, 300 pounds is the maximum weight. With three straps, 400 pounds is the maximum weight. When four or more straps are used, the maximum weight must not exceed 500 pounds. The minimum weight will vary according to the parachute used. When dropped from the paratroop doors, the load must weigh a minimum of 11 pounds per square foot. When dropped from the ramp, the load must weigh a minimum of 28 pounds per square foot. Table 3-1 lists parachutes used with this container and the weight restriction.

3-3. A-7A Container Loads

The A-7A loads can be rigged for low-velocity, high-velocity, and HAARS. The container can exit the aircraft either through the paratroop doors or off the ramp. The equipment should be padded with felt, cellulose wadding, or honeycomb. This container is usually used to supply small items, ready-to-use or disassembled equipment, or other nonfragile supplies. The load can be rigged by the using unit. The parachute

must be packed by a parachute rigger. It is only required to be inspected by a jumpmaster or parachute rigger. The HAARS must be rigged and inspected by a parachute rigger.

3-4. Parachutes for A-7A Loads

To select a parachute for an A-7A load, consider the type of airdrop (low-velocity or high-velocity) and the weight of the rigged container (Table 3-1). Pack and install the parachute as described below.

a. Low-Velocity Loads. The parachutes that can be used to rig an A-7A load for low-velocity airdrop are given below.

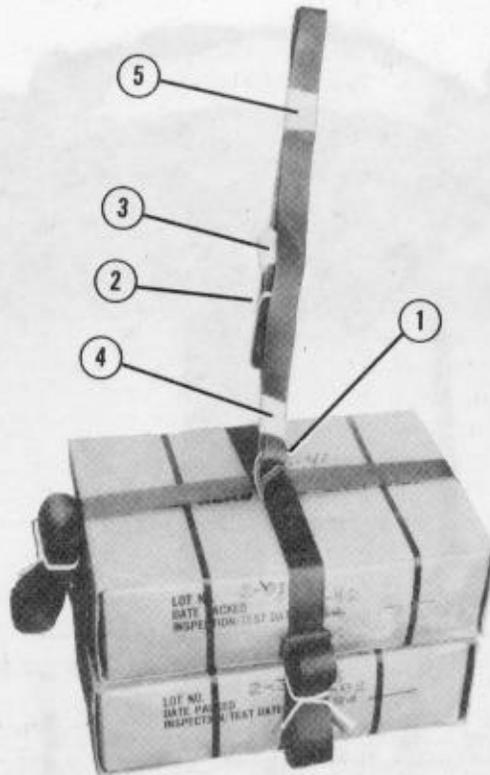
(1) *One 68-inch pilot parachute.* Pack one 68-inch pilot parachute according to TM 10-1670-281-23&P/TO 13C5-32-2. Install the parachute as shown in Figure 3-2.

(2) *Three 68-inch pilot parachutes.* Pack three 68-inch pilot parachutes according to TM 10-1670-281-23&P/TO 13C5-32-2. Install the parachutes as shown in Figure 3-3.

Table 3-1. Parachute requirements for A-7A container loads

Parachutes	Suspended Weight (Pounds)	
	Minimum	Maximum
Low-Velocity		
One 68-inch pilot	30	50
Three 68-inch pilot	51	200
One T-10 modified cargo	90	500
One G-14 cargo	200	500
High-Velocity		
* One 68-inch pilot	75	150
Three 68-inch pilot	151	500
* One 12-foot, high-velocity cargo	151	500
One 15-foot, cargo extraction	151	500
* <i>Primary parachute</i>		

Note: Use masking tape only.

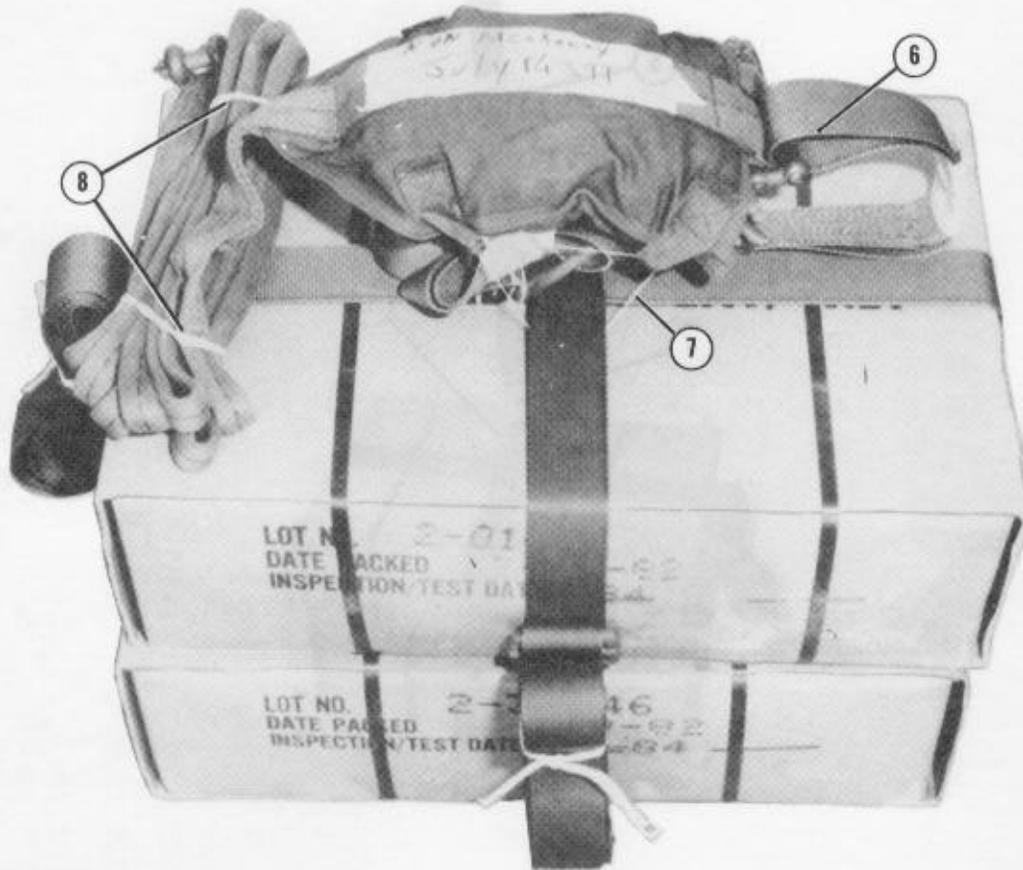


- ① Pass the free end of an A-7A strap through the D-ring on top of the load. Pass the free end of the strap through the friction adapter. Tighten the strap until a 24-inch loop is formed.

Note: Route the strap so that the oversized portion of the metal frame is down. Make sure the friction adapter is about halfway down the strap.

- ② Fold the excess strap. Secure the excess straps according to Chapter 1.
- ③ Tape the friction adapter.
- ④ Tape the strap together 2 inches above the D-ring.
- ⑤ Tape the other end of the strap together so that a 3-inch loop is formed.

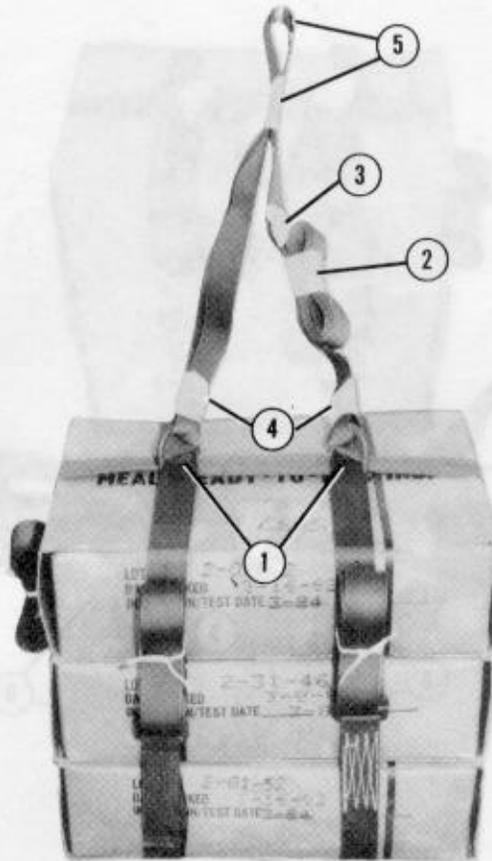
Figure 3-2. One 68-inch pilot parachute installed



- ⑥ Place the 3-inch loop on the parachute L-bar connector link. Fasten the L-bar connector link.
- ⑦ Place the 68-inch pilot parachute on top of the load. Tie each side of the parachute to one A-7A strap with a length of ticket number 8/7 cotton thread.
- ⑧ Fold the static line, and secure it on top of the load with retainer bands.

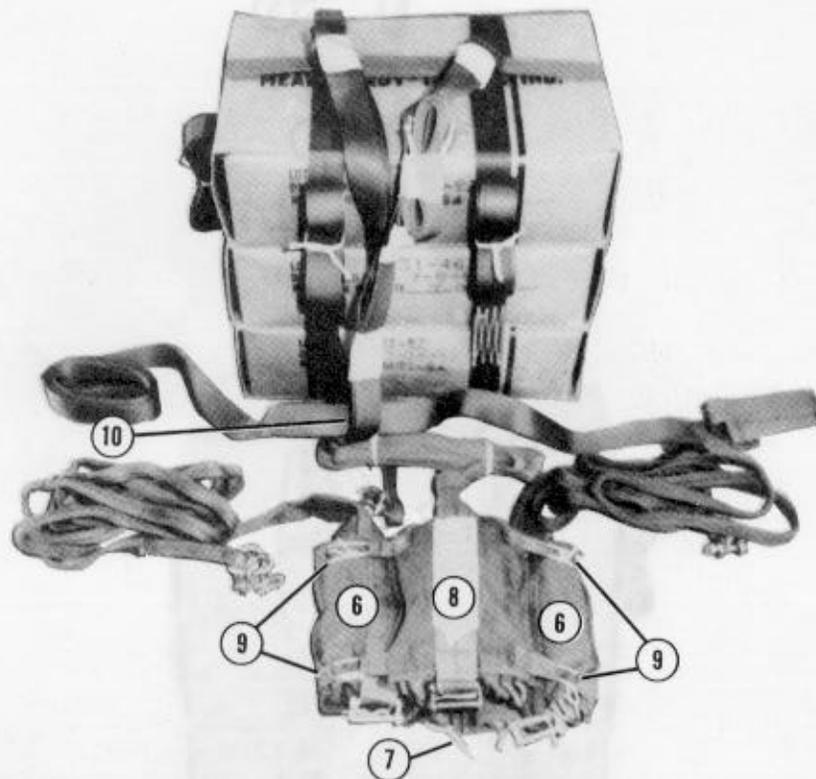
Figure 3-2. One 68-inch pilot parachute installed (continued)

Note: Use masking tape only.



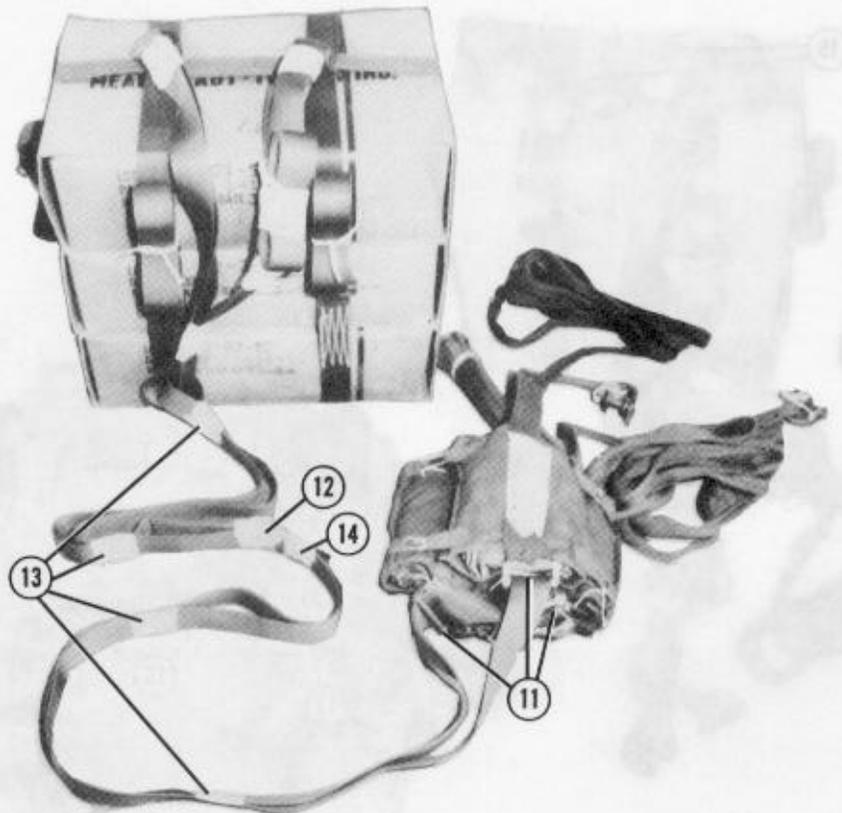
- ① Pass the free end of an A-7A strap through the D-rings on top of the load. Pass the free end of the strap through the friction adapter. Pull both plies of the strap upward between the D-rings. Tighten the strap until the two plies of the strap are 24 inches above the load.
- ② Fold the excess strap. Secure the excess strap according to Chapter I.
- ③ Tape the friction adapter.
- ④ Tape the A-7A strap together 2 inches above each D-ring.
- ⑤ Form a 3-inch loop in the center of the A-7A strap. Tape the plies of the strap together below the loop.

Figure 3-3. Three 68-inch pilot parachutes installed



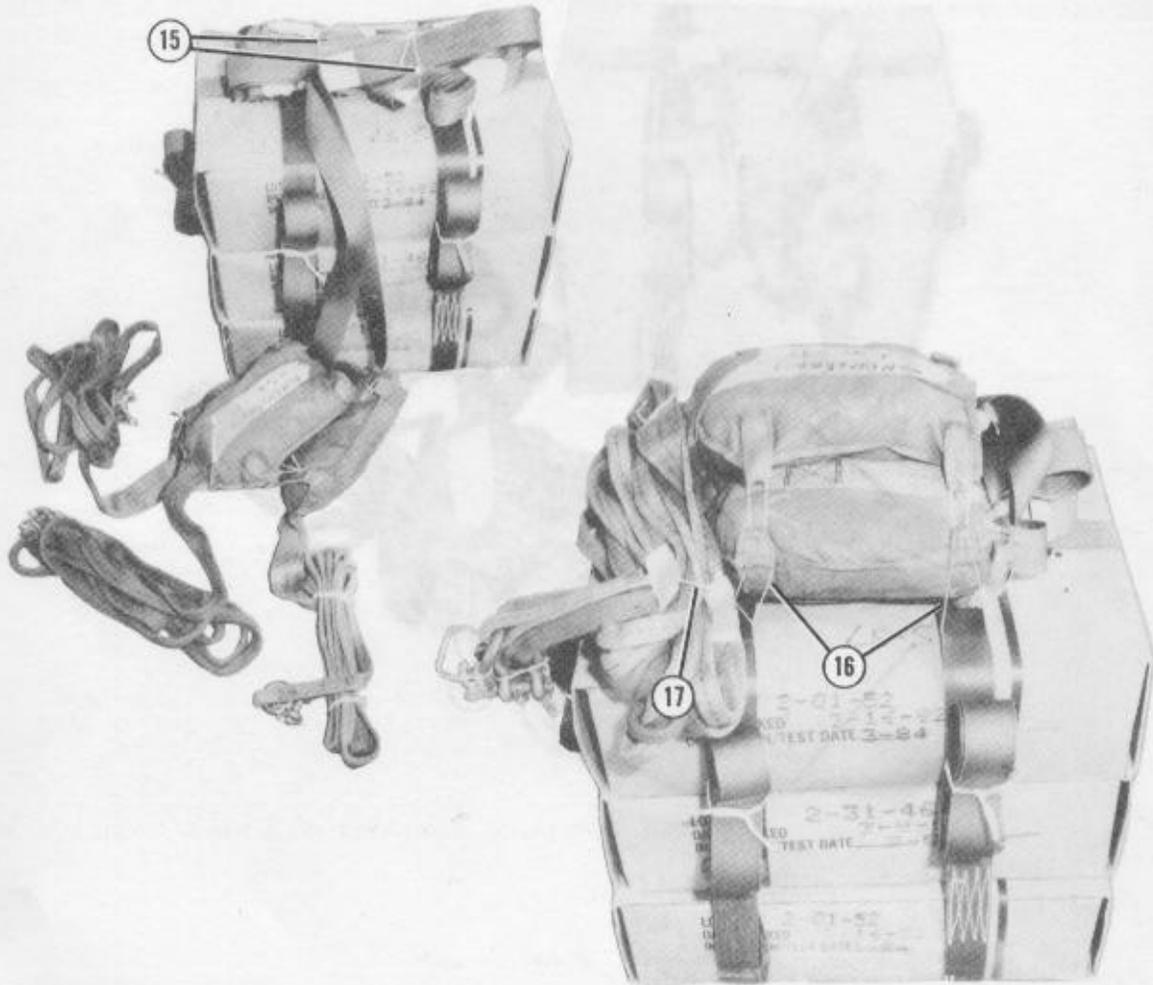
- ⑥ Place two 68-inch parachutes on a flat, dry surface.
- ⑦ Tie the parachutes together using the closer bag attaching loops with one length of ticket number 8/7 cotton thread at the top of the bag and one length at the bottom of the bag.
- ⑧ Place a third parachute on top of the two parachutes placed in step 6.
- ⑨ Tie the top (third) parachute bag attaching loops to the outside bag attaching loops on the bottom parachutes with four lengths of ticket number 8/7 cotton thread.
- ⑩ Pass the free end of another A-7A strap through the 3-inch loop (step 5) in the other A-7A strap.

Figure 3-3. Three 68-inch pilot parachutes installed (continued)



- ⑪ Pass the free end of the A-7A strap (step 10) through the L-bar connector links of the three 68-inch parachutes.
- ⑫ Pass the free end of the A-7A strap through the friction adapter, and tighten it to a length of 7 feet. Tape the friction adapter.
- ⑬ Tape the plies of the A-7A strap together.
- ⑭ Fold and tape the excess strap.

Figure 3-3. Three 68-inch pilot parachutes installed (continued)



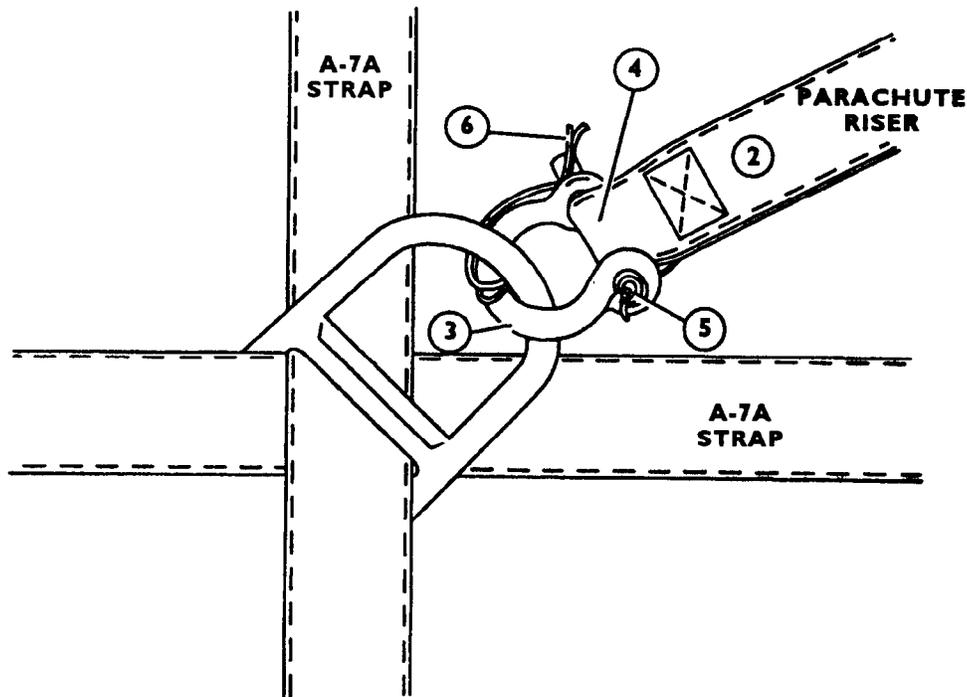
- ⑮ Fold the A-7A straps, and lay them on top of the load. Tie the folds to the top of the load with two lengths of ticket number 8/7 cotton thread.
- ⑯ Place the parachutes on top of the load. Tie the parachute bag attaching loops to the A-7A straps with four lengths of ticket number 8/7 cotton thread.
- ⑰ Tape the parachute static lines together. Tie the static lines to the top of the load with ticket number 8/7 cotton thread.

Figure 3-3. Three 68-inch pilot parachutes installed (continued)

(3) *One T-10 modified cargo parachute.*
 Modify one T-10 parachute according to Paragraph 3-5 and as shown in Figure 3-8. Pack the parachute according to TM 10-1670-293-23&P/TO 14D1-2-467-2. Steps similar to the G-14 cargo parachute installation are used when installing the T-10 modified cargo parachute.

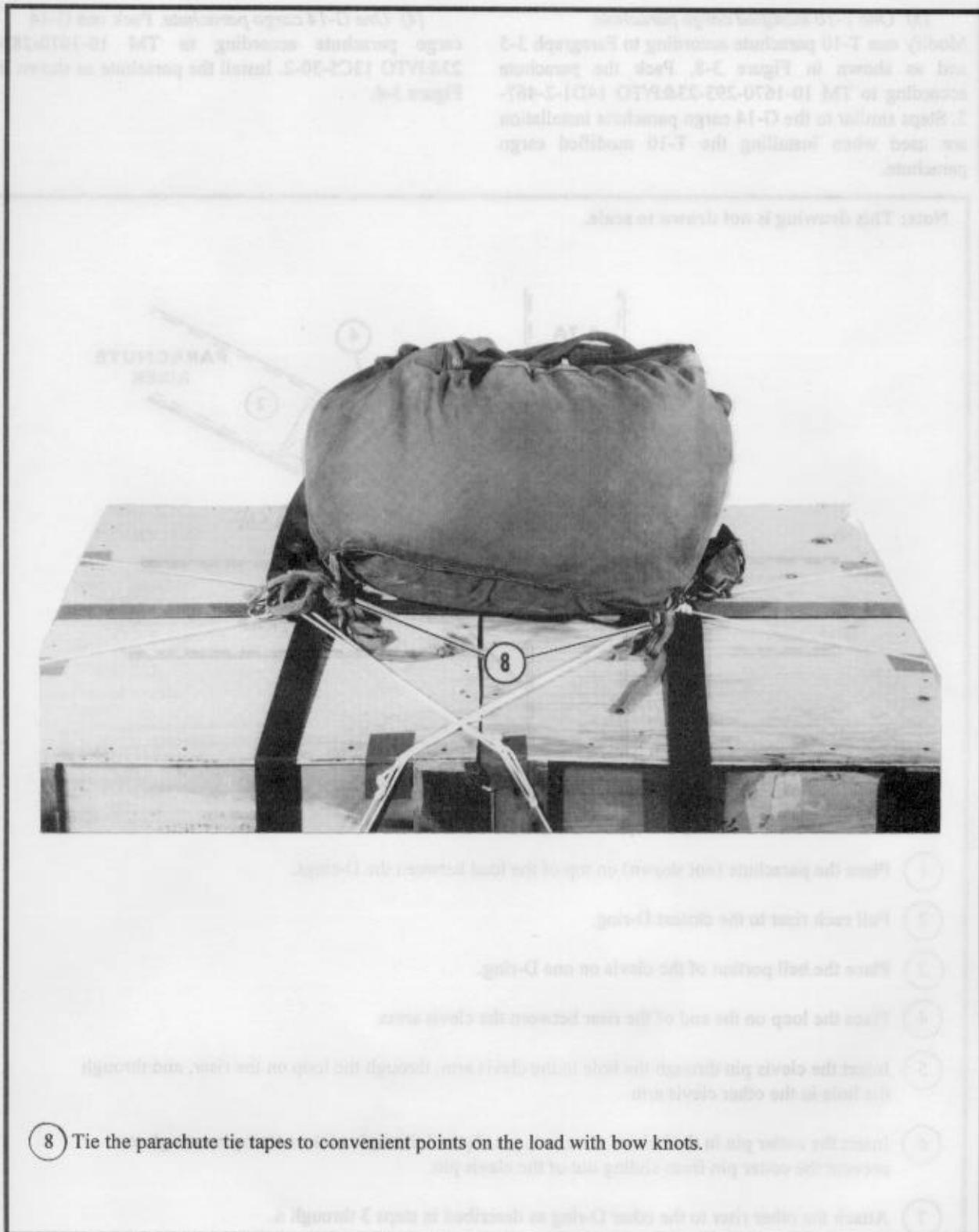
(4) *One G-14 cargo parachute.* Pack one G-14 cargo parachute according to TM 10-1670-282-23&P/TO 13C5-30-2. Install the parachute as shown in Figure 3-4.

Note: This drawing is not drawn to scale.



- 1 Place the parachute (not shown) on top of the load between the D-rings.
- 2 Pull each riser to the closest D-ring.
- 3 Place the bell portion of the clevis on one D-ring.
- 4 Place the loop on the end of the riser between the clevis arms.
- 5 Insert the clevis pin through the hole in the clevis arm, through the loop on the riser, and through the hole in the other clevis arm.
- 6 Insert the cotter pin in the hole of the clevis pin. Spread the ends of the cotter pin enough to prevent the cotter pin from sliding out of the clevis pin.
- 7 Attach the other riser to the other D-ring as described in steps 3 through 6.

Figure 3-4. G-14 cargo parachute installed



- ⑧ Tie the parachute tie tapes to convenient points on the load with bow knots.

Figure 3-4. One G-14 cargo parachute installed (continued)

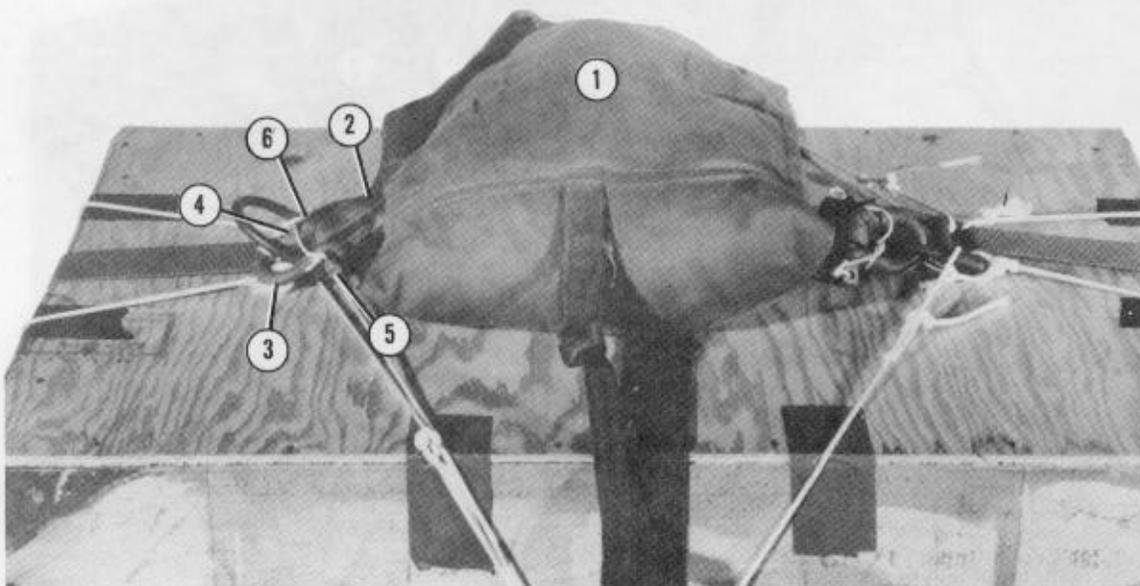
b. High-Velocity Loads. The parachutes that can be used to rig an A-7A load for high-velocity airdrop are described here.

(1) *One 68-inch pilot parachute.* Pack and install one 68-inch pilot parachute as described in paragraph 3-4a(1).

(2) *Three 68-inch pilot parachutes.* Pack and install three 68-inch pilot parachutes as described in paragraph 3-4a(2).

(3) *One 12-foot, high-velocity cargo parachute.* Pack one 12-foot, high-velocity cargo parachute according to TM 10-1670-275-23&P/TO 13C5-25-2. Install the parachute as shown in Figure 3-5.

(4) *One 15-foot cargo extraction parachute.* When the 15-foot cargo extraction parachute is used as the primary parachute on a high-velocity airdrop, modify the parachute as shown in Figure 3-6. Install it as shown in Figure 3-7.



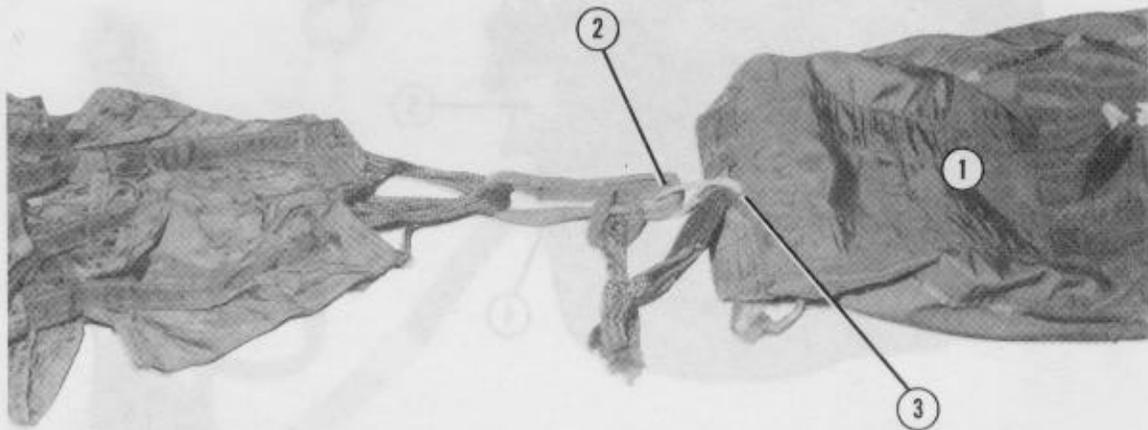
- ① Center the parachute on top of the load between the D-rings.
- ② Pull each riser to the closest D-ring.
- ③ Place the bell portion of a clevis on one D-ring.
- ④ Place the loop on the end of the riser between the clevis arms.
- ⑤ Insert the clevis pin through the hole in the clevis arm, through the loop on the riser, and through the hole in the other clevis arm.
- ⑥ Insert the cotter pin in the hole of the clevis pin. Spread the ends of the cotter pin enough to prevent the cotter pin from sliding out of the clevis pin.

Figure 3-5. One 12-foot, high-velocity parachute installed



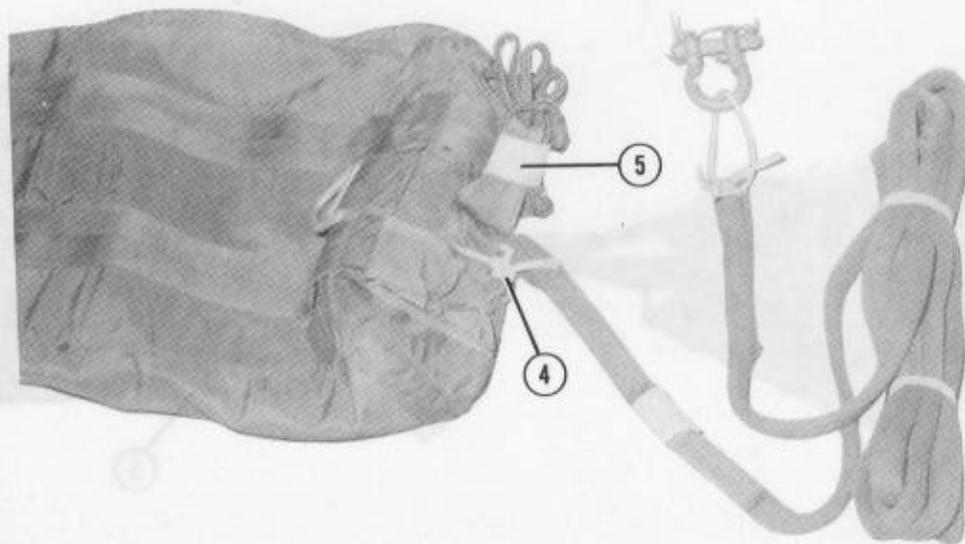
- ⑦ Attach the other riser to the other D-ring as described in steps 1 through 6.
- ⑧ Tie a length of type I, 1/4-inch cotton webbing on one side of the parachute at a convenient point. Pass the free end of the type I, 1/4-inch cotton webbing over the parachute, and tie it to a convenient point.

Figure 3-5. One 12-foot, high-velocity parachute installed (continued)



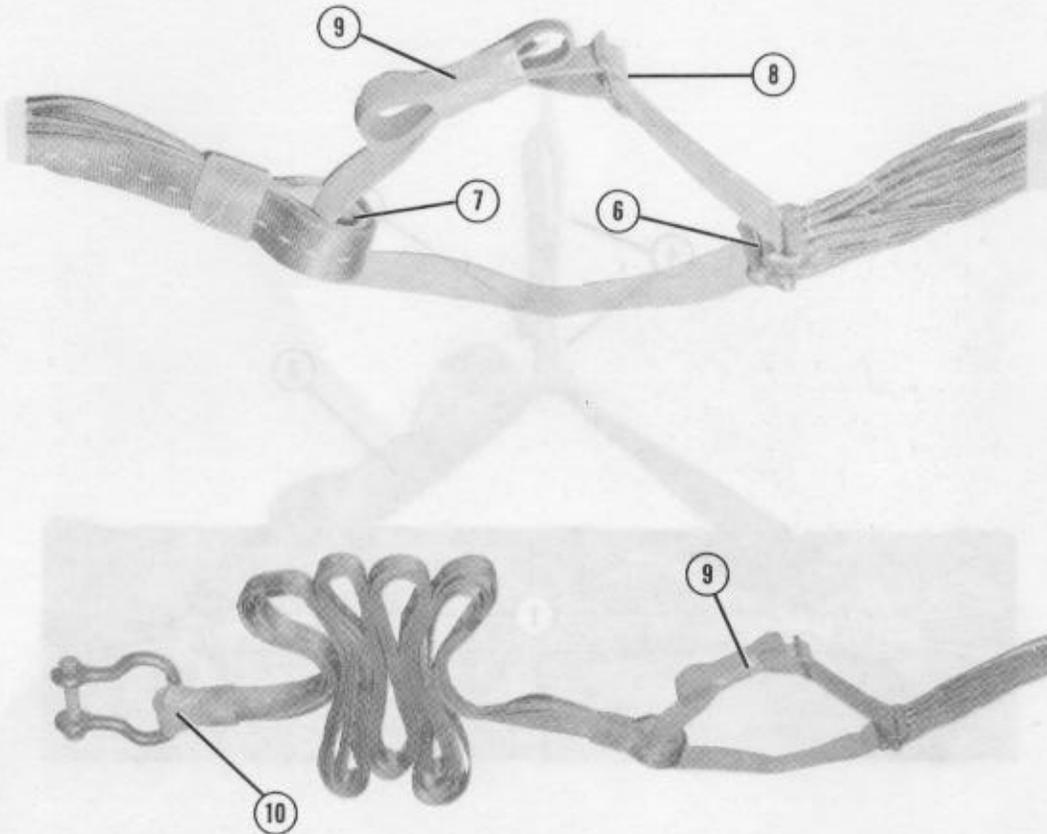
- ① Invert the 15-foot cargo extraction parachute deployment bag.
- ② Pass a 14-inch length of type III nylon cord through the bridle loop of the 15-foot extraction parachute. Even the ends of the cord.
- ③ Pass both ends of the type III nylon cord through the hole in the top of the deployment bag.

Figure 3-6. A 15-foot cargo extraction parachute modified



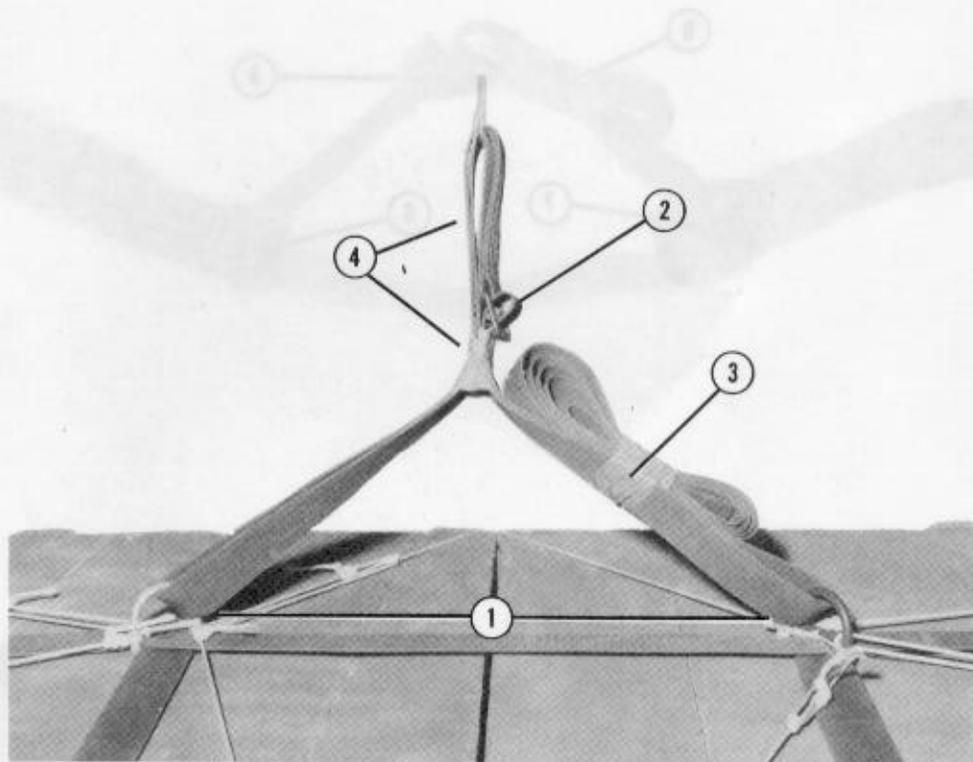
- ④ Pass one end of the type III nylon cord through the break cord attaching loop in the end of the static line. Tie the ends of the type III nylon cord together with a surgeon's knot and a locking knot. Tie an overhand knot in each end.
- ⑤ S-fold the pendulum line, and tape the folds together.

Figure 3-6. A 15-foot cargo extraction parachute modified (continued)



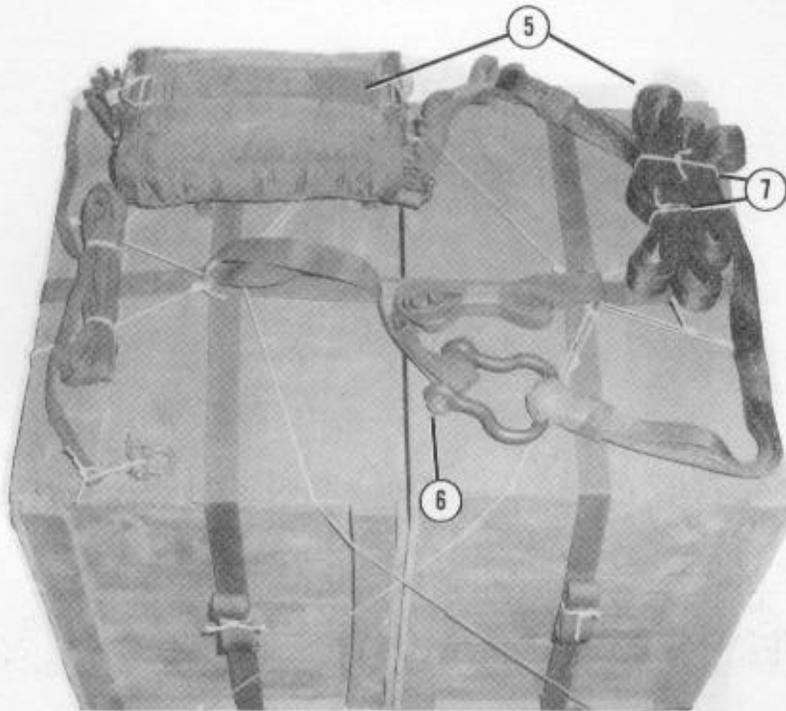
- ⑥ Remove the extraction line and the 36-inch adapter web from the parachute connector links. Pass the free end of a 60-inch nylon webbing strap (shear strap) through the suspension line L-bar connector links.
- ⑦ Pass the free end of the shear strap through one end of a 20-foot (2-loop), type XXVI nylon webbing sling.
- ⑧ Fasten the shear strap with the friction adapter, and pull the end of the strap until a 12-inch loop is formed.
- ⑨ Fold the excess strap, and tape the folds to the strap.
- ⑩ Place a 3/4-inch cargo suspension clevis on the free end of the 20-foot sling. Replace the bolt and nut. Tape the clevis to the sling.

Figure 3-6. A 15-foot cargo extraction parachute modified (continued)



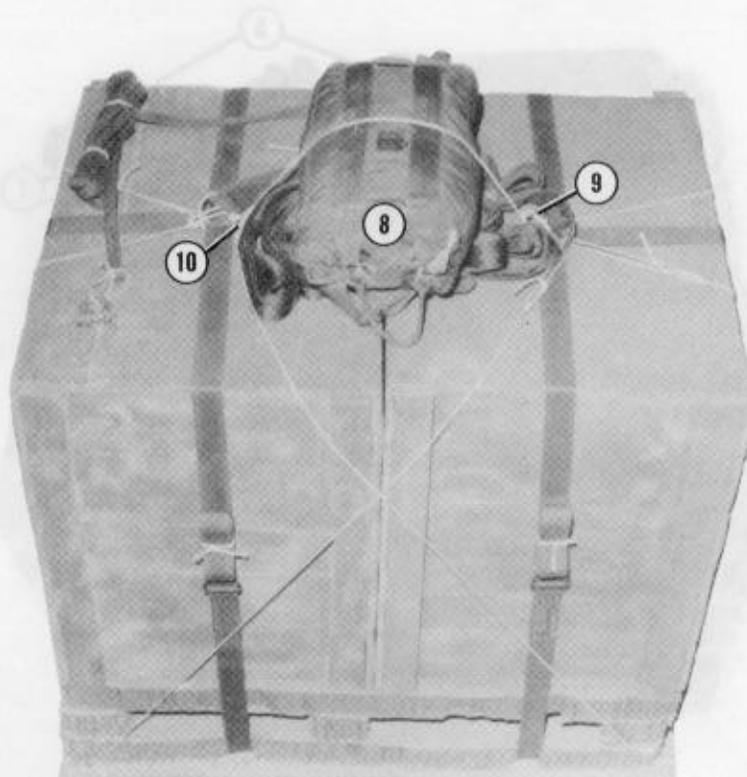
- ① Pass the free end of an A-7A strap through the two D-rings on top of the load.
- ② Fasten the strap with the friction adapter. Pull the end of the strap through the friction adapter until the double length of the strap is 24 inches long.
- ③ Fold the excess strap. Secure the folds to the strap with tape or type I, 1/4-inch cotton webbing.
- ④ Pull the two plies of the strap upward. Form a 6-inch loop in the center of the strap, and tape the plies of the strap together below the loop.

Figure 3-7. One modified 15-foot cargo extraction parachute installed



- ⑤ **Modify the 15-foot cargo extraction parachute as shown in Figure 3-6. Place the 15-foot cargo parachute and the 20-foot sling on top of the load.**
- ⑥ **Place the loop formed in step 4 on the bolt of the cargo suspension clevis on the end of the 20-foot sling. Replace the nut.**
- ⑦ **Fold the 20-foot sling, and tie the folds in place with lengths of type I, 1/4-inch cotton webbing.**

Figure 3-7. One modified 15-foot cargo extraction parachute installed (continued)



- ⑧ Center the sling and the parachute on the load.
- ⑨ Tie one end of a length of type I, 1/4-inch cotton webbing to a convenient point on the load.
- ⑩ Pass the free end of the type I, 1/4-inch cotton webbing over the parachute. Pull the webbing tight, and tie the free end to a convenient point on the load.

Figure 3-7. One modified 15-foot cargo extraction parachute installed (continued)

3-5. Modifying the T-10 Parachute

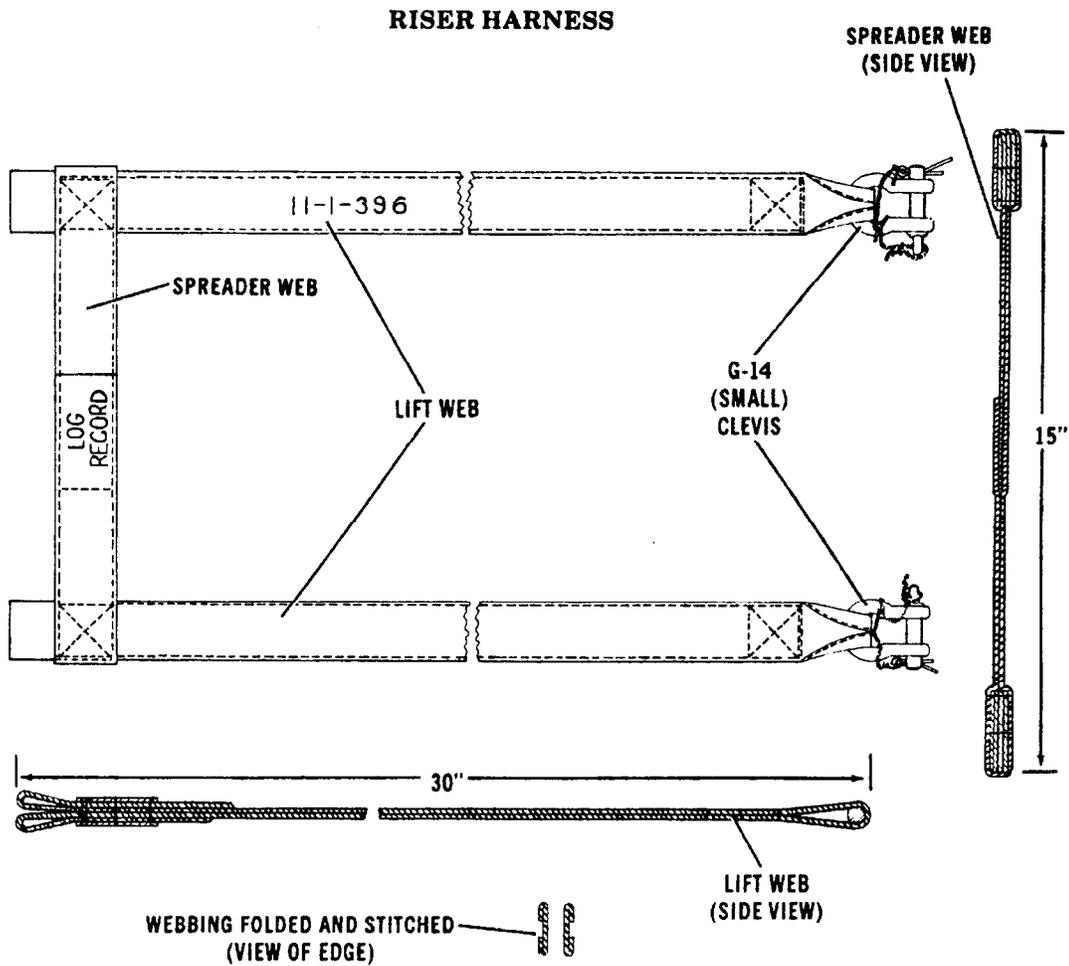
CAUTION

T-10 parachutes or components thereof that have been converted for cargo use must not be used for personnel parachutes.

The T-10 personnel parachute may be used as the recovery parachute on container loads weighing at least 90 pounds but not more than 500 pounds. However, the T-10 parachute must be modified to be used on container loads. Prepare the T-10 parachute as described below:

- a. Inspect the parachute according to TM 10-1670-293-23&P/TO 14D1-2-467-2.
- b. Construct the riser harness as shown in Figure 3-8, steps 1 through 6.
- c. Modify the deployment bag as shown in Figure 3-8, steps 7, 12, and 13.
- d. Remove the static line snap assembly as shown in Figure 3-8, step 8.
- e. Modify the static line as shown in Figure 3-8, steps 9 and 10.
- f. Modify the canopy as shown in Figure 3-8, steps 14 and 15.
- g. Attach the riser harness as shown in Figure 3-8, step 16.
- h. Pack the parachute according to TM 10-1670-293-23&P/TO 14D1-2-467-2.
- i. Fold and secure the static line as shown in Figure 3-8, steps 17, 18, and 19.

Note: This drawing is not drawn to scale.

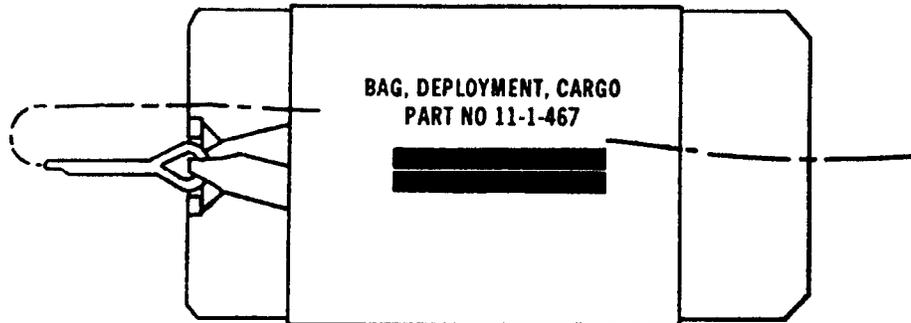


Step:

1. Use type VIII nylon webbing.
2. Use size 3, nylon thread.
3. Follow TM 10-1670-298-20&P for stitching instructions.
4. Form the T-10 cargo parachute riser harness as shown in the diagram above.
5. Form a pocket in the center of the spreader web as shown in the diagram above. Attach the prepared log record book to the spreader web pocket.
6. Attach the two G-14 clevises.

Figure 3-8. T-10 parachute modified

Note: These drawings are not drawn to scale.

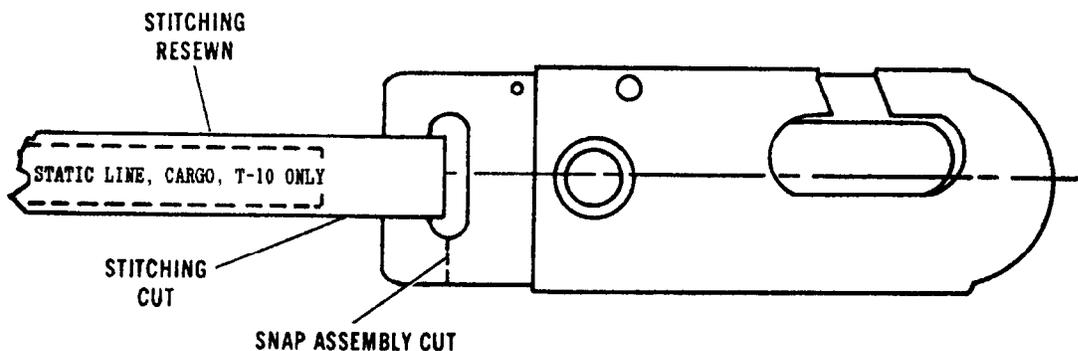


Step:

7. Cover or black out the data block on the deployment bag flap. Stencil on the bag flap with ink (color number 15102, MIL-I-6903C) as close as possible to the original lettering the following:

BAG, DEPLOYMENT, CARGO
PART NO 11-1-467

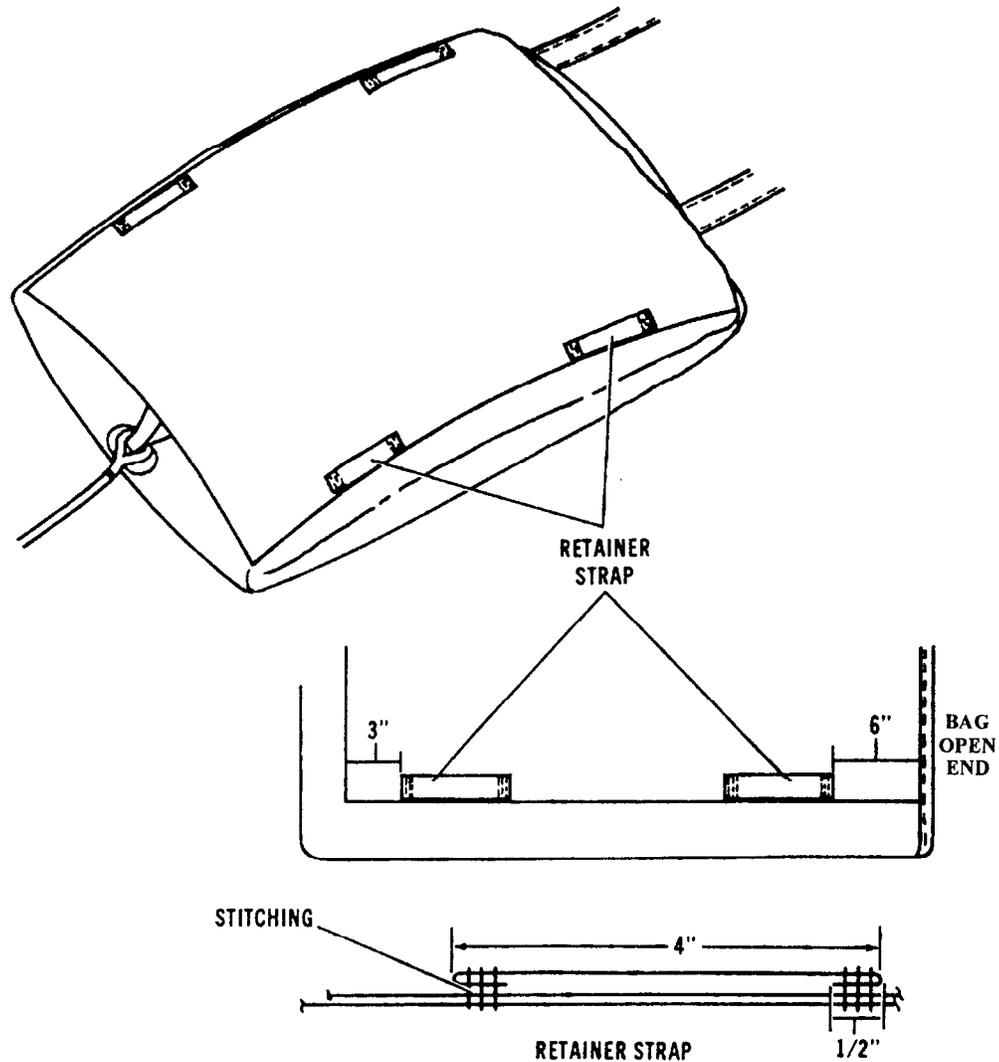
Note: The lettering must be at least 1/2-inch high.



8. Remove the static line snap assembly from the static line with bolt cutters.
9. Cut the stitching on the inside of the static line loop back 1/2 inch from the end. Start 2 inches below the cut stitching, and sew the edge of the static line 2 inches toward the cut stitching and across the static line. Sew the edge of the static line 2 inches on the other side.
10. Attach a G-14 clevis to the loop formed in step 9.
11. Using 1/2-inch high lettering, stencil the following words 1 inch below the G-14 clevis attaching loop: STATIC LINE, CARGO, T-10 ONLY. The lettering must be done with strata blue parachute ink.

Figure 3-8. T-10 parachute modified (continued)

Note: These drawings are not drawn to scale.



Step:

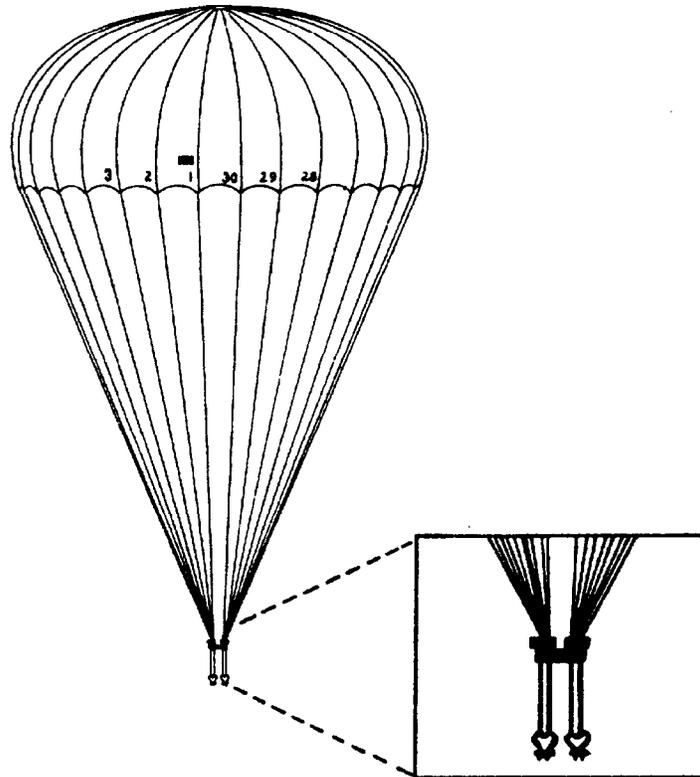
12. Cut a 5 inch length of 1-inch, type II cotton webbing, and wax the ends.

Note: If 1-inch, type II cotton webbing is not available, 1-inch, type III nylon webbing may be substituted.

13. Make a 1/2-inch turn-under on each end of the webbing, and position the webbing as shown with the turn-unders facing down. Secure the strap by making three rows of stitching across each strap end according to TM 10-1670-276-23&P/TO 13C5-29-2 and TM 10-1670-201-23/TO 13C-1-41.

Figure 3-8. T-10 parachute modified (continued)

Note: This drawing is not drawn to scale.



Step:

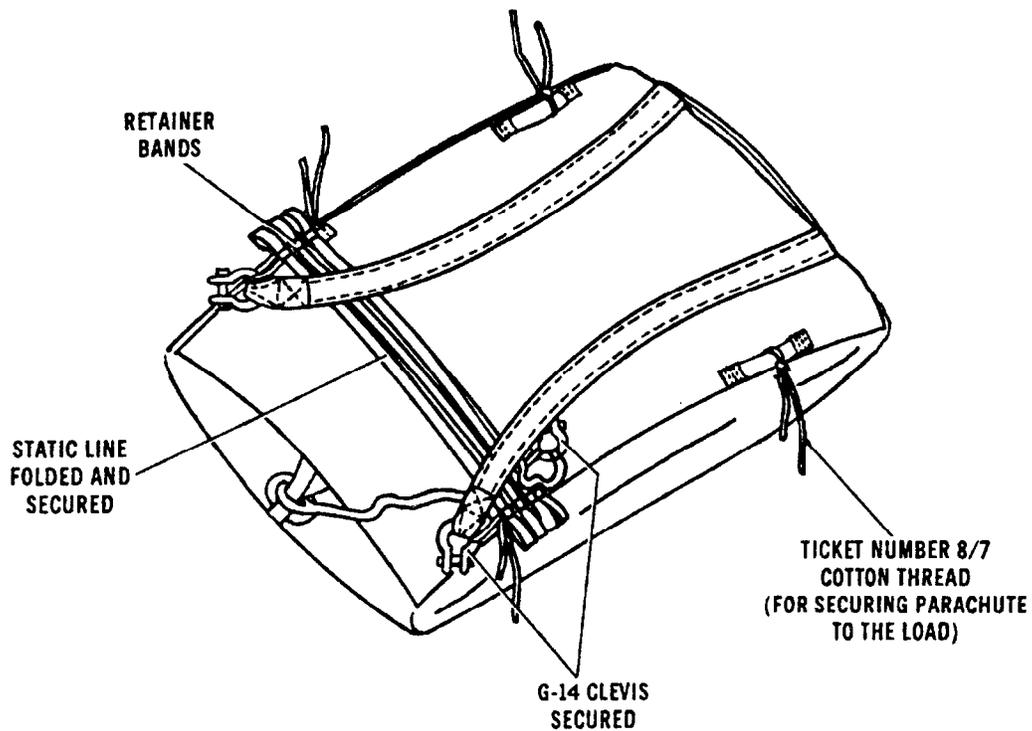
14. Cover or black out the data block (except serial number) on number 1 gore and 15 gore of the parachute canopy. Stencil on the canopy (as close as possible to the original lettering) the following:

CANOPY, CARGO, NYLON
PART NUMBER 11-1-466

15. Remove the personnel harness from the T-10 parachute.
16. Install the riser harness as follows:
 - a. Attach suspension lines 1 through 8 to the left front riser loop with an L-bar connector link.
 - b. Attach suspension lines 9 through 15 to the left rear riser loop with an L-bar connector link.
 - c. Attach suspension lines 16 through 22 to the right rear riser loop with an L-bar connector link.
 - d. Attach suspension lines 23 through 30 to the right front riser loop with an L-bar connector link.

Figure 3-8. T-10 parachute modified (continued)

Note: This drawing is not drawn to scale.



Step:

17. Fold the static line across the deployment bag. Secure the folds to the top retainer straps with retainer bands.
18. Secure the static line clevis with a retainer band or ticket number 8/4 cotton thread.
19. Secure each G-14 clevis attached to the riser harness to the retainer straps with ticket number 8/4 cotton thread to store the parachute.

Note: When installing the parachute on the load, secure the parachute to convenient points on the load with ticket number 8/7 cotton thread attached to each retainer strap.

Figure 3-8. T-10 parachute modified (continued)

Table 3-2. Equipment required for modifying the T-10 parachute

National Stock Number	Item	Quantity
1670-00-590-9909	Bag, deployment	1
1670-01-247-7151	Canopy, 35-ft diam, T-10C	1
1670-00-568-0323	Band, retainer	As required
4030-00-678-8560	Shackle, 3/8-in diam (G-14 clevis)	2
8310-00-917-3944	Thread, cotton, ticket number 8/4	As required
8310-00-917-3945	Thread, cotton, ticket number 8/7	As required
8310-00-267-3027	Thread, nylon, size 3, OD	As required
8310-00-248-9714	or Thread, nylon, size 3, NT	As required
8305-00-268-2411	Webbing:	As required
8305-00-281-3315	Cotton, 1/4-in, type I	As required
8305-00-261-8585	Cotton, 1-in, type II	As required
8305-01-062-7050	or Nylon, 1-in, type III	As required
8305-00-261-8585	Nylon, type VIII, OD	As required
8305-00-263-3591	or Nylon, type VIII, NT	As required