Section VII

EXTRACTION PARACHUTES

3-30. Extraction Lines

The size and length of the extraction line used depend on the aircraft used and the size of the cargo extraction parachute rigged on the load.

CAUTION

While attaching the extraction line to the cargo extraction parachute, ensure that the keepers on the extraction line and the adapter web are pushed tight against the link and are taped in place with cloth-backed tape. If a keeper is not present on the adapter web, tape the adapter web in place with cloth-backed tape.

3-31. C-130 Aircraft

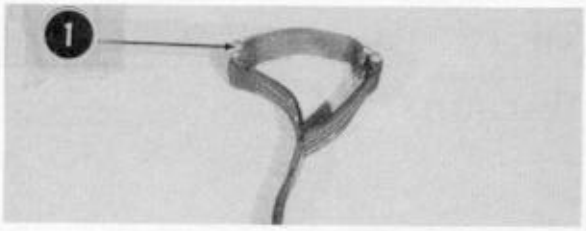
The primary method of extraction of low-velocity airdrop platforms uses a 60-foot extraction line attached to the indicated cargo extraction parachute as detailed in the following paragraphs. When the A/A37A-11 tow-plate is utilized for Drogue Extraction System airdrops, adapt the procedures in paragraph 3-33.2.

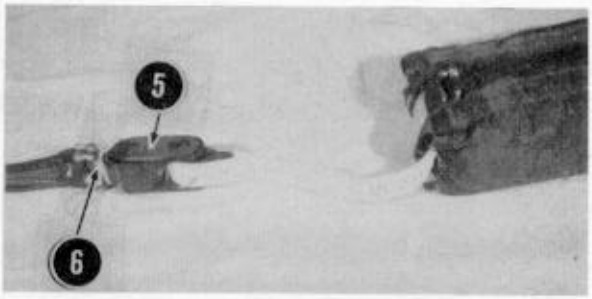
a. One 15-Foot Cargo Extraction Parachute.

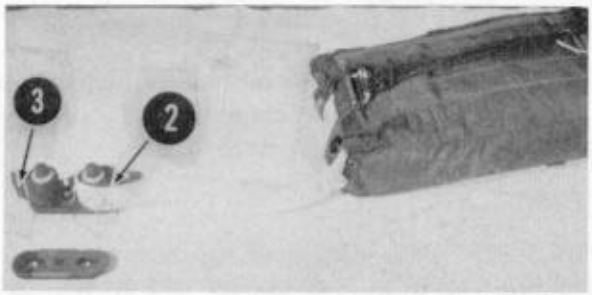
(1) If the issued 60-foot (1-loop), type X nylon webbing extraction line (NSN 1670-00-856-0265) is attached to the parachute, the parachute is ready for use.

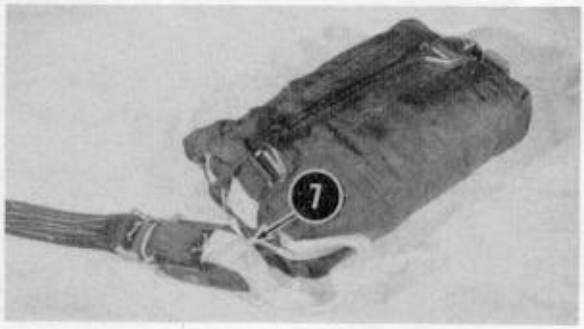
(2) If the parachute has been modified by attaching a 36-inch adapter web to the canopy suspension lines, one of two extraction lines may be used. Attach an extraction line using one of the following procedures:

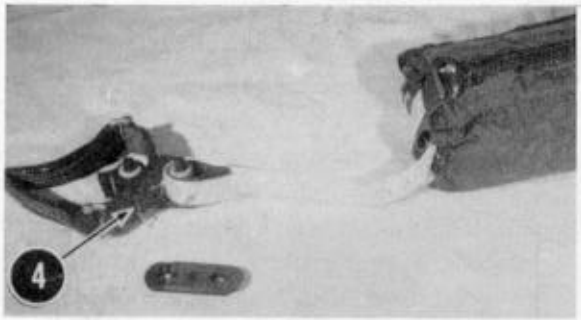
(a) Attach a 60-foot (1-loop), type X nylon webbing extraction line (NSN 1670-00-856-0265) as shown in Figure 3-121. Adapt the procedures in Figure 3-121 to attach a 60-foot (1-loop), type XXVI nylon webbing extraction line (NSN 1670-01-064-4452).











(1) Use two L-bar connector links to fit a 9 1/2-inch adapter web to the extraction line connector link attaching loop of a 60-foot (1-loop), type X nylon webbing extraction line.

(2) Place the bridle loop of the 36-inch adapter web on one sleeve of a type IV link assembly.

(3) Place a 3 1/2-inch cotton buffer on the other sleeve of the link.

(4) Place the 9 1/2-inch adapter web on the type IV link between the buffer and the bridle loop.

(5) Replace the side link plate. Be sure that the spring has properly seated the button with the lock slide closing toward the load. Tape the adapter web with cloth-backed tape.

(6) Fold the 9 1/2-inch adapter web, and tie the fold in place with a single length of type I, 1/4-inch cotton webbing.

(7) Tie the type IV link to the bag closing loops with one length of type I, 1/4-inch cotton webbing. Run the webbing through the top and bottom bag closing loops on the grommet side of the bag. Tie the ends of the cord together with a surgeon's knot and a locking knot.

Figure 3-121. Extraction line fitted to 36-inch adapter web

(b) Attach the adapter web to the 15-foot extraction parachute as shown in Figure 3-122.

① Fit the loop of the adapter web on the sleeve of a type IV link assembly.

② Fit the extraction line parachute attaching loop to the other sleeve of the link. Replace the side link plate. Be sure that the spring has properly seated the button with the lock slide closing toward the load. Tape the keeper and the adapter web in place with cloth-backed tape.

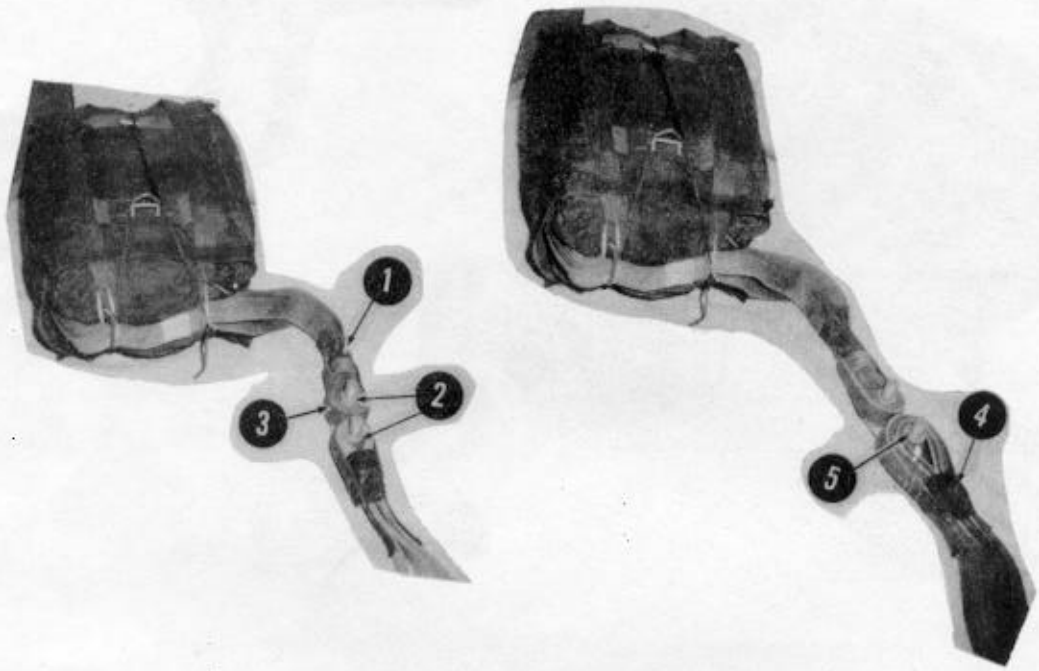
③ Tie the type IV link to the bag closing loops with one length of type I, 1/4-inch cotton webbing. Run the webbing through the top and bottom closing loops on the grommet side of the bag. Tie the ends of the webbing together with a surgeon's knot and a locking knot.

Figure 3-122. Extraction line attached to 15-foot extraction parachute

b. One 22-Foot Cargo Extraction Parachute. The 22-foot cargo extraction parachute may use either a 60-foot (3-loop), type X nylon webbing extraction line (NSN 1670-00-856-0266) or a 60-foot (3-loop), type XXVI nylon webbing extraction line (NSN 1670-01-062-6313). Attach the line to the parachute by adapting the procedures shown in Figure 3-123.

c. One 28-Foot, Heavy-Duty Cargo Extraction Parachute. The 28-foot, heavy-duty cargo extraction parachute needs a 60-foot (3-loop), type XXVI nylon webbing extraction line (NSN 1670-01-062-6313). Attach the line to the parachute by adapting the procedures shown in Figure 3-123.

Note: See Table 2-8 to determine the proper link assembly (3 3/4- or 5 1/2-inch) to use.



(1) Add a cotton buffer to the inside of the adapter web loop of the cargo extraction parachute.

(2) Place a large spacer on each bolt of the two-point link.

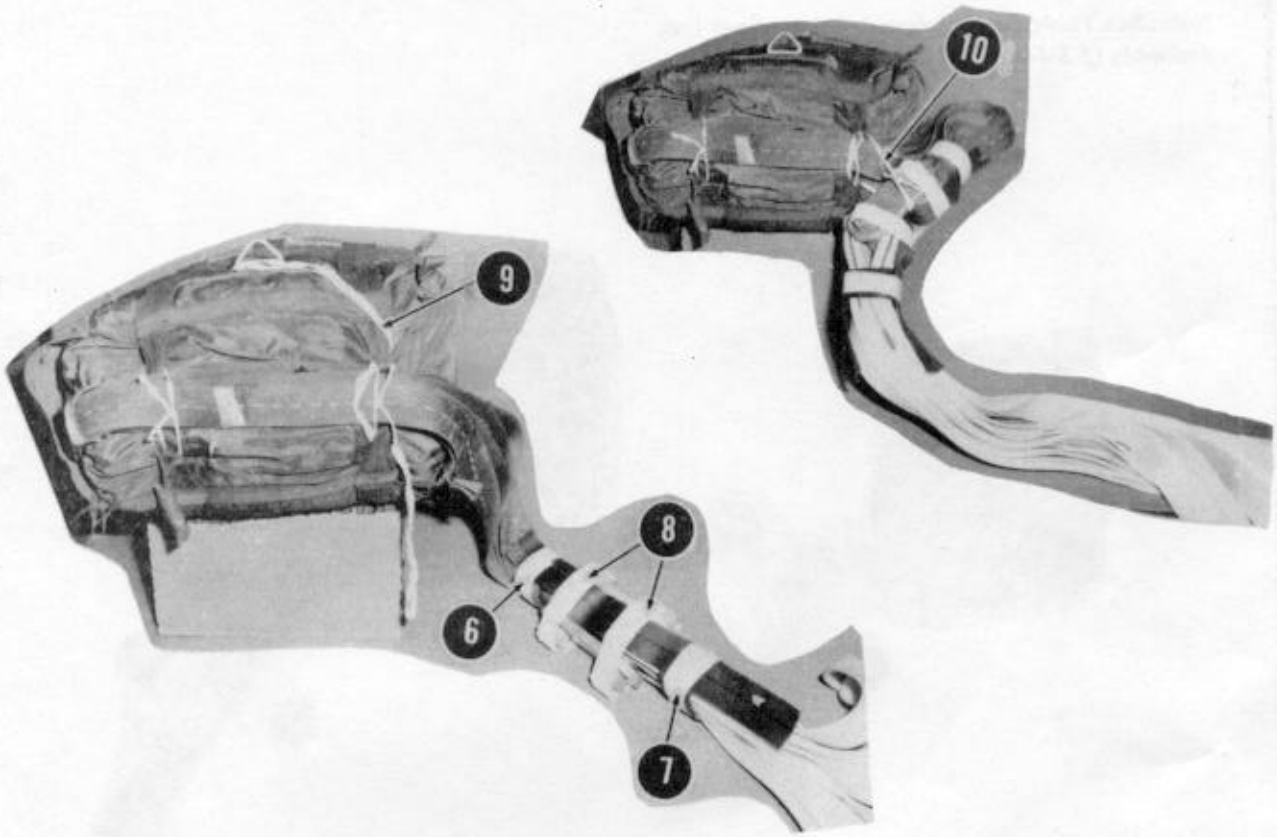
(3) Fit the buffered adapter web loop on one of the spacers attached in step 2 above.

Note: When a ply separator is used, cotton buffers are not required.

(4) Add cotton buffer to the inside of one of the extraction line parachute-attaching loops on the 60-foot extraction line. Tape the buffers in place with cloth-backed tape.

(5) Fit the loop on the free spacer of the two-point link.

Figure 3-123. Extraction line attached to 22- or 28-foot cargo extraction parachute with a 3 3/4-or 5 1/2-inch, two-point link assembly



(6) Run a length of tape around the outside buffer and the adapter web.

(7) Run a length of tape around the outside buffer and the extraction line.

(8) Bolt the side plate to the two-point link. Use a wrench to tighten the nuts. Run a length of tape around the link and over each nut and bolt end.

(9) For a 22-foot cargo extraction parachute, run a length of type I, 1/4-inch cotton webbing through the top and bottom bag closing loops on the grommet side of the bag. For a 28-foot cargo extraction parachute, run a double length of type I, 1 /4-inch cotton webbing through the top and bottom bag closing loops on the grommet side of the bag.

(10) Run type I, 1/4-inch cotton webbing through the two-point link, and tie the ends of the webbing together with a surgeon's knot and a locking knot.

Figure 3-123. Extraction line attached to 22- or 28-foot cargo extraction parachute with a 3 3/4- or 5 1/2-inch, two-point link assembly (continued)

d. Two 28-Foot, Heavy-Duty Cargo Extraction Parachutes. A cluster of two 28-foot, heavy-duty cargo extraction parachutes, as shown in Figure 3-124, is attached to one end of a 60-foot (6-loop), type XXVI nylon webbing line (NSN 1670-01-064-4454). The other end of the line is attached to the four-point link assembly of the parachute cluster after the cluster has been installed in the aircraft.

3-32. C-141 Aircraft

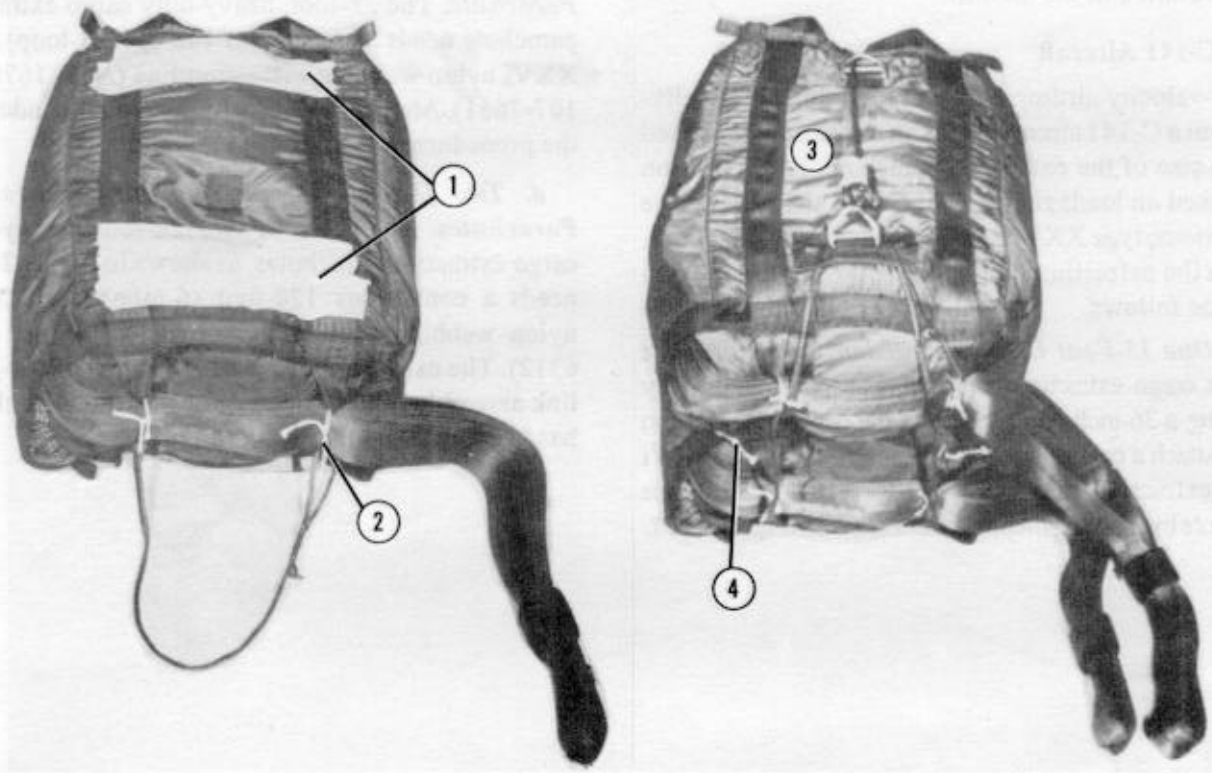
A low-velocity airdrop platform load rigged for delivery from a C-141 aircraft needs an extraction line based on the size of the extraction parachute. All extraction lines used on loads rigged for a C-141 aircraft must be continuous, type XXVI nylon webbing extraction lines. Attach the extraction line to the cargo extraction parachute as follows.

a. One 15-Foot Cargo Extraction Parachute. The 15-foot cargo extraction parachute must be modified by attaching a 36-inch adapter web to the canopy suspension lines. Attach a continuous 160-foot (1-loop), type XXVI nylon extraction line (NSN 1670-01-107-7652) to the parachute by adapting the procedures shown in Figure 3-122.

b. One 22-Foot Cargo Extraction Parachute. The 22-foot cargo extraction parachute needs a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line (NSN 1670-01-107-7651). Attach the line to the parachute by adapting the procedures shown in Figure 3-123.

c. One 28-Foot, Heavy-Duty Cargo Extraction Parachute. The 28-foot, heavy-duty cargo extraction parachute needs a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line (NSN 1670-01-107-7651). Attach the line to the parachute by adapting the procedures shown in Figure 3-123.

d. Two 28-Foot, Heavy-Duty Cargo Extraction Parachutes. A cluster of two 28-foot, heavy-duty cargo extraction parachutes, as shown in Figure 3-124, needs a continuous 120-foot (6-loop), type XXVI nylon webbing extraction line (NSN 1670-01-062-6312). The extraction line is attached to the four-point link assembly of the parachute cluster after the cluster has been installed in the aircraft.



(1) Tape the V-rings of the bottom parachute to the deployment bag.

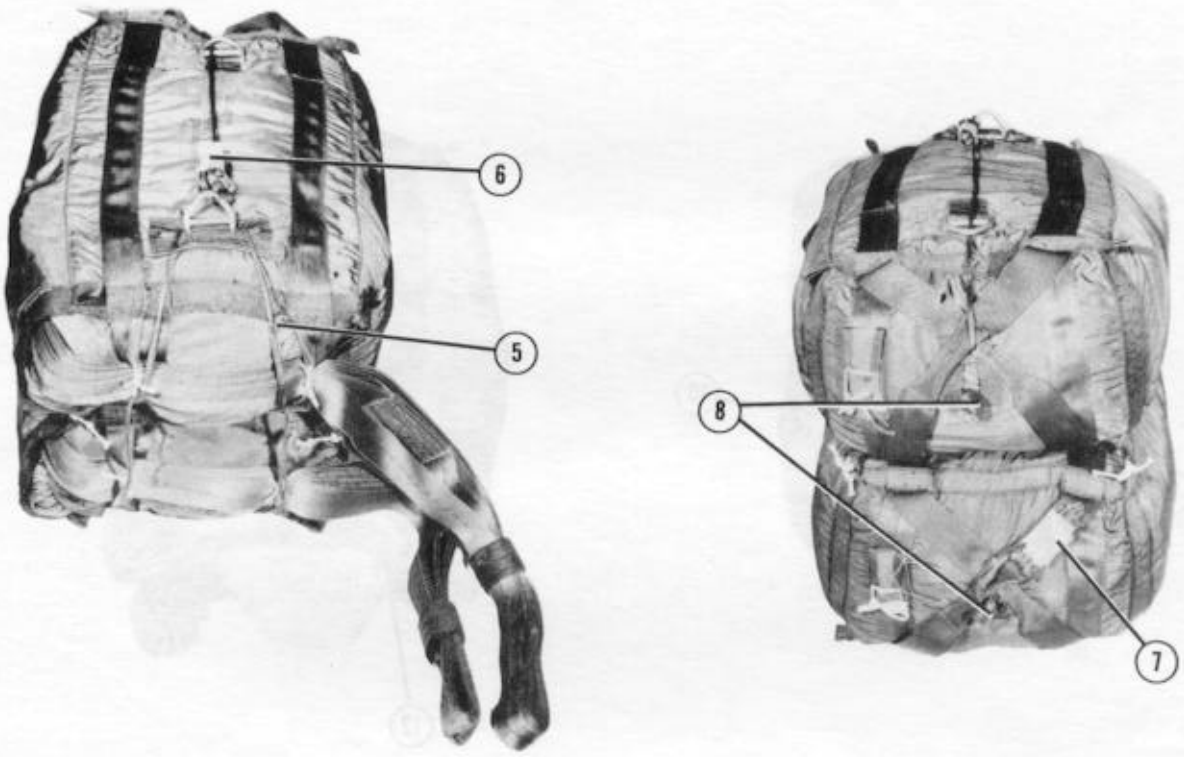
(2) Be sure 9 to 12 inches of the adapter web extend beyond the tie.

(3) Place a second parachute on top of the first.

(4) Tie the parachutes together at each corner with single lengths of type III nylon cord.

Note: When tying the ends of the type III nylon cord together, use a surgeon's knot, a locking knot, and an overhand knot in each free end.

Figure 3-124. Clustering extraction parachutes for an initial extraction



(5) Run the safety loop of the top parachute through the safety loop of the bottom parachute, and hook it behind the bent V-ring of the top parachute.

(6) Safety the pendulum line of the top parachute to the bent V-ring. Fold the excess line, and tape the folds in place.

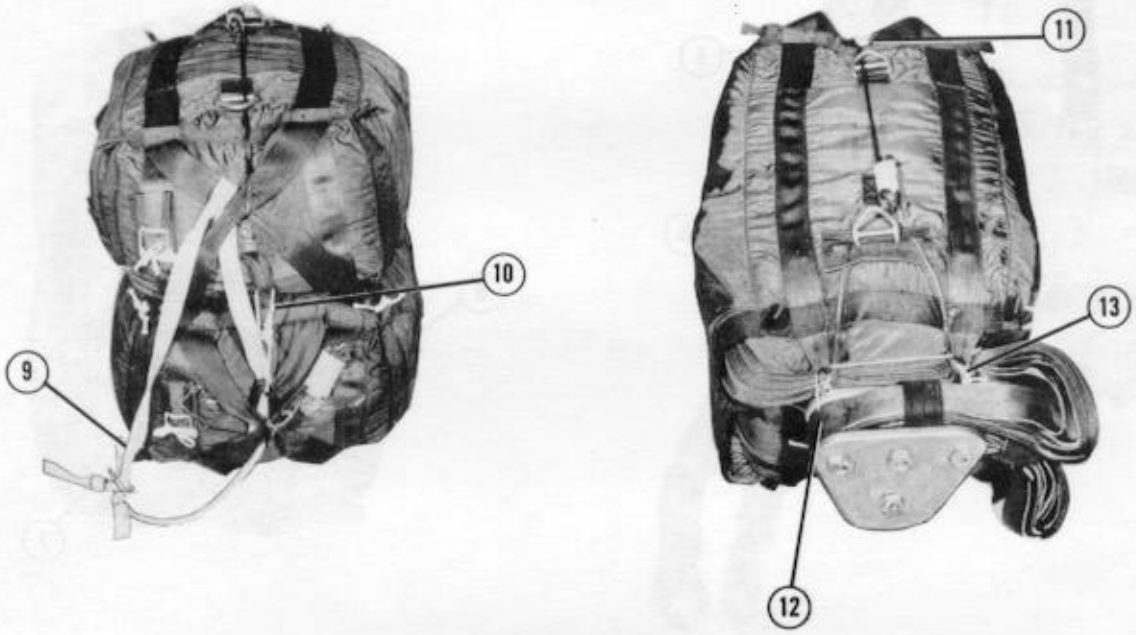
(7) Fold the pendulum line of the bottom parachute, and tape the folds in place.

(8) Pull each bridle loop from its bag far enough to untie the bag retaining lines. Remove these lines.

Figure 3-124. Clustering extraction parachutes for an initial extraction (continued)

CAUTION

Be sure the bag retaining tie does not pass through the bridle loop of the top parachute.



(9) Use a 103-inch length of 1-inch tubular nylon webbing for the bag retaining tie. Run the tie through the bag retaining straps of the bottom parachute, through the bridle loop, and up through the bag retaining straps of the top parachute. Tie the ends of the retaining strap together with a surgeon's knot and a locking knot.

(10) Tie the bridle loops together with one length of type III nylon cord to form a break cord.

(11) Fold the bag retaining strap, and tape the folds in place.

(12) Place the loops of the adapter web on the top outside pins of a four-point link assembly, and replace the link cover. Push the keepers against the pins, and tape the keepers in place with cloth-backed tape.

(13) Tie the link assembly to the upper bag closing loops of the top parachute with one length of type III nylon cord. Ensure the cord passes through the link and under the top pins.

Figure 3-124. Clustering extraction parachutes for an initial extraction (continued)

3-33. Extraction Parachute Clusters

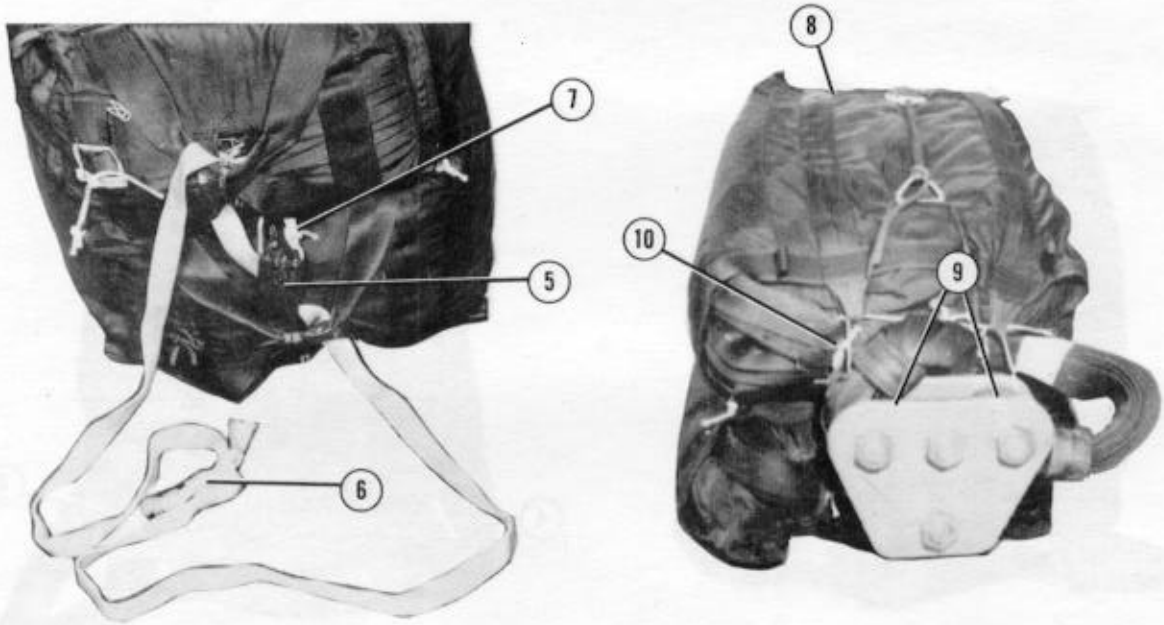
Cluster two 28-foot cargo extraction parachutes for an initial extraction as shown in Figure 3-124 and for a sequential extraction as shown in Figure 3-125.

1. Remove the safety loop from around the bent V-ring. Extend the safety loop around the opposite side of the bag from the bent V-ring, and tie it snugly in place with the pendulum line.
2. Be sure 9 to 12 inches of the adapter web extend beyond the bag closing tie.
3. Prepare a second parachute as in steps 1 and 2 above and place it on top of the first parachute.
4. Tie the parachutes together at each corner with single lengths of type III nylon cord with a surgeon's knot, a locking knot, and an overhand knot in each free end.

Figure 3-125. Clustering extraction parachutes for a sequential extraction

CAUTION

Be sure the bag retaining tie does not pass through the bridle loop of the top parachute.



(5) Pull each bridle loop from its bag far enough to untie the bag retaining lines.

(6) Use a 103-inch length of 1-inch tubular nylon webbing for the bag retaining tie. Run the tie through the bag retaining straps of the bottom parachute, through the bridle loop, and up through the bag retaining straps of the top parachute. Tie the ends of the retaining tie together with a surgeon's knot, a locking knot, and an overhand knot in the running end.

(7) Tie the bridle loops together with a single length of type III nylon cord.

(8) Fold and tape the bag retaining tie.

(9) Place the loops of the adapter webs on the top outside pins of a four-point link assembly, and replace the link cover. Push the keepers against the pins, and tape the keepers in place with cloth-backed tape.

(10) Tie the link assembly to the upper bag closing tabs of the top parachute with a single length of type III nylon cord. Ensure the cord passes through the link and under the top pins.

Figure 3-125. Clustering extraction parachutes for a sequential extraction (continued)

3-33.1. C-5 Aircraft

A low-velocity airdrop platform load rigged for delivery from a C-5 aircraft needs an extraction line based on the size of the extraction parachute (according to Table 2-8) and the platform's location within the aircraft (as shown in Figure 2-14.1). Because extraction line length varies depending on the platform's location within the aircraft, attachment of cargo extraction parachutes to extraction lines and joining of extraction lines shall be accomplished after the platform is loaded aboard the aircraft. Attach the extraction line to the cargo extraction parachute and join extraction lines as follows.

a. One 15-Foot Cargo Extraction Parachute. The 15-foot cargo extraction parachute must be modified by attaching a 36-inch adapter web to the canopy suspension lines. Attach a continuous 160-foot (1 -loop), type XXVI nylon webbing extraction line to the parachute by adapting the procedures shown in Figure 3-122. Platform loads using a 15-foot cargo extraction parachute must be positioned so that the rear edge of the platform is located between aircraft fuselage stations (FSs) 1187 and 1971.

b. One 22-Foot Cargo Extraction Parachute. Attach the extraction line to the extraction parachute and join extraction lines as follows.

(1) Rear edge of the platform located between aircraft FSs 1427 and 1971. The 22-foot cargo extraction parachute needs a continuous 140-foot (3-loop), type XXVI nylon webbing extraction line. Attach the line to the parachute by adapting the procedures shown in Figure 3-123.

(2) Rear edge of the platform located between aircraft FSs 707 and 1426. The 22-foot cargo extraction parachute needs a 60-foot (3-loop), type XXVI nylon webbing extraction line; a 140-foot (3-loop), type XXVI nylon webbing extraction line; and a 5 1/2-inch, two-point link assembly. Attach the 60-foot extraction line to the parachute by adapting the procedures shown in Figure 3-123. Join the 140-foot extraction line to the 60-foot extraction line by adapting the procedures shown in Figure 3-126.

c. One 28-Foot Cargo Extraction Parachute. Attach the extraction line to the extraction parachute and join extraction lines as follows.

(1) Rear edge of the platform located between aircraft FSs 1427 and 1971. One 28-foot cargo extraction parachute needs a continuous 140 foot (3-loop), type XXVI nylon webbing extraction line. Attach the line to the parachute by adapting the procedures shown in Figure 3-123.

(2) Rear edge of the platform located between aircraft FSs 707 and 1426. One 28-foot cargo extraction parachute needs a 60-foot (3-loop), type XXVI nylon webbing extraction line; a 140-foot (3-loop), type XXVI nylon webbing extraction line; and a 5 1/2-inch, two-point link assembly. Attach the 60-foot extraction line to the parachute by adapting the procedures shown in Figure 3-123. Join the 140-foot extraction line to the 60-foot extraction line by adapting the procedures shown in Figure 3-126.

d. Two 28-Foot Cargo Extraction Parachutes. A cluster of two 28-foot cargo extraction parachutes is prepared for an initial extraction as shown in Figure 3-128 and for a sequential extraction as shown in Figure 3-125. Attach the extraction line to the extraction parachutes and join extraction lines as follows.

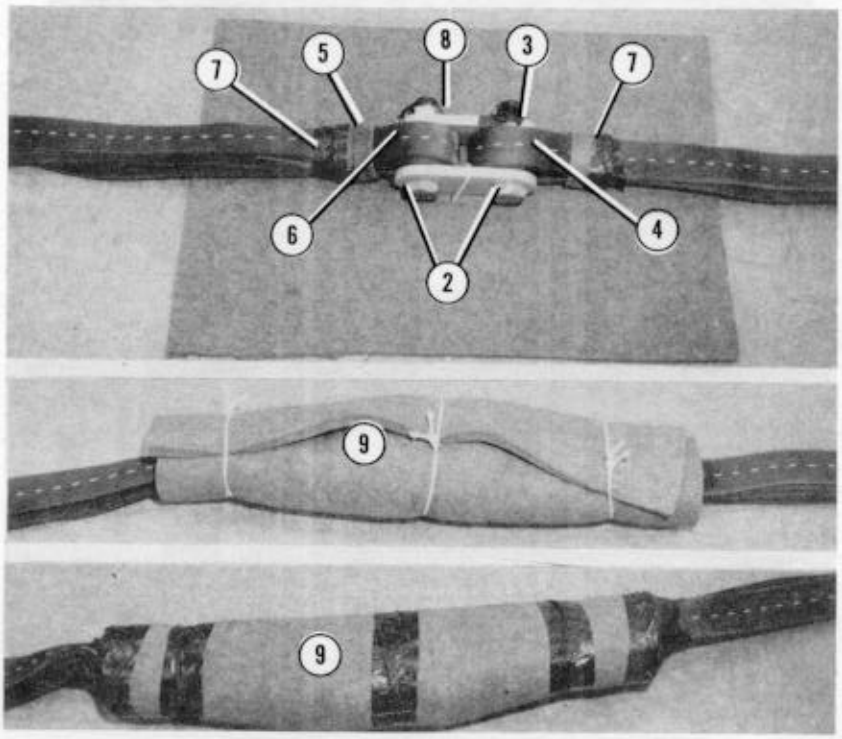
(1) Rear edge of the platform located between aircraft FSs 1667 and 1971. Two 28-foot cargo extraction parachutes need a continuous 120 foot (6-loop), type XXVI nylon webbing extraction line and a four-point link assembly. The extraction line is attached to the four-point link assembly of the parachute cluster after the cluster has been installed in the aircraft.

(2) Rear edge of the platform located between aircraft FSs 947 and 1666. Two 28-foot cargo extraction parachutes need a 60-foot (6-loop), type XXVI nylon webbing extraction line; a 120-foot (6-loop), type XXVI nylon webbing extraction line; a four-point link assembly; and a modified extraction force transfer coupler, 11-inch adapter latch assembly. Attach the 60-foot extraction line to the four-point link assembly of the parachute cluster after the cluster

has been installed in the aircraft. Join the 120-foot extraction line to the 60-foot extraction line by adapting the procedures shown in Figure 3-127.

(3) Rear edge of the platform located forward of aircraft FS 947. Two 28-foot cargo extraction parachutes need two 120-foot (6-loop), type XXVI nylon webbing extraction lines; a four-point link assembly; and a modified extraction force transfer coupler, 11-inch adapter latch assembly. Attach a 120-foot extraction line to the four-point link assembly of the parachute cluster after the cluster has been installed in the aircraft. Join the two 120-foot extraction lines together by adapting the procedures shown in Figure 3-127.

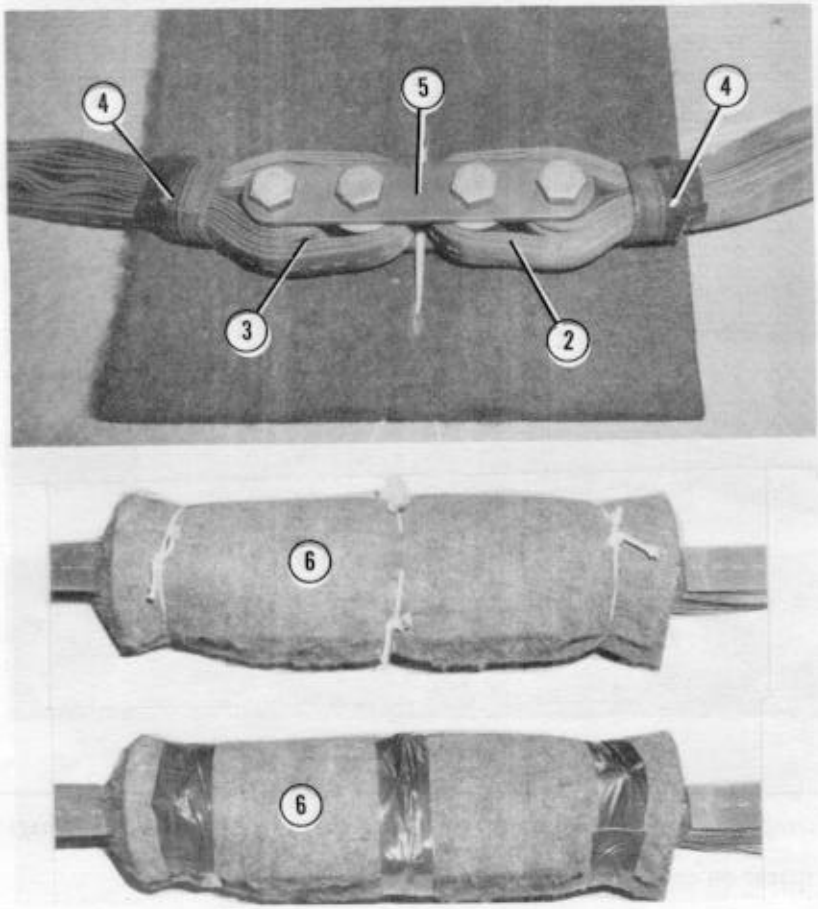
CAUTION
When connecting extraction lines, attach the shortest extraction line to the extraction parachute.



1. Remove the temporary handling and transport tie from both sling/extraction line bags (not shown).
2. Place a large spacer on each bolt of the 5 1/2-inch, two-point link.
3. Add a cotton buffer to the inside of the load-attaching loop of the extraction line connected to the extraction parachute.
4. Fit the buffered extraction line loop on one of the spacers attached in step 2, above.
5. Add a cotton buffer to the inside of the parachute-attaching loop of the extraction line connected to the EFTC.
6. Fit the buffered loop on the free spacer of the two-point link.
7. Run a length of tape around each extraction line loop near the two-point link.
8. Bolt the side plate on the two-point link. Wrench tighten the nuts. Run a length of tape around the link and over each nut and bolt end (not shown).
9. Wrap the link with 1/2-inch felt padding. Pass type III nylon cord around the felt in three places and tie. This keeps the felt from slipping. Tape over each type III nylon cord tie with cloth-backed tape.

Figure 3-126. Connecting type XXVI (3-loop) extraction lines together for C-5 airdrop

CAUTION
When connecting extraction lines, attach the shortest extraction line to the extraction parachute.



(1) Remove the temporary handling and transport tie from both sling/extraction bags (not shown).

(2) Divide the plies of the load-attaching loop of the extraction line connected to the extraction parachutes and place loops over two spacers of one end of a modified adapter latch assembly.

(3) Divide the plies of the parachute-attaching loop of the extraction line connected to the EFTC and place loops on the two free spacers of the modified adapter latch assembly.

(4) Run a length of tape around each extraction line loop near the modified adapter latch assembly.

(5) Bolt on the side plate of the 11-inch adapter latch assembly (modified). Wrench tighten the nuts. Run a length of tape around the latch assembly and over each nut and bolt end (not shown).

(6) Wrap the modified adapter latch assembly with 1/2-inch felt padding. Tie the felt padding in three places with type III nylon cord. Tape over each type III nylon cord tie with cloth-backed tape.

Figure 3-127. Connecting type XXVI (6-loop) extraction lines together for C-5 airdrop

e. Derigged 28-Foot Extraction Parachutes. Clustered 28-foot extraction parachutes must be derigged for an initial extraction as follows.

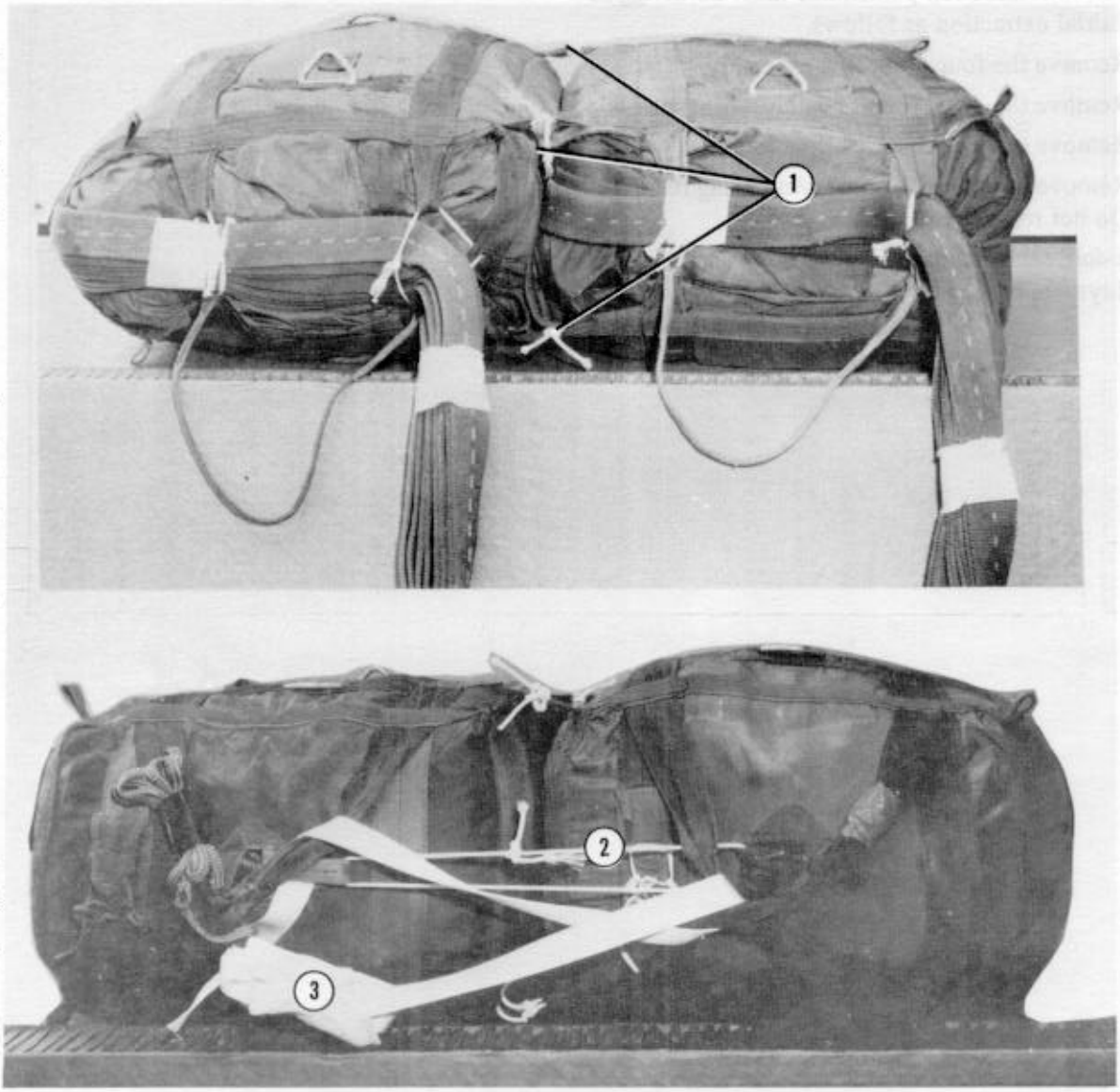
(1) Remove the four-point link assembly.

(2) Remove the deployment bag clustering ties.

(3) Remove the parachutes' bridle loop tie.

(4) Remove tape from the deployment bag retaining strap. Do not remove the strap.

(5) S-fold each pendulum line, and tape each fold to its deployment bag.



(1) Cluster the parachutes in four places by tying the adjacent inboard clustering loops of the parachutes with single lengths of type III nylon cord.

(2) Tie the bridle loops together with one length of type III nylon cord to form a break cord.

(3) S-fold the 1-inch tubular nylon webbing deployment bag retaining strap, and tape the folds together with masking tape.

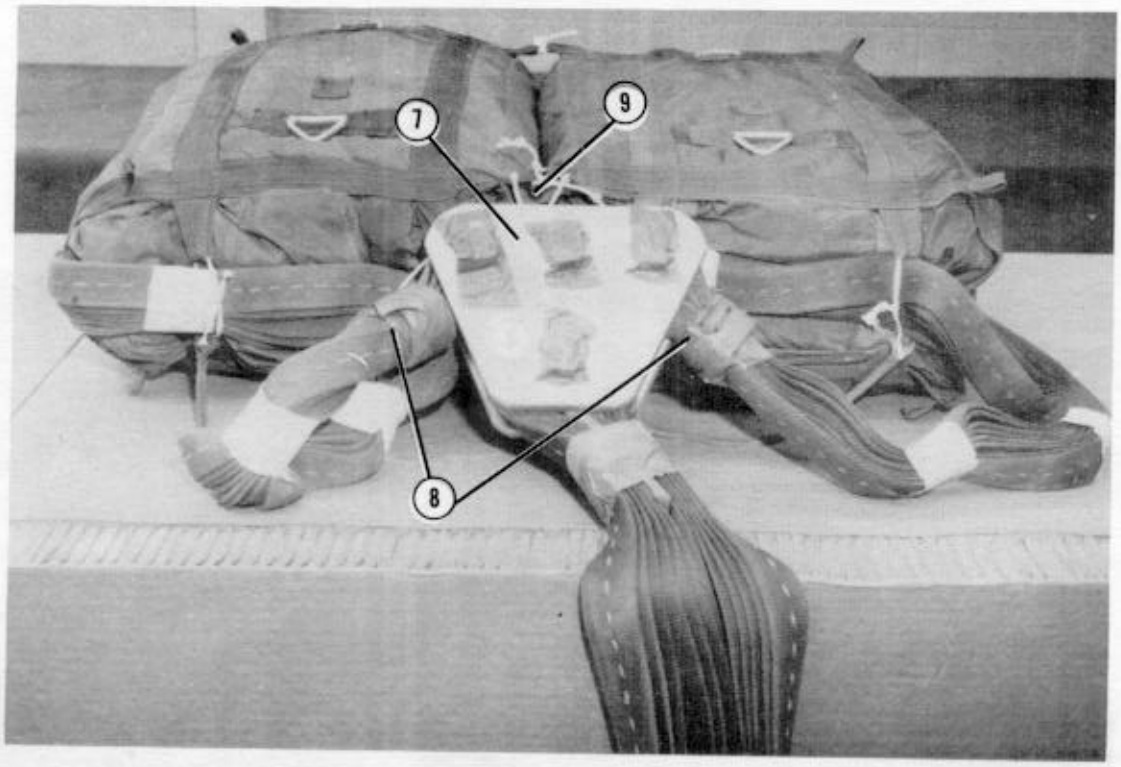
Figure 3-128. Clustering extraction parachutes for an initial extraction from C-5 aircraft

(4) Place the left parachute adapter web loop on the top left pin of a four-point link assembly. Place the right parachute adapter web loop on the top right pin.

(5) Place a cotton buffer on the bottom pin of the four-point link.

(6) Place the free end of the extraction line on the bottom pin and the separator. Divide the plies between the pin and the separator.

Figure 3-128. Clustering extraction parachutes for an initial extraction from C-5 aircraft (continued)



(7) Replace the link cover, and wrench tighten the nuts on the bolts. Run a length of cloth-backed tape over each nut.

(8) Push the keepers against the pins, and tape the keepers in place with cloth-backed tape.

(9) Center the four-point link against the mouths of the parachutes. Tie the link to the top inboard bag closing loop on each parachute with a length of type III nylon cord. Ensure the cord passes through the link and under the top pins.

Note: When tying the ends of the cord together, use a surgeon's knot, a locking knot, and an overhand knot in each free end.

Figure 3-128. Clustering extraction parachutes for an initial extraction from C-5 aircraft (continued)

3-33.2 MC-130 Aircraft

The primary method of extraction of low-velocity airdrop platforms uses the A/A37A-11 (LAPES) tow plate. When LAPE extraction parachute components are not available, adapt the procedures in paragraph 3-31. Use the extraction parachute configurations for low-velocity airdrop using the A/A3A-11 (LAPES) tow plate as follows:

a. One 15-Foot Cargo Extraction Parachute.

(1) When used as a drogue parachute only, attach the drogue extraction line to the parachute adapter web by adapting the procedures in Figure 3-122.

(2) When used as a drogue and main extraction parachute, provide an additional 60-foot (1-loop), type XXVI nylon webbing extraction line and an extraction link assembly (NSN 1670-01-072-1378).

(3) All extraction/drogue lines will be packed in extraction line bags.

b. One 22-Foot Cargo Extraction Parachute.

(1) Modify the 22-foot extraction parachute deployment bag with bridle straps by adapting procedures in FM 10-542/TO 13C7-51-21, chapter 2.

(2) Install the break cord tie, bag closing ties, and miniature cutter knife by adapting the procedures in TM 10-1670-277-23&P/TO 13C5-28-2.

(3) Rig the 22-foot extraction parachute and the 60-foot (3-loop), type XXVI nylon webbing extraction line by adapting the procedures in TM 10-1670-286-20&P/TO 13C5-2-41 paragraph 2-9.

c. One 28-Foot Cargo Extraction Parachute.

(1) The 28-foot cargo extraction parachute will be packed for LAPES airdrop as outlined in TM 1670-277-23&P/TO 13C5-28-2.

(2) Rig the 28-foot extraction parachute and the 60-foot (3-loop), type XXVI nylon webbing extraction line by adapting procedures in TM 10-1670-286-20&P/TO 13C5-2-41 paragraph 2-9.

d. Two 28-Foot Cargo Extraction Parachutes.

(1) The 28-foot cargo extraction parachutes will be packed for LAPES airdrop as outlined in TM 10-1670-277-23&P/TO 13C5-28-2.

(2) Rig two 28-foot extraction parachutes and a 60-foot (6-loop), type XXVI nylon webbing extraction line by adapting the procedures in TM 10-1670-286-20&P/TO 13C5-2-41 paragraph 2-10.

Note: The 55-foot drogue line (NSN 1670-01-036-0724) is not required for tow plate low-velocity airdrop.