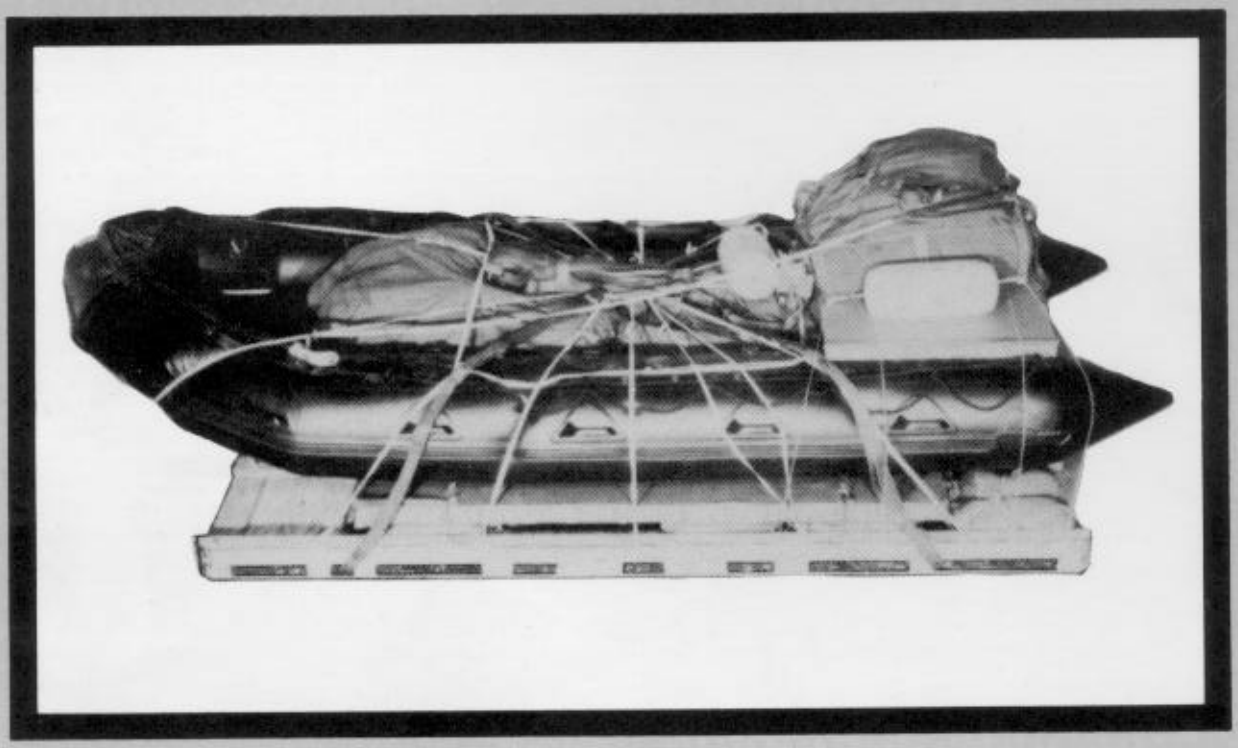
ARMY FM 10-542
AIR FORCE TO 13C7-51-21

AIRDROP OF SUPPLIES AND EQUIPMENT

RIGGING LOADS FOR SPECIAL OPERATIONS



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This change modifies the procedures for rigging double F470U boats. It also adds procedures for rigging the F470U boat in an A-22 cargo bag. Also included in this change are the service publication numbers for the Marine Corps (FMFM 7-51) and the Navy (NAVSEA SS400-AD-MMO-010). Make this change throughout the manual.

FM 10-542/TO 13C7-51-21, 7 October 1987, is changed as follows:

1. New or changed material is identified by a vertical bar in the margin opposite the changed material.
2. Remove old pages and insert new pages as indicated below:

Remove pages	Insert pages
i through v	i through vi
1-1 and 1-2	1-1 and 1-2
2-7 and 2-8	2-7 and 2-8
3-5 and 3-6	3-5 and 3-6
3-9 and 3-10	3-9 and 3-10
3-35 and 3-36	3-35 and 3-36
3-67 and 3-68	3-67 and 3-68
3-71 through 3-78	3-71 through 3-78
	3-90 through 3-134
Glossary-1	Glossary-1
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AIRDROP OF SUPPLIES AND EQUIPMENT
RIGGING LOADS FOR SPECIAL OPERATIONS

This change adds procedures for rigging the Mobile Over Snow Transport (MOST) for low-velocity airdrop. Also included in this change is Appendix A, checklists for Joint Airdrop Inspections.

1. New or changed material is identified by a vertical bar in the margin opposite the changed material.

2. Remove old pages and insert new pages as indicated below:

Remove pages	Insert pages
i through vi	i through vii
1-1 and 1-2	1-1 and 1-2
	4-1 through 4-23
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FIELD MANUAL
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NAVAL SEA COMMAND
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TECHNICAL ORDER
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DEPARTMENT OF THE ARMY
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AIRDROP OF SUPPLIES AND EQUIPMENT
RIGGING LOADS FOR SPECIAL OPERATIONS

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PREFACE

SCOPE

This manual is designed for use by all parachute riggers. This manual shows and tells how to prepare and rig the following airdrop loads for special operations:

- Four different HSLLADS containers or loads rigged for airdrop from the MC-130 aircraft.
- Six different inflated, rubber raiding crafts rigged on SOCEPs for low-velocity airdrop from a C-130, or C-141 aircraft. In addition, a rubber raiding craft and a small inflatable boat are rigged as airdrop bundles.
- The Mobile Over Snow Transport (MOST) for low-velocity airdrop.

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CHAPTER 1

INTRODUCTION

1-1. Description of Items

The descriptions of the items rigged in this manual are given below.

a. HSLLADS Container. The HSLLADS container is an adjustable container made of an A-21 cargo cover and other airdrop items. Its size and weight are determined by the load.

b. Zodiac Mark III Boat. The inflated Zodiac Mark III boat is 75 inches wide, 18 inches high, and 180 inches long. The boat weighs 240 pounds.

c. Mark III Futura Boat. The inflated Mark III Futura boat is 75 inches wide, 26 inches high, and 185 inches long. The boat weighs 250 pounds.

d. Z-Bird Boat. The inflated Z-Bird boat is 75 inches wide, 18 inches high, and 180 inches long. The boat weighs 250 pounds.

e. Zodiac K40 Boat. The inflated Zodiac K40 boat is 82 inches wide, 29 inches high, and 159 inches long. The boat weighs 60 pounds.

f. Zodiac K50 Boat. The inflated Zodiac K5O boat is 82 inches wide, 29 inches high, and 195 inches long. The boat weighs 80 pounds.

g. Zodiac F47OU Boat. The inflated Zodiac F47OU boat is dropped singly or in pairs. Each boat is 75 inches wide, 22 inches high, and 185 inches long. Each boat weighs 250 pounds.

h. Small Inflatable Boat. The IBS is airdropped partially inflated in a bundle. The uninflated boat is 32 inches wide, 32 inches high, and 38 inches long. The boat weighs 150 pounds.

i. Mobile Over Snow Transport. The MOST consists of two snow machines and two sleds.

1-2. Special Considerations

CAUTION: ONLY AMMUNITION AND SUPPLIES APPROVED FOR HIGH-VELOCITY OR HSLLADS AIRDROP MAY BE AIRDROPPED BY HSLLADS.

When a dangerous material is being rigged, the container must be marked and labeled according to AFR 71-4/TM 38-250. Only ammunition listed in FM 10-553/TO 13C7-18-41 may be airdropped. A copy of this manual must be available to the joint airdrop inspectors during the before- and after-loading inspections.

a. HSLLADS Container. The following items apply to the HSLLADS container:

- A multiple drop of four HSLLADS containers may be airdropped on one pass provided the total weight does not exceed 2,200 pounds.
- The type XXVI nylon webbing used to band multiple HSLLADS loads will be furnished by the US Army.
- The HSLLADS containers are airdropped from the MC-130 aircraft only.

NOTE: FOR AIR FORCE USE ONLY. A HSLLADS CONTAINER WEIGHING AT LEAST 250 POUNDS MAY BE AIRDROPPED FOR CONTINUANCE TRAINING PURPOSES ONLY, PROVIDED THE 35 POUNDS PER SQUARE FOOT MINIMUM IS MAINTAINED. FOR UNILATERAL TRAINING LOADS, HONEYCOMB IS NOT REQUIRED.

b. Boats and Parachutists. The following items apply to boats and parachutists:

- One boat may be airdropped from a C-130 aircraft and followed by parachutists.
- Two boats and two groups of parachutists may be airdropped from a C-130 in a single pass.
- Boats airdropped from C-141 aircraft cannot be followed by a parachutist on a static line. Nonstatic line parachutists may follow the load after retrieval of the deployment bags.
- The total rigged weight of rubber raiding craft loads on SOCEPs must be a minimum of 2,100 pounds. Sandbags or other ballast may be added to the platform for this purpose.

c. Joint Airdrop Inspection Record Checklists. Joint Airdrop Inspection Record checklists are provided for local reproduction in Appendix A. Use these checklists for joint airdrop inspections with DD Form 1748-4 as follows:

- Fill in the heading of the DD Form 1748-4.
- Cross out blocks 12 and 13.
- Write in "See Attached Checklist" in block 16 remarks.
- Make three copies of the checklist and attach them to the DD Form 1748-4.
- Use the checklist, as required.
- Sign DD Form 1748-4.
- Keep each DD Form 1748-4 and each checklist together as a complete record.

CHAPTER 2

RIGGING HSLLADS CONTAINER LOADS

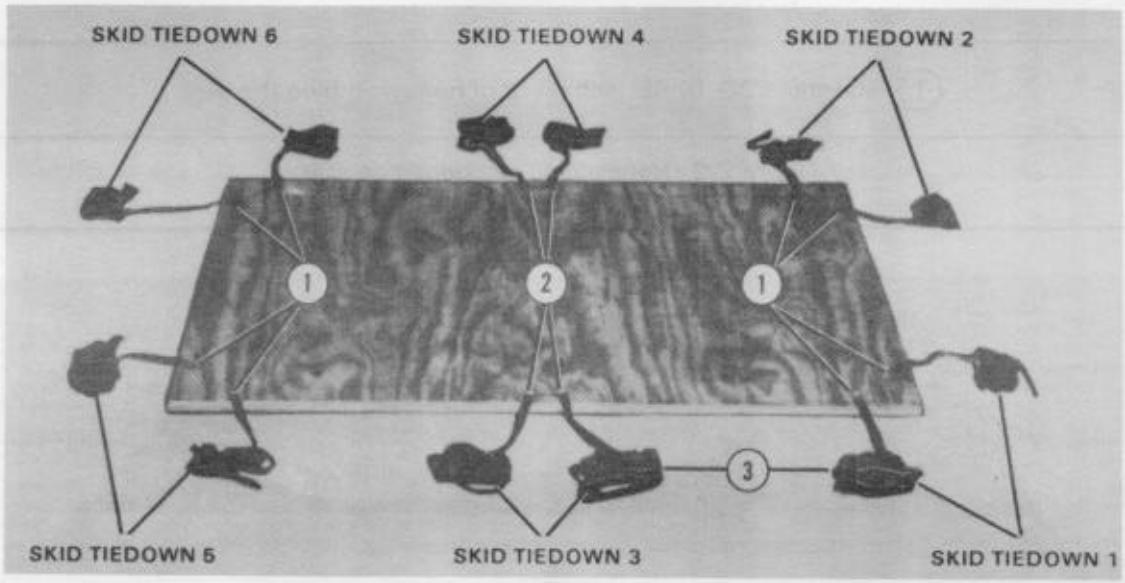
Section I
RIGGING THE CONTAINER

2-1. Description of Container

The HSLLADS container is an adjustable container made of an A-21 cargo cover and other airdrop items. The items are assembled and used together so that the container will withstand the shock of the parachute opening when airdropped at high speed.

2-2. Preparing Container

Dimensions of the load base in these procedures are typical. The size of the load base may change to fit other supply loads. Prepare the load base and HSLLADS container as shown in Figures 2-1, 2-2, and 2-3.



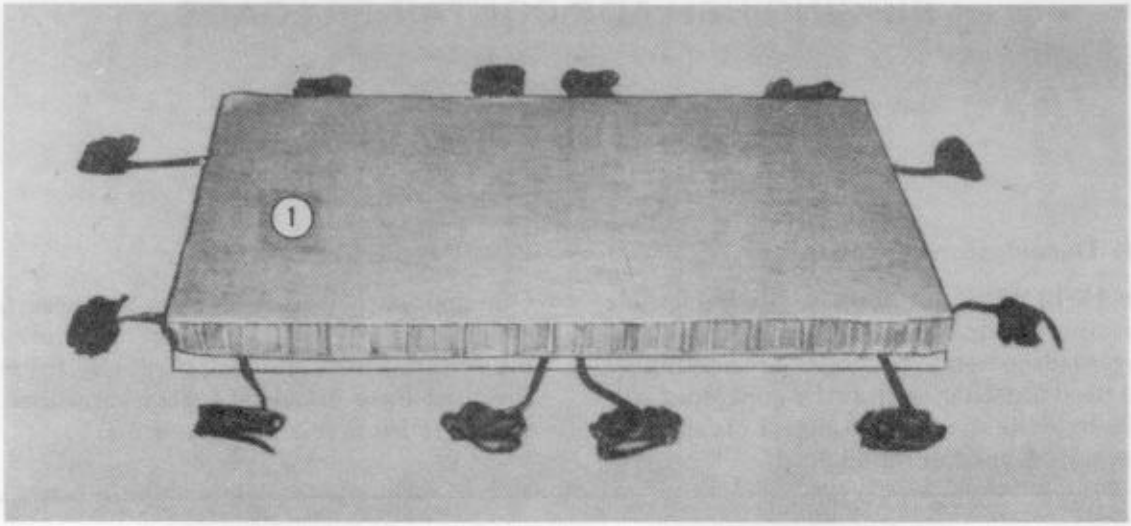
(1) Drill 1/2-inch-diameter holes 4 inches from each corner and 1 inch from the edge of a 3/4- by 30- by 48-inch piece of plywood.

(2) Center two additional 1/2-inch-diameter holes on each 48-inch side of the skid 4 inches from each other and 1 inch from the edge.

(3) Thread a 12-foot length of 1/2-inch tubular nylon webbing through each pair of holes in the skid. (Doubled, type III nylon cord may be used.)

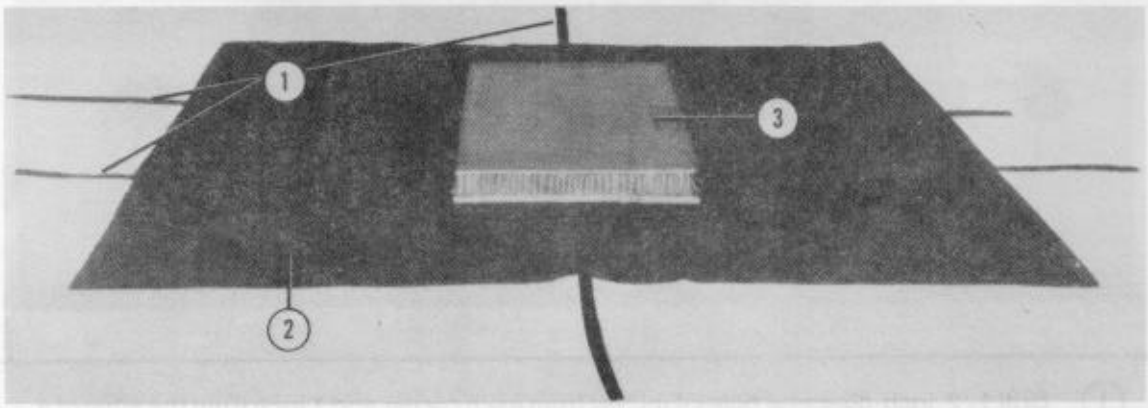
NOTE: DENOTED SKID TIEDOWN NUMBERS WILL BE REFERRED TO IN FIGURE 2-7.

Figure 2-1. Skid prepared



(1) Center a 30- by 48-inch piece of honeycomb on the skid.

Figure 2-2. Honeycomb positioned on skid



(1) Thread three 12-foot lengths of type X nylon webbing through the keepers on the A-21 cargo cover.

(2) Place the cover, with the webbing down,on top of the honeycomb and skid.

(3) Center another 3/4- by 30- by 48-piece of plywood and a 30-by 48-inch piece of honeycomb on top of the cargo cover. This is the load base.

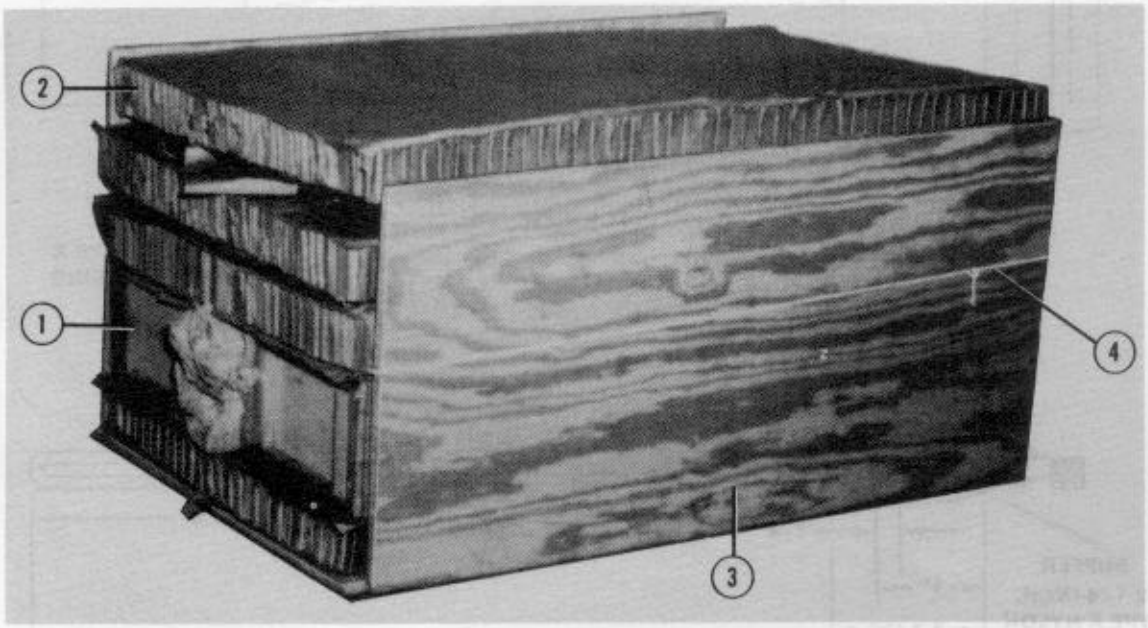
Figure 2-3. A-21 container cover and load base placed on skid

2-3. Loading Container

Place the items to be airdropped on the honeycomb in the manner shown in Figure 2-4 and Section II of this chapter. Place the durable or heavy items on the bottom and the lighter or more fragile items on the middle or top layers. Use cellulose wadding, felt, or honeycomb to cushion the rigged items. Use honeycomb to level and square the load before closing the container.

CAUTION: WHEN A CONTAINER IS RIGGED FOR DELIVERY FROM AIR FORCE AIRCRAFT, THE RIGGED WEIGHT DIVIDED BY THE LARGEST SURFACE AREA (MEASURED IN SQUARE FEET) MUST BE A MINIMUM OF 35 POUNDS PER SQUARE FOOT.

NOTE: THE RIGGED CONTAINER MUST WEIGH AT LEAST 250 POUNDS BUT NO MORE THAN 600 POUNDS.



(1) Place the items to be airdropped on the load base as shown in Section II of this chapter.

NOTE: ONLY ITEMS WHICH HAVE BEEN TESTED AND APPROVED FOR HIGH-VELOCITY OR HSLLADS AIRDROP MAY BE LOADED IN THIS CONTAINER.

(2) Square the load using the necessary honeycomb pieces.

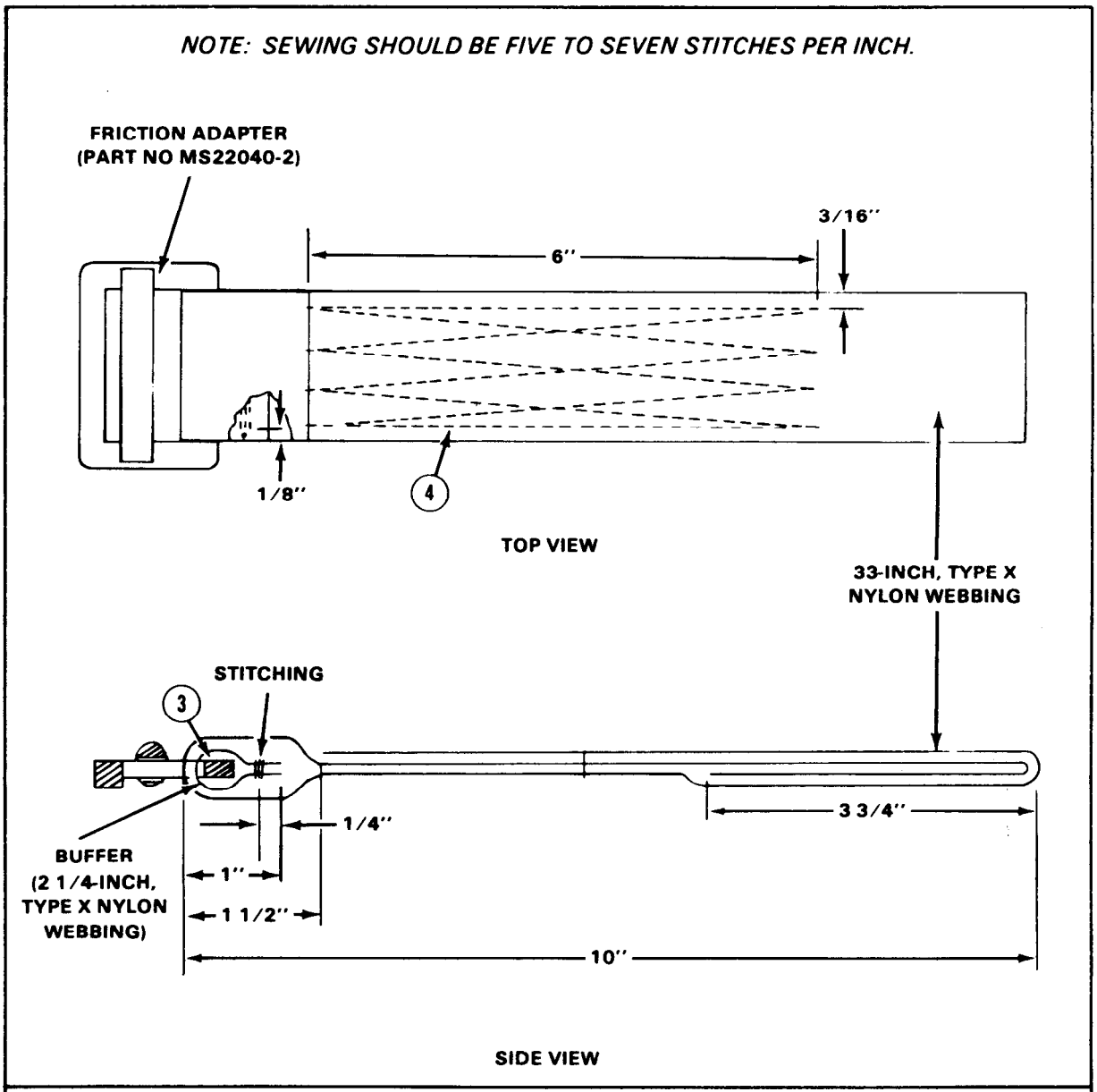
(3) Place a 3/4-inch piece of plywood, cut to fit, on each side of the load.

(4) Tie the plywood in place with type III nylon cord.

Figure 2-4. Load positioned on load base with sideboards in place

2-4. Constructing Container Straps

Make two container straps as shown in Figure 2-5.

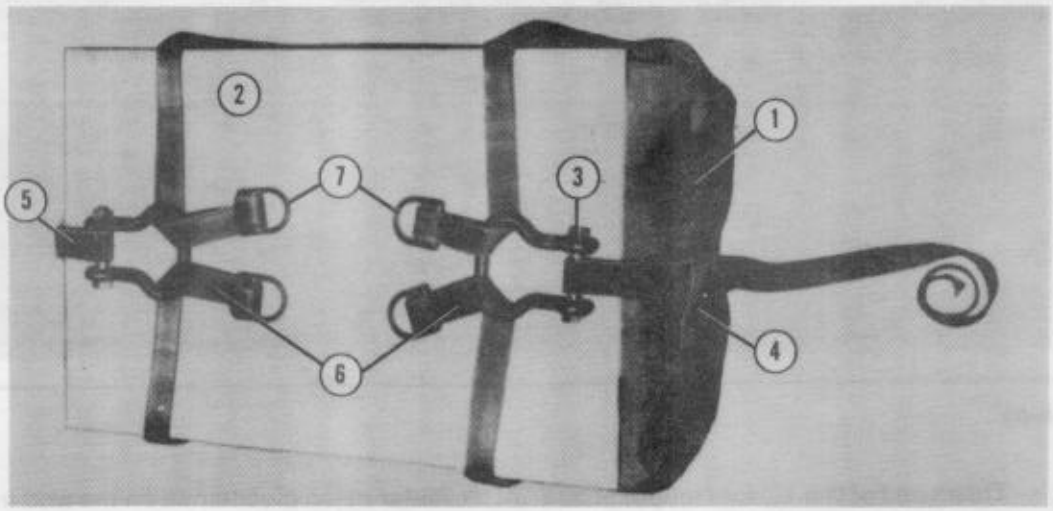


1. Cut a 33-inch and a 2 1/4-inch length of type X nylon webbing.
2. Sear both ends of the webbing.
3. Sew a friction adapter and buffer in one end and a loop in the other end.
4. Use ticket number 5 or size FF nylon thread and sew the 6-inch, four-point WW stitch.

Figure 2-5. HSLLADS container strap prepared

2-5. Closing Container and Stowing Parachute

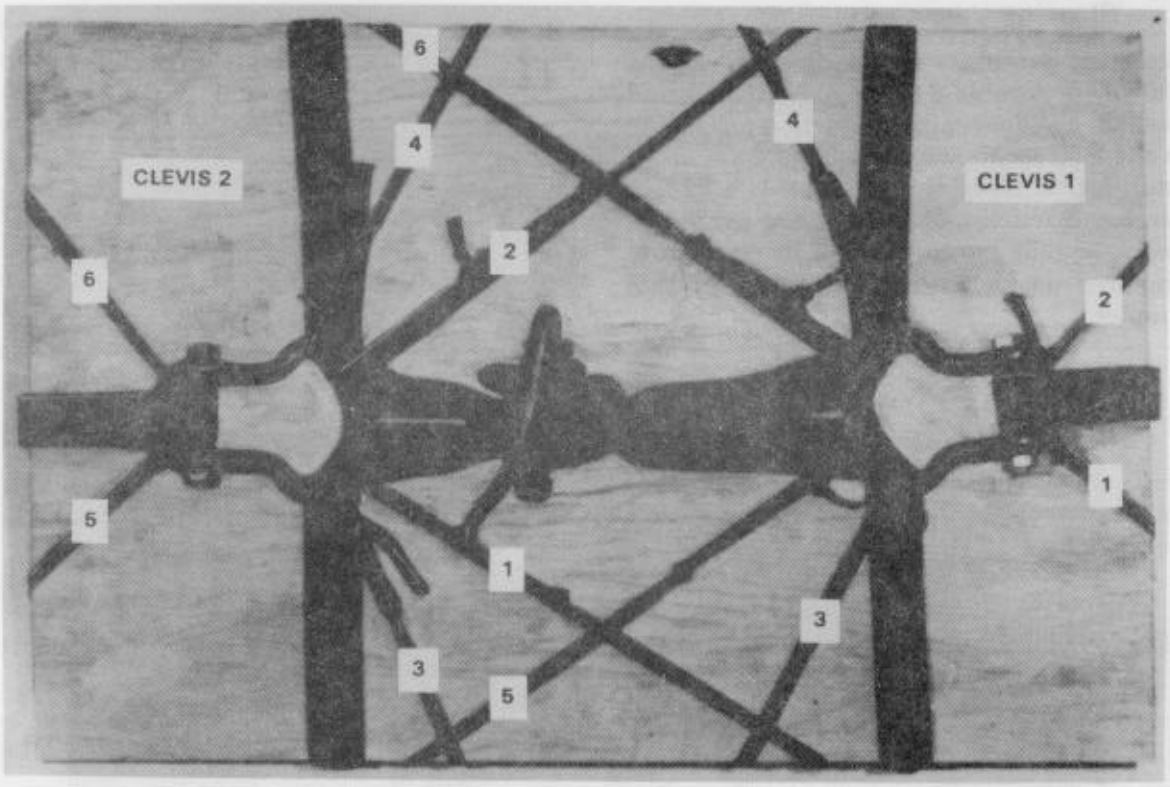
Close the container and secure the skid as shown in Figures 2-6 and 2-7. Attach and restrain a 22-foot cargo extraction parachute to the load as shown in Figures 2-8 and 2-9 and Section III of this chapter. If a 22-foot cargo extraction parachute is not available, use a 28-foot cargo extraction parachute prepared as shown in Section III of this chapter.



SIDE VIEW

1. Close the cargo cover, and fold under the excess material.
2. Place a 3/4-inch piece of plywood, cut to fit, on top of the load.
3. Fit the loop end of a container strap on the bolt of a cargo suspension clevis.
4. Pass the free end of a 12-foot, type X nylon webbing strap (attached to the A-21 container cover) through the container strap's friction adapter.
5. Attach the second container strap to the other end of the 12-foot, type X nylon webbing strap and then bolt the second cargo suspension clevis in the same manner as in steps 3 and 4.
6. Run the remaining type X nylon webbing straps around the container. Pass the ends of the straps under and up through the cargo suspension clevises.
7. Place a D-ring on each end of the type X nylon webbing straps.

Figure 2-6. HSLLADS container closed

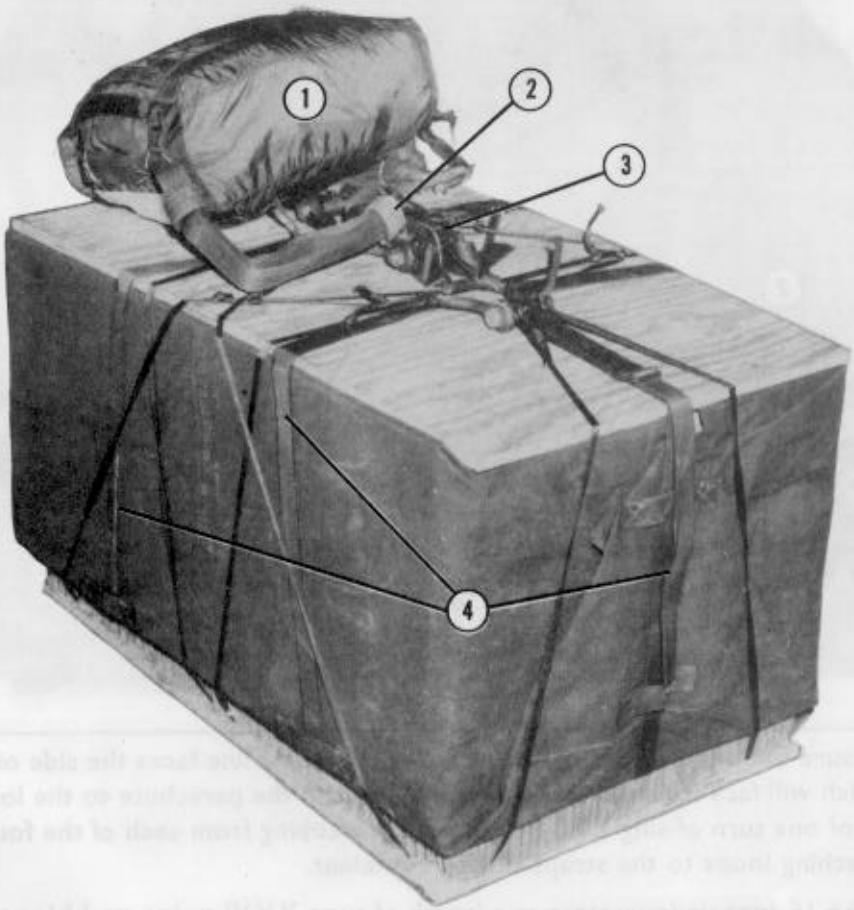


Steps:

1. Tie an end of the 12-foot length of 1/2-inch tubular nylon (positioned on the skid in Figure 2-1) to each clevis indicated below under the first tie column using three half-hitch knots and one overhand knot.
2. Form a loop an appropriate distance from the end of each piece of 1/2-inch tubular nylon for the second tie. Pass the free end through the clevis indicated below in the second tie column and back through the loop. Pull the 1/2-inch tubular nylon tight, and tie it with three half-hitch knots and one overhand knot.

Skid Tiedown Number	First Tie	Second Tie
1	Clevis 1	Clevis 2
2	Clevis 1	Clevis 2
3	Clevis 1	Clevis 2
4	Clevis 2	Clevis 1
5	Clevis 2	Clevis 1
6	Clevis 2	Clevis 1

Figure 2-7. Skid tied to the container



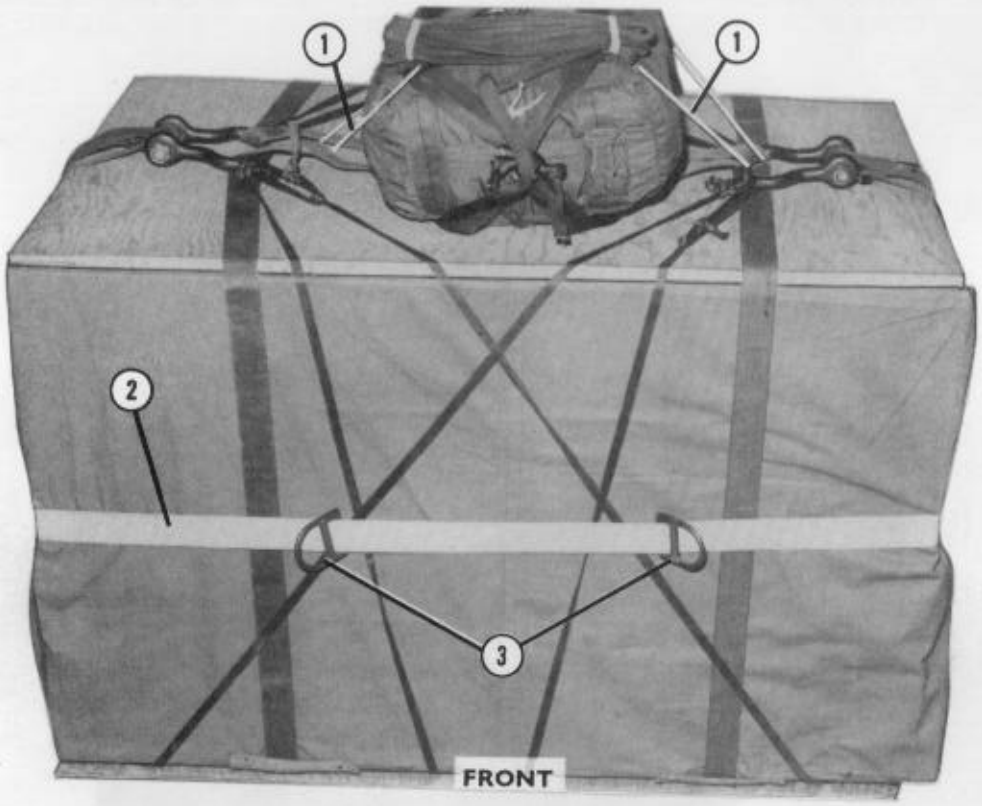
(1) Prepare and pack a 22- or 28-foot cargo extraction parachute according to TM 10-1670-215-23/TO 13C5-1-102/NAVAIR 13-1-16 and Section III of this chapter.

(2) Place the adapter web of the cargo extraction parachute on a cargo suspension clevis.

(3) Place four D-rings on the bolt of the cargo suspension clevis that has the adapter web attached.

(4) Tighten all straps. Fold any excess webbing, and tape it or tie it with 80-pound cotton webbing.

Figure 2-8. Parachute prepared



(1) Be sure the parachute is installed so that the static line faces the side of the load which will face forward in the aircraft. Restrain the parachute to the load with a tie of one turn of single, 80-pound cotton webbing from each of the four cluster attaching loops to the straps on the container.

(2) Use a 15-foot tiedown strap or a length of type XXVI nylon webbing with two D-rings attached as a load band around the rigged HSLLADS container at the estimated vertical center of balance.

(3) Place the two D-rings on the front of the load. Secure the tiedown strap with a D-ring and a load binder.

CAUTION: THE LOAD BAND MUST BE AS TIGHT AS POSSIBLE TO PREVENT IT FROM STRETCHING WHEN IT IS ATTACHED TO THE RELEASE SYSTEM.

Figure 2-9. Parachute restrained and load band installed

2-6. Equipment Required

The equipment needed to prepare and rig the HSLLADS container is listed in Table 2-1.

Table 2-1. Equipment required for rigging a HSLLADS container

National Stock Number	Item	Quantity
4030-00-678-8562	Clevis assembly, suspension, cargo	3
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-360-0321	Cover, canvas, type A-21 bag	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, 10,000-lb	6
8305-00-958-3685	Felt, 1/2-in	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb	As required
1670-00-687-5458	Parachute, cargo extraction, 22-ft or	1
1670-00-262-1797	Parachute, cargo extraction, 28-ft, with deployment bag number 66J1713	1
5530-00-128-4981	Plywood, 3/4-in	As required
1670-00-611-4347	Static line, cargo parachute (for G-13 or G-14)	1
No NSN	Strap, container assembly (fabricated locally)	2
1670-00-937-0271	*Tiedown assembly, 10,000-lb	1
	Webbing:	
8305-00-268-2411	Cotton, 80-lb	As required
8305-00-268-2453	Nylon, tubular, 1/2-in	As required
8305-00-268-2455	Nylon, tubular, 1-in	As required
8305-00-263-3591	Nylon, type VIII	As required
8305-00-261-8584	Nylon, type X	12 yd
*When this item is not available, the following items are required:		
1670-00-937-0272	Binder, load, 10,000-lb	1
1670-00-937-0147	D-ring	2
8305-00-177-5069	Webbing, nylon, type XXVI	15 ft

Section II
RIGGING TYPICAL LOADS FOR HSLLADS CONTAINERS

2-7. Description

The items loaded in the HSLLADS containers described in this section are typical. There is no specific requirement for either the items or the quantities of an item to be airdropped in any one container. Only items which have been tested and approved for high-velocity or HSLLADS airdrop may be airdropped.

NOTE: THE RIGGED CONTAINER MUST WEIGH AT LEAST 250 POUNDS BUT NO MORE THAN 600 POUNDS.

2-8. Rigging the Loads

Close and rig the container according to the procedures described in Section I. Place the

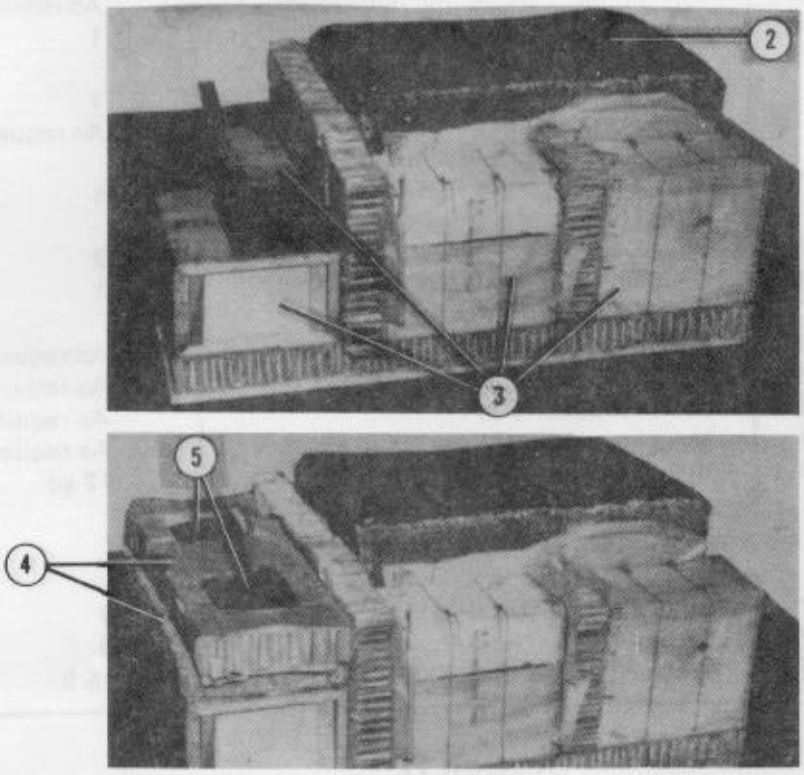
durable or heavy items on the bottom of the load and the lighter or more fragile items on the middle or top layers.

NOTE: ALL LOADS ARE SHOWN FROM THE A-21 CARGO COVER AND UP. THE SKID AND ONE LAYER OF HONEYCOMB ARE UNDER THE A-21 CARGO COVER. THESE LOADS ARE SAMPLES ONLY.

2-9. Rigging Load 1

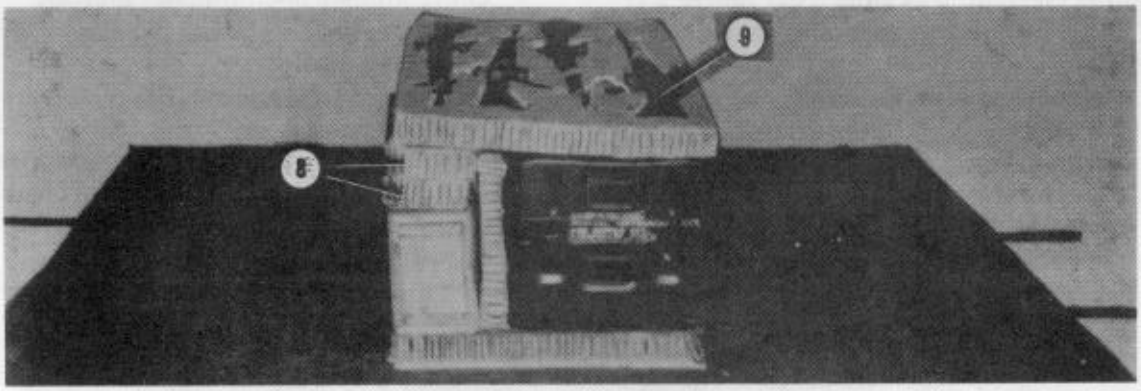
Load 1 items are placed on the load base as shown in Figure 2-10. The following supplies are rigged in load 1:

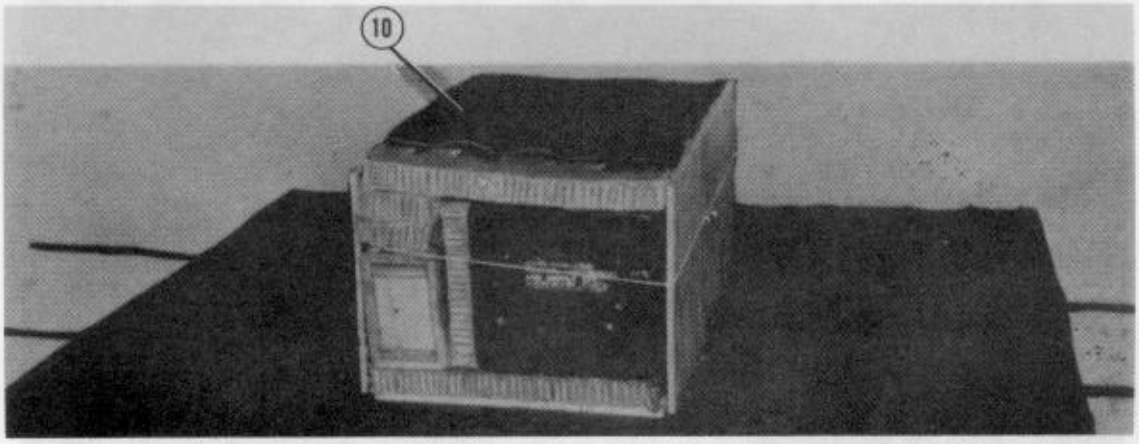
- Twelve M16 rifles with bayonets and scabbards.
- Four cases of 5.56-millimeter ammunition.
- One field surgical instrument supply set.
- Two individual surgical supply sets.
- Two binoculars in cases.



1. Open the field surgical instrument supply set, and place cellulose wadding as necessary to prevent movement of set components (not shown).
2. Close the field surgical instrument supply set, and place it on the load base as shown.
3. Place four cases of 5.56-millimeter ammunition on the load base as shown.
4. Place two pieces of honeycomb, cut to fit, on top of the ammunition cases.
5. Make two cutouts in the top piece of honeycomb for the binoculars. Place one pair of binoculars in each cutout.

Figure 2-10. Load 1 items placed





(6) Remove the bayonets and scabbards from the M16 rifles. Pad the bayonets and scabbards with cellulose wadding, and place them on the load (not shown).

(7) Place two individual surgical supply sets on the binoculars (not shown).

(8) Level the top of the load using the necessary honeycomb pieces.

(9) Recess four M16 rifles in a 30- by 48-inch piece of honeycomb, and place it on top of the load.

(10) Place a piece of 1/2-inch felt on top of the rifles.

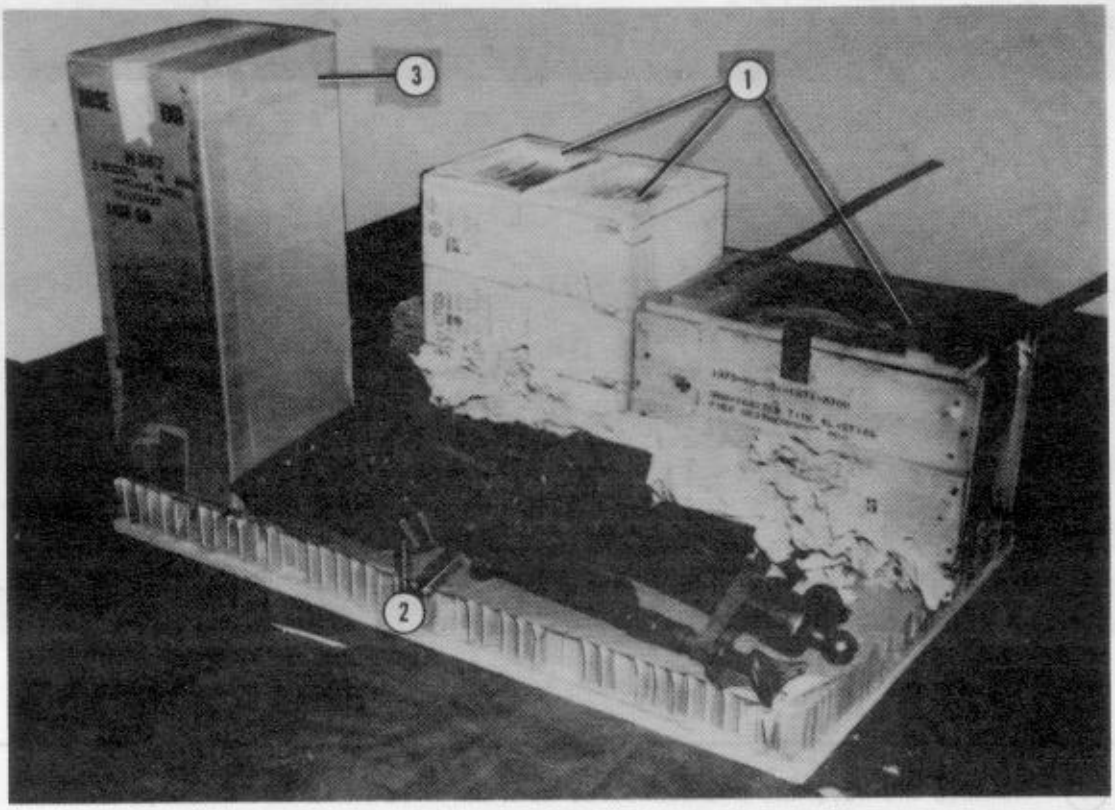
(11) Perform steps 9 and 10 again for eight additional M16 rifles using two additional pieces of honeycomb (not shown).

Figure 2-10. Load 1 items placed (continued)

2-10. Rigging Load 2

Load 2 items are placed on the load base and prepared for rigging as shown in Figures 2-11 and 2-12. The following supplies are rigged in load 2:

- One case of fuse igniters.
- Two cases of 7.62-millimeter linked ammunition.
- Two boxes of 7.62-millimeter linked ammunition.
- One box of LAW missiles.
- Four compasses.
- One complete 60-millimeter mortar.
- Two 45-caliber pistols with holsters and three loaded clips.
- One box of Ringer's solution.
- Two binoculars in cases.
- One AN/PRC-77 radio with accessories.
- One M60 machine gun with extra barrel.
- Sixty 60-millimeter, high-explosive mortar rounds.



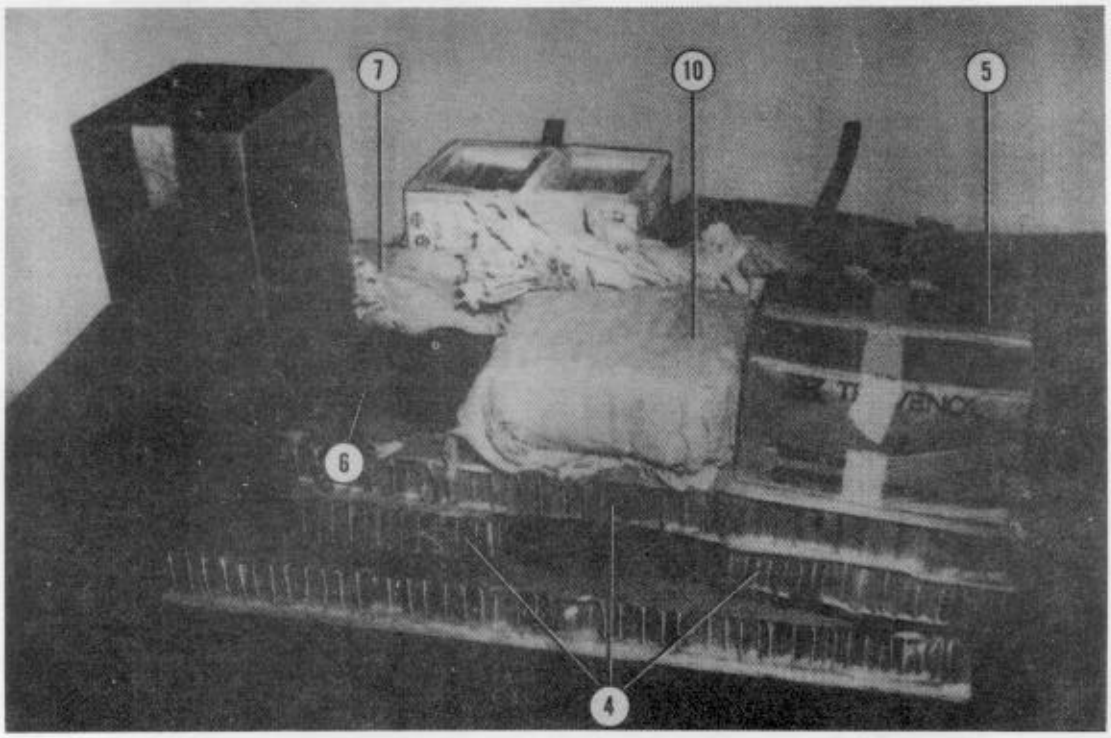
(1) Place one case of fuse igniters and all of the 7.62-millimeter linked ammunition on the load base as shown.

(2) Place the complete 60-millimeter mortar on the load base as shown.

(3) Place the boxed LAW missiles on the load base with the nose end up.

CAUTION THE LAW MISSILES MUST ALWAYS BE PLACED NOSE UP FOR AIRDROP

Figure 2-11. Load 2 items placed



(4) Level the top of the 60-millimeter mortar with the necessary honeycomb pieces.

(5) Place the box of Ringer's solution on the honeycomb as shown.

(6) Place the binoculars (in cases) and the compasses on top of the honeycomb as shown.

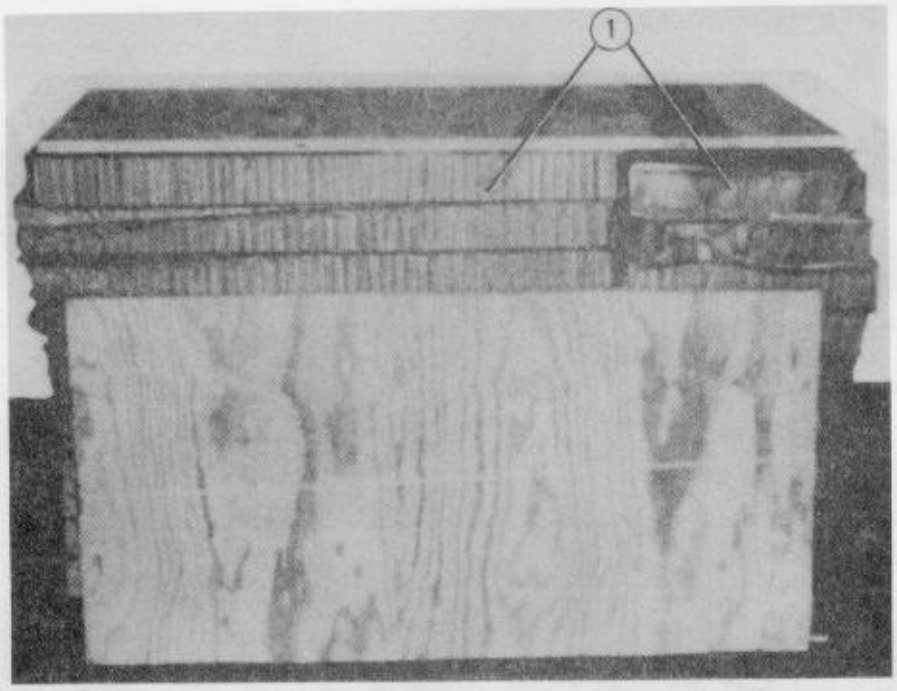
(7) Pad the M60 machine gun and extra barrel with cellulose wadding, and place them on the load as shown.

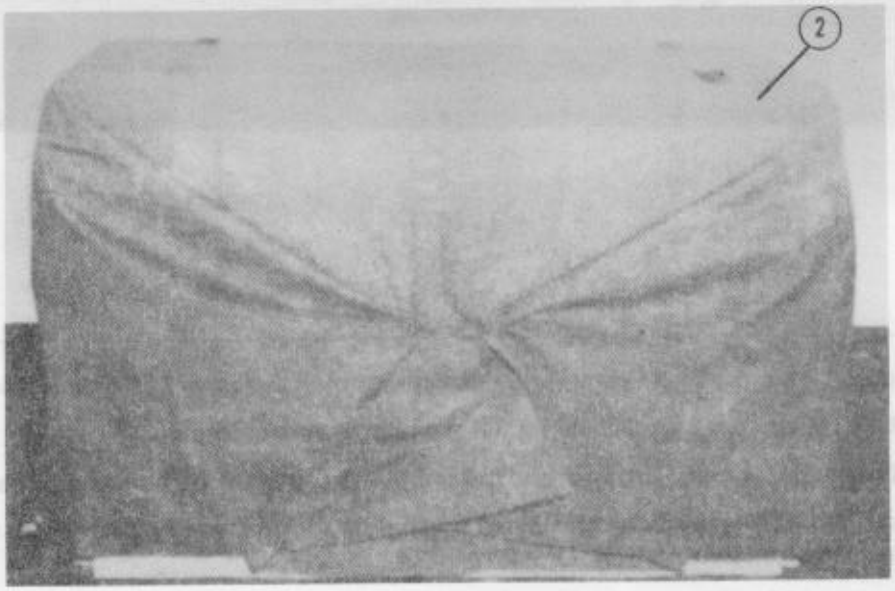
(8) Box sixty 60-millimeter, high-explosive mortar rounds, and place them on the load (not shown).

(9) Fit the 45-caliber pistols with holsters and clips on the load (not shown).

(10) Pad an AN/PRC-77 radio and accessories with cellulose wadding, and place them on the honeycomb as shown.

Figure 2-11. Load 2 items placed (continued)





(1) Use the necessary honeycomb pieces to level and square the load with the top of the LAW missiles.

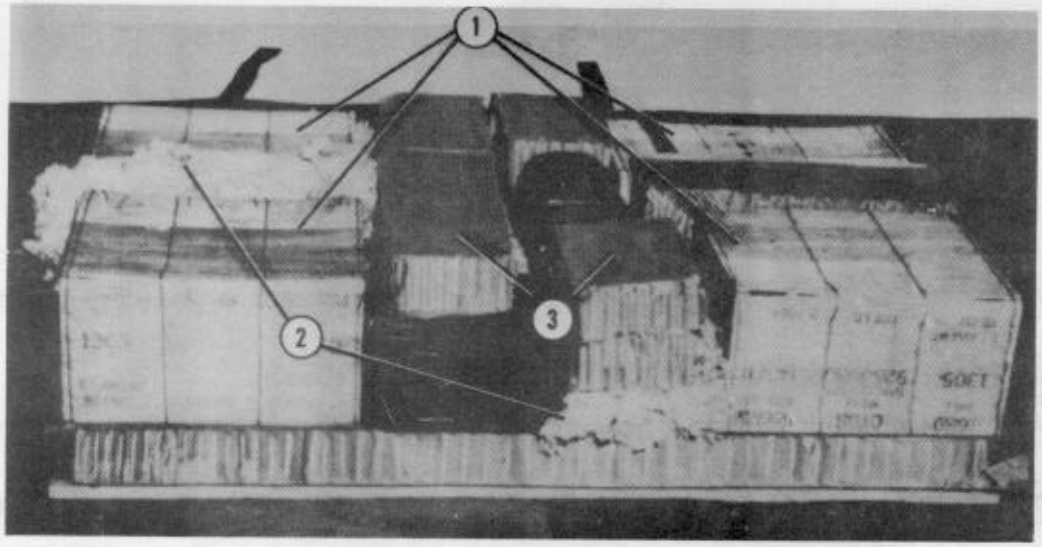
(2) Fold an additional A-21 cargo cover or appropriate cotton duck cloth around the load.

Figure 2-12. Load 2 prepared for rigging

2-11. Rigging Load 3

Load 3 items are placed on the load base as shown in Figure 2-13. The following supplies are rigged in load 3:

- Three cases of 5.56-millimeter ammunition.
- One case of 7.62-millimeter linked ammunition.
- Three power supplies (PP-2685/GRC-109).
- Ten M16 rifles with bayonets and scabbards.
- One box of 30-caliber ammunition.
- One M1D rifle with scope.
- One direct current generator (G-34/G).
- Two hand cranks (for generator).
- Three AN/GRC-109 radios.
- One AN/GRC-109 generator.
- One IV injection set.

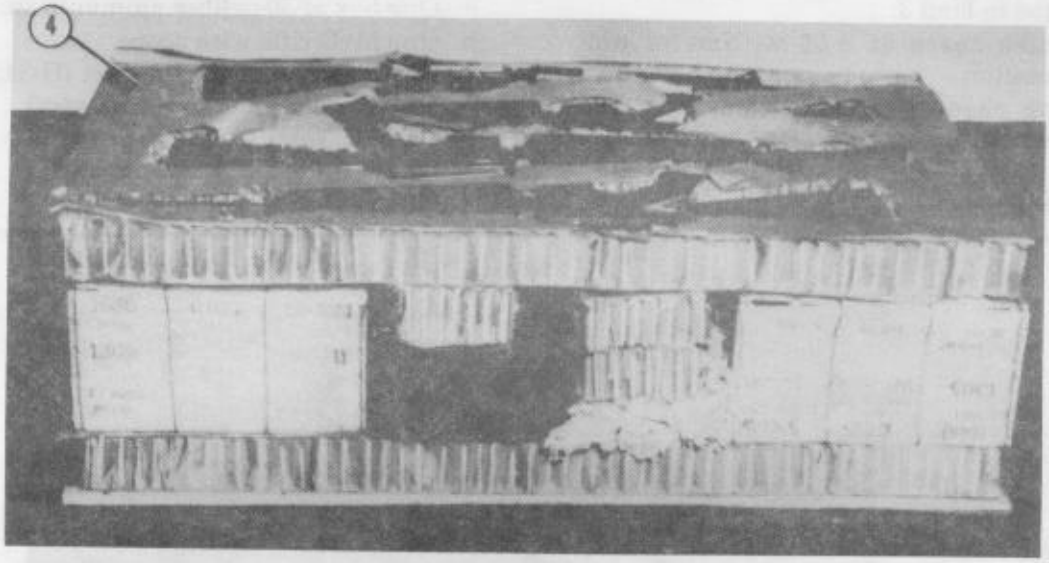


(1) Place three cases of 5.56-millimeter ammunition, one case of 7.62-millimeter linked ammunition, one box of 30-caliber ammunition, and the power supplies on the load base as shown.

(2) Pad the small items with cellulose wadding, and fit them into the load.

(3) Level and square the load with pieces of honeycomb.

Figure 2-13. Load 3 items placed



(4) Recess four M16 rifles in a 30- by 48-inch piece of honeycomb, and place it on the load.

(5) Place a layer of 1/2-inch felt on top of the rifles (not shown).

(6) Place an additional piece of honeycomb with four rifles on the load as in step 4 above (not shown).

(7) Recess two M16 rifles, one M1D rifle, and one AN/GRC-109 generator in a 30- by 48-inch piece of honeycomb, and place it on the load (not shown).

(8) Place a piece of 1/2-inch felt on top of the rifles and generator (not shown).

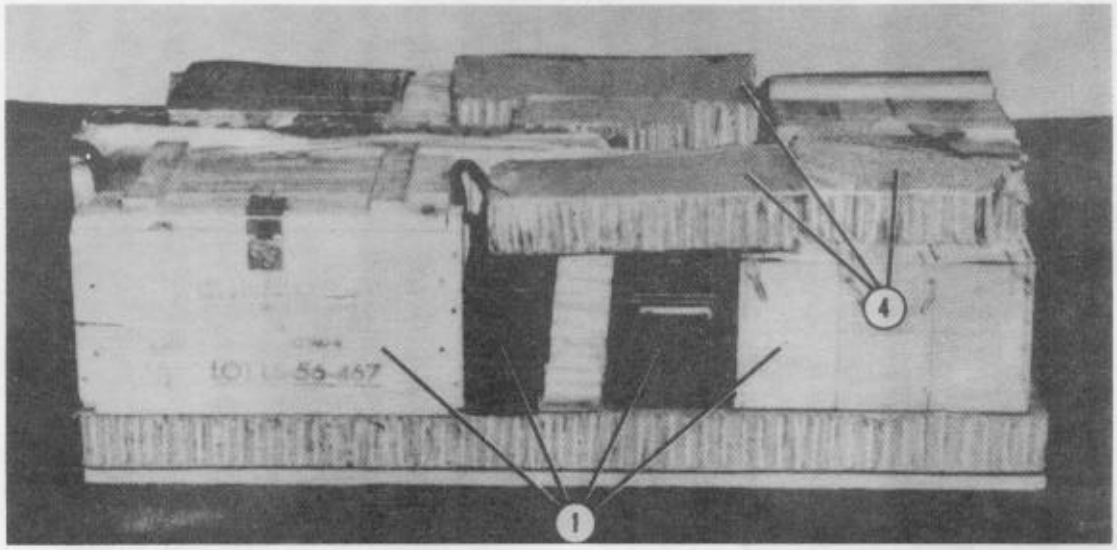
(9) Place an additional 30- by 48-inch piece of honeycomb on top of the load (not shown).

Figure 2-13. Load 3 items placed (continued)

2-12. Rigging Load 4

Load 4 items are placed on the load base as shown in Figure 2-14. The following supplies are rigged in load 4:

- One case of M67 fragmenting hand grenades.
- Three cases of 5.56-millimeter ammunition.
- Three claymore mines.
- One M203 40-millimeter launcher.
- Thirty 40-millimeter ammunition rounds.
- Eight M16 rifles with bayonets and scabbards.
- One M1D rifle with scope.
- 150 30-caliber ammunition rounds.
- Two individual surgical supply sets.



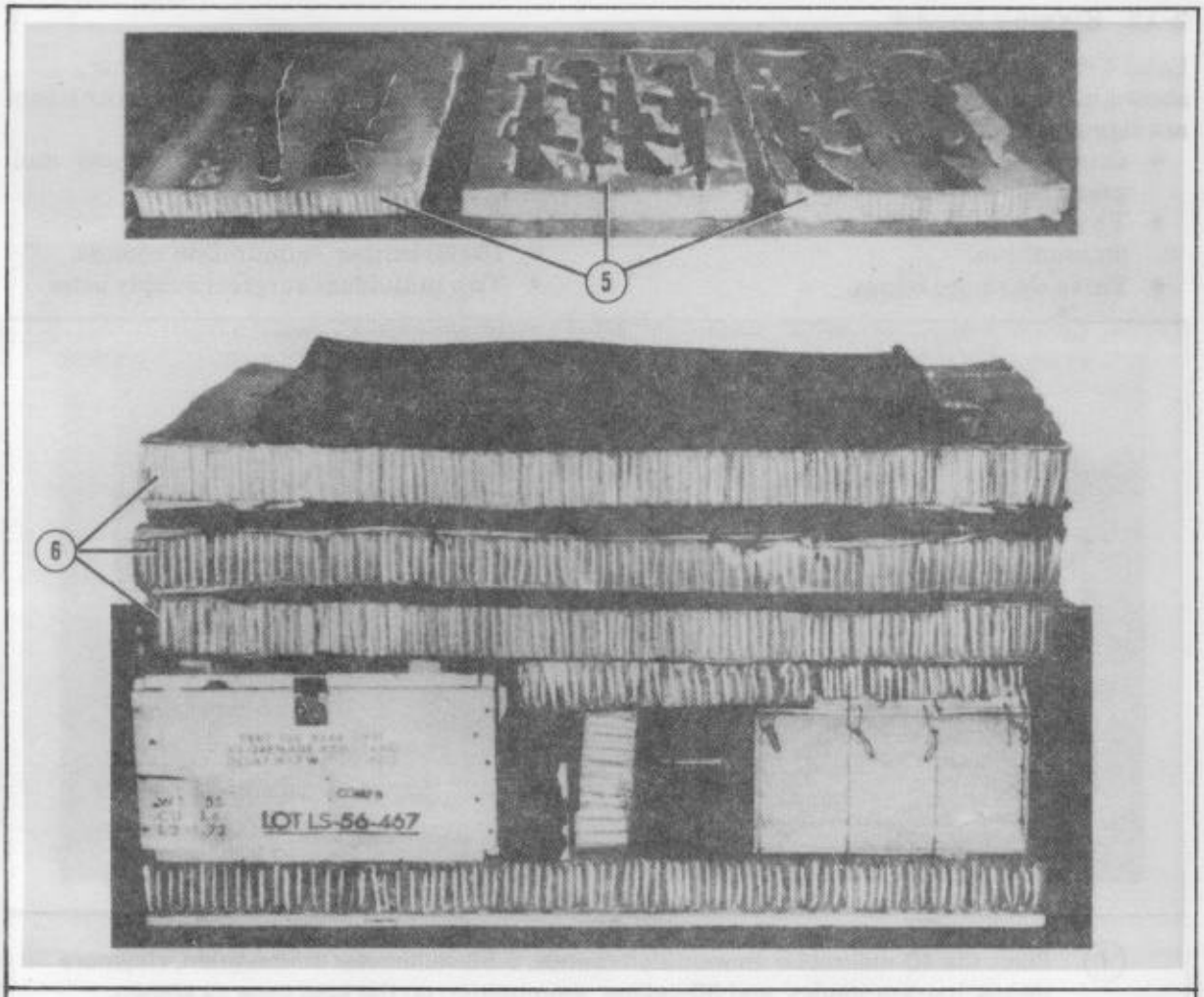
(1) Place the 40-millimeter ammunition rounds, 5.56-millimeter ammunition, claymore mines, hand grenades, and 30-caliber ammunition on the load base as shown.

(2) Remove the bayonets and scabbards from the M16 rifles. Pad the bayonets and scabbards with cellulose wadding, and fit them into the load.

(3) Fit the individual surgical supply sets into the load.

(4) Level and square the load with pieces of honeycomb.

Figure 2-14. Load 4 items placed



(5) Recess the weapons in three 30- by 48-inch pieces of honeycomb.

(6) Place these three layers of honeycomb containing the weapons on the load with a sheet of 1/2-inch felt on top of each layer.

Figure 2-14. Load 4 items placed (continued)

Section III
MODIFYING AND PACKING THE 22-FOOT AND 28-FOOT CARGO EXTRACTION PARACHUTES

2-13. Modifying Cargo Extraction Parachute Deployment Bag

Remove the pendulum line. Remove safety cords, deployment bag bridle loop, and V-rings from the deployment bag as shown in Figure 2-15. Make two bridle straps as shown in Figure 2-16. Attach the bridle straps to the deployment bag as shown in Figure 2-17.

NOTE: IF THE 28-FOOT CARGO EXTRACTION PARACHUTE IS TO BE USED, THE DEPLOYMENT BAG, PART NUMBER 66J1713, MUST BE USED. PREPARE THE BAG AS YOU WOULD FOR THE 22-FOOT CARGO EXTRACTION PARACHUTE.

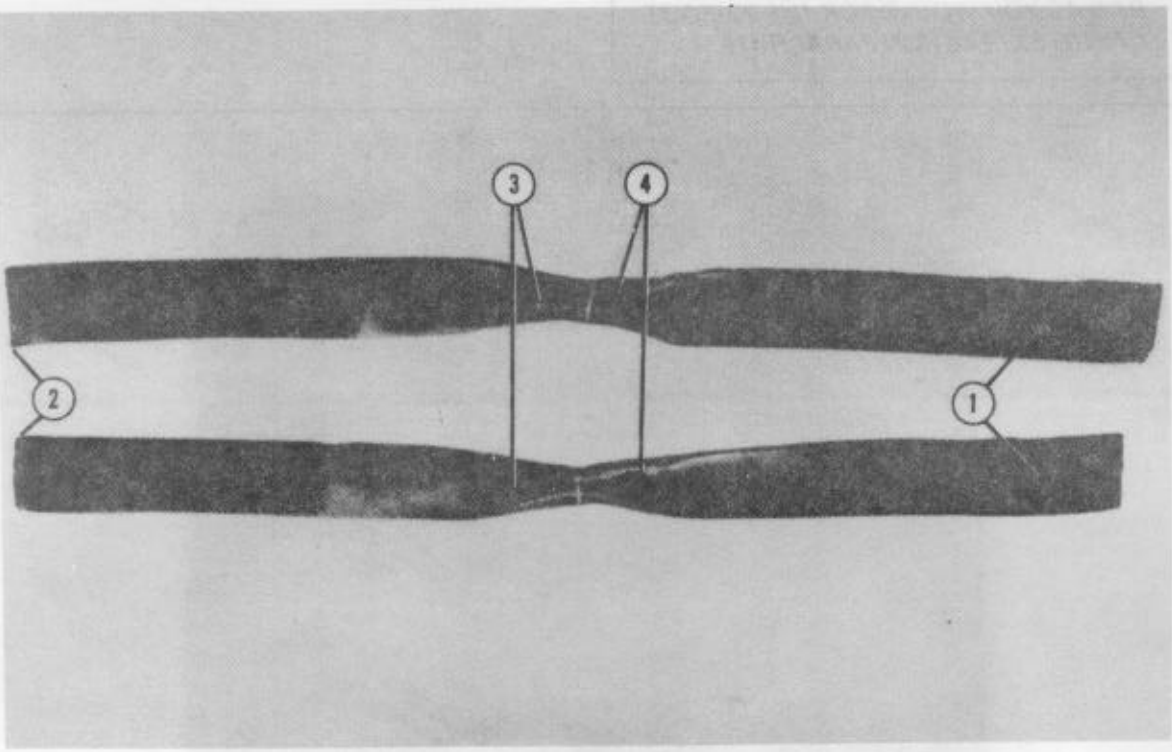
(1) Cut the V-rings off the deployment bag.

(2) Cut the safety cords off the bag.

(3) Cut the deployment bag bridle loop strap from the bag.

NOTE: DO NOT REMOVE THE SLOT REINFORCEMENT.

Figure 2-15. Deployment bag modification



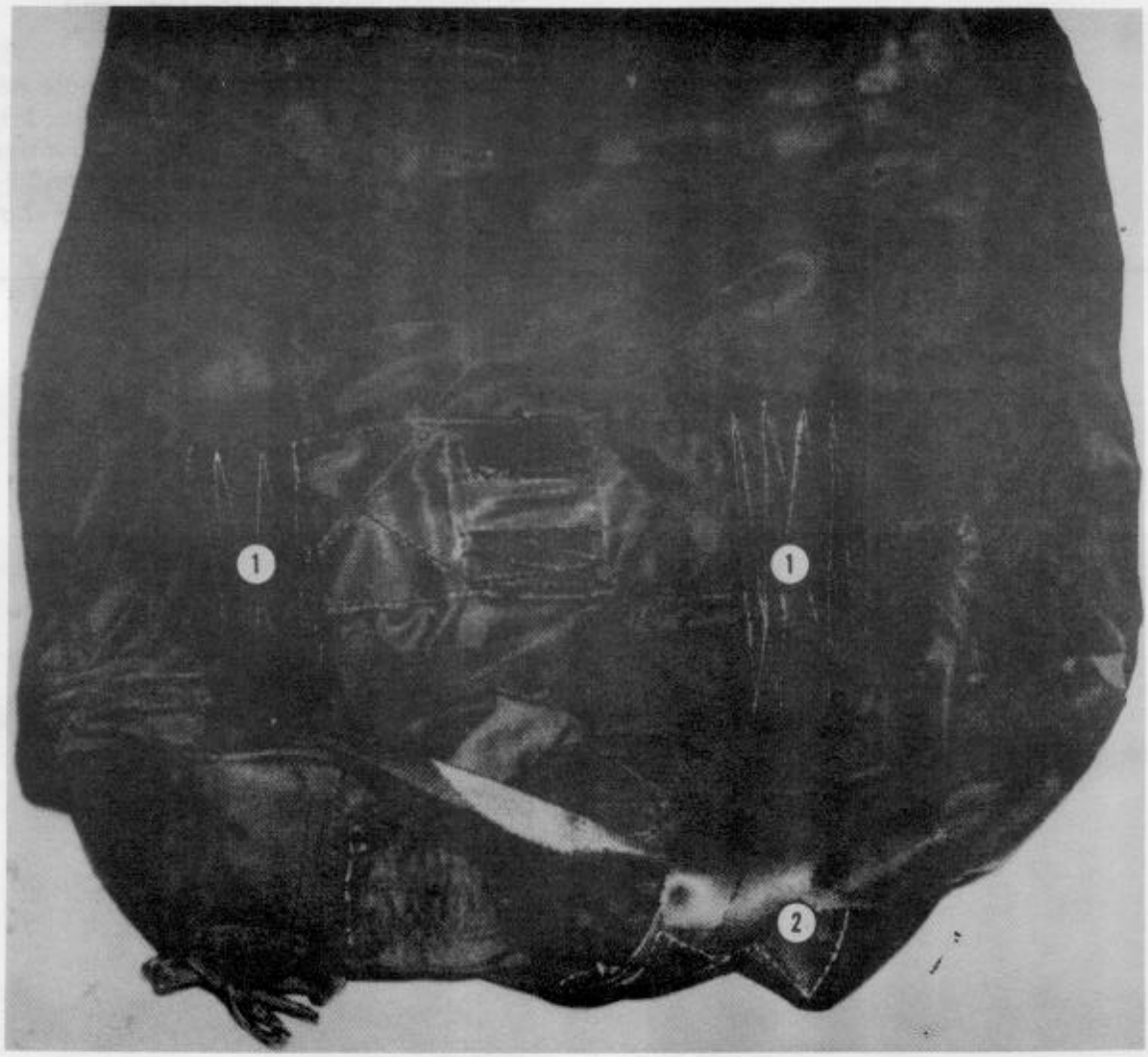
(1) Cut two 24-inch lengths of treated, type VIII nylon webbing.

(2) Sear the cut ends.

(3) Form a 4-inch roll in the center of each strap.

(4) Stitch around the roll and across the center of the roll with ticket number 3 or size FF nylon thread.

Figure 2-16. Bridle straps formed



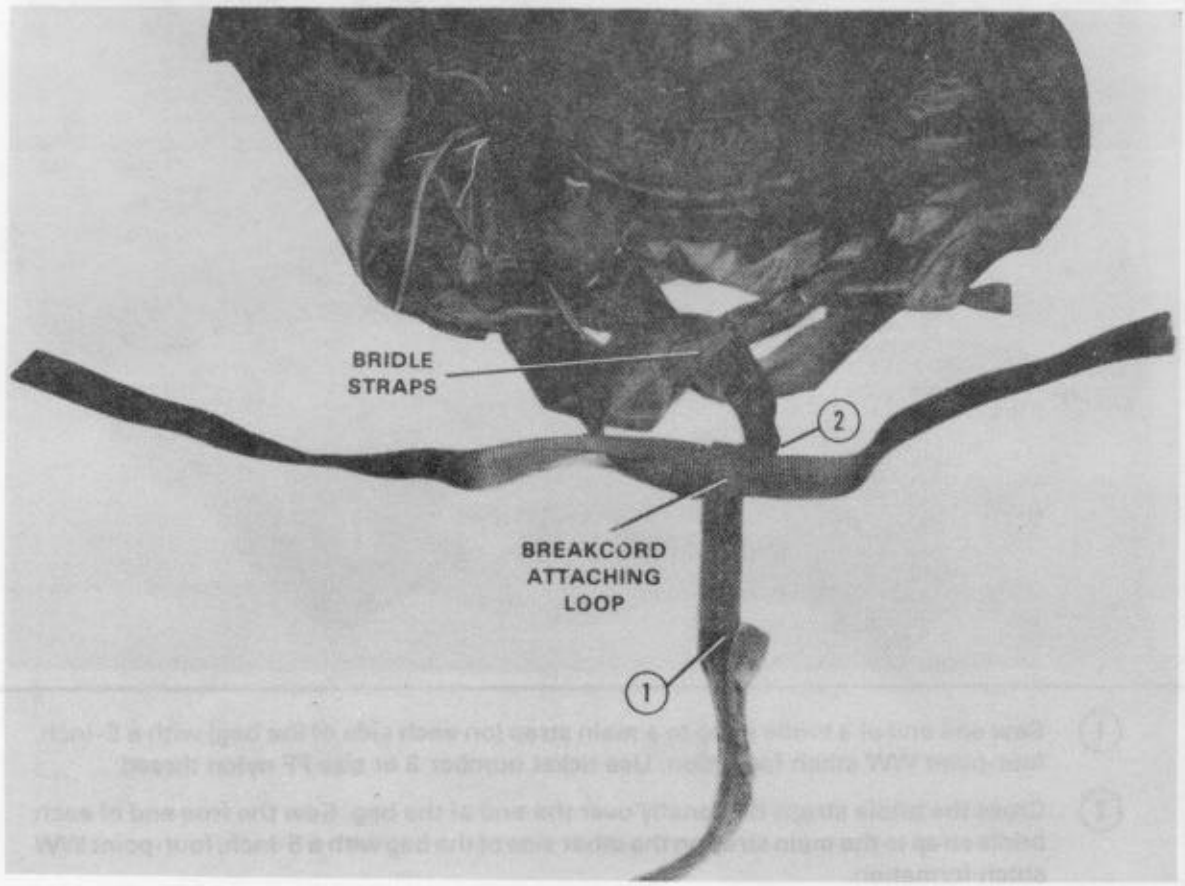
(1) Sew one end of a bridle strap to a main strap (on each side of the bag) with a 5-inch, four-point WW stitch formation. Use ticket number 3 or size FF nylon thread.

(2) Cross the bridle straps diagonally over the end of the bag. Sew the free end of each bridle strap to the main strap on the other side of the bag with a 5-inch, four-point WW stitch formation.

Figure 2-17. Bridle straps attached to the 22-foot cargo extraction parachute deployment bag

2-14. Attaching Static Line and Bridle Loop Breakcord

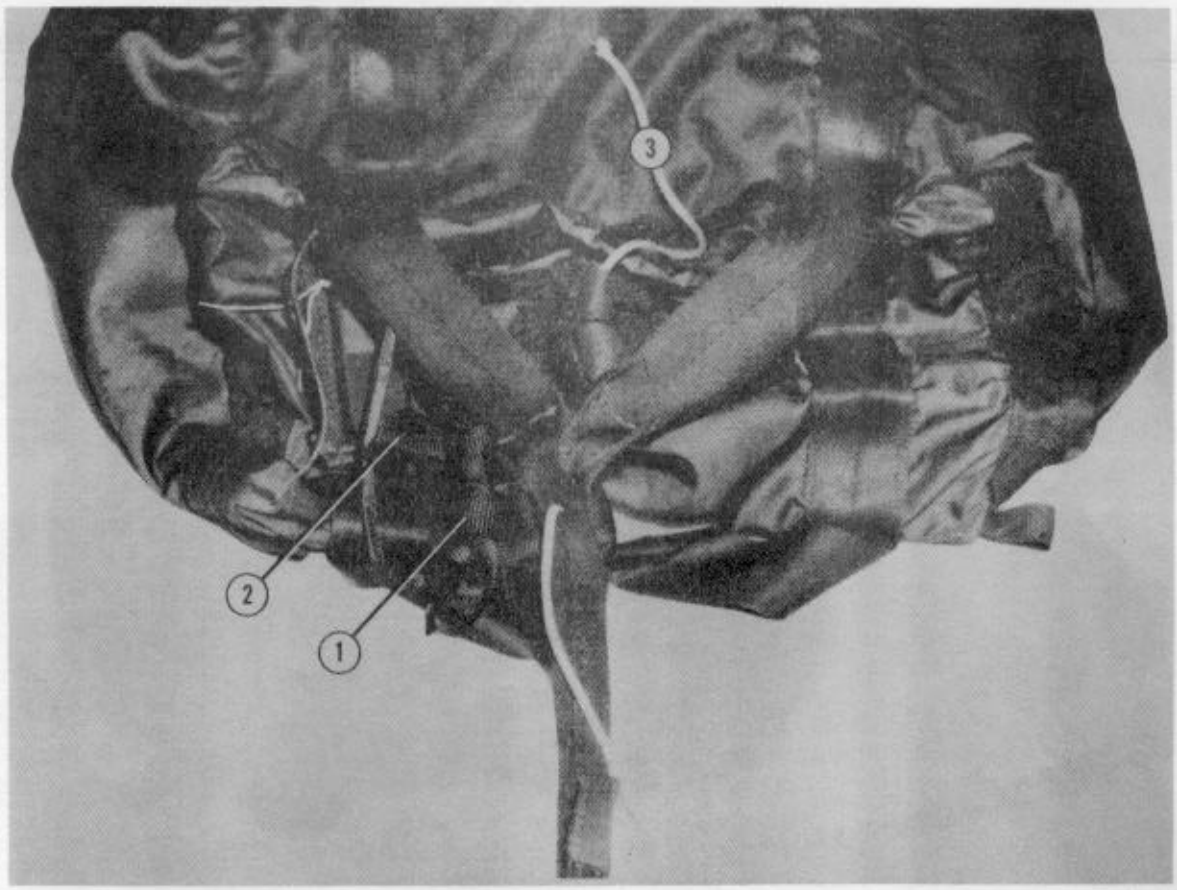
Use the G-13 or G-14 cargo parachute static line. Attach the static line to the bag bridle straps with a length of 1-inch tubular nylon webbing as shown in Figures 2-18 and 2-19. Make the bridle loop breakcord tie as shown in Figures 2-19 and 2-20.



(1) Use the G-13 or G-14 cargo parachute static line.

(2) Pass a length of 1-inch tubular nylon webbing through the static line breakcord attaching loop and around the crossed bridle straps to make a two-ply tie.

Figure 2-18. Static line positioned



(1) Secure the 1-inch tubular nylon webbing with a surgeon's knot, a locking knot, and an overhand knot in the running ends.

(2) Cut the 1-inch tubular nylon webbing 1 inch from the overhand knots.

(3) Pass a length of coreless type III nylon cord through the parachute bridle loop and through the static line breakcord attaching loop.

Figure 2-19. Static line attached and bridle loop breakcord placed

2-15. Stowing Suspension Lines

Use ticket number 5 or 8/7 cotton thread instead of retainer bands to stow the suspension lines. Attach the thread to the suspension line retaining straps by making a loop around the straps. Place the suspension line stow between both ends of a length of ticket number 5 or 8/7 cotton thread. Secure the ends with a surgeon's knot and a locking knot. Cut the thread ends to 1 inch after making the ties.

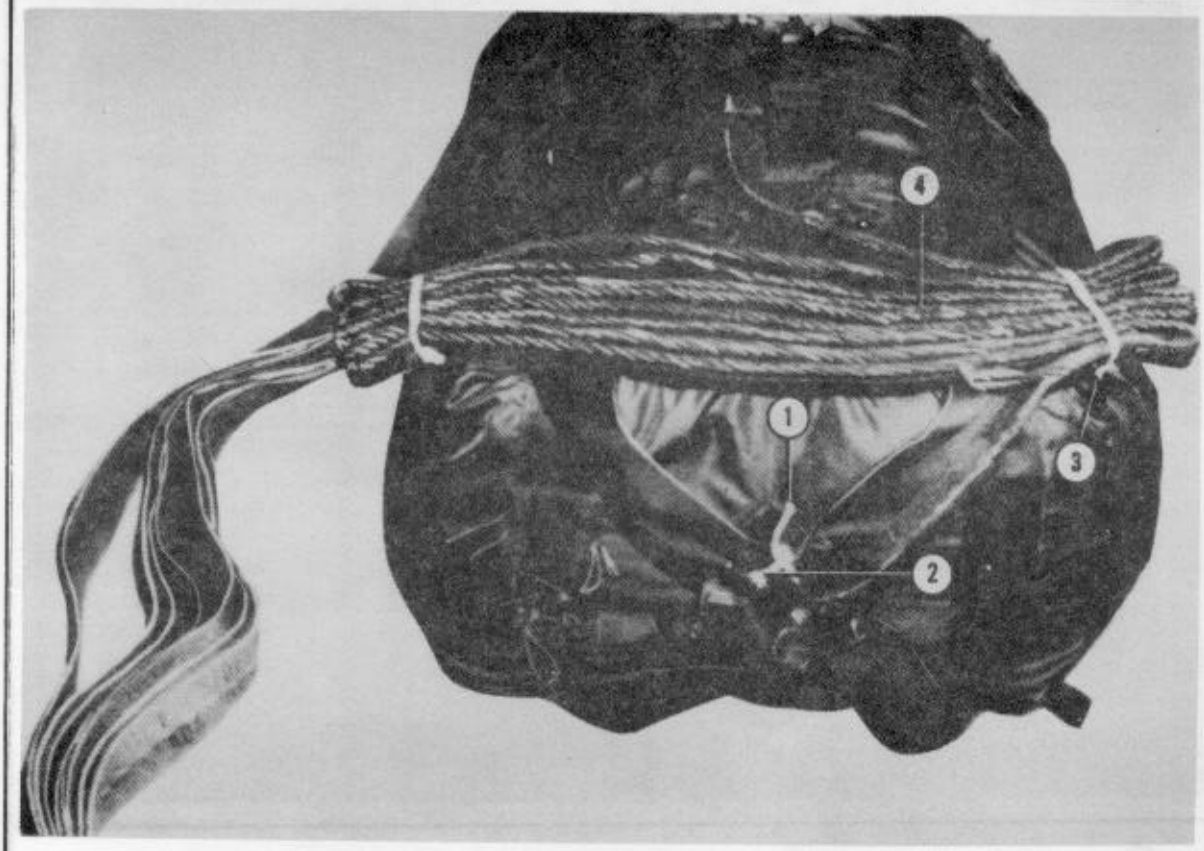
2-16. Packing Parachute

Pack the cargo extraction parachute according to procedures in TM 10-1670-215-23/TO 13C5-1-102/NAVAIR 13-1-16 and this section.

NOTE: MAKE THE BAG CLOSING TIE WITH ONE TURN OF SINGLE, 80-POUND COTTON WEBBING.

2-17. Stowing Static Line

Stow the static line as shown in Figure 2-20.



(1) Tie the coreless type III nylon cord with a surgeon's knot, a locking knot, and an overhand knot in each running end.

(2) Cut the nylon cord 1 inch from the overhand knots.

(3) Attach a retainer band to each of the two cluster attaching loops nearest the static line.

(4) S-fold the static line, and secure it with the installed retainer bands.

Figure 2-20. Breakcord tie made and static line stowed

CHAPTER 3

RIGGING RUBBER RAIDING CRAFT

Section I
RIGGING ZODIAC MARK III BOAT

NOTICE OF EXCEPTION

THE PROCEDURES IN THIS CHAPTER ARE DIFFERENT FROM THOSE IN FM 10-500/TO 13C7-1-5. AN EXCEPTION TO FM 10-500/TO 13C7-1-5 IS GRANTED. THE PROCEDURES IN THIS CHAPTER MUST BE FOLLOWED.

3-1. Description of Load

The description of the load rigged in this section is given below.

a. Inflated Zodiac Mark III Rubber Raiding Craft. This boat is rigged on a 75- by 144-inch SOCEP with a G-12C, G-12D, or G-12E cargo parachute. The boat weighs 240 pounds. When inflated, it is 75 inches wide, 180 inches long, and 18 inches high. The boat is powered by a 35-horsepower outboard engine that weighs 136 pounds with its 6-gallon fuel tank full. Six paddles weighing a total of 24 pounds are a part of the boat's equipment.

> *NOTE: A 55-HORSEPOWER ENGINE IS THE LARGEST THAT MAY BE USED ON THE ZODIAC MARK III BOAT.*

b. Accompanying Load. An accompanying load weighing at least 650 pounds but no more than 1,170 pounds must be dropped with the boat. The accompanying load illustrated in this chapter consists of six rucksacks weighing 420 pounds; six weapons weighing 42 pounds; and six twin, "72" scuba tanks weighing 420 pounds.

3-2. Preparing Platform

Build a new SOCEP, or recondition a used one, using the procedures described below. This platform is used for all the loads described in this chapter except the IBS bundle.

a. New Platform. When no used SOCEP is available, build a new platform for this load as shown in Figures 3-1 through 3-4. Salt-treated lumber must be used for the platform frame.

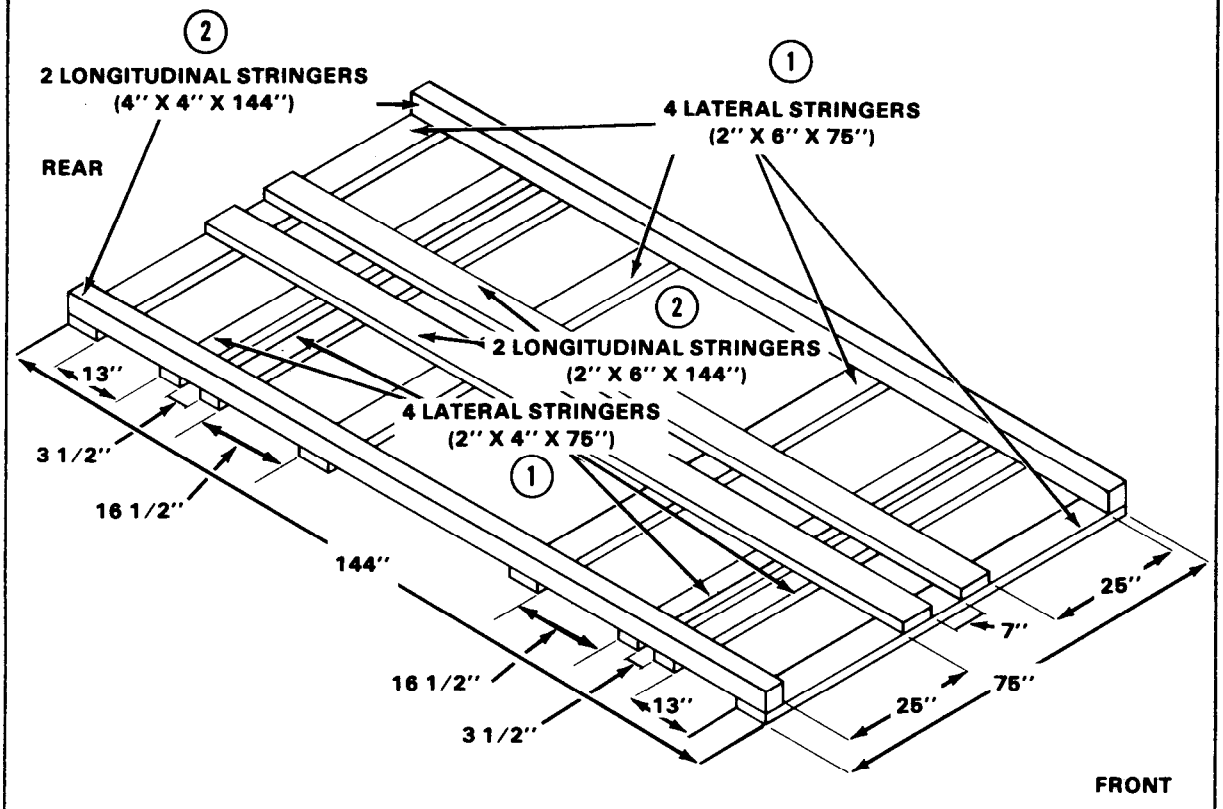
b. Used Platform. When a used SOCEP constructed for this load is available, inspect and recondition it as described below.

(1) ***Inspecting for Damaged or Missing Parts.*** Check the platform to see that all parts are present. Inspect each part carefully for damage. When the following conditions exist, the platform is not suitable for use until it is repaired:

- Any part is missing.
- A stringer or spacer block is broken, cracked, split, or severely gouged.
- A plywood panel is cracked or gouged through at least one ply for a width of 2 inches or more.
- A plywood panel is gouged for a length of 12 inches or more.

(2) ***Inspecting Parts, Screws, or Nails.*** Check the entire platform for loose stringers, spacer blocks, and plywood panels. Also check for loose, missing, damaged, or protruding screws or nails. These defects may be corrected as follows:

- Renail loose parts that are not damaged. Do not nail in original holes or in the grain line used before. Use screws when possible.
- Replace loose, damaged, or missing nails, screws, and bolts. Reset or remove and replace protruding nails, screws, and bolts.



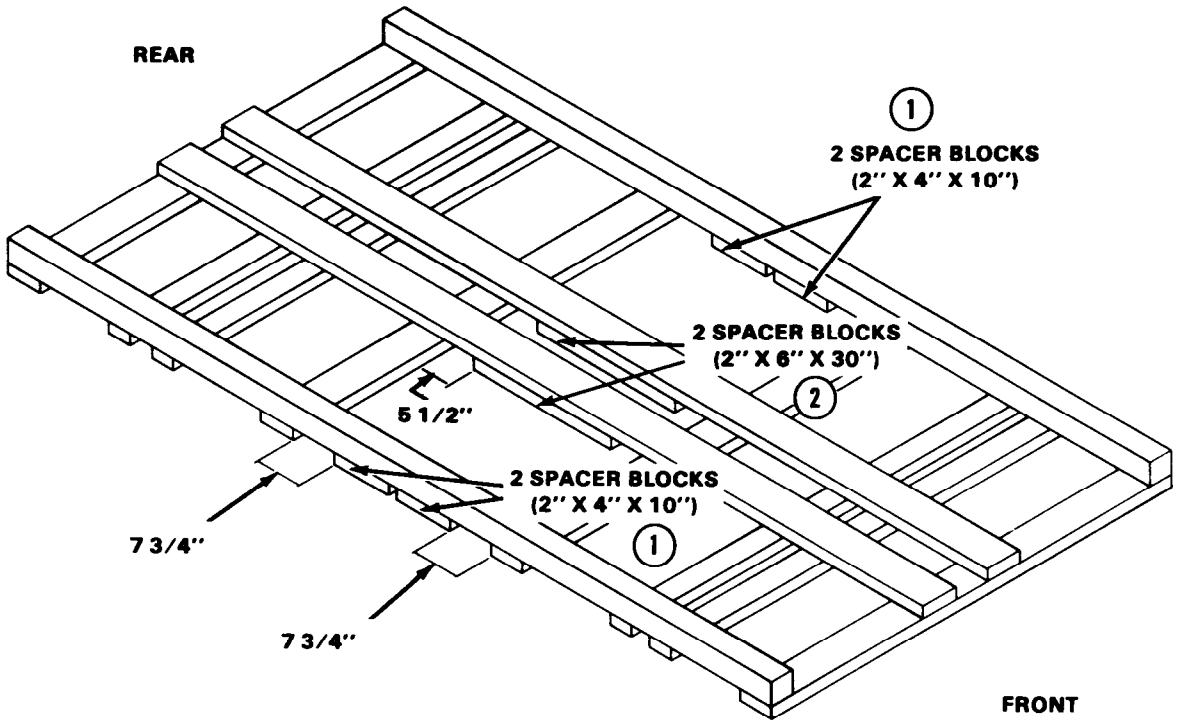
(1) Lay out four 2- by 6- by 75-inch and four 2-by 4- by 75-inch lateral stringers as shown.

(2) Lay two 2- by 6- by 144-inch and two 4- by 4- by 144-inch longitudinal stringers on top of the lateral stringers as shown.

(3) Nail the stringers together with twenty-penny nails. Do not nail the extreme corners of the frame where the corners will be cut off (Figure 3-4).

NOTE: TURN THE PLATFORM OVER TO NAIL THE LATERAL STRINGERS TO THE 4-INCH LONGITUDINAL STRINGERS. IF THE PLATFORM IS TO BE REUSED, SUBSTITUTE 4-INCH WOOD SCREWS FOR TWENTY-PENNY NAILS.

Figure 3-1. Platform frame built



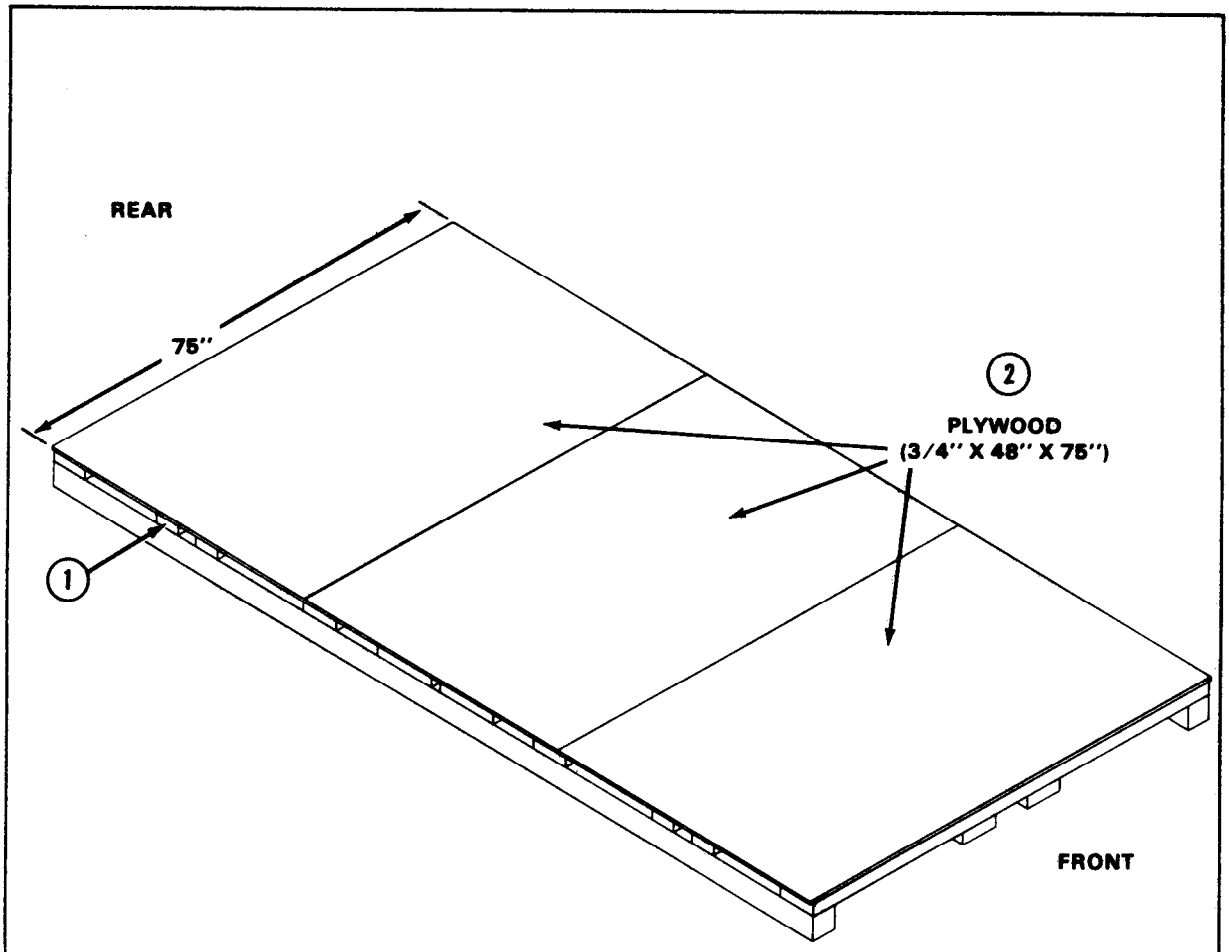
(1) Nail two 2- by 4- by 10-inch wood spacer blocks in the center of each 4- by 4-inch longitudinal stringer with at least four twenty-penny nails.

(2) Nail one 2- by 6- by 30-inch wood spacer block in the center of each 2- by 6-inch longitudinal stringer with at least four twenty-penny nails.

(3) Clinch all nails flush with the wood (not shown).

NOTE: IF THE PLATFORM IS TO BE REUSED, SUBSTITUTE 4-INCH WOOD SCREWS FOR THE TWENTY-PENNY NAILS.

Figure 3-2. Spacer blocks nailed to frame



(1) Place the frame bottom up to apply the plywood.

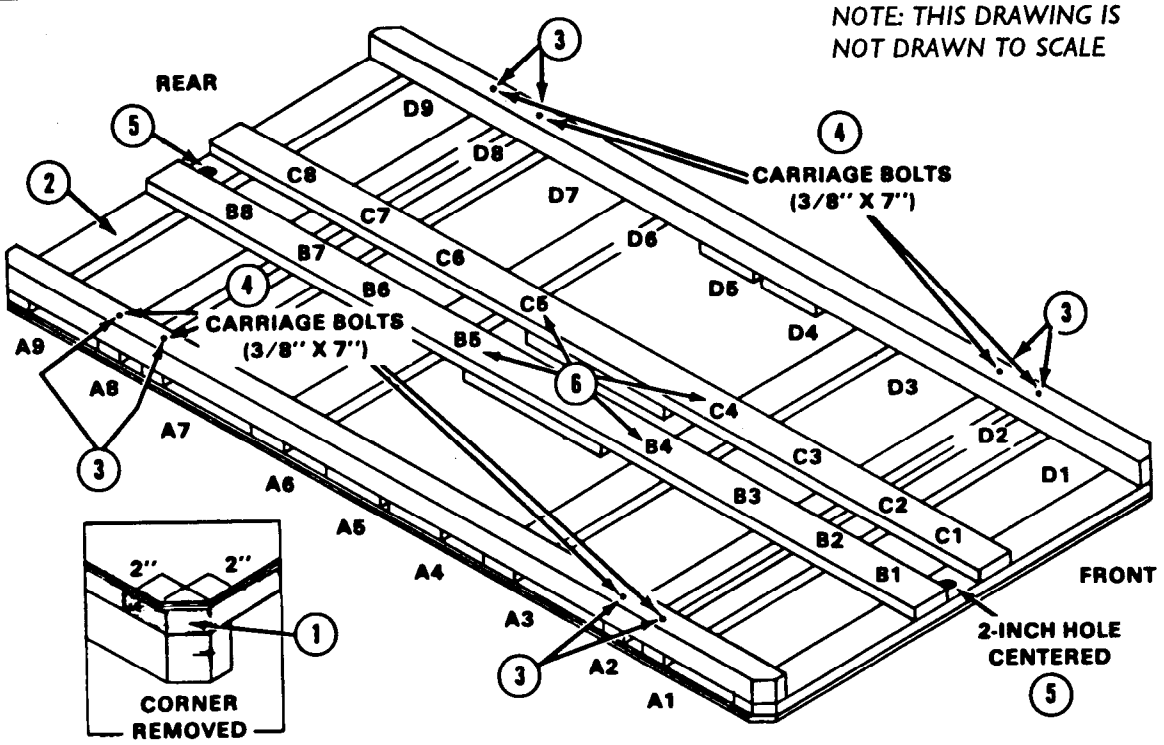
(2) Lay three 3/4- by 48- by 75-inch pieces of plywood on the frame.

(3) Nail the plywood to the lateral stringers at 6-inch intervals with sixpenny nails (not shown).

(4) Use eightpenny nails in the plywood where they will penetrate the longitudinal stringers and spacer blocks. Do not drive nails where they will interfere with the holes in Figure 3-4, step 3 (not shown).

NOTE: TO EXTEND THE SERVICE LIFE OF THE PLATFORM WHEN IT IS USED FOR TRAINING DROPS, USE 2-INCH BRASS WOOD SCREWS INSTEAD OF SIXPENNY NAILS AND 2 1/2-INCH BRASS WOOD SCREWS INSTEAD OF EIGHTPENNY NAILS.

Figure 3-3. Plywood nailed to frame



(1) Cut off each corner of the platform.

(2) Turn the platform right side up.

(3) Drill eight 3/8-inch holes in the platform as shown. Make the holes pass through each end of each 2- by 4-inch lateral stringer and the 4- by 4-inch longitudinal stringers.

(4) Insert a 3/8- by 7-inch carriage bolt into each hole, and bolt each of the lateral stringers to the longitudinal stringers.

NOTE: INSERT BOLTS FROM PLYWOOD DECK SIDE OF PLATFORM.

(5) Drill a 2-inch hole through the plywood and front lateral stringer centered between the two center longitudinal stringers. Drill a 2-inch hole through the plywood and the rear lateral stringer in the same way.

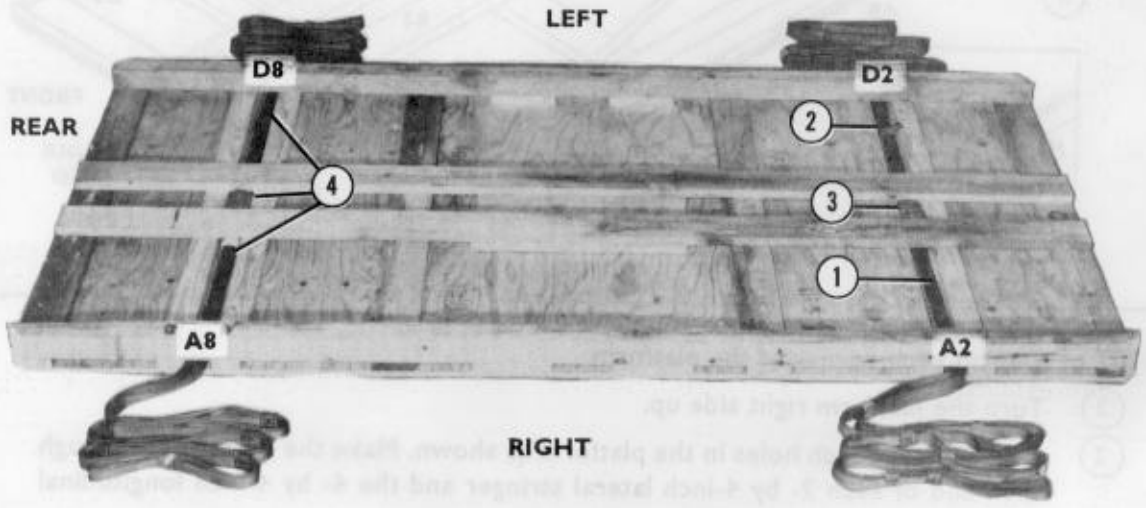
(6) Label the number of the tiedown spaces on the longitudinal stringers above the space as shown above.

NOTE: TO EXTEND THE SERVICE LIFE OF THE PLATFORM WHEN IT IS USED FOR TRAINING DROPS, DRILL 3/8-INCH HOLES AND INSERT 5-INCH CARRIAGE BOLTS THROUGH THE ENDS OF THE CENTER LONGITUDINAL STRINGERS. DRILL HOLES AND INSERT 7-INCH CARRIAGE BOLTS THROUGH THE OUTSIDE LONGITUDINAL STRINGERS AND THE LATERAL STRINGERS.

Figure 3-4. Corners cut off, bolts installed, and tiedown spaces numbered

3-3. Installing Suspension Slings

Install four 16-foot (2-loop), type XXVI nylon webbing slings as suspension slings on the platform. Use two type IV link assemblies and two link covers to finish installing the suspension slings as shown in Figure 3-5.



1. Run a sling from the right side of the platform through tiedown space A2.
2. Run a sling from the left side of the platform through tiedown space D2.
3. Join the two slings together between the center longitudinal stringers with a type IV link assembly. Cover the link, and place it on the floor between the longitudinal stringers.
4. Repeat steps 1, 2, and 3, and install the rear slings through tiedown spaces A8 and D8.

Figure 3-5. Suspension slings installed on platform

3-4. Stowing Sandbags

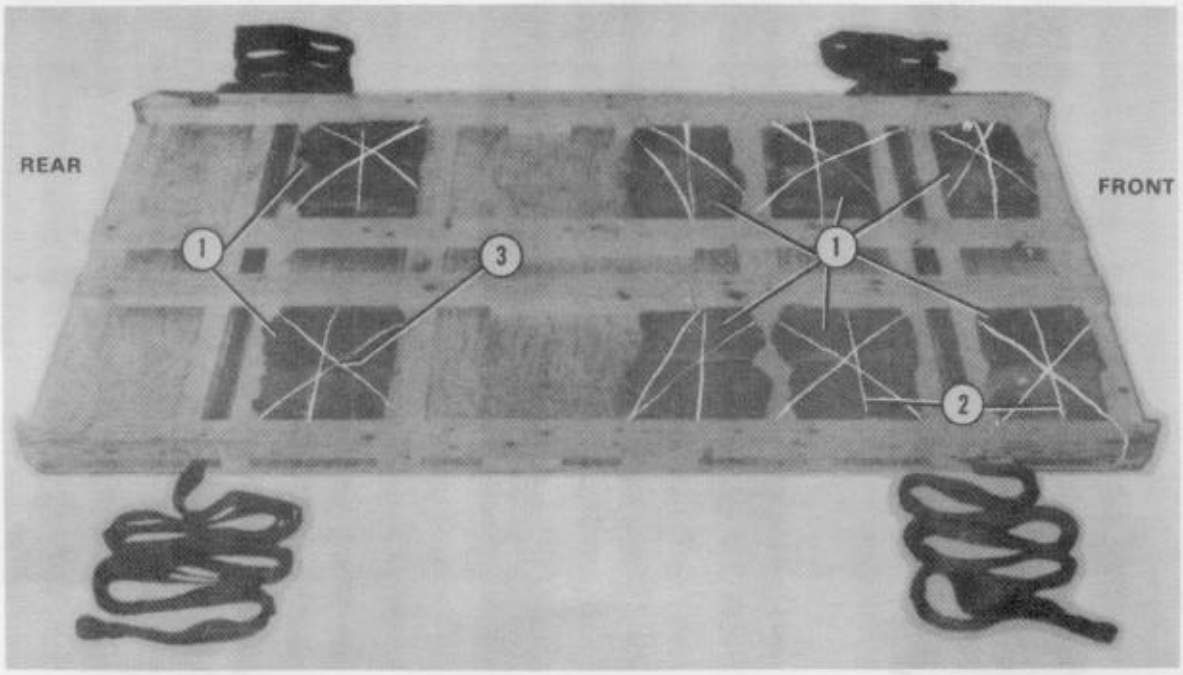
Fill 16 sandbags with 35 pounds of sand or gravel in each bag. Stow the sandbags in the platform recesses as shown in Figure 3-6.

NOTE: FOR TRAINING DROPS, USE LESS SAND OR REMOVE THE SANDBAGS BEFORE DERIGGING THE BOAT.

3-5. Placing and Securing Honeycomb

Two sheets of 36- by 96-inch honeycomb are placed on top of the sandbags. They are tied in place with lengths of type III nylon cord as shown in Figure 3-7.

NOTE: USE TAPE UNDER THE TYPE III NYLON CORD TO KEEP IT FROM CUTTING THE HONEYCOMB.

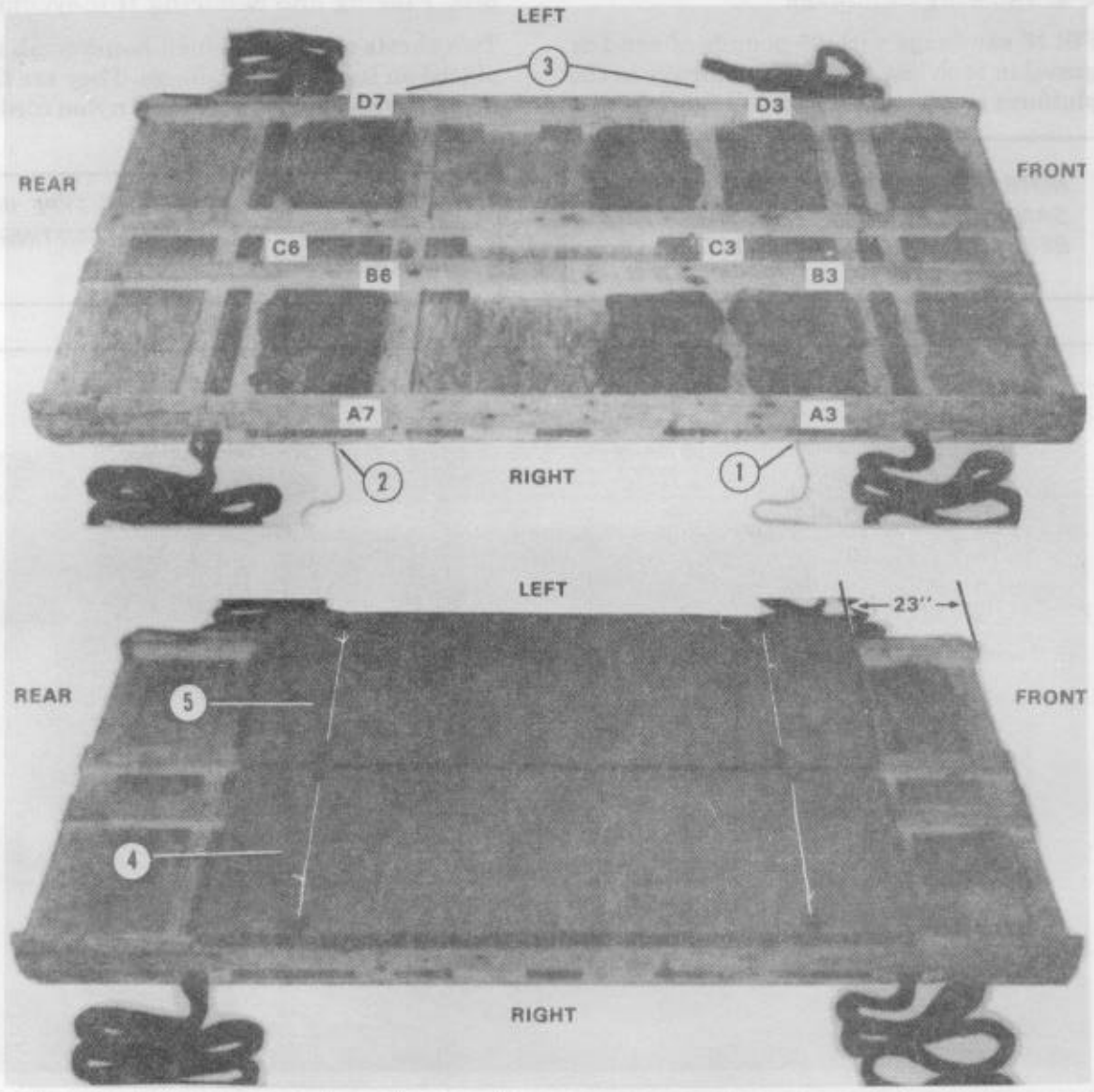


(1) Lay two sandbags in each platform recess as shown.

(2) Tie a length of type III nylon cord across both sandbags in each recess and to the appropriate tiedown spaces.

(3) Form an X over each pair of sandbags with two type III nylon cord ties, and tie the cord to the appropriate tiedown spaces.

Figure 3-6. Sandbags stowed on platform



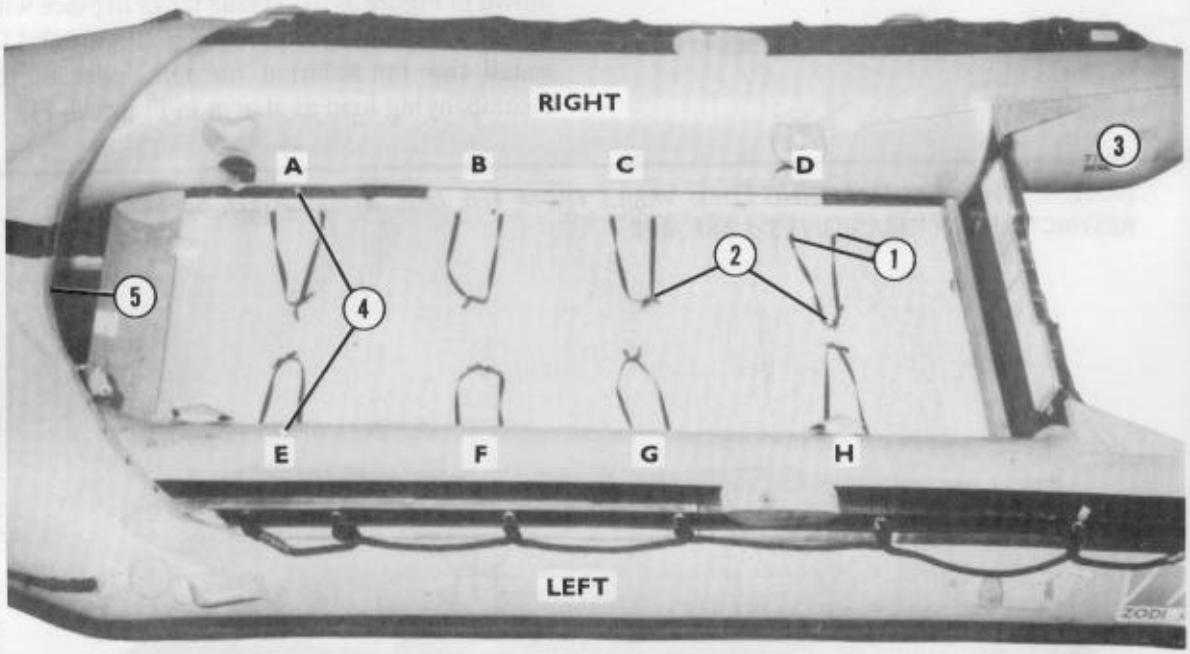
1. Pass a length of type III nylon cord through tiedown spaces A3 and B3.
2. Pass a length of type III nylon cord through tiedown spaces A7 and B6.
3. Pass a length of type III nylon cord through tiedown spaces C3 and D3 (on left side of platform), and another length through tiedown spaces C6 and D7.
4. Lay a 36- by 96-inch piece of honeycomb on the right side of the platform 23 inches from the front. Tie the honeycomb in place with the nylon cord placed in steps 1 and 2.
5. Lay a 36- by 96-inch piece of honeycomb on the left side of the platform 23 inches from the front. Tie the honeycomb in place with the nylon cord placed in step 3.

Figure 3-7. Honeycomb tied to platform

3-6. Preparing Boat

Prepare the boat as shown in Figure 3-8. Additional ties may be added for forward and aft restraints.

CAUTION: PERFORM STEPS 1 AND 2 BEFORE INSTALLING THE FLOOR PANELS.



(1) Drill two 1/2-inch holes in both sides of each floor panel.

(2) Run a 4-foot length of 1/2-inch tubular nylon webbing through both holes in each side of each panel. Tie the ends of the nylon webbing together with a square knot and an overhand knot in the running ends.

NOTE: IF THE JOHNSON, EVINRUDE, OR MARS ENGINE IS TO BE USED WITH THIS BOAT, DRILL TWO ADDITIONAL HOLES IN THE DECK CENTERED NEAR THE REAR EDGE. RUN A 6-FOOT LENGTH OF 1/2-INCH TUBULAR NYLON WEBBING THROUGH BOTH HOLES TO MAKE A REAR TIEDOWN.

(3) Install the floor panels, and inflate the boat.

(4) Start at the front of the boat, and name the in-boat tiedowns on the right side A, B, C, and D. Name the in-boat tiedowns on the left side E, F, G, and H.

(5) Stow the foot-operated air pump in its stowage pocket in the bow of the boat (not shown).

(6) Tie chemical lights to the bow of the boat and to the center side carrying handles or ropes with 80-pound cotton webbing if dictated by mission requirements (not shown).

Figure 3-8. Boat prepared

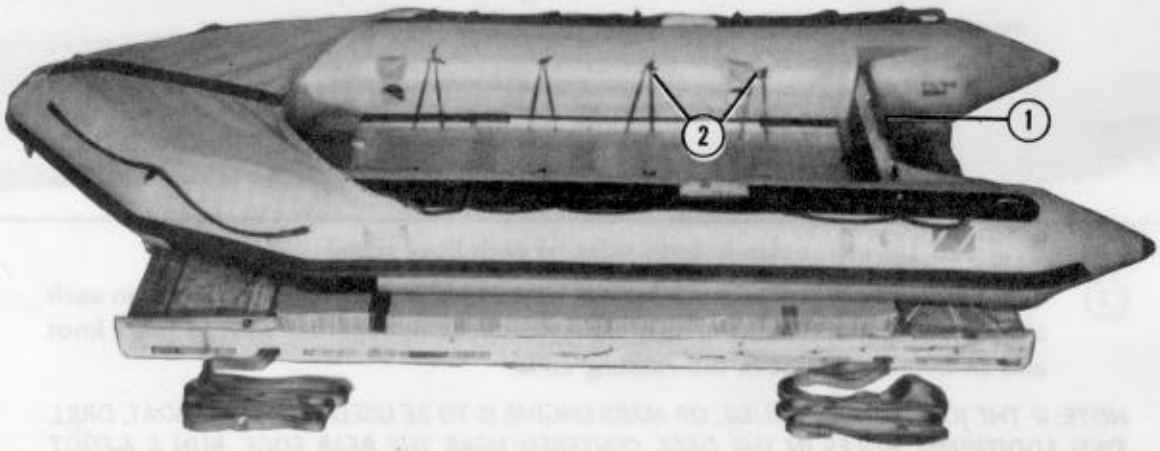
3-7. Positioning Boat

Set the boat on the platform as shown in Figure 3-9.

3-8. Stowing Scuba Tanks

Lay the six pairs of scuba tanks in the boat as shown in Figure 3-10. Tie the tanks in place with 1/2-inch tubular nylon webbing (Figure 3-11). Install ties for securing the remainder of the accompanying load as shown in Figure 3-11.

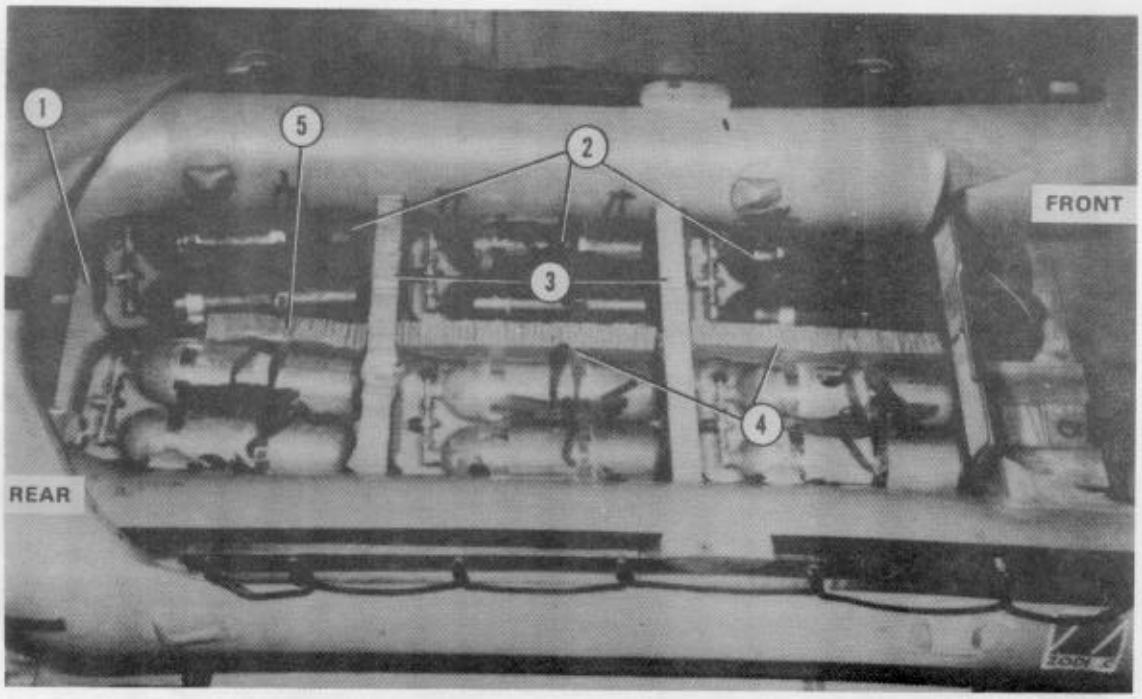
NOTE: IF THE ACCOMPANYING LOAD VARIES FROM THE ONE ILLUSTRATED, BE SURE THE RESTRICTIONS IN PARAGRAPH 3-1 ARE MET.



(1) Set the boat on the platform with the transom even with the front of the honeycomb.

(2) Tape the in-boat tiedowns to the side of the boat.

Figure 3-9. Boat positioned on platform



(1) Cut off the corners of a 36- by 96-inch sheet of honeycomb, and lay it in the floor of the boat.

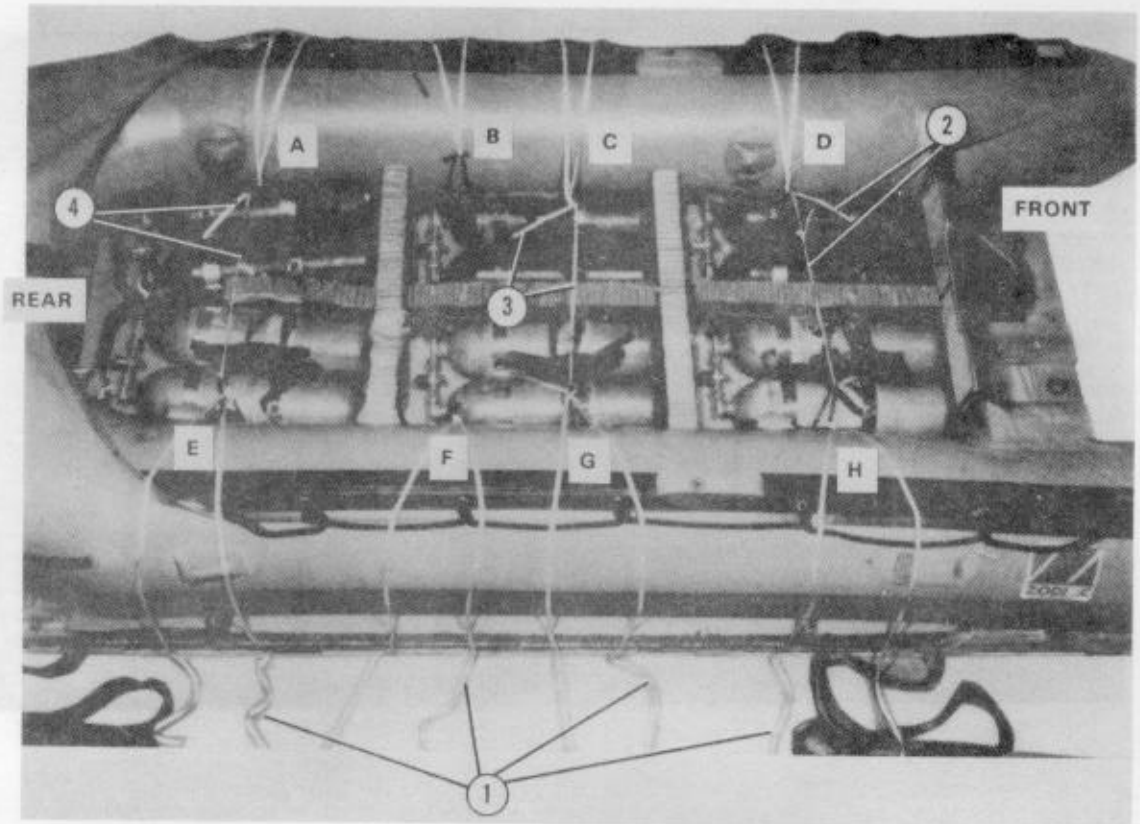
(2) Lay the tanks on the honeycomb as shown.

(3) Place a 7- by 36-inch piece of honeycomb between the rows of tanks.

(4) Place a 7- by 28-inch piece of honeycomb between the middle and rear pair of tanks.

(5) Place a 7- by 17-inch piece of honeycomb between the tanks in the bow of the boat.

Figure 3-10. Scuba tanks placed in boat



(1) Pass a 12-foot length of 1/2-inch tubular nylon webbing through each in-boat tiedown. Even the ends, and tie them in place with a clove hitch. Lay the lengths outside the boat.

(2) Pass a length of 1/2-inch tubular nylon webbing through in-boat tiedown D, over the first tank, under the second and third tanks, and up through in-boat tiedown H. Tie the ends together.

(3) Pass a length of 1/2-inch tubular nylon webbing through in-boat tiedown C, over the first tank, under the second and third tanks, and up through in-boat tiedown G. Tie the ends together.

(4) Pass a length of 1/2-inch tubular nylon webbing through in-boat tiedown A, over the first tank, under the second and third tanks, and up through in-boat tiedown E. Tie the ends together.

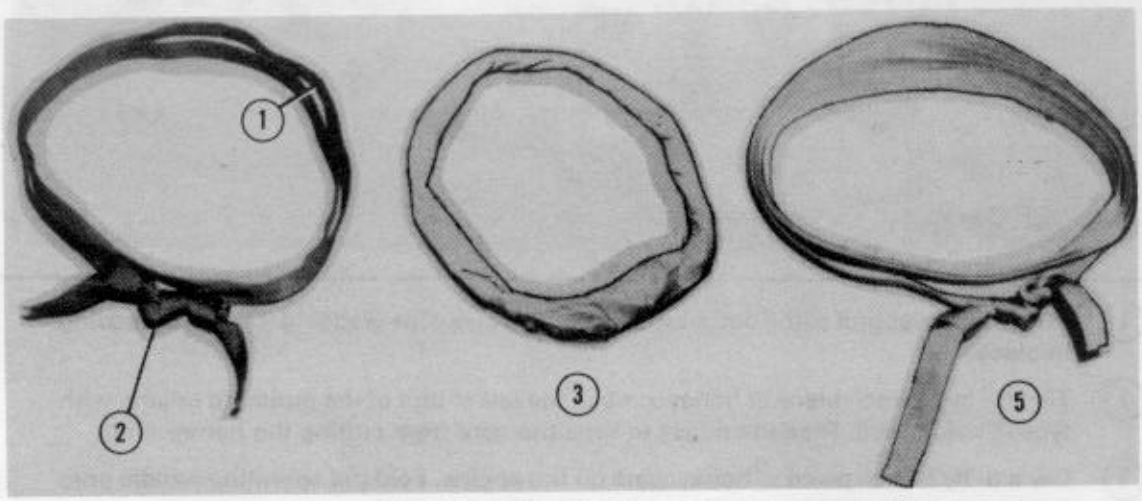
Figure 3-11. Scuba tanks tied in place and accompanying load ties positioned

3-9. Preparing and Stowing Outboard Engines

CAUTION: SAFETY THE ENGINE TO A CONVENIENT POINT IN THE BOAT WITH A LENGTH OF 1/2-INCH TUBULAR NYLON WEBBING.

The preparation and stowage procedures for all the outboard engines used with the boats rigged in this manual are given below.

a. Making Tiedown Rings. Make three nylon webbing tiedown rings as shown in Figure 3-12.



(1) Use a 60-inch length of 1-inch nylon webbing to make a two-ply tiedown ring 10 inches in diameter.

(2) Tie the ends of the webbing together with a square knot, and tie an overhand knot in each free end.

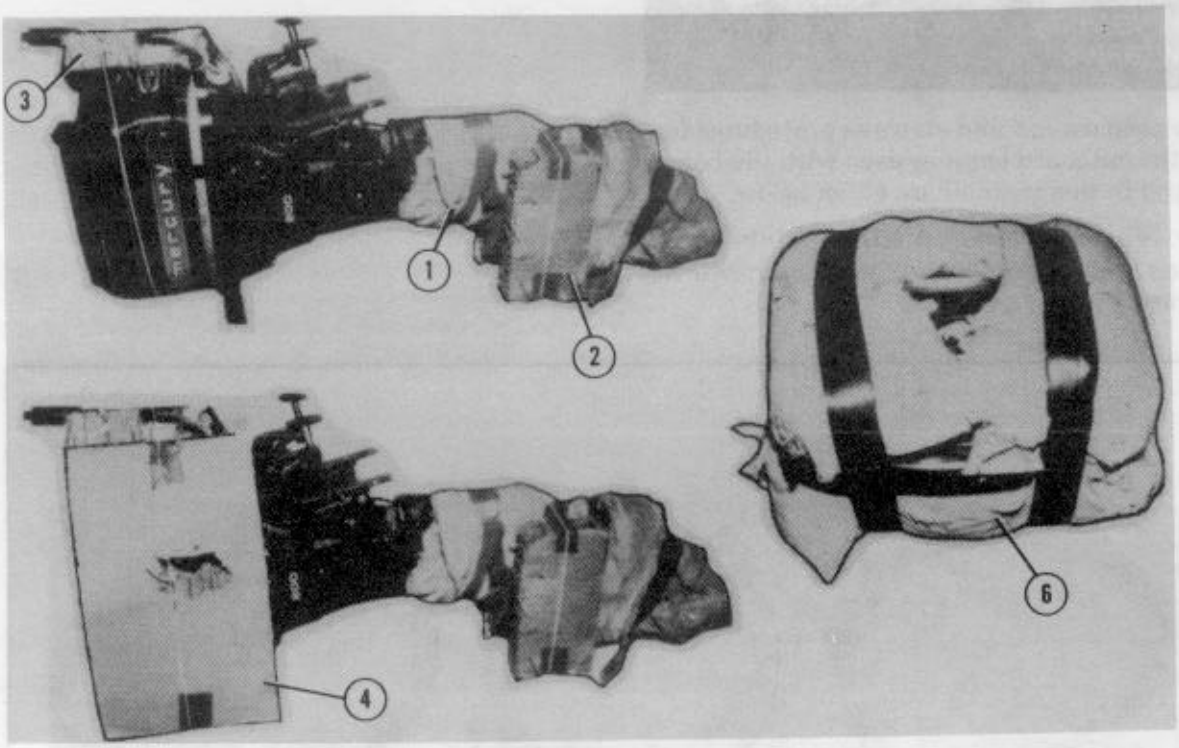
(3) Wrap the nylon webbing ring with tape.

(4) Repeat steps 1 through 3 to form a second tiedown ring (not shown).

(5) Use a 120-inch length of 1-inch tubular nylon webbing to make a four-ply tiedown ring 10 inches in diameter. Tie the nylon as in step 2. Wrap the ring as in step 3.

Figure 3-12. Tiedown rings formed

b. Preparing and Stowing Mercury Engines. Prepare the Mercury outboard engine and fuel tank as shown in Figure 3-13. Lay the engine and fuel tank on the scuba tanks, and tie them in place as shown in Figure 3-14.



(1) Wrap the lower unit of the outboard engine with cellulose wadding. Tape the wadding in place.

(2) Tie a 6- by 12-inch piece of honeycomb to the lower unit of the outboard engine with type III nylon cord. Tape the edges to keep the cord from cutting the honeycomb.

(3) Lay a 6- by 6-inch piece of honeycomb on the engine. Fold the operating handle onto the honeycomb, and tie it in place with type III nylon cord.

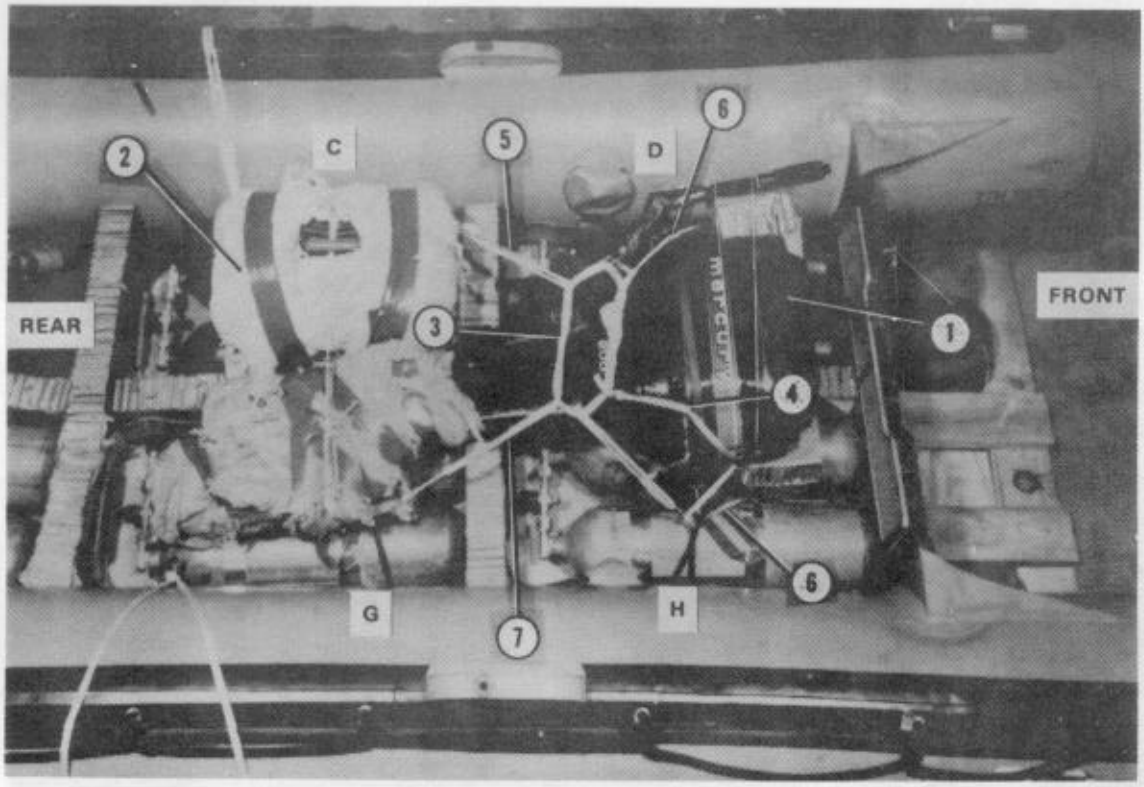
(4) Place a 12- by 24-inch piece of honeycomb against the engine. Make a cutout for the shift lever as shown. Tie the honeycomb to the engine with type III nylon cord. Tape the edges to keep the cord from cutting the honeycomb.

(5) Make sure the fuel tank is at least 1/2 full but no more than 3/4 full (not shown).

(6) Pad the fuel tank with several layers of cellulose wadding. Do not cover the handle. Tape the wadding in place.

(7) Put only five gallons of fuel in each container if collapsible plastic containers are used. Force out all air before closing them. Pad between plastic tanks and engine or other equipment with 1/2-inch felt (not shown).

Figure 3-13. Mercury outboard engine and fuel tank prepared



(1) Lay the outboard engine, honeycomb side down, in the rear of the boat. Place the top of the engine 3 inches from the transom.

(2) Set the fuel tank beside the lower unit.

(3) Lay a two-ply tiedown ring (Figure 3-12) on the middle unit of the outboard engine.

NOTE: KEEP THE 10-INCH TIEDOWN RING CENTERED OVER THE MIDDLE UNIT OF THE OUTBOARD ENGINE WHILE SECURING THE ENGINE. USE THE PROCEDURES IN FIGURE 3-21 TO MAKE EACH TIE TO THE TIEDOWN RING.

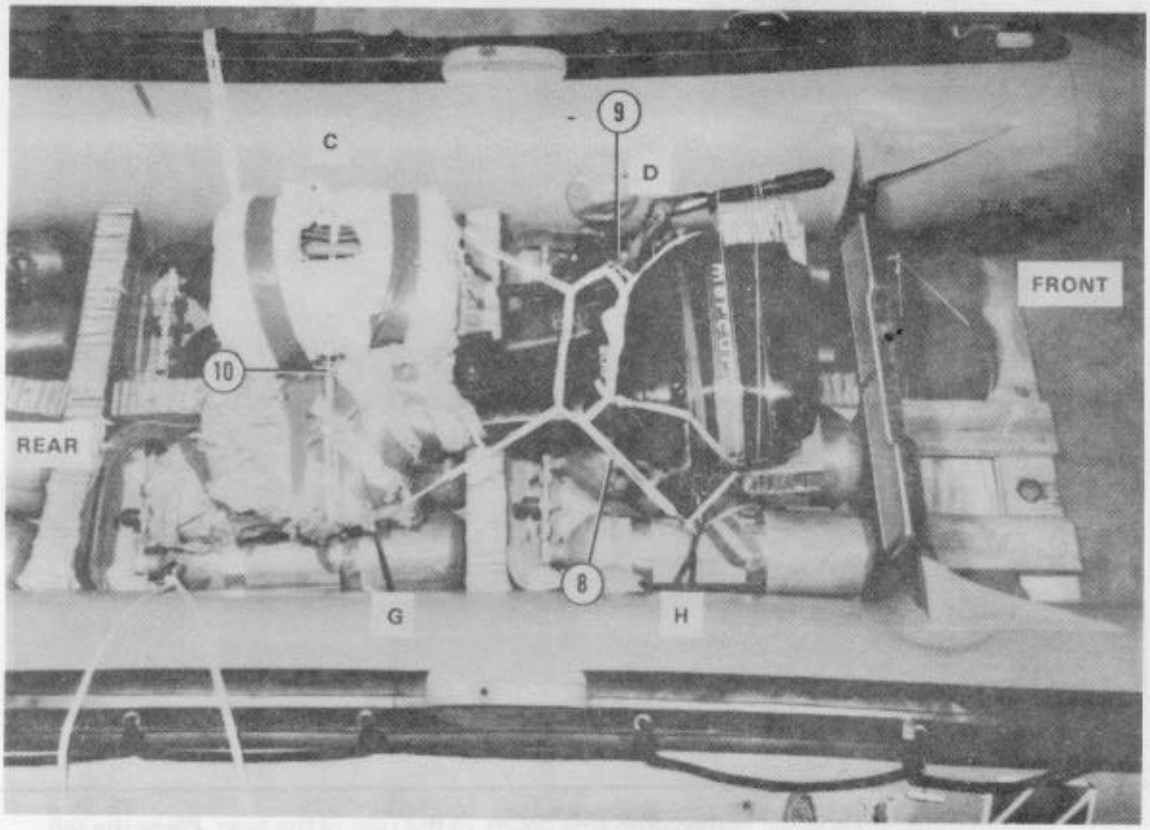
(4) Pass one end of the webbing from tiedown D under the engine, up over the engine, and through the tiedown ring.

(5) Pass one end of the webbing from tiedown C through the tiedown ring.

(6) Pass one end of the webbing from tiedown H under the engine, up over the engine, and through the tiedown ring.

(7) Pass one end of the webbing from tiedown G through the tiedown ring.

Figure 3-14. Mercury outboard engine and fuel tank stowed in boat



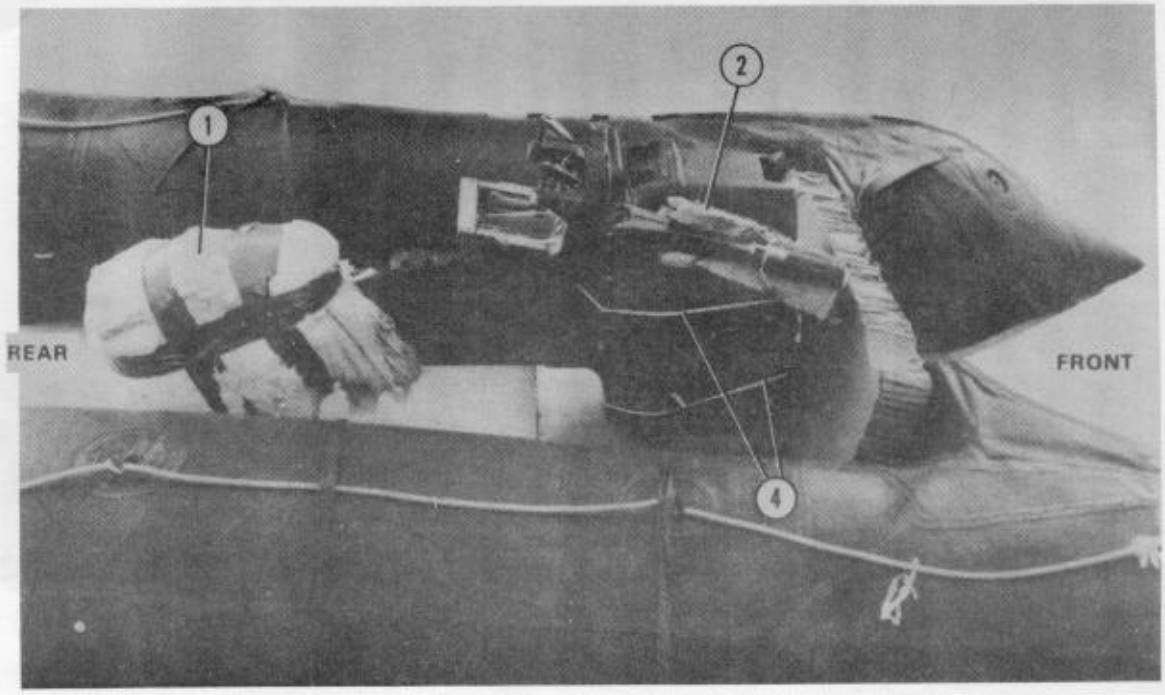
(8) Pass the webbing from tiedown H through the tiedown ring.

(9) Pass the webbing from tiedown D through the tiedown ring.

(10) Run the webbing from tiedown C through the fuel tank handle. Tie it to the nylon from tiedown G.

Figure 3-14. Mercury outboard engine and fuel tank stowed in boat (continued)

*c. **Preparing and Stowing Johnson and Evinrude Engines.*** Prepare the Johnson Sea Horse and Evinrude outboard engines as shown in Figure 3-15. Set the engine and fuel tank in the boat, and secure them as shown in Figure 3-16.



(1) Wrap the lower unit of the outboard engine with cellulose wadding. Tape the wadding in place.

(2) Tie a 3- by 12-inch piece of honeycomb between the operating handle and the engine cover with type III nylon cord.

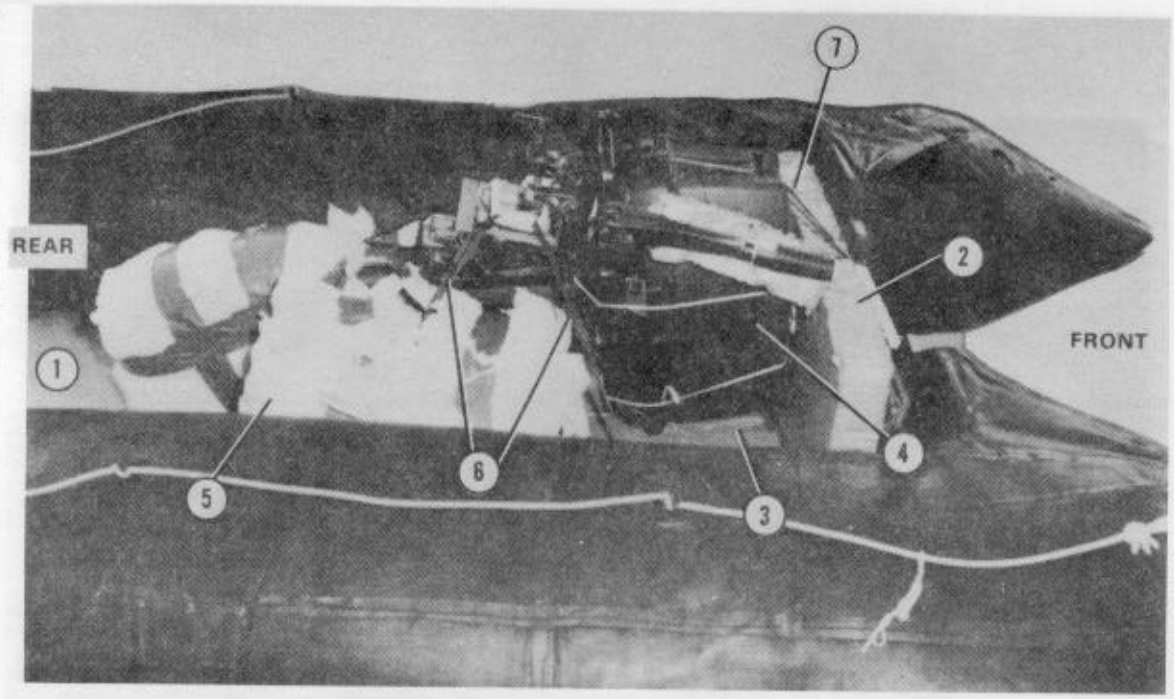
(3) Place two thicknesses of honeycomb, 8 inches wide and cut to fit, under the shaft housing of engines larger than 35 horsepower (35 horsepower engine shown). Glue them flat between the shaft housing and the honeycomb deck placed earlier (not shown).

(4) Tie the engine cover in place with two lengths of type III nylon cord.

(5) Pad the fuel tank as shown in Figure 3-13.

Figure 3-15. Johnson Sea Horse or Evinrude engine prepared

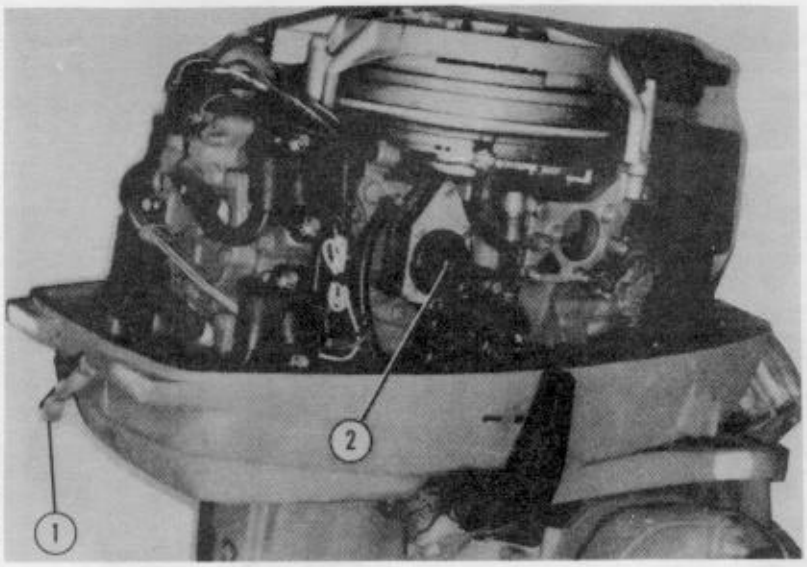
NOTE: SCUBA TANKS CANNOT BE PLACED UNDER JOHNSON SEA HORSE AND EVINRUDE ENGINES.

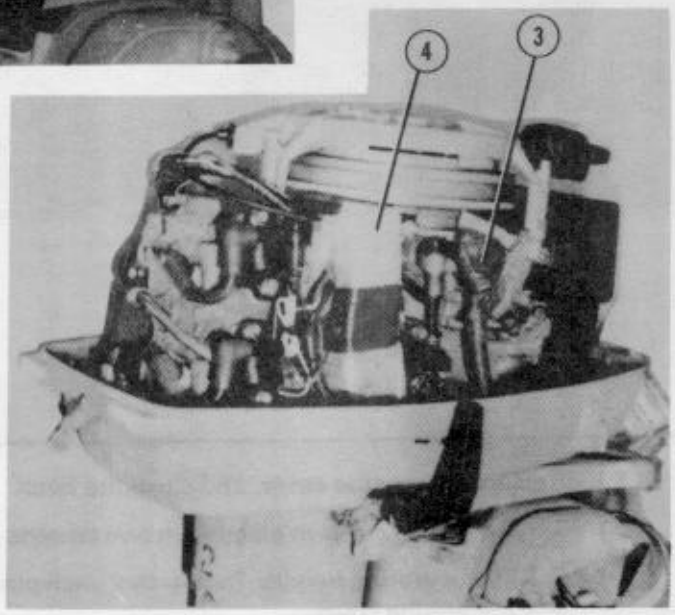


1. Set a 36- by 96-inch piece of honeycomb in the floor of the boat.
2. Set an 18- by 36-inch piece of honeycomb against the transom.
3. Cut a 6- by 8-inch cutout in the center of the 36-inch side of an 18- by 36-inch piece of honeycomb. Lay the honeycomb on the 36- by 96-inch piece of honeycomb with the cutout against the 18- by 36-inch honeycomb in step 1.
4. Set the rear of the engine on the 18- by 36-inch honeycomb with the top of the engine against the transom honeycomb.
5. Set the fuel tank beside the engine as shown.
6. Tie the engine and fuel tank in the boat as shown in Figure 3-14. Center the tiedown ring on the engine mounting bracket.
7. Bring the rear tiedown from the rear tiedown holes over the transom and engine cover, and tie it to the tiedown ring. (See Figure 3-8, Note.)

Figure 3-16. Johnson Sea Horse or Evinrude engine and fuel tank stowed

d. Preparing and Stowing Mars Engine. Prepare the Mars engine as shown in Figure 3-17. Set the engine and fuel tank in the boat, and secure them as shown in Figure 3-18.





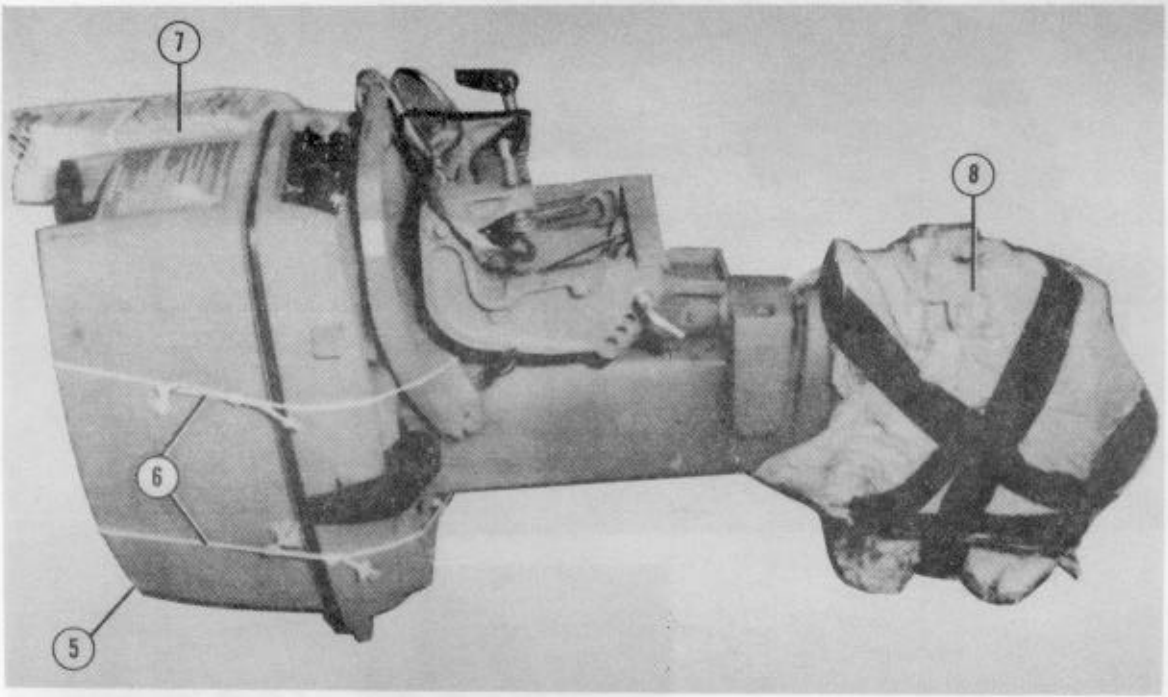
(1) Open the cover latch, and remove the engine cover.

(2) Unscrew the fuel filter from the fuel pump. Leave the fuel filter attached to the hose.

(3) Wrap the filter with plastic and tape.

(4) Wrap the fuel pump with plastic and tape.

Figure 3-17. Mars engine prepared



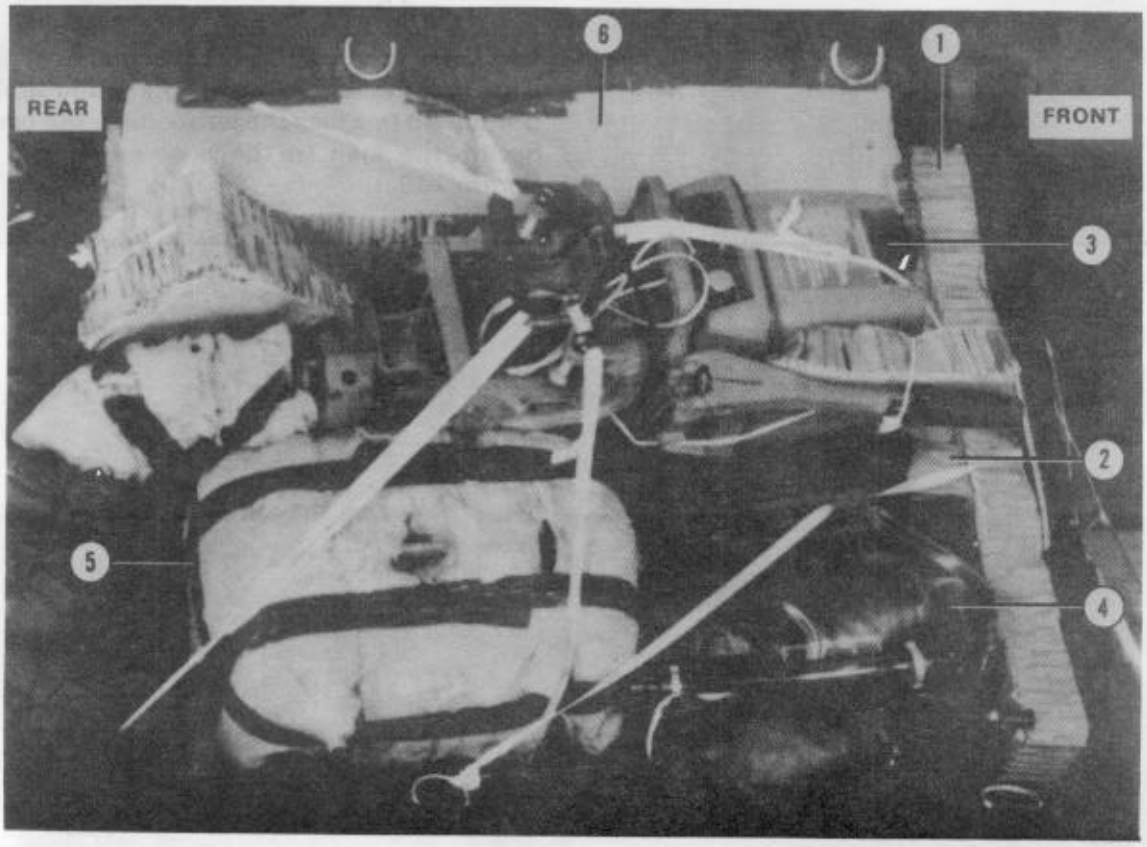
(5) Replace the engine cover, and close the latch.

(6) Tie the engine cover in place with two lengths of type III nylon cord.

(7) Fold the operating handle. Tie a 4- by 9-inch piece of honeycomb between the handle and the engine cover.

(8) Wrap the lower unit with cellulose wadding and tape.

Figure 3-17. Mars engine prepared (continued)

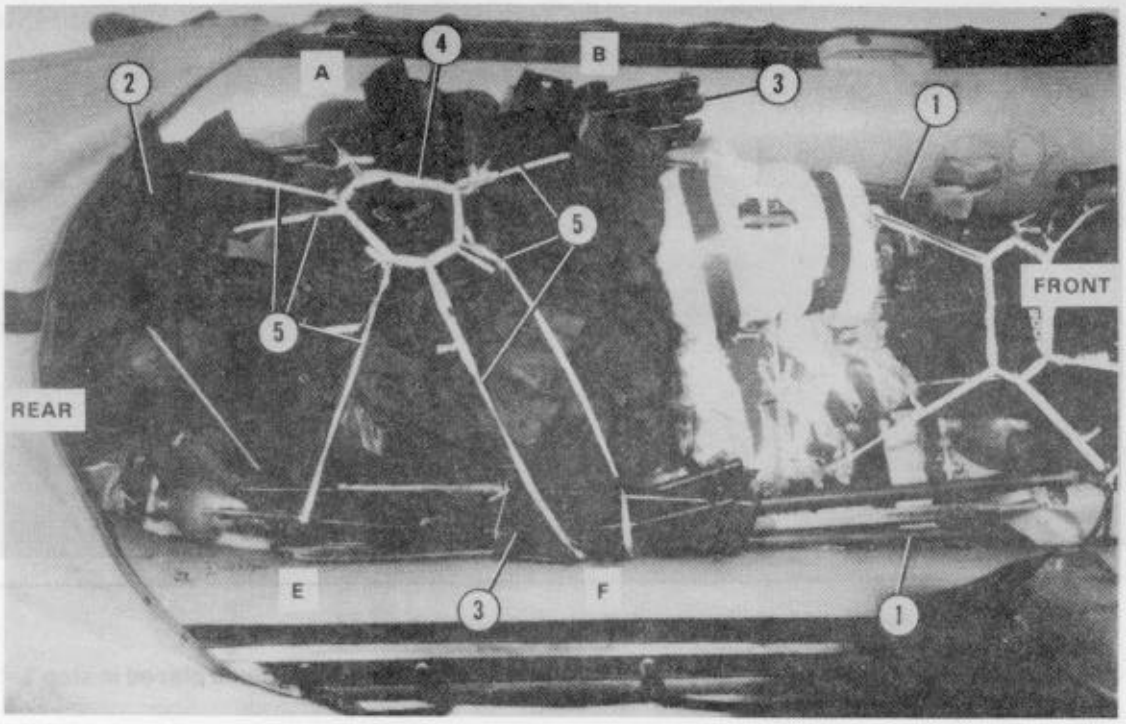


1. Set a 13- by 36-inch piece of honeycomb against the transom.
2. Set a 9- by 22-inch piece of honeycomb lengthwise against the piece placed in step 1 and flush against the left side of the boat.
3. Center the engine in the boat with its top flush against the honeycomb placed in step 2.
4. Set a collapsible plastic fuel tank to the right side of the boat beside the engine. Pad between the tank and the engine with 1/2-inch felt.
5. Set a wrapped metal fuel tank against the engine shaft housing.
6. Fill the space to the left of the engine with supplies, additional tanks, or honeycomb so that the engine does not move. Pad any item that may contact the engine with honeycomb.
7. Adapt the procedures shown in Figures 3-14 and 3-16 for securing the engine and fuel tanks.

Figure 3-18. Mars engine and fuel tanks stowed

3-10. Stowing Paddles, Rucksacks, and Weapons

Lay three boat paddles on each side of the boat. Set the rucksacks on the scuba tanks (Figure 3-11). Place the weapons in the boat. Secure the load in the boat as shown in Figure 3-19.



(1) Lay three paddles along each side of the boat as shown.

(2) Set the rucksacks on the scuba tanks in the bow of the boat with the racks up.

(3) Tie the weapons together in two groups of three weapons with type III nylon cord. Lay the weapons beside the rucksacks and on top of the paddles on each side of the boat.

(4) Place a two-ply tiedown ring (Figure 3-12) in the center of the rucksacks.

NOTE: MAKE THE TIES TO KEEP THE TIEDOWN RING IN THE MIDDLE OF THE RUCKSACKS. PASS THE TIEDOWN NYLON THROUGH THE RUCKSACK FRAMES AND THROUGH THE TIEDOWN RING.

(5) Make the 1/2-inch tubular nylon ties from tiedowns A, B, E, and F to the tiedown ring. Adapt the knot used in Figure 3-21 by tying a loop in the standing end. Bring the running end through the ring, and tie it to the loop.

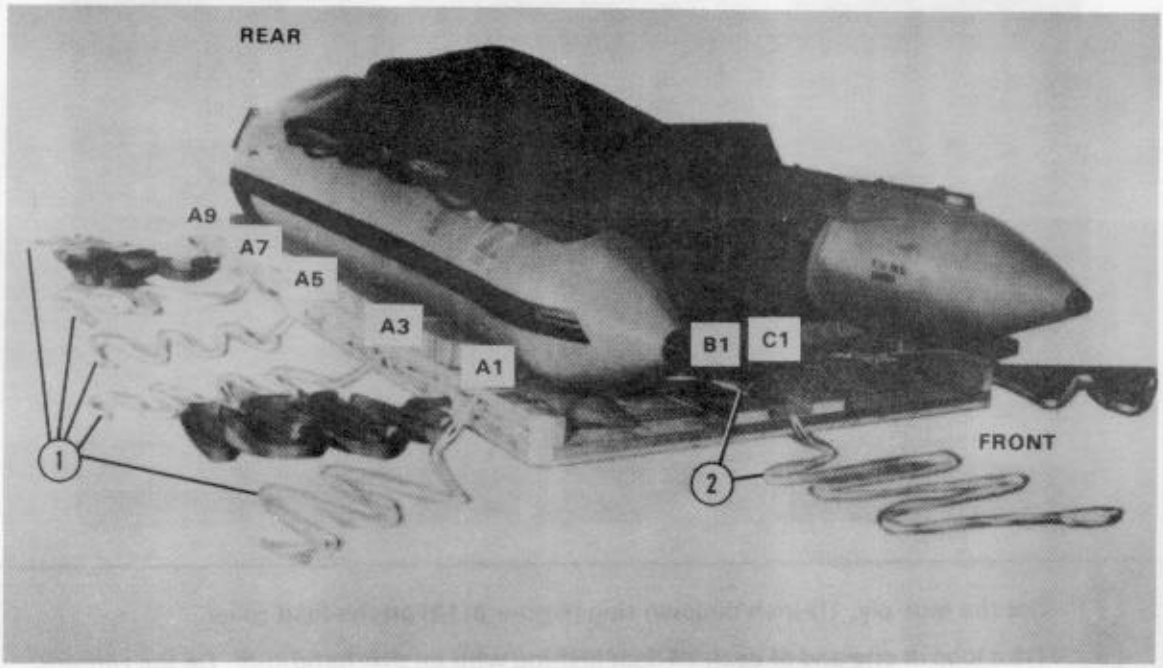
Figure 3-19. Paddles, rucksacks, and weapons stowed in boat

3-11. Installing Load Cover

Spread a 5- by 10-foot piece of cotton duck cloth over the accompanying load in the boat. Push the edges of the cloth down between the load and the sides of the boat (Figure 3-20).

3-12. Lashing Boat

Lash the boat to the platform with ten 14-foot and two 24-foot lengths of 1/2-inch tubular nylon webbing as shown in Figures 3-20, 3-21, and 3-22.

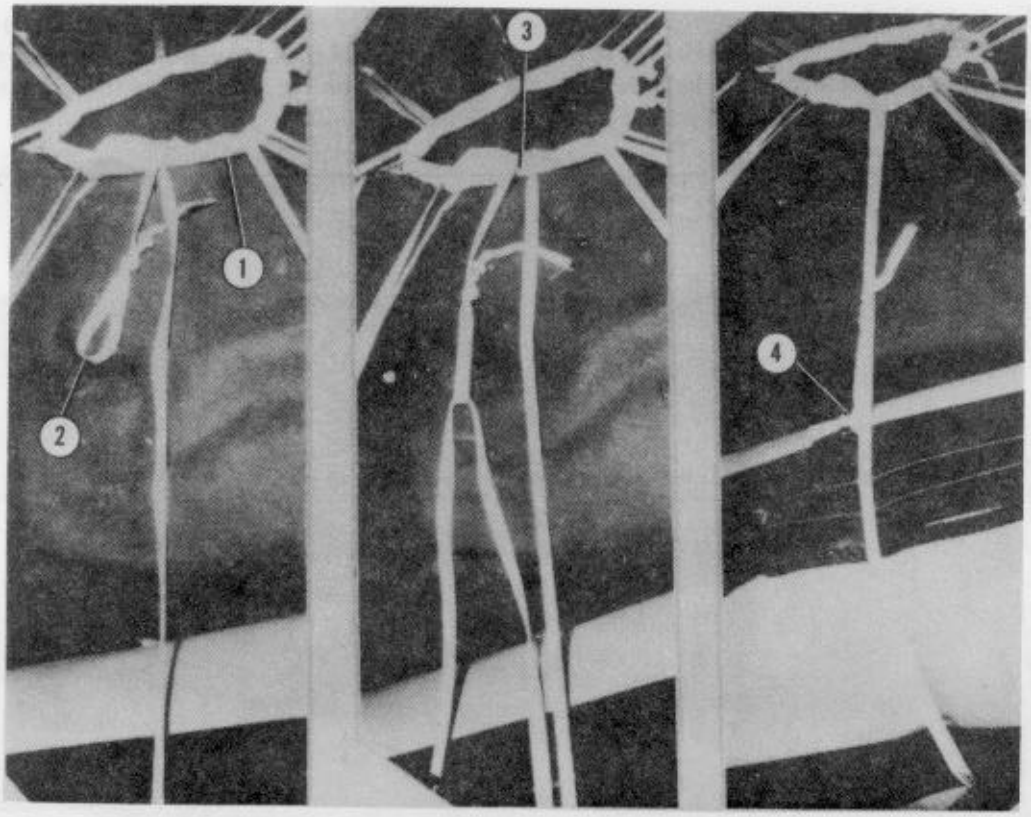


(1) Tie the 14-foot lengths of nylon through tiedown spaces A1, A3, A5, A7, and A9 on the right stringer and through tiedown spaces D1, D3, D5, D7, and D9 on the left stringer.

(2) Pass one end of a 24-foot length of nylon through tiedown spaces B1 and C1. Even the ends, and make an overhand knot about 18 inches from the tiedown spaces.

(3) Pass one end of the other 24-foot length of nylon through tiedown spaces B8 and C8 (not shown). Even the ends, and make an overhand knot about 18 inches from the tiedown spaces.

Figure 3-20. Load cover and boat lashings installed



(1) Set the four-ply, 10-inch tiedown ring (Figure 3-12) on the load cover.

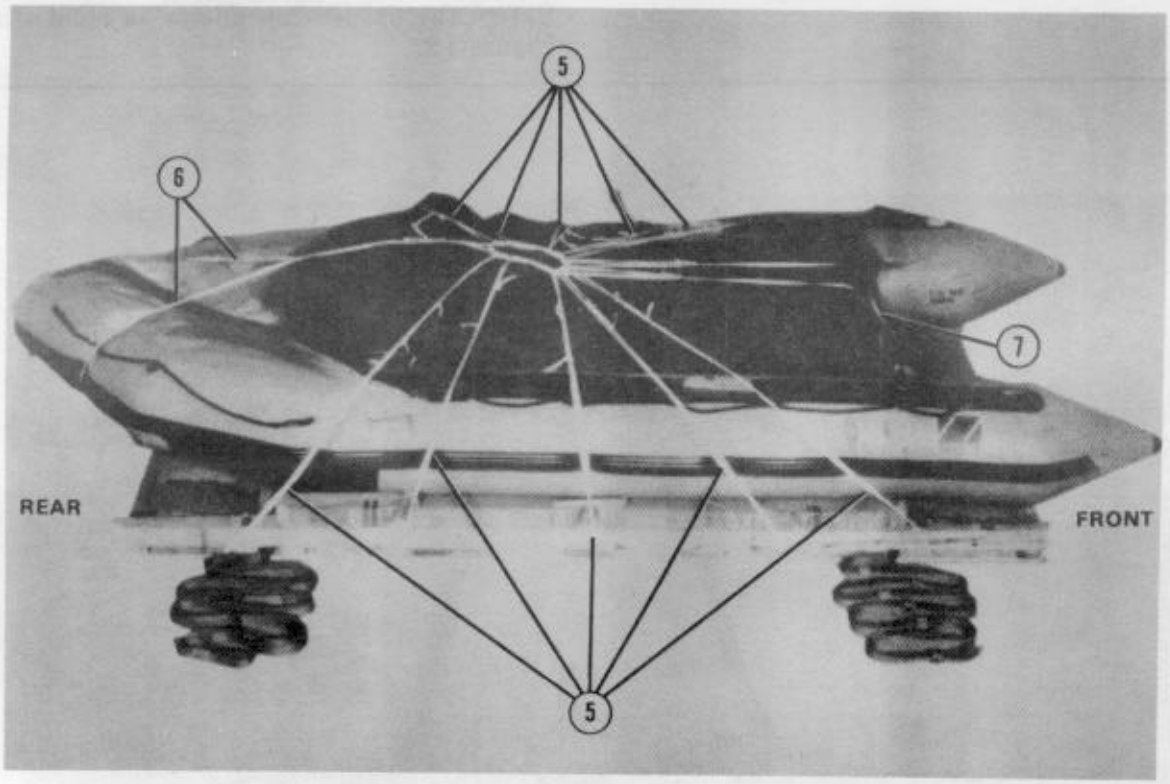
(2) Tie a loop in one end of each 14-foot lashing with an overhand knot. Tie the running end with an overhand knot.

(3) Pass the loop end through the tiedown ring.

(4) Pass the opposite end of the lashing through the loop, pull it tight, and tie it with three alternating half hitch knots. Tie an overhand knot in the running end.

NOTE: THE PURPOSE OF THIS METHOD OF TYING IS TO ALLOW THE LASHINGS TO SLIDE EASILY OFF THE TIEDOWN RING ONCE IT IS CUT.

Figure 3-21. Lashings tied to tiedown ring



NOTE: KEEP THE TIEDOWN RING IN THE CENTER OF THE BOAT WHILE TYING THE LASHINGS.

(5) Tie all of the 14-foot lashings to the tiedown ring as described in steps 2, 3, and 4.

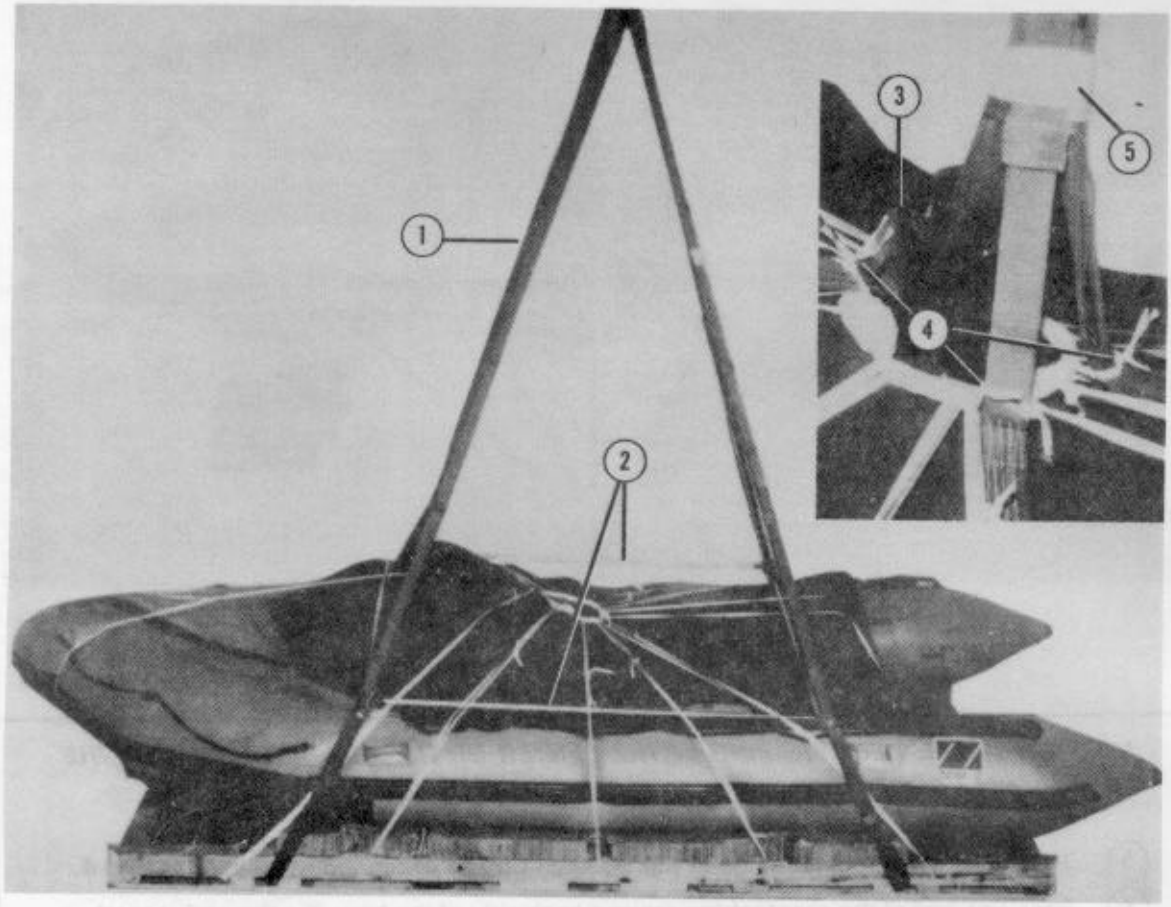
(6) Pass one end of the rear lashing around each side of the bow. Tie the ends together with an overhand knot. Tie the lashing to the tiedown ring as in steps 2, 3, and 4.

(7) Use the intermediate loop tie to tie each end of the front lashing to the tiedown ring according to steps 2, 3, and 4.

Figure 3-21. Lashings tied to tiedown ring (continued)

3-13. Safetying Suspension Slings

Safety the suspension slings as shown in Figure 3-22.



(1) Raise the suspension slings.

(2) Make the deadman's tie 6 to 8 inches above the load as described in FM 10-500/TO 13C7-1-5.

(3) Lower the suspension slings until they touch the tiedown ring.

(4) Tie each sling to the tiedown ring with two lengths of 80-pound cotton webbing.

(5) Tape the slings together at the tiedown ring and at 2-foot intervals with two turns of paper masking tape.

Figure 3-22. Suspension slings safetied

3-14. Stowing Parachute

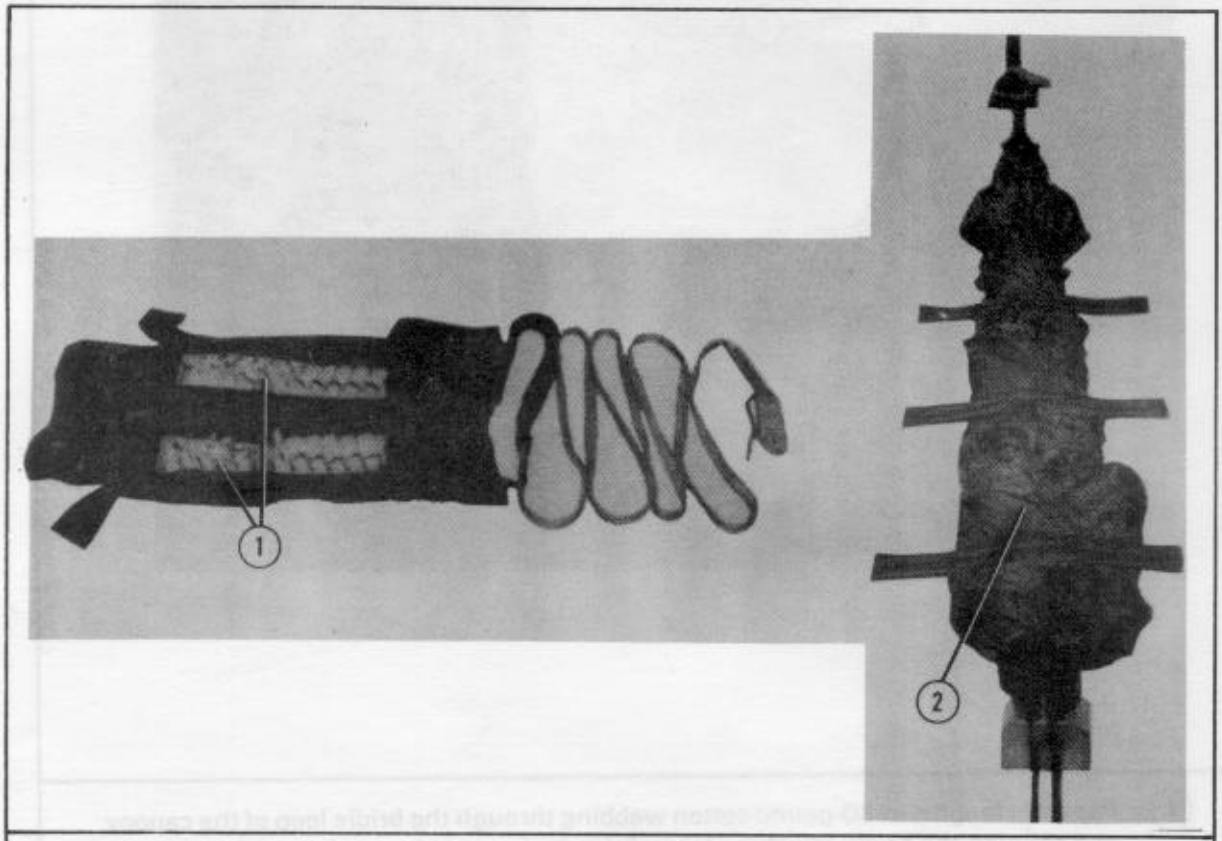
A 15-foot cargo extraction parachute is used to deploy the G-12 cargo parachute after the load is pushed from the aircraft. When used as a deployment parachute for this load, the 15-foot cargo extraction parachute is packed in a T-10 deployment bag.

NOTE: IF THE STANDARD 15-FOOT PARACHUTE DEPLOYMENT BAG IS ATTACHED TO THE PARACHUTE, REMOVE THE BAG AT THE BAG RETAINING LINE.

a. Packing the 15-Foot Extraction Parachute. Use the following items to pack the 15-foot cargo extraction parachute in a T-10 deployment bag for use with this load as shown in Figures 3-23 through 3-28:

- One T-10 deployment bag with static line.
- Retainer bands as required.
- 80-pound cotton webbing.
- Ticket number 5 cotton thread.
- One large cargo suspension clevis.

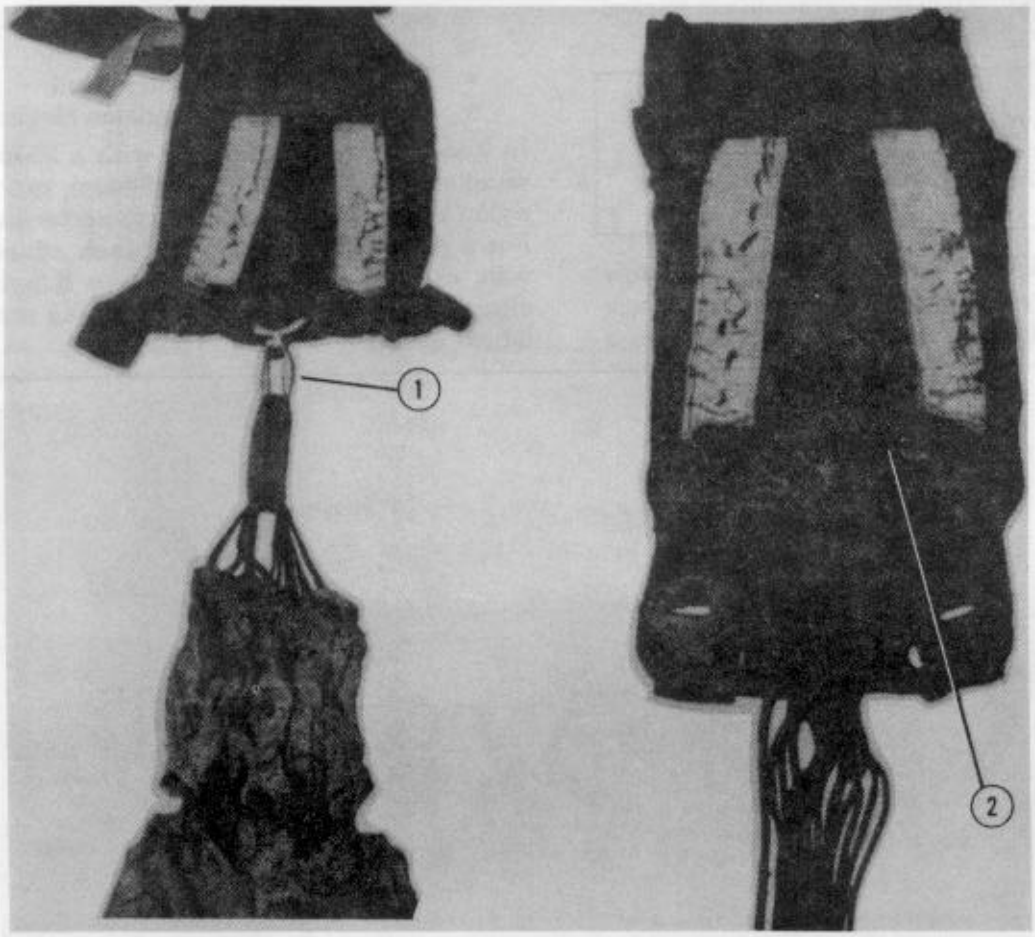
In addition, for a parachute with a 36-inch adapter web, use one 9-foot (3-loop), type X nylon sling and one type IV connector link. For a parachute without a 36-inch adapter web, use one 12-foot (3-loop), type X nylon sling and one 60-inch nylon webbing strap (shear strap).



(1) Attach retainer bands to the first eight stow loops on each side of the T-10 deployment bag.

(2) Flat fold and long fold the canopy as outlined in TM 10-1670-215-23/TO 13C5-1-102/ NAVAIR 13-1-16.

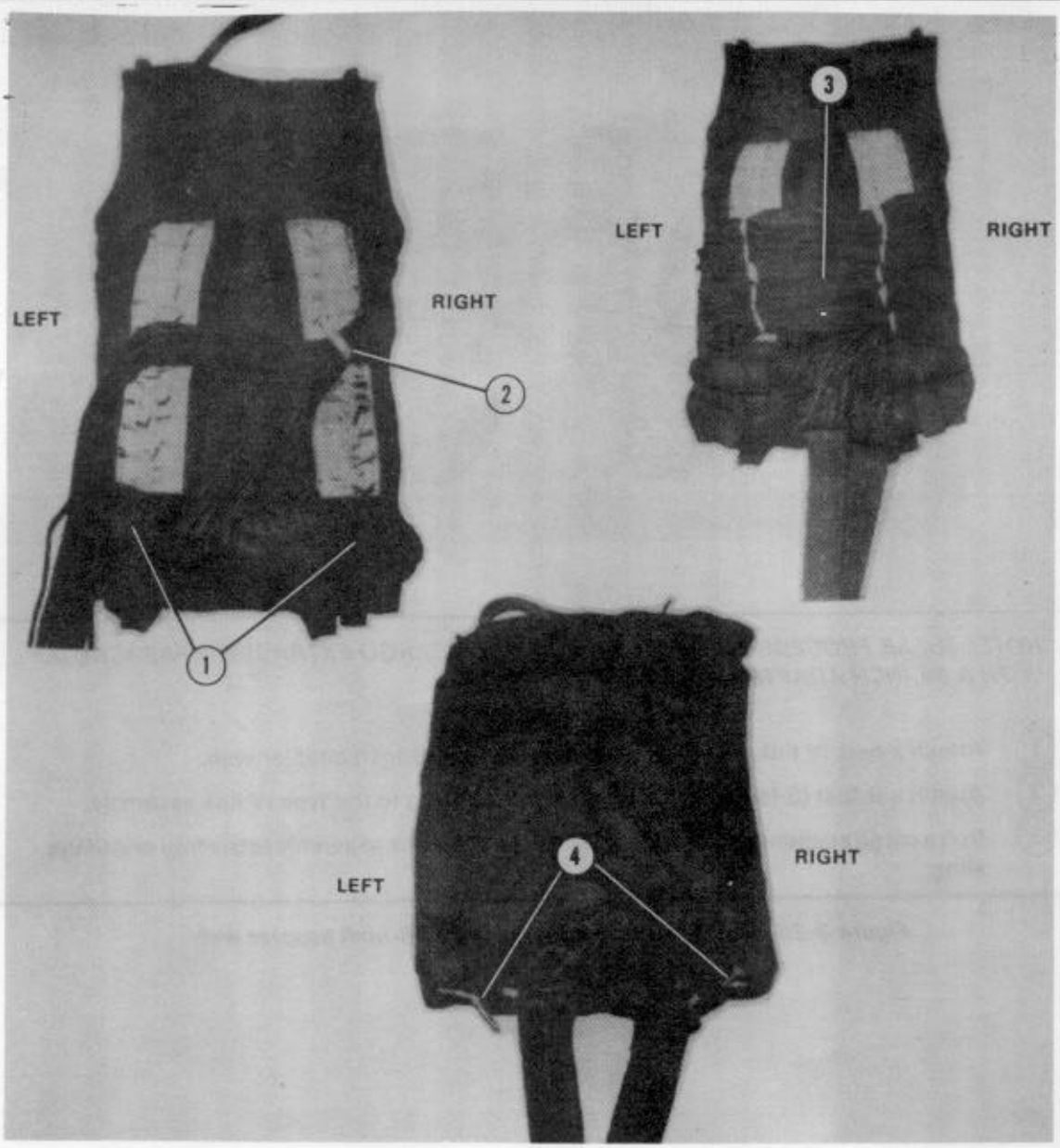
Figure 3-23. Retainer bands attached and canopy folded



(1) Pass two lengths of 80-pound cotton webbing through the bridle loop of the canopy and through the bridle attaching loop of the deployment bag to form a 3-inch loop. Cross the ends of the webbing over the bridle attaching loop. Tie them with a surgeon's knot and a locking knot.

(2) S-fold the canopy into the deployment bag. Start at the upper right corner of the bag.

Figure 3-24. Deployment bag attached and canopy stowed



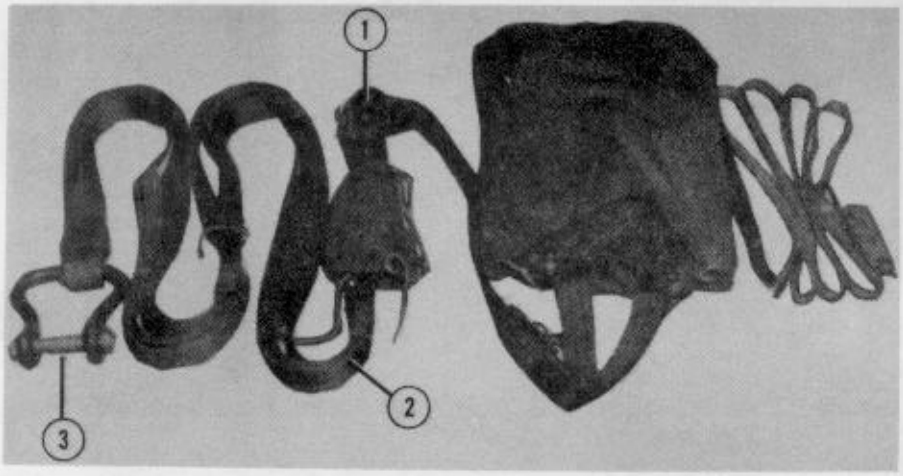
(1) Make the locking stows as outlined in TM 10-1670-213-23.

(2) Make the first suspension line stow in the upper right retainer band.

(3) Continue stowing the lines from side to side.

(4) Pass a length of 80-pound cotton webbing through the right side connector link, the connector link loops, and the suspension line protector flap loop. Tie it with a surgeon's knot and a locking knot. Repeat the procedures on the left side.

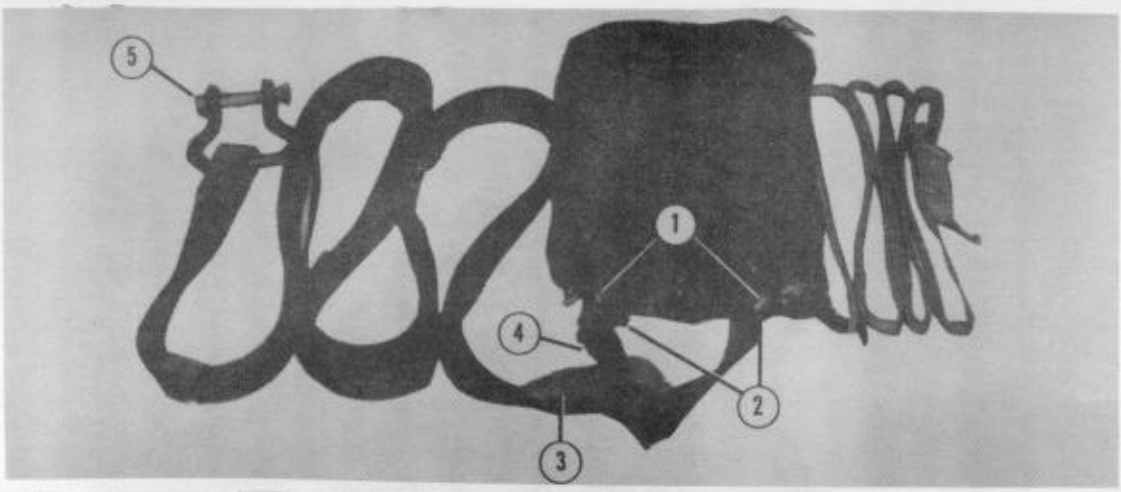
Figure 3-25. Locking stows and suspension line stows made and connector links tied



NOTE: THESE PROCEDURES ARE FOR A 15-FOOT CARGO EXTRACTION PARACHUTE WITH A 36-INCH ADAPTER WEB.

1. Attach a type IV link assembly with cover to the 36-inch adapter web.
2. Attach a 9-foot (3-loop), type X nylon webbing sling to the type IV link assembly.
3. Bolt a cargo suspension clevis (shown) or a type IV link assembly to the free end of the sling.

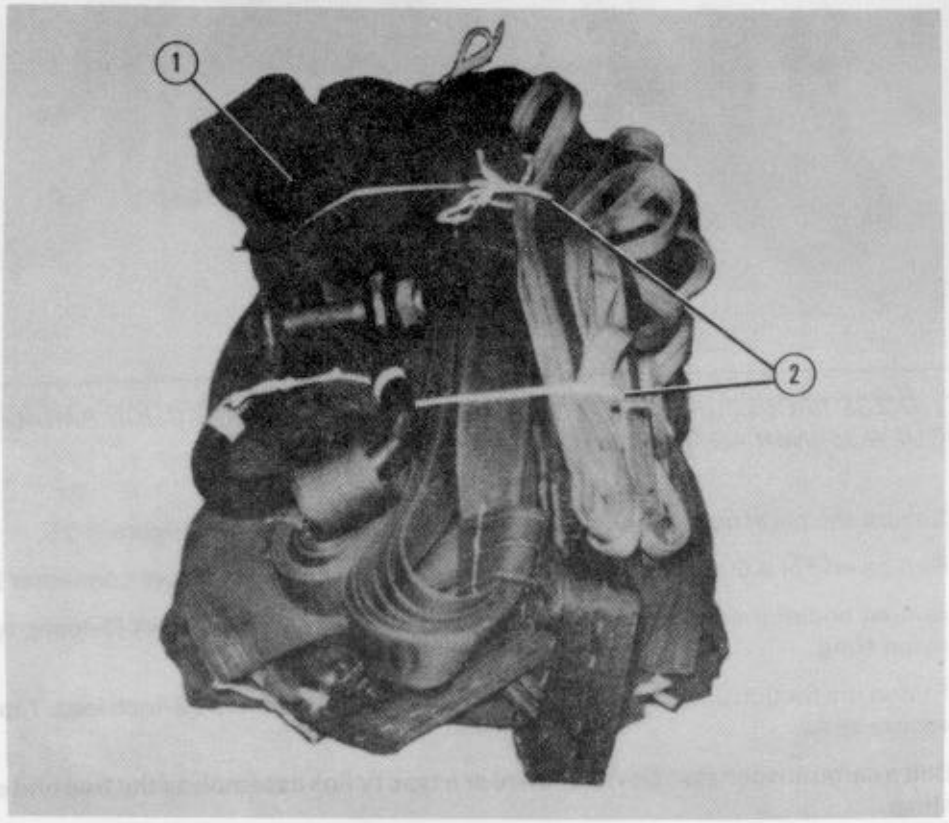
Figure 3-26. Deployment line installed on 36-inch adapter web



NOTE: THESE PROCEDURES ARE FOR A 15-FOOT CARGO EXTRACTION PARACHUTE WITHOUT A 36-INCH ADADPTER WEB.

1. Secure the parachute connector links the same as in step 4 of Figure 3-25.
2. Run an end of a 60-inch shear strap through both of the parachute connector links.
3. Run an end of the 60-inch shear strap through an end of a 12-foot (3-loop), type X nylon sling.
4. Fasten the friction adapter, and adjust the shear strap to form a 12-inch loop. Tape the excess strap.
5. Bolt a cargo suspension clevis (shown) or a type IV link assembly to the free end of the sling.

Figure 3-27. Deployment line installed on a 60-inch shear strap

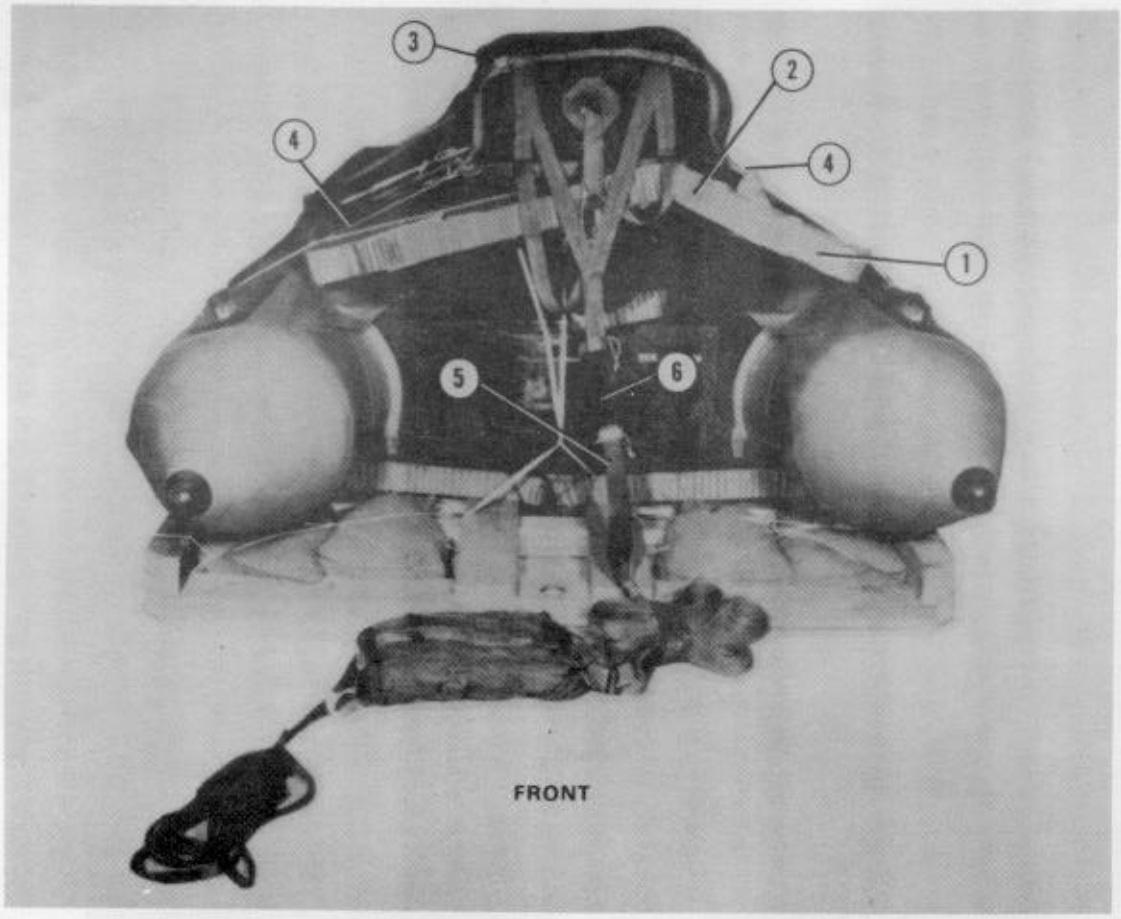


(1) S-fold the deployment line and the static line. Place them on top of the deployment bag.

(2) Secure the deployment line and the static line in place with two lengths of 80-pound cotton webbing wrapped around the lines and bag.

Figure 3-28. Cargo extraction parachute packed in a T-10 deployment bag

b. Stowing G-12 Cargo Parachute and 15-Foot Cargo Extraction Parachute. Prepare one G-12 cargo parachute. Stow it as shown in Figure 3-29 and according to FM 10-500/TO 13C7-1-5. Stow the 15-foot cargo extraction parachute as shown in Figures 3-29 and 3-30.



(1) Lay a 36- by 55-inch piece of honeycomb on the top front of the accompanying load. Extend it 1 inch past the transom.

(2) Bend the honeycomb over the load towards the sides of the boat. Tie it to convenient places with type III nylon cord. Use tape under the cord to prevent it from cutting the honeycomb.

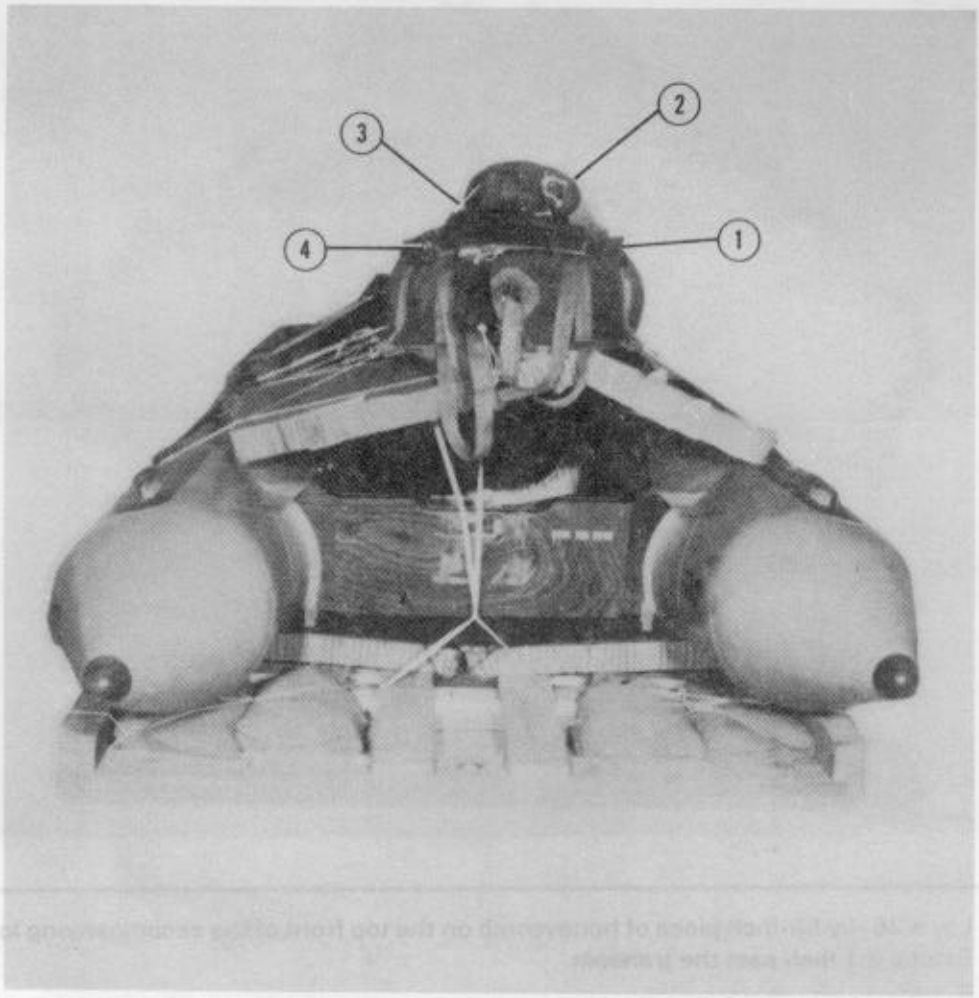
(3) Set a G-12 cargo parachute on top of the honeycomb with the bridle toward the front of the platform.

(4) Tie each corner of the parachute to the platform with one length of 80-pound cotton webbing.

(5) Attach the 9-foot sling from the 15-foot cargo extraction parachute to the G-12 cargo parachute deployment bag with a cargo suspension clevis or a type IV link assembly.

(6) Cover the clevis or link with the appropriate cover.

Figure 3-29. G-12 cargo parachute positioned on load and 15-foot cargo extraction parachute attached



(1) Lay the 9-foot sling (of the cargo extraction parachute) on top of the G-12 cargo parachute.

(2) Set the 15-foot cargo extraction parachute on top of its sling.

(3) Tie the extraction parachute to the G-12 cargo parachute with four lengths of ticket number 5 cotton thread.

(4) Fit rubber retainer bands to the riser retaining loops. Fold the static line, and hold the folds in place with the rubber retainer bands.

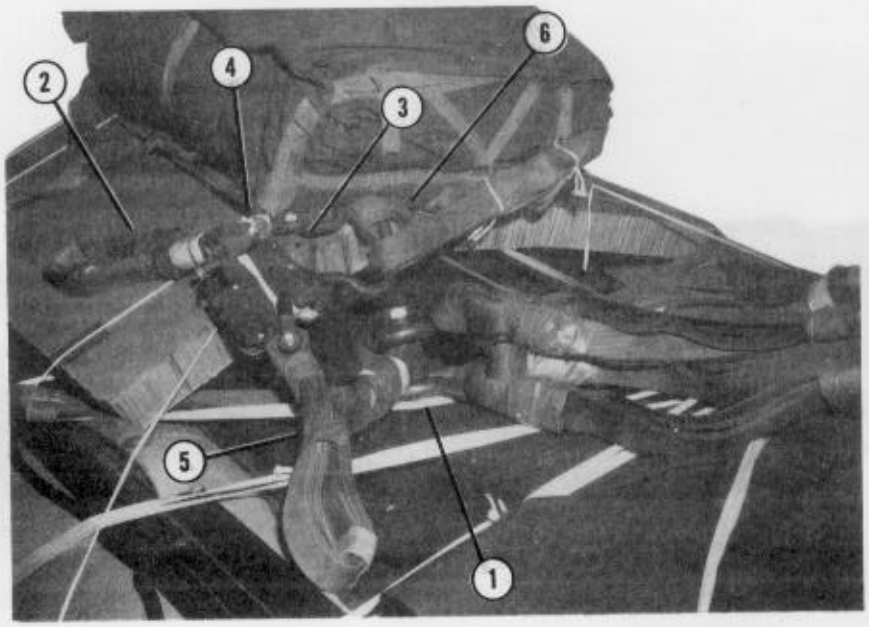
Figure 3-30. Parachutes stowed

3-15. Installing Parachute Release

Use the M-1 or the 5,000-pound-capacity cargo parachute release on this load. Prepare, install, and safety the release as shown in FM 10-500-2/TO 13C7-1-5 and Figure 3-31.

NOTE: THE HYDRAULIC RELEASE IS AUTHORIZED FOR NAVY AND AIR FORCE USE.

CAUTION: THE RELEASE LINK MUST ALWAYS BE PLACED IN THE HIGH-WEIGHT NOTCH OF THE 5,000-POUND-CAPACITY CARGO PARACHUTE RELEASE ASSEMBLY.



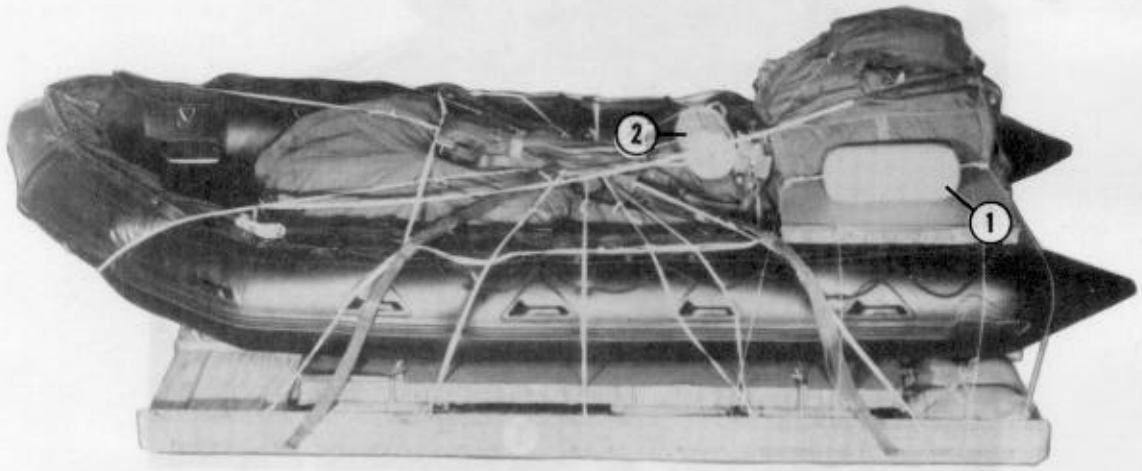
1. Attach the link assembly 3-foot sling to the cargo suspension clevis attached to the load suspension slings.
2. Attach a 3-foot sling to the yoke assembly.
3. Attach the yoke assembly 3-foot sling to the G-12 riser clevis.
4. Safety the release to a parachute carrying handle with two lengths of 80-pound cotton webbing.
5. Tape the 3-foot slings.
6. Remove the left secondary bag closing tie (not shown).

Figure 3-31. The 5,000-pound-capacity parachute release installed

3-16. Flotation for Training Loads

Use flotation devices on training loads to help recover the parachute and parachute deployment bag. Install the flotation devices as shown in Figure 3-32. Recommended flotation devices include dock bumpers, life preservers, diving buoys, and two 12- by 12-inch pieces of honeycomb taped with waterproof tape.

NOTE: THIS IS A ZODIAC MARK III FUTURA BOAT. THIS PHOTOGRAPH IS TO SHOW FLOTATION DEVICES ONLY.



(1) Tie one flotation device to the G-12 cargo parachute deployment bag clustering straps with type III nylon cord.

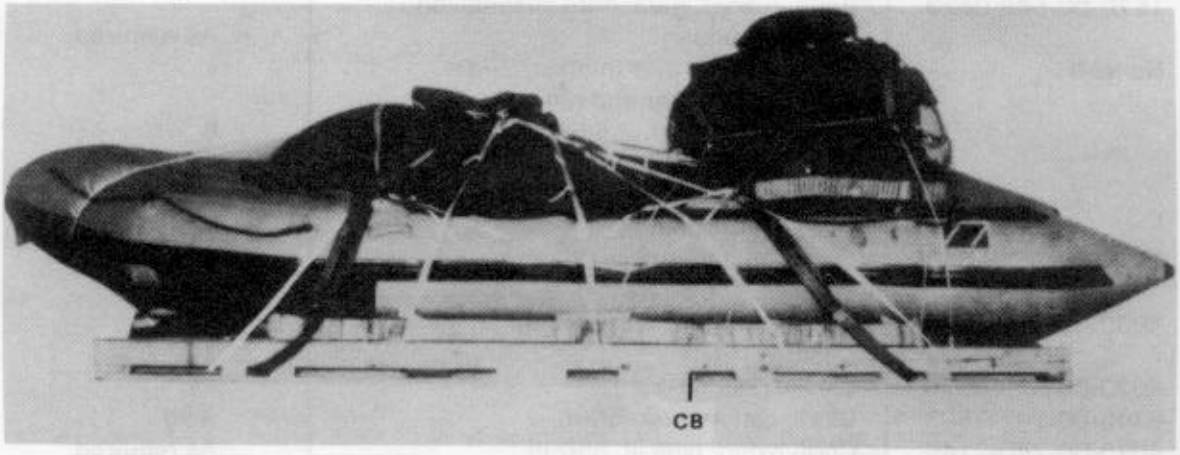
(2) Tie one flotation device to the 3-foot sling between the parachute risers and the parachute release assembly with type III nylon cord.

Figure 3-32. Flotation devices tied to load

3-17. Marking Rigged Load

Mark the rigged load according to FM 10-500/TO 13C7-1-5 and as shown in Figure 3-33. If the accompanying load varies from the one shown, the weight, height, and CB must be recomputed.

CAUTION MAKE THE FINAL RIGGER INSPECTION REQUIRED BY FM 10-500/TO 13C7-1-5 BEFORE THE LOAD LEAVES THE RIGGING SITE



RIGGED LOAD DATA

Weight		2,470 pounds
Height		60 inches
Width		75 inches
Length		184 inches
Overhang:	Front	17 inches
	Rear	23 inches
CB (from front edge of platform)		60 inches

Figure 3-33. Zodiac Mark III rubber raiding craft fully rigged

3-18. Equipment Required

The equipment needed to prepare and rig this load is listed in Table 3-1. Additional items may be listed with the load description.

Table 3-1. Equipment required for rigging rubber raiding craft for low-velocity airdrop

National Stock Number	Item	Quantity
8105-00-285-4744	Bag, sand	16
1670-00-568-0323	Band, rubber, parachute suspension line retainer	As required
No NSN	Bolt, carriage, 3/8-in diam, 7-in long, w washer and nut (Add eight for training.)	8
	Bolt, carriage, 3/8-in diam, 5-in long, w washer and nut (Use for training.)	4
1377-00-958-1048	Cartridge, time-delay, 20-sec (for 5,000-lb release)	1
4030-00-090-5354	Clevis assembly, suspension, large, 1-in	1
4030-00-678-8560	Clevis, riser, G-13	1
8305-00-242-3593	Cloth, cotton duck, 60-in	4 yd
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
	Cover:	
1670-00-360-0329	Link or	2
1670-00-360-0328	Clevis, large	1
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
1670-00-590-9909	Deployment bag, parachute, cotton	1
	Link assembly:	
1670-00-217-2421	Parachute connector	2
1670-00-783-5988	Single, type IV	3
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	4 sheets
	6- by 6-in	(1)
	6- by 12-in	(1)
	7- by 17-in	(1)
	7- by 28-in	(2)
	7- by 36-in	(2)
	36- by 55-in	(1)
	36- by 96-in	(3)
	Parachute:	
1670-00-272-8955	Cargo, G-12C or	1
1670-00-893-2371	Cargo, G-12D or	1
1670-01-065-3755	Cargo, G-12E	1

Table 3-1. Equipment required for rigging rubber raiding craft for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
1670-00-052-1548	Cargo extraction, 15-ft (new)	1
	Platform, combat-expendable:	
	Lumber:	
5510-00-220-6446	2- by 4- by 10-in	4
	2- by 4- by 75-in	4
5510-00-220-6448	2- by 6- by 30-in	2
	2- by 6- by 75-in	4
	2- by 6- by 144-in	2
5510-00-220-6274	4- by 4- by 144-in	2
	Nail, steel, wire, common:	
5315-00-010-4657	6d	As required
5315-00-010-4659	8d	As required
5315-00-164-5121	20d	As required
5530-00-128-4981	Plywood, 3/4- by 48- by 75-in	3
	Release, cargo parachute:	
1377-00-799-8494	5,000-lb or	1
1670-01-097-8816	M-1	1
	Sling, cargo, airdrop:	
	For 5,000-lb release:	
1670-00-753-3788	3-ft (3-loop), type X nylon webbing or	2
1670-01-062-6301	3-ft (2-loop), type XXVI nylon webbing	2
	For deployment line:	
1670-00-753-3631	9-ft (3-loop), type X nylon webbing or	1
1670-01-062-6304	9-ft (2-loop), type XXVI nylon webbing (Use w adapter web.)	1
	For platform suspension:	
1670-00-823-5042	16-ft (3-loop), type X or	4
1670-01-063-7761	16-ft (2-loop), type XXVI	4
1670-00-368-7486	Strap, webbing, nylon (shear strap), 60-in	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
8125-00-074-5124	Tape, adhesive, cloth-backed, type IV, 2-in	As required
	Thread, cotton:	
8310-00-194-4065	ticket number 5 or	As required
8310-00-917-3945	8/7 cord	As required
	Webbing:	
8305-00-268-2411	Cotton, 80-lb	As required
8305-00-082-5752	Nylon, tubular, 1/2-in, 1,000-lb, natural	As required
8305-00-268-2455	Nylon, tubular, 1-in	As required

Section II
RIGGING ZODIAC MARK III FUTURA BOAT

3-19. Description of Load

The description of the load rigged in this section is given below.

a. Inflated Zodiac Mark III Futura Rubber Raiding Craft. This boat is rigged on a 75- by 144-inch SOCEP with a G-12C, G-12D, or G-12E cargo parachute. The boat weighs 250 pounds. When inflated, it is 75 inches wide, 185 inches long, and 26 inches high. The boat shown is powered by a 35-horsepower outboard engine that weighs 216 pounds with two filled 6-gallon fuel tanks. Six paddles weighing a total of 24 pounds are part of the boat's equipment.

NOTE: A 50-HORSEPOWER ENGINE IS THE LARGEST THAT MAY BE USED ON THIS BOAT.

b. Accompanying Load. An accompanying load weighing at least 650 pounds but no more than 1,170 pounds must be dropped with the boat.

3-20. Preparing Platform

Build a new SOCEP, or inspect and repair a used platform, according to paragraph 3-2.

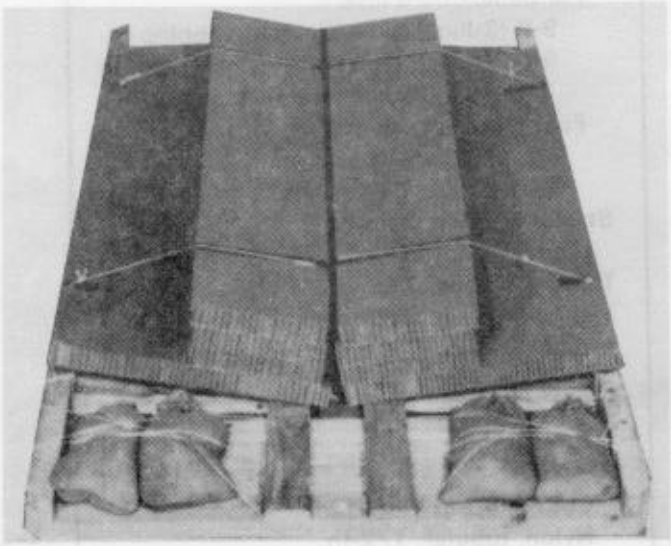
3-21. Installing Suspension Slings and Stowing Sandbags

Install four suspension slings on the platform as directed in paragraph 3-3. Stow sandbags on the platform according to paragraph 3-4.

3-22. Placing and Securing Honeycomb Stacks

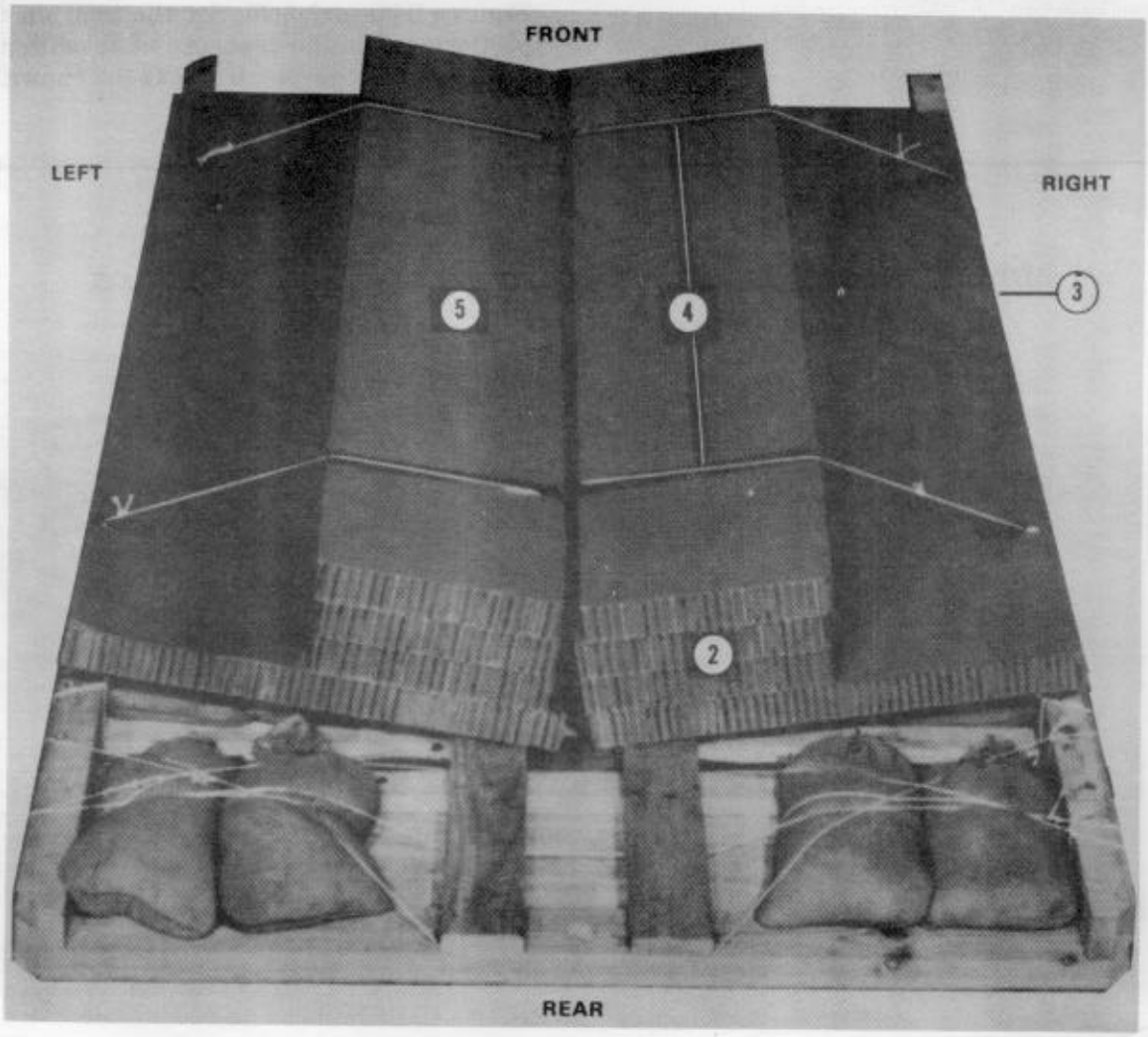
Build, place, and secure two honeycomb stacks as shown in Figure 3-34.

NOTE: USE TAPE UNDER THE TYPE III NYLON CORD TIES TO PREVENT THE CORD FROM CUTTING THE HONEYCOMB.



(1) Position four lengths of type III nylon cord as shown in Figure 3-7, steps 1, 2, and 3.

Figure 3-34. Honeycomb prepared, positioned, and secured for Zodiac Mark III Futura boat



(2) Glue three 16- by 96-inch pieces of honeycomb together and then glue this stack to a 36- by 96-inch piece of honeycomb (even with the 96-inch side).

(3) Center this honeycomb stack on the right side of the platform with its right edge flush with the right edge of the platform.

(4) Tie the honeycomb stack in place with the lengths of type III nylon cord placed on the right side in step 1.

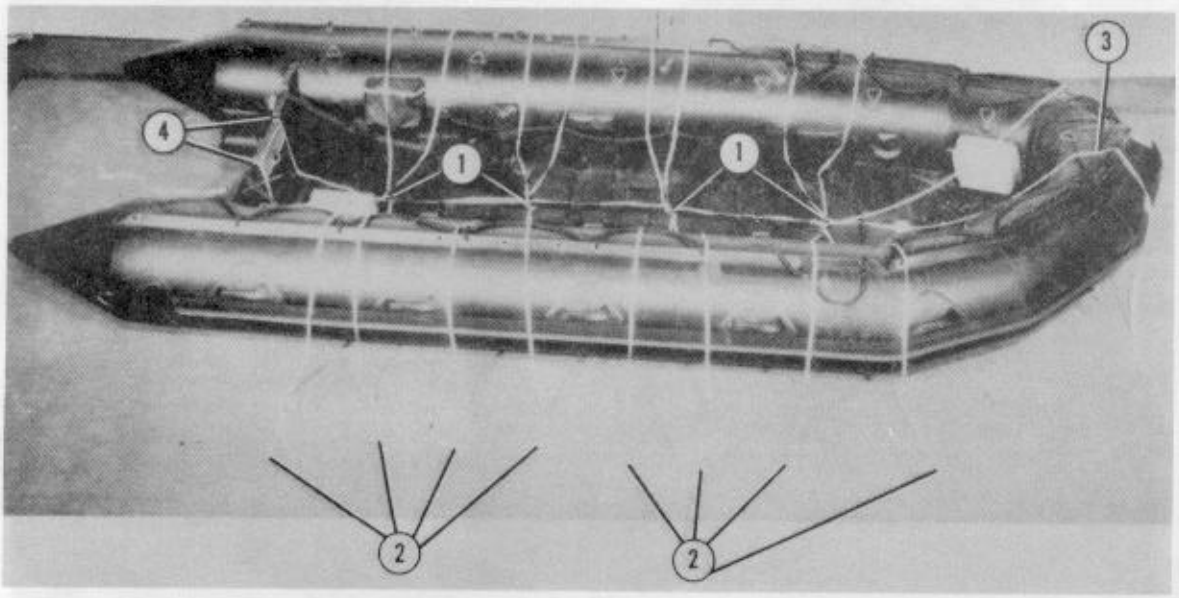
(5) Build a second honeycomb stack as described in step 2. Tie it in place on the left side of the platform in the same way.

Figure 3-34. Honeycomb prepared, positioned, and secured for Zodiac Mark III Futura boat (continued)

3-23. Preparing and Positioning Boat

Inflate the boat, and prepare it as shown in Figures 3-35 and 3-36. Set the boat on the platform with the transom even with the front of the honeycomb stacks (as shown in Figure 3-36).

NOTE: TIE THE GIRTH HITCH KNOT ACCORDING TO FM 10-500/TO 13C7-1-5.



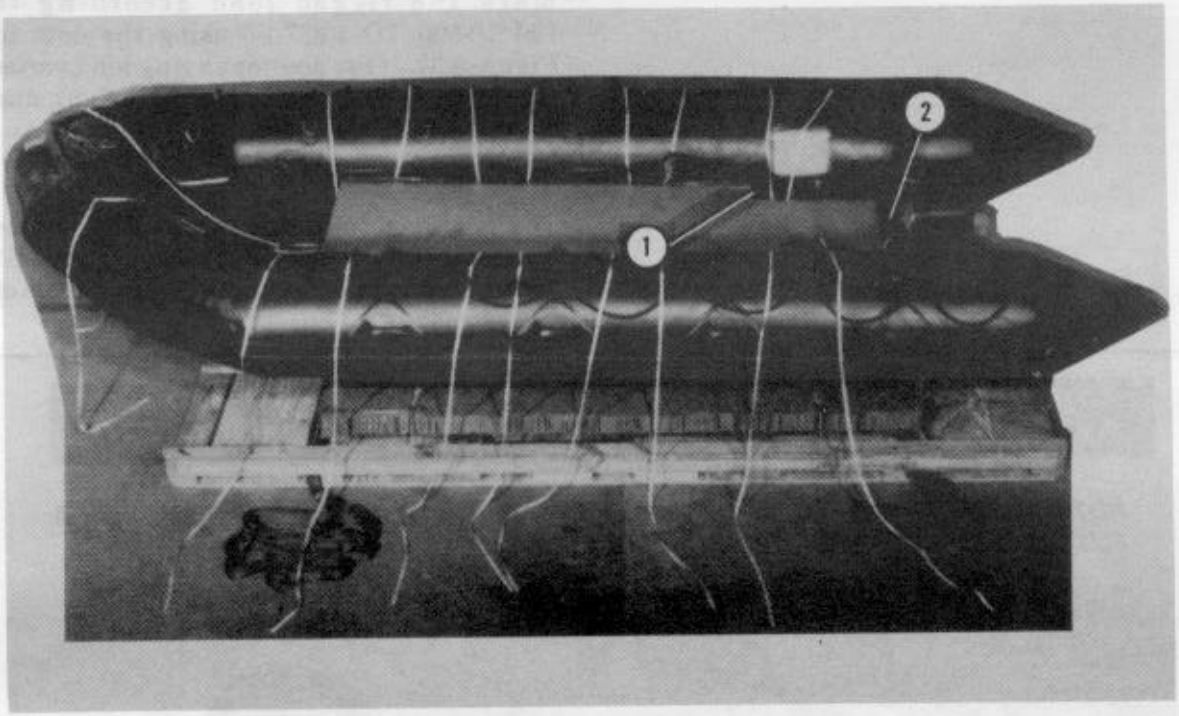
(1) Tie two 12-foot lengths of 1/2-inch tubular nylon webbing to each center tiedown ring with a girth hitch knot.

(2) Lay both ends of one tie from each tiedown ring across one side of the boat. Lay the ends of the second tie across the opposite side of the boat.

(3) Tie a 14-foot length of 1/2-inch tubular nylon webbing to the front center tiedown ring with a girth hitch knot. Lay the ends of the tie over the bow.

(4) Tie a 14-foot length of 1/2-inch tubular nylon webbing to the rear center tiedown ring with a girth hitch knot. Lay the ends of the tie over the transom.

Figure 3-35. In-boat tiedowns installed



(1) Cut a 4- by 24-inch piece of honeycomb from both sides of the same end of a 36- by 96-inch piece of honeycomb.

(2) Tape both edges of the honeycomb on all sides and both ends. Lay the honeycomb in the boat with the cutout end against the transom.

(3) Tie chemical lights to the bow tie inside the boat and to the center side carrying handles with 80-pound cotton webbing if dictated by mission requirements (not shown).

Figure 3-36. Honeycomb for engine and load stowage positioned

3-24. Stowing Boat Equipment and Accompanying Load

An accompanying load weighing at least 650 pounds but no more than 1,170 pounds must be dropped with the boat. Adapt procedures in paragraphs 3-8, 3-9, and 3-10 to stow the boat equipment and accompanying load.

3-25. Rigging Boat

Adapt the procedures in Section I to finish rigging the Zodiac Mark III Futura boat.

3-26. Marking Rigged Load

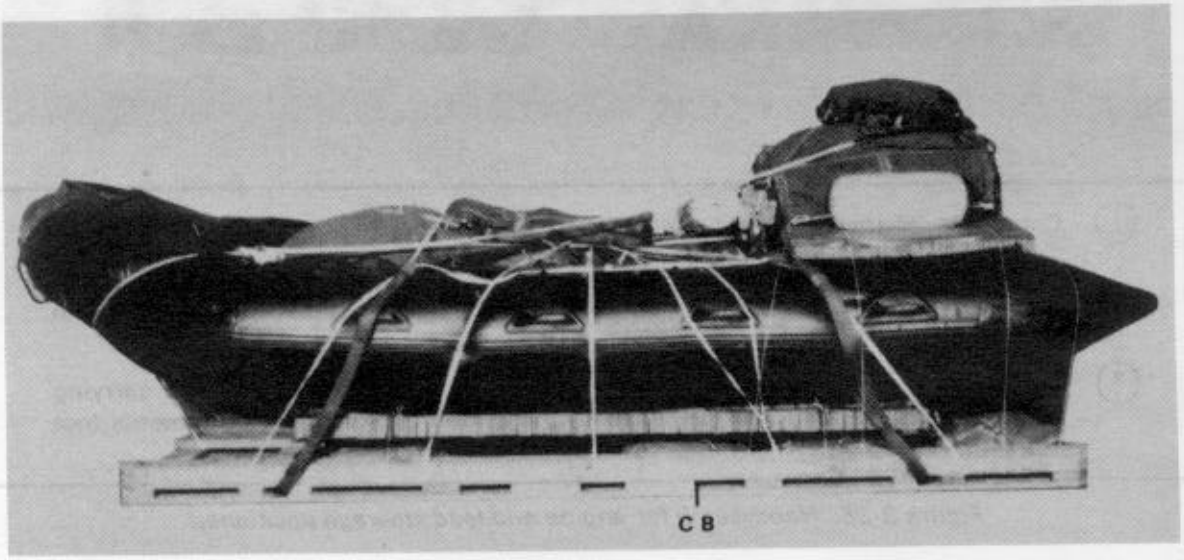
Mark the rigged load according to FM 10-500/TO 13C7-1-5 using the data in Figure 3-37. If the accompanying load varies from the one shown, the weight, height, and CB must be recomputed.

3-27. Equipment Required

The equipment required to rig the Zodiac Mark III Futura boat is listed in Table 3-1 with an addition of six 16- by 96-inch pieces of honeycomb.

CAUTION: MAKE THE FINAL RIGGER INSPECTION REQUIRED BY FM 10-500/TO 13C7-1-5 BEFORE THE LOAD LEAVES THE RIGGING SITE.

NOTE: FOR TRAINING DROPS, TIE A FLOAT TO THE G-12 DEPLOYMENT BAG AND A FLOAT TO THE CARGO PARACHUTE RELEASE.



RIGGED LOAD DATA

Weight		2,440 pounds
Height		67 inches
Width		75 inches
Length		185 inches
Overhang:	Front	18 inches
	Rear	23 inches
CB (from front edge of platform)		60 inches

Figure 3-37. Zodiac Mark III Futura rubber raiding craft fully rigged

Section III
RIGGING Z-BIRD BOAT

3-28. Description of Load

The description of the load rigged in this section is given below.

a. Z-bird Rubber Raiding Craft. This boat is rigged on a 75-by 144-inch SOCEP with a G-12C, G-12D, or G-12E cargo parachute. The boat weighs 211 pounds. When inflated, it is 75 inches wide, 180 inches long, and 18 inches high. The boat shown is powered by a 35-horsepower outboard engine that weighs 142 pounds with its 6-gallon fuel tank full. Six paddles weighing a total of 24 pounds are part of the boat's equipment.

NOTE: A 65-HORSEPOWER ENGINE IS THE LARGEST THAT MAY BE USED ON THIS LOAD.

b. Accompanying Load. An accompanying load weighing at least 650 pounds but no more than 1,170 pounds must be dropped with the boat.

3-29. Preparing Platform

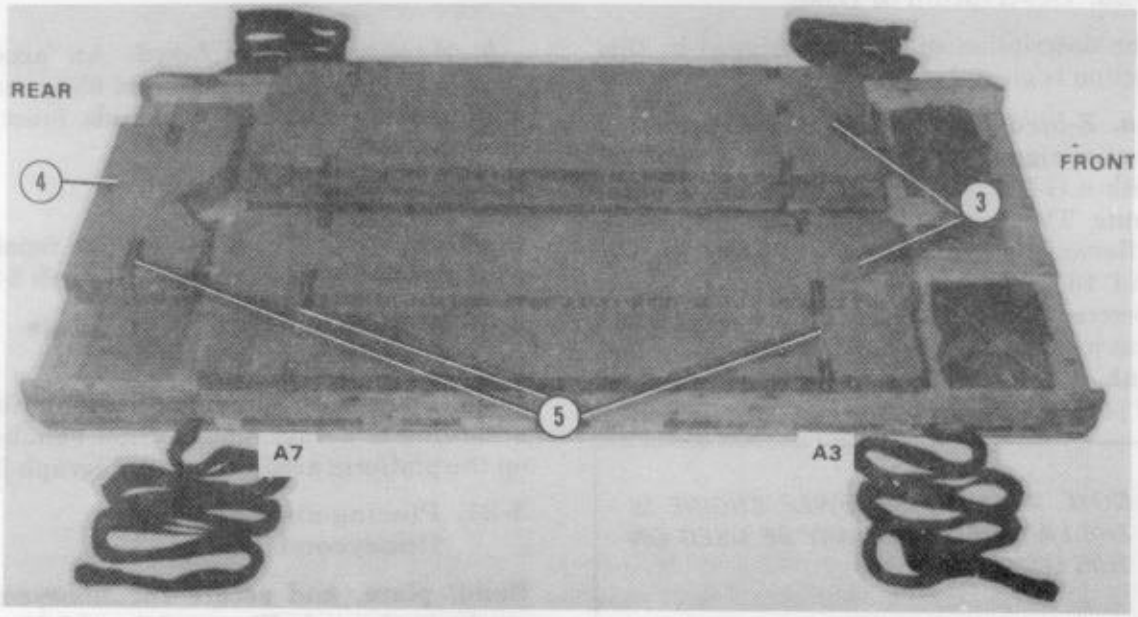
Build a new SOCEP, or inspect and repair a used platform, according to paragraph 3-2.

3-30. Installing Suspension Slings and Stowing Sandbags

Install four suspension slings on the platform according to paragraph 3-3. Stow sandbags on the platform according to paragraph 3-4.

3-31. Placing and Securing Honeycomb Stacks

Build, place, and secure the honeycomb stacks as shown in Figures 3-7 and 3-38.

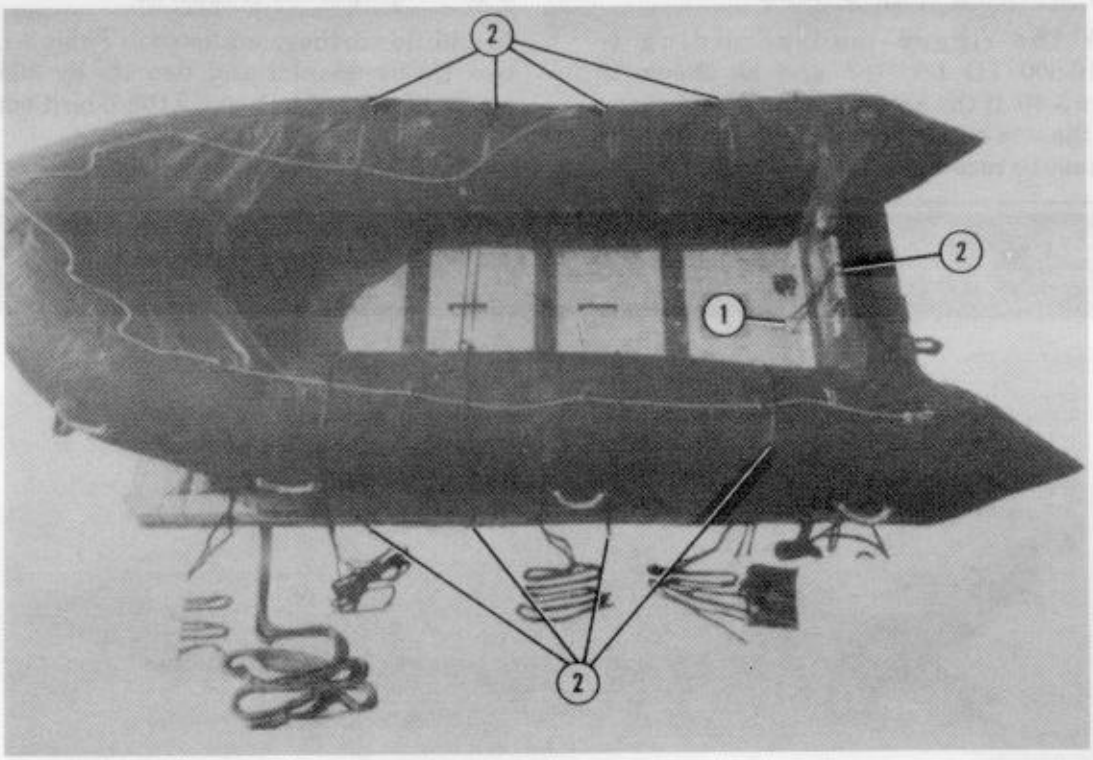


1. Position type III nylon cord on the platform as shown in steps 1, 2, and 3 of Figure 3-7. Run an additional length of type III nylon cord through spaces B8 and C8 (not shown).
2. Lay two 36- by 96-inch pieces of honeycomb on the platform as shown in Figure 3-7.
3. Glue an 18- by 96-inch piece of honeycomb 13 inches from the outside edge of each 36- by 96-inch piece.
4. Flush fit and glue two 18- by 36-inch pieces of honeycomb together. Cut a vee 6 inches deep and 16 inches wide from the center of the 36-inch side. Center this stack on the rear of the platform 3 inches from the platform edge with the vee facing the front of the platform.
5. Tie the honeycomb stacks in place with the type III nylon cord placed in step 1. Use tape under the type III nylon cord to prevent the cord from cutting the honeycomb.

Figure 3-38. Honeycomb prepared for Z-bird boat

3-32. Preparing Boat

Inflate the boat, and install the in-boat tiedowns as shown in Figures 3-8 and 3-39.



CAUTION: PERFORM STEPS 1 AND 2 BEFORE INSTALLING THE FLOOR PANELS.

(1) Drill two 1/2-inch holes in the center rear of the rear floor panel in addition to the holes drilled in Figure 3-8.

(2) Run a length of 1/2-inch tubular nylon webbing through the holes. Tie the ends of the webbing together with a square knot and an overhand knot in the running ends.

(3) Tie chemical lights to the bow tie inside the boat and to the center side carrying handles with 80-pound cotton webbing if dictated by mission requirements (not shown).

Figure 3-39. In-boat tiedowns installed

3-33. Positioning Boat

Position the boat on the platform with the transom even with the front of the honeycomb.

3-34. Rigging Boat

Adapt the procedures in Section I to load and completely rig the Z-bird boat.

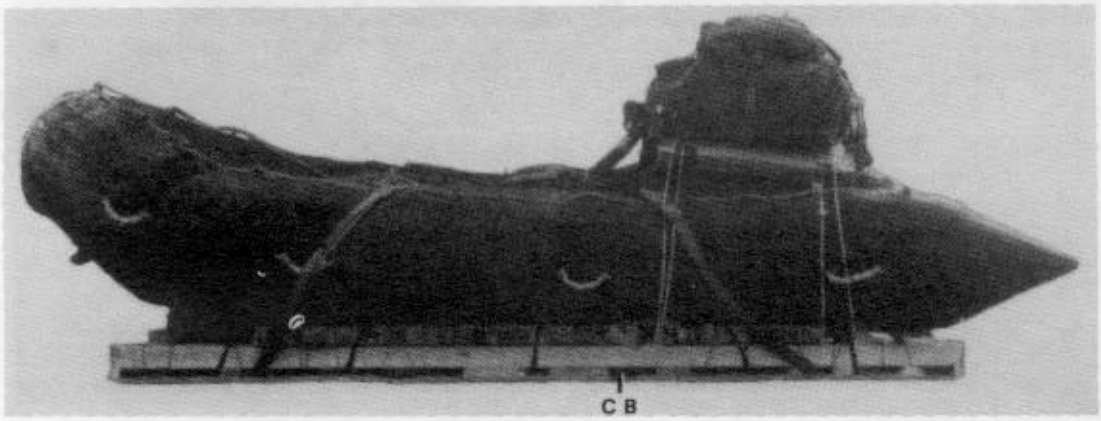
3-35. Marking Rigged Load

Mark the rigged load according to FM 10-500/TO 13C7-1-5 and as shown in Figure 3-40. If the accompanying load varies from the one shown, the weight, height, and CB must be recomputed.

3-36. Equipment Required

In addition to the items listed in Table 3-1, use two 18- by 96-inch and two 18- by 36-inch pieces of honeycomb to rig the Z-bird boat.

CAUTION: MAKE THE FINAL RIGGER INSPECTION REQUIRED BY FM 10-500/TO 13C7-1-5 BEFORE THE LOAD LEAVES THE RIGGING SITE.



RIGGED LOAD DATA

Weight		2,470 pounds
Height		60 inches
Width		75 inches
Length		184 inches
Overhang:	Front	17 inches
	Rear	23 inches
CB (from front edge of platform)		60 inches

Figure 3-40. Z-bird rubber raiding craft fully rigged

Section IV
RIGGING ZODIAC K40 BOAT

3-37. Description of Load

The description of the load rigged in this section is given below.

a. Inflated Zodiac K40 Rubber Raiding Craft. This boat is rigged on a 75- by 144-inch SOCEP with a G-12C, G-12D, or G-12E cargo parachute. The boat weighs 60 pounds. When inflated, it is 82 inches wide, 159 inches long, and 29 inches high. The boat shown is powered by a 35-horsepower outboard engine that weighs 216 pounds with its two 6-gallon fuel tanks full. Six paddles

weighing a total of 24 pounds are part of the boat's equipment.

NOTE: A 35-HORSEPOWER ENGINE IS THE LARGEST THAT MAY BE USED ON THIS BOAT.

b. Accompanying Load. An accompanying load weighing at least 470 pounds but no more than 870 pounds must be dropped with the boat.

3-38. Preparing Platform

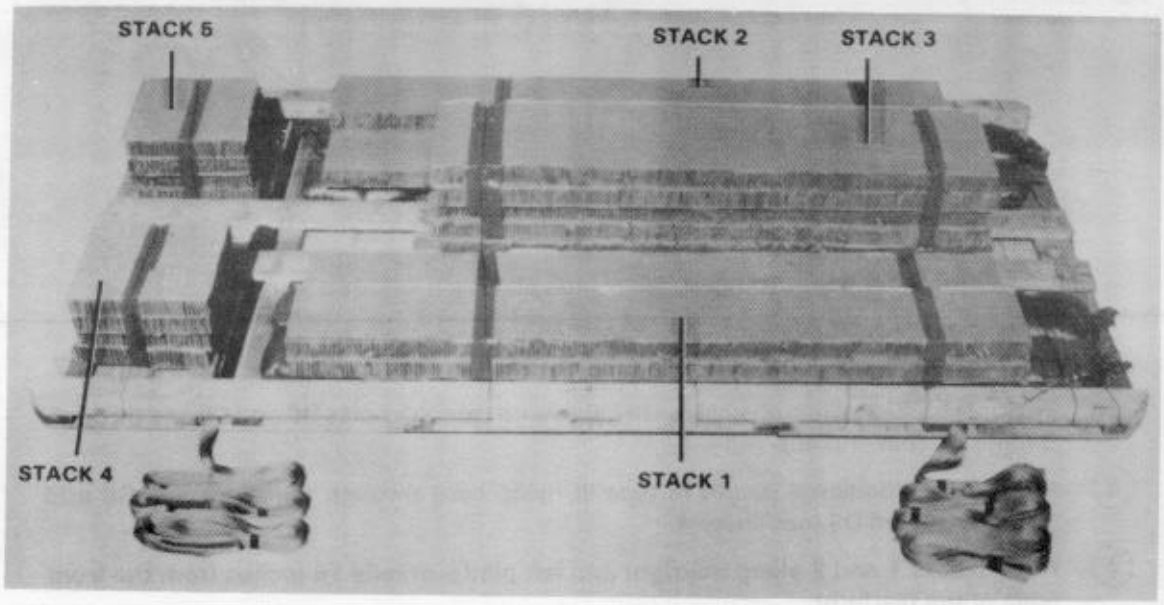
Build a new SOCEP, or inspect and repair a used platform, according to paragraph 3-2.

3-39. Installing Suspension Slings and Stowing Sandbags

Install four suspension slings on the platform according to paragraph 3-3. Stow sandbags on the platform according to paragraph 3-4.

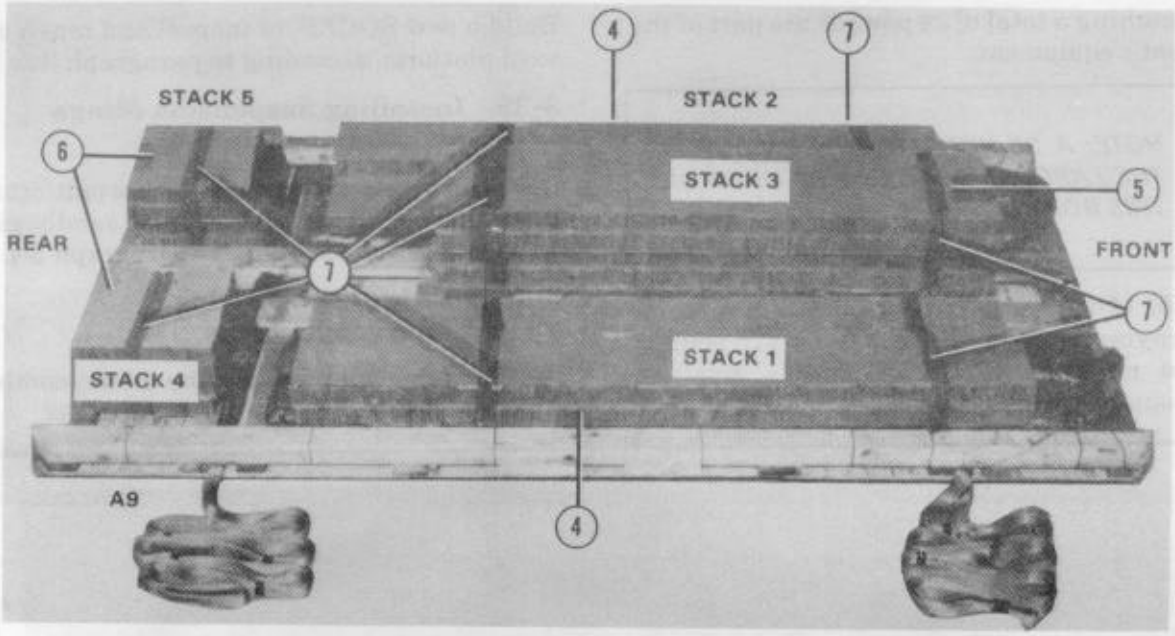
3-40. Placing and Securing Honeycomb Stacks

Build, place, and secure the honeycomb stacks as shown in Figures 3-41 and 3-42.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Instructions
1	1	24	96	Stack the 12-inch-wide piece on top and flush with one side of the 24-inch-wide piece.
	1	12	96	
2	Same as stack 1.			
3	6	18	78	Stack flush.
4	4	18	18	Stack flush.
5	Same as stack 4.			

Figure 3-41. Honeycomb stacks for K40 boat prepared



(1) Position type III nylon cord on the platform as shown in steps 1, 2, and 3 of Figure 3-7.

(2) Position additional lengths of type III nylon cord through holes B6 and C6 and through B3 and C3 (not shown).

(3) Position an additional length of type III nylon cord through holes A9 and B8 and through C8 and D9 (not shown).

(4) Place stacks 1 and 2 along the right and left platform rails 16 inches from the front edge of the platform.

(5) Center stack 3 between stacks 1 and 2, placing it 16 inches from the front edge of the platform.

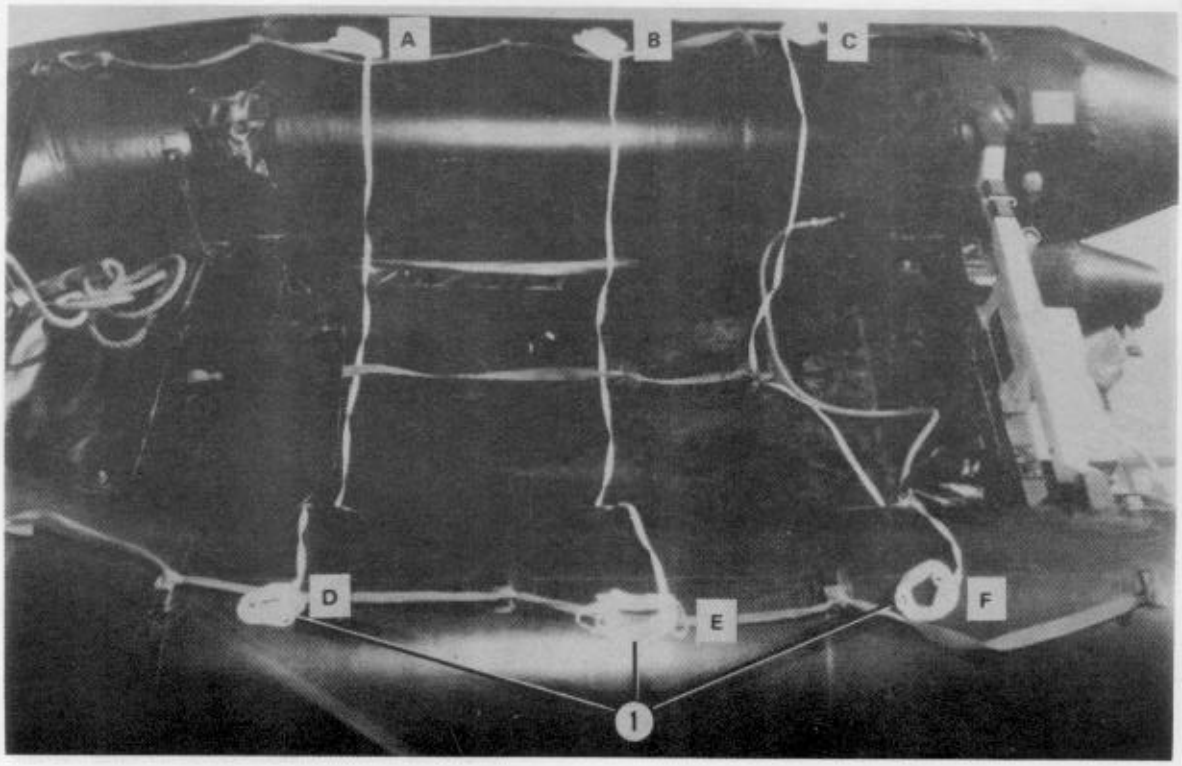
(6) Set stacks 4 and 5 against the center longitudinal stringers 4 inches from the rear of the platform.

(7) Tie the stacks in place with the pre-positioned type III nylon cord from steps 1, 2, and 3. Use tape under the ties to keep the cord from cutting the honeycomb.

Figure 3-42. Honeycomb stacks for K40 boat placed and secured

3-41. Preparing Boat

Inflate the boat, and install the in-boat tiedowns as shown in Figure 3-43. Install the honeycomb in the bottom of the boat as shown in Figure 3-44.



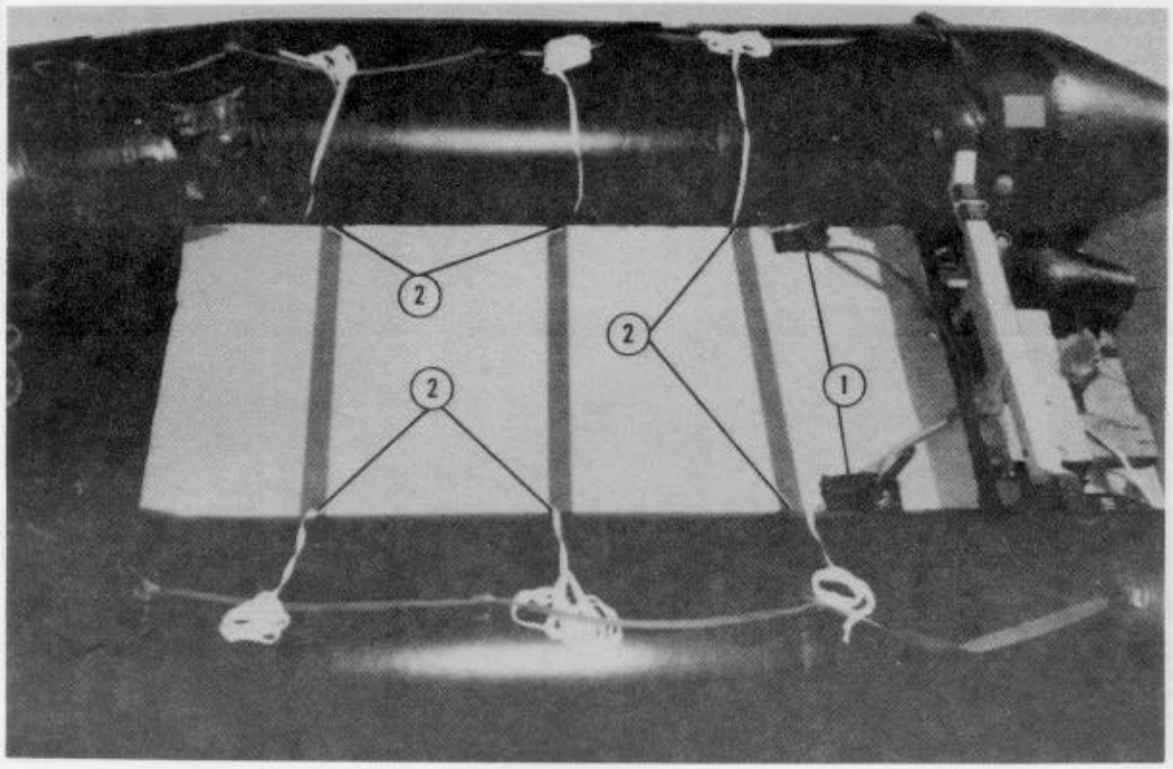
(1) Run three 12-foot lengths of 1/2-inch tubular nylon webbing under the center lifeline at both ends and in the center.

NOTE: ADDITIONAL TIES MAY BE NECESSARY FOR LARGE LOADS.

(2) Tie the bow cover down to convenient points with type III nylon cord (not shown).

(3) Tie chemical lights to the bow tie inside the boat and to the center side carrying handles with 80-pound cotton webbing if dictated by mission requirements (not shown).

Figure 3-43. In-boat tiedowns installed



(1) Set a piece of 36- by 96-inch honeycomb in the boat against the transom. Make two 2- by 4-inch cutouts to allow for the CO_2 valves.

(2) Tape the edges of the honeycomb where the pre-positioned ties will touch the honeycomb.

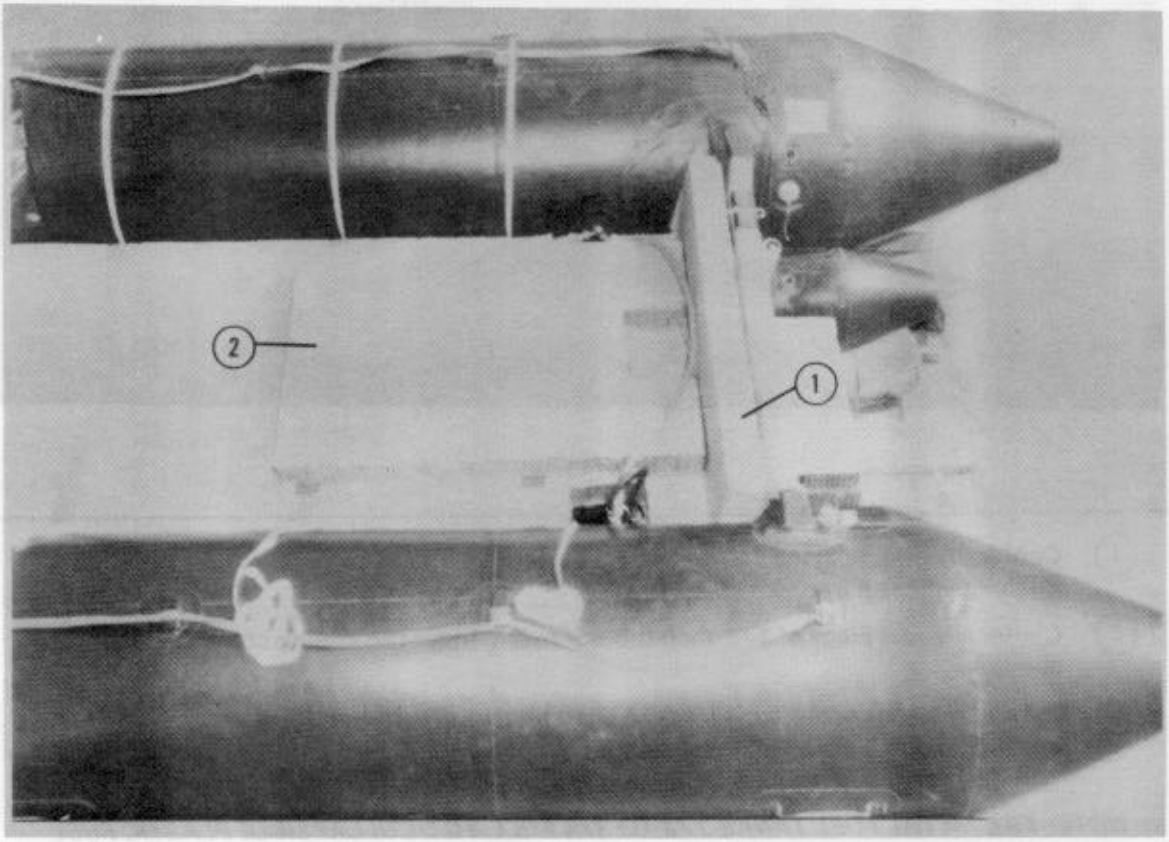
Figure 3-44. Honeycomb for engine and load stowage positioned

3-42. Positioning Boat

Center the boat on the platform with the transom 18 inches from the front edge of the platform.

3-43. Preparing and Stowing Outboard Engine and Fuel Tanks

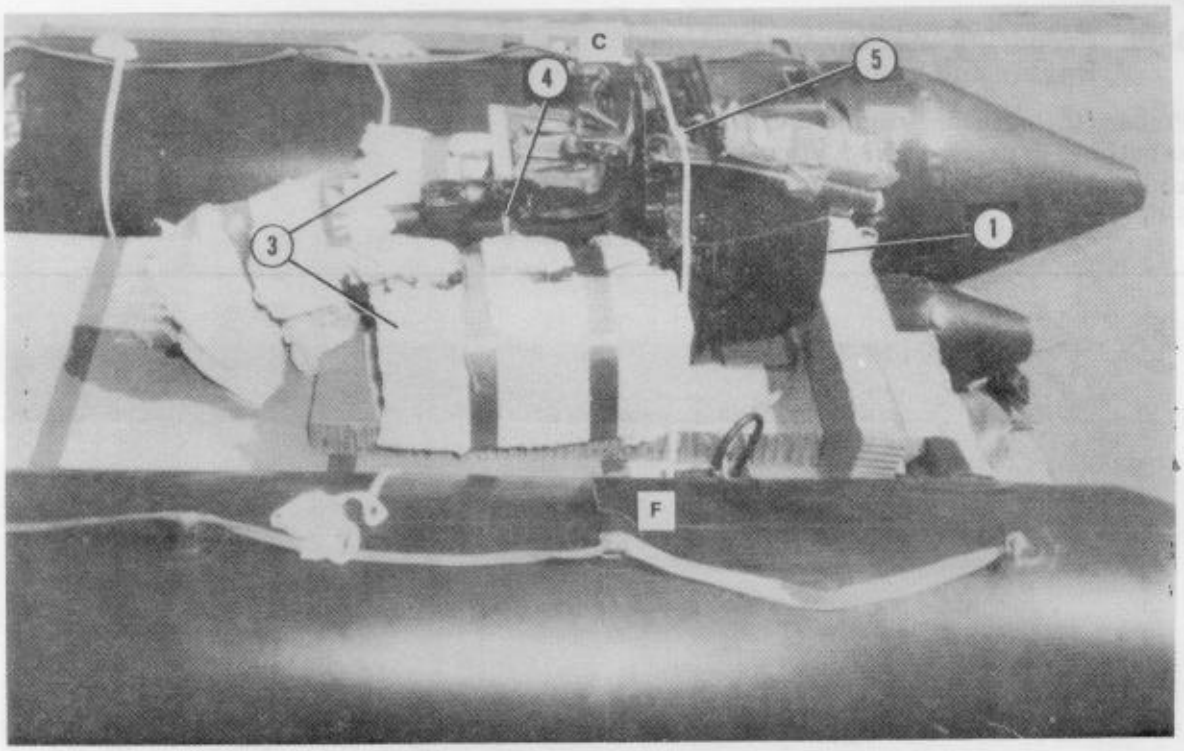
Prepare the outboard engine and fuel tanks as outlined in paragraph 3-9. Stow the engine and fuel tanks as shown in Figures 3-45 and 3-46.



(1) Set an 8- by 36-inch piece of honeycomb flush against the transom.

(2) Glue a 24- by 36-inch piece of honeycomb with a 6-by 8-inch cutout in one end of the 24-inch side against the honeycomb positioned in step 1.

Figure 3-45. Honeycomb for engine stowage positioned



(1) Center the engine in the boat with the operator's handle up and the top of the engine flush against the transom honeycomb.

(2) Center a 5-foot piece of 1/2-inch tubular nylon under the engine shaft housing (not shown).

(3) Set one fuel tank on either side of the shaft housing. Pad between the engine and fuel tanks with small pieces of honeycomb.

NOTE: FILL METAL FUEL TANKS 1/2 TO 3/4 FULL. FILL COLLAPSIBLE PLASTIC FUEL CONTAINERS TO FIVE GALLONS, AND FORCE OUT ALL AIR.

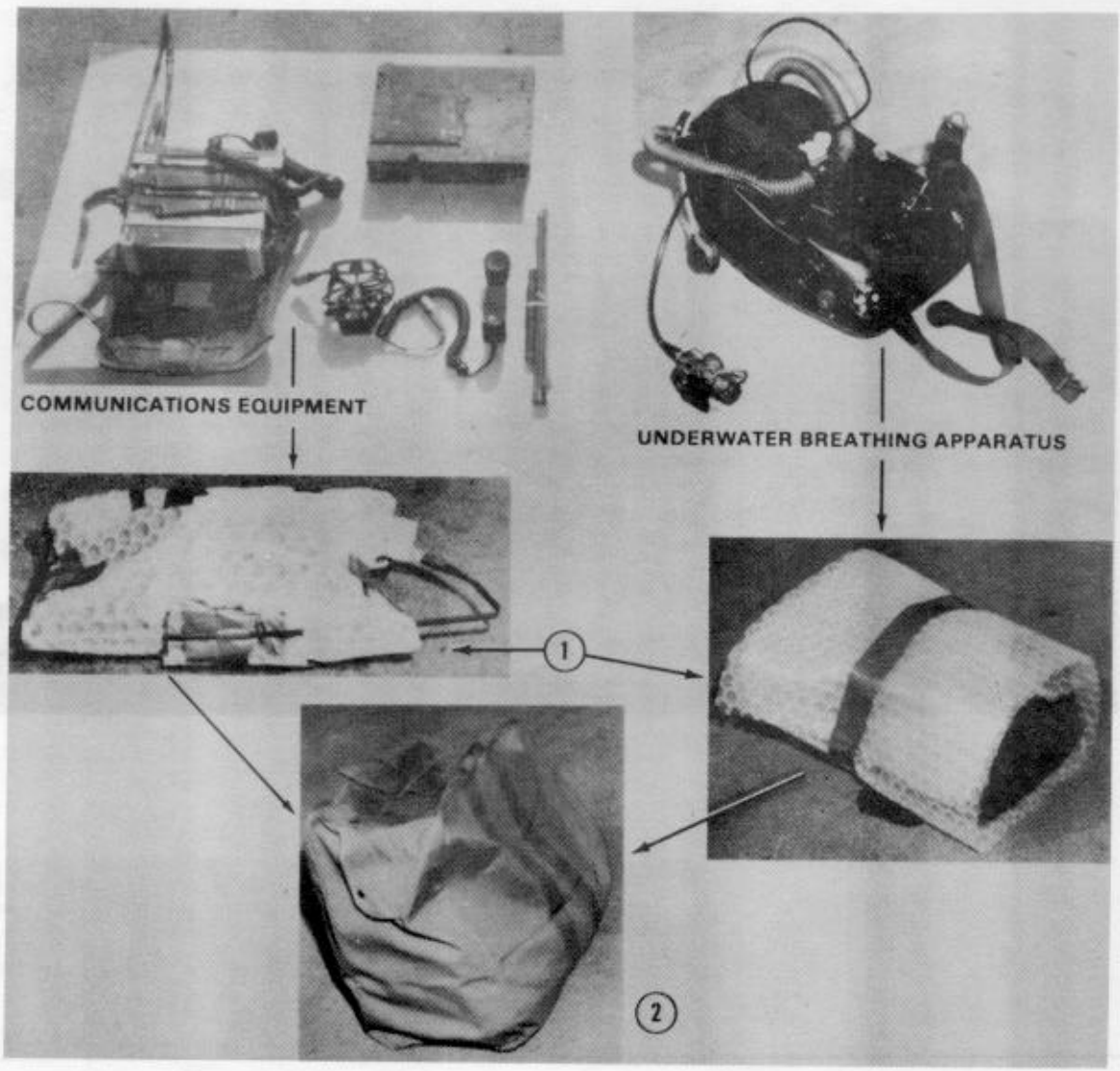
(4) Tie the tanks to the engine by passing the 5-foot piece of 1/2-inch tubular nylon webbing through the fuel tank carrying handles.

(5) Tie tiedowns C and F together over the engine mounting bracket with a square knot. (See Figure 3-43.)

Figure 3-46. Engine and fuel tanks stowed

3-44. Stowing Load and Paddles

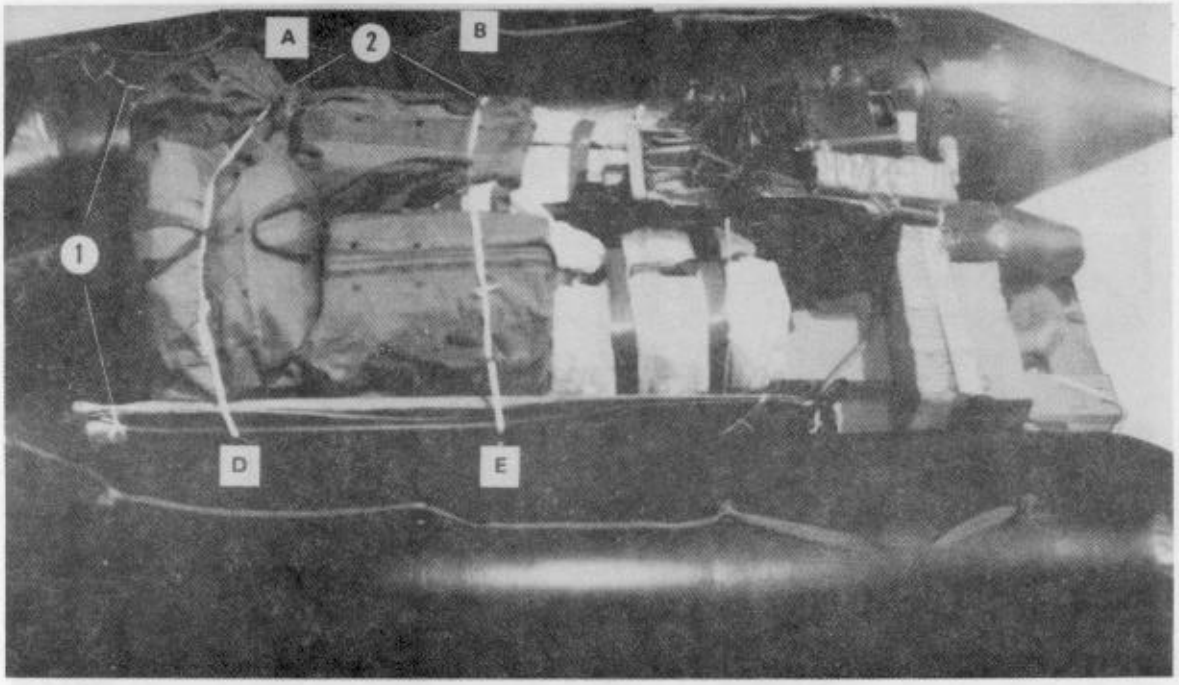
If the load is rucksacks and weapons, load and secure them as outlined in paragraph 3-10. Load and secure communications equipment or underwater breathing apparatus as shown in Figures 3-47 and 3-48.



(1) Wrap communications equipment and underwater breathing apparatus in bubble wrap, and secure the wrap with tape.

(2) Stow the communications equipment and underwater breathing apparatus.

Figure 3-47. Communications equipment and underwater breathing apparatus prepared



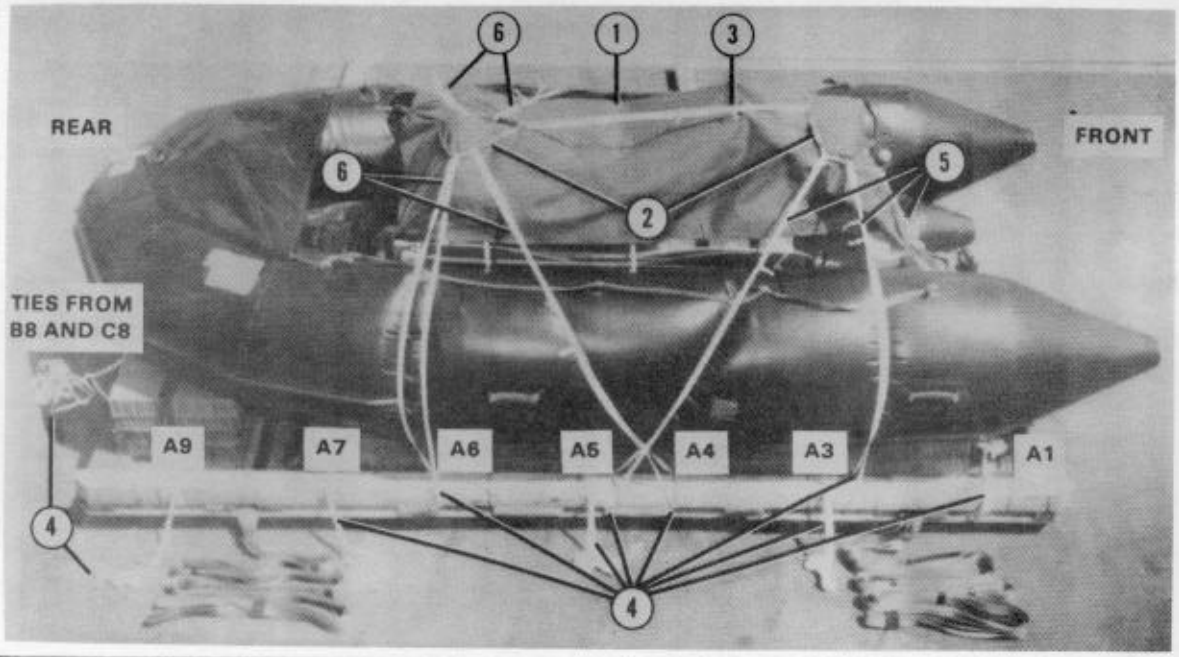
(1) Tie three paddles together using type III nylon cord. Stow one bundle of three paddles along each side of the boat.

(2) Stow four kit bags behind the engine and fuel tanks toward the bow. Secure them with tiedowns A, B, D, and E. Pass the webbing through the bag carrying handles.

Figure 3-48. Kit bags and paddles stowed

3-45. Installing Load Cover and Tiedown Rings

Make the three nylon webbing tiedown rings as shown in Figure 3-12. Install the load cover, and secure the load with the tiedown rings as shown in Figure 3-49.



(1) Cover the engine, the fuel tanks, and the rest of the load with a 6- by 8-foot piece of canvas. Tie the corners of the canvas to convenient points on the boat with type III nylon cord.

(2) Set a two-ply tiedown ring on each end of the load cover. Center the front ring over the engine power section housing. Center the rear ring over the load about 18 inches from the rear edge of the load cover.

(3) Tie the rings together with a length of 1/2-inch tubular nylon webbing.

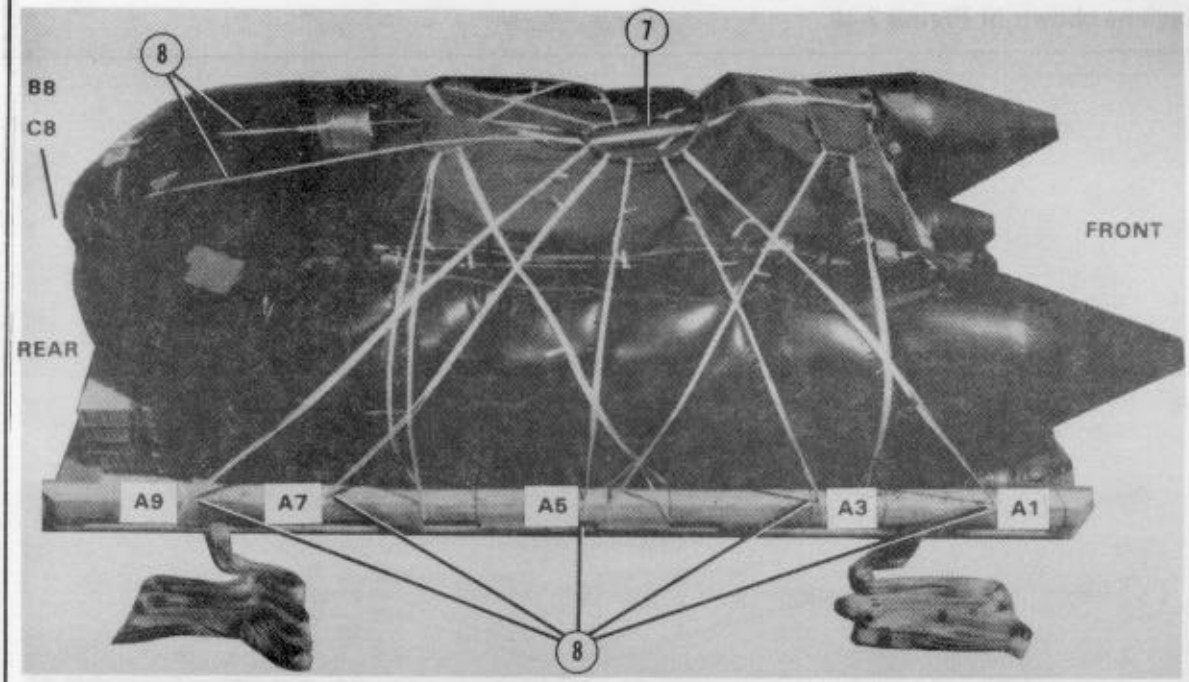
NOTE: MAKE ALL TIES TO THE TIEDOWN RINGS AS DIRECTED IN FIGURE 3-21.

(4) Tie 14-foot lengths of 1/2-inch tubular nylon webbing to platform tiedown spaces A1, D1, A3, D3, A4, D4, A5, D5, A6, D6, A7, D7, A9, and D9. Tie additional lengths to A3, D3, A5, and D5; around B1 and C1; and around B8 and C8.

(5) Tie the 14-foot webbing from spaces A3, D3, A5, D5, and B1 and C1 to the front tiedown ring.

(6) Tie the webbing from spaces A4, D4, A6, and D6 to the rear tiedown ring.

Figure 3-49. Load and load cover secured



(7) Center the four-ply tiedown ring between the two two-ply rings.

(8) Tie the additional webbing from spaces A1, D1, A3, D3, A5, D5, A7, D7, A9, D9, B8, and C8 to the four-ply tiedown ring.

Figure 3-49. Load and load cover secured (continued)

3-46. Rigging Boat

Finish rigging the Zodiac K40 boat by adapting procedures in Section I.

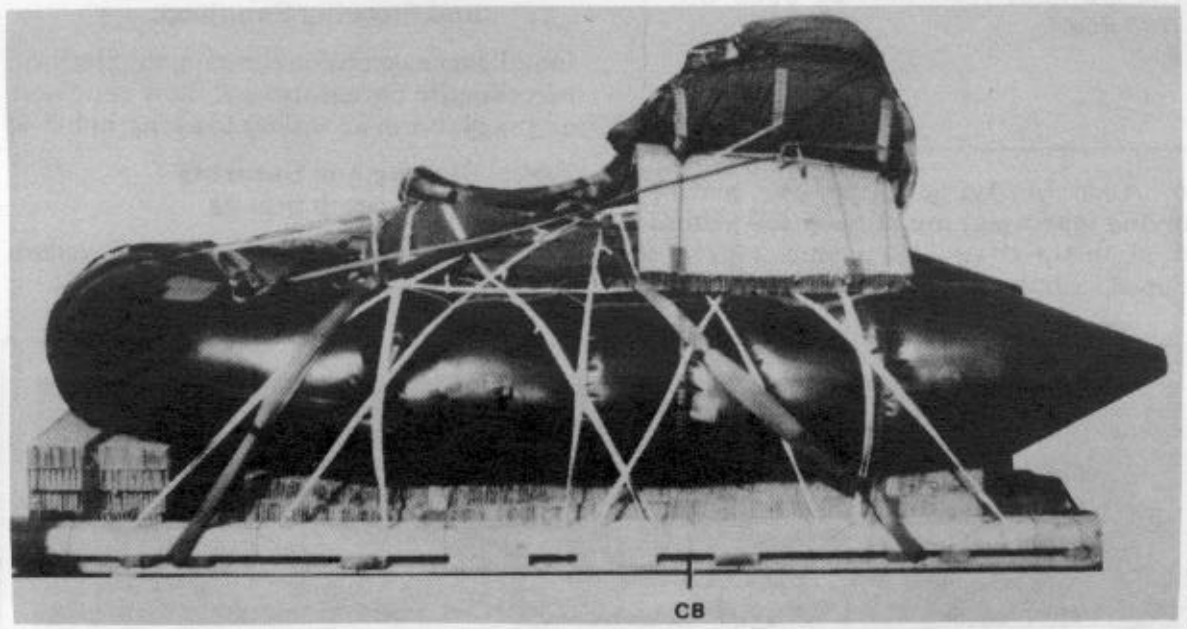
3-47. Marking Rigged Load

Mark the rigged load according to FM 10-500/TO 13C7-1-5 and as shown in Figure 3-50. If the accompanying load varies from that shown, the weight, height, and CB must be recomputed.

3-48. Equipment Required

In addition to the items listed in Table 3-1, use six 18- by 78-inch pieces of honeycomb, eight 18- by 18-inch pieces of honeycomb, and one 24- by 36-inch piece of honeycomb.

CAUTION: MAKE THE FINAL RIGGER INSPECTION REQUIRED BY FM 10-500/ TO 13C7-1-5 BEFORE THE LOAD LEAVES THE RIGGING SITE.



RIGGED LOAD DATA

Weight		2,208 pounds
Height		70 inches
Width		82 inches
Length		159 inches
Overhang:	Front	20 inches
	Rear	12 inches
CB (from front edge of platform)		52 inches

Figure 3-50. Zodiac K40 rubber raiding craft fully rigged

Section V
RIGGING ZODIAC K50 BOAT

3-49. Description of Load

The description of the load rigged in this section is given below.

a. Inflated Zodiac K50 Rubber Raiding Craft. This boat is rigged on a 75- by 144-inch SOCEP with a G-12C, G-12D, or G-12E cargo parachute. The boat weighs 80 pounds. When inflated, it is 82 inches wide, 195 inches long, and 29 inches high. The boat shown is powered by a 35-horsepower outboard engine that weighs 216 pounds with its two 6-gallon fuel tanks full. Six paddles weighing a total of 24 pounds are part of the boat's equipment.

NOTE: A 50-HORSEPOWER ENGINE IS THE LARGEST THAT MAY BE USED ON THIS BOAT.

b. Accompanying Load. An accompanying load weighing at least 450 pounds but no more than 850 pounds must be dropped with the boat.

3-50. Preparing Platform

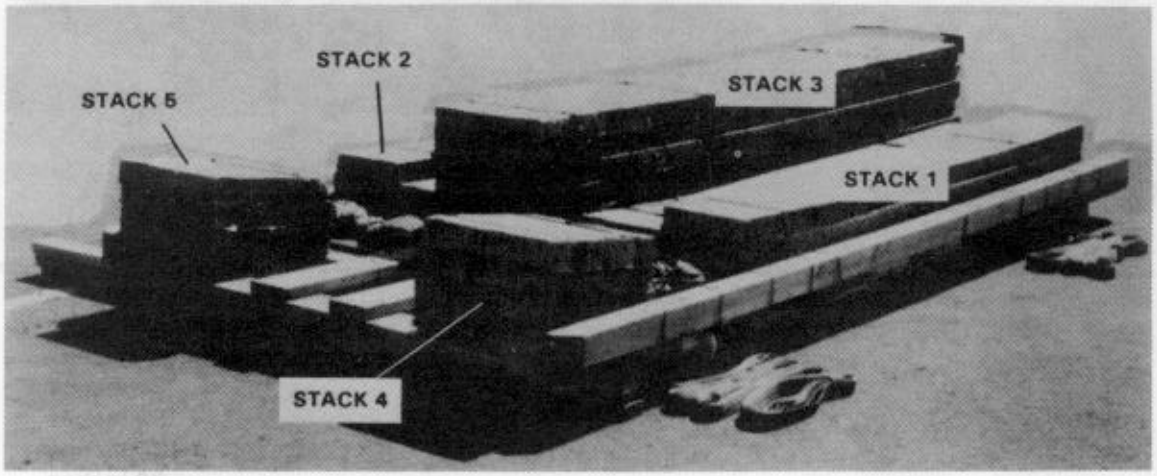
Build a new SOCEP, or inspect and repair a used platform, according to paragraph 3-2.

3-51. Installing Suspension Slings and Stowing Sandbags

Install four suspension slings on the platform according to paragraph 3-3. Stow sandbags on the platform according to paragraph 3-4.

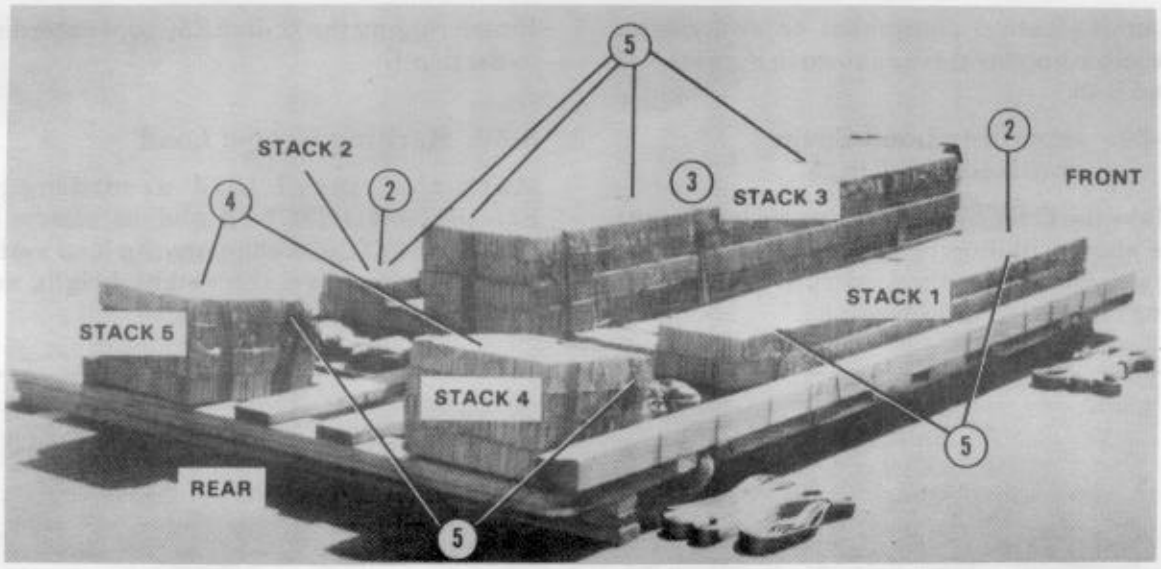
3-52. Placing and Securing Honeycomb Stacks

Build, place, and secure the honeycomb stacks as shown in Figures 3-51 and 3-52.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Instructions
1	1	24	96	Stack the 12-inch-wide piece on top and flush with one side of the 24-inch-wide piece.
	1	12	96	
2	Same as stack 1.			
3	6	18	96	Stack side-by-side and flush to form a stack 108 inches long.
	6	18	12	
4	4	18	18	Stack flush.
5	Same as stack 4.			

Figure 3-51. Honeycomb stacks for the Zodiac K50 boat prepared



(1) Position lengths of type III nylon cord on the platform as shown in Figure 3-42, steps 1, 2, and 3.

(2) Place stacks 1 and 2 along the right and left platform rails 12 inches from the front edge of the platform as shown.

(3) Center stack 3 between stacks 1 and 2, placing it 6 inches from the front edge of the platform.

(4) Set stacks 4 and 5 flush with the rear edge of the platform and the right and left rails.

(5) Tie the stacks in place with the pre-positioned type III nylon cord from step 1. Use tape under the ties to keep the cord from cutting the honeycomb.

Figure 3-52. Honeycomb stacks for the Zodiac K50 boat placed and secured

3-53. Preparing Boat

Inflate the boat, and install the in-boat tiedowns as shown in Figures 3-43 and 3-44.

3-54. Positioning Boat

Center the boat on the platform with the transom 8 inches from the front edge of the platform.

3-55. Preparing and Stowing Outboard Engine and Fuel Tanks

Prepare the outboard engine and fuel tanks as outlined in paragraph 3-9. Stow the engine and fuel tanks as shown in Figure 3-46.

3-56. Stowing Load and Paddles

Load and secure rucksacks and weapons as outlined in paragraph 3-10. Load and secure

communication equipment or underwater breathing apparatus as shown in Figures 3-47 and 3-48.

3-57. Installing Load Cover and Tiedown Rings

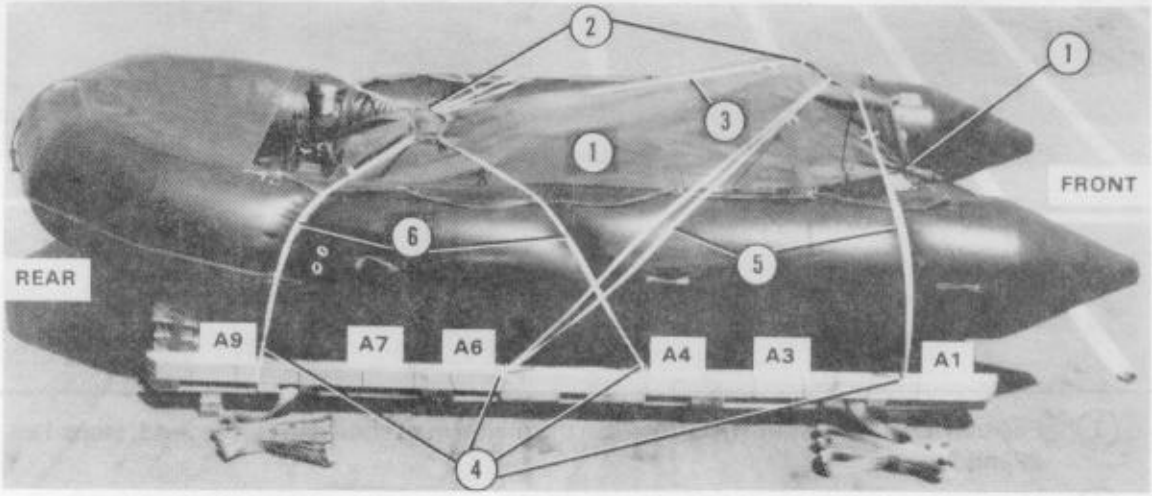
Make the three nylon webbing tiedown rings as shown in Figure 3-12. Install the load cover, and secure the load with the tiedown rings as shown in Figure 3-53.

3-58. Rigging Boat

Finish rigging the Zodiac K50 boat according to Section I.

3-59. Marking Rigged Load

Mark the rigged load according to FM 10-500/TO 13C7-1-5 and as shown in Figure 3-54. If the accompanying load varies from the one shown, the weight, height, and CB must be recomputed.



(1) Cover the engine, the fuel tanks, and the rest of the load with a 6- by 12-foot piece of canvas. Tie the corners of the canvas to convenient points on the boat with type III nylon cord.

(2) Set a two-ply tiedown ring on each end of the load cover. Center the front ring over the engine power section housing. Center the rear ring over the load about 18 inches from the rear edge of the load cover.

(3) Tie the rings together with a length of 1/2-inch tubular nylon webbing.

(4) Tie 14-foot lengths of 1/2-inch tubular nylon webbing to platform tiedown spaces A1, D1, A4, D4, A6, D6, A9, D9, and around B1 and C1.

(5) Tie the webbing from spaces A1, D1, A6, D6, B1, and C1 to the front tiedown ring.

(6) Tie the webbing from spaces A4, D4, A9, and D9 to the rear tiedown ring.

(7) Tie additional 14-foot lengths of 1/2-inch tubular nylon webbing to tiedown spaces A1, D1, A3, D3, A5, D5, A7, D7, A9, D9, and around B8 and C8 (not shown).

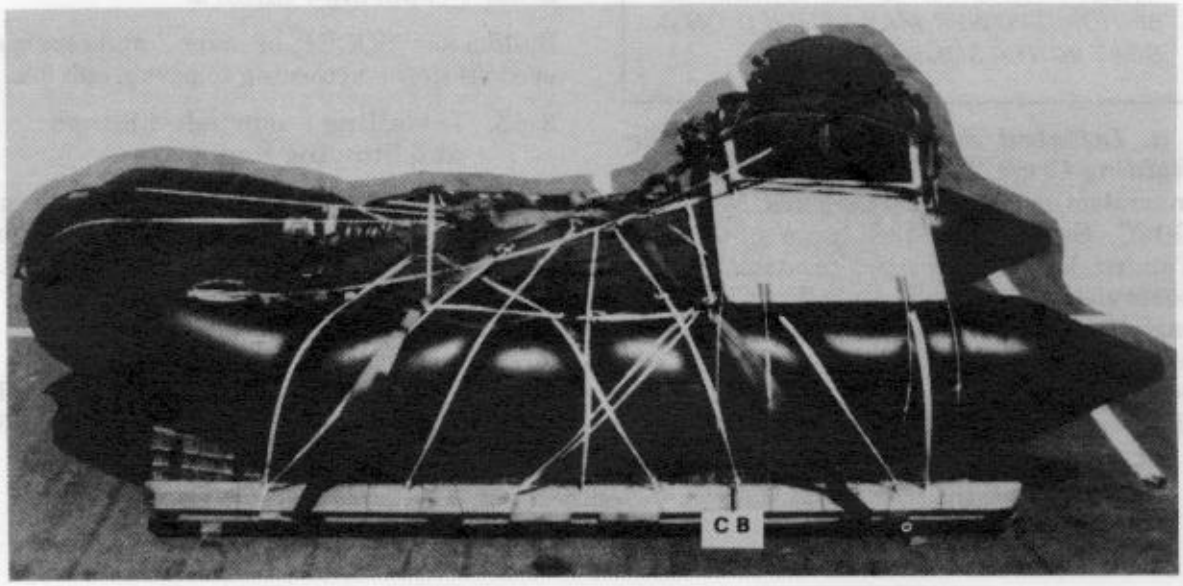
(8) Place and secure the center four-ply tiedown ring as shown in Figure 3-49.

Figure 3-53. Load and load cover secured

3-60. Equipment Required

In addition to the items listed in Table 3-1, use six 12- by 18-inch pieces of honeycomb, eight 18- by 18-inch pieces of honeycomb, six 18- by 96-inch pieces of honeycomb, and one 24- by 36-inch piece of honeycomb.

CAUTION: MAKE THE FINAL RIGGER INSPECTION REQUIRED BY FM 10-500/TO 13C7 1-5 BEFORE THE LOAD LEAVES THE RIGGING SITE



RIGGED LOAD DATA

Weight		2,218 pounds
Height		70 inches
Width		82 inches
Length		194 inches
Overhang:	Front	25 inches
	Rear	25 inches
CB (from front edge of platform)		52 inches

Figure 3-54. Zodiac K50 rubber raiding craft fully rigged

Section VI
RIGGING DOUBLE ZODIAC F470U BOATS

3-61. Description of Load

The description of the load rigged in this section is given below.

NOTE: A 40-HORSEPOWER ENGINE IS THE LARGEST THAT MAY BE USED ON THIS BOAT WHEN THE BOAT IS EQUIPPED WITH THE ACCORDION FLOOR. AN ENGINE AS LARGE AS 65-HORSEPOWER MAY BE USED ON A BOAT WITH A SOLID FLOOR.

a. Inflated Zodiac F470U Rubber Raiding Craft. This boat is rigged singly or in tandem on a 75- by 144-inch SOCEP with a G-12C, G-12D, or G-12E cargo parachute. Tandem loads require two parachutes. The boats weigh 250 pounds each. When inflated, each boat is 75 inches wide, 185 inches long, and 22 inches high. The boats shown are powered by 35-horsepower outboard engines that weigh 136 pounds each with one full 6-gallon fuel tank. Six paddles weighing a total of 24 pounds are part of each boat's equipment.

b. Accompanying Load. Accompanying loads weighing at least 650 pounds but no more than 1,170 pounds must be dropped with each boat.

3-62. Preparing Platform

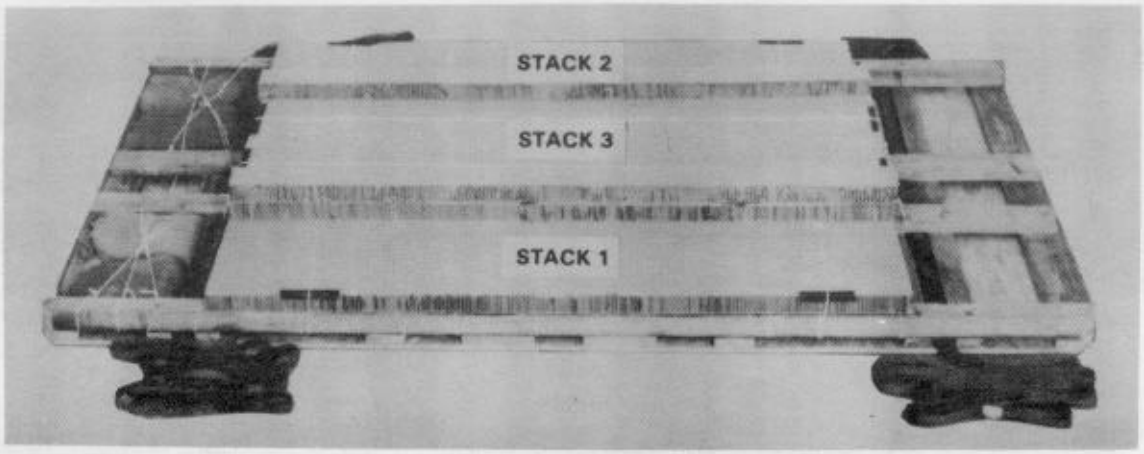
Build a new SOCEP, or inspect and repair a used platform, according to paragraph 3-2.

3-63. Installing Suspension Slings and Stowing Sandbags

Install four suspension slings on the platform according to paragraph 3-3. Stow sandbags on the platform according to paragraph 3-4.

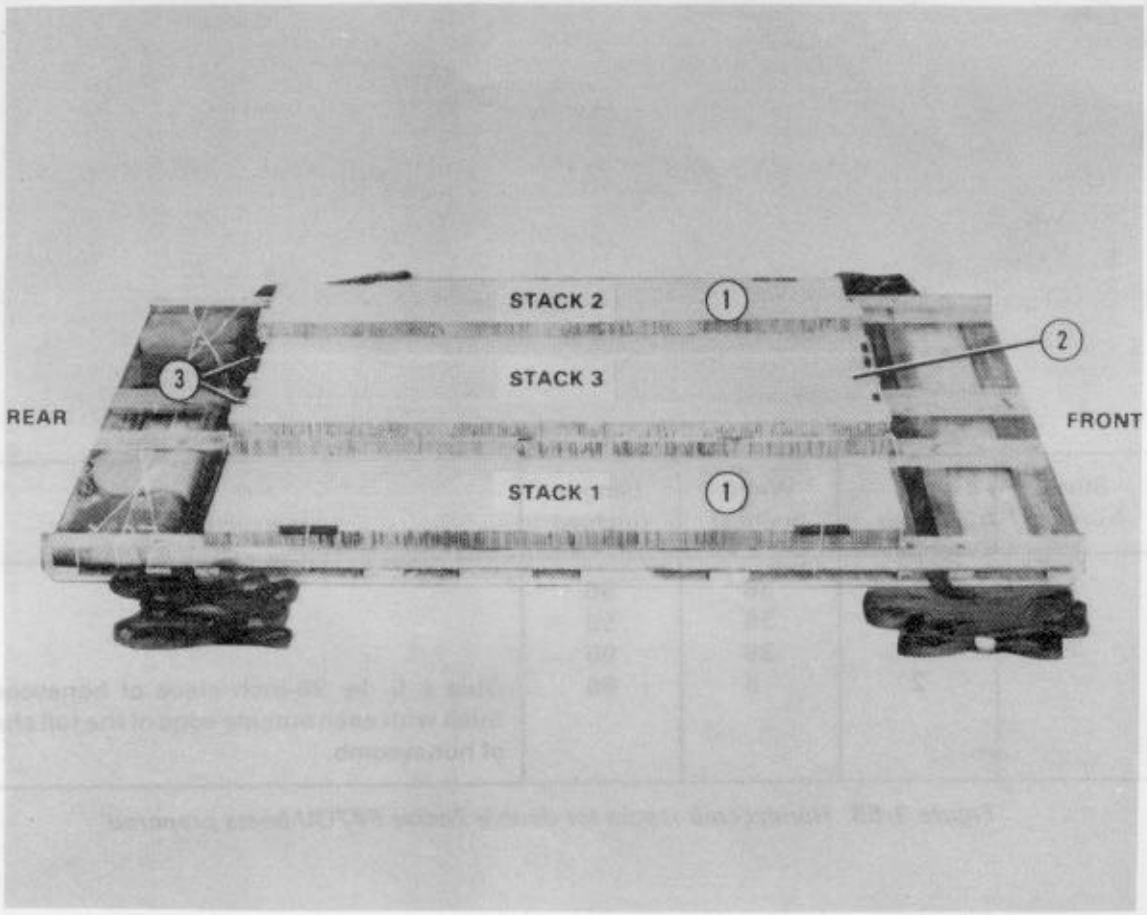
3-64. Placing and Securing Honeycomb Stacks

Build, place, and secure the honeycomb stacks as shown in Figures 3-7, 3-55, and 3-56.



Stack Number	Pieces	Width (Inches)	Length (Inches)	Instructions
1	1	36	96	
2	1	36	96	
3	1	36	96	
	2	5	96	Glue a 5- by 96-inch piece of honeycomb flush with each outside edge of the full sheet of honeycomb.

Figure 3-55. Honeycomb stacks for double Zodiac F470U boats prepared



(1) Position lengths of type III nylon cord and stacks 1 and 2 on the platform as shown in Figure 3-7.

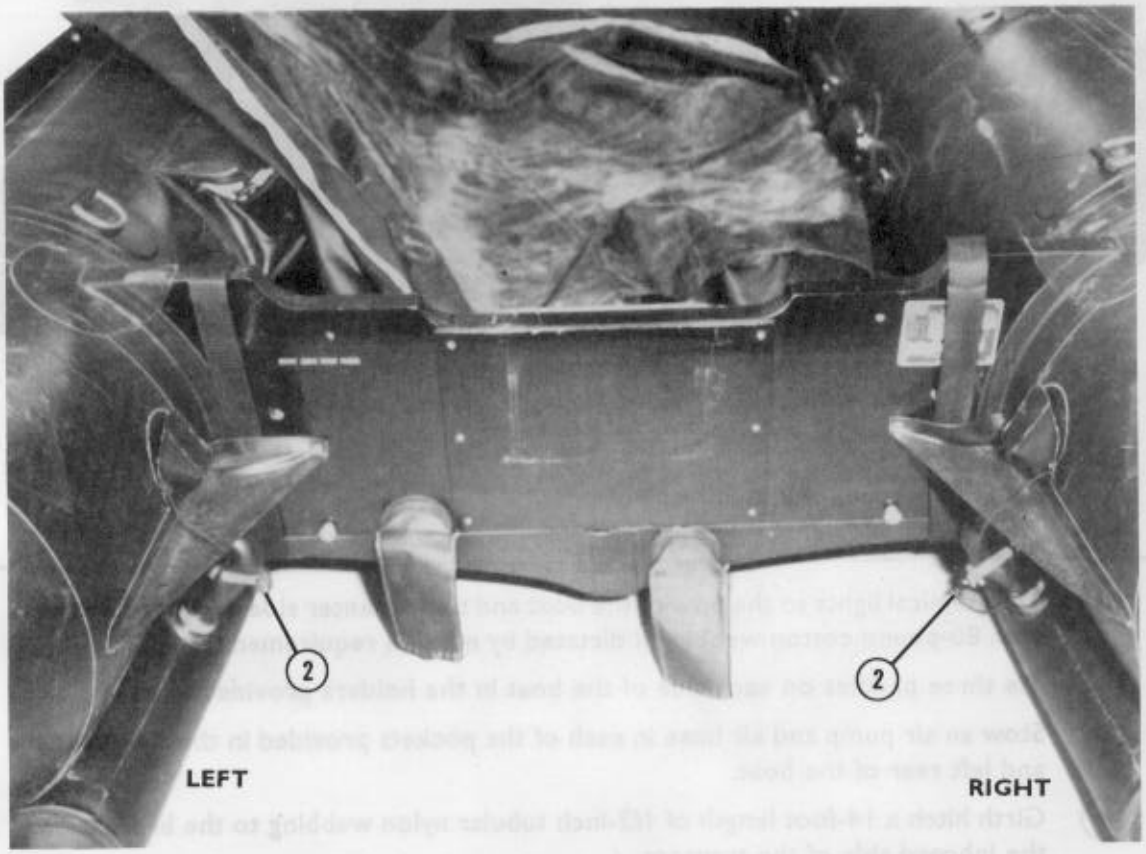
(2) Center and glue stack 3 over stacks 1 and 2 flush with front and rear ends.

(3) Tie stack 3 to the longitudinal stringers of the platform with lengths of type III nylon cord. Tape the honeycomb edges under the type III nylon cord.

Figure 3-56. Honeycomb stacks for double Zodiac F470U boats placed and secured

3-65. Preparing Boats

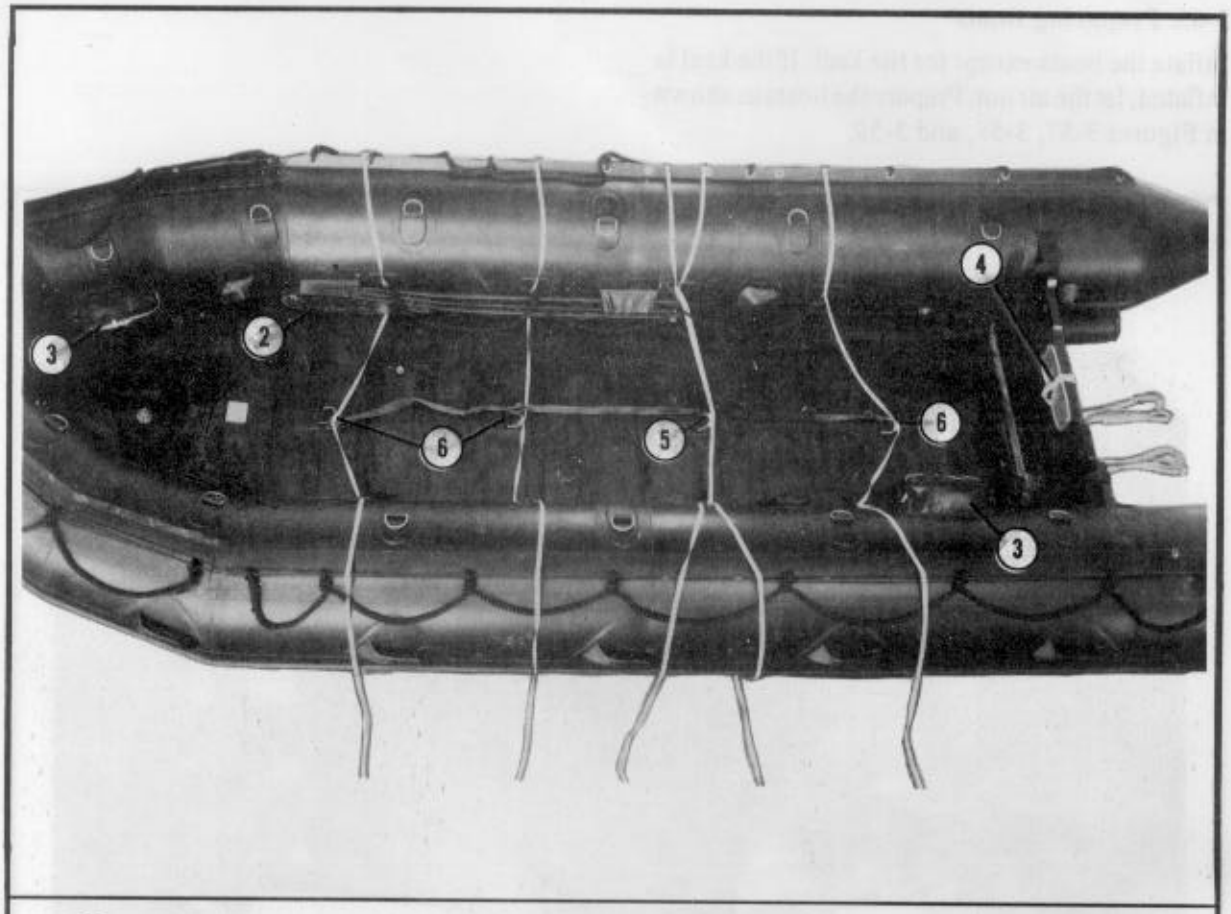
Inflate the boats except for the keel. If the keel is inflated, let the air out. Prepare the boats as shown in Figures 3-57, 3-58, and 3-59.



(1) Remove the hose clips from the stowage pockets behind the transom on the left and right sides of the boat (not shown).

(2) Place the hose clips around the hoses connecting the upper and lower tubes, and tighten the hose clips with the wing nuts provided.

Figure 3-57. Hose clips installed



(1) Tie chemical lights to the bow of the boat and to the center side carrying handles with 80-pound cotton webbing if dictated by mission requirements (not shown).

(2) Tie three paddles on each side of the boat in the holders provided.

(3) Stow an air pump and air hose in each of the pockets provided in the right front and left rear of the boat.

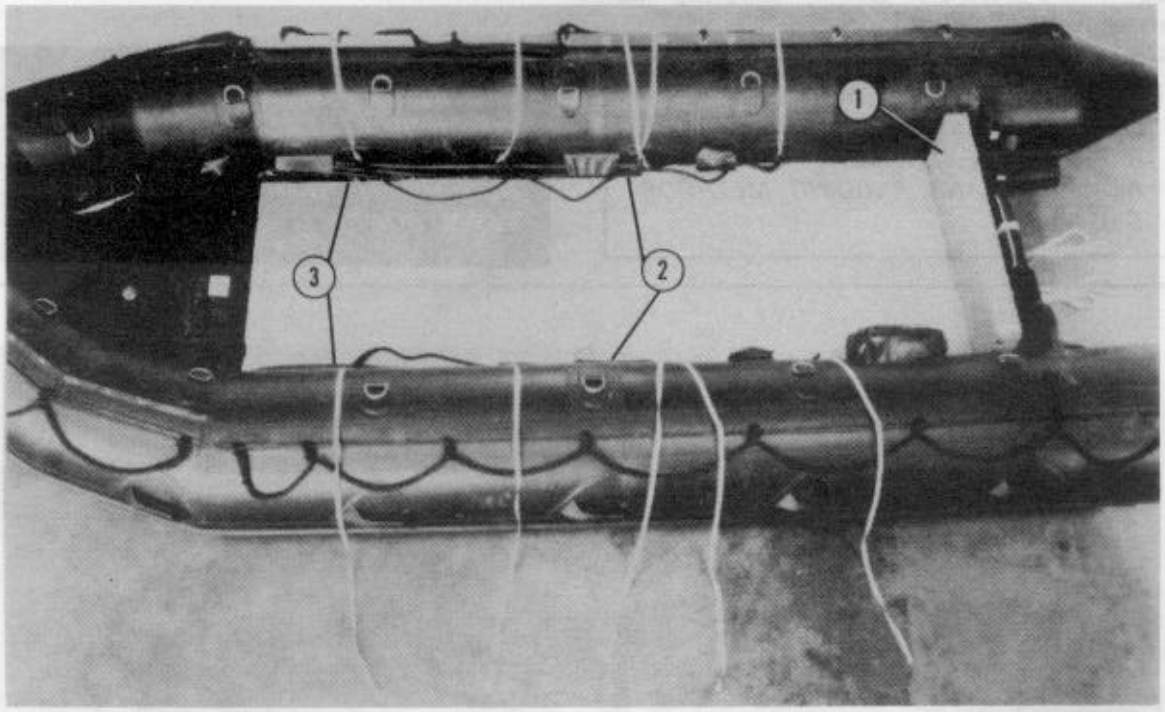
(4) Girth hitch a 14-foot length of 1/2-inch tubular nylon webbing to the bracket on the inboard side of the transom.

(5) Girth hitch two 14-foot lengths of 1/2-inch tubular nylon webbing to the second in-floor D-ring from the rear of the boat. Pass the running ends through the nearest safety rope D-ring and over the side.

(6) Girth hitch one 14-foot length of 1/2-inch tubular nylon webbing to each of the three remaining in-floor D-rings. Pass each running end through the nearest safety rope D-ring and over the side.

NOTE: ADDITIONAL TIES MAY BE ADDED FOR FORWARD AND AFT RESTRAINT.

Figure 3-58. Paddles and pumps stowed and in-boat tiedowns installed



(1) Set a 13- by 36-inch piece of honeycomb against the transom.

(2) Make a 2- by 54-inch cutout on each side, starting from the same end, of a 36- by 96-inch piece of honeycomb.

(3) Place the honeycomb in the floor of the boat with the cutouts against the paddles.

Figure 3-59. Honeycomb for engine and load stowage positioned

3-66. Positioning First Boat

Center the boat on the platform with the transom even with the front edge of the honeycomb.

3-67. Preparing and Stowing Accompanying Load

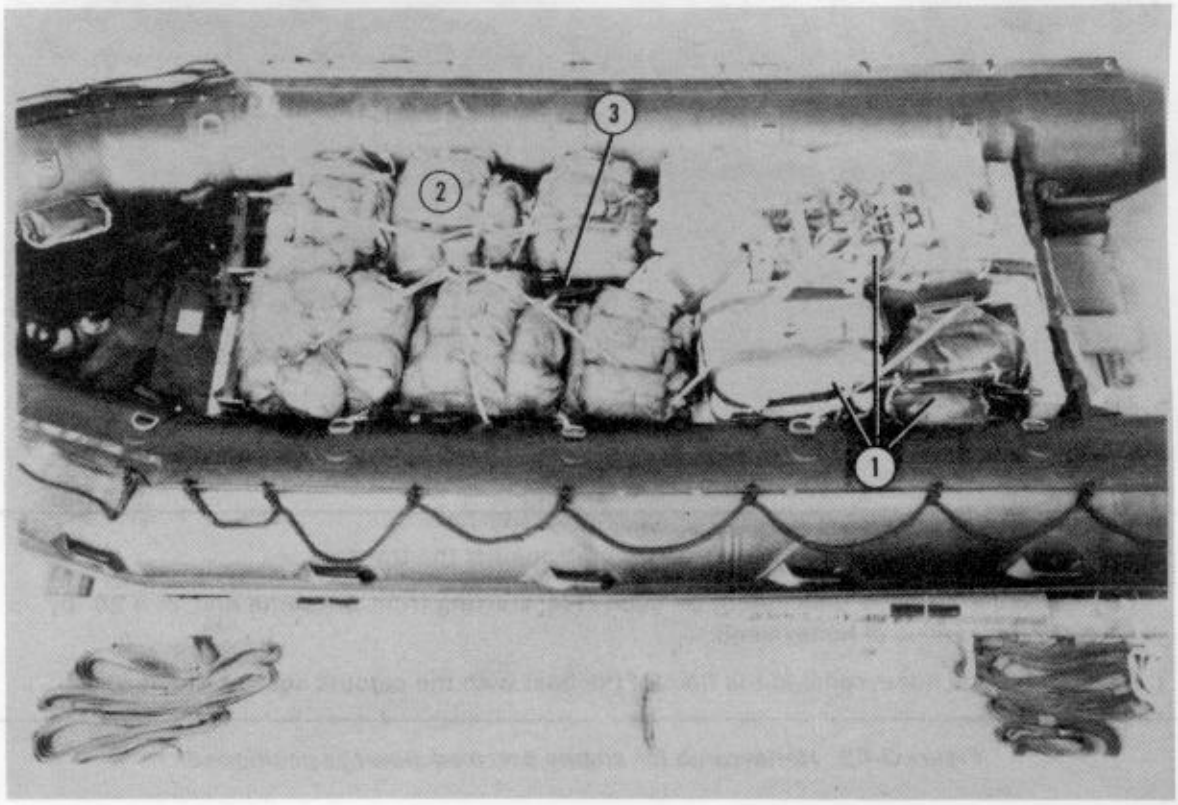
Prepare and stow the outboard engine, fuel tanks, and the rest of the load as described below.

a. Prepare the outboard engine and fuel tanks as shown in paragraph 3-9. Stow and restrain the engine, fuel tanks, and load as shown in Figure 3-60 and by adapting the procedures in Section I.

NOTE: UP TO FOUR METAL OR COLLAPSIBLE PLASTIC FUEL TANKS MAY BE RIGGED IN EACH BOAT USING THE RESTRAINT AND PADDING METHODS SHOWN.

b. If only one Zodiac F47OU boat is to be dropped on this platform, cover the load and finish rigging it according to Section I.

CAUTION: AN ACCOMPANYING LOAD WEIGHING AT LEAST 640 POUNDS BUT NO MORE THAN 1,170 POUNDS MUST BE DROPPED WITH A SINGLE ZODIAC F47OU BOAT.

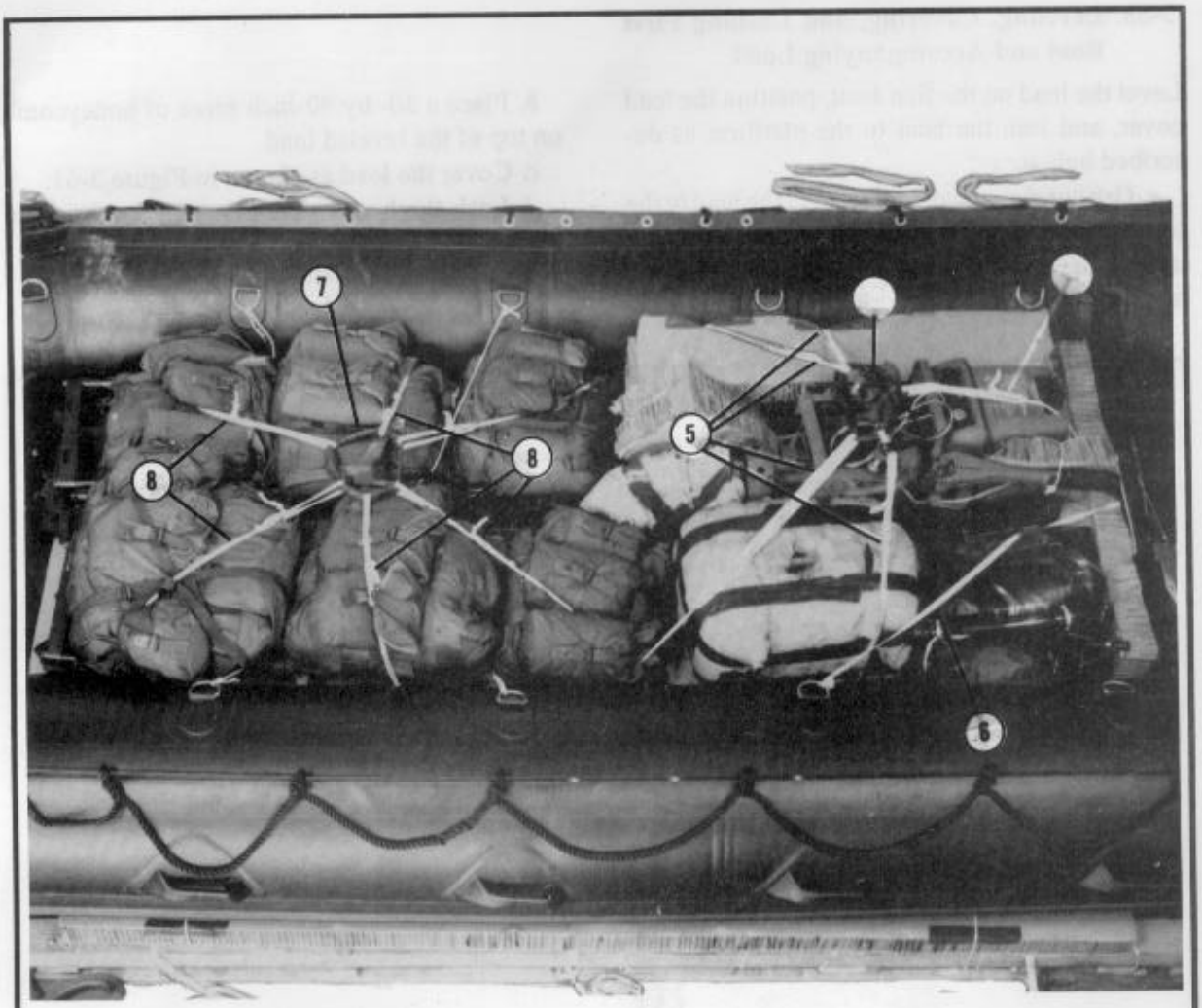


(1) Stow the engine and fuel tanks as described in paragraph 3-9. Use the instructions that apply to the type of engine you have with your boats.

(2) Lay the rucksacks in the boat. Tie the frames together with type III nylon cord.

(3) Place the weapons between the two rows of rucksacks. Tie them in place to convenient D-rings on the boat with two lengths of type III nylon cord.

Figure 3-60. Engine, fuel tanks, and load stowed and restrained



(4) Lay a two-ply tiedown ring over the engine mounting bracket.

(5) Pass one tie from each of the first two in-boat tiedowns on both sides of the boat and from the tiedowns on the transom through the ring. Tie each tie to a loop made in its standing end. Tie them to the ring as shown in Figure 3-21.

(6) Bring the remaining ties on the transom through the handle on the plastic fuel tank. Tie it to the second D-ring on the right side of the boat.

(7) Center a two-ply tiedown ring on the rucksacks.

(8) Use the remaining in-boat ties to restrain the load as described in step 5 above.

Figure 3-60. Engine, fuel tanks, and load stowed and restrained (continued)

3-68. Leveling, Covering, and Lashing First Boat and Accompanying Load

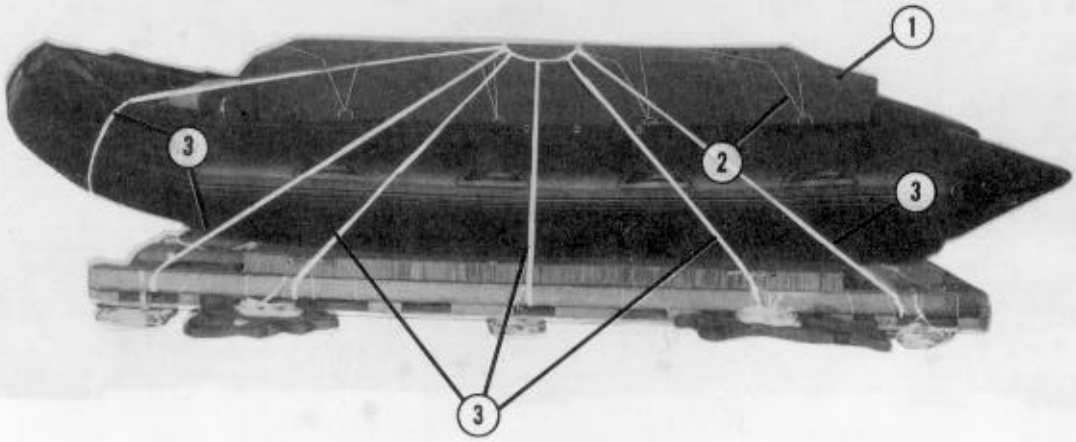
Level the load on the first boat, position the load cover, and lash the boat to the platform as described below.

a. Use honeycomb pieces to level the load to the top of the engine. If collapsible fuel tanks are used, fit honeycomb around them by standing the honeycomb on edge for support.

b. Place a 30- by 90-inch piece of honeycomb on top of the leveled load.

c. Cover the load as shown in Figure 3-61.

d. Lash the boat to the platform as shown in Figure 3-61.



(1) Place a 5- by 10-foot piece of cotton duck cloth over the 30- by 90-inch piece of honeycomb.

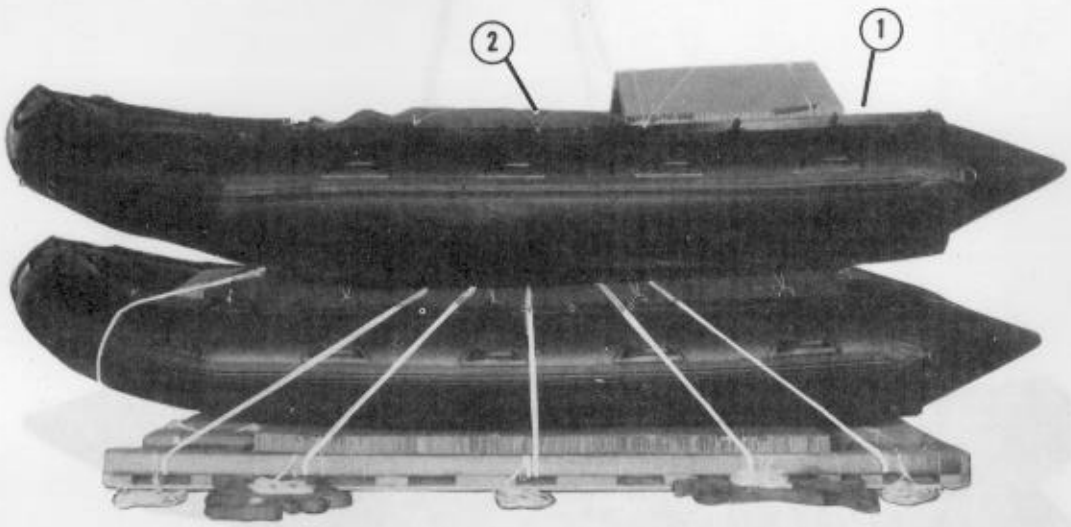
(2) Tie the cloth in place with type III nylon cord using the D-rings on the sides of the boat.

(3) Position the lashings and tie them to the tiedown ring as shown in Figures 3-20 and 3-21. Cut notches in the honeycomb to gain access to the platform tiedown holes.

Figure 3-61. Load cover tied in place and boat lashed to platform

3-69. Placing and Loading Second Boat

Prepare, place, load, and cover the second Zodiac F470U boat as shown in Figure 3-62.



(1) Inflate the second boat except for the keel (not shown). Prepare it according to directions in Figures 3-57 through 3-59. Center the second boat on top of the first boat. The transoms must be even with each other and the front edge of the platform.

NOTE: LOCAL SOP MAY ALLOW PLASTIC SHEETING BETWEEN BOATS TO AID IN DERIGGING.

(2) Prepare, stow, and cover the engine, fuel tanks, and load items according to the directions in Figures 3-60 and 3-61.

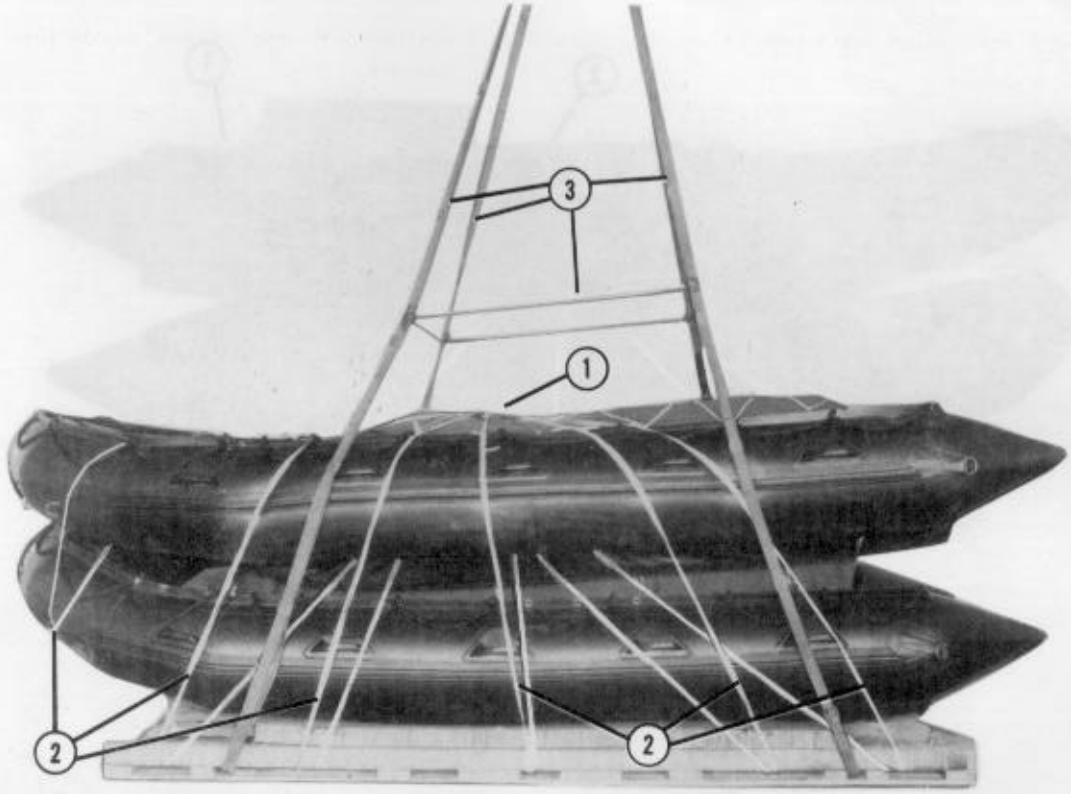
Figure 3-62. Second boat prepared, placed, and covered

3-70. Lashing Second Boat to Platform

Lash the second boat to the platform as shown in Figure 3-63.

3-71. Safetying Suspension Slings

Make a deadman's tie, and safety the suspension slings according to FM 10-500-2/TO 13C7-1-5 and as shown in Figures 3-22 and 3-63.



(1) Center the four-ply tiedown ring over the load cover of the second boat.

(2) Position the lashings and tie them to the tiedown ring as shown in Figures 3-20 and 3-21. Cut notches in the honeycomb to gain access to the platform tiedown holes.

(3) Raise the suspension slings, and make the deadman's tie according to FM 10-500-2/ TO 13C7-1-5.

(4) Lower the slings, and tie them to the tiedown ring as shown in Figure 3-22.

Figure 3-63. Boats lashed and suspension slings safetied

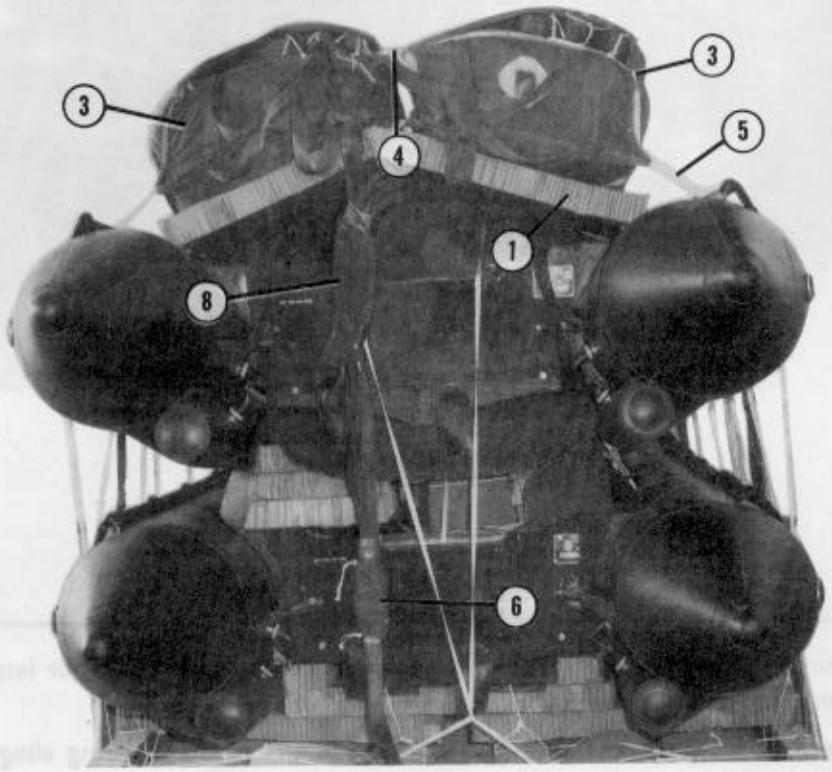
3-72. Stowing Parachutes

Stow parachutes as described below.

a. Lay a 36- by 55-inch piece of honeycomb across the load cover of the second boat as shown in Figure 3-64.

b. Prepare and pack the 15-foot cargo extraction parachute as described in paragraph 3-14.

c. Prepare two G-12 cargo parachutes. Stow them on the front of the load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-64.



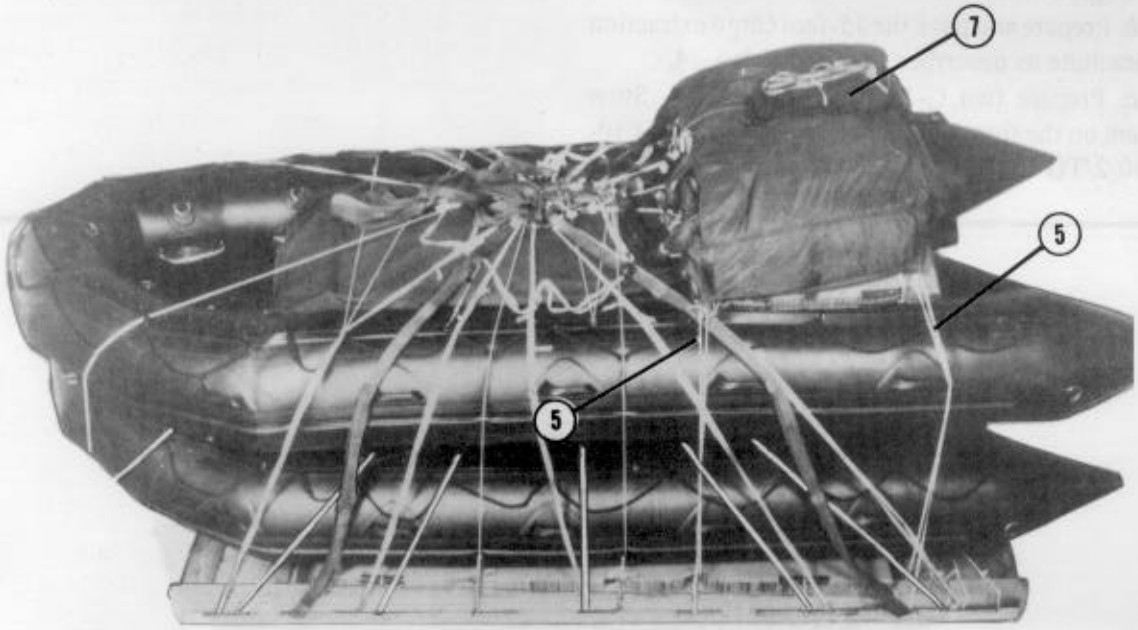
(1) Lay a 36- by 55-inch piece of honeycomb across the load cover of the second boat. Let the honeycomb extend 1 inch past the transom.

(2) Bend the honeycomb over the load. Tape the edges of the honeycomb to prevent cutting (not shown). Tie the honeycomb down with type III nylon cord.

(3) Set two G-12 cargo parachutes on the honeycomb with the riser extension compartment up and the bridle toward the front of the platform.

(4) Cluster the parachutes together with single lengths of 80-pound cotton webbing.

Figure 3-64. Parachutes stowed



(5) Secure the parachutes to convenient points on the load with four lengths of 80-pound cotton webbing.

(6) Attach the deployment line (9-foot, type XXVI nylon webbing sling) from the packed 15-foot extraction parachute to the G-12 bridles with a type IV link assembly or a medium clevis. Cover the link or clevis with the appropriate cover.

(7) Center the 15-foot cargo extraction parachute on top of the G-12 cargo parachutes. Safety it in place with ticket number 5 cotton thread.

(8) S-fold the slack in the deployment line, and tape the folds. Secure the clustering clevis to the riser extension tiedown loops with a double length of 80-pound cotton webbing.

(9) Remove the left secondary bag closing tie from both G-12 parachutes (not shown).

Figure 3-64. Parachutes stowed (continued)

3-73. Installing Parachute Release

Use either two 5,000-pound-capacity releases or one M-1 release on this load.

a. Prepare, install, and safety two 5,000-pound-capacity releases according to FM 10-500-2/TO 13C7-1-5.

b. Prepare, install, and safety the M-1 release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-65.

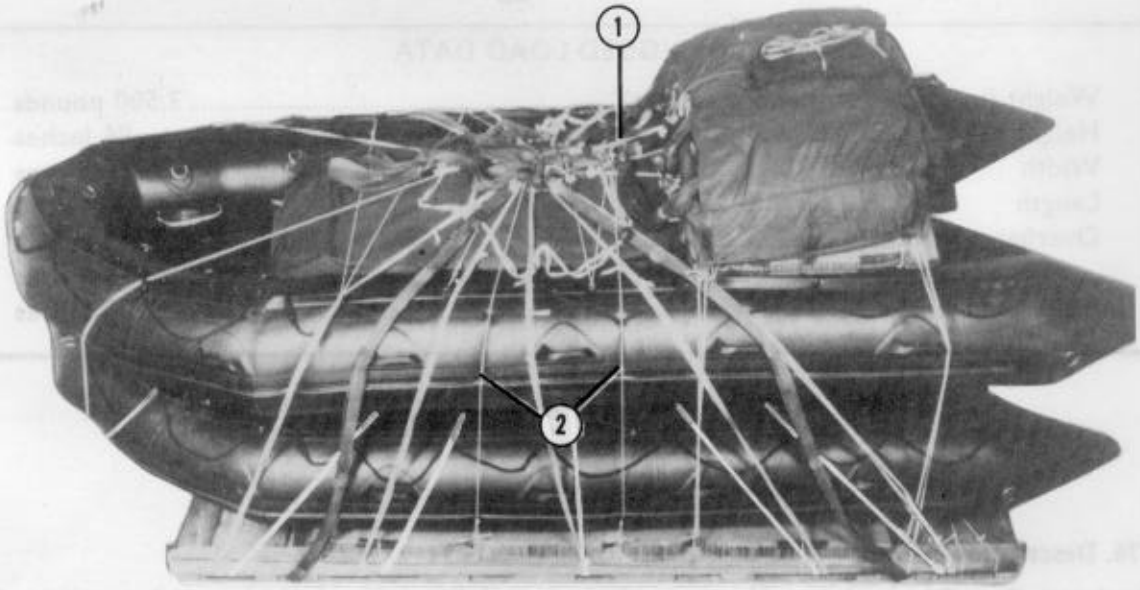
NOTE: THE HYDRAULIC RELEASE IS AUTHORIZED FOR NAVY AND AIR FORCE USE.

3-74. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-66. If the accompanying load varies from the one shown, the weight, height, and CB must be recomputed.

3-75. Equipment Required

In addition to the items listed in Table 3-1, use one additional G-12 cargo parachute, four 36- by 96-inch pieces of honeycomb, two 5- by 96-inch pieces of honeycomb, two 30- by 90-inch pieces of honeycomb, and one 13- by 36-inch piece of honeycomb.



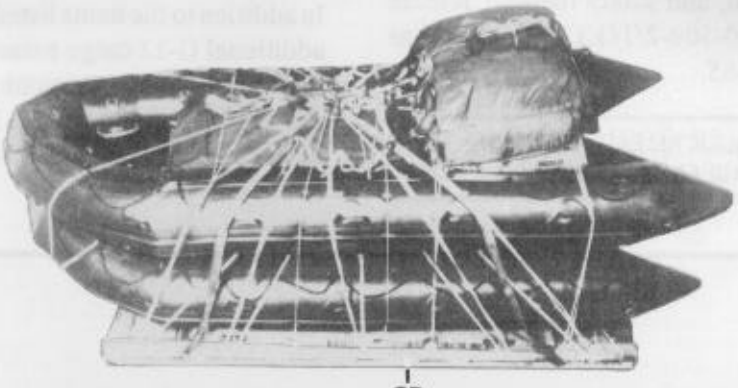
(1) Attach the riser extensions on the G-12 parachutes to the two parachute connectors on the M-1 release.

(2) Safety the release to convenient points on the platform with type III nylon cord.

Figure 3-65. M-1 parachute release installed

CAUTION: MAKE THE FINAL RIGGER INSPECTION REQUIRED BY FM 10-500-21 TO 13C7-1-5 BEFORE THE LOAD LEAVES THE RIGGING SITE.

NOTE: REMOVE THE PLASTIC AND TAPE FROM THE FUEL PUMP AND FILTER AND REATTACH THEM BEFORE USING THE MARS ENGINE. INFLATE THE KEEL BEFORE USING THE BOAT.



RIGGED LOAD DATA

Weight (maximum suspended weight)	3,500 pounds
Height	86 inches
Width	75 inches
Length	189 inches
Overhang: Front	16 inches
Rear	29 inches
CB (from front edge of platform)	60 inches

Figure 3-66. Double Zodiac F470U boats fully rigged

3-73. Installing Parachute Release

Use either two 5,000-pound-capacity releases or one M-1 release on this load.

a. Prepare, install, and safety two 5,000-pound-capacity releases according to FM 10-500-2/TO 13C7-1-5.

b. Prepare, install, and safety the M-1 release according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-65.

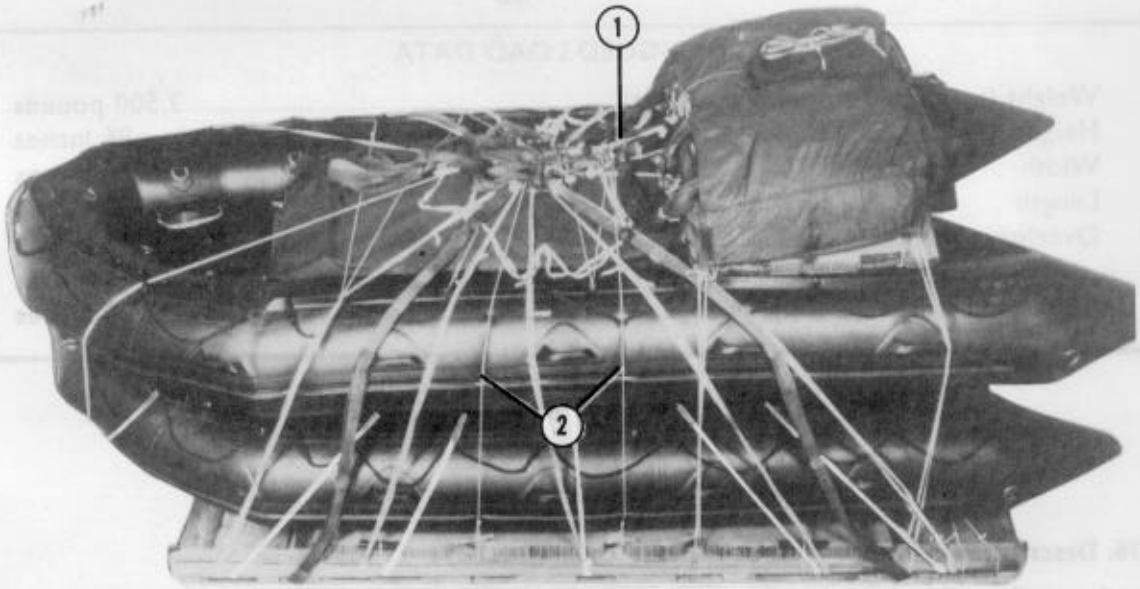
NOTE: THE HYDRAULIC RELEASE IS AUTHORIZED FOR NAVY AND AIR FORCE USE.

3-74. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 3-66. If the accompanying load varies from the one shown, the weight, height, and CB must be recomputed.

3-75. Equipment Required

In addition to the items listed in Table 3-1, use one additional G-12 cargo parachute, four 36- by 96-inch pieces of honeycomb, two 5- by 96-inch pieces of honeycomb, two 30- by 90-inch pieces of honeycomb, and one 13- by 36-inch piece of honeycomb.



(1) Attach the riser extensions on the G-12 parachutes to the two parachute connectors on the M-1 release.

(2) Safety the release to convenient points on the platform with type III nylon cord.

Figure 3-65. M-1 parachute release installed

Section VII
RIGGING THE IBS BUNDLE

3-76. Description of Load

The description of the load rigged in this section is given below.

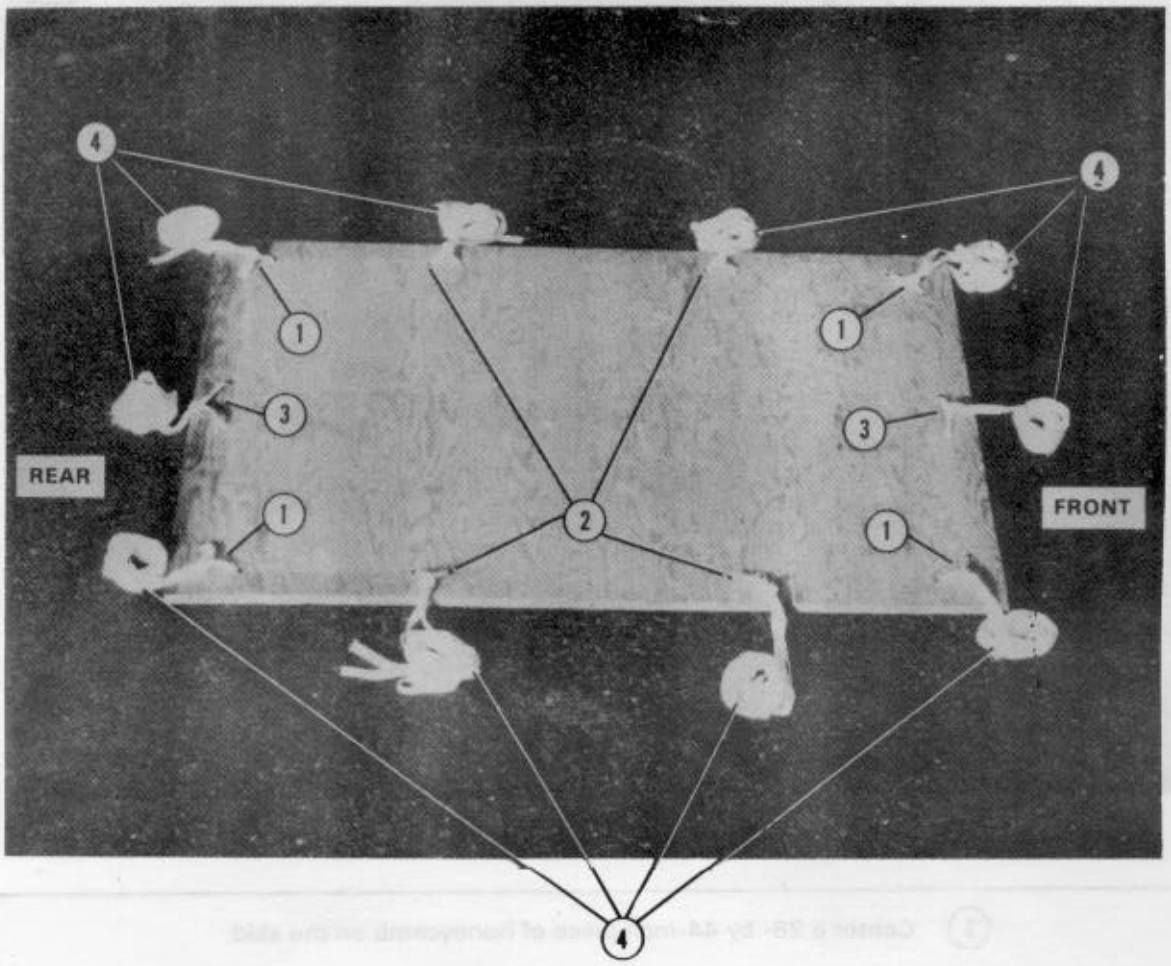
a. Small Inflatable Boat. The IBS is rigged on a 3/4- by 32- by 48-inch skid board and requires a T-10 parachute adapted for cargo use according to FM 10-500-3/TO 13C7-1-11/FMFM 7-47. The boat weighs 150 pounds. When inflated, it is 72 inches wide, 144 inches long, and 16 inches high. The boat shown is powered by a 15-horsepower outboard engine that weighs 180 pounds with its two 6-gallon fuel tanks full. Six paddles weighing a total of 24 pounds are part of the boat's equipment.

NOTE: A 40-HORSEPOWER ENGINE IS THE LARGEST THAT MAY BE USED ON THIS BOAT.

b. Accompanying Load. No accompanying load can be dropped with the IBS bundle.

3-77. Preparing Skid

Build the skid board, and install the tiedowns and honeycomb as shown in Figures 3-67 and 3-68.



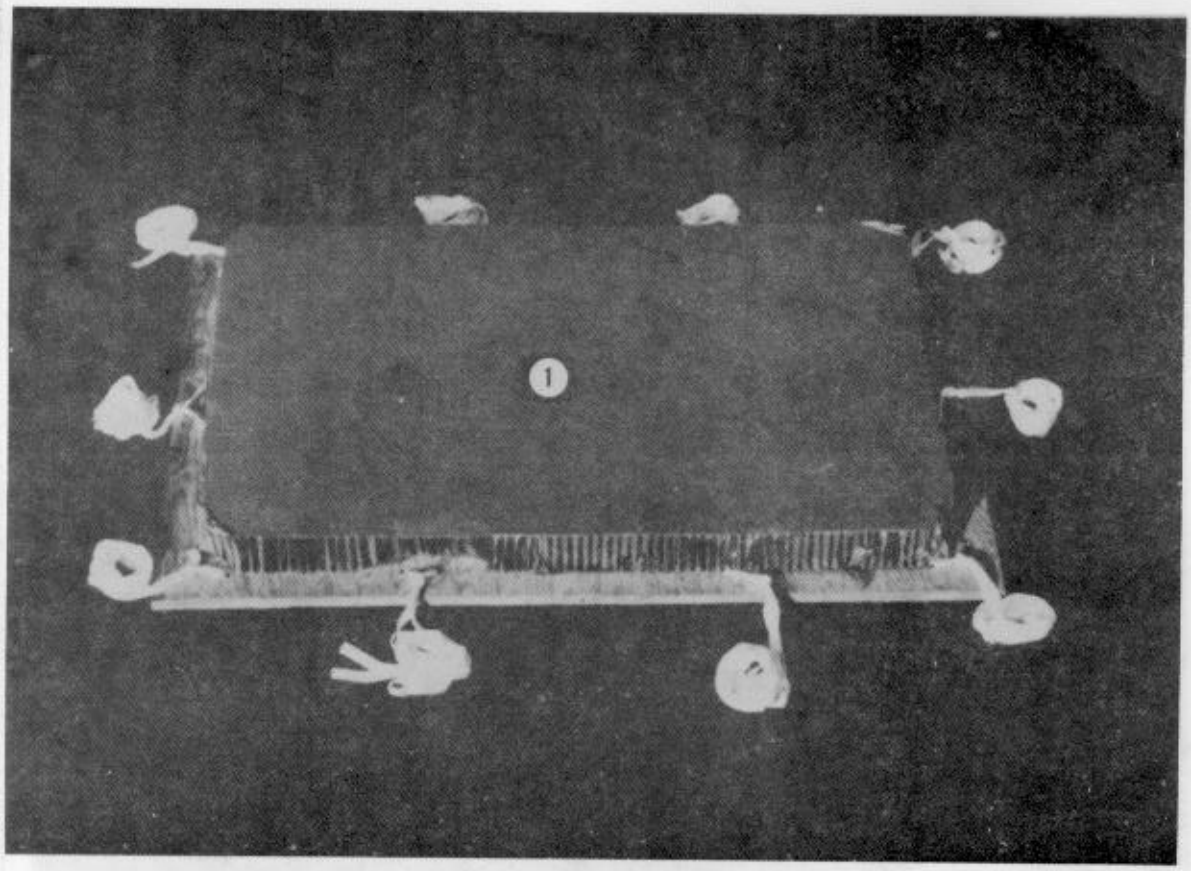
(1) Drill two 1/2-inch-diameter holes 4 inches from each corner (2 inches from the edge) of a 3/4- by 32- by 48-inch piece of plywood.

(2) Drill 1/2-inch-diameter holes 16 inches, 18 inches, 30 inches, and 32 inches from the front edge of the skid along the 48-inch sides. All holes must be 2 inches from the nearest edge.

(3) Center and drill two 1/2-inch-diameter holes 4 inches from each other and 2 inches from the edge along the 32-inch sides.

(4) Thread a 10-foot length of 1/2-inch tubular nylon webbing through each pair of holes. Tie an overhand knot in each length of 1/2-inch tubular nylon webbing.

Figure 3-67. Skid prepared

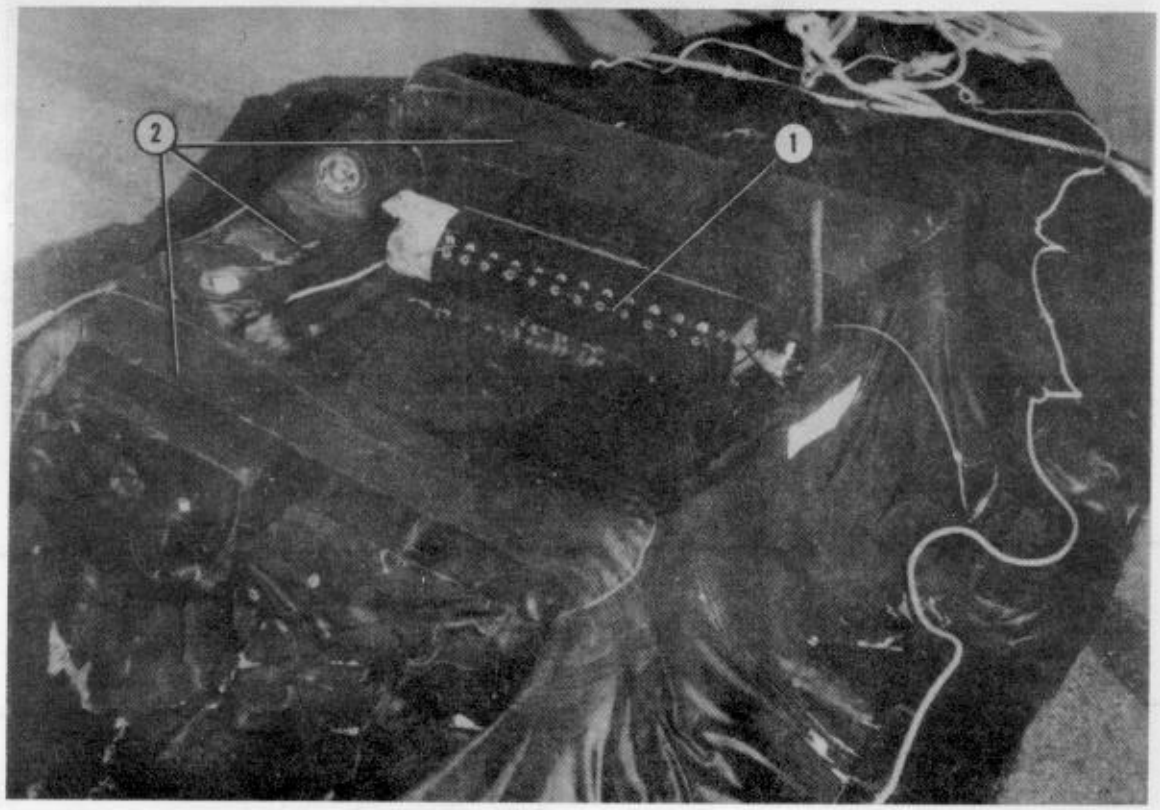


(1) Center a 28- by 44-inch piece of honeycomb on the skid.

Figure 3-68. Honeycomb positioned on the skid

3-78. Preparing the IBS

Prepare the IBS as shown in Figure 3-69.

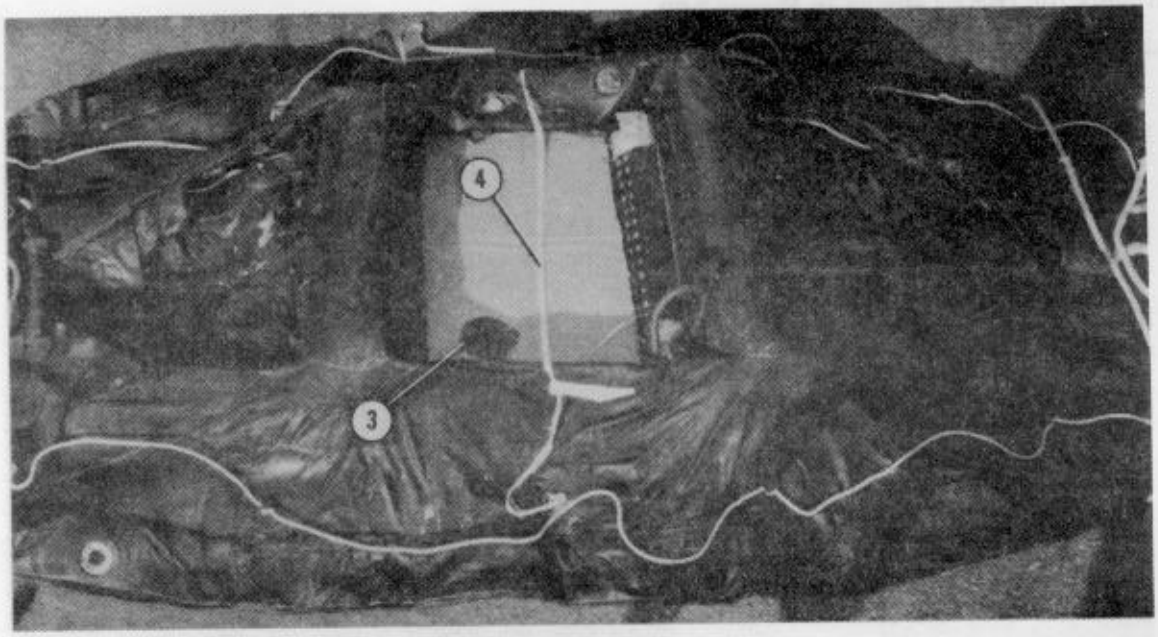


(1) Pad the CO_2 bottle with bubble wrap. Stow the bottle in the center compartment. Tie the compartment shut with type III nylon cord.

(2) Inflate the boat's tubes with the hand pump.

NOTE: STOW THE PUMP IN THE STOWAGE COMPARTMENT ON THE CENTER TUBE.

Figure 3-69. Boat prepared



(3) Make a 5-inch circular cutout in a corner of an 18- by 32-inch piece of honeycomb. Set the honeycomb on the floor of the boat with the cutout over the floor valve.

(4) Center a 6-foot length of 1/2-inch tubular nylon over the length of the honeycomb.

Figure 3-69. Boat prepared (continued)

3-79. Preparing Engine and Fuel Tanks

Prepare the engine and the fuel tanks as described below.

a. Wrap the lower unit of the engine with bubble wrap and tape.

b. Tie a 2- by 8-inch piece of honeycomb between the operator's handle and the engine cover with type III nylon cord.

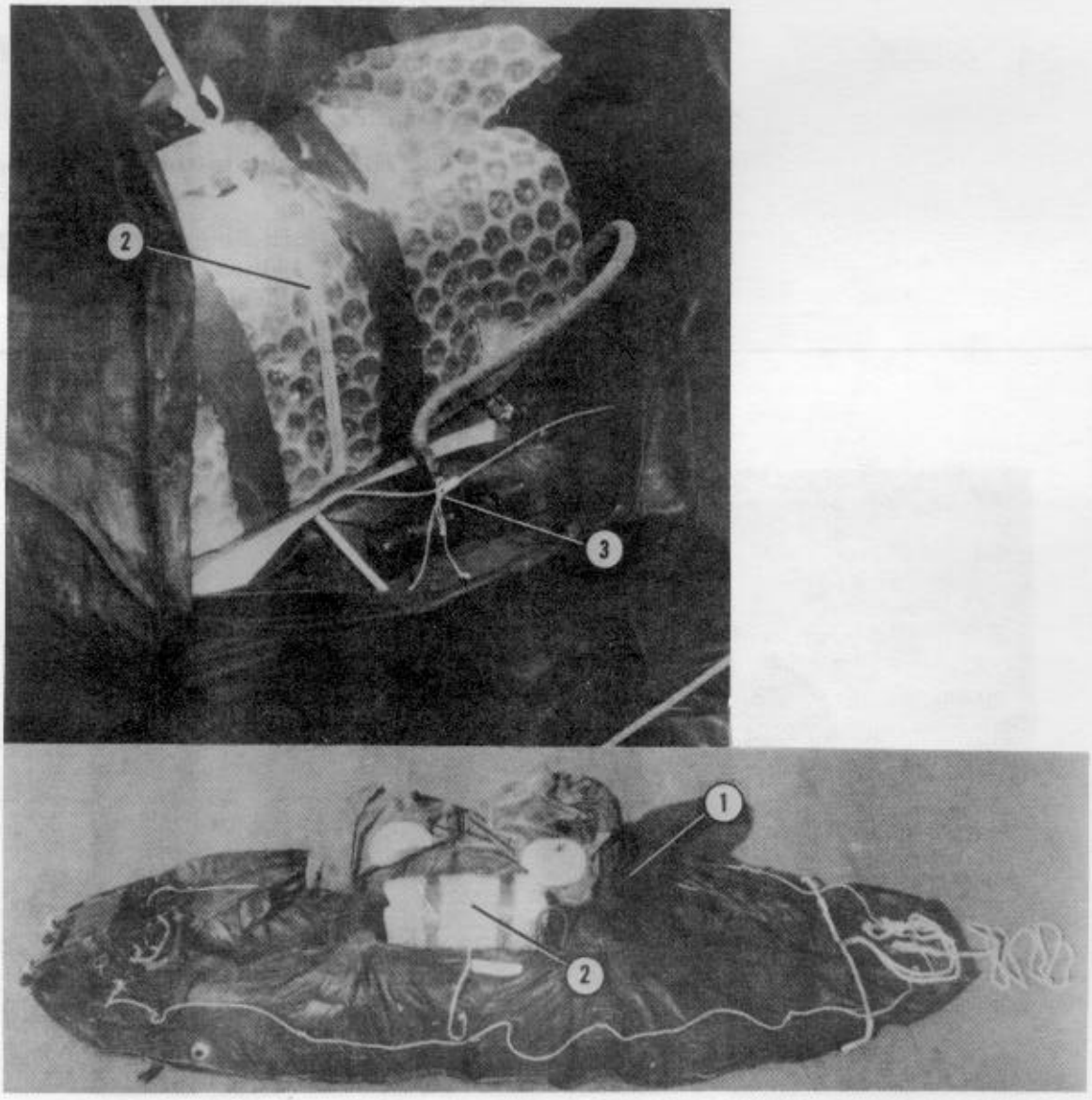
c. Stow the engine and fuel hoses in an airtight, waterproof bag.

3-80. Positioning Boat and Engine

Set the boat on the skid, and position the engine as described below.

a. Center the boat on the skid lengthwise.

b. Set the engine and fuel tanks on the inflated center tubes as shown in Figure 3-70.



(1) Set the wrapped engine on the two inflated center tubes with the operator's handle up and the top of the engine flush with the forward edge of the front tube.

(2) Set a fuel can on either side of the engine's lower unit. Tie the cans to the lower unit with the pre-positioned 1/2-inch tubular nylon webbing.

(3) Tie the CO_2 activation handle to the hose coupling with ticket number 5 cotton thread.

NOTE: BE SURE THAT THE CO_2 HOSE IS NOT CRIMPED OR PINCHED UNDER THE FUEL CANS.

Figure 3-70. Engine and fuel tanks positioned and secured

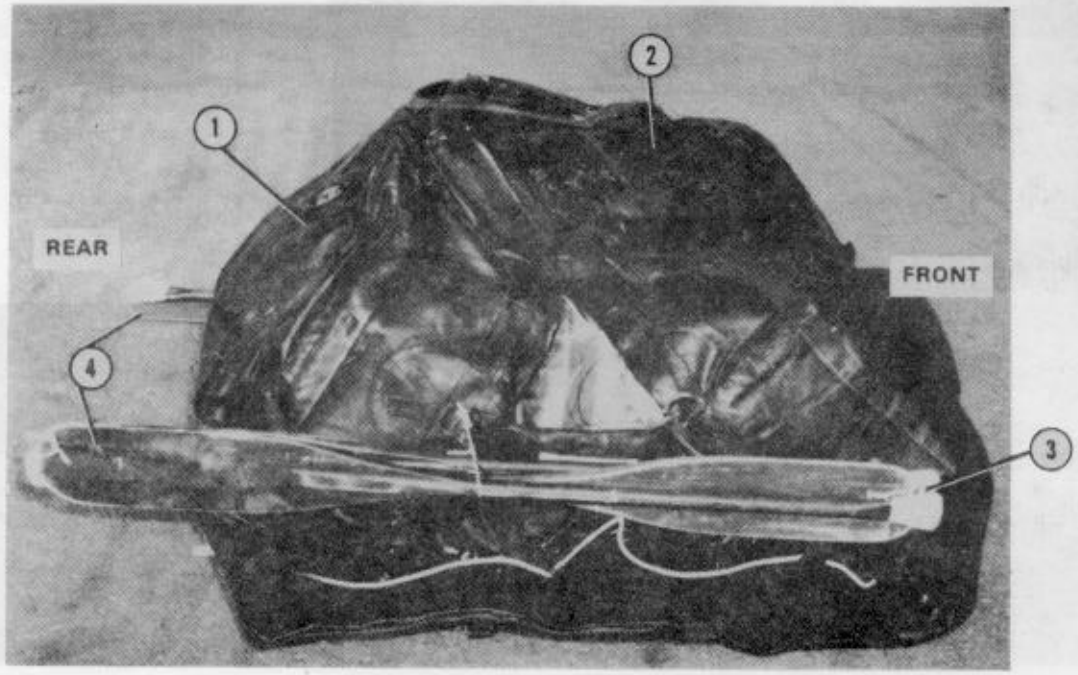
3-81. Stowing Boat and Paddles

Stow the boat and paddles as shown in Figure 3-71.

3-82. Lashing the IBS Bundle

Lash the IBS bundle to the platform as described below.

a. Form one 30-inch-diameter tiedown ring (2-loop) and two 16-inch-diameter tiedown rings (2-loop) as outlined in Figure 3-12.



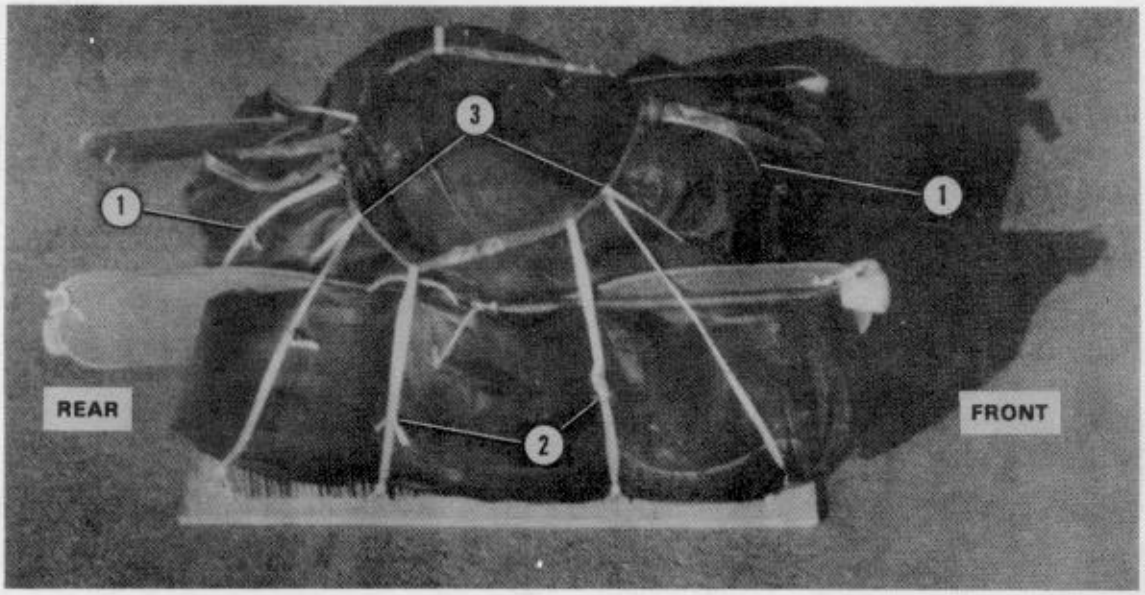
1. Fold the rear of the boat over the top of the engine and fuel cans.
2. Fold the front of the boat over the rear. The boat must be 48 inches long when folded.
3. Tie each set of three paddles together with type III nylon cord.
4. Place a set of paddles on each side of the boat. Tie each set to a carrying handle ring with type III nylon cord.

Figure 3-71. Boat and paddles stowed

b. Girth hitch the two 16-inch tiedown rings to the 30-inch tiedown ring on opposite sides.

c. Center the rings on the bundle with the 16-inch tiedown rings at the front and rear.

d. Lash the platform to the 30-inch tiedown ring as shown in Figure 3-72.



(1) Run the front and rear ties under the 16-inch (suspension) tiedown rings, under the 30-inch tiedown ring, and out through the centers of the girth hitches. Tie them with an intermediate loop as shown in Figure 3-21.

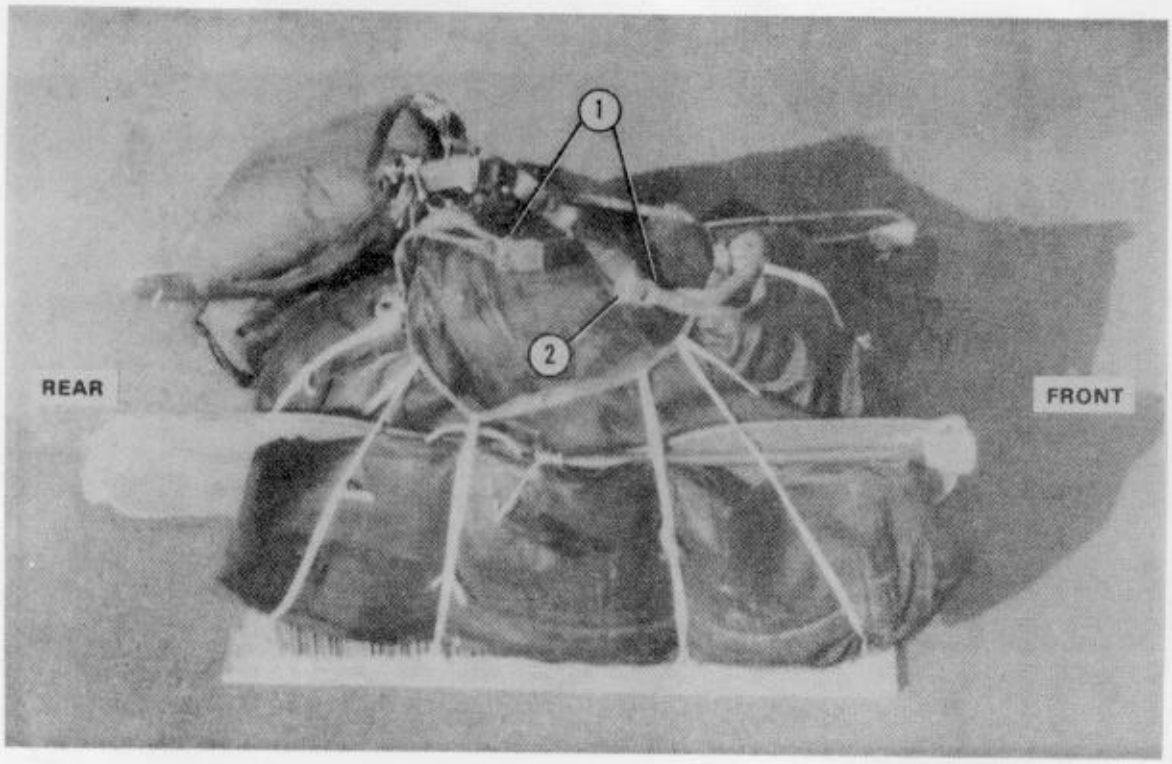
(2) Fold the sides of the boat upward, and secure them with the center two ties on each side.

(3) Split the corner ties on either side of the paddles. Secure them to the 30-inch tiedown ring with an intermediate loop.

Figure 3-72. Boat lashed

3-83. Stowing Parachute

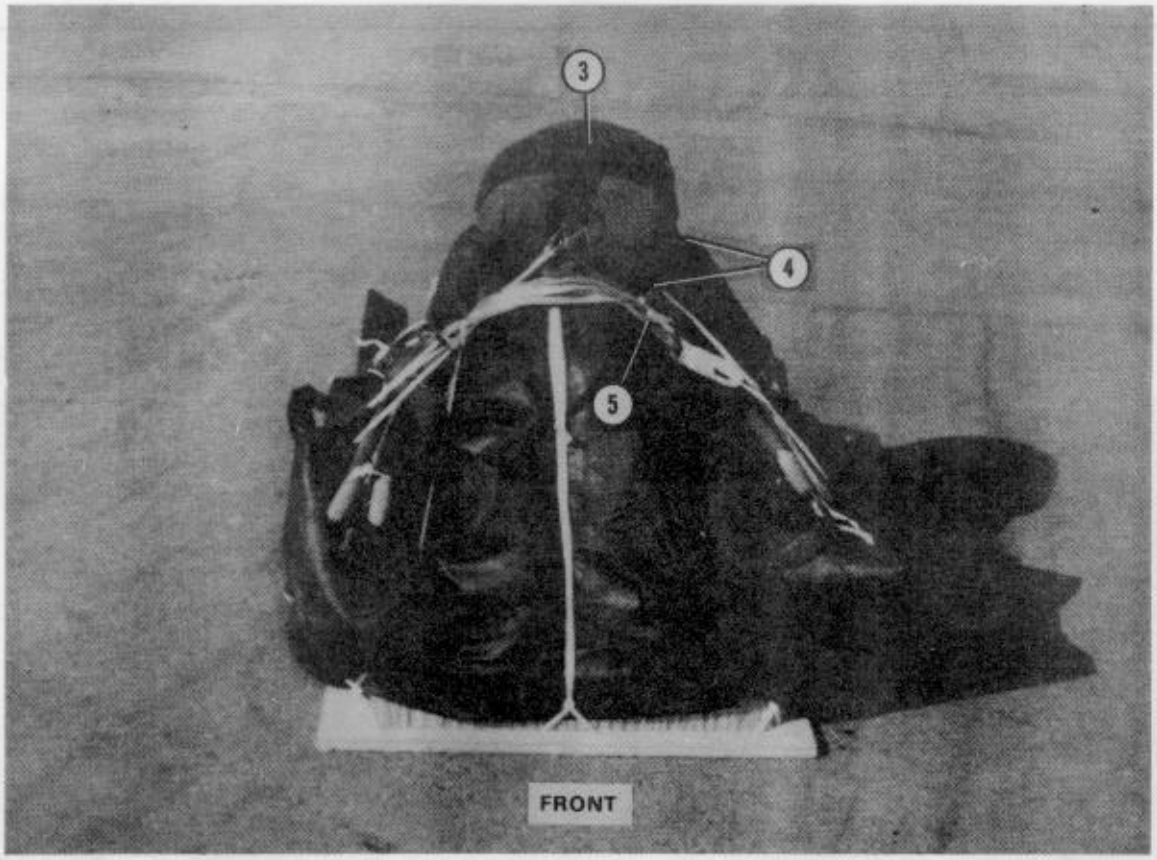
Prepare a T-10 (modified) parachute according to FM 10-501/TO 13C7-1-11, and set it on top of the load as shown in Figure 3-73.



(1) Attach one T-10 (modified) riser to each small (suspension) tiedown ring with a small clevis. Be sure that the bell portion of the clevis contacts the suspension ring.

(2) Tape the clevises and parachute risers.

Figure 3-73. T-10 (modified) parachute stowed



NOTE: IF THE LOAD IS TO BE RIGGED FOR A MULTIPLE CONTAINER DROP, POSITION THE PARACHUTE SO THAT THE STATIC LINE FACES THE ANCHOR LINE CABLE. OTHERWISE, THE IBS MAY ONLY BE DROPPED FROM THE C-130 AS A SINGLE BUNDLE OFF THE RAMP.

(3) Set the parachute on the bundle so that the static line faces the front.

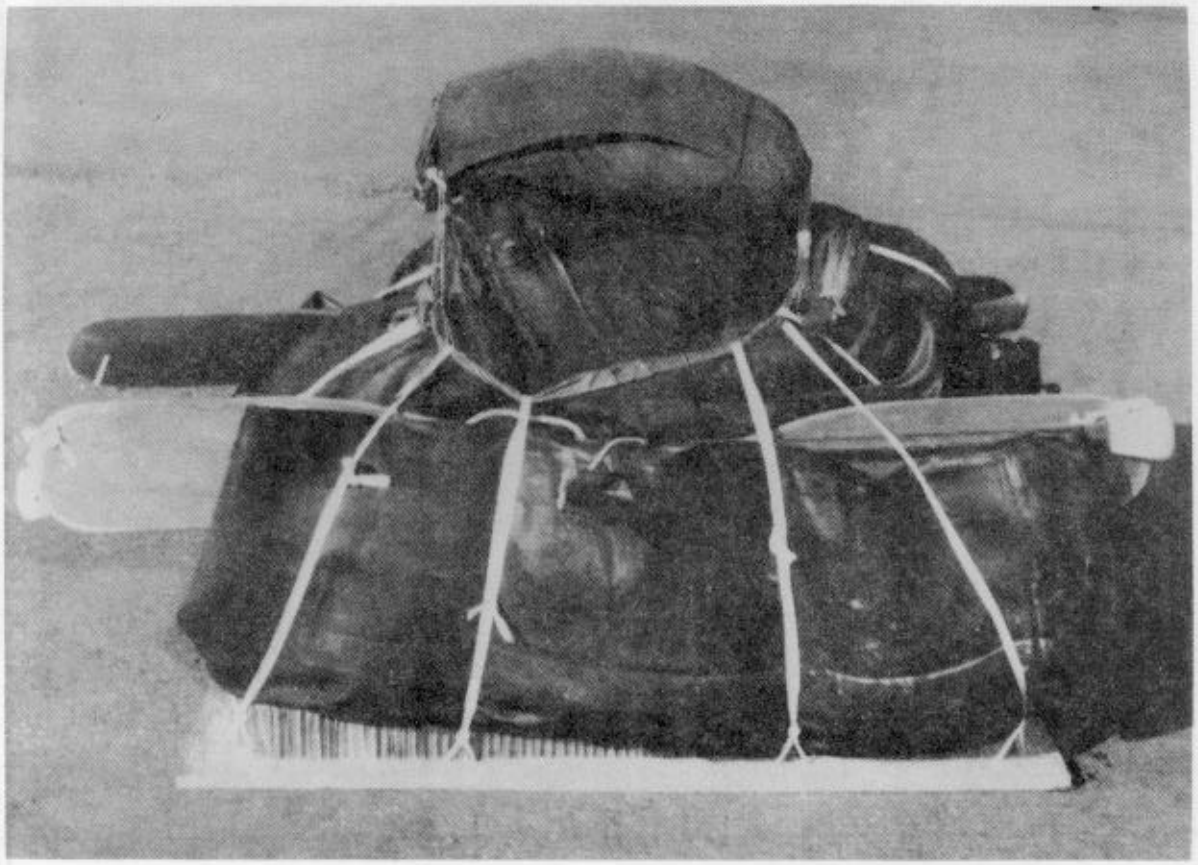
(4) Tie the deployment bag to the 30-inch tiedown ring with ticket number 5 cotton thread.

(5) Fold the static line, retaining the folds with retainer bands.

Figure 3-73. T-10 (modified) parachute stowed (continued)

3-84. Marking Rigged Load

Mark the rigged load according to FM 10-500/TO 13C7-1-5 and as shown in Figure 3-74.



RIGGED LOAD DATA

Weight	475 pounds
Height	38 inches
Width	38 inches
Length	60 inches

Figure 3-74. IBS bundle rigged for low-velocity airdrop

3-85. Equipment Required

The equipment required to rig the IBS bundle is listed in Table 3-2.

Table 3-2. Equipment required for rigging the IBS bundle

National Stock Number	Item	Quantity
4030-00-360-0304	Clevis assembly, suspension, small, 5/8-in	2
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-753-3928	Pad, energy-dissipating, honeycomb, 3- by 36- by 96-in	1 sheet
No NSN	Parachute, personnel, troop-back, 35-ft diam, T-10, cargo-adapted	
5530-00-128-4981	Plywood, 3/4- by 32- by 48-in	1
7510-00-266-5016	Tape, adhesive, 2-in	As required
8310-00-194-4065	Thread, cotton, ticket number 5 or	As required
8310-00-917-3945	Thread, cotton, 8/7 cord	As required
8305-00-082-5752	Webbing, nylon, tubular, 1/2-in	As required
8305-00-268-2455	Webbing, nylon, tubular, 1-in	As required

Section VIII
RIGGING ZODIAC F470U BOAT IN A-22 CARGO BAG

3-86. Description of Load

The description of the load rigged in this section is given below.

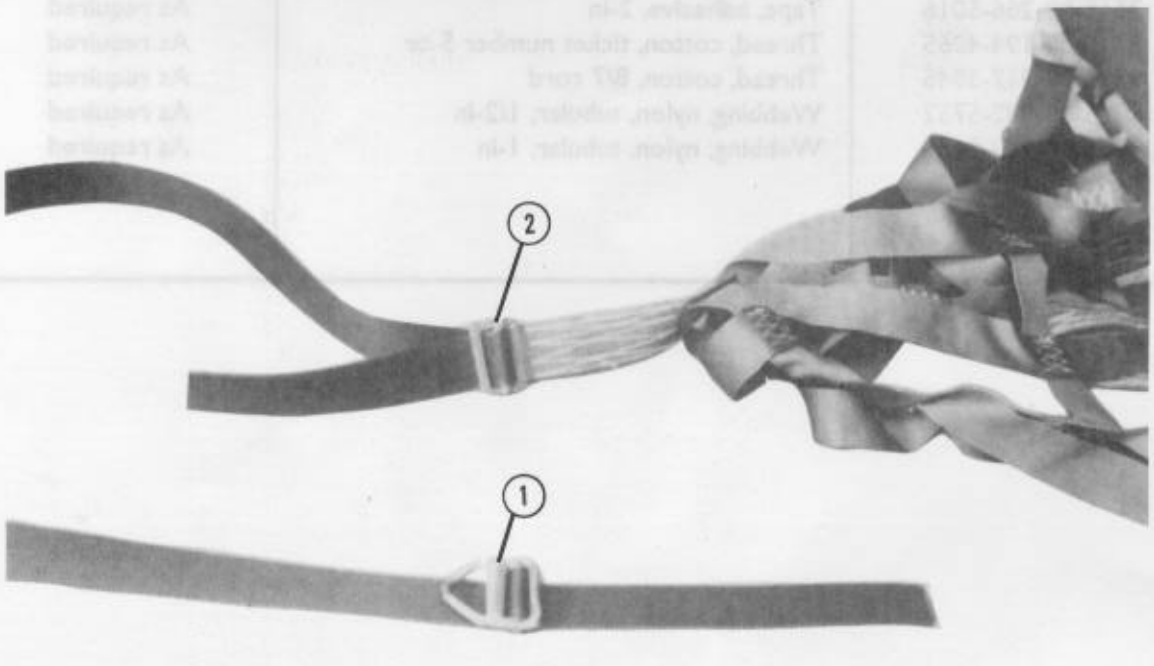
a. The Zodiak F470U Rubber Raiding Craft is described in Section VI. This boat is rigged in an adapted A-22 cargo bag on a 48- by 48-inch skid for low-velocity airdrop over water. The boat is rigged with the 35-horsepower submersible MARS engine installed on the boat transom. This load is designed for rapid inflation and deployment of the boat. The load shown weighs 600 pounds.

b. The accompanying load is limited to equipment that can be stowed on both sides of the engine box and secured within the A-22 cargo bag. No accompanying load is shown.

CAUTION: THIS LOAD DIFFERS FROM OTHER RUBBER BOAT LOADS. STRICT ADHERENCE TO RIGGING PROCEDURES IS CRITICAL.

3-87. Adapting A-22 Cargo Bag

Adapt the long and short tiedown straps on the sling assembly of the A-22 cargo bag as shown in Figure 3-75.



(1) Install a V-ring to one end of a 36-inch length of type VIII nylon webbing. Prepare a second assembly in the same way.

(2) Thread the free end of each length of type VIII nylon webbing through the quick-fit adapter on the long tiedown strap. Repeat for the short tiedown strap.

Figure 3-75. A-22 sling assembly adapted

(3) Install a parachute harness snap to each of the remaining long and short tie-down straps on the sling assembly. Install the parachute harness snap so that it will open inward when the A-22 container is closed.

(4) Make a pull handle for each parachute harness snap.

Figure 3-75. A-22 sling assembly adapted (continued)

3-88. Constructing Engine Protection Box

Construct the engine protection box as shown in Figure 3-76. If the engine protection box is to be recovered and reused, construct the box of oiled marine-grade plywood and aluminum braces. For one-time use, standard plywood and nails may be used.

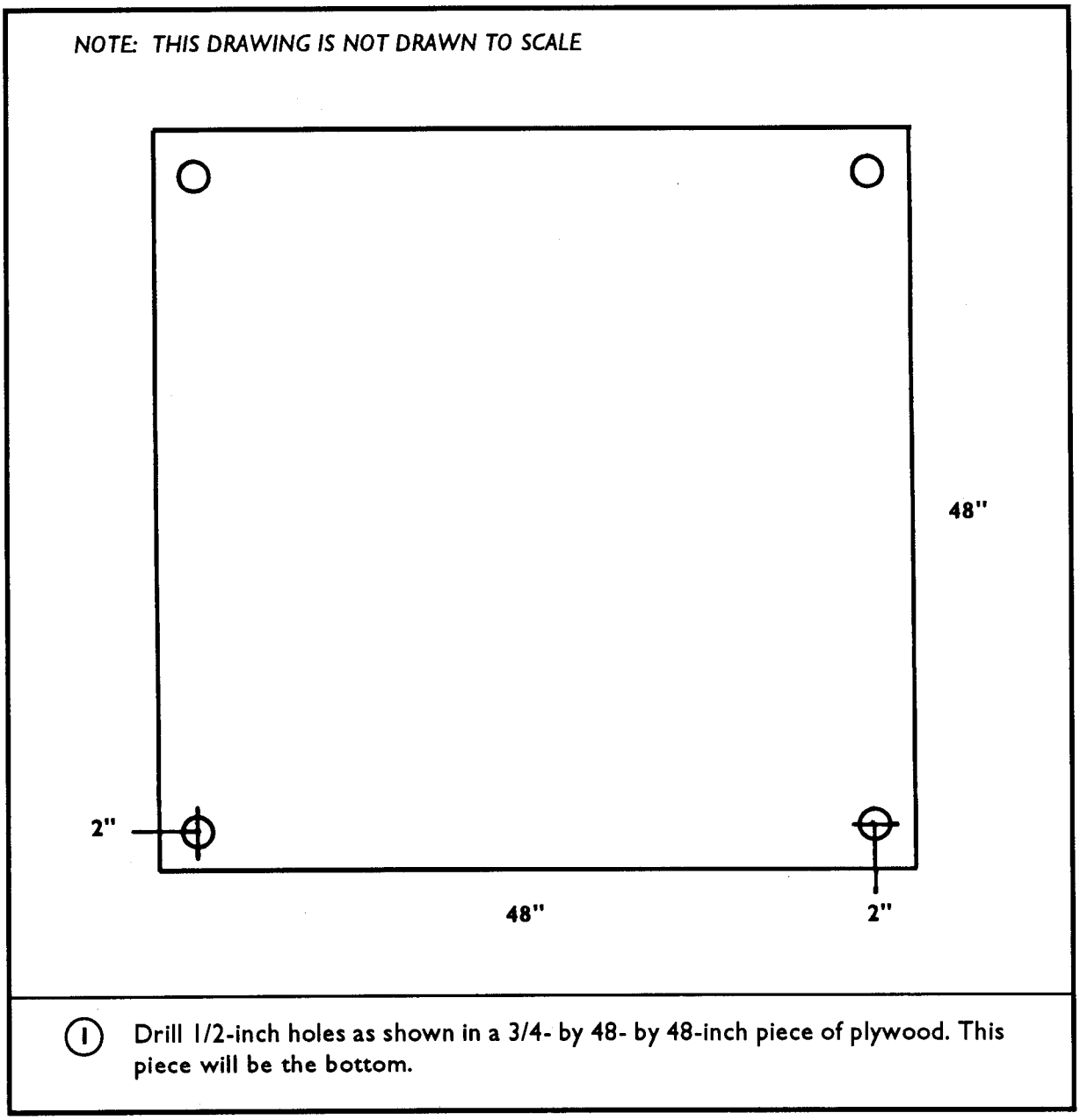
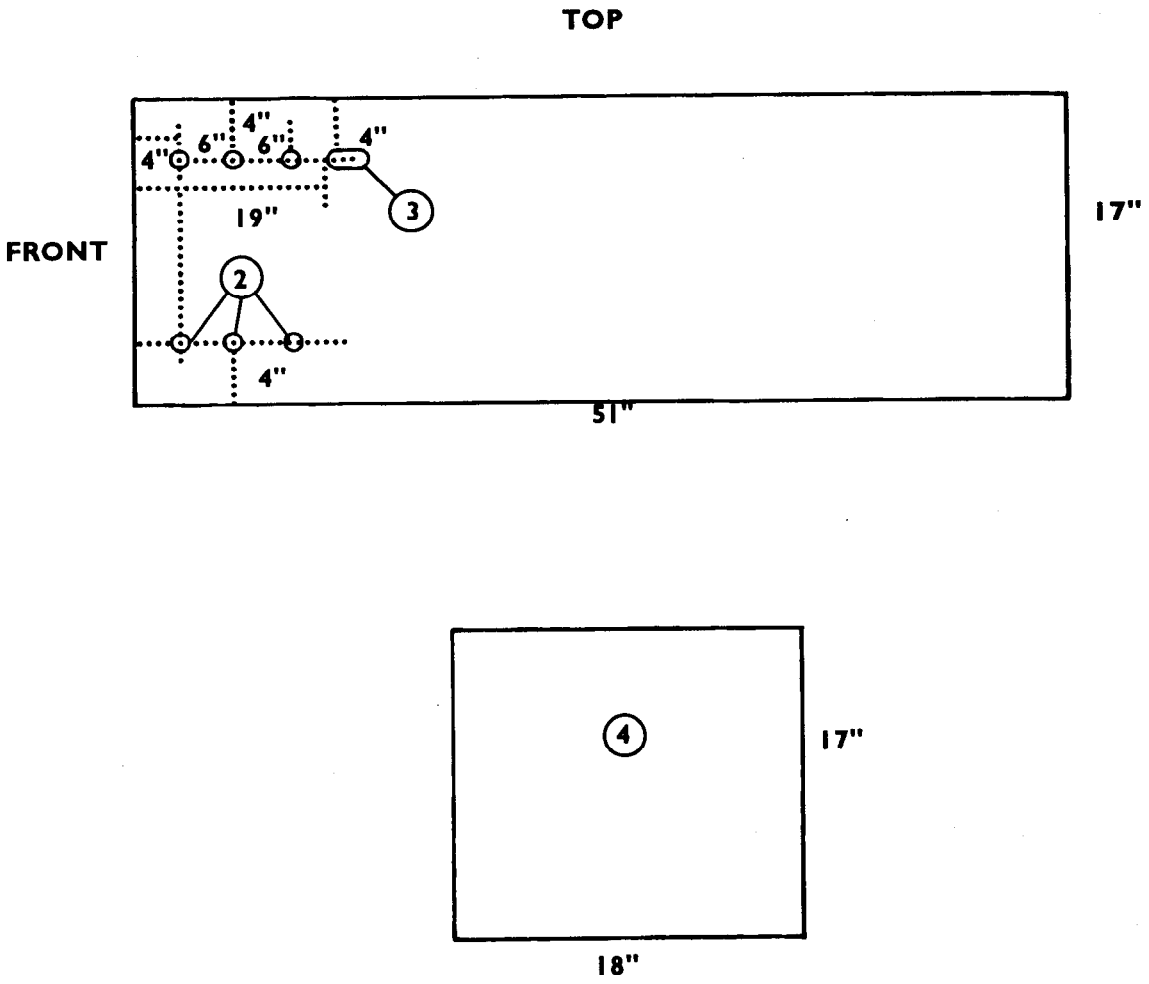


Figure 3-76. Engine protection box constructed

NOTE: THESE DRAWINGS ARE NOT DRAWN TO SCALE.



(2) Drill 1/2-inch holes as shown in two 3/4- by 17- by 51-inch pieces of plywood. These pieces will be the sides.

NOTE: ADDITIONAL HOLES MAY BE DRILLED IN THE SIDES TO SECURE EQUIPMENT.

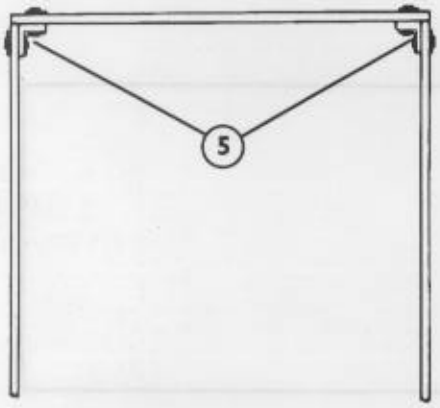
(3) Cut a 2- by 1/2-inch slot in each side 19 inches from the front edge and 4 inches from the top.

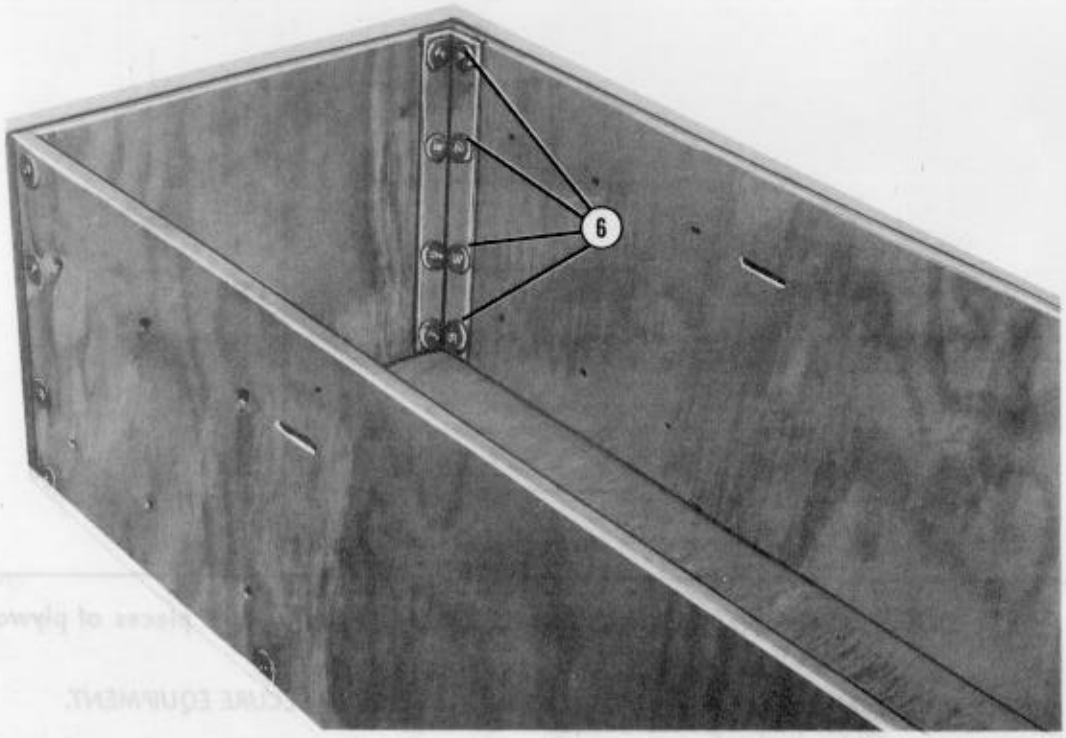
NOTE: THE LENGTH OF THE BOX SIDES MAY BE 52 INCHES TO FACILITATE THE DERIGGING OF LONG-SHAFT ENGINES.

(4) Cut two 3/4- by 17- by 18-inch pieces of honeycomb as the ends.

Figure 3-76. Engine protection box constructed (continued)

NOTE: THIS DRAWING IS NOT DRAWN TO SCALE.



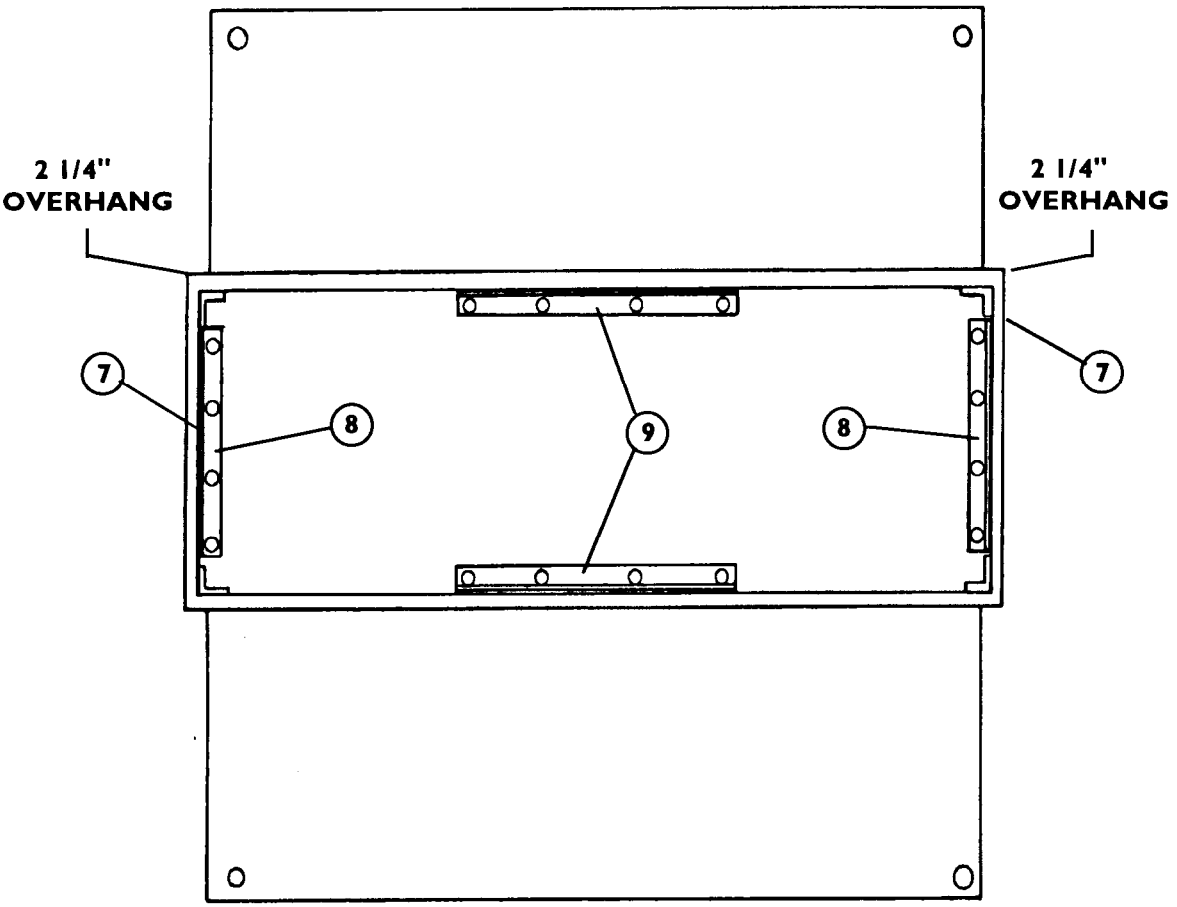


(5) Join the ends and sides of the box with 17-inch lengths of angled aluminum or Dexion braces. Fit the ends of the box to the outside edges of the sides.

(6) Drill four holes (one at each end of the brace and two evenly spaced between the end holes). Install bolts and nuts using 1 1/2-inch-diameter fender washers under each bolt and each nut.

Figure 3-76. Engine protection box constructed (continued)

NOTE: THIS DRAWING IS NOT DRAWN TO SCALE.

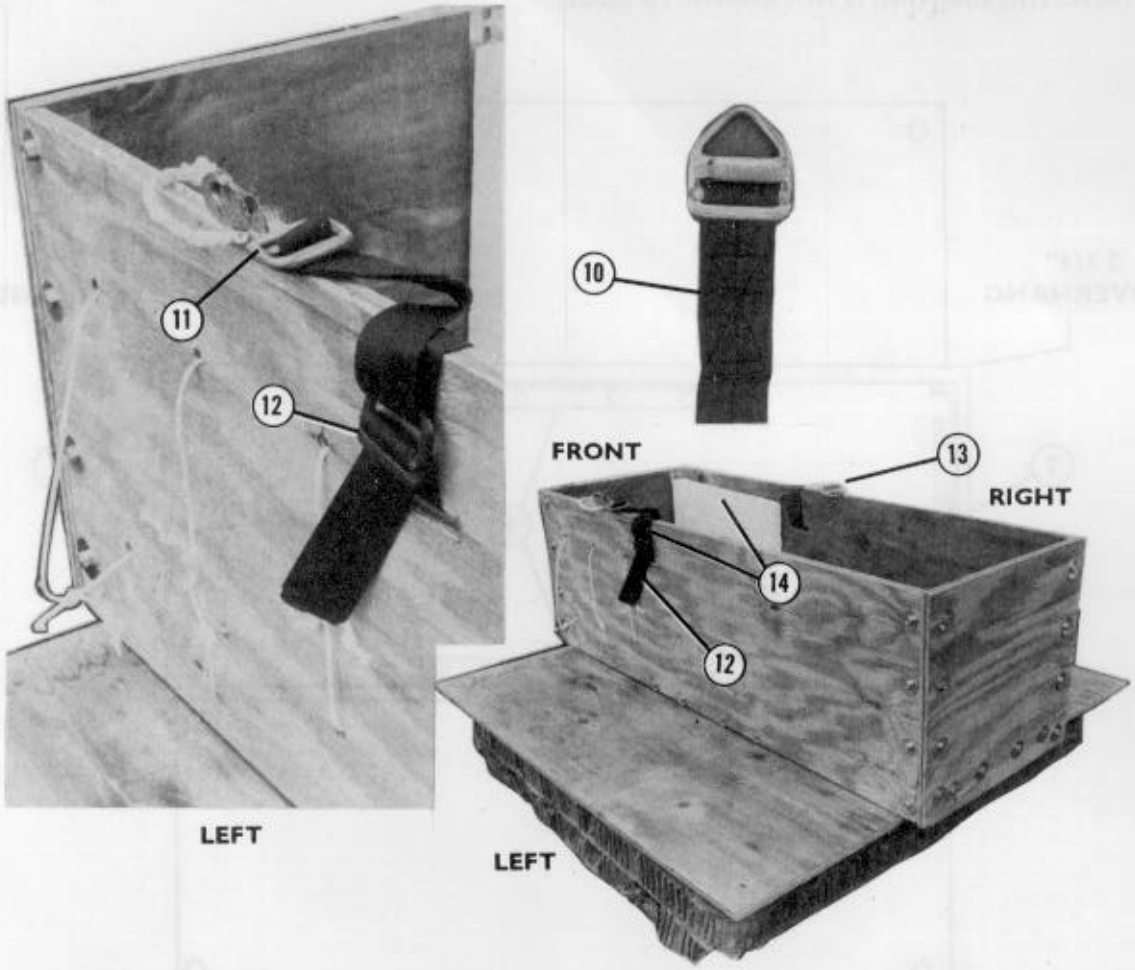


(7) Center the sides of the box over the bottom so that the ends overhang the bottom 1 1/2 inches at the front and rear.

(8) Join each end of the box to the bottom with a 14-inch length of angled aluminum or Dexion. Drill holes and install fasteners and washers as in step 6. Note that the total overhang at each end for a 51-inch box is 2 1/4 inches.

(9) Join each side of the box to the bottom with a 20-inch length of angled aluminum or Dexion centered along each side. Drill holes and install fasteners and washers as in step 6.

Figure 3-76. Engine protection box constructed (continued)



(10) Sew a V-ring to a 30-inch length of type VIII nylon webbing.

(11) Attach a parachute harness snap to another 30-inch length of type VIII nylon webbing using the friction adapter on the snap. Make a pull handle for the snap as in step 4 of Figure 3-75.

(12) With the snap opening facing the inside of the box, attach the strap with the parachute harness snap to the slot on the left side of the box using a friction adapter.

(13) Attach the strap with the V-ring to the slot on the right side of the box with a friction adapter.

(14) Place one 13- by 17-inch piece of foam padding in each front side of the box. Secure them with type III nylon cord tied through the holes in the sides of the box.

Figure 3-76. Engine protection box constructed (continued)

3-89 Modifying Type IV Link Assembly for Use With Hydraulic Release

Modify the type IV link assembly as shown in Figures 3-77 through 3-80, if the hydraulic release is to be used on this load.

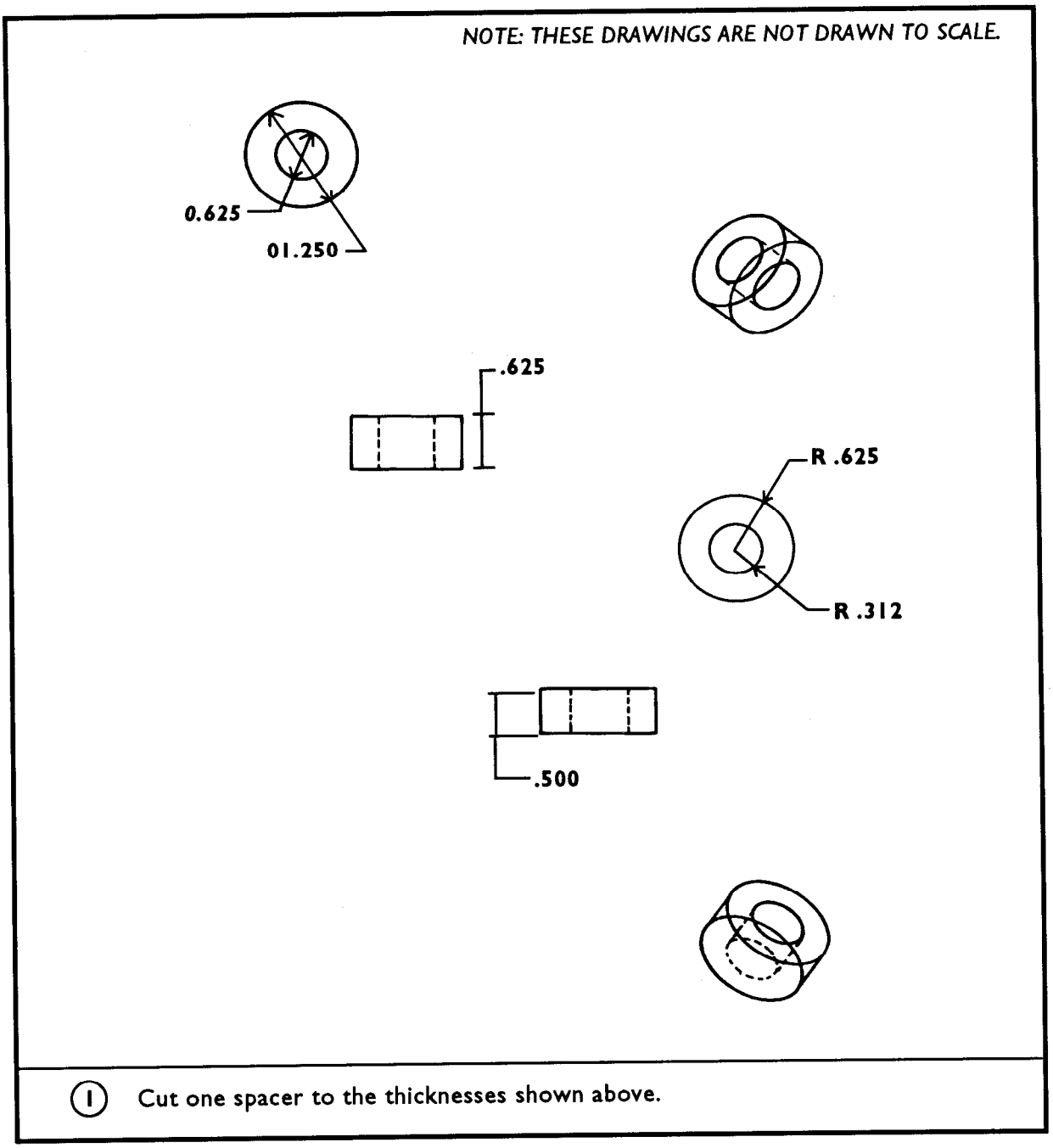
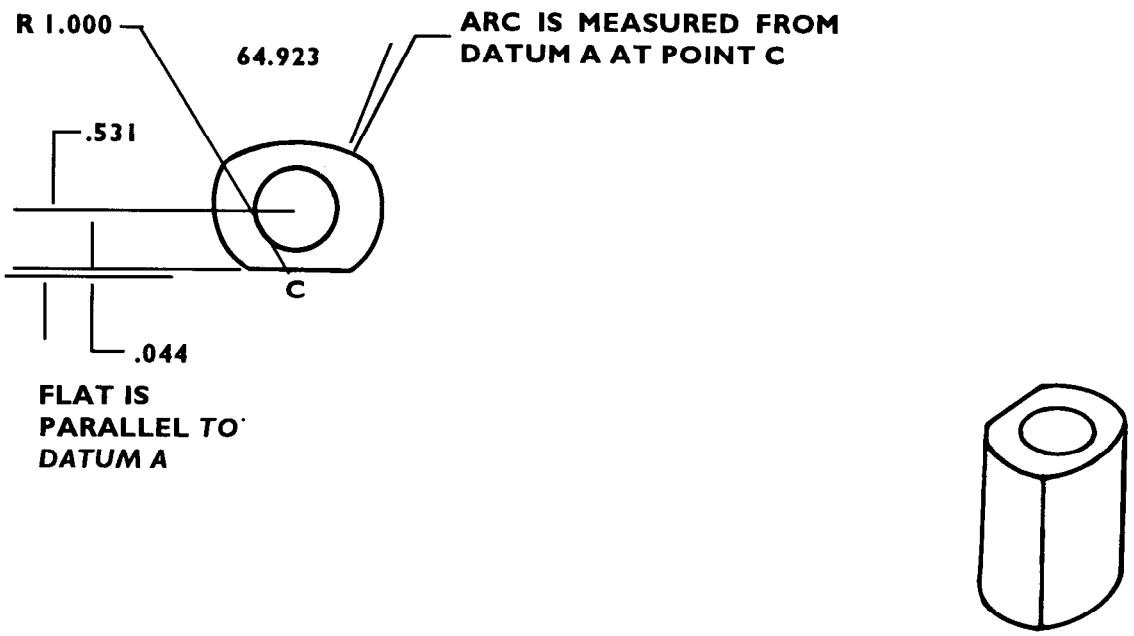
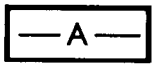


Figure 3-77. Spacer modified for release end of link

NOTE: THESE DRAWINGS ARE NOT DRAWN TO SCALE.



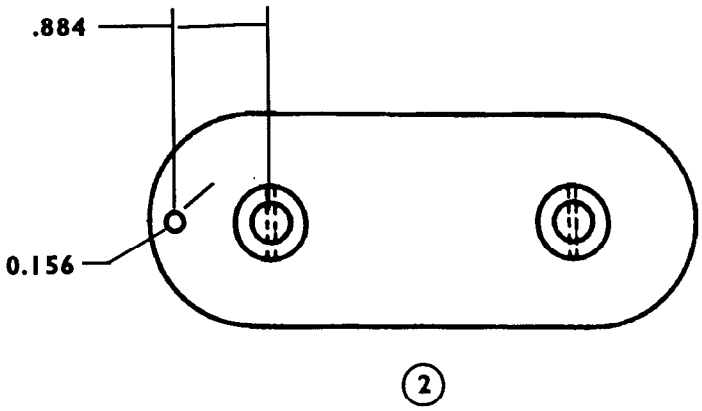


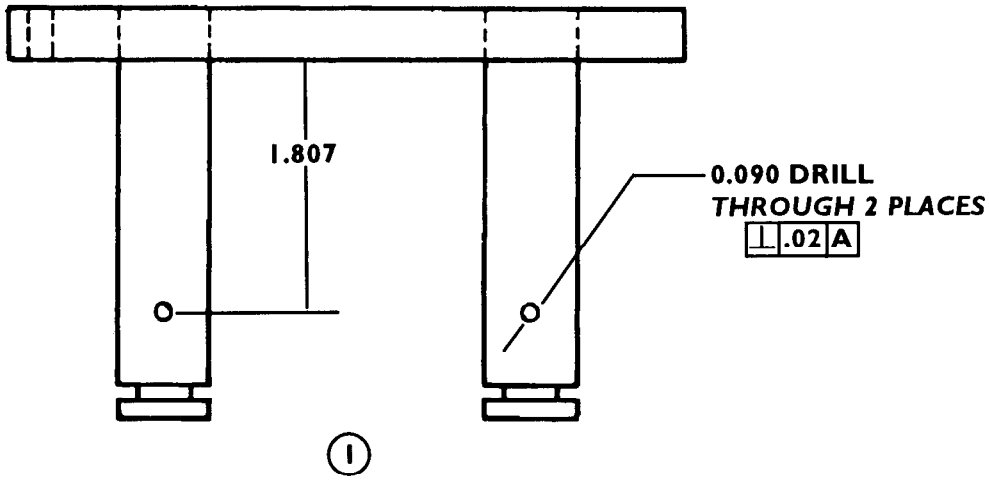
DATUM A IS PERPENDICULAR TO RADIUS OF SPACER AND AT POSITION INDICATED

(1) Mill the other spacer to the specifications shown so that the D-rings on the A-22 adapter webs fit over the spacer.

Figure 3-78. Spacer modified for load end of link

NOTE: THESE DRAWINGS ARE NOT DRAWN TO SCALE.



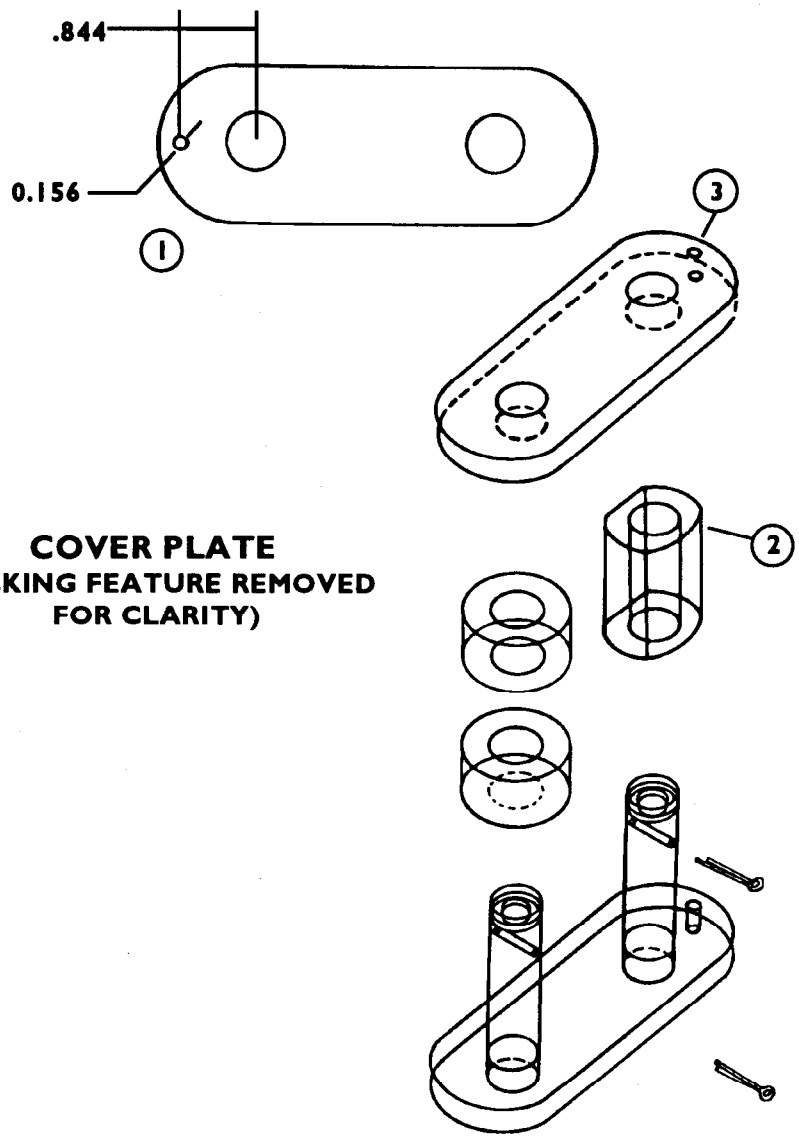


(1) Drill holes as shown in both sleeve pins of the link assembly.

(2) Drill a hole in one end of the link assembly body as shown.

Figure 3-79. Link assembly body modified

NOTE: THESE DRAWINGS ARE NOT DRAWN TO SCALE.



COVER PLATE
(LOCKING FEATURE REMOVED FOR CLARITY)

(1) Drill a hole as shown in the closure end of the side plate.

(2) Place the milled single spacer on the same end of the link assembly body as the drilled hole.

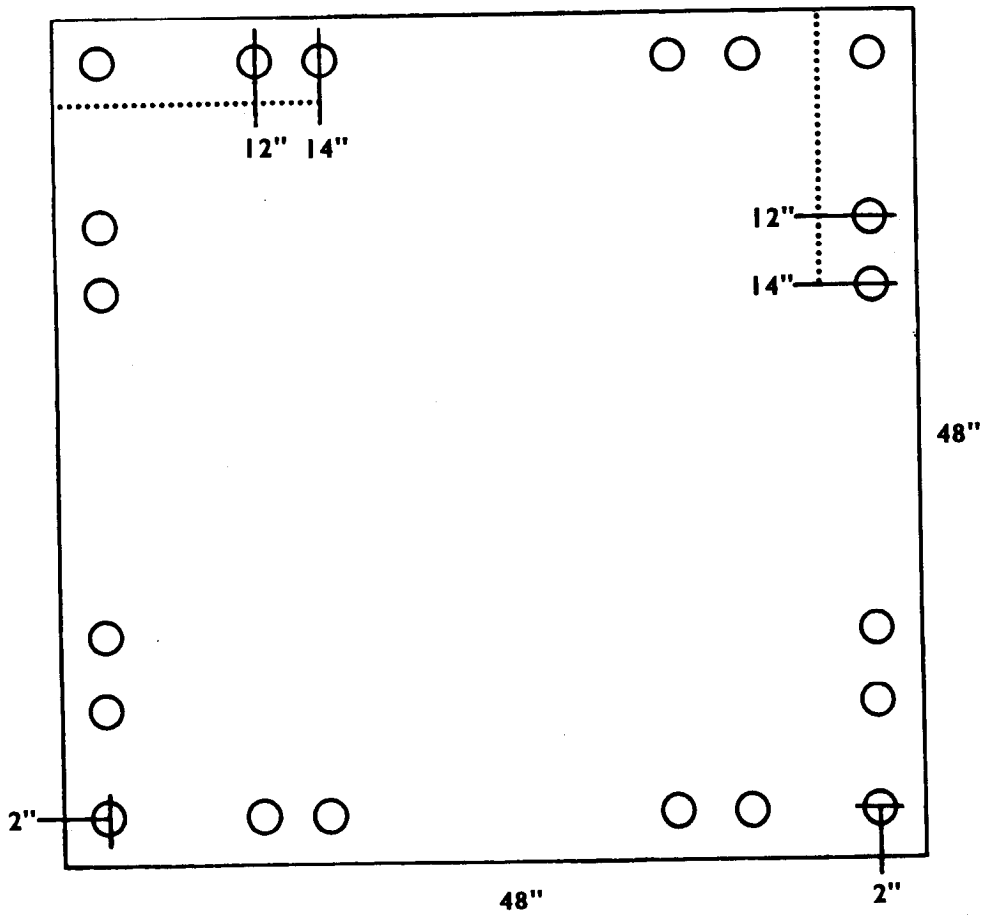
(3) Assemble the link as shown. Place the side plate on the link assembly with the drilled hole at the same end as the milled spacer.

Figure 3-80. Side plate modified and link assembled

3-90. Preparing Skid and A-22 Cargo Bag and Placing Engine Box

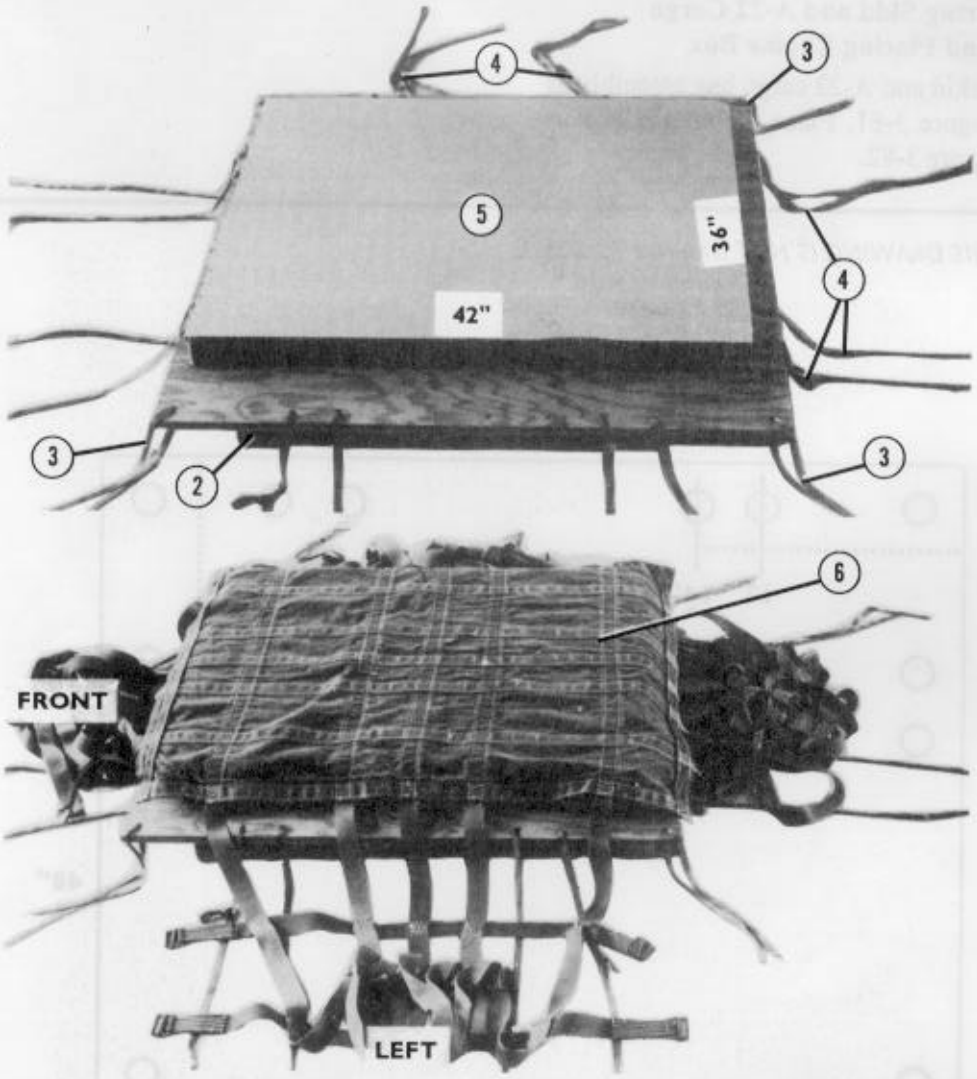
Prepare the skid and A-22 cargo bag assembly as shown in Figure 3-81. Place the engine box as shown in Figure 3-82.

NOTE: THIS DRAWING IS NOT DRAWN TO SCALE.



(1) Drill 1/2-inch holes as shown in a 3/4- by 48- by 48-inch piece of plywood.

Figure 3-81. Skid and A-22 cargo bag prepared



(2) Place the skid on dunnage to allow lifting by forklift.

(3) Center a 24-inch length of 1/2-inch tubular nylon webbing through each corner hole.

(4) Pass a length of 1/2-inch tubular nylon webbing through each pair of holes in the sides of the skid board.

(5) Center a 36- by 42-inch piece of honeycomb on the skid as shown.

(6) Center the scuff pad of the A-22 sling assembly over the honeycomb and skid. Be sure the parachute harness snaps installed in Figure 3-75 are on the front and left sides of the load.

Figure 3-81. Skid and A-22 cargo bag prepared (continued)

(1) Center the A-22 cover assembly over the scuff pad. Tuck the slings and cover flaps around the skid to allow working space.

(2) Center the base of the engine box over the skid and A-22 cargo bag.

(3) Tie the corners of the skid to the corners of the engine box using the lengths of 1/2-inch tubular nylon webbing placed in step 3 of Figure 3-81.

Figure 3-82. Engine box placed

3-91. Preparing Engine and Securing Engine in Box

Prepare a 35-horsepower MARS submersible engine and secure it in the engine box as described below.

a. Prepare the engine with the assistance of a boat operator as described below.

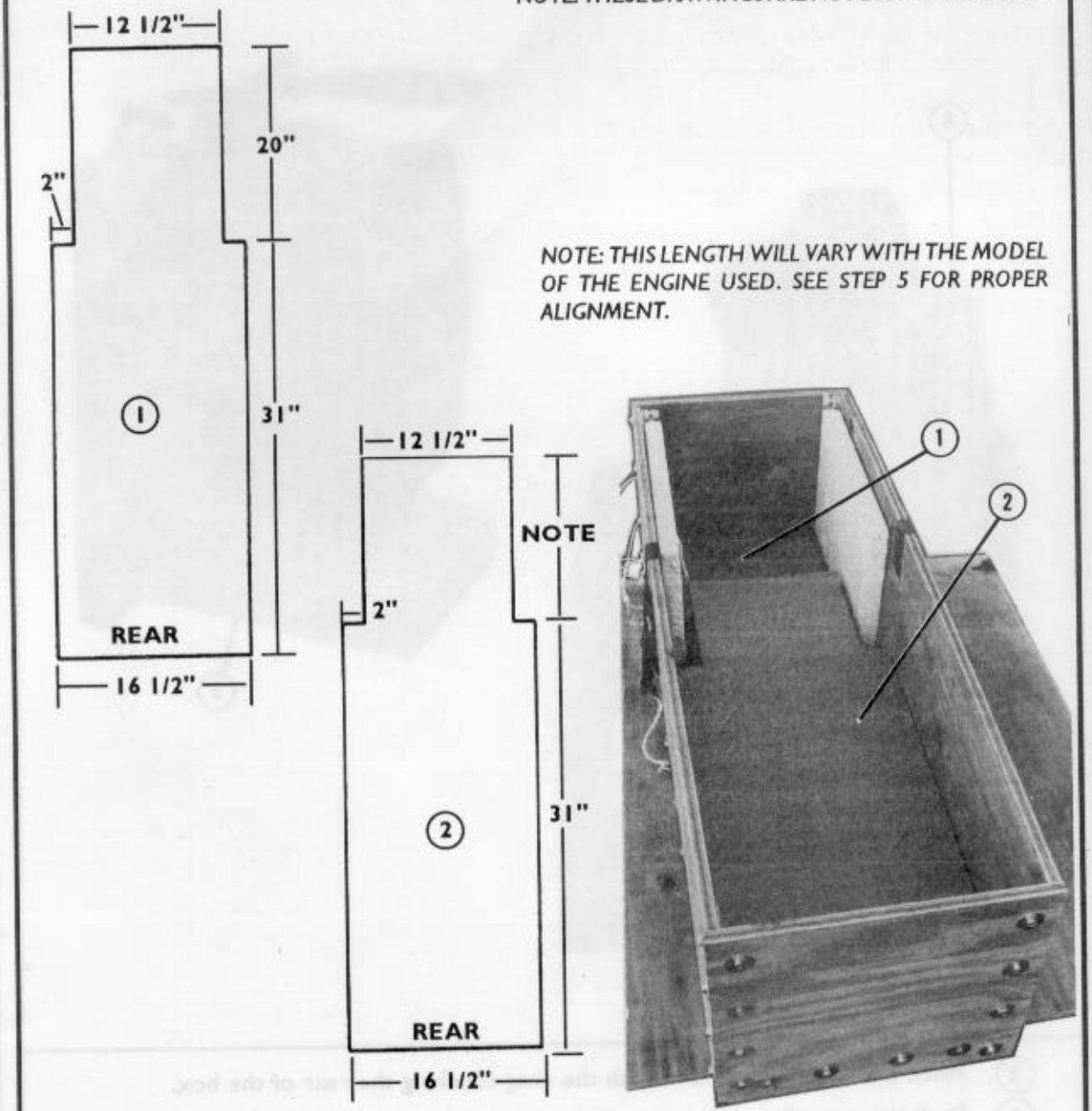
(1) Place the shift lever in the NEUTRAL position

(2) Open the throttle fully.

(3) Place the dewatering valve in the OUT position.

(4) Coat the ignition components with moisture-resistant sealer.

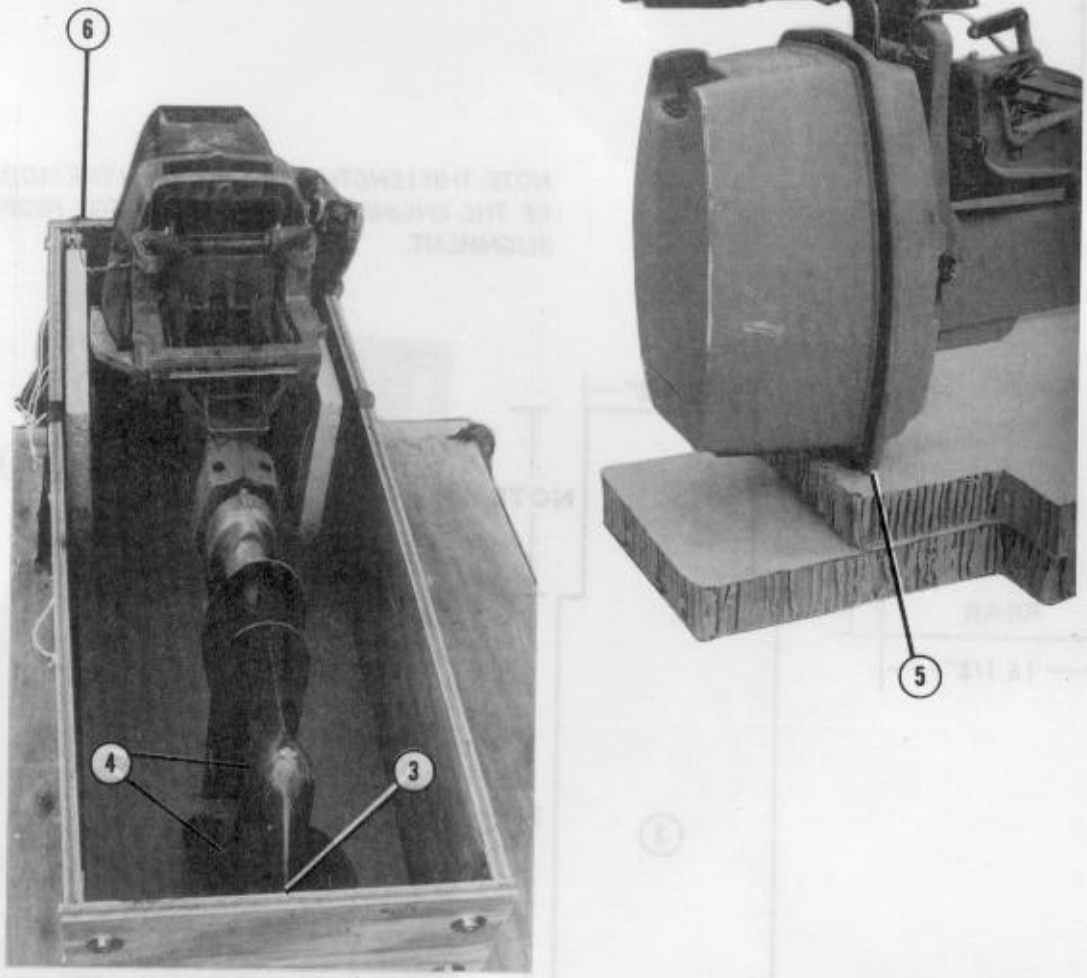
b. Place the engine in the engine box, pad it with honeycomb, and secure it as shown in Figure 3-83.



(1) Cut a piece of honeycomb as shown. Place it in the bottom of the engine box.

(2) Cut the second piece of honeycomb as shown. Place it in the box, aligning the rear edge with the rear edge of the first piece.

Figure 3-83. Engine secured in box



(3) Place the engine in the box with the skeg touching the rear of the box.

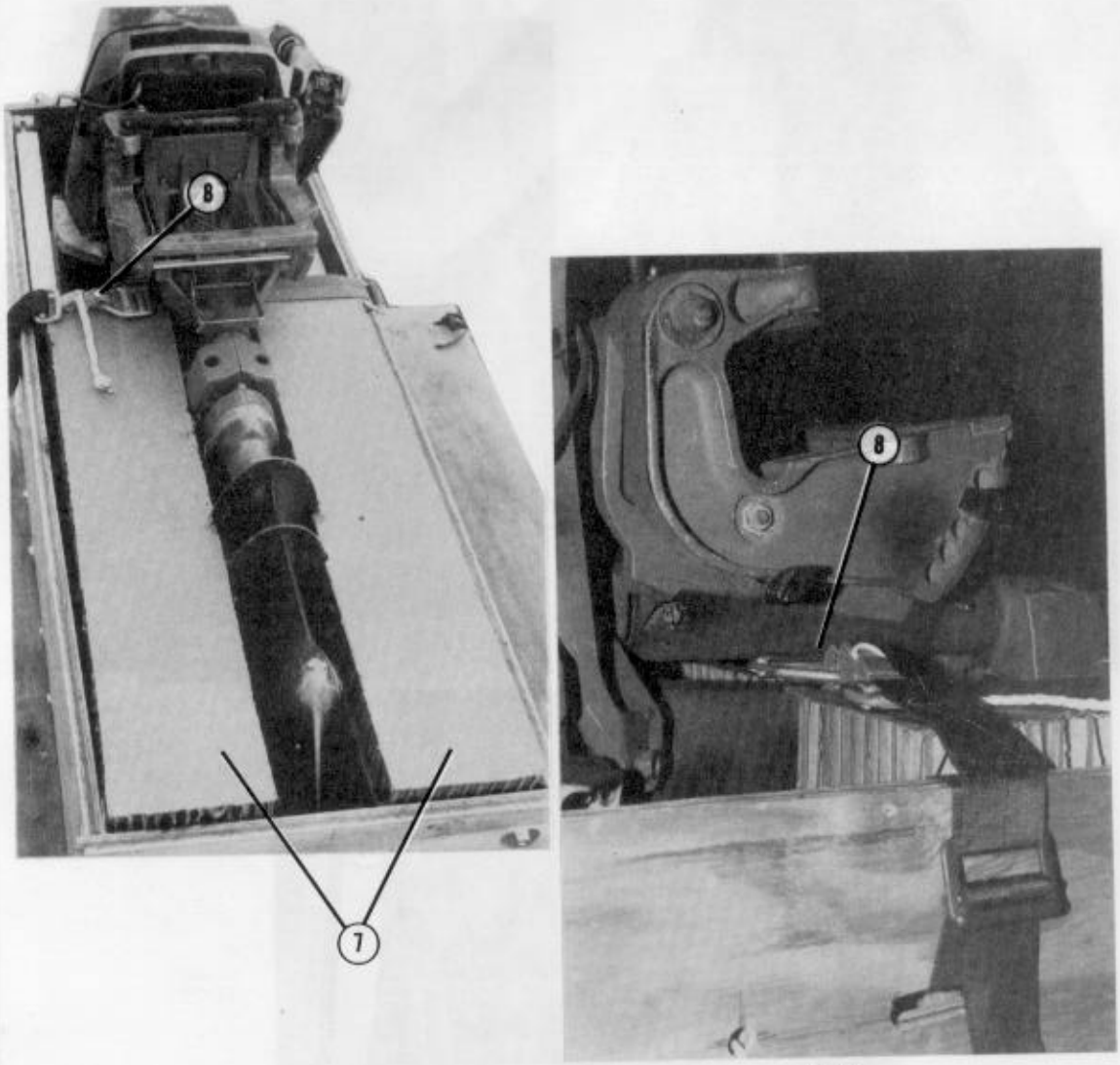
(4) Push the propeller and antiventilation plate down into the honeycomb.

(5) Be sure that the metal ledge below the engine cover rests on the honeycomb as shown. (The box is NOT shown here for visual purposes.)

NOTE: BE SURE THE ENGINE COVER DOES NOT REST ON THE HONEYCOMB.

(6) Leave the engine retention cable outside the box.

Figure 3-83. Engine secured in box (continued)

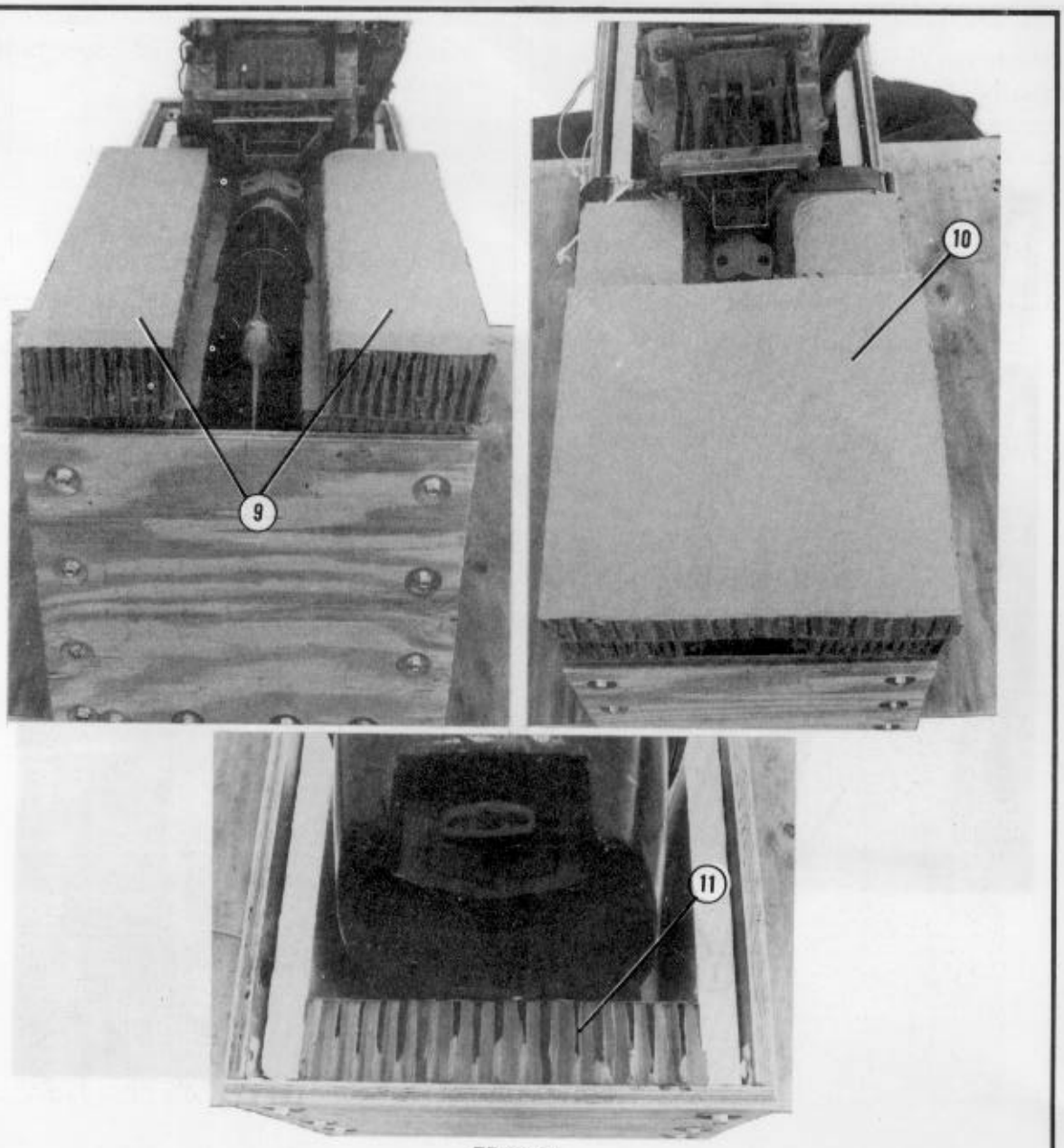


LEFT

(7) Place four 6- by 30-inch pieces of honeycomb in the box on each side of the lower engine shaft.

(8) Fasten the engine restraint strap snugly over the engine. Pass the strap between the engine mounting bracket and drive shaft housing.

Figure 3-83. Engine secured in box (continued)



(9) Place a layer of 6- by 26-inch honeycomb on each side of the engine, flush with the rear corners of the box.

(10) Place an 18- by 18-inch piece of honeycomb flush over the rear of the box.

(11) If the short-shaft engine is being rigged, place a 9- by 15-inch piece of honeycomb between the top of the engine and the front end of the engine box.

Figure 3-83. Engine secured in box (continued)

3-92. Preparing Boat and Inflation System

Prepare the F470U boat and the inflation system as described below.

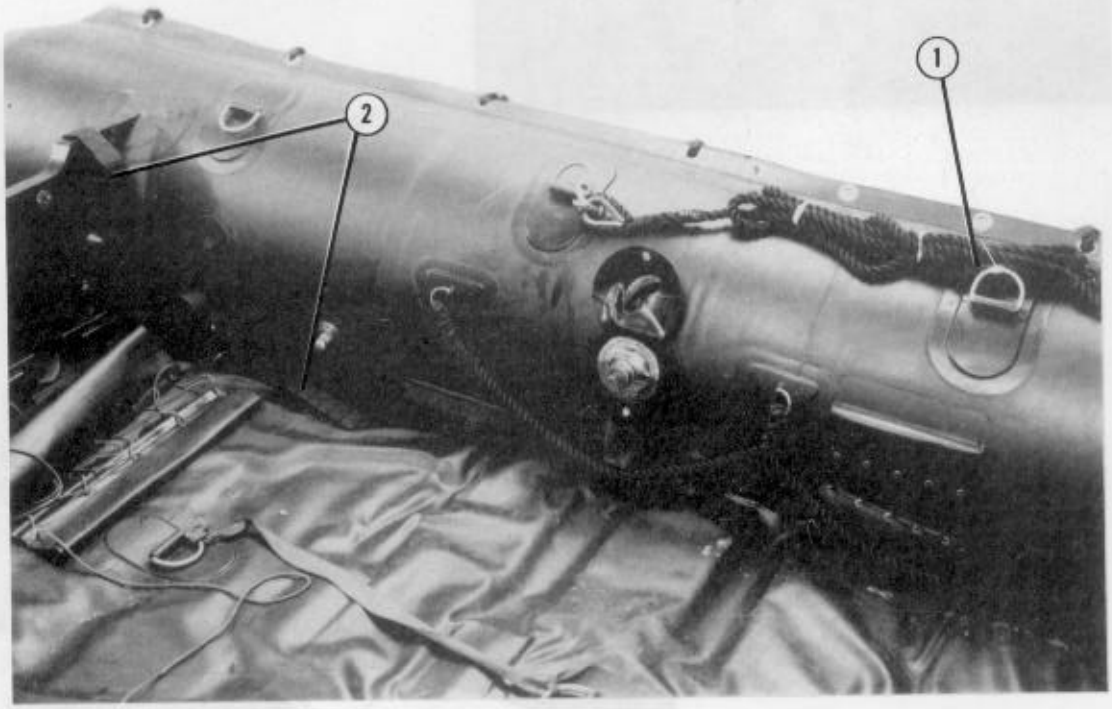
a. Make a pressure check on the boat in accordance with the manufacturer's manual.

b. Be sure the bow line is less than 12 feet long.

c. Stow any tools, spare engine parts, foot pump, and hose in the bow storage pouches. Attach chemical lights (not red) to the zipper pulls if mission requirements dictate.

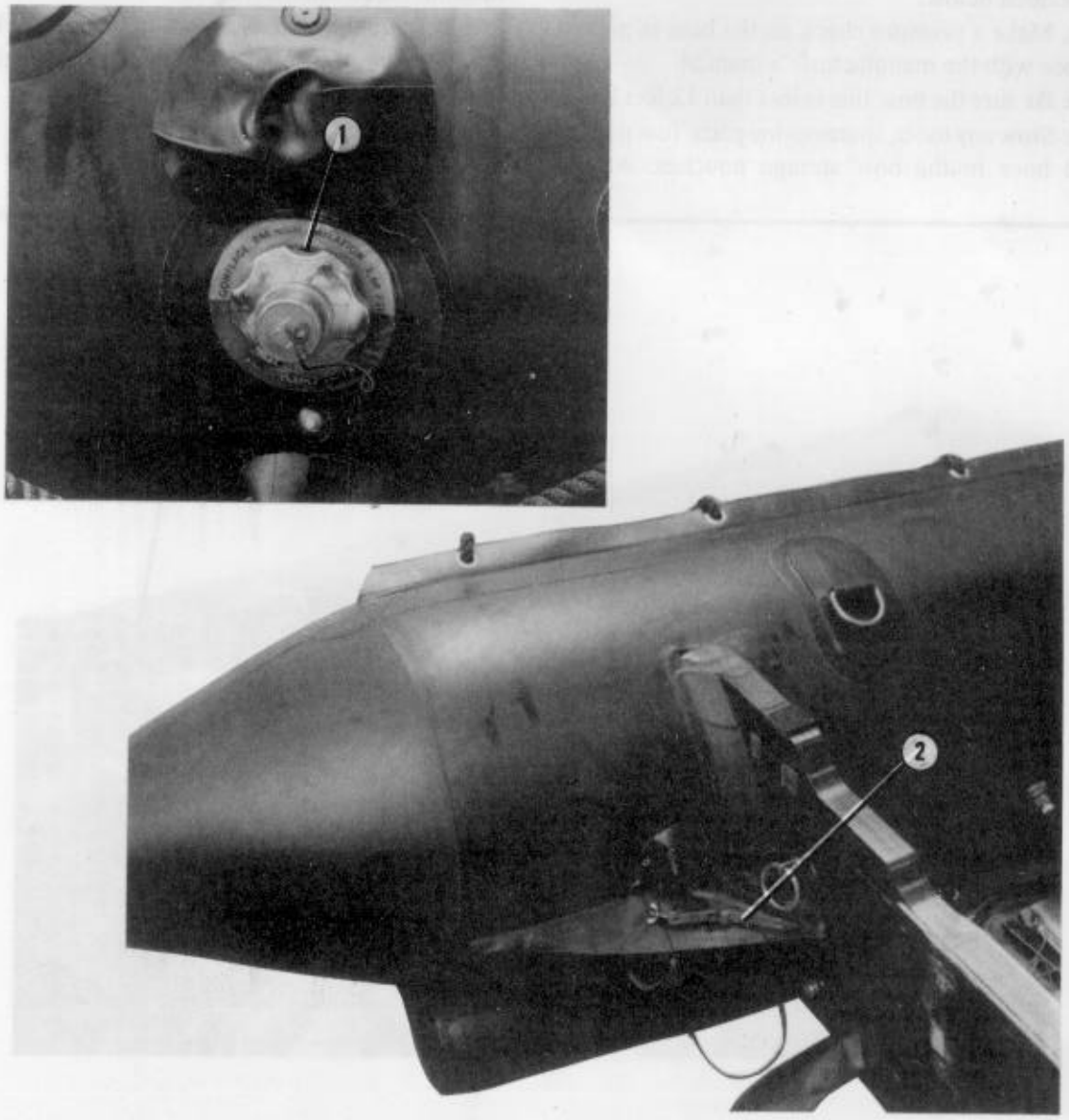
d. Prepare the boat as shown in Figure 3-84.

e. Prepare the inflation system as shown in Figure 3-85.



(1) S-fold all loose boat lines. Secure the folds to adjacent rings with retainer bands.
(2) Loosen the transom straps.

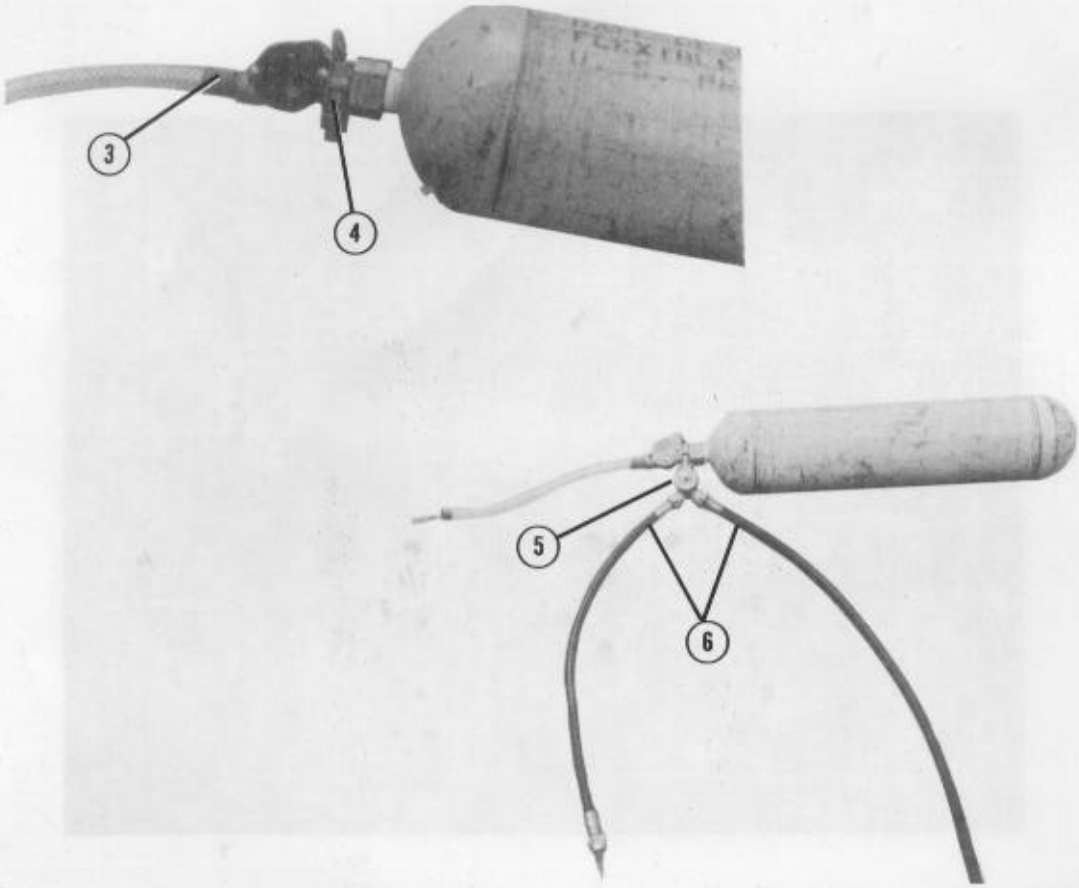
Figure 3-84. Boat prepared



(1) Be sure all four valves are set in the center of the inflation (red) position.

(2) Remove the isolator clamps from the shock absorption tubes. Store them in the pouch provided.

Figure 3-85. Inflation system prepared



CAUTIONS: 1. USE ONLY CO_2 TO INFLATE THE BUOYANCY TUBES ON THIS BOAT. THE AIR SYSTEM SUPPLIED BY THE MANUFACTURER IS NOT ADEQUATE FOR THIS APPLICATION.

2. BE SURE THE INFLATION BOTTLE IS FILLED WITH 11.8 POUNDS OF CO_2 AND .2 POUND OF N_2.

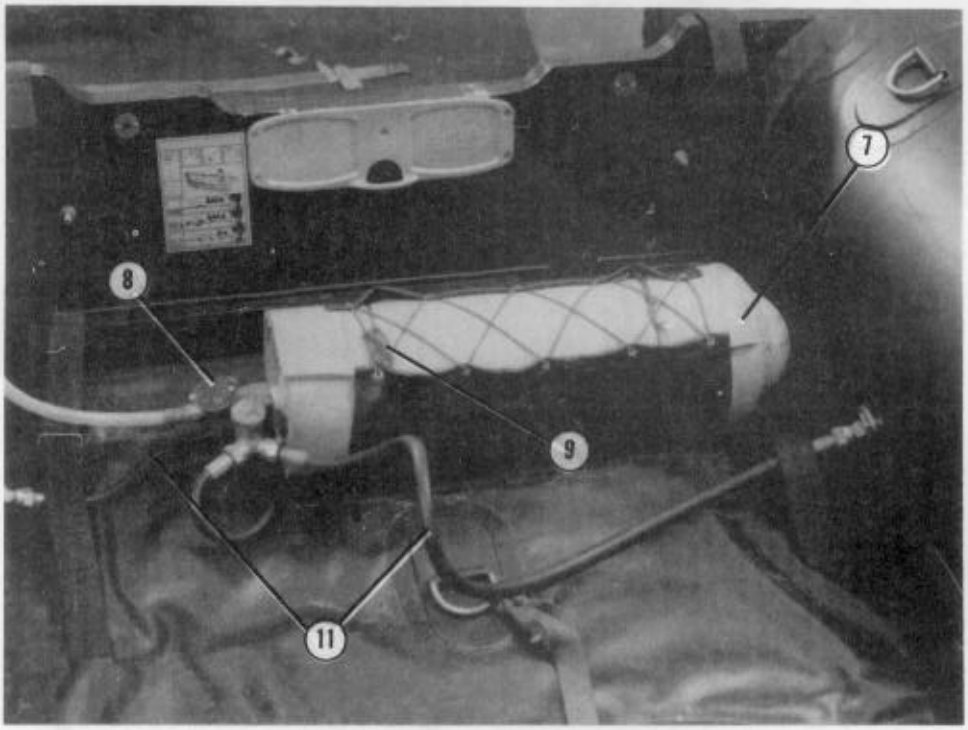
(3) Be sure the CO_2 bottle has the pull cable attached to the upward pull side of the valve.

(4) Be sure that the valve charge indicator shows green.

(5) Wrap the threads of the outlet fitting with two turns of Teflon tape (not shown) and attach the Y valve with vent.

(6) Attach the filler hoses provided with the boat to the Y valve. Install the short hose to the left and the long hose to the right.

Figure 3-85. Inflation system prepared (continued)



(7) Pad the tank with foam. Use type I, 1/4-inch cotton webbing to tie the foam in place.

(8) Place the tank in the holder provided with the valve facing the right side. Face the valve as shown.

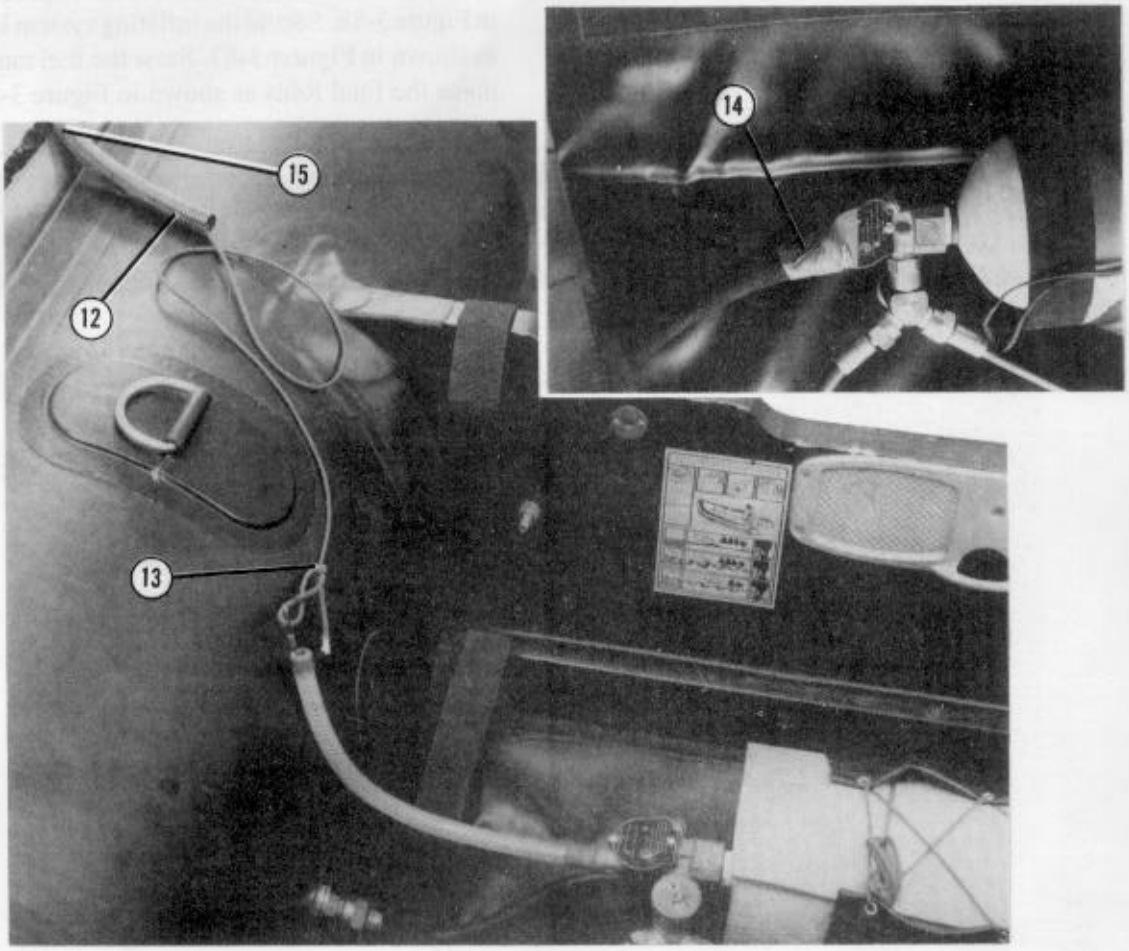
(9) Lace the tank snugly into the holder. Tuck any loose ends of lacing into the holder.

(10) Be sure each female hose coupling has a nylon washer. Wrap the inflation fittings on the boat with two turns of Teflon tape (not shown).

(11) Route the hoses under the transom straps to the buoyancy tube connectors with the long hose to the right and the short hose to the left. Tighten the connections snugly with a wrench.

CAUTION: DO NOT INFLATE THE KEEL WITH CO_2. THIS OPERATION USES AIR AND IS DONE WHEN THE BOAT IS RECOVERED.

Figure 3-85. Inflation system prepared (continued)



(12) Insert an 8-foot length of type III nylon cord in a 60-inch length of 5/8-inch garden hose or rubber automotive hose.

(13) Tie the type III nylon cord to the lanyard of the CO_2 bottle with an inside bowline knot. Tie the knot as shown in FM 10-500-2/TO 13C7-1-5, and leave a 3- to 4-inch loop in the cord.

(14) Place the end of the hose snugly against the bottle valve. Tape the hose to the valve.

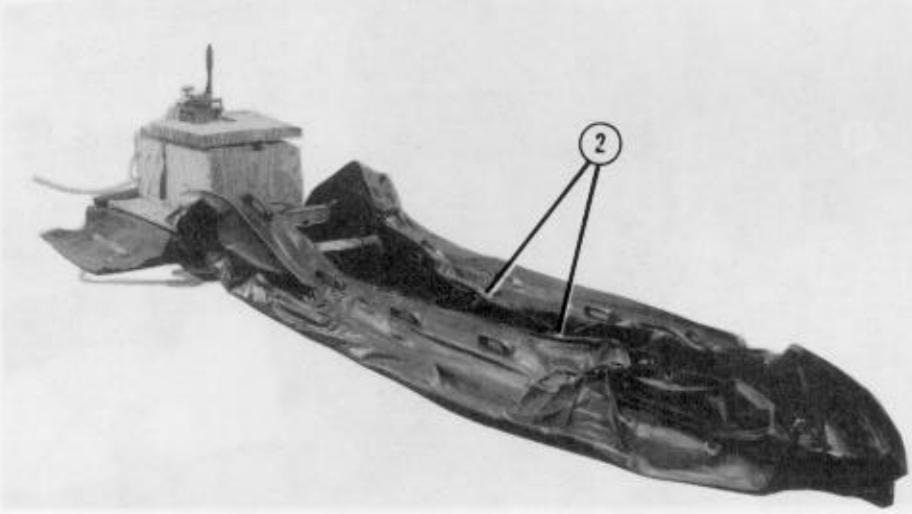
(15) Pass the hose out of the boat, toward the transom.

Figure 3-85. Inflation system prepared (continued)

3-93. Collapsing and Folding Boat and Loading Fuel Tanks

Collapse the boat and attach it to the engine shown in Figure 3-86. Secure the inflating system lanyard as shown in Figurer 3-87. Stow the fuel tanks and make the final folds as shown in Figure 3-88.

CAUTION: BE SURE THAT THE ISOLATOR CLAMPS ARE REMOVED FROM THE SHOCK ABSORPTION TUBES AND STOWED. BE SURE ALSO THAT ALL INFLATION VALVES ARE CLOSED AND IN THE CENTER OF INFLATION (RED) POSITION.

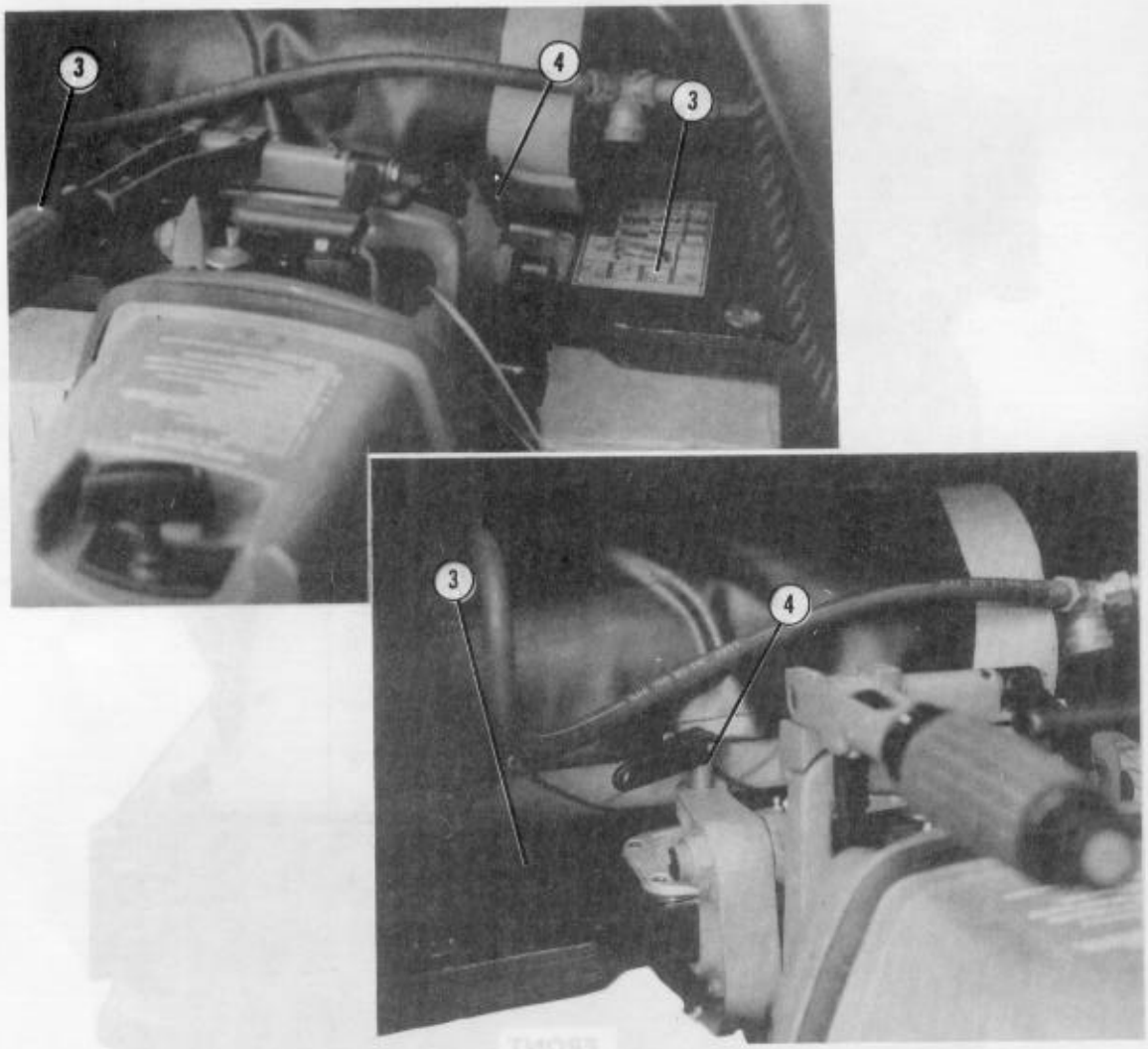


(1) Use an industrial strength vacuum cleaner to vacuum the air out of the floor of the boat and to vacuum the CO_2 out of the buoyancy tubes.

(2) Fold the side tubes in toward the center. The bottom seams of the buoyancy tubes will lie along the edge of the deflated boat. The left and right tubes will touch as they are folded toward the center of the boat.

NOTE: PERFORM STEPS 1 AND 2 SIMULTANEOUSLY.

Figure 3-86. Boat collapsed and attached to engine

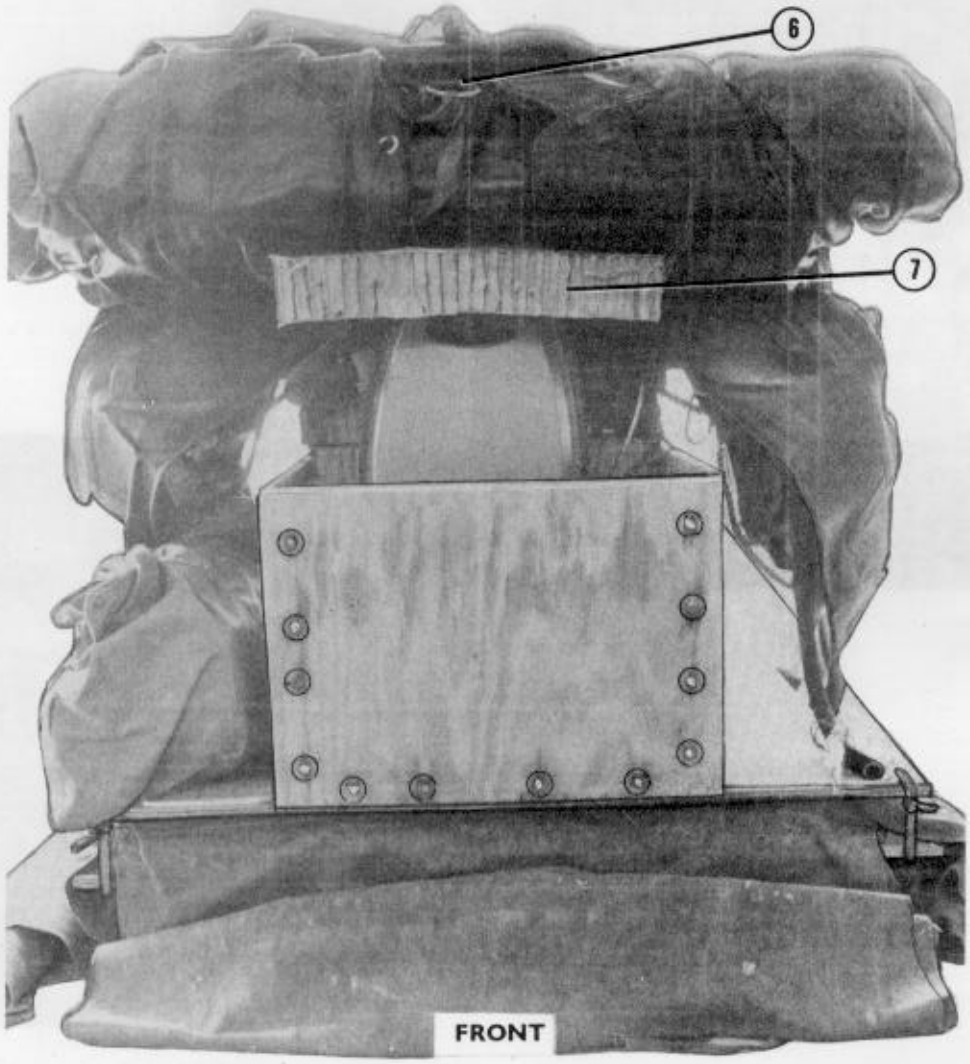


(3) Open the mounting clamps on the engine. Lift the transom of the boat with the help of assistants and slide the transom into the engine mounting clamps. Crush the surrounding honeycomb, if necessary.

(4) Be sure that the clamps are aligned with the metal engine mounting pads on the transom. Tighten the engine mounting clamps.

(5) Attach the engine safety cable to the ring provided on the transom using a small clevis (not shown).

Figure 3-86. Boat collapsed and attached to engine (continued)

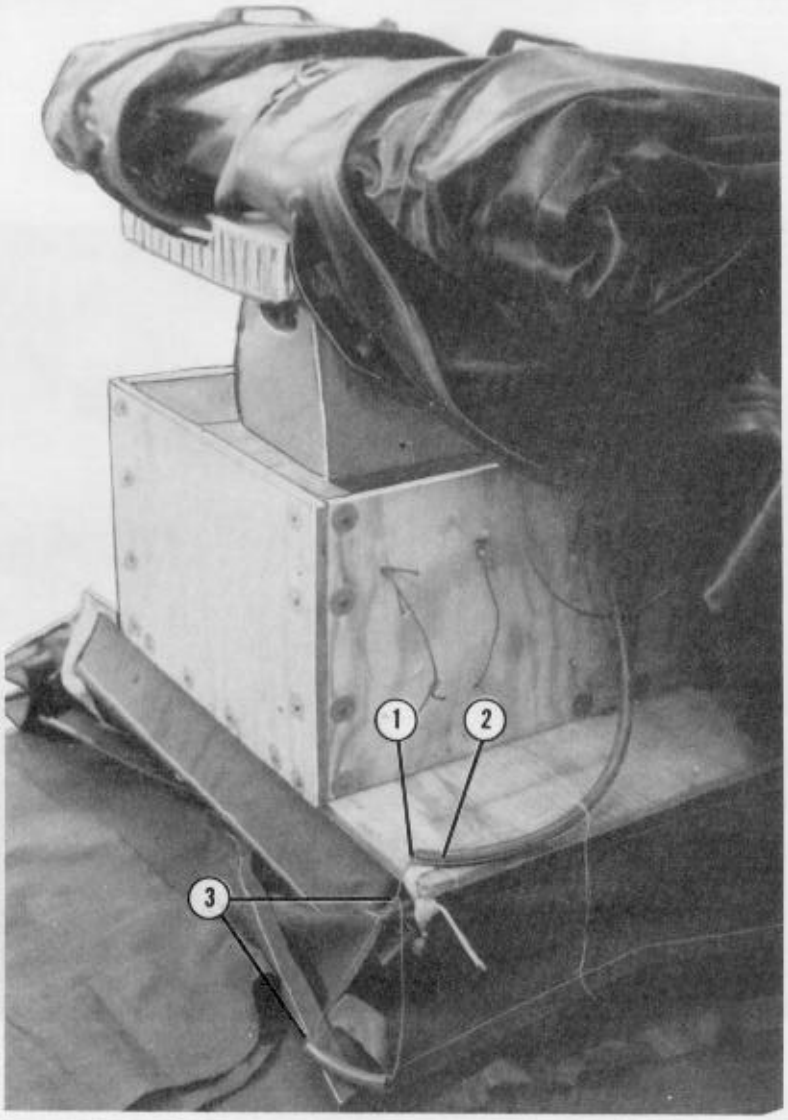


(6) Fold the boat up onto the box so that the second floor ring is nearly even with the front edge of the box. Be sure that the floor slats lie flat and that the inflation system is intact.

(7) Place a piece of 12- by 17-inch honeycomb over the engine to support the boat.

NOTE: ANY EQUIPMENT, SUCH AS RUCKSACKS, MAY BE STOWED AT THIS STAGE ALONG THE SIDES OF THE BOX. DO NOT EXCEED THE DIMENSIONS OF THIS SPACE. USE THE PRE-POSITIONED TYPE III NYLON CORD TIES TO SECURE THE EQUIPMENT.

Figure 3-86. Boat collapsed and attached to engine (continued)

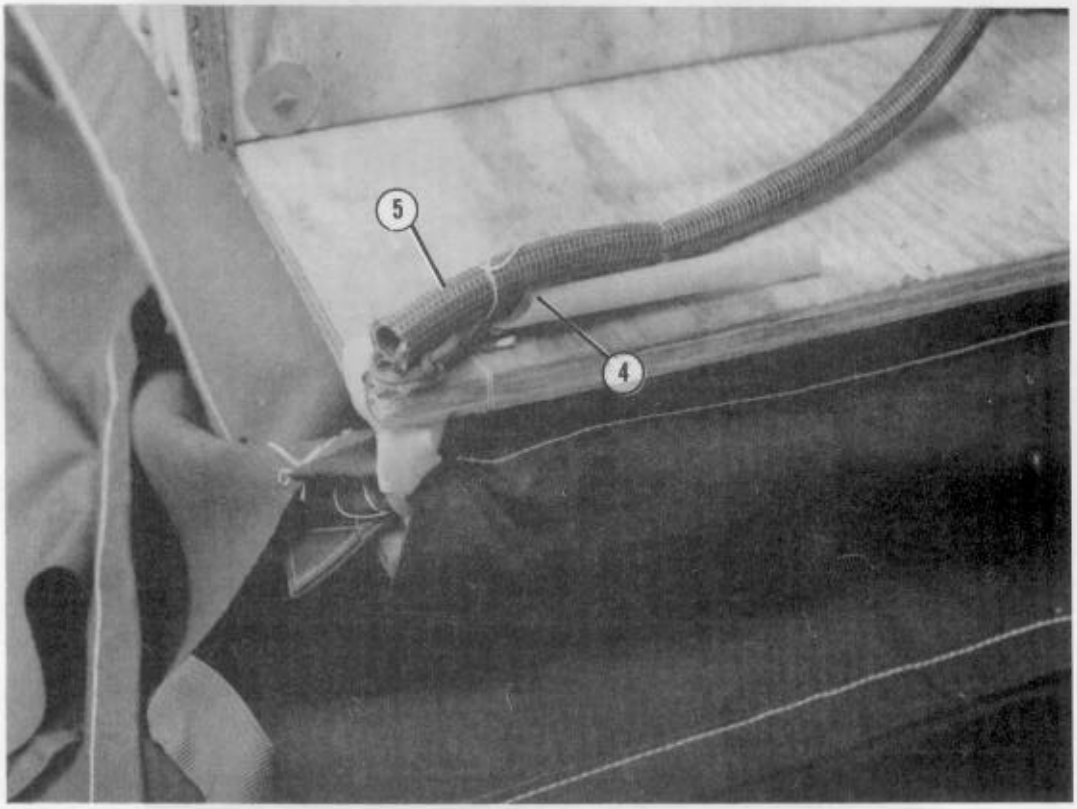


(1) Cut the inflation lanyard hose installed in step 12 of Figure 3-85 to 33 inches. Do NOT cut the type III nylon cord inside the hose.

(2) Tie a length of 8/7 cotton thread to the left front corner hole in the engine box with a girth hitch. Tie the end of the lanyard hose even with the corner of the box with the running ends of the thread in a surgeon's knot and locking knot.

(3) Run the free end of the type III nylon cord through a 6-inch length of hose. Make a loop as shown and tie it with an outside bowline knot (tie bowline knot as shown in FM 10-500-2/TO 13C7-1-5, except that the running end of the cord faces outside the loop).

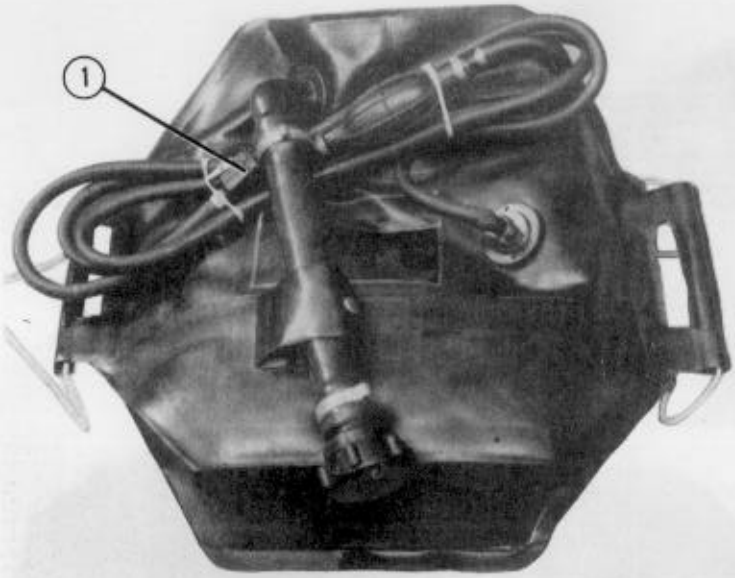
Figure 3-87. Inflation system lanyard secured

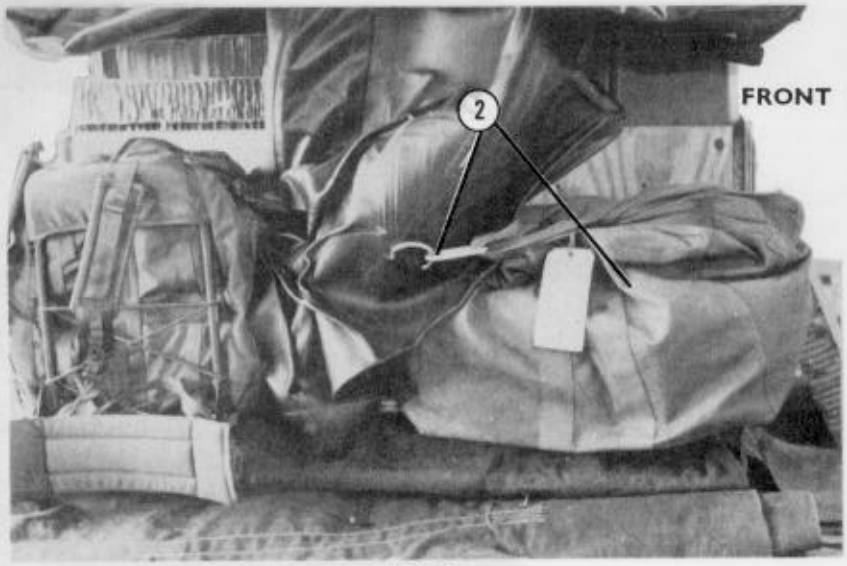


(4) Tie a chemical light around the long lanyard hose with type III nylon cord. Do not tie the chemical light to the pull handle.

(5) Fold the lanyard pull handle made in step 3, flush with the end of the hose. Tie the handle to the hose with the free ends of 8/7 cotton thread using a surgeon's knot and locking knot.

Figure 3-87. Inflation system lanyard secured (continued)





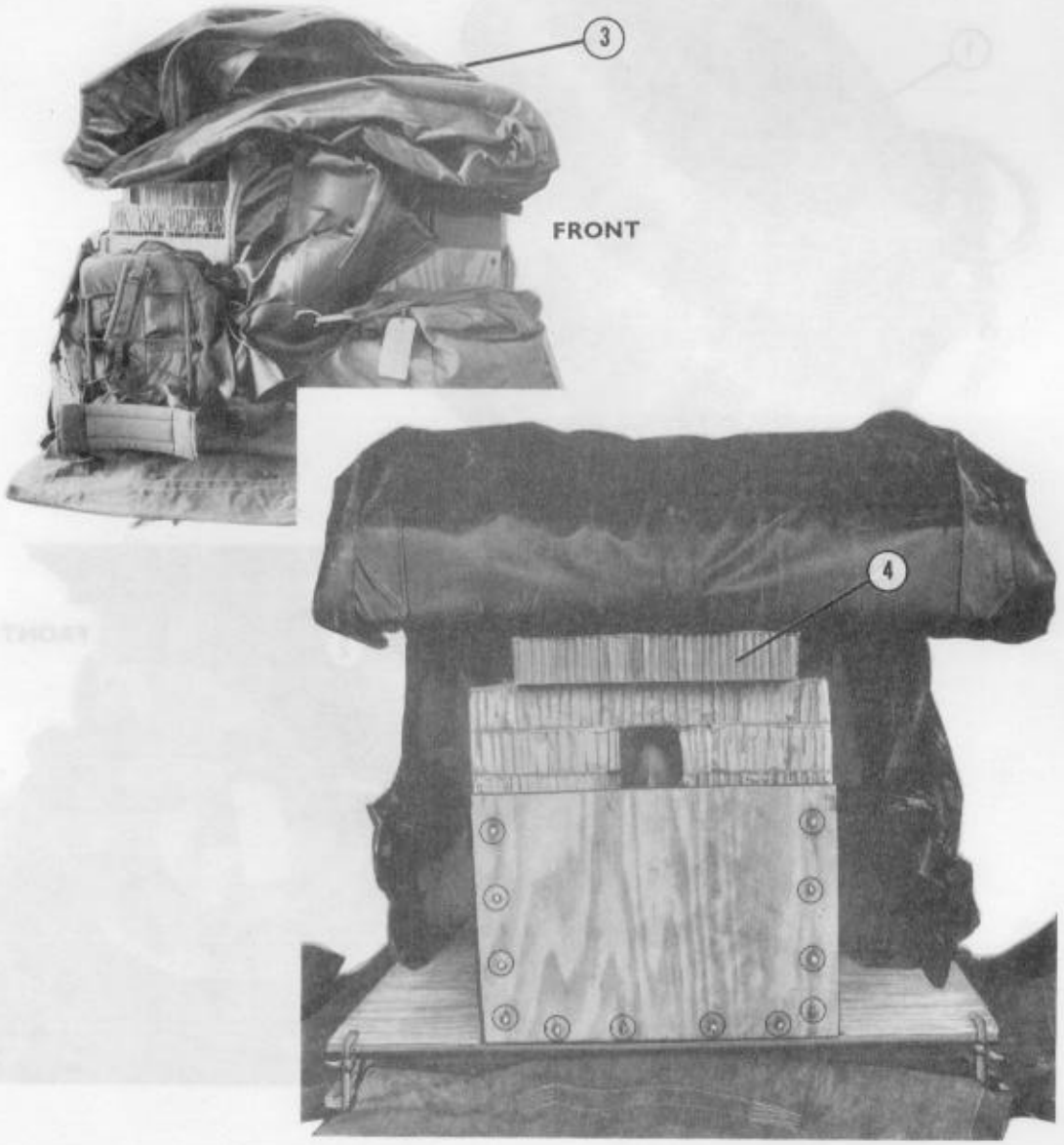
RIGHT

NOTE: USE 6-, 9-, OR 18-GALLON PLASTIC COLLAPSIBLE FUEL TANKS. USE NO MORE THAN FOUR TANKS.

(1) S-fold and tie the fuel lines on the tanks.

(2) Place the tanks in kit bags, no more than two 6- or 9-gallon tanks per bag. Set the bag on the shelf outside the engine box. Secure the bag to the engine box or to the tow rings on the boat.

Figure 3-88. Fuel tanks stowed and final folds made

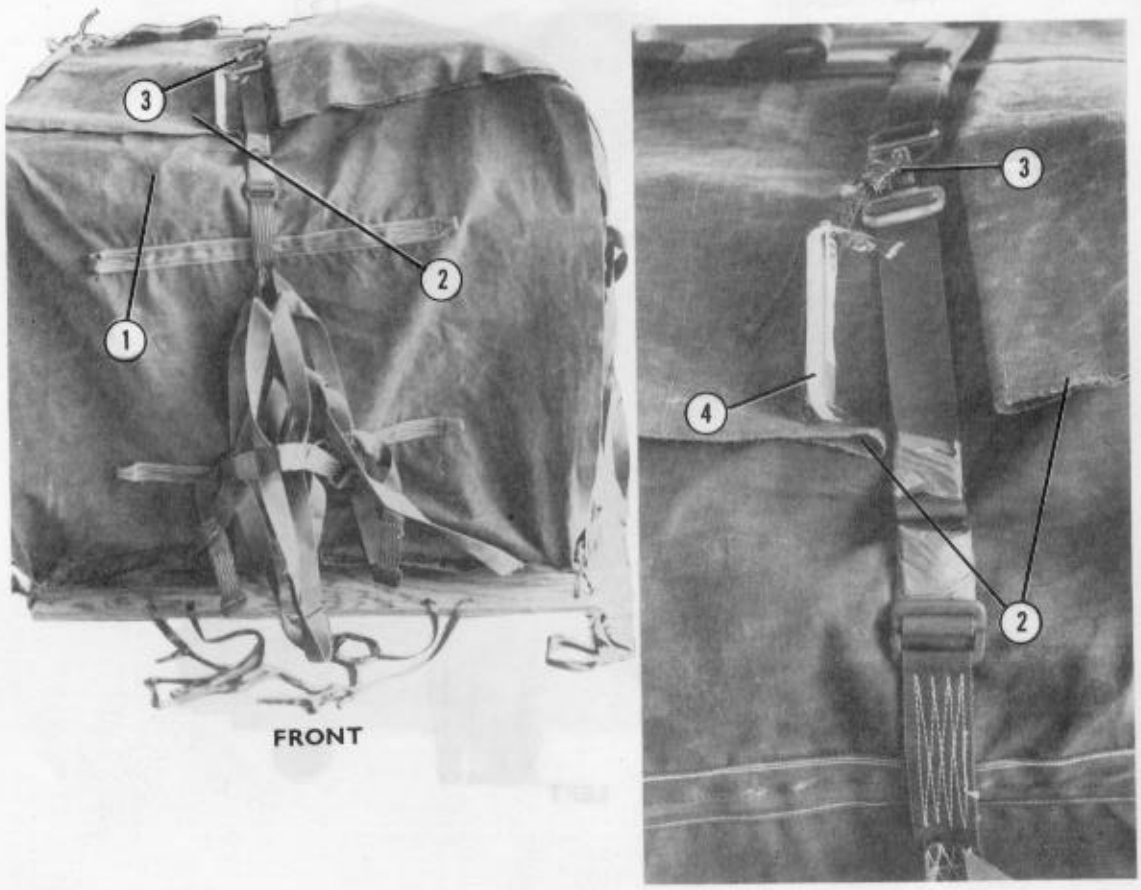


(3) Fold the bow of the boat to the front as far as the front edge of the engine box.
(4) Support the boat at the rear with a 26- by 16-inch piece of honeycomb.
(5) Fold all lifelines under the boat (not shown).

Figure 3-88. Fuel tanks stowed and final folds made (continued)

3-94. Securing A-22 Cargo Bag

Secure the A-22 cargo bag as shown in Figure 3-89.



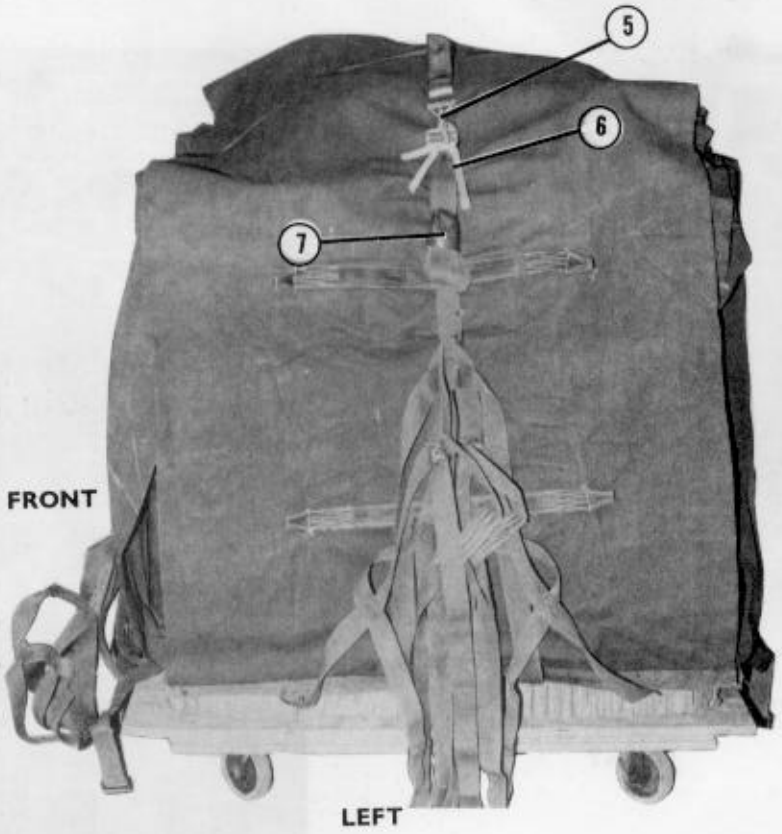
(1) Fold the front and rear A-22 cover flaps up. Fold the excess of each flap under itself so that the two flaps just touch.

(2) Fold the left and right flaps up in the same way as in step 1 above.

(3) Fasten the front-to-rear long and short tie-down straps using the modifications installed in Figure 3-75. Position the fasteners so that they close on the front of the load (the engine end of the boat).

(4) Tie a chemical light to the parachute harness snap.

Figure 3-89. A-22 cargo bag secured

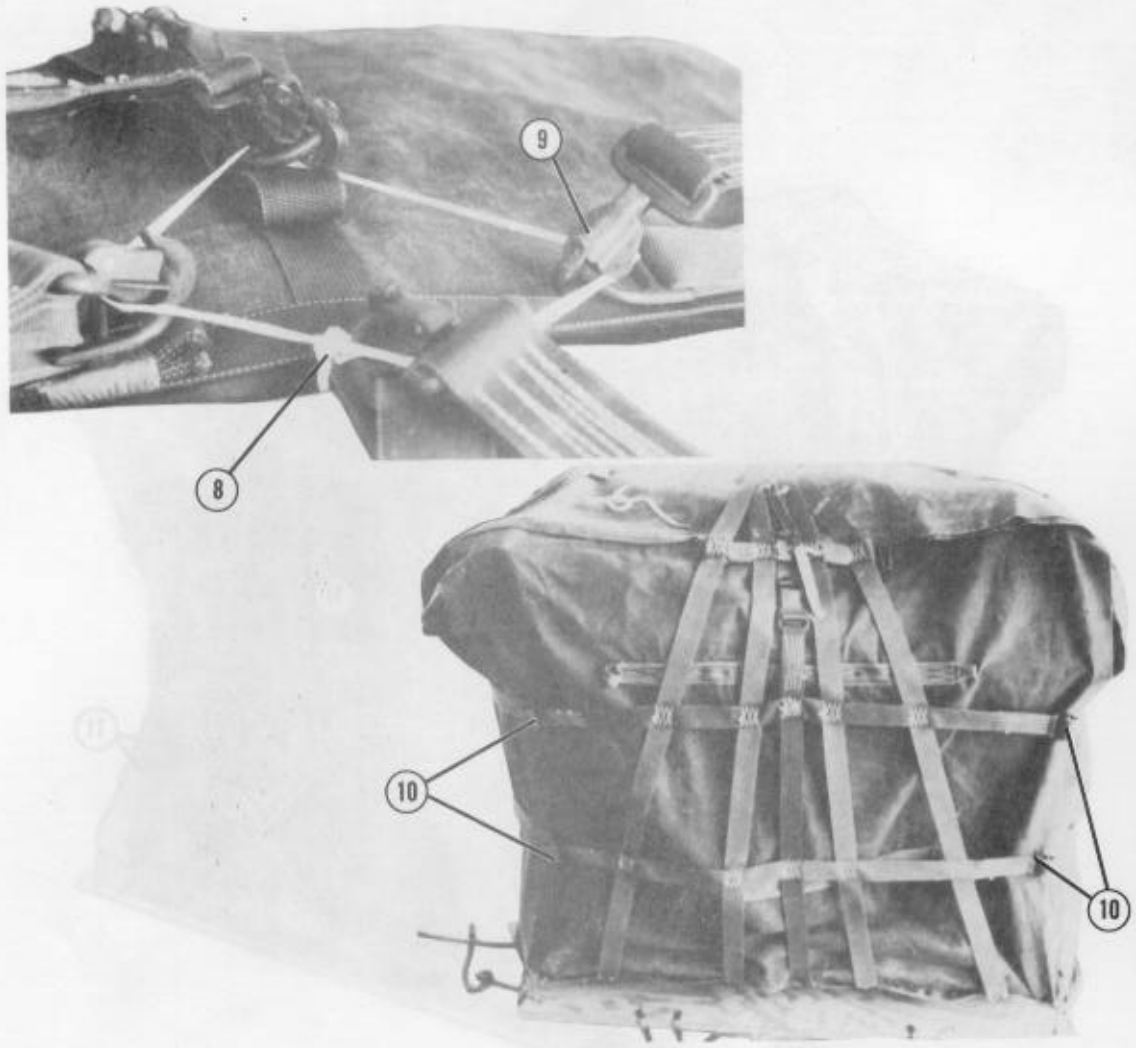


(5) Fasten the left-to-right long and short tie-down straps using the modifications installed in Figure 3-75. Position the fasteners so that they close on the top left side of the load.

(6) Tie a chemical light securely to the parachute harness snap.

(7) Fold and tape any excess strap material.

Figure 3-89. A-22 cargo bag secured (continued)



(8) Bring all four support web assemblies to the top of the load. Tie all four together through the rectangular holes in the D-rings as shown using a length of type I, 1/4-inch cotton webbing tied in a square knot.

(9) Install the adapter webs so that the snaps face inward. Tape the snaps closed.

(10) Close the lower and middle lateral snaps loosely so that the bag flaps are held securely. Do NOT allow the lateral straps to touch the boat. Do not fasten the upper lateral straps. Fold them inward, and tape them to the support web assembly.

Figure 3-89. A-22 cargo bag secured (continued)

(11) Tie the skid board to the A-22 sling assembly where the lower lateral straps join the support webs as shown using the 1/2-inch tubular nylon webbing pre-positioned in step 4 of Figure 3-81.

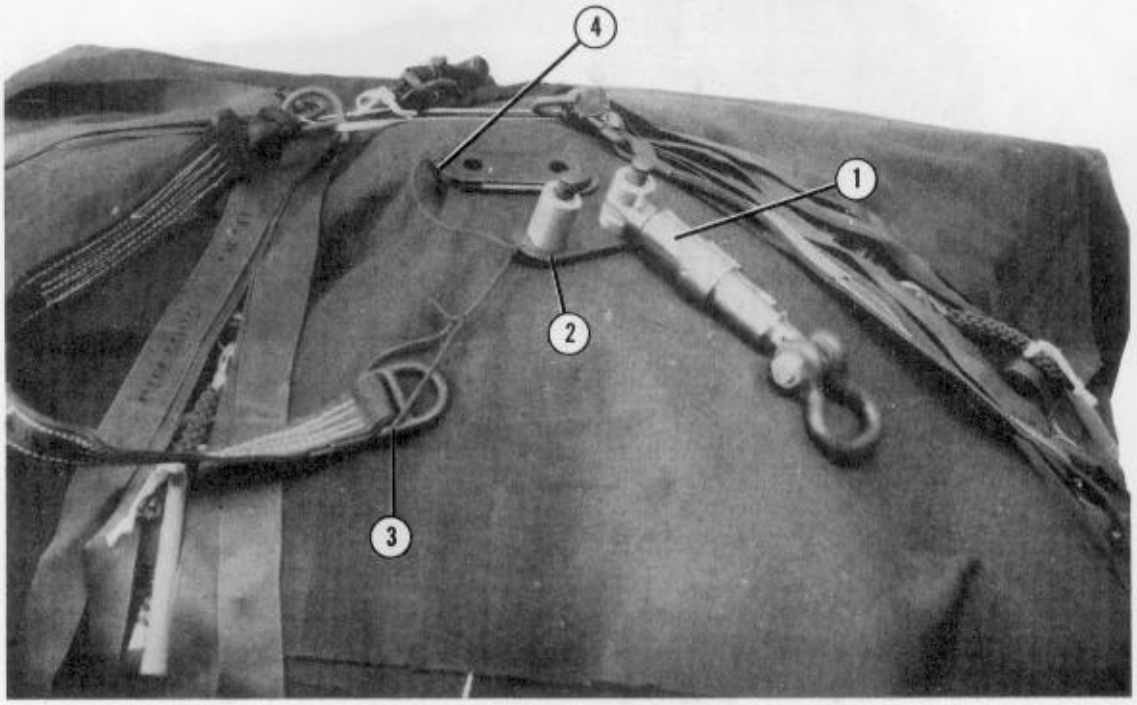
Figure 3-89. A-22 cargo bag secured (continued)

3-95. Installing Parachute Release and Parachutes

Install the hydraulic release as shown in Figure 3-90. Install two T-10 parachutes modified for cargo use as shown in Figure 3-91.

NOTES: 1. ARMY UNITS NOT AUTHORIZED TO USE THE HYDRAULIC RELEASE WILL USE THE M-1 RELEASE.

2. IF PARACHUTES OTHER THAN THE T-10 PARACHUTES ARE USED, FINISH RIGGING THE LOAD ACCORDING TO FM 10-500-3/TO 13C7-1-11/FMFM 7-47.



(1) Install the hydraulic release to the split spacer side of the type IV link modified in paragraph 3-89.

(2) Pass a suitable length of type III nylon cord through the hole in the baseplate of the type IV link, leaving 18 inches.

(3) Pass the 18-inch end through the fabric loop in the front adapter web. Tie a loop as shown with a bowline knot with an overhand knot in the running end.

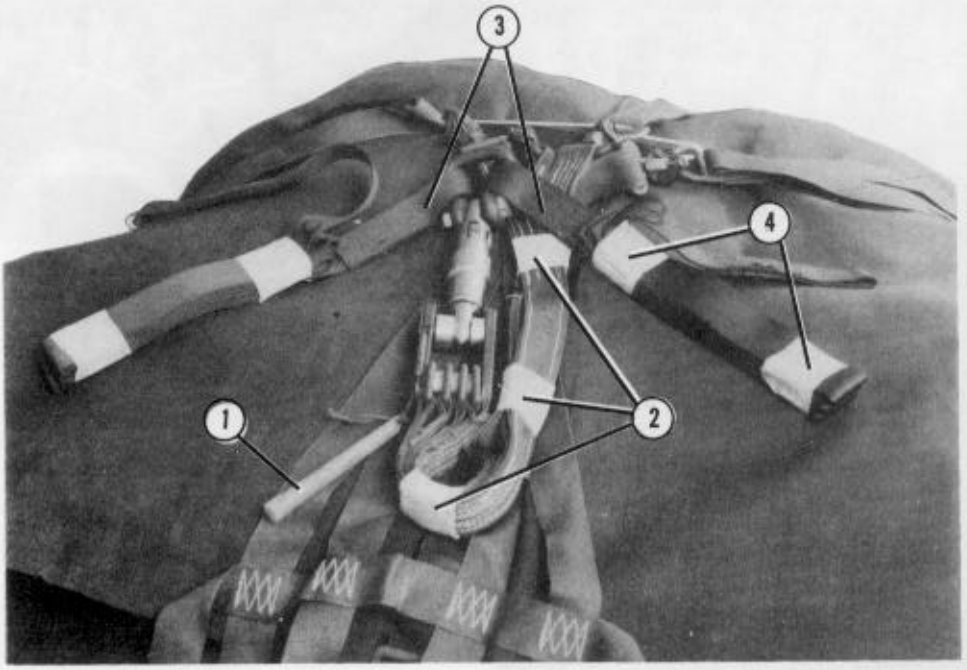
(4) Tie the free end of the type III nylon cord to the drilled hole in the type IV link cover.

Figure 3-90. Release installed

(5) Place the D-rings of the adapter webs on the milled spacer of the type IV link in the following order: front, left, rear, right (clockwise or counterclockwise beginning with the front).

(6) Install the cover plate on the type IV link, facing the drilled hole away from the release. Raise the adapter webs and make sure there are no twists in them.

Figure 3-90. Release installed (continued)



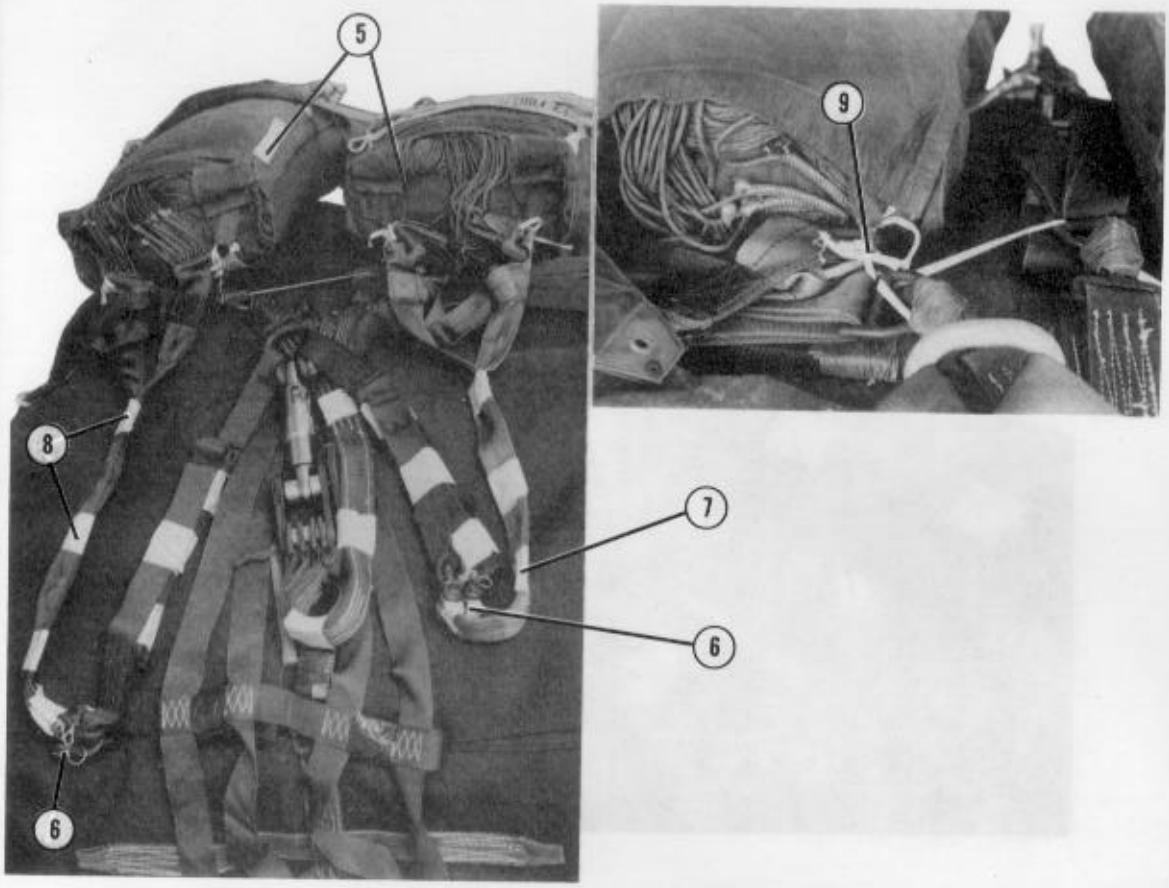
(1) Tie a chemical light to the type IV link with type I, 1/4-inch cotton webbing.

(2) Tape the adapter webs together in three places with paper masking tape.

(3) Attach two 120-inch connector straps to the bell portion of a small suspension clevis. Bolt the clevis to the release.

(4) S-fold the riser extensions into 1-foot folds. Tape the folds in two places with paper masking tape.

Figure 3-91. Riser extensions and parachutes installed



(5) Install two T-10 parachutes modified for cargo on the front of the load.

(6) Place both of the riser clevises in the loop of the riser extension. Secure the clevis pins and make sure the clevis pins remain in the loops of the parachute risers.

(7) Tape the risers of each parachute individually with two turns of tape, just behind the clevises.

(8) Tape the parachute risers of each parachute together with two turns of tape, in the center and about 6 inches from the H-bar.

(9) Tie the inside L-bar links on each parachute to the rectangular holes in the nearest support web D-rings with type I, 1/4-inch cotton webbing.

Figure 3-91. Riser extensions and parachutes installed (continued)

(10) Pass a single length of type I, 1/4-inch cotton webbing through the support web at the second lateral strap. Tie each end to the break cord attaching strap on each parachute deployment bag.

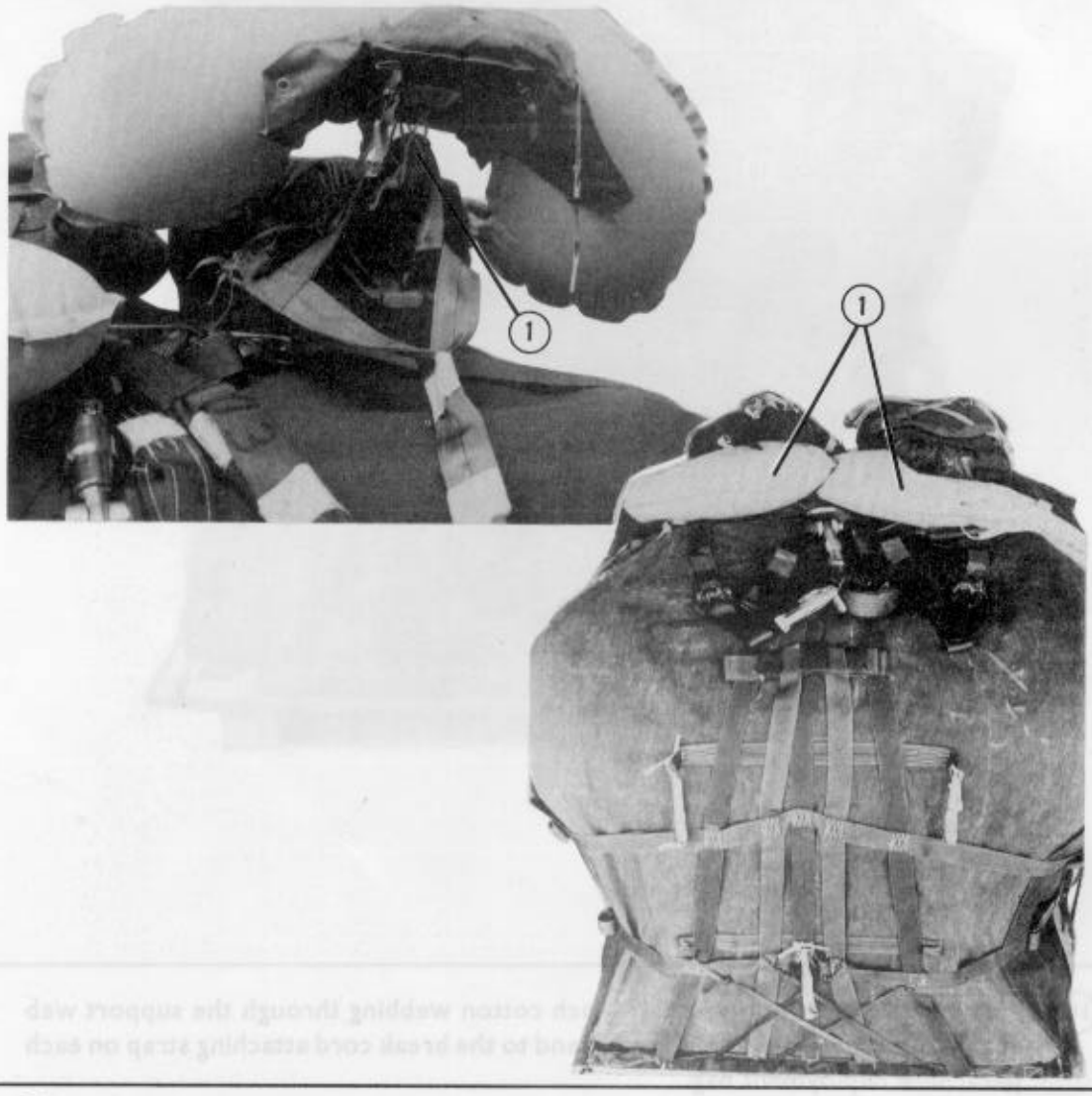
(11) Tie a strobe light to the support web near the inflation lanyard with type I, 1/4-inch cotton webbing.

Figure 3-91. Riser extensions and parachutes installed (continued)

3-96. Installing Flotation Devices and Chemical Lights (Optional)

Install flotation devices to aid in the recovery of parachutes for training drops as shown in Figure 3-92. Install chemical lights for night operations as shown in Figure 3-93.

NOTE: FLOTATION DEVICES AND CHEMICAL LIGHTS MAY NOT BE REQUIRED FOR OPERATIONAL DROPS.



(1) Tie a flotation device to the H-bar of the riser harness of each parachute with type III nylon cord.

Figure 3-92. Flotation devices installed

(1) Tie chemical lights to the support web on all sides of the load. An inverted V pattern is shown.

Figure 3-93. Chemical lights installed for night operations

3-97. Marking Rigged Load

Mark the rigged load according to FM 10-500-3/ TO 13C7-1-11/FMFM 7-47 and as shown in Figure 3-94.

NOTE: THE LOAD SHOWN INCLUDES 10 GALLONS OF FUEL AND NO ADDITIONAL EQUIPMENT.

RIGGED LOAD DATA

Weight	600 pounds
Maximum load allowed with two T-10 parachutes	1,000 pounds
Height	56 inches
Width	51 inches
Length	51 inches

Figure 3-94. Zodiac F470U boat rigged in A-22 cargo bag

3-98. Equipment Required

The equipment required to rig the F47OU boat in the A-22 cargo bag is listed in Table 3-3.

Table 3-3. Equipment required for rigging F47OU boat in A-22 cargo bag

National Stock Number	Item	Quantity
7125-00-577-5858	Aluminum, angle, 90 degrees	As required
1670-00-587-3421	Bag, cargo, A-22	1
1670-00-568-0323	Band, rubber, retainer	As required
local purchase	Bolt, 1/4- by 1 1/2-in, galvanized	136
4030-00-360-0304	Clevis, suspension, 5/8-in (small)	1
4020-00-240-2146	Cord, nylon, type III	As required
4220-00-579-3968 LS	Cylinder, CO_2, 20-man life raft	1
4220-00-059-6061	Flotation device; LPU 3/P or	2
4220-00-657-2197	B7	2
8135-01-005-8974	Foam	2 sheets
local purchase	Hose, rubber, garden	As required
8460-00-606-8366	Kit bag, flyer	As required
	Light, chemical, wand:	
0260-01-074-4229	Green	As required
6260-01-178-5559	Red	As required
6230-00-067-5209	Light, marker, distress, SDU-5E	1
1670-00-783-5988	Link assembly, type IV	1
local purchase	Nut, hexagonal, 1/4-in, galvanized	136
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	2 sheets
	3- by 36- by 96-in:	
	6- by 26-in	(2)
	6- by 30-in	(8)
	9- by 15-in	(1)
	12- by 17-in	(1)
	18- by 18-in	(1)
	18- by 51-in	(2)
	26- by 16-in	(1)
	36- by 42-in	(1)

Table 3-3. Equipment required for rigging F47OU boat in A-22 cargo bag (continued)

National Stock Number	Item	Quantity
1670-01-247-7151	Parachute, T-10B (modified for cargo)	2
5530-00-128-4981	Plywood 3/4-in:	
	17- by 18-in	2
	17- by 51-in	2
	48- by 48-in	2
1670-01-310-2871	Release, cargo parachute, hydraulic	1
5340-00-875-1861	Snap, parachute harness	3
1670-00-738-5879	Strap, connector, extraction, 120-in	2
	Tape:	
7510-00-266-6710	Masking, 2-in	As required
7510-00-266-5016	PSA, cloth-back, adhesive, 2-in	As required
local purchase	Teflon, plumber's	As required
8310-01-102-4478	Thread, cotton, ticket number 8/7	As required
4220-00-665-5172 LS	Valve assembly	1
1670-00-986-1139	V-ring assembly	3
local purchase	Washer, fender, 1 1/2-in, galvanized	272
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
8305-00-082-5753	Tubular, 1/2-in	As required
8305-00-263-3591	Type VIII	As required

CHAPTER 4

RIGGING THE MOBILE OVER SNOW TRANSPORT (MOST) ON A 16-FOOT, TYPE V AIRDROP PLATFORM FOR LOW-VELOCITY AIRDROP (LVAD)

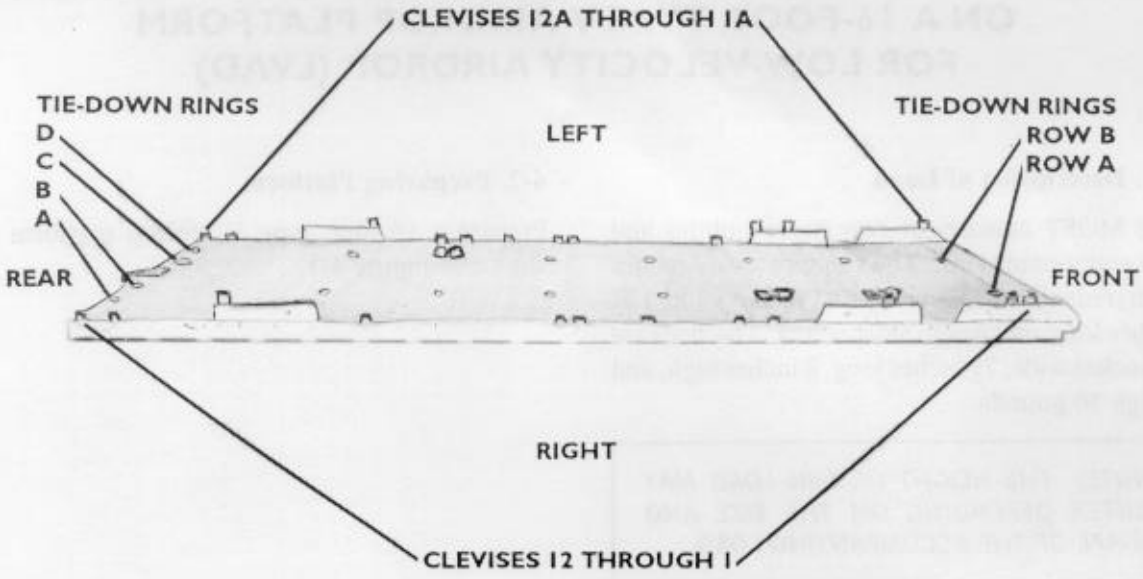
4-1. Description of Load

The MOST consists of two snow mobiles and two equipment sleds. The vehicles are 49 inches high (reducible to 39 inches), 41 inches wide, 122 inches long, and weigh 580 pounds. The sleds are 26 inches wide, 79 inches long, 8 inches high, and weigh 50 pounds.

NOTE: THE HEIGHT OF THIS LOAD MAY DIFFER DEPENDING ON THE SIZE AND SHAPE OF THE ACCOMPANYING LOAD.

4-2. Preparing Platform

Prepare a 16-foot, type V airdrop platform as shown in Figure 4-1.



Step:

1. Inspect or assemble and inspect a 16-foot, type V airdrop platform according to TM 10-1670-268-20&P/TO 13-C7-52-22.

NOTE: THE NOSE BUMPER MAY OR MAY NOT BE INSTALLED.

2. Install a tandem link to the front of each platform side rail using bushings 1, 2, and 3.
3. Install the first set of suspension links to bushings 6, 7, and 8.
4. Install the second set of suspension links to bushings 25, 26, and 27.
5. Install tie-down clevises to the front tandem link using bushings 2 and 3 on the right rail and bushing 1 on the left rail.
6. Install tie-down clevises to the first suspension links using bushing 2 on the right rail and bushings 3 and 4 on the left rail.
7. Install a tie-down clevis to the second suspension links using bushing 4 on the right rail and bushing 1 on the left rail.

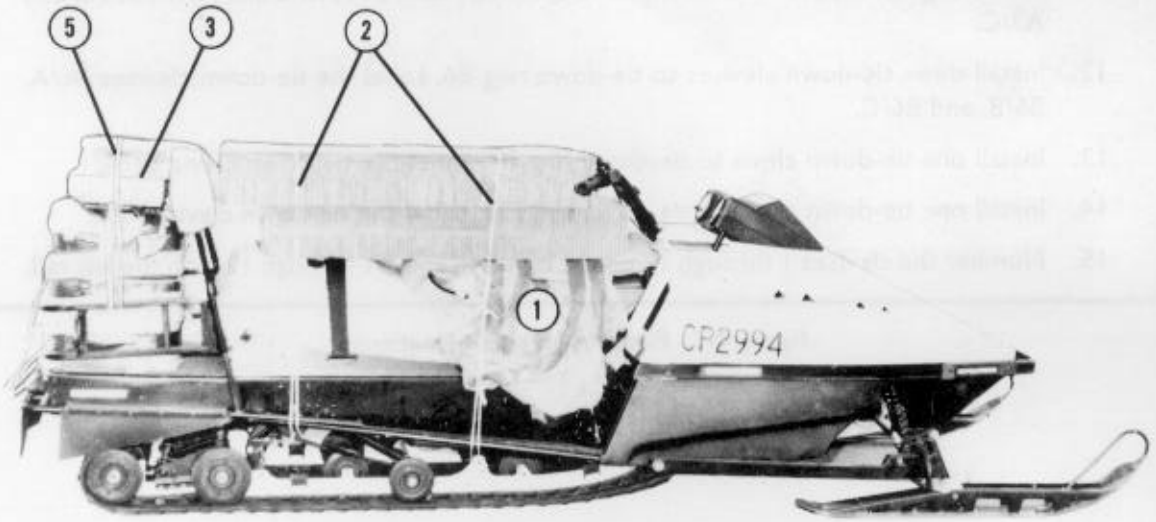
Figure 4-1. Platform prepared

8. Install tie-down clevises to the right rail using bushings 10, 11, 14, 16, 17, 23, 31, and 32.
9. Install tie-down clevises to the left rail using bushings 9, 16, 17, 19, 21, 22, 31, 32, 33, and 34.
10. Label the tie-down rings according to FM 10-500-2/TO 13C7-1-5.
11. Install three tie-down clevises to tie-down rings A2 and three tie-down clevises to tie-down ring A3. Label the tie-down clevises A2/A, A2/B, and A2/C and A3/A, A3/B, and A3/C.
12. Install three tie-down clevises to tie-down ring B6. Label the tie-down clevises B6/A, B6/B, and B6/C.
13. Install one tie-down clevis to tie-down ring B7. Label the tie-down clevis B7/A.
14. Install one tie-down clevis to tie-down ring C8. Label the tie-down clevis C8/A.
15. Number the clevises 1 through 12 on the right rail and 1A through 12A on the left rail.

Figure 4-1. Platform prepared (continued)

4-3. Preparing Load

Prepare the snow mobiles as shown in Figure 4-2. Prepare the sleds as shown in Figure 4-3.



(1) Remove the windshields, and prepare them with cellulose wadding and tape. Place the windshields on the driver's seat.

(2) Cut four 15- by 42-inch pieces of honeycomb. Tape the edges on the top layers. Secure the honeycomb on top of the windshield and seats with two pieces of type III nylon cord.

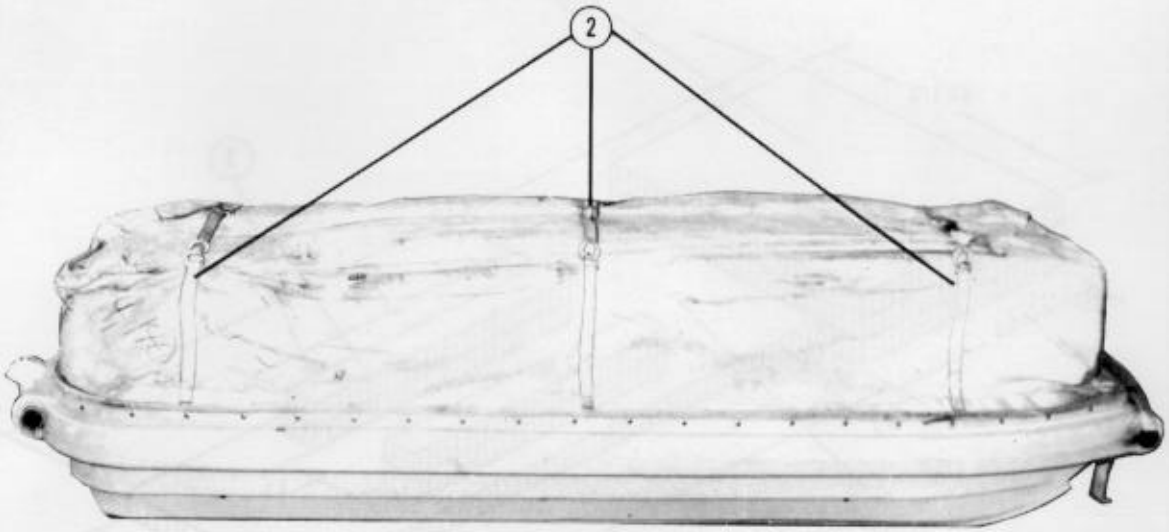
(3) Wrap and tape cellulose wadding around two fuel cans. Cut two 10- by 19-inch pieces of honeycomb, and tape the edges with pressure sensitive tape. Place the honeycomb on top of the fuel cans.

(4) Cut two 14 1/2- by 16 1/2-inch pieces of honeycomb. Place the honeycomb between the fuel cans (not shown).

(5) Secure the fuel cans with 1/2-inch tubular nylon webbing and type III nylon cord.

NOTE: TO PREVENT DAMAGE TO THE VEHICLE, A 15 1/2- BY 22-INCH PIECE OF PLYWOOD MAY BE USED UNDERNEATH THE FUEL CANS. (OPTIONAL)

Figure 4-2. Snow mobiles prepared



(1) Pad the inside of the sled with cellulose wadding. Place all miscellaneous supplies and equipment in the sled according to AFR 71-4/TM 38-250. Secure with a piece of 1/2-inch tubular nylon webbing. Secure the inner straps of the sled (not shown).

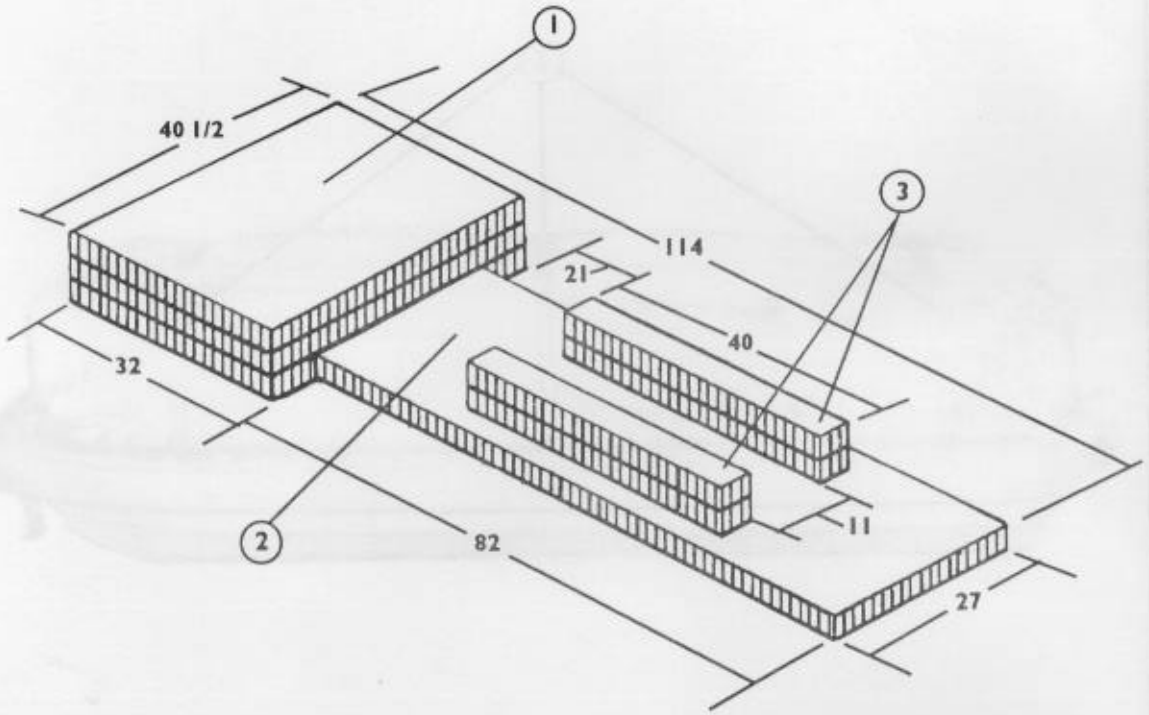
(2) Close the outer cover and secure the straps.

Figure 4-3. Sleds prepared.

4-4. Building And Positioning Honeycomb Stacks On Platform

Build honeycomb stacks 1 through 4 as shown in Figures 4-4 and 4-5. Place the honeycomb stacks on the platform as shown in Figure 4-6.

NOTES: 1. ALL MEASUREMENTS ARE IN INCHES.
2. THIS DRAWING IS NOT DRAWN TO SCALE.



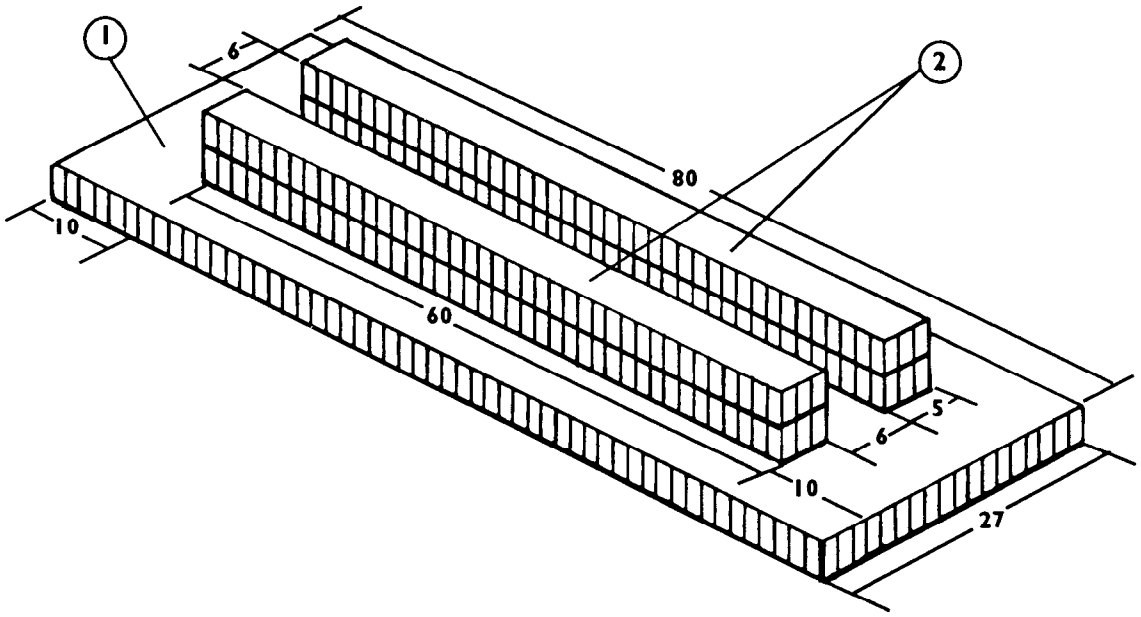
(1) Construct a stack of three pieces of 40 1/2- by 32-inch honeycomb.

(2) Center a piece of 82- by 27-inch honeycomb next to the three pieces in step 1.

(3) Construct two stacks of honeycomb, each having two layers of 40- by 4 1/2-inch honeycomb, and place them on the 82- by 27-inch piece of honeycomb.

Figure 4-4. Stacks 1 and 3 prepared

NOTES: 1. ALL MEASUREMENTS ARE IN INCHES.
2. THIS DRAWING IS NOT DRAWN TO SCALE.

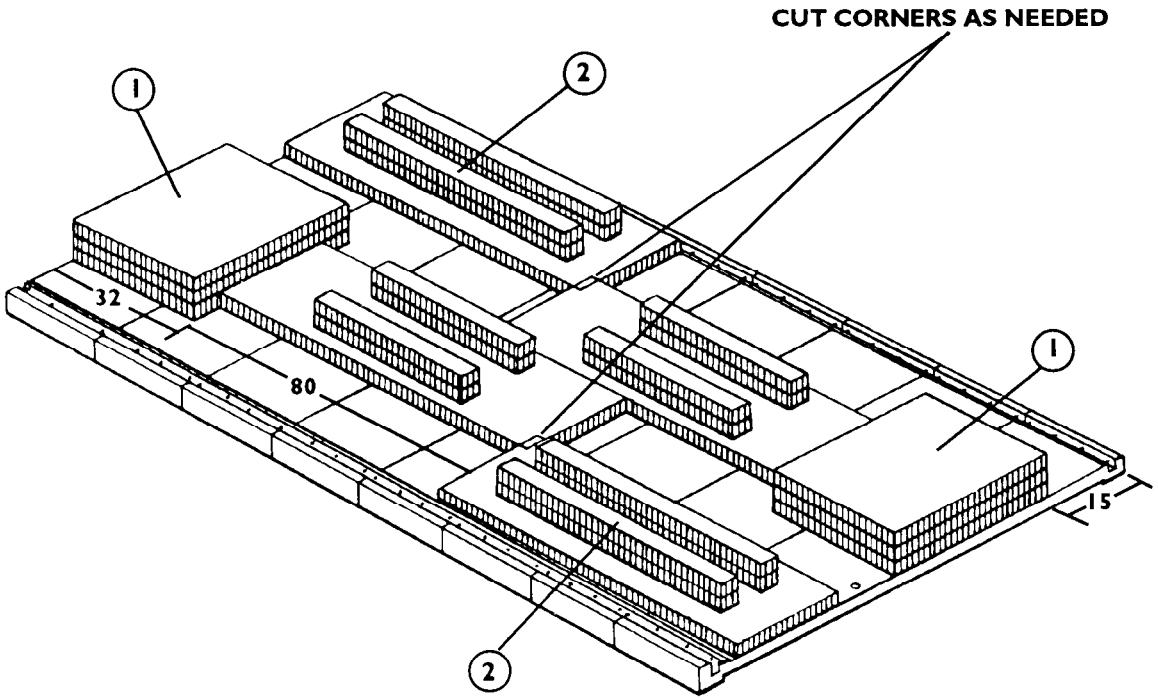


(1) Cut an 80- by 27-inch piece of honeycomb.

(2) Construct two stacks of honeycomb, each having two layers of 60- by 5-inch honeycomb. Place them on top of the 80- by 27-inch piece of honeycomb.

Figure 4-5. Stacks 2 and 4 prepared

NOTES: 1. ALL MEASUREMENTS ARE IN INCHES.
2. THIS DRAWING IS NOT DRAWN TO SCALE.



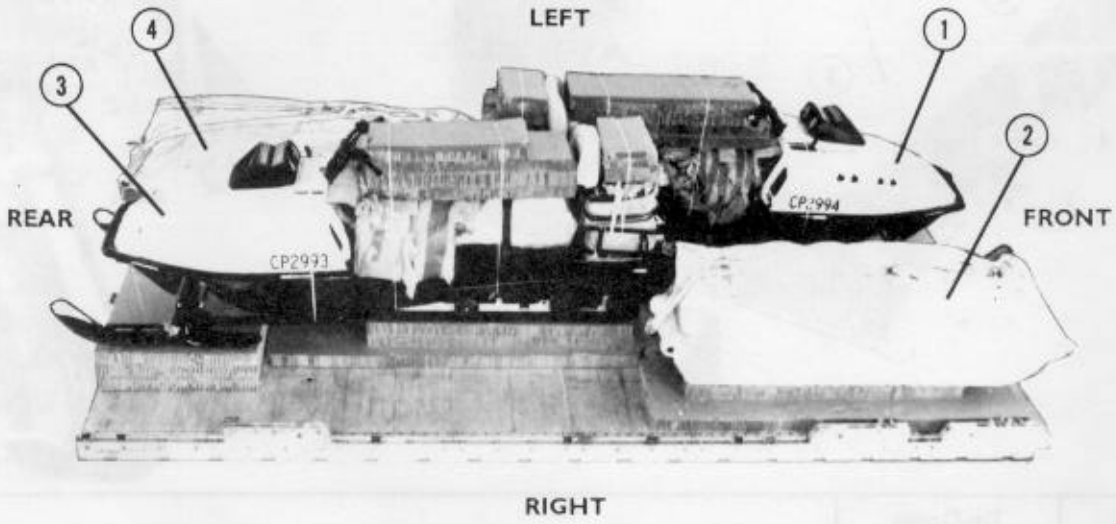
(1) Position honeycomb stacks 1 and 3 on the platform.

(2) Position honeycomb stacks 2 and 4 on the platform.

Figure 4-6. Honeycomb stacks placed on platform

4-5. Positioning Load

Position the load on the platform as shown in Figure 4-7.



(1) Position one snow mobile on the left front side of the platform.

(2) Position one sled on the right front side of the platform.

NOTE: POSITION BOTH PIECES OF EQUIPMENT WITH A 9 1/2-INCH OVERHANG AT THE FRONT OF THE PLATFORM, NOT THE NOSE BUMPER.

(3) Position the other snow mobile on the right rear side of the platform.

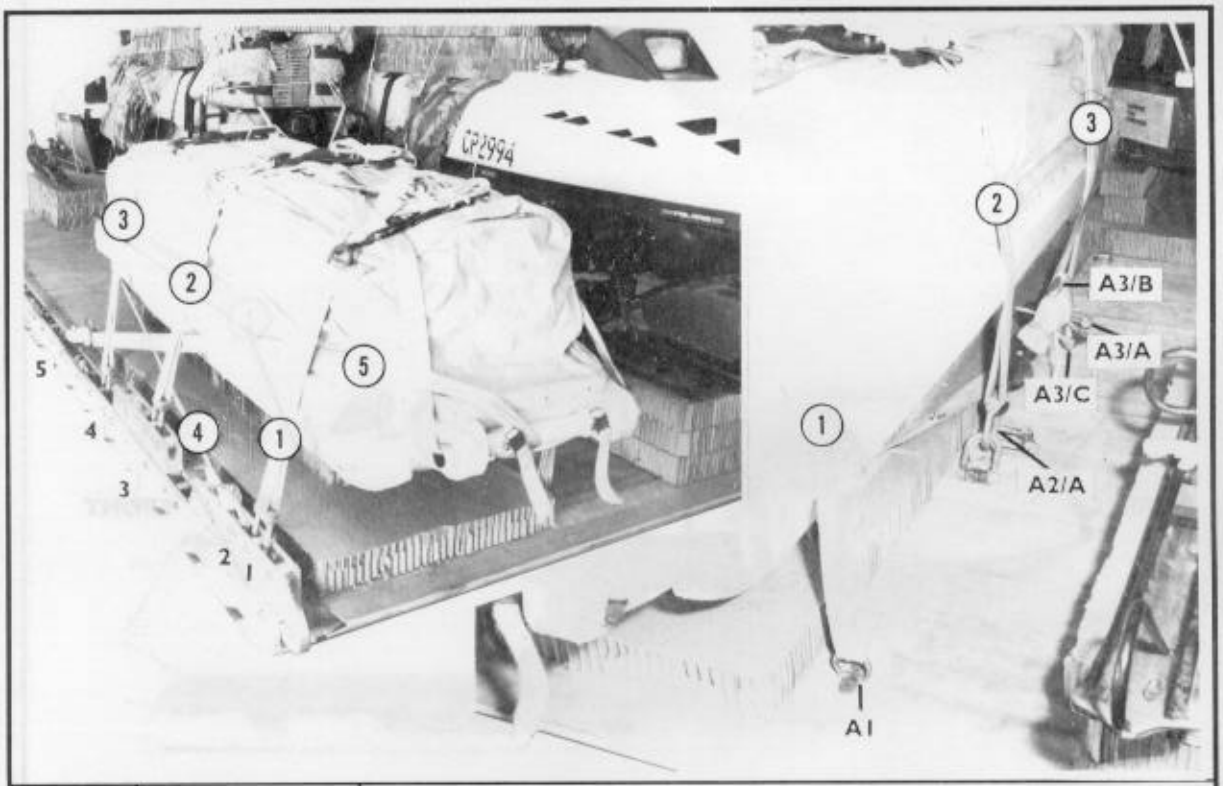
(4) Position the other sled on the left rear side of the platform.

NOTE: POSITION BOTH PIECES OF EQUIPMENT WITH A 9 1/2-INCH OVERHANG AT THE REAR OF THE PLATFORM.

Figure 4-7. Load positioned

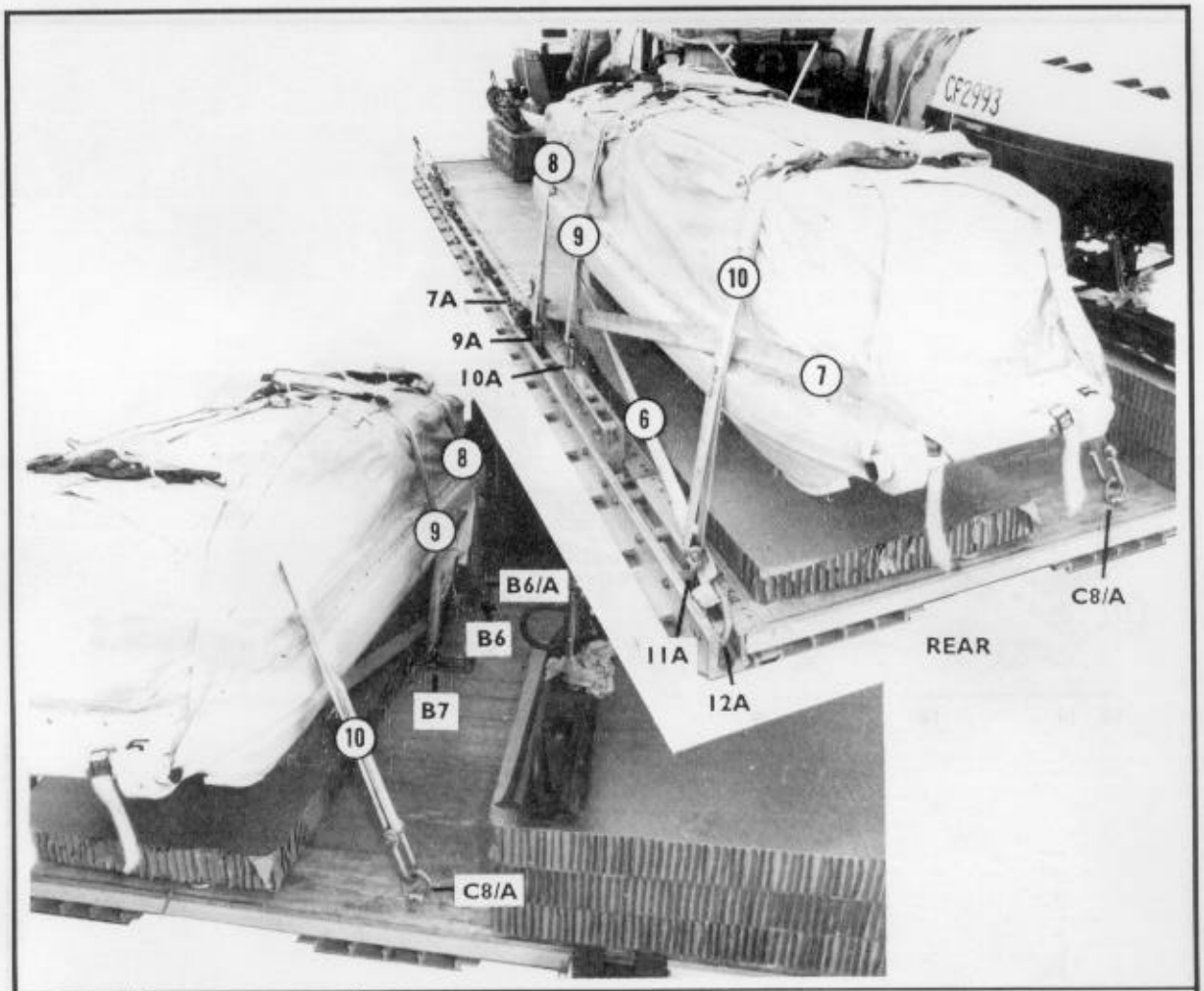
4-6. Lashing Snow Mobiles and Sleds to Platform

Lash the snow mobiles and sleds to the platform according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 4-8.



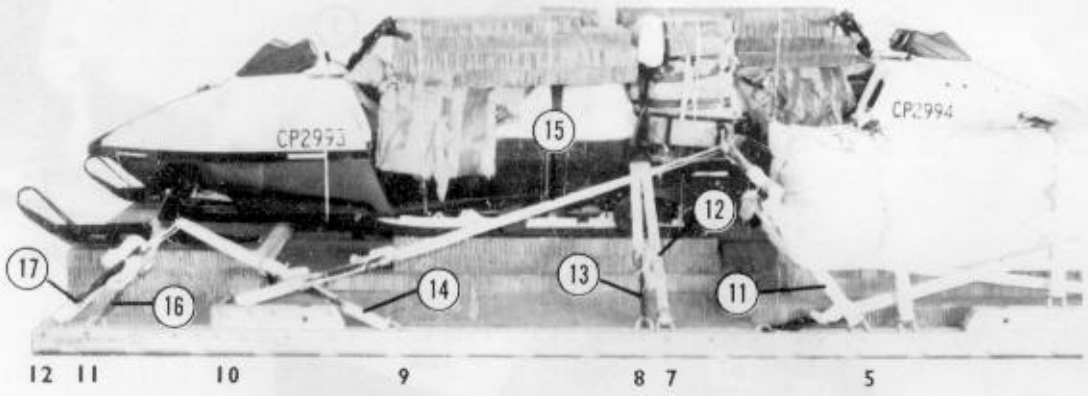
Lashing Number	Tie-Down Clevis/Ring Number	Instructions
		Pass lashing:
1	1 and A1	Through clevis and over the top front of sled 1. Secure with load binder on top of sled.
2	3 and A2\A	Through clevis and over the top middle of sled 1. Secure with load binder on top of sled.
3	4 and A3/A	Through clevis and over the top rear of sled 1. Secure with load binder on top of sled.
4	2 and A3/B	Through clevis and through its own D-ring, around and over the rear of the sled. Secure to tie-down ring A3/B.
5	5 and A3/C	Through tie-down ring A3/C and through its own D-ring, around and over the front of the sled. Secure to clevis with a D-ring and a load binder.

Figure 4-8. Snow mobiles and sleds lashed to platform



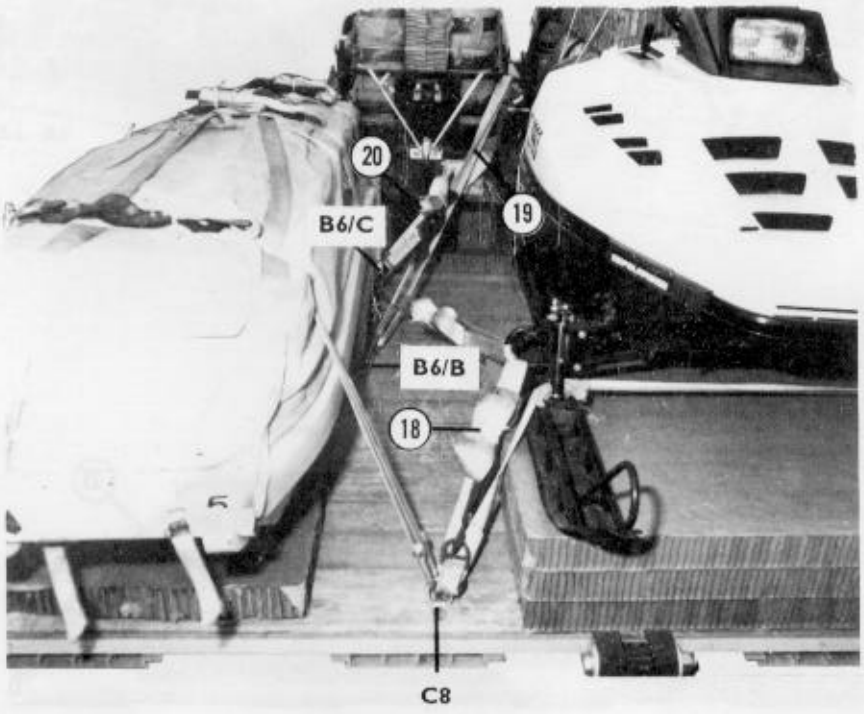
Lashing Number	Tie-Down Clevis/Ring Number	Instructions
		Pass lashing:
6	12A and B6	Through clevis and through its own D-ring, around and over the front of the sled. Secure to tie-down ring B6.
7	7A and B6	Through tie-down ring B6 and through its own D-ring, around and over the aft end of sled 2. Secure to tie-down clevis 7A with a D-ring and a load binder.
8	9A and B6/A	Through clevis and over the top front of sled 2. Secure with load binder on the top of sled.
9	10A and B7	Through clevis and over the top middle of sled 2. Secure with load binder on the top of sled.
10	11A and C8/A	Through clevis and over the top rear of sled 2. Secure with load binder on the top of sled.

Figure 4-8. Snow mobiles and sleds lashed to platform (continued)



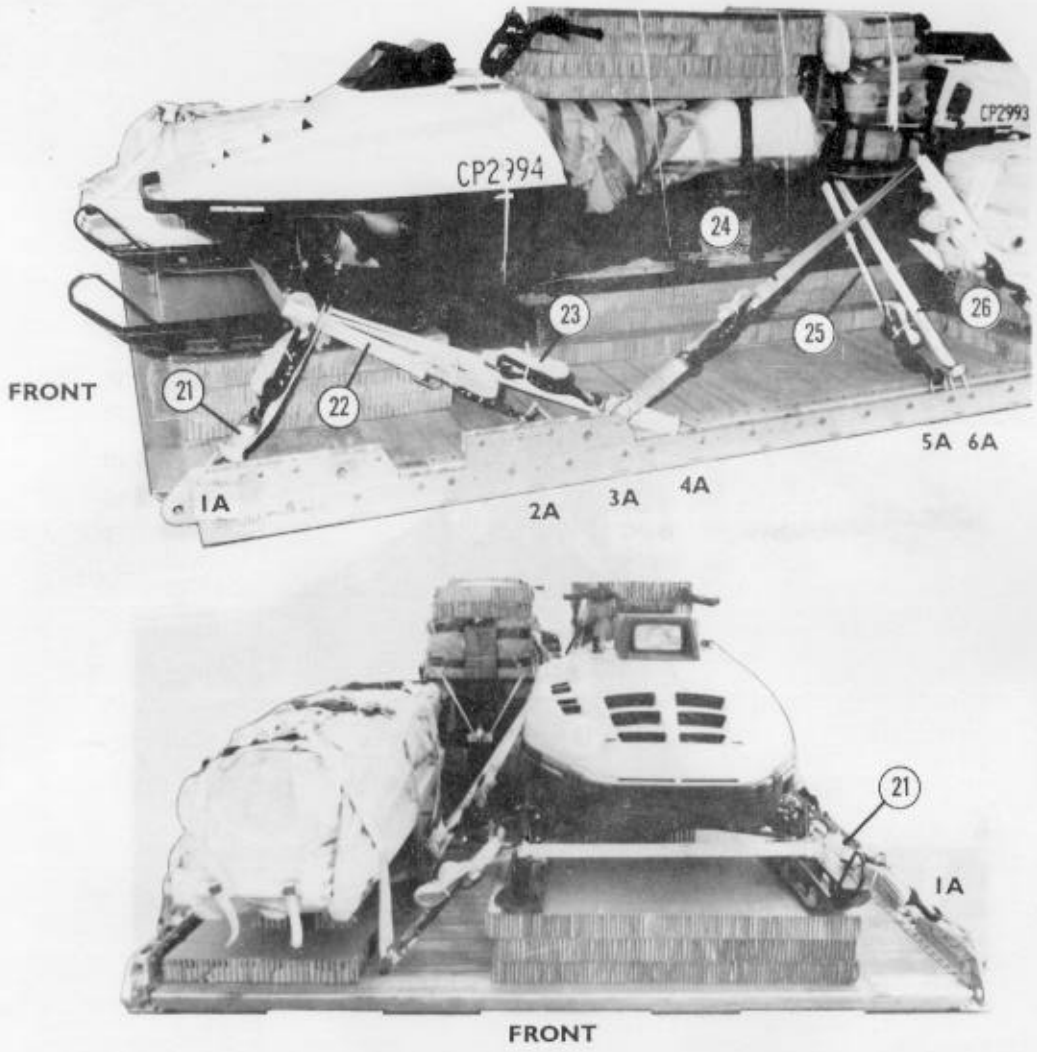
Lashing Number	Tie-Down Clevis/Ring Number	Instructions
		Pass lashing:
11	5	Through clevis and lifting provision, right front side.
12	7 and 5A	Through clevis and through its own D-ring and through the rear frame of both vehicles. Secure to clevis 5A with a D-ring and a load binder.
13	8 and 6A	Through clevis 6A and its own D-ring and through the rear frame of both vehicles. Secure to clevis 8 with a D-ring and load binder.
14	9	Through clevis and lifting provision, right rear side.
15	10	Through clevis and lifting provision, right front side.
16	C8 and 11	Through tie-down ring C8 and through its own D-ring and across the skids of the rear snow mobile. Secure lashing on clevis 11 with a D-ring and a load binder.
17	12	Through clevis and lifting provision, right rear side.

Figure 4-8. Snow mobiles and sleds lashed to platform (continued)



Lashing Number	Tie-Down Clevis/Ring Number	Instructions
		Pass lashing:
18	C8	Through D-ring and lifting provision, left rear side.
19	B6/B	Through clevis and lifting provision, left rear side.
20	B6/C	Through clevis and lifting provision, left front side.

Figure 4-8. Snow mobiles and sleds lashed to platform (continued)

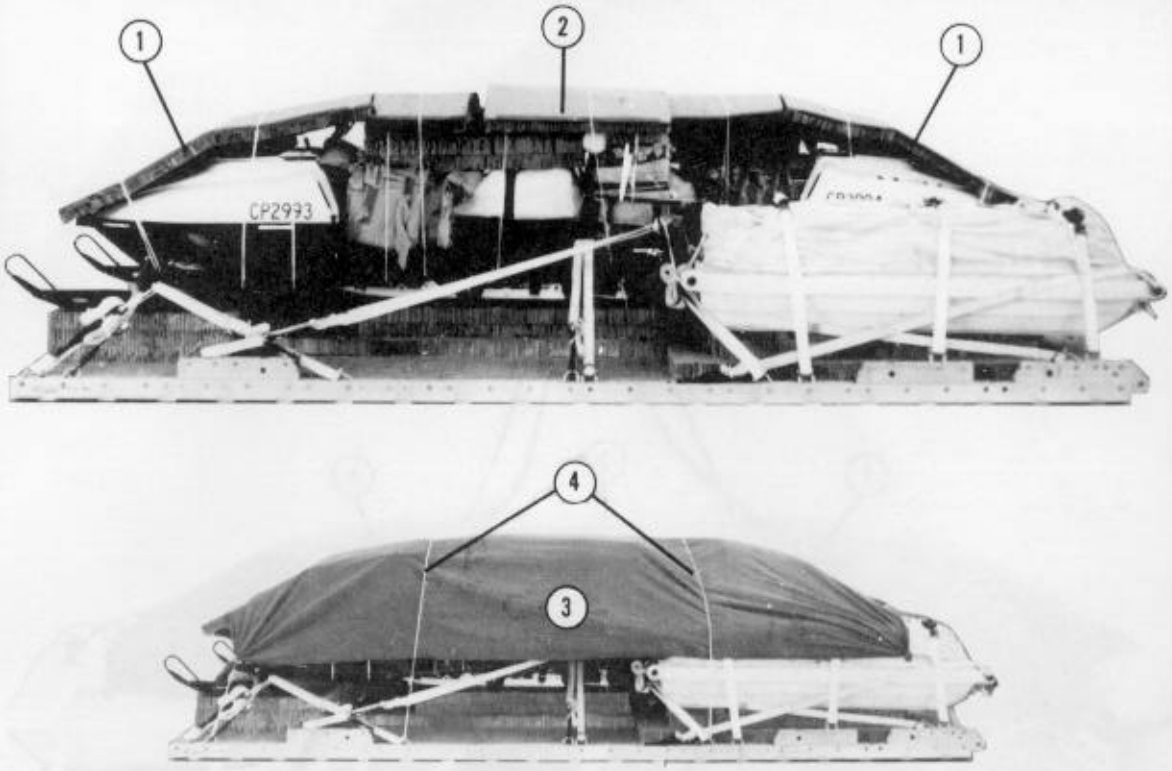


Lashing Number	Tie-Down Clevis/Ring Number	Instructions
		Pass lashing:
21	1A	Through clevis and lifting provision, left front side.
22	A2/B and 2A	Through clevis, through its own D-ring, and across the skids of snow mobile. Secure lashing to clevis 2A with a D-ring and a load binder.
23	4A	Through clevis and lifting provision, left rear side.
24	3A	Through clevis and lifting provision, left front side.
25	5A	Through clevis and lifting provision, left rear side.
26	6A	Through clevis and lifting provision, right rear side.

Figure 4-8. Snow mobiles and sleds lashed to platform (continued)

4-7. Installing Honeycomb, Release Tray, and Load Cover

Install honeycomb, the release tray, and the load cover as shown in Figure 4-9.



(1) Cut two 36- by 83-inch pieces of honeycomb. Place one piece of honeycomb in a vertical position over the top of each snow mobile. Tape the edges with pressure sensitive tape. Secure the honeycomb to the vehicles with type III nylon cord.

(2) Cut a 36- by 64-inch piece of honeycomb. Tape the edges with pressure sensitive tape. Place the honeycomb horizontally over the rear of both vehicles. Secure the honeycomb with type III nylon cord. Tie the cord to convenient points on the platform.

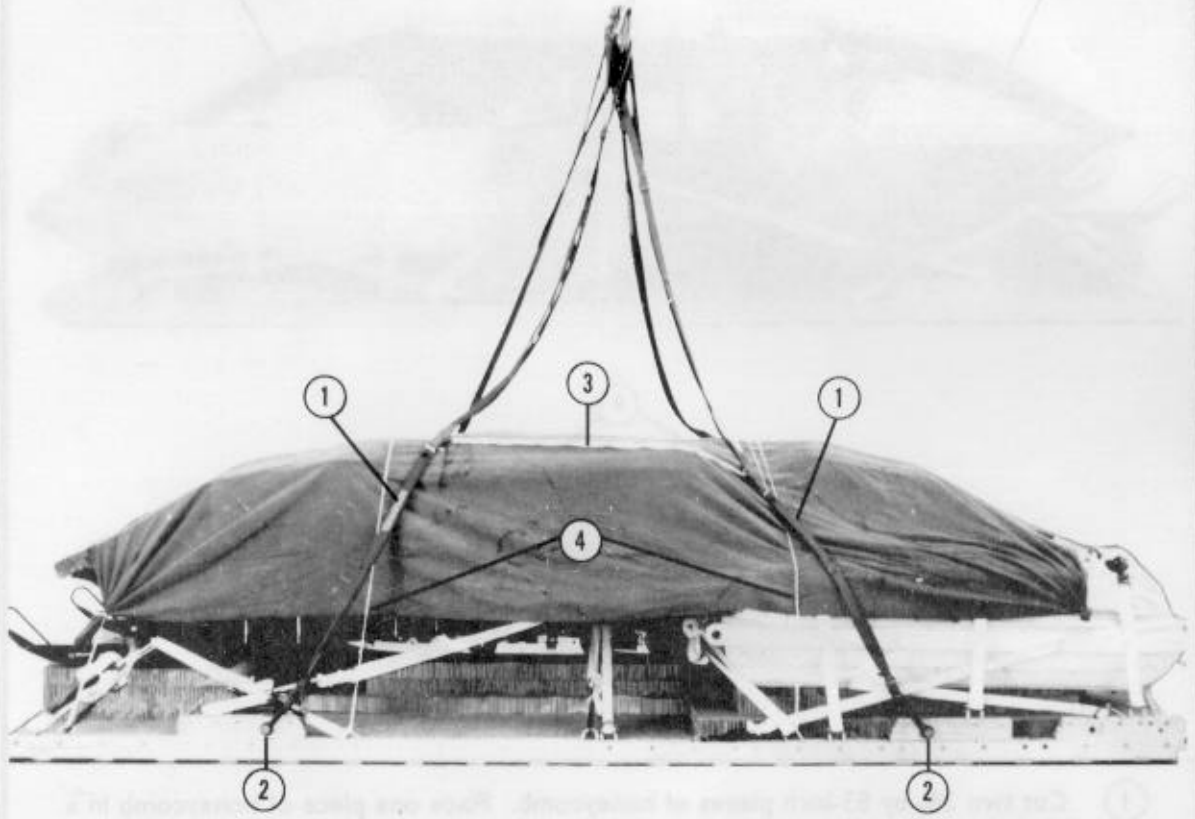
(3) Prepare a 10- by 16-foot piece of cotton duck cloth to be used as a load cover. Place the cover over the load.

(4) Secure the load cover at the corners and across the top with type III nylon cord. Tie the cord to convenient points on the platform.

Figure 4-9. Honeycomb, release tray, and load cover installed

4-8. Installing Suspension Slings and Deadman's Tie

Install the suspension slings and deadman's tie according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 4-10.



(1) Use four 12-foot (2-loop), type XXVI nylon slings for suspension.

(2) Use four large cargo clevises, and attach each suspension sling to each of the four suspension links.

(3) Install a deadman's tie according to FM 10-500-2/TO 13C7-1-5.

(4) Safety the front and rear suspension slings from left to right with type III nylon cord. Tie the cord to the platform at convenient places.

Figure 4-10. Suspension slings and deadman's tie installed

4-9. Stowing Cargo Parachute

Stow the cargo parachute according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 4-11.

(1) Place one G-11B cargo parachute on the hood of the rear snow mobile.

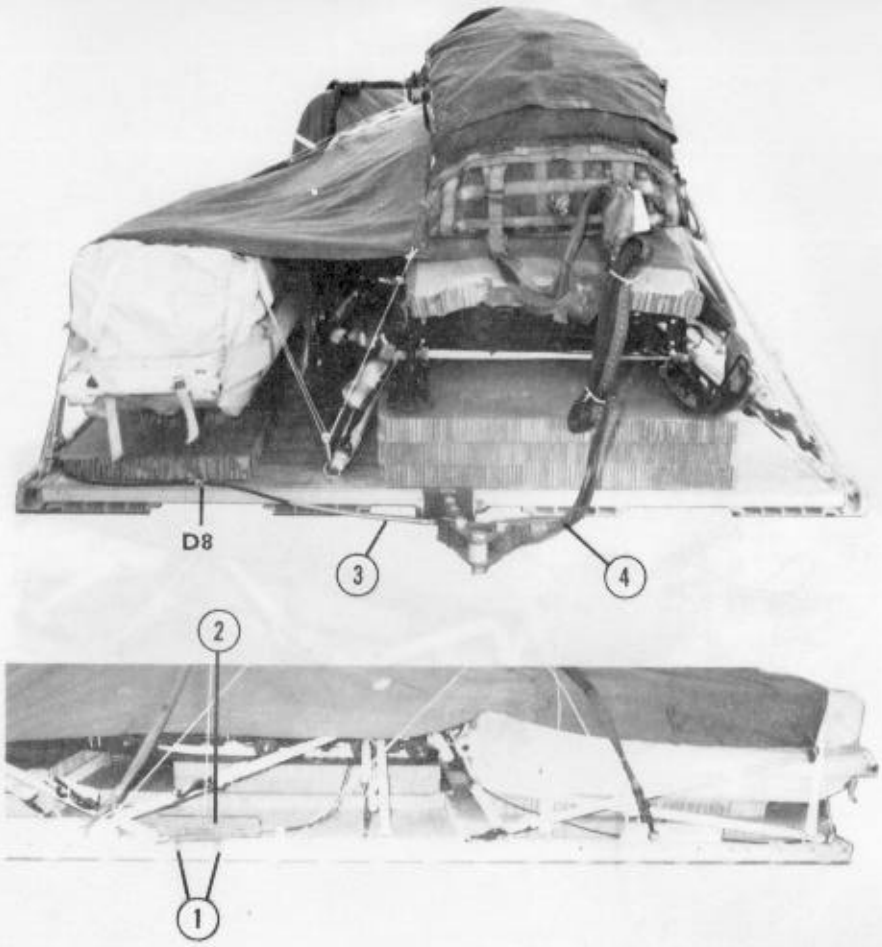
(2) Restrain the parachute to the platform, using tie-down clevises 8, 8A, 12, and 12A with type III nylon cord.

(3) Attach a 9-foot (2-loop), type XXVI nylon sling to be used as a deployment line (not shown).

Figure 4-11. Cargo parachute stowed

4-10. Installing Extraction System

Attach the EFTC to the load according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 4-12.



(1) Install the EFTC mounting brackets to the aft set of holes on the left platform side rail.

(2) Install the actuator according to FM 10-500-2/TO 13C7-1-5

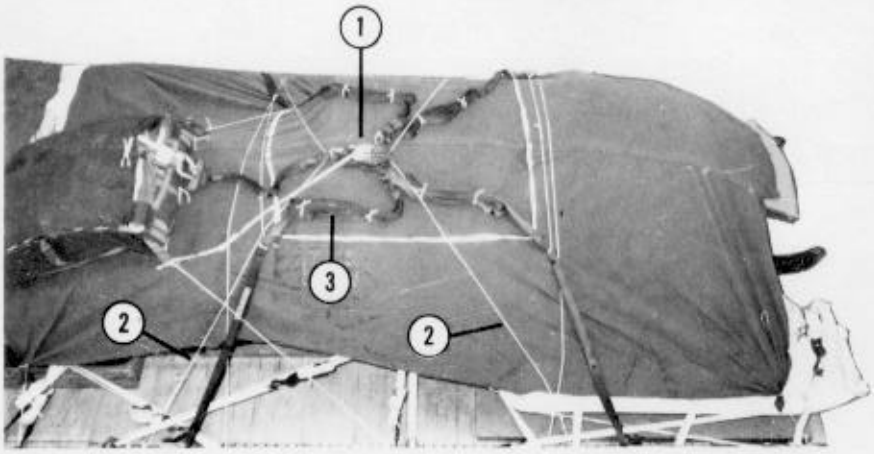
(3) Install a 16-foot cable according to FM 10-500-2/TO 13C7-1-5. Safety the cable to tie-down ring D8 with 1/4-inch cotton webbing.

(4) Install a 9-foot (2-loop), type XXVI nylon deployment sling on the load, and bolt it to the latch assembly on the right spacer. S-fold the slack, and tie the folds with 1/4-inch cotton webbing.

Figure 4-12. EFTC installed

4-11. Installing Parachute Release System

Install the M-1 cargo parachute release system according to FM 10-500-2/TO 13C7-1-5 and as shown in Figure 4-13.



(1) Center the M-1 release on the load.

(2) Tie the release to convenient points on the load with type III nylon cord.

(3) S-fold and tape or tie the slack in the suspension slings.

Figure 4-13. Parachute release system installed

4-12. Placing Extraction Parachute

Place the extraction parachute as described below.

a. C-130 Aircraft. Place a 15-foot cargo extraction parachute, a type IV connector link, and a 60-foot (1-loop), type XXVI nylon extraction line on the load for installation inside the aircraft.

b. C-141 Aircraft. Place a 15-foot cargo extraction parachute, a type IV connector link, and a 160-foot (1-loop), type XXVI nylon extraction line on the load for installation inside the aircraft.

c. C-5 Aircraft. See FM 10-500-2/TO 13C7-1-5 for extraction parachute requirements.

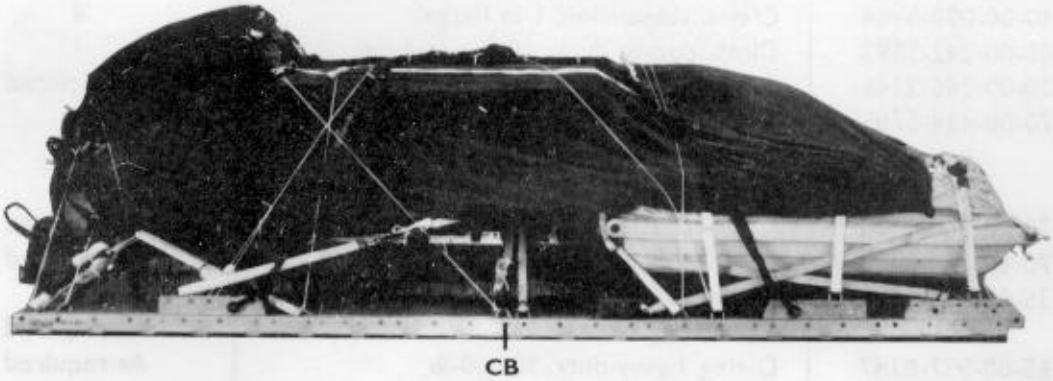
4-13. Installing Provisions for Emergency Restraints

Install the provisions for emergency restraints on the platform as outlined in FM 10-500-2/ TO 13C7-1-5, tables 3-3, 3-4, and 3-5.

4-14. Marking Rigged Load

Mark the rigged load according to FM 10-500-2/ TO 13C7-1-5 and as shown in Figure 4-14. Complete DD Form 1387-2, and securely attach it to the load. Indicate on DD Form 1387-2 that the load has been prepared according to AFR 71-4/ TM 38-250. If the load varies from the one shown, the weight, height, CB, and parachute requirements must be recomputed.

CAUTION: MAKE THE FINAL RIGGER INSPECTION REQUIRED BY FM 10-500-21 TO 13C7-1-5 BEFORE THE LOAD LEAVES THE RIGGING SITE.



RIGGED LOAD DATA

Weight:	Load shown	4,460 pounds
	Maximum load allowed	5,000 pounds
Height		66 inches
Width		108 inches
Length		210 inches
Overhang:	Front	9 1/2 inches
	Rear	9 1/2 inches
CB (from front edge of platform)		100 inches
Extraction system		EFTC

Figure 4-14. MOST rigged on platform

4-15. Equipment Required

Use the equipment listed in Table 4-1 to rig this load.

Table 4-1. Equipment required for rigging the MOST on a type V platform for low-velocity airdrop

National Stock Number	Item	Quantity
8040-00-273-8713	Adhesive, paste, 1-gal	As required
4030-00-090-5354	Clevis, suspension, 1-in (large)	4
8305-00-242-3593	Cloth, cotton duck, 10- by 16-foot	1
4020-00-240-2146	Cord, nylon, type III, 550-lb	As required
1670-00-434-5785	Coupling, airdrop, extraction force transfer w16-ft cable	1
	Cover:	
1670-00-360-0328	Clevis, large	As required
1670-00-360-0329	Link assembly, type IV	As required
8135-00-664-6958	Cushioning material, packaging, cellulose wadding	As required
5365-00-937-0147	D-ring, heavy-duty, 10,000-lb	As required
1670-00-783-5988	Link assembly, type IV (for extraction line)	1
1670-00-753-3928	Pad, energy-dissipating, honeycomb,	
	3- by 36- by 96-in:	15 sheets
	10- by 19-in	(2)
	15- by 42-in	(4)
	14 1/2- by 16 1/2-in	(2)
	36- by 64-in	(1)
	36- by 83-in	(2)
	40- by 4 1/2-in	(4)
	40 1/2- by 32-in	(3)
	60- by 5-in	(8)
	80- by 27-in	(1)
	82- by 27-in	(1)
	Parachute:	
1670-01-016-7841	Cargo, G-11B	1
	Cargo extraction:	
1670-01-063-3715	15-ft (C-130)/(C-141)	1

Table 4-1. Equipment required for rigging the MOST on a type V platform for low-velocity airdrop (continued)

National Stock Number	Item	Quantity
	Platform, AD, type V, 16-ft:	1
	Bracket:	
1670-01-162-2375	Inside EFTA	(1)
1670-01-162-2374	Outside EFTA	(1)
1670-01-162-2372	Clevis assembly (type V)	(37)
1670-01-162-2376	Extraction bracket assembly	(1)
1670-01-247-2389	Suspension link	(4)
1670-01-162-2381	Tandem link (multi-purpose)	(2)
5530-00-128-4981	Plywood, 3/4-in:	
	15 1/2- by 22-in (optional)	(1)
1670-01-097-8816	Release, cargo parachute, M-1	1
	Sling, cargo airdrop, type XXVI nylon webbing:	
	For line, extraction:	
1670-01-064-4452	60-ft (1-loop),drogue	1
1670-01-107-7652	160-ft (1-loop) (C-141)	1
	For deployment line:	
1670-01-062-6304	9-ft (2-loop)	1
	For lifting and for suspension:	
1670-01-062-6303	12-ft (2-loop)	4
	Tape, adhesive:	
7510-00-266-6710	Masking, 2-in	As required
7510-00-266-5016	PSA, cloth back, 2-in	As required
1670-00-937-0271	Tie-down assembly, 15-ft	26
	Webbing:	
8305-00-268-2411	Cotton, 1/4-in, type I	As required
	Nylon:	
	Tubular:	
8305-00-082-5752	1/2-in, natural or	As required
8305-00-268-2453	1/2-in, olive drab	As required
8305-00-261-8584	Type X, olive drab or	As required
8305-00-260-6890	Type X	As required

APPENDIX A

REPRODUCIBLE CHECKLISTS

This appendix provides blank copies of Joint Airdrop Inspection Record checklists. These checklists are not available through normal supply channels. You may reproduce them locally.

JOINT AIRDROP INSPECTION RECORD (CRRC)

(See reverse for instructions)

1. UNIT BEING AIRFIELD	2. DEPARTURE AIRFIELD (Onload)

3. TYPE AIRCRAFT	4. ACFT SERIAL	5. ITEM DESCRIPTION	6. RIGGED IAW FM TO NO CHAPTER	7. LOAD POSITION OF

LOAD DATA TAG INFORMATION	8. WEIGHT	9. LENGTH	10. WIDTH	11. HEIGHT

12. CARGO PARACHUTE SYSTEM	LOADING INSPECTION BEFORE	LOADING INSPECTION AFTER
A. CORRECT NUMBER OF PARACHUTES (D Bags clustered)		
B. PARACHUTE SECURED TO LOAD, CONNECTED TO RELEASE WITH THREE FOOT SLING (Single parachute) (Remove left bag tie)		
C. RELEASE STRAPS ATTACHED TO CLEVIS AT PARACHUTE BRIDLES		
D. RESTRAINT STRAPS PROPERLY SECURING PARACHUTES AND ROUTED THROUGH RELEASE KNIVES		
E. RELEASE KNIVES PROPERLY SAFETIED		
F. RISER EXTENSIONS CORRECT LENGTH, ATTACHED TO PARACHUTE(s)		
G. 15 FOOT PILOT CHUTE ATTACHED TO Q-12 (When applicable)		
H. STATIC LINES CONNECTED TO ANCHOR CABLE		
I. ANCHOR CABLE STOPS PROPERLY POSITIONED AND TAPED		
CHECK ONLY ITEMS APPLICABLE TO YOUR PARTICULAR LOAD		
13. M-1		
A. RELEASE POSITIONED CORRECTLY AND SECURED TO LOAD		
B. PARACHUTE CONNECTOR(s) SEATED IN RETAINER CLAMP		
C. RELEASE TIMER KEYS EXTENDED ARMING LANYARD WIRE SEATED, AND LANYARD SAFETIED		
D. ARMING		
14. FXC RELEASE		
A. RELEASE POSITIONED CORRECTLY AND SECURED TO LOAD		
B. UPPER RELEASE ASSEMBLY ATTACHED TO SHACKLE ASSEMBLY		
15. 5,000 POUND PARACHUTE RELEASE ASSEMBLY		
A. RELEASE LINK IN COPRRECT SLOT YOKE SAFETIED		
B. SPINNER PROPERLY SEATED		
C. SAFETY PIN IN COCKING LEVER		
D. MULTIPLE RELEASES CLUSTERED		
E. SAFTIED TO PARACHUTE		
F. ATTACHED TO COUPLER CLEVIS ON LOAD		
16. SUSPENSION SLINGS		
A. ATTACHED TO COUPLER CLEVIS LINKS		
B. CORRECT LENGTH, LOOP AND NUMBER		
C. ATTACHED TO LOAD OR PLATFORM		
D. PROPERLY PADED ROUTED AND SECURED		
17. GENERAL ITEMS		
A. LASHINGS UNIFORM TENSION		
B. ACCOMPANYING LOAD SECURED		
C. HONETCOMB FLUSH AGAINST LOAD GOOD CONDITION PROPERLY ARRANGED		
D. PLATFORM NOT DAMAGED OR BOWED BOTTOM CHECKED FOR CONDITION (Chuck before or when loading).		
18. TYPE VIII NYLON SHEAR STRAP		
A. CORRECT LENGTH		
B. PROPERLY ROOTED THROUGH PLATFORM(S) AND AIRCRAFT TIEDOWN RINGS		
C. SINGLE OR AFT MOST CRRC ONLY — KNIFE SHARP AND SECURELY ATTACHED TO CABLE ADAPTER		
D. SINGLE OR AFT MOST CRRC ONLY — KNIFE INSTALLED CORRECTLY AND SAFETIED		
E. SINGLE OR AFT MOST CRRC ONLY — 5000 LB NYLON FORWARD RESTRAINT STRAP ROUTED AND SECURED		
F. (C-141 ONLY) MULTIPLE CRRC		
1. RELEASE LANYARD (A7A OR DOUBLE LENGTH TYPE VIII NYLON) CORRECT LENGTH		
2. KNIFE SHARP AND ATTACHED TO RELEASE LANYARD		
J. KNIFE INSTALLED ON RELEASE GATE OF THE NEXT FORWARD PLATFORM AND SAFETIED		
G. (MC 130 ONLY) MA 4A/4A BOMB RACK (SINGLE CRRC ONLY)		
1. D RINGS ATTACHED TO RELEASE GATE		
2. BOMB RACK AND SAFETY CHAINS CONNECTED, SAFETY PIN INSTALLED		
3. SEDS ELECTRICAL CABLE CONNECTED		
4. 5000 LB NYLON FORWARD RESTRAINT STRAP ROUTED AND SECURED TO FORWARD LOAD ONLY		
5. 1000 LB NYLON FORWARD RESTRAINT STRAP ROUTED AND SECURED TO AFT LOAD		
H. PREPARED IAW TM 38 250 AFR 71 1		
I. EMERGENCY RESTRAINT PROVISIONS ON LOAD		

19. BEFORE LOADING INSPECTION CERTIFICATION — DATE AND TIME COMP

A. TRANSPORTATION FORCE INSPECTOR

UNIT (Print)	LAST NAME (PRINT)	INITIALS

SIGNITURE

B. AERIAL PORT INSPECTOR

UNIT (Print)	LAST NAME (Print)	INITIALS

SIGNITURE

20. AFTER LOADING INSPECTION CERTIFICATION — DATE AND TIME COMP

A. TRANSPORTATION FORCE INSPECTOR

UNIT	LAST	INITIALS

SIGNITURE

B. AERIAL PORT INSPECTOR

UNIT (Print)	LAST NAME (Print)	INITIALS

SIGNITURE

C. AIRCREW LOADMASTER

UNIT	LAST NAME (Print)	INITIALS

SIGNITURE

21. REMARKS

CONTINUED ON BACK

Suggested format for reproducible checklist

21. ADDITIONAL REMARKS

INSTRUCTIONS

Complete Join Airdrop Inspection Record *(CRRC)* as detailed below:

Item 1. Enter the designation and geographic location of the military unit responsible for the equipment being tendered for airdrop. *(Example: 612 th Quartermaster Company, Fort Brag, NC)*

Item 2. Enter the designation of the locality from which the unit being airlifted is departing. *(Example: Bravo LZ, Elgin AFB, FL)*

Item 3. Enter the model and series of aircraft that will airlift the equipment to be airdropped. *(Example: C-130E)*

Item 4. Enter the complete serial number (tail number) of the aircraft on which the equipment is loaded. *(Complete during afterloading inspections)*

Item 5. Enter the nomenclature of the equipment tendered for airdrop. If additional space is required, enter "see remarks" and describe the entire load in item 21. *(Example: ammunition, petroleum)*

Item 6. Enter the FM/TO number and specific chapter utilized in rigging the equipment tendered for airdrop.

Item 7. Enter the number of containers onloaded and the number of drops to be accomplished.

Item 8. Enter the total rigged weight of the item.

Item 9. Enter the length of the item.

Item 10. Enter the width of the item.

Item 11. Enter the height of the item.

Items 12 through 18. Enter a check mark for each applicable item. Enter "NA" for non-applicable items. NOTE: If an entire major area is not applicable, it may be crossed out *(X)*.

Item 19. Enter local time and date of inspections. All entries, including signatures, must be complete and legible. Both the Transported Force and Aerial Port inspectors certify completion of the inspection. When the load is delivered to the aircraft, the aircrew loadsmaster will insure all items 1 through 11 are entered and correct, and insure all checks in the before loading column *(Items 12 through 18)* are entered. Insure 19A and B are completed.

Item 20. Enter local time and date of inspections. All entries including signature, must be complete and legible. Both inspectors must certify completion.

NOTE: After all inspections are completed, the aircrew loadmaster insures that all applicable columns have been checked, and affixes his signature certifying completion of all inspection requirements.

Item 21. Enter any comments pertaining to the load, loading difficulties encountered or reasons for rejection of the load. Also include any other pertinent facts concerning the load of delays. When inflight rigging is required, those items to be completed inflight will be annotated.

Suggested format for reproducible checklist (continued)

JOINT AIRDROP INSPECTION RECORD (HSLLADS/CRS)
(SPECIAL OPERATIONS)

1. UNIT BEING AIRLIFTED			2. DEPARTURE AIRFIELD (ONLOAD)	
3. TYPE AIRCRAFT	4. ACFT SERIAL NO.	5. ITEM DESCRIPTION	6. RIGGED IAW FM/TO NO., CHAP	7. NO. CONTAINERS/DROPS

LOAD DATA TAG INFORMATION	8. WEIGHT	9. LENGTH	10. WIDTH	11. HEIGHT

CHECK ONLY ITEMS APPLICABLE TO YOUR SPECIFIC LOAD	LOADING INSPECTION	
	BEFORE	AFTER
12. CARGO PARACHUTE SYSTEM		
A. CORRECT SIZE, NUMBER, BAG CLOSING TIES CORRECT		
B. PILOT CHUTE ATTACHED TO G-12 (WHEN APPLICABLE)		
C. CLUSTER TIES NOT SECURED TO LOAD		
D. DEPLOYMENT BAG SECURED TO LOAD		
E. PARACHUTE CLEVIS SECURED TO LOAD		
F. STATIC LINE(s) PROPERLY ATTACHED TO DEPLOYMENT BAG (BREAKAWAY OR NON-BREAKAWAY)		
G. STATIC LINE(s) CONNECTED TO ANCHOR CABLE		
H. ANCHOR CABLE STOP PROPERLY POSITIONED AND TAPED		
13. CONTAINERS		
A. SUSPENSION WEBS ATTACHED TO CONTAINER AND TAPED		
B. CONDITION OF WEBBING AND COVER		
C. HONEYCOMB CONDITION (HIGH VELOCITY; CORRECT AMOUNT)		
D. SKID BOARD CONDITION AND SKID BOARD TIES (HIGH VELOCITY/HSLLADS; STEEL BANDS ROUTED FORWARD AND AFT		
E. TYPE XXVI NYLON/DACRON STRAP BELLY BAND INSTALLED WITH D-RINGS AND ROUTED CORRECTLY (SINGLE CONTAINER DROP)		
F. EXCESS TYPE XXVI NYLON/DACRON STRAP FOLDED AND SECURED AND LOAD BINDER FACING AFT AND SAFETIED (SINGLE CONTAINER DROP ONLY)		
14. MULTIPLE CONTAINER RIGGING		
A. TYPE XXVI NYLON SAFETIED TO AFT CONTAINER WITH TYPE III NYLON		
B. TYPE XXVI NYLON SAFETIED TO FORWARD CONTAINERS WITH 80 LB COTTON WEBBING		
C. D-RINGS SAFETIED WITH 80 LB COTTON WEBBING		
15. RELEASE SYSTEM AND AIRCRAFT RIGGING		
A. CONTAINER(s) PROPERLY POSITIONED		
B. SEDS PROPERLY ROUTED AROUND CONTAINER(s) WITH PULLEY ASSEMBLY CONNECTED TO TIEDOWN RINGS 30B AND 30F		
C. BOMB RACK AND SAFETY CHAINS CONNECTED, CHAINS TAPED, AND SAFETY PIN INSTALLED		
D. SEDS ELECTRICAL CABLE CONNECTED		
E. SEDS RETENTION LINE ATTACHED TO TIEDOWN ROWS B AND F		
F. 5000 LB NYLON FORWARD RESTRAINT STRAP PROPERLY ROUTED, CONNECTED, AND EXCESS SECURED		
16. HAZARDOUS MATERIAL PREPARED IAW TM 38-250/ AFR 71-4		

17. BEFORE LOADING INSPECTION CERTIFICATION	DATE AND TIME COMP
A. TRANSPORTATION FORCE INSPECTOR	
UNIT (PRINT) / LAST NAME (PRINT) / INITIALS	
SIGNATURE	
B. AERIAL PORT INSPECTOR	
UNIT (PRINT) / LAST NAME (PRINT) / INITIALS	
SIGNATURE	

18. AFTER LOADING INSPECTION CERTIFICATION	DATE AND TIME COMP
A. TRANSPORTATION FORCE INSPECTOR	
UNIT (PRINT) / LAST NAME (PRINT) / INITIALS	
SIGNATURE	
B. AERIAL PORT INSPECTOR	
UNIT (PRINT) / LAST NAME (PRINT) / INITIALS	
SIGNATURE	
C. AIRCREW LOADMASTER	
UNIT (PRINT) / LAST NAME (PRINT) / INITIALS	
SIGNATURE	
19. REMARKS	

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GLOSSARY

AFB Air Force base

AFR Air Force regulation

AFTO Air Force technical order

ALC Air Logistics Center

AMC Air Mobility Command

ARNG Army National Guard

attn attention

c change

CB center of balance

CO_2 carbon dioxide

d penny

DA Department of the Army

DC District of Columbia

DD Department of Defense

diam diameter

FM field manual

FMFM fleet Marine force manual

ft foot/feet

gal gallon

HQ headquarters

HSLLADS high-speed, low-level airdrop system

IBS inflatable boat, small

in inch

LAW light antitank weapon

lb pound

LPU life preserver, underarm

LVAD low-velocity airdrop

MARS military amphibious reconnaissance system

mm millimeter

MOST Mobile Over Snow Transport

N_2 nitrogen

NAVAIR Naval Air Systems Command

NAVSEA Naval Sea Command

no number

NSN national stock number

Qty quantity

rqr requirement

sec second

SOCEP special operations combat-expendable platform

SOP standing operating procedure

TM technical manual

TO technical order

TRADOC United States Army Training and Doctrine Command

typ typical

US United States

USAR United States Army Reserve

w with

wo without

yd yard

REFERENCES

These documents must be available to the intended users of this publication.

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TO 13C7-51-21
7 OCTOBER 1987

By Order of the Secretaries of the Army and the Air Force:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

R. L. DILWORTH
Brigadier General, United States Army
The Adjutant General

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