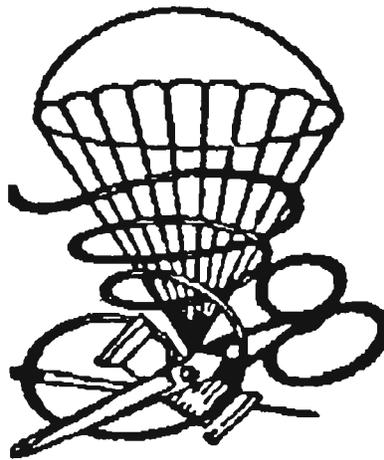


# NORTHERN LITE III

## OWNERS MANUAL



NORTHERN LITE ENTERPRISES, INC.

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**⚠ WARNING ⚠**

PARACHUTING IS A HIGH RISK ACTIVITY WHICH MAY  
CAUSE OR RESULT IN SERIOUS INJURY OR DEATH

**NORTHERN  
LITE  
III**

**OWNERS MANUAL**

**REVISED FEB. 1992**

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## **WARNING - NO WARRANTIES - DISCLAIMER**

It is expressly understood and agreed upon that by the use hereof by the Buyer or any subsequent user that the Seller shall in no way be deemed or held liable or accountable, upon or under any guaranties or warrantees, expressed or implied, statutory, by operation of law or otherwise, beyond that expressed herein. It sold with all faults and **WITHOUT ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE**, expressed or implied for the particular purpose the Buyer intends to use it.

The liability of the Seller is limited to replacement of defective parts found upon examination by the manufacturer to be defective in material or workmanship within 30 days after its purchase, and which has not been caused by an accident, striking, improper use, alteration, tampering, excessive use, misuse or abuse.

The Seller and/or manufacturer shall in no event be liable for personal injuries or for any other damages, whether direct or consequential to any person, and have no other liability in connection with this device, and the Seller further **DISCLAIMS** and the Buyer and/or user hereby **WAIVES** any such liability.

## LIMITATIONS OF EQUIPMENT

NORTHERN LITE III Harness/Container Systems are manufactured with FAA authorization under TSO-C23c Category B of SAE Aerospace Standard AS-8015A. The use of the NORTHERN LITE III is limited to a maximum weight of 254 lbs (115 kg) and a maximum airspeed of 150 knots. Further weight and speed limitations are imposed by Northern Lite Enterprises, Inc. based upon the maximum recommended or approved weight and speed limitations defined by the manufacturer of any and all attached components (i.e. main or reserve canopies).

It is the responsibility of the individual jumper to familiarize himself with the operation, maintenance, and limitations of all components of the assembled NORTHERN LITE III harness/container system. Any questions or concerns regarding the compatibility, assembly, packing, maintenance, or use should be directed to an FAA certificated parachute rigger, instructor, or the manufacturer as applicable.

### **⚠️ WARNING ⚠️**

**PARACHUTING IS A HAZARDOUS ACTIVITY WHICH CAN RESULT IN INJURY OR DEATH AND THE USE OF THIS EQUIPMENT CANNOT CHANGE THAT FACT. NO ONE SHOULD ATTEMPT TO MAKE A PARACHUTE JUMP UNLESS THEY HAVE BEEN THOROUGHLY TRAINED BY A CERTIFIED AND EXPERIENCED INSTRUCTOR. THERE ARE NO GUARANTEES THAT THIS EQUIPMENT WILL FUNCTION AS INTENDED, REGARDLESS OF HOW IT IS ASSEMBLED, PACKED, MAINTAINED OR USED. BY USING THIS EQUIPMENT !!THE USER ASSUMES ALL RISKS AND LIABILITIES!!**

## **TO THE OWNER:**

Your new rig has been crafted from the finest materials available. Treat it well and it will last a lifetime of jumps. Keep it out of the sun, avoid dirt and stains. Store it away from oils, moisture, acids, abrasives, etc. and inspect it frequently for wear or damage.

To clean your gear occasionally of heavy soil it may be soaked in warm water in a mild soap solution and brushed clean.

When it is time to assemble or repack your reserve, choose a rigger you know and trust, one who will let you watch. You (and your rigger) will appreciate the ease with which the Northern Lite III container closes around your reserve, leaving a clean launch pad for your pilot chute. You will also gain a better understanding of your reserve system and how it works.

The Northern Lite III harness and container system is a custom made sport tandem rig. It is fully approved under FAA TSO C23c. It is built to fit specific volume canopies. Check the tag on the packing data card pocket (located in a pocket under the reserve top flap) to find out what size reserve canopy will fit in the reserve container. No attempt will be made in these instructions to show you how to flake and fold the canopies to be packed in the Northern Lite III. Refer to canopy manufacturer's instructions for that information.

Your new Northern Lite III comes with all parts required for assembly with your reserve and main canopies. The main risers with toggle system are provided with either 3-ring or mini 3-ring releases. Although the size differs, they operate in the same manner. Your rig is also supplied with a reserve bridle and pilot chute, or a reserve free-bag, pilot chute, toggles, and guide rings (for square reserve canopies), a main pilot chute, main bridle, and main deployment bag.

The Northern Lite III comes with a reserve ripcord. When activated, it should be pulled hard to full extension of the user's arm. Also provided is a main canopy jettison handle (cutaway handle). It too, should be pulled to full extension of wearer's arm when used. Housings for both reserve activation and main jettison cables are provided and tacked in place at the factory. These tacks should be checked periodically for secureness.

## **EQUIPMENT MAINTENANCE:**

Requirements for maintenance per FAR 105.43:

- A) A certificated parachute rigger or the person making the parachute jump must have packed the main parachute within 120 days before the date of its use.
- B) A certificated and appropriately rated FAA Senior or Master parachute rigger must have packed the auxiliary/reserve parachute within 120 days before the date of use if made of synthetic fiber; or 60 days before the date of use if made of silk, pongee, or other natural fibers.

## **USER MAINTENANCE:**

Prior to each jump the jumper should examine the general condition of the NORTHERN LITE III Harness/Container System. Any questions or concerns should be directed to the proper authority (i.e.: rigger, instructor or the manufacturer). The following is a list of specific items which should be examined prior to the use of this equipment.

- 1) Check for the proper seating of the main container pin, examine the integrity of the closing loop and check the main bridle for proper routing and general condition.
- 2) Check the reserve pins to assure proper seating, examine the closing loops for wear and assure the outer flap is secure.
- 3) Check all visible harness and container stitching.
- 4) Check all housings for excessive wear, dents, and proper tacking.
- 5) Examine all velcro to be sure it is clean and holds securely.
- 6) Check the reserve ripcord for freedom of movement in housing and the secure seating of the handle in the velcro pocket.
- 7) Check the hardware for operation, cracks or chips in the plating.
- 8) Assure the proper assembly of the Booth 3-Ring Release System.
- 9) Verify that the main pilot chute is fully inserted in its pocket and the handle is easily accessible.

**NORTHERN LITE III - COMPATIBILITY LIST**

CONTAINER SIZES	RESERVE SIZE RANGE (CUBIC INCHES)	MAIN SIZE RANGE (CUBIC INCHES)
S5.5S	350 - 400	350-400
S5.5	350-400	400-450
S5.6S	350-400	425-475
S5.6	350-400	450-500
SSEX.5	400-450	350-400
SSEX.6	400-450	400-450
SSEX.7	400-450	450-550
SSEX.8	425-475	500-600
5.5	400-475	400-450
5.6	400-475	450-500
5.7	400-475	500-550
5.7D	400-475	550-650
5.8	400-475	650-800
L5.6	450-550	450-500
L5.7	450-550	500-550
L5.7D	450-550	550-650
L5.8	450-525	650-800

## **LOOP LIST - RESERVE**

Best results will be obtained by using the following loop lengths:

Round reserves: 10-1/2 inches

Square reserves: 12 inches

**ATTN RIGGERS:** These are approximate lengths. While the loop lengths provided should be correct, discretion should be used to keep reserve ripcord pull within TSO C23c limits ( 5 lbs minimum applied force to pull reserve handle and 22 lbs. maximum).

## **ASSEMBLING THE MAIN CONTAINER**

1. Lay out main parachute, flake canopy, and check lines for straightness and continuity.
2. When lines check out, attach connector links to risers in correct manner (nose of canopy on front riser, tail on rear riser).
3. Run steering lines through guide ring on rear riser.
4. Attach toggle to steering line with a minimum of three (3) half hitches.
5. Attach right riser to right side of harness. Attach left riser to left side of harness.
6. Run bridle loop through grommet at top of bag, (mouth of bag toward canopy), with bag-stop ring positioned on the outside of the bag.
7. Thread the bridle through the ring at the top of the canopy (or nylon loop if provided with canopy), and thread back through the grommet at top of bag.
8. Thread the pilot chute through the loop in the bridle and pull to secure.
9. Install rubber bands on bag.
10. Main parachute is now ready to pack according to manufacturer's instructions.

**NOTE:** IT IS RECOMMENDED THAT THE PROPER ASSEMBLY BE INSPECTED AND VERIFIED BY A CERTIFICATED PARACHUTE RIGGER.

## **ASSEMBLING THE RESERVE CONTAINER**

This document is to be used as a guide for packing reserves into the NORTHERN LITE III reserve container.

An FAA senior or master rigger certificate with back rating is required to pack any reserve or emergency parachute that will be carried for use in the United States.

Due to the great variety of ram air parachutes available for use as reserves, no instructions for inspection or assembly are contained in this document. **THE RIGGER MUST FOLLOW THE CANOPY MANUFACTURER'S INSTRUCTIONS FOR THESE STEPS.**

Although other methods of folding ram air reserves will also yield satisfactory results, the method described herein is preferred for use with the NORTHERN LITE III free-bag, bridle, and container system.

## **PACKING THE RESERVE CONTAINER**

Before you start, record the pertinent data from the canopy. (Many reserves have been packed twice in the same day for want of a number and a date).

### **PARTS REQUIRED:**

1. Northern Lite III Harness/Container System
2. Compatible Volume Reserve Canopy (See Chart)
3. Reserve Pilot Chute (Provided)
4. Reserve Bridle or Free-bag for Square (Provided)
5. Canopy Packing Instructions
6. Rubber Bands (Round Reserve only)
7. Reserve Closing Loop (Provided)
8. Reserve Ripcord (Provided)
9. Lead Seal and Thread
10. Packing Data Card (Provided)

### **TOOLS REQUIRED: (Round or Square)**

1. Needle and Tack Cord (Cotton No. 6)
2. Large Blade Screwdriver or 6" Adjustable Wrench
3. Shot Bags, Line Separator, Etc.
4. Two (2) Pull Up Cords 40" long
5. Two (2) Temporary Pins
6. Seal Press
7. Scissors or Knife
8. Packing Paddle

### **ADDITIONAL TOOLS REQUIRED: (SQUARE ONLY)**

1. (Method A) 2 Poptop T-bars  
(Method B) 2 Pull Up Cords (Ungutted 550) 60" long
2. Molar Strap (optional)

## **PACKING INSTRUCTIONS ROUND RESERVE**

### **ASSEMBLY:**

1. Attach compatible canopy to reserve risers (2 or 4) with both canopy and container/harness system face down on table. Use the front set of risers for single link set up.
2. If two (2) "L" links are used, the riser end must be tacked according to Fig. 2.
3. Using the bridle provided, tie and tack the reserve pilot chute to the apex of canopy in the accepted fashion. **NOTE:** A 6 ft. length of 1,000 lb. tubular nylon should be used with long spring pilot chutes only. **Hot dog pilot chutes (or similar types) are recommended.**
4. Install rubber bands only if a non-diapered or 2-stow diapered canopy is being installed. (Fig. 4)

### **START HERE FOR REPACK:**

5. After line continuity has been established, tighten all connector links. Inspect the pilot chute, bridle, apex, canopy, skirt, lines, toggles, and harness/container system for integrity.
6. Tack steering toggles, if applicable.
7. Flake, fold and diaper (if applicable) canopy according to canopy manufacturer's instructions.
8. Stow lines (if applicable) starting in either lower corner of container. Leave a minimum of excess line between skirt or diaper and last line in stow. (Fig. 5)

9. Be sure closing loop is in place and install two (2) pull up cords in closing loop. (Fig.6) (See chart on page 6 for proper loop length)
10. Turn the harness/container system 90 degrees clockwise on table. Install skirt or diaper in lower right corner of container. (Fig. 6)
11. Completely fill corner opposite skirt with canopy material. (Fig. 6)
12. Return one fold to skirt and place it directly on top of skirt. (Fig. 7) Fill corner again. There will now be three (3) layers of folded canopy material stacked in the lower portion of the container. **Note:** On some full stow diapered reserves, an extra fold in corner opposite diaper may be required to give a uniform stack of material. (Fig. 6 and 8)
13. "S"-Fold remainder of canopy into container. Pull the pull up cords through at the most convenient time during this procedure. (Fig. 9)
14. Close kicker plate flap (inside bottom). Install two (2) temporary pins. (Fig. 10)
15. Close side flaps. Reinstall same two temporary pins. (Fig. 11)
16. Dress upper corners (tuck in flap T-12). (Fig. 11) Mate hook velcro on side flaps to pile velcro on top flap. (Fig. 12) **Note:** Some square reserve systems call for no velcro corner which may restrict bag extraction from container. (In such instances, mate a spare piece of 1" hook to 1" pile on top flap).
17. Install bridle and pilot chute in lower portion of container on kicker plate flap. Compress pilot chute. Tuck in pilot chute material. (Fig. 13 and 14)

18. Close bottom flap tightly over pilot chute. Pull up closing loops and relocate the two temporary pins. (Fig. 15 and 16)

19. Close inside top flap. Pull up closing loops and pin with ripcord. Be sure housing is clear. (Fig.17)

**20. REMOVE TEMPORARY PINS.**

21. Redress corners if necessary. Install seal in normal manner and close the top cover flap.

22. Sign data card (previously filled out) and install it in pocket between reserve and backpad.



FIG. 1

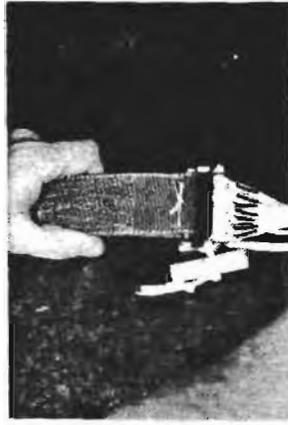


FIG. 2

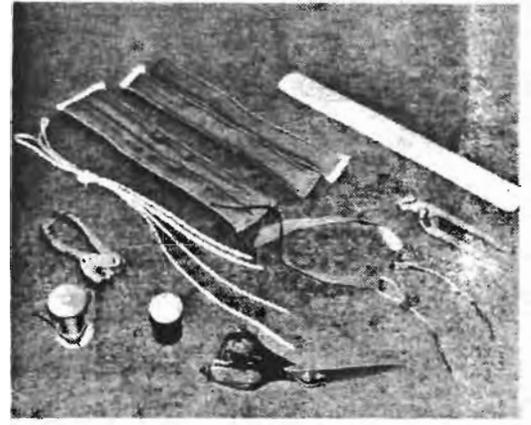


FIG. 3



FIG. 4

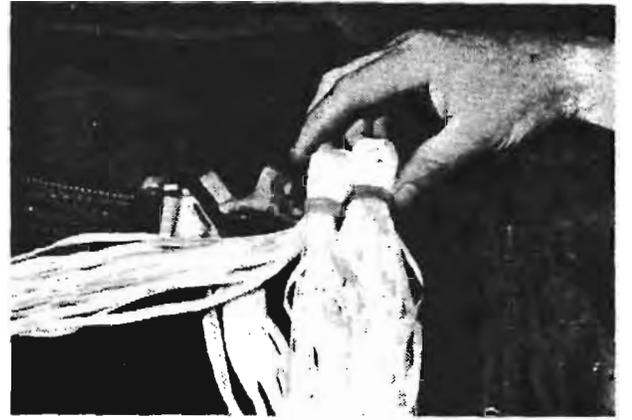


FIG. 5



FIG. 6



FIG. 7

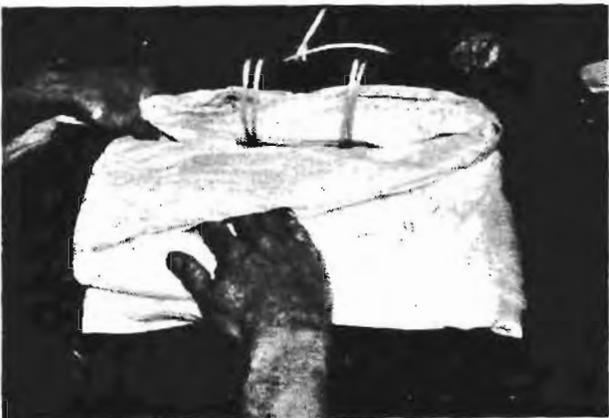


FIG. 8

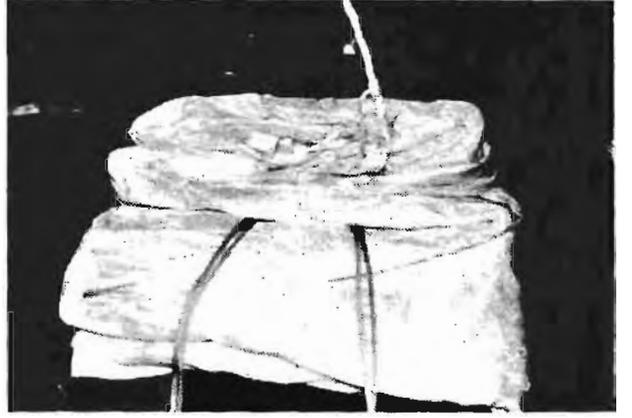


FIG. 9

(c) Tie the 60" pull-up cords off with an overhand knot outside the top side of the bag, (these will serve as pull-up cords for the pull-up cords) so that the bag may be about 4"-5" thick when filled with the ram air canopy. (Fig. 1b)

4. Lay the canopy neatly on its right side, taking care to even up the topskin and line groups. Split the nose of the canopy. (Fold 3 cells under and leave 4 cells laying flat.) (Fig. 2)

5. Set the brakes by pulling the fingertrap down through the guide ring (RW-3 or RW-4). (If a Paraflyte canopy is being packed, be sure that the ring is an RW-4) Place the locking loop through the fingertrap and through the guide ring. Insert about 1" of the stiffened end of the steering toggle through the locking loop. "S" fold the excess steering line and stow it between the toggle and the riser. Secure the toggle to the riser by mating the velcro. (Fig. 3)

6. Kneeling at the top of the canopy, grasp the top 4 cells (left half of canopy) with your right hand about halfway between line groups A and B. Grasp all 7 cells with your left hand directly above line group B. Maintaining a constant distance between your hands, raise the fabric about 10" off the floor and move to the right until line groups A and B are in line. (Fig. 4 and 5) Be sure to maintain an even tension in all the lines while making these folds.

7. Repeat step 6 for folds between line groups B and C, only this time, grasping 3 cells with your right hand. (Fig. 4 and 5)

8. Repeat step 6 for folds between line groups C and D, once again grasping 4 cells with your right hand. (Fig. 4 and 5)

9. Spread the tail of the canopy to expose the wind channel. While clearing the stabilizer panels, check to see that the folds between the line groups are neat and continuous between the top and bottom surfaces of the canopy. (Fig. 6)

10. At this time, check to see that all the lines and attachment points are located at the center of the stack of folds (the wind channel) (Fig. 6).

11. Flake and split the tail of the canopy according to the canopy manufacturer's instructions. (Where over the shoulder, or pro-pack is indicated, note that the end result is the same as the method shown here.) (Fig. 22 - Courtesy Glide Path International)
12. Stow the slider according to the canopy manufacturer's instructions. (Fig. 7)
13. Raise the center of the tail towards the top of the canopy and make a staking fold of the stabilizers and slider so that they are even with the trailing edge of the canopy. (Fig. 8)
14. Return the center of the tail to its former position (covering the folded stabilizers and slider). (Fig.8)
15. Kneeling on the trailing edge and facing the top of the canopy, split the top of the canopy into two sections -- much like the shape of a molar tooth. (YOU WILL NOW SEE THE METHOD BEHIND OUR MADNESS. IT IS VERY EASY TO SPLIT THE TOP OF THE CANOPY IF YOU FOLLOW THESE INSTRUCTIONS PROPERLY.) (Fig. 9 and 10)
16. Dress the two sections neatly. (Fig. 10)
17. Dress the canopy to a width about 4" wider than the bag.
18. Carefully slide the bag over the canopy, filling the upper portion of the bag with the two split sections of the top of the canopy -- one on each side of the (Method A) t-bars; or (Method B) ungutted pull-up cords. (Fig. 11)
19. Stack fold the remainder of the canopy into the lower portion of the bag, with the tail section on top. (Fig. 12 and 13)
20. Close the locking flap with two short bites (1"-2") of the suspension line in the elastic safety stow. (Fig. 14)

21. Sit down on the pilot chute bridle facing the top of the bag. Roll the bottom of the bag up towards yourself until the line stow pouch is facing up. (Fig. 15)
22. Open the pouch on the bottom side of the bag and stow the remainder of the suspension lines in the pouch, leaving about 8" of line unstowed. Mate the nylon hook and look to close the line pouch. (Fig. 15)

## PART II: CLOSING THE CONTAINER

23. Lay the D-bag into the container with the bridle going out to the top. Lift the D-bag and spread the risers so that they are not on top of each other. Now raise the top of the D-bag and (Method A) remove the rubber bands from the ends of the t-bars and insert about 4"-5" of the 40" gutted pull-up cords through the slots in the t-bars; OR (Method B) untie one of the slip knots in one of the 60" pull-up cords and insert about 8"-10" of the 40" cord through the 60" cord. Repeat for the other side. Pull the secured ends of the 40" pull-up cords up through the bag, being very careful not to pull any canopy fabric through the grommets. Fill the lower corners of the container with the bag. Pull the closing loop up through the bag and secure with two temporary pins. (Fig. 16 and 17)
24. Feed the pull-up cords through the grommets on the inside bottom flap of the container. Pull the closing loop through the grommets and secure with the temporary pins. (Fig. 18)
25. "S" fold the bridle at the bottom of the container. Make these folds as wide as the D-bag to reduce the bulk. (Fig. 19)
26. Close side flaps and relocate the two temporary pins. (Fig. 19)
27. Dress the upper corners of the container. (Tuck in the Type-12 flaps) (Fig. 19)

28. Install the pilot chute in the lower portion of the container. Compress the pilot chute. Tuck in all mesh and fabric. **BE SURE THAT NO PILOT CHUTE MESH OR FABRIC CAN BE CAUGHT BY THE OPEN ENDS OF THE CLOSING LOOP DURING DEPLOYMENT.**

29. Close bottom flap tightly over pilot chute. Pull up the closing loop and relocate the two temporary pins. (Fig. 20)

30. Close inside top flap. Pull up closing loop and secure with ripcord. **BE SURE HOUSING IS CLEAR.** (Fig. 21)

31. **REMOVE THE TWO TEMPORARY PINS!!**

32. Redress corners if necessary. Install seal in normal manner and close the top cover flap.

33. Sign packing data card (previously filled out) and install it in the pocket provided under the reserve flap.

34. Fill in the warning label located on the lower backpad with the pertinent weight and air-speed data.

35. **RECHECK THIS PROCEDURE TO ASSURE THAT ALL STEPS WERE COMPLETED AND THEN COUNT YOUR TOOLS TO BE ABSOLUTELY SURE THAT THEY ARE ALL OUT OF THE CONTAINER!**

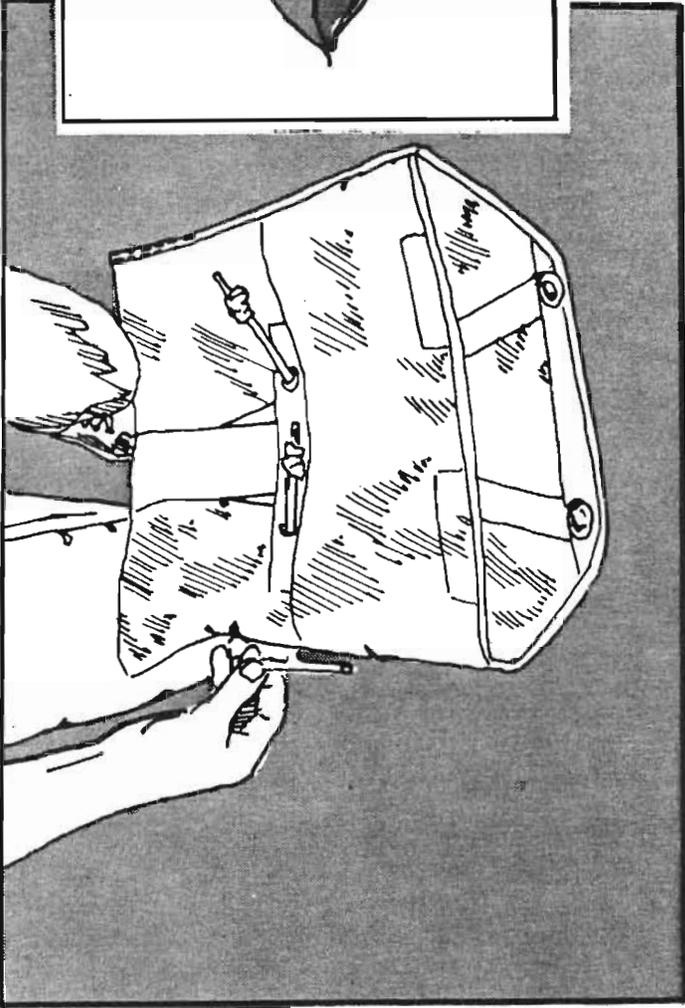


FIG. 1a

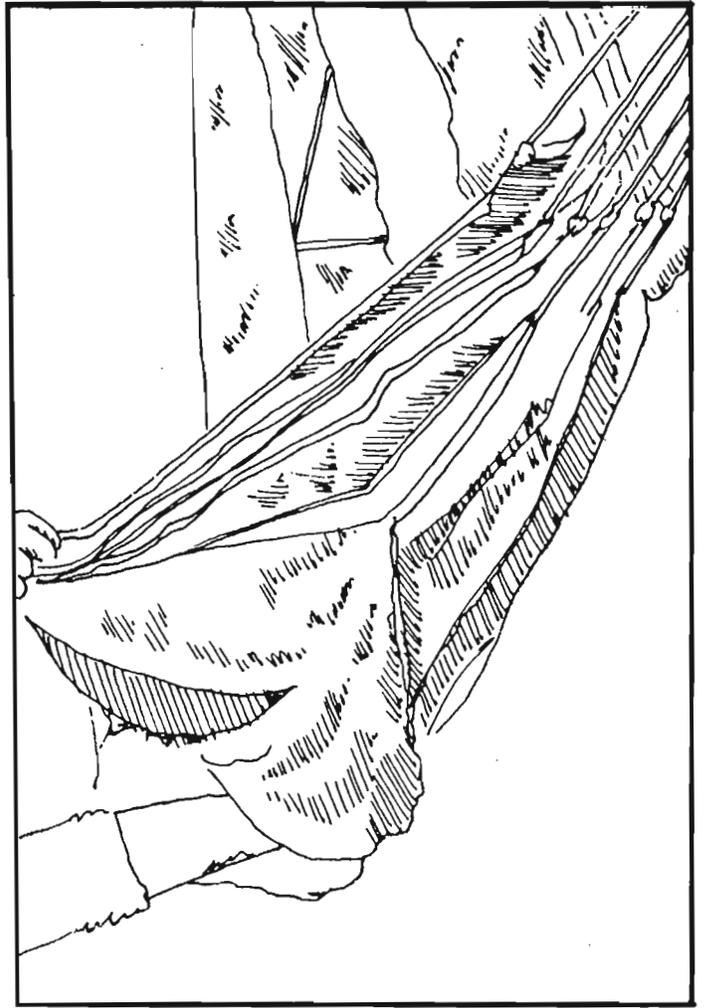


FIG. 2

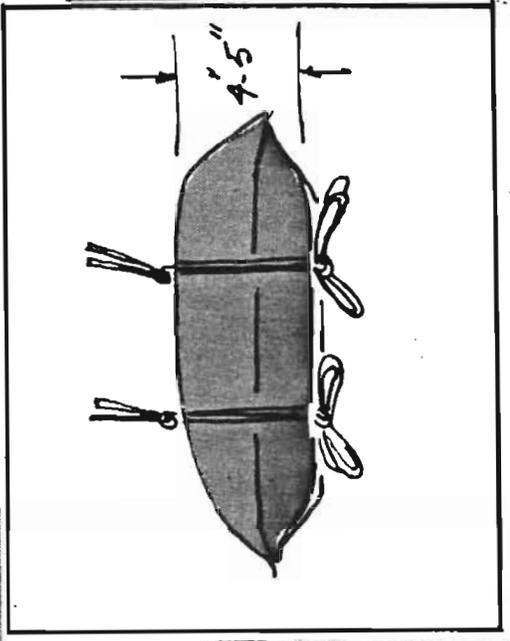


FIG 1b

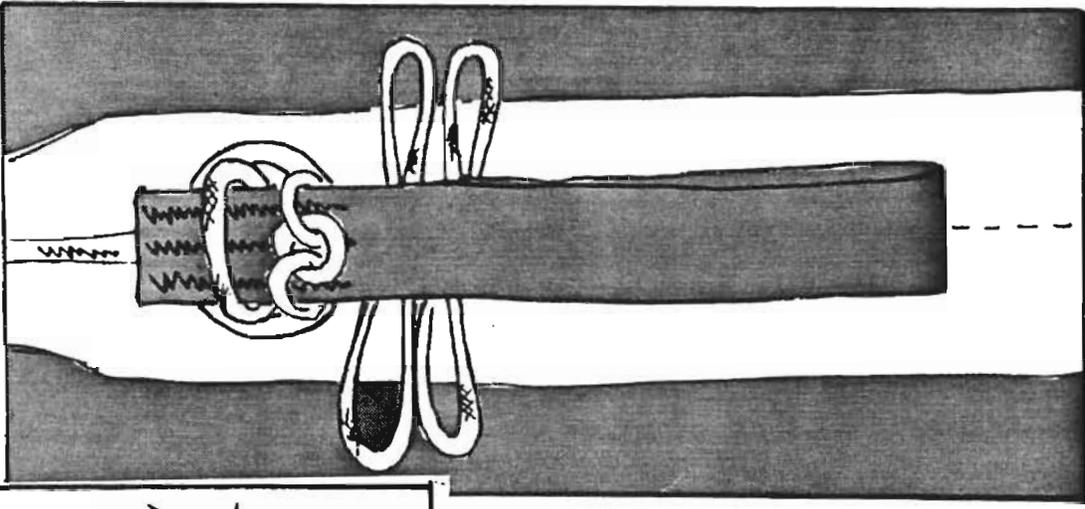


FIG. 3

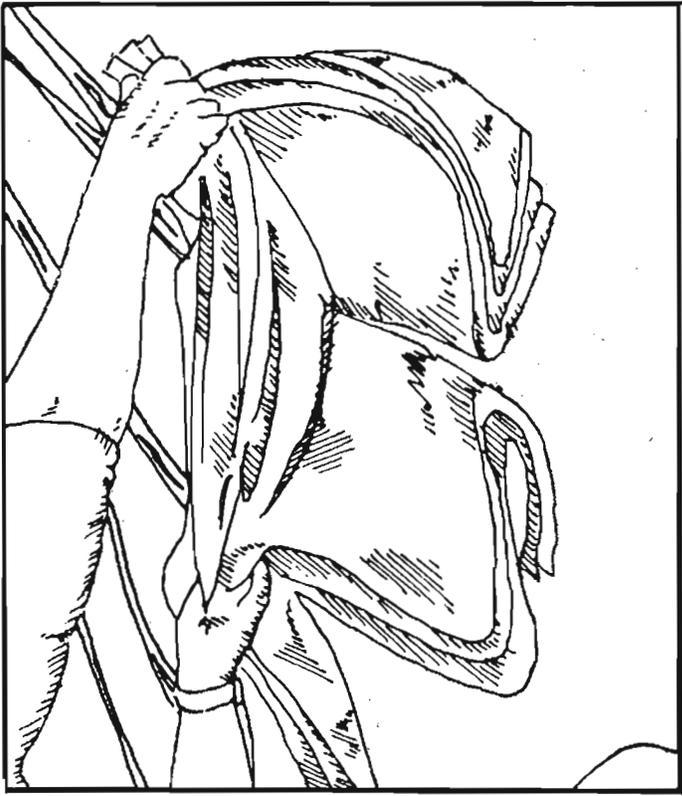


Fig. 5

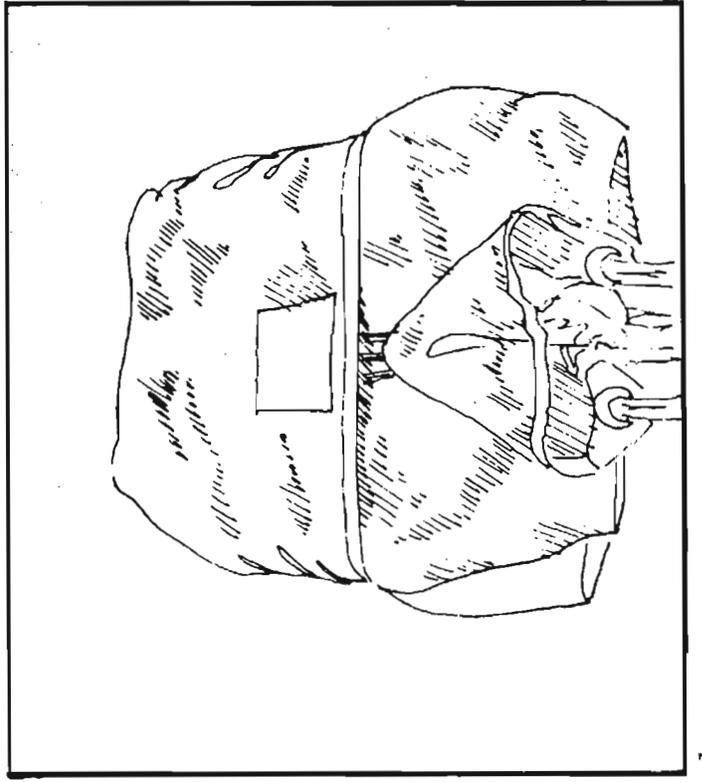


FIG. 7



Fig. 4

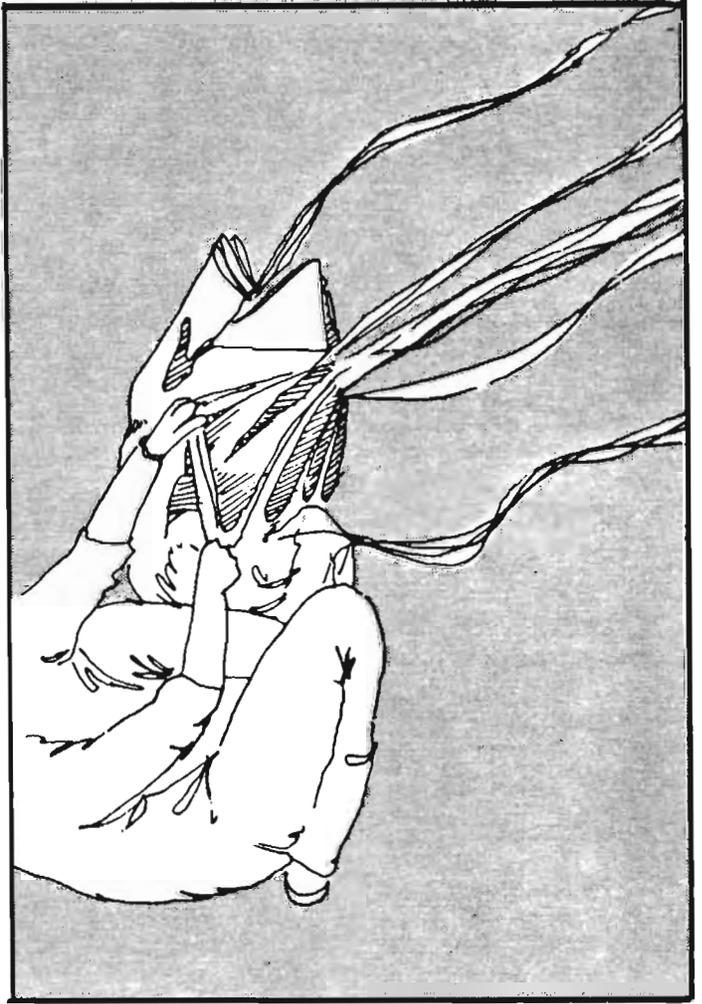


FIG. 6



FIG. 9

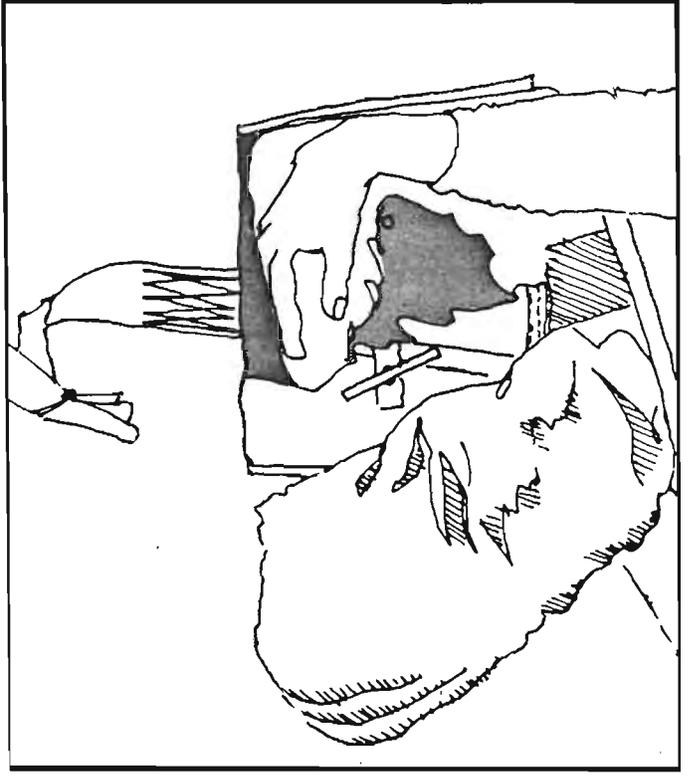


FIG. 11

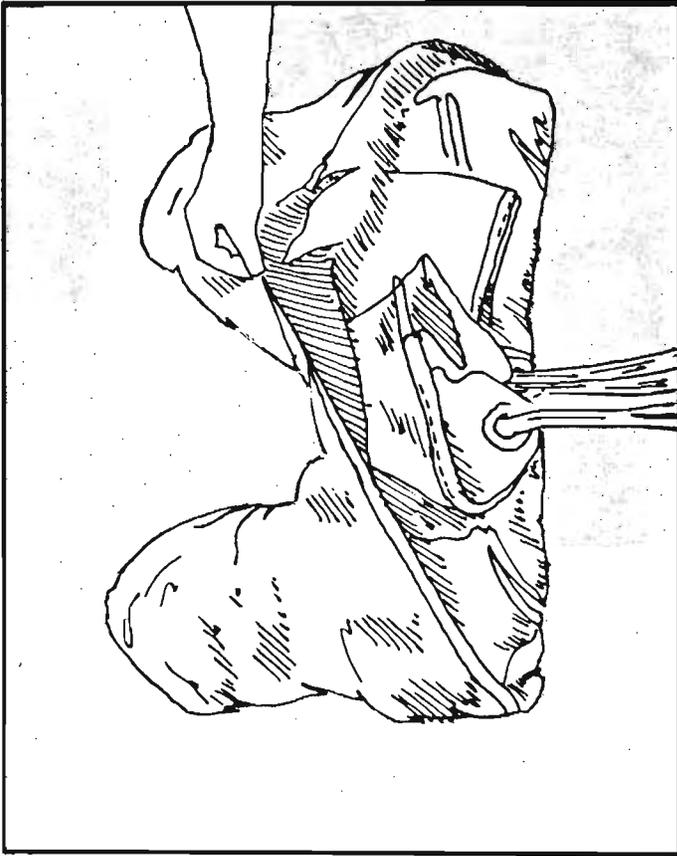


FIG. 8



FIG. 10



FIG. 13



FIG. 15

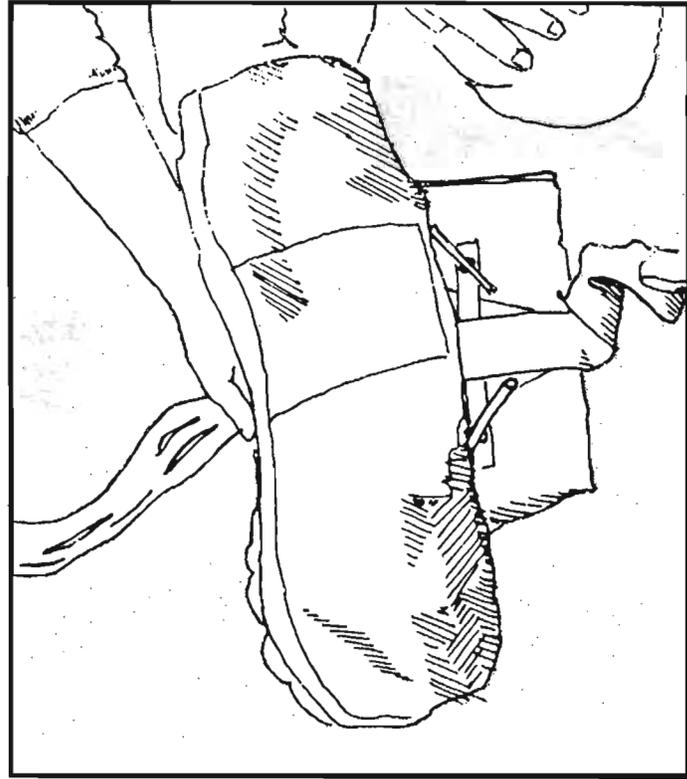


FIG. 12

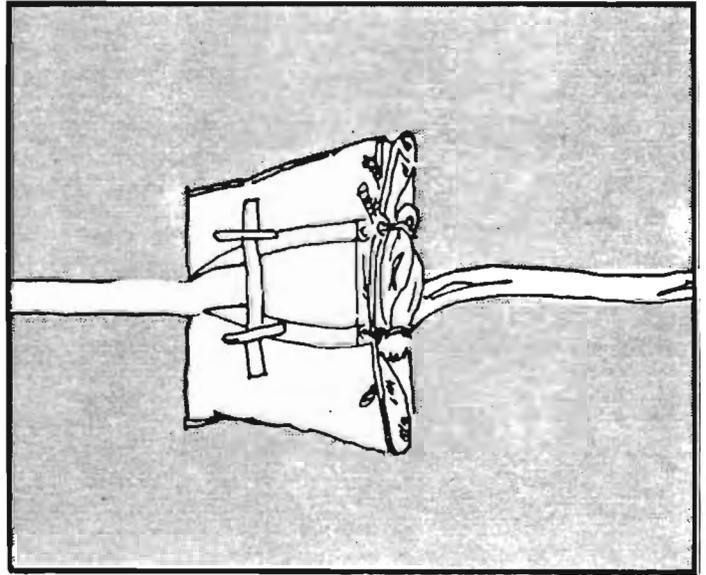


FIG. 14

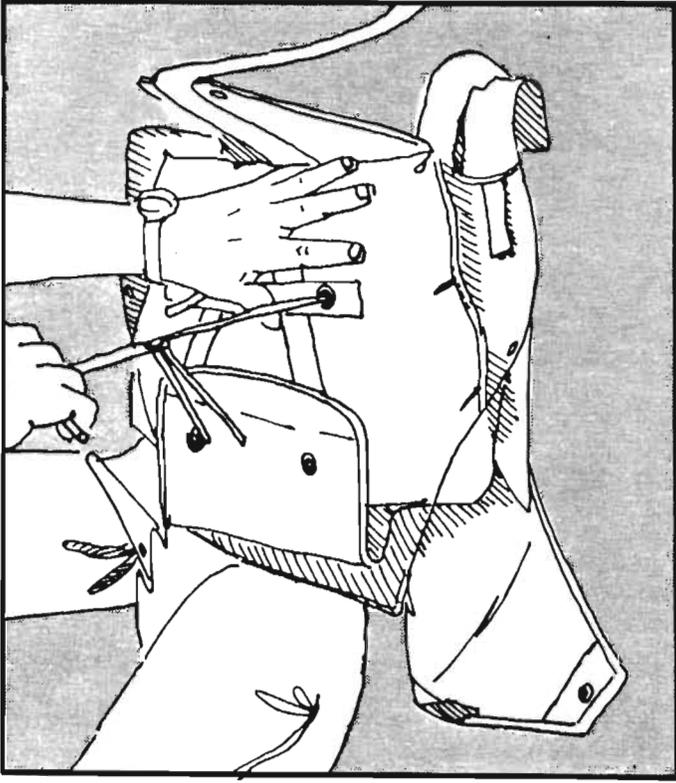


FIG. 17

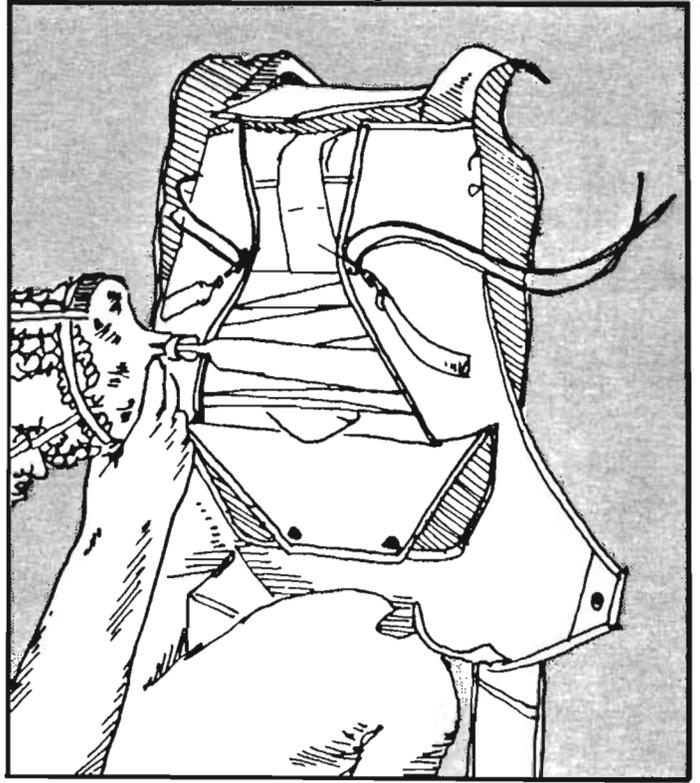


FIG. 19

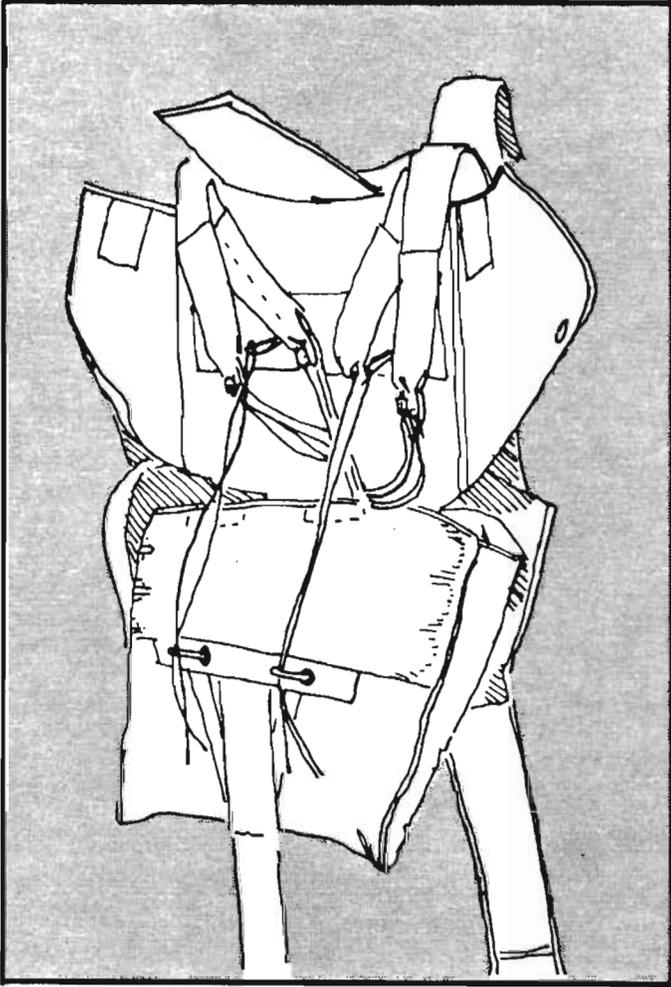


FIG. 16

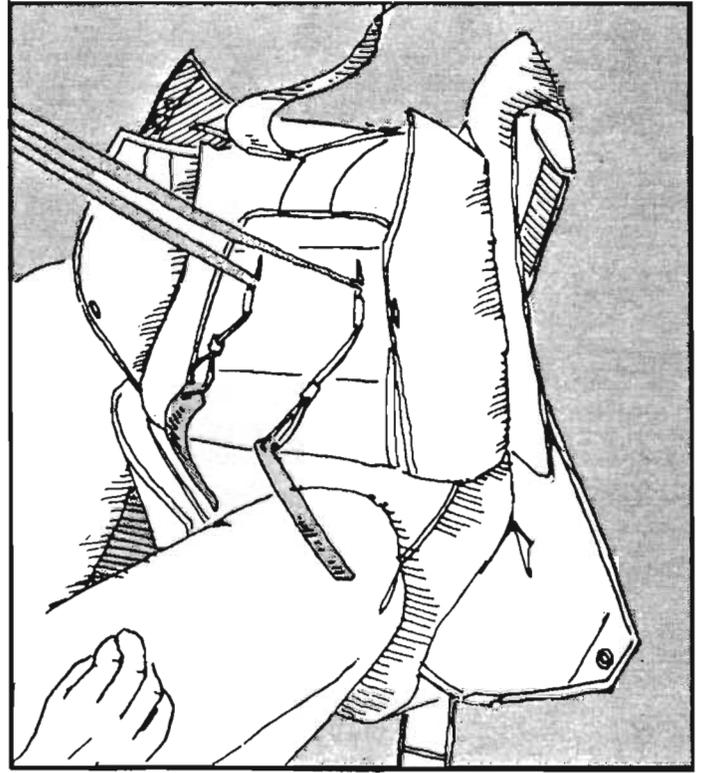


FIG. 18

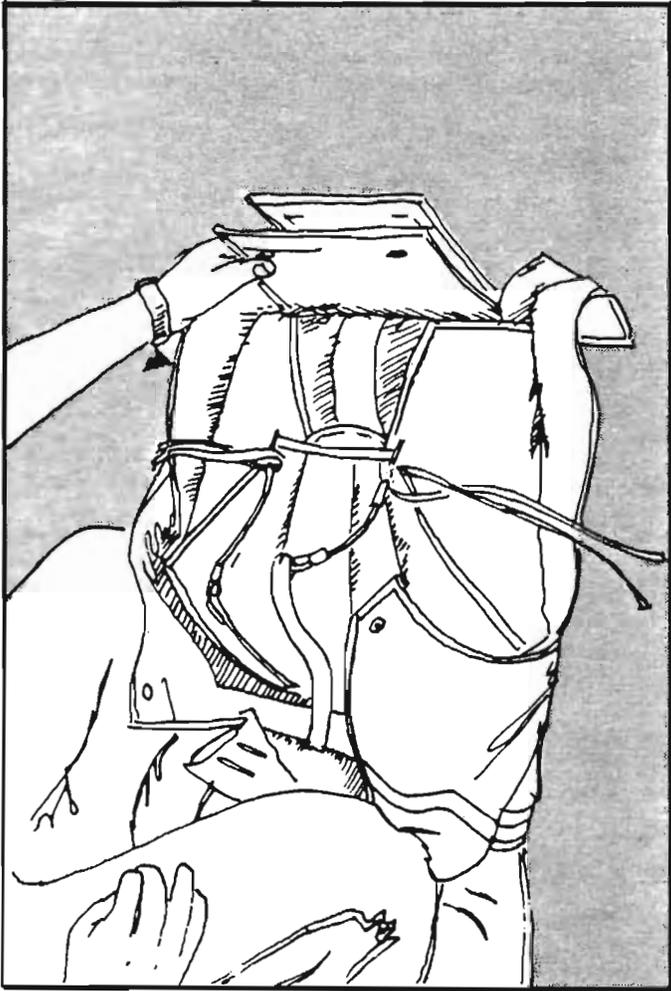


FIG. 20

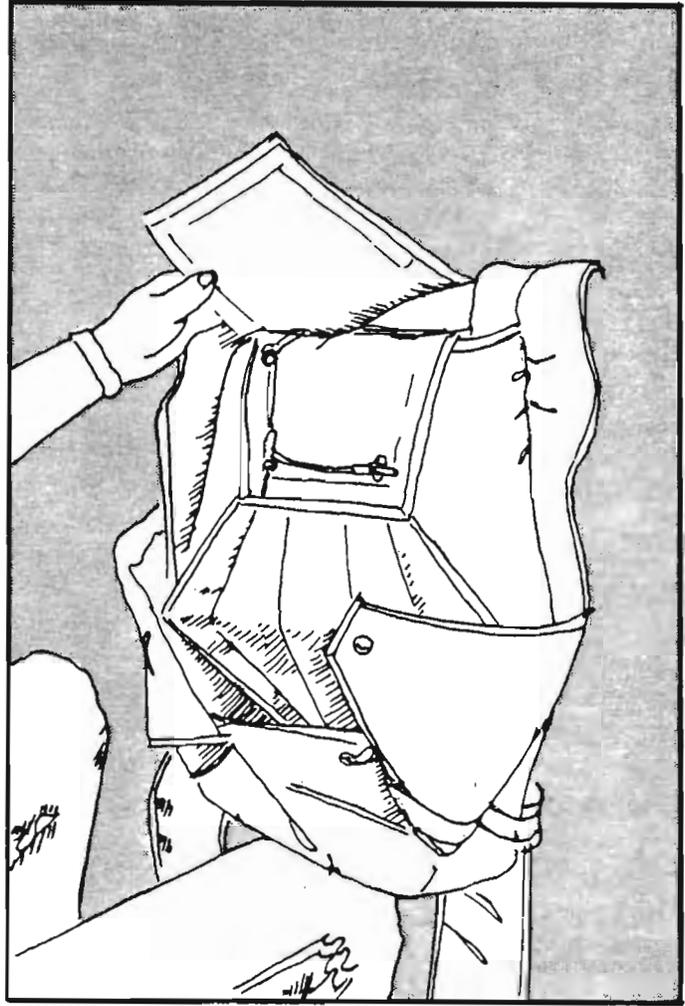


FIG. 21

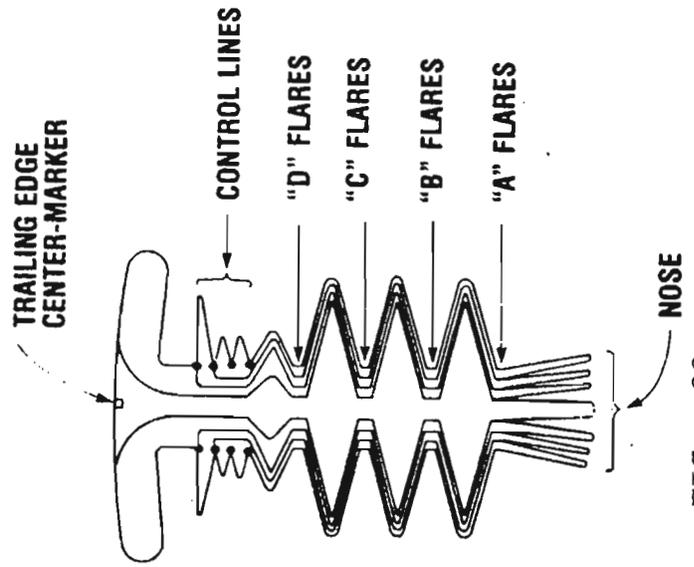


FIG. 22

DIAGRAMMATIC VIEW OF BOTTOM SEAMS