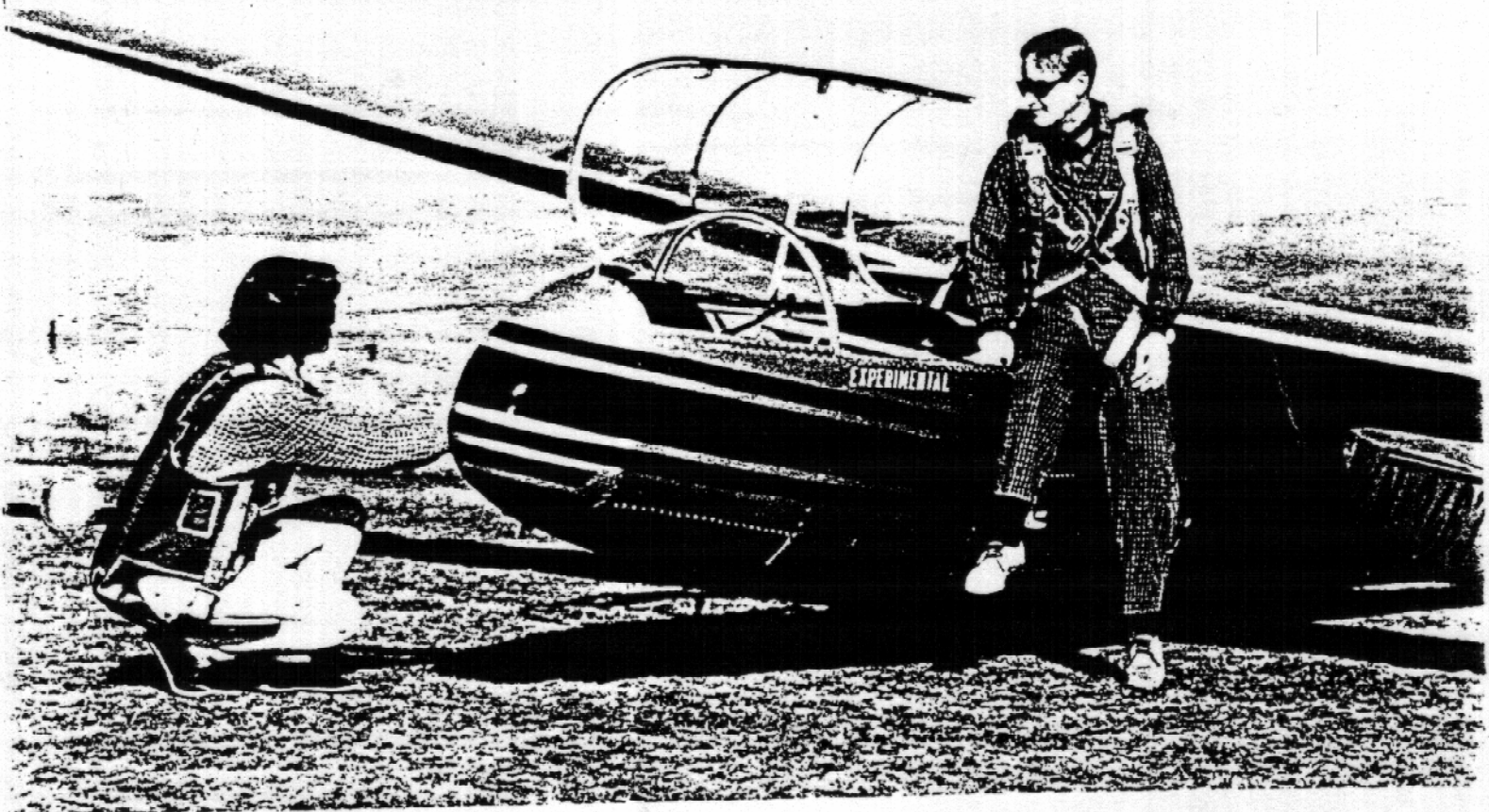


G Q SECURITY PARACHUTES, INC.
SAN LEANDRO, CALIFORNIA



150

250

**OPERATION
SERVICE AND MAINTENANCE
INSTRUCTIONS
FOR
SEAT-BACK STYLE
G Q SECURITY SAFETY-CHUTE**



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1.0 **SCOPE** Defines the Inspection and Repacking procedures for Model 150 Safety-Chute Assembly, with TSO 23b approval in the low speed category and for use in Aircraft under 150 MPH, and Model 250 for standard category.

2.0 **SPECIFICATIONS**

- 2.1 TSO C23b
- 2.2 NAS 804
- 2.3 MIL-P-6645E (USAF)
- 2.4 Standards MIL-STD 849, 8 April 1965

3.0 **SYSTEM DESCRIPTION**

3.1 The Back-Seat Type Chair Model 150 Safety-Chute is a thin light-weight 16 lbs which is recommended for use in low speed aircraft, Sailplanes, Helicopters and low powered aircraft. The Model 250 Safety-Chute weighs 17.3 lbs. and is recommended for all aircraft with normal performance in excess of 150 MPH.

3.1.1 The Model 150 and Model 250 Parachute canopies are 26 ft. radial diameter 30 degree conical with 24 gores and lines using 1.1 oz/sq. yd. nylon ripstop fabric 40-50 CFM/sq. ft. The Model 150 with a low speed rating has block constructed gores with 375 lb. T.S. vent and suspension lines. The lines are sewn directly to the risers. The Model 250 parachute canopy has bias constructed gores and employs 550 lbs. T. S. nylon cord for the vent and suspension lines. The suspension lines terminate on 4 solid links. Both canopies are provided with an inverted T shape orifice which provides thrust and turn control. Model 150 canopy Part No. 64E1209-1A and the Model 250 canopy Part No. 73E1581-1.

3.1.2 **Pilot-Chute** The Pilot-Chute is a 36" Diameter 8 Gore/Vane Coil Spring activated Pilot Chute. The Spring is rated at 35 lbs. when compressed to a 1 inch height. The spring cap is provided with a positioning/retainer strap. Pilot Chute P/N 63F1122-1.

3.1.3 **Bridle, Pilot-Chute** The bridle is fabricated of 9/16" tubular nylon webbing connecting the Pilot Chute to the Canopy Vent Lines. Bridle Part No. 63C1128-1, 36" long.

3.1.4 **Harness/Risers** The Harness and Risers are fabricated of nylon webbing per Specification MIL-W-4088, Type VIII and Type XIII. All sewing is with Size 5 Cord, per Federal Specification V-T-295, Class I, Type I. Adjustable ejector snaps and vee rings conform to MILitary Standard or Air Force Standard parts. The Risers are integral with the Harness. The Harness is integral with the Back-Seat Pack.

3.1.5 **Back-Seat Parachute Pack** The Parachute Pack is a Back-Seat combination 15 inches wide, 50 inches in total length and a constructed thickness of 1 inch. The pack carrier is heavy weight nylon Duck conforming to MIL-C-3953, Type IV, Class 2, to which are sewn all other flaps, covers, etc. fabricated from pack cloth per Specification MIL-C-7219, Type III. All edges are bound with nylon tape 3/4" wide per Specification MIL-T-5038, Type III.

The Pack is 15 inches wide x 32 inches in length. The pack is provided with a Pilot Chute compartment, with 2 side flaps and 2 end flaps. One large upper and 1 large lower end closure flaps. Each with 2 small side flaps closed with button fastener and 2 side closing flaps.

3.1.5.1 The wearer side is provided with a 1/2" thick pad. The center is fastened with 1" wide Velcro tape. Under the center cushion is a Ripcord access flap attached to the lateral body panel.

4.0 **INSPECTION AND PACKING REQUIREMENTS**

4.1 **Frequency of Inspection.** The Security Safety-Chute shall be inspected and repacked every 120 days, (4 months), in accordance with Part 91 of the F.A.R. Para. 91.15 (a) (1), by an appropriately certified parachute Rigger in accordance with Part 65 of the Federal Aviation Regulation, Back Type Rating Required.

4.2 **Pre-Flight Inspection.** Inspection of Ripcord Pins and Seals and security of the locking cord.

4.2.1 Check and fasten all button snaps.

4.2.2 Check harness ejector snaps, check spring for soundness.

4.2.3 Check harness for cuts and damage.

5.0 **OPERATION** The Security Safety-Chute is a conventional Ripcord activated, Pilot-Chute deployed Parachute System.

5.1 **Jumping Clear.** There are no concise simple rules for jumping clear of a disabled airplane. The one basic rule is: Be completely clear of the aircraft before pulling the Ripcord.

- 5.1.1 Practice climbing out of your Aircraft with your Chute on while on the ground. Find the obstruction and those items of equipment that snag you or your Security Safety-Chute, remember to avoid them insofar as possible when the actual emergency arises. Be sure to:
1. Release Your Safety Belt and Shoulder Harness.
 2. Disconnect or Remove Headsets and Mikes.
 3. Jettison Canopy.
 4. Jump Clear pushing away from the Aircraft. You will fall faster than the Airplane unless the aircraft is diving.
 5. Look to the left body panel and locate the Ripcord.
- 5.2 **Pulling the Ripcord.** AFTER having cleared the Aircraft, immediately grasp the Ripcord handle with the right hand and then with a hard quick 22 pound pull, pull the Ripcord, releasing the Pilot-Chute into instant operation deploying the Main Steerable Security Safety-Chute. Approximately 2 seconds after Ripcord pull the Canopy is fully inflated and you are now in your descent phase. If your weight is:

1. 140 lbs. your rate of descent is 15.7 FPS
2. 160 lbs. your rate of descent is 16.6 FPS
3. 180 lbs. your rate of descent is 17.5 FPS
4. 200 lbs. your rate of descent is 18.4 FPS

Deployment/Filling Time - 1.95--2.10 seconds @ 70 MPH/IAS

The Canopy is stable within plus or minus 10 degrees, forward speed is approximately 5 MPH.

- 5.3 **Steering.** The Security Safety-Chute is fully Steerable Gliding Parachute.
- 5.3.1 Steering is accomplished by pulling down on the rear Risers. Pulling down on the right rear Riser the Canopy turns right, conversely pulling down on the left Riser the Canopy turns left.
- 5.3.2 **Braking.** By pulling down on both rear Risers will reduce the forward speed of the Canopy.
- 5.4 **Landing.** In preparing to land face into the wind reducing your forward speed.
- 5.4.1 Put your feet together and slightly flex your knees.
- 5.4.2 Land on the balls of your feet. Relax and go with the Parachute, somersaulting or rolling with the landing.
- 5.4.3 Remove the Harness.
- 5.5 **High Wind Landing.** Sit well back in the harness saddle, as you would on a swing. Turn the Canopy into the wind to reduce the ground speed to a minimum. At approximately 200 feet altitude release the leg straps still sitting well back in the saddle. Maintain your upwind heading.
- 5.5.1 Land as described in Paragraph 5.4.
- 5.6 **Water Landing.** Preparation for water landing is the same as for a high wind. Turn into the wind, SIT well back in the saddle. Disconnect the leg straps.
- 5.6.1 Grasping the rear Risers overhead for steering, maintain upwind heading. As your feet ENTER the water, straighten out, release your hold of the Risers and slip out of the Harness.
- 5.6.2 Whenever flying within the proximity of water, flotation equipment should be worn. Inflate your Life Vest after entry into the water.

6.0 SERVICE AND MAINTENANCE INSTRUCTIONS

- 6.1 **120 Day Inspection and Repair (4 months).**
- 6.1.1 **Canopy Check.** Canopy fabric for cuts, tears or stain. Check lines for snags or cuts. Check all stitching. Accomplish all repairs per MIL-P-6645, or use best practice.
- 6.1.2 Check Pilot Chute for holes, tears or damage. Repair per MIL-P-6645, or use best practice.
- 6.1.3 **Pilot Chute Bridle.** Inspect for cuts, burns or stains. Check stitching. If damaged, replace.
- 6.1.4 Check harness for cuts and abrasion. Check all hardware for function and operation. Inspect button fasteners for function. Replace as required. Any damage requiring disassembly of the Harness from the Pack body shall be cause for complete assembly replacement. Remove connector links on the Main Lift Web to facilitate packing.

- 6.1.5 Inspect Pack Assembly for cuts, tears or stains. Small tears not over 2 inches may be patched. Use best practice. Damage to Stiffener Plates or main body shall be cause for complete assembly replacement.

6.2 Packing Procedure

- 6.2.1 Lay Canopy on the table with Gore No. 1 and 24 on the top and 12 and 13 on the bottom. Number sequence facing the Canopy will be counter-clockwise. Check Canopy for being right side out. The Canopy is provided with pocket bands and they must be on the outside of the Canopy. Check suspension line continuity. Pleat and fold the Gores. Numbers 1-12 and 13-24. Fold the pleated Gores over to approximately 15" wide. Place shot-bag on the Canopy. Check suspension lines to the connector links.

- 6.2.2 Pack Closing Loops Installation. Part No. 78A1679, Type 3 MIC-C-5040 coreless manufactured loop, with a loop at each end, 1 1/4" long or MIL-C-5040 Type 1, 100 T.S. may be used. When using Type 1, form a 1 1/4" loop by holding both running ends together and securing with an overhand knot leaving enough material to secure both running ends with an additional overhand knot. Then sear-cut remaining cord to within 1/4" of ends. Install locking loops on the ripcord pins. Pass loop end through the grommet or end with overhand knot if using Type 1. 2 required. Place pull up cord through the locking loops.
NOTE: Loop end of Type 1, not knotted end will have pin inserted.

TEMPORARILY tape the Ripcord pins in place using 3/4" wide masking tape (see FIG. 1). Turn pack over and pull cords through. Lay cords in Pilot-Chute compartment.

- 6.2.3 Stowing the Lines. The Links should be installed on the Risers with the replaceable end on the outside. The line continuity is when facing the Canopy at the lines:

6	5	4	3	2	1	24	23	22	21	20	19
7	8	9	10	11	12	13	14	15	16	17	18

- 6.2.3.1 The risers are placed in the Pack with the connector links placed side by side, 2 on each side of Pilot Chute compartment. The suspension lines will be stowed in the numerical order stamped in the pack adjacent to the appropriate stowing elastic (see FIG. 2).

- 6.2.3.2 Suspension Line Stowing elastics are #81 Bestuvall Elastic Bands 2" long x 1/2" wide.

- 6.2.4 Stowing the Canopy. Remove the suspension line separator, grasp and turn under the canopy skirt and place at the upper end of the pack, spread out to full pack width. Fold Canopy approximately 2" below the lower end. Reduce the width of the remaining portion of the Canopy to approximately 8 to 10 inches wide. Accordion fold the Canopy first down the left side, then the right side of the Pilot Chute compartment (see FIG. 3). Fold the Vent area of the Canopy under, and near the upper end of the Pilot Chute compartment. Lay Pilot Chute compartment flaps over the folded Canopy (see FIG. 4).

- 6.2.5 Closing the Container. Place the top and bottom small side flaps over the Canopy and snap the top and bottom end flaps over the Canopy. Pass the locking cords through the grommets in the top and bottom end flaps.

- 6.2.5.1 Bring the Pilot-Chute bridle between the top and bottom and end flaps forming the Pilot-Chute stowage compartment.

- 6.2.5.2 Position the Pilot-Chute in its compartment coiling the bridle beneath it. Collapse and position grommet tabs over the pack grommet. Pass cord ends through the grommet tabs. Insert temporary ripcord pins through the cord loops (see FIG. 5).

- 6.2.5.3 Closing the Side Flaps. Close the right side flap over the Pilot-Chute, pass the locking cord ends through the grommets. Pull up and replace the temporary ripcord pins. Close the left side flap in the same manner.

- 6.2.5.4 Install "S" Locking Hooks (with retainer spring) through the locking cord loop before removing the temporary pins. After "hooks" are installed remove temporary pins and pull up cords, then close flap. (see FIG. 6). Turn the Pack over, open the cushion flap and the Ripcord cover flap. Remove the masking tape and seal bottom pin using 3/8 lead and 24/4 cotton thread (see FIG. 7) **CAUTION NOTE:** It is

imperative that the masking tape be removed from the pins and cables as it may increase the Ripcord pull force.

Secure spring in the center by tacking one turn doubled of 24/4 cord cotton thread stitching through the nylon duck and tying off with a square or surgeons knot over the spring. (Optional)

6.2.6 Reinstall Connector Link in the Main sling and saddle.

7.0 PARTS LIST

Part No.	Description
69B1451-1	Parachute Assembly, Dual Pack, Back-Seat
64E1209-1A	Canopy, 26 ft. Conical Low Porosity Steerable 150
73E1581-1	Canopy, 26 ft. Conical Low Porosity Steerable 250
63C1128-1	Bridle, Pilot Chute, 36 Inch
63F1122-1	Pilot Chute, 36" Dia. 8 Gore/Vane, Coil Spring
69E1445-1	Pack, Back-Seat Harness-Container Assembly
69E1448-1	Harness
69E1469-1	Ripcord
78A1679	Pack Closing Loop (2 Required)

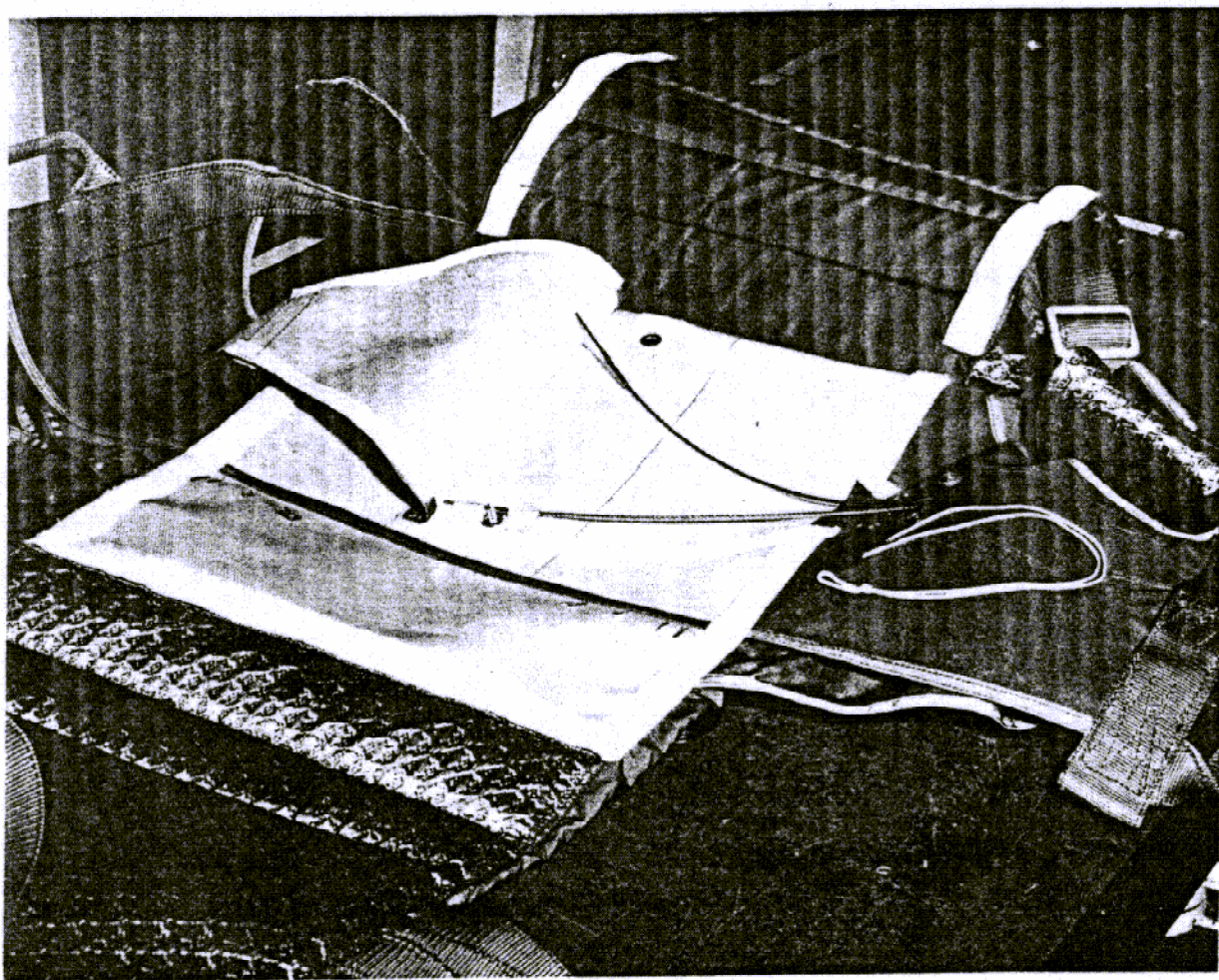


FIGURE 1

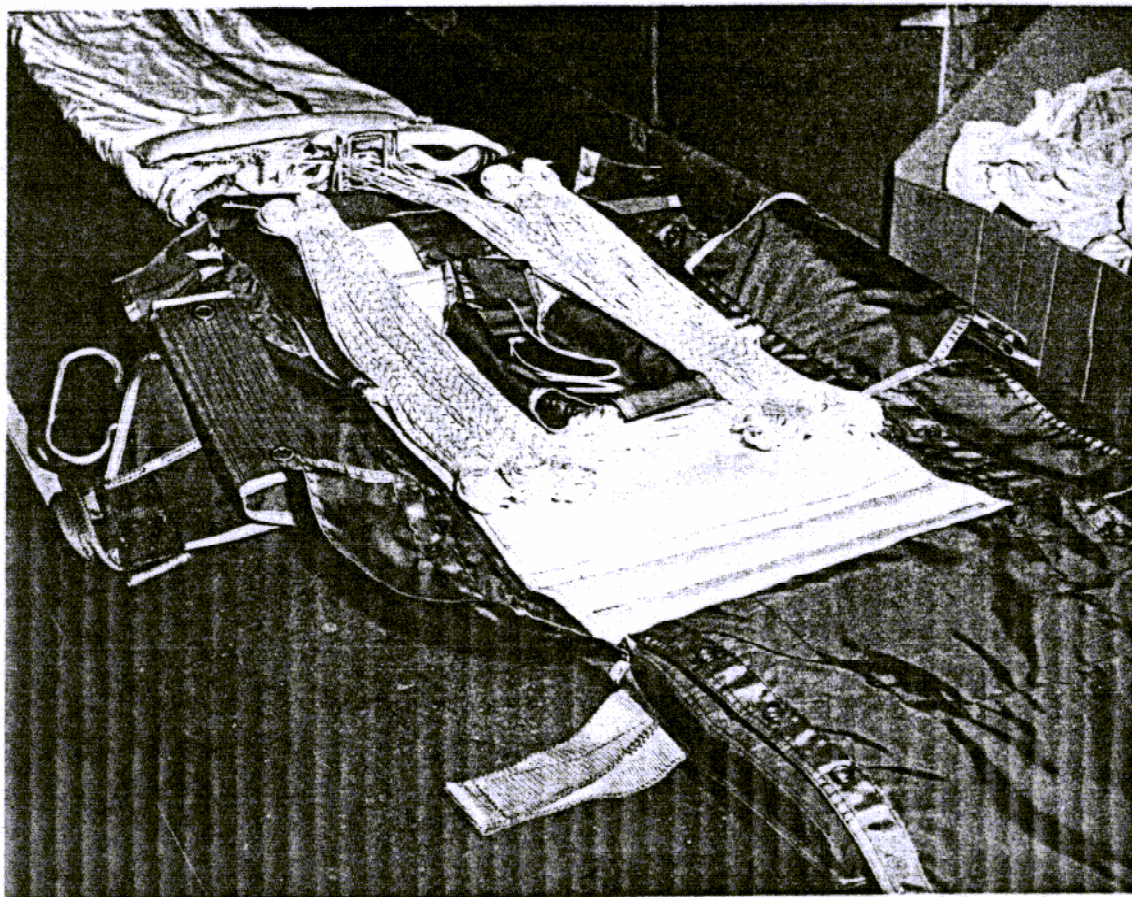


FIGURE 2

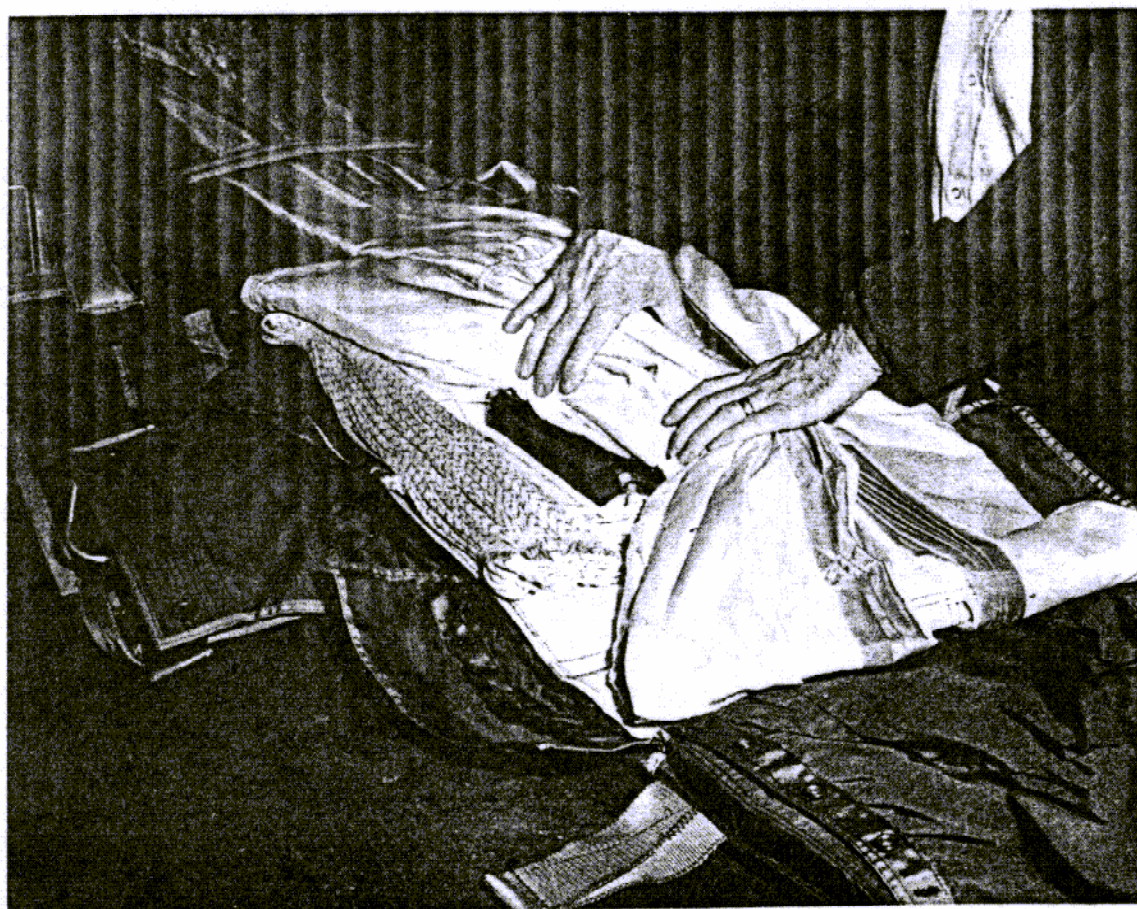


FIGURE 3



FIGURE 4



FIGURE 5

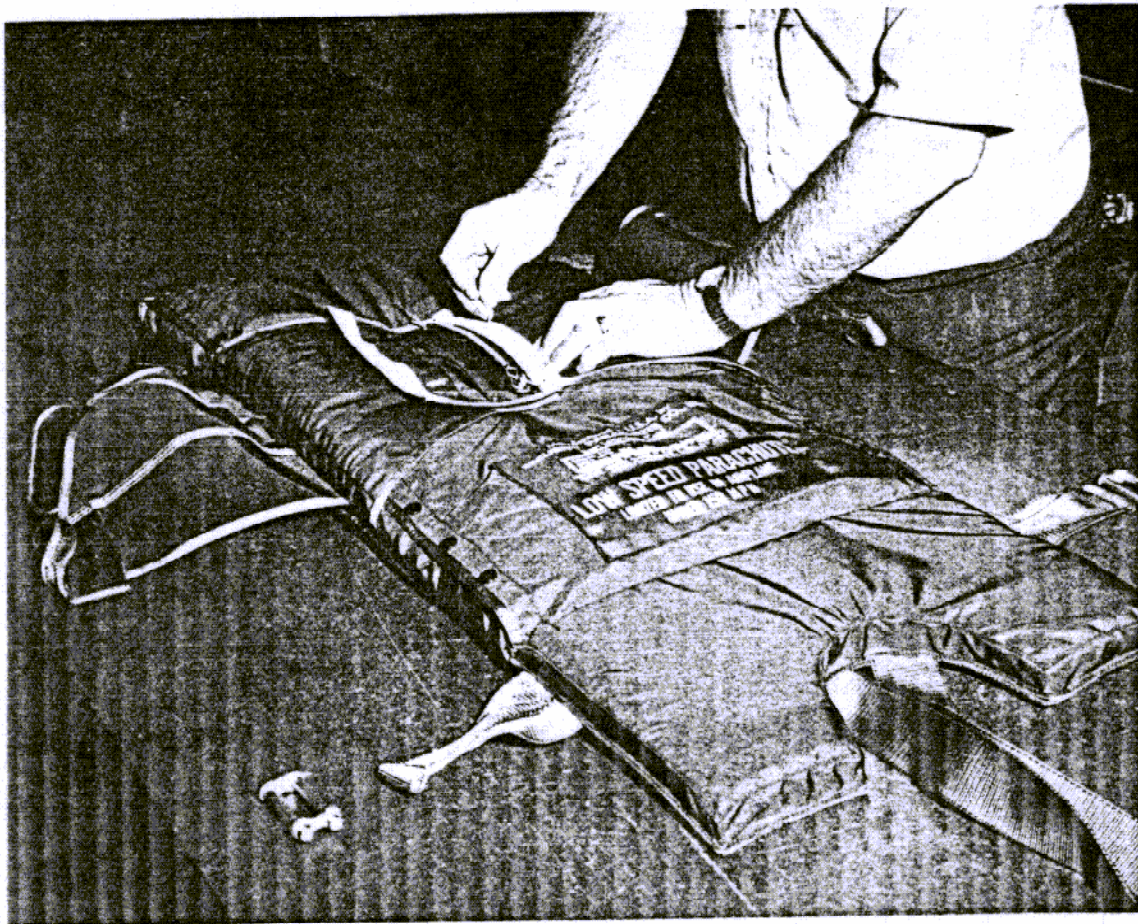


FIGURE 6

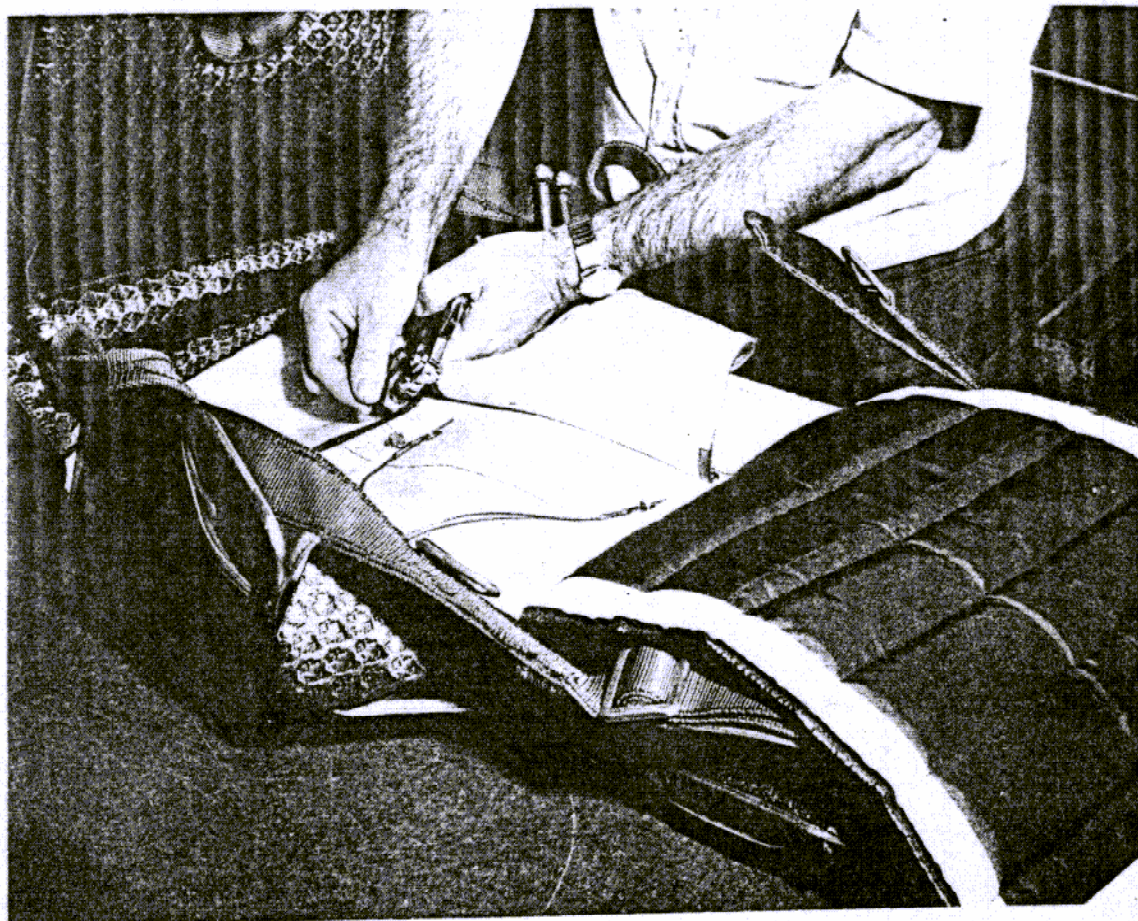
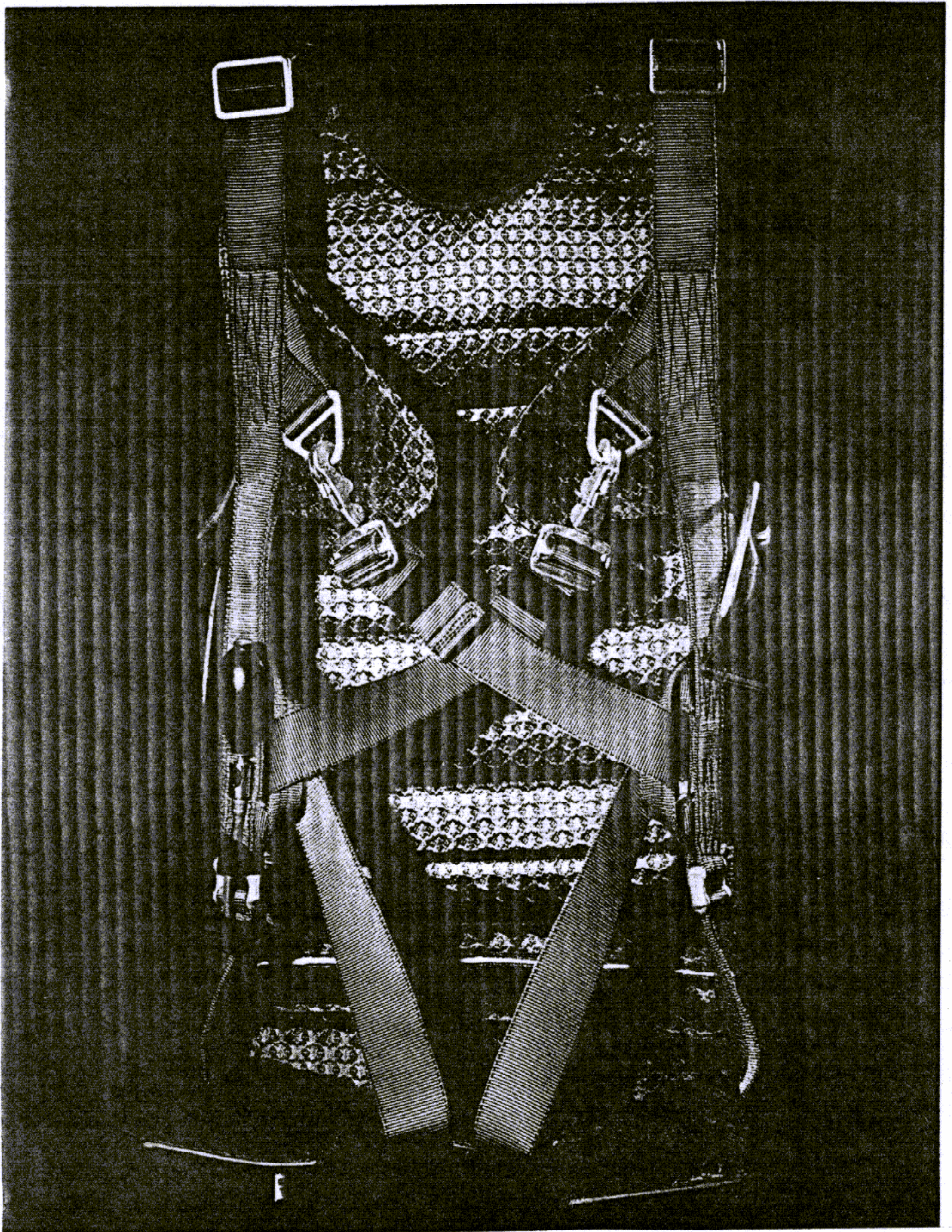


FIGURE 7

Persons responsible for repacking this Parachute are cautioned not to make changes or deviations of any kind in procedures as outlined in this Operations Manual without previous factory approval. Replacement parts are available from:

Engineering Department
G Q Security Parachutes, Inc.
P. O. Box 3096
San Leandro, California 94578

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NOTE: PROPER WAY TO ATTACH LEG STRAPS.