CHAPTER 25

EQUIPMENT/ FURNISHINGS

LEARJET 35/35A/36/36A
MAINTENANCE MANUAL

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Insert latest revised pages; destroy superseded or deleted pages.

* Asterisk indicates pages revised, added, or deleted by the current revision. The portion of the text affected by the current revision is indicated by a vertical line in the outer margin of the page.

Record of Temporary Revisions

Revision Number	Status	Date	Location	Insertion Date	Inserter's Initials	Removal Date	Remover's Initials
25-1	Inactive	Mar 25/75	25-30-01 Page 201	Mar 25/75	LJ	Oct 1/75 Rev. 4	LJ
25-2	Inactive	Apr 8/75	25-30-02 Page 805	Apr 8/75	LJ	Oct 1/75 Rev. 4	LJ
25-3	Inactive	Apr 8/75	25-40-01 Page 1	Apr 8/75	LJ	Oct 1/75 Rev. 4	LJ
25-4	Inactive	Apr 8/75	25-10-01 Page 201	Apr 8/75	LJ	Oct 1/75 Rev. 4	LJ
25-5	Inactive	Apr 8/75	25-30-02 Page 602	Apr 8/75	LJ	Oct 1/75 Rev. 4	LJ
25-6	Inactive	May 3/78	25-61-00 Page 201	May 3/78	LJ	Aug 21/78 Rev. 9	LJ
25-7	Inactive	Oct 31/80	25-62-00 Page 1	Oct 31/80	LJ	Apr 30/82 Rev. 27	LJ
25-8	Inactive	Sep 20/96	25-64-01 Page 201	Sep 20/96	LJ	Fev 11/00 Rev. 68	LJ
25-9	Inactive	Jan 9/98	25-00-00 Page 1	Jan 9/98	LJ	Fev 11/00 Rev. 68	LJ

GENERAL - DESCRIPTION AND OPERATION

1. DESCRIPTION

A. Equipment and furnishings in the aircraft include removable items in the flight and passenger compartments, emergency equipment, and fuselage insulation.

B. Description, operation, and necessary maintenance practices for equipment and furnishings are included in this chapter.

NOTE: Materials used in the repair and/or refurbishment of aircraft interior or baggage compartment must comply with applicable Federal Aviation Regulations (FARs).

Learjet

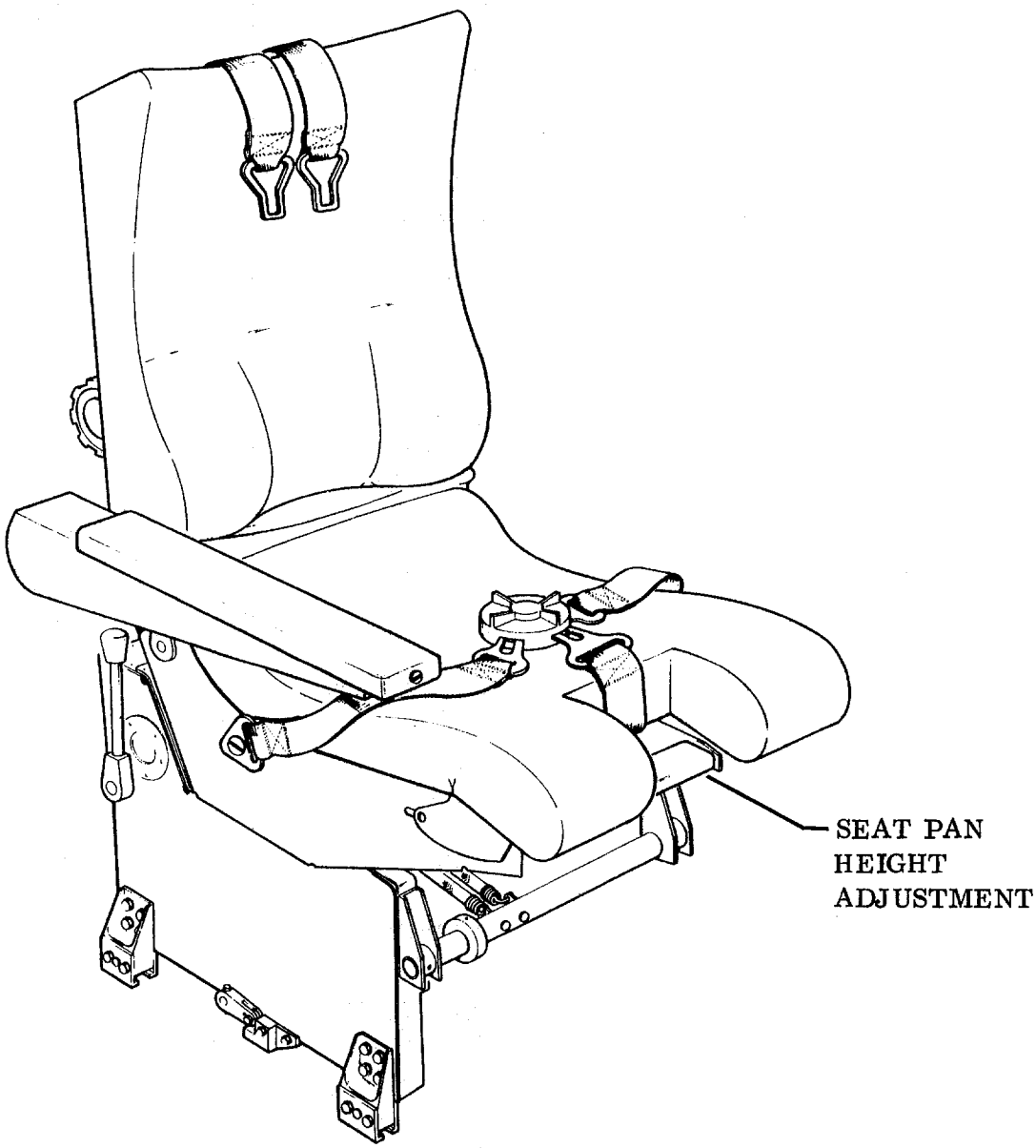
FLIGHT COMPARTMENT - DESCRIPTION AND OPERATION

1. Description
   A. The flight compartment is divided from the passenger compartment by the service cabinets directly behind the pilot's and copilot's seats.
   B. Equipment and furnishings within the flight compartment include seats, seat belts, shoulder harnesses, life vests and a map case.
   C. An emergency hatchet and emergency tool kit may be installed in the flight compartment, dependent on interior equipment and option selections.

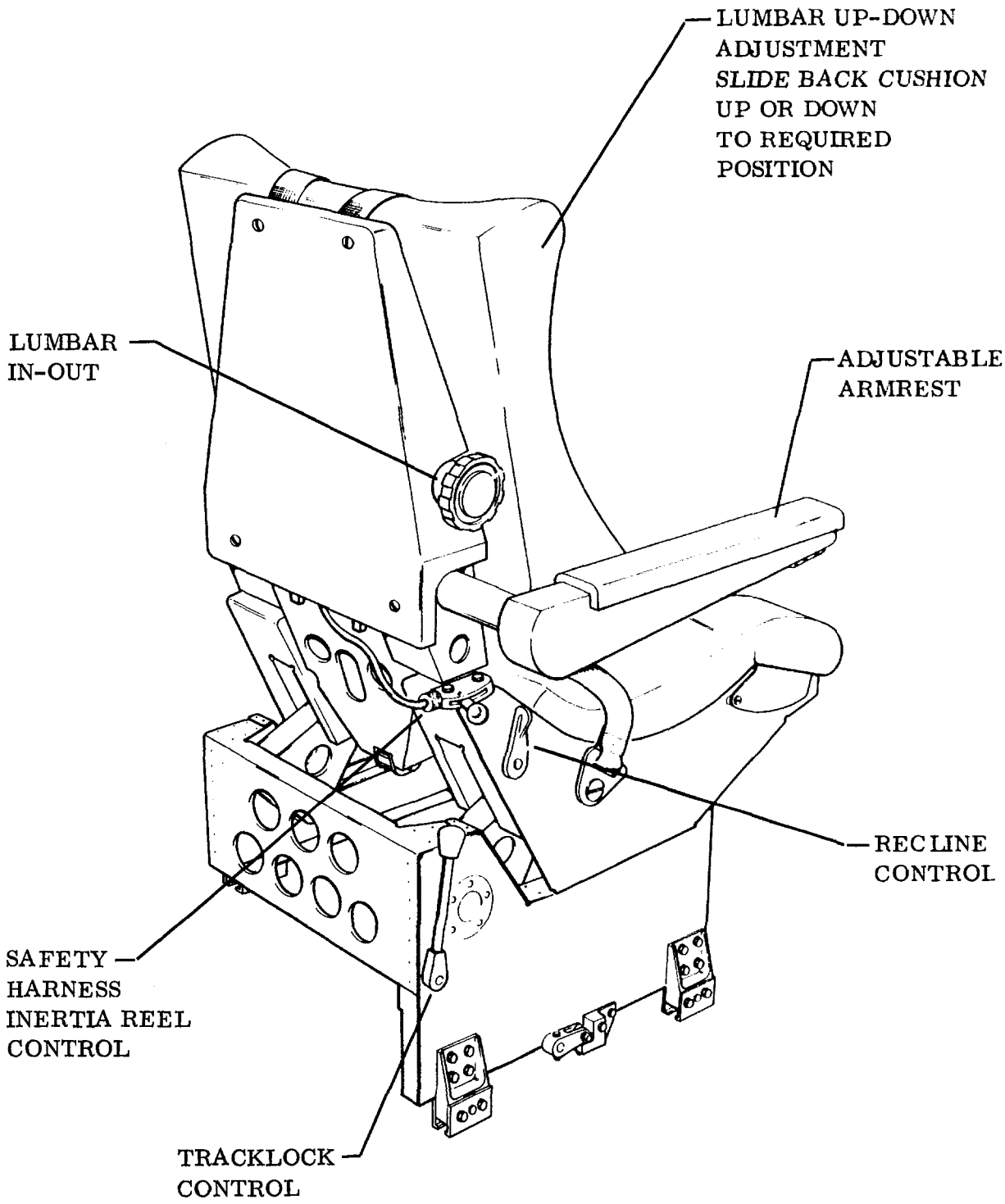
PILOT'S AND COPILOT'S SEATS - DESCRIPTION AND OPERATION

1. Description
   A. The pilot's and copilot's seats are manually adjustable in the forward, aft and vertical positions. Forward-aft adjustment is accomplished by a lever on the forward-inboard part of the seat. Vertical adjustment is accomplished by a lever located on the forward-outboard part of the seat. An armrest located on the inboard side of each seat is adjustable for ease of entry and exit from the seat. The metal structure seats are padded with foam rubber and upholstered.
   B. Each seat is equipped with a two-piece nylon seat belt which is fastened to the seat structure on the inboard side and the fuselage structure on the outboard side. A shoulder harness is also available. The lower portion of the shoulder harness is attached to the existing seat belt and the upper portion is attached to a reel mounted in the back of each crew seat.
   C. *Aircraft Equipped with IPECO Pilot's and Copilot's Seats (See figure 1.)*
      (1) The seat is of lightweight construction and comprises two basic structures: the upper seat structure contains the necessary controls to adjust the seat, and the seat base houses the positive track locking mechanism.
      (2) The seat is either left or right (pilot or copilot), depending upon the positioning of the major controls.
      (3) The seat base consists of a light alloy box structure with left and right hand claw plate and roller assemblies, running on aircraft mounted tracks. The side panels are asymmetrically proportioned in height to allow for the contours of the aircraft structure. A positive lock mechanism, tensioned by springs, allows fore and aft adjustment of the seat position.
      (4) The light alloy seat assembly contains the necessary controls and mechanism to adjust the seat pan height, recline, and lumbar support. The single inboard armrest of each seat is adjustable for height and can be folded and stowed when not in use.
      (5) The safety harness inertia reel is mounted at the rear of the spine. The lap straps and crotch strap are attached to the seat pan.
   D. *Aircraft Equipped with Custom Products Pilots and Copilot's Seats (See figure 2.)*
      (1) The seat is of lightweight single piece construction. It incorporates the seat structure, the seat base and a locking mechanism.
      (2) Each seat has a single inboard armrest, which is retractable when not in use.
      (3) The track lock lever, located on the lower inboard side of the seat, allows for fore and aft adjustments of the seat.
      (4) The height adjustment lever, located on the lower outboard side of the seat, allows for up and down adjustments of the seat.
      (5) The seat incorporates lap and shoulder restraints which are attached to the seat frame.

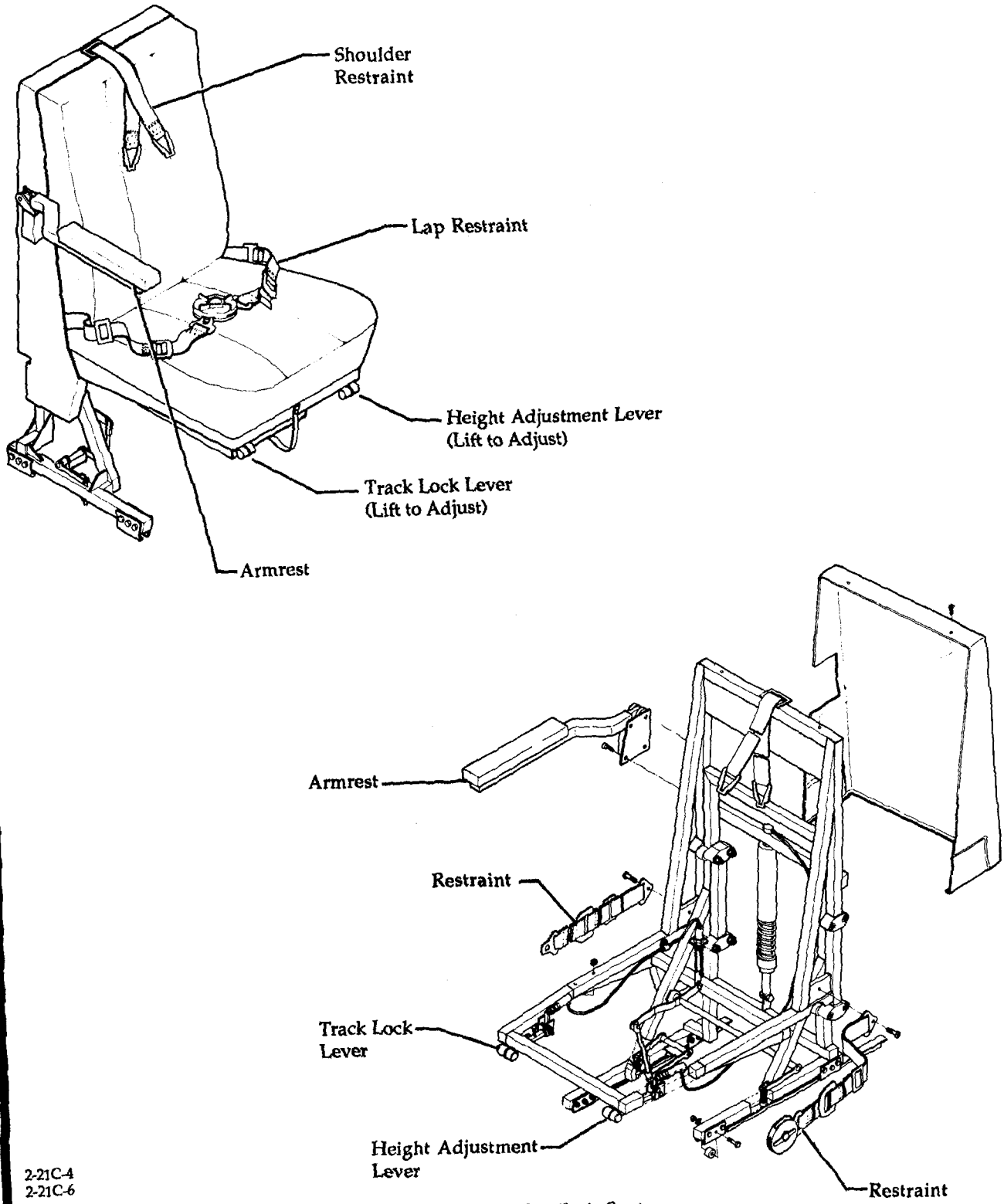
2. Operation
   A. Component Operation *(Aircraft Equipped with IPECO Pilot's and Copilot's Seats.)*
      (1) The track locking mechanism is spring loaded by two tension springs. When the track lock lever is pulled rearwards, the track lock pins disengage from the track allowing the seat to be moved fore or aft to the required position.
      (2) When the seat height adjustment handle is pulled upwards, height lock pins are disengaged from lock plates in the seat base. Continued pressure on the handle rotates the front and rear lift lift arms which are, in turn, assisted by spring tension of the bungee rubber cords to raise the seat. When the handle is released the locking pins engage the locking plates in the desired position. When the seat is to be raised or lowered, it is necessary for the occupant to adjust his weight on the seat pan until the required position is obtained.
      (3) The thigh pads are spring loaded on pivot shafts with operating levers running in slides on the seat pan.



Pilot's and Copilot's Seat
Figure 1 (Sheet 1 of 2)



Pilot's and Copilot's Seat
Figure 1 (Sheet 2 of 2)



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Pilot's and Copilot's Seat
Figure 2

EFFECTIVITY: AIRCRAFT EQUIPPED WITH CUSTOM PRODUCTS SEATS

(4) The recline unit is mounted between the center of the spine base and the underside of the seat pan. The recline control is situated at the rear of the seat pan. When the control handle is pulled upward, a spring loaded latch plate is withdrawn by a cable from contact with a coarse threaded nut within the recline unit. Application of pressure on the backrest rotates the threaded nut and allows the strut to be pushed into the recline unit; the spring is compressed and the backrest reclines. When the control handle is released, the spring loaded latch plate reengages with the coarse threaded nut and the backrest is locked in the required position. If the control handle is again pulled upward, and pressure released from the back rest, the spring, which was compressed by the recline operation, re-asserts itself causing the threaded nut to rotate in the opposite direction. The strut pushes on the backrest which returns to an upright position and is locked upon release of the control handle.

(5) The armrest is individually adjustable for height by a control knob located at the forward end and connected by a drive shaft to a screw adjuster. When the control knob is turned, the screw adjuster increases or decreases the distance between the armrest drive plate and the pivot block, thereby raising or lowering the armrest. A separate fixed up stop makes it possible to raise the armrest from any position of adjustment to align parallel to the seat back. When fully folded, the armrest is pushed in towards the center of the seat, thus reducing the seat width.

(6) The seat back cushion is adjustable for up-down and in-out lumbar support. Lumbar in-out adjustment is controlled by a handwheel on the inboard side of the seat. When the handwheel is rotated, the movement is transmitted through worm and wheel gears to the cross shaft, to which two relay arms are connected. As the relay arms rotate, the lumbar cushion moves forward or backward to the spine structure. The up-down adjustment is achieved by sliding the backrest up or down to the required position, the weight of the back cushion being balanced by the spring housed in the seat spine.

B. Component Operation *(Aircraft Equipped with Custom Products Seats)*

(1) The track lock mechanism is controlled by a lever and a hydrolok control. Lifting the lever located at the forward inboard corner of the seat actuates the hydrolok and releases the track locks. The seat is then moved forward or aft, the lever is released and the spring loaded track locks will engage in the seat tracks.

(2) The height adjustment mechanism is controlled by a lever and a hydrolok control. Lifting the lever located at the forward outboard corner of the seat actuates the hydrolok and releases the spring loaded seat back. The seat back is raised or lowered as desired and the lever is released. The seat back is then locked into position.

1. Removal/Installation

NOTE:
- Removal of the pilot's and copilot's seats is identical.
- To facilitate removal and installation of the seats, it is recommended that the pilot seat be removed first and installed last.

A. Remove Seat (*Aircraft Equipped with Custom Products Pilot's and Copilot's Seats*)
   (1) Lower the seat as far as possible using the vertical adjustment lever.
   (2) Remove seat cushion for ease of access to attaching hardware.
   (3) Loosen nuts and bolts which pass through seat rail shoe. Nuts should be loosened sufficiently to remove seat from seat rail.
   (4) Remove forward seat track stop.

CAUTION: AVOID REPOSITIONING VERTICAL ADJUSTMENT LEVER WHILE REMOVING SEAT FROM COCKPIT. INADVERTENT MOVEMENT OF LEVER WILL CAUSE THE HYDROLOK ASSEMBLY TO TELESCOPE THE SEAT AND MAY CAUSE DAMAGE WITHIN THE COCKPIT.

   (5) Spread shoes sufficiently to clear seat rail. Lift seat from rail and remove from aircraft.

B. Install Seat (*Aircraft Equipped with Custom Products Pilot's and Copilot's Seats*)

CAUTION: AVOID REPOSITIONING VERTICAL ADJUSTMENT LEVER WHILE INSTALLING SEAT IN COCKPIT. INADVERTENT MOVEMENT OF LEVER WILL CAUSE THE HYDROLOK ASSEMBLY TO TELESCOPE THE SEAT AND MAY CAUSE DAMAGE WITHIN THE COCKPIT.

   (1) Position seat over rails, spread shoes sufficiently to clear rail and lower seat onto seat rail.
   (2) Tighten nuts and bolts securing shoes.
   (3) Install seat cushion.
   (4) Install forward seat track stop.
   (5) Check seat operation through its full travel on the seat rail for positive pin engagement and release. Also check for binding of seat as it slides on rail.

C. Remove Seat (*Aircraft Equipped with IPECO Pilot's and Copilot's Seats*)
   (1) Remove forward seat track stops.

NOTE: Nuts are captive on inner plates. Retain spacers released when bolts are withdrawn.

   (2) Remove two attach bolts from each rear claw foot, and remove claw feet.
   (3) Hold tracklock lever in its rearmost position and move seat forward until front claw feet disengage from seat tracks.
   (4) Remove seat from aircraft.

D. Install Seat (*Aircraft Equipped with IPECO Pilot's and Copilot's Seats*)
   (1) Verify that forward seat track stops are removed from seat tracks and that rear claw feet are removed from seat.
   (2) Position seat with front claw feet immediately forward of seat tracks.

NOTE: The seat must approach seat tracks from outboard side with tracklock lever held in the rearmost position to allow the clamp plates to engage with the seat track heads.

(3) With tracklock lever in its rearmost position, move seat aft until front claw feet engage seat tracks.
(4) Install rear claw feet, making sure that each bolt has a spacer installed.
(5) Check seat for freedom of movement on seat rails. Check that tracklock pins will engage all lock holes in seat tracks.
(6) Install forward seat track stops.

2. Adjustment/Test

WARNING: **SEATS THAT FAIL THE FUNCTIONAL TEST MUST BE REPLACED OR SAFETY MAY BE COMPROMISED. UNAUTHORIZED REPAIRS TO SEAT STRUCTURE OR COMPONENTS MAY AFFECT SEAT SAFETY FEATURES AND MUST NOT BE ATTEMPTED.**

A. Functional Test of Crew Seat Mechanisms *(Aircraft Equipped with IPECO Pilot's and Copilot's Seats)*
(1) Sit in the seat and operate the tracklock lever. Check that the seat runs freely on the floor rails. Release the tracklock lever and check that the locking pins engage freely in the holes in the floor rail.
(2) Operate the seat height adjustment lever and check that the seat moves freely over its full range and that it locks when the lever is released.
(3) Push the thigh pads down and check that the override mechanism operates smoothly. Relax pressure and check that the thigh pads return to their pre-set position.
(4) Operate the armrest adjuster and check that the armrest can be raised or lowered over the full range. Fold back the armrest and check that it can be pushed inwards to the stowed position and withdrawn again.
(5) Operate the lumbar support in-out handwheel and check that the lumbar cushion moves freely through its full range of movement.
(6) Slide the backrest fully up and down through its full range and check that it remains in any selected position.

B. Functional Test of Crew Seat Mechanisms *(Aircraft Equipped with Custom Products Pilot's and Copilot's Seats)*
(1) Sit in the seat and operate the tracklock lever. Check that the seat runs freely on the floor rails. Release the tracklock lever and check that the locking pins engage freely in the holes in the floor rail.
(2) Operate the seat height adjustment lever and check that the seat moves freely over its full range and that it locks when the lever is released.

3. Inspection/Check
A. Check all seat parts for the following:
(1) Cleanliness.
(2) Distortion.
(3) Cracks - visually and dye penetrant.
(4) Scores.
(5) Dents.
(6) Excessive wear.
(7) Corrosion and deterioration of protective treatment.
(8) Serviceability of all screw threads.
(9) Security of attachment.
(10) Locking quadrant holes for wear and distortion.
(11) Fraying of height lock cable.
(12) General condition of bungee cords.

B. Check all rivets and riveted assemblies for the following:
   (1) Tightness.
   (2) Flush fitting where applicable.
   (3) Security of attachment.
   (4) Distortion of holes.

4. Approved Repairs *(Aircraft Equipped with IPECO Pilot's and Copilot's Seats)*

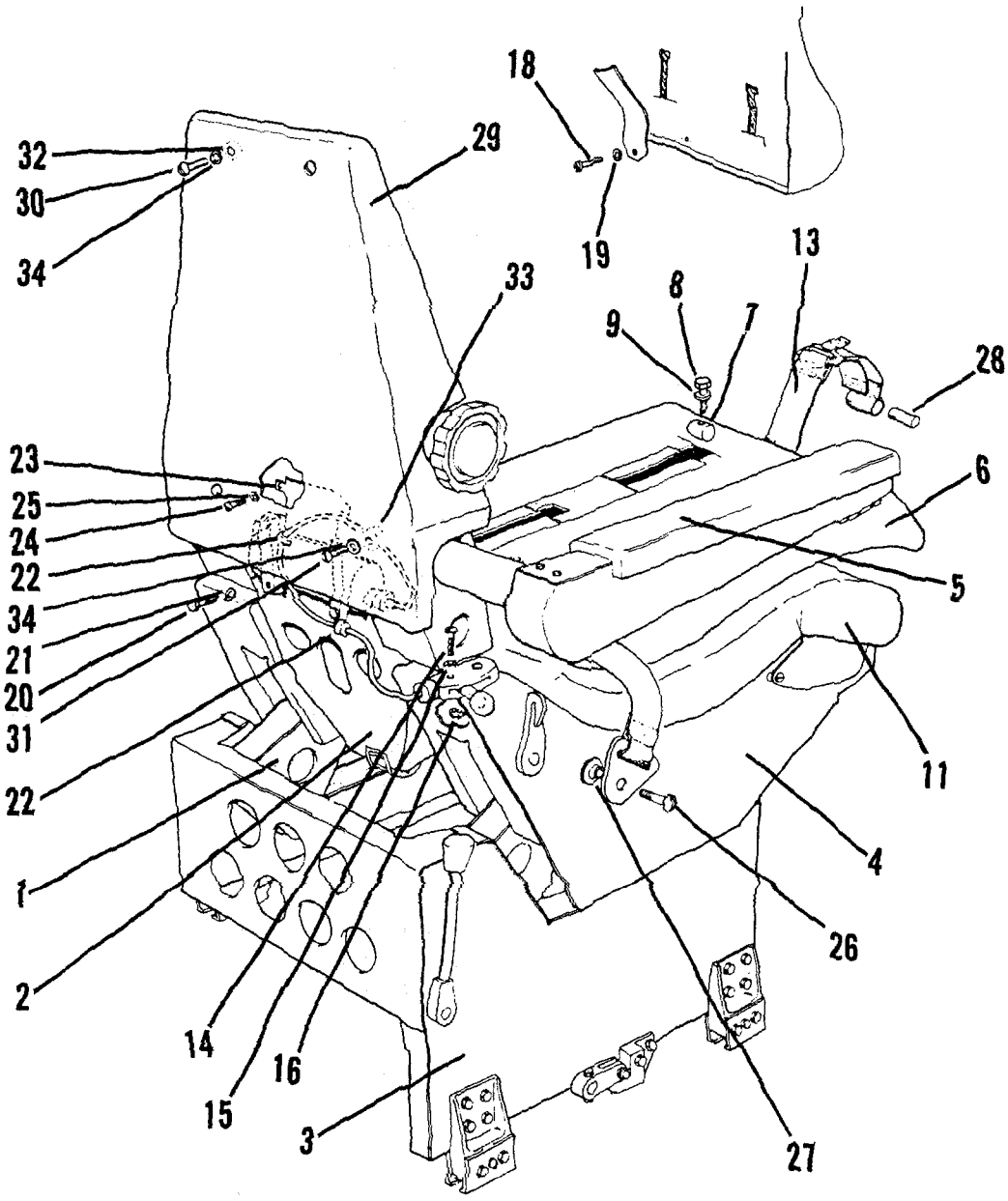
A. General
   (1) Repairs to the seat are confined to the replacement of parts as required. Welded assemblies are to be returned to IPECO for repair or replacement.

WARNING: UNAUTHORIZED REPAIRS TO SEAT STRUCTURE OR COMPONENTS MAY AFFECT THE SAFETY FEATURES OF THE SEAT AND MUST NOT BE ATTEMPTED.

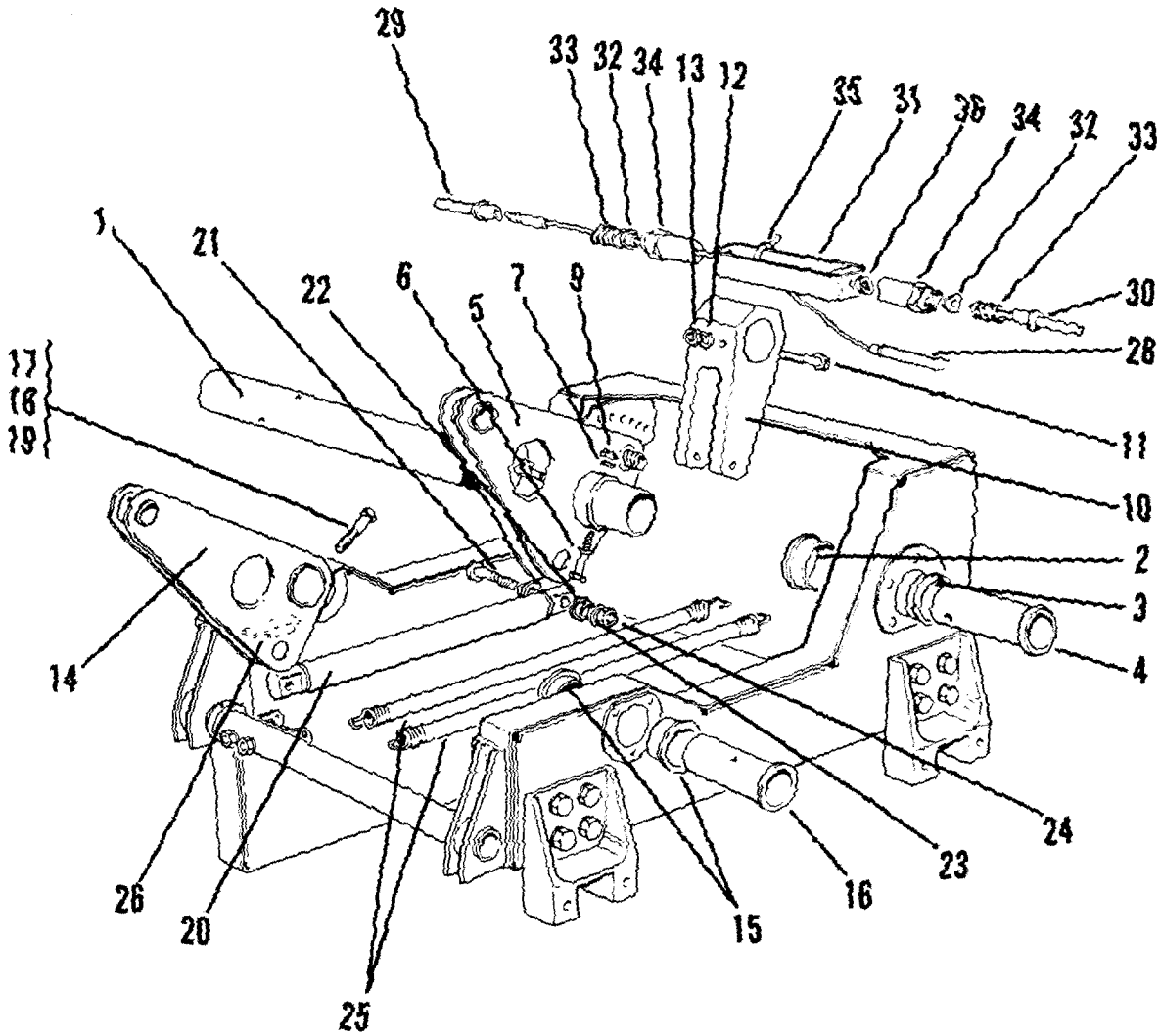
NOTE: If damage has occurred to major assemblies of the seat (e.g., the spine assembly, seat pan, or base assembly), the complete seat should be returned to the manufacturer for repair.

B. Disassemble Upholstery and Accessories (See figure 201.)
   (1) Remove bolts (26) and remove lap straps. Retain spacers (27).
   (2) Push crotch strap (13) back into its mounting bracket until shaft (28) can be removed.
   (3) Remove bolts (30 and 31), washers (34) and remove back fairing (29). Retain spacers (32 and 33).
   (4) Remove bolts (24), washers (25), and remove harness fairing (23).
   (5) Remove bolts (20 and 14), washers (21 and 15), and nut (16) and remove inertia reel and release assembly completely. Retain clips (22).
   (6) Remove seat pan cushion (11) by pulling upward from rear to release Velcro attachment strips.
   (7) Remove bolts (8), washers (9), and remove stop block (7).
   (8) Remove bolt (18) and washer (19) to disconnect tensator spring. Remove seat back rest assembly (6) by moving downward to clear rollers on spine assembly.
   (9) Remove screws (20) and washers (21) securing cover (19). (See figure 206.) Remove bolts and washers (17) and withdraw armrest (16) assembly from armrest tube. Retain spacers (18).

C. Disassemble Seat Base and Lift Mechanism (See figure 202.)
   (1) Remove bolts (48), nuts (50), and washers (49) from each pivot tube (47). (See figure 205.)
   (2) Remove Sel-lok pins (54) from spacer (53). (See figure 205.)
   (3) Remove pivot tube (47) while supporting front of seat pan. (See figure 205.) Retain bearings (51).
   (4) Remove bolts (61), nuts (63), and washers (62) from each rear lift arm. (See figure 205.)
   (5) Remove pivot pins (60) while supporting rear of seat pan. (See figure 205.) Retain bushings (59).
   (6) Remove bolts (21), nuts (24), washers (22), bushings (23), and remove operating bars (20). Retain bushings (23).
   (7) Remove bolts, nuts and washers (17, 18, and 19), and remove pivots (16). Retain bearings (15) and front lift arms (14).
   (8) Remove bungee rubber cords (25).
   (9) Remove bolt (11), nut (13), and washer (12).
   (10) Remove bolts (6), nuts (9), and washers (7) from rear lift arms (5).
   (11) Unscrew spring housings (34), remove cable tie (35) and disconnect cable assembly (28) from connector bracket.
   (12) Unscrew pin (29) from cable assembly (28) end fitting. Remove ferrule (32) and spring (33).
   (13) Unscrew pin (30). Remove ferrule (32), spring (33) and locknut (36).
   (14) Remove torque tube (1) from base. Retain bungee lever (10), lift arms (5), sleeve tubes (4), and bushings (2 and 3).



Upholstery and Accessories
Figure 201

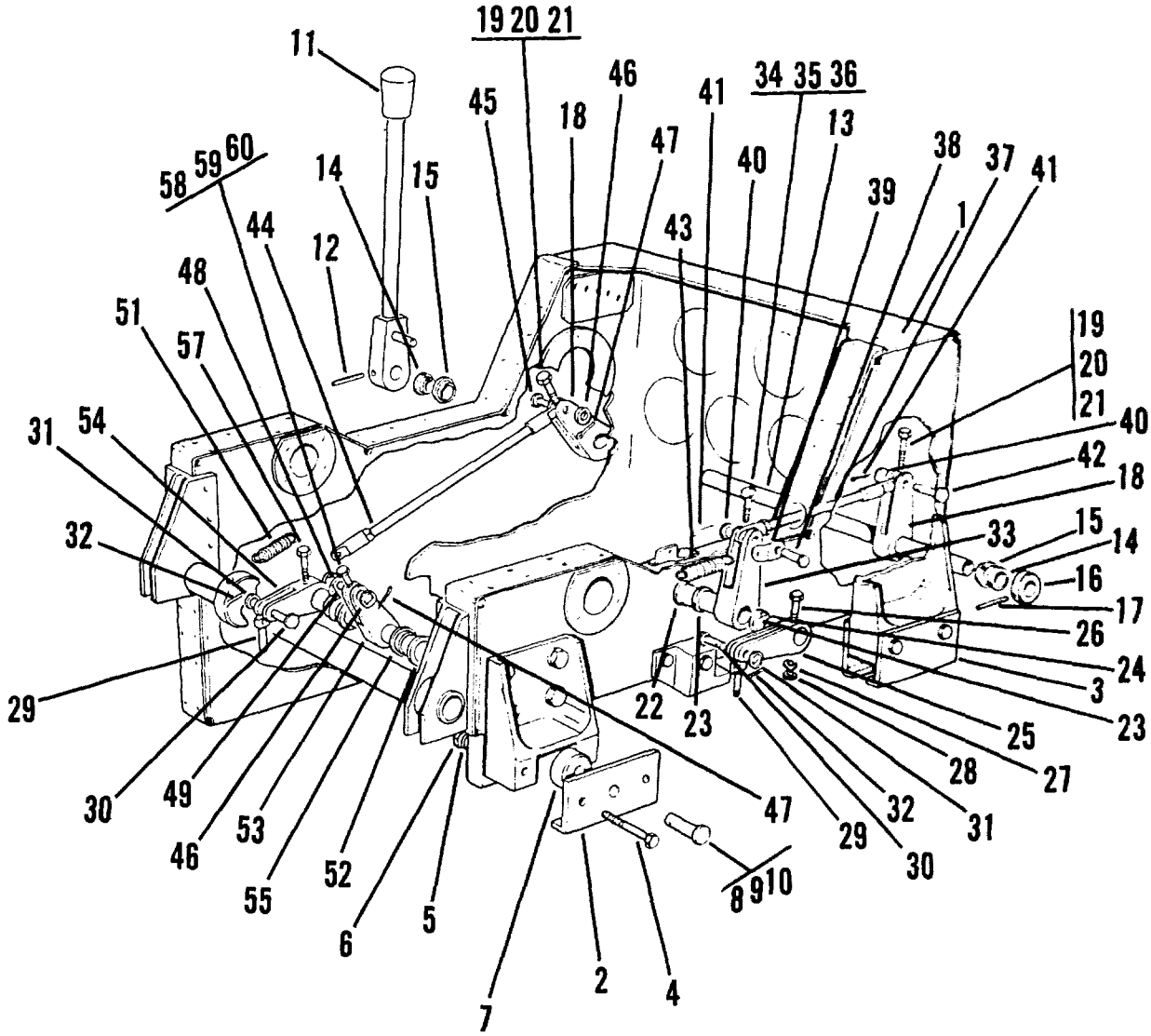


Seat Base and Mechanism
Figure 202

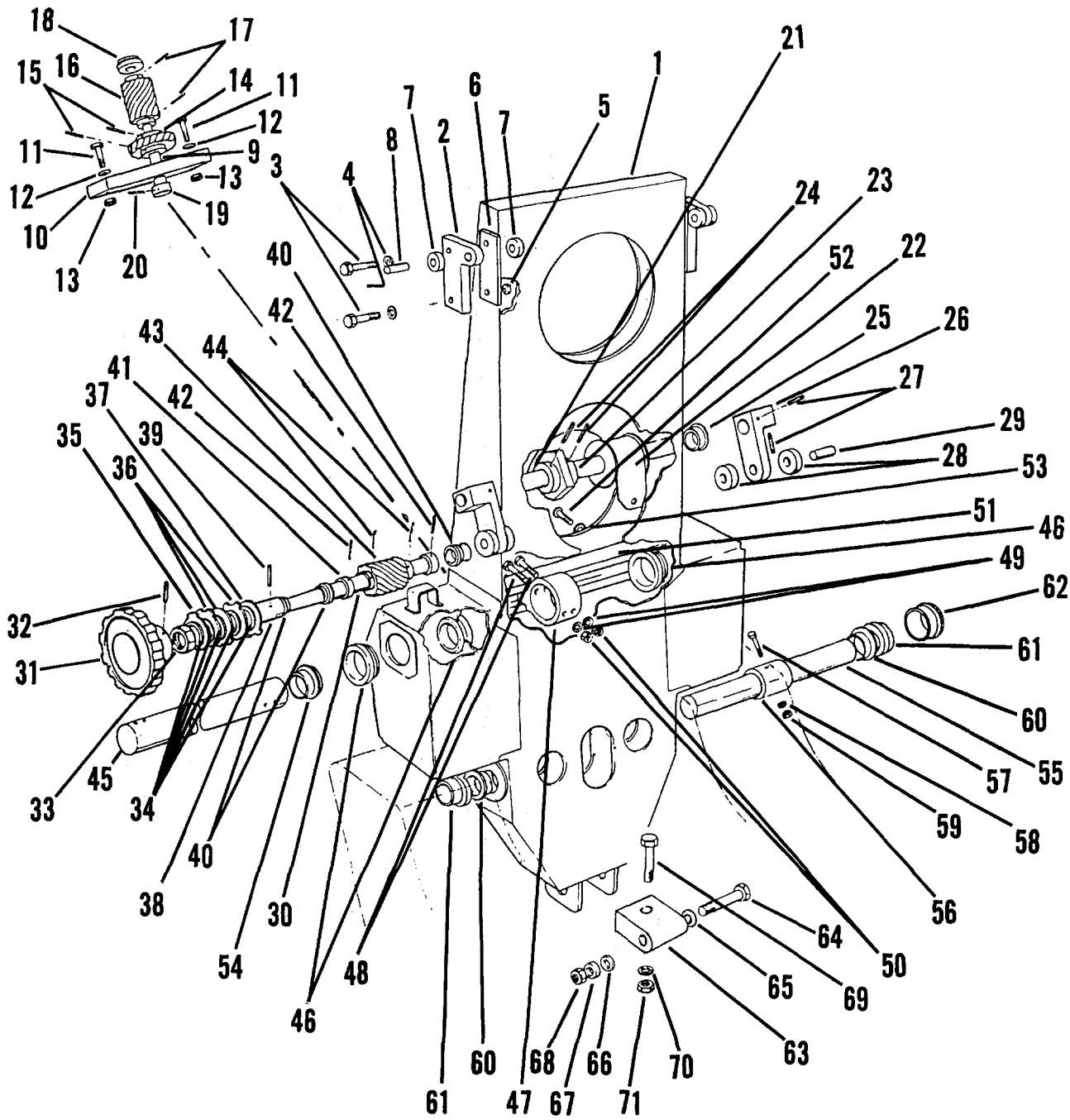
(15) Remove bolt (73) and washer (74) from 'P' clip (72). (See figure 205.) Remove height lock cable assembly (71).
(16) Drive out Sel-lok pins (66), and remove pivot pins (65) and recline unit (64) from seat. (See figure 205.)
(17) Drive out Sel-lok pin (34) and detach lever (33) from recline shaft (28). (See figure 205.)
(18) Remove recline shaft (28) from seat. (See figure 205.) Retain bearings (29 and 30).
(19) Drive out Sel-lok pin (32) and remove recline lever (31) from shaft (28). (See figure 205.)

D. Disassemble Seat Base and Tracklock Mechanism (See figure 203.)
(1) Drive out spirol pin (12) and remove handle assembly (11) from shaft (13).
(2) Remove tension springs (51 and 43).
(3) Remove shear pin (38) from lever (33). Retain split pin (41), washer (46), and spring link (39).
(4) Remove pin (48) from lever (53). Retain split pin (47), washer (46), and spring link (49).
(5) Remove bolt (19), nut (20), and washer (21) from lever (18) outboard.
(6) Remove bolt (19), nut (20), and washer (21) from lever (18) inboard.
(7) Remove split pin (41) and shear pin (42). Retain washer (40). Remove control rod (37) from base.
(8) Remove split pin (47) and shear pin (45). Retain washer (46) and remove control rod (44) from base.
(9) Remove shaft (13). Retain bearing housing (14) and bearing (15).
(10) Drive out Sel-lok pin (17) and remove collar (16) from shaft (13).
(11) Remove bolt (26), nut (28), and washer (27) from lever (25).
(12) Remove bolt (34), nut (35), and washer (36) from lever (33).
(13) Remove pivot tube (22) from base. Retain levers (25 and 33), bushing (23), and spacer (24).
(14) Remove split pin (32) and shear pin (30). Retain washer (31). Remove tracklock pin (29).
(15) Remove bolt (58), nut (59), and washer (60) from lever (54).
(16) Remove bolt (60), nut (58), and washer (59) from lever (53).
(17) Remove pivot tube (52). Retain bushing (55), levers (53 and 54), and spacer (56).
(18) Remove split pin (32) and clevis pin (30). Retain washer (31) and tracklock pin (29).
(19) Remove bolts (4), nuts (6), washers (5), and claw plates (2 and 3) from base.
(20) Remove shear pins (8), washers (9), and split pins (10) from each claw plate assembly. Retain cam follower (7).

E. Disassemble Seat Spine and Mechanism (See figure 204.)
(1) Remove spindle (8) and rollers (7) from spine.
(2) Remove bolts (3) and washers (4), and detach pivot plates (2) and packers (6).
(3) Remove spindle (29) and rollers (28).
(4) Remove Sel-lok pins (27) and detach lumbar levers (26) from shaft (21).
(5) Slide shaft (21) until the worm wheel (23) is clear of the vertical shaft assembly. Drive out Sel-lok pins (24).
(6) Remove shaft (21). Retain worm wheel (23), spring tensator (22), and bearings (25).
(7) Remove bolts (11), nuts (13), and washers (12) and remove vertical shaft assembly (9) from spine. Retain bearing (18).
(8) Drive out Sel-lok pins (17) and remove worm wheel (16) from shaft.
(9) Drive out Sel-lok pins (15) and remove worm wheel (14) from shaft.
(10) Drive out Sel-lok pin (20) and remove collar (19).
(11) Separate shaft (9) from bearing block (10).
(12) Drive out Sel-lok pin (32) and remove handwheel (31). Remove locknut (33).
(13) Remove catch plate washers (34), catch plates (35 and 36), and stop plate (37) from drive shaft (30).
(14) Drive out Sel-lok pin (39) and remove adapter (38).
(15) Drive out Sel-lok pins (44) from worm wheel (43).
(16) Drive out Sel-lok pins (42) from sleeve (41).
(17) Remove shaft from spine. Retain all parts mounted on the shaft, including bearings (40).
(18) Remove bolts (48), nuts (50), and washers (49).



Seat Base and Track Lock Mechanism
Figure 203



Seat Spine and Mechanism
Figure 204

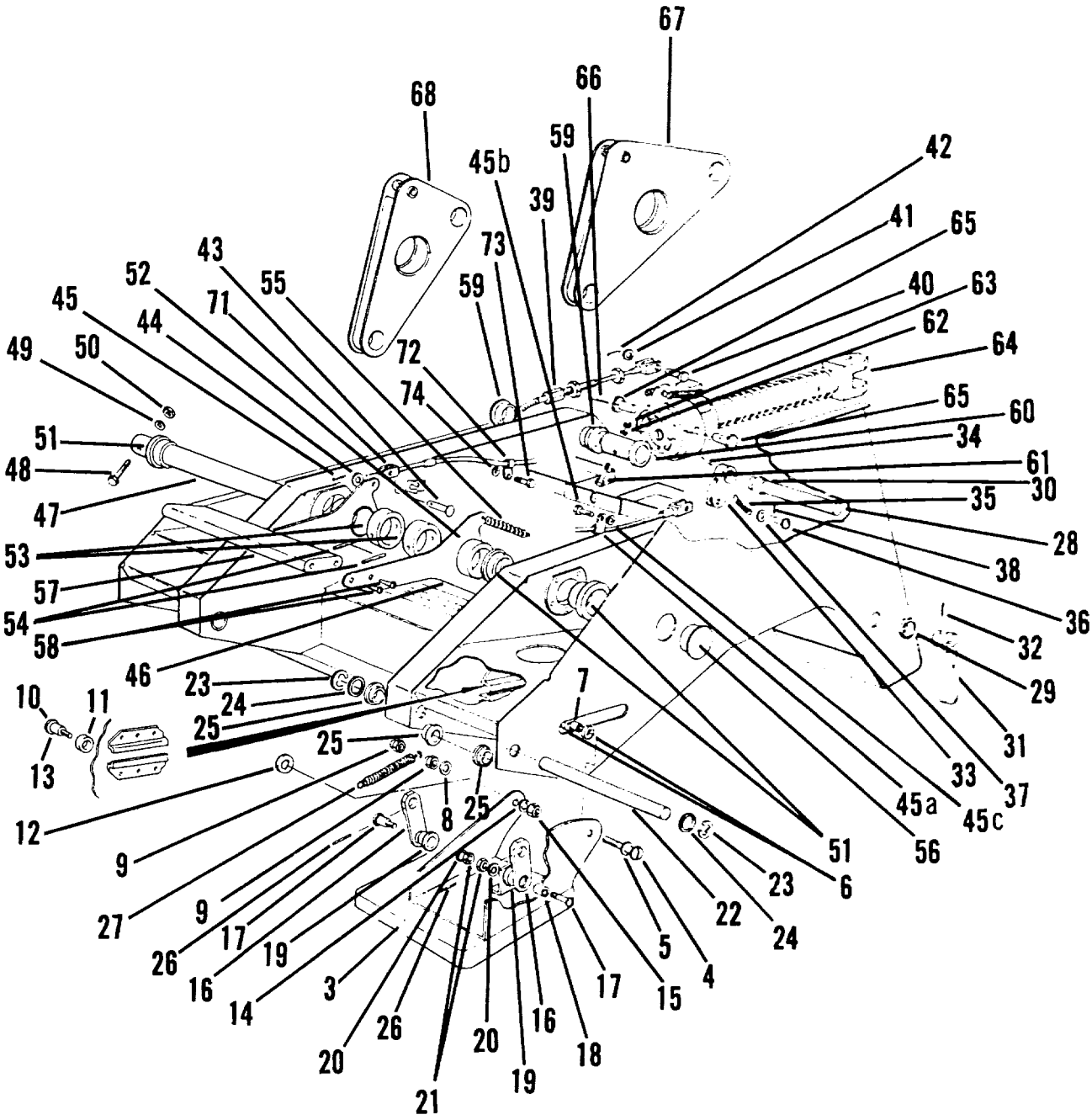
(19) Remove armrest tube from spine. Retain armrest tube stop (47) and bearings (46).
(20) Remove bolts (52) and washers (53) and detach stop block (51) from spine.
(21) Remove bolt (57), nut (59), and washer (58) from pivot shaft collar (56).
(22) Remove bolt (64), nut (68), and washers (65, 66, and 67) from attachment block (63).
(23) Support spline assembly and remove spline shaft (55). Retain bearings (60), pivot bearing (61), and collar (56).
(24) Remove bolt (69), nut (71), and washer (70). Remove block (63) from recline unit.

F. Disassemble Seat Pan and Mechanism (See figure 205.)
(1) Remove bolts (61), nuts (63), and washers (62). Remove pivot pin (60) and rear lift arms.
(2) Remove shear pin (43), washer (44), and split pin (45), and disconnect height lock cable (71) from height lock lever (46).
(3) Remove bolts (48), nuts (50), and washers (49), and remove forward lift arms (68).
(4) Remove end plug (56).
(5) Drive out Sel-lok pins (54) from spacers (53) and withdraw pivot tube (47). Retain height lock lever assembly (46), bearings (51 and 52), and spacers (53). Detach spring (55).
(6) Remove screws (58) and separate handle (57) from height lock levers (46).
(7) Drive out Sel-lok pins (26) from levers (16).
(8) Remove circlips (23) and washers (24), and remove shafts (22). Retain bearings (25).
(9) Remove bolts (4 and 10) and nuts (9 and 15). Unhook tension spring (27) and remove washers (5, 14, and 8). Remove thigh pads (3). Retain rollers (6 and 11), sleeves (7, 18, and 13), and washer (12).
(10) Remove bolts (17), nuts (21), washers (20), sleeves (18) and detach levers (16). Retain bearings (19).
(11) Unhook tension spring (35). Remove pin (36), washer (37), and split pin (38) to release recline cable from lever (33).
(12) Remove pin (40), washer (41), and split pin (42), and disconnect recline cable (39) from recline unit.
(13) Remove bolts (45b) and washers (45c), and release 'P' clips (45a) from structure. Remove recline cable assembly (39).

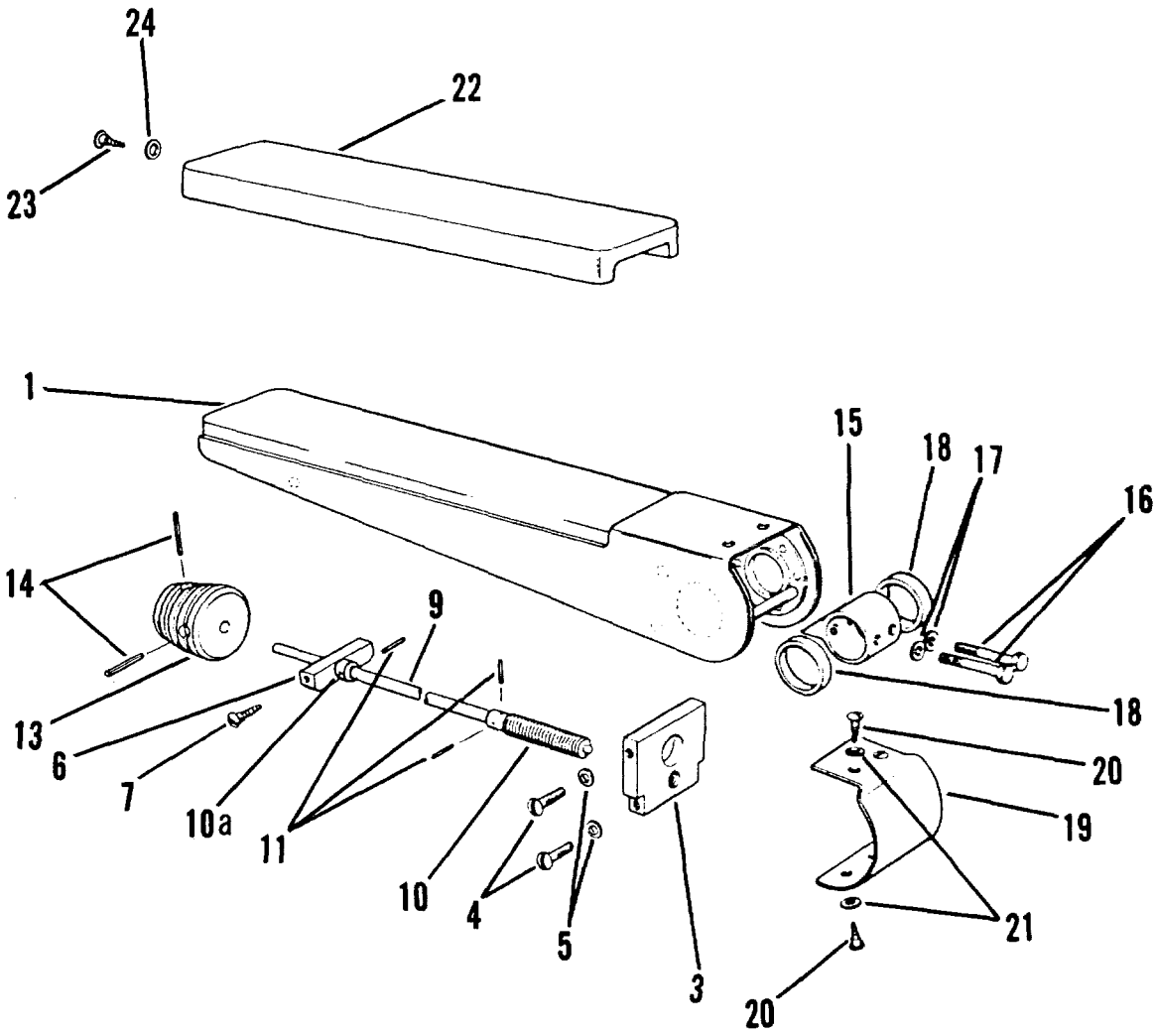
G. Disassemble Armrest (See figure 206.)
(1) Remove screw (23) and washer (24), and remove capping (22).
(2) Drive out Sel-lok pins (14) and remove adjusting knob (13).
(3) Screw shaft assembly (9) fully rearward until it is disconnected from threaded block (3).
(4) Drive out Sel-lok pins (11) and separate drive shaft (9) and adjustment screw (10).
(5) Remove screws (4) and washers (5), and remove block (3) from armrest.
(6) Remove drive screws (7) and bearing block (6).

NOTE: In order to perform steps (5) and (6), the covering material must be released from the structure and refitted, using a suitable adhesive, during reassembly.

H. Assemble Seat Base and Tracklock Mechanism (See figure 203.)
(1) Assemble bearing housing (14) and bearing (15) to base assembly.
(2) Assemble operating handle (11) to shaft (13) using new Sel-lok pin (12).
(3) Insert shaft assembly (13) into base, attaching each lever (18) in turn while shaft is inserted.
(4) Secure each lever (18) to shaft with bolts (19), nuts (20), and washers (21).
(5) Secure collar (16) to shaft (13) with new Sel-lock pin (17).
(6) Insert control rod (37) into base and secure to lever (18) with shear pin (42), washer (40), and split pin (41).
(7) Insert control rod (44) into base and secure to lever (18) with shear pin (45), washer (46), and split pin (47).
(8) Fit bushing (23) to base.
(9) Assemble levers (25 and 33) to base with spacer (24), bushing (23), and pivot tube (22).
(10) Secure lever (33) using bolt (34), nut (35), and washer (36).



Seat Pan and Mechanism
Figure 205



Armrest Assembly
Figure 206

(11) Secure lever (25) using bolt (26), nut (28), and washer (27).
(12) Attach control rod (37) to lever (33) using shear pin (38), link (39), washer (40), and split pin (41).
(13) Attach tracklock pin (29) to lever (25) using clevis pin (30), washer (31), and split pin (32).
(14) Assemble bushing (55) to base.
(15) Assemble levers (53 and 54) with spacer (56) and pivot tube (52).
(16) Secure lever (54) with bolt (57), nut (59), and washer (58).
(17) Secure lever (53) with bolt (58), nut (60), and washer (59).
(18) Attach control rod (44) to lever (53) with shear pin (48), spring link (49), washer (46), and split pin (47).
(19) Attach tracklock pin (29) to lever (54) with pin (30), washer (31), and split pins (10).
(20) Attach springs (51 and 43) to spring links and anchor points.
(21) Assemble cam follower (7) to claw plates with pins (8), washers (9), and split pins (10).
(22) Attach claw plates (2 and 3) to base using bolts (4), nuts (6), and washers (5). Note that each rear claw plate (3) is fitted on the outboard side.

I. *Assemble Seat Pan and Mechanism (See figure 205.)*
(1) Assemble levers (16) to thigh support brackets (3) with bolts (17), sleeves (18), bearings (19), nuts (21), and washers (20).
(2) Attach thigh support brackets to seat pan using bolts (4 and 10), sleeves (13 and 7), rollers (6 and 11), washers (5, 14, 8, and 12), and nuts (9 and 15).
(3) Attach levers (16) to seat using bearings (25), shaft (22), washers (24), and circlips (23).
(4) Secure levers to shaft with new Sel-lok pins (26).
(5) Attach springs (27).
(6) Secure operating handle (31) to tube (28) with new Sel-lok pin (32).
(7) Fit bearings (29 and 30) and tube (28) to seat.
(8) Secure lever (33) to tube using new Sel-lok pin (34).
(9) Secure recline unit (64) to seat using pins (65) and new Sel-lok pins (66).
(10) Attach recline cable assembly (39) to recline unit using pin (40), washer (41), and split pin (42).

J. Assemble Seat Base and Pan Assembly (See figure 202.)
(1) Assemble bearings (2 and 3) and pivot tubes (4) to base.
(2) Assemble torque tube (1) to base with rear lift arms (5) and bungee lever (10).
(3) Secure bungee lever to tube using bolt (11), nut (13), and washer (12).
(4) Secure rear lift arms (5) to torque tube using bolts (6), nuts (9), and washers (7).
(5) Fit bearings (15) and pivot tubes (16) to base and fit front lift arms (14).
(6) Secure lift arms using bolts (17), washers (18), and nuts (19).
(7) Assemble bearings (22) to lift arms. Install operating bars (20) and secure with bolts (21), nuts (23), and washers (22).
(8) Assemble pin (30), spring (33), and ferrule (32) to housing and secure assembly with locknut (36) to connector bracket (31). Attach assembly to rear outboard lift arm.
(9) Assemble ferrule (32), spring (33), housing (34), and pin (29) to cable assembly.
(10) Engage cable end out casing in connector bracket and screw spring housing onto inboard rear lift arm.
(11) Fit cable tie (35) around connector bracket and cable assembly.
(12) Attach bungee rubber cords to bungee lever and forward cross tube.
(13) Assemble bearings (59) to seat pan. (See figure 205.)
(14) With front of seat pan positioned at front lift arms, assemble height lock levers (46), collars (53), spacers (52), torque tube (47), and seat pan to base.
(15) Assemble spacers (59) to base. (See figure 205.)
(16) Assemble seat base to rear lift arms with pivot tubes (60).
(17) Secure lift arms to seat base using bolts (48 and 61), nuts (50 and 63), and washers (49 and 62).
(18) Attach height lock handle (57) to height lock levers (46) using screws (58). (See figure 205.)
(19) Attach height lock cable (71) to height lock levers (46) using pin (43), washer (44), and split pin (45).

(20) Attach height lock cable to structure using 'P' clip (72), bolt (73), and washer (74). (See figure 205.)
(21) Attach tension spring (55). (See figure 205.)
(22) Attach free end of recline cable (39) to lever (33) using pin (36), washer (37), and split pin (38).
(23) Secure recline cable to seat structure with 'P' clips (45a), bolts (45b), and washers (45c).

K. Assemble Seat Spine and Mechanism (See figure 204.)
(1) Fit bearings (40) to spine structure. Assemble worm wheel (43), shaft (30), and collars (41) to spine. Secure collars and worm wheel with new Sel-lok pins (42 and 44).
(2) Assemble bearings (25) to spine.
(3) Assemble shaft (21), tensator spring (22), lumbar levers (26), and worm wheel (23) to spine. Secure items (26) and (23) with new Sel-lok pins (24 and 27).
(4) Assemble worm wheels (14 and 16) to shaft (9) with new Sel-lok pins (15 and 17).
(5) Locate shaft assembly on block (10) and attach collar (19) to shaft with new Sel-lok pin (20).
(6) Assemble completed assembly with bearing (18) to spine. Secure with bolts (11), nuts (13), and washers (12).
(7) Attach spacer (38) to shaft (30) with new Sel-lok pin (39). Assemble catch plates (34, 35, 36 and 37) to shaft.
(8) Install locknut (33) to shaft and install handwheel (31) to shaft with new Sel-lok pin (32). Tighten locknut.
(9) Install bearings (46) to spine.
(10) Secure guide block (51) to spine with bolts (52) and washers (53).
(11) Assemble armrest tube (45) to spine with stop (47). Secure stop to tube with bolts (48), nuts (50), and washers (49).
(12) Install block (54) to tube.
(13) Install spine assembly on seat pan assembly and assemble tube (55), spacer (56), and bearings (60 and 61). Install end plugs (62).
(14) Secure spacer (56) with bolt (57), nut (59), and washer (58).
(15) Assemble spine base to recline unit with block (63), bolts (64 and 69), washers (70, 66, and 67), and nuts (68 and 71).
(16) Secure pivot plates (2) with bolts (3), washers (4), and packer (6).

L. Assemble Armrest Assembly (See figure 206.)
(1) Install bearing block (6) to armrest with drive pins (7).
(2) Install block (3) to armrest with screws (4) and washers (5).
(3) Install shaft (9) and adjustment screw (10) with new Sel-lok pins (11).
(4) Install shaft assembly in bearing block (6), and screw shaft into block (3).
(5) Secure knob (13) to shaft with new Sel-lok pins (14).
(6) Secure capping strip (22) with screw (23) and washer (24).

M. Assemble Upholstery and Accessories (See figure 201.)
(1) Assemble armrest to spine with spacers (18) and block (15). Secure with screws (16) and washers (17).
(2) Install cover (19) and secure with screws (20 and 21).
(3) Install rollers (7 and 28) on spine with pins (8 and 29).
(4) Install backrest assembly on spine and attach tensator spring to backrest with bolt (18) and washer (19).
(5) Install stops (7) with bolts (8) and washers (9).
(6) Install inertia reel to spine using bolts (20) and washers (21). Attach harness cable with 'P' clips under appropriate bolt heads.
(7) Secure harness fairing (23) to spine with bolts (24) and washers (25).
(8) Attach inertia reel operating handle to seat pan with bolts (14), nuts (16), and washers (15).
(9) Attach back fairing (29) to spine using bolts (30 and 31), washers (34), and spacers (32 and 33).
(10) Secure lap straps to seat pan using bolts (26) and spacers (27).
(11) Secure crotch strap to seat pan with shaft (28).
(12) Install seat cushion on seat pan.

PASSENGER COMPARTMENT - DESCRIPTION AND OPERATION

1. Description
   A. The passenger compartment is that area aft of the service cabinet extending to the aft pressure bulkhead.
   B. Equipment and furnishings within the passenger compartment include the seats, toilet, service cabinets, life vests and a work table.

1. Tools and Equipment

NOTE: Equivalent substitutes may be used in lieu of the following items.

NAME	PART NUMBER	MANUFACTURER	USE
Orvus WA Paste			
Lissapol	1132	Imperial Chemical Industries	
Wich Torlan		Wichita Brush and Chemical Co.	
Mineral Spirits	Apco No. 10		
Cheesecloth		Commercially Available	

2. Cleaning Interior

CAUTION: DO NOT USE ABRASIVE CLEANERS, PARTICULARLY THOSE CONTAINING BLEACHES, ON ANY INTERIOR DECORATIVE SURFACE. ABRASIVE CLEANERS WILL DESTROY SILK-SCREENED DESIGNS, DAMAGE COLORED LEATHERS, PAINTED SURFACES, AND PLASTIC SURFACES. AVOID USING ORGANIC CHEMICALS, PARTICULARLY KETONES, ESTERS, AROMATIC AMINES, NITRO COMPOUNDS AND HYDROCARBONS, OR CLEANERS THAT MAY CONTAIN THE ABOVE CHEMICALS. AVOID USING MATERIALS SUCH AS FIRE EXTINGUISHER FLUIDS, DE-ICING FLUIDS, PAINT STRIPPERS, LACQUER THINNERS, OR HYDRAULIC FLUIDS.

A. Cleaning Rugs, Leather, Fabrics
   (1) Mix two (2) ounces of Orvus paste per gallon of water.
   (2) Use only the foam for cleaning.
   (3) Sponge foam on the surface. Do not get surface too wet.

B. Cleaning Plastics or Metal Surfaces

CAUTION: DO NOT USE THE FOLLOWING MATERIALS ON DECORATIVE PLASTICS: GASOLINE, ALCOHOL, BENZENE, HEXANE, KEROSENE, XYLENE, ACETONE, CARBON TETRACHLORIDE, FIRE EXTINGUISHER OR DE-ICING FLUIDS, LACQUER THINNERS, OR WINDOW CLEANING SPRAYS.

   (1) Mix one (1) tablespoon Orvus paste per gallon of water.
   (2) Wash the surface with a cloth.
   (3) Rinse the surface with clean water and wipe dry.

C. Cleaning Acrylic Windows

(1) Remove loosely adhering dirt and grit from the window by flushing with water filtered free of dirt and abrasive materials.

(2) Wash with nonabrasive soap and water. A soft, thoroughly clean cloth, sponge, or chamois may be used in washing, but only as a means of carrying the soapy water to the plastic. Go over the surface only with the bare hand so that any abrasive can be quickly detected and removed before it scratches the plastic surface.

CAUTION: RUBBING THE PLASTIC SURFACE WITH A DRY CLOTH WILL CAUSE SCRATCHES AND BUILD UP AN ELECTROSTATIC CHARGE THAT ATTRACTS DUST PARTICLES. ALL RUBBING OPERATIONS ON ACRYLIC PLASTICS SHALL BE DONE WITH AS LIGHT A PRESSURE AS POSSIBLE.

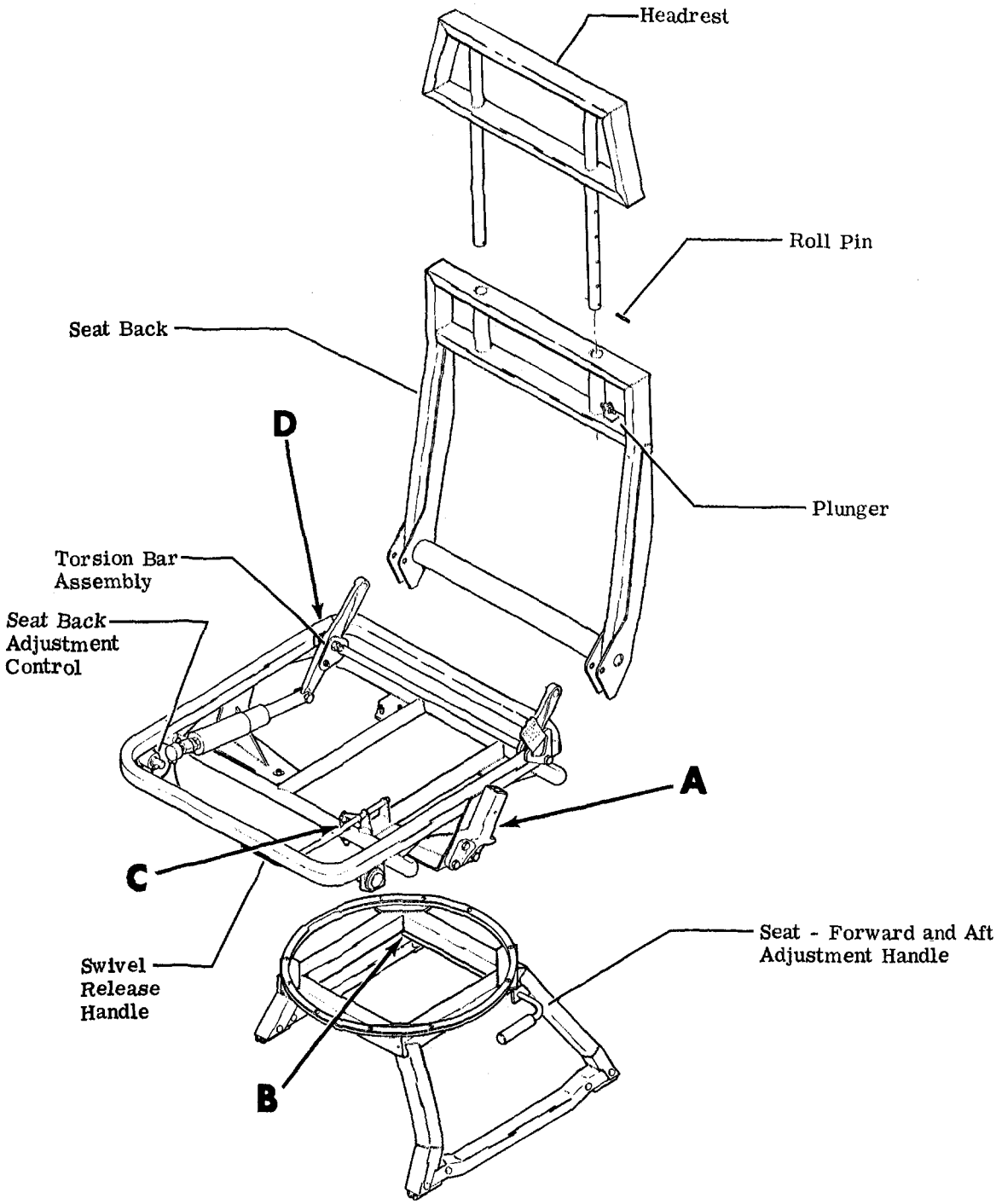
(3) Dry the window with a clean, damp chamois. A clean, soft cloth or tissue may be used if care is taken not to rub the plastic after it is dry.

(4) Remove oil and grease by rubbing lightly with a cloth wetted with aliphatic naphtha.

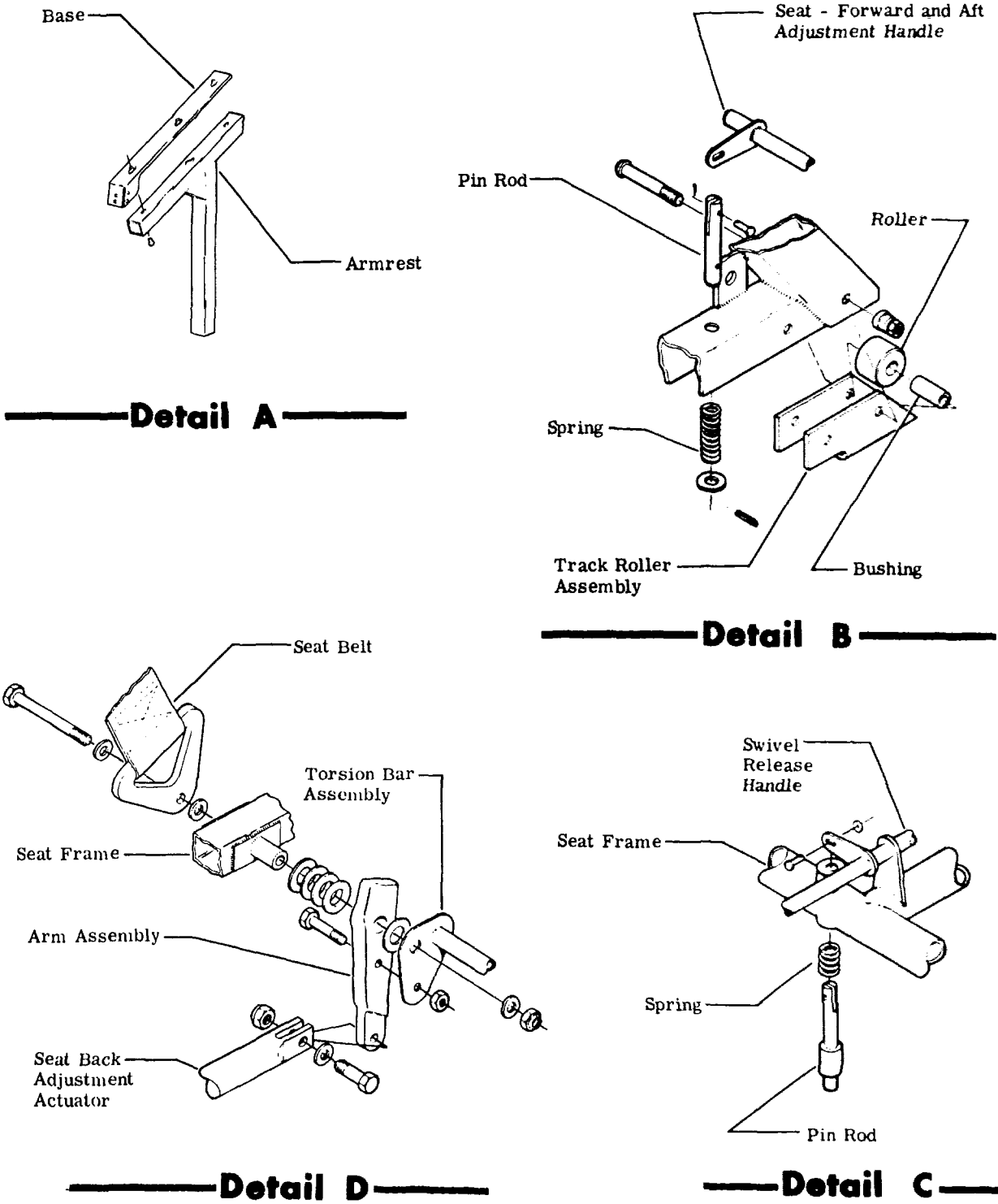
CAUTION: DO NOT USE THE FOLLOWING MATERIALS ON ACRYLIC PLASTICS: GASOLINE, ALCOHOL, BENZENE, HEXANE, XYLENE, ACETONE, CARBON TETRACHLORIDE, FIRE EXTINGUISHER OR DE-ICING FLUIDS, LACQUER THINNERS, OR WINDOW CLEANING SPRAYS, AS THEY SOFTEN THE PLASTIC AND/OR CAUSE CRAZING.

PASSENGER SEATS - DESCRIPTION AND OPERATION

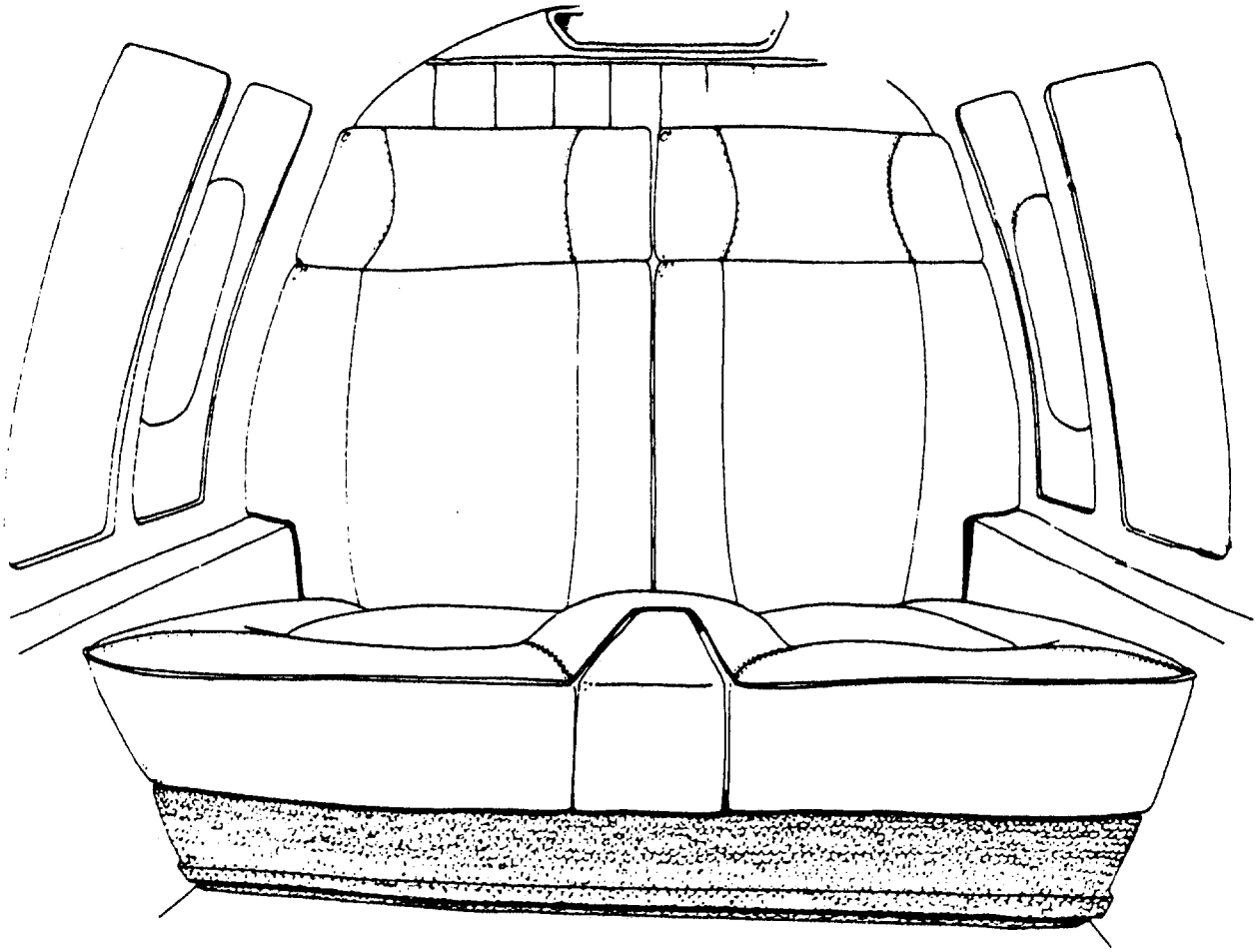
1. Description
   A. Passenger seats in the aircraft consist of three types: a divan seat, a berthable divan, and swivel seats.
   B. On *Aircraft 35-002 and Subsequent*, the divan seat is full cabin width and is located in the aft passenger compartment. The seat has split-type seat backs that fold down against the seat bottom to provide additional cargo space.
   C. On *Aircraft 36-002 and Subsequent*, the berthable divan is full cabin width and is located in the aft passenger compartment. The seat has split-type seat backs that can be adjusted and locked into position using a button located on the lower forward portion of the seat. The berthable divan design allows the seat backs to fold down into a bed. The divan also incorporates a center fold-down arm rest.
   D. The swivel seats are mounted on seat rails and can be moved fore and aft using an adjustment handle. The seats can be rotated 180° and locked into position using a swivel release handle. The seat back can be reclined and locked into position using a button located on the lower forward portion of the seat. A telescoping head rest in the seat back is adjustable by pulling up and pushing down.



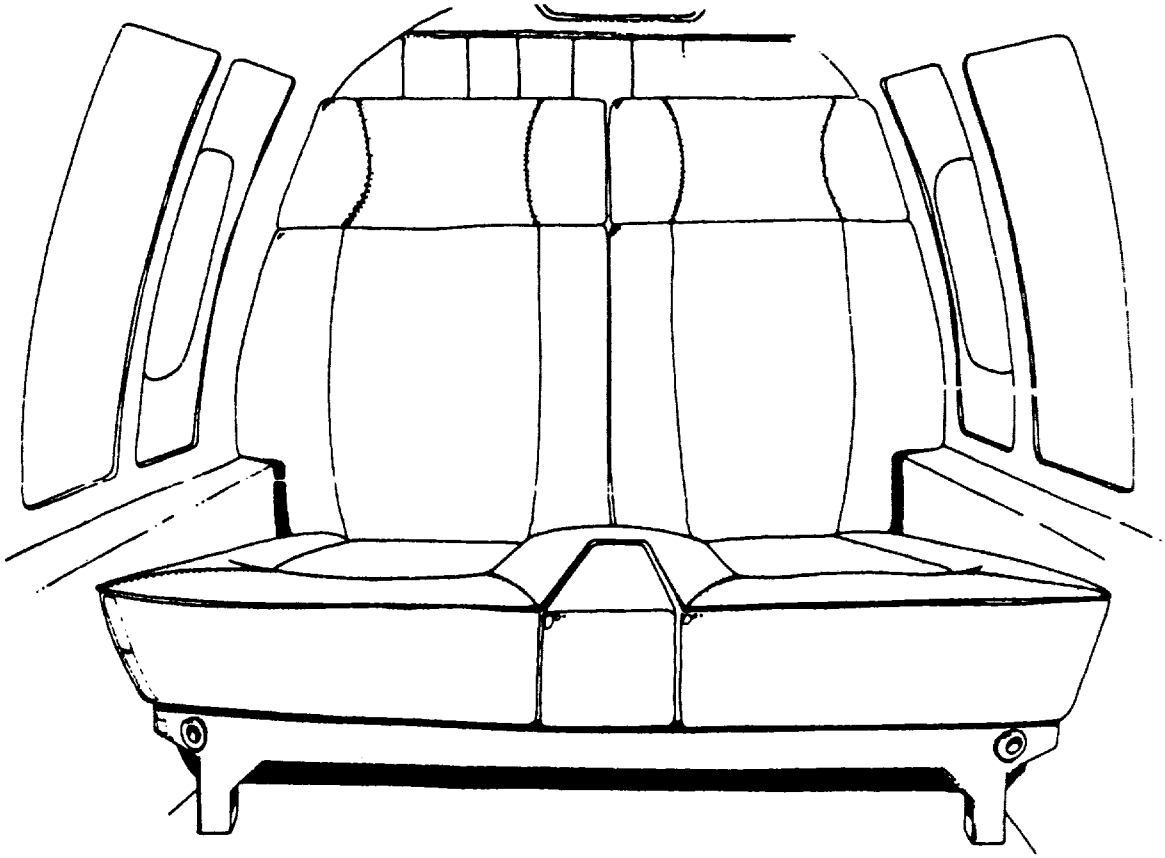
Swivel Seat Assembly
Figure 1 (Sheet 1 of 2)



Swivel Seat Assembly
Figure 1 (Sheet 2 of 2)



Divan Seat Assembly
Figure 2



Berthable Divan Seat Assembly
Figure 3

1. **Removal/Installation**
   A. Remove Swivel Seats (See figure 201.)
      (1) Remove attaching parts and doorway molding forward of LH seat rails.
      (2) Remove any stub bulkheads, closets, or cabinets that may obstruct removal of seats at forward end of seat rail (LH side) or forward seat rail cutouts (RH side).
      (3) Loosen seat stops for outboard seat rails and slide stops forward enough to allow marking of center of stop positions using a permanent felt-tip marker.
      (4) Slide LH stops and seats off forward end of seat rails and remove from aircraft.
      (5) Slide RH stops and seats forward to seat rail cutouts opposite passenger/crew door and remove from aircraft.
   B. Install Swivel Seats (See figure 201.)
      (1) Place RH seats and stops onto forward seat rail at cutouts, and slide seats down rail until stops are centered on markings. Tighten seat stops.
      (2) Place LH seats and stops onto seat rail at forward end, and slide seats down rail until stops are centered on markings. Tighten seat stops.
      (3) Reinstall any stub bulkheads, closets, or cabinets that have been removed.
      (4) Install doorway molding forward of LH seat rails using attaching parts.
   C. Remove Divan (See figures 202 and 203.)
      (1) Remove divan seat cushion by pulling up. Cushion is attached with Velcro strips.
      (2) Fold seat back forward.
      (3) Remove attaching parts at base of seat back and remove seat back from aircraft.
   D. Install Divan (See figures 202 and 203.)
      (1) Position divan seat back in aircraft and secure with attaching parts.
      (2) Unfold seat back.
      (3) Install seat cushion using Velcro strips.

2. **Approved Repairs**
   A. Tools and Equipment

      NOTE: Equivalent substitutes may be used in lieu of the following:

NAME	PART NUMBER	MANUFACTURER	USE
Hydraulic Fluid	MIL-H-6083, Type I	Commercially Available	Service hydraulic control.

   B. Service Hydraulic Control (See figure 204.)

      NOTE: A hydraulic control is used to release the hydrolok unit(s) and allow the seat back to be adjusted. Failure of seat back to release while depressing release button indicates the need to service the hydraulic control.

      (1) Remove shrouds from seat base to gain access to hydraulic control.
      (2) Loosen set screw attaching hydraulic control to hydrolok unit(s).
      (3) Release inner snap ring and slide hydraulic control outward.
      (4) Loosen set screw in button and remove button.
      (5) Release outer snap ring and remove hydraulic control from mounting collar.

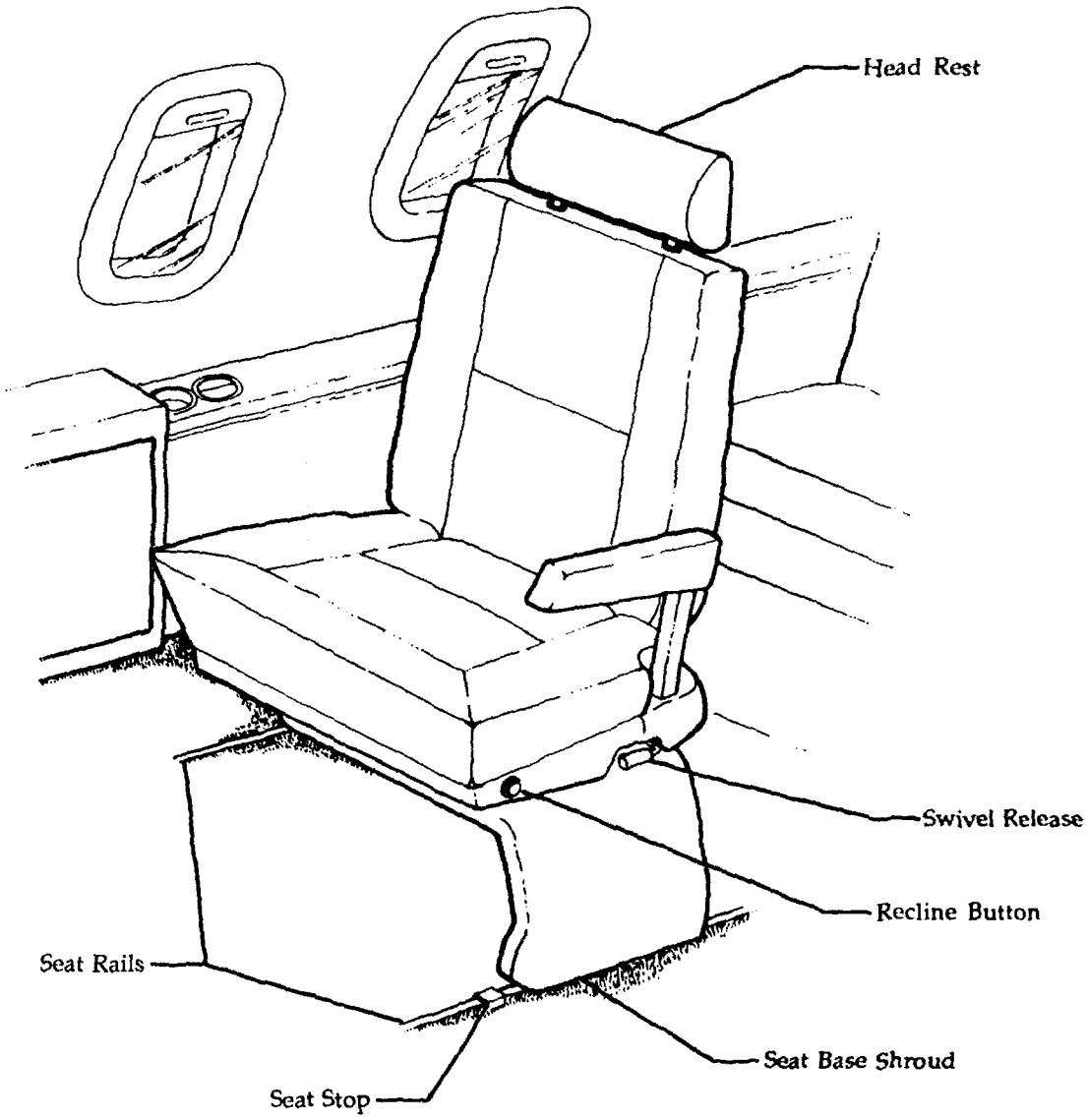
(6) Inspect hydraulic control for evidence of fluid leakage.

NOTE: If leakage is observed, replace hydraulic control.

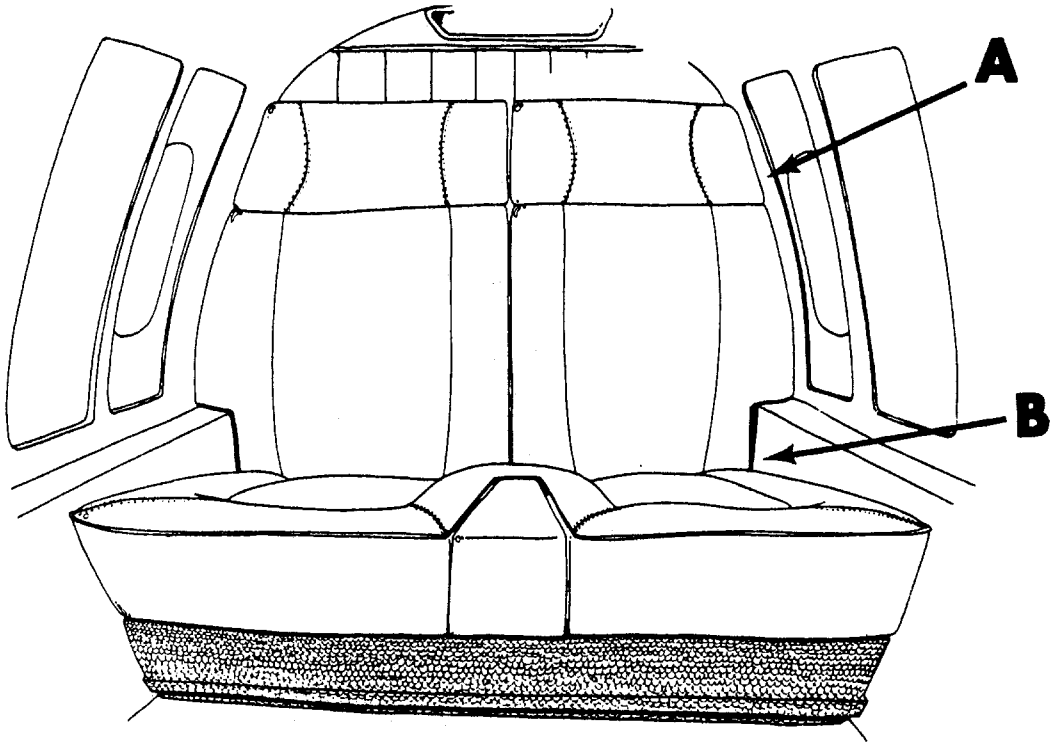
(7) Remove internal snap ring from one end of the hydraulic control and remove plunger.
(8) Fill with MIL-H-6083, Type 1 hydraulic fluid through open end of hydraulic control.
(9) Install plunger and internal snap ring.
(10) Install hydraulic control on hydrolok unit(s) and secure with set screw.
(11) Check operation of seat back.

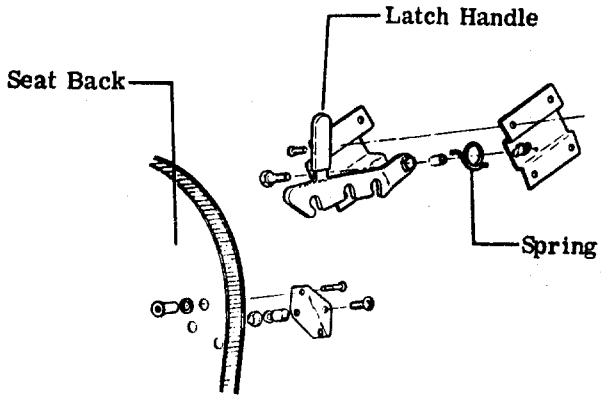
NOTE: If seat back does not release, hydraulic control may need additional fluid. If seat back does not lock, too much fluid has been added and must be bled. To bleed fluid, loosen bleed screw at hydrolok end of hydraulic control. Recheck seat back operation.

(12) Install button end of hydraulic control through the mounting collar and secure with outer snap ring.
(13) Install button and secure with set screw.
(14) Slide hydraulic control inward and secure with inner snap ring on back side of mounting collar.
(15) Install shrouds onto seat base.

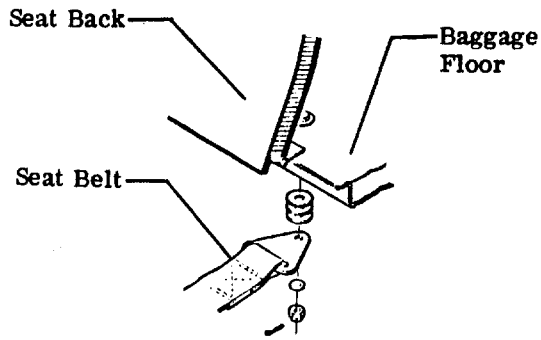


Swivel Seat Installation
Figure 201



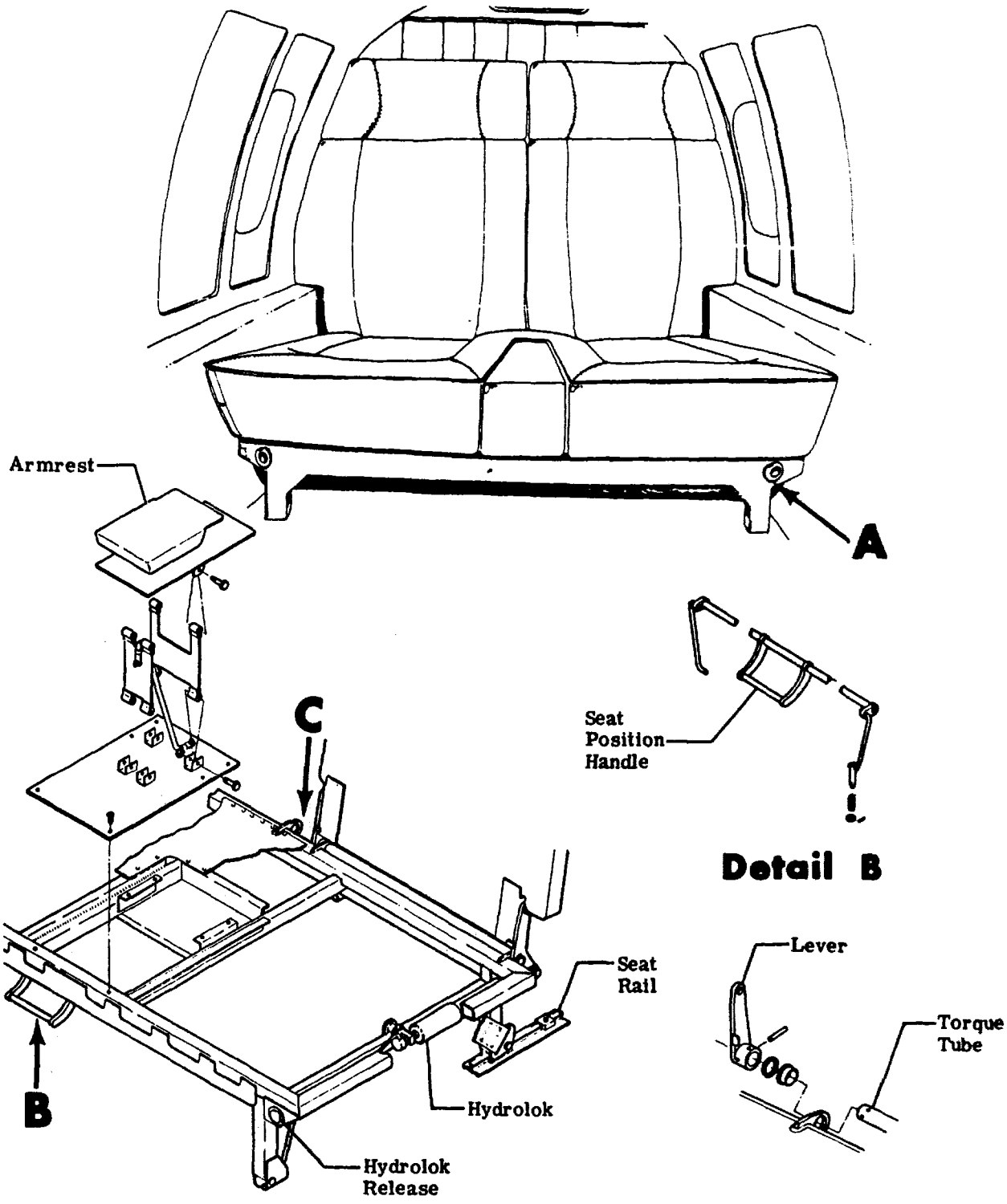


Detail A

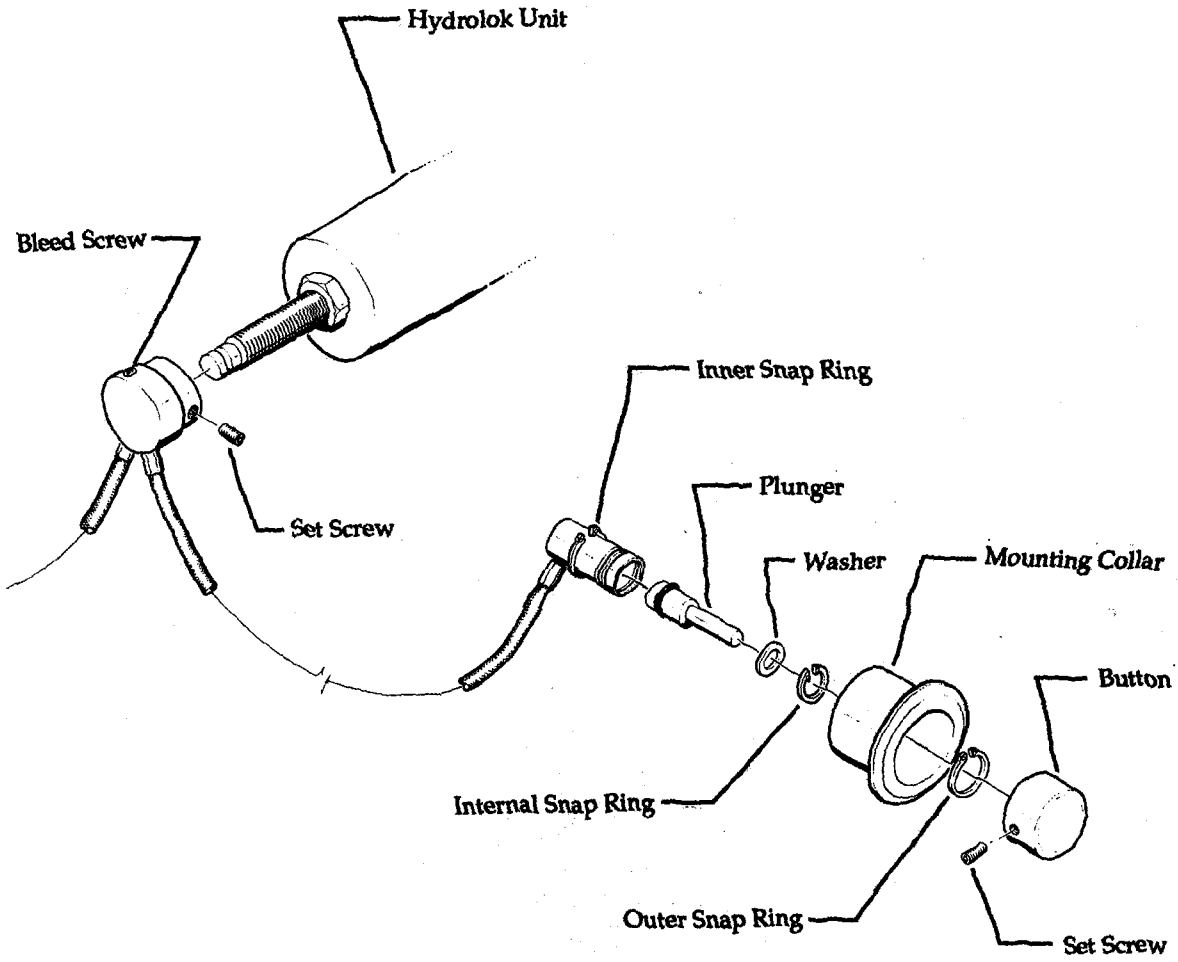


Detail B

Divan Installation
Figure 202



Berthable Divan Installation
Figure 203



Seat Back Hydraulic Control
Figure 204

Learjet

SERVICE CABINET - DESCRIPTION AND OPERATION

1. **Description**
   A. A service cabinet is located in the passenger compartment directly aft of the pilot's seat. Located in the service cabinet are provisions for three one-quart vacuum jugs, a plastic cup dispenser, a bottle cabinet, and two compartments for supply storage.
   B. A fire extinguisher is stowed inside the LH service cabinet.
   C. An emergency hatchet and emergency tool kit may be stowed in the LH service cabinet, dependent on interior equipment and option selections.

TOILET - DESCRIPTION AND OPERATION

1. Description
   A. A flush type toilet is installed in the forward, right hand passenger compartment as optional equipment.
   B. *On Model 36 Aircraft*, the aft facing toilet slides out of the cabinet and into the aisle for use.
   C. *On Model 35 Aircraft*, the toilet is stationary and side facing.
   D. The toilet should be serviced according to the manufacturer's instructions.

1. Removal/Installation

NOTE: When removing and installing the toilet, it is desirable to first remove the waste bucket to make the toilet lighter and easier to handle.

A. Remove Toilet *(Model 35)*
   (1) Grasp strap, located at the backside of the seat assembly, and lift up lid assembly to expose waste bucket inside toilet assembly.
   (2) Remove waste bucket cover from stowing bracket and snap into place on waste bucket.
   (3) Grasp handle on waste bucket and remove waste bucket by pulling straight up with a steady pull.
   (4) Firmly grasp toilet assembly and carefully pull toilet straight up just far enough to expose electrical plug and static hose at lower rear of toilet assembly.
   (5) Unscrew electrical plug from toilet and remove static hose.
   (6) Remove toilet assembly from aircraft.

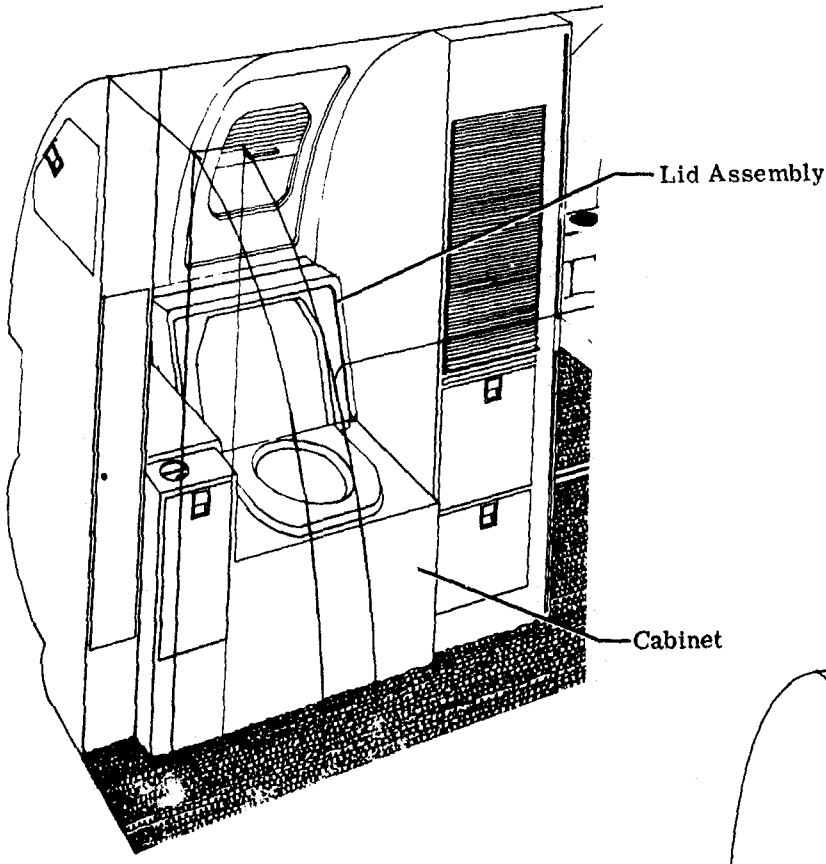
B. Install Toilet *(Model 35)*
   (1) Position toilet assembly over hole in cabinetry and connect electrical plug and static hose.
   (2) Gently lower toilet assembly into cabinet, ensuring that static hose does not kink.
   (3) Ensure that toilet assembly is firmly seated in cabinet.
   (4) Position waste bucket into toilet assembly and firmly press down on bucket corners to ensure alignment of seal in groove.
   (5) Remove and stow waste bucket cover.
   (6) Close the seat assembly.

C. Remove Toilet *(Model 36)*
   (1) Release catch and slide toilet into aisle.
   (2) Grasp strap, located at the back side of the seat assembly, and lift up lid assembly to expose waste bucket inside toilet assembly.
   (3) Remove waste bucket cover from stowing bracket and snap into place on waste bucket.
   (4) Grasp handle on waste bucket and remove waste bucket by pulling straight up with a steady pull.
   (5) Remove screws securing tracks to toilet assembly.

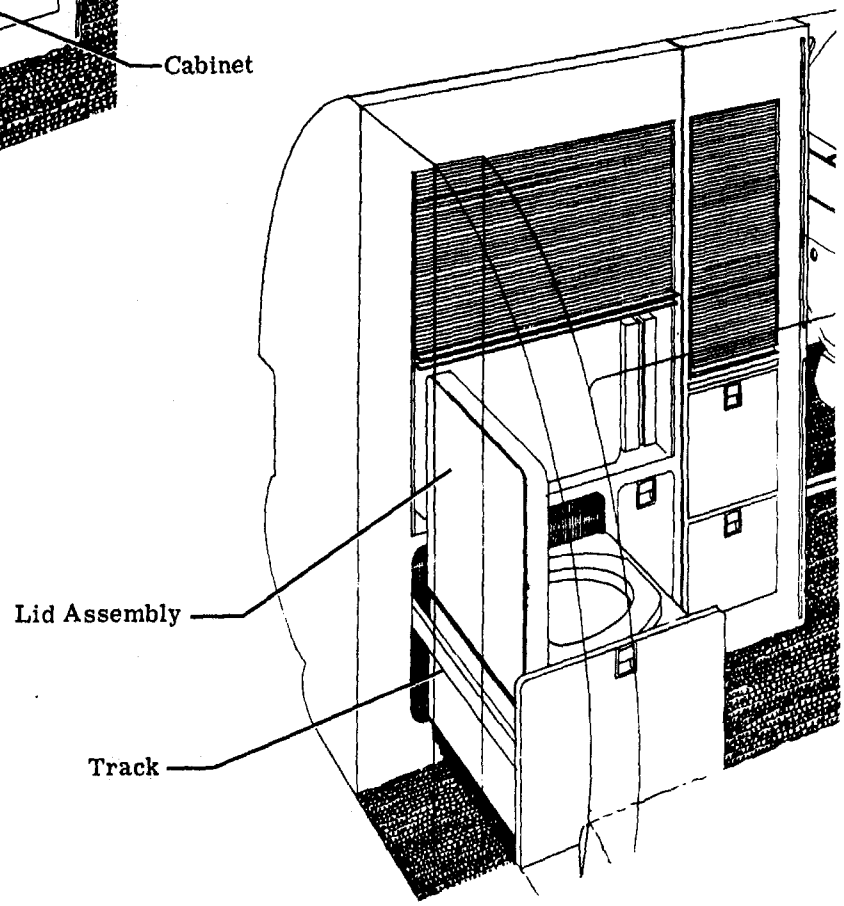
      NOTE: When removing screws from tracks, be sure to support the toilet assembly to prevent it from falling and causing possible damage.

   (6) Carefully raise toilet assembly to gain access to static hose and electrical plug.
   (7) Unscrew electrical plug from toilet and remove static hose.
   (8) Remove toilet assembly from aircraft.

D. Install Toilet *(Model 36)*
   (1) Hold toilet assembly in position and connect electrical plug and static hose.
   (2) Align toilet assembly with holes in track. Secure toilet assembly to tracks with screws.
   (3) Position waste bucket into toilet assembly and firmly press down on bucket corners to ensure alignment of seal in groove.
   (4) Remove and stow waste bucket cover.
   (5) Slide toilet assembly into cabinet until it latches.



Model 35 Aircraft



Model 36 Aircraft

Toilet Installation
Figure 201

2. **Approved Repairs** *(Aircraft equipped with Monogram 17000 series toilets)*

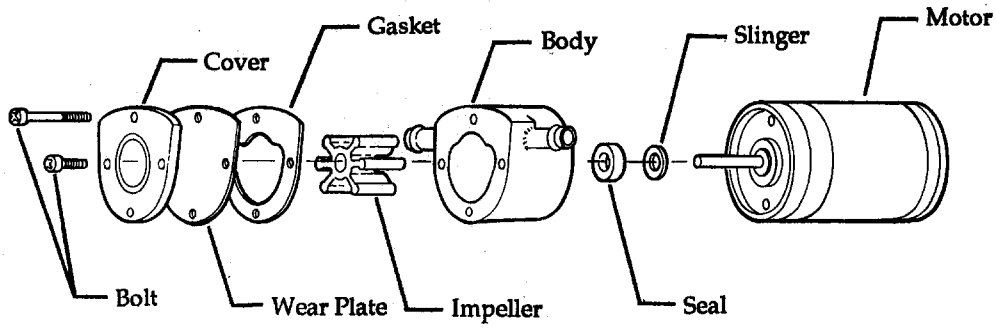
CAUTION:
- **USE ONLY THOSE CHEMICALS SPECIFIED IN MONOGRAM TOILET MAINTENANCE MANUAL.**
- **THE FOLLOWING CHEMICALS ARE KNOWN TO CAUSE DEGRADATION OF THE PUMP IMPELLER: AMMONIA, AMMONIUM HYDROXIDE, BENZENE, BORAX, CHLORINE (ANHYDROUS LIQUID), DEODORANTS, GREASE, ISOPROPYL ALCOHOL, LACQUER SOLVENTS, METHANOL, PINE SOL, AND TOLUENE. THE TWO MOST COMMON CAUSES OF IMPELLER SWELLING WILL BE FROM DEODORANTS AND CLEANING WITH PINE SOL.**

A. Pump Impeller Replacement *(Toilets in which impeller has not been replaced within the past 12 months)* (See Figure 202.)
   (1) Remove toilet assembly from aircraft.
   (2) Detach quick disconnect.
   (3) Remove screws connecting motor pump assembly to toilet assembly mounting plate.
   (4) Remove screws from motor pump mounting plate.
   (5) Disassemble pump body, discard gaskets and remove impeller.
   (6) Test motor to verify proper operation.
   (7) Lubricate body, new impeller, and the seal using an acid brush and petroleum jelly.
   (8) Assemble motor pump assembly using one new gasket.
   (9) Test motor pump assembly to verify proper flow of 5 gpm.
   (10) Attach pump assembly to toilet.
   (11) Install toilet in aircraft.

B. Addition of gaskets to correct for pump impeller swelling *(Toilets in which impeller has been replaced within the past 12 months)* (See Figure 202.)
   (1) Remove toilet assembly from aircraft.
   (2) Detach quick disconnect.
   (3) Remove screws connecting motor pump assembly to toilet assembly mounting plate.
   (4) Remove screws from motor pump mounting plate.
   (5) Disassemble pump body, discard gaskets and remove impeller.
   (6) Test motor to verify proper operation.
   (7) Lubricate body, impeller, and the seal using an acid brush and petroleum jelly.

   CAUTION: **ADDING TOO MANY GASKETS MAY RESULT IN PUMP CAVITATION. WHEN ADDING GASKETS, ADD ONE AT A TIME AND VERIFY PROPER FLOW OF 5 GPM. IN MOST CASES, TWO OR THREE GASKETS WILL PERMANENTLY PREVENT SEIZURE AFTER IMPELLER SWELLING.**

   (8) Reassemble pump using gaskets as required to prevent impeller seizure.
   (9) Test motor pump assembly to verify proper flow of 5 gpm.
   (10) Attach pump assembly to toilet.
   (11) Install toilet in aircraft.



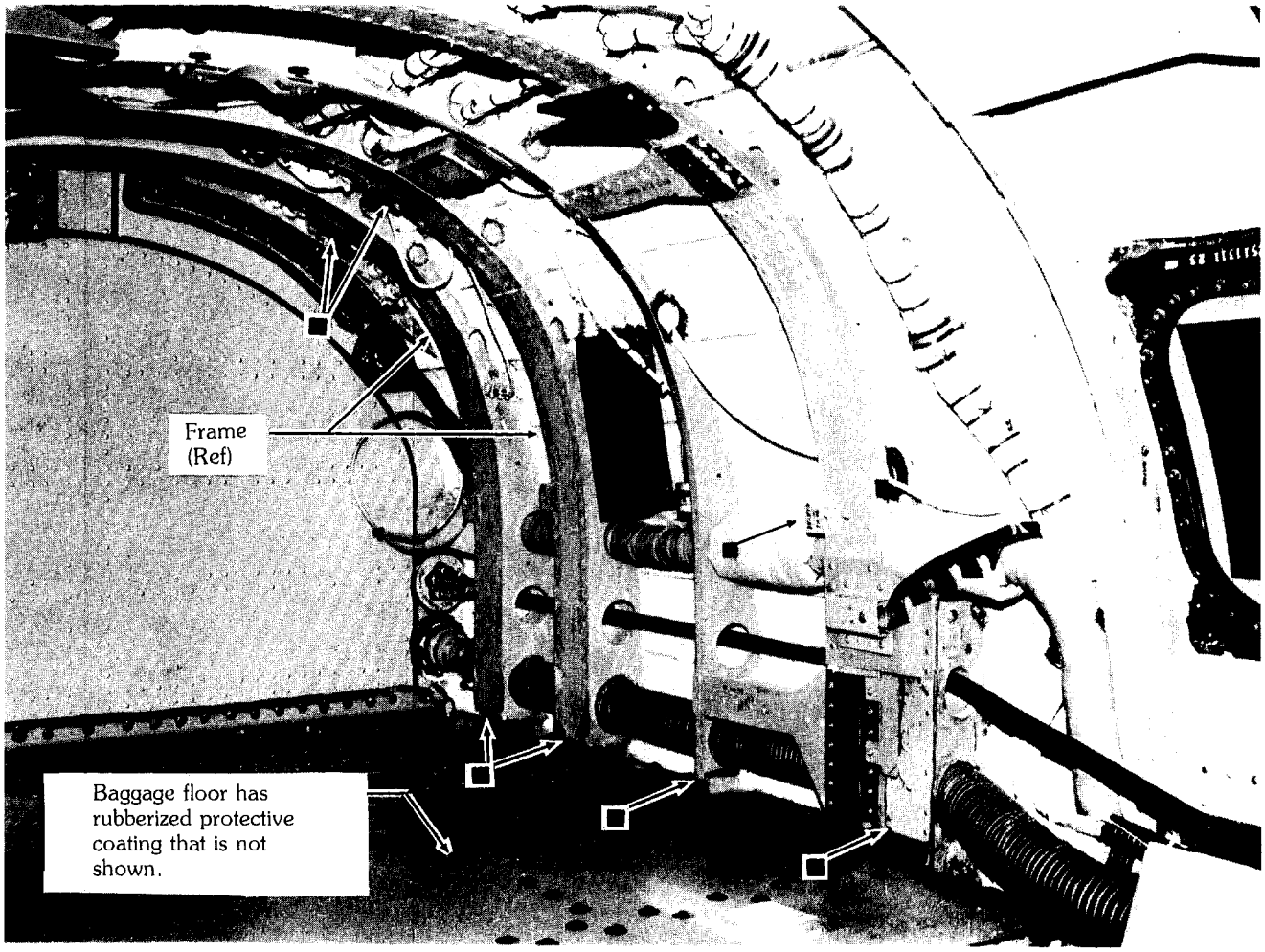
14-234A

Pump Impeller Replacement
Figure 202

1. Inspection/Check

NOTE: The following maintenance practices are provided as an aid in inspection/repair of corrosion.

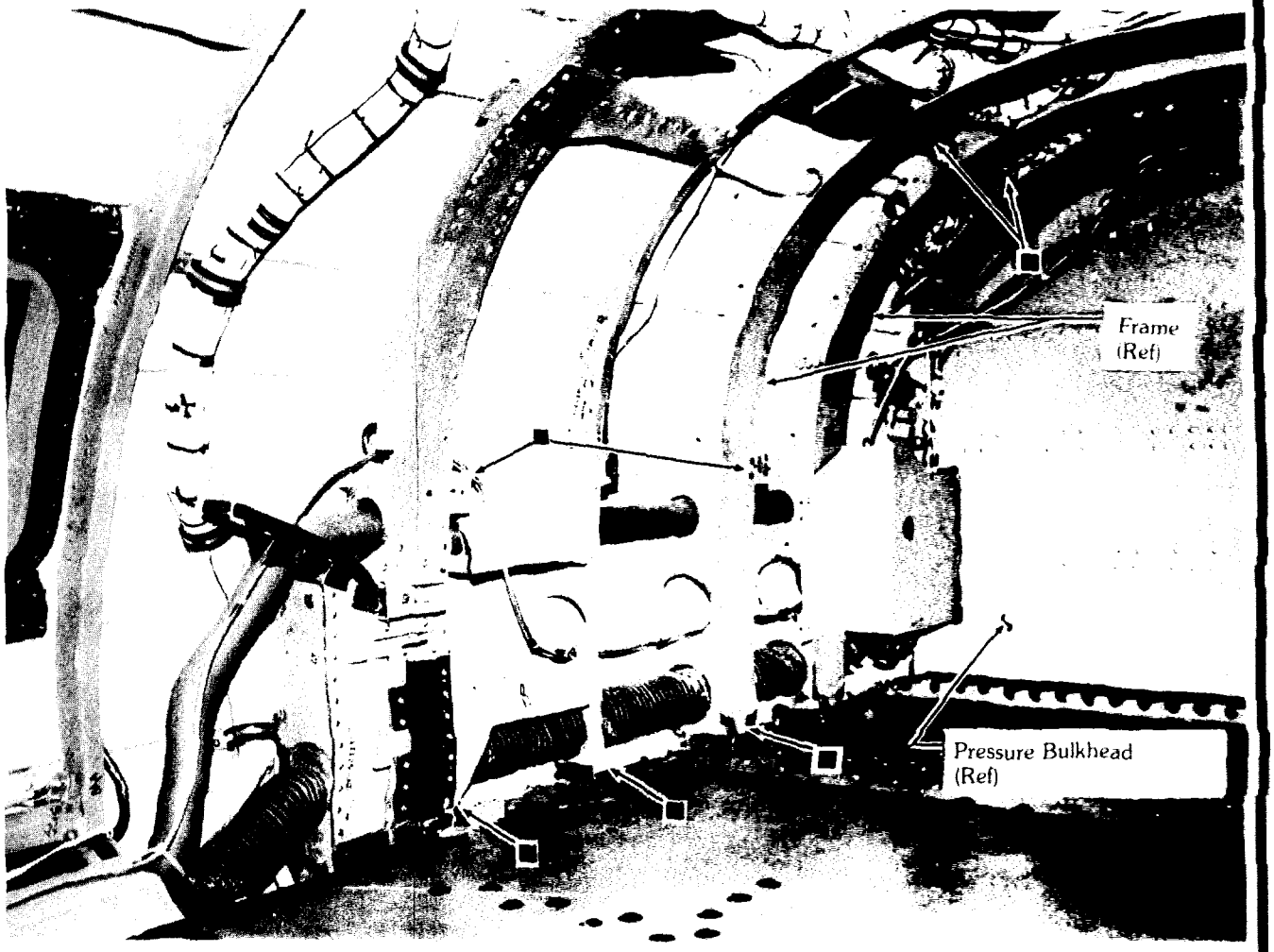
A. Inspect Baggage Compartment for Corrosion. (See figure 201.)
   (1) Remove divan and remove baggage compartment interior panels.
   (2) Remove interior panel at pressure bulkhead.
   (3) Detach baggage compartment overhead liner sufficiently to permit inspection of structure.
   (4) Carefully inspect structure for corrosion, particularly at locations shown.
   (5) If corrosion is not found, no further action is required.
   (6) Measure and rework corroded area in accordance with Chapter 20.



■ Inspect carefully especially in these locations.

VIEW OF LH SIDE OF BAGGAGE COMPARTMENT LOOKING AFT (TYPICAL)

Inspect Baggage Compartment Structure for Corrosion
Figure 201 (Sheet 1 of 2)



■ *Inspect carefully especially* in these locations.

VIEW OF RH SIDE OF BAGGAGE COMPARTMENT LOOKING AFT (TYPICAL)

Inspect Baggage Compartment Structure for Corrosion
Figure 201 (Sheet 2 of 2)

EMERGENCY EQUIPMENT - DESCRIPTION AND OPERATION

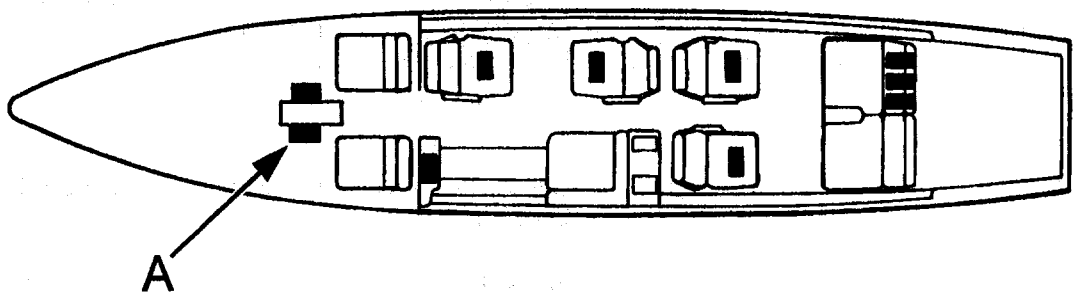
1. Description
   A. Emergency equipment is located in the flight and passenger compartments and includes an emergency tool kit, a hatchet and life vests. In addition, a drag chute may be mounted on the inside of the tailcone access door and an optional emergency locator transmitter (ELT) system may be installed.
   B. The emergency tool kit is stowed in the left hand service cabinet. The ratchet and socket contained in the tool kit are used to open the cabin door in the event of electrical or mechanical failure of the cabin door release actuator mechanism.
   C. An emergency hatchet is stowed in the left hand service cabinet or on the forward side of the right hand partition, depending upon the aircraft floorplan.
   D. Life vests are stowed in a pocket behind the pilot's and copilot's seats (or next to the pedestal, on *Aircraft equipped with IPECO seats*) and in a compartment under each passenger seat and in the service cabinet. Inflatable life vests are subject to general deterioration due to aging. Experience has indicated that such equipment may be in need of replacement at the end of 5 years due to porosity of the rubber coated material.
   E. Refer to 25-62-00 for information on the optional drag chute. Refer to 25-63-00 for information on the optional ELT system.

LIFE VESTS - DESCRIPTION AND OPERATION

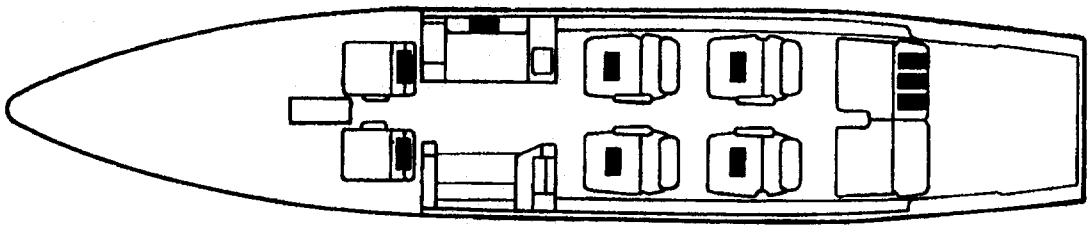
1. Description
   A. Life vests stowed in each crew and passenger seat are intended for emergency flotation in the event of aircraft evacuation in water. Vests are inflatable either by carbon dioxide cartridge or orally. Inflatable life vests are made of rubber coated fabric and are therefore subject to deterioration due to aging and chafing.
   B. Component Description

      CAUTION: ALL SERVICE WORK PERFORMED ON LIFE VESTS SHALL BE DONE AT AN FAA APPROVED SERVICE FACILITY.

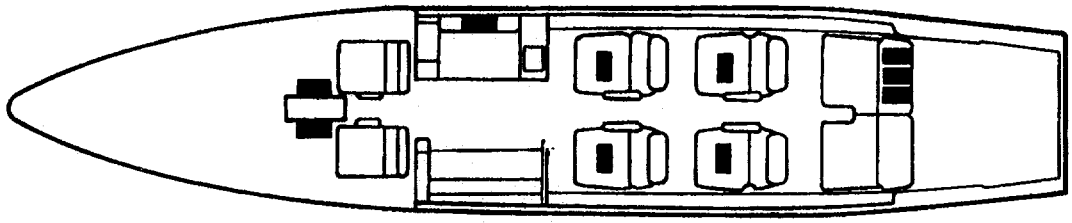
      (1) Each life vest consists of the following major assemblies: a cell assembly, an inflator assembly, and a harness assembly. (See Figure 1.)
         (a) A cell assembly consists of two (2) coated nylon fabric independent cells. Each cell is equipped with a check valve subassembly and an oral tube assembly.
         (b) Each inflator assembly consists of an inflator housing, a carbon dioxide cylinder, a fabric cylinder blanket, and attaching hardware for fastening the inflator assembly to the manifold stem. A tee-handle and lanyard is provided on each inflator to allow the user to discharge the carbon dioxide cylinders into the cell assembly. The contents of the carbon dioxide cylinder will inflate the cell assembly fully but is insufficient to cause overinflation.
         (c) The straps and harness assembly secure the life jacket to the user.



MID CABIN FLOOR PLAN



STANDARD FLOOR PLAN

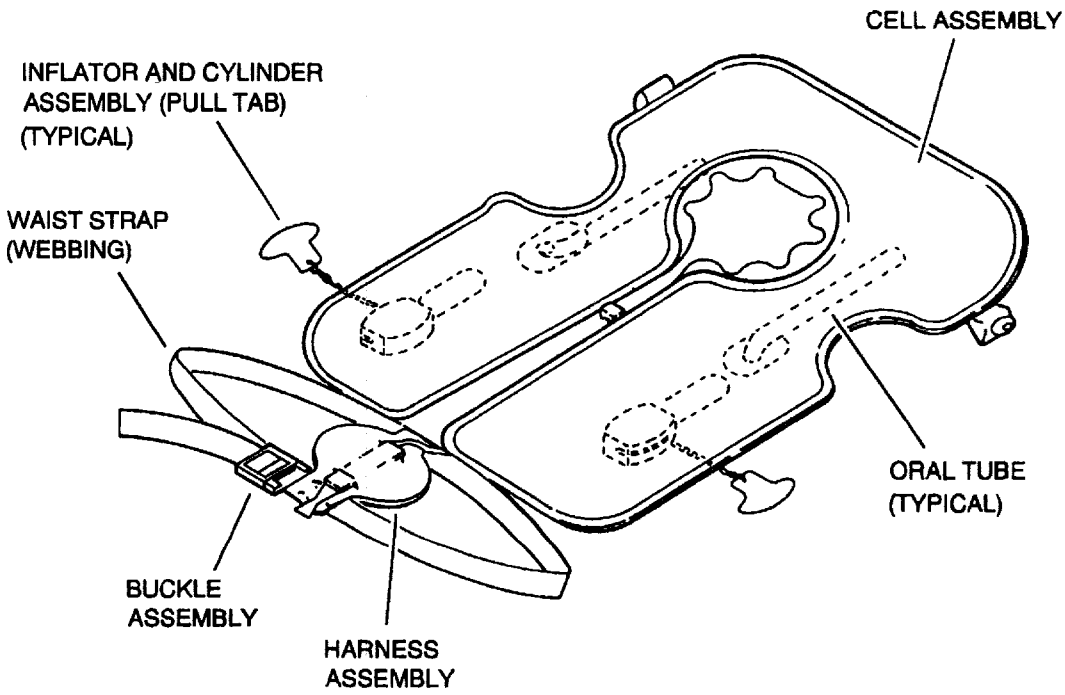


STANDARD FLOOR PLAN – WITHOUT IPECO CREW SEATS

M35-256100-001-02

14-218B

Life Vest Description
Figure 1 (Sheet 1 of 2)



(TYPICAL)

Detail A

M35-256100-001-03

Life Vest Description
Figure 1 (Sheet 2 of 2)

LIFE VESTS - MAINTENANCE PRACTICES

1. Inspection/Check

A. Inspection of Life Vest (See Figure 201.)

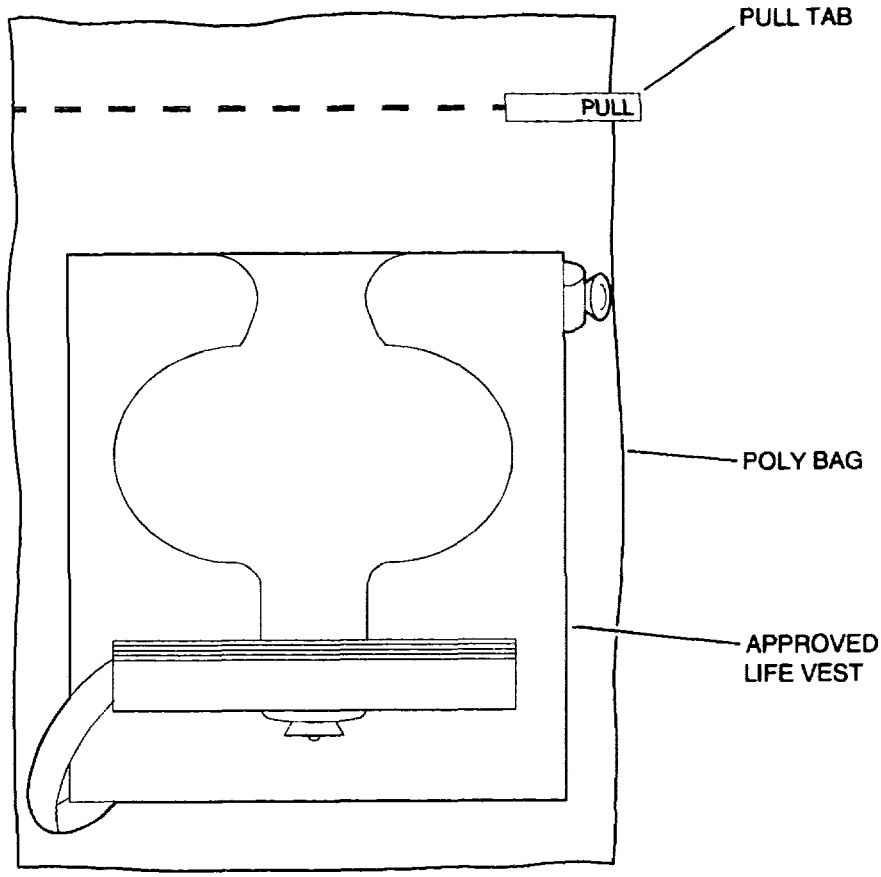
NOTE: Inspect Life preservers in accordance with the current inspection interval specified in Chapter 5.

(1) Refer to manufacturer's manual for specific inspection procedures.
(2) Determine date on inspection certification card that is included in poly bag containing life vest.
(3) Recertify or replace life vest if date on certification card has expired.

NOTE: Due to aging and chafing during storage, a life vest is subject to deterioration.

Life vests may be in need of replacement at the end of five (5) years due to the porosity of the rubber coated material.

(4) Recertify or replace life vest if poly bag has been opened.

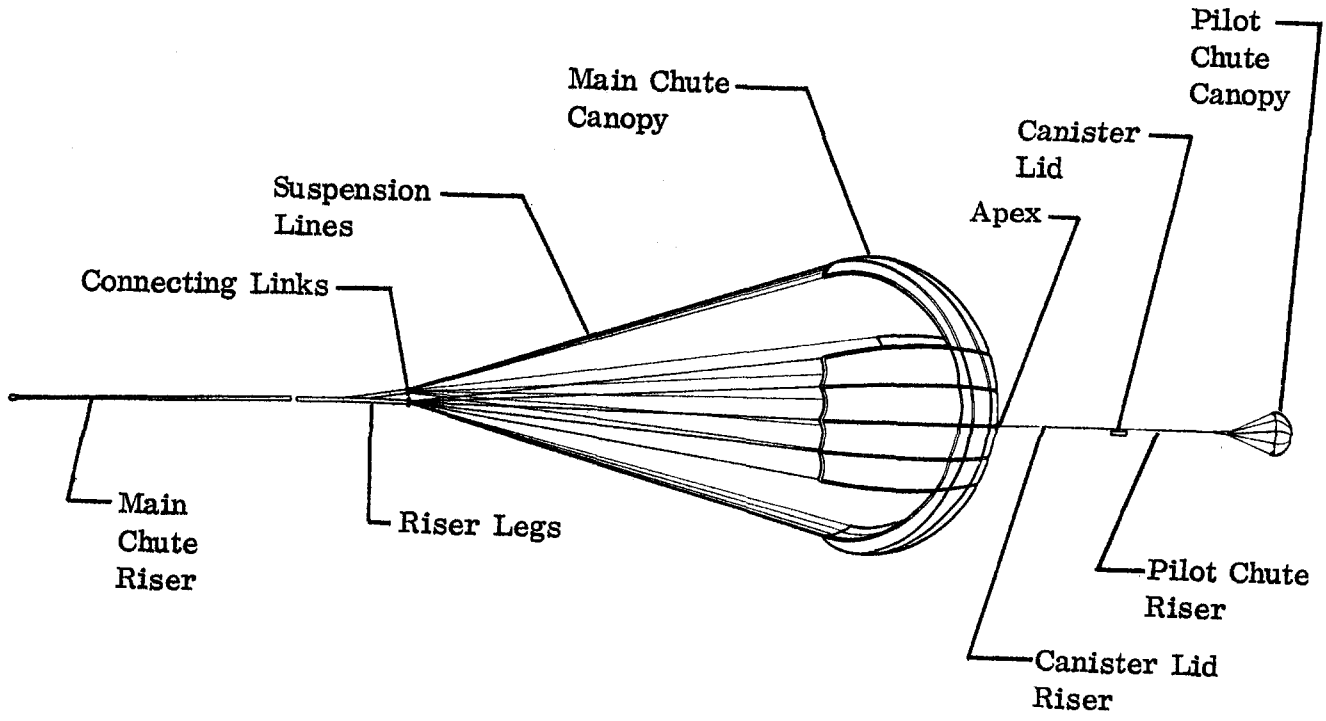


Life Vest Storage
Figure 201

DRAG CHUTE - DESCRIPTION AND OPERATION

1. **Description**
   A. The drag chute is optional equipment and will facilitate deceleration in emergency or marginal length runway conditions.
   B. The drag chute control handle is located on the RH side of the pedestal and is equipped with two safeties which must be depressed prior to deployment or jettison. The control cable is routed under the floorboard, under the fuselage fuel tank, and to the drag chute control mechanism.
   C. The drag chute control mechanism is located at the forward edge of the tailcone access door opening.
   D. The drag chute canister contains the packed drag chute assembly, and is installed in the tailcone access door. The canister lid restrains the drag chute in the canister, and is held in place by three pairs of engagement hooks.
   E. The drag chute assembly is contained in the canister and consists of a pilot chute and main chute with their associated risers and suspension lines. The canister lid is connected to the risers between the main chute and the pilot chute.

2. **Operation**
   A. Both safeties on the drag chute control handle must be simultaneously squeezed into the handle before the handle can be pulled or pushed.
   B. Pulling the control handle to the deploy position causes the control cable to operate the control mechanism in the tailcone. The control mechanism overcenters the chute riser hook, locking it closed, and rotates the unlatching ring. This causes the canister lid to rotate slightly and disengage from the canister. The canister lid and pilot chute are then ejected by a spring contained in and attached to the inside of the pilot chute.
   C. Returning the control handle to the "rest/jettison" position causes the unlatching ring to rotate back to its original position. The chute riser hook is moved to center so that it is unlocked, but mechanism spring pressure holds it closed. At this point, sufficient tension on the chute riser can overcome the spring pressure, allowing the hook to be pulled open, releasing the drag chute. A manual hook release is incorporated to aid in removal/installation of a packed canister/lid assembly.

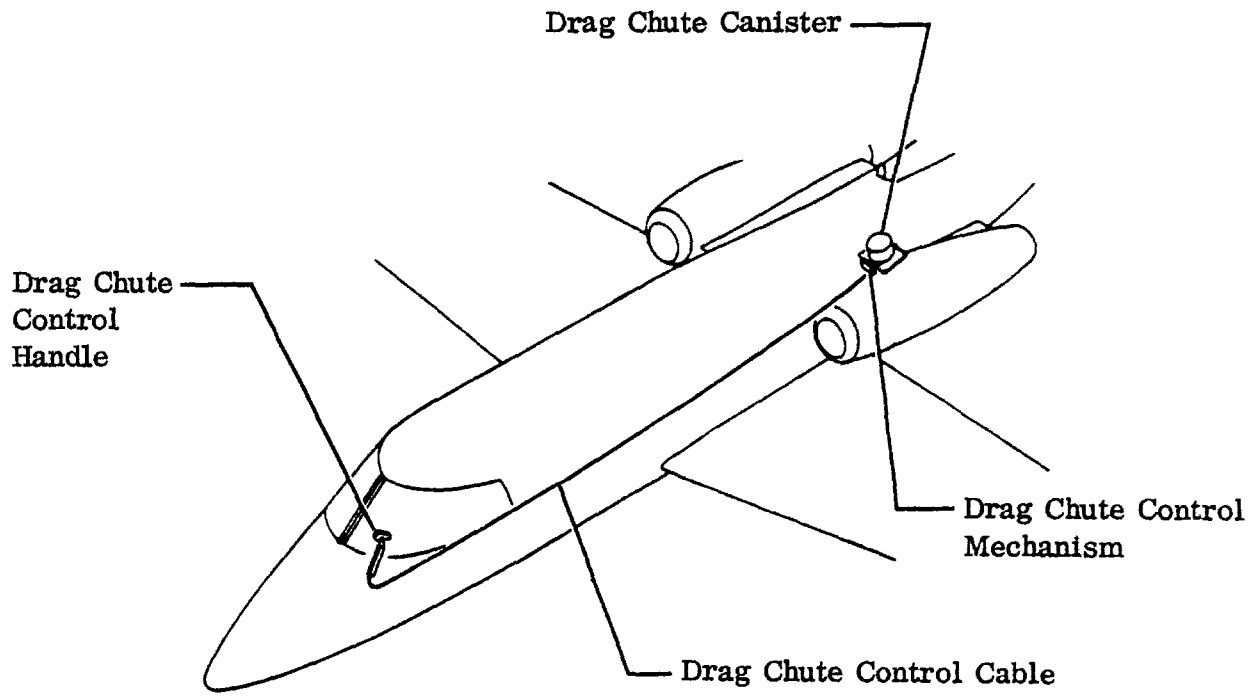


Drag Chute Assembly
Figure 1

14-92C-5W

EFFECTIVITY: OPTIONAL

MM-99



Drag Chute Components Installation
Figure 2

DRAG CHUTE - MAINTENANCE PRACTICES

1. Removal/Installation
   A. Remove Drag Chute Canister (See Figure 201.)
      (1) Lower tailcone access door.

      NOTE: If drag chute is still packed in canister, lower tailcone access door only far enough to gain access to the drag chute attachment hook. This avoids inadvertently pulling chute riser out of canister.

      (2) Raise hook on control mechanism and remove riser from hook. (See Detail B.)
      (3) Loosen canister retaining nuts and remove canister and lid assembly from the tailcone access door.
      (4) Rotate lid assembly, taking care to control spring load on lid, and remove lid from canister.
      (5) Remove drag chute from canister.
   B. Install Drag Chute Canister (See Figure 201.)

      NOTE: Refer to Servicing, this section, for drag chute packing procedure.

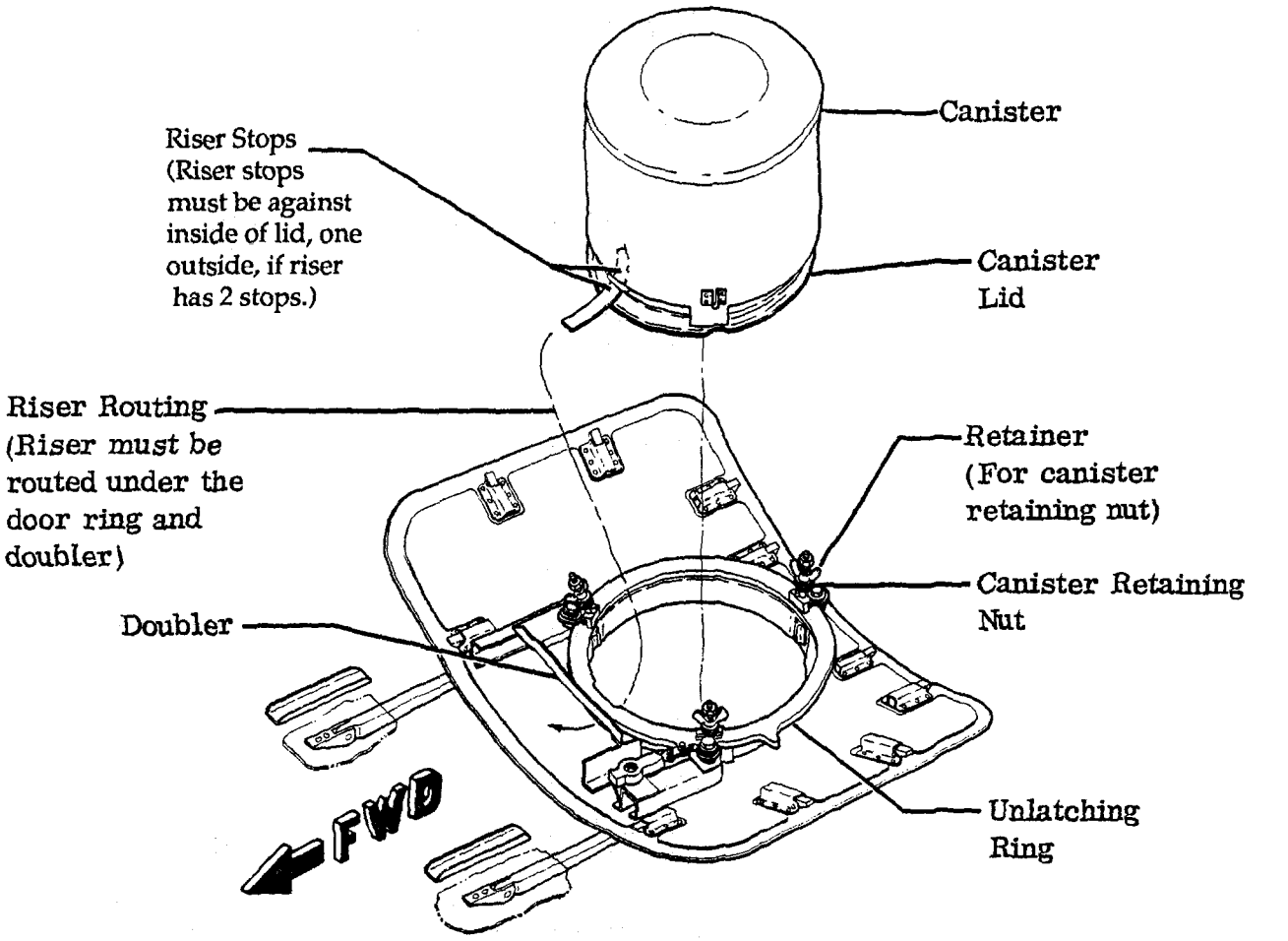
      (1) Install canister and lid assembly in tailcone access door and secure with canister retaining nuts. Ensure that riser protruding from canister is forward.
      (2) Route riser through riser keeper, raise hook of control mechanism (see Detail B) and position loop on hook and allow hook to return to rest position.

      CAUTION:
      - **ENSURE THAT RISER IS ROUTED UNDER DOOR RING AND DOUBLER, AND THROUGH RISER KEEPER. (REFER TO PLACARD ON TAILCONE ACCESS DOOR FOR CORRECT ROUTING THROUGH KEEPER.)**
      - **ENSURE THAT RED MARKED STOP ON RISER IS INSIDE CANISTER. IF RISER HAS TWO STOPS, THE UNMARKED STOP MUST BE OUTSIDE CANISTER. (PRESENCE OF TWO STOPS OUTSIDE CANISTER COULD CAUSE DAMAGE TO THE DOOR DURING DRAG CHUTE DEPLOYMENT BY SNAGGING DOOR DOUBLER.)**
      - **ENSURE THAT RISER DOES NOT BIND RING.**
      - **ON AIRCRAFT MODIFIED PER *AAK 74-6A, "DRAG CHUTE INSTALLATION"*, ENSURE THAT PT2 MOISTURE VALVE DRAIN LINE IS TRIMMED FLUSH WITH AIRCRAFT SKIN. IF LINE IS NOT TRIMMED, POSSIBLE DAMAGE TO DRAG CHUTE CANOPY, RISERS AND AIRCRAFT SKIN COULD RESULT DURING DRAG CHUTE DEPLOYMENT.**

      (3) Raise and secure tailcone access door.
   C. Remove Drag Chute Control Handle (See Figure 202.)
      (1) Remove cable cover from RH side of pedestal.
      (2) Remove channel supporting control handle and cable.

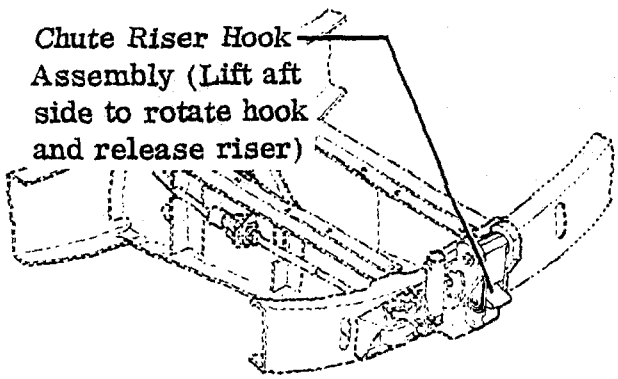
      NOTE: If spacers are installed between channel and pedestal, note the location of spacers and attaching screws as they are of varying lengths.

      (3) Remove clamps securing cable assembly and handle to channel.
      (4) Break safety wire and unscrew cable nut from handle.



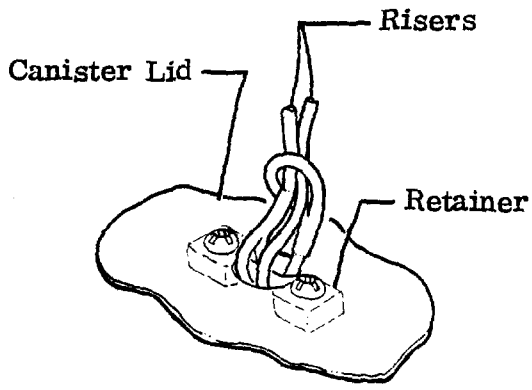
Packed Canister Installation

Detail A



Chute Riser Attachment to Aircraft

Detail B

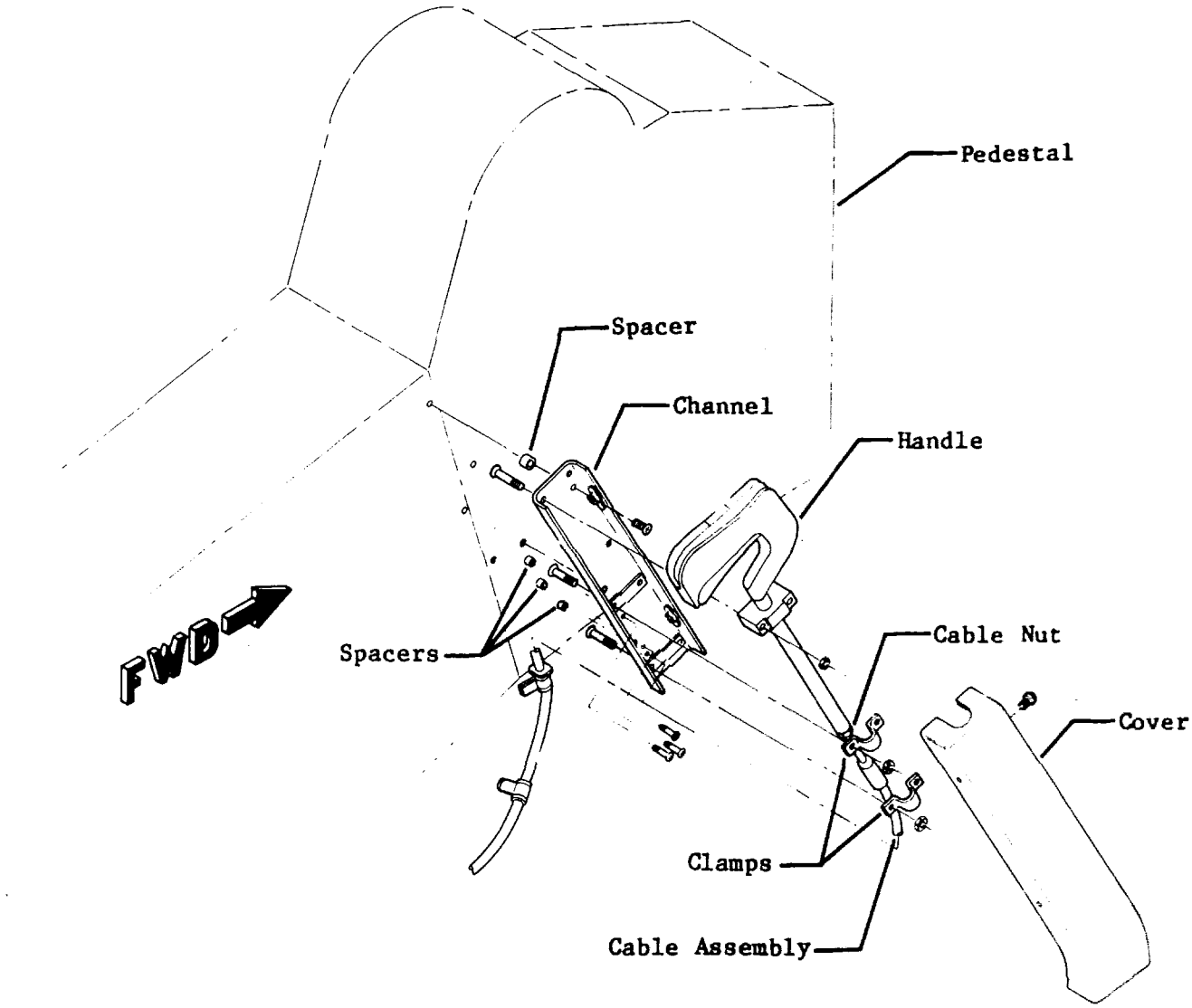


Riser Attachment to Canister Lid

Detail C

14-120C
14-121C
14-121C-2

Drag Chute Installation
Figure 201



14-111C

Drag Chute Control Handle Installation
Figure 202

(5) Pull cable housing and handle apart.
(6) Using a wrench, hold cable stationary and unscrew handle.

D. Install Drag Chute Control Handle (See Figure 202.)
(1) Using a wrench, hold cable stationary and screw handle onto cable.

NOTE: Cable shall fully bottom out in handle. There is no provision for adjustment at this end of the cable.

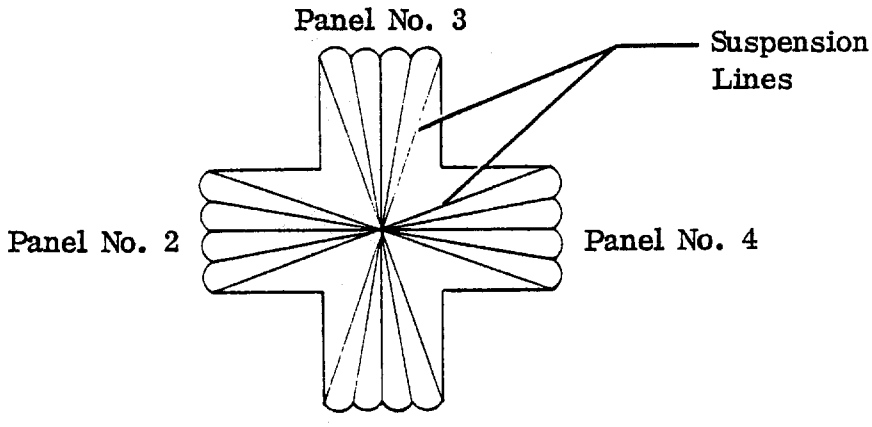
(2) Push cable housing and handle together and screw cable nut into handle. Do not tighten nut at this time.
(3) Install cable assembly and handle on channel leaving clamps loose.
(4) Position the cable assembly, handle, and channel as they will be installed on the aircraft. While in this position, tighten cable nut being careful not to twist cable assembly.
(5) Tighten clamps securing cable assembly and handle to channel.
(6) Safety wire cable nut to the nearest clamp.
(7) Install channel on RH side of pedestal. If spacers are used, install in the locations noted during removal.
(8) Check that cable is not twisted or kinked.
(9) Rig drag chute control system. (Refer to Adjustment/Test, this section.)
(10) Install cable cover on RH side of pedestal.

2. Servicing

A. Pack Drag Chute (See Figure 203.)

NOTE: Reliable deployment and inflation is critically dependent on closely following this specific folding and packing procedure. The packing panel incorporated in the canister will ease packing and help achieve proper performance.

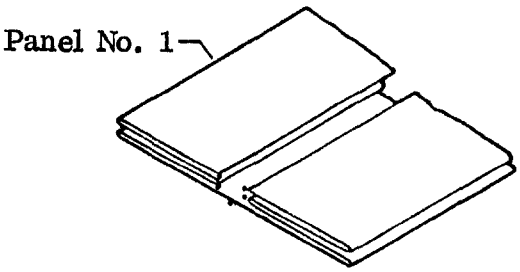
(1) Lay the drag chute on a smooth, clean, dry surface. Ideally, the surface shall be long enough to completely extend the chute and riser (approximately 55 feet [16.8 meters]). If this is not possible, the riser can be doubled back.



VIEW LOOKING AFT AT OPEN DRAG CHUTE CANOPY PANEL IDENTIFICATION

Detail A

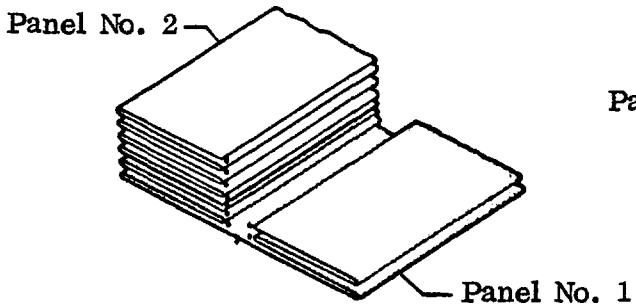
Drag Chute Packing
Figure 203 (Sheet 1 of 5)



PANEL NO. 1
IN FOLDED CONFIGURATION

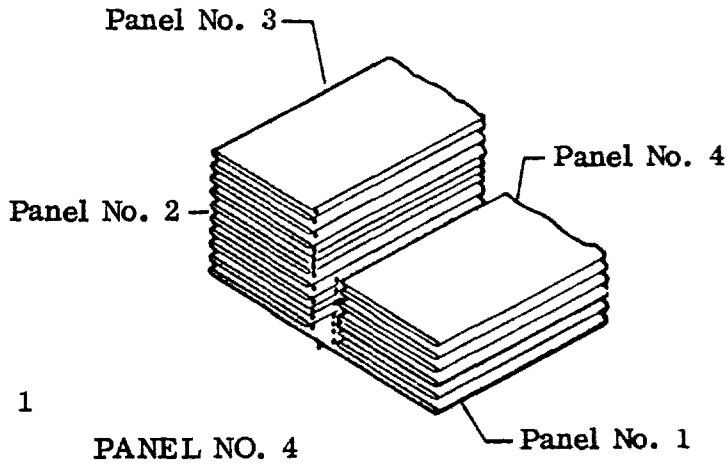
Detail B

NOTE: The (•) shown in details B, C, D, E, and F indicate the points where suspension lines attach to the canopy hem.



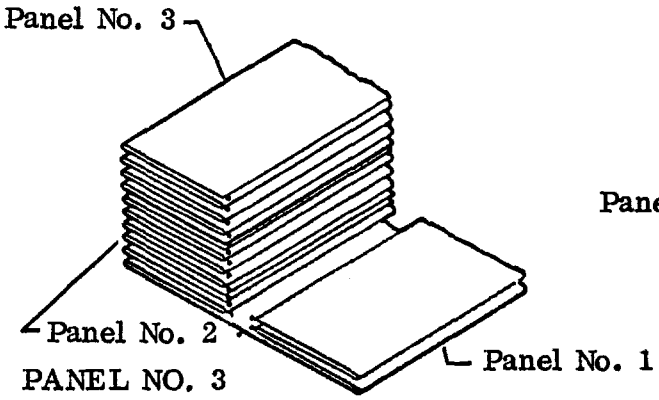
PANEL NO. 2
IN FOLDED CONFIGURATION

Detail C



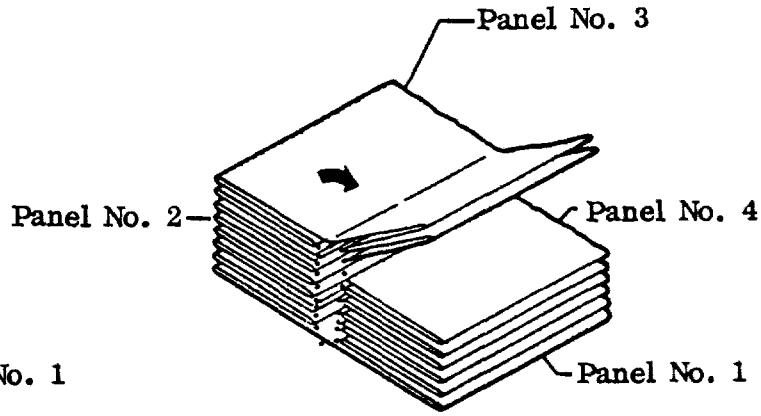
PANEL NO. 4
IN FOLDED CONFIGURATION

Detail E



PANEL NO. 3
IN FOLDED CONFIGURATION

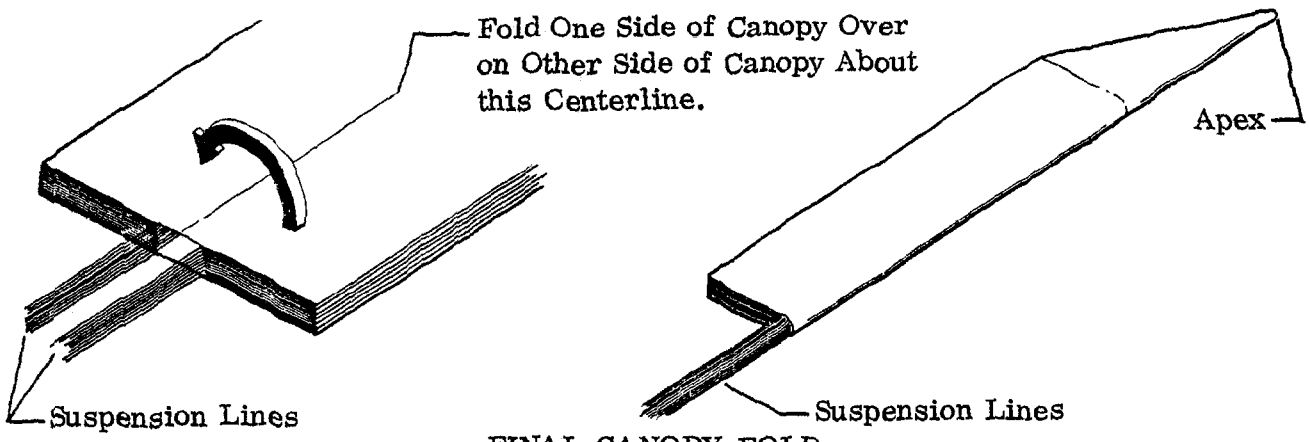
Detail D



PANEL NO. 3 FOLD OVER

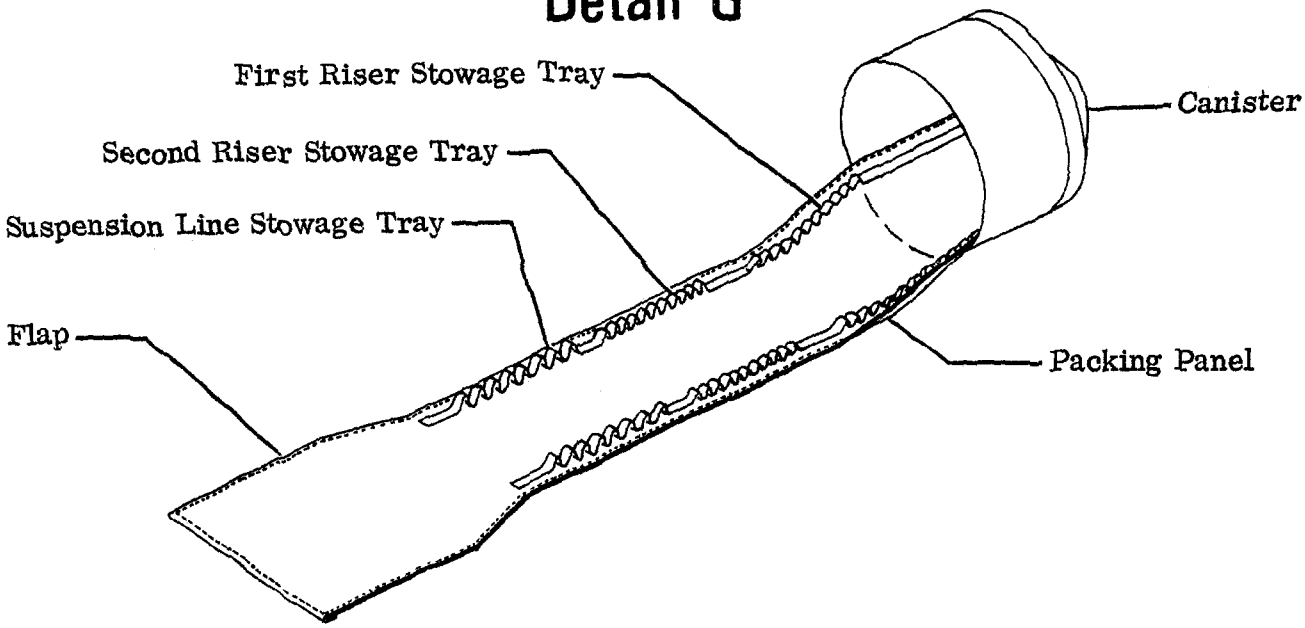
Detail F

Drag Chute Packing
Figure 203 (Sheet 2 of 5)

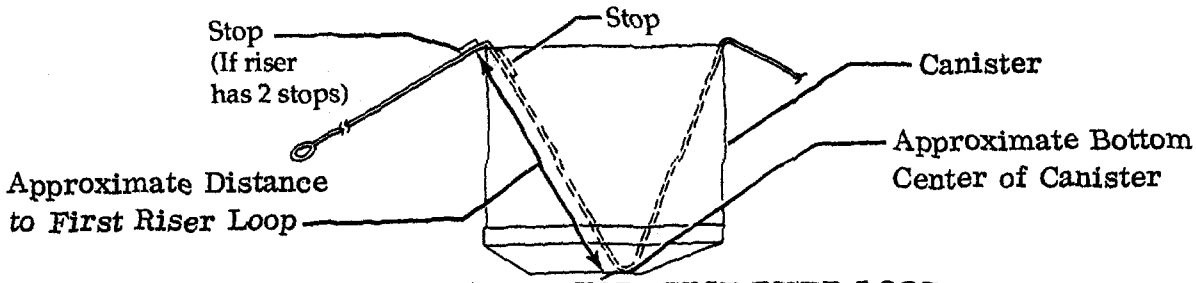


FINAL CANOPY FOLD

Detail G



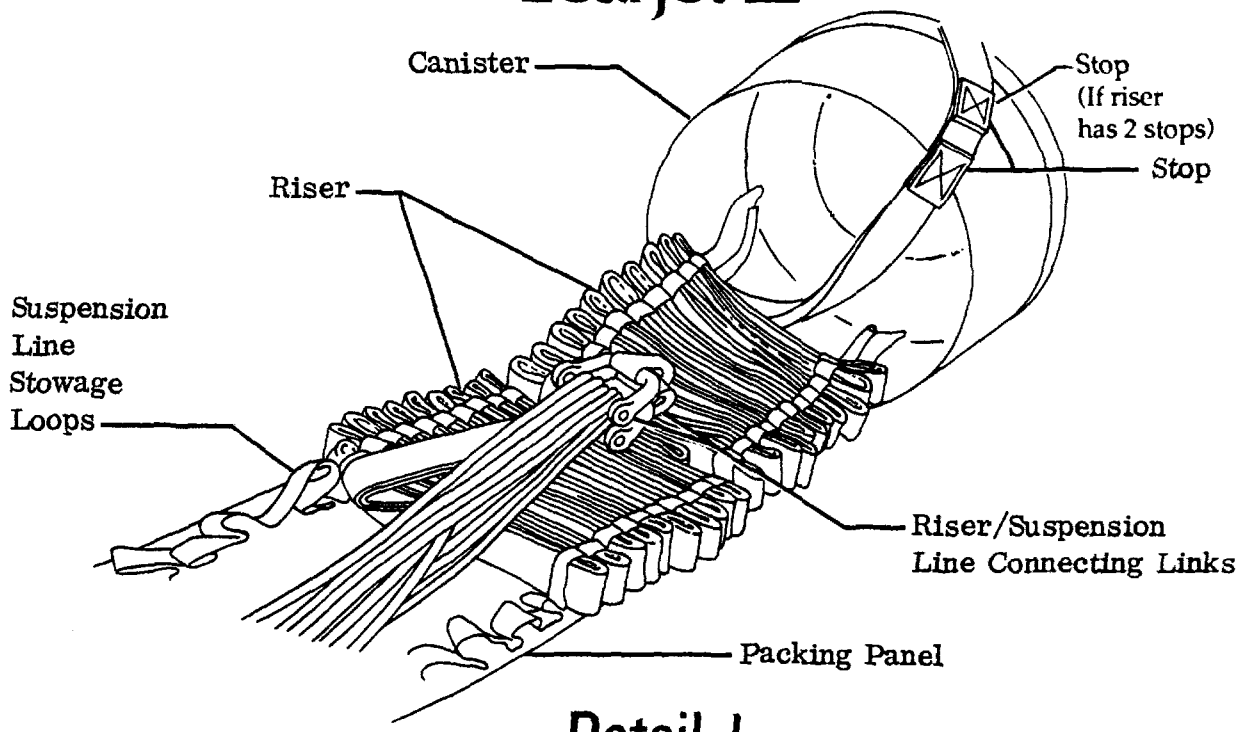
DRAG CHUTE CANISTER AND STOWAGE PANEL



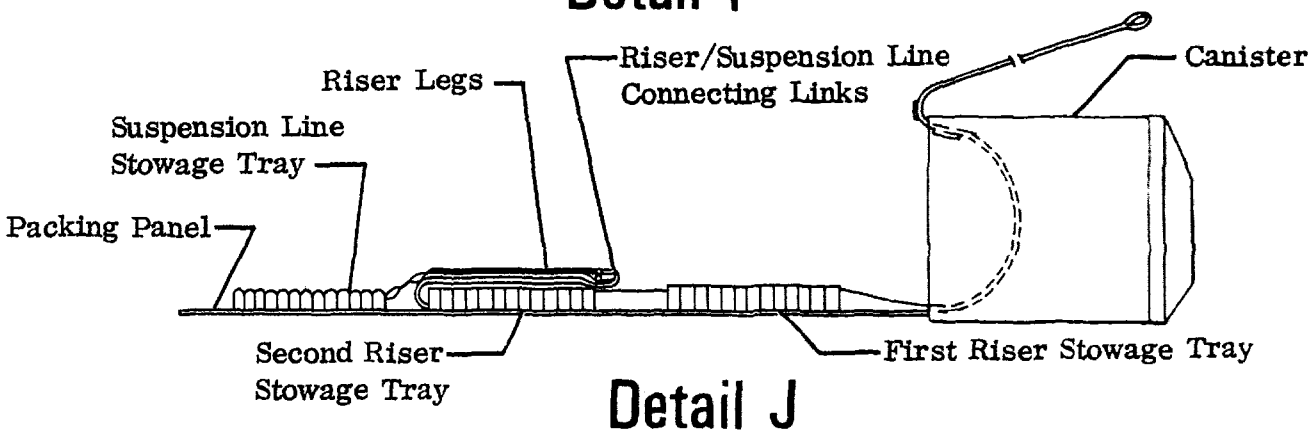
DETERMINING LOCATION FOR FIRST RISER LOOP

Detail H

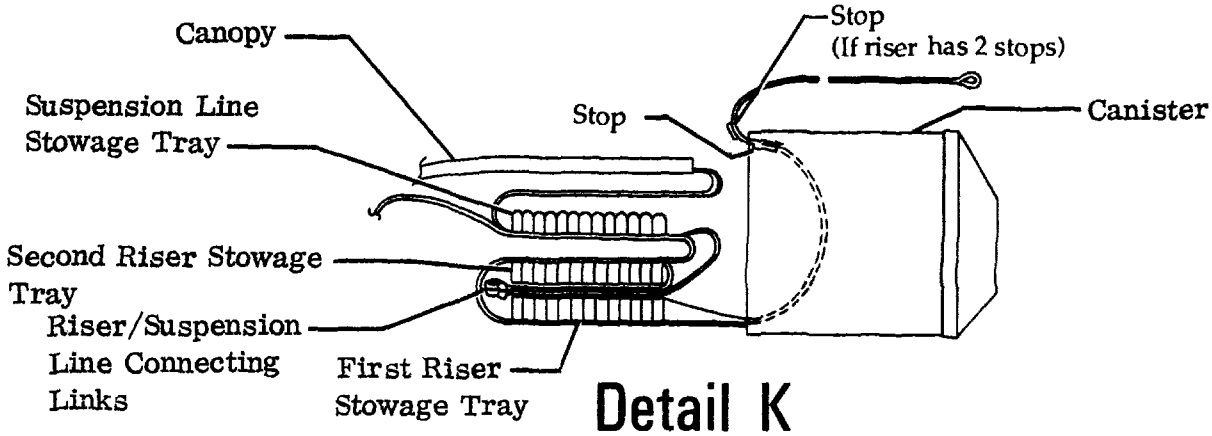
Drag Chute Packing
Figure 203 (Sheet 3 of 5)



Detail I

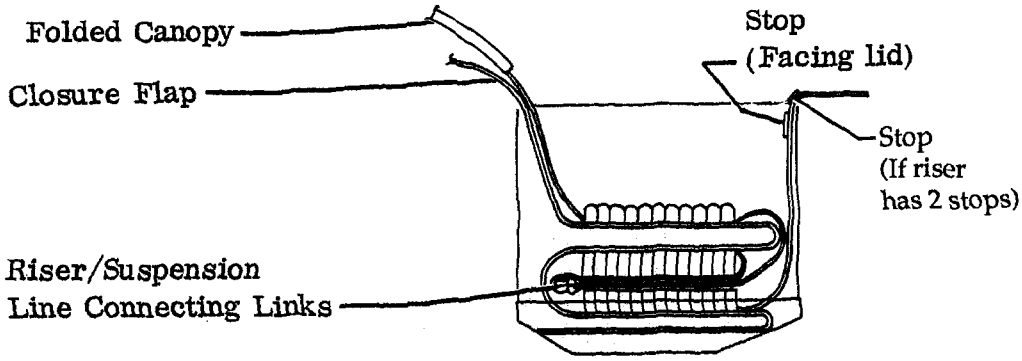


Detail J

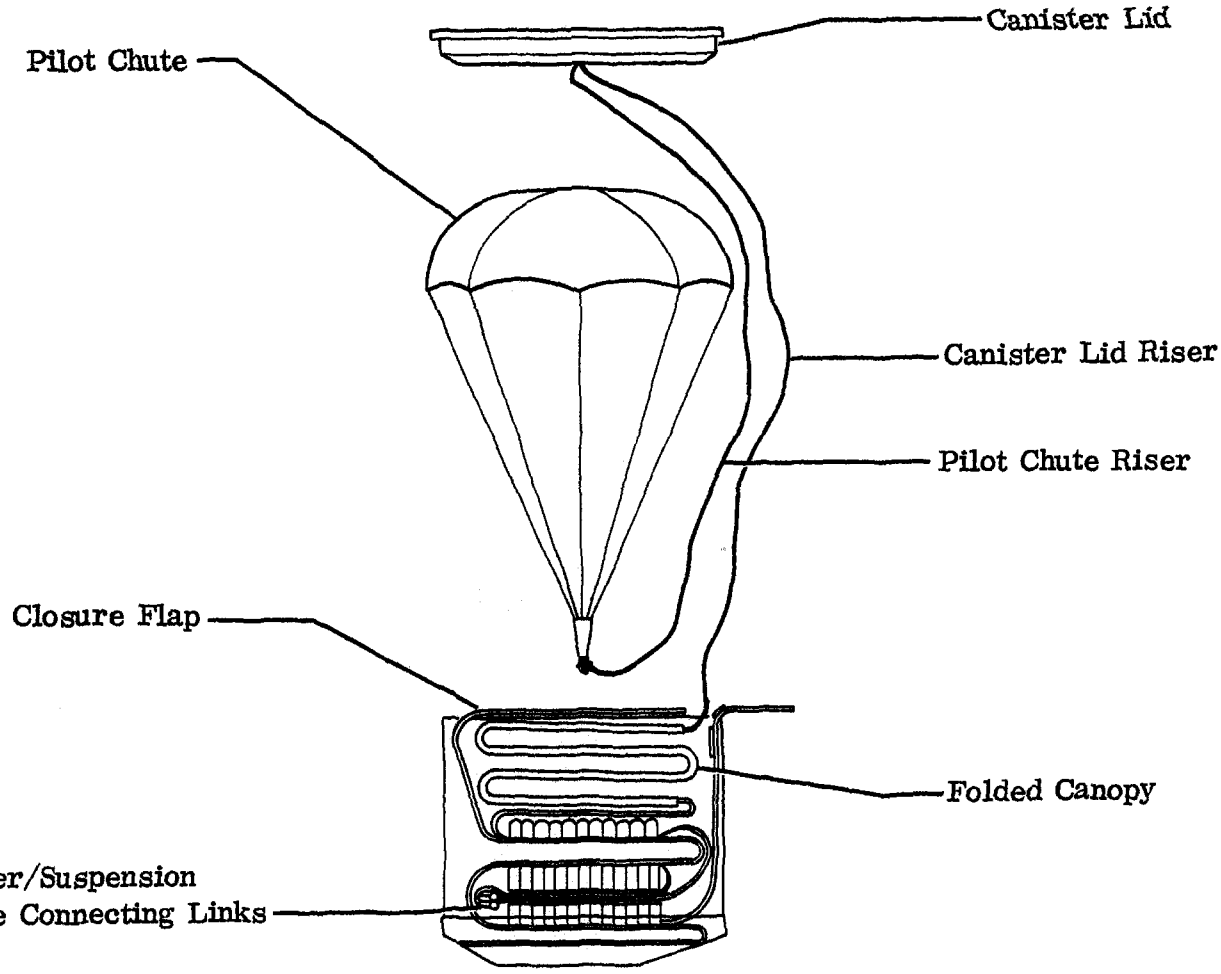


Detail K

Drag Chute Packing
Figure 203 (Sheet 4 of 5)



Detail L



Detail M

Drag Chute Packing
Figure 203 (Sheet 5 of 5)

(2) Inspect the drag chute assembly for damage. (Refer to Inspection/Check, this section.)

NOTE: Each time the drag chute is repacked, a damage inspection shall be made of the suspension lines, canopy panels, and risers. A special inspection (refer to Inspection/Check) also is required if deployment was made above 150 KIAS, or if jettison or failure occurred above 100 KIAS.

(3) Separate and straighten the suspension lines of the individual panels to eliminate crossed or twisted lines.

NOTE: For clarity and ease of reference, each of the chute panels must be identified.

(4) Identify one of the panels as number one. The remaining panels shall then be numbered in clockwise sequence as shown in Detail A.
(5) Separate the suspension lines by panels.
(6) Examine the canopy to ensure the correct surface is to the outside. This can be determined by observing the location of the load bearing tapes on the canopy cloth. The canopy shall be oriented so that the tapes passing across the canopy are located on the outside.
(7) Ensure that the riser is positioned so that all twists are removed.
(8) Ensure that riser legs are positioned so that suspension lines from one panel do not cross the suspension lines from any other panel.
(9) Position the number 1 panel with the full panel width laying on the flat folding surface with canopy inside surface up.
(10) Position panel 2 to the left side of panel 1 and panels 3 and 4 to the right side of panel 1.
(11) Fold panel number 1 as shown in Detail B. Ensure that all folds extend the full length of the panel and on through the apex of the chute.
(12) Fold panel number 2 on top of left half of panel 1 as shown in Detail C. The bottom fold of panel 2 and the top fold of panel 1 must be adjacent and panel edges must be aligned.
(13) Fold panel number 3 on top of panel number 2 in the same manner as panel 2 was folded onto panel 1. The numbers 1, 2 and 3 folded panels shall appear as shown in Detail D.
(14) Fold panel number 4 onto the top right half of panel number 1 as shown in Detail E.
(15) Rotate the top two folds of panel 3 180° clockwise onto top of panel 4 as shown in Detail F.
(16) The crown area of the canopy is difficult to fold smoothly and correctly until all panels have been folded as outlined in steps (11) through (15). All folds shall now be checked to ensure that they extend through the crown area to the apex of the chute.
(17) The final step in the canopy folding process is accomplished by folding the canopy on the center line. This is accomplished by rotating those folds on one side of the center line 180°, and placing these folds on top of the other half of the folded canopy. This may be done in either direction, clockwise or counterclockwise. When this folding step is complete, the canopy will be positioned with all suspension line/canopy attachment points on one side of the folded canopy as shown in Detail G.
(18) The riser must be oriented with respect to the folded canopy so that no twists exist in the riser. This will necessitate placing the riser legs in the same relative position as the canopy; that is, the leg on the side of the canopy that was folded over shall now be on top of the other leg, with no twists in either leg.
(19) The next step is to install the riser in the packing panel stowage trays as shown in Detail I. The approximate position from the end of the riser to the first loop is determined by placing the riser over the rim of the packing canister and extending the riser down into the canister. The stop that positions the riser in the canister must be placed to the inside edge of the canister. The point at which the riser makes contact with the center of the canister is the approximate location of the first loop in the stowage panel. This is shown in Detail H.

(20) The first loop is put in the tray such that riser orientation is maintained. From this point on, by keeping the twists out of the riser, proper orientation will be maintained. The riser loop is forced through the stowage loop on the tray until the riser loop is positioned approximately 1/4 inch (6 mm) past the outside edge of the panel.

(21) The second riser loop is placed in the first stowage loop on the opposite side of the stowage tray. Each riser loop must be positioned as in step 20. Care must be made not to pull preceding riser loops out of the stowage loops when placing the riser in subsequent stowage loops. The process of stowing the riser in the loops of the stowage tray is continued by inserting the risers in each next unfilled stowage loop on alternating sides of the first stowage tray until the space between the first and second stowage trays is reached.

(22) After the eleven pairs of riser loops in the first riser stowage tray are utilized, a space in the stowage loop assembly is reached. This space is to permit folding the stowage tray. The first riser loop in the second stowage tray is placed in the same side as the last riser loop from the preceding series. The length of riser between the stowage trays shall be sufficient to facilitate ease of folding. This requires a length of riser sufficient to reach 3/4 of the way across the width of the tray and back to the original side. See Detail I.

(23) The remaining length of riser is placed in the second stowage tray in the same manner. Allowance has been provided for packing variations and riser elongation. Therefore, it may not be necessary to use all the stowage loops provided.

(24) Following filling of the second stowage tray, the riser legs must be placed in such a way as to facilitate packing in the canister. This is done by placing the riser legs and the riser/suspension line connecting links as shown in Detail J. The links shall be approximately centered.

(25) The next step is to fold the suspension lines into the loops of suspension line stowage tray. These loops are loose and serve only to simplify stowage and assure packing and deployment reliability. The first suspension line loop shall be selected so that sufficient slack (approximately 2 inches [50.8 mm]) will be left in the lines to allow proper folding of the tray when packing.

(26) Insert the suspension lines into stowage loops. Just as in the risers' stowage, the suspension lines are stowed by inserting the suspension lines in each next unfilled stowage loop on alternating sides of the stowage tray. The stowed suspension lines shall extend beyond the edge of the tray no more than 3/4 inch (19 mm). This process is continued until all stowage loops have been filled. When this has been completed, approximately 12 inches (304.8 mm) of suspension lines will remain unstowed.

(27) The second riser stowage tray is folded over the first riser stowage tray as shown in Detail K. The suspension line stowage tray becomes the top of the stacked tray. The riser end shall be restored to the original orientation as determined at the beginning of the riser stowage procedure in preparation for final packing steps.

(28) The canopy skirt of the folded parachute shall be placed on top of the unstowed suspension line.

(29) The stacked trays in the canister, when properly positioned, will appear as shown in Detail L. Smooth the flap around the circumference of the canister and fold back over the edge toward the canopy.

(30) The first step in canopy folding is to fold the excess suspension line on top of the stowed lines. The canopy skirt is the placed in the canister at the side where the riser exits and is folded as shown in Detail M.

(31) When the canopy is completely folded, the flap is placed over the can opening and pressed down on all sides forming a protective closure. The canister lid riser and the pilot chute riser must be kept outside the flap.

(32) Following the positioning of the closure flap, the pilot chute riser is placed neatly on top of the flap such that the pilot chute spring can be centered on the pack for closure.

(33) Center the lid on the pilot chute spring and while compressing the spring, distribute the pilot chute canopy evenly around the canister. Engage canister lid on canister, ensuring that the drag chute riser exits through the notch provided in the lid. Care shall be exercised to ensure that pilot chute canopy is not jammed into any part of the canister to lid attachment mechanism.

3. **Inspection/Check**
   A. Inspect Drag Chute
      (1) Check suspension lines and joints, individually, for cut or frayed cords.
      (2) Check canopy panels for deterioration or cuts.
      (3) Check main chute riser joints and riser for weak members.
      (4) Replace any weak or damaged chute component.
   B. Inspect Structure

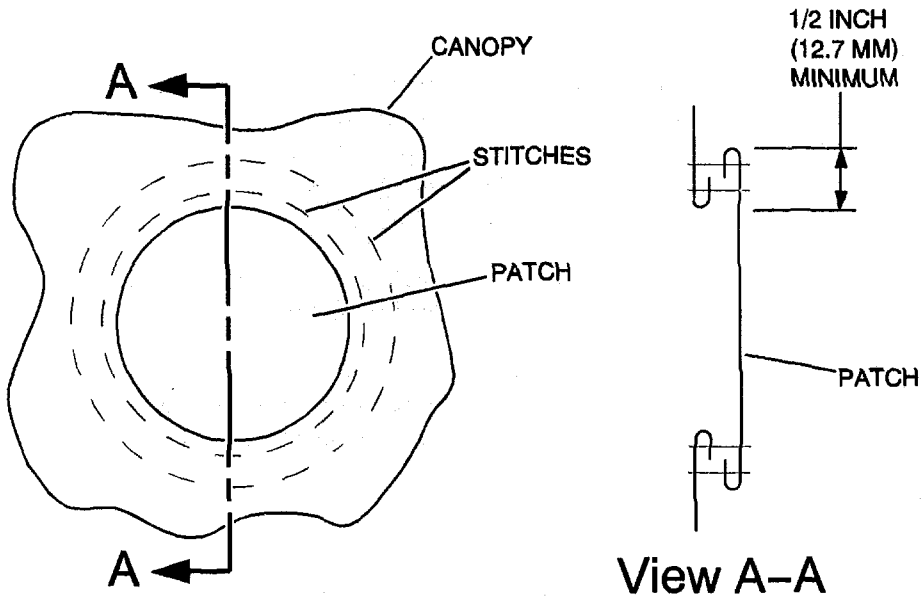
      NOTE: This inspection is required if the drag chute was deployed above 150 KIAS, if jettison occurred above 100 KIAS, or if failure occurred.

      (1) Inspect frame structure adjacent to where drag chute control mechanism is mounted.
      (2) Inspect keel beam forward of the frame on which control mechanism is mounted.
      (3) Inspect structure used to attach keel beam to the frame on which control mechanism is mounted.

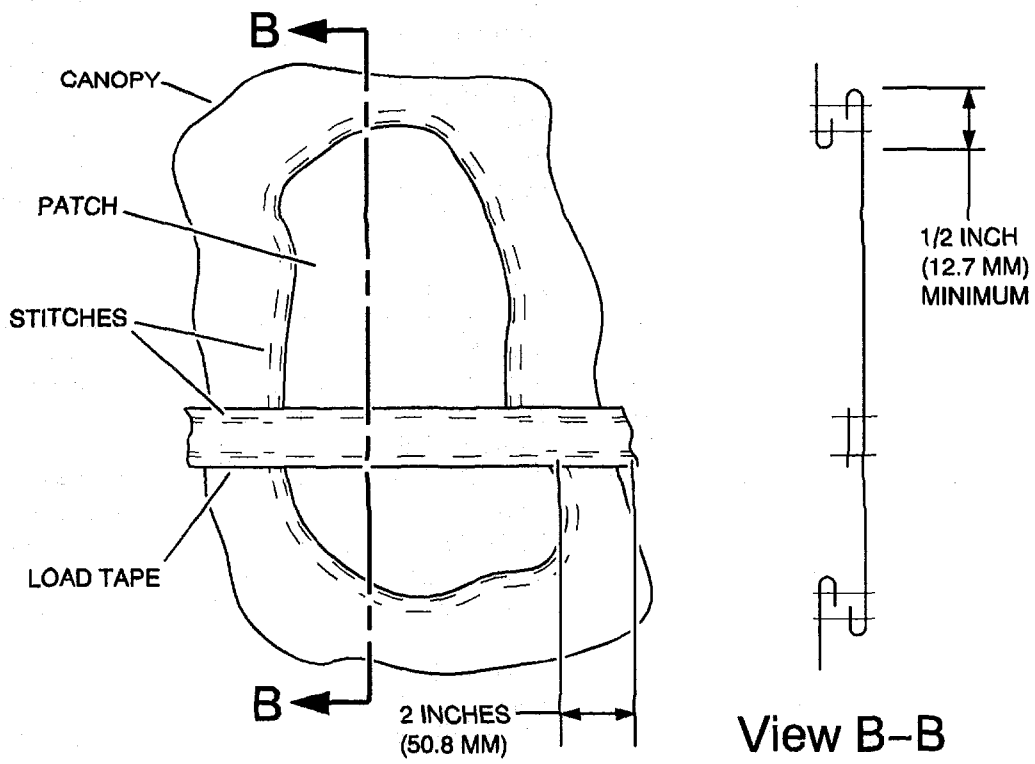
4. **Approved Repairs**
   A. Repair Drag Chute. (See Figure 204.)

      NOTE: Repairs to the drag chute are permissible provided proper procedures are followed. Repairs to the drag chute are to be performed only by an FAA approved repair station or by an FAA certified master rigger.

      (1) Holes or damaged canopy areas may be repaired if the hole or damaged area can be patched using a piece of canopy fabric with a maximum area of 100 square inches (64,516 mm). The patch shall be cut to the proper size so that it extends beyond the hole or damaged area in all directions by a minimum of one and one-half inches (38 mm). The patch shall be sewn on the inside of the canopy using Federal Standard No. 751A stitch, Type 301, with 8 to 11 stitches per inch (25.4 mm). The thread used shall be V-T-295, Type I or II, Class 1 or 2, Size E. The edges of the cloth around the damaged area and the edges of the patch shall be turned toward each other to prevent material fraying. The patch shall be secured to the canopy by sewing two rows of stitches around the damaged area and on the patch.
      (2) All fabric used to make canopy repairs shall be of the same type and quality as that of the canopy material at the point where the repair is being made. In the event that damage occurs at an area of transition from one type of fabric to another (i.e., at the location where a side panel joins the center panel), the material used for the patch shall be the same as that of the center panel. The four side panels are fabricated using MIL-C-7020, Type II, canopy cloth and the center panel is fabricated from nylon fabric, Pattern Number A25895.
      (3) When damage to the canopy occurs at a location where a load tape is located within the damaged area, the repair process is somewhat more difficult. For this type of repair, the stitching shall be removed from the load tape sufficiently far back from the damaged area to permit the canopy cloth to be turned under. With the stitching removed, the repair patch is sewn as previously described. When the patch has been secured with two rows of stitches sewn around the damaged area, the repair job is completed by sewing the load tapes to the patch. The tapes shall be sewn using a Type 301 stitch with 8 to 11 stitches per inch (25.4 mm). The thread used shall be V-T-295, Type I or II, Class 1 or 2, Size E. Two rows of stitching shall be used to coincide with the original two rows of stitching on the load tape. The stitching used to secure the load tape to the repaired canopy shall be of sufficient length to extend a minimum of two inches (50.8 mm) beyond the point where the stitching was removed to permit installing the patch. Therefore, at the locations where the original stitching on the load tapes joins the repaired area, double stitching must be provided.

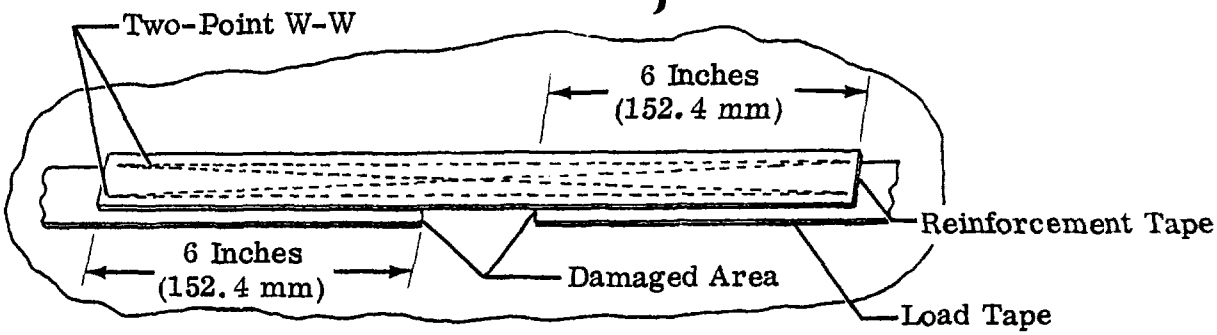


TYPICAL CANOPY REPAIR

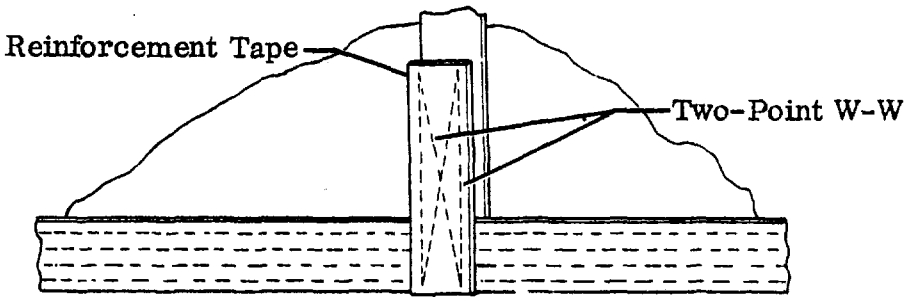


CANOPY REPAIR IN LOAD TAPE AREA

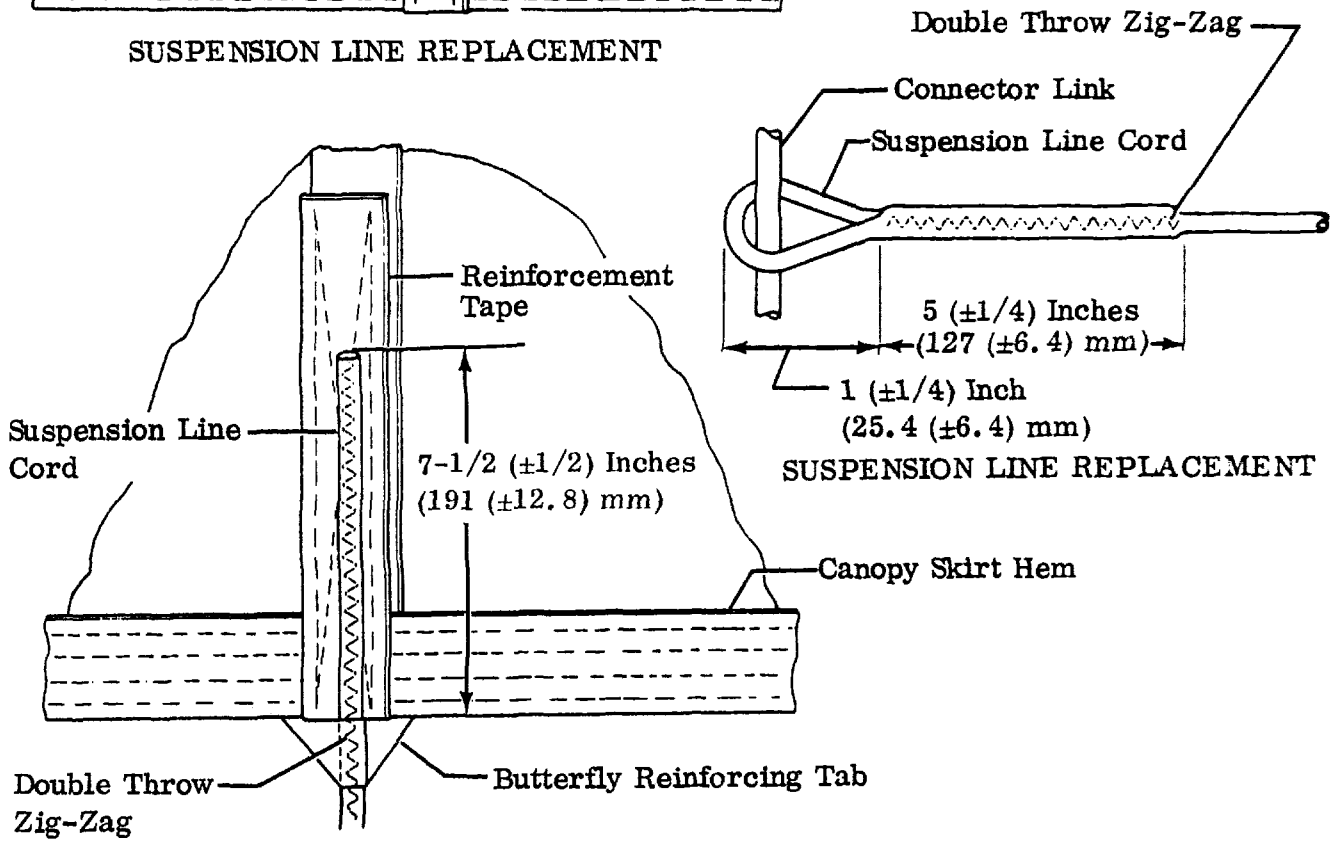
Drag Chute Repair
Figure 204 (Sheet 1 of 3)



LOAD TAPE REPAIR



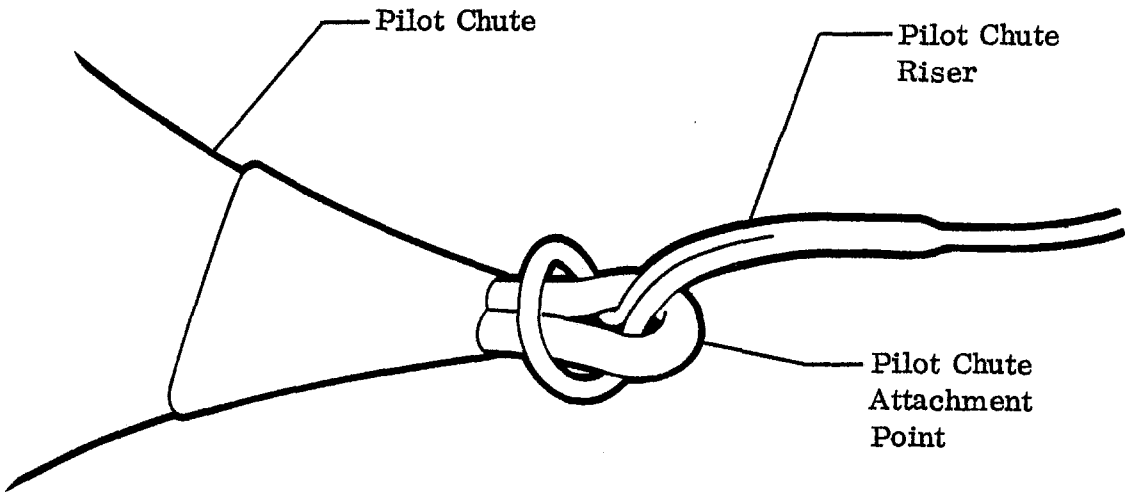
SUSPENSION LINE REPLACEMENT



SUSPENSION LINE REPLACEMENT

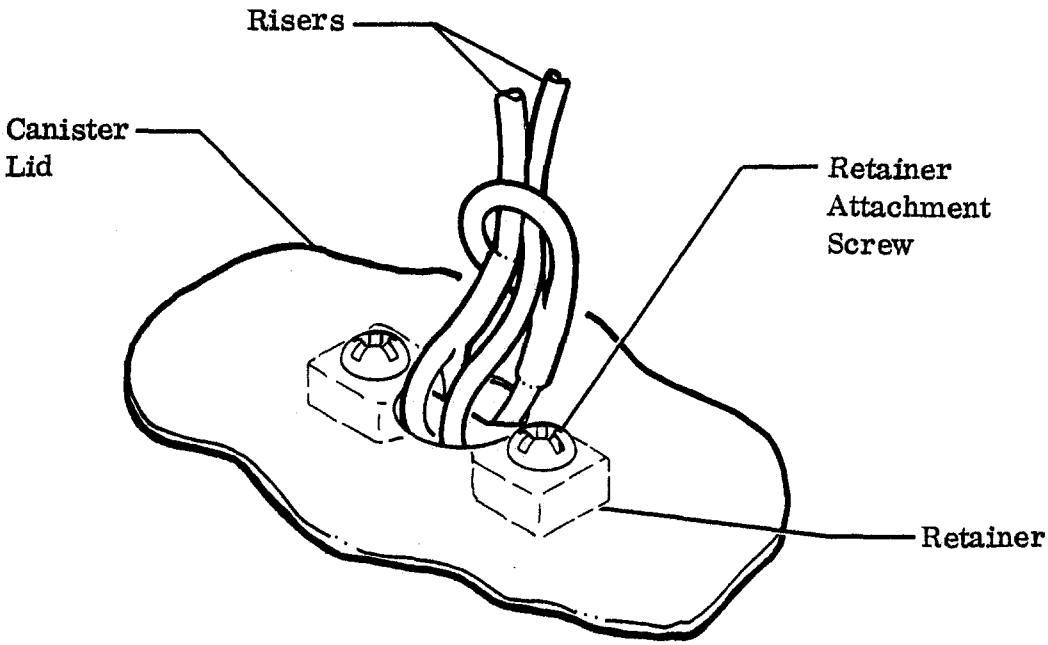
SUSPENSION LINE REPLACEMENT

Drag Chute Repair
Figure 204 (Sheet 2 of 3)



Pilot Chute Riser Attachment to Pilot Chute

Detail A



Risers Attachment to Canister Lid

Detail B

Drag Chute Repair
Figure 204 (Sheet 3 of 3)

(4) If the damage inflicted to the parachute caused holes in the canopy or damaged areas that cannot be patched as described above with a patch containing an area of 100 square inches (64,516 square mm), the damaged canopy shall be replaced rather than repaired.

(5) In the event that a load tape is damaged, the load tape shall be reinforced with a length of tape, MIL-T-5038, Type IV, 5/8 inch (16 mm) wide. The tape shall be of sufficient length to extend 6 inches (152 mm) in both directions beyond the damaged location. The reinforcement tape shall be sewn on as shown using Type 301 stitch with 8 to 11 stitches per inch (25.4 mm). Nylon thread, V-T-295, Type I or II, Class 1 or 2, Size E shall be used to sew the tape. A two-point W-W stitch pattern shall be used to attach the reinforcement tape.

(6) In the event of load tape damage at a location where two load tapes cross and damage has been incurred to both load tapes, the canopy shall be replaced rather than repaired.

(7) Frayed or damaged suspension lines or damaged suspension line canopy joints shall be repaired by replacing the suspension lines. The damaged suspension lines shall be carefully taken off the canopy by cutting the stitches that secure the suspension line to the canopy. Prior to attaching the new suspension line, a reinforcement tape, MIL-T-5038, Type IV, 5/8 inch (16 mm) wide, 12 inches (305 mm) long shall be sewn on the canopy immediately above the canopy bottom panel edge. The tape shall be sewn on with 2 point W-W stitch pattern using a Type 301 stitch with 8 to 11 stitches per inch (25.4 mm). Nylon thread, Type I or II, Class 1 or 2, Size E, shall be used.

(8) After the reinforcement tape has been attached, the new suspension line cord can be sewn on. The cord used shall be MIL-C-7515, Type III. The cord shall be prepared by cutting a length 206 inches (5.23 meters) long, threading one end of the cord around the connector link and back into itself. The cord shall then be secured by sewing with a double throw zig-zag stitch with a minimum stitch length of 5/32 inch (4 mm). The double-throw zig-zag sewing machine shall be set to provide 6 to 9 edge stitches per inch (25.4 mm). Nylon thread, V-T-295, Type I or II, Class 1, Size F, shall be used to sew the suspension line cord. Care must be taken to ensure that the new cord occupies the same position on the connector link as was occupied by the replaced cord.

(9) With one end of the suspension line prepared as shown, the other end of the suspension cord shall be inserted through the bottom of the butterfly reinforcing tab and placed on the top of the 12-inch (305 mm) reinforcing tape that was previously sewn to the canopy. The distance from the top of the cord to the bottom of the canopy panel shall be 7-1/2 inches (191 mm). When the cord is positioned, the cord must be sewn to the canopy with the same type stitch and thread as was used to prepare the loop in the other end.

(10) If the canopy skirt hem (the edge of the canopy where the suspension lines are attached) is damaged, the canopy shall be replaced rather than repaired.

(11) When the risers connecting the main canopy, canister lid, and pilot chute are damaged, the damaged riser shall be replaced with a new riser.

(12) Pilot chute riser or canister lid riser attachment is as follows:

(a) Attach the pilot chute riser to the pilot chute by passing one end of the riser through the attachment loop of the pilot chute and then through the loop on the opposite end of the pilot chute riser. Draw the riser tight against the pilot chute attachment loop, and attach the free end to the canister lid. Refer to Detail A.

(b) To attach canister lid riser to main canopy, remove bolt from shackle at apex of main canopy, position loop of riser in shackle, and install bolt, passing it through the riser loop.

(c) Attach either or both risers to canister lid by removing retainer attachment screws, and extracting retainer from inside lid. Pulling on risers while removing screws will aid in controlling retainer during screw removal. Install risers to retainer as shown in Detail B, and insert retainer/riser assembly into canister lid. Align attachment holes in retainer and lid, and install attachment screws. Pulling risers while installing screws will aid in controlling retainer.

(13) In the event the main chute riser becomes worn or damaged, the riser shall be replaced rather than repaired.

(14) If the pilot parachute is damaged, it shall be removed and replaced with a new pilot parachute. The pilot parachute must be attached to the top of the main parachute with the canister lid as described previously.

(15) A damaged stowage tray shall be removed and replaced with a new one. The stowage tray can be replaced by removing the two bolts on the inside of the packing container. The new stowage tray shall be put into position and secured by inserting the bolts and tightening the nuts.

5. **Adjustment/Test**

A. Rig Drag Chute Control System. (See Figure 205.)

(1) Lower the tailcone access door.

(2) Position the control handle to the rest/jettison position (control handle fully down).

NOTE: The drag chute control handle is locked unless the two grip safeties are squeezed simultaneously.

(3) Check that the control mechanism crank is full against the stop (rest/jettison position). Loosen telescopic nut and adjust clevis as required.

(4) With the control handle and the control mechanism crank in the rest/jettison position there shall be some play in the control handle within its detent.

(5) Squeeze the grip safeties and pull the control handle to the deploy position (control handle fully up).

(6) Check that control mechanism crank is full down against the stop (deploy position). Adjust clevis as required.

(7) With the control handle and the control mechanism crank in the deploy position, there shall be some play in the control handle within its detent.

(8) Tighten telescopic nut and install cotter pin.

(9) Squeeze grip safeties and return the control handle to the rest/jettison position.

(10) Raise and secure the tailcone access door.

CAUTION: ENSURE THAT RISER DOES NOT BIND RING.

B. Functional Test Drag Chute.

NOTE: Perform Functional Test of Drag Chute in accordance with the current inspection intervals specified in Chapter 5.

Drag chute may be deployed on landing in lieu of the following static test procedure, provided the drag chute lubrication requirements in Chapter 12 are accomplished.

(1) Station a person under the tailcone access door to hold and prevent the canister lid from being ejected when drag chute control handle is actuated. The lid assembly must be allowed to pop down only enough to assure disengagement of latching mechanism.

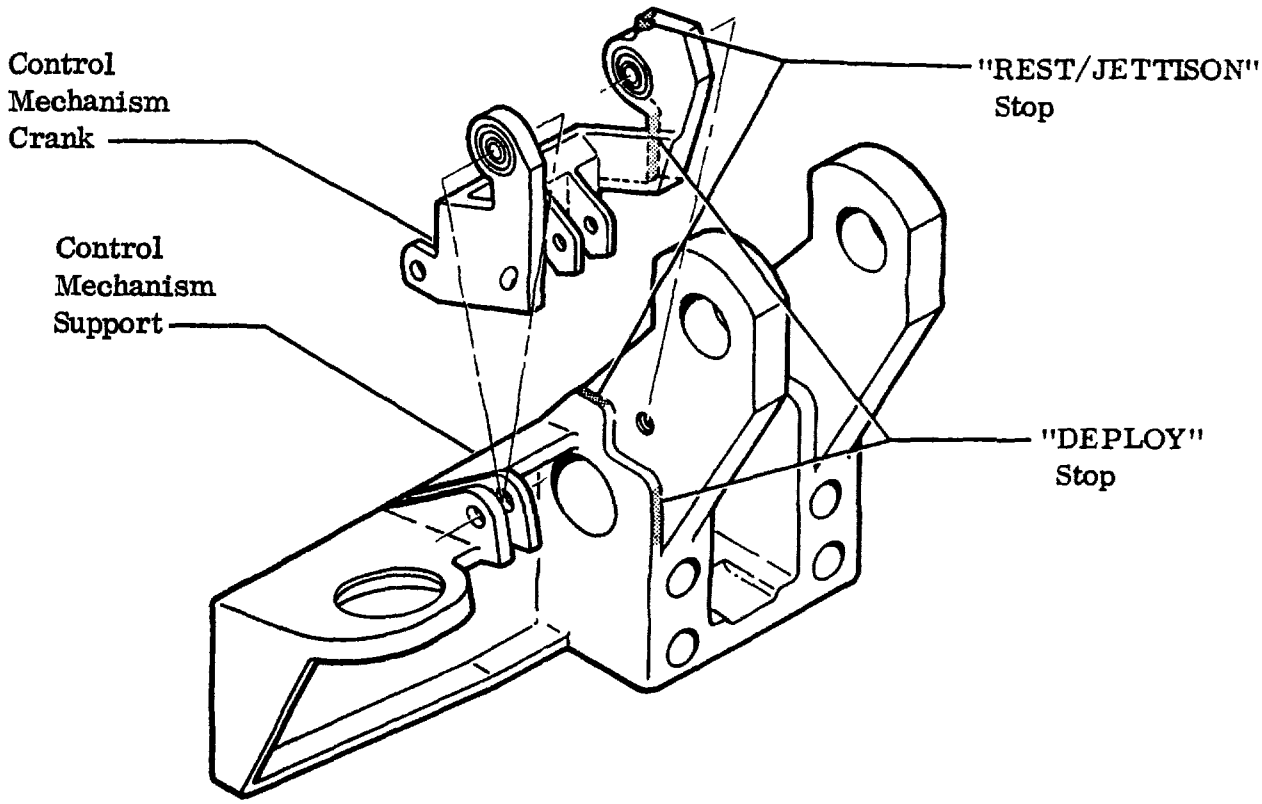
(2) Squeeze grip safeties of control handle and pull up to the deploy position.

(3) Note disengagement of canister lid assembly from canister.

(4) Push lid assembly back up into position.

(5) Squeeze the grip safeties and return the control handle to the rest/jettison position, thus reengaging the lid latches.

(6) Lubricate drag chute control system. (Refer to Chapter 12.)



Control Mechanism Stop Location
Figure 205

EMERGENCY LOCATOR TRANSMITTER - DESCRIPTION AND OPERATION

1. **Description** (See figure 1.)
   A. Garrett and Pointer Systems
      (1) The emergency locator transmitter (ELT) system consists of a transmitter, dual antennas, a 28 vdc circuit breaker, control/charger unit *(Aircraft equipped with Garrett System)*, and a system switch *(Aircraft equipped with Pointer System)*.
   B. Dorne Margolin System
      (1) The emergency locator transmitter (ELT) system consists of a transmitter, an antenna, and a system switch.
   C. Component Description
      (1) Garrett and Pointer Systems
         (a) The transmitter contains a battery pack that supplies power for operation in both the emergency and manual modes. *On Aircraft equipped with Garrett System*, the transmitter is installed on the vertical stabilizer skin between spars 1 and 2 at approximately W.L. 85.00. *On Aircraft equipped with Pointer System*, the transmitter is installed on the vertical stabilizer rib between spars 1 and 2 at approximately W.L. 85.00.
         (b) The antennas are installed on both sides of the vertical stabilizer aft of spar 1 at approximately W.L. 88.00.
         (c) *On Aircraft equipped with Garrett System*, the control/charger unit is installed in the center pedestal. The control/charger unit provides a remote control for the ELT system and keeps the transmitter battery pack charged.
         (d) *On Aircraft equipped with Pointer System*, the system switch is installed in the center pedestal or pilot's panel and provides a remote control for the ELT system.
      (2) Dorne Margolin System
         (a) The transmitter is installed in the LH side of the tailcone between frames 31 and 32 at W.L. 38.00. The ELT transmitter contains an internal battery pack that supplies power for operation in either the emergency or manual modes.
         (b) The antenna is installed on top of the fuselage adjacent to the dorsal inlet.
         (c) The system switch is installed on the pedestal or pilot's panel and provides a remote control for the ELT system.

2. **Operation** (See figure 2.)

   CAUTION: *ON AIRCRAFT EQUIPPED WITH POINTER SYSTEM*, IN CASE OF AN INADVERTENT ACTIVATION, THE "G" SWITCH IN THE TRANSMITTER CAN BE RESET BY PLACING THE SYSTEM SWITCH TO THE RESET POSITION. DO NOT HOLD THE SYSTEM SWITCH TO THE RESET POSITION FOR MORE THAN FIVE SECONDS OR THE THERMOMECHANICAL SWITCH IN THE TRANSMITTER MAY BE DAMAGED.

   A. Emergency Mode of Operation
      (1) *On Aircraft equipped with Garrett System*, switches are positioned as follows for emergency mode. With switches in this position, the system will automatically activate under impact forces.
         (a) Transmitter Switch - AUTO.
         (b) Control Switch (in cockpit) - OFF.
      (2) *On Aircraft equipped with Pointer or Dorne Margolin System*, switches are positioned as follows for emergency mode. With switches in this position, the system will automatically activate under impact forces.
         (a) Transmitter Switch - AUTO.
         (b) System Switch (in cockpit) - AUTO.

B. Manual Mode of Operation

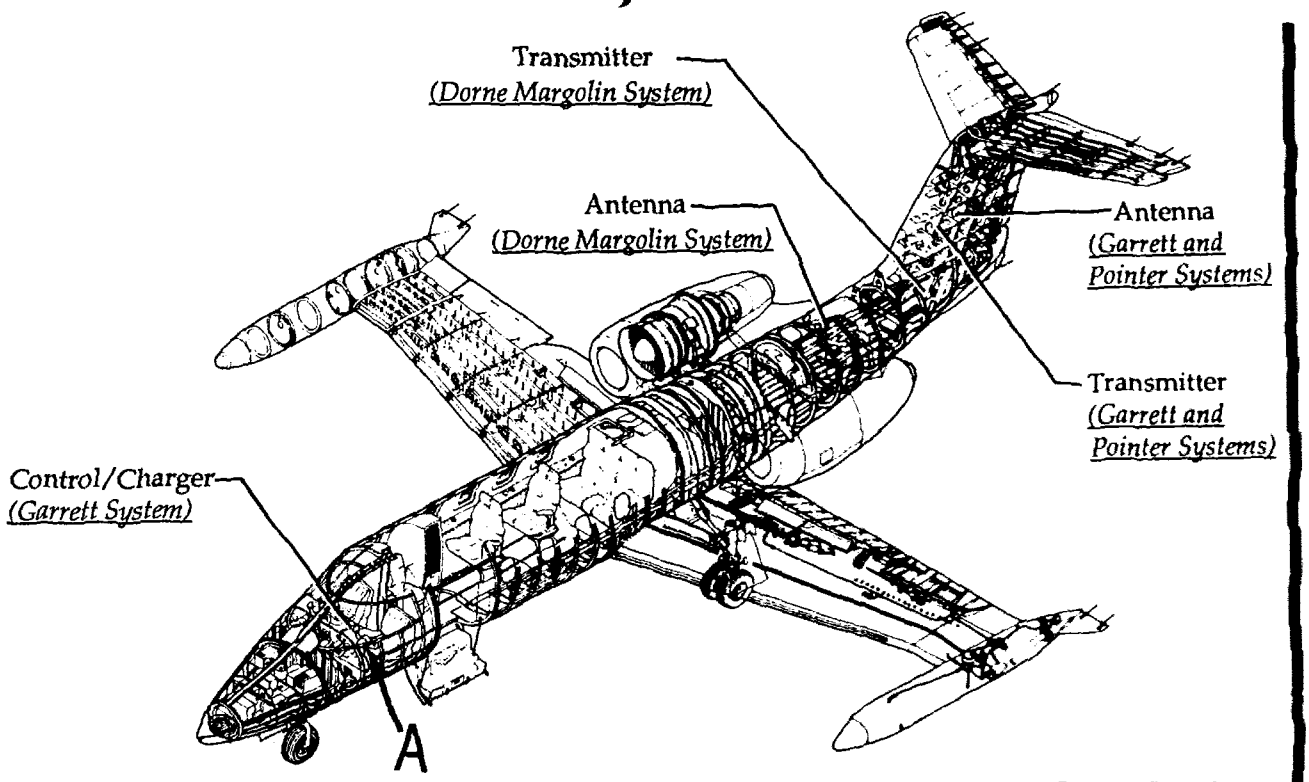
(1) The ELT system may be manually operated by either the control switch *(Aircraft equipped with Garrett System)*, the system switch *(Aircraft equipped with Pointer or Dorne Margolin System)*, or the master switch on the transmitter itself.

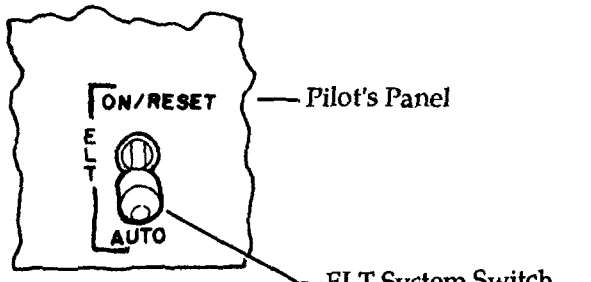
(2) The manual mode is used when (1) testing the system or (2) soft impact forces do not activate the transmitter.

C. Battery Pack Charging *(Aircraft equipped with Garrett System)*

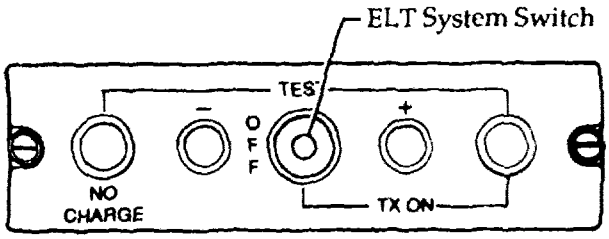
(1) The battery pack is recharged by the control/charger unit. The charging light on the control/charger unit will be illuminated as long as the battery pack is fully charged. However, the charging light will go out and remain out as long as the battery pack is being charged.

NOTE: At extremely cold temperatures (-30°F or lower), the charging light will be illuminated. This is normal and the battery pack will remain fully charged.

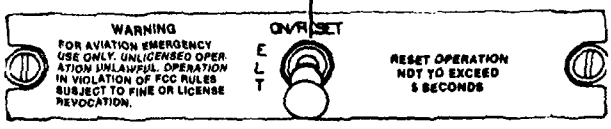




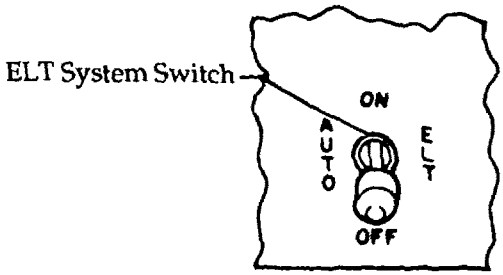
Dorne Margolin System



Garrett System



Dorne Margolin System

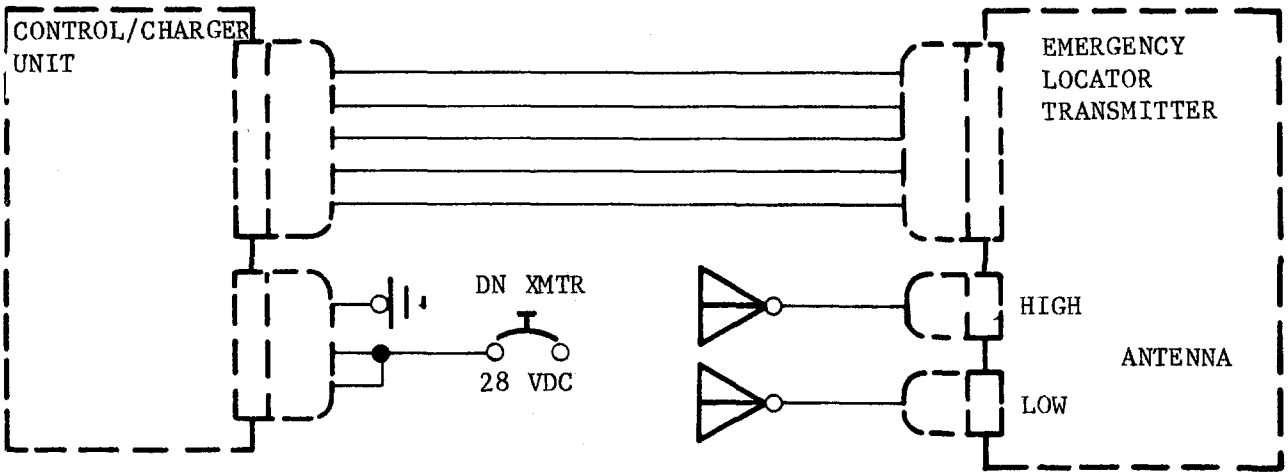


Pointer System

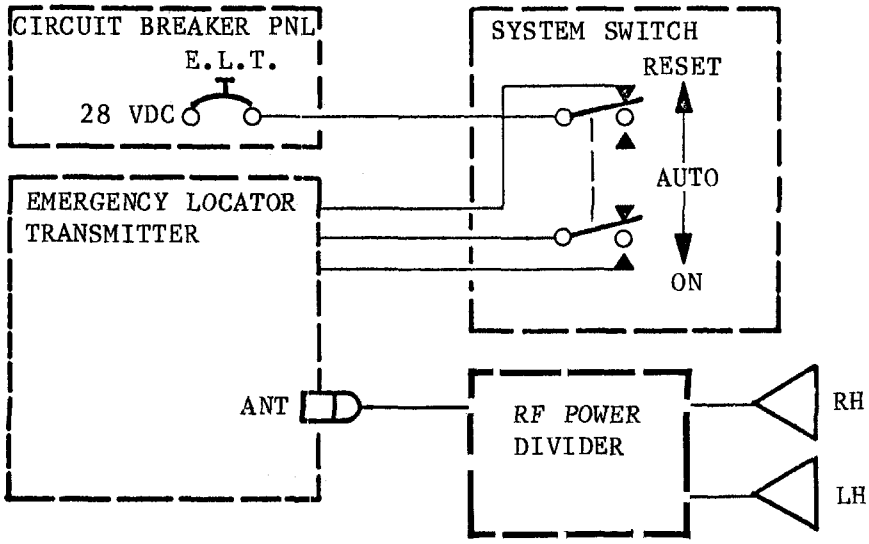
Detail A

Emergency Locator Transmitter System Locator
Figure 1

EFFECTIVITY: OPTIONAL



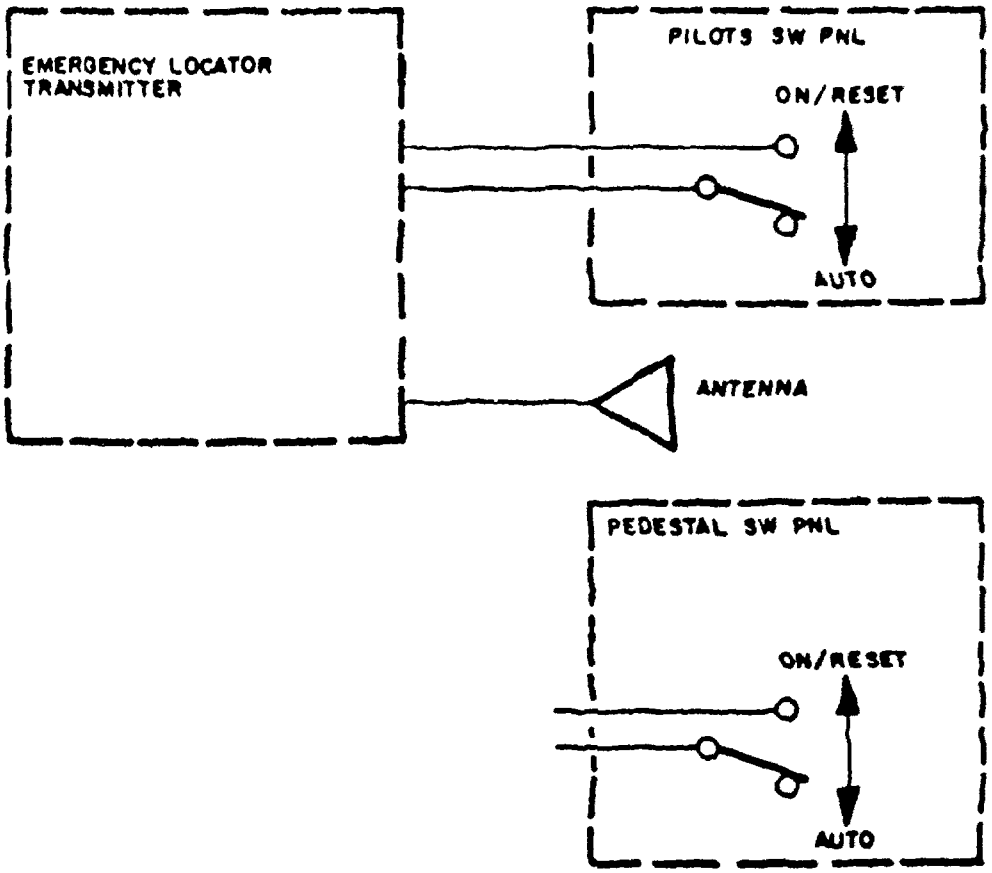
Garrett ELT System



Pointer ELT System

NOTE: Refer to *Avionics and Optional Electrical Customization Wiring Manual* for system wiring diagram.

Emergency Locator Transmitter System Electrical Control Schematic
Figure 2 (Sheet 1 of 2)



Dorne Margolin ELT System

NOTE: Refer to *Avionics and Optional Electrical Customization Wiring Manual* for system wiring diagram.

Emergency Locator Transmitter System Electrical Control Schematic
Figure 2 (Sheet 2 of 2)

EMERGENCY LOCATOR TRANSMITTER SYSTEM - TROUBLE SHOOTING

1. **Troubleshooting**
   A. See figure 101 for trouble shooting procedures. (Refer to Aircraft Avionics and Optional Electrical Customization Wiring Manual for emergency locator transmitter system wiring diagram.)
   B. Tools and Equipment

      NOTE: Equivalent substitutes may be used in lieu of the following.

NAME	PART NUMBER	MANUFACTURER	USE
Multimeter	Model 260 or Model 3430	Simpson Hewlett Packard	Check circuits.

PROBABLE CAUSE	ISOLATION PROCEDURE	REMEDY
1. ELT Tone Weak or Absent When Tested.		
a. Defective battery.	Ensure that COMM 2 is tuned to 121.5 MHz. Set ELT Switch to ON, and then to AUTO. Verify that tone is absent.	Replace battery in accordance with instructions included with replacement battery pack.
b. Defective ELT control circuit.	Check continuity of wiring between remote ELT system switch and ELT.	Repair or replace defective wiring or components.
c. Defective control/charger unit *(Garrett System only)*.	Check for charger voltage at front panel jacks.	Replace defective control/charger unit. (Refer to 25-63-03.)
d. Defective antenna(s).	Visually inspect antenna(s) and connection(s) to ELT for damage. Resistance from ELT unit to structure shall be less than 0.005 ohms.	Replace defective antenna(s) (refer to 25-63-02) or rebond ELT.
e. Defective transmitter or system switch.	Verify that other ELT system components are OK per previous steps.	Replace transmitter. (Refer to 25-63-01.) If problem persists, replace control/charger unit *(Garrett)*, ELT system switch *(Pointer or Dorne Margolin)*, or ELT panel *(Dorne Margolin)*. (Refer to 25-63-03.)

Emergency Locator Transmitter System Trouble Shooting
Figure 101

EMERGENCY LOCATOR TRANSMITTER SYSTEM - MAINTENANCE PRACTICES

1. Adjustment/Test

NOTE: Notify the nearest FAA control tower before testing the ELT system. If possible, tests should be conducted in the first 5 minutes of any hour. The transmitter test should not last longer than three (3) audio sweeps.

Perform Functional Test of the ELT System in accordance with the current inspection interval specified in Chapter 5.

A. Functional Test of Garrett ELT System *(1098B)*

(1) Remove ELT unit from aircraft.
(2) Apply electrical power to aircraft.
(3) Turn on COMM 2 and tune to emergency frequency channel 121.5 MHz.
(4) Set the transmitter switch to ARM.
(5) While holding the transmitter in one hand close to the comm antenna, strike the front of the ELT ("into the arrow") sharply with the heel of your hand.
(6) Downward sweeping audio tone shall be audible on COMM 2.
(7) Turn transmitter off after three (3) audio sweeps.
(8) Install ELT unit into aircraft.
(9) With Control Switch set to OFF, observe that both adjacent indicator lights are off.
(10) Set Control Switch to TEST. Both indicator lights shall illuminate. Downward sweeping audio tone shall be audible on COMM 2.
(11) Set Control Switch to OFF. Tone shall not be audible on COMM 2.
(12) Set Control Switch to TX ON. The TX ON transmit light shall illuminate and the NO CHARGE light shall remain off. The COMM 2 receiver background noise shall disappear. Return Control Switch to OFF immediately upon observing proper light operation.
(13) Pull DN XMTR circuit breaker.
(14) Set Control Switch to TEST. Both adjacent indicator lights shall remain off. The COMM 2 receiver background noise shall disappear and the hiss of the transmitter carrier shall be present. Return Control Switch to OFF immediately upon observing proper functioning of the transmitter.
(15) Reset DN XMTR circuit breaker.
(16) Verify tone is not audible on COMM 2.
(17) Turn COMM 2 off.
(18) Remove electrical power from aircraft.

B. Functional Test of Dorne Margolin ELT System *(2113TUC)*

(1) Remove ELT unit from aircraft.
(2) Apply electrical power to aircraft.
(3) Turn on COMM 2 and tune to emergency frequency channel 121.5 MHz.
(4) Set the transmitter switch to ARM.
(5) While holding the transmitter in one hand close to the comm antenna, strike the front of the ELT ("into the arrow") sharply with the heel of your hand.
(6) Downward sweeping audio tone shall be audible on COMM 2.

(7) Turn transmitter off after three (3) audio sweeps.
(8) Install ELT unit into aircraft.
(9) Set System Switch to ON. Downward sweeping audio tone shall be audible on COMM 2.
(10) Set System Switch to AUTO. Tone shall not be audible on COMM 2.
(11) Turn COMM 2 off.
(12) Remove electrical power from aircraft.

C. Functional Test of Pointer ELT System *(2022TUC)*
(1) Remove ELT unit from aircraft.
(2) Apply electrical power to aircraft.
(3) Turn on COMM 2 and tune to emergency frequency channel 121.5 MHz.
(4) Press G switch reset button on ELT unit in firmly.
(5) Place master switch to AUTO position.
(6) Shake the unit firmly parallel to the "DIRECTION OF FLIGHT" arrow on the unit face. Verify that a tone is heard on COMM 2. During test a decreasing tone will be heard before the typical warbling tone begins. Reset G switch to turn unit off.
(7) Install ELT unit into aircraft
(8) Set System Switch to ON. Downward sweeping audio tone shall be audible on COMM 2.
(9) Set System Switch to AUTO. Tone shall not be audible on COMM 2.
(10) Turn COMM 2 off.
(11) Remove electrical power from aircraft.

2. Inspection/Check

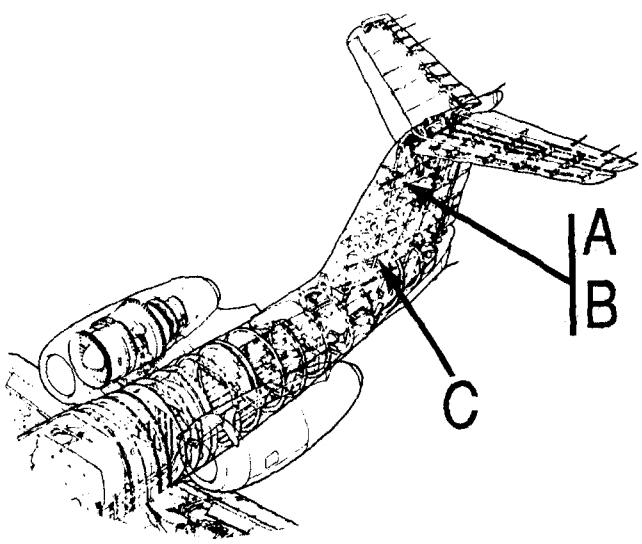
A. Garrett ELT System
(1) The battery pack must be replaced or recharged if (1) the transmitter has been in use for more than one cumulative hour, or (2) when 50% of the useful life of the battery pack has expired. This time is indicated by a date stamp on the face plate of the transmitter.

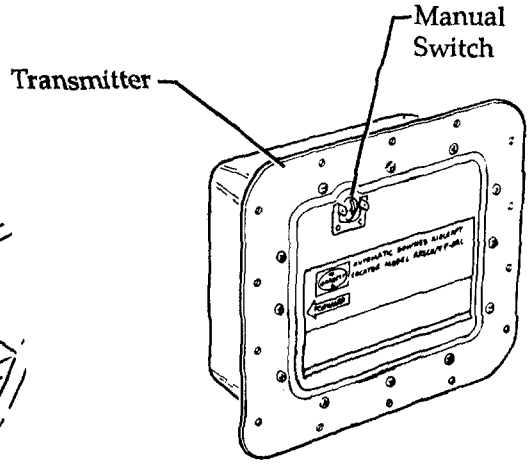
B. Pointer ELT System
(1) The battery pack must be replaced after 3 years shelf or service life, or under any of the following conditions:
(a) After the transmitter has been in an emergency situation, including any inadvertent actuation of unknown duration.
(b) After the transmitter has been operated for more than one cumulative hour (e.g., time accumulated in several tests and/or an inadvertent activation of known duration).
(c) On or before battery replacement date. (Battery replacement date is marked on a label at the end of transmitter.)

C. Dorne Margolin ELT System
(1) The battery pack must be replaced on or before the replacement date marked on the transmitter label. Replace battery pack in accordance with instructions included with replacement battery pack.

NOTE: Use of any battery pack other than that manufactured by Dorne Margolin will void the warranty on that particular unit.

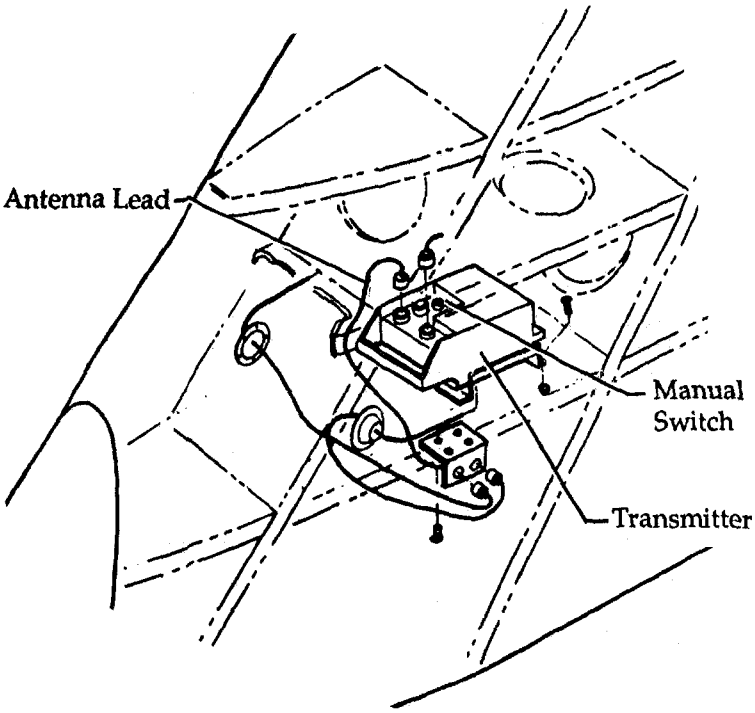
1. **Removal/Installation**
   A. Remove Emergency Locator Transmitter. (See figure 201.)
      (1) Garrett System
         (a) Remove access cover from RH side of vertical stabilizer to gain access to transmitter.
         (b) Disconnect antenna leads and electrical connector from transmitter.
         (c) Remove attaching parts, door and transmitter from aircraft.
         (d) Clean sealant from door and vertical stabilizer.
         (e) Remove all surface oxides with #80 grit sandpaper and wash with methyl ethyl ketone (MEK).
      (2) Pointer System
         (a) Remove access cover from RH side of vertical stabilizer to gain access to transmitter.
         (b) Disconnect antenna lead and electrical connector from transmitter.
         (c) Set master switch on transmitter to OFF.
         (d) Remove clip securing transmitter in mounting bracket and remove transmitter from aircraft.
      (3) Dorne Margolin System
         (a) Remove access cover from LH side of tailcone between frames 31 and 32.
         (b) Disconnect antenna lead and electrical connector from transmitter.
         (c) Remove attaching parts and transmitter from aircraft.
   B. Install Emergency Locator Transmitter. (See figure 201.)
      (1) Garrett System
         (a) Prepare transmitter and vertical stabilizer mounting surfaces for electrical bonding. (Refer to Chapter 20 of Wiring Manual.)
         (b) Install transmitter, door, doubler, and gasket and secure with attaching parts.
         (c) Check resistance between transmitter case and vertical stabilizer. Maximum resistance shall not be greater than amount specified in Chapter 20 of Wiring Manual.
         (d) Connect antenna leads and electrical connector to transmitter.
         (e) Set master switch on transmitter to AUTO.
         (f) Install access cover and secure with attaching parts.
         (g) Apply fillet seal around door covering transmitter. (Refer to Chapter 20.)
         (h) Touch up painted areas as required. (Refer to Chapter 20.)
      (2) Pointer System
         (a) Prepare transmitter and mounting tray surfaces for electrical bonding. (Refer to Chapter 20 of Wiring Manual.)
         (b) Install transmitter and secure in mounting bracket with clip.
         (c) Check resistance between transmitter case and vertical stabilizer. Maximum resistance shall not be greater than amount specified in Chapter 20 of Wiring Manual.
         (d) Reset the "G" switch by pushing the reset button on the transmitter.
         (e) Set master switch on transmitter to AUTO.
         (f) Connect antenna lead and electrical connector to transmitter.
         (g) Install access cover and secure with attaching parts.
      (3) Dorne Margolin System
         (a) Prepare transmitter and fuselage mounting surfaces for electrical bonding. (Refer to Chapter 20 of Wiring Manual.)
         (b) Install transmitter and secure with attaching parts.
         (c) Check resistance between transmitter case and vertical stabilizer. Maximum resistance shall not be greater than amount specified in Chapter 20 of Wiring Manual.
         (d) Connect antenna lead and electrical connector to transmitter.
         (e) Set master switch on transmitter to AUTO.
         (f) Install access cover and secure with attaching parts.





Garrett Transmitter

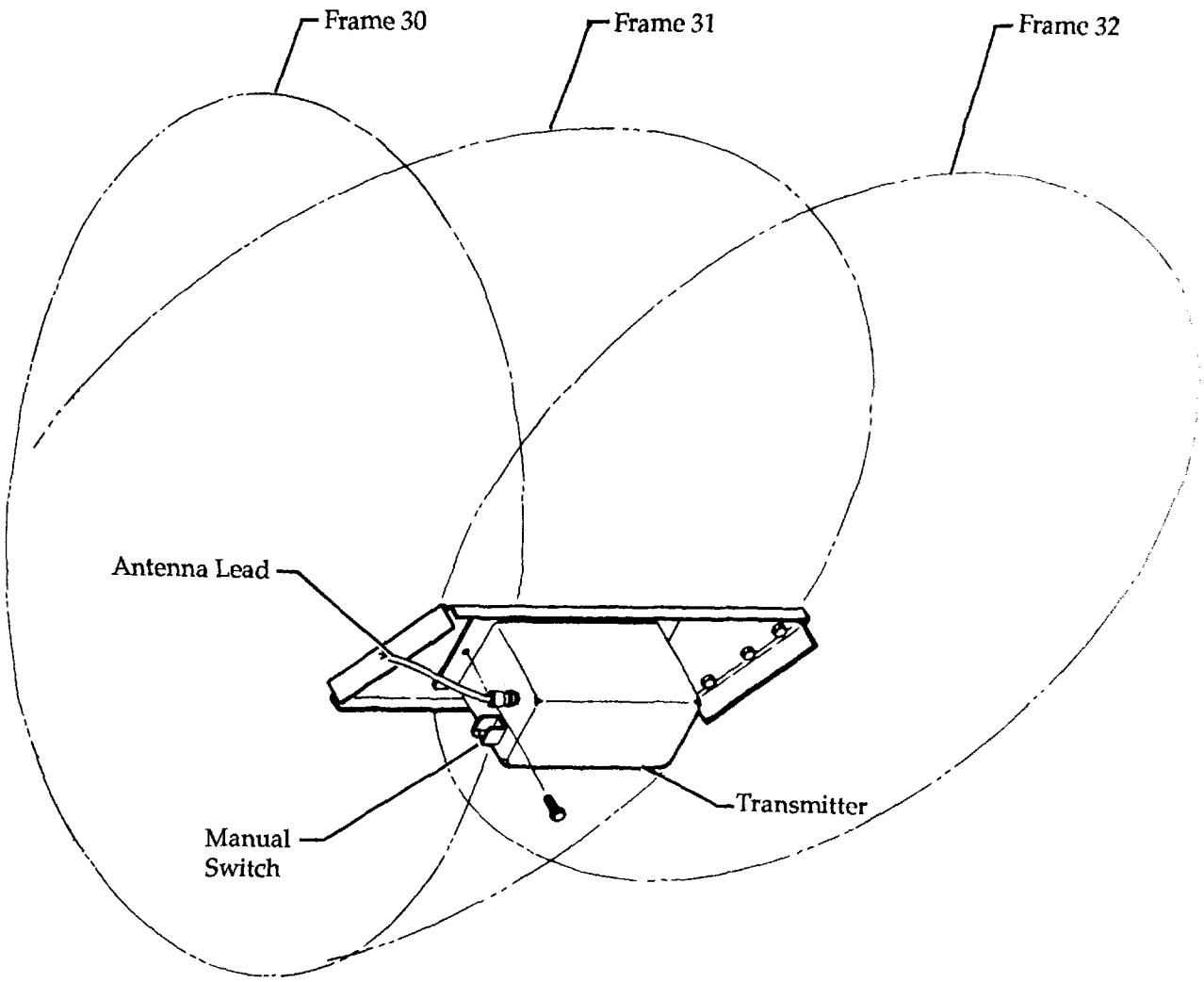
Detail A



Pointer Transmitter

Detail B

Emergency Locator Transmitter Installation
Figure 201 (Sheet 1 of 2)



Dorne Margolin Transmitter

Detail C

Emergency Locator Transmitter Installation
Figure 201 (Sheet 2 of 2)

EMERGENCY LOCATOR TRANSMITTER ANTENNA - MAINTENANCE PRACTICES

1. Removal/Installation

A. Tools and Equipment

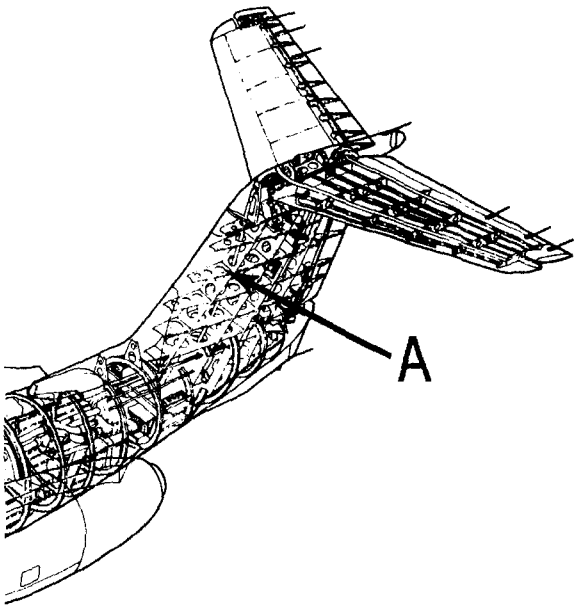
NOTE: Equivalent substitutes may used in lieu of the following:

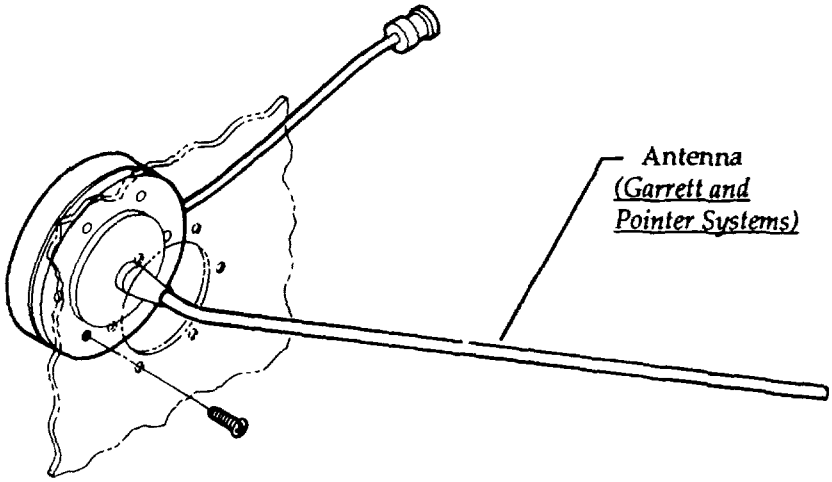
NAME	PART NUMBER	MANUFACTURER	USE
Silicone Rubber Adhesive	Silastic 732	Dow Corning	Install antenna.
N-Butyl Alcohol	TT-B-846	Commercially Available	Clean connector.
Methyl Ethyl Ketone		Commercially Available	Clean surfaces.
Sealant	Pro-Seal 890	Coast	Seal antenna base.

B. Remove Antenna. (See figure 201.)
   (1) Garrett and Pointer Systems
      (a) Remove access cover from RH side of vertical stabilizer to gain access to transmitter.
      (b) *On Aircraft equipped with Garrett System*, disconnect antenna lead from transmitter. *On Aircraft equipped with Pointer System*, disconnect antenna lead from the RF power divider.
      (c) Loosen and remove antenna rod from antenna base.
      (d) Remove attaching parts and antenna base from vertical stabilizer.
      (e) Clear sealant from antenna base and vertical stabilizer.
   (2) Dorne Margolin System
      (a) Lower tailcone access door to gain access to antenna lead.
      (b) Disconnect antenna lead from antenna base.
      (c) Remove attaching parts, antenna base and antenna gasket from aircraft.

C. Install Antenna. (See figure 201.)
   (1) Garrett and Pointer Systems
      (a) Prepare antenna and vertical stabilizer mounting surfaces for electrical bonding. (Refer to Chapter 20 of Wiring Manual.)
      (b) Connect antenna lead to antenna.
      (c) Clean coax connector with n-butyl alcohol (TT-B-846).
      (d) Cover entire area of coax connector with clear silicone rubber adhesive.
      (e) Install antenna base and secure with attaching parts.
      (f) Ensure that resistance between antenna base and vertical stabilizer does not exceed 0.005 ohm.
      (g) Clean antenna base and fuselage mating area with a clean cloth and methyl ethyl ketone (MEK).
      (h) Using Pro-Seal 890, apply a fillet seal around antenna base. (Refer to Chapter 20.)
      (i) Install antenna rod on antenna base and tighten.
      (j) *On Aircraft equipped with Garrett System*, connect antenna lead to transmitter. *On Aircraft equipped with Pointer System*, connect antenna lead to RF power divider.
      (k) Install access cover and secure with attaching parts.

(2) Dorne Margolin System
   (a) Prepare antenna and fuselage mounting surfaces for electrical bonding. (Refer to Chapter 20 of Wiring Manual.)
   (b) Position antenna base and antenna gasket on tailcone left of dorsal inlet and secure with attaching parts.
   (c) Ensure that resistance between antenna base and fuselage does not exceed maximum amount stated in Chapter 20 of Wiring Manual.
   (d) Clean antenna base and fuselage mating area with a clean cloth and methyl ethyl ketone (MEK).
   (e) Using Pro-Seal 890, apply a fillet seal around antenna base. (Refer to Chapter 20.)
   (f) Connect antenna lead to antenna base.
   (g) Clean coax connector with n-butyl alcohol (TT-B-846).
   (h) Cover entire area of coax connector with clear silicone rubber adhesive (Silastic 732, manufactured by Dow Corning).
   (i) Raise and secure tailcone access door.

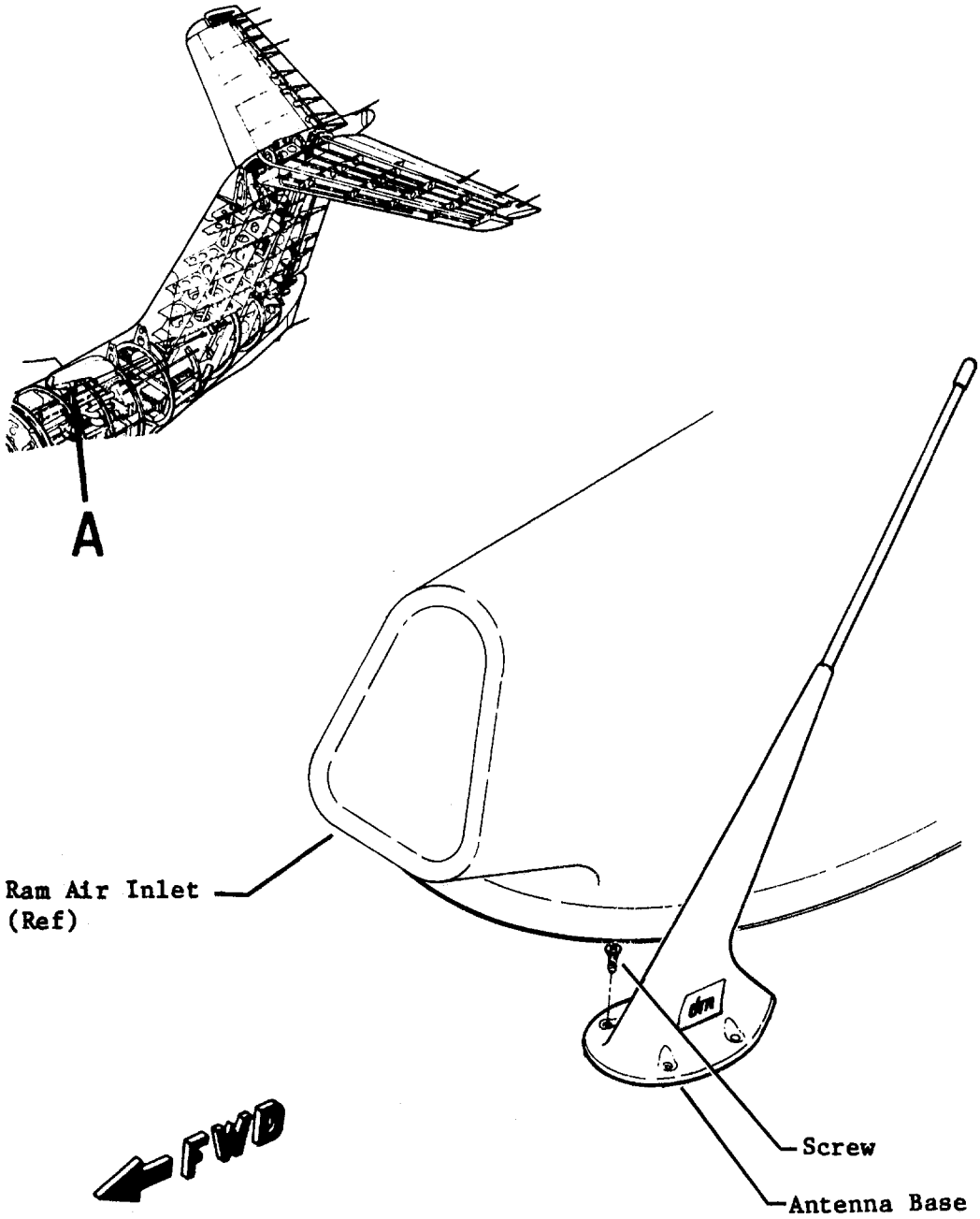




Detail A

Emergency Locator Transmitter Antenna Installation
Figure 201 (Sheet 1 of 2)

EFFECTIVITY: OPTIONAL



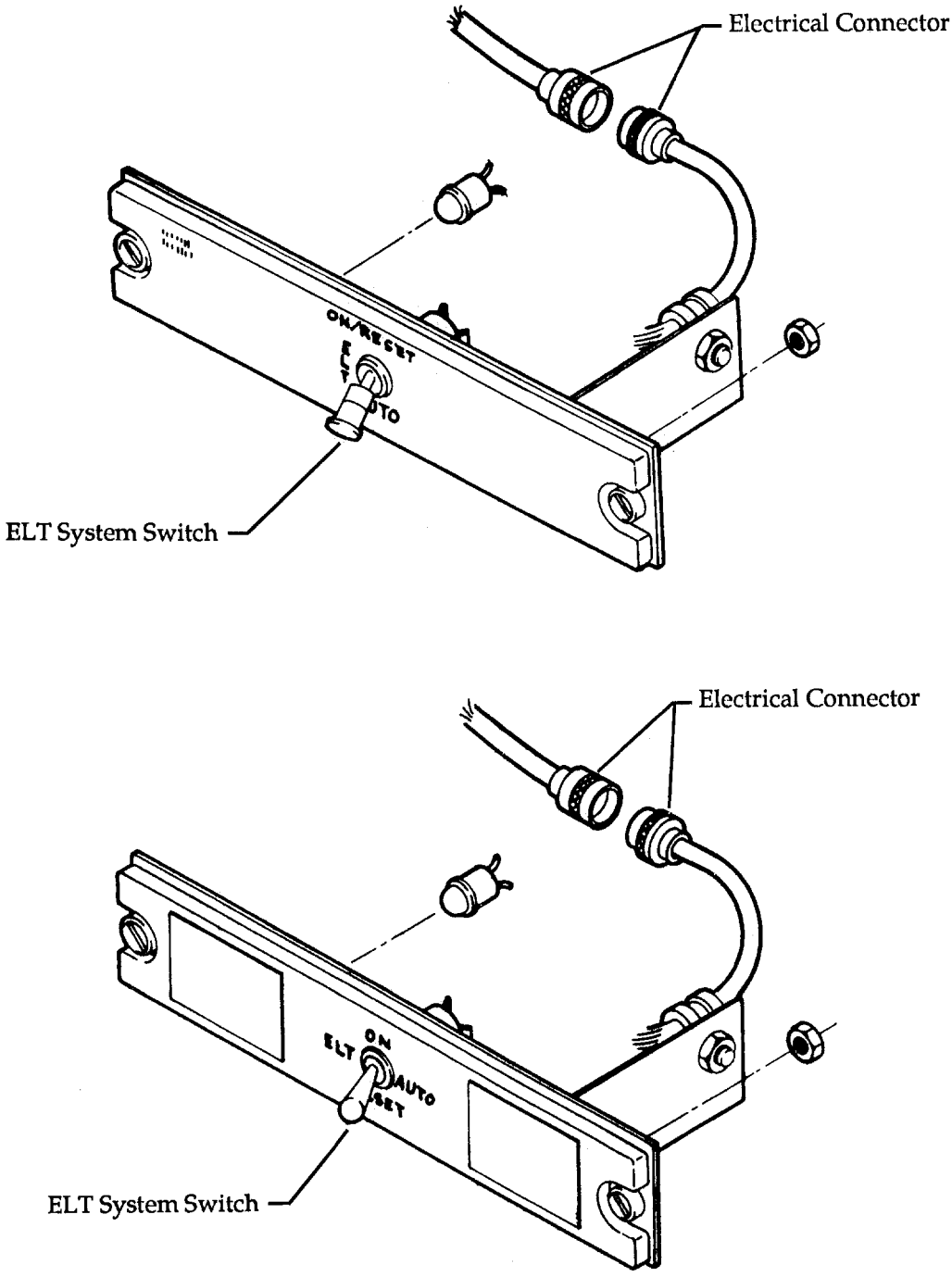
Detail A

Dorne Margolin System

Emergency Locator Transmitter Antenna Installation
Figure 201 (Sheet 2 of 2)

EMERGENCY LOCATOR TRANSMITTER PANEL OR SWITCH (REMOTE) - MAINTENANCE PRACTICES

1. **Removal/Installation**
   - A. Remove Remote Panel or Switch. (See figure 201.)
     - (1) Garrett and Dorne Margolin Systems
       - (a) Remove attaching parts from panel.
       - (b) Pull panel out so that electrical connectors are accessible.
       - (c) Disconnect electrical connectors and remove panel from aircraft.
     - (2) Pointer System
       - (a) Remove attaching parts from switch.
       - (b) Disconnect electrical connector and remove switch from aircraft.
   - B. Install Remote Panel or Switch. (See figure 201.)
     - (1) Garrett and Dorne Margolin Systems
       - (a) Connect electrical connectors to panel.
       - (b) Install panel and secure with attaching parts.
       - (c) Perform functional test of ELT system. (Refer to 25-63-00.)
     - (2) Pointer System
       - (a) Connect electrical connector to switch.
       - (b) Install switch and secure with attaching parts.
       - (c) Perform functional test of ELT system. (Refer to 25-63-00.)

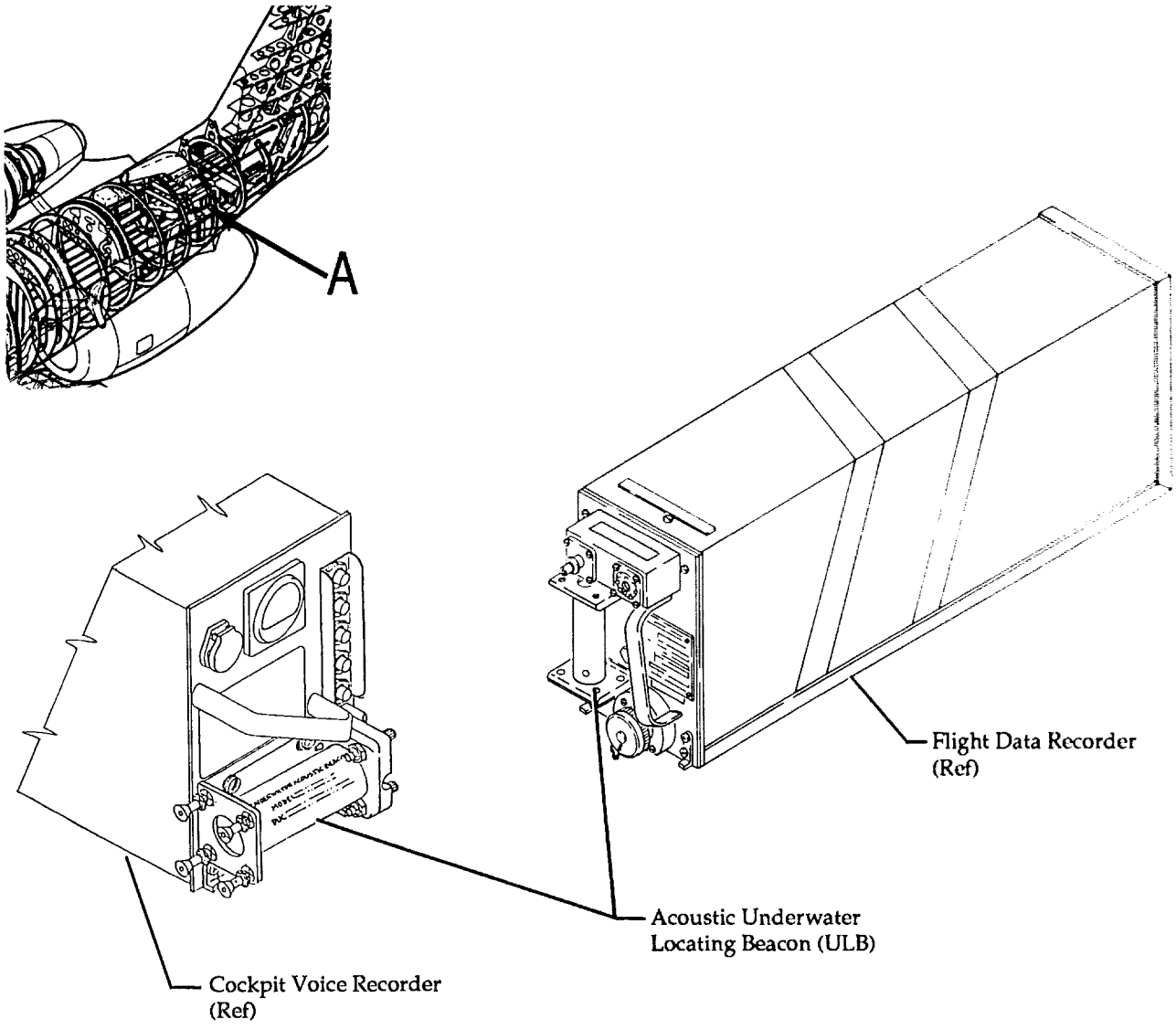


Emergency Locator Transmitter Panel or Switch (Remote) Installation
Figure 201

UNDERWATER LOCATING BEACON - DESCRIPTION AND OPERATION

1. **Description**
   A. The Dukane underwater locating beacon is mounted on the front panel of the flight data recorder and/or the cockpit voice recorder. It is powered by internal batteries and has no electrical connection to the aircraft. The underwater locating beacon is also referred to as an underwater acoustic beacon and operates in the ultrasonic frequency range of 35 to 45 kHz.

2. **Operation**
   A. The underwater acoustic beacon is activated automatically by a water sensitive switch located on the end of the beacon case.



Detail A

Underwater Locating Beacon Locator (Typical)
Figure 1

UNDERWATER LOCATING BEACON - MAINTENANCE PRACTICES

1. Removal/Installation

NOTE: The underwater locating beacon (ULB) is battery operated and is also referred to as an underwater acoustic beacon or underwater locator device.

A. Removal of Underwater Locating Beacon (See Figure 201.)
(1) Lower tailcone access door.

NOTE: The ULB is installed by a mounting cradle on the face plate of the flight data recorder and/or cockpit voice recorder. Assembly and disassembly of ULB may be performed with the flight data recorder/cockpit voice recorder installed or removed from its mounting tray.

(2) Remove attaching parts and cover plate from mounting cradle.
(3) Pull ULB from mounting cradle.

B. Installation of Underwater Locating Beacon (See Figure 201.)
(1) Slide beacon into mounting cradle with water sensitive switch facing down and rotate beacon so battery replacement date label can be read.
(2) Position cover plate on mounting cradle and secure with attaching parts.
(3) Perform Functional Test of Underwater Locating Beacon. (Refer to Adjustment/Test, this section.)

2. Adjustment/Test

A. Tools and Equipment

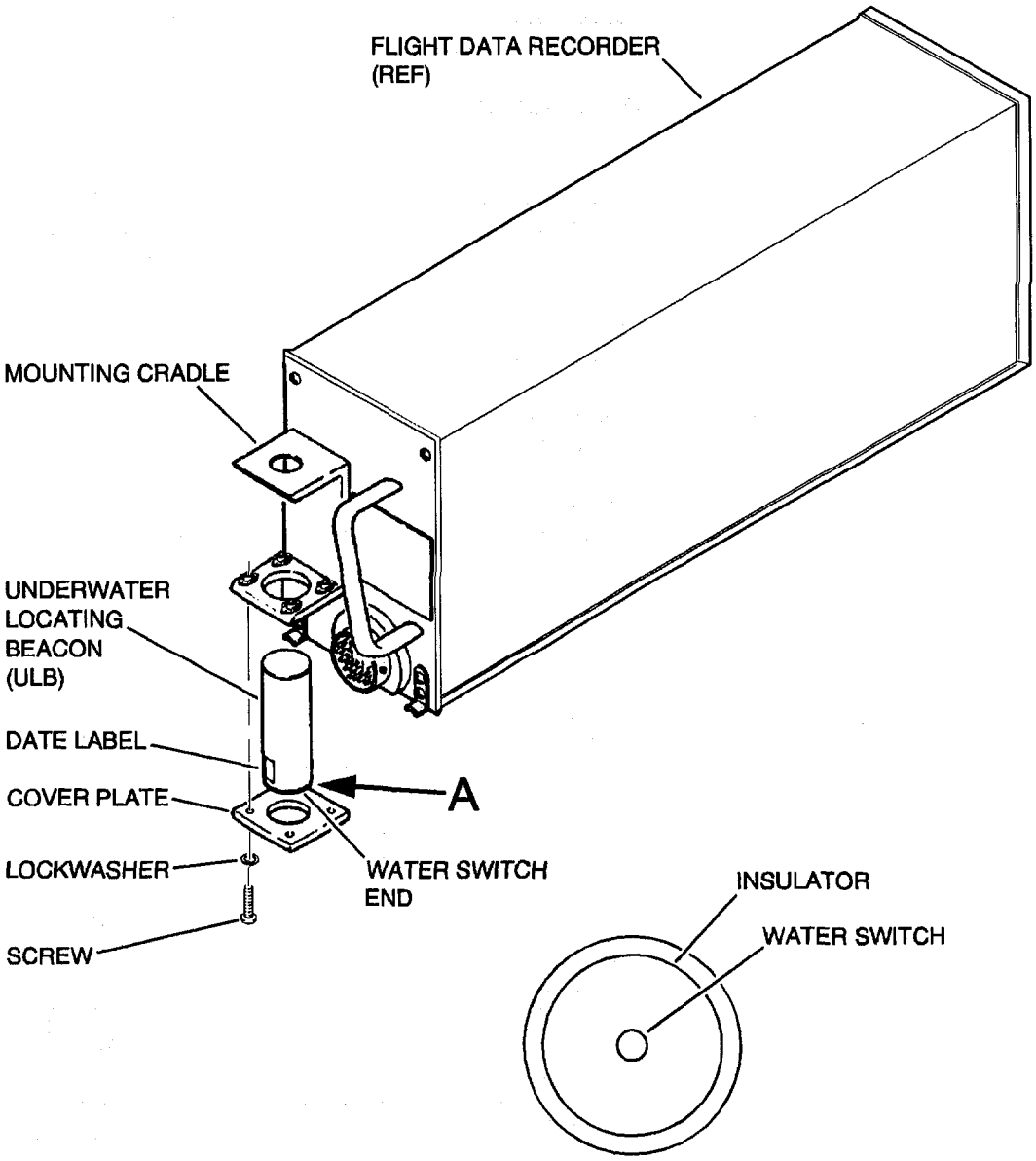
NOTE: Equivalent substitutes may be used in lieu of the following:

NAME	PART NUMBER	MANUFACTURER	USE
Ultrasonic Test Set	Model 42A12	Dukane Ultrasonics Division St. Charles, IL	Test ULB.
Pinglight Test Set	PL-1	Dukane Ultrasonics Division St. Charles, IL	Test ULB.
High Impedance Voltmeter (Input impedance of 10M ohms)		Commercially Available	Check battery voltage.
Electrical Wire		Commercially Available	Jumper for water switch.
Oscilloscope	Tektronix 425	Tektronix Beaverton, OR	Determine pulse duration.

B. Functional Test of Underwater Locating Beacon (See Figure 201.)

NOTE: Perform Functional Test of Underwater Locating Beacon in accordance with the current inspection interval specified in Chapter 5.

(1) Functional test using Dukane Model 42A12.
(a) Set INPUT SELECTOR Switch to INT position on Ultrasonic Test Set.



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10-54B-3

Underwater Locating Beacon Installation
Figure 201

EFFECTIVITY: AIRCRAFT EQUIPPED WITH UNDERWATER LOCATING BEACON

(b) Activate test set and check for operation by jingling a set of keys, coins or other available ultrasonic noise maker near test set microphone. Set TUNING CONTROL between 35 and 45 kHz.
(c) Establish temporary circuit across the beacon water switch by means of a flexible conductor (wire). Tune test set for best signal.
(d) Pulse duration can be determined by displaying output of test set on an oscilloscope.
(e) Approximate operating frequency may be determined by tuning Test Set to zero beat with acoustic signal and reading frequency off of dial setting.

NOTE: Results of the functional test with the beacon operating in air will be approximate compared to underwater operation. When operating in air, the acoustic loading on the beacon is less than when operating in water. This affects pulse repetition rate and pulse duration.

In general, operation in air will yield a slower pulse repetition rate and a longer pulse duration. A rapid or accelerating pulse rate usually indicates an expired battery.

Test results obtained with the beacon operating in a small vessel of water are meaningless due to the acoustic energy reflected by the walls of the vessel.

(f) Remove jumper wire across beacon water switch.

(2) Functional test using PL-1 Pinglite Test Set.
(a) Establish temporary circuit across beacon water switch by means of a flexible conductor (wire).
(b) Press end of PL-1 test set against the beacon body approximately one (1) inch from water switch end.
(c) Depress and hold operation button on PL-1 test set. Test set light will flash with each pulse of beacon. An initial flash indicates PL-1 test set is operating.
(d) Remove jumper wire from beacon water switch.

B. Battery Test

NOTE: Perform Battery Test in accordance with the current inspection interval specified in Chapter 5.

(1) Clean water switch. (Refer to Cleaning/Painting, this section.) The switch must be clean and dry before testing the battery.

WARNING: DO NOT REMOVE BATTERY FROM DK100 BEACON. FAILURE TO OBSERVE THIS WARNING COULD RESULT IN THE RELEASE OF HAZARDOUS CHEMICALS.

(2) Using a high impedance voltmeter, place negative lead on water switch pin and positive lead on beacon case or mounting cradle.
(3) Check measured voltage per battery code on battery label. Battery code A shall measure 3.55 vdc minimum. Battery label without a code shall measure 7.10 vdc minimum.
(4) If battery voltage is below acceptable level, the underwater locating beacon shall be replaced.

3. Cleaning/Painting

A. Clean Dukane Underwater Locating Beacon Water Switch (See Figure 201.)

NOTE: Clean water switch in accordance with the current inspection interval specified in Chapter 5.

Water switch and insulator shall be cleaned between intervals anytime dirt or dust is evident.

(1) Tools and Equipment

NOTE: Equivalent substitutes may be used in lieu of the following:

NAME	PART NUMBER	MANUFACTURER	USE
Mild Soap Solution		Commercially Available	Clean water switch.
Soft Cloth		Commercially Available	Clean water switch.

(2) Clean the water sensitive switch with soft cloth and mild detergent.
(3) Check battery replacement date when cleaning water sensitive switch.

FUSELAGE INSULATION - DESCRIPTION AND OPERATION

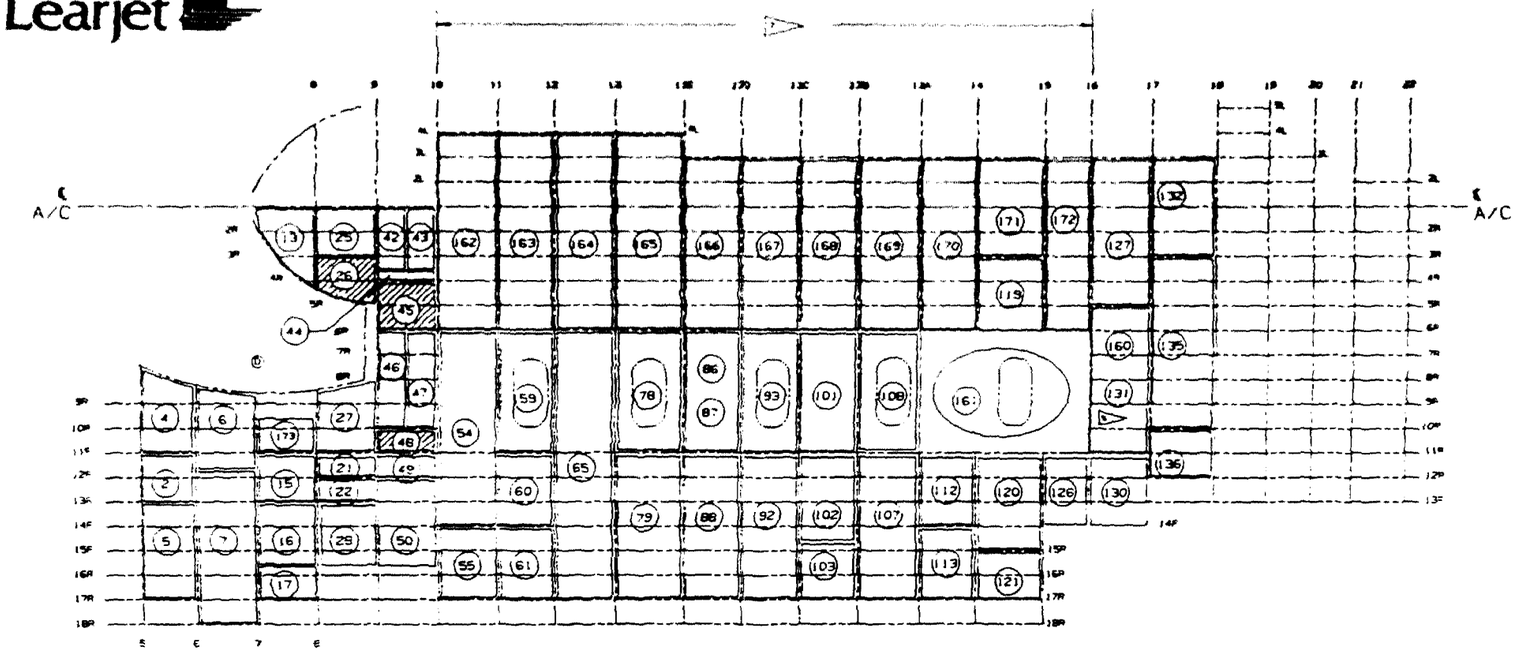
1. DESCRIPTION

A. Insulation batting is manufactured oversized so that it holds itself in place when installed. Insulation padding beneath the floorboards is secured using SJ-5816 foam tape (mfd. by 3M Co.).

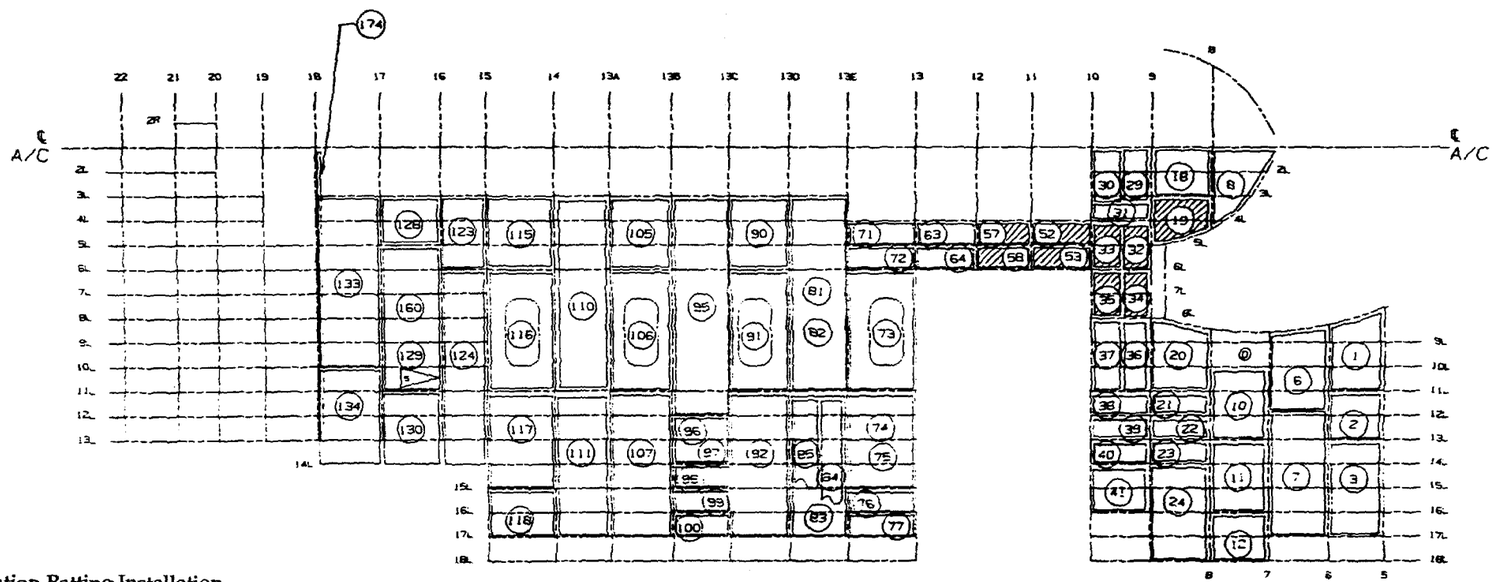
B. The aft baggage compartment floor is covered by Insolite, type M (mfd. by Uniroyal Co., Mishawaka, IN), which has a pressure-sensitive adhesive on one side.

C. On *Aircraft 35-612*, the divan floor is covered with GP2 Soundfoam (mfd. by E.N. Murray, Denver, CO). On *Aircraft 35-639 and Subsequent and 36-058 and Subsequent*, the divan floor is covered with SD40-125 foam (mfd. by E.A.R. Division of Cabbot Corp., Indianapolis, IN) which has a pressure-sensitive adhesive on one side.

1. REMOVAL/INSTALLATION
   A. Fuselage insulation batting is installed in accordance with figure 201.
   B. Floorboard padding insulation is installed in accordance with figure 202.



View Looking Outboard at RH Side



View Looking Outboard at LH Side

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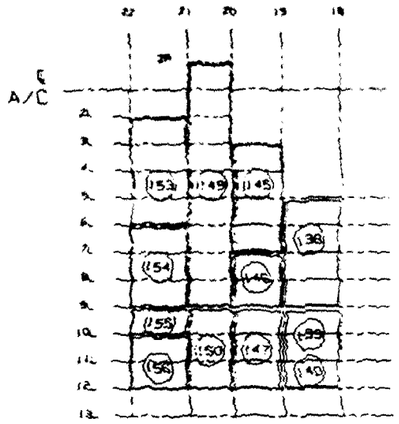
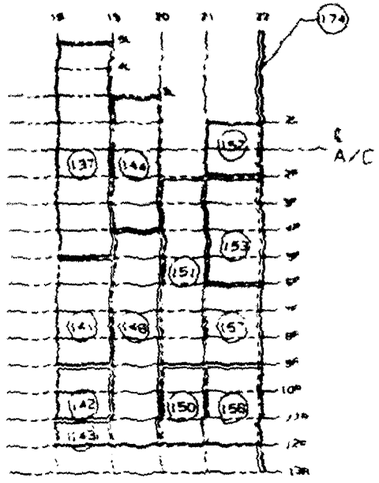
Insulation Batting Installation
Figure 201 (Sheet 1 of 2)

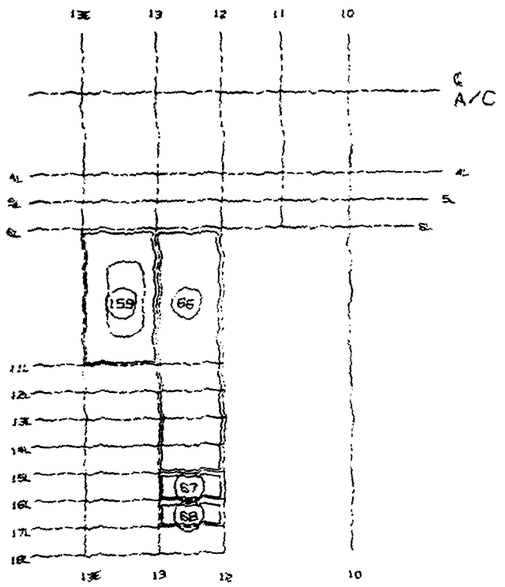


View Looking Outboard at LH Side

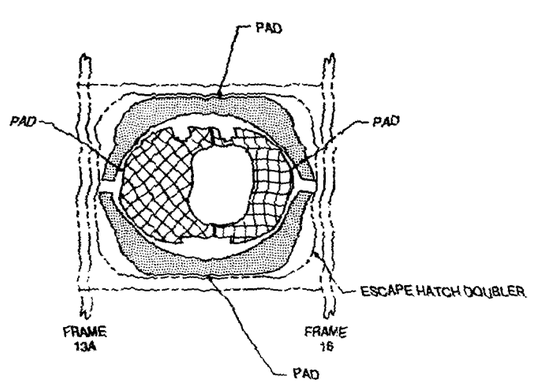


View Looking Outboard at RH Side

Effective on Aircraft 35-612, 35-639 and Subsequent



View Looking Outboard at LH Side



NOTE: Identify pad and its location before removal.

View Looking Outboard at RH Side

NOTES:

1. Insulation bags are located in the aircraft according to the following procedure:

   a. Location index number on each bag indicates frame, stringer, and left or right side of aircraft. Number 5-8L, for example, indicates frame 5, stringer 8, and left side of aircraft. Location is aft of the frame and below the stringer indicated.

   b. Bags stamped with locating index "C" overlap top center. Install these bags beginning from the right side of the aircraft and on the upper side of the stringer indicated.

2. Bags with a location index not specifying "L" or "R" are applicable to either side of the fuselage.

3. Where two bags are used in the same location, one bag is located outboard and one bag is located inboard of system components in the area.

4. Install bags in shaded areas (////////) prior to closing the area and installing inner skin.

5. These bags are required with aft windows.

6. Symbol (XX) denotes insulation bag. Reference numbers within circles are not used for the purposes of this illustration.

7. From cockpit to forward of baggage area, install bagged batting above equipment and plumbing next to skin.

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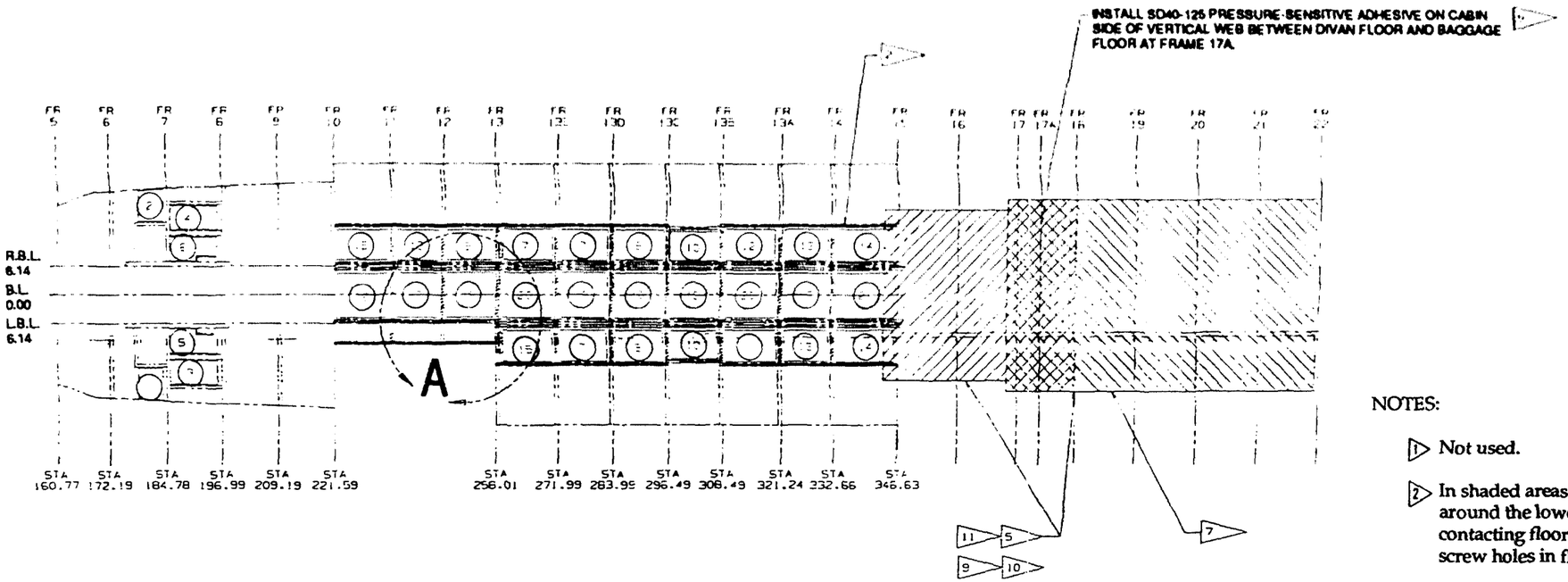
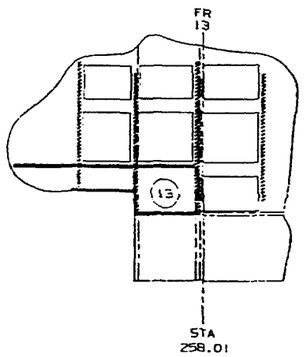
Insulation Batting Installation
Figure 201 (Sheet 2 of 2)





Detail A

2619470

Floorboard Padding Installation
Figure 202

NOTES:

1. Not used.
2. In shaded areas (////////), install self-adhesive foam tape around the lower surface edge of floorboards and in areas contacting floor structure. Punch holes in tape to match screw holes in floorboards.
3. Install self-adhesive foam insulation to lower surface of floorboards. Ensure that part numbers are visible on installation. Trim insulation to clear interfering structure or aircraft components.
4. Symbol (XX) denotes insulation bag. Reference numbers within circles are not used for the purposes of this illustration.
5. Install GP2 Soundfoam on upper surface of divan floor.
6. Not used.
7. Install Insolite foam, type M, on aft baggage floor.
8. Not used.
9. Effective on Aircraft 35-639 and Subsequent, 36-058 and Subsequent.
10. Install SD40-125 pressure-sensitive adhesive foam on upper surface of divan floor.
11. Effective on Aircraft 35-612.