

AIRFRAME

DESCRIPTION

The fuselage section consists of the cabin section and the tail boom. The cabin section consists of the crew compartment, passenger/cargo area, transmission mount, engine deck, and fuel tanks. The passenger/cargo doors and the crew doors have transparent plastic windows at the top. Transparent plastic windows are also provided in the cabin roof above the crew compartment. Two additional windows are located forward and below the tail rotor control pedals.

WINDSHIELDS

Windshields are made of transparent plastic. They are set in weather-tight sealer, and are mounted to the cabin structure with dural screws, washers, and nuts.

CREW DOORS

Access to the crew compartment is gained through two swing-out doors hinged on the forward side. Each door incorporates three transparent plastic windows, which may be termed the forward, upper and adjustable windows. A latch assembly, which may be operated from either side of each door, secures the door in the closed position. In an emergency, doors may be jettisoned by pulling EMERGENCY RELEASE handle on inside of each door.

HINGED PANEL DOOR

The hinged panel just ahead of the sliding door provides a wider opening for cargo loading.

PASSENGER/CARGO DOORS

The large sliding door on each side of the helicopter provides access to the passenger/cargo area. Each sliding door has a latch for the closed position, and two windows which can be jettisoned are used as emergency escape hatches. The door can be secured in the open position by a retractable stop located on the rear bulkhead of cabin.

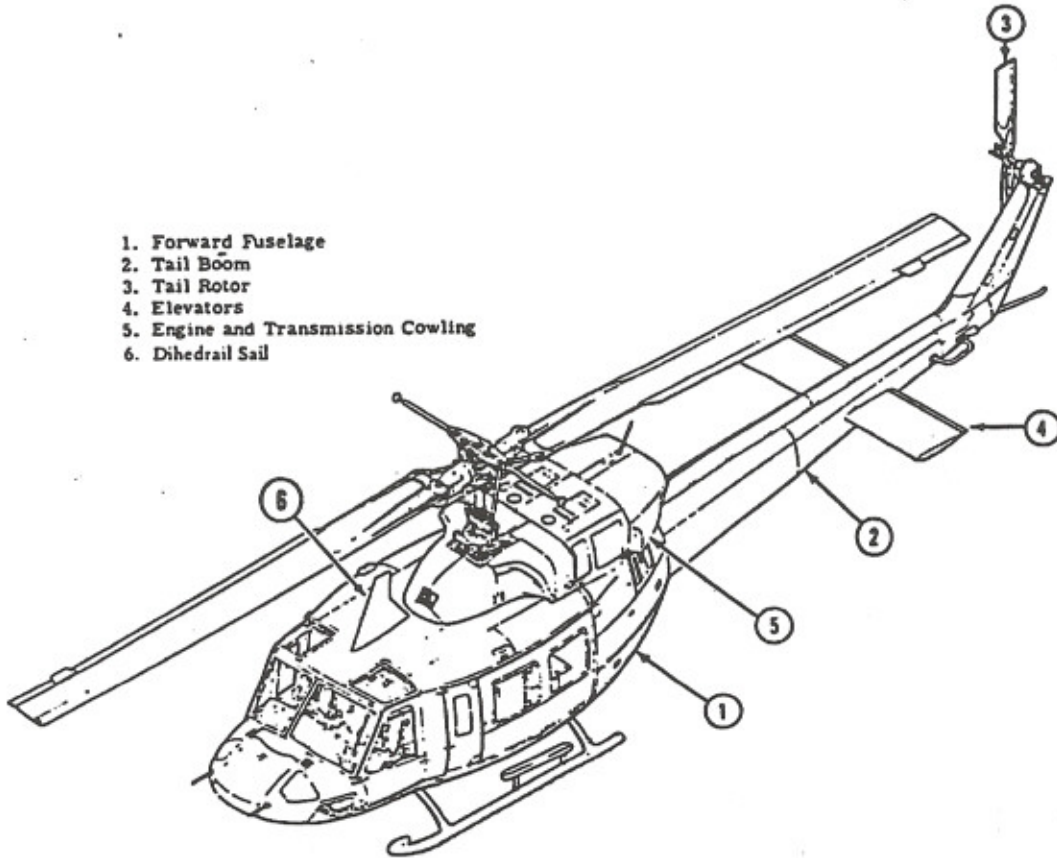
POWERPLANT COWLING

The powerplant and air management systems are enclosed by the powerplant cowling. It consists of air inlet cowlings, top panels, upper and lower engine cowls, combining gearbox top panels, combining gearbox side panels, and an oil cooler fairing.

TRANSMISSION COWLING

A one-piece cowling covering the front and sides of the upper transmission area, is secured by two latches and two hinge assemblies. For access, the unlatched fairing can be hinged forward.

1. Forward Fuselage
2. Tail Boom
3. Tail Rotor
4. Elevators
5. Engine and Transmission Cowling
6. Dihedral Sail



Model 212 Helicopter

DIHEDRAL SAIL

The dihedral sail is a vertical aerodynamic fin, 6 square feet in area, mounted on the top of the cabin roof forward of the mast. This sail provides positive dihedral stability so that when the helicopter is yawed it will roll and turn in the direction of the yaw. This permits the pilot to execute coordinated turns, and the helicopter will exhibit the equivalent handling characteristics of present fixed-wing aircraft.

DRIVESHAFT COVERS

The tail rotor driveshafting and 42° gearbox is enclosed by four covers. Two dust covers protect the driveshafts on the tail boom, a cover assembly protects the 42° gear box, and a dust cover protects the drive shaft on the vertical fin. The dust covers are hinged along the right hand side and are secured in place by fasteners.

TAIL BOOM

The tail boom includes the synchronized elevator. Four special high tension bolts attach the tail boom to the forward fuselage.

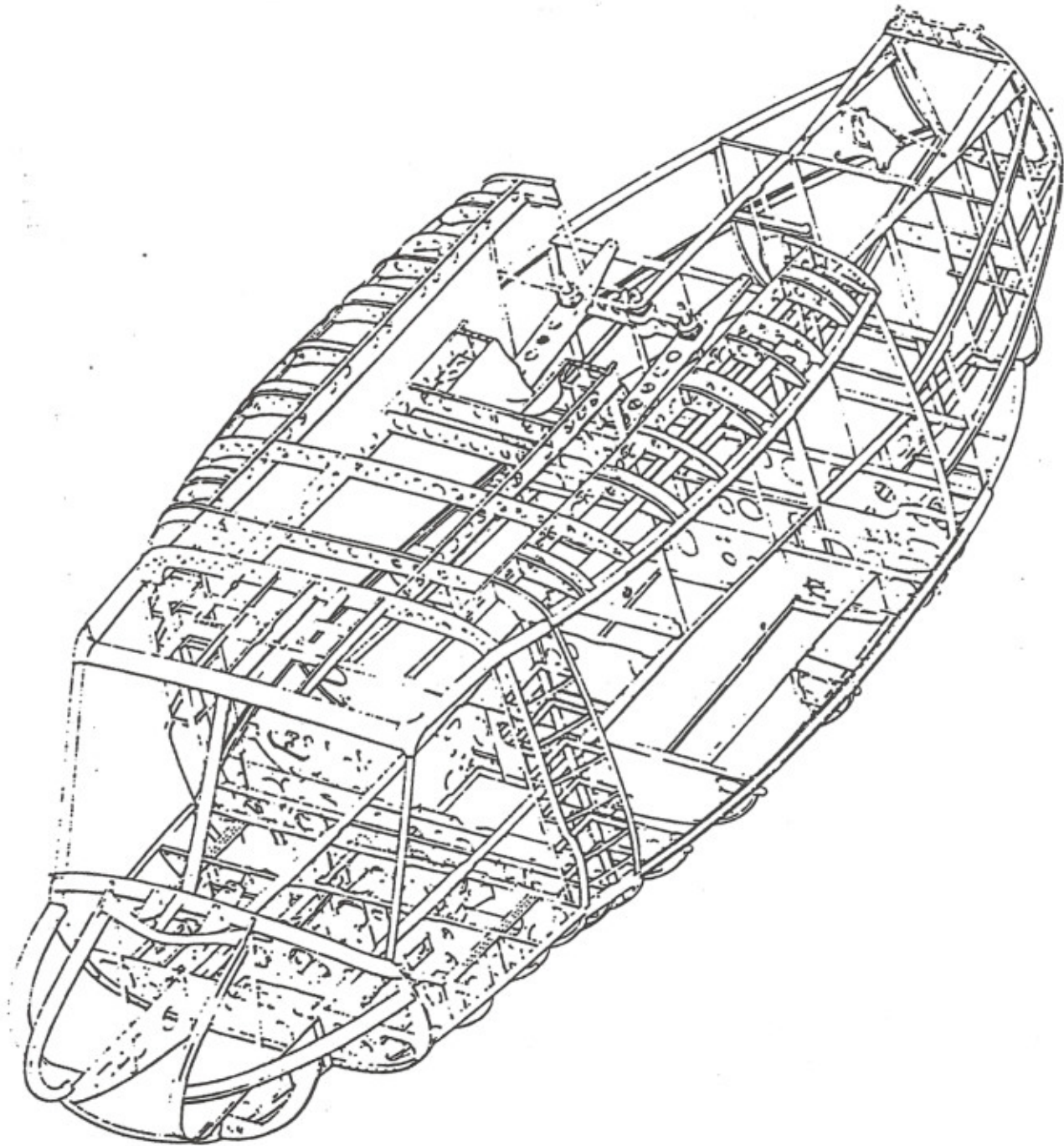
TAIL SKID

A tubular steel tail skid is attached on lower aft section of tail boom. The purpose of the tail skid is to warn the pilot of a tail-low attitude when landing.

LANDING GEAR

The landing gear is constructed of formed aluminum alloy tubes, consisting of two skids attached on ends of two arched cross tubes which are secured to fuselage structure by four padded caps. Each skid tube is fitted with a forward end step, a two-ring fitting, two saddles with sockets for cross tubes, a two-piece shoe along bottom, a rear end cap, and two eyebolt fittings for mounting of ground handling wheel assemblies.

Notes



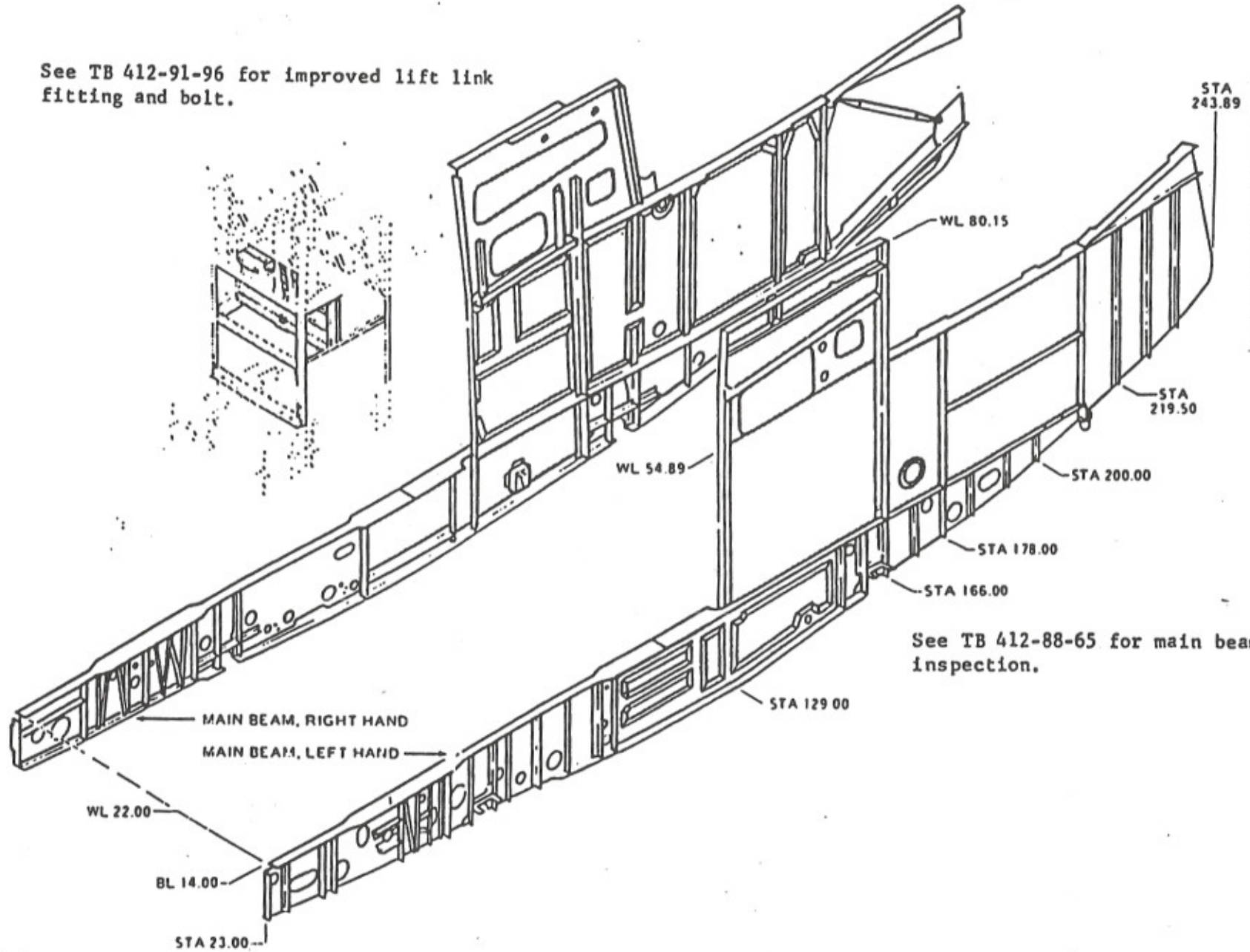
Forward Section

FORWARD FUSELAGE STRUCTURE

The primary structure is the two main beams supporting the nose section on the forward end, tailboom on the aft end, landing gear below, and the pylon and engine deck above. The main beams with the transverse bulkheads make up the supporting structure for the cabin floor.

Bell

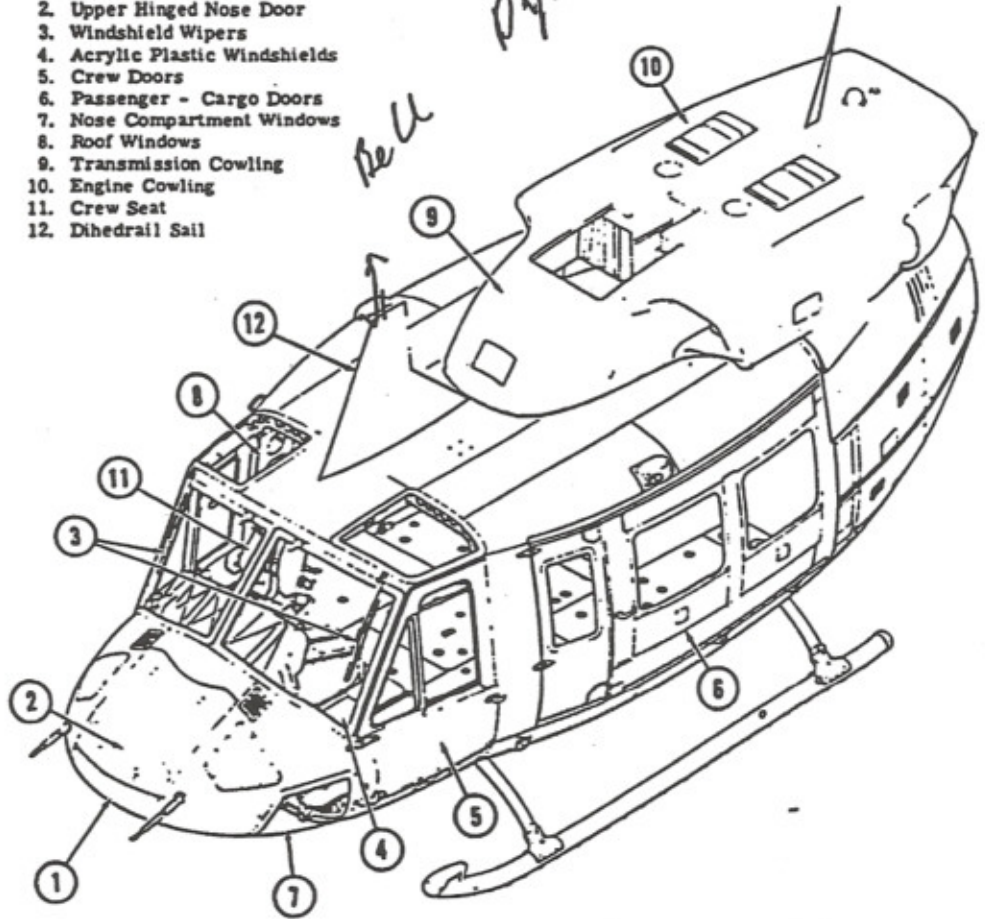
See TB 412-91-96 for improved lift link fitting and bolt.



MAIN BEAMS AND LIFT BEAM

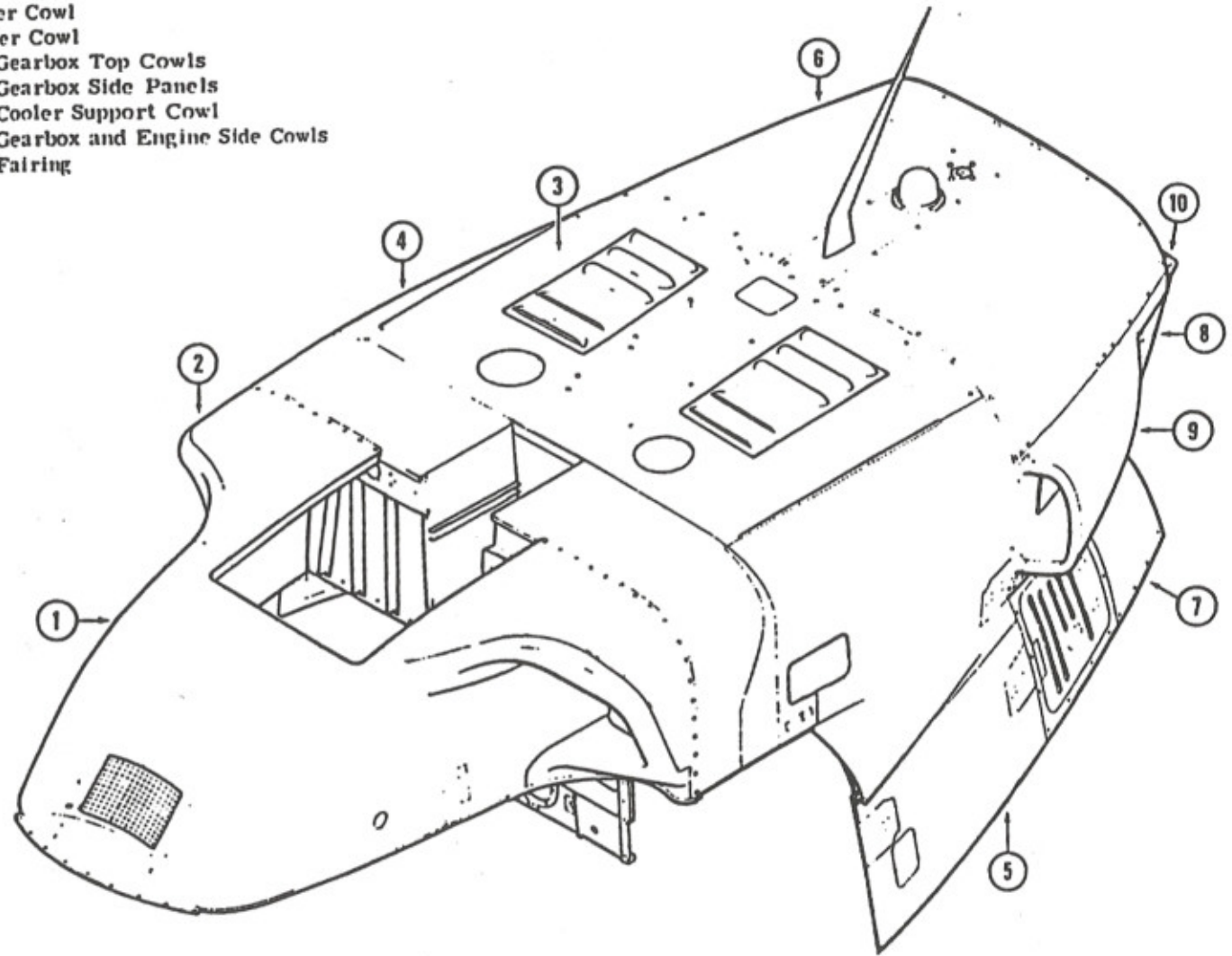
See TB 412-88-65 for main beam cap inspection.

1. Lower Hinged Nose Door
2. Upper Hinged Nose Door
3. Windshield Wipers
4. Acrylic Plastic Windshields
5. Crew Doors
6. Passenger - Cargo Doors
7. Nose Compartment Windows
8. Roof Windows
9. Transmission Cowling
10. Engine Cowling
11. Crew Seat
12. Dihedral Sail



Forward Fuselage Section

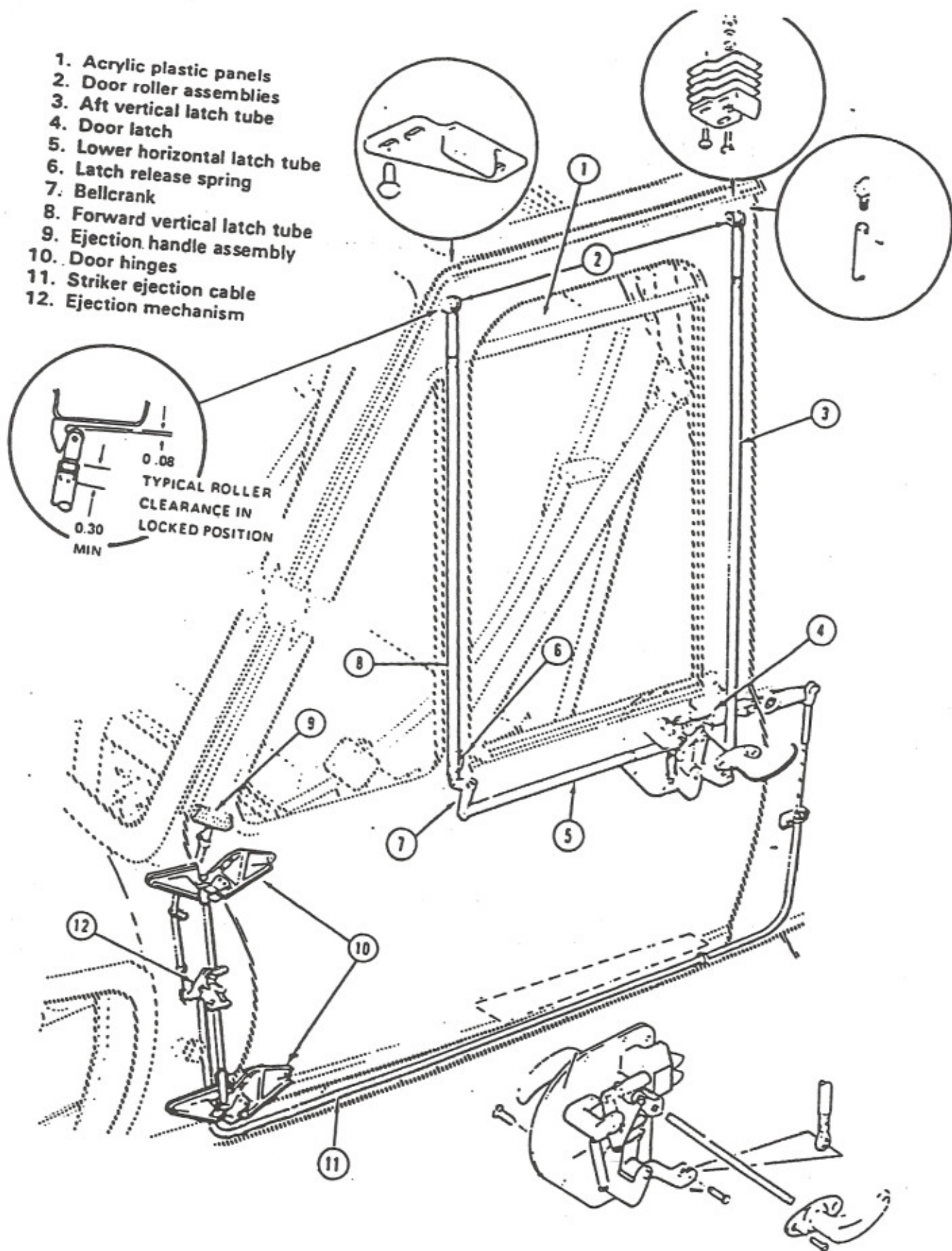
1. Transmission Fairing Assembly
2. Engine Air Inlet Fairings
3. Engine Cowl Top Panel
4. Engine Upper Cowl
5. Engine Lower Cowl
6. Combining Gearbox Top Cows
7. Combining Gearbox Side Panels
8. Engine Oil Cooler Support Cowl
9. Combining Gearbox and Engine Side Cowls
10. Oil Cooler Fairing



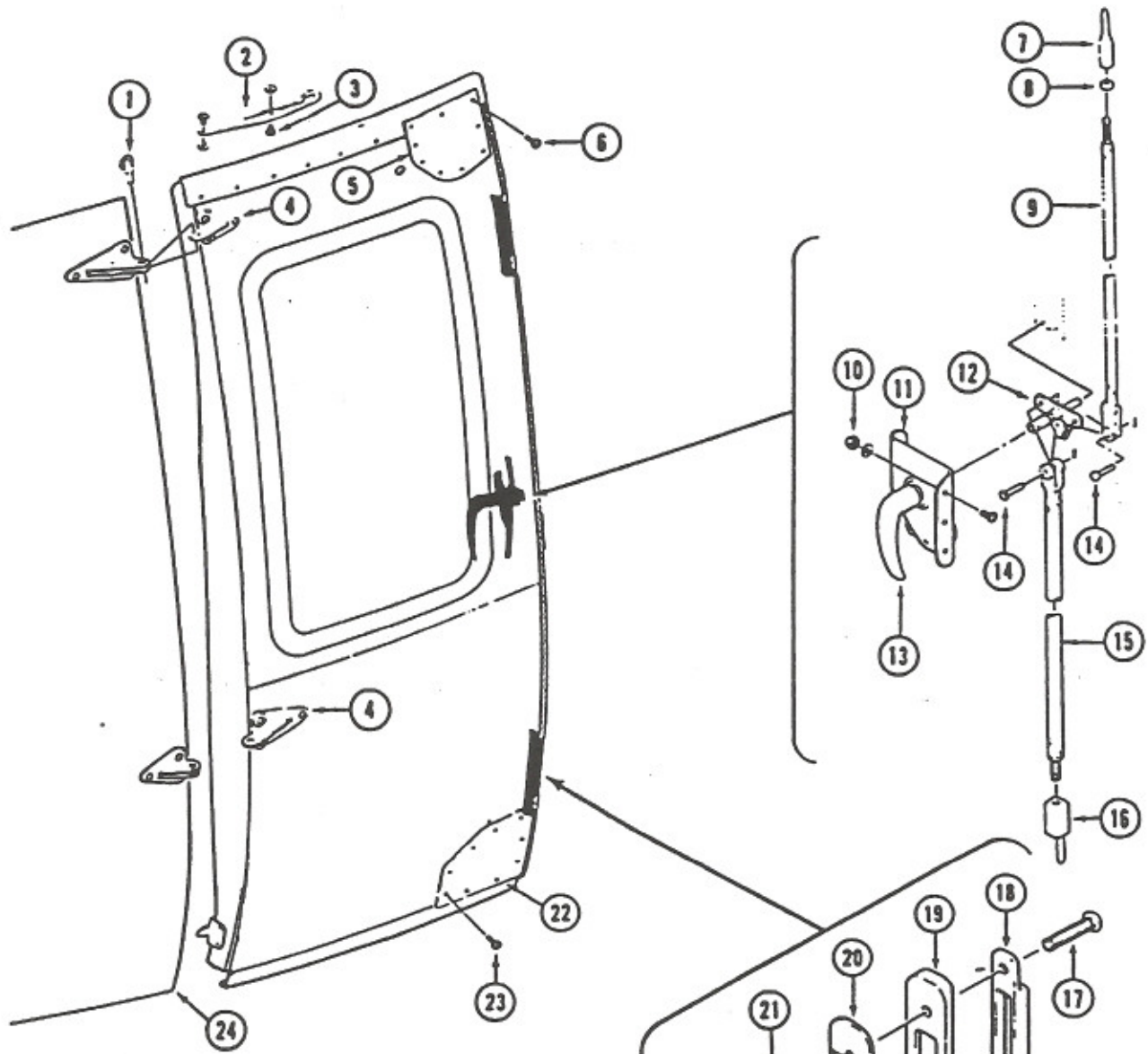
Transmission and Engine Cowling

CREW DOOR

1. Acrylic plastic panels
2. Door roller assemblies
3. Aft vertical latch tube
4. Door latch
5. Lower horizontal latch tube
6. Latch release spring
7. Bellcrank
8. Forward vertical latch tube
9. Ejection handle assembly
10. Door hinges
11. Striker ejection cable
12. Ejection mechanism



HINGED PANEL



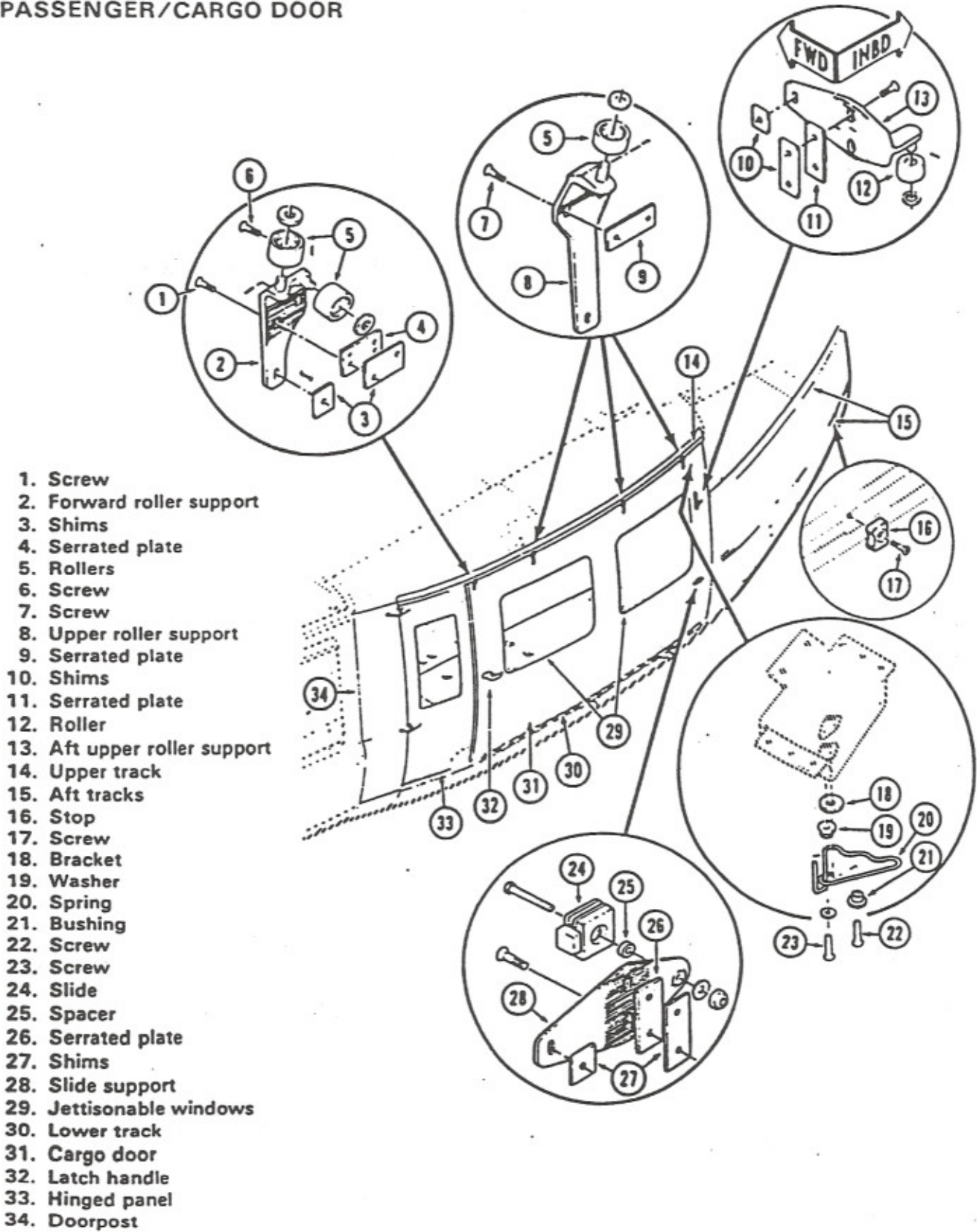
- | | |
|-----------------------|-------------------|
| 1. Quick Release Pin | 13. Handle |
| 2. Positioning Spring | 14. Pin |
| 3. Pivot | 15. Tube |
| 4. Hinge | 16. Pin |
| 5. Cover | 17. Screw |
| 6. Screw | 18. Striker Guide |
| 7. Pin | 19. Shim |
| 8. Nut | 20. Plate |
| 9. Tube | 21. Striker |
| 10. Nut | 22. Cover |
| 11. Escutcheon | 23. Screw |
| 12. Spindle Assembly | 24. Door Post |

HINGED PANEL

A hinged panel just forward of each sliding door opens outward and forward to increase the total width of the opening by 18 inches. Each hinged panel has a small acrylic plastic window.

Bell

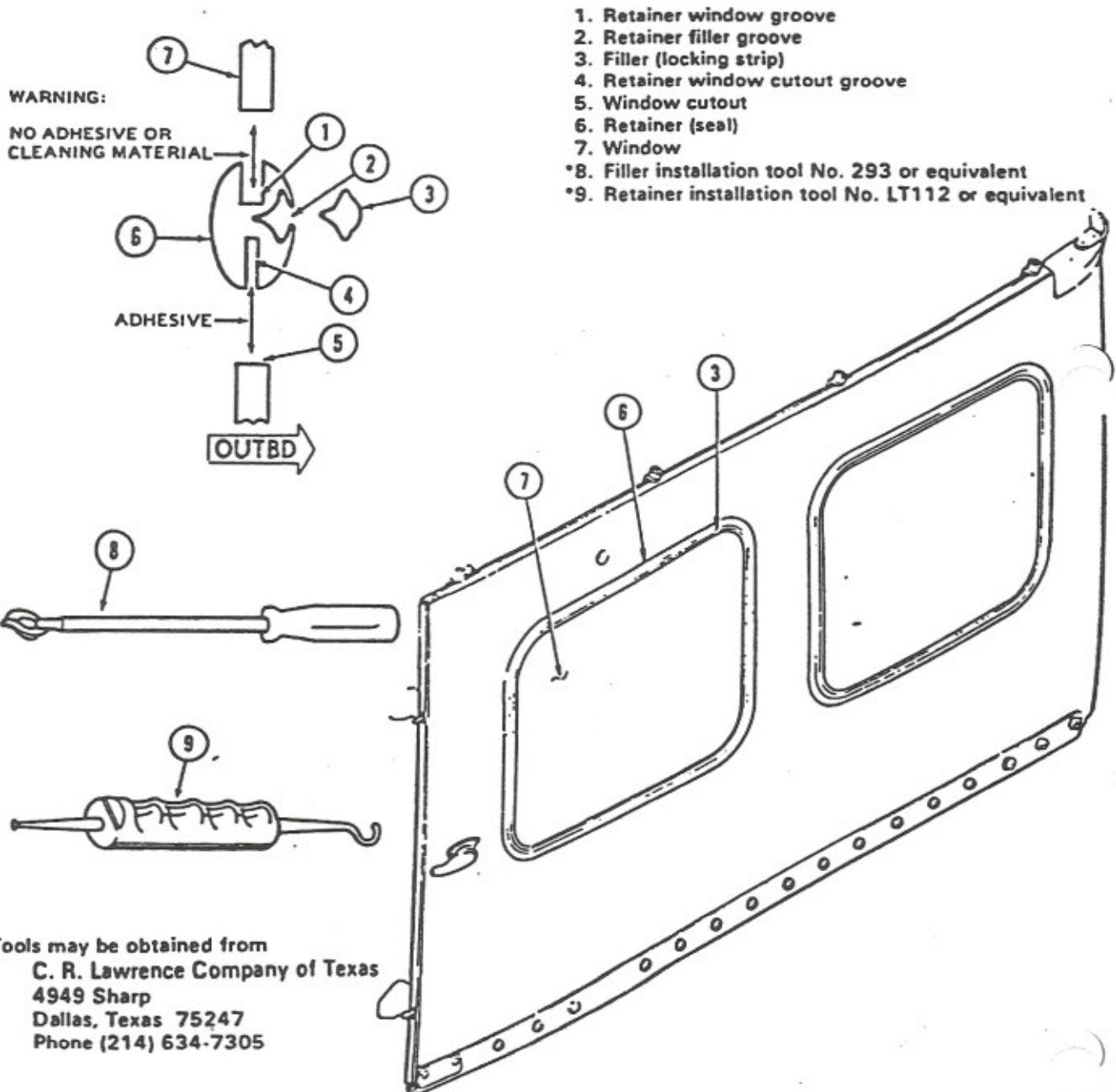
PASSENGER/CARGO DOOR

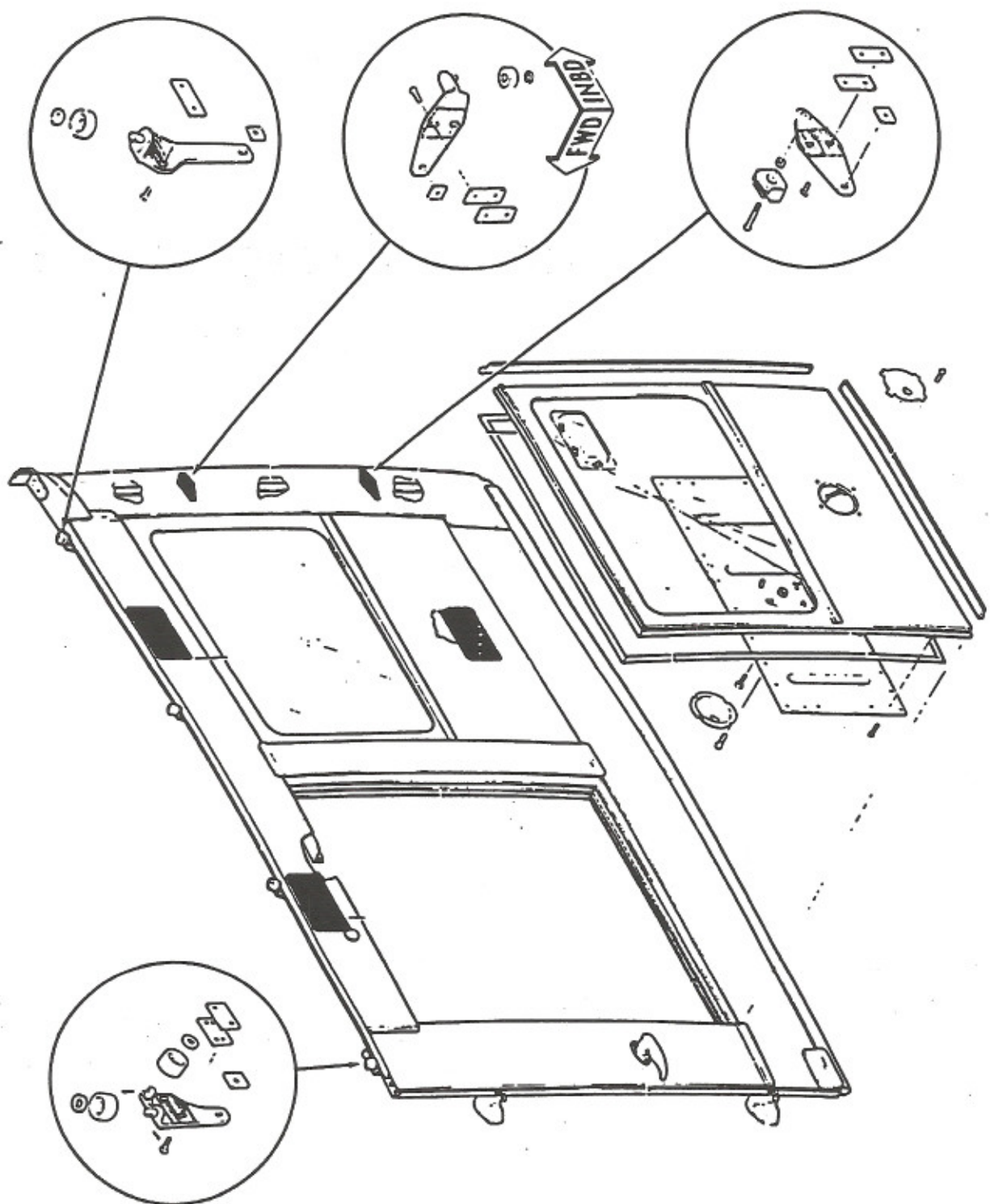


PASSENGER/CARGO DOOR

The larger sliding door on each side of the forward fuselage provides access to the passenger/cargo compartment. Each door can be secured in the open or closed position. The two acrylic plastic windows in each door are jettisonable from either the inside or outside by applying hand pressure to clearly marked spots on either sides of the window.

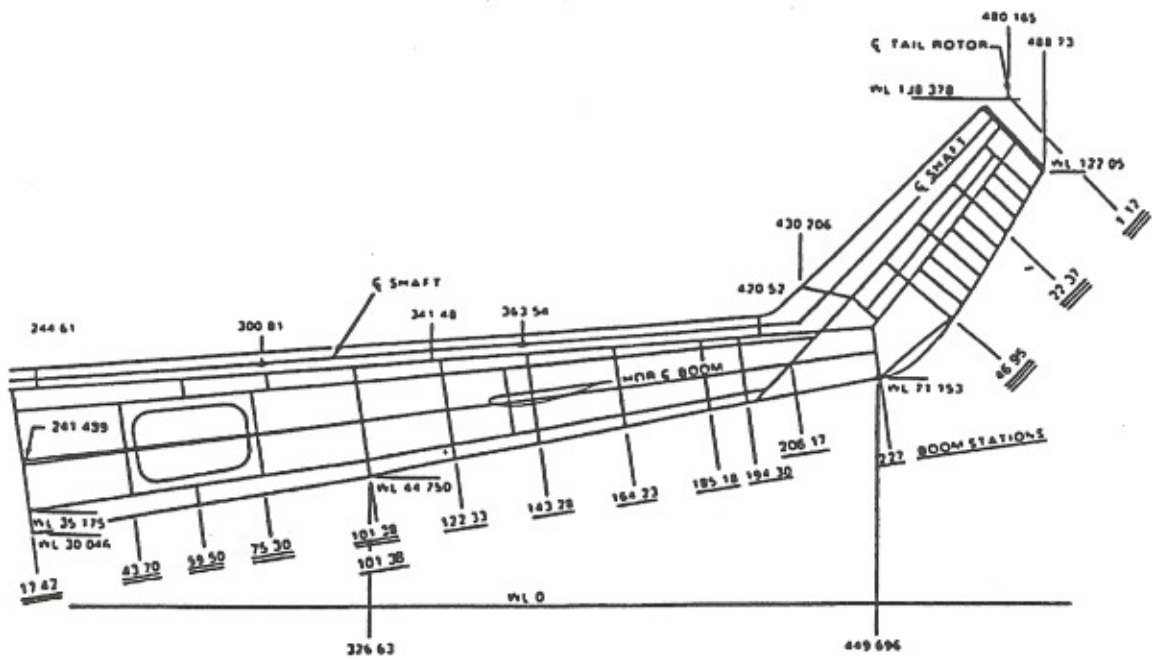
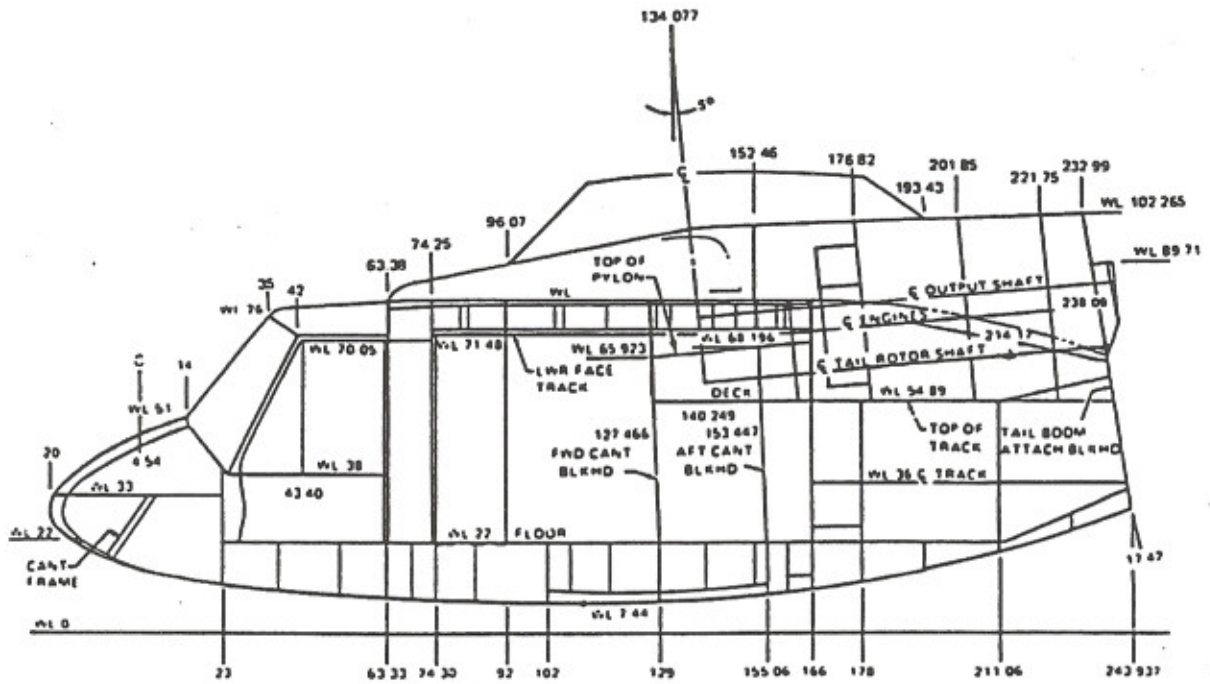
PASSENGER/CARGO DOOR





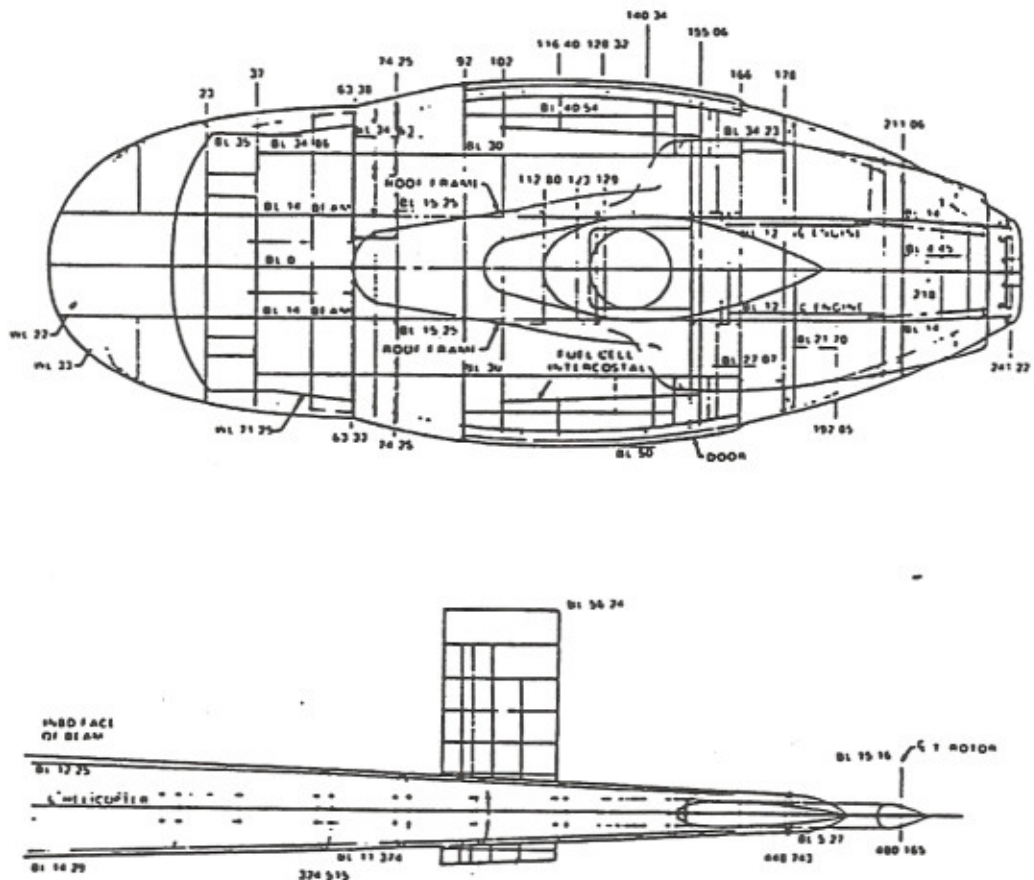
Passenger/Cargo Door Assembly

STATION DIAGRAM



STATION DIAGRAM

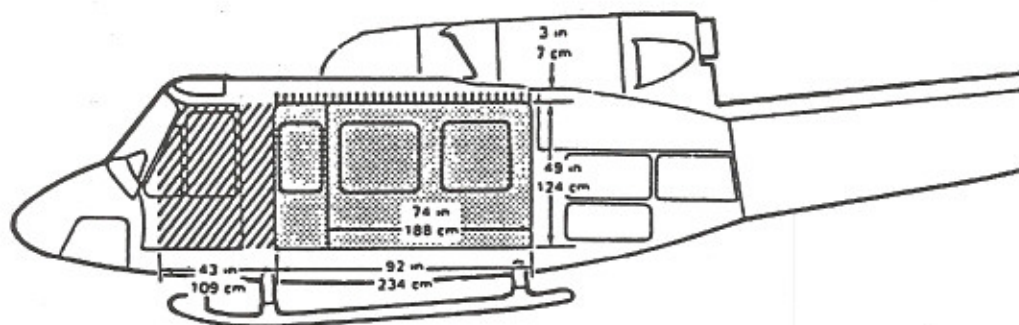
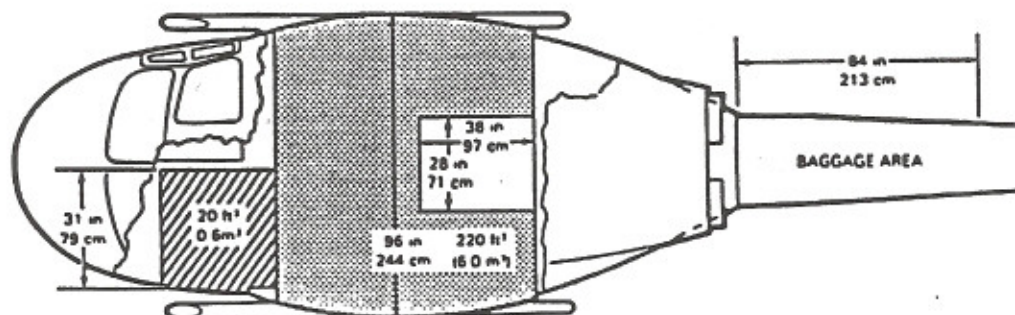
This diagram includes fuselage stations, water lines, and butt lines used to locate specific points on the airframe. This information is utilized in weight and balance, component location, and repair or replacement of airframe structure parts. All numbers are in inches, fuselage stations numbers begin at station number zero, called the reference datum line, and run vertically thru the fuselage. Station numbers forward of the reference datum line are minus numbers and numbers aft of the datum line are plus numbers. Water lines begin below the fuselage and run horizontally thru the fuselage numbered from bottom to top. Butt lines begin at the center line of the fuselage and run left and right of the center line in a horizontal plane. Butt lines right are plus numbers and butt lines left are minus numbers.






XX.XX BOOM STATION
XX.XX BAGGAGE COMPARTMENT STATION
XX.XX FIN STATION

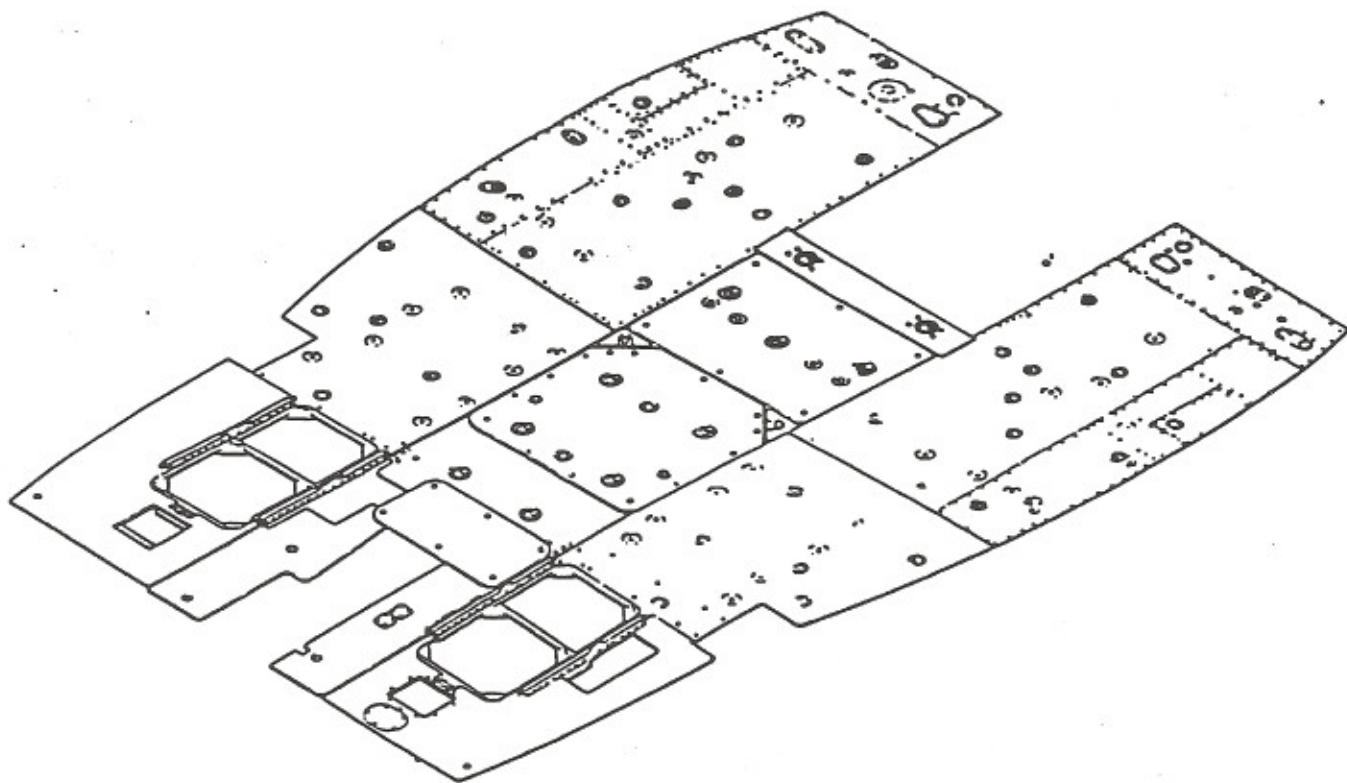
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PASSENGER/CARGO COMPARTMENT



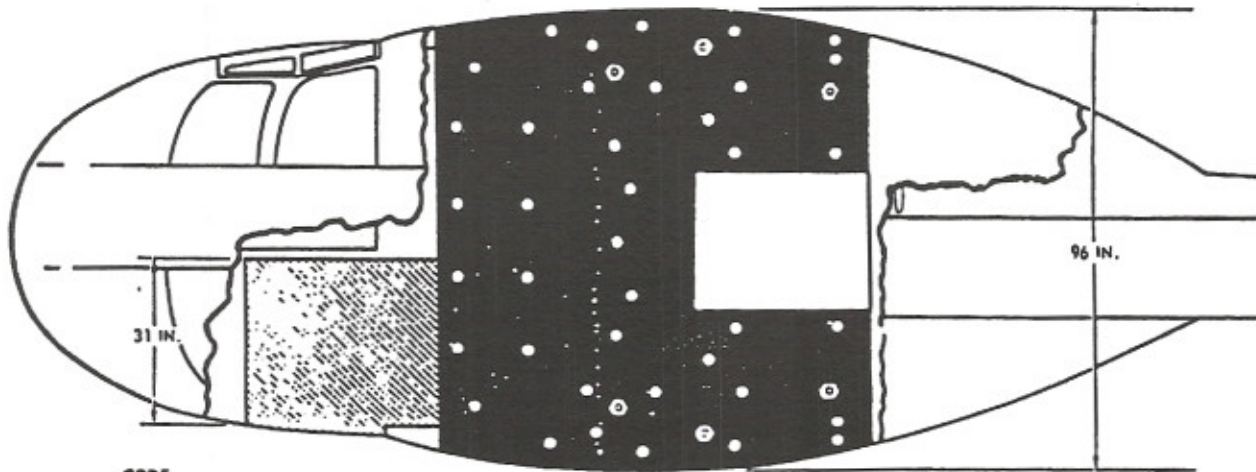
-  OPTIONAL LOADING AREA, LEFT SEAT REMOVED
-  CARGO AREA
-  INTERIOR CLEARANCE ABOVE MAX. PACKAGE A CENTER LINE OF CABIN

CARGO TIEDOWN



Tiedown fittings, strength 1250 lb. vertical, 500 lb. horizontal load per fitting, 1350 lb. at an angle of 22° from vertical.

Max. floor loading — 100 lbs. per sq. foot.

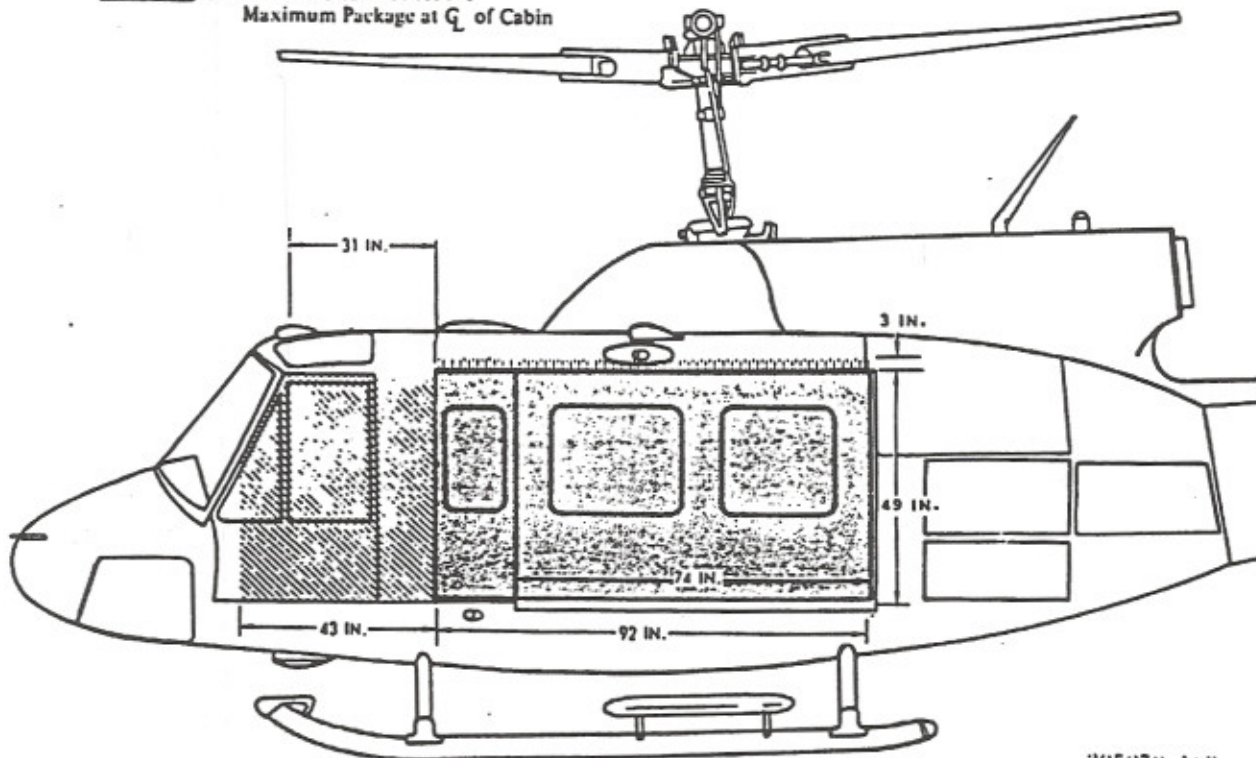


CODE

- 1. Tie-down Fittings
- ⊙ 2. Stanchion Fittings
- ▭ 3. Cargo Area, Maximum Loading Dimensions
- ▨ 4. Optional Loading Area, Left Seat Removed
- ▩ 5. Interior Clearance Above Maximum Package at Q_c of Cabin

NOTES:

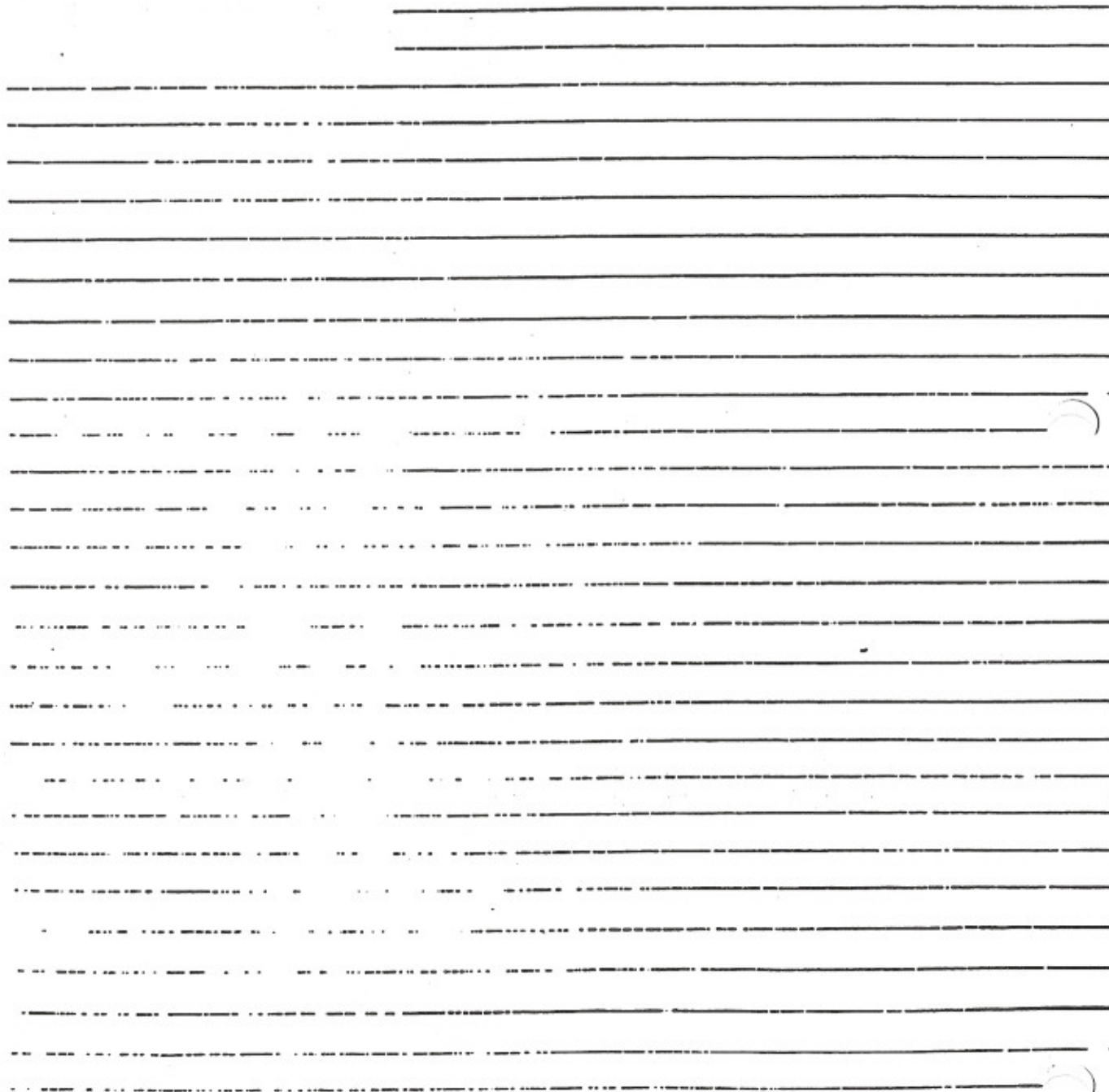
Tie-down fittings, strength 1250 lb. vertical, 500 lb. horizontal load per fitting, 1350 lb. at an angle of 22° from vertical.



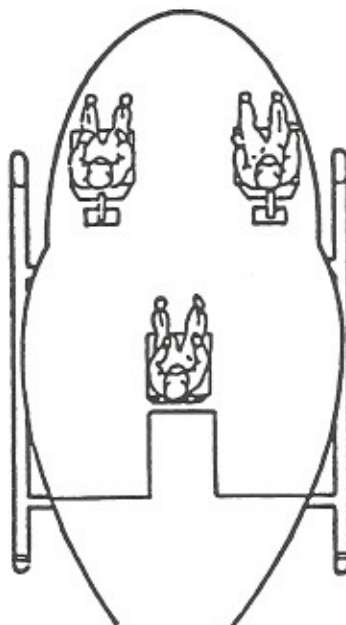
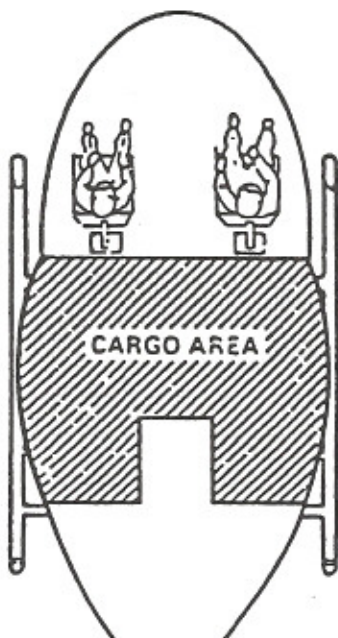
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PASSENGER/CARGO COMPARTMENT

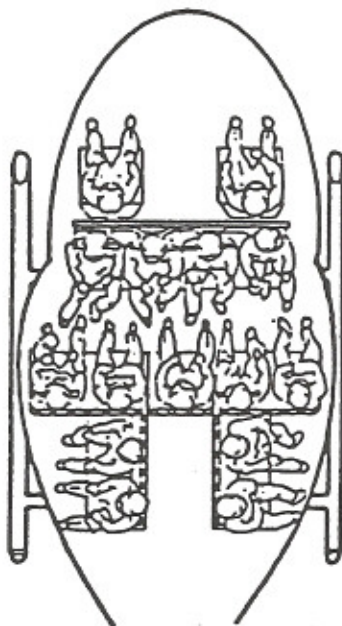
The cabin floors and aft bulkheads are equipped with fittings that serve as attachment points for seat, tie-down rings, litter and internal hoist. Tie-downs are standard equipment in the floor. The points at which they are located are shown in the cargo loading sketch.



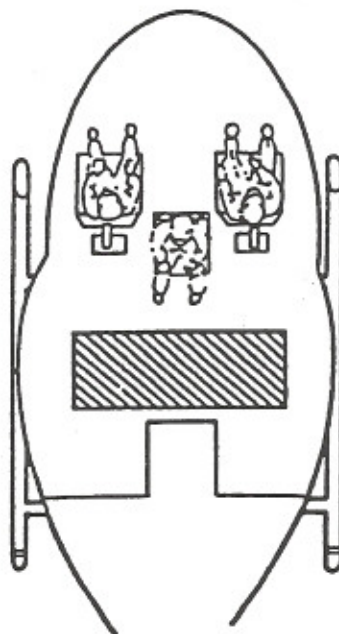
COMPARTMENT DIAGRAM



**SINGLE PASSENGER SEAT
MEDICAL ATTENDANT HOIST OPERATOR**

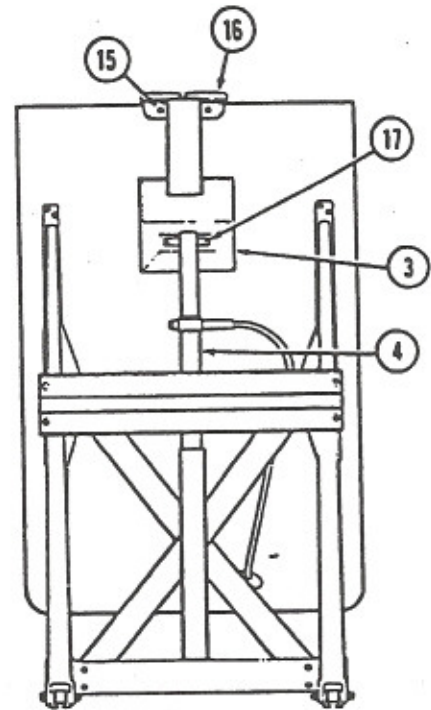
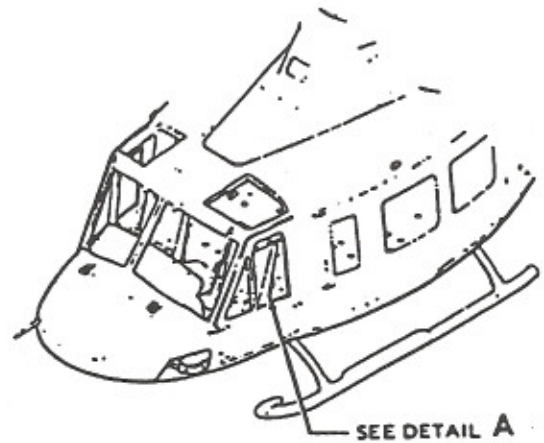
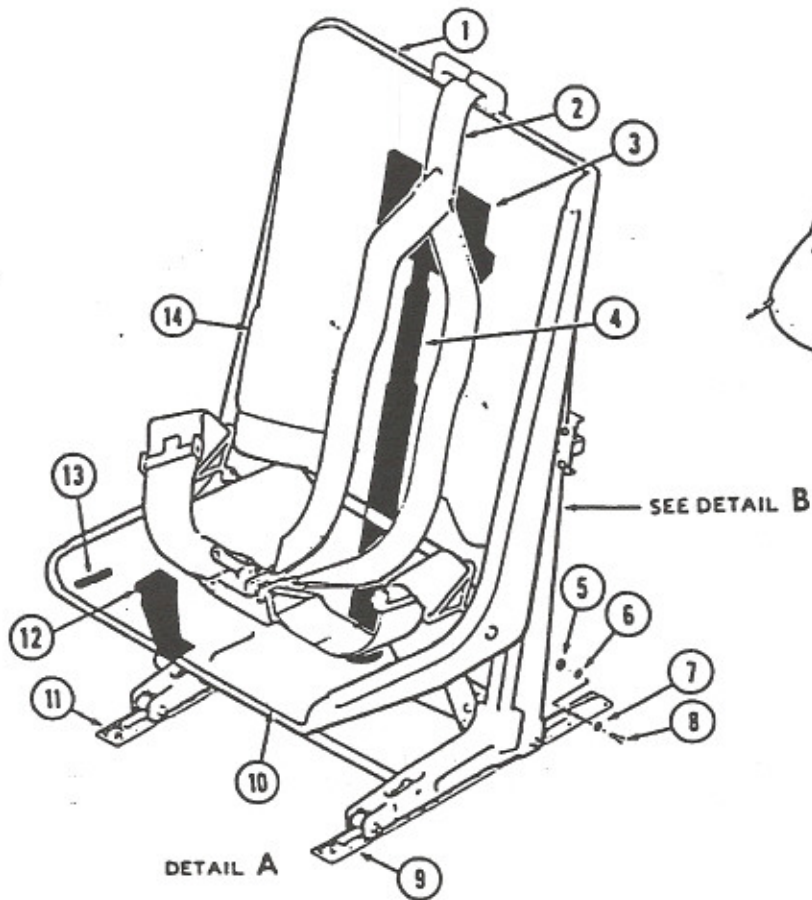


PERSONNEL TRANSPORT



**PERSONNEL TRANSPORT
THREE LITTER PATIENTS**

CREW SEAT



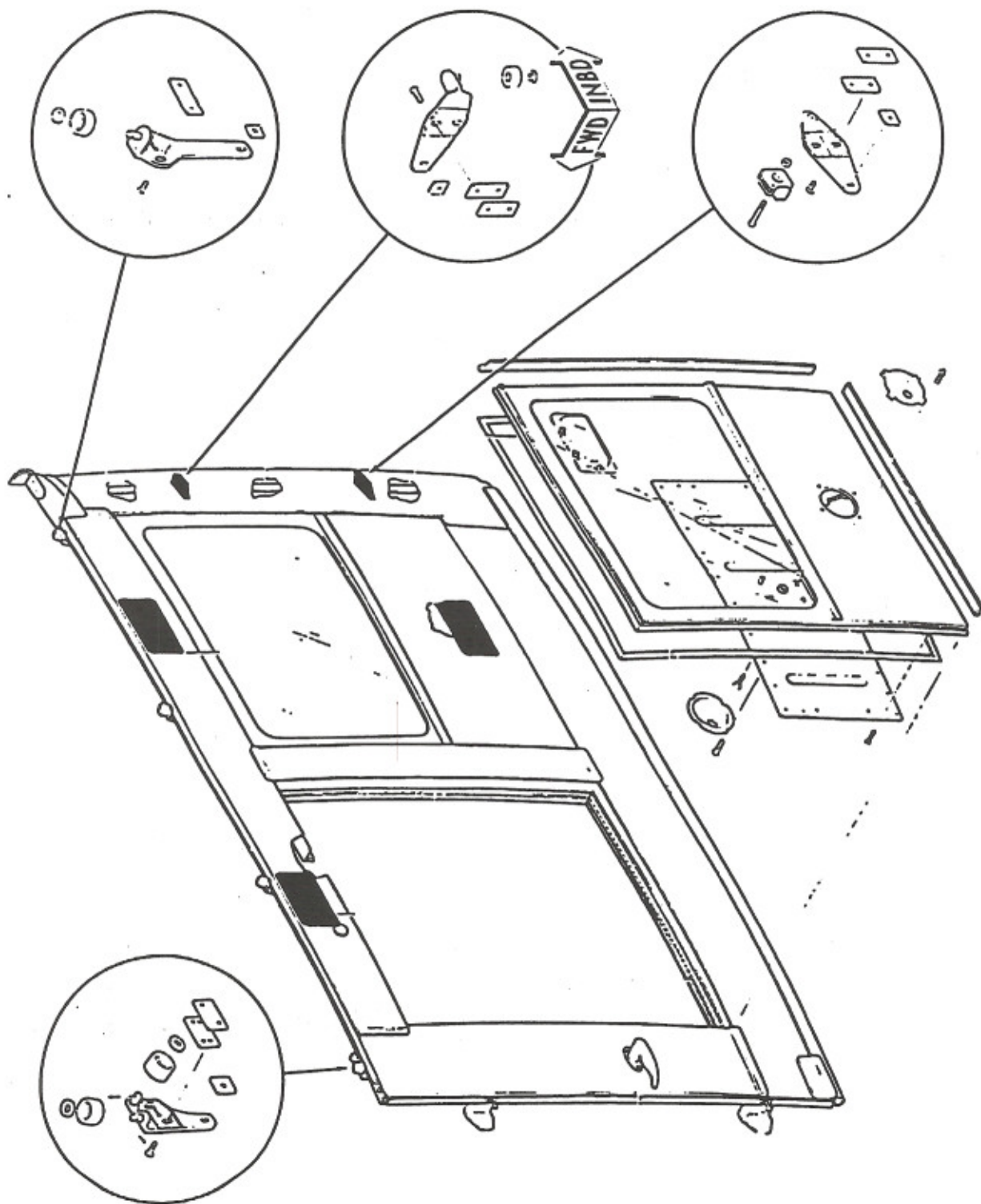
1. Copilot seat assembly
2. Restraint assembly
3. Inertia reel assembly
4. Attenuator (energy absorption device)
5. Nut
6. Washer (AN960C10)
7. Washer (AN960C10)
8. Screw
9. Track (left)
10. Bottom seat cushion
11. Track (right)
12. Fore and aft adjustment
13. Vertical adjustment
14. Back seat cushion
15. Screw
16. Guide (restraint assembly)
17. Screw

DETAIL B

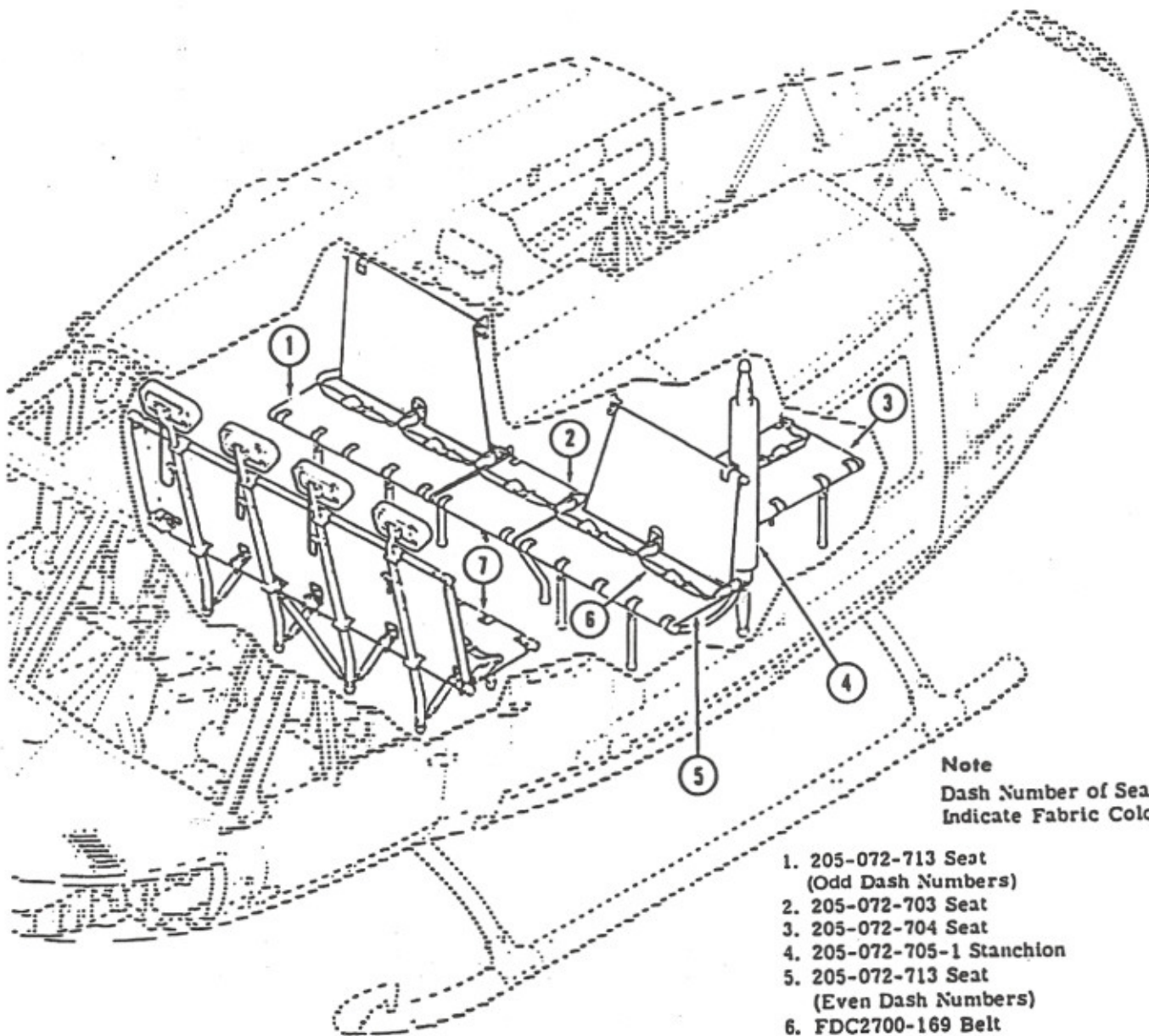
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PILOT AND PASSENGER/CO-PILOT SEAT INSTALLATION

Energy - attenuating bucket seats are provided for the pilot and passenger/co-pilot. Each seat is outfitted with a seat cushion, back cushion, safety belt, shoulder harness, and inertia reel.



Passenger/Cargo Door Assembly



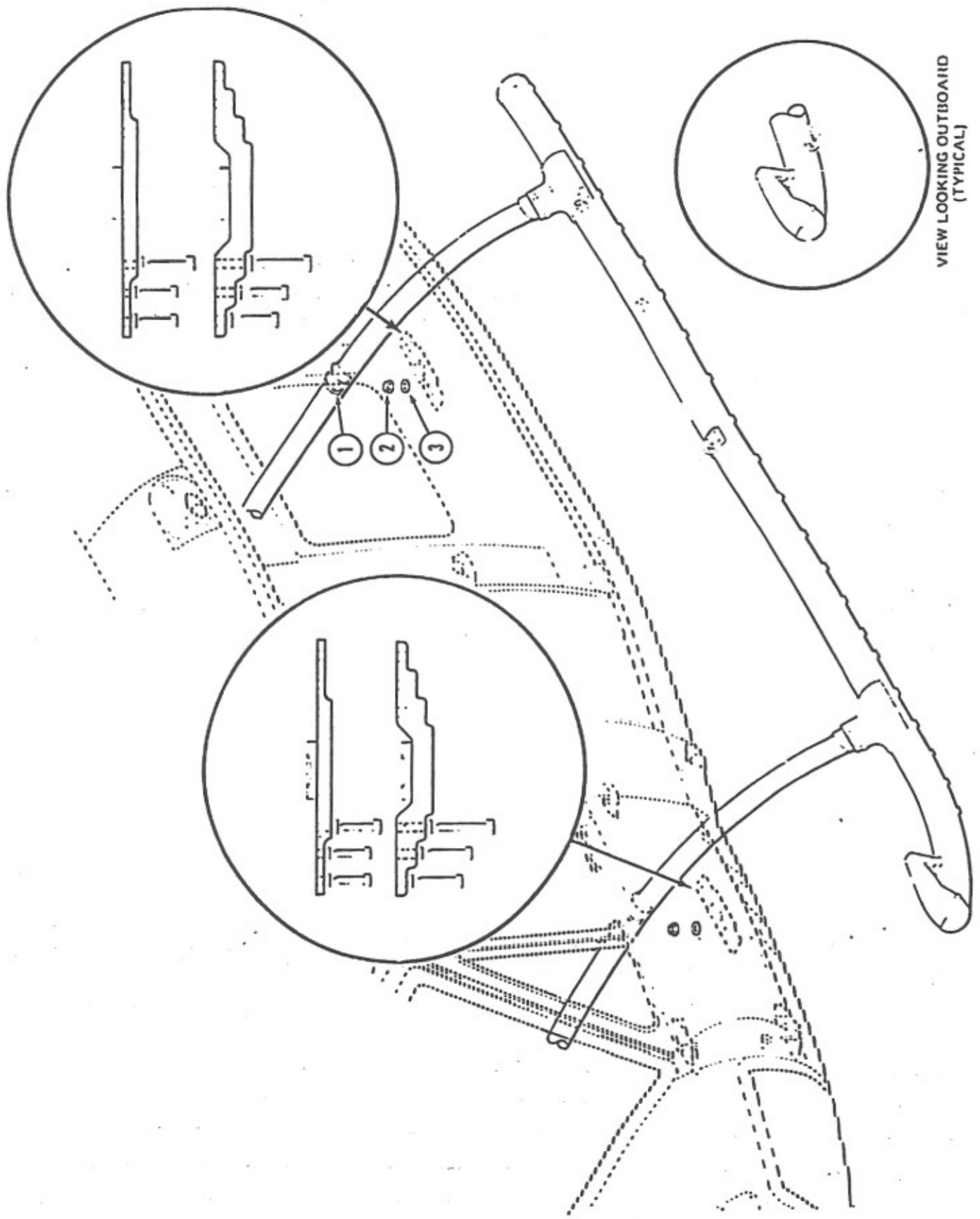
Note
 Dash Number of Seats
 Indicate Fabric Color

1. 205-072-713 Seat
(Odd Dash Numbers)
2. 205-072-703 Seat
3. 205-072-704 Seat
4. 205-072-705-1 Stanchion
5. 205-072-713 Seat
(Even Dash Numbers)
6. FDC2700-169 Belt
7. 205-070-792 Seat

Passenger Seats

Notes

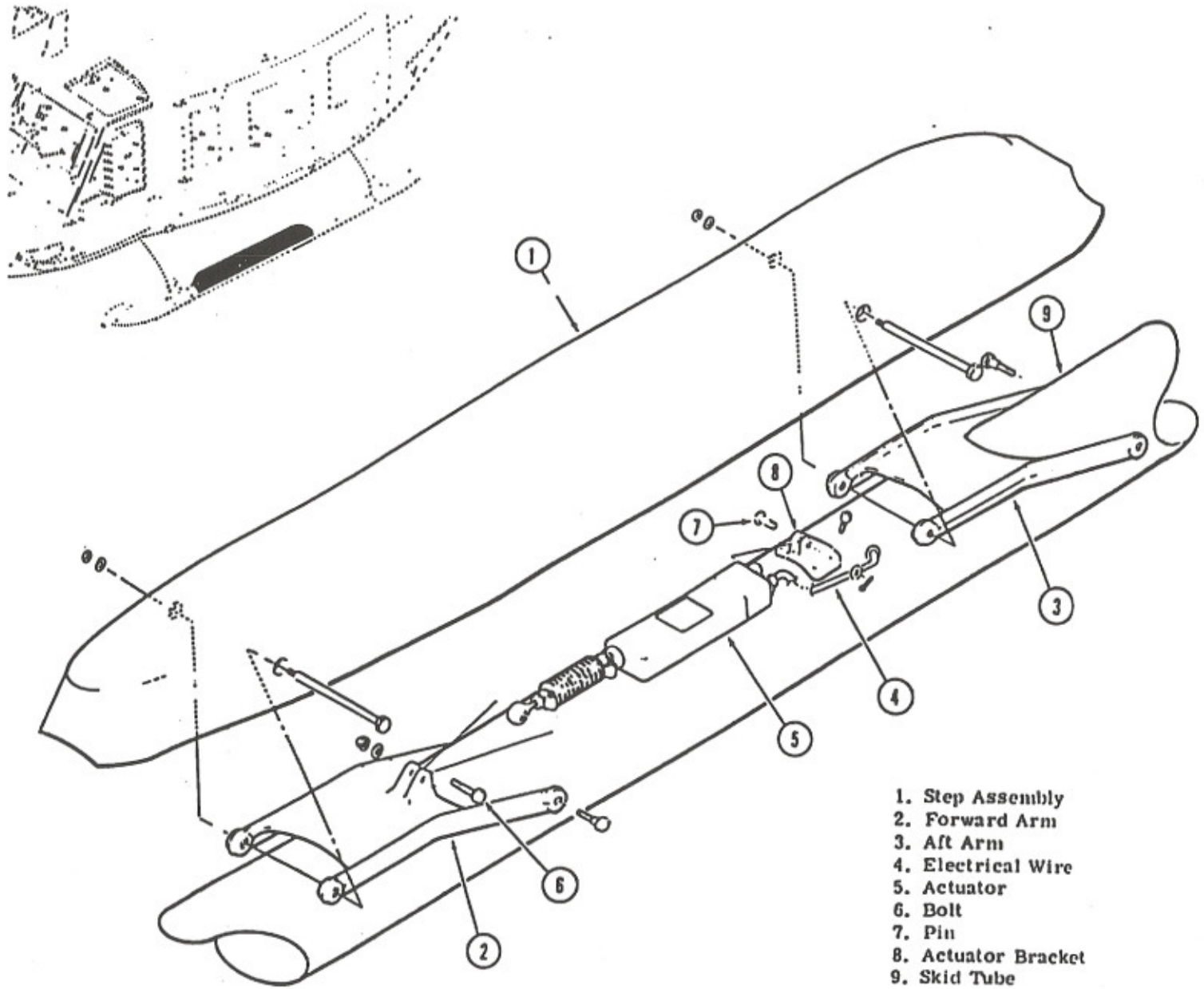
A series of horizontal dashed lines for writing notes.



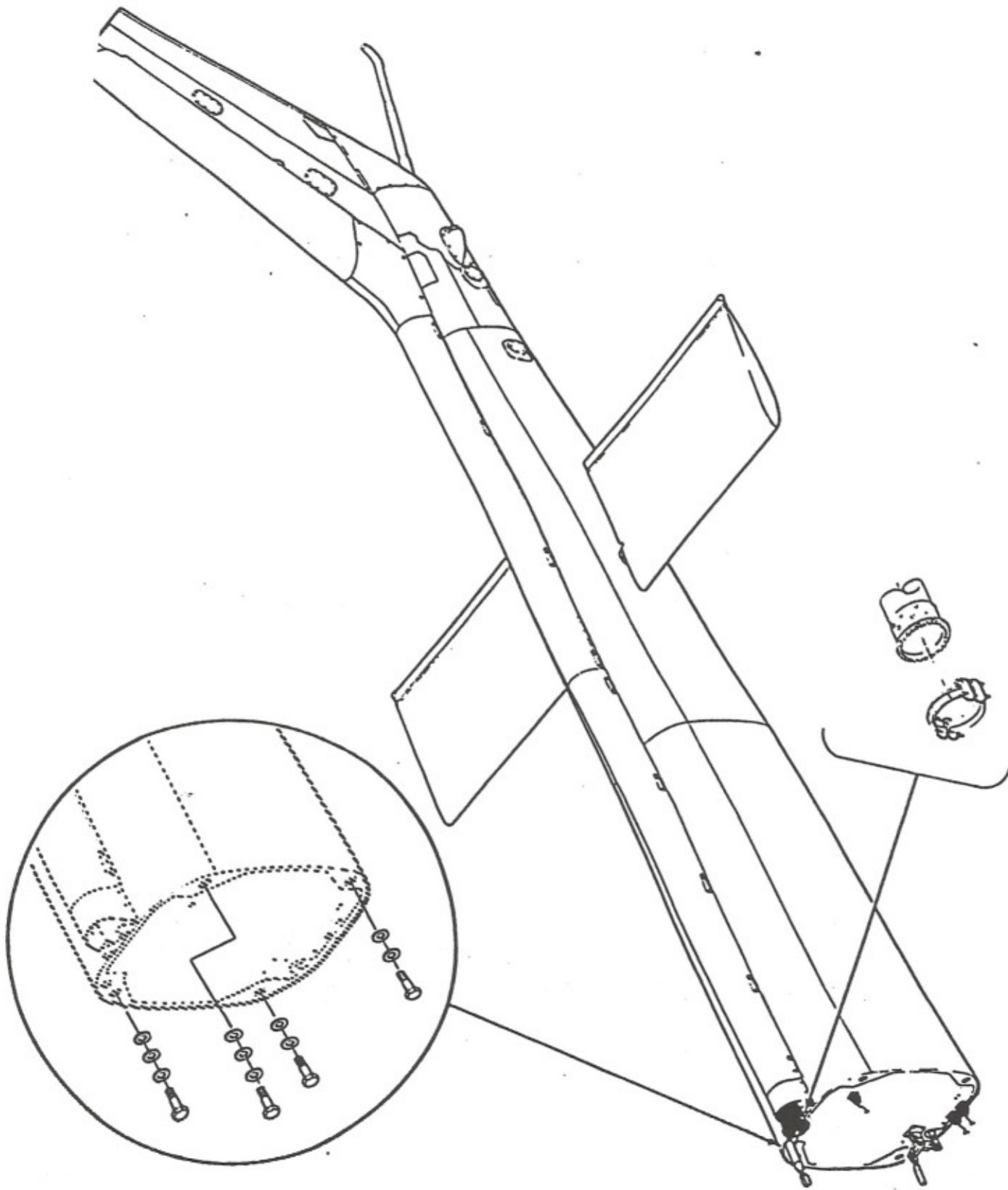
VIEW LOOKING OUTBOARD
(TYPICAL)

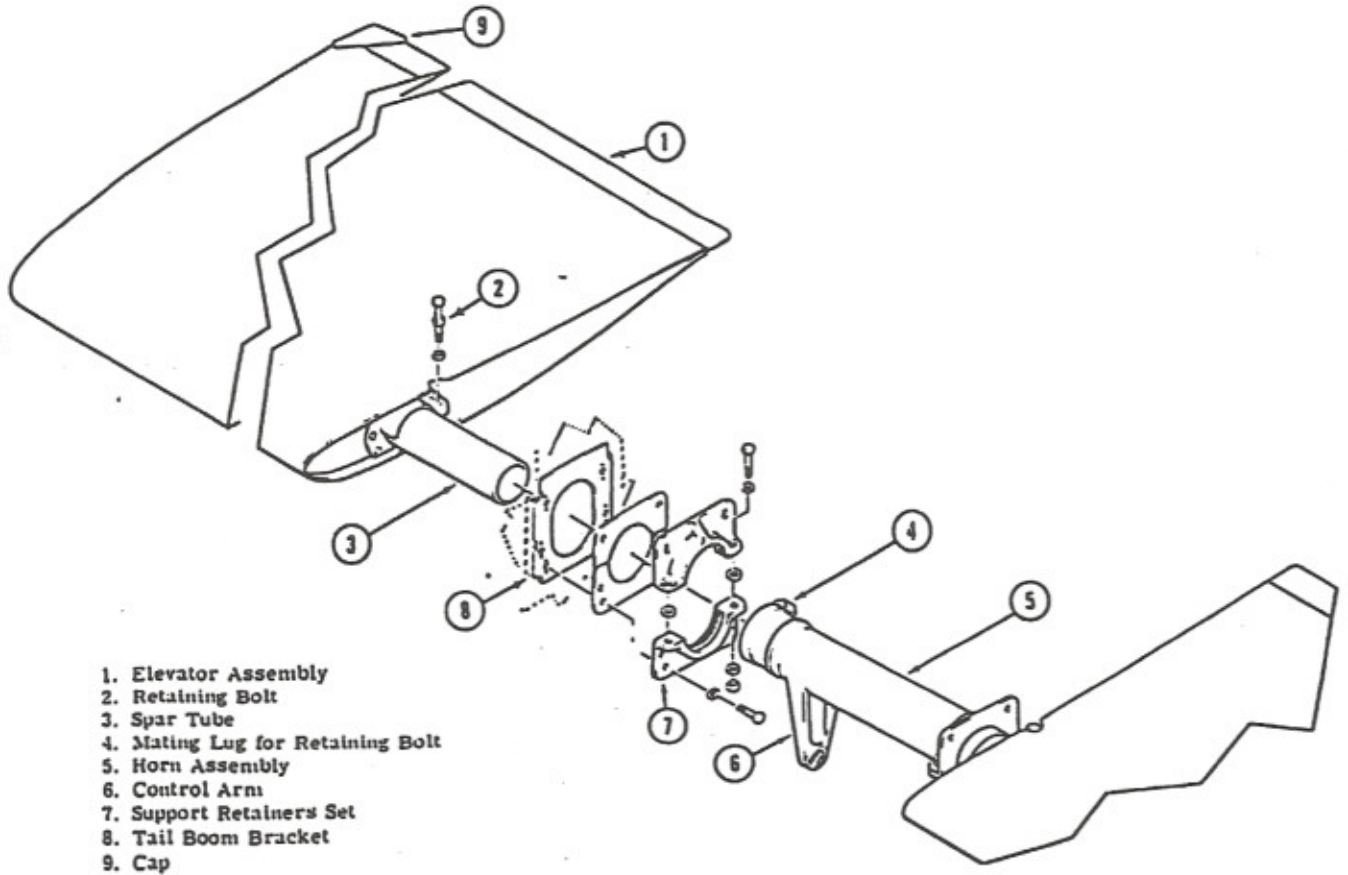
Skid Landing Gear

Step Installation



- 1. Step Assembly
- 2. Forward Arm
- 3. Aft Arm
- 4. Electrical Wire
- 5. Actuator
- 6. Bolt
- 7. Pin
- 8. Actuator Bracket
- 9. Skid Tube





- 1. Elevator Assembly
- 2. Retaining Bolt
- 3. Spar Tube
- 4. Mating Lug for Retaining Bolt
- 5. Horn Assembly
- 6. Control Arm
- 7. Support Retainers Set
- 8. Tail Boom Bracket
- 9. Cap

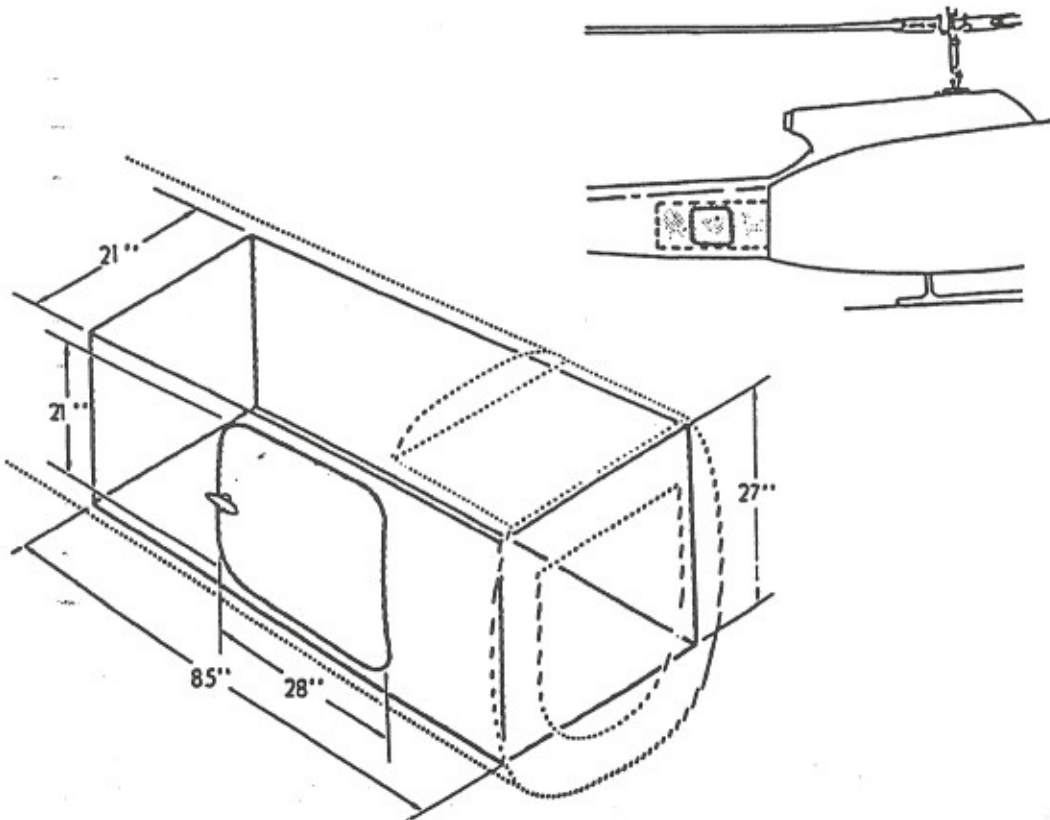
Synchronized Elevator

Notes

BAGGAGE COMPARTMENT

Additional internal cargo space of 28 cubic feet is available in the baggage compartment which is located in the tail boom. It can carry a total of 400 pounds. Access to the baggage compartment is through a door approximately 28" x 21" and located on the right side of the helicopter.

A three section cargo net is installed for securing the baggage and to prevent shifting during flight. The door handle contains a lock. The compartment has interior lights that are controlled by a door actuated switch.



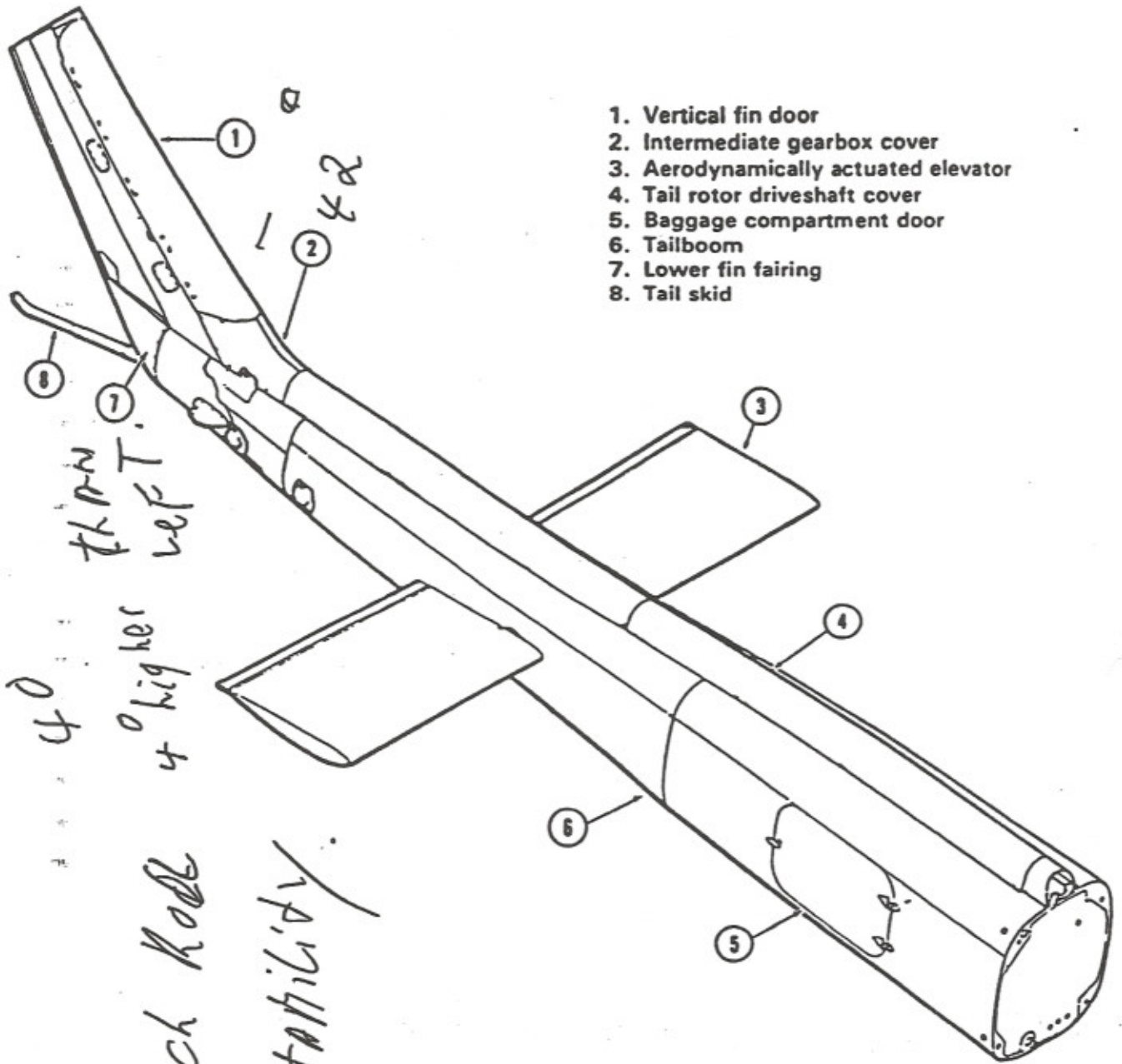
Baggage Compartment

PASSENGER BOARDING STEP

Electrically actuated passenger step is mounted on the skid below the passenger/cargo door. When actuated by a switch on the pedestal in the crew compartment, the passenger step rises to a height of approximately 16 inches.

Bell

TAILBOOM



- 1. Vertical fin door
- 2. Intermediate gearbox cover
- 3. Aerodynamically actuated elevator
- 4. Tail rotor driveshaft cover
- 5. Baggage compartment door
- 6. Tailboom
- 7. Lower fin fairing
- 8. Tail skid

40
4° higher
Duck nose
stability.

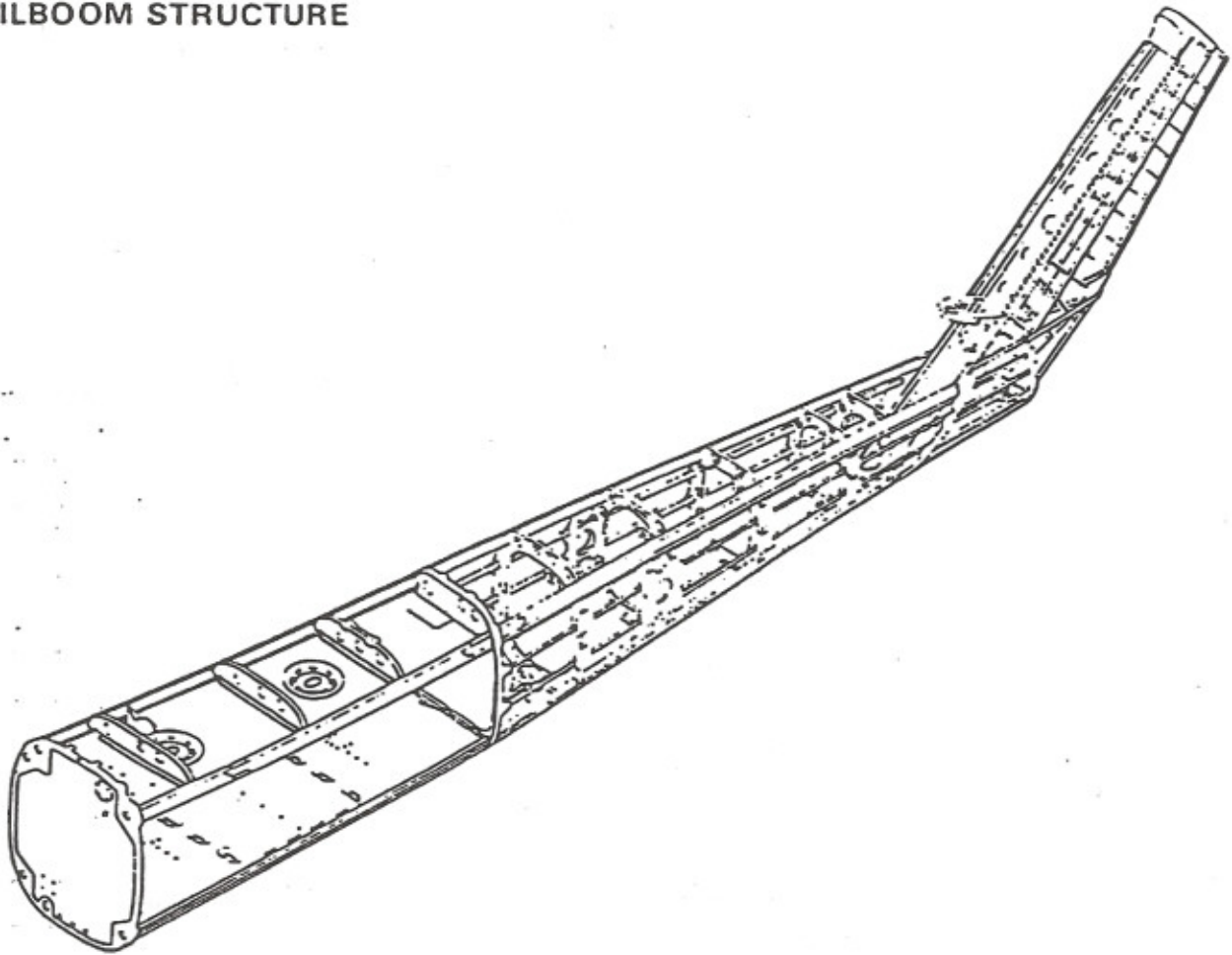
THRU WFT.

TAILBOOM

The tailboom assembly includes the tail rotor driveshaft covers, vertical fin, elevator, baggage compartment, and tail skid. The tailboom assembly is attached to the forward fuselage section by four tension bolts.

Bell

TAILBOOM STRUCTURE



Bell

See ASB 412-90-49 for tailboom upper longeron inspection.

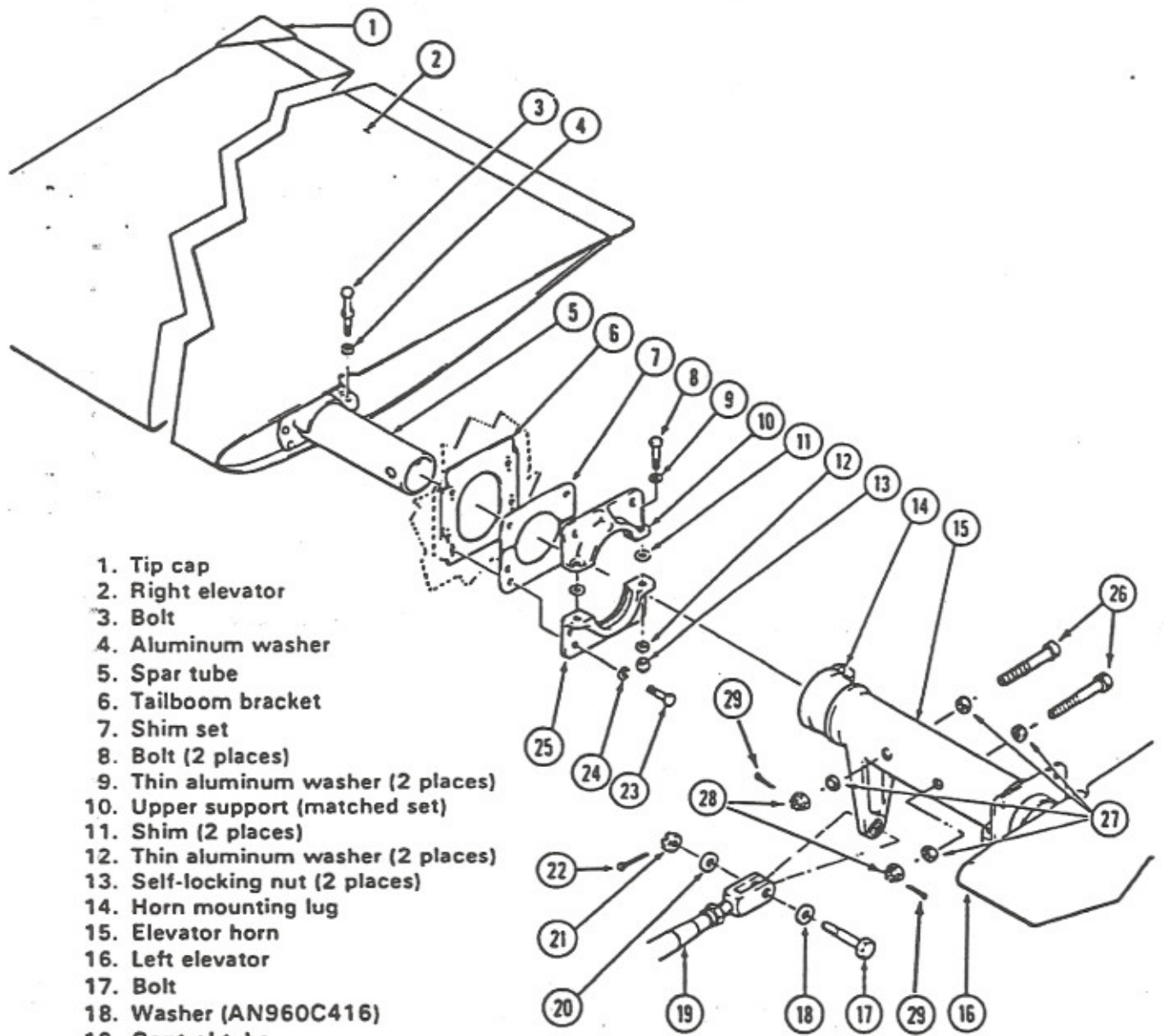
Handwritten notes area consisting of 12 horizontal lines.

TAILBOOM STRUCTURE

The tailboom assembly is a semi-monocoque structure employing aluminum alloy skin, bulkheads, longerons, and stringers. A baggage compartment of honeycomb construction is located in the forward section of the tailboom with the access door on the right side.

Bell

ELEVATOR



1. Tip cap
2. Right elevator
3. Bolt
4. Aluminum washer
5. Spar tube
6. Tailboom bracket
7. Shim set
8. Bolt (2 places)
9. Thin aluminum washer (2 places)
10. Upper support (matched set)
11. Shim (2 places)
12. Thin aluminum washer (2 places)
13. Self-locking nut (2 places)
14. Horn mounting lug
15. Elevator horn
16. Left elevator
17. Bolt
18. Washer (AN960C416)
19. Control tube
20. Washer (AN960C416)
21. Nut
22. Cotter pin
23. Bolt (6 places)
24. Thin aluminum washer (6 places)
25. Lower support (matched set)
26. Bolt
27. Washers (AN960PD516)
28. Nut
29. Cotter pin

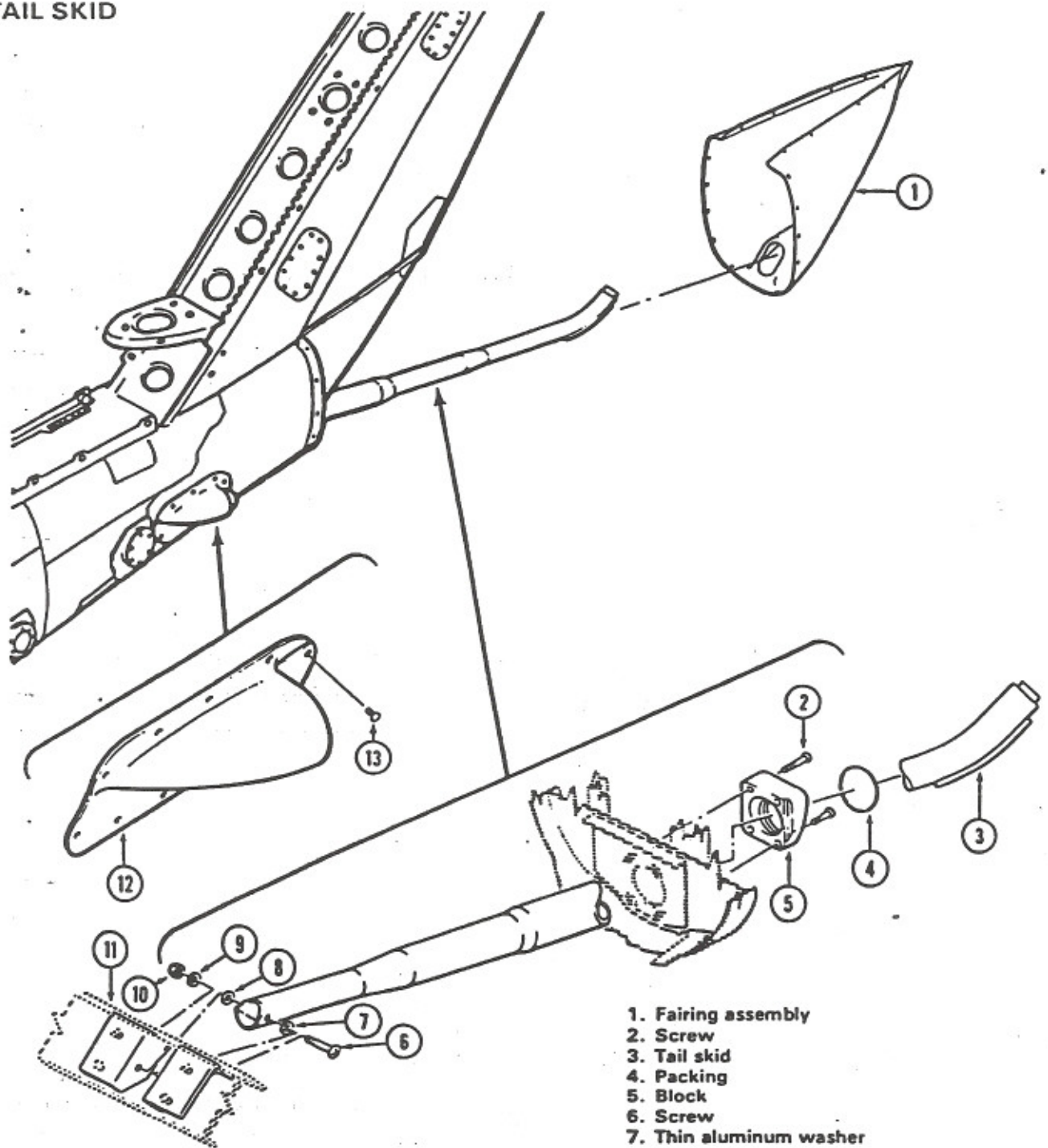
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ELEVATOR

The elevator consists of two separate aerodynamic surfaces attached to a horn assembly extending through the tailboom. The elevator horn assembly is installed with antifriction bearings.

Bell

TAIL SKID



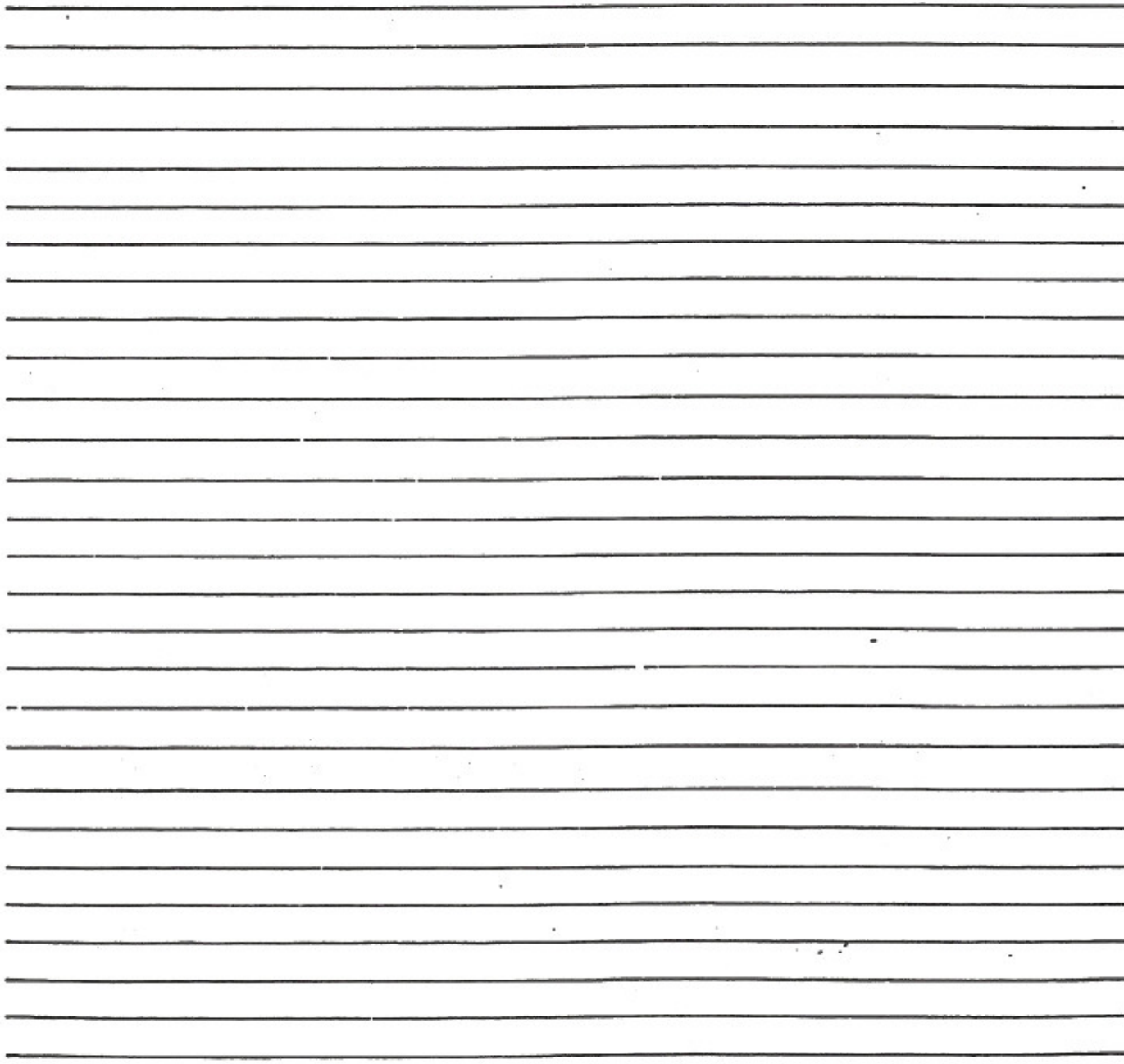
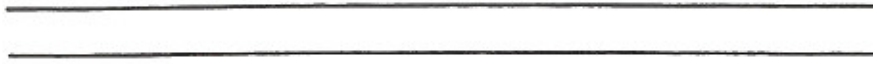
- 1. Fairing assembly
- 2. Screw
- 3. Tail skid
- 4. Packing
- 5. Block
- 6. Screw
- 7. Thin aluminum washer
- 8. Thin aluminum washer
- 9. Thin aluminum washer
- 10. Nut
- 11. Brace
- 12. Fairing assembly
- 13. Screw

412030-3

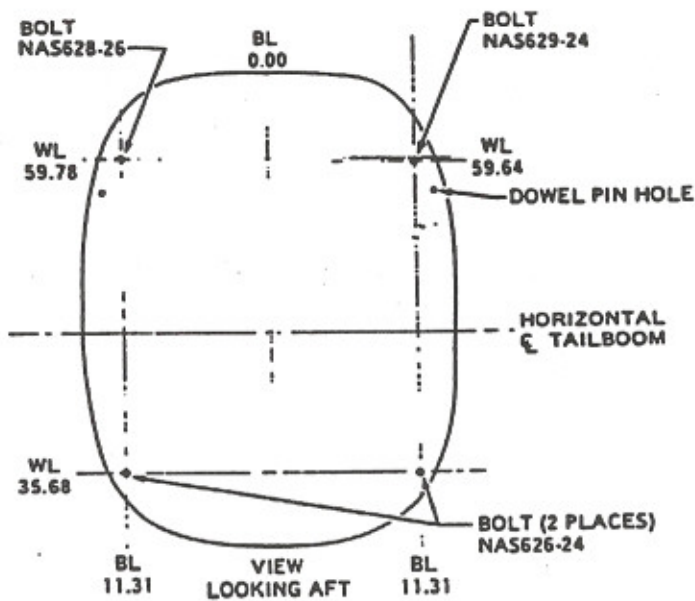
TAIL SKID

A tubular steel tail skid is installed on the aft lower portion of the tail boom to warn the pilot of a tail low attitude when landing.

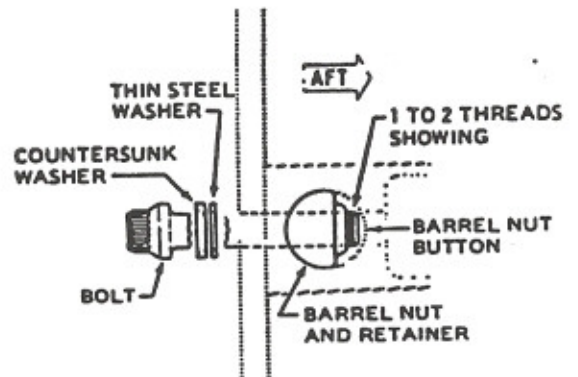
Bell



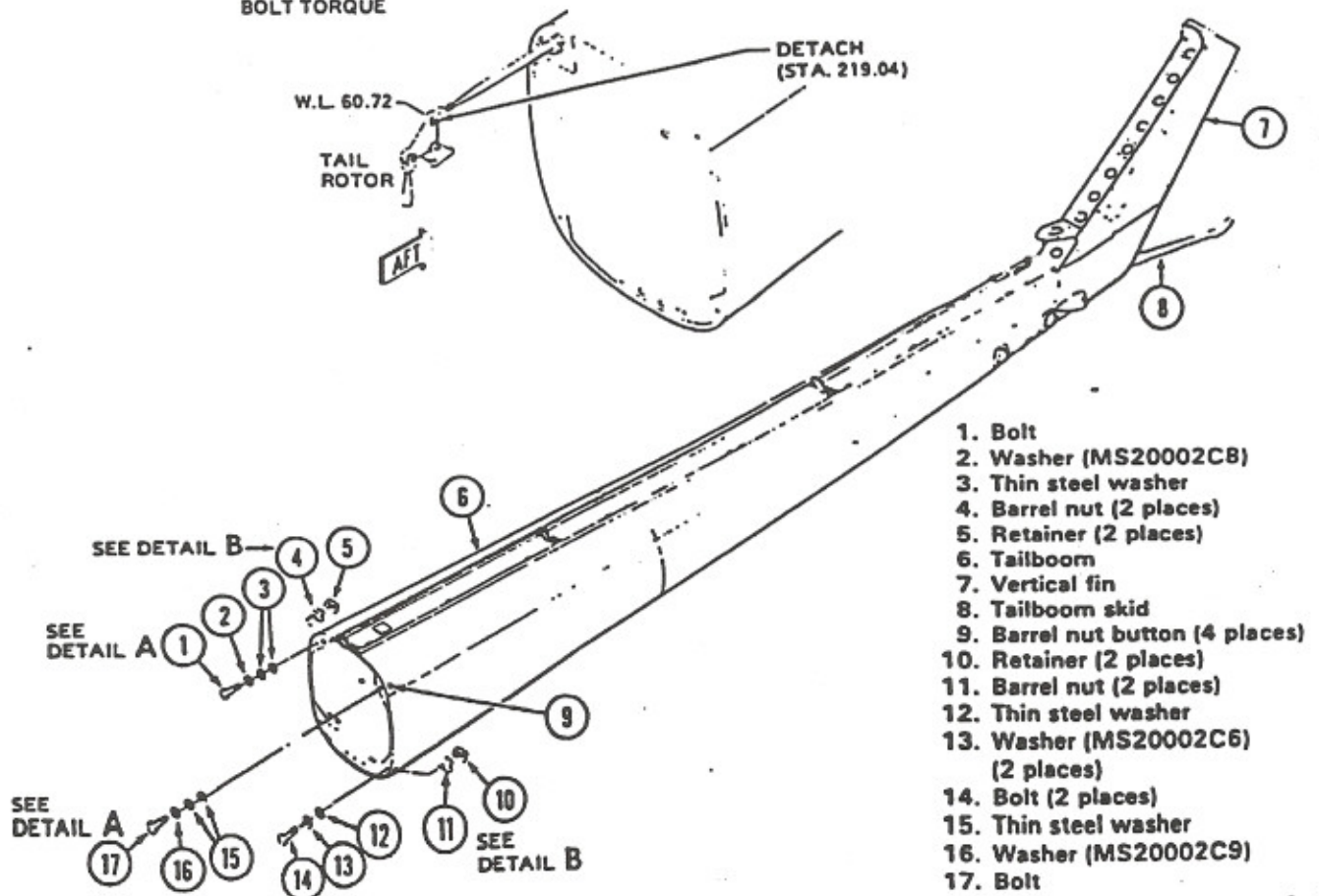
TAILBOOM INSTALLATION



DETAIL A
BOLT TORQUE



DETAIL B
BOLT INSTALLATION



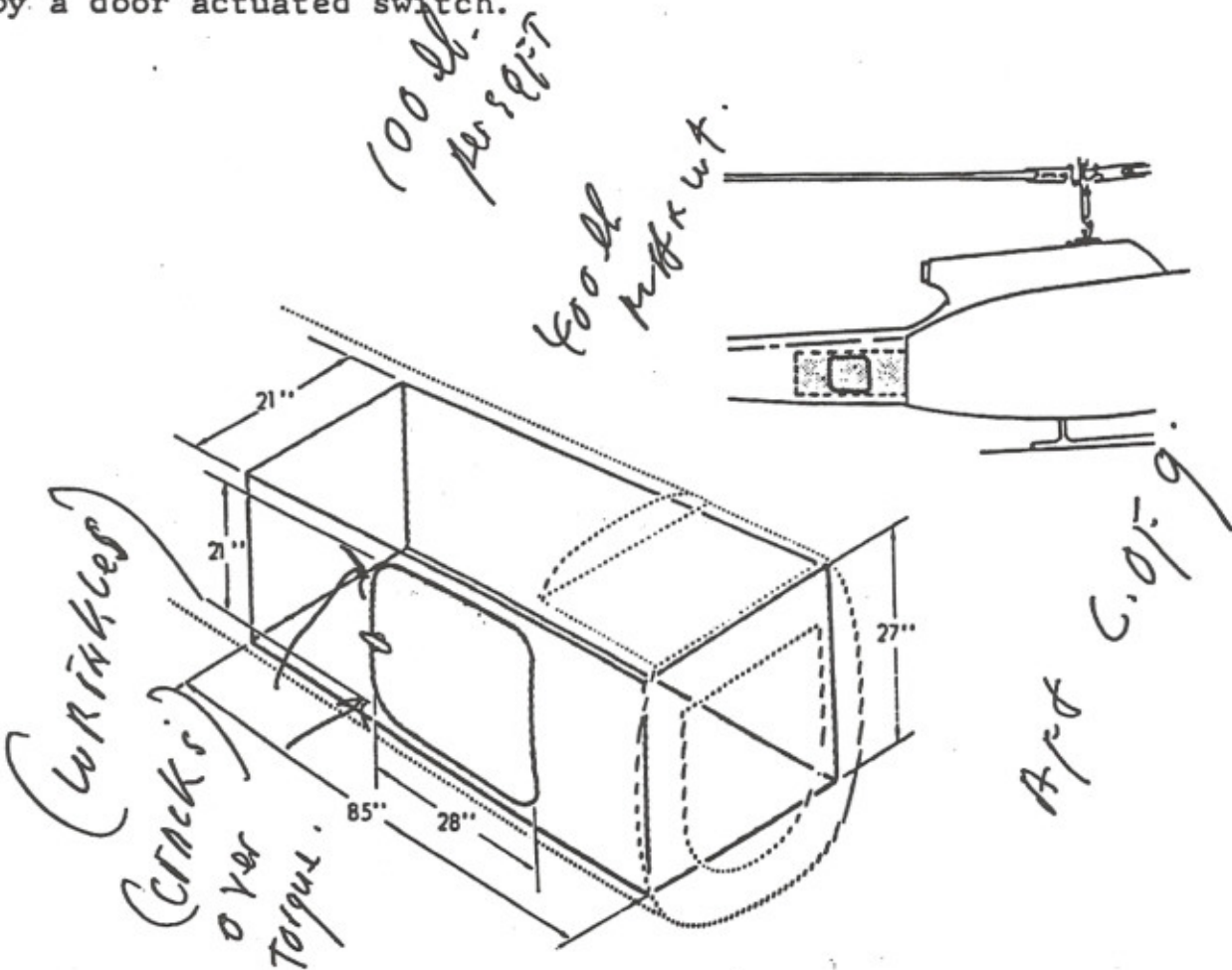
1. Bolt
2. Washer (MS20002CB)
3. Thin steel washer
4. Barrel nut (2 places)
5. Retainer (2 places)
6. Tailboom
7. Vertical fin
8. Tailboom skid
9. Barrel nut button (4 places)
10. Retainer (2 places)
11. Barrel nut (2 places)
12. Thin steel washer
13. Washer (MS20002C6) (2 places)
14. Bolt (2 places)
15. Thin steel washer
16. Washer (MS20002C9)
17. Bolt

412030-9

BAGGAGE COMPARTMENT

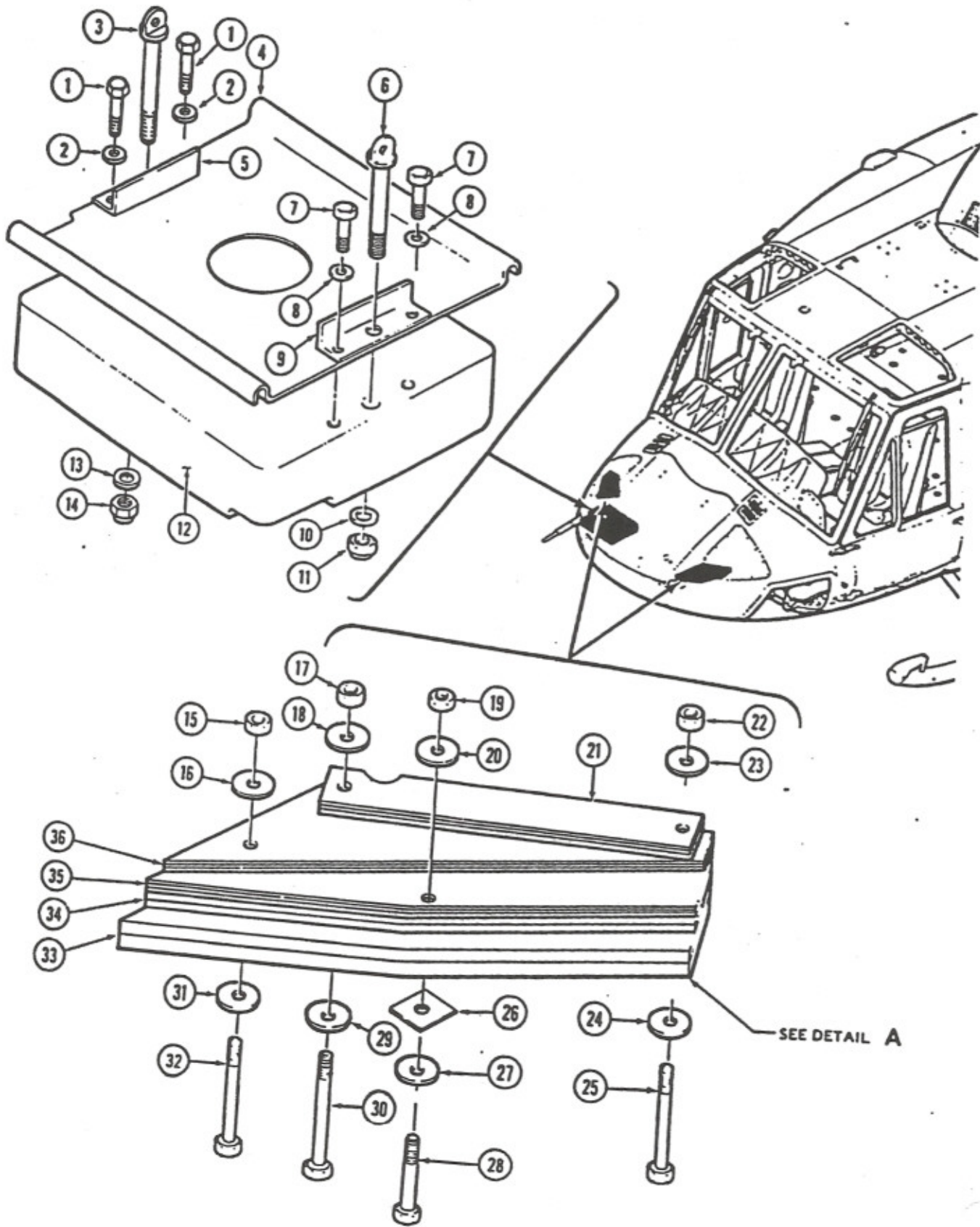
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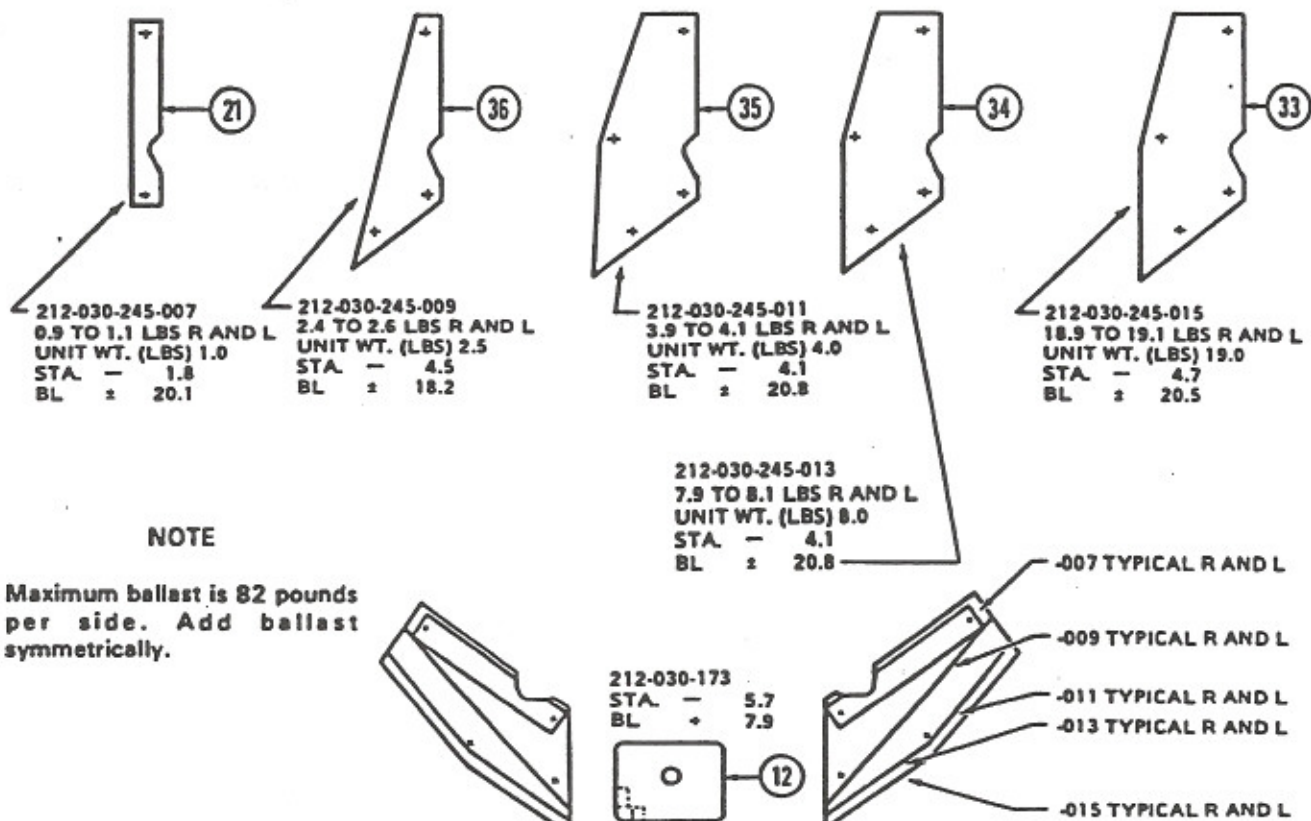


Baggage Compartment

FORWARD BALLAST LOCATION

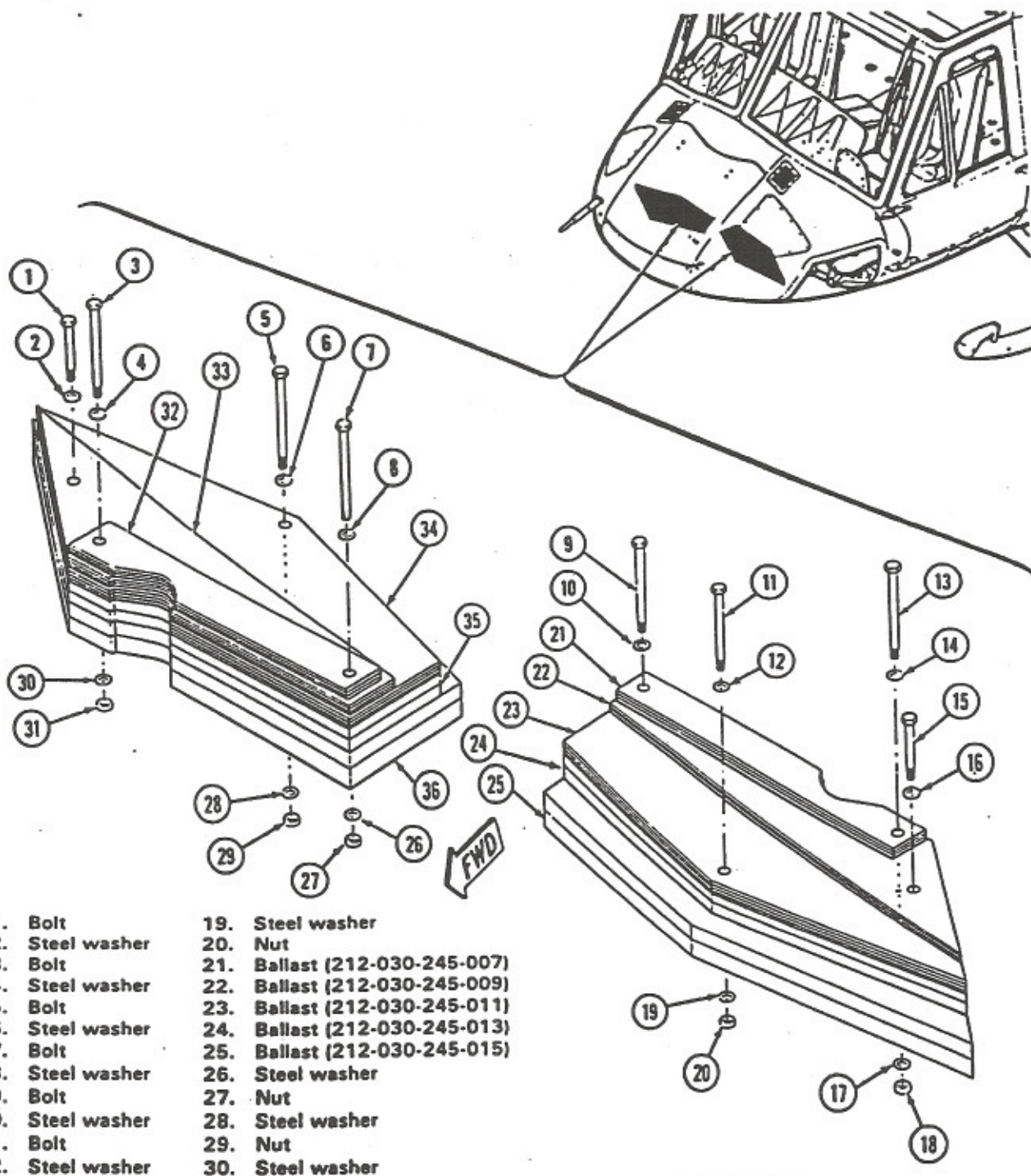


FORWARD BALLAST LOCATION (continued)



- | | |
|-------------------------------|-------------------------------|
| 1. Bolt | 19. Nut |
| 2. Aluminum washer | 20. Steel washer |
| 3. Eyebolt | 21. Ballast (212-030-245-007) |
| 4. Pan | 22. Nut |
| 5. Bracket | 23. Steel washer |
| 6. Eyebolt | 24. Steel washer |
| 7. Bolt | 25. Bolt |
| 8. Aluminum washer | 26. Block |
| 9. Bracket | 27. Steel washer |
| 10. Aluminum washer | 28. Bolt |
| 11. Nut | 29. Steel washer |
| 12. Ballast (212-030-173-009) | 30. Bolt |
| 13. Aluminum washer | 31. Steel washer |
| 14. Nut | 32. Bolt |
| 15. Nut | 33. Ballast (212-030-245-015) |
| 16. Steel washer | 34. Ballast (212-030-245-013) |
| 17. Nut | 35. Ballast (212-030-245-011) |
| 18. Steel washer | 36. Ballast (212-030-245-009) |

FORWARD BALLAST ALTERNATE LOCATION

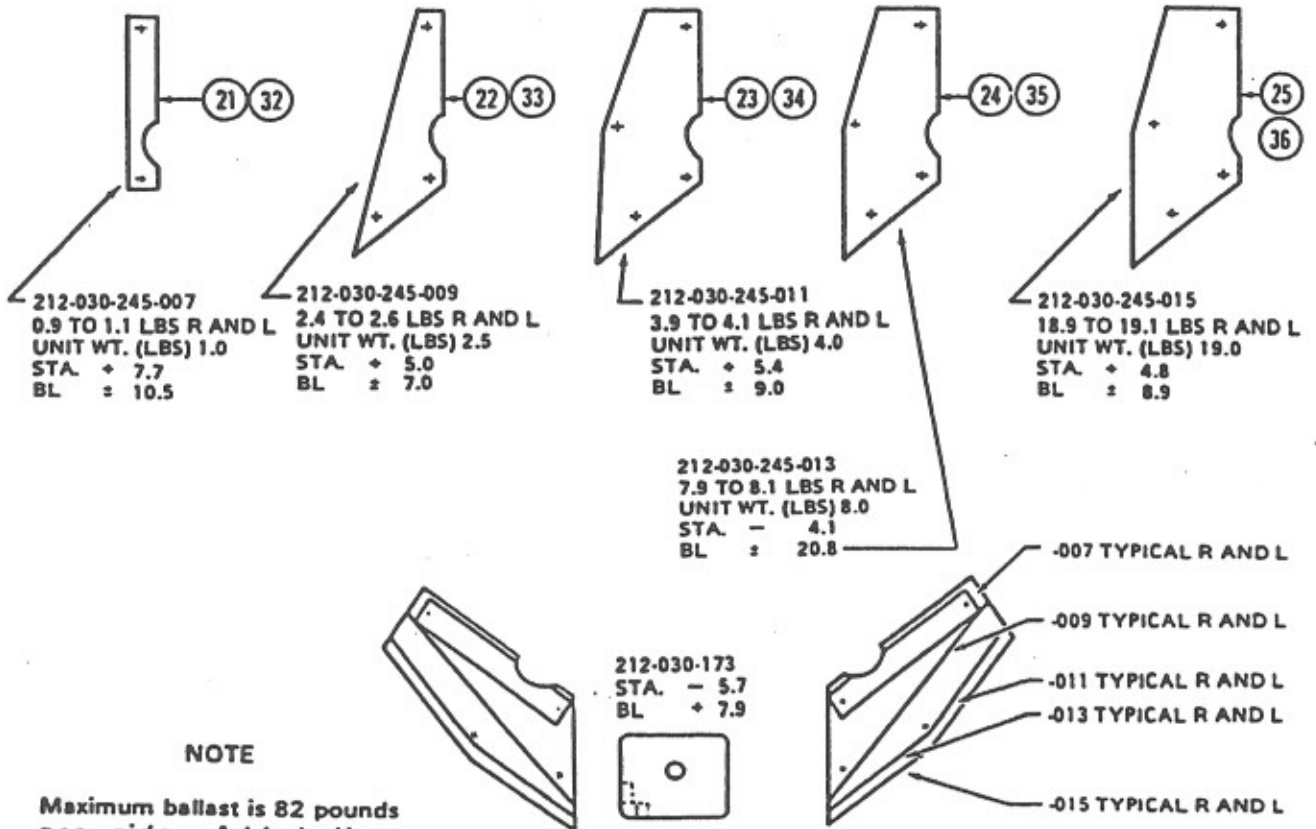


- | | |
|------------------|-------------------------------|
| 1. Bolt | 19. Steel washer |
| 2. Steel washer | 20. Nut |
| 3. Bolt | 21. Ballast (212-030-245-007) |
| 4. Steel washer | 22. Ballast (212-030-245-009) |
| 5. Bolt | 23. Ballast (212-030-245-011) |
| 6. Steel washer | 24. Ballast (212-030-245-013) |
| 7. Bolt | 25. Ballast (212-030-245-015) |
| 8. Steel washer | 26. Steel washer |
| 9. Bolt | 27. Nut |
| 10. Steel washer | 28. Steel washer |
| 11. Bolt | 29. Nut |
| 12. Steel washer | 30. Steel washer |
| 13. Bolt | 31. Nut |
| 14. Steel washer | 32. Ballast (212-030-245-007) |
| 15. Bolt | 33. Ballast (212-030-245-009) |
| 16. Steel washer | 34. Ballast (212-030-245-011) |
| 17. Steel washer | 35. Ballast (212-030-245-013) |
| 18. Nut | 36. Ballast (212-030-245-015) |

SEE DETAIL A

412030-27A
212-030-245C

FORWARD BALLAST ALTERNATE LOCATION (continued)



NOTE

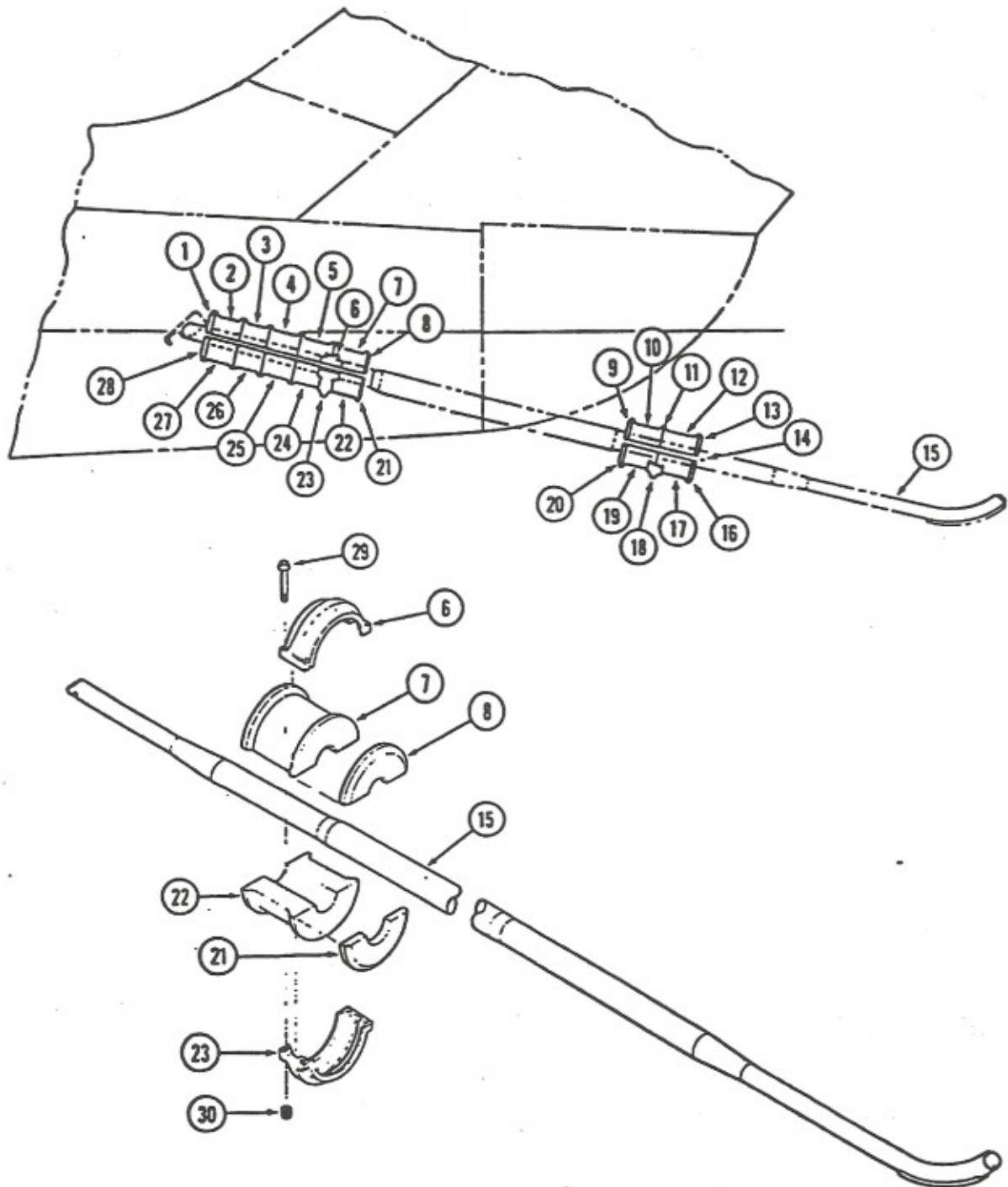
Maximum ballast is 82 pounds per side. Add ballast symmetrically. 212-030-173-9 ballast not included in 164 pound maximum weight.

ACTUAL WEIGHT IS STAMPED ON EACH 212-030-173 WEIGHT

DETAIL A

Bell

AFT BALLAST LOCATION



NOTE: Maximum allowable number of ballast (weights) are illustrated. Determine number of weights required from text.

412030-1-1