

RESTRICTED

AN 01-245FBA-2

Erection and Maintenance
Instructions
for
NAVY MODEL
F2H-1
AIRPLANES

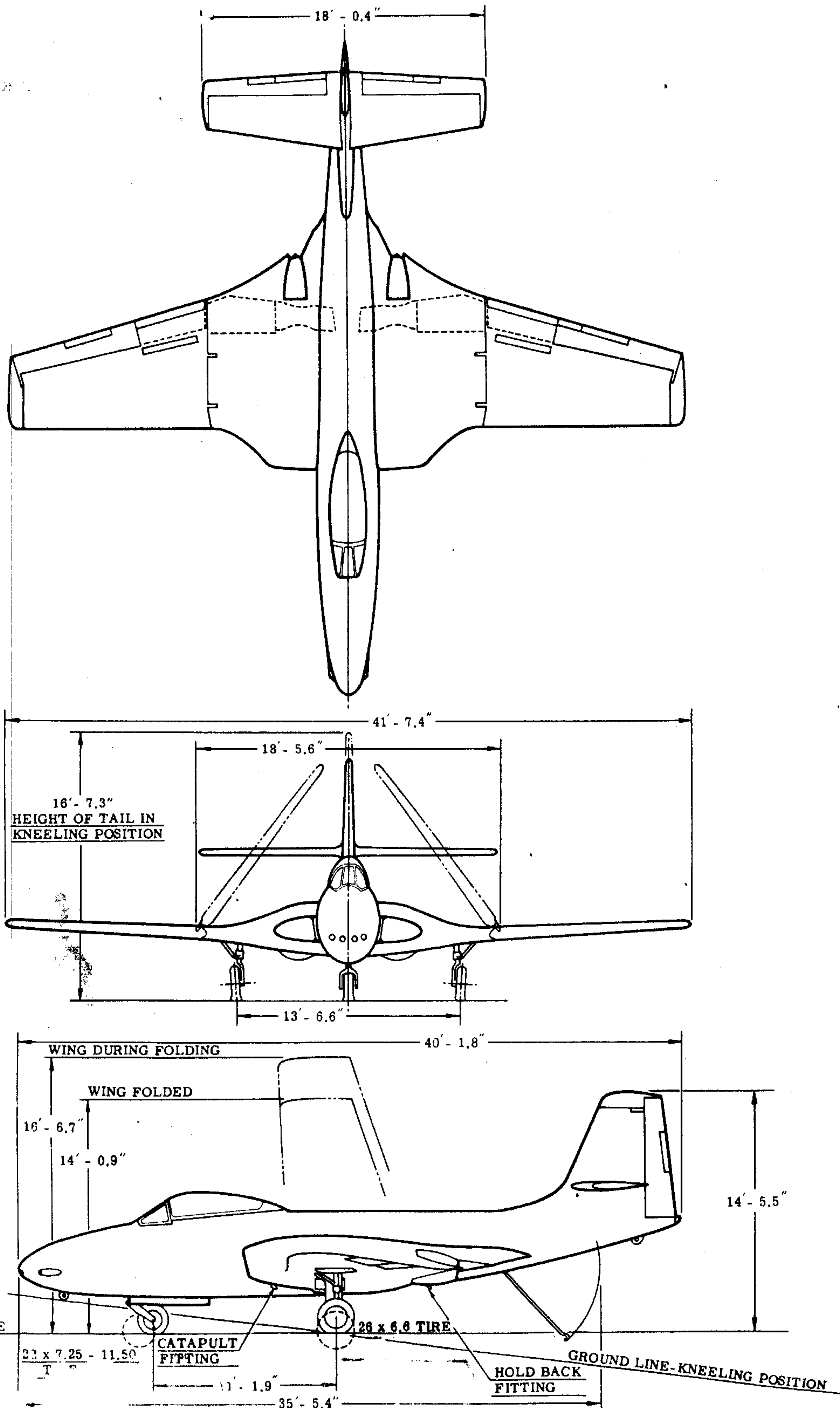
THIS PUBLICATION SUPERSEDES AN 01-245FBA-2
DATED 1 NOVEMBER 1948

PUBLISHED UNDER AUTHORITY OF THE SECRETARY OF THE AIR FORCE
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RESTRICTED

1 June 1949



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1-17. MAD

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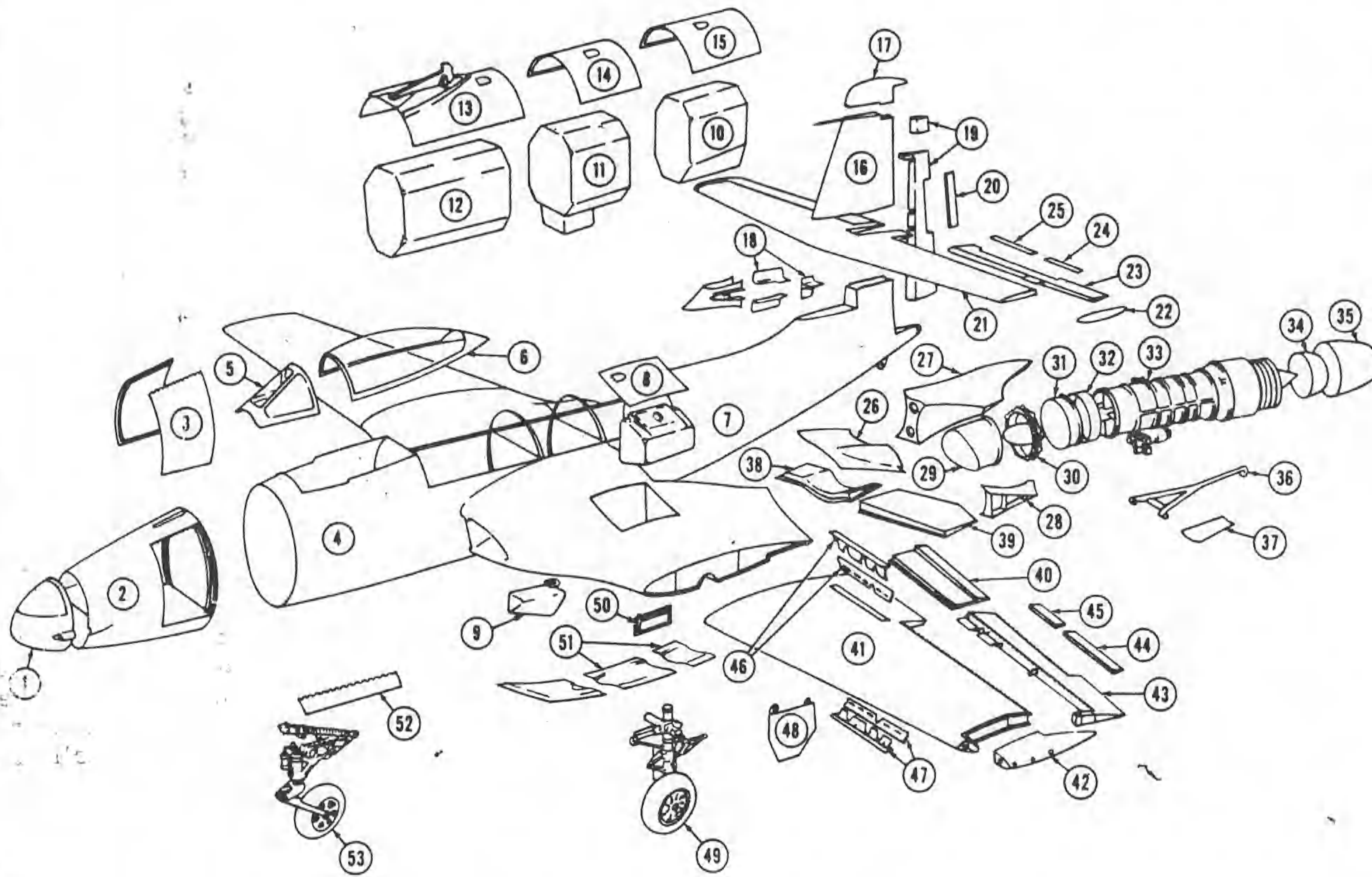
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1-24. C

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Size _____

Figure 1-3. General Arrangement



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|-------------------------------------|-----------------------------------------|---------------------------------------|
| 1. REMOVABLE NOSE | 19. RUDDER | 37. DOOR - ARRESTING HOOK ACCESS |
| 2. FUSELAGE - FORWARD | 20. RUDDER TRIM & BALANCE TAB | 38. FLAP - CENTER SECTION INBOARD |
| 3. DOOR - ARMAMENT ACCESS | 21. STABILIZER | 39. FLAP - CENTER SECTION OUTBOARD |
| 4. FUSELAGE AND CENTER PANEL | 22. ELEVATOR TIP | 40. FLAP - OUTER PANEL |
| 5. WINGFIELD | 23. ELEVATOR | 41. WING - OUTER PANEL |
| 6. FUEL TANK - WING | 24. ELEVATOR TRIM TAB | 42. WING TIP |
| 7. FORWARD WING FUEL TANK ACCESS | 25. ELEVATOR BALANCE TAB | 43. AILERON |
| 8. FUEL TANK | 26. DOOR - POWER PLANT ACCESS | 44. AILERON BALANCE TAB |
| 9. FUEL TANK - AFT FUSELAGE | 27. FAIRING - INBOARD WING ROOT ENGINE | 45. AILERON TRIM TAB |
| 10. FUEL TANK - CENTER FUSELAGE | 28. FAIRING - OUTBOARD WING ROOT ENGINE | 46. SPEED BRAKES - UPPER SURFACE |
| 11. FUEL TANK - FORWARD FUSELAGE | 29. AIR DUCT - FORWARD SECTION | 47. SPEED BRAKES - LOWER SURFACE |
| 12. DOOR - FORWARD FUEL TANK ACCESS | 30. AIR DUCT - BUTTERFLY VALVE | 48. DOOR - MAIN LANDING GEAR OUTBOARD |
| 13. DOOR - CENTER FUEL TANK ACCESS | 31. AIR DUCT - AFT SECTION | 49. MAIN LANDING GEAR |
| 14. DOOR - AFT FUEL TANK ACCESS | 32. AIR DUCT - ENGINE ADAPTER | 50. DOOR - MAIN LANDING GEAR INBOARD |
| 15. DOOR - AFT FUEL TANK ACCESS | 33. ENGINE - TURBO JET | 51. DOORS - POWER PLANT ACCESS |
| 16. DOOR | 34. EXHAUST NOZZLE | 52. DOOR - NOSE LANDING GEAR |
| 17. FINISH | 35. ENGINE FAIRING | 53. NOSE LANDING GEAR |
| 18. TAIL FINISH | 36. ARRESTING HOOK | |

Figure 1-2. Major Components

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SECTION I DESCRIPTION, DIMENSIONS AND LEADING PARTICULARS

1-1. DESCRIPTION.

1-2. GENERAL. The Model F2H-1 airplane is a single-place, two engine, jet-propelled fighter. The airplane is designed to be either land or carrier based, and is provided with the necessary equipment for catapulting.

1-3. ENGINES. Two J34-WE-22 or -30 turbo-jet engines are used to power the airplane. The engines are interchangeable with minor changes in the accessories.

1-4. STRUCTURE. Semi-monocoque or stressed metal skin type construction is employed for all major components. The main section of the fuselage is integral with the center panel. The spars of the center panel are continuous from wing fold to wing fold, increasing in depth in their center portion to act as bulkheads in the fuselage and to form enlarged root sections in which the engines are housed. The nose section forward of F.S. 78.00 is attached to the main section by bolts. The wing and tail surfaces are full cantilever. The outer panels are hinged to the center panel to permit folding upward and inboard.

1-5. CONTROLS. The rudder, elevator and aileron control systems are conventional in design. A control stick and rudder pedals are connected to the elevators and rudder by cable systems. Push-pull tubes connect the control stick to the ailerons. A hydraulic boost system is provided at each aileron to augment stick forces. Electrically actuated trim tabs are provided on the left aileron, the elevators and the rudder. The rudder trim tab also functions as an anti-balance tab.

1-10. GENERAL.

Span (wings spread)	_____	41 ft. 7.4 in.
Span (wings folded)	_____	18 ft. 5.3 in.
Height (over cockpit)	_____	14 ft. 3.1 in.
Height (over vertical fin)	_____	14 ft. 0.5 in.
Height (over vertical fin, airplane kneeling)	_____	14 ft. 0.5 in.
Height (maximum during wing folding)	_____	16 ft. 0.0 in.
Height (wings folded)	_____	14 ft. 0.5 in.
Length (over-all)	_____	41 ft. 7.4 in.

1-11. WINGS.

Airfoil Section (theoretical root at W.S. 107.84)	_____	NACA 65-212
Airfoil Section (theoretical tip at W.S. 250.052)	_____	NACA 63-212
Chord (theoretical at C _L of airplane)	_____	127.61 in.
Chord (theoretical tip at W.S. 250.052)	_____	52.00 in.
Incidence	_____	-1/2°
Dihedral (at leading edge of chord plane)	_____	3°
Sweepback	_____	0°

1-12. STABILIZER.

Span	_____	18 ft. 0.4 in.
Chord	_____	58.00 in.
Incidence (with respect to wing chord plane)	_____	0° 55' ± 25'
Dihedral	_____	0°

Balance tabs are provided on both ailerons. Split tabs are installed on the elevators. Electrically actuated split type flaps are installed along the trailing edge of the center and outer panels. Electrically actuated speed brakes are installed in each outer panel.

1-6. ALIGHTING GEAR. The tricycle alighting gear is electrically actuated and is fully retractable. The main gear is attached to the center panel structure and retracts outboard into the center and outer panels. The nose gear retracts aft into the fuselage. When retracted, all gears are enclosed by flush doors. The nose gear may be retracted independently to 'KNEE' the airplane for spotting on a carrier deck. The alighting equipment consists of a conventional arrestment hook installed in the aft fuselage and a crash barrier arm installed just forward of the windshield.

1-7. ARMAMENT. Four fixed M3 20mm guns are installed in the nose. The guns are mounted side by side with the inboard guns slightly forward of the outboard guns. Four ammunition boxes, each with a capacity of 150 rounds, are installed above the guns. Expendable cases and links are collected in a compartment beneath the gun floor. The guns are charged pneumatically or fired electrically.

1-8. PRINCIPAL DIMENSIONS.

1-9. All dimensions are given with the airplane in level flight position unless otherwise stated. Principal overall dimensions are shown in Figure 1-3, and station, buttock, and water lines are shown in Figure 1-4.



36

Anti-Balance - Right (from rudder T.E.) - 27 2.1 + 30 .24
 - Left (from rudder T.E.) - 27 2.1 + 30 .24

1-16. LEADING PARTICULARS.

1-17. MAIN GEAR.

Type _____ Electrically Operated Fully Retractable
 Tread _____ 13 ft. 6 in.
 Shock Struts _____ Air-Oil
 Type _____
 Maker and Part No. _____ Bendix 156610 L.H. and 156611 R.H.
 Fluid Required (AN Specification No.) _____ AN-0-366
 Normal Static Extension _____ 2.5 in.
 Wheels _____
 Type _____ Goodyear No. 9530174, Split-Type 26 x 6.6
 Tires _____
 Type, Tread, and Size _____ Extra High Pressure, Type VII B 26 x 6.6
 Inflation Pressure (all conditions) _____ 145 psi
 Brakes _____
 Type _____ Goodyear 9530196 Single Disc

1-18. NOSE GEAR.

Type _____ Electrically Operated - Fully Retractable
 Shock Strut _____ Air-Oil
 Type _____
 Maker and Part No. _____ Bendix No. 156610
 Fluid Required (AN Specification No.) _____ AN-0-366
 Normal Static Extension _____ 2.5 in.
 Wheel _____
 Type _____ Goodrich No. G-3-341-1-M (22 x 7.25 x 11.50)
 Tire _____
 Type, Tread and Size _____ Low Profile, Type VI 22 x 7.25 x 11.50
 Inflation Pressure (all conditions) _____ 80 psi

1-19. ENGINES.

Number _____ Two
 Designation _____ Turbo-Jet J34-WE-20 or 20A
 Fuel _____ Spec. AN-F-48 Cheapest Grade Available
 Oil _____ Spec. AN-0-9, Grade 1010 or 1015

1-20. TANK CAPACITIES.

1-21. FUEL.

	Pounds	Gallons
Forward Fuselage Tank	2262	377
Center Fuselage Tank	1134	189
Aft Fuselage Tank	1338	223
Right Wing Tank	264	44
Left Wing Tank	264	44
Total Fuel	5262	877

1-22. OIL.

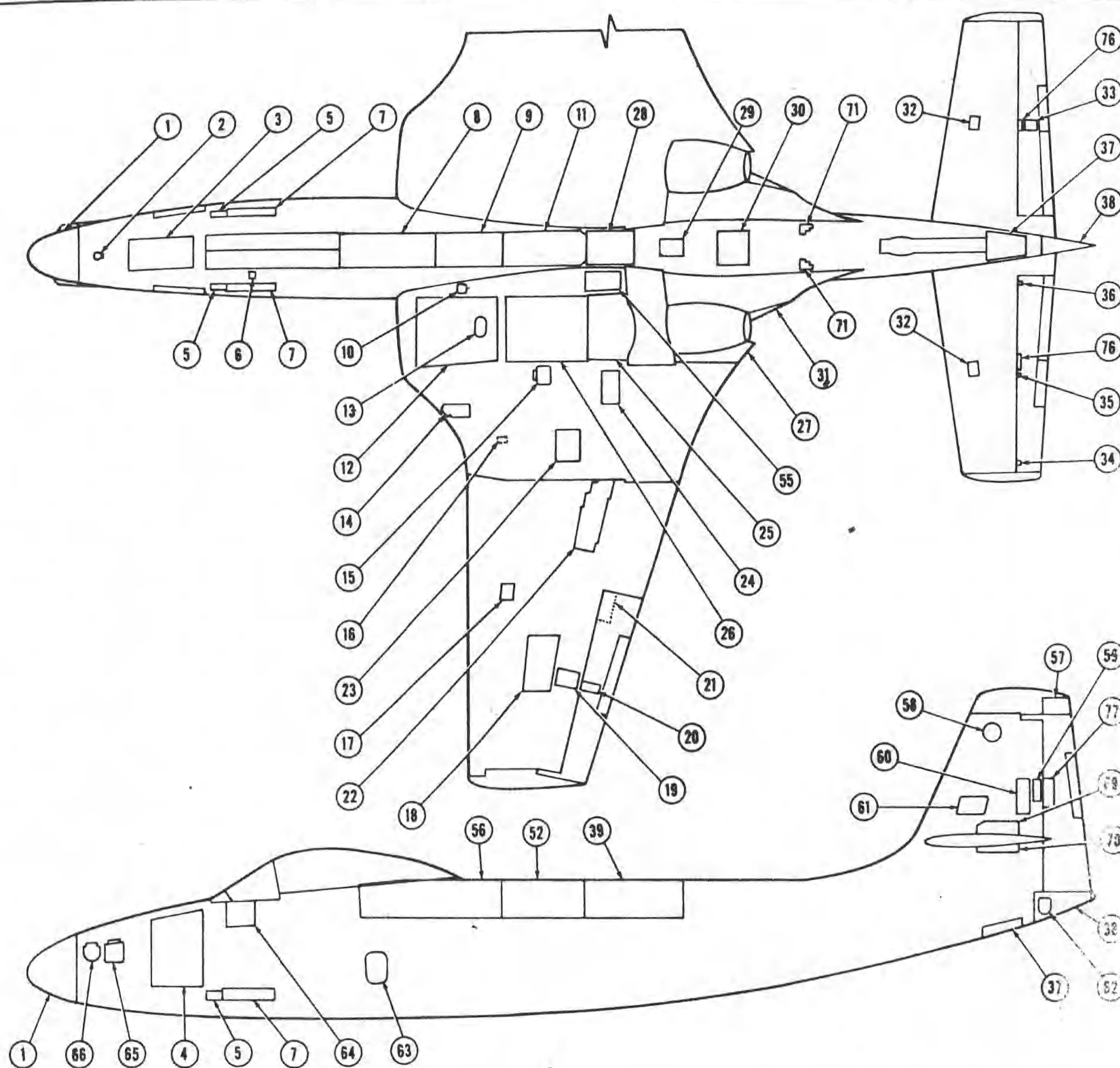
	Gallons
Right Tank	3.25
Left Tank	3.25
Expansion Space (Each Tank)	3.75

1-23. HYDRAULIC FLUID (AN-0-366)

	Quarts
Right Reservoir (Total Capacity)	2.9
Left Reservoir (Total Capacity)	2.9

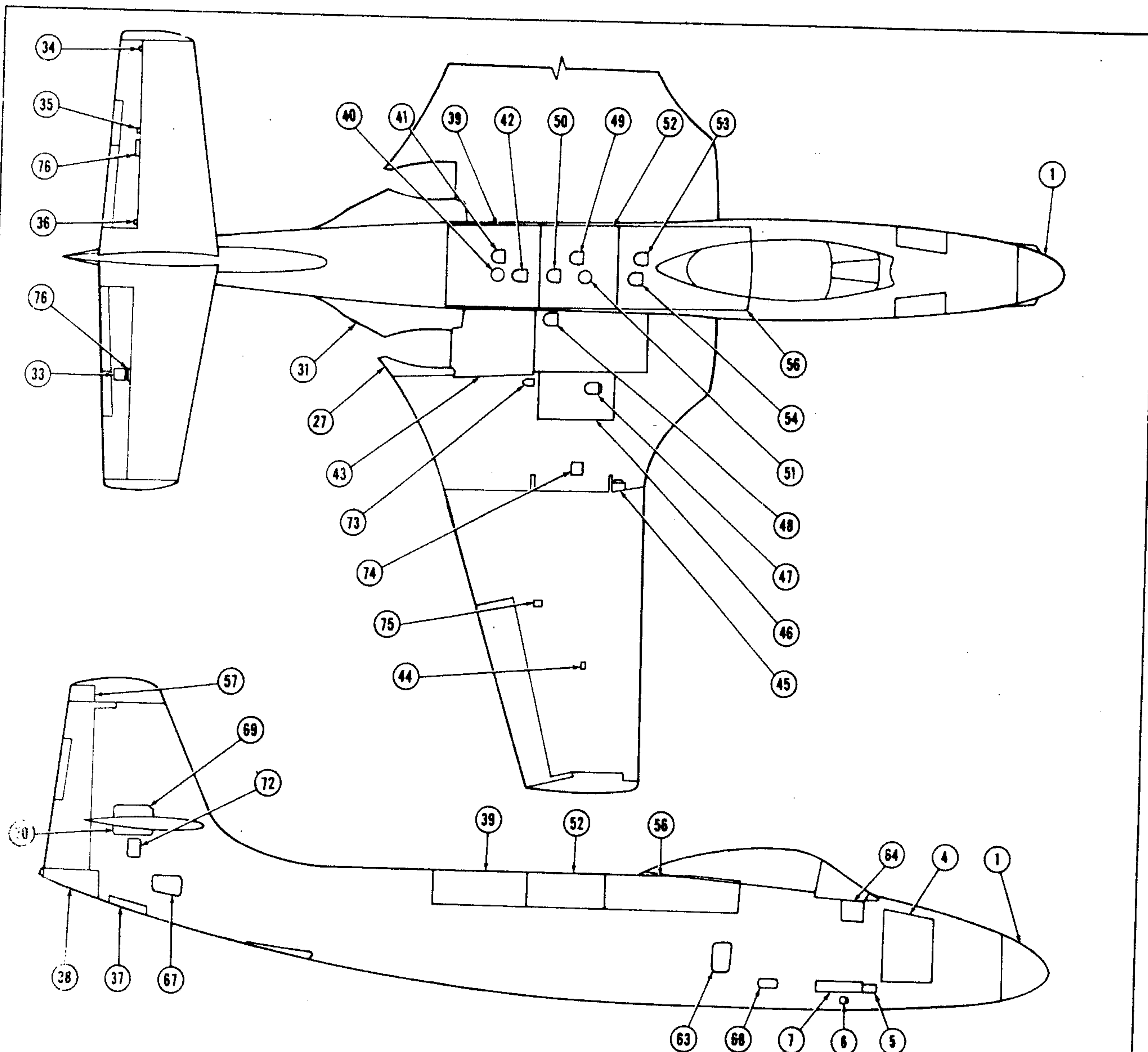
1-24. OXYGEN CYLINDERS.

Number _____ One
 Size _____ 514 cu. in.



DOOR NO.	ACCESS TO	DOOR NO.	ACCESS TO
40	FUEL TRANSFER SWITCH	59	RUDDER TRIM TAB
41	FUEL QUANTITY GAGE	60	TAB ACTUATOR
42	FUEL TANK FILLER	61	COMPASS TRANS.
43 L/R	POWER PLANT	62	RUDDER CONTROL HORN
44 L/R	AILERON POWER BOOST RESISTOR	63 L/R	ELEVATOR CONTROLS
45 L/R	AILERON CONTROLS	64 L/R	INSTALLATION AND CONTROLS
46 L/R	FUEL TANK	65	COMPRESSOR
47 L/R	FUEL TANK FILLER	66	RADIO & NOSE LATCH
48 L/R	OIL FILLER	67	RUDDER CONTROL
49	FUEL QUANTITY GAGE	68	CONTROLS
50	FUEL TANK FILLER	69 L/R	ELEVATOR STRUCTURE STOP
51	FUEL TRANSFER SWITCH	70 L/R	ELEVATOR STRUCTURE STOP
52	FUEL CELL	71 L/R	HINGE BOLT
53	FUEL QUANTITY GAGE	72	ELEVATOR TAB ACTUATOR
54	FUEL TANK FILLER	73 L/R	JURY STRUT & HOIST FITTING
55 L/R	MISCELLANEOUS CONTROLS	74 L/R	MAIN LANDING GEAR LIMIT SWITCH
56	FUEL TANK	75 L/R	OUTER PANEL HOIST & JURY STRUT
57	RUDDER TIP	76 L/R	SCREW JACK
58	ANTENNA & PITOT CONNECTION	77	TRIM & BALANCE CONTROLS

Figure 3-2. Access Openings (Sheet 2 of 2)



DOOR NO.	ACCESS TO	DOOR NO.	ACCESS TO
1	RADIO EQUIPMENT	20 L/R	BALANCE TAB CONTROL
2	DOLLY SUPPORT	21	TRIM TAB ACTUATOR
3	LINK & CASE	22 L/R	SPEED BRAKE CONTROLS
4 L R	ARMAMENT	23 L/R	RELAY PANEL
5 L R	OUTBOARD GUN	24 L/R	SPEED BRAKE ACTUATOR
6	AIR TANK	25 L/R	POWER PLANT
7 L R	NOSE LANDING GEAR AND ELEVATOR CONTROL	26 L/R	POWER PLANT
8	FUEL SYSTEM	27 L/R	POWER PLANT
9	FUEL SYSTEM	28	FLAP MOTOR
10	EXTERNAL POWER	29	FUEL PUMP
11	FUEL SYSTEM	30	RADIO
12 L/R	POWER PLANT	31 L/R	POWER PLANT
13 L R	POWER PLANT CONTROL PANEL	32 L/R	FIN ILLUMINATING LIGHT
14	GUN CAMERA	33 L/R	ELEVATOR TRIM TAB CONTROL
15 L/R	FUEL CELL	34 L/R	ELEVATOR HINGE BOLT
16	MAIN LANDING GEAR TRUNNION BOLT	35 L/R	ELEVATOR HINGE BOLT
17 L/R	AILERON CONTROL	36 L/R	ELEVATOR HINGE BOLT
18 L/R	AILERON BOOST SYSTEM	37	ELEVATOR CONTROLS
19 L/H	AILERON BOOST CYLINDER	38	CONTROLS
		39	FUEL CELL

Figure 3-2 Access Openings (Sheet 1 of 2)

idling rpm (4000 - 5000).

k. After both engines are running, disconnect external power supply.

3-27. Deleted.

3-28. TAXIING.

3-29. Whenever possible, avoid taxiing over soft spots in the runway or over soft ground. The high pressure tires allow the airplane to become mired very easily.

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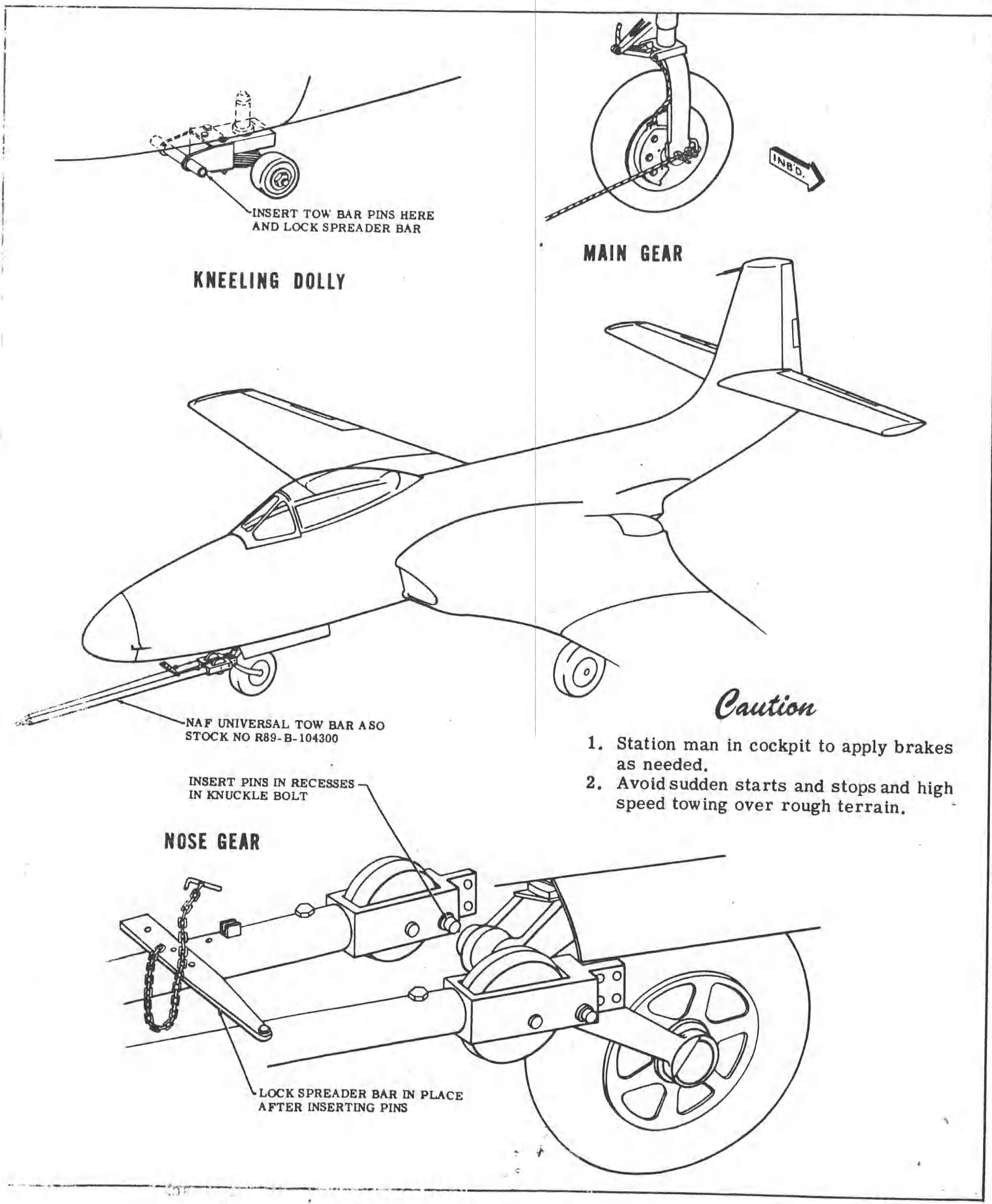
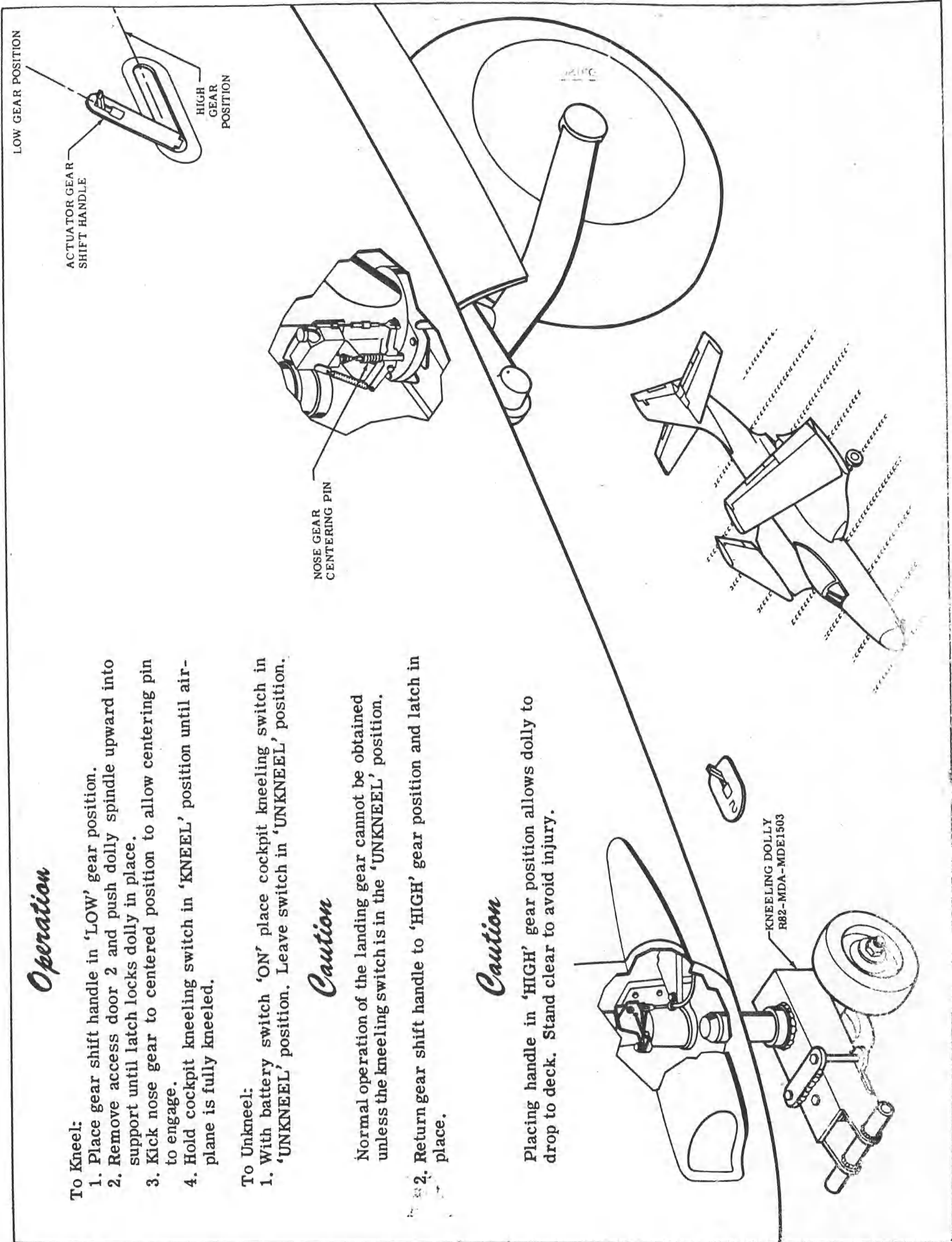


Figure 3-3. Towing



Operation

To Kneel:

1. Place gear shift handle in 'LOW' gear position.
2. Remove access door 2 and push dolly spindle upward into support until latch locks dolly in place.
3. Kick nose gear to centered position to allow centering pin to engage.
4. Hold cockpit kneeling switch in 'KNEEL' position until airplane is fully kneeled.

To Unkneel:

1. With battery switch 'ON' place cockpit kneeling switch in 'UNKNEEL' position. Leave switch in 'UNKNEEL' position.

Caution

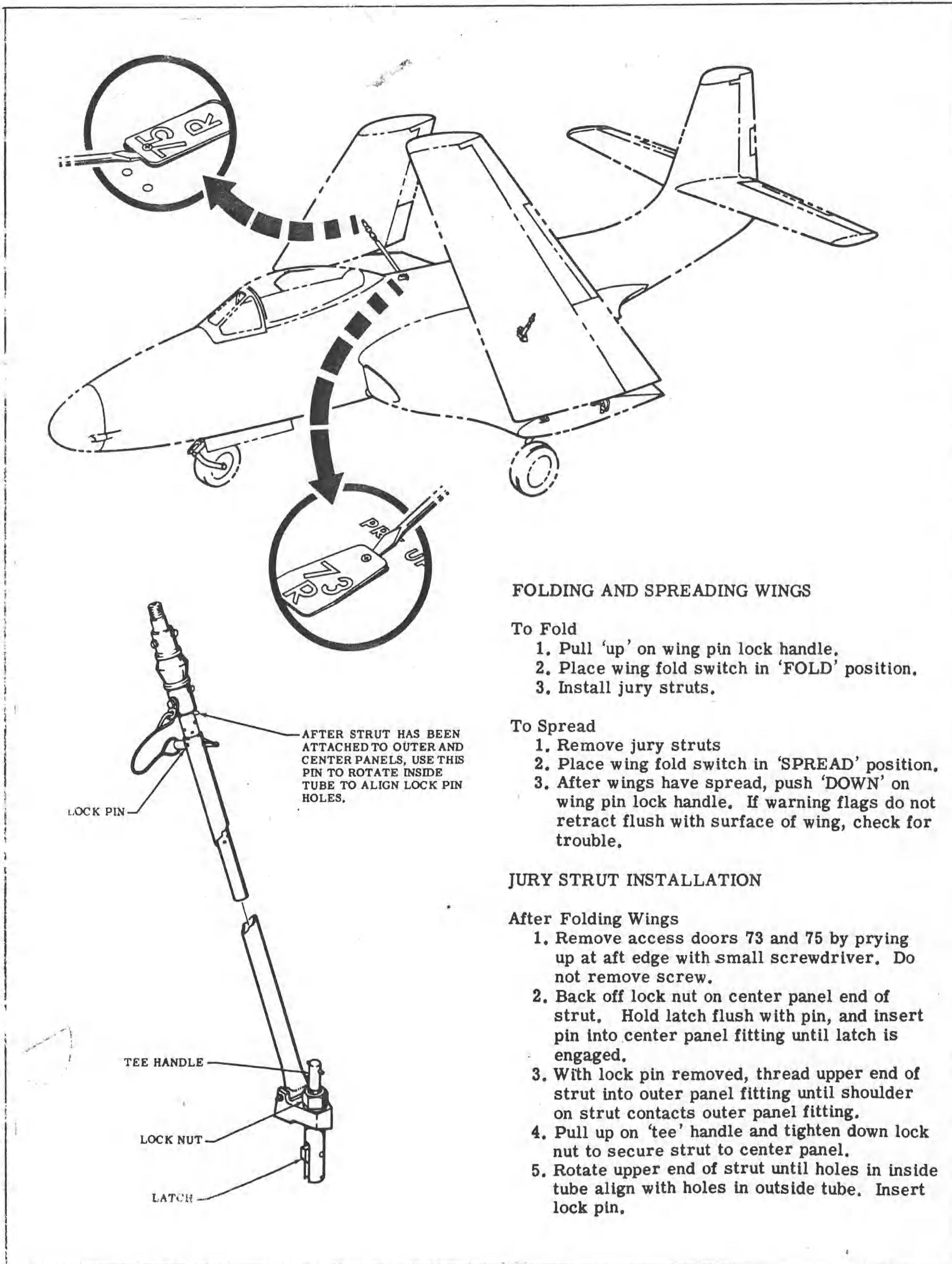
Normal operation of the landing gear cannot be obtained unless the kneeling switch is in the 'UNKNEEL' position.

2. Return gear shift handle to 'HIGH' gear position and latch in place.

Caution

Placing handle in 'HIGH' gear position allows dolly to drop to deck. Stand clear to avoid injury.

Figure 3-8. Kneeling
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FOLDING AND SPREADING WINGS

To Fold

1. Pull 'up' on wing pin lock handle.
2. Place wing fold switch in 'FOLD' position.
3. Install jury struts.

To Spread

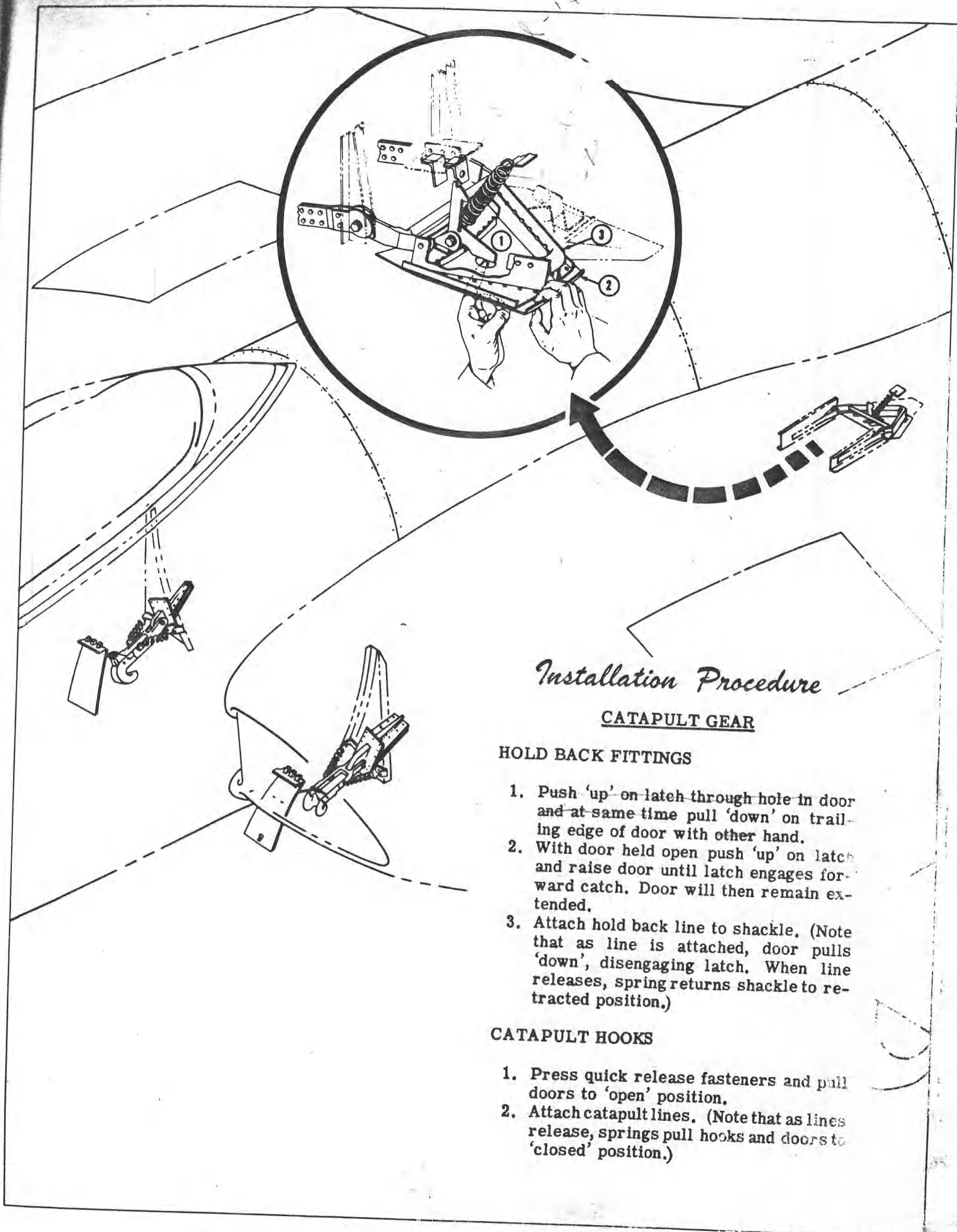
1. Remove jury struts
2. Place wing fold switch in 'SPREAD' position.
3. After wings have spread, push 'DOWN' on wing pin lock handle. If warning flags do not retract flush with surface of wing, check for trouble.

JURY STRUT INSTALLATION

After Folding Wings

1. Remove access doors 73 and 75 by prying up at aft edge with small screwdriver. Do not remove screw.
2. Back off lock nut on center panel end of strut. Hold latch flush with pin, and insert pin into center panel fitting until latch is engaged.
3. With lock pin removed, thread upper end of strut into outer panel fitting until shoulder on strut contacts outer panel fitting.
4. Pull up on 'tee' handle and tighten down lock nut to secure strut to center panel.
5. Rotate upper end of strut until holes in inside tube align with holes in outside tube. Insert lock pin.

Figure 3-9. Wing Folding
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Installation Procedure

CATAPULT GEAR

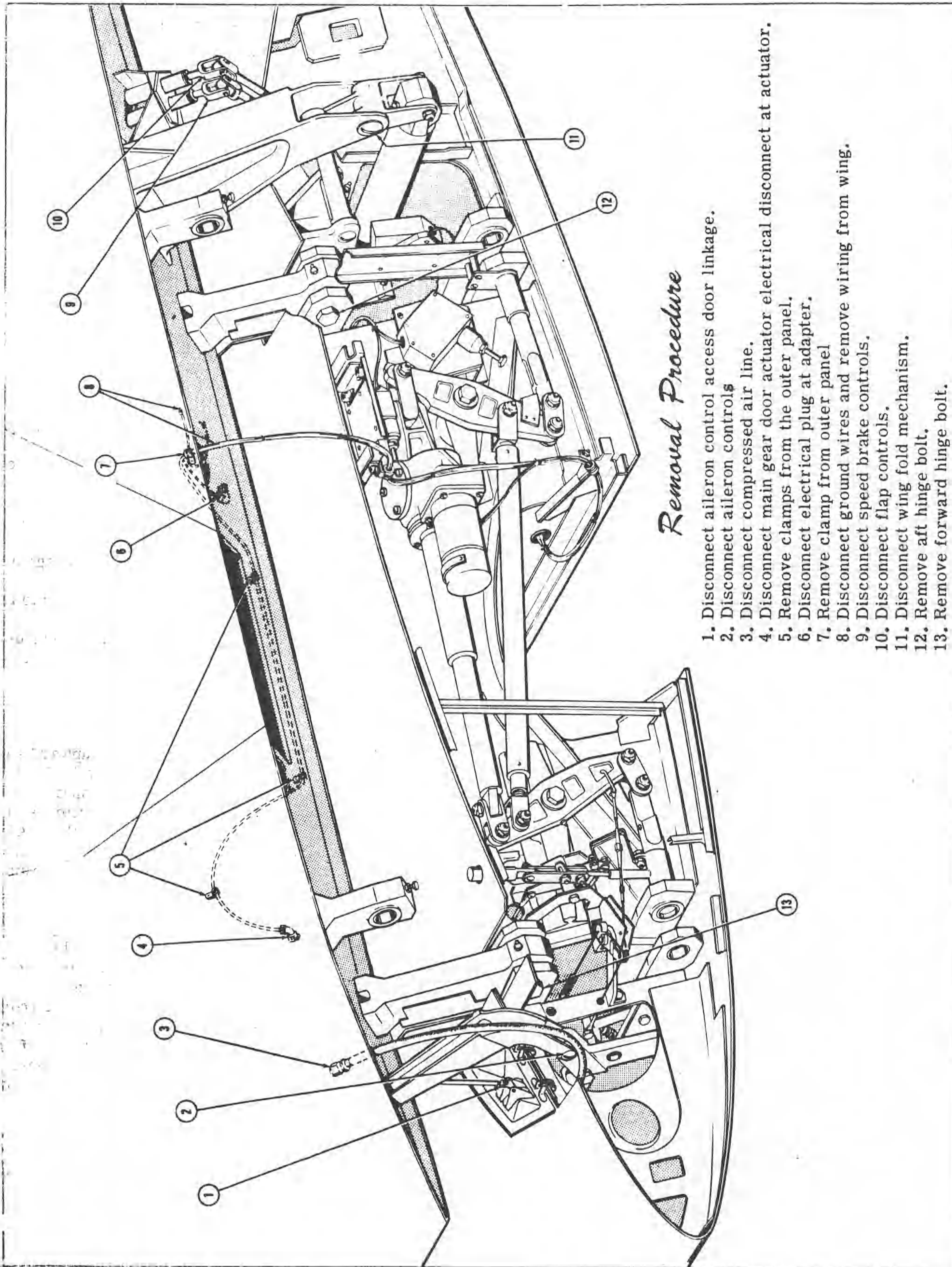
HOLD BACK FITTINGS

1. Push 'up' on latch through hole in door and at same time pull 'down' on trailing edge of door with other hand.
2. With door held open push 'up' on latch and raise door until latch engages forward catch. Door will then remain extended.
3. Attach hold back line to shackle. (Note that as line is attached, door pulls 'down', disengaging latch. When line releases, spring returns shackle to retracted position.)

CATAPULT HOOKS

1. Press quick release fasteners and pull doors to 'open' position.
2. Attach catapult lines. (Note that as lines release, springs pull hooks and doors to 'closed' position.)

Figure 3-10. Catapulting



Removal Procedure

1. Disconnect aileron control access door linkage.
2. Disconnect aileron controls
3. Disconnect compressed air line.
4. Disconnect main gear door actuator electrical disconnect at actuator.
5. Remove clamps from the outer panel.
6. Disconnect electrical plug at adapter.
7. Remove clamp from outer panel
8. Disconnect ground wires and remove wiring from wing.
9. Disconnect speed brake controls.
10. Disconnect flap controls.
11. Disconnect wing fold mechanism.
12. Remove aft hinge bolt.
13. Remove forward hinge bolt.

Figure 4-2. Removal of Outer Panel

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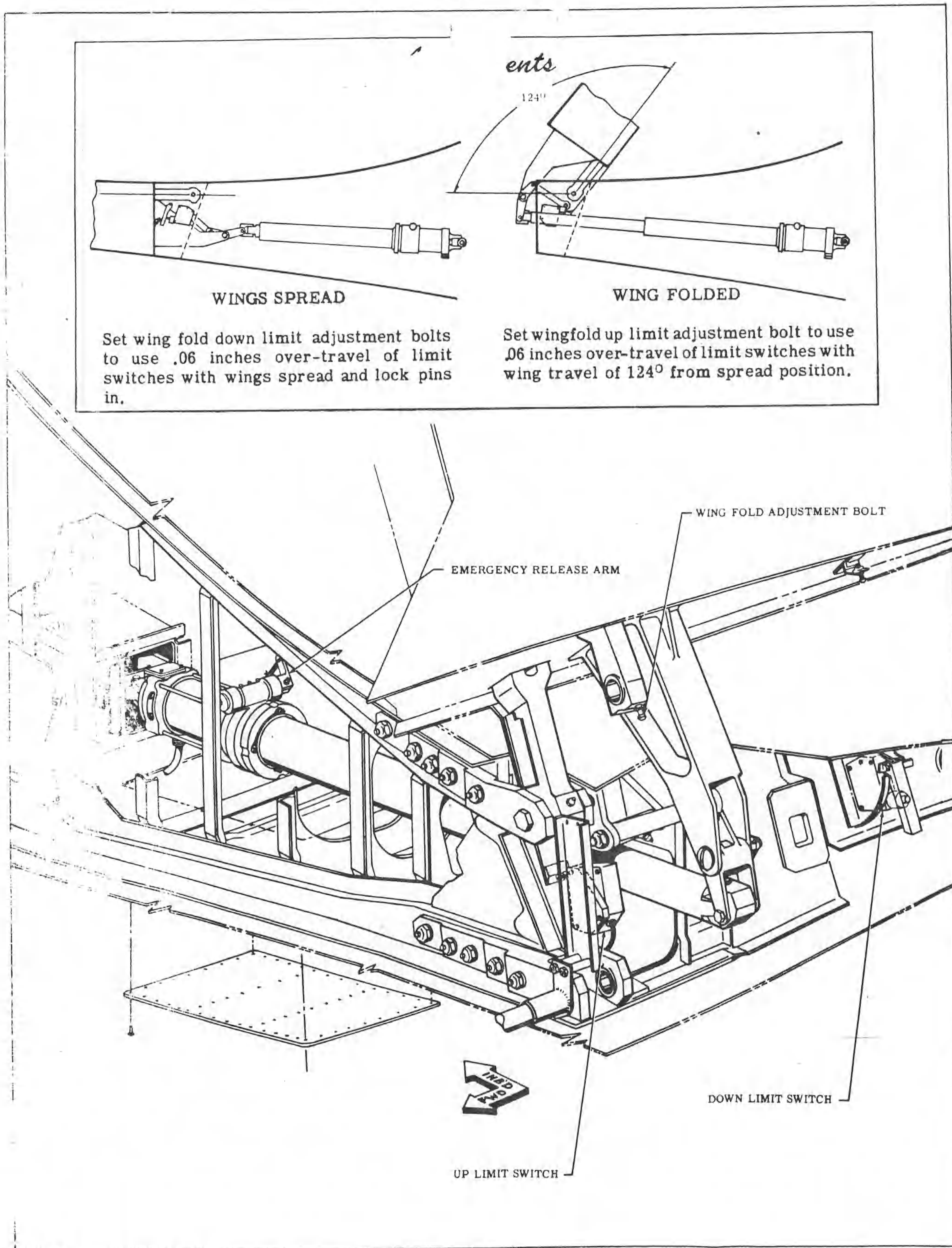
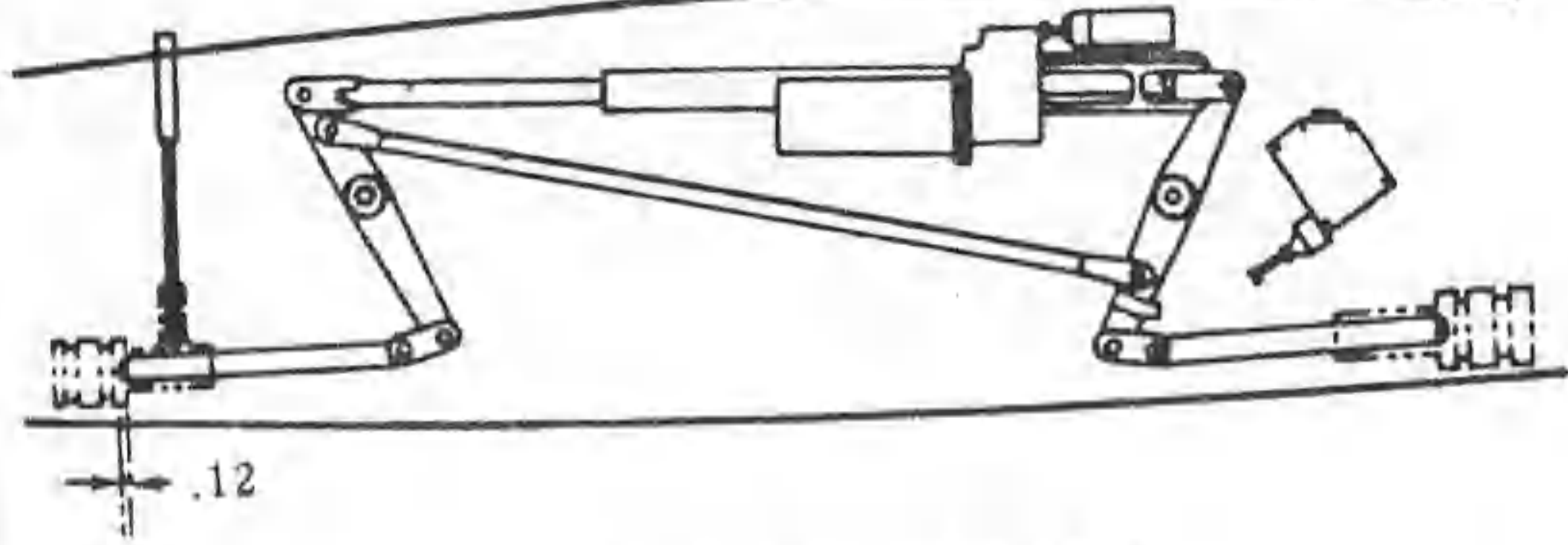


Figure 4-3. Wing Fold Mechanism

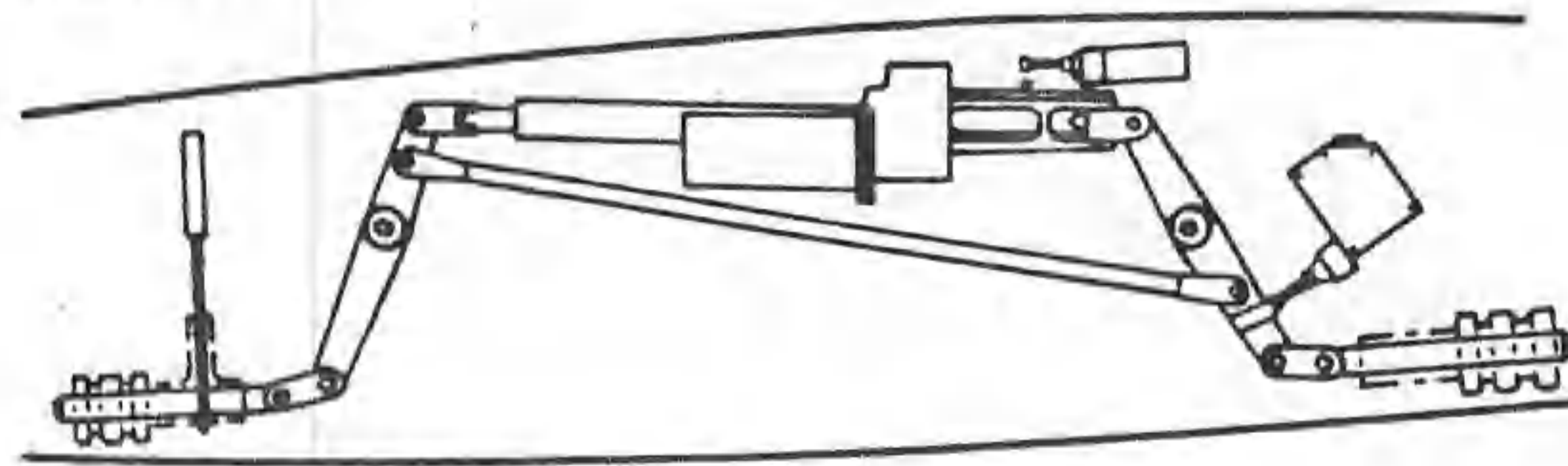
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Adjustments



WINGS FOLDED

Adjust out limit switch to trip when pin clears forward face of front spar lower hinge by .12.



WINGS SPREAD

Adjust in limit switch to use .03 inches overtravel when center line of hole in forward pin is in line with center line of safety pin.

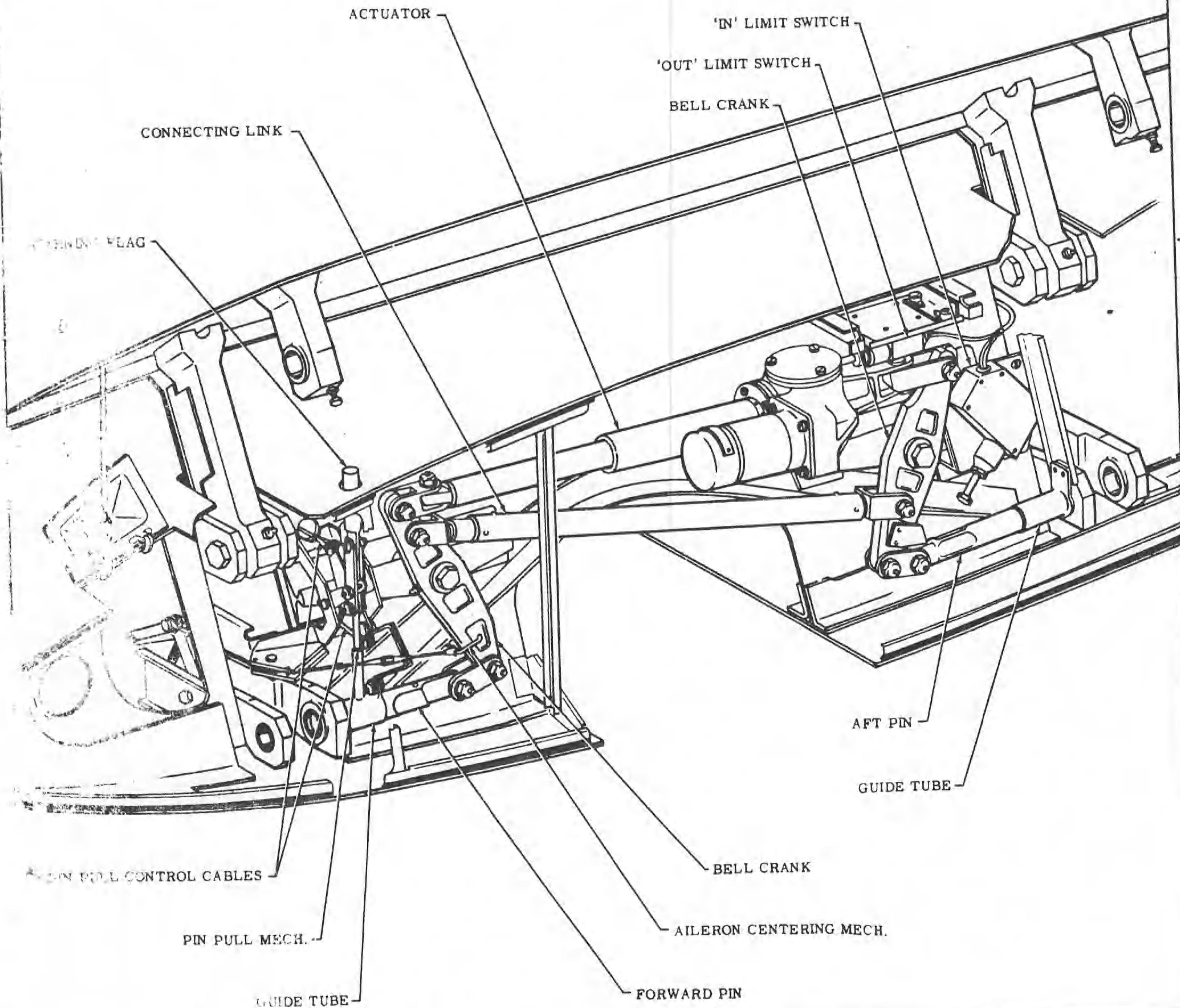
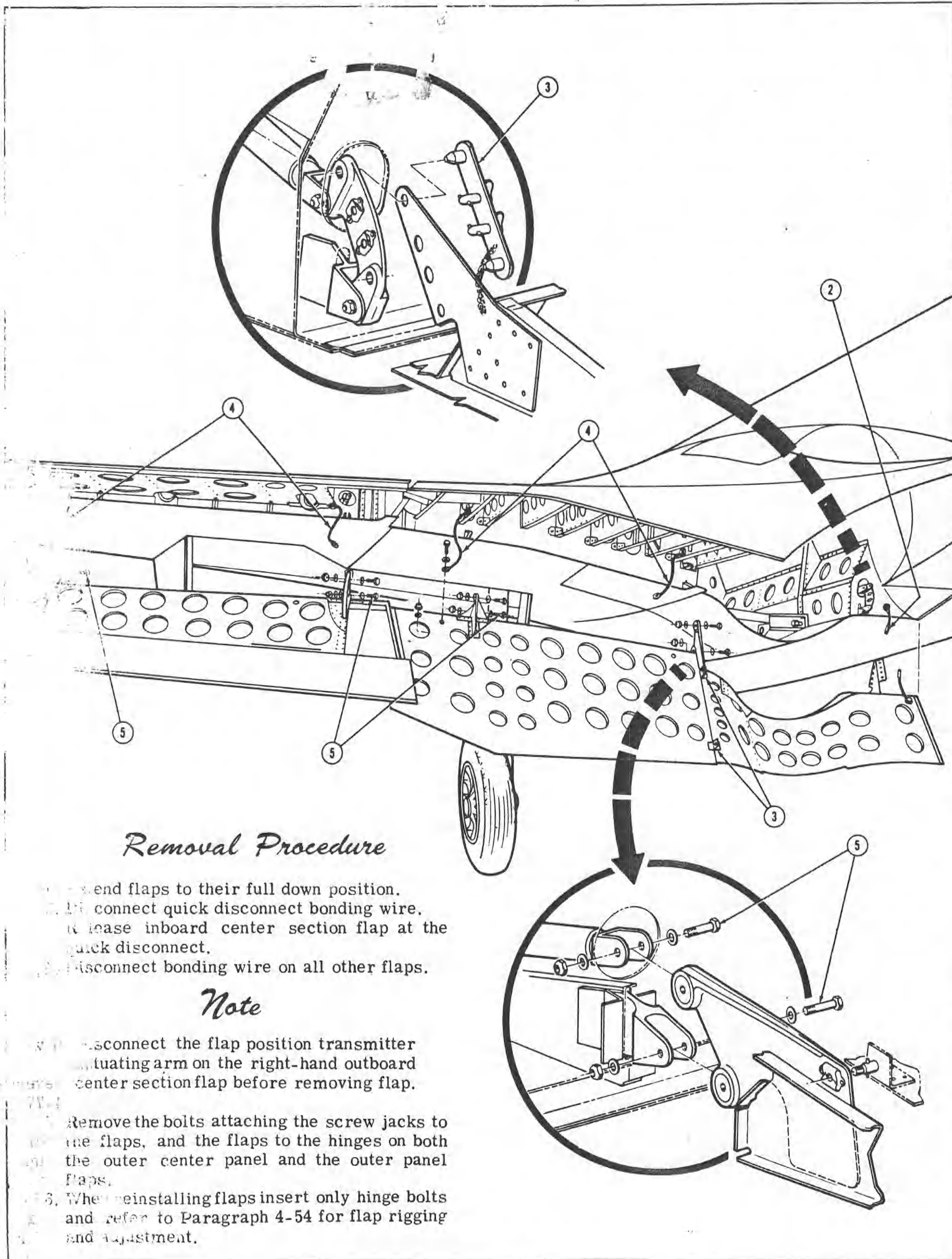


Figure 4-4. Wing Pin Pull Mechanism



Removal Procedure

1. Extend flaps to their full down position.
2. Disconnect quick disconnect bonding wire.
3. Release inboard center section flap at the quick disconnect.
4. Disconnect bonding wire on all other flaps.

Note

5. Disconnect the flap position transmitter actuating arm on the right-hand outboard center section flap before removing flap.
6. Remove the bolts attaching the screw jacks to the flaps, and the flaps to the hinges on both the outer center panel and the outer panel flaps.
7. When reinstalling flaps insert only hinge bolts and refer to Paragraph 4-54 for flap rigging and adjustment.

Figure 4-7. Removal of Flaps

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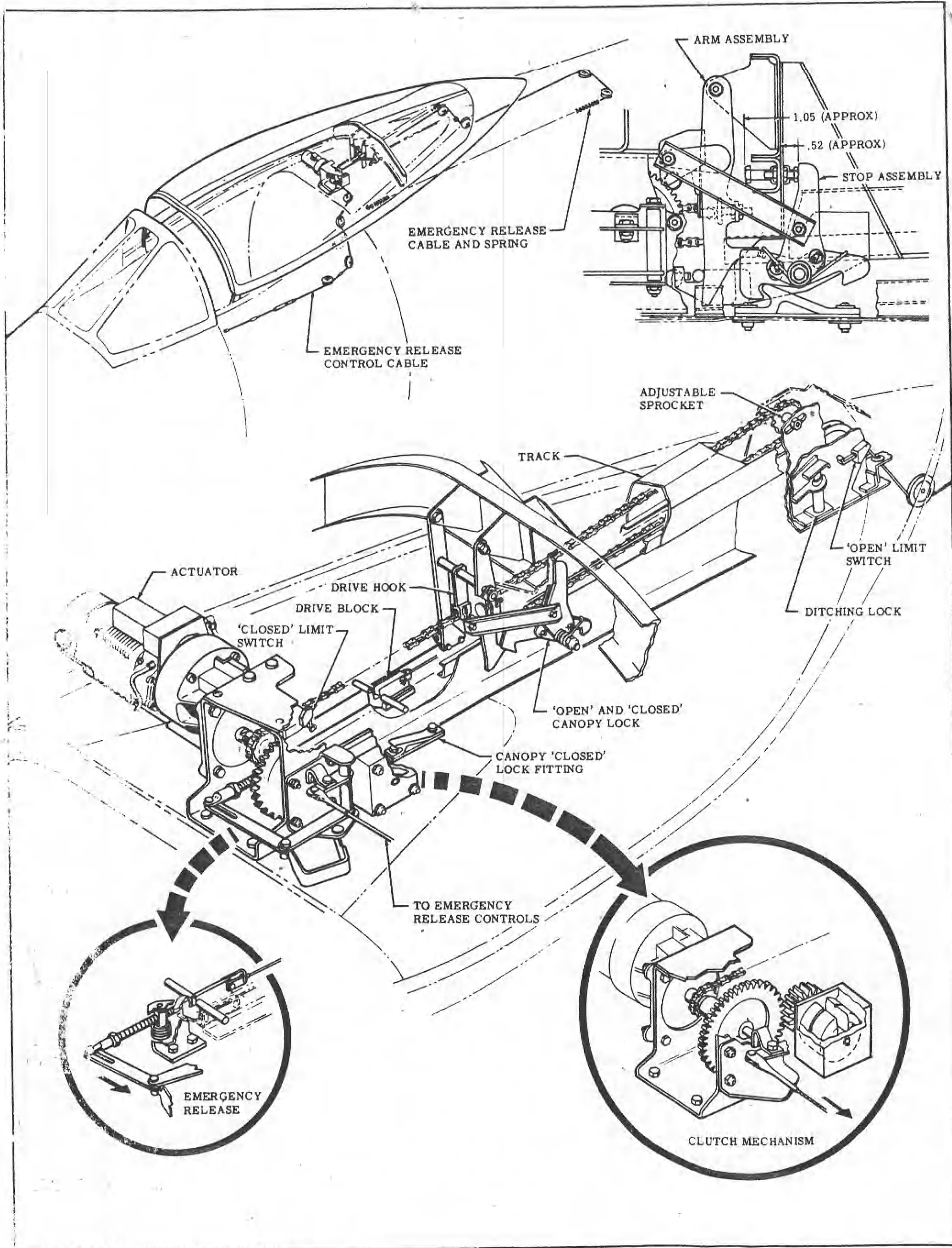


Figure 4-28. Canopy Actuating Mechanism
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Disconnect Points

- 1. Actuator electrical plug
- 2. 'DOWN' position indicator switch
- 3. Centering lock safety switch
- 4. Kneeling mechanism at clutch
- 5. Centering lock cable at kneeling mechanism
- 6. Actuator trunnion
- 7. Upper drag brace trunnions
- 8. Shock strut trunnions

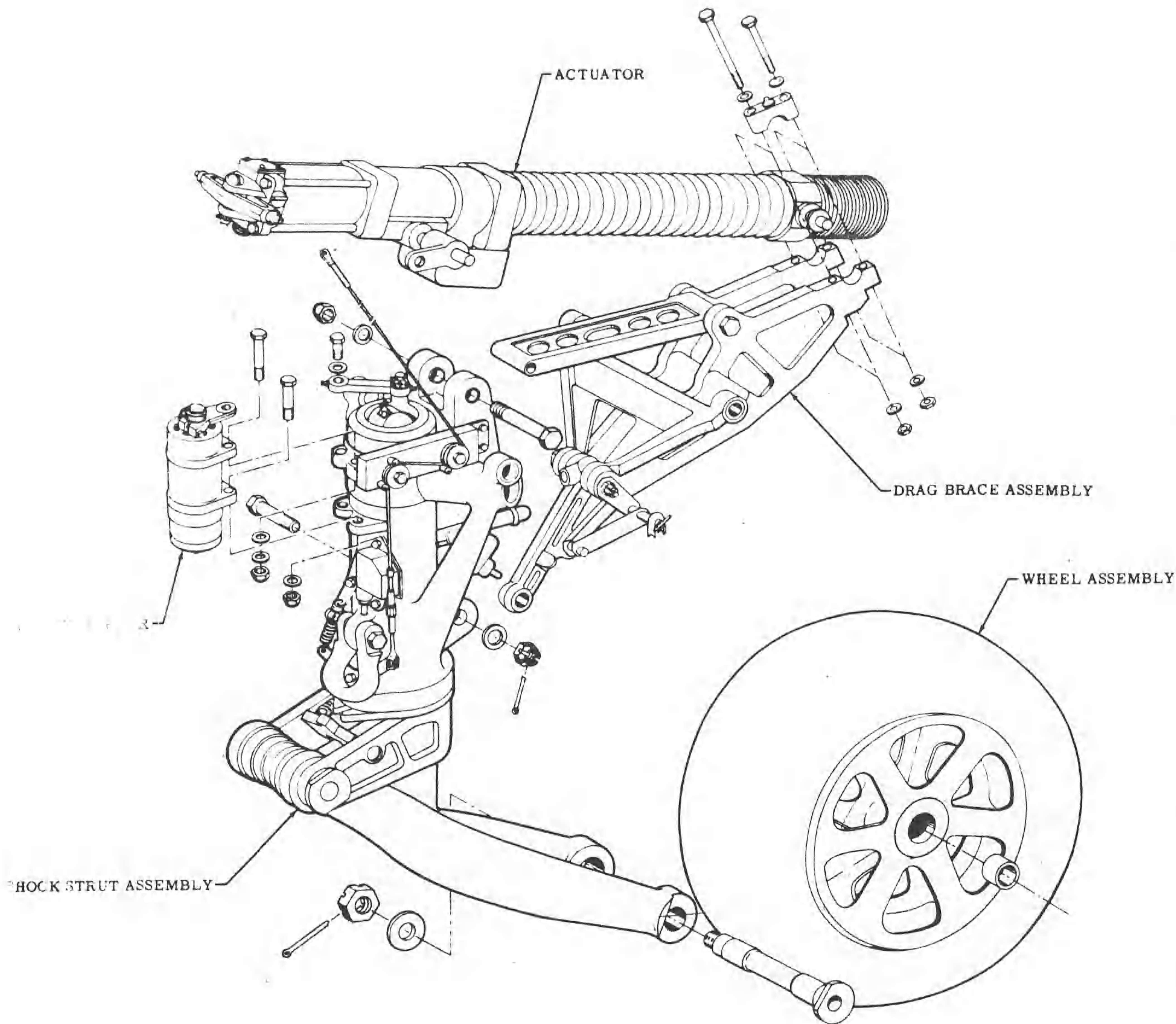
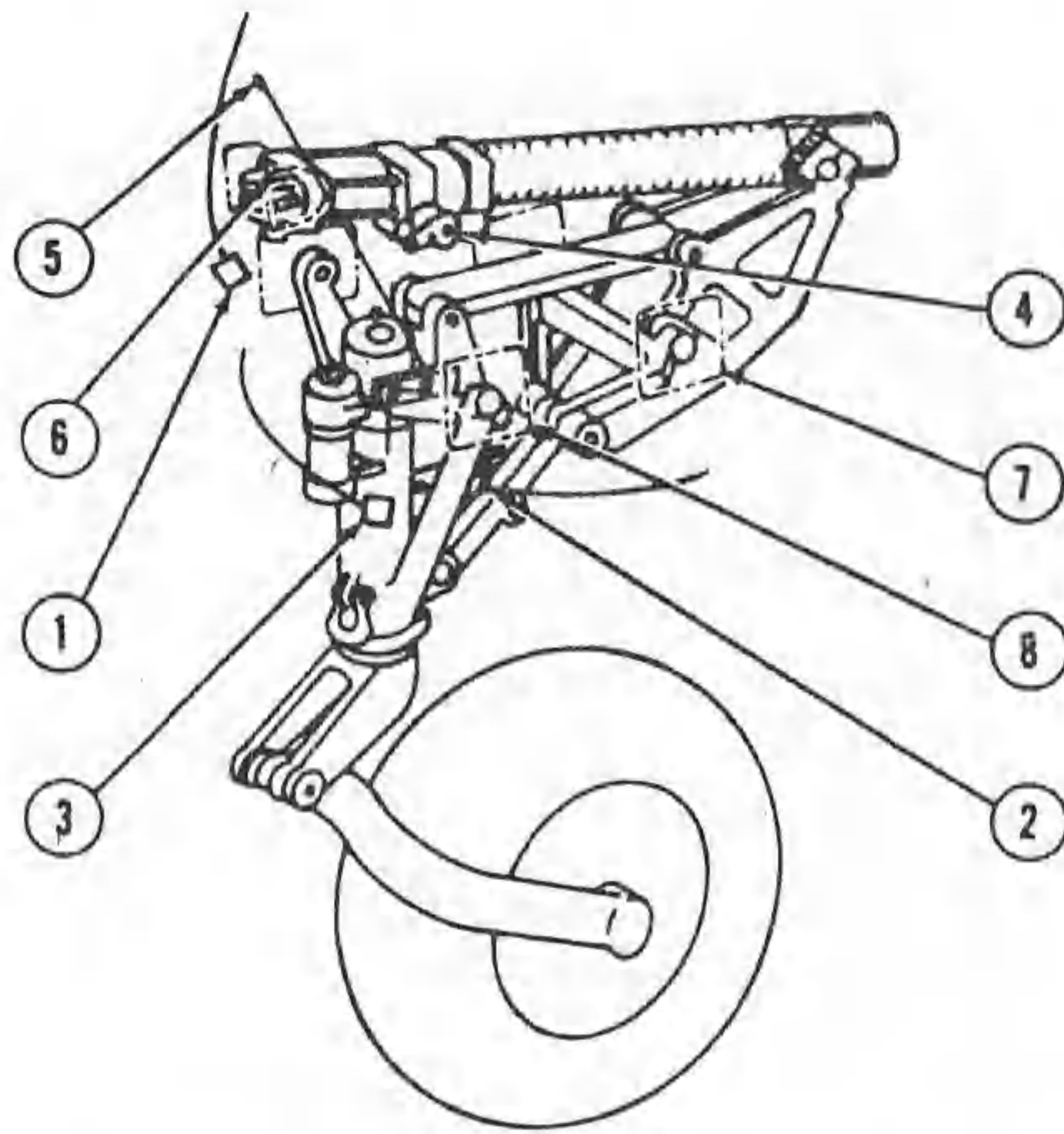
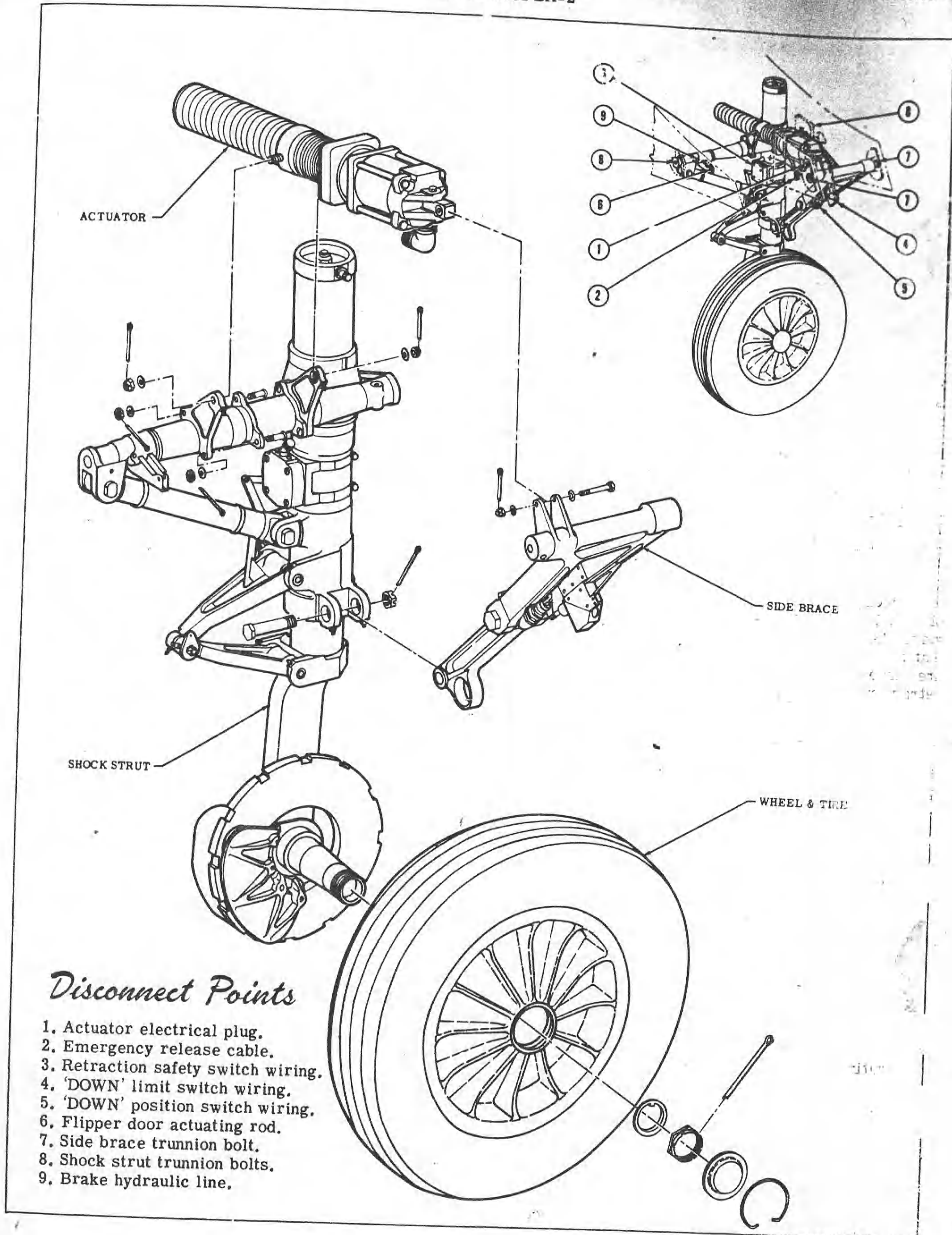


Figure 4-37. Nose Gear Components



Disconnect Points

1. Actuator electrical plug.
2. Emergency release cable.
3. Retraction safety switch wiring.
4. 'DOWN' limit switch wiring.
5. 'DOWN' position switch wiring.
6. Flipper door actuating rod.
7. Side brace trunnion bolt.
8. Shock strut trunnion bolts.
9. Brake hydraulic line.

Figure 4-29. Main Gear Components

Disconnect Points

1. Remove flap and access doors.
2. Fuel line disconnect.
3. Oil lines disconnect.
4. Air pressure line disconnect.
5. Electrical connector.
6. Generator cooling tube connection.
7. Dump tank line connection.
8. Engine control connection.

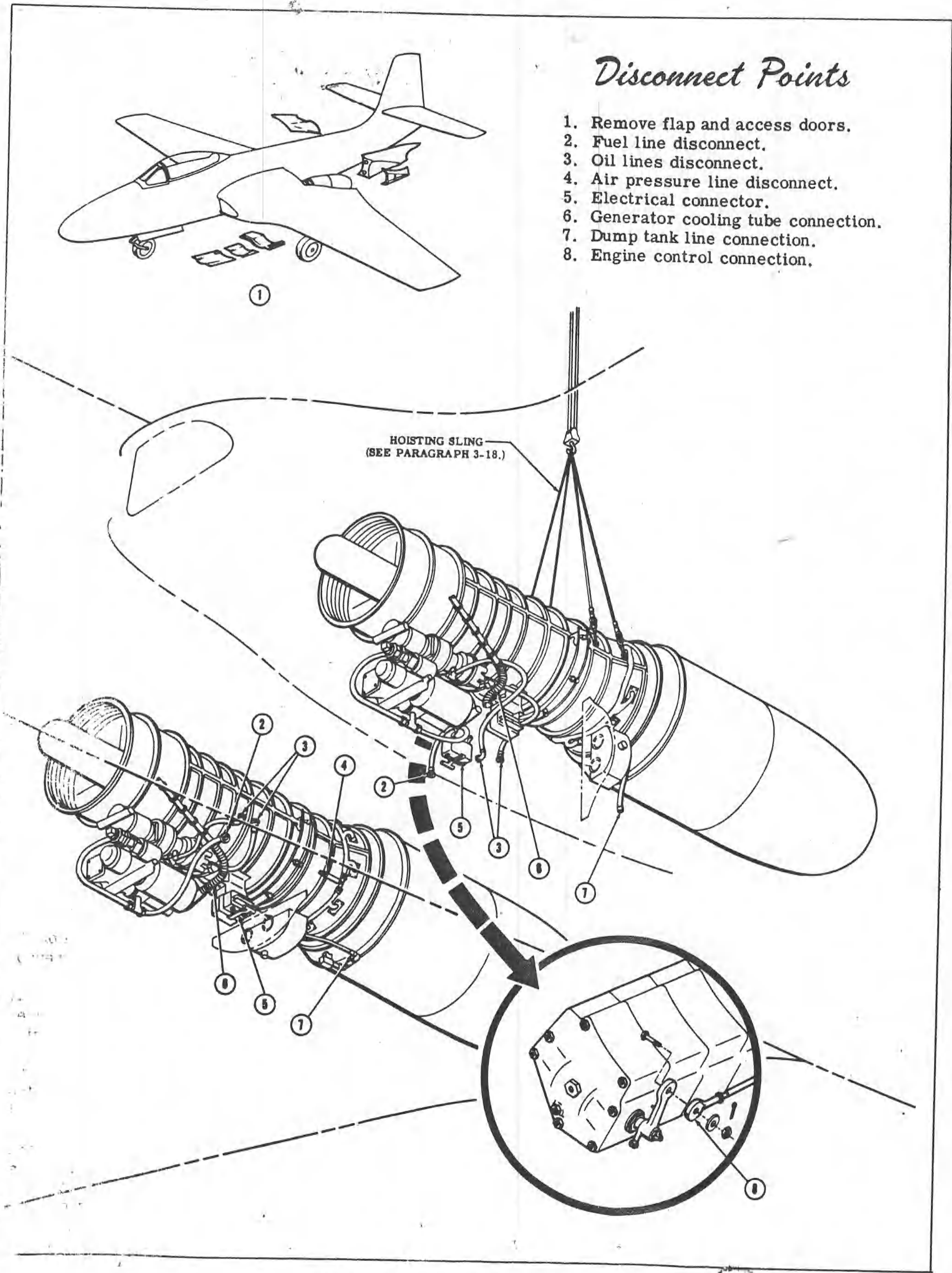


Figure 4-47. Removal and Installation of Engine

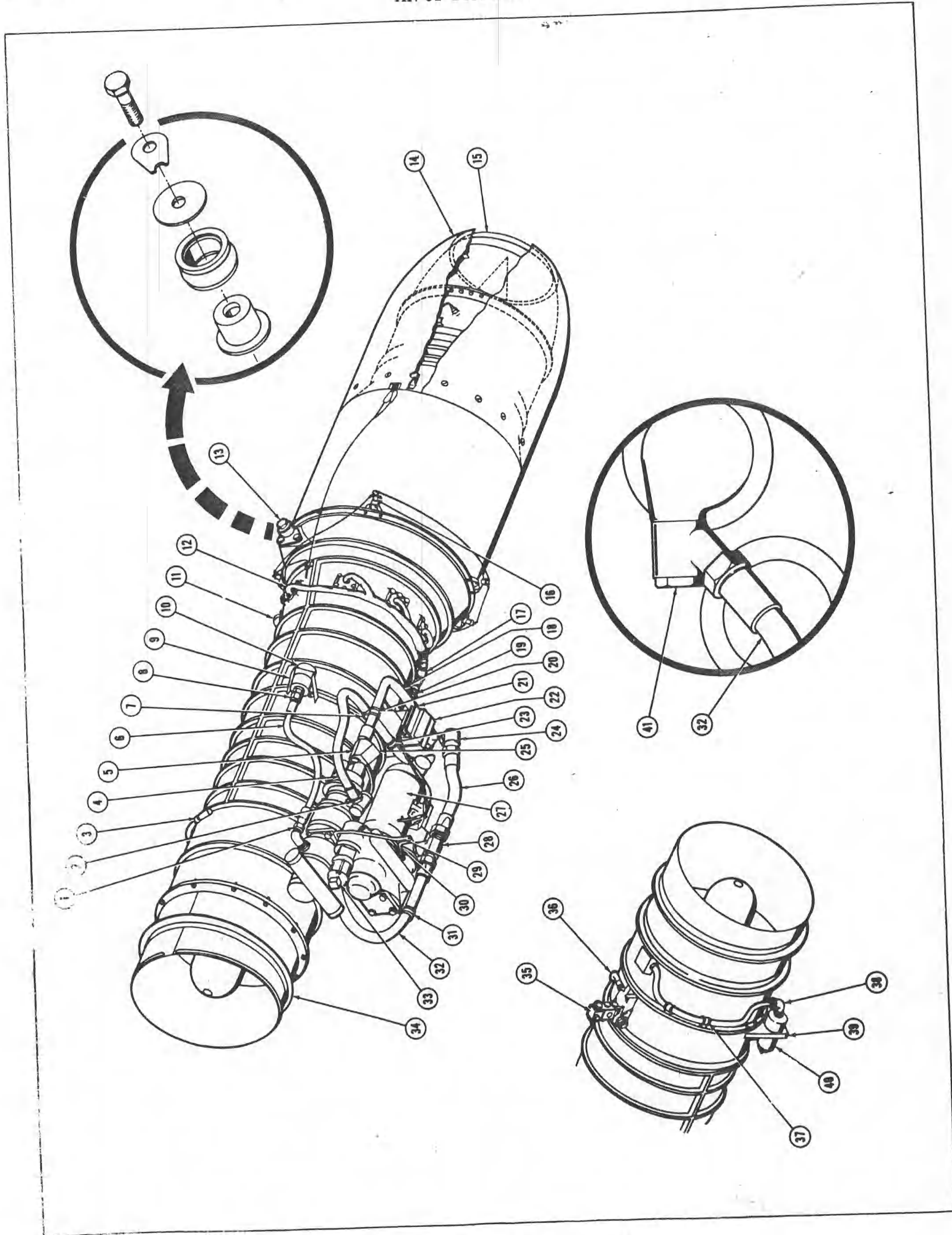


Figure 4-48. Engine Build-Up

Name	Qty.	Part No.	Name	Qty.	Part No.	Name	Qty.	Part No.
1. Elbow Fitting	1	15-58014-5	Washer	1	15-51030	Sealing Ring	1	2-2045-2-22
Sealing Ring	1	2-2045-2-7	Bolt	1	AN10-13A			
Union Nut	1	AN924-4						
2. Union	1	AN815-12D	14. Fairing	1	15-50020	29. L.H. Emergency		
Sealing Ring	1	2-2045-2-18	Screw	18	AN510C10-4	Fuel Pump		
						Drain Line Assy.	1	15-58041-17
3. Line Support	1	755-8-2-8 (Adel)	15. Nozzle	1	15-50021	Sealing Ring	1	2-2045-2-18
Bracket	1	15-58015	Bolt	48	AN4C4A	Nut	1	AN924-4D
Screw	1	NAS229-9	Palnut	48	19H531-4	Elbow	1	AN833-4D
Washer	1	AN960PD10			(WEMCO)			
Nut	1	AN365-1032	Nut	48	19H527-4	R.H. Emergency		
Spacer	1	15-58036			(WEMCO)	Fuel Pump		
Bolt	1	AN4-12A	Washer	48	AN960-C-416	Drain Line Assy	1	15-58041-19
			(See Figure 4-49			Sealing Ring	1	2-2045-2-18
4. L.H. Oil Line Assy.	1	AN6264-12D-36	Trimming Exhaust			Nut	1	AN924-4D
Coupling Half	1	AN6221-12	Nozzle)			Elbow	1	AN833-4D
Nut	1	AN6224-12						
R.H. Oil Line Assy.	1	AN6264-12D-18	16. Fire Detector			30. L.H. Governor		
Union	1	AN815-12D	System			Drain Line Assy.	1	15-58041-15
Elbow	1	AN927-12D	(See Figure 4-51)			Sealing Ring	1	2-2045-2-18
Sealing Ring	1	2-2045-2-18				Nipple	1	AN815-4D
						R.H. Governor		
5. Fitting	1	15-57054	17. Connection Assy.	1	15-50023	Drain Line Assy.	1	15-58041-21
Nut	1	AN924-10D	(Flex.)			Sealing Ring	1	2-2045-2-18
Sealing Ring	1	2-2045-2-14				Nipple	1	AN815-4D
6. Hose Assy.	1	AN6264-4-26	18. L.H. Oil Line Assy.	1	AN6264-10D-25	31. L.H. Clip	1	15-58188
			Union	1	AN815-10D	Clamp	1	AN742-22C
7. L.H. Only			Elbow	1	AN928-10D	Bolt	1	AN3-5A
Clamp	1	AN742-19C	Sealing Ring	2	2-2045-2-14	Washer	2	AN960PD10
Screw	1	NAS229-8	Coupling Half	1	AN6221-10	Nut	1	AN365-1032
Nut	1	AN365-1032	Nut	1	AN6224-12	Washer	1	AN960PD10
Washer	1	AN960PD10	R.H. Oil Line Assy.	1	AN6264-10D-15			
			Coupling Half	1	AN6221-10	32. Fuel Line Assy.	1	AN6264-16D-23
8. Union	1	AN815-4D	Nut	1	AN6224-12			
Sealing Ring	1	2-2045-2-7				33. Tachometer	1	R88-G-1320
			19. L.H. Fitting Assy.	1	15-50017			
9. Bracket	1	15-58035	Plug	1	8802(E.B. Wiggins)	34. Air Duct Adapter	1	15-59011
Bolt	3	AN4-13A	R.H. Fitting Assy.	1	15-50022	Bolt	12	AN4-7A
Spacer	3	15-58036	Plug	1	8802(E.B. Wiggins)	Washer	36	AN960PD10
Washer	3	AN960-416				Nut	12	AN365-428
Washer	3	AN960PD416	20. L.H. Only			Gasket	1	15-59027
Screw	4	NAS203-632-6	Clamp	1	AN742-17C			
						35. Engine Mount -		
10. Fuel Pressure			21. L.H. Only			Fwd Universal Assy.	1	15-51007
Transmitter	1	R88-T-2651-125	Clamp	1	AN742-17C	Bolt	1	AN8-25A
		(G.F.E.)				Washer	2	AN980A-816
11. Air Pressure			22. Engine Wiring			Nut	1	AN365-820
Manifold	1	15-50011-2	Installation					
Bolt	24	AN3H5A	(See Figure 4-50.)			36. Nipple	1	AN816-8D
Washer	14	AN900PD10				Vent Line	1	15-58096-3
Wire	4	AN995C-32-10	23. L.H. Only					
Gasket	1	9M28-1	Clip	1	15-57058	37. Bracket	2	15-58015
			Clamp	1	AN742-19C	Clip	2	755-E-8-2-8 (Adel)
12. Air Pressure			Screw	1	NAS229-8	Screw	2	NAS229-9
Manifold	1	15-50011-1	Nut	1	AN365-1032	Washer	2	AN960PD10
Bolt	24	AN3H5A						
Washer	24	AN900-PD10	24. L.H. Only			38. ELBOW	1	AN822-4D
Wire	4	AN995-C32-10	Union	1	AN815-20D	Hose Assy.	1	AN6264-4-26 1/2
Gasket	4	9M28-1	Sealing Ring	1	2-2045-2-27	Fitting Assy.	1	15-58014-3
			Elbow	1	2-2045-2-27			
13. Main Engine			Sealing Ring	1	2-2045-2-27	39. Bracket	1	15-58233
Mounts						Bolt	3	AN4-13A
(See Detail)			25. Thermometer	1	R88-B-890	Spacer	3	15-58036
Outboard Mount			Washer	1	(AN5525-1 G.F.E.)	Washer	3	AN960-416
Retainer	1	15-51025			AN900-10	Washer	3	AN960PD416
Sleeve Assy.	2	15-51003	26. L.H. Fuel Line	1	AN6264-20D-10	Screw	4	NAS203-632-6
Washer	1	15-51024	R.H. Fuel Line Assy.	1	AN6264-20D-30			
Washer	1	15-51030				40. Oil Pressure	1	R88-T-2651-100
Bolt	1	AN10-11A	27. Generator	1	2CM-63 (G.F.E.)	Transmitter		(G.F.E.)
Inboard Mount								
Retainer	1	15-51026	28. L.H. Fitting	1	15-58038	41. L.H. Elbow	1	15-580207
Sleeve Assy.	1	15-51003	Nut	1	AN924-16D	Gasket	2	AN901-16A
Washer	1	15-51024	Sealing Ring	1	2-2045-2-22	Bolt	1	AN775-16D
						R.H. Elbow	1	15-58207
			R.H. Fitting	1	15-58037	Bolt	1	AN775-16D
			Nut	1	AN924-16D	Washer	2	AN901-16A

4-354. AIR INDUCTION SYSTEM.

4-355. GENERAL DESCRIPTION. A separate air intake duct is provided to supply air to each engine. The ducts start at the leading edge of the center wing section adjacent to the fuselage and run aft to the oil cooler section of the engine. A butterfly valve in each duct shuts off the flow of air when an engine is shut down in flight and also may be closed while the airplane is on the ground to prevent the entrance of foreign matter into the engine. The valve is operated by an electric linear actuator and has only completely 'OPEN' and 'CLOSED' positions. The engine master switches and micro switches in the throttle quadrant control the actuators. The engine master switch must be in the 'ON' position and the throttle quadrant moved away from the 'OFF' position to open the butterfly valve. This arrangement prevents the engines from being started with the butterfly valve closed. Small bleeder ducts at the leading edge openings divert a portion of the rammed air to the generator and engine compartment for cooling.

4-356. AIR DUCT AND BUTTERFLY VALVE.

4-357. DESCRIPTION. Each air duct assembly consists of a forward section, a ring in which the butterfly valve is located, an aft section and an adapter section. The sections are built up of sheet metal, changing in cross-section from the shape of the leading edge opening at the forward end to circular at the adapter assembly. The forward and aft duct sections are bolted to the ring which supports the butterfly valve. The adapter assembly is bolted to the oil cooler flange on the engine. A hinged collar attached to the wing structure clamps the aft duct to the adapter section. This allows the adapter section to be quickly disconnected so that it may be removed with the engine. The forward end of the duct is attached to the leading edge structure with flush type screws. The butterfly valve pivots horizontally in bearings in the support ring. A crank arm on the outboard side connects the butterfly valve shaft to the linear actuator.

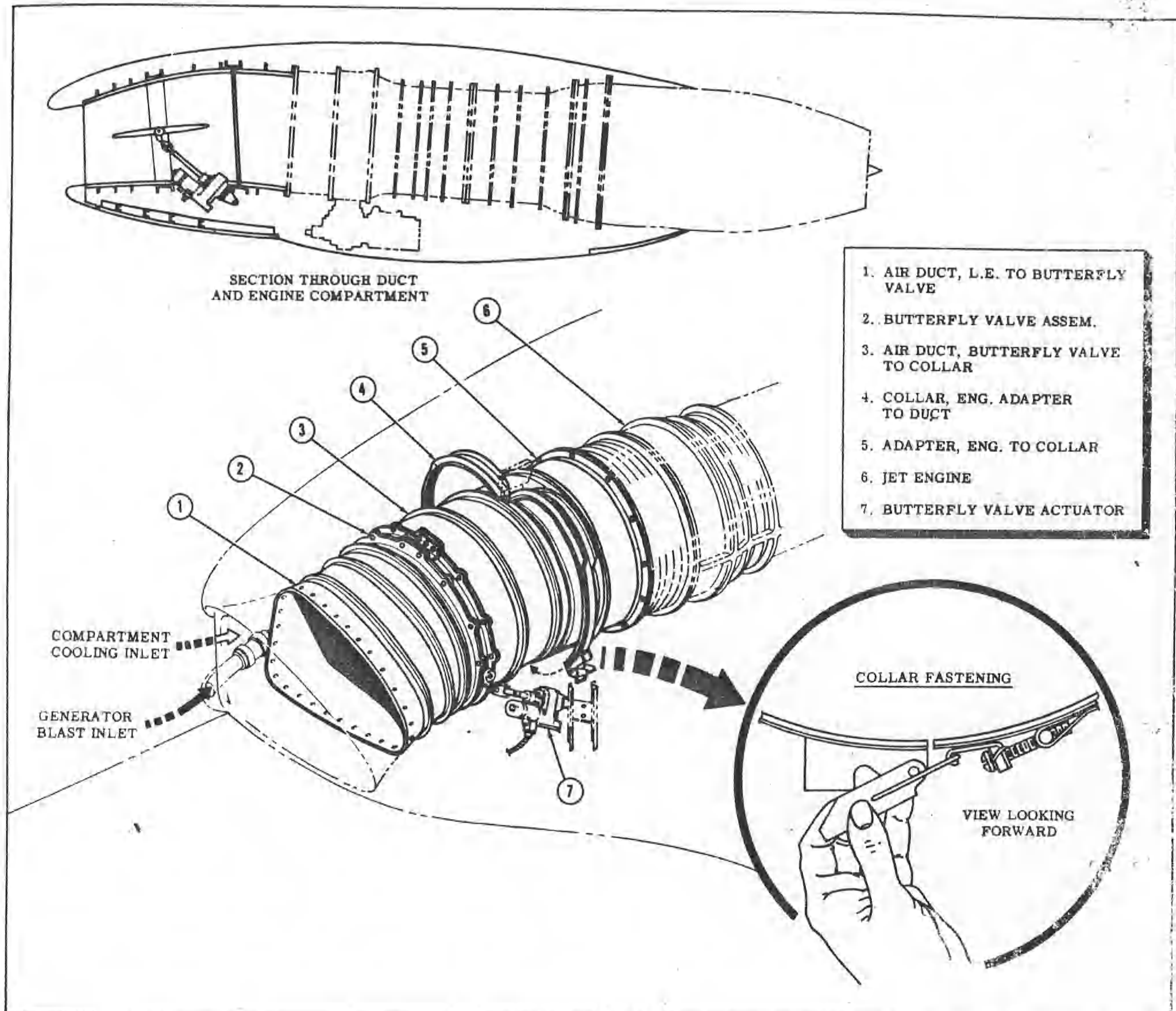
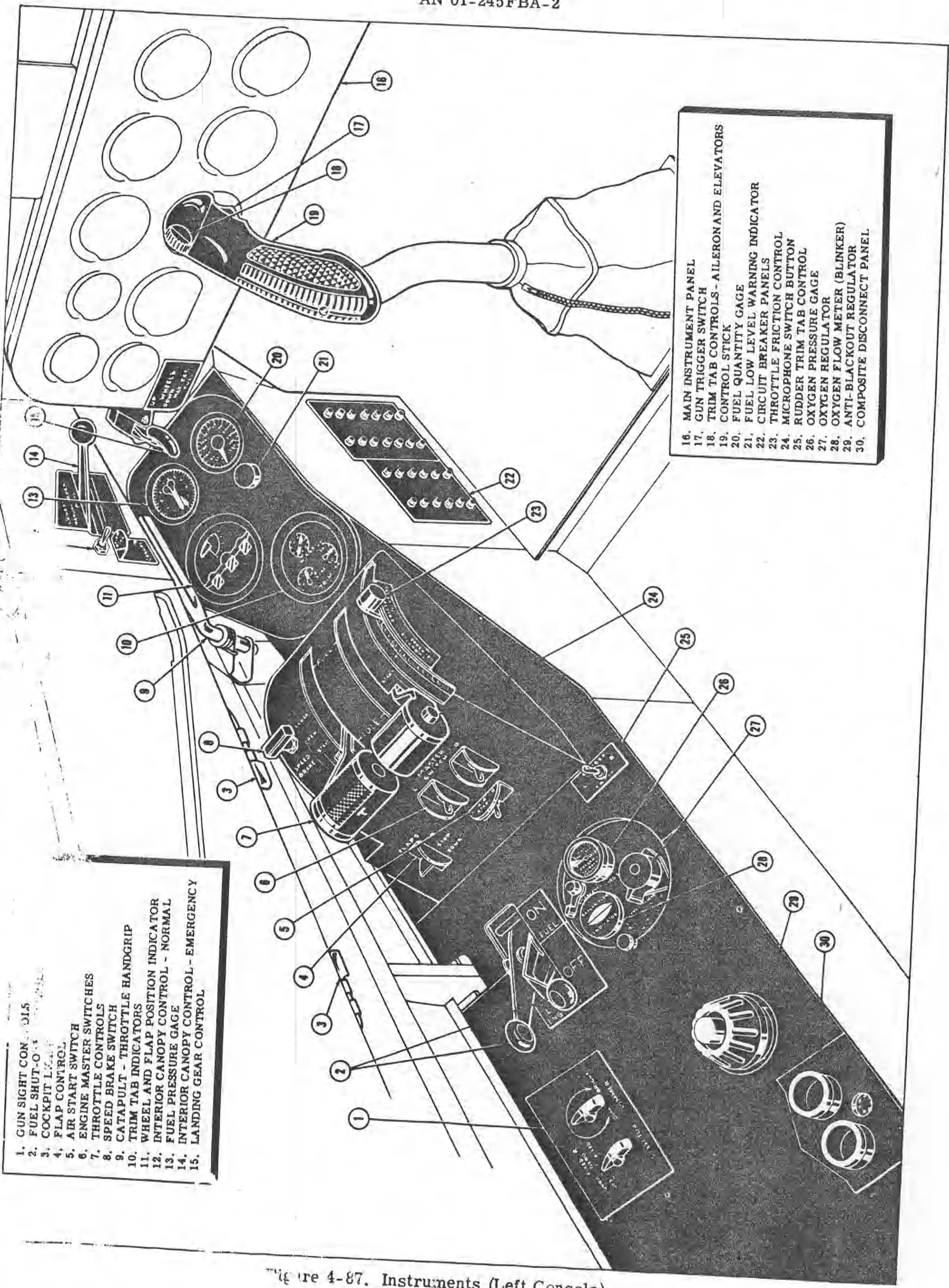


Figure 4-52. Air Induction System

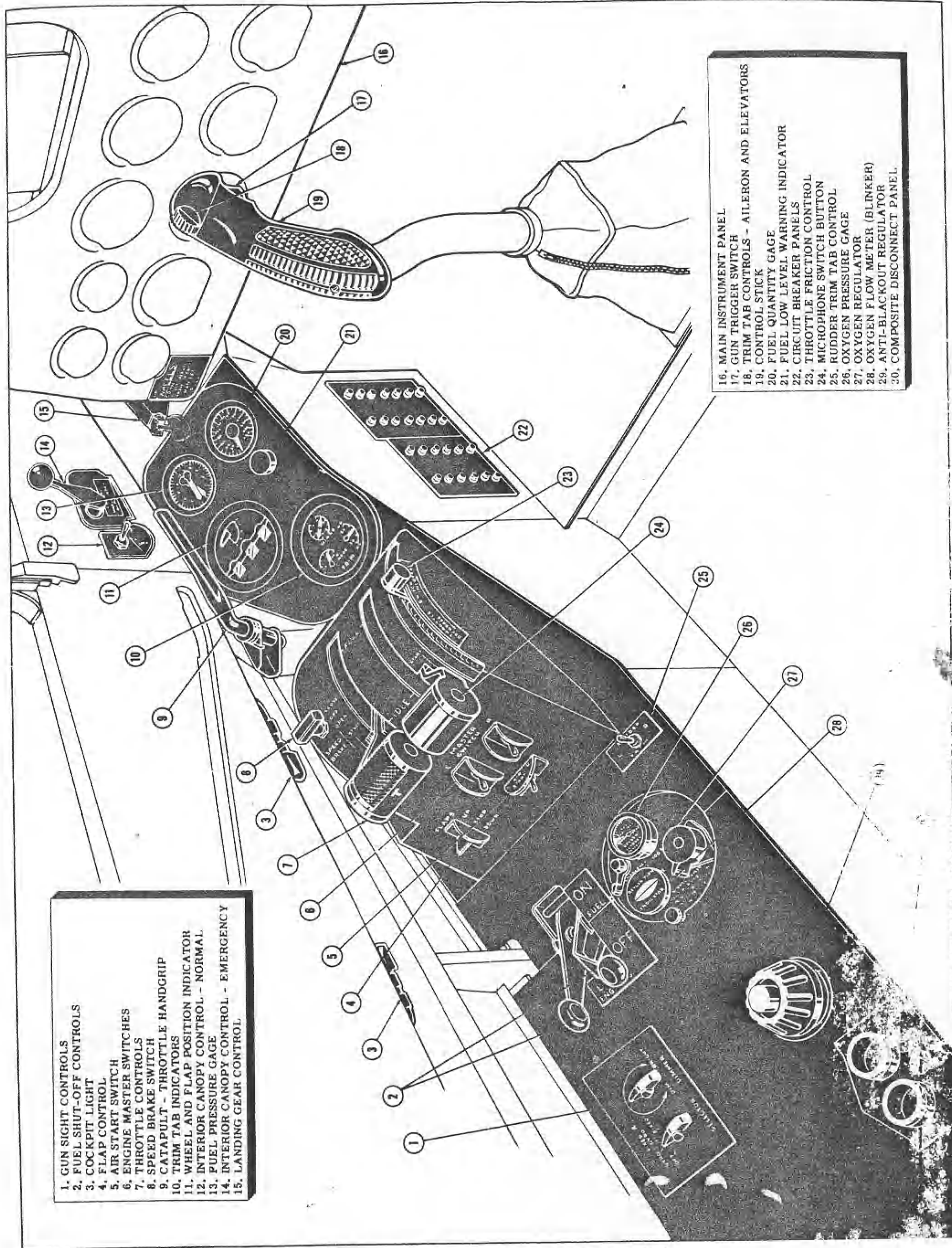


1. GUN SIGHT CONTROLS
2. FUEL SHUT-OFF SWITCH
3. COCKPIT LIGHTS
4. FLAP CONTROL
5. AIR START SWITCH
6. ENGINE MASTER SWITCHES
7. THROTTLE CONTROLS
8. SPEED BRAKE SWITCH
9. CATAPULT - THROTTLE HANDGRIP
10. TRIM TAB INDICATORS
11. WHEEL AND FLAP POSITION INDICATOR
12. INTERIOR CANOPY CONTROL - NORMAL
13. FUEL PRESSURE GAGE
14. INTERIOR CANOPY CONTROL - EMERGENCY
15. LANDING GEAR CONTROL

16. MAIN INSTRUMENT PANEL
17. GUN TRIGGER SWITCH
18. TRIM TAB CONTROLS - AILERON AND ELEVATORS
19. CONTROL STICK
20. FUEL QUANTITY GAGE
21. FUEL LOW LEVEL WARNING INDICATOR
22. CIRCUIT BREAKER PANELS
23. THROTTLE FRICTION CONTROL
24. MICROPHONE SWITCH BUTTON
25. RUDDER TRIM TAB CONTROL
26. OXYGEN PRESSURE GAGE
27. OXYGEN REGULATOR
28. OXYGEN FLOW METER (BLINKER)
29. ANTI-BLACKOUT REGULATOR
30. COMPOSITE DISCONNECT PANEL

Figure 4-87. Instruments (Left Console)

FCit-1. Applies to Aircraft Serial No. 122530 to 122533 (Incl.)



- 1. GUN SIGHT CONTROLS
- 2. FUEL SHUT-OFF CONTROLS
- 3. COCKPIT LIGHT
- 4. FLAP CONTROL
- 5. AIR START SWITCH
- 6. ENGINE MASTER SWITCHES
- 7. THROTTLE CONTROLS
- 8. SPEED BRAKE SWITCH
- 9. CATAPULT - THROTTLE HANDGRIP
- 10. TRIM TAB INDICATORS
- 11. WHEEL AND FLAP POSITION INDICATOR
- 12. INTERIOR CANOPY CONTROL - NORMAL
- 13. FUEL PRESSURE GAGE
- 14. INTERIOR CANOPY CONTROL - EMERGENCY
- 15. LANDING GEAR CONTROL

- 16. MAIN INSTRUMENT PANEL
- 17. GUN TRIGGER SWITCH
- 18. TRIM TAB CONTROLS - AILERON AND ELEVATORS
- 19. CONTROL STICK
- 20. FUEL QUANTITY GAGE
- 21. FUEL LOW LEVEL WARNING INDICATOR
- 22. CIRCUIT BREAKER PANELS
- 23. THROTTLE FRICTION CONTROL
- 24. MICROPHONE SWITCH BUTTON
- 25. RUDDER TRIM TAB CONTROL
- 26. OXYGEN PRESSURE GAGE
- 27. OXYGEN REGULATOR
- 28. OXYGEN FLOW METER (BLINKER)
- 29. ANTI-BLACKOUT REGULATOR
- 30. COMPOSITE DISCONNECT PANEL

Figure 4-87a. Instruments (Left Console)

Model F2H-1. Applies to Aircraft Serial No. 122534 to 122539 (In-1.)

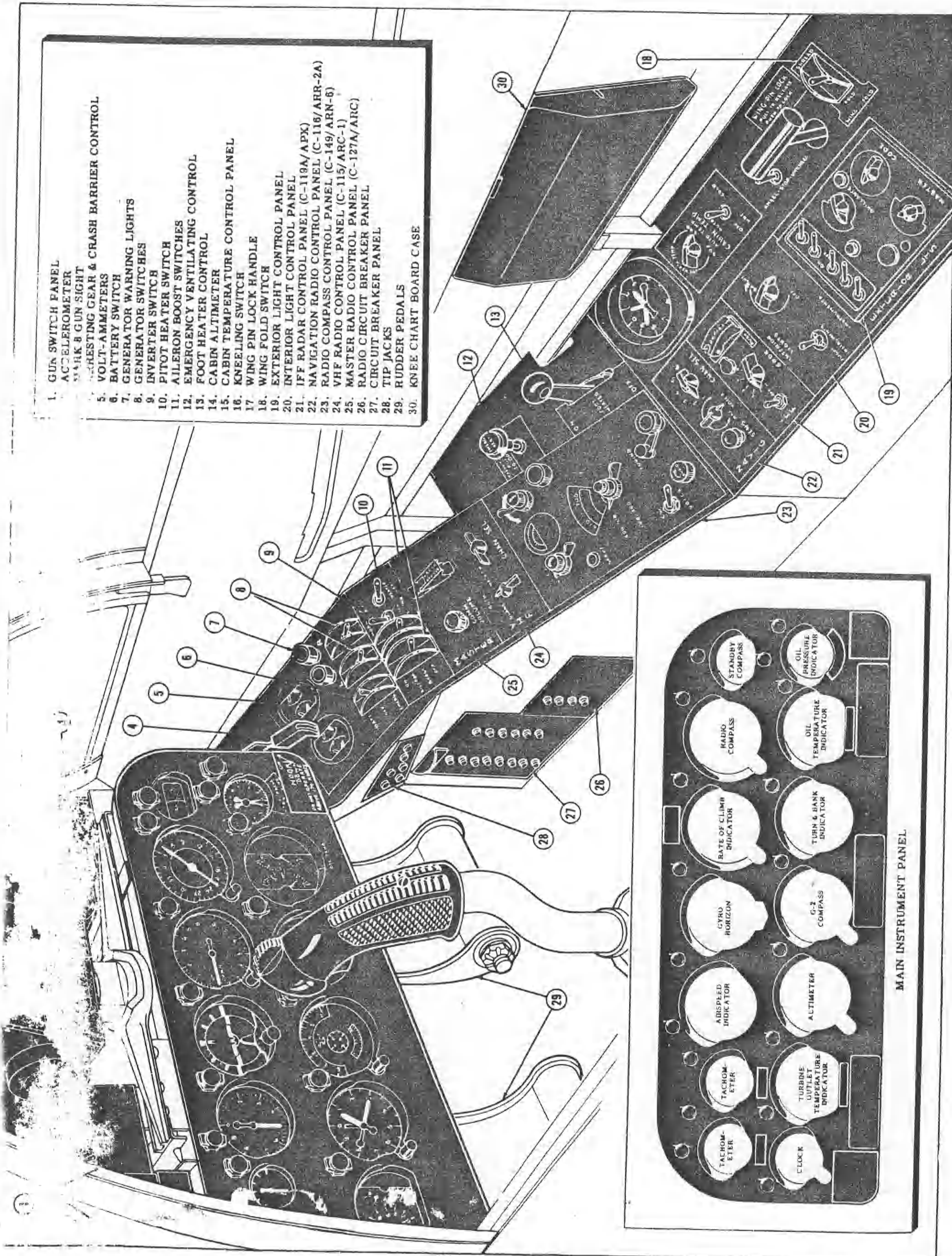
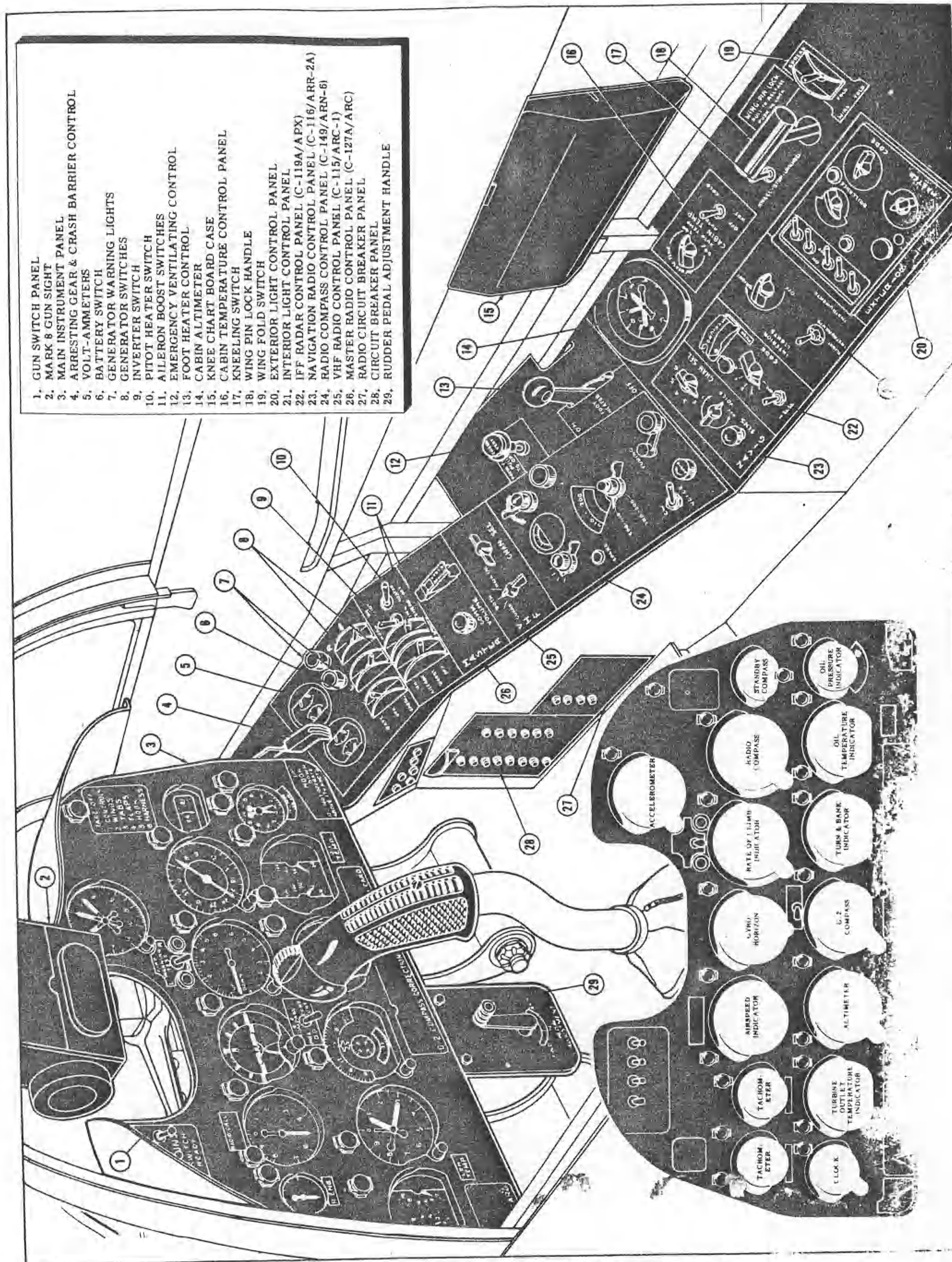


Figure 4-88. Instruments (Right Console)

Model F2H-1. Applies to Aircraft Serial No. 122530 to 122533 (Incl.)



1. GUN SWITCH PANEL
2. MARK 8 GUN SIGHT
3. MAIN INSTRUMENT PANEL
4. ARRESTING GEAR & CRASH BARRIER CONTROL
5. VOLT-AMMETERS
6. BATTERY SWITCH
7. GENERATOR WARNING LIGHTS
8. GENERATOR SWITCHES
9. INVERTER SWITCH
10. PITOT HEATER SWITCH
- 11.AILERON BOOST SWITCHES
12. EMERGENCY VENTILATING CONTROL
13. FOOT HEATER CONTROL
14. CABIN ALTIMETER
15. KNEE CHART BOARD CASE
16. CABIN TEMPERATURE CONTROL PANEL
17. KNEELING SWITCH
18. WING PIN LOCK HANDLE
19. WING FOLD SWITCH
20. EXTERIOR LIGHT CONTROL PANEL
21. INTERIOR LIGHT CONTROL PANEL
22. IFF RADAR CONTROL PANEL (C-119A/APX)
23. NAVIGATION RADIO CONTROL PANEL (C-116/ARR-2A)
24. RADIO COMPASS CONTROL PANEL (C-149/ARN-6)
25. VHF RADIO CONTROL PANEL (C-115/ARC-1)
26. MASTER RADIO CONTROL PANEL (C-127A/ARC)
27. RADIO CIRCUIT BREAKER PANEL
28. CIRCUIT BREAKER PANEL
29. RUDDER PEDAL ADJUSTMENT HANDLE

Figure 4-88a. Instruments (Right Console)

Model F4H-1. Applies to Aircraft Serial No. 122534 to 122535 (incl.)

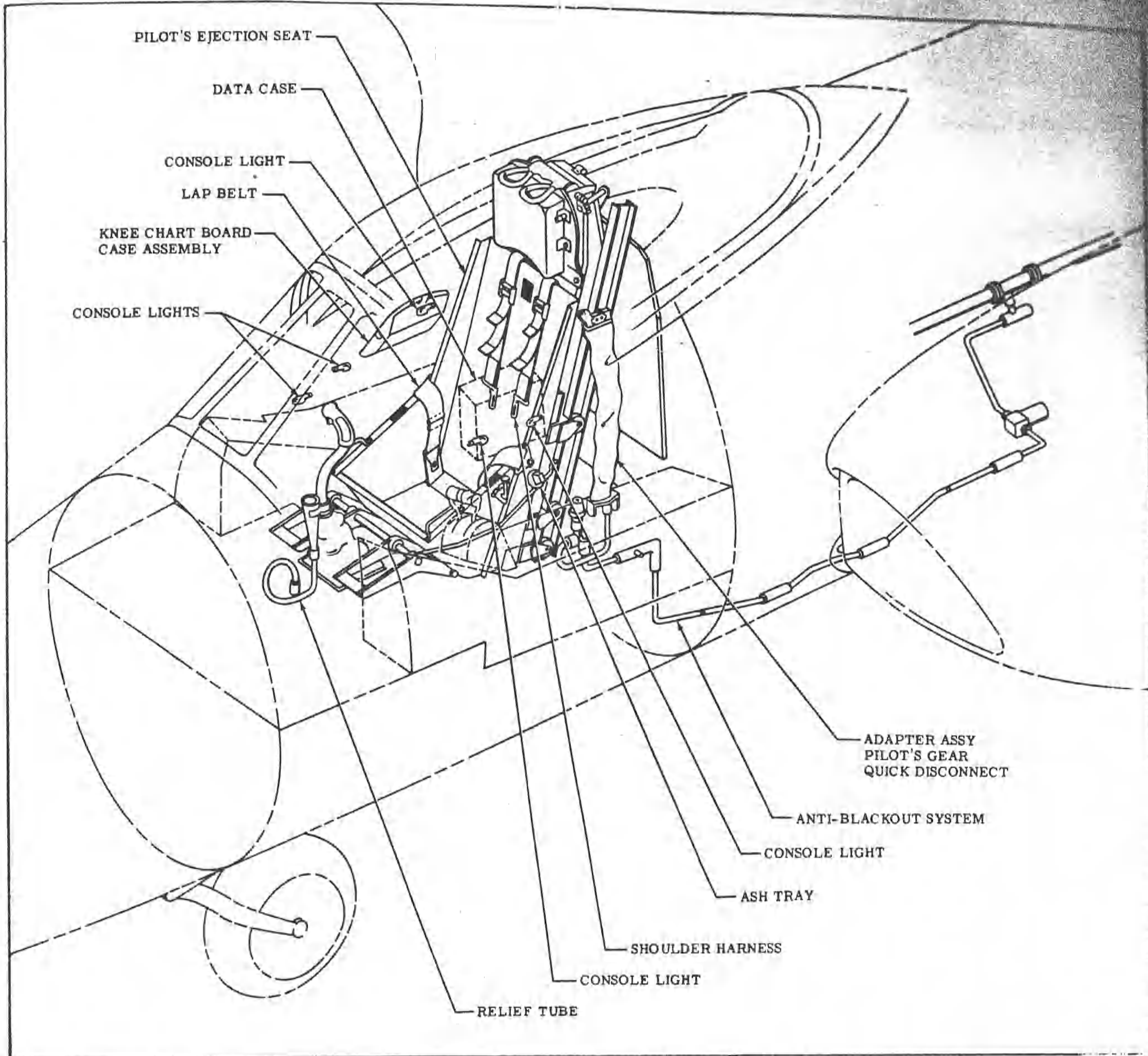


Figure 4-89a. Fuselage Equipment

Effective Airplanes Nos. 122540 and Up.

graph 816.

4-817a. PILOT'S EJECTION SEAT.

4-817b. DESCRIPTION. The pilot ejection seat consists of three main parts: the bucket, the frame (which are the jettisonable portions of the seat), and the track which remains with the aircraft.

4-817c. The bucket is the actual chair in which the pilot sits and it holds parachute, pararaft kit, seat and back cushions. It may be adjusted for pilot height by means of a switch mounted on the right side of the bucket. The seat moves up and down along the line of ejection which is inclined aft at 17° to the vertical line. Movement is accomplished by a reversible electric

motor mounted on the track assembly which actuates two screw jacks by means of a splined fitting for quick disconnect, a flexible shaft and a geared 'T' drive fitting. The screw jacks are mounted between the frame and the bucket and move the bucket up and down along tracks integral with the back of the bucket. On the left side of the bucket is the inertia reel control lever. Pushing down and forward locks shoulder straps. The inertia reel is also locked automatically upon ejection of the seat. Mounted on the front of the bucket are two stirrups for the pilot's feet during ejection. The stirrups remain on the floor for any position of seat adjustment by means of a strut and linkage arrangement, but are fixed in position in relation to the bucket on ejection. Two handles are located at the forward edge on either side of the bucket for raising the knee braces and operating the projection mechanism.

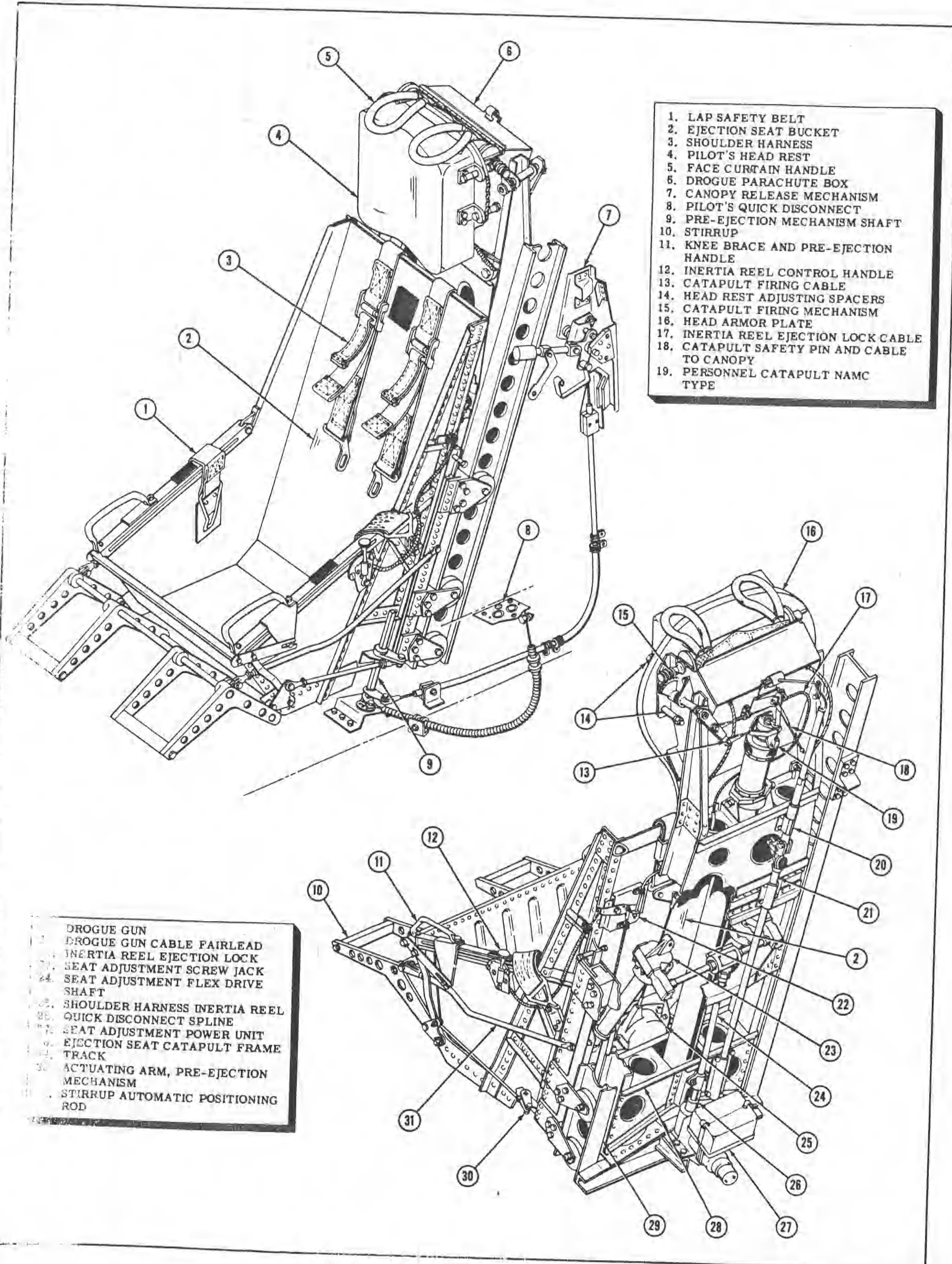


Figure 4-89b. Ejection Seat

- 1. 20 M.M. GUNS.
- 2. AMMUNITION BOX OUTBOARD GUN.
- 3. AMMUNITION BOX OUTBOARD GUN.
- 4. LINK CHUTE.
- 5. CASE AND LINK COMPARTMENT.
- 6. FORWARD GUN MOUNT.
- 7. AFT GUN MOUNT.

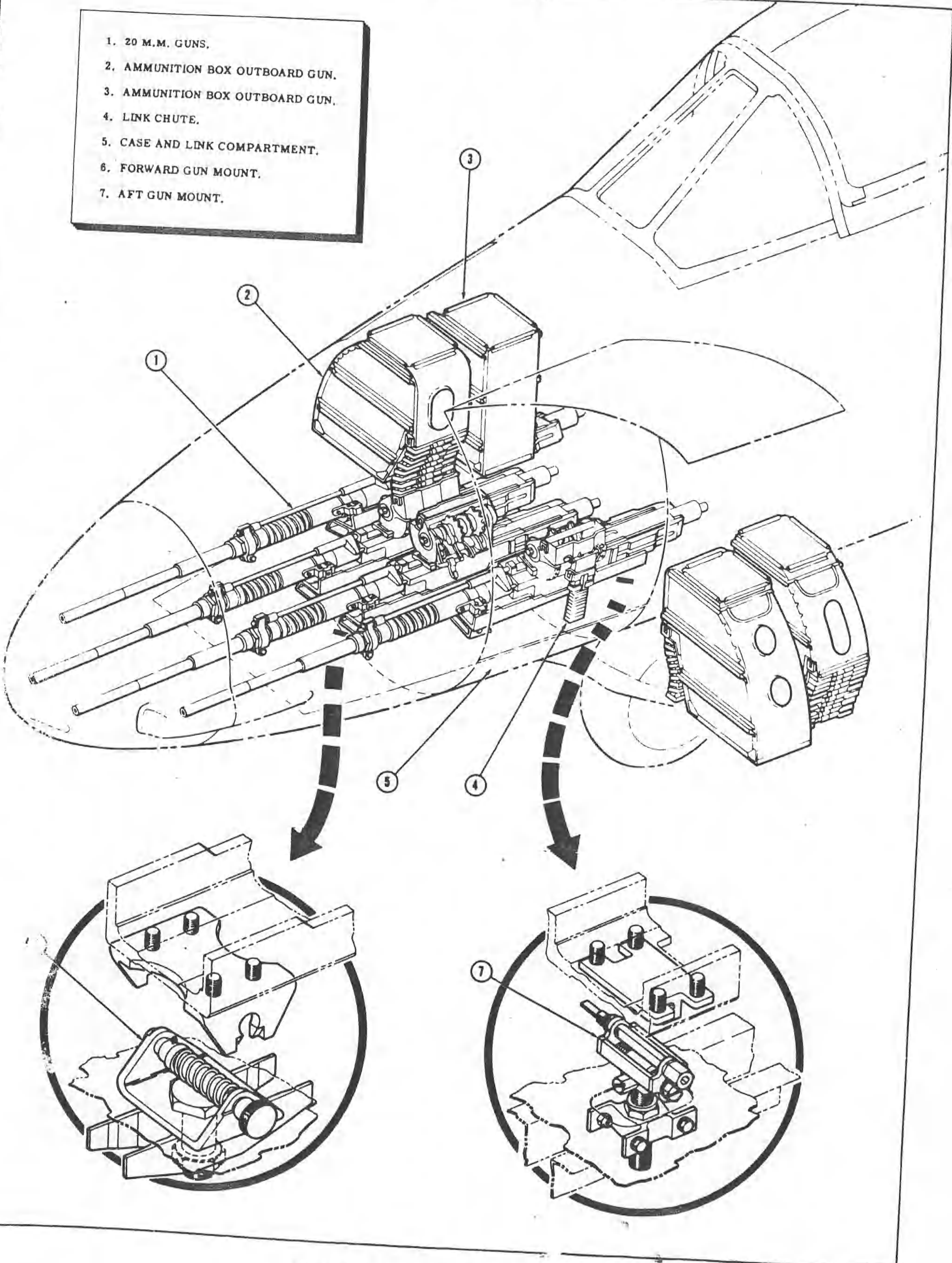


Figure 4-96. Gun Installation

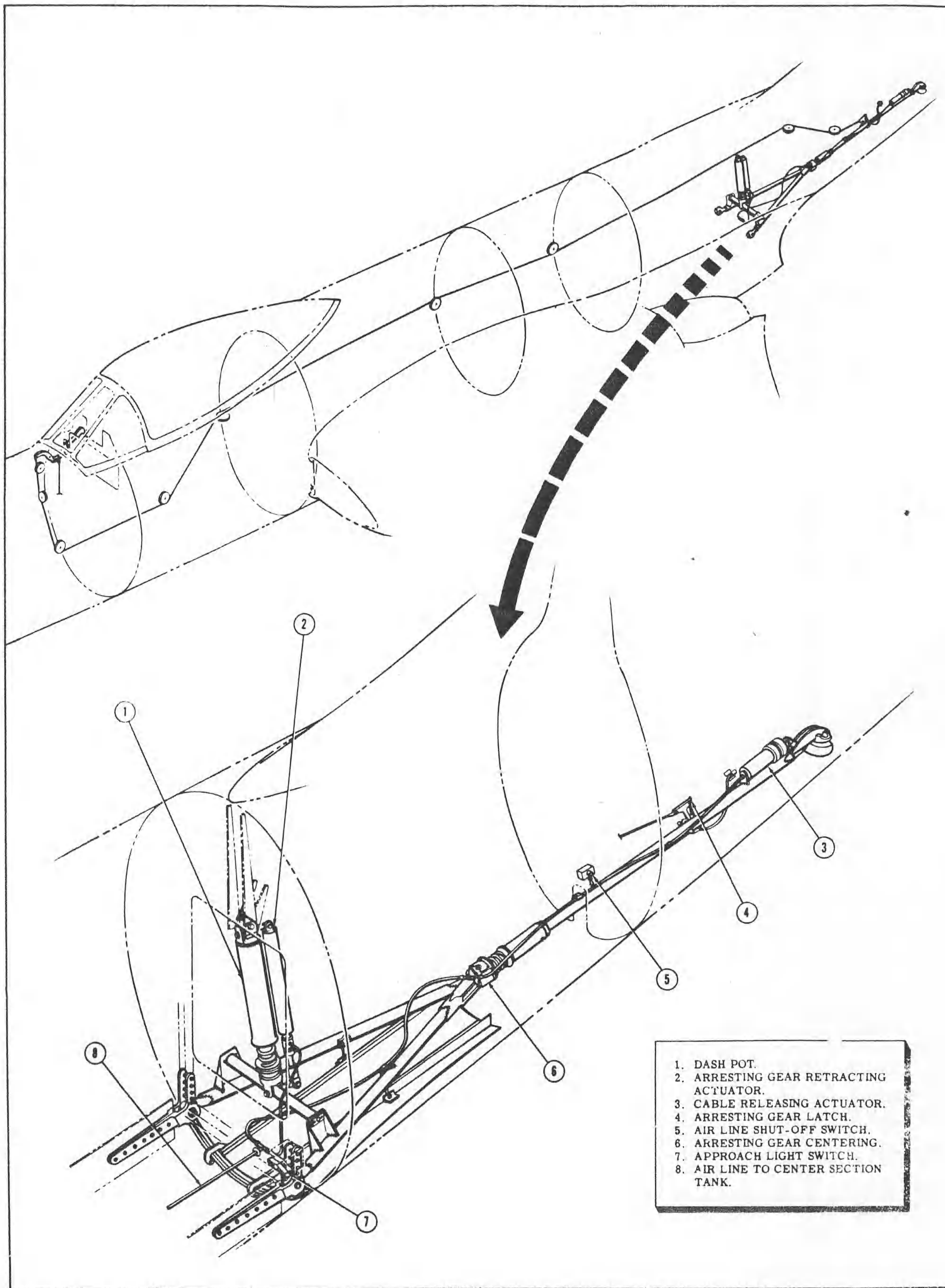


Figure 4-103. Arresting Gear
RESTRICTED

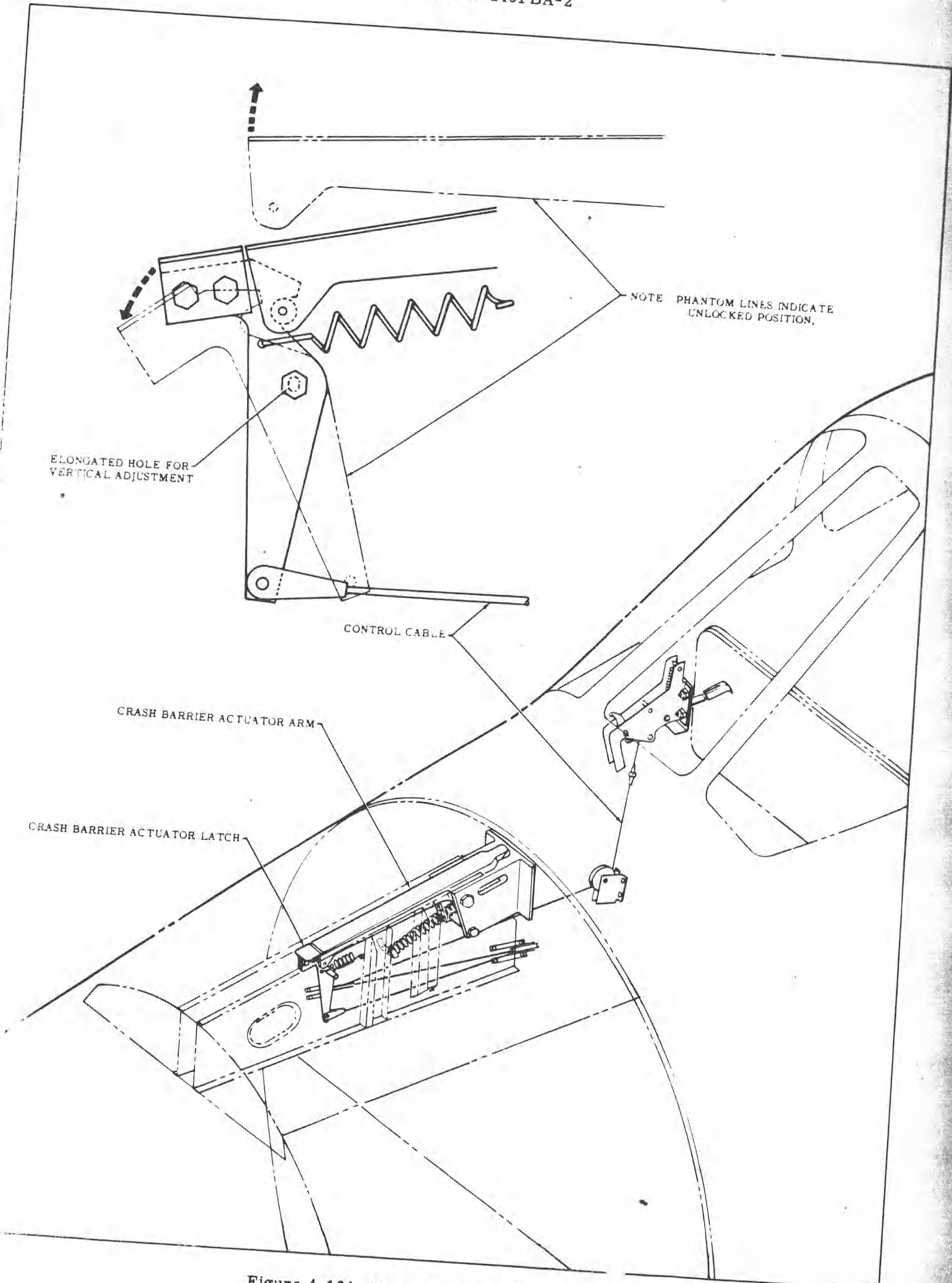


Figure 4-104. Crash Barrier Installation