

SECTION 5
AIRCRAFT, GENERAL DESCRIPTION

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AIRCRAFT GENERAL DESCRIPTION

<u>E.A.L. NUMBER</u>	<u>CERTIFICATE NUMBER</u>	<u>MANUFACTURER'S NUMBER</u>
501	N5501	1005
502	N5502	1007
503	N5503	1008
504	N5504	1009
505	N5505	1010
506	N5506	1011
507	N5507	1012
509	N5509	1013
510	N5510	1014
511	N5511	1016
512	N5512	1017
513	N5513	1018
514	N5514	1020
515	N5515	1021
516	N5516	1022
517	N5517	1023
518	N5518	1026
519	N5519	1029
520	N5520	1030
521	N5521	1032
522	N5522	1033
523	N5523	1034
524	N5524	1036
525	N5525	1038
526	N5526	1042
527	N5527	1043
528	N5528	1045
529	N5529	1048
530	N5530	1053
531	N5531	1055
532	N5532	1060
533	N5533	1062
534	N5534	1066
535	N5535	1068
536	N5536	1071
537	N5537	1075
538	N5538	1078
539	N5539	1080
540	N5540	1088
541	N5541	1098

AIRCRAFT, GENERAL DESCRIPTION

GENERAL

The Model 188 Electra is a medium range passenger transport airplane powered by four Allison 501D-13 prop-jet engines. The four blade constant speed propellers which govern engine rpm to 13,820 during flight, are reversible and full feathering.

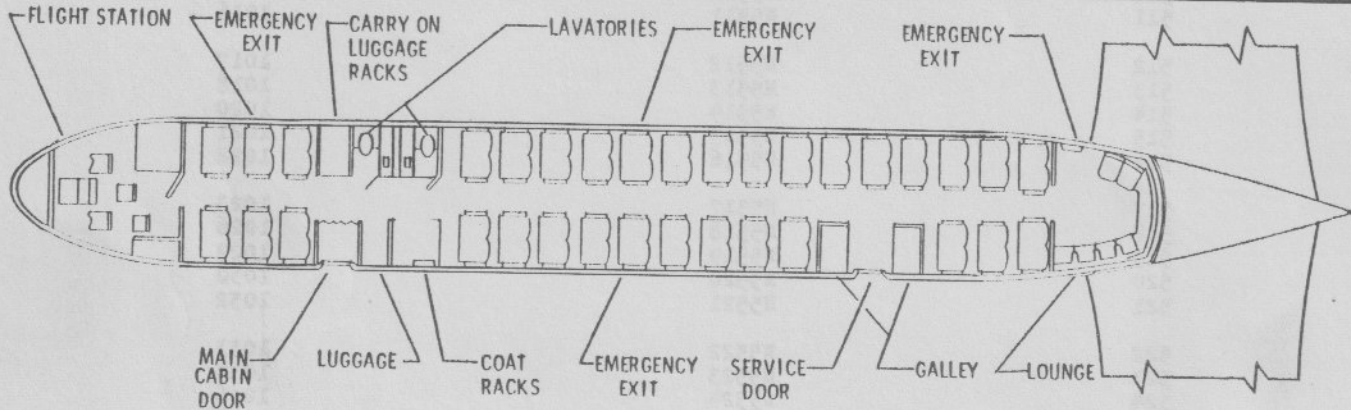
Wing Span - 99 Ft.
Wing Area - 1300 Sq. ft.

DIMENSIONS AND AREAS

Fuselage length 104 Ft. 6.5 inches.
Fuselage breadth - 11 ft. 4 inches.

WEIGHTS

Maximum take-off weight - 113,000 Lbs.
Maximum landing weight - 95,650 Lbs.
Maximum zero fuel weight - 80,910 Lbs. (501-524)
86,000 Lbs. (525-541)



PASSENGER ACCOMMODATIONS

PASSENGER CABIN

The forward cabin accommodates 12 passengers, the main cabin 54, and the lounge has 6 seats, two of which will be occupied by the flight attendants. There are seats in the cabin for 70 passengers and two flight attendants and the seating is four abreast in double rows of two.

FLOORING AND WALL PANELING

Flooring and paneling of the passenger cabin, except the aisles, are of metal honeycomb radiant heating panels.

ENTRANCE AREA

The vestibule, or main entrance area is aft of the forward passenger compartment. In the vestibule are two lavatories on the right side with a drinking fountain between; two carry-on luggage racks, a coat rack and stowage space for the integral passenger loading stair are on the left.

BUFFET AREA

The buffet is located at the aft cabin door which permits servicing the galley at this location in the rear while the passengers are being boarded through the forward entrance.

LOUNGE

The lounge is separated from the aft end of the main passenger cabin by laminated plexiglas panels. A floor level door size emergency exit is provided on the right-hand side of the lounge. Passenger oxygen system controls are within easy reach of the flight attendants when seated at their stations on the right of the lounge.

WATER SYSTEM

The water system consists of two overhead tanks, one over the lavatories with a 30-gallon capacity, and a 15-gallon tank at the galley. The forward tank serves the drinking fountain through a cooler, and provides wash water for the lavatories. The aft tank serves the galley for all use. Both tanks are serviced from a central filling point located in the wing fillet. Remote control valves allow filling and draining of either or both tanks separately or together. The feed system from the overhead tanks is simply gravity with no pumps required. Waste water at the wash basins is drained into the master cans. The drinking station liquid is drained into a removable trash can.

AIRCRAFT, GENERAL DESCRIPTION

PASSENGER ACCOMMODATIONS (Continued)

EVACUATION SLIDES

Two emergency evacuation slides are provided, one for the galley service door, which is strapped inside of a moulded container above the door; and one for the lounge emergency exit, which is stowed in the floor level compartment ahead of the right-hand lounge partition. The chutes are long enough to take care of a nose gear retracted position.

FLOTATION GEAR

Four 20-man rafts and one emergency transmitter will be carried. Two rafts will be located in hat rack compartments on either side of the cabin aft of the galley. The third raft will be carried on the floor of the coat room, and the fourth raft and transmitter will be on the floor of the left-hand carry-on baggage rack. Vests will be stowed beneath passenger seats.

DOORS AND EXITS

PASSENGER DOOR

The passenger door is located on the left side of the fuselage at station 352 which is well ahead of the propeller plane. It provides an opening of 35 x 81 inches. The door is operated electrically from inside or outside the plane, and can be operated manually from either location in the event current is not available. It opens inward and slides out of the way overhead between the cabin liner and the skin of the fuselage.

FOLDING STAIRS

When retracted, the folding stairs are stowed in the vestibule just inside the passenger door. They normally operate hydraulically, but can also be operated manually from either inside or outside the airplane. The steps are lighted internally and equipped with hand rails. Rollers are mounted on the bottom to allow extending in the event of a belly landing, and to compensate for different strut, ramp, or loading conditions.

SERVICE DOOR

The service door is located on the left side of the fuselage at station 856 and provides access to the galley so it can be serviced while planing or de-planing passengers. The opening is the same size, and the actuation identical as the passenger door; however, no folding stair is provided at this location.

EMERGENCY EXITS

There is a floor level door size emergency exit on the right side of the lounge. The service door is considered an emergency exit with or without electrical power. Two overwing emergency exits are provided, one on either side of the plane. These are larger than any in use previously and are only 14 inches above floor level.

To provide full opening for the exits, the seats adjacent are so designed that the armrests come away with the exit, thus eliminating any hurdle. An additional exit is provided on the right-hand side of the forward passenger cabin. The two sliding side windows at the flight station are quite large and are also considered as emergency exits. Descent ropes are stowed at the top between cabin liner and fuselage skin at both of the cockpit emergency windows and the emergency exit window on the right side in the forward passenger cabin. Other emergency exits are not provided with descent ropes.

CARGO LOADING DOORS

The two cargo loading doors are located on the right side of the bottom fuselage. The forward cargo compartment door is at station 283, the rear cargo compartment door at station 884. Each is opened by pushing inward then sliding longitudinally on tracks. Each has an opening measuring 42 x 52 inches.

SERVICE CENTER DOORS

Service center doors are all on the bottom centerline of the fuselage. From front to rear they are located at stations 464, 530 and 730 for the air conditioning, electrical and hydraulic service centers respectively.

ACCESS TO UNDERFLOOR COMPARTMENTS

It is possible to gain access to the forward and aft baggage compartments through openings in the passenger compartment floor which are directly above the cargo loading doors at stations 283 and 884. Partial access through a floor opening is possible to the electrical service center. Access is not provided from inside the plane to the hydraulic or air conditioning service centers.

DOOR WARNING LIGHTS

There is a microswitch at each door to the pressurized area except emergency exits. With a door open, one of two warning lights will be energized. They are located on the annunciator display of the center instrument panel and indicate whether "Cabin doors" or "Lower doors" are not closed and latched.

FLIGHT STATION

SEATING ARRANGEMENT

The Captain's and Pilot's seats may be reclined, are adjustable vertically, fore and aft, and laterally. There is a hand hold in the wall on the outboard side of each seat to aid in lateral adjustment. The F/E seat is situated in the aisle just aft of the throttle pedestal and is adjustable vertically, fore and aft, and may be reclined. It slides aft and to the right for aisle clearance. A stationary observer's seat is installed just aft of the Captain's station. It is elevated to give the observer an unobstructed view of the instruments and controls.

AIRCRAFT, GENERAL DESCRIPTION

SEATING ARRANGEMENT (Continued)

Crew baggage stowage space is provided under the observer's seat.

WINDSHIELD PANELS

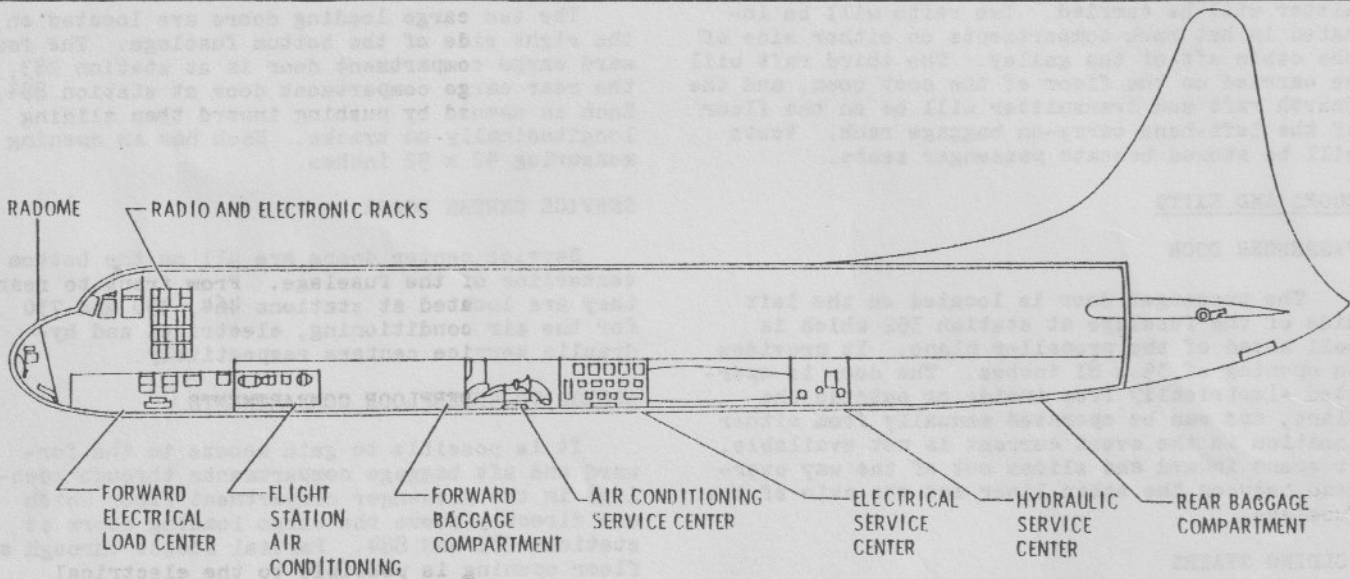
The two forward panels are approximately 1½" thick and are designed to be birdproof. They are made in five plies (3 glass, 2 vinyl) and are equipped with hydraulically operated windshield wipers.

The sliding windows are of 3-ply construction. When unpressurized they may be opened

from the inside by a lever in the lower aft corner. They may be opened from the outside by an emergency lever. They are classed as an emergency exit and an escape rope is fastened over each enclosed in a zippered bag.

Aft windows are of 3-ply construction and are in a fixed position. Overhead windows are located on either side above the Captain and Pilot to assist in increasing the flight crew's field of vision.

Flight station windows have provisions for anti-icing, defogging and defrosting.



LOWER COMPARTMENTS

All cargo compartments and service centers are in the pressurized area.

FORWARD BAGGAGE COMPARTMENT

The forward baggage compartment is situated between the nose wheel well and the air conditioning service center, and has a capacity of 254 cubic feet. There is an access door in the floor which is located above the regular external loading door situated on the lower right hand side of the fuselage.

AIR CONDITIONING SERVICE CENTER

The air conditioning service center is between the forward baggage compartment and the electrical service center. Access is through a sliding door on the bottom of the fuselage. In it are housed the major units of the air conditioning system.

ELECTRICAL SERVICE CENTER

The electrical service center is located between the air conditioning center and the wing box beam. Entrance is through a door on the bottom of the fuselage. In it are housed the major units of the electrical system.

HYDRAULIC SERVICE CENTER

The hydraulic service center is located just aft of the beam and ahead of the rear baggage compartment. Entrance is through a door on the bottom of the fuselage, and it contains not only the hydraulic pumps, but all the major parts of the hydraulic system.

REAR CARGO COMPARTMENT

The rear cargo compartment is located aft of the hydraulic service center and extends to the rear pressure bulkhead. Entrance is through a door on the lower right side of the fuselage.

Handwritten notes: 255, 220, 5-24

AIRCRAFT, GENERAL DESCRIPTION

LOWER COMPARTMENTS

REAR CARGO COMPARTMENT (Continued)

Access is also possible through a floor opening directly above the external loading door. This compartment has a capacity of 270 cubic feet.

OTHER FUSELAGE ACCESS POINTS

The nose wheel well area is unpressurized and gives access to inverters, battery and ground connections and flight station air conditioning units.

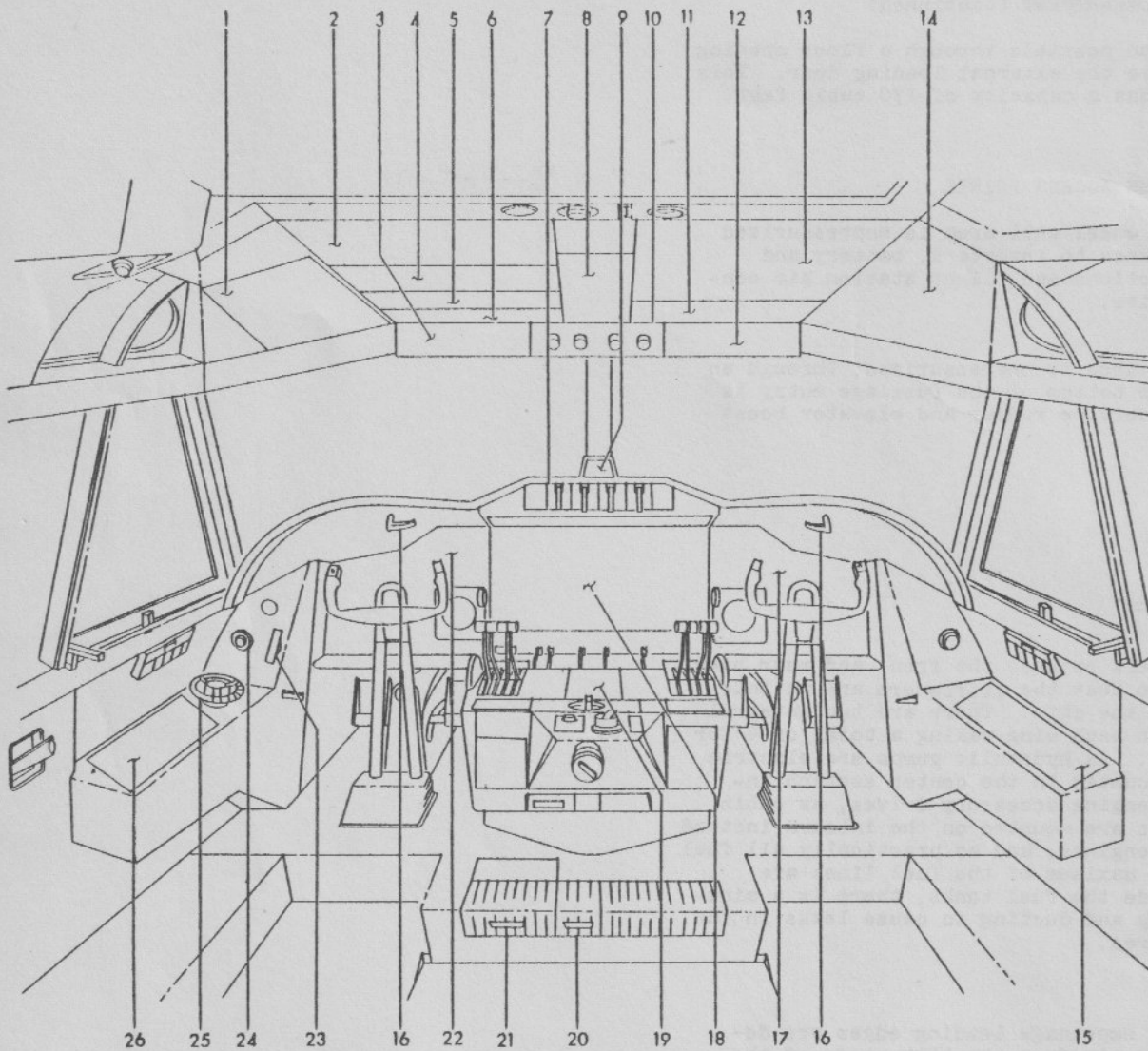
The tail area is unpressurized; through an access on the bottom of the fuselage entry is possible to service rudder and elevator boost units.

WINGS AND TAIL

Wing panels between the front and rear beam are milled so that the stiffeners are an integral part of the skin. There are two integral fuel tanks in each wing making a total of 4 for the airplane. As hydraulic pumps are electric driven and mounted in the center section instead of on engine accessory drives, as cabin superchargers are mounted on the inboard instead of outboard engines, and as practically all fuel valves and a maximum of the fuel lines are mounted inside the fuel tanks, there is a minimum of tubing and ducting to cause leaks in the wing structures.

Wing and empennage leading edges are de-iced by bleed air from the 14th stage of the engine compressors.

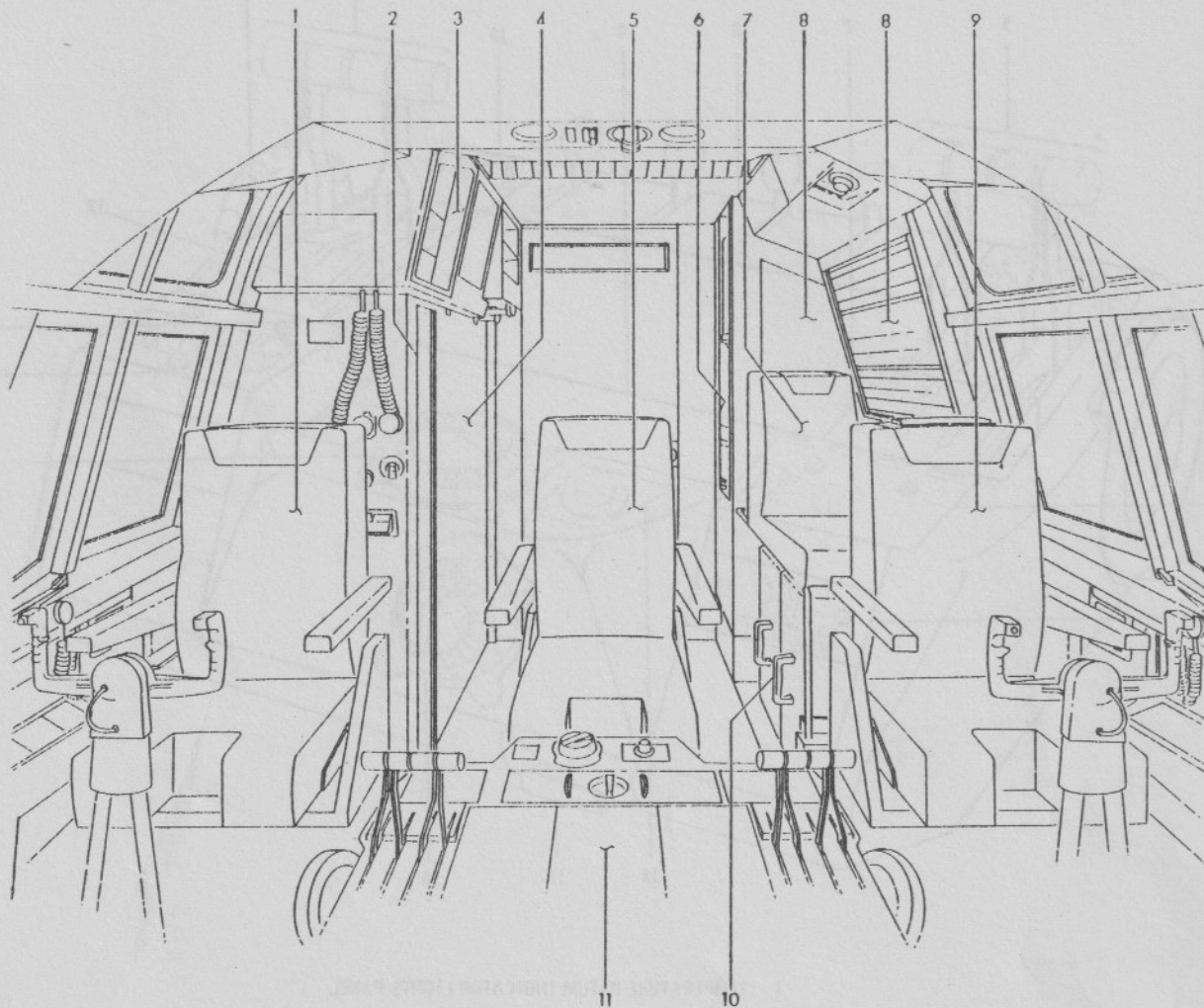
AIRCRAFT GENERAL DESCRIPTION



- | | | | |
|----|------------------------------------|----|-----------------------------|
| 1 | OVERHEAD LIGHT CONTROL PANEL | 14 | ENGINE TEST OVERHEAD PANEL |
| 2 | AIR CONDITIONING CONTROL PANEL | 15 | CO-PILOT'S SIDE CONSOLE |
| 3 | LANDING LIGHT CONTROL PANEL | 16 | EMERGENCY AIR BRAKE HANDLES |
| 4 | AIR FOIL ICE CONTROL PANEL | 17 | CO-PILOT'S INSTRUMENT PANEL |
| 5 | PROPELLER ICE CONTROL PANEL | 18 | CENTER INSTRUMENT PANEL |
| 6 | ICE CONTROL LOWER PANEL | 19 | CENTER CONTROL PEDESTAL |
| 7 | GLARESHIELD PANEL | 20 | FUEL DUMP CONTROL LEVERS |
| 8 | ENGINE STARTING CONTROL PANEL | 21 | BOOSTER CONTROL LEVERS |
| 9 | MAGNETIC COMPASS | 22 | PILOT'S INSTRUMENT PANEL |
| 10 | PROPELLER FEATHER CONTROL PANEL | 23 | PARKING BRAKE HANDLE |
| 11 | CABIN PRESSURIZATION CONTROL PANEL | 24 | WINDSHIELD WIPER CONTROL |
| 12 | CABIN AIR COMPRESSOR CONTROL PANEL | 25 | NOSE GEAR STEERING WHEEL |
| 13 | ELECTRICAL CONTROL PANEL | 26 | PILOT'S SIDE CONSOLE |

FLIGHT STATION (FWD VIEW)

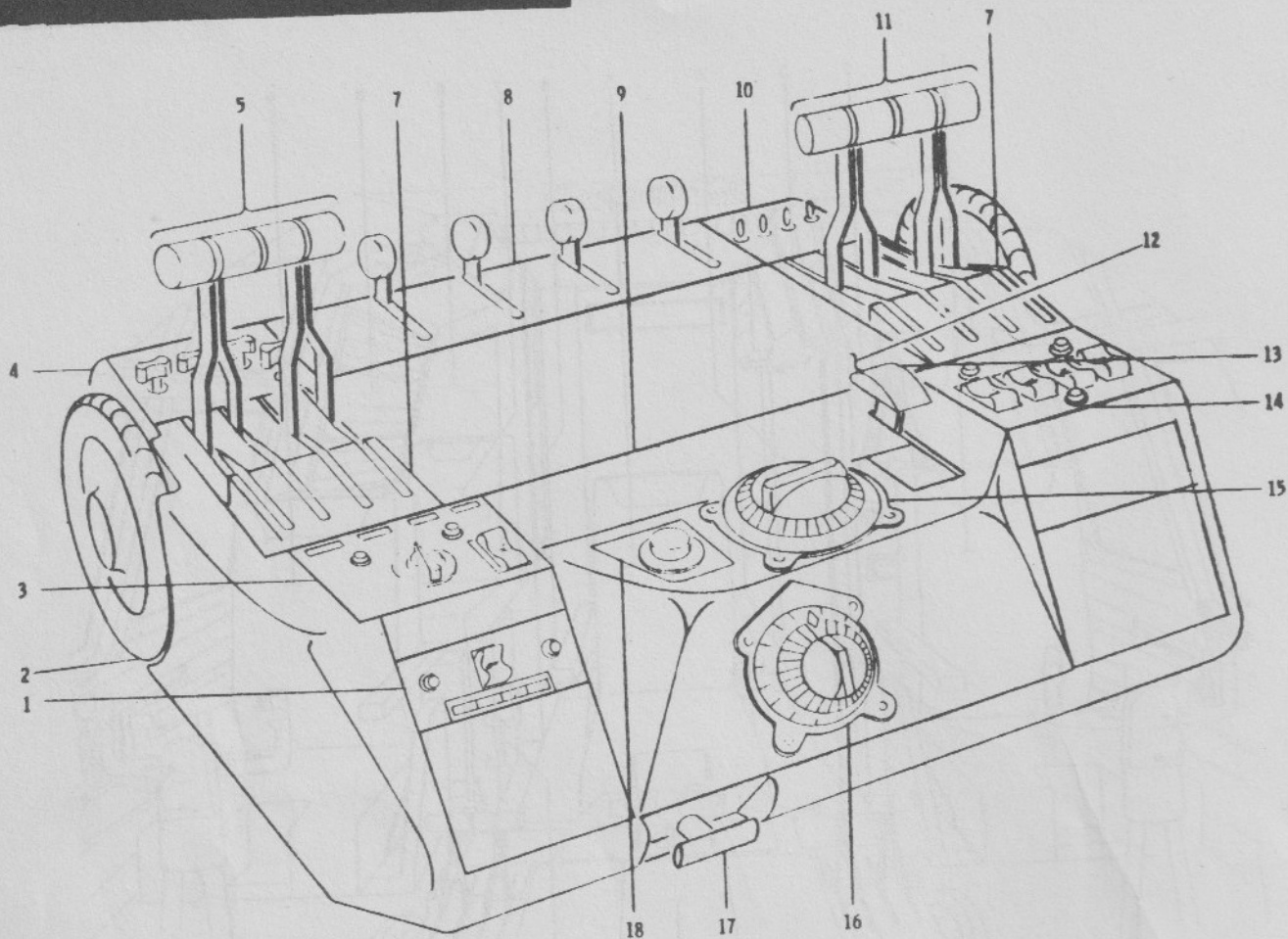
AIRCRAFT GENERAL DESCRIPTION



- 1 CO-PILOT'S STATION
- 2 RADIO CIRCUIT BREAKER PANEL
- 3 TEMPERATURE CONTROL PANEL
- 4 RADIO RACKS
- 5 FLIGHT ENGINEER'S STATION
- 6 PORTABLE FIRE EXTINGUISHER AND AXE
- 7 CREW OBSERVER STATION
- 8 CIRCUIT BREAKER PANELS
- 9 PILOT'S STATION
- 10 CREW LUGGAGE AREA
- 11 CENTER CONTROL PEDESTAL

FLIGHT STATION (AFT VIEW)

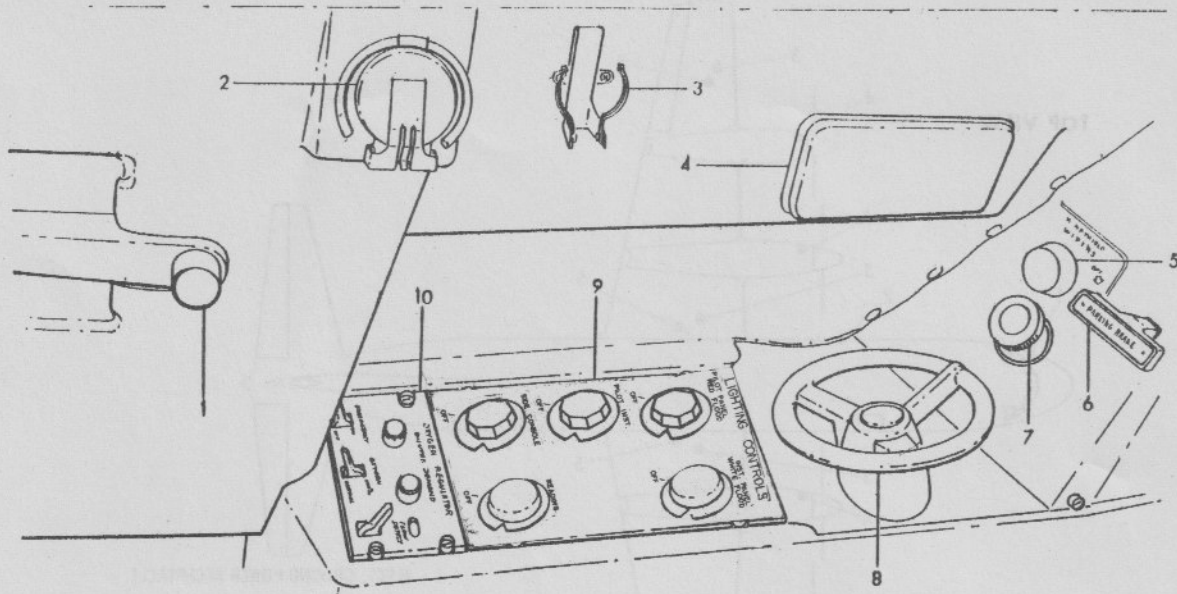
AIRCRAFT, GENERAL DESCRIPTION



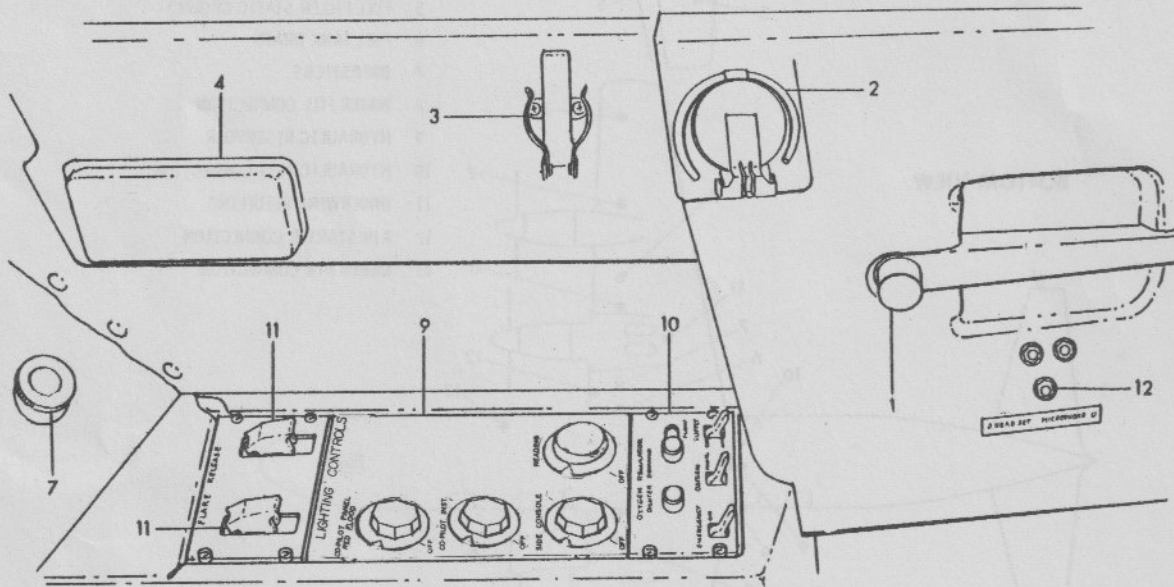
- 1 TEMPERATURE DATUM INDICATOR LIGHTS PANEL
- 2 ELEVATOR TRIM TAB WHEEL
- 3 PROPELLER SYNCHRONIZER PANEL
- 4 RPM SELECTOR PANEL
- 5 PILOTS POWER LEVERS
- 7 POWER LEVERS POSITION PANEL
- 8 FUEL SYSTEM PANEL
- 9 AUTOMATIC PILOT CONTROL PANEL
- 10 FUEL GOVERNOR OVERSPEED PANEL
- 11 COPILOTS POWER LEVERS
- 12 RADIO CONTROL PANEL
- 13 WING FLAP CONTROL LEVER
- 14 OIL COOLER FLAP PANEL
- 15 RUDDER TRIM TAB CONTROL
- 16 AILERON TRIM TAB CONTROL
- 17 AUTOMATIC PILOT EMERGENCY DISCONNECT
- 18 PEDESTAL LIGHT CONTROL PANEL

CENTER CONTROL PEDESTAL

AIRCRAFT GENERAL DESCRIPTION



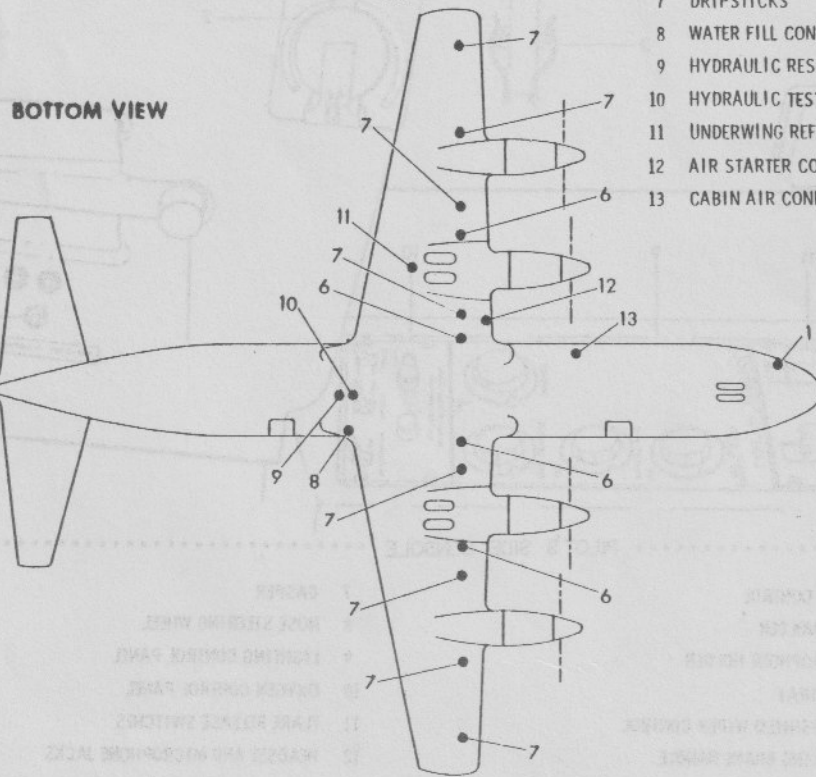
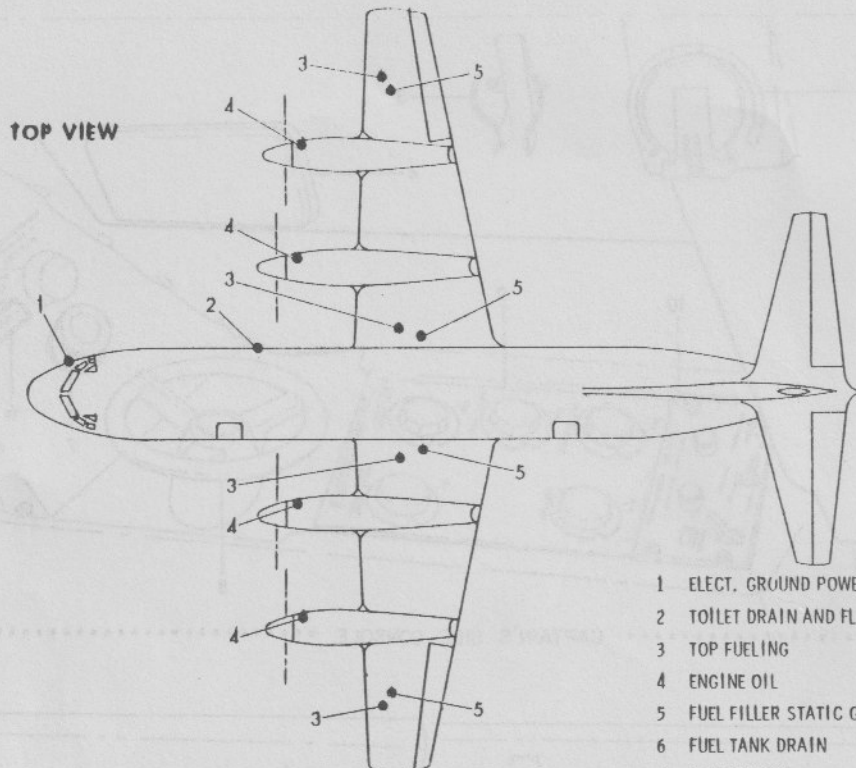
..... CAPTAIN'S SIDE CONSOLE



..... PILOT'S SIDE CONSOLE

- | | |
|----------------------------|---------------------------------|
| 1 SEAT CONTROL | 7 GASPER |
| 2 CUP HOLDER | 8 NOSE STEERING WHEEL |
| 3 MICROPHONE HOLDER | 9 LIGHTING CONTROL PANEL |
| 4 ASH TRAY | 10 OXYGEN CONTROL PANEL |
| 5 WINDSHIELD WIPER CONTROL | 11 FLARE RELEASE SWITCHES |
| 6 PARKING BRAKE HANDLE | 12 HEADSET AND MICROPHONE JACKS |

AIRCRAFT, GENERAL DESCRIPTION



- 1 ELECT. GROUND POWER RECEPTACLE
- 2 TOILET DRAIN AND FLUSH
- 3 TOP FUELING
- 4 ENGINE OIL
- 5 FUEL FILLER STATIC GROUND
- 6 FUEL TANK DRAIN
- 7 DRIPSTICKS
- 8 WATER FILL CONNECTION
- 9 HYDRAULIC RESERVOIR
- 10 HYDRAULIC TEST CONNECTION
- 11 UNDERWING REFUELING
- 12 AIR STARTER CONNECTION
- 13 CABIN AIR CONNECTION

SERVICING DIAGRAM