Figure 1-14 (Sheet 2 of 4)

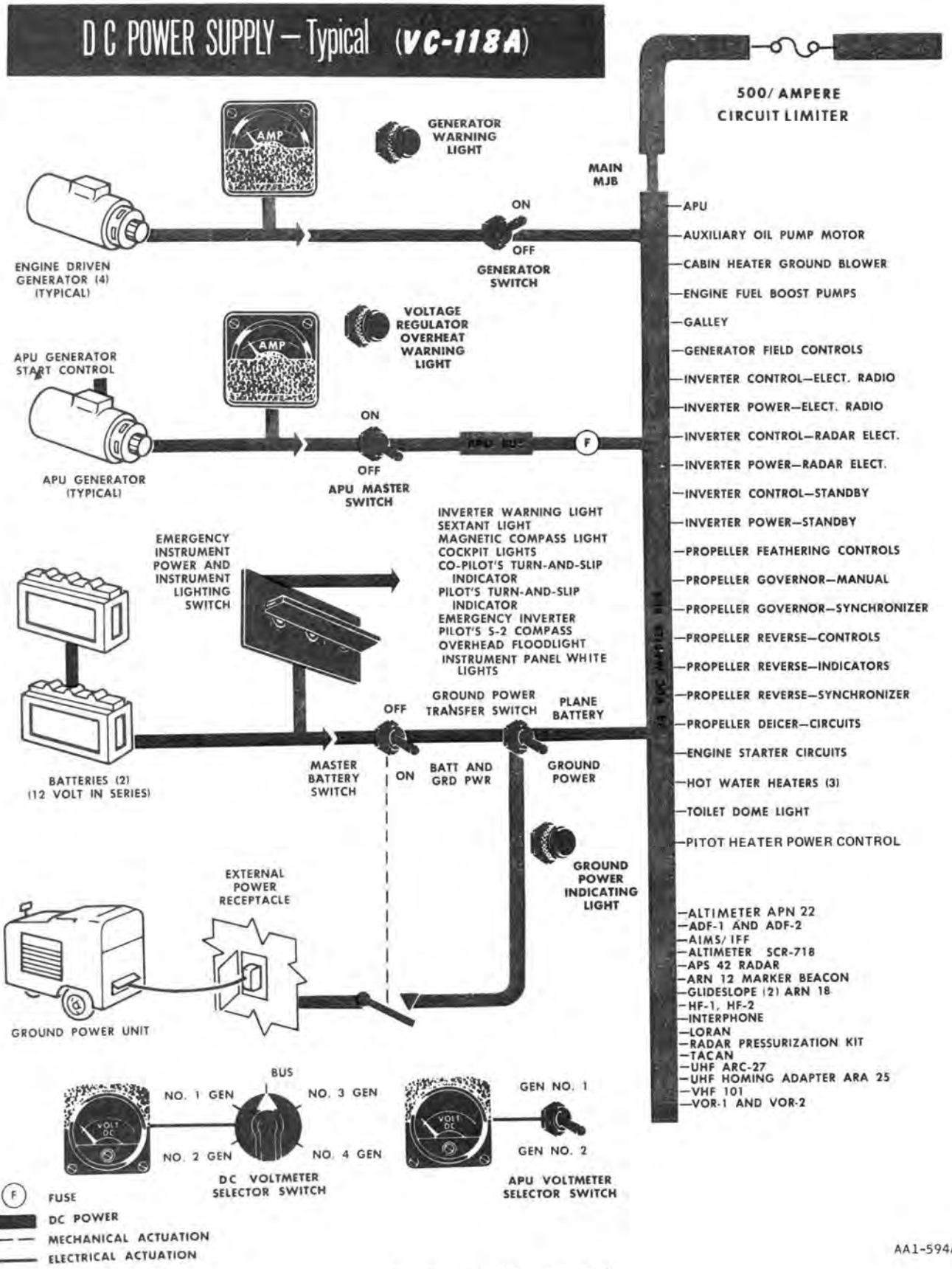


Figure 1-14 (Sheet 3 of 4)

Figure 1-14 (Sheet 4 of 4)

A C POWER SUPPLY — Typical (C-118A)

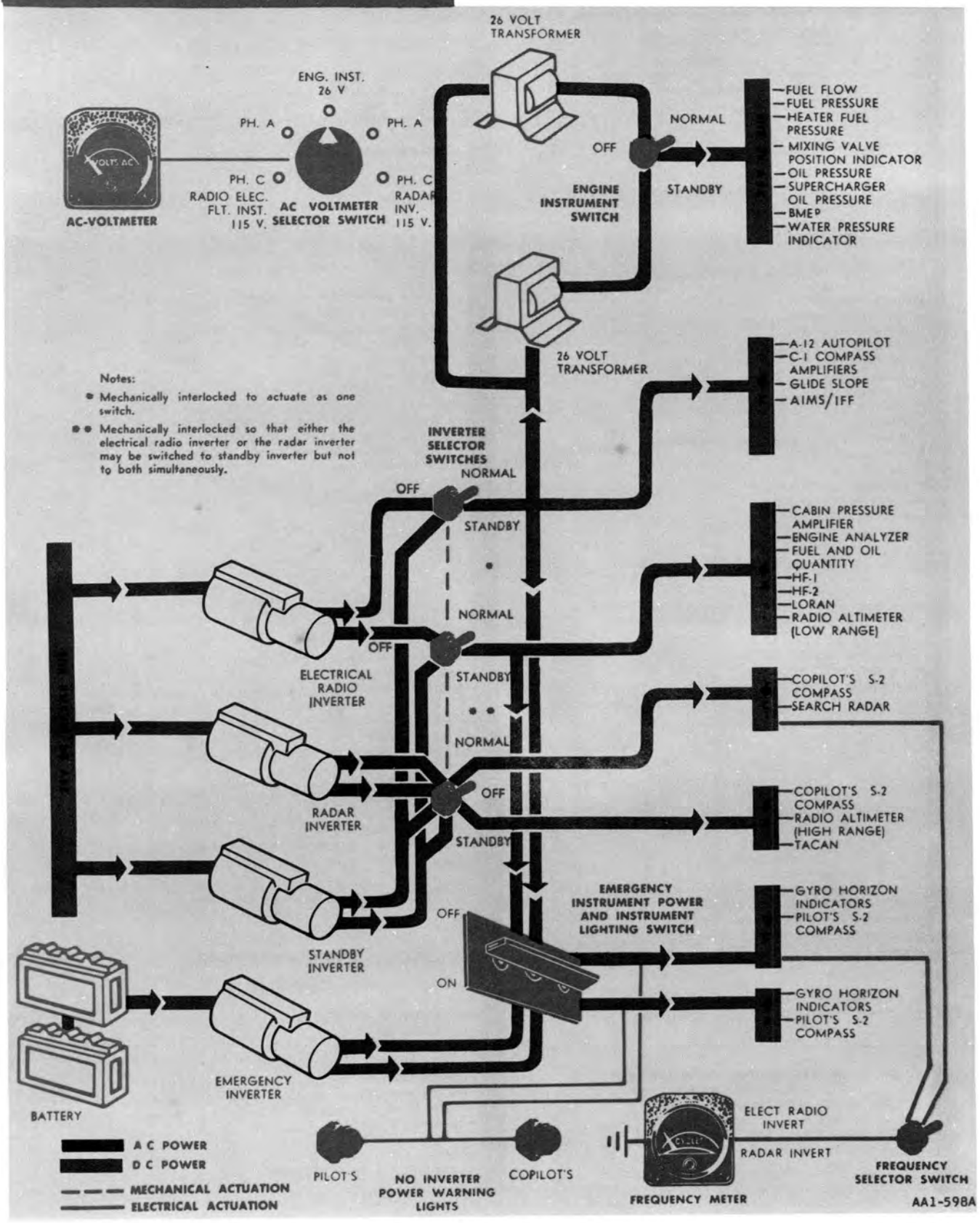


Figure 1-15 (Sheet 1 of 2)

AC POWER SUPPLY – Typical (VC-118A)

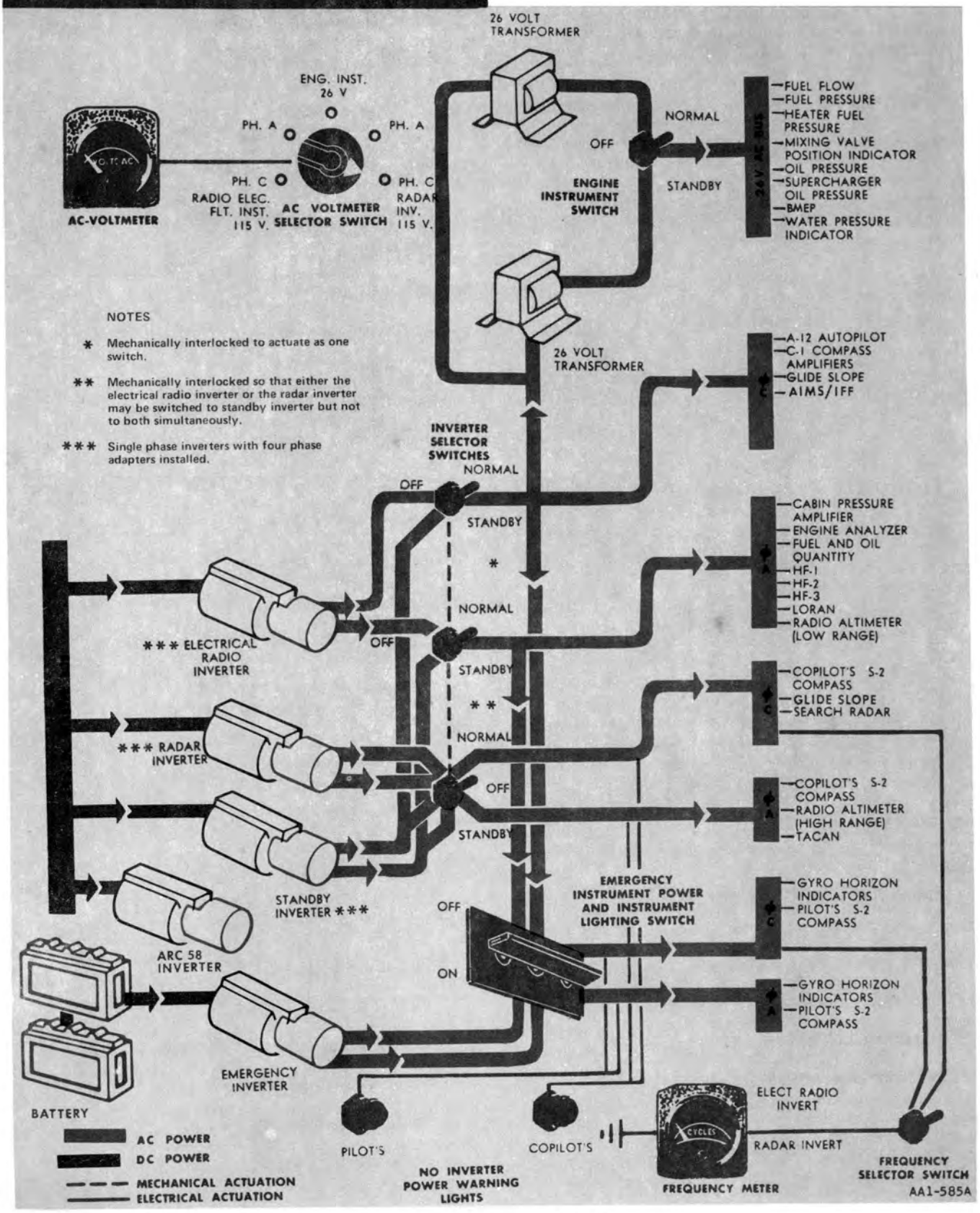


Figure 1-15 (Sheet 2 of 2)

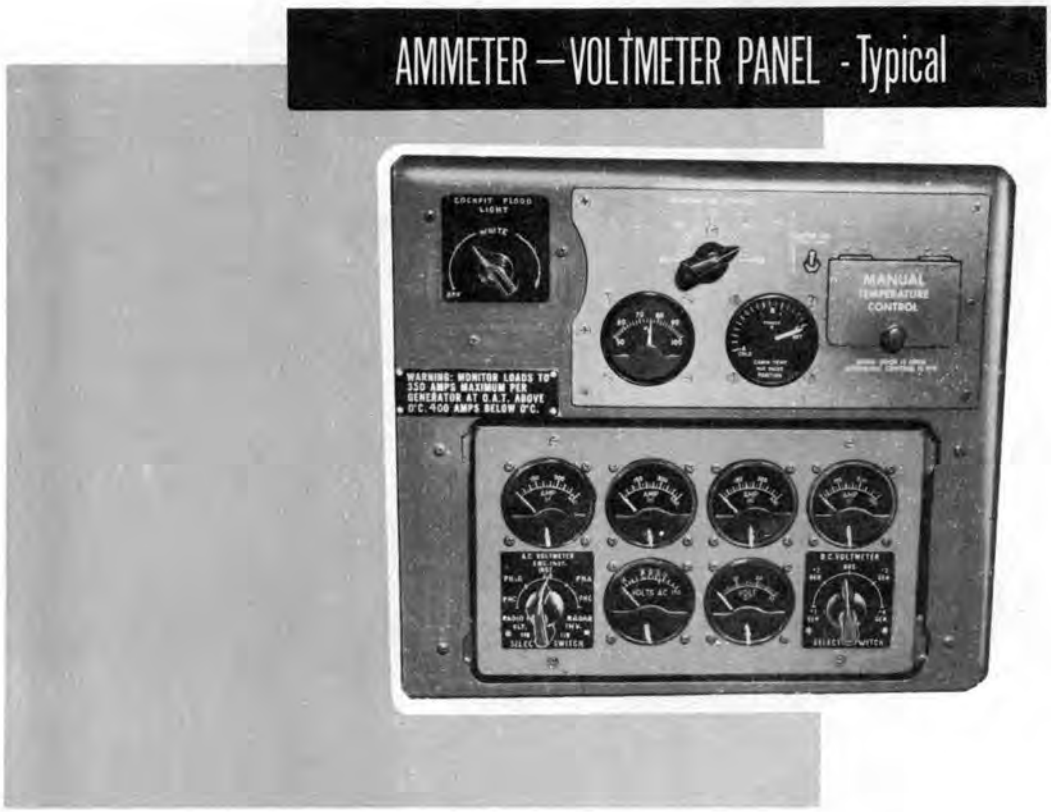


Figure 1-16

of A or C phase power failure of the ELECT-RADIO inverter. If the lights illuminate, the other inverter or the emergency inverter should be energized to supply ac power for the gyro flight instruments.

AC VOLTMETER AND SELECTOR SWITCH.

A rotary-type selector switch, installed adjacent to the voltmeter, has placarded positions 115 ELEC & RADIO INVERT., FLT. INST. PHASE C, ENG. INST 26, FLT. INST. PHASE A, and 115 RADAR INVERTER. On remaining aircraft, a rotary-type selector switch, installed adjacent to the voltmeter, has placarded positions RADIO ELECT. FLT. INST. 115V, PH.C, PH.A, ENG. INST. 26V, PH.A, PH.C, and RADAR INV. 115V. The selector switch may be used to connect the voltmeter to any one of the positions. Normally, the selector switch should remain in the ENG. INST. 26V position.

EMERGENCY INSTRUMENT POWER AND INSTRUMENT LIGHTING SWITCH.

A gang bar ON-OFF emergency instrument power and instrument lighting switch is mounted on the forward overhead panel (figure 1-11). Moving this switch to the ON position turns on the emergency inverter to supply ac power to the gyro flight instruments, disconnects the ac power supply from the main inverters to the flight instruments, and connects the aircraft batteries to supply dc power to the emergency inverter and dc operated emergency lighting and instruments. The operational ac powered flight instruments will be the pilot's and co-pilot's attitude indicator and the pilot's and navigator's S-2 compass system, or with the G-2 system, it will be the co-pilot's compass system. The dc operated emergency instruments are the pilot's and copilot's turn-and-slip indicators. The dc operated lights are the magnetic compass light, the periscopic sextant and mount light, instrument white lights, the pilot's overhead-floodlight, and the emergency inverter warning lights. The main inverters will continue to supply ac power to the remaining electrical equipment not affected by the emergency switch, unless the inverter switches are turned off. At any time the emergency inverter is operating, RADIO ELECT. FLT. INST 115V PH. C and RADIO ELECT. FLT. INST 115V PH. A positions on the ac voltmeter selector switch will indicate emergency inverter output and the RADIO ELECT position of the ac FREQUENCY SELECTOR switch will indicate the emergency inverter cycles on the ac frequency meter.

ENGINE INSTRUMENT TRANSFORMER SWITCH.

The engine instrument transformer switch mounted on the forward overhead panel (figure 1-11) connects either the NORMAL or ALTERNATE (STANDBY) 26 volt transformer to provide ac power for the engine instruments. The center position is the OFF position.

EXTERNAL POWER SUPPLY RECEPTACLE.

One three-pronged, polarized receptacle is provided on the undersurface of the fuselage to permit connecting external power for starting engines or for operating other aircraft equipment (figure 1-2). A polarized relay will prevent the ground power relay from closing if polarity of the ground power unit is reversed. If ground power supply voltage drops to 18 volts or less, the aircraft batteries will automatically be connected to the master bus.

EXTERNAL POWER SUPPLY LIGHT.

A red external power supply light is mounted on the forward overhead panel (figure 1-11), and illuminates when external power supply is plugged in and operating, the master battery switch is turned on, and the battery selector switch is placed in the GROUND POWER position.

NOTE

If the red light is out, check the ground power circuit breaker, located overhead and aft of the cockpit entrance. This circuit breaker also controls operation of the cabin heater ground blower on external power and controls the auxiliary ground power relay, which provides additional 175-ampere loading.

CIRCUIT PROTECTORS.

The circuit protectors are located on the main circuit protector panel and the radio rack panel (figure 1-17). The circuit protectors for the fuel booster pumps are located on the aft overhead panel (figure 1-10). Additional circuit protectors are located throughout the aircraft.

HYDRAULIC POWER SUPPLY SYSTEM.

The hydraulic power supply system operates the retractable tricycle landing gear, the wheel brakes, the nosewheel steering system, the windshield wipers, the wing flaps, the forward cargo door, and the aft section of the main cargo door (figure 1-18). Two main pressure accumulators, each equipped with a pressure gage, are installed in the hydraulic accessories compartment. A nosewheel steering pressure accumulator and pressure gage are installed in the nosewheel well. An engine-driven hydraulic pump capable of maintaining system pressure within limits is installed on each inboard engine to deliver hydraulic fluid under pressure to the system during normal operation. An electrically driven auxiliary hydraulic pump provides an emergency source of pressure. The auxiliary pump can be used if the engine-driven pumps fail or if pressure is desired while the aircraft is on the ground and the engines are inoperative.

NOTE

On some aircraft the cargo doors have been sealed shut, the hydraulic lines to the cargo doors are capped off, and the cargo door switches and actuating cylinders have been removed.

HYDRAULIC SYSTEM BYPASS VALVE LEVER.

A hydraulic system bypass valve lever is mounted on the control pedestal (figure 1-6) and has placarded positions ON and OFF. In the OFF (bypass handle up, system inoperative) position, the bypass valve is opened, allowing the fluid to bypass the pressure regulator and return to the reservoir. In the ON position, (bypass handle down) fluid is directed to all units in the hydraulic system except the cargo doors.

EMERGENCY HYDRAULIC PUMP SWITCH.

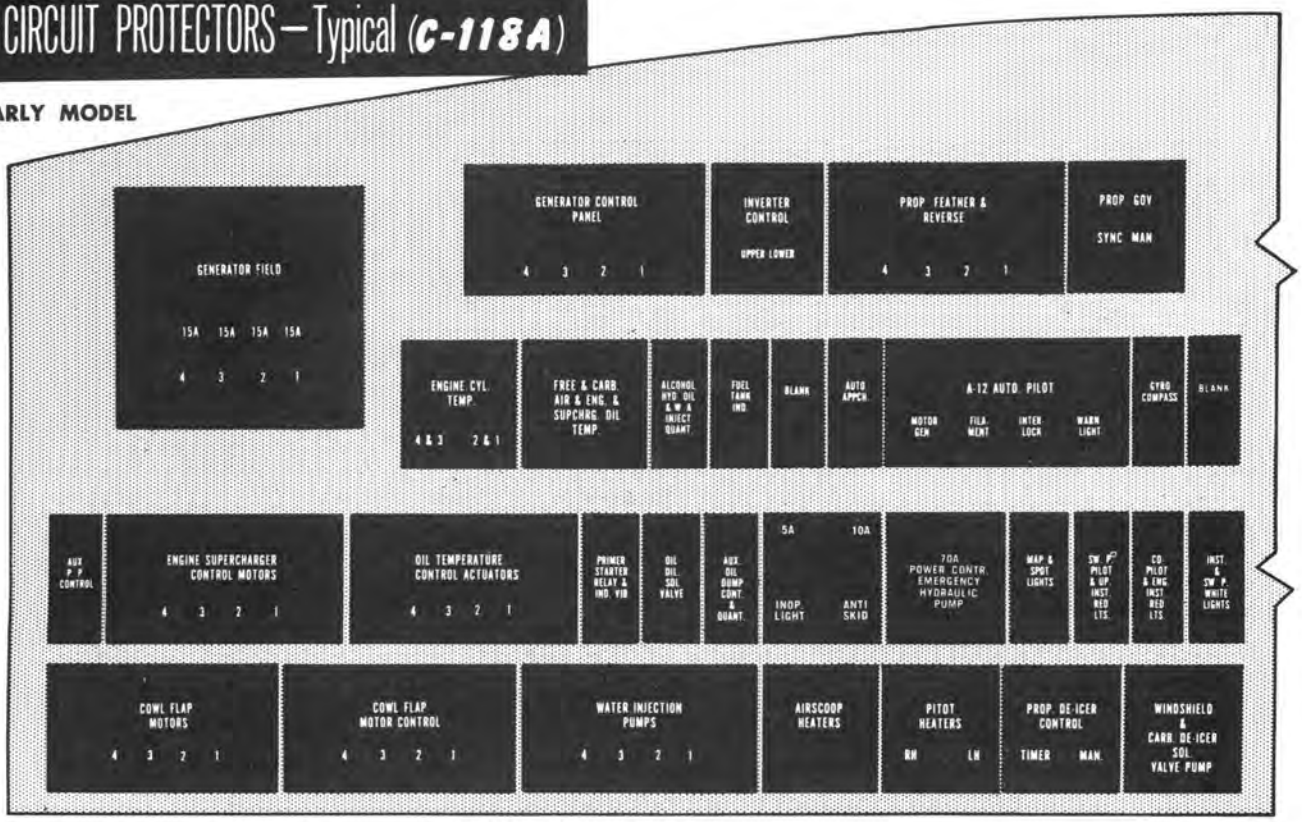
A spring-loaded ON-OFF emergency pump switch is mounted on the hydraulic and oxygen instrument panel to the right of the copilot's seat (figure 1-20).

EMERGENCY HYDRAULIC PUMP SELECTOR VALVE LEVER.

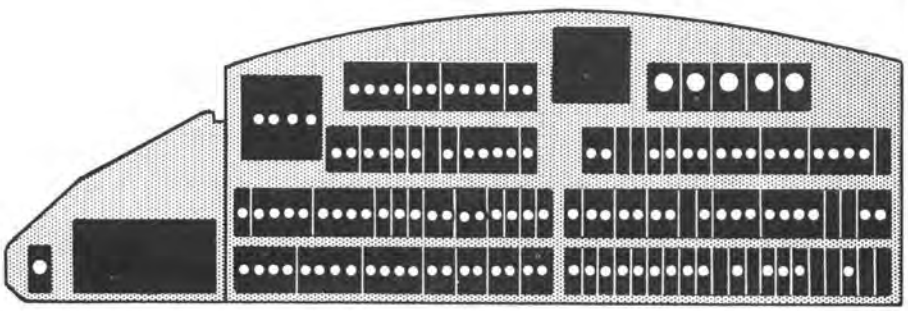
An emergency hydraulic pump selector valve lever, installed on the floor to the left of the copilot's seat (figure 1-19), controls the hydraulic fluid delivery from the emergency hydraulic pump only. Hydraulic pressure is delivered to the brakes in all positions of the selector valve. However, in the BRAKE SYSTEM position, pressure from the pump will be

CIRCUIT PROTECTORS—Typical (C-118A)

EARLY MODEL

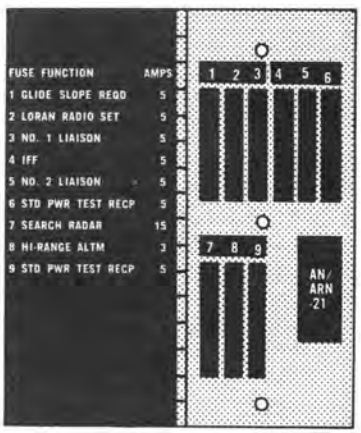


MAIN JUNCTION BOX

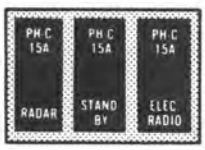


RIGHT ANNEX

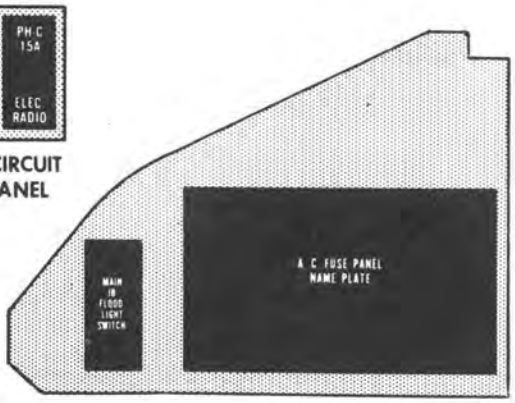
MAIN JUNCTION BOX



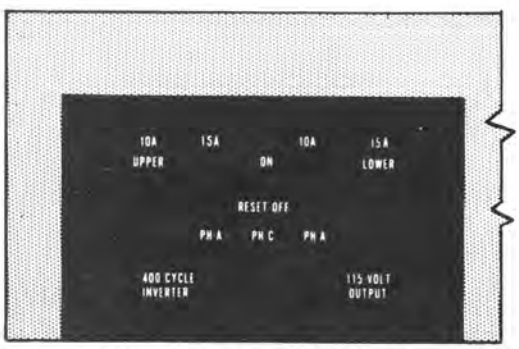
RADIO FUSE PANEL



INVERTER CIRCUIT BREAKER PANEL



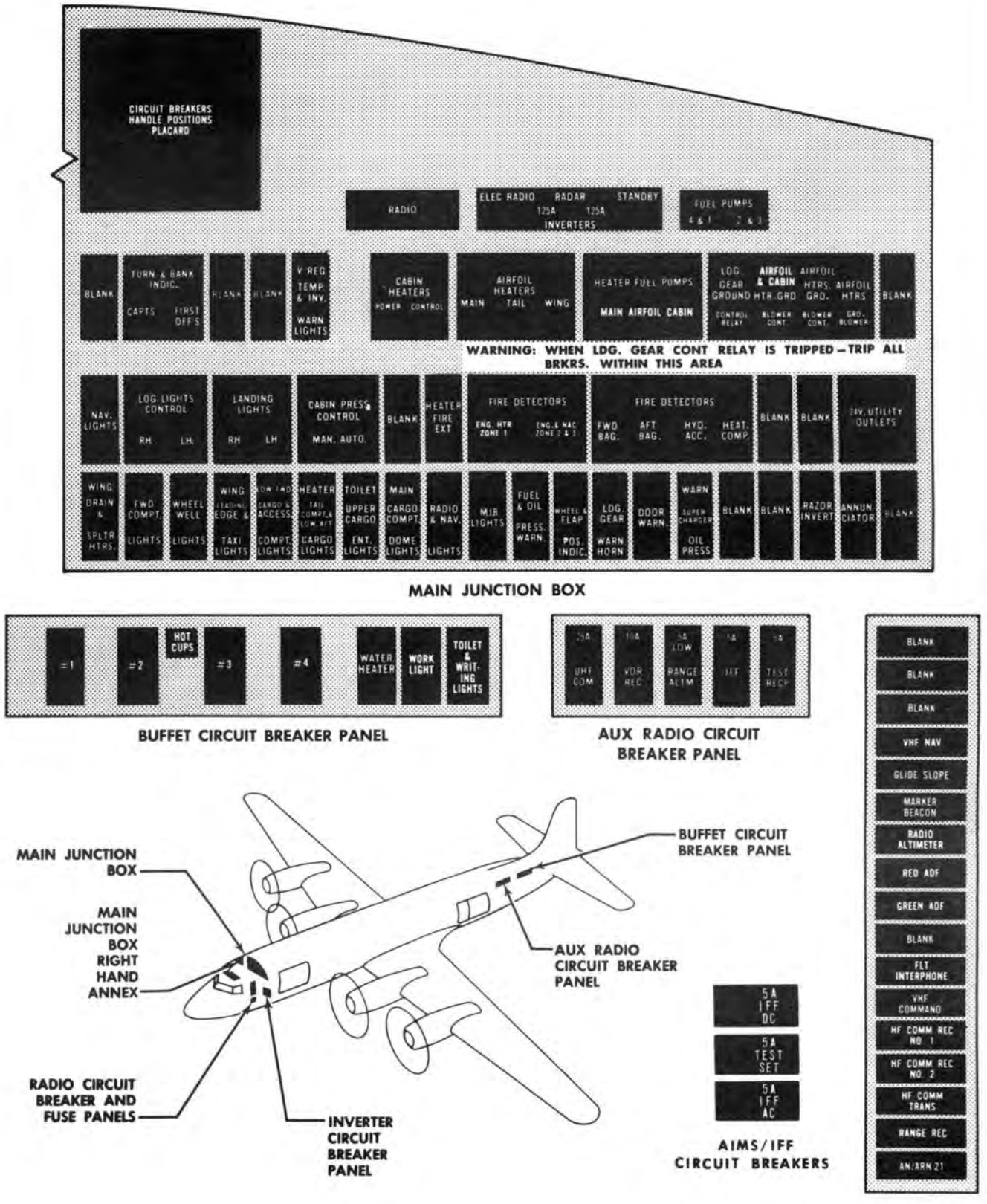
MAIN JUNCTION BOX RIGHT ANNEX



INVERTER CIRCUIT BREAKERS

AA1-561

Figure 1-17 (Sheet 1 of 9)



MAIN JUNCTION BOX

BUFFET CIRCUIT BREAKER PANEL

AUX RADIO CIRCUIT BREAKER PANEL

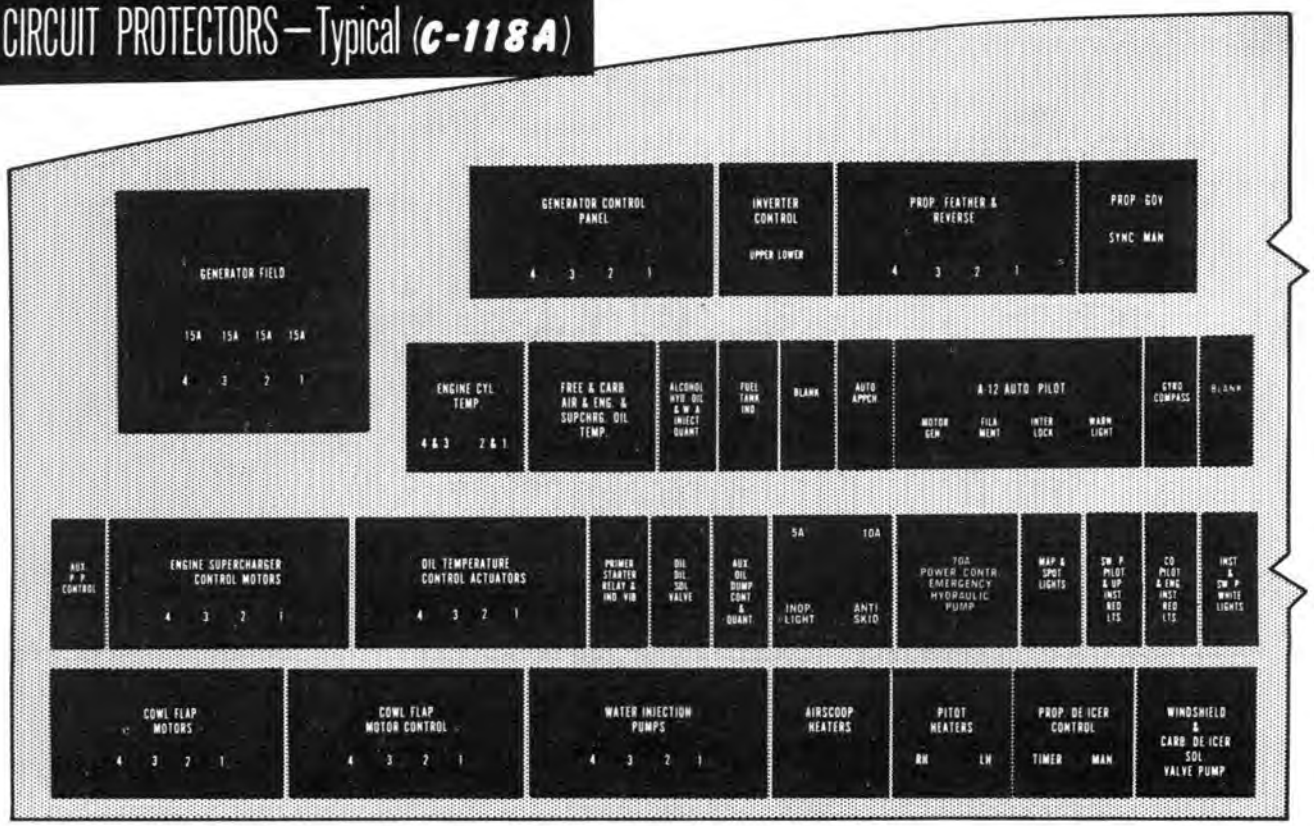
AIMS/IFF CIRCUIT BREAKERS

RADIO CIRCUIT BREAKER PANEL

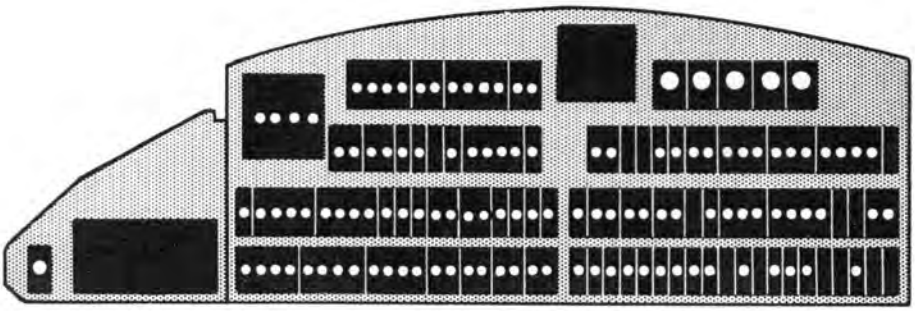
AA1-562

Figure 1-17 (Sheet 2 of 9)

CIRCUIT PROTECTORS—Typical (C-118A)

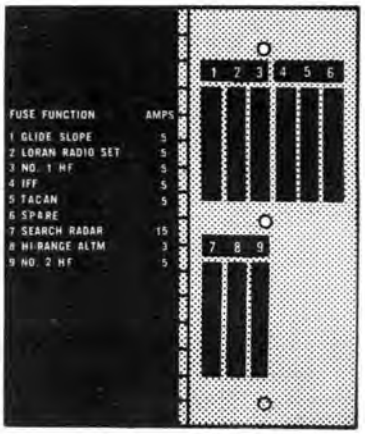


MAIN JUNCTION BOX



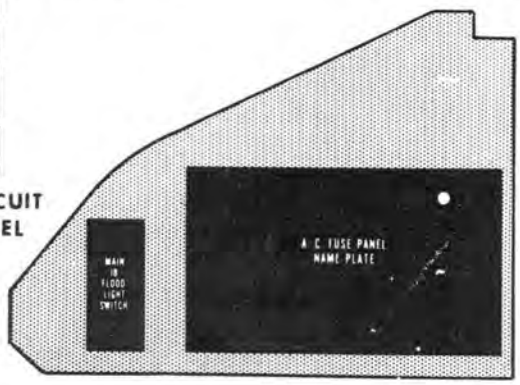
RIGHT ANNEX

MAIN JUNCTION BOX

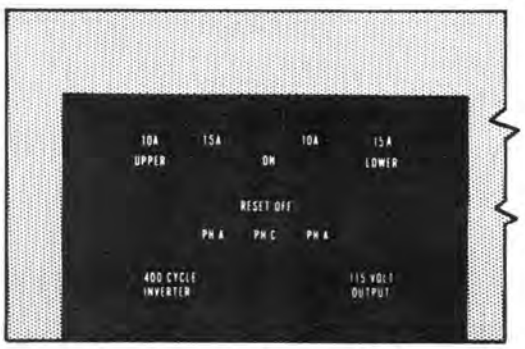


RADIO FUSE PANEL

INVERTER CIRCUIT BREAKER PANEL



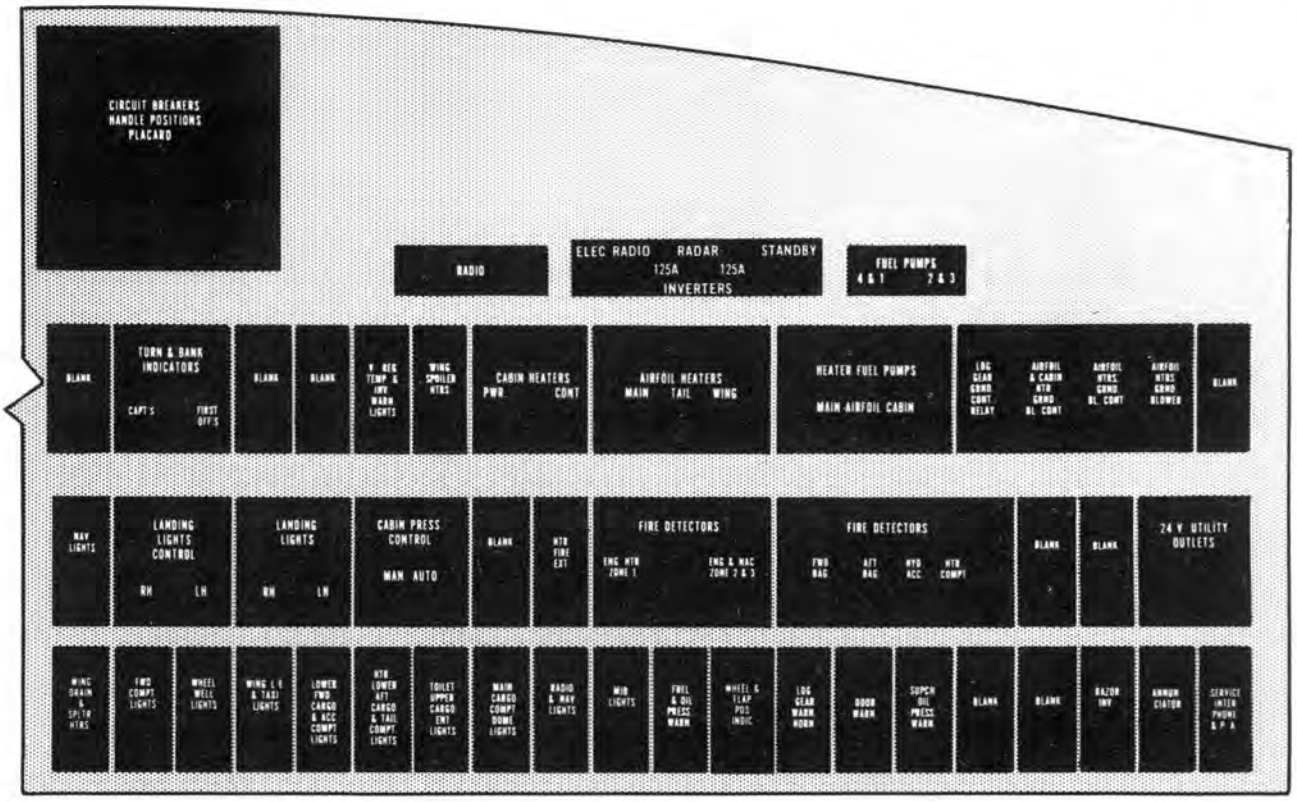
MAIN JUNCTION BOX RIGHT ANNEX



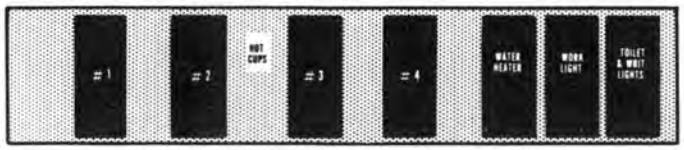
INVERTER CIRCUIT BREAKERS

AA1-563

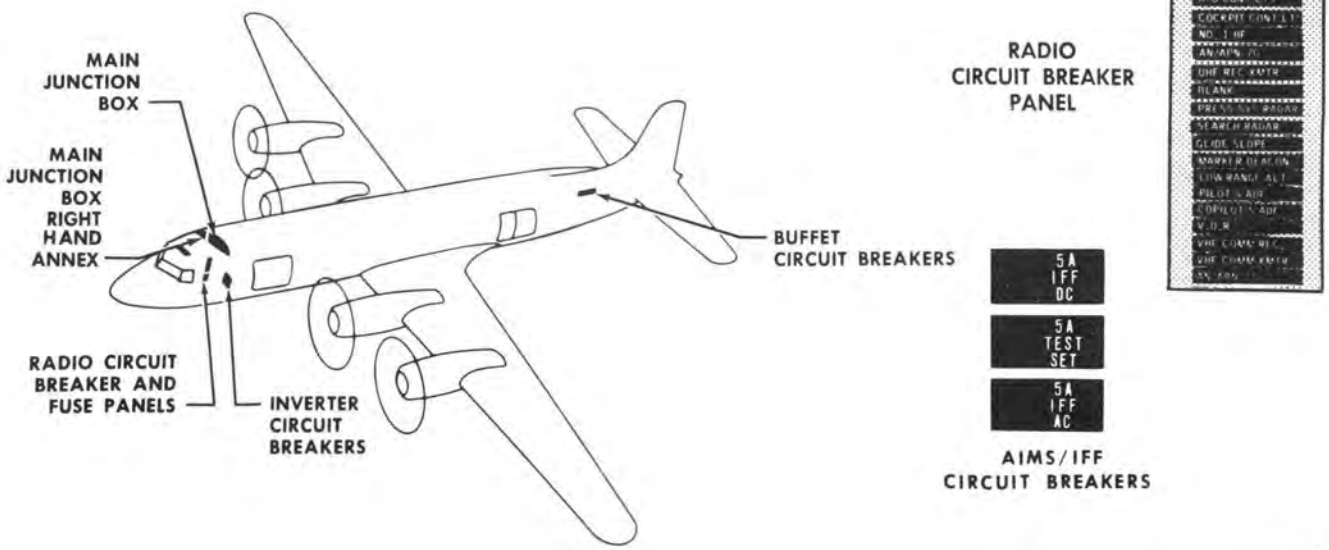
Figure 1-17 (Sheet 3 of 9)



MAIN JUNCTION BOX



BUFFET CIRCUIT BREAKERS

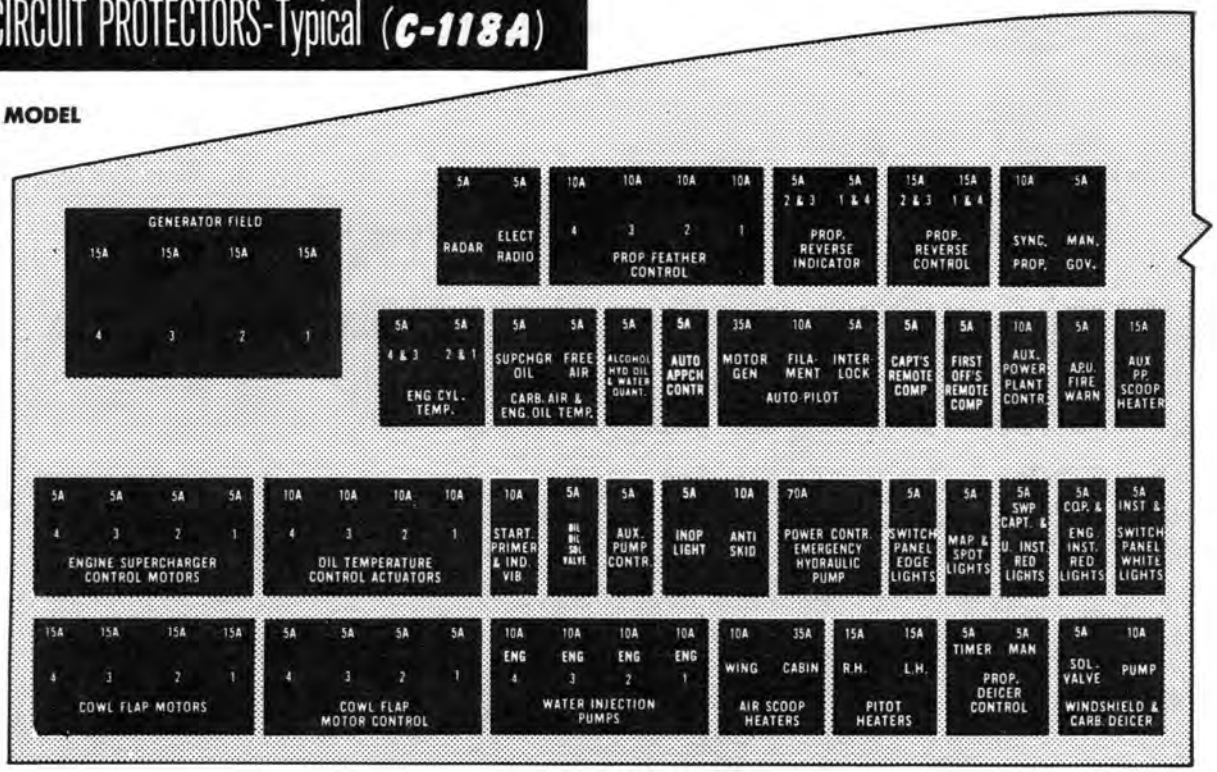


AA1-564

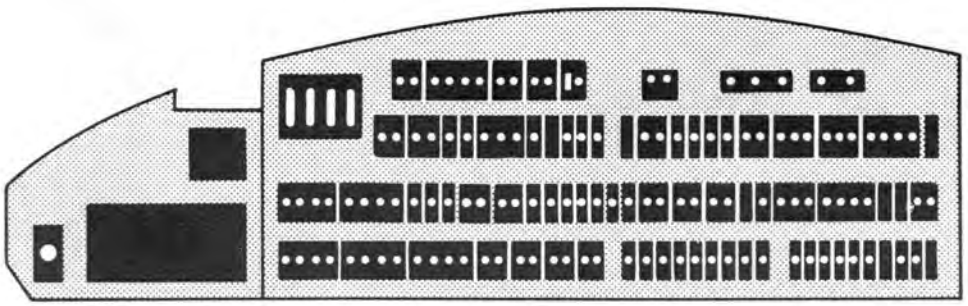
Figure 1-17 (Sheet 4 of 9)

CIRCUIT PROTECTORS-Typical (C-118A)

LATE MODEL



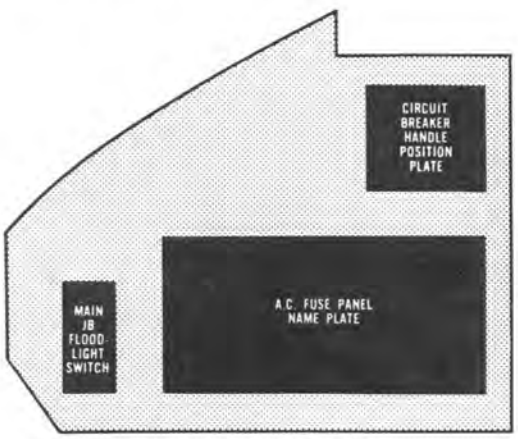
MAIN JUNCTION BOX



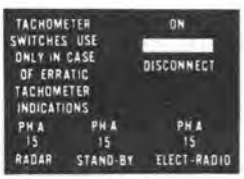
RIGHT HAND ANNEX

MAIN JUNCTION BOX

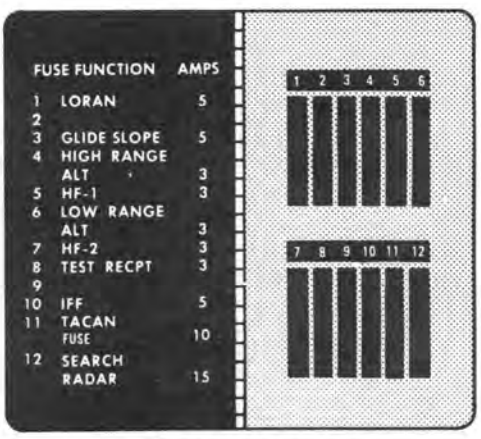
INVERTER CIRCUIT BREAKER PANEL



MAIN JUNCTION BOX RIGHT HAND ANNEX



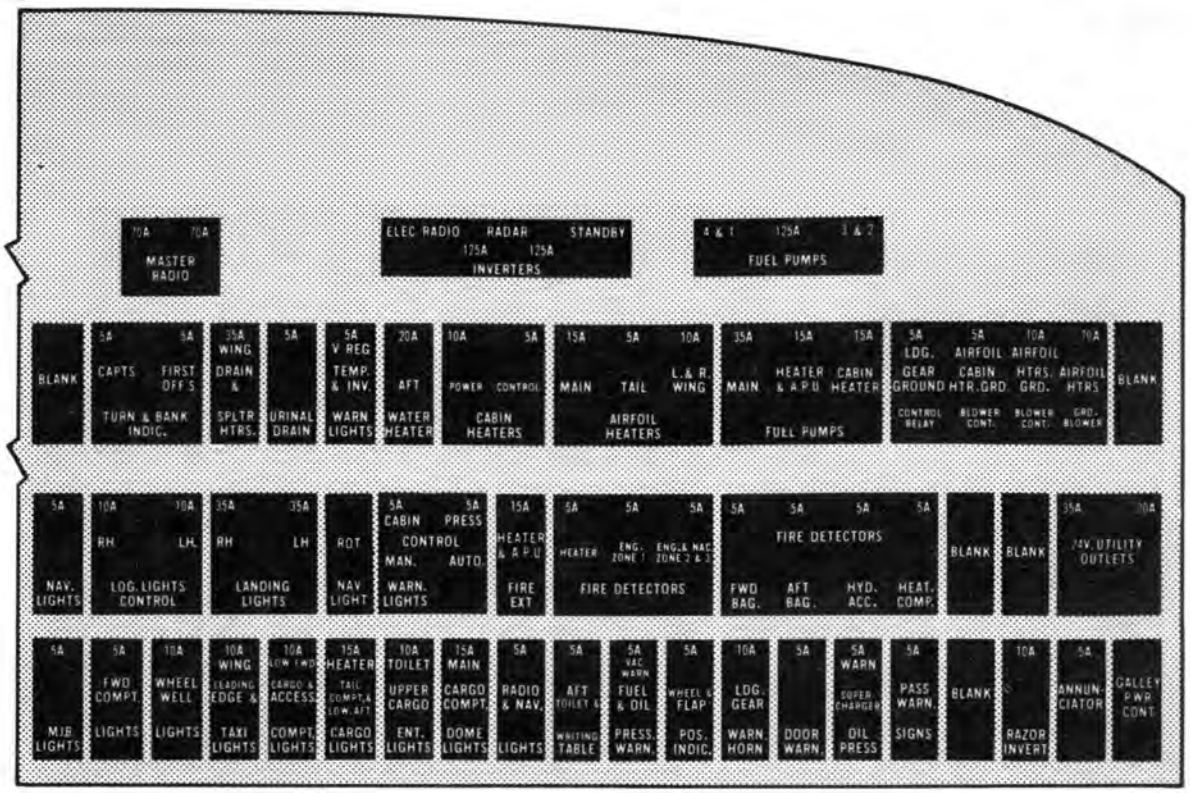
TACHOMETER ISOLATION SWITCH PANEL



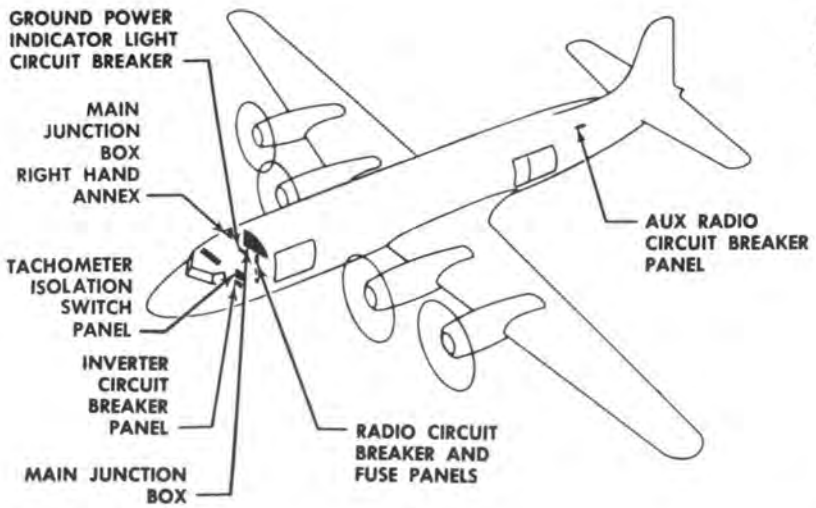
RADIO FUSE PANEL

AA1-565

Figure 1-17 (Sheet 5 of 9)



MAIN JUNCTION BOX



GROUND POWER INDICATOR LIGHT CIRCUIT BREAKER

RADIO CIRCUIT BREAKER PANEL

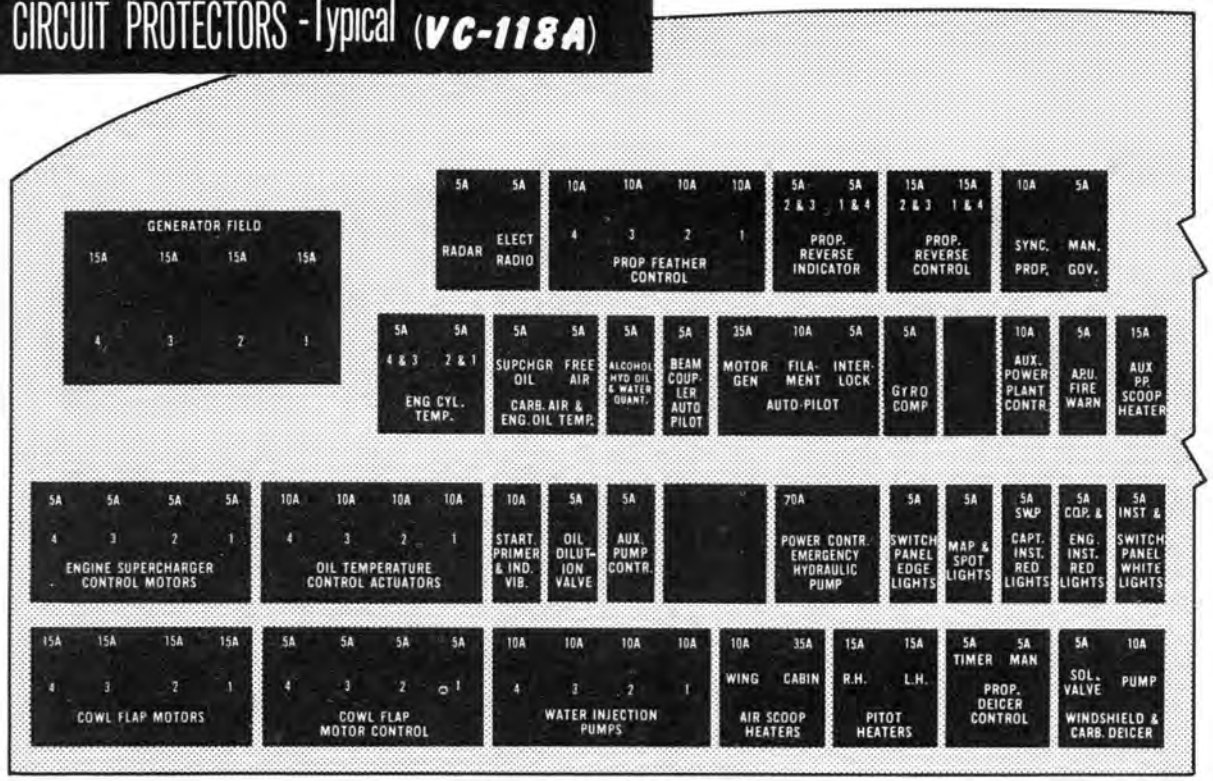
AIMS/IFF CIRCUIT BREAKERS

AUX RADIO CIRCUIT BREAKER PANEL

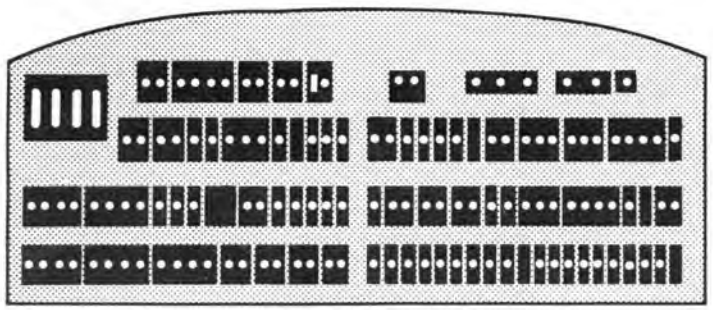
AA1-566

Figure 1-17 (Sheet 6 of 9)

CIRCUIT PROTECTORS - Typical (VC-118A)



MAIN JUNCTION BOX



MAIN JUNCTION BOX

1	ARC-58 ⁄A	10A
2	ARC-58 ⁄B	10A
3	ARC-58 ⁄C	10A
4	ARC-58 DC	5A
5	SEL CALL DC	5A

ARC-58 CIRCUIT BREAKERS

1	AN/ARN-21	5A
2	TEST RECPT	5A
3	IFS	5A
4	TACAN	5A

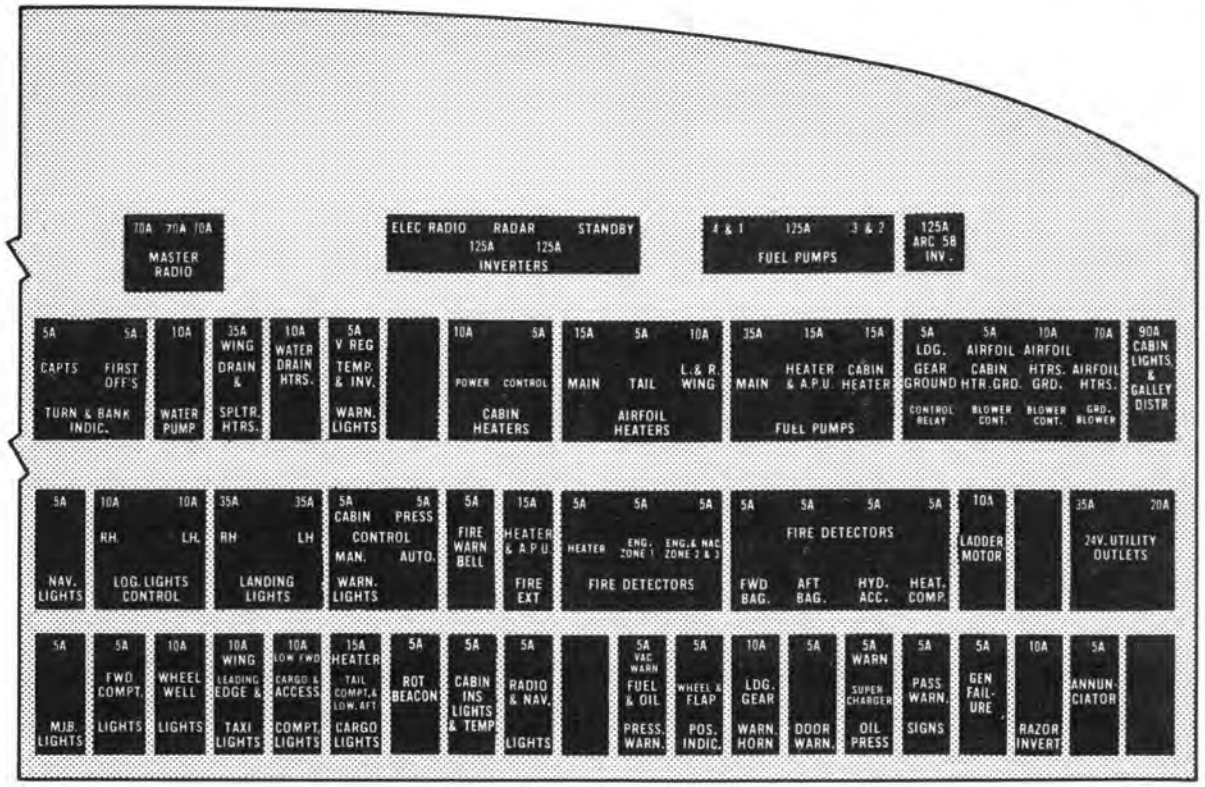
IFS-TACAN CIRCUIT BREAKERS

	FUSE FUNCTION	AMPS
1	LORAN	5A
2		
3	GLIDE SLOPE—2	5A
4	HIGH RANGE ALT	3A
5	HF-1	3A
6	LOW RANGE ALT	3A
7	HF-2	3A
8	TEST RECPT	3A
9	IFS	2A
10	IFF	5A
11	SEARCH RADAR	15A
12	GLIDE SLOPE—1	5A
13	TEST RECPT	5A
14		
15		
16	TEST RECPT	5A
17	TACAN	10A
18		

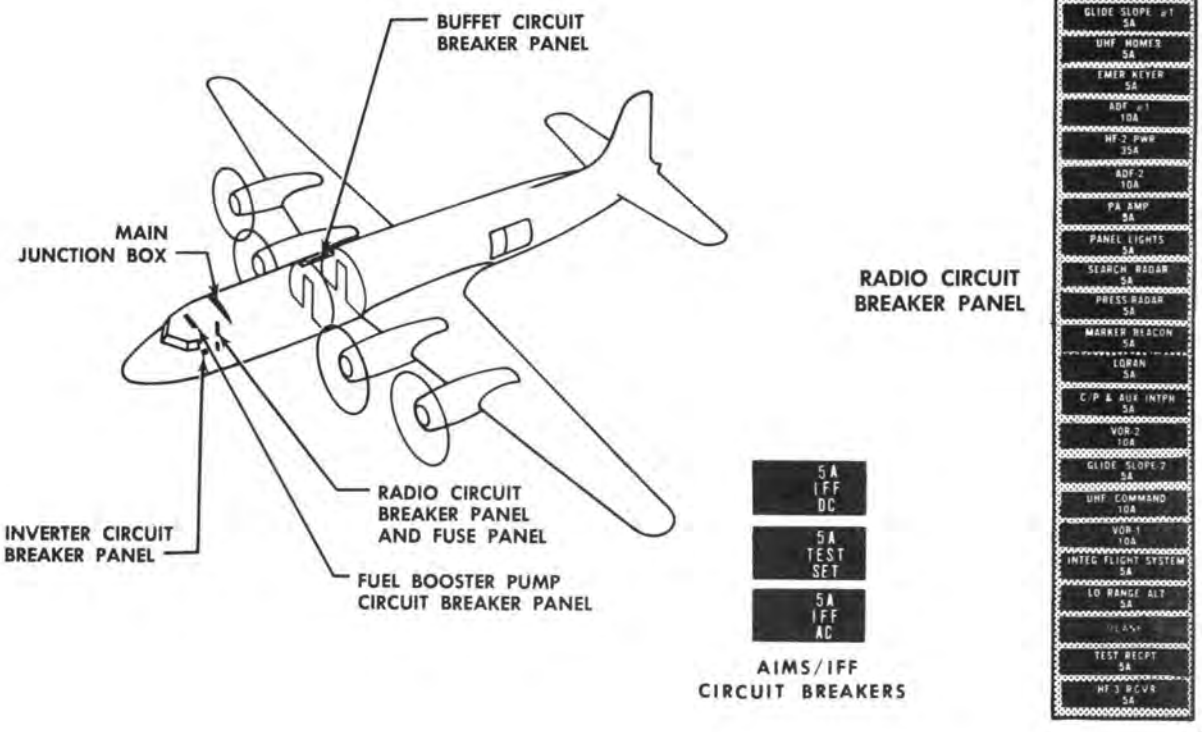
RADIO FUSE PANEL

AA1-567

Figure 1-17 (Sheet 7 of 9)



MAIN JUNCTION BOX



AA1-568

Figure 1-17 (Sheet 8 of 9)

CIRCUIT PROTECTORS-Typical (C-118A)

A.C. FUSE ARRANGEMENT

1.	ENG #1 FUEL FLOW, FUEL PRESS., SUPERCHG'R OIL PRESS. OIL PRESS, TORQUEMETER, WATER PRESS.	C	2A	26V	15.	FIRST OFFICER'S FLIGHT INSTR.	A	2A	115V
2.	ENG #2 FUEL FLOW, FUEL PRESS, OIL PRESS TORQUEMETER, WATER PRESS.	C	2A	26V	16.	FIRST OFFICER'S FLIGHT INSTR.	C	2A	115V
3.	ENG #3 FUEL FLOW, FUEL PRESS, OIL PRESS, TORQUEMETER, WATER PRESS.	C	2A	26V	17.	CAPT'S REMOTE COMPASS	A	3A	115V
4.	ENG #4 FUEL FLOW, FUEL PRESS, SUPERCHG'R OIL PRESS. OIL PRESS, TORQUEMETER, WATER PRESS.	C	2A	26V	18.	CAPT'S REMOTE COMPASS	C	3A	115V
5.	FUEL PRESS, HEATERS, MIX, VALVE POSITION INDIC	C	2A	26V	19.	AUTO PILOT	C	5A	115V
6.					20.	CAPT'S FLIGHT INSTR.	A	2A	115V
7.					21.	CAPT'S FLIGHT INSTR.	C	2A	115V
8.					22.	CABIN PRESS. CONTROL AMPL.	C	2A	115V
9.	AUX. OIL QUAN.	C	2A	115V	23.	UTILITY OUTLET	C	5A	115V
10.	FUEL QUANT TOTALIZER	C	2A	115V	24.	COMPASS REPEATER POWER UNIT	C	2A	115V
11.	ENG 1 OIL QUAN & MAIN & ALT. FUEL QUAN.	C	2A	115V	25.	UPPER ENG. INSTR. POWER	C	2A	115V
12.	ENG 2 OIL QUAN & MAIN & ALT. FUEL QUAN.	C	2A	115V	26.	LOWER ENG. INSTR. POWER	C	2A	115V
13.	ENG 3 OIL QUAN & MAIN & ALT. FUEL QUAN.	C	2A	115V	27.	ENGINE ANALYZER RECEPT.	C	3A	115V
14.	ENG 4 OIL QUAN & MAIN & ALT. FUEL QUAN.	C	2A	115V	28.	FIRST OFFICER'S REMOTE COMPASS	A	3A	115V
					29.	FIRST OFFICER'S REMOTE COMPASS	C	3A	115V
					30.				
					31.				
					32.				

NOTE: FUSES MTD. ON AFT SIDE OF PANEL

A.C. FUSE ARRANGEMENT

Figure 1-17 (Sheet 9 of 9)

delivered only to the brakes and cargo doors; it is recommended that the control lever normally be left in this position. The positions of the selector valve lever are as follows:

BRAKE SYSTEM (forward position) - Fluid is directed to brakes and cargo doors only.

NOTE

When operating the hydraulic emergency pump in the BRAKE SYSTEM position, emergency pressure will not indicate on the hydraulic system pressure indicator.

GENERAL SYSTEM (center position) - Fluid is directed to general system, brakes, and cargo doors only.

PRESS ACCUM (aft position) - Fluid is directed to brakes, general system, pressure accumulators, and cargo doors.

HYDRAULIC SYSTEM EMERGENCY SHUTOFF VALVES.

A mechanically actuated shutoff valve, controlled from the cockpit by means of the respective fire selector handle (figure 1-25), is installed at each inboard nacelle firewall to shut off the flow of hydraulic fluid through the firewall.

HYDRAULIC SYSTEM PRESSURE INDICATOR.

A hydraulic system direct reading pressure indicator is mounted on the hydraulic and oxygen instrument panel (figure 1-20).

HYDRAULIC SYSTEM QUANTITY INDICATOR.

A hydraulic system quantity indicator, energized by 28 vdc, is mounted on the upper instrument panel (figure 1-9). With the engines inoperative, the fluid level should indicate FULL at zero pressure. With the engines operating, the fluid level should indicate

at NORMAL FLIGHT. The REFILL position indicates insufficient hydraulic fluid quantity.

FLIGHT CONTROL SYSTEM.

All flight controls are conventionally operated by dual wheel and rudder pedal controls (figure 1-4). Trim tabs are mechanically controlled and both ailerons, both elevators, and the rudder are equipped with spring control tabs (figure 1-21).

RUDDER TRIM TAB HANDWHEEL.

The rudder trim tab is controlled by a handwheel mounted at the vee of the windshield (figure 1-4). The degree of trim is shown on an indicator below the wheel.

AILERON TRIM TAB HANDWHEEL.

The aileron trim tabs are controlled by a handwheel mounted on the control pedestal (figure 1-6). The degree of trim is indicated above the handwheel.

ELEVATOR TRIM TAB HANDWHEELS.

The elevator trim tabs are controlled by two handwheels mounted on the control pedestal (figure 1-6). The degree of trim is shown on an indicator on the inboard side of each handwheel.

NOTE

Pitch limits on the elevator trim tab handwheels are calibrated from 0 to 9 degrees noseup and from 0 to 6 degrees nosedown. Less than 4-degree noseup tab will allow 22 degrees of elevator travel; however, full elevator travel of 25 degrees is available with more than 4-degree noseup tab. During preflight check of the elevator trim control, a slight drag or binding on the control at approximately the 4-degree noseup position is no cause for alarm as this is due to the readjustment of the elevator travel.

SPRING CONTROL TABS.

Both ailerons, both elevators, and the rudder are equipped with spring control flying tabs. The tabs are spring loaded and designed to utilize aerodynamic loads on the spring control tabs to provide aerodynamic boost to the main control surfaces, thus reducing what would otherwise be high stick forces.

The spring control tab is actually an intermediate arrangement (figure 1-21) giving stick forces somewhere between those obtained by controlling the main surfaces directly (a direct control system) and those forces obtained by controlling a tab directly (a pure flying tab or servo tab system). Spring tabs have been found necessary because pilot forces arising from the use of direct control were too high, while those obtained by using a servo tab were much too low. Pilot forces that are too low deprive the pilot of "feel," since friction in the control system conceals the small forces.

The spring on the control tab is preloaded to overcome system friction and to center the tab. Except for the rudder system, the preload is set to barely overcome the system friction. The rudder preload is much higher in order to make the control forces heavier. This is accomplished by preventing the tab from helping the main surface until approximately 65 pounds of pilot force are applied.

Note that the spring control systems for both rudder and elevator have different operational characteristics on the ground (no airload). Since the spring control tabs for the rudder and elevator are preloaded, movement of the stick under these conditions moves the main surface while the tab remains fixed at neutral position, because of the springs, until the main surface reaches its stops. At this point, continued movement of the stick will deflect the tab, and stick force will be felt as a result of the action of the tab springs.

The aileron spring tabs are not preloaded; therefore, any ground movement of the aileron will deflect the aileron spring control tabs. This movement will be shown on the aileron tab motion indicator, located just forward of the aileron trim indicator. In flight, all spring control tabs will be deflected with any movement of their respective control surfaces.

CONTROL-SURFACE LOCK LEVER.

While the aircraft is on the ground, the control surfaces can be locked in the neutral positions, as a protection against damage from high wind velocities, by a mechanical control-surface lock system. The system is engaged with the control surfaces by a lever mounted on the floor to the right of the pilot's seat (figure 1-23). To engage the control-surface lock lever, hold the controls centered and pull the