

accurate fuel quantity indications, by weight, are provided regardless of changes of temperature, density, and aircraft attitude. For the same reason, however, the gages will indicate less fuel by weight on a hot day than actual gallonage inasmuch as gallon-weight is less on a hot day than on a standard day.

**CAUTION**

If the power circuit to one of these gages fails, the gage continues to indicate the quantity shown at the time of failure.

## ELECTRICAL POWER SUPPLY SYSTEMS

Direct and alternating current are provided for the operation of electrical equipment. The basic electrical system is a 24-28-volt, single-wire, grounded system. The aircraft structure serves as a ground return for all circuits except in the vicinity of the magnetic compass, where two-wire circuits are required to prevent magnetic interference. Direct-current power is supplied by two generators (one on each engine), by batteries, or by an outside source through an external power receptacle. Two main and one autopilot inverters operate on direct-current power from the main distribution bus and provide 400-cycle, 115-volt, alternating current for the equipment shown in figure 1-24. Although inverters are three-phase, the alternating current system is basically single-phase, only one phase of inverter output being utilized for power distribution. Two engine-driven alternators, one mounted on the accessory section of each engine, are provided to furnish emergency flight instrument power in the event of complete inverter failure.

### Circuit Breakers and Fuses

Circuit breakers are installed on the main circuit breaker panel, radio circuit breaker

panels, fuel control panel, pitot heat control panel, and aft circuit breaker panel. All circuit breakers are of the trip-free type with the exception of the propeller feather control, fuel control valve, and fuel boost pump circuit breakers which are non-trip-free (can be held in the set position in an emergency to override a fault).

**CAUTION**

In order to avoid ignition of a fire, do not hold a circuit breaker in for longer than a few seconds. Use this method only during extreme emergency conditions.

All circuit breakers are grouped on the panels according to their function, insofar as practicable. All alternating-current circuit breakers are segregated from the direct-current circuit breakers for accessibility and selection.

**NOTE**

Circuits requiring heavy current, such as starters, propeller deice, propeller feather pumps, and inverters, are protected by current limiters located in the wheel well junction boxes and in the main direct-current distribution bus.

Circuits drawing less than five amperes are protected by fuses in either alternating-current or direct-current circuits. Fuses are located on the main circuit breaker panel, pilot's and copilot's instrument panel shelves, radio circuit breaker panels, and on each oil thermostat in the nacelles. (Refer to figure 1-21 for circuit breaker and fuse panel locations.)



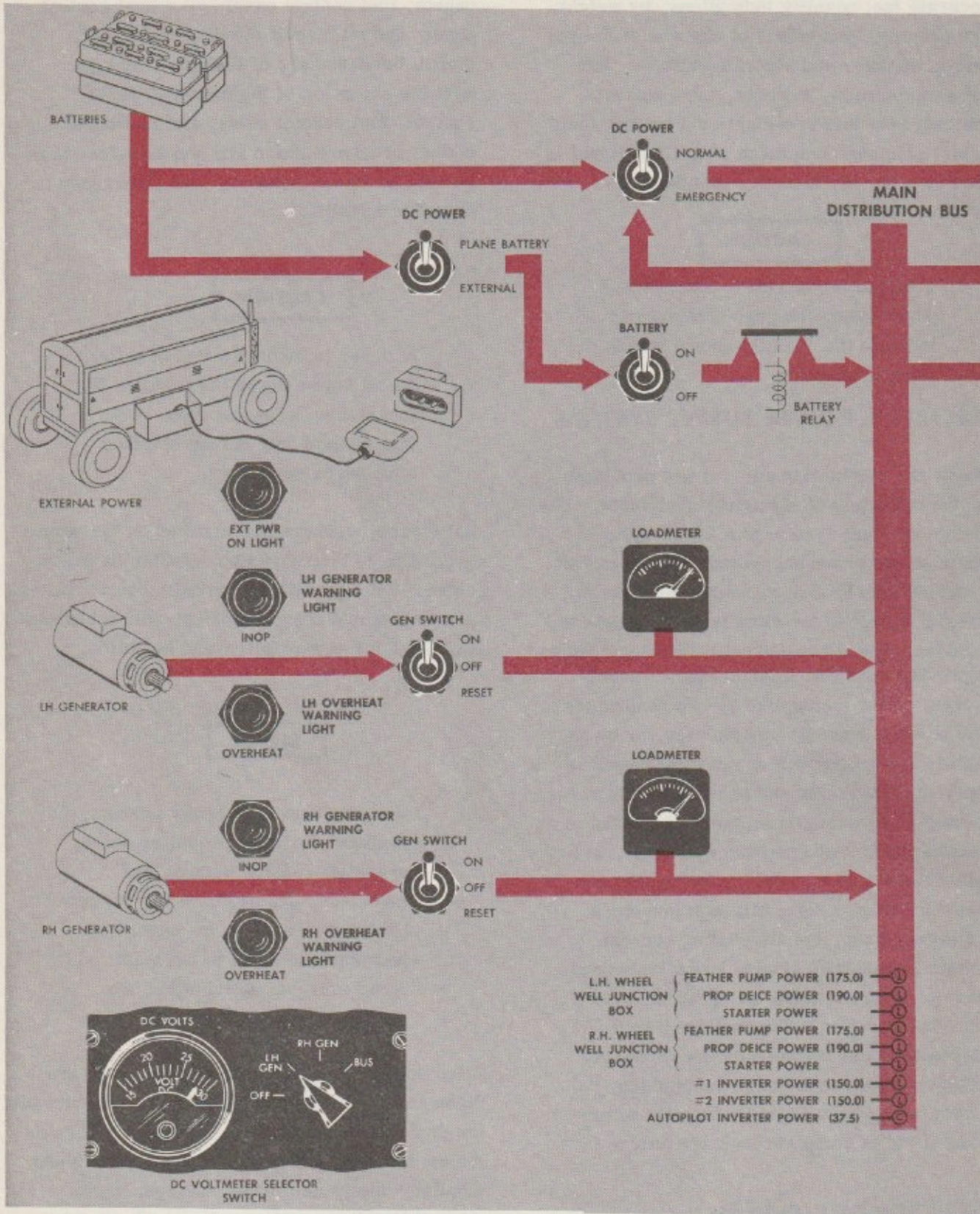


Figure 1-20 (Sheet 1 of 2). DC Power Supply System



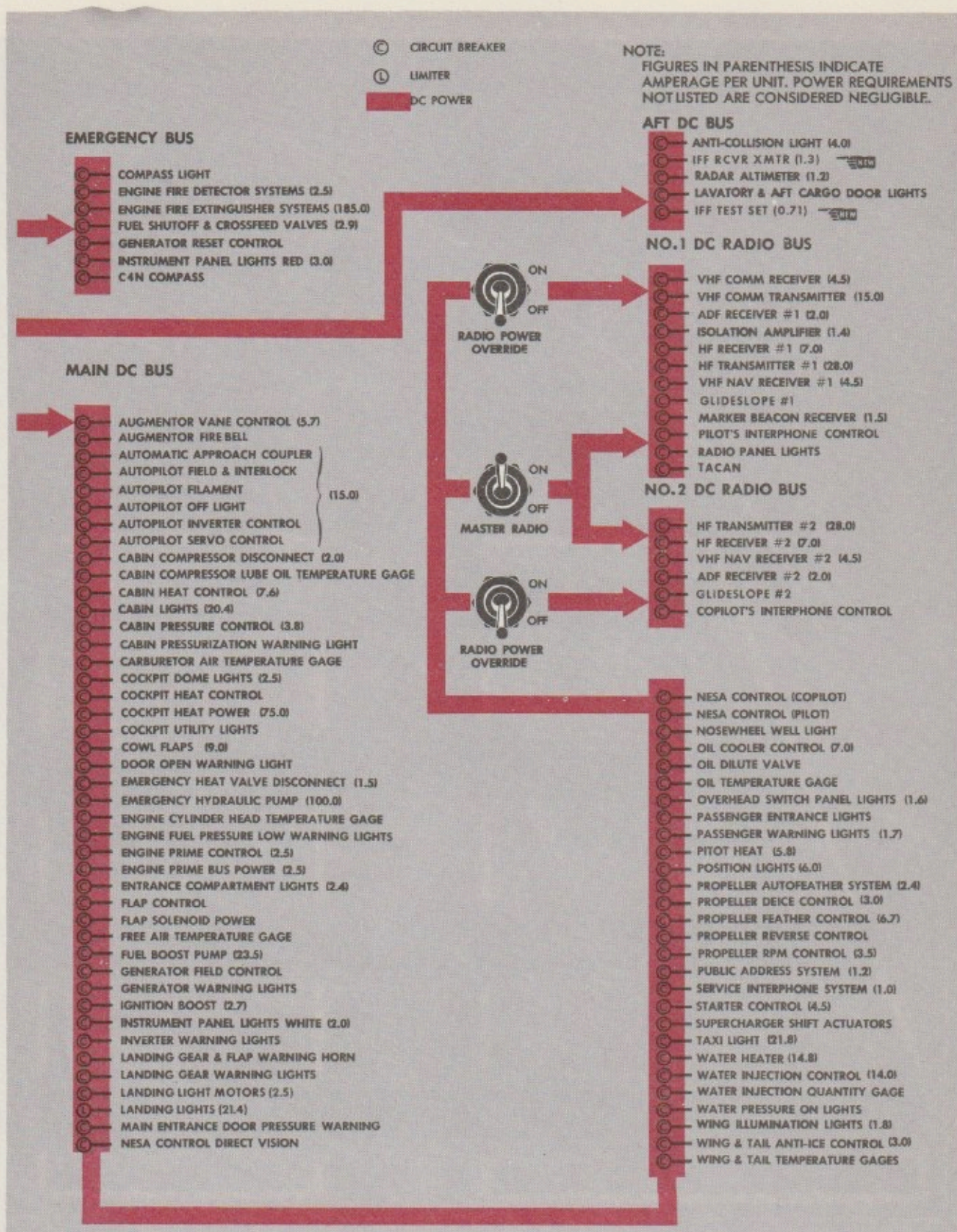


Figure 1-20 (Sheet 2 of 2). DC Power Supply System



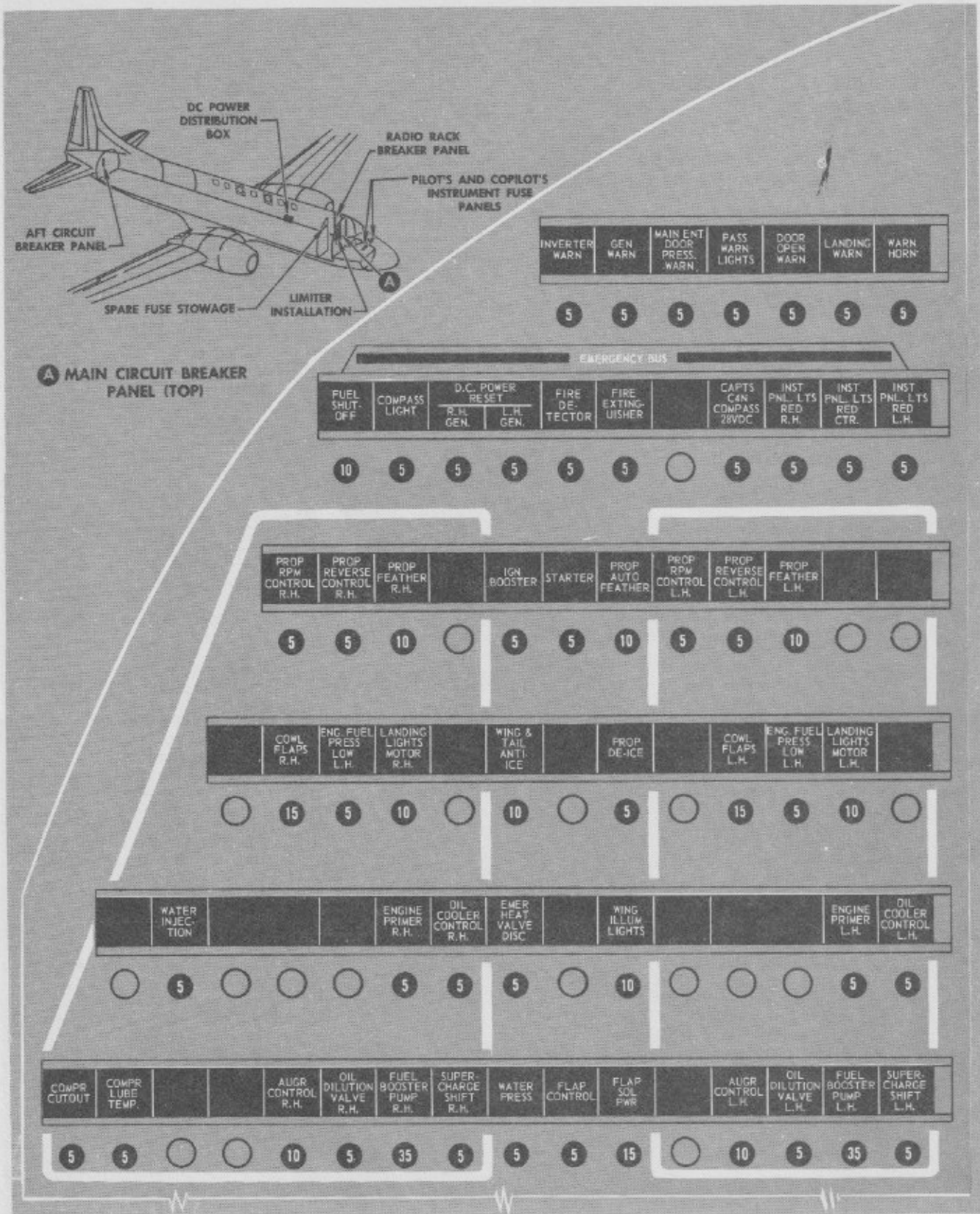


Figure 1-21 (Sheet 1 of 2). Circuit Breaker and Fuse Panel Locations (Typical)

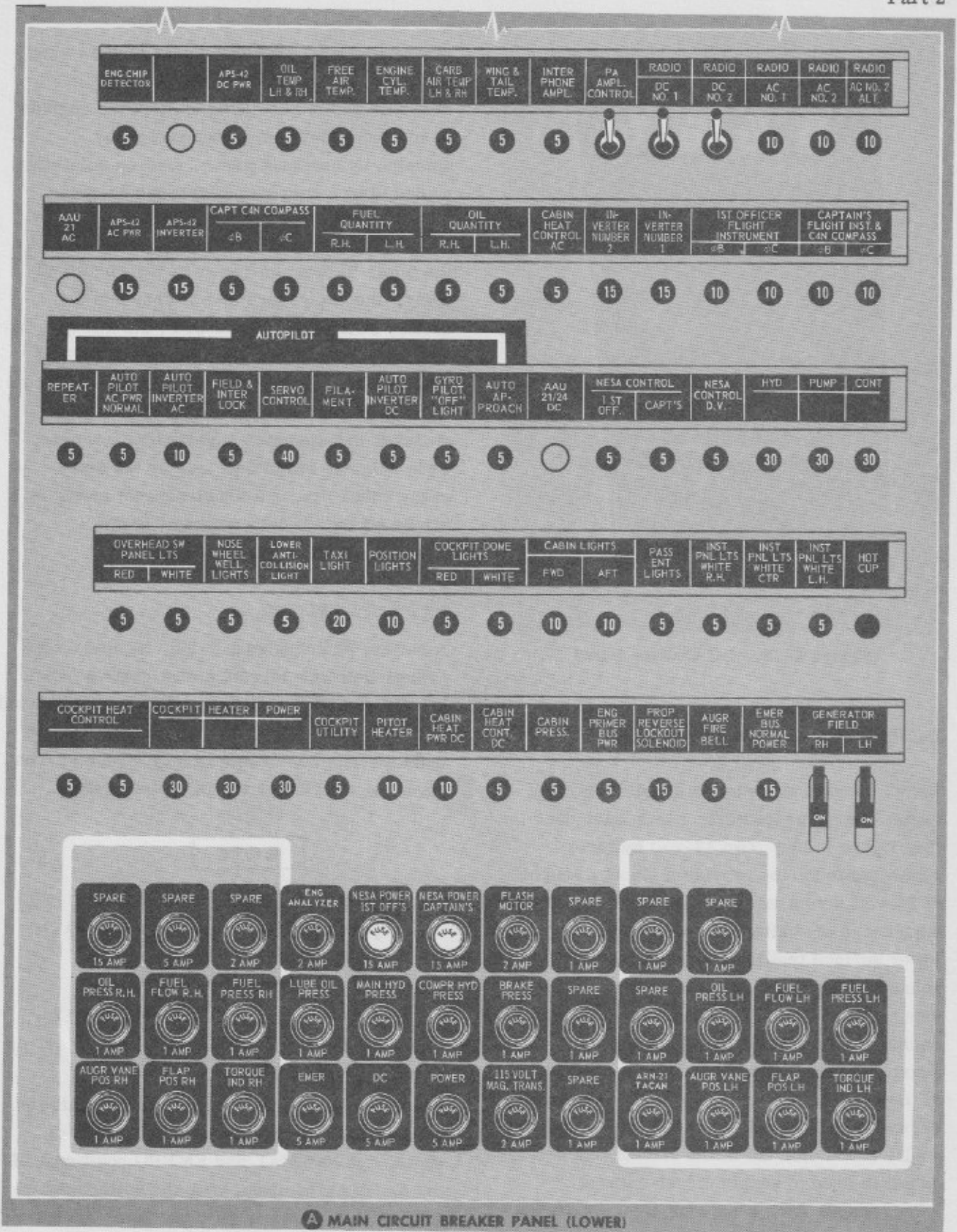


Figure 1-21 (Sheet 2 of 2). Circuit Breaker and Fuse Panel Locations (Typical)