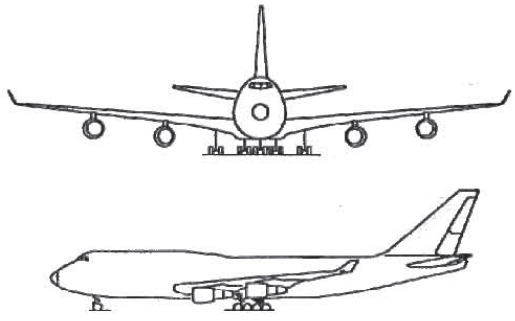
CF6-80 Supplement for Boeing 747-400 General Familiarization



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Self Paced Training Study Guide

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ATA-24 (CF-6)

ACRONYMS

AGCU - Auxiliary Generator Control Unit
APB - Auxiliary Power Breaker
APCU Auxiliary Power Control Unit
APUC Auxiliary Power unit Controller
BCU Bus Control Unit
BPCU Bus Power Control Unit
BTB Bus Tie Breaker
CSD Constant Speed Drive
CT Current Transformer
DCCS DC Current Sensor
DCIR DC Isolation Relay
DPCT Differential Protection Current Transformer
ELCU Electrical Load Control Unit
EPC External Power Contactor
GB Generator Breaker
GCB Generator Circuit Breaker
GCR Generator Control Relay
GCU Generator Control Unit
GIIB Ground Handling Bus GHR - Ground Handling Relay
GSB Ground Service Bus
GSR Ground Service Relay
GSSR Ground Service Select Relay
GSTR Ground Service Transfer Relay
IBVSU Instrument Bus Voltage Sensing Unit
IDG Integrated Drive Generator
NBPT No Break Power Transfer
RCCB Remote Control Circuit Breaker
SSB Split System Breaker
SUSP Sustained Unlike Source Protection
TR Transformer Rectifier
TRU Transformer Rectifier Unit
UBR Utility Bus Relay
XPC External Power Contactor

ELECTRICAL POWER

The electrical power system consists of those systems and components which generate, distribute and control electrical power to the airplane. The systems include:

- External/APU power
- Engine power
- DC power
- Standby power
- Load distribution
- Indicating

External /APU Power

External/APU power supplies electrical power during ground operations. It includes two external power sources and two APU generators.

Engine Power

Electrical power supplied by the engines is used for all normal flight operations. Engine power consists of four integrated drive generators (IDG).
The dc power system supplies those loads requiring dc power. It includes the batteries and transformer rectifier units.

Standby Power

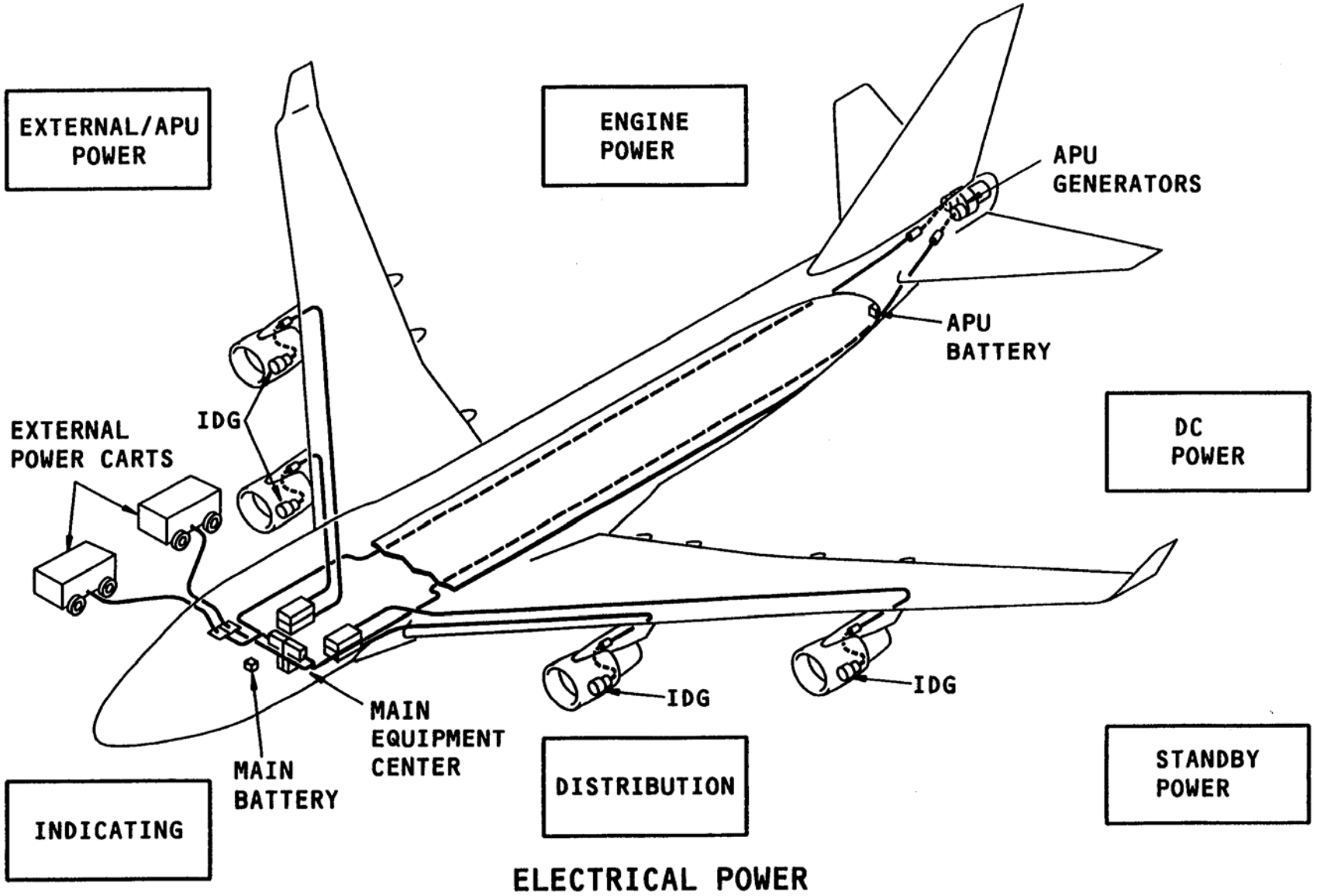
Standby power supplies power to selected loads when the primary source has failed.

Load Distribution

The load distribution system is used to control and distribute ac and dc power throughout the airplane.

Indication

Indicating includes the electrical power interfaces with EICAS and the central maintenance computer and related displays.



ELECTRICAL POWER

ELECTRICAL SYSTEM CONTROL PANEL

The electrical system panel is in the flight deck on the P5 overhead panel. The panel consists of switches and a selector knob which allow automatic or manually control the electrical power system.

Drive Disc

The drive disconnect switch is a guarded momentary action switch. Operation of the switch disconnects the IDG input drive from the engine.

The amber DRIVE light in the switch indicates a low pressure or high temperature of the IDG oil.

Gen Cont

The generator control switch is an alternate action switch. Operation of the switch to the latched in position closes the generator field relay and allows the generator circuit breaker (GCB) to close when good power is available. Operation to the out position opens the generator field relay and the GCB.

ON is a mechanical indication of automatic GCB operation. OFF is an amber light indication of an open GCB.

Bus Tie

The bus tie switch is an alternate action switch. Operation of the switch to the latched in position enables automatic operation of the bus tie breaker (BTB) and dc isolation relay (DCIR). Operation to the out position opens the BTB and the DCIR.

AUTO is a mechanical indication of automatic BTB and DCIR operation. ISLN is an amber light indication of an open BTB.

Ext Pwr 1/Ext Pwr 2

The external power switch is a momentary action switch. Operation of the switch alternately opens or closes the external power contactor if external power is available.

AVAIL is a white light indication of good external cower plugged into the airplane. ON is an indication of a closed external power contactor.

APU GEN L/APU GEN 2

The APU generator switch is a momentary action switch. Operation of the switch alternately opens and closes the auxiliary power breaker (APB) if auxiliary power is available.

AVAIL is a white light indication of good APU power. ON is an indication of a closed APB.

Battery

The battery switch is a guarded alternate action switch. Operation of the switch to the latched in position connects the battery to the main battery bus.

ON is a mechanical indication of a closed battery switch. OFF is an amber light indicating that the battery switch is off.

L-UTILITY-R

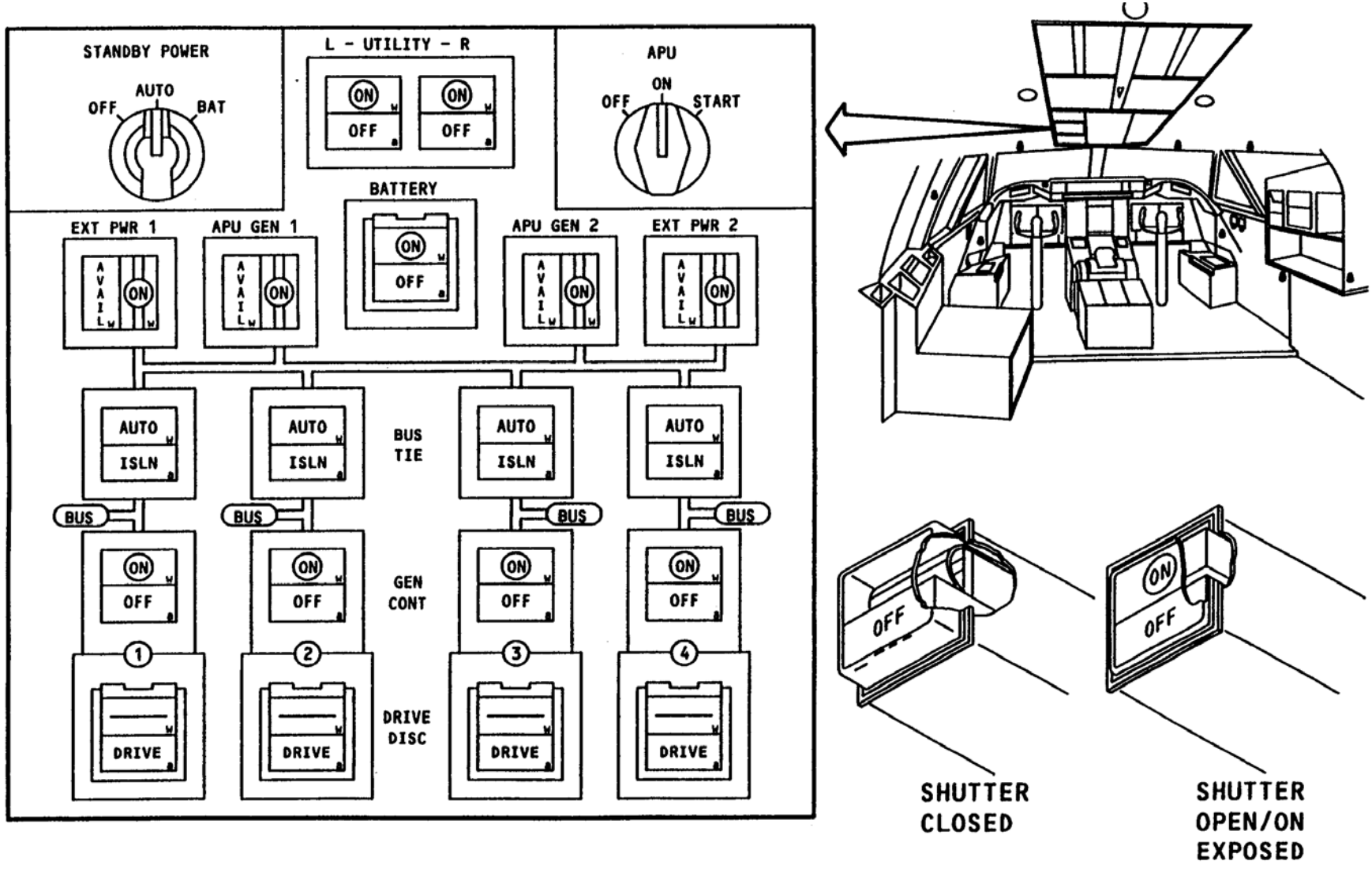
The utility bus switch is an alternate action switch. Operation of the switch alternately opens or closes the electrical load control unit (ELCU) relays. L-UTILITY and R-UTILITY each control two galley ELCUS and two utility bus ELCUs.

ON is a mechanical indication of a closed utility bus switch. OFF is an amber light indication of an open ELOU(s) (inhibited during load shedding).

Standby Power

The standby power switch is a three position rotary switch:

- OFF turns off standby power.
- AUTO transfers the ac standby bus to the static inverter with a loss of ac bus 3. It also transfers the main battery bus and APU battery bus from dc bus 3 to the main battery and APU battery, respectively, with a loss of dc bus 3.
- BAT connects the main battery to the main battery bus and the APU battery to the APU battery bus if the battery switch is on. It also turns on the static inverter to supply the ac standby bus.

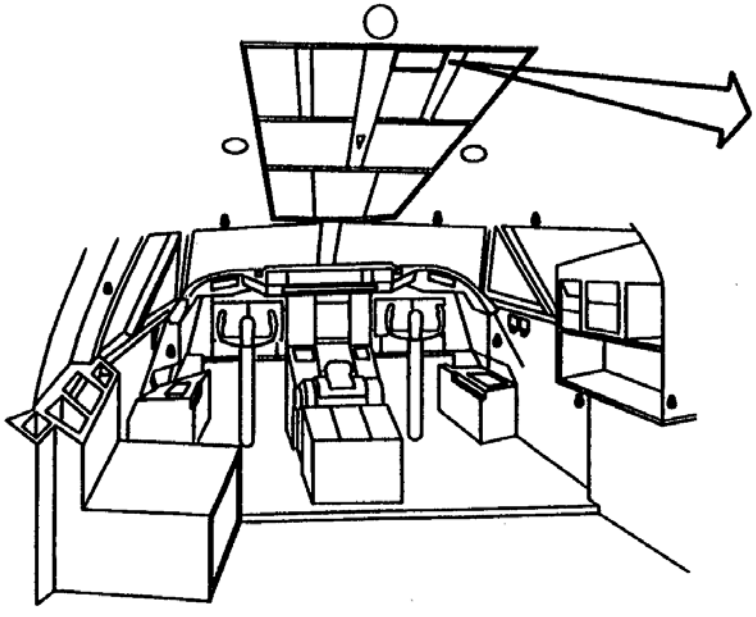


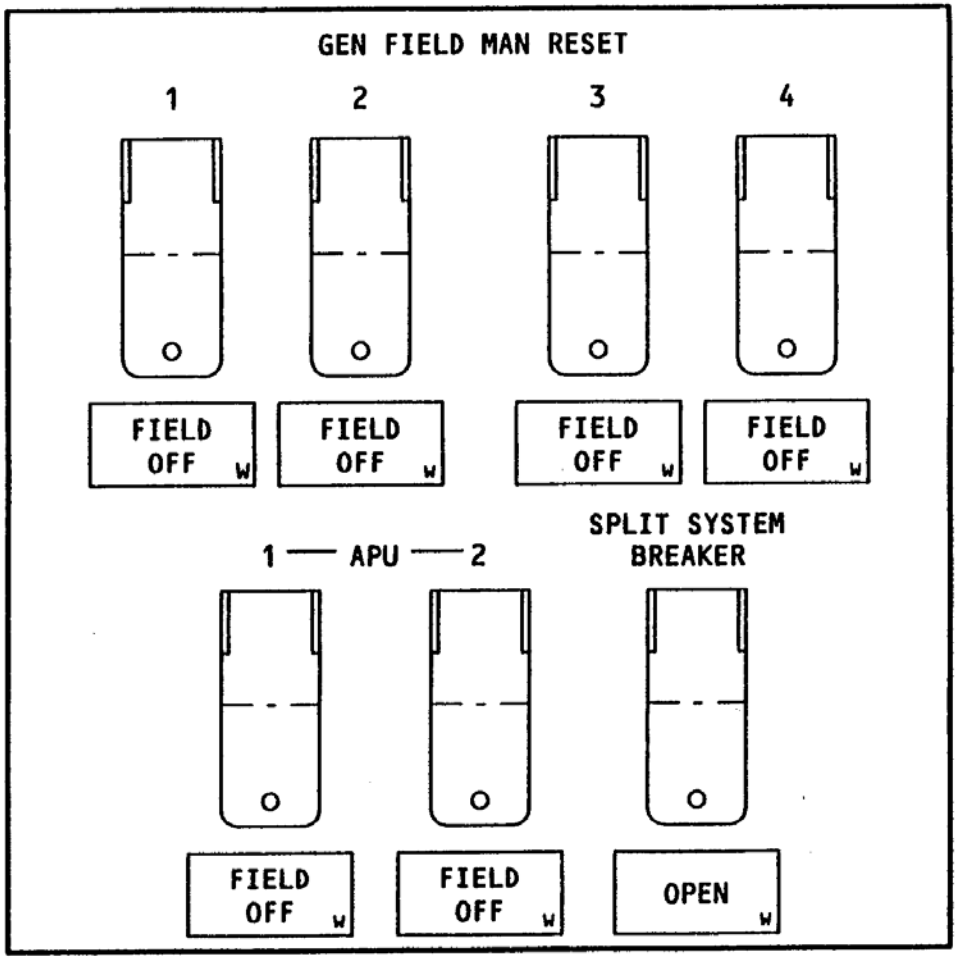
ELECTRICAL SYSTEM CONTROL PANEL

GENERATOR MANUAL RESET PANEL

The generator manual reset panel is in the flight deck on the aft overhead panel (P461). The panel has seven guarded momentary toggle switches. It provides indication and manual control for the:

- Engine generator field relays
- APU generator field relays
- Split system breaker (SSB)





GENERATOR MANUAL RESET PANEL