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GENERAL

Fuel is stored in two wing tanks and a center tank. Each wing tank consists of an outer tank and a collector tank. The center tank contains two electrically driven fuel pumps which transfer fuel to the collector tanks. The collector tank contains two electrically driven fuel pumps which supply fuel to engines and APU. For the engine fuel system see POWER PLANT. The fuel system is controlled from the FUEL panel at the flight deck and incorporates fuel quantity displays for each tank. Total fuel quantity is displayed at the fuel quantity totalizer.
Refuelling and defuelling is controlled from a fuel service panel located in the RH wing root lower fairing.
Tank ventilation to ambient air takes place via vent valves or, if blocked, via sniffle valves.
Failures will be detected and the relevant alerts are presented.

FUEL TRANSFER

Fuel from the center tank is transferred to the wing tanks by two center tank pumps. When a collector tank is full, the excess fuel flows into the outer tank. With one pump operating a normally closed transfer valve will open to allow fuel transfer from the operating pump to both collector tanks. If both pumps are inoperative the center tank contents become unusable.
Fuel transfer is automatically controlled when either center tank pump is switched ON and the AUTO FEED push button is blank. Fuel is transferred when the engine fuel flow exceeds 1135 kg/hr (2500 lbs/hr) and/or when the fuel quantity of both wing tanks is below a predetermined value.
If the autofeed control fails, fuel transfer can be manually controlled when the AUTO FEED push button is depressed to MAN. In this case fuel is transferred to the collector tanks as soon as a center tank pump is switched ON.

FUEL SUPPLY

In normal operation, the LH collector tank supplies engine 1 and the APU. The RH collector tank supplies engine 2. Each pump in the collector tank has sufficient capacity to supply one engine in all thrust conditions or both engines in climb and cruise thrust conditions.
The supply lines from the collector tanks to the engines are interconnected by a crossfeed line which is normally closed by two crossfeed valves These valves are controlled by the X-FEED push button. The crossfeed system allows any engine to be fed from either or both collector tanks.
In case of an engine fire the fuel supply to an engine can be isolated manually with a fire shut-off valve. In case of an APU fire the APU fire shut-off valve is automatically closed. See FIRE PROTECTION.

QUANTITY INDICATION

The aircraft is equipped with a fuel quantity indication system that consists of a fuel quantity totalizer and separate displays for each wing tank and the center tank at the FUEL panel. Fuel quantity data is fed to the totalizer which indicates the total amount of fuel in kilograms (pounds). From the totalizer, fuel quantity data is fed to the FUEL panel displays, fuel service panel displays, flight management system, and flight warning system.
A fuel asymmetry alert will be presented if the difference between the contents of the wing tanks is more than 350 kg (770 lbs). The alert will disappear when the difference in wing tank contents is reduced to below approximately 250 kg (600 lbs).
The fuel quantity of each wing tank can also be measured on the ground with three magnetic fuel-level indicators mounted underwing. Fuel quantity readout accuracy is similar to that of the main indication system when a correction for the aircraft attitude is applied. Aircraft attitude corrections are indicated at the attitude monitor.

REFUELLING AND DEFUELLING

Pressure re- and defuelling of the aircraft is accomplished through a single point fuelling system and is controlled from the fuel service panel. Fuelling instructions are engraved on the inside of the fuel service panel access hatch.
The wing tanks can also be fuelled by gravity through the overwing fuelling points.

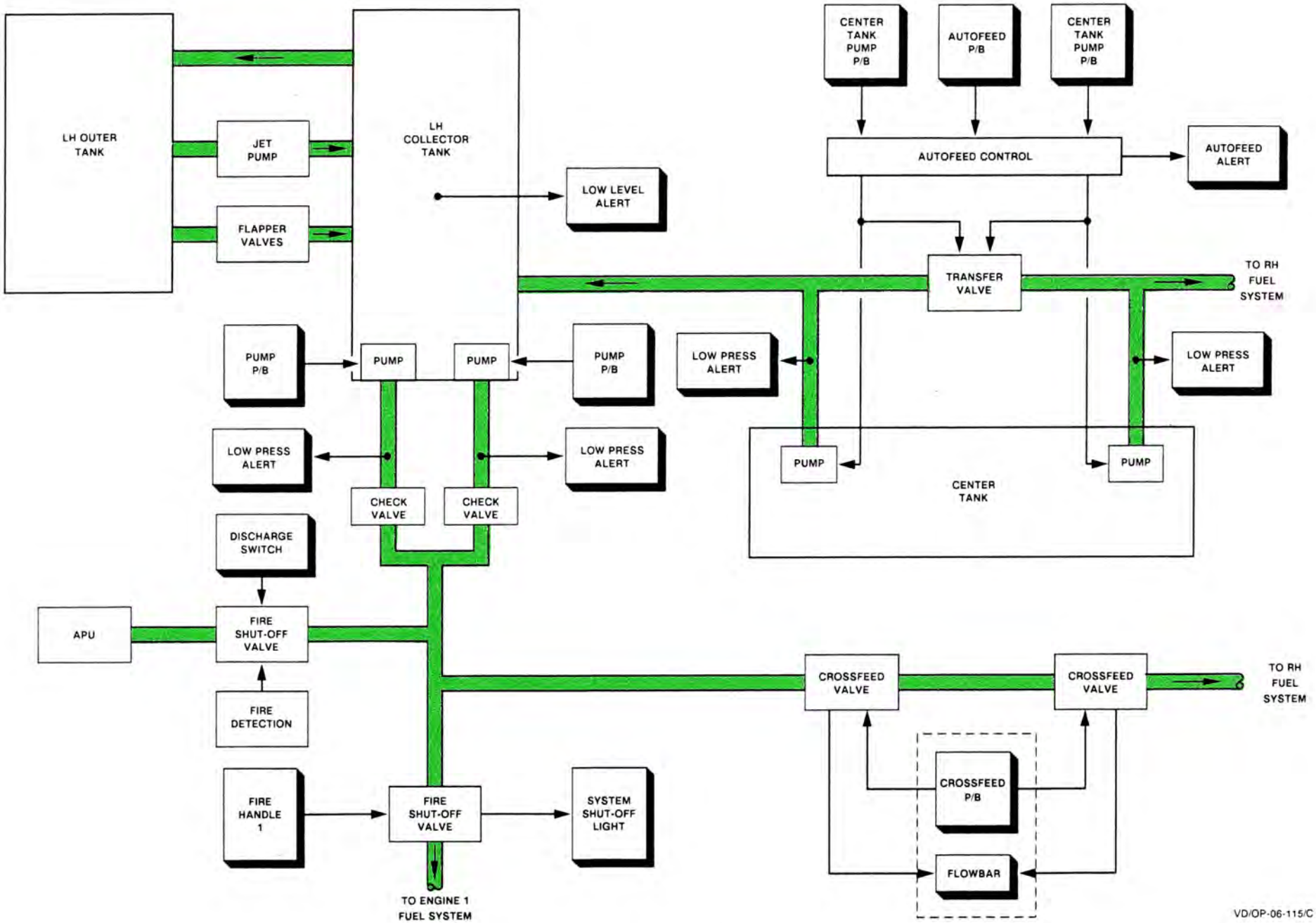
USABLE FUEL TANK QUANTITY			
	Wing tanks	**Center tank**	**Total**
Liters	9680	3140	12 820
US gallons	2557	830	3387
IMP gallons	2130	691	2821
Kilograms	7744	2512	10 256
Pounds	17 073	5538	22 611

Conversion factors:

- 3.7854118 l/US gallon
- 4.546087 l/IMP gallon
  0.800 kg/l
  0.4535923 kg/lb

FUEL SYSTEM

FUNCTIONAL DIAGRAM



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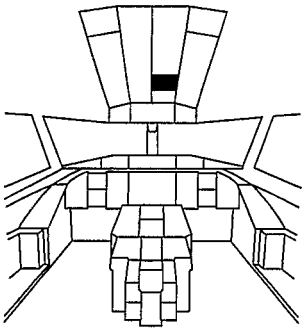
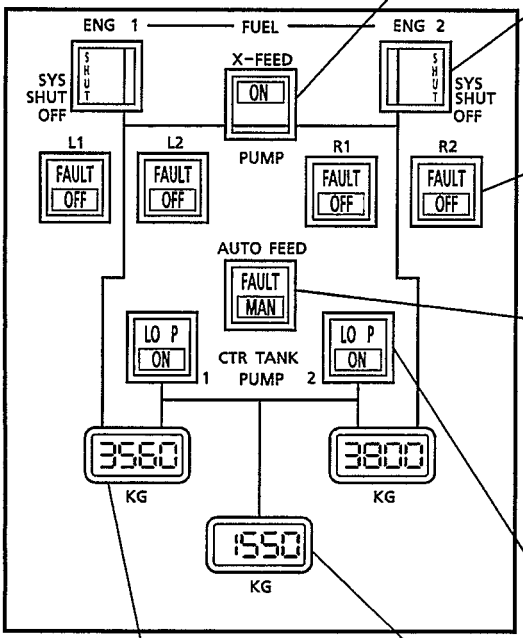




X–FEED P/B

Normal (blank)
– No crossfeed.
ON (blue) and flowbar (white)
– Crossfeed.
NOTE: Memo message FUEL X-FEED ON is displayed at MFDU primary page.
NOTE: If flowbar does not come on, valve position disagrees with p/b selection.

SYSTEM SHUT-OFF INDICATOR

Flowbar (white)
– Fire shut-off valve open.
SHUT (white)
– Fire shut-off valve closed.

PUMP P/B

Normal (blank)
– Pump in operation.
FAULT (amber)
– Pump output pressure low.
OFF (white)
– Pump manually switched off.

AUTOFEED P/B

Normal (blank)
– Fuel transfer automatically controlled provided at least one CTR TANK PUMP p/b is ON.
FAULT (amber)
– Autofeed control failure.
MAN (white)
– Autofeed control manually switched off.
– Fuel transfer controlled by CTR TANK PUMP p/b's.

CENTER TANK PUMP P/B

Normal (blank)
– Pump off.
LO P (amber)
– Pump output pressure low.
ON (blue)
– Pump automatically controlled during automatic fuel transfer.
– Pump in operation during manual fuel transfer.

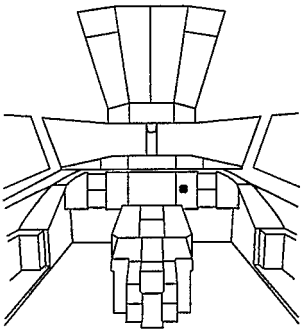
FUEL QUANTITY DISPLAY

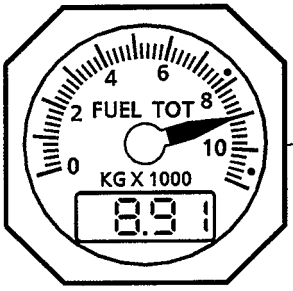
Shows fuel quantity in center tank.

FUEL QUANTITY DISPLAY

Shows fuel quantity in corresponding wing tank.
NOTE: When fuel quantity drops below 100 kg, LO + numerals (flashing) are shown.

VD/OP-06-102/D

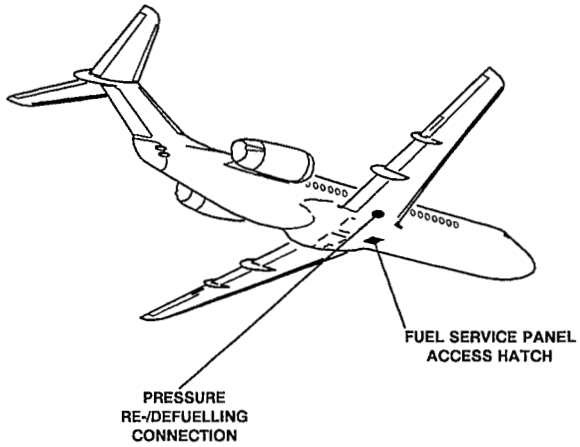


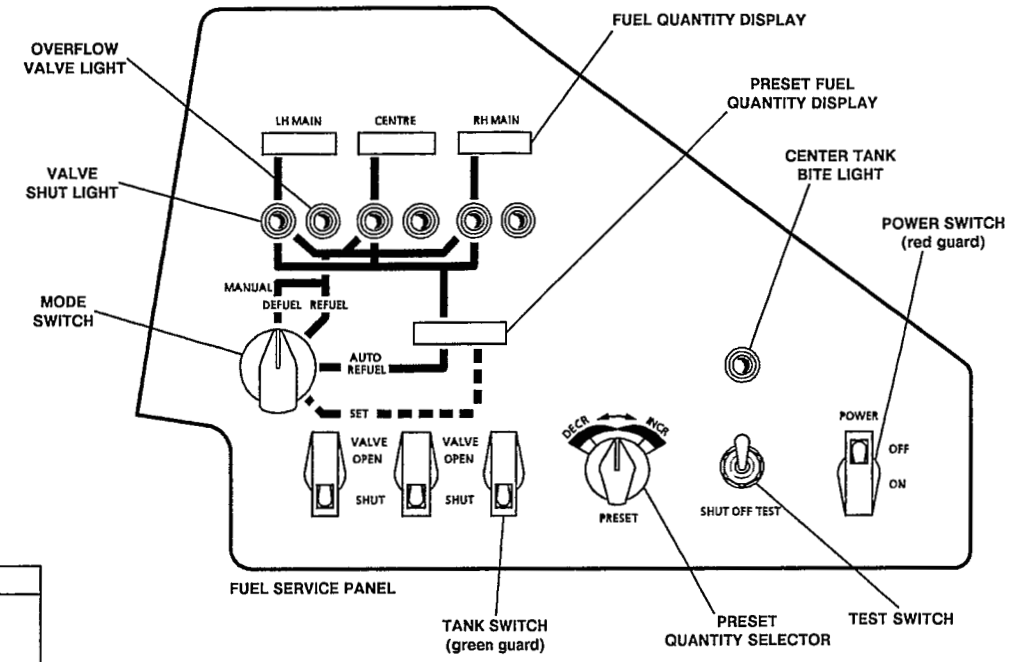


FUEL QUANTITY TOTALIZER
Shows total fuel quantity in wing tanks and center tank. NOTE: With pointer at first dot both wing tanks are full. NOTE: With pointer at second dot both wing tanks and center tank are full.

FUEL SYSTEM

CONTROLS AND INDICATORS





SELECT		CHECK		REMARKS
RE- AND DEFUELLING				
POWER SWITCH	. ON	ALL DISPLAYS	. ON	READ QUANTITY
TANK SWITCHES	. SHUT	VALVE SHUT LIGHTS	ON	
		CWT BITE LIGHT	: OUT	
REFUELLING AUTOMATIC				
MODE SWITCH PRESET REQUIRED QUANTITY	SET	PRESET QUANTITY	INCR/DECR	
DISPENSER PUMP	PRESSURE	OVERFLOW VALVE LIGHTS	· ON	IF OUT OPERATE TEST SWITCH IF STILL OUT STOP REFUELLING
MODE SWITCH	AUTO	VALVE SHUT LIGHT(S)	· OUT	SELECTED QUANTITY IS REACHED WHEN VALVE SHUT LIGHT ON
WHEN REFUELLING IS COMPLETED		CHECK TOTAL QUANTITY EQUALS SELECTED QUANTITY		CWT REFUELLING MAY STOP AND CONTINUE WHEN MAINTANKS FULL
SHUT-OFF TEST				
OPERATE TEST SWITCH DURING REFUELLING		ALL VALVE SHUT LIGHTS DISPENSER FLOW CWT BITE LIGHT	· ON . STOP ON	DISPLAYS TANKS . STATIONARY PRESET DISPLAYS · ALLS
RELEASE TEST SWITCH		ALL VALVE SHUT LIGHTS DISPENSER FLOW	· OUT CONTINUES	
		CWT BITE LIGHT	: OUT	BITE FAILED LIGHT ON AFTER 15 SECS
RE- AND DEFUELLING MANUAL				
POWER SWITCH TANK SWITCHES	ON SHUT	ALL DISPLAYS VALVE SHUT LIGHTS	ON ON	READ QUANTITY
MODE SWITCH DISPENSER PUMP	. MANUAL · PRESSURE	OVERFLOW VALVE LIGHTS	ON	IF OUT OPERATE TEST SWITCH IF STILL OUT STOP REFUELLING
TANK SWITCH(ES) WHEN THE REQUIRED QUANTITY IS REACHED TANK SWITCH(ES)	OPEN SHUT	QUANTITY SELECTED TANK	INCR/DECR	PERFORM SHUT OFF TEST AS ABOVE
		APPLICABLE VALVE SHUT LIGHTS	ON	
AFTER RE- AND DEFUELLING		**CAUTION** • FUEL PANEL CALIBRATED IN KG		
ALL GUARDS	· CLOSED	• IF ANY INDICATION IS NOT CONFORMING TO INSTRUCTIONS • STOP FUELLING AND REFER TO MAINTENANCE MANUAL CHAPTER 12		

INSTRUCTION PLATE

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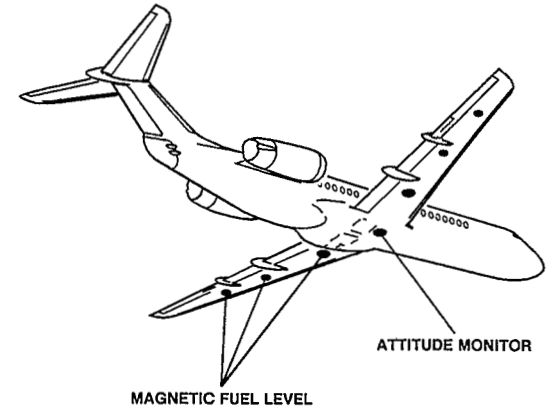
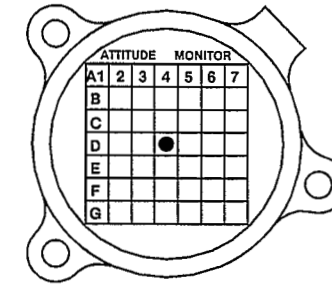
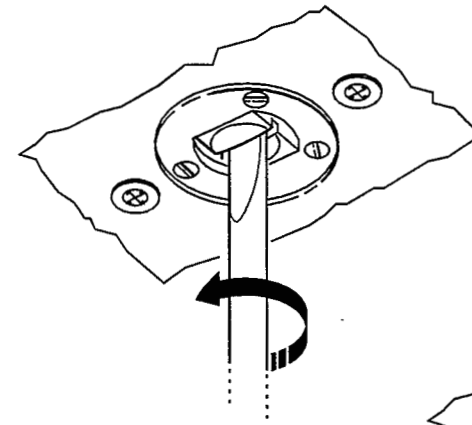
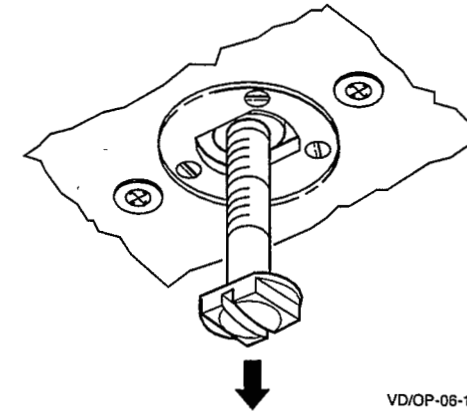




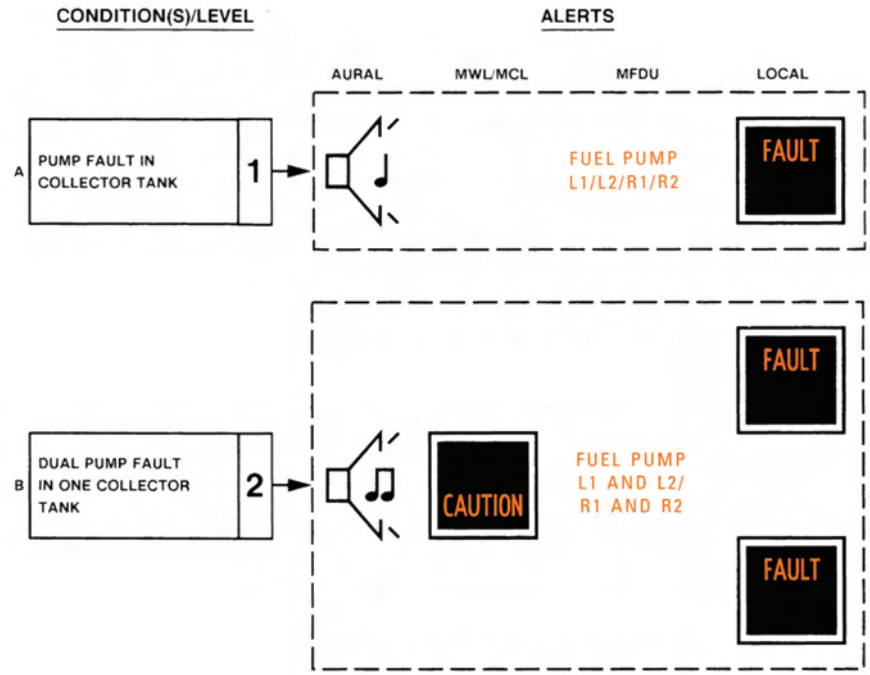


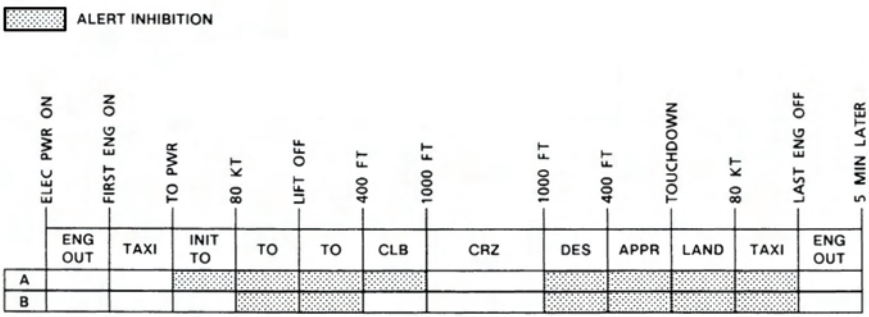
ATTITUDE MONITOR
When the aircraft is in level position, the bubble is in position D4.



MAGNETIC FUEL-LEVEL INDICATOR
Turn 90 degrees to unlock indicator. Lower the indicator until built-in magnet is felt to float. Read indicator calibration (kg).

VD/OP-06-109/A





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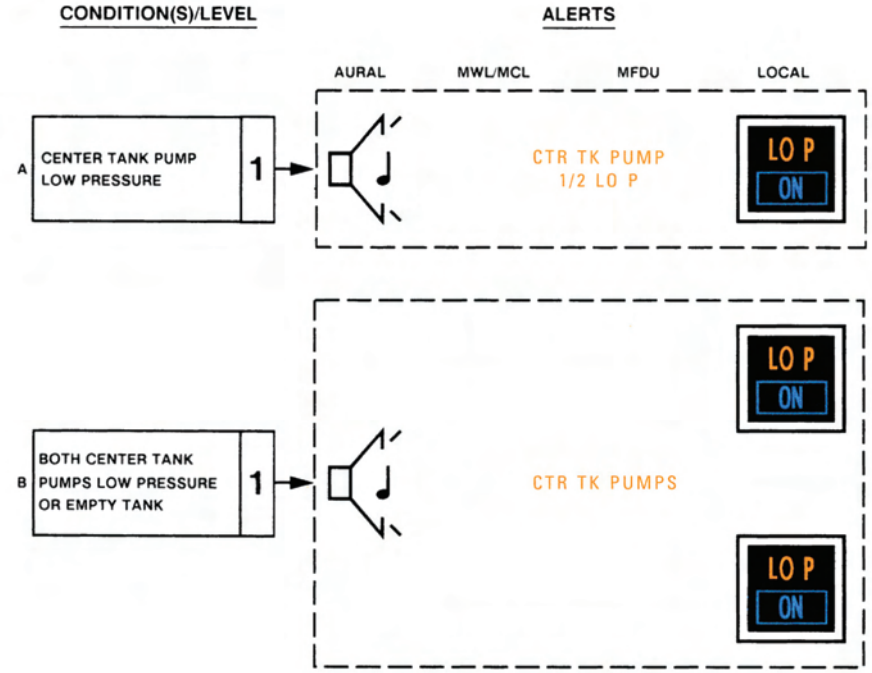

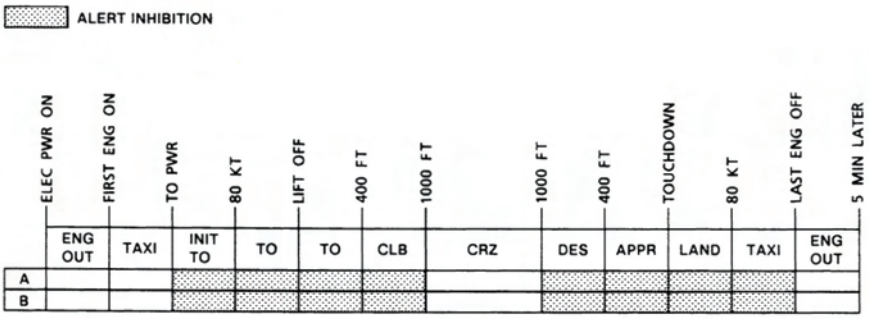

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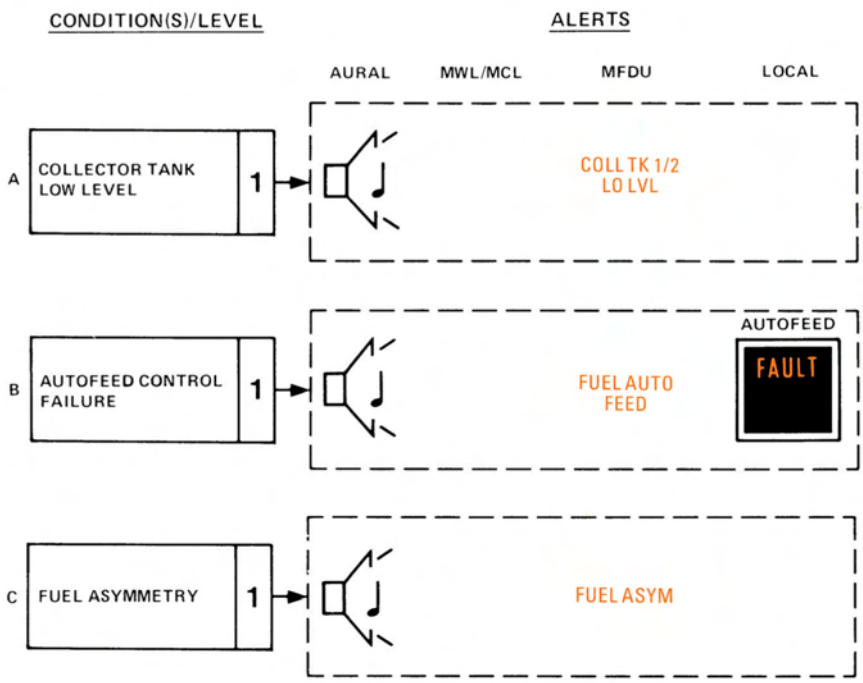

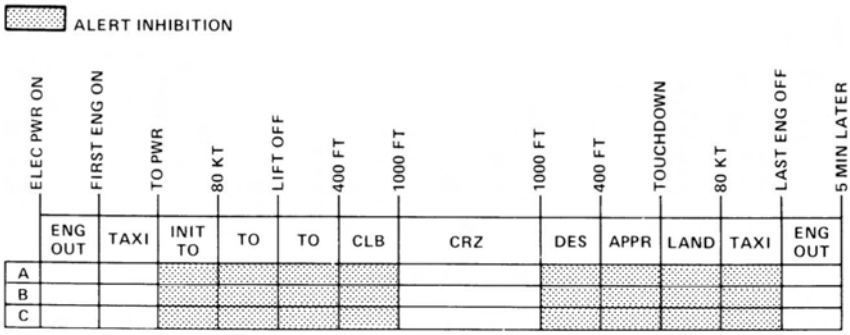

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