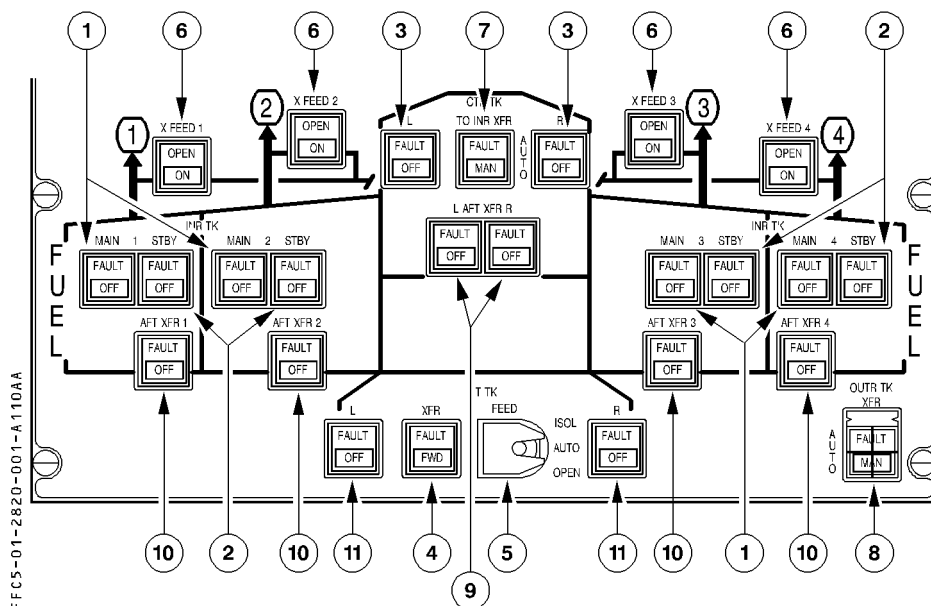


OVERHEAD PANEL



① INR TANK MAIN 1 (2) (3) (4) pushbutton

On	:	Pump is on.
OFF	:	Pump is off.
FAULT It	:	The amber light and the ECAM caution come on, when the delivered pressure drops. It is inhibited when OFF is selected.

② INR TANK STBY 1 (2) (3) (4) pushbutton

On	:	Standby pump runs when associated main pump is failed or off.
OFF	:	Pump is off.
FAULT It	:	The amber light and the ECAM caution come on, when the delivered pressure drops. It is inhibited when OFF is selected, or the main pump is running.

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③ L (or R) CTR TANK pushbutton

- On : The center tank pump permanently runs. Appropriate valves control the transfer. The pump automatically stops, when the tank is empty.
- OFF : Pump is off.
- FAULT It : The amber light and the ECAM caution come on, when :
- The delivered pressure drops, or
 - The associated pump fails, or
 - When any inner tank level becomes low.
- It is inhibited when OFF is selected.

④ T. TK XFR pushbutton

- Auto : The FCMC controls the CG.
- FWD : Initiates a manual forward transfer to the center tank, by opening :
- The trim tank isolation valve,
 - The auxiliary forward transfer valve,
- And by closing :
- The trim pipe isolation valve,
 - The trim tank inlet valve.
- And, by operating the trim tank forward transfer pumps. Center tank overflow must be manually prevented.
- FAULT It : The amber light and the ECAM caution come on, when :
- The FMGS detects an excess aft CG, based on the THS position (independent of fuel quantity), or
 - The FCMC is unable to carry out the forward transfer.
 - The FUEL LO TEMP warning is triggered, due to trim tank fuel low temperature.

⑤ T. TK FEED sel

- AUTO : FCMC has full control of the trim tank transfer system
- ISOL : The transfer line is isolated, as the following valves close :
- Trim tank isolation valve
 - Trim tank inlet valve
 - Auxiliary forward transfer valve
 - Trim pipe isolation valve
- The trim tank transfer pumps continue to run to perform the water scavenge.
- OPEN : The valves used during a manual forward transfer, and the trim tank inlet valve open.

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⑥ X FEED 1 (2) (3) (4) pushbutton

- Auto : All valves automatically open in electrical emergency configuration, and close again when the "LAND RECOVERY" pushbutton is set to ON.
- ON : The valve opens.
- OPEN It : The green light comes on, when the valve is fully open.

⑦ CTR TK TO INR XFR pushbutton

- Auto : The FCMC controls the center to inner tank transfer.
- MAN : Initiates the center to inner tank transfer.
To avoid inner tank overflow, the center tank pumps may be selected off.
- FAULT It : The amber light and the ECAM caution come on, when :
 - Any inner tank low level is reached, or
 - The FCMC is unable to carry out the transfer to the inner tanks, or
 - The FUEL LO TEMP warning is triggered, due to inner tank fuel low temperature.

⑧ OUTR TANK XFR pushbutton (guarded)

- Auto : The FCMC controls the outer to inner tank transfer.
- MAN : Initiates the outer to inner tank transfer by opening the :
 - Outer transfer valves,
 - Outer tank inlet valves,
 - Inner tank 1 and 4 inlet valves.
- FAULT It : The amber light and the ECAM caution come on, when :
 - Any inner tank low level is reached, or
 - The FCMC is unable to carry out the transfer to the inner tanks, or
 - The FUEL LO TEMP warning is triggered, due to outer tank fuel low temperature.

⑨ L (or R) AFT XFR pushbutton

- Auto : The center tank aft transfer pump runs, if :
 - Required for a fuel transfer
 - During jettison operation.
- OFF : Pump is off.
- FAULT It : The amber light and the ECAM caution come on, in case of a failure of the associated pump.

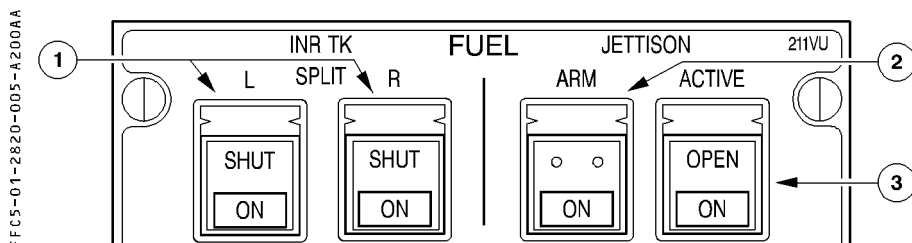
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⑩ AFT XFR 1(2) (3) (4) pushbutton

- Auto : The inner tank aft transfer pump runs, if :
- Required for a fuel transfer
 - During jettison operation.
- OFF : Pump is off.
- FAULT It : The amber light and the ECAM caution come on, in case of a failure of the associated pump.

⑪ L (or R) T. TK pushbutton

- On : The trim tank pump runs, if :
- Required for a fuel transfer
 - During jettison operation.
- OFF : Pump is off.
- FAULT It : The amber light and the ECAM caution come on, in case of a failure of the associated pump.



① INR TK SPLIT L (or R) pushbutton (guarded)

- Auto : The transfer control valve connects the aft and forward section of inner tank 2 or 3. Above FL 255 until touchdown, the transfer control valve shuts and connects the forward inner tank 2(3) section to a jet pump, to transfer the fuel of the aft section to the forward section.
- ON : The transfer control valve connects the forward inner 2(3) section to a jet pump, to transfer the fuel of the aft section to the forward section. A check valve prevents flow from the forward to the aft section. The light comes on white.
- SHUT : The light comes on blue, when the transfer control valve is shut. The forward inner tank 2(3) sections are connected to a jet pump to transfer the fuel of the aft section into the forward section.

② JETTISON ARM pushbutton (guarded in Off)

- Off : Jettison is disarmed.
- ON : Jettison is armed and can be activated via the ACTIVE pushbutton.

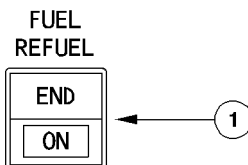
③ JETTISON ACTIVE pushbutton (guarded in Off)

- Off : Jettison is inactive.
- ON : Jettison is activated, provided the ARM pushbutton is set to ON.
- OPEN It : Comes on when the jettison valves are open.

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MAINTENANCE PANEL

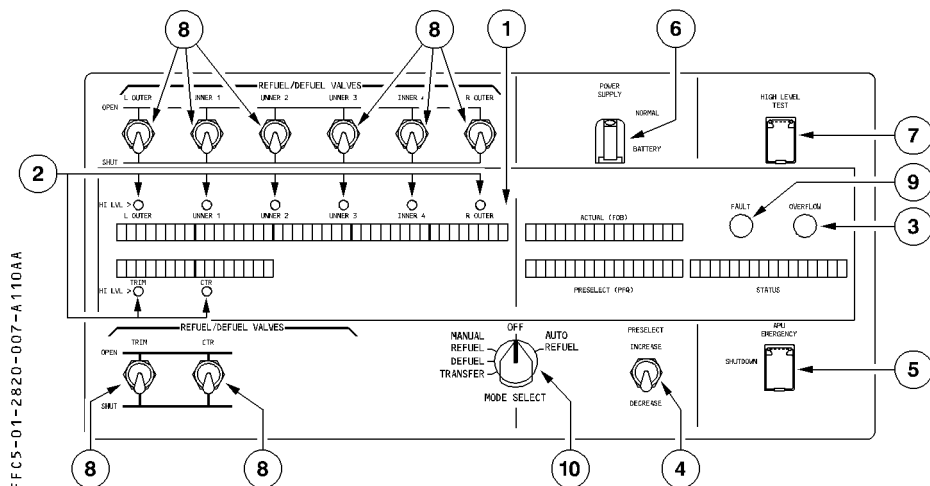
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① REFUEL pushbutton

- ON : Refueling is initiated according to the BLOCK FUEL quantity displayed on the FMGS MCDU INIT B page.
- END It : Indicates that refueling is completed.
Flashes when refueling is aborted, or when the high level test is negative.

REFUELING CONTROL PANEL



① FUEL QUANTITY indicator

Displays, in kg (or lbs) :

- The fuel quantity of each tank.
- The pre-selected total quantity.
- The actual total fuel on board.
- The status of the refuel system.

② HI LVL It

- Comes on blue, when high level is detected.
- The corresponding refuel valve automatically closes.

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③ OVERFLOW It

- Comes on amber, when a vent tank overflow is detected.

④ INCREASE/DECREASE preselector rocker sw

- Pressing either side of the switch increases or decreases the preselected quantity.

⑤ APU EMER pushbutton (guarded)

When pressed, it initiates the APU shutdown sequence.

⑥ POWER SUPPLY sw (guarded in NORM)

- NORM : Refueling / Defueling can be supplied either by external power or with the APU generator on line.
- BAT : Refueling / Defueling is battery-powered.

⑦ HIGH LEVEL TEST sw (guarded)

During the test :

- Refueling stops.
- HI LEVEL, OVERFLOW and FAULT lights come on, if they were off and go off if they were on, to indicate if their circuits are serviceable.
- The STATUS display indicates the test progress.
- When the test is complete, the STATUS display indicates whether the test was successful.

⑧ REFUEL / DEFUEL VALVES sel

- OPEN : Valves open when the MODE SELECT switch is set to the manual mode. In the manual REFUEL position, each refuel/defuel valve closes when high level is detected in the associated tank.
- SHUT : Valves close when the MODE SELECT switch is set to the manual mode.

⑨ FAULT It

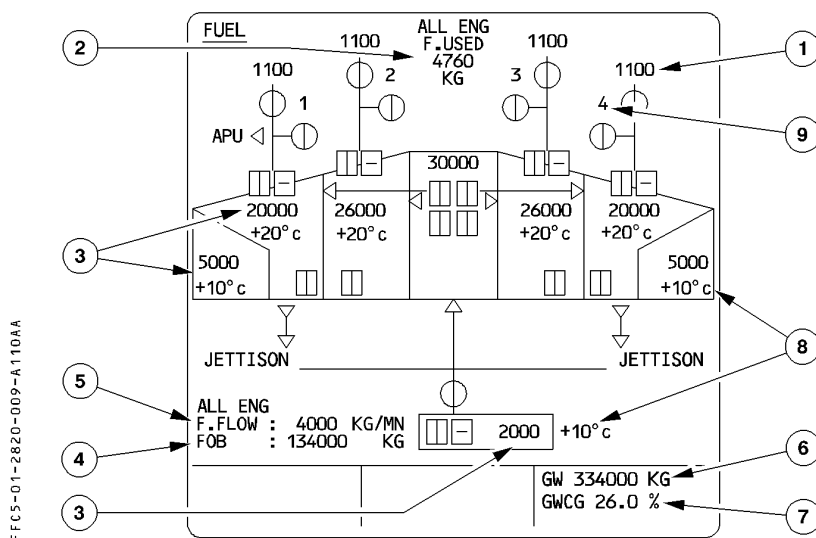
- Comes on amber, if a failure occurs. The STATUS display indicates the failure reason.

⑩ MODE SELECT sel

- OFF : Refueling system is off.
Refuel valves close.
APU emergency shutdown and high level test remain available.
- AUTO REFUEL : Refuel operates in automatic mode.
- MANUAL REFUEL : Refuel operates in manual mode.
- DEFUEL : Defuel valves are opened when the main or standby pumps are set to ON.
- TRANSFER : Refuel isolation and the trim tank inlet valves are closed, and the auxiliary refuel valve is opened.

ECAM FUEL PAGE

FUEL QTY, TEMP, GW AND CG INDICATIONS



⑪ Fuel used indication (per engine)

- It is normally green.
- If the fuel flow detection system fails, the FADEC computes a synthetic FU value.
- When this computed value is considered erroneous by more than 136 kg (300 lbs), the displayed value is crossed out with two amber bars.
- Units may either be in KG or LB, depending on the DMC pin program.

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② Total fuel used indication (Engines plus APU fuel used)

- It is normally green.
- When either “engine fuel used” is crossed, two amber bars appear across the value.
- Units may either be in KG or LB, depending on the DMC pin program.

③ Fuel quantity indication

- It is normally green.
- When the accuracy of the fuel quantity indication is degraded, two amber bars appear across the last two digits.
- If the fuel is unusable (trim or outer tanks only), the quantity indication is displayed in an amber box.
- A partial amber box appears, if 16 tonnes of the center tank fuel is unusable, or the fuel of inner tanks 2 and 3 is unusable.
- The fuel quantity indication becomes amber, in case of low level (inner tank only) or overflow.
- In the event of imbalance, the affected pair of inner or outer tank fuel quantity indications are underlined in amber.
- Units may either be in KG or LB, depending on the DMC pin program.

④ Fuel flow indication

All engines and APU fuel flow per minutes.

⑤ Fuel on board quantity indication

- It is normally green.
- In case of degraded accuracy, the last two digits are dashed.

Note : *In case any tank's fuel is partially unusable, the quantity indication is displayed in a partial amber box.*

⑥ Gross weight indication

- It is normally green.
- When the accuracy of the fuel quantity indication is degraded, two amber bars appear across the last two digits. The last two digits of the center of gravity indication are also dashed.
- When the gross weight is not computed on ground, blue dashes appear.
- Units may either be in KG or LB, depending on the DMC pin program.

⑦ Center of gravity indication

- It is normally green.
- When the FMGC (FE part) detects an excess aft CG, it comes on red.
- When the CG is not computed on ground, blue dashes appear.

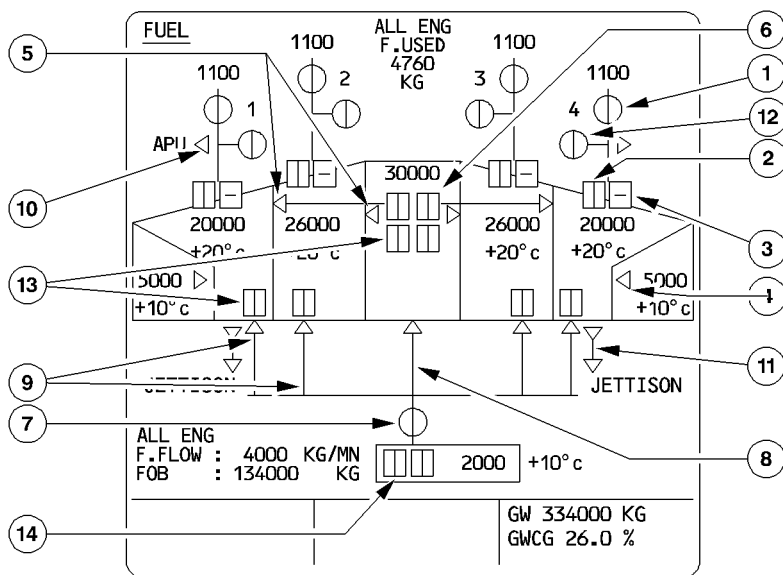
⑧ Fuel temperature indication

- It is normally green.
- It is amber in the following cases :
 - Inner tank collector cell : Above 49°C.
 - Any tank : Below – 40°C.
- It disappears when the tank quantity is below :
 - 1600 kg (3532 lbs) for the trim tank.
 - 3000 kg (6620 lbs) for the outer tank.

⑨ Engine number

- It is white, when the engine is running.
- It is amber, when the engine is not running.

FUEL FEED, TRANSFER AND JETTISON INDICATIONS



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① Engine LP valves indication

In line	– Green	: Valve is open.
In line	– Amber	: Valve is abnormally open.
Cross line	– Amber	: Valve is closed.
Transit	– Amber	: Valve is in transit.

② Engine feed pumps indication

In line	– Green	: Pump is running.
In line	– Amber	: Pump abnormally running.
Cross line	– Amber	: Pump not running.
“LO”	– Amber	: Pump pressure is low. Pump is on.

③ Standby engine feed pumps indication

Are identical to the normal pump, except for pump not running.

Cross line	– Green	: Pump not running.
Cross line	– Amber	: Pump abnormally not running.

④ Outer to inner transfer indication

▷ Green	:	Normal transfer (auto).
▶ Green	:	Manual transfer.
▶ Amber	:	Abnormal transfer.
No display	:	No transfer.

⑤ Center to inner transfer indication

Identical to the transfer from outer tanks.

⑥ Center tank pumps indication

Identical to the standby wing tank pumps.

⑦ Trim tank isolation indication

This valve represents the trim tank isolation valve and the trim tank inlet valve.

In line	– Green	: One valve is open.
Cross line	– Green	: Both valves are closed.
In line	– Amber	: One valve is abnormally open.
Cross line	– Amber	: Both valves are abnormally closed.

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⑧ Trim to center transfer indication

No display	:	No transfer.
Green	:	Manual forward (↑) transfer.
Green	:	Normal aft (↓) or forward (↑) transfer (auto).
Amber	:	Abnormal aft (↓) or forward (↑) transfer.

⑨ Trim to inner transfer indication

No display	:	No transfer.
Green	:	Normal aft (↓) or forward (↑) transfer.
Amber	:	Abnormal aft (↓) or forward (↑) transfer.

If fuel transfers to/from only one inner tank due to a fuel imbalance, only one arrow is displayed.

⑩ APU LP valve indication

APU (White) ◁ (White)	:	Valve is closed.
APU (White) ◁ (Green)	:	Fuel provided to the APU.
APU (Amber) ◀ (Amber)	:	Failed open.
APU (amber)	:	Failed closed.

⑪ Jettison indication

No display	:	No jettison.
↓ JETTISON (Green)	:	Jettison normally active.
↓ JETTISON (Amber)	:	Abnormal jettison (valve abnormally open).
JETTISON (Amber)	:	Valve abnormally closed.

⑫ X-Feed valve

Cross line	– Green	:	Valve is closed.
In line	– Green	:	Valve is open.
Cross line	– Amber	:	Valve is abnormally closed.
In line	– Amber	:	Valve is abnormally open.
Transit	– Amber	:	Valve is in transit.

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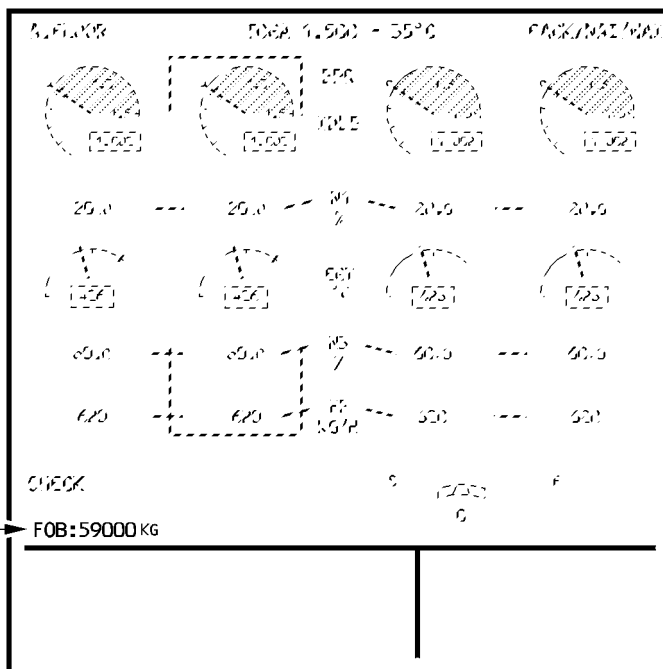
⑬ AFT XFR pumps

In line	– Green	: Pump is running.
In line	– Amber	: Pump abnormally running.
Cross line	– Amber	: Pump not running.
“LO”	– Amber	: Pump pressure is low. Pump is on.

⑭ Trim tank pumps

In line	– Green	: Pump is running.
In line	– Amber	: Pump abnormally running.
Cross line	– Amber	: Pump not running.
“LO”	– Amber	: Pump pressure is low. Pump is on.

ECAM UPPER DISPLAY

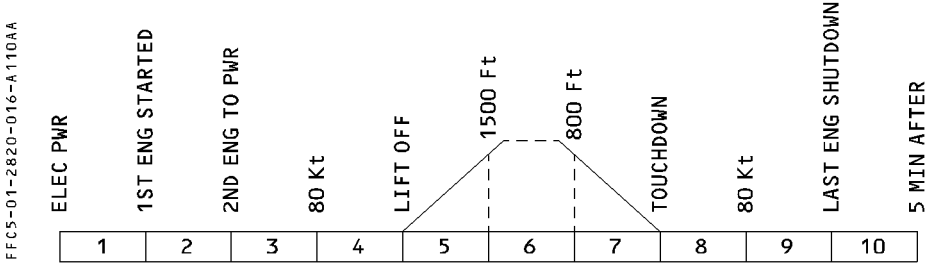


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① FOB - Fuel on Board indication

- It is normally green.
- An amber half box appears around FOB, when the indicated quantity is not fully usable.
- When the fuel quantity indication is inaccurate, two amber lines appear across the last two digits.
- Units may be indicated in kg or lbs.

WARNINGS AND CAUTIONS



E/WD: FAILURE TITLE conditions	AURAL WARNING	MASTER LIGHT	SD PAGE CALLED	LOCAL WARNING	FLT PHASE			
EXCESS AFT CG	CRC	MASTER WARN	FUEL	T TK XFR FAULT lt	INHIB 2 to 5, 7 to 10			
NO WEIGHT/CG DATA No WEIGHT/CG entered at engine start.	SINGLE CHIME	MASTER CAUT		NIL	1, 3 to 10			
WEIGHT/CG DISAGREE One FCMC has detected a disagreement between the ZFW, ZFCG, GW, GWCG data of FMGEC 1 and 2.						3 to 10		
FE/FCMC CG DISAGREE CG has exceeded the aft limit 3 times							2 to 5, 7 to 10	
ABNORM DISTRIBUTION								3 to 5, 7, 8, 9, 10
Outer tanks empty and trim tank contains more than 3000 kg.								
ENG 1(2)(3)(4) LP VALVE FAULT							3, 4, 5, 7, 8	
X FEED 1(2)(3)(4) FAULT						NIL		NIL
MAIN PMP 1 (2)(3)(4) FAULT Pump low pressure.								
MAIN 1(2)(3)(4) + STBY 1(2)(3)(4) FAULT Pumps low pressure.	SINGLE CHIME	MASTER CAUT		PUMP FAULT Light	1, 3, 4, 5 7, 8, 10			
L(R) WING PMPS FAULT Pump low pressure.								
INR 1(2)(3)(4) AFT PMP FAULT Pump failure.	NIL	NIL						
CTR/INR L(R) PMP FAULT Pump failure.								
CTR/INR PMPS FAULT Failure of both CTR to INR transfer pumps.	SINGLE CHIME	MASTER CAUT						
CTR AFT L(R) PMP FAULT Pump failure.						NIL	NIL	
T TK L(R) PMP FAULT Pump failure.								

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E / WD: FAILURE TITLE conditions	AURAL WARNING	MASTER LIGHT	SD PAGE CALLED	LOCAL WARNINGS	FLT PHASE INHIB
T TK PMPS FAULT Failure of both trim tank pumps.	SINGLE CHIME	MASTER CAUT	FUEL	PUMP FAULT Lt	1, 3, 4, 5 7, 8, 10
APU VALVE FAULT Incorrect position of low pressure or isolation valve.				NIL	3, 4, 5, 7, 8
APU LINE FAULT APU line is broken.					4, 5, 8
JETTISON NOT CLOSED Jettison valve not closed.				JETTISON ACTIVE OPEN Lt	4, 5, 7, 8
JETTISON FAULT Jettison is inhibited.	NIL	NIL		NIL	3, 4, 5, 7, 8, 9
F. USED/FOB DISAGREE Difference between initial FOB and fuel used data of more than 5000 kg (11038 lbs).		1 to 5 7 to 10			
FQI FAULT FCMC fails to calculate the FQI.		XFR FAULT Lt		3, 4, 5 7, 8	
LO TEMP Any fuel temp. below – 40°C Recall at – 47°C		NIL		3, 4, 5, 6, 7, 8	
INR 1(2)(3)(4) HI TEMP Collector Cell fuel temperature above 49°C. Recall at 55°C.		XFR FAULT Lt		3, 4, 5 7, 8	
OUTR TK XFR FAULT Anomaly detected during transfer.				4, 5, 7, 8	
T TK XFR FAULT Aft or forward transfer failed.		NIL		3, 4, 5, 7, 8	
CTR/INR XFR FAULT Anomaly detected during transfer.				4, 5, 7, 8	
T TK LINE FAULT Trim tank line damaged or trim tank isolation failure.		NIL		3, 4, 5, 7, 8	
MAN XFR COMPLETED Tank empty with manual XFR pushbutton ON.				1 to 5 7 to 10	
ABNORM MAN FWD XFR				3, 4, 5 7, 8	
WING TK IMBALANCE Imbalance between inners 1 and 4 > 2500 kg (5518 lbs). Imbalance between inners 2 and 3 > 3000 kg (6620 lbs). Imbalance between both outers > 1000 kg (2200 lbs).				3, 4, 5 7, 8	
WING TKS BALANCED					

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		SEQ 210	REV 17

E / WD: FAILURE TITLE conditions	AURAL WARNING	MASTER LIGHT	SD PAGE CALLED	LOCAL WARNINGS	FLT PHASE INHIB
INR SPLIT FAULT Valve not moved to the correct position	SINGLE CHIME	MASTER CAUT	FUEL	NIL	3, 4, 5 7, 8
INR 1(2)(3)(4) LO LVL One inner tank fuel quantity below 1000 kg (2200 lbs) for more than 60 seconds.				XFR FAULT Lt	1, 3, 4, 5 7, 8, 9, 10
INR 1+2 (3+4) LO LVL Inner tank 1 and 2 or 3 and 4 fuel quantities below 1000 kg (2200 lbs) for more than 60 seconds.					
ALL INRS LO LVL All inner tank fuel quantities below 1000 kg (2200 lbs) for more than 60 seconds.					
WING TK OVERFLOW Wing surge tank fuel quantity is above 590 kg (1302 lbs).					
T TK OVERFLOW Trim surge tank fuel quantity is above 80 kg (177 lbs).					
REFUEL FAULT				NIL	NIL
FCMC 1(2) FAULT	3, 4, 5 7, 8				
FCMC 1+2 FAULT	4, 5, 7, 8				
FDC 1(2) FAULT	3, 4, 5 7, 8				

MEMO DISPLAY

- REFUEL IN PROGRESS message is displayed in green in Phases 1, 2, 9 and 10.
- REFUEL PANEL message is displayed in amber in < Phase 2 (after engine start) if the refuel panel door is open.
- T TK XFRD message is displayed in flight Phases 6, 7, 8 and 9, when the trim tank has been emptied following a forward transfer.
- T TK XFR IN PROGRESS message is displayed in green during trim tank transfer.
- OUTR TKS XFRD message is displayed in green, when the outer tank has been transferred into the inner tank.
- OUTR TK XFR IN PROGRESS message is displayed in green during outer tank transfer into the inner tank.
- FUEL X FEED message is displayed in green, when at least two adjacent X Feed valves are manually or automatically opened. It becomes amber during takeoff (Phases 3, 4, 5).
- JETTISON IN PROGRESS message is displayed green during jettison operation.