FUEL LEAK - DETERMINATION & MANAGEMENT

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LEAK DETERMINATION

A fuel leak may be detected if:
* the sum of FOB and FU is significantly less than FOB at engine start, or is decreasing
* a passenger (or cabin crew member) observes fuel spray from an engine/pylon or wing tip
* the total fuel quantity is decreasing at an abnormal rate
* a fuel imbalance is developing
* fuel quantity in a tank is decreasing too fast (leak from engine/pylon or hole in the tank)
* a tank is overflowing (due to a pipe rupture in the tank)
* the fuel flow is excessive (engine leak)
* fuel is smelt in the cabin

If visibility permits, leak source may be identified by a visual check from the cabin:
- fuel is smelt in the cabin
- the fuel flow is excessive (engine leak)
- a tank is overflowing (due to a pipe rupture in the tank)
- fuel quantity in a tank is decreasing too fast (leak from engine/pylon or hole in the tank)
- fuel imbalance is developing
- the total fuel quantity is decreasing at an abnormal rate
- a passenger (or cabin crew member) observes fuel spray from an engine/pylon or wing tip
- fuel is smelt in the cabin

If a fuel leak from the wing in close vicinity to the engine may be confused with a fuel leak from the engine/pylon itself as observed from the cabin. Be careful!

A fuel leak from the wing in close vicinity to the engine may be confused with a fuel leak from the engine/pylon itself - as observed from the cabin. Be careful!

LEAK FROM ENGINE/PYLON VISUALLY OBSERVED

LEAK SUSPECTED

LAND ASAP

LEAK FROM ENGINE/PYLON CONFIRMED

LEAK FROM ENGINE/PYLON NOT CONFIRMED OR LEAK NOT LOCATED

FUEL LEAK LOCATION PROCESS - BEGIN

LEAK CONTINUES AFTER ENGINE SHUTDOWN

ENGINE LEAK MAY STILL BE SUSPECTED

FUEL LOSS REDUCTION PROCEDURE

Apply this procedure only if suggested by the FUEL LEAK procedure, and if the flight crew needs to minimise fuel loss. It covers two types of leaks.

1) A leak from the wing - manual trim tank transfer. Symmetrical transfer fuel to both inner tanks and avoids automatic fuel transfer to only the least full inner tank (as happened in the 'Azores glider' dual flameout case).
2) A leak from the trim tank - manual trim tank transfer to both inner tanks (saves trim tank fuel before it is lost through the leak)

Checklist for both cases:

If centre tank (as installed) trim tank not empty:
* L & R CTR PUMPS - ON (as installed)
* CTR TK XFR - MAN (as installed)
* T TANK FEED - AUTO
* T TANK MODE - ISOL

When centre tank (as installed) empty:
* CTR TK XFR - AUTO (as installed)

When trim tank from both tanks:
* T TANK FEED AUTO
* T TANK MODE - ISOL

"If the leak is not from the engines or cannot be located, it is imperative that the crossfeed valves are not open."

Always keep an accurate and frequent fuel log. It will show up an inappropriate quantity decrease. Don't rely on the fuel system to self-manage as it may in fact mask a fuel leak with automatic transfer balancing - trim tank to inner tanks (eg. Azores Glider). Frequent viewing of the ECAM fuel page is also an SOP.

- GRAVITY FEEDING (to be considered)
- IN ALMOST ALL CASES, SWITCHING THE PUMPS OFF (AT GRAVITY FEED CRUISE LEVEL) WILL PREVENT ANY FURTHER LOSS OF FUEL. ALL PUMPS MUST BE SWITCHED OFF - EVEN IF THE LEAK IS ONLY FROM ONE WING, AS THERE ARE SOME FAILURES ON ONE SIDE THAT WILL RESULT IN FUEL LOSS FROM THE OTHER SIDE.
- ENGINE START SEL - IGN
- ALL TK PUMPS - OFF
- AVOID NEGATIVE G FACTOR

FUEL LOSS REDUCTION PROC CONSIDER

DO NOT APPLY THE FUEL IMBALANCE PROC. APPROACH AND LANDING CAN BE DONE, EVEN WITH ONE FULL WING/ONE EMPTY WING.

FUEL SMELL IN THE CABIN

LEAK FROM THE CENTRE TANK (AS INSTALLED) TRIM TANK OR APU/TRIM FUEL FEEDING LINE MAY BE SUSPECTED

A LEAK FROM THE CENTRE TANK (AS INSTALLED), TRIM TANK OR APU/TRIM FUEL FEEDING LINE MAY BE SUSPECTED

When the ECAM fuel page is also an SOP

Alarming fuel system mode of operation

FUEL LEAK IMBALANCE PROC (crossfeeding)

CAUTION: A FUEL IMBALANCE MAY INDICATE A FUEL LEAK
ALWAYS CONSIDER THE POSSIBILITY OF A FUEL LEAK BEFORE BALANCING FUEL

Determine FOB/FU discrepancies with a difference of 3.5 tons.