



# **SERVICE BULLETIN Supplement**

## **SB-42-017A-2014 Fuel System**

Date published: December 2014

### **Fuel System with FUEL CAT**

**Subject:**

- Special features for equipment with FUEL CAT (Fuel management computer)

**Applicable:**

- C42 Serie with FUEL CAT

**Deadline:**

- None

**Impact on airworthiness:**

- None

**Classification:**

- Supplement to Service Bulletin

**Weight and Balance:**

- No influence

**Technical background:**

When retrofitting the UL Aircraft C42-Serie with a return line according to SB-42-0171 2014, a function of the FUEL CAT (flow measurement) is impaired. The instantaneous consumption displayed is distorted by the fuel return flow. There are two options for correcting the momentary consumption information on the FUEL CAT display:

**Variant I:**

- Modification of the FUEL CAT for the instantaneous fuel consumption indicator with return line:  
For this, the FUEL CAT must be modified by the manufacturer and a fuel pressure sensor installed.(see photo connection diagram). The FUEL CAT is then able to calculate the fuel flow return from the measured fuel pressure in coalition with the diameter of the return nozzle, thus indicating the actual fuel consumption.



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Experience has shown that the instantaneous consumption determined in this way is unfortunately, very imprecise. By calibrating the turbine and programming a fictional return nozzle diameter, the figures displayed can be improved but do not achieve the precision of the original technique without a return line.

#### **Variant II:**

- Use of the FUEL CAT without modification for the instantaneous fuel consumption display with return fuel line:

For this purpose, only the correction factor for the turbine flow measurement in the programming mode is changed on the FUEL CAT. Experience has shown, a plausible fuel consumption is displayed in cruise flight, with a correction factor of 0.6-0.7. This variant requires no modification on the fuel system or the FUEL CAT.

The setting menu of the FUEL CAT can be entered by pressing the left push button while switching the main switch on (See FUEL CAT Operating Instructions). By repeated pressing the left button, the correction factor menu will appear in the upper display. This can be changed by the toggle switch in the center. By repeatedly pressing the left button, you return to the operating mode. By means of test runs and test flights, the displayed consumption should then be compared to the real consumption then adapted.

#### **Variant III:**

- Replacing the old FUEL CAT with a FUEL CAT NT (new generation): A new FUEL CAT was developed in the course of product development, especially in connection with the currently used return flow line. Besides many other advantages, this device has the capability to determine fuel flow in the supply line as well as in the return line, thus indicating a reliable instantaneous consumption again. These systems are currently being installed in our aircraft now in production.