

Jason Aguilera
Senior Air Safety Investigator
Aviation Safety - Central Region

Date: February 9, 2023

Subject: CEN20LA287, N8503E

Contact: Bill Kelly, Federal Aviation Administration (FAA)

The airplane was recovered from the accident site to a maintenance facility. On July 28, 2020, FAA Inspector Bill Kelly traveled to the facility to oversee examination of the engine. He informed me that the fuel control unit and fuel pump rigging were checked for freedom of travel and proper operation of their respective stops, with no discrepancies noted.

He witnessed the removal of the fuel control unit and high-pressure fuel pump from the engine. The airframe and engine total time was recorded as 6,493.0 Hours.

The power turbine was inspected with no signs of distress. The intake screen was removed, and the first stage compressor blades were inspected with no visible signs of damage. The gas generator was checked for freedom of rotation.

The airframe fuel filter was removed and inspected. The filter contained some particles, but not a significant amount. There was one particle in the sample from the filter bowl. Inspection of the high-pressure fuel pump filters, revealed no contamination.

The fuel control unit, fuel pump, and fuel to oil heat exchanger unit were removed for testing.

Fuel Control:
P/N 8061-333
S/N 11518193
TSO: 1352.6

High Pressure Fuel Pump:
P/N 3040760C
S/N 008491
TSO: 1352.6

Oil-to-Fuel Heater
Data Tag no longer attached
Manufacture date stamp on unit June 2002 appears to be original installation.

FAA Inspector Bill Kelly reported that the airplane fuel tanks were between $\frac{1}{4}$ to $\frac{1}{2}$ full of fuel following the accident. The airplane's insurance adjuster reported that during recovery of the airplane about 58 gallons of fuel was drained. According to the type certificate data sheet, the fuel tank holds at least 218 gallons. Air Tractor Service Letter #178 informs pilots that fuel starvation could occur if a fuel imbalance is created when fuel migrates from one tank to another, or if there is uneven fuel flow to the header tank. This can occur if the airplane is flown in a slip or skid during the flight or if the airplane is turning continuously in one direction.

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