



RECORD OF EXAMINATION

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NTSB Accident Number: CEN18LA010
Location: Air Salvage of Dallas, Lancaster, Texas
Date: November 2, 2017

Narrative:

Post-accident examination of the airplane revealed that the flaps and landing gear were retracted. The propeller was attached to the engine crankshaft, and all three propeller blades were attached to the propeller hub. All the propeller blades exhibited chordwise scratches consistent with rotation. The propeller blades were able to be rotated in the hub by hand, which was consistent with broken pitch change links.

Flight control continuity was confirmed from the flight control surfaces to the cockpit controls. The airplane fuel tanks were intact and not broken open. The fuel caps were in place and secure. The fuel tank filler necks and bottom of the fuel caps were brown in color consistent with corrosion. The cockpit fuel tank selector was positioned to OFF, and the cockpit auxiliary fuel tank selector was positioned to RIGHT WING. The pilot did not report the positions of the fuel selectors that he had used during the flight.

During the salvage recovery of the airplane, the right-wing tank contained about 9 gallons of fuel, the right-wing auxiliary tank was empty, the left-wing tank contained about 1 gallon of fuel, and the left-wing auxiliary tank contained about 8 gallons of fuel. The rear auxiliary tank was empty. The wings had been either separated from the fuselage during the accident or removed during recovery.

All the fuel tank sending units were of the resistive type and were not annotated with information identifying a manufacturer, part number, or serial number. The sending units were removed, examined and tested with an Ohm meter. All the sending units' float arms moved freely under hand pressure, no binding was noted, and their electrical connections were secure and in place. The resistive test measurements yielded the following approximate resistive values for the fuel sender float positions at bottom limit of travel, mid-range, and upper limit of travel positions:

Test meter resistance - 2 ohms

Left wing fuel tank: bottom limit – 4 ohms, mid-range – 18 ohms, upper limit – 45 ohms
Left auxiliary fuel tank: bottom limit, mid-range, upper limit – 35 ohms
Right main fuel tank: bottom limit – 3 ohms, mid-range – 16 ohms, upper limit – 38 ohms
Right auxiliary fuel tank: bottom limit – 6 ohms, mid-range – 37 ohms, upper limit – 49 ohms

The resistive specifications for the airplane were unknown at the time this report was written.

There was no record that the fuel senders had been replaced since the manufacture of the airplane. Electrical power was placed on the airplane, and the communication and navigation radios turned on and no circuit breakers tripped. Electrical continuity from the battery to the alternator was confirmed. The alternator was attached, secure and had its drive belt in place, which exhibited normal belt tension. The alternator was removed, and bench tested without anomalies. The loss of electrical power was not duplicated during the examination.

Post-accident engine examination revealed the fuel lines were attached and secure. The fuel lines between the fuel pump and the fuel metering unit contained no fuel. The fuel line between the fuel metering unit and the fuel manifold valve contained no fuel. The fuel manifold cap was removed, and no fuel was present in the manifold housing. The manifold screen did not contain debris, the diaphragm was intact, and the plunger displayed no anomalies. Borescope examination of the cylinders revealed no mechanical anomalies. Engine drive and valve train continuity to the accessory section was confirmed during hand rotation of the propeller with the top spark plugs removed. The top sparkplugs displayed color consistent with a lean mixture. The spark plugs displayed no lead or carbon fouling, and the electrodes displayed a normal-worn condition. During engine rotation, there was a repetitive audible sound consistent with the magneto impulse coupling operation. After neither magneto produced an electrical spark, they were removed for bench testing and disassembly.

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