



MEMORANDUM FOR RECORD

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National Transportation Safety Board
Office of Aviation Safety - Eastern Region

Date: August 20, 2013
NTSB Case Number: ERA12LA229
Subject: Engine Examination/Test Results

Initial Examination/Test

On March 30, 2012 Rob Seaton of Rotech Flight Safety Ltd. conducted an examination of the engine from N379CT under the supervision of FAA Principal Maintenance Inspector Alton Clark of the Tampa Flight Standards District Office. The following is a digest of the notes provided by Mr. Seaton and Inspector Clark.

- The gascolator was disassembled and the fuel screen was found to be contaminated with an undetermined particulate, similar in appearance to sand.
- Two of the three propeller blades were fractured from about their mid-point to the blade tips.
- The crankshaft was free to rotate and thumb compression was confirmed on all cylinders.
- The magnetic chip plug appeared normal and the top plugs in normal condition with some lead deposits and were white in color.
- All ignition system components appeared serviceable.
- The fuel pump was removed and a clear fluid (appearance and smell consistent with auto gas) was observed at the inlet and outlet side. When actuated the pump sounded normal and appeared to function (pump fluid).
- The carburetors were disassembled and examined. The number 1/3 carburetor had a small amount of particulate contamination present in the fuel bowl along with a normal fluid level. The number 2/4 carburetor had a significant amount of particulate contamination (sand-like in appearance) present along with a low fluid level.
- Testing of fuel samples recovered from the carburetors was negative for the presence of water. The fuel had a blue tint consistent with 100LL aviation fuel.

- The engine was subsequently started and ran normally. An ignition check showed that both the left and right side systems were functioning normally. Throttle response also appeared normal.

Follow-up Test of Fuel Pump

The fuel pump was subsequently removed from the engine and forwarded to the engine manufacturer in Austria in order to confirm that it was operating within its required parameters. The pump was subsequently tested on January 26, 2013 under the supervision of the Austrian Civil Aviation Safety Investigation Authority.

After being installed on a test bench a fuel flow and pressure test was conducted. The test engine was subsequently started normally and ran smoothly. The fuel pressure remained within the prescribed limits throughout the engine test rpm range, which was between 1,800 and 5,800 rpm. During the test, a small drip of fuel was noted to be discharging from a weep hole on the pump, which did not affect its operation. Following the test, the fuel pump was disassembled and its internal components examined. Detailed examination of the pump's rubber diaphragm showed that superficial cracks were present on both the fuel and dry sides. The diaphragm was then fitted into a test fixture and a vacuum was applied to test for leaks. No leakage of air was observed during the test.