



MEMORANDUM FOR RECORD

Investigator: Brian C. Rayner
Senior Air Safety Investigator
Eastern Region

Date: July 7, 2016
Reference: Engine Run
NTSB Accident Number: ERA16LA204

Narrative:

Representatives of the NTSB and Lycoming Engines met at Shannon Regional Airport to examine the accident airplane, and attempt a test run of the right engine which remained mounted in its nacelle, and attached to the airframe.

The constant speed propeller was damaged during the accident sequence. It was removed, an expansion plug was seated in the front of the crankshaft, and a fixed pitch propeller was mounted. The airplane was pushed out to the taxiway apron, jumper cables were attached to an airport service vehicle and the airplane's battery, and an engine start was attempted utilizing the airplane's own fuel system.

The engine was started, and it ran smoothly and continuously until engine oil sprayed in the propeller wash. The engine was stopped, the propeller was removed, the crankshaft expansion plug was reseated, the engine was serviced with oil, and another engine start was initiated.

The engine started and idled smoothly, and ran continuously without interruption. The throttle was increased and decreased and the engine ran smoothly through the power changes. Engine oil pressure and fuel flow indications were consistent with the throttle position as it was changed.

With full throttle application, approximately 2200 rpm was observed on the aircraft tachometer, the engine ran roughly, which was consistent with a lean fuel air mixture setting. Fuel flow as noted on the digital flow meter was approximately 19 gallons per hour. Typical fuel flow requirements for the subject engine operating at this power setting would be 8.5 gallons per hour based on a lean limit mixture setting and approximately 10 gallons per hour based on a best power mixture setting. The abnormality noted with the digital flow indication system was consistent with air entering the fuel system resulting in acceleration of the flow scan vein resulting in high fuel flow indications.

The engine started and ran smoothly and continuously except when it demanded high fuel flow. The fuel flow abnormality as noted was consistent with air entering upstream of the engine on the airframe side of the fuel system. The engine exam was suspended based on the findings as observed.