



MEMORANDUM FOR RECORD

Heidi Kemner
Air Safety Investigator
Eastern Region Aviation

July 6, 2016

Subject: ERA16LA226
Who: Mike Childers – Lycoming Senior Air Safety Investigator

In a field examination, Mr. Childers noted the following.

As first viewed, the engine remained attached to the aircraft firewall through the tubular engine mount. The right side exhaust tubing was impact damaged. The alternator was impact separated from the engine and hanging by the electrical cables.

The engine was photographed as first viewed and then partially disassembled to facilitate the examination. The engine was rotated by turning the propeller and continuity of the crankshaft top the rear gears and to the valve train was confirmed. Compression and suction were observed from all four engine cylinders. The interiors of the cylinders were examined using a lighted borescope and no anomalies noted.

A review of aircraft and engine logbooks provided by the FAA revealed that the engine was last overhauled on 03/08/2011 by Gann Aviation. The overhaul entry includes a notation that the engine was “balanced, blueprinted, partsmatched, flowed and a nascar type valvejob. The clys were nickel plated by Aircraft Clys of America and the performance work done by PAP....”

The engine was removed on 08/09/2014 after a propeller strike. On 10/15/2014, it was disassembled, inspected and repaired by Gann Aviation. The engine was reinstalled on 11/03/2014.

The propeller remained attached to the engine crankshaft flange and the propeller spinner remained attached to the propeller. The propeller blade marked “A” was bent aft about 30 degrees at about 12 inches outboard of the hub. That blade exhibited leading edge damage, torsional twisting, chord-wise scoring and curling of the propeller tip. The propeller blade marked “B” was curved aft about 90 degrees at about 2/3 span. That blade exhibited leading edge damage, trailing edge damage and chord-wise scoring. The

propeller blade marked "C" was curved forward about 5 degrees near the tip. The propeller governor remained attached to the engine and no damage was noted. The control cable remained attached to the governor control arm and the air was observed in the full increase/RPM position. The cabin propeller control was positioned about 1 inch from the forward end of the control quadrant slot.

The fuel injector servo remained attached to the engine and no damage was noted. The throttle and mixture controls remained attached to the respective servo control arms. The throttle and mixture controls in the aircraft cabin were in a full forward position. The servo throttle arm was in a full throttle position and the servo mixture control arm was in a full rich position. The regulator plug was secure. The servo fuel inlet screen was unobstructed. The servo was partially disassembled and no damage noted. The fuel and air diaphragms were intact.

The flow divider remained attached to the engine end no damage was noted. All of the flow divider hoses and lines were secure. The flow divider was partially disassembled. The fuel diaphragm was intact and no debris was observed.

The one piece "GAMIjector" fuel injector nozzles were unobstructed.

The engine driven fuel pump remained attached to the engine and no indications of external damage or fuel leakage observed. The pump was removed, the inlet hoses submerged in water and the actuator arm operated by hand. No water was expelled from the outlet port. The pump was retained by the FAA investigator for shipment to the NTSB and further evaluation.

Oil was observed in the engine.