



Federal Aviation Administration

Memorandum

Date: 11/05/2020
To: Doug Brazy, Air Safety Investigator, NTSB
From: Rodney L. Hood, ASI, ATL-FSDO-11, 404-474-5173
Prepared by: Rodney Hood
Subject: N920JL Accident

On November 4, 2020, N920JL was inspected by Atlanta FSDO ASI's Rodney Hood and Mark Fayerman. The inspection was conducted at Atlanta Air Recovery, Griffin, GA.

Fuel System Inspection

- 1- Verified primer handle was in and properly locked
- 2- Verified fuel selector turned smoothly to the right and left detents
- 3- Fuel Hose (Electric pump outlet to engine driven pump inlet) was disconnected at the engine driven pump and drained fuel into a jar. Fuel was faint light blue in color with sediment.
- 4- Electric pump. Removed filter and drained fuel into a jar, noted sediment, fuel was faint light blue in color. Power wire was broken. Appeared to have broken due to tension applied to wire harness when the engine separated from firewall at impact. Connected a power supply to pump wire and verified the pump operated.
- 5- Engine Driven pump. Fuel was present at the outlet when the line was disconnected.
After removal of the pump, reconnected the inlet hose and filled hose with fuel, pump discharged a burst of fuel when actuated by hand.
Verified the engine driven fuel pump actuating rod moved up and down as the prop was rotated.
- 6- Carburetor. Throttle and mixture controls were securely attached to the carb. Removed carb. The throttle and mixture levers moved freely from stop to stop. Verified the accelerator pump sprayed fuel when throttle lever was moved to "full throttle" position. Removed inlet screen, screen was free of contaminants. Separated float chamber, approximately 1/8 of fuel was present in float bowl, the accelerator pump chamber was full of fuel. The float moved freely and the needle valve opened and closed as the float moved up and down.

Ignition System Inspection

- 1- Checked engine timing. Verified left and right magnetos were timed to 25 degrees BTC.
- 2- Removed spark plugs part number Tempest UREM38E. #1 lower plug had severe oil fouling. All others appeared normal.
- 3- Removed magnetos. Rotated with a drill and verified all leads fired.

Induction System

- 1- Intake scoop and boot were free of any blockage.
- 2- The induction air filter had a small of debris on it.
- 3- Carb Air box was crushed due to impact damage.

Exhaust System

- 1- Noted #2 exhaust riser was broken away from the flange at the cylinder attach point. The separation of the riser from the flange appears to have occurred at impact. However; there is evidence of a prior exhaust leak, heavy exhaust soot was present on the cylinder and spark plug lead. See pictures IMG 0168 – IMG 0171, IMG 0214 and DSCO 5828.
- 2- Removed muffler and exhaust risers. Muffler internal baffle appeared to be intact.
- 3- Heavy soot was noted on and adjacent to the carburetor heat muff. Evidence of burn-thru and cracking was noted on the carb heat hose flange. The heat muff was removed from the exhaust riser for inspection. A hole was found in the exhaust riser with a crack emanating from each side of the crack. The inside of the carb heat SCAT hose was coated with a layer of exhaust soot.
- 4- The inside of the carb air box was coated with soot. The air box was disassembled for inspection. Soot was found on both sides of the butterfly valve.
- 5- The carburetor throat and venturi were coated with soot.

Engine

- 1- Rotated prop and verified thumb suction/compression on all cylinders. #1 was noticeably weaker than the others.
- 2- Performed a compression test. #1: 80/60 with leakage past the piston rings. #2: 80/71, #3: 80/75, #4: 80/70.
- 3- Removed rocker box covers. Rotated prop and verified valve train continuity. No discrepancies of springs, rockers or push rods were noted.
- 4- Rotated prop and verified accessory section was driven by observation of vacuum pump rotation.

- 5- Evidence of oil leaking around the base of cylinder #2. It appears to have been seeping oil for many hours.