Narrative of facts: N3000G

Richmond, RI 9/21/2020

Accident #ERA20LA325

Prepared by ASI Aidan Seltsam-Wilps, EA-61 Boston FSDO

AIDAN M SELTSAM-WILPS Digitally signed by AIDAN M SELTSAM-WILPS Date: 2020.10.14 13:52:50 -04'00'

Interview with pilot follows:

He had flown the aircraft the day before to BID and back. His pre-takeoff checks showed no abnormalities. The engine "is getting close to overhaul, but I have been keeping up with maintenance". On climb-out, the pilot observed the engine RPM slowly falling off. He applied carburetor heat, and checked the fuel selector, with no change in power. He noted the oil pressure looked low, but would correspond correctly to a reduced power setting. The aircraft could not hold altitude, so he turned back toward the runway at approximately 300-500 feet. The aircraft impacted level terrain just north of the airport, in an upright attitude, striking solar panel arrays in a field. The pilot (sole occupant) was uninjured.

Report from Maintenance Inspector David Cardullo who travelled to the scene follows:

Traveled to accident site to inspect A/C that crashed off airport after takeoff. Pilot reported he lost engine power. Preliminary inspection of A/C at scene revealed:

1) Flight control continuity checked, no abnormalities noted, LH aileron connecting rod was severed from impact at aileron end.
2) The aircraft was heavily damaged, LH wing LE torn off from the wing root to approx. 1/2 up the wing to the tip. The fuselage was bent, N/G & LMG were torn off their mounting points.
3) No fuel was observed in any fuel tanks; LH & header tank were ruptured upon impact, pilot reported he had approx. 7 gals of fuel in each wing with 2 gals in header tank, there was minor fuel spillage on scene.
4) Fuel gascolator was full of fuel, sample taken, emptied bowl, contaminants found in fuel gascolator bowl. Approximately ¼ cup of fuel was obtained, the bottom 3/8" of the sample was water & dirt contaminants. (see video #1)
5) Fuel checked at fuel site where A/C was last fueled with no issues noted. Fuel farm filters were changed in May 2020. Aircraft had flown two times after refueling at Richmond airport before this accident. (see video #2)
6) Reviewed A/C logs, annual inspection completed on 9/2019 at 1380.5 tach reading. Current tach reading 1435.5, approx. 55 hours since annual inspection.

7) The latest engine maintenance completed were the spark plugs cleaned and gapped on 8/13/2020 at tach reading 1429.1. Spark plug showed normal wear and color, appeared to be worn within limits, appeared to be fairly new.
8) Pilot reported that he shuts off the fuel with the fuel shut off valve when shutting down the engine due to the carb float sometimes sticking, causing fuel to leak and puddle under the engine. I asked if he ever had maintenance look at it, he stated he was thinking about getting the carb overhauled.
9) No record of any maintenance ever being performed on the carb or magneto in the records. The engine log shows the TSO for the engine is 1590.3. 1800 hrs or 12 years is the recommended TBO according to TCM. Engine records indicate the engine was overhauled 2/1990.
10) Unable to locate current A/C registration, only one located expired in 2017.

Inspected engine at recovery site:

1) Evidence of water & contaminants found in carb bowl, inlet screen, and engine driven fuel pump. Retrieved fuel sample from carb bowl, very little fuel in bowl (see video #3)
2) Carb inlet screen, engine driven fuel pump showed evidence of rust & corrosion inside the covers and housings. (see video #4a,b,c)
3) Removed carb bowl to inspect floats; float movement was not restricted, unable to check the needle and seat operation.
4) Cylinder compression check performed by pulling prop through by hand and finger on the plug boss, all four cylinders appeared to have strong compression.
5) Both LH & RH magneto impulse couplings snapped, indicating the valve train was intact. Pilot indicated he had a 100 rpm drop, with an even split on his run up.
6) Inspected the cylinder interiors with pin light, no abnormalities or defects noted.
7) Inspected engine controls at the carb, free movement of throttle, mixture. Unable to move engine controls in cockpit.

The NTSB contacted the pilot on 10/14/2020 and the pilot clarified that he did always sump the header tank, but had a hard time getting all of the water out. He said there was always a bubble or two in the gascolator. He stated that he changes the fuel tank gaskets about once a year as they need replacing. The pilot also confirmed that there was a known problem with the carburetor float, and he had to shut the engine down after flights by using the fuel cutoff.

[redacted]