



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

April 12, 2019

ENGINE EXAMINATION

WPR19FA106

A. ACCIDENT

Location: Santa Fe, NM
Date: April 8, 2019
Aircraft: Costruzioni Aeronautiche Tecnam P2002 Sierra,
Registration Number: N118LS
NTSB IIC: Albert Nixon

B. EXAMINATION PARTICIPANT:

Albert Nixon
Senior Aviation Accident Investigator
National Transportation Safety Board
Federal Way, WA 98003

Jordan Paskevich
Chief Accident Investigator
Rotech Flight Safety/Rotax Aircraft Engines.
Vernon B.C. Canada

C. SUMMARY

Examination of the airplane's engine was conducted on April 12, 2019, at the facilities of Air Transport in Phoenix, Arizona. No anomalies or evidence of preimpact mechanical failure or malfunction were noted during the examination of the recovered engine.

D. DETAILS OF THE INVESTIGATION

1.0 Engine Examination

Examination of the Rotax 912 ULS2 engine revealed that it was thermally damaged particularly on the bottom portion. The crankcase was intact. The rocker covers were removed. Rocker cover No. 1 exhibited a ¼ inch hole on the front bottom portion consistent with impact damage. The crankshaft was able to be rotated by hand rotation using the flywheel retainer bolt and rotational continuity was established throughout the engine and valve train in all cylinders. The pick-up coils for the ignition were thermally damaged. The flywheel from the ignition housing was removed and examined and no anomalies were noted. All the spark plugs were removed, and their electrodes exhibited "normal wear" signatures when compared to the Champion Check-A-Plug comparison chart and all anomalies were consistent with thermal damage and the position of the engine.



Figure 1: Engine being prepared for examination as viewed from the front.

Both carburetors were examined. The main jets were free of obstructions and no anomalies were noted.

The intake manifolds were removed, and the intake valves were examined with no anomalies noted. The exhaust system remained attached but was separated from the muffler. All exhaust valves were examined, and no anomalies were noted.

All coolant lines were consumed by thermal damage. All oil lines were consumed by thermal damage, except for the return line to the oil tank, on the bottom of the engine. The engine driven fuel pump was consumed by thermal damage. The oil pump was removed and examined, and no anomalies were noted.

The engine was disassembled. All cylinders were removed and examined, and no anomalies were noted. The hydraulic lifter exhibited normal operating conditions. The crankshaft and camshaft were examined with no anomalies noted. The oil passageway was examined and no obstruction to flow was observed.

Both propeller blades remained attached to the hub and were thermally damaged. One blade had separated and splintered and about a 3-inch portion from the hub remained. The other blade had tip damage.

Submitted by: Albert Nixon