



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

April 27, 2022

AIRFRAME AND ENGINE EXAMINATION SUMMARY

WPR22FA067

A. ACCIDENT

Location: Show Low, AZ
Date: December 22, 2021
Aircraft: N6000Z
NTSB IIC: Albert Nixon

B. EXAMINATION PARTICIPANTS:

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

Mark Platt
Senior Air Safety Investigator
Lycoming Engines
Williamsport, PA

C. SUMMARY

Examination of the airplane airframe and engine was conducted on April 27, 2022, at the facilities of Air Transport in Phoenix, Arizona. No evidence of preimpact mechanical malfunctions or failures were noted during the examination of the airframe and engine that would have precluded normal operation.

D. DETAILS OF THE INVESTIGATION

1.0 AIRFRAME EXAMINATION

The leading edges of the wings sustained impact damage and were separated from the fuselage. The left and right ailerons and flaps were attached. Flight control continuity was established to all flight control surfaces.

A thermally damaged unknown model and manufactured Engine Monitor and a Samsung Tablet were found and sent to the NTSB Vehicle Recorders Laboratory for potential download.



Figure 1: Airplane's wing as viewed from the left side.

2.0 ENGINE EXAMINATION

The Lycoming O-320 series engine was attached to the engine mount and firewall which had separated from the fuselage. There was no data plate attached to the engine. Exterior examination of the engine revealed that the engine sustained impact and thermal damage. Furthermore, the oil sump sustained impact damage and a hole was observed in the right rear section.

The top sparks plugs were removed and examined. Examination revealed that the spark plug electrodes were undamaged and when compared to the Champion Spark Plugs Check-A-Plug chart AV-27, exhibited coloration consistent with normal operation. The rocker covers were removed, and no mechanical anomalies were noted.

The crankshaft was unable to be rotated due to the impact damage at the engine case and crankshaft in the front of the engine. The rocker covers were removed, and examination of the rocker box areas revealed no preimpact mechanical malfunctions. The combustion chambers and engine case interior were examined with a lighted borescope and revealed normal operating signatures.



Figure 2: The engine as viewed from the top back side during the examination.

The carburetor was separated from the engine and sustained impact and thermal damage. The throttle and mixture controls were separated from the carburetor. A rod end that was consistent with the throttle control rod end was located and had a section of the throttle control arm wedged between the attaching hardware.

The fuel pump was attached to the engine and sustained thermal damage. The internal check valves and diaphragm were thermally destroyed.

The magnetos were attached and sustained thermal damage and were unable to be functionally tested.

The oil suction screen was secure and removed for examination. Examination revealed no contaminants.

The two bladed metal propeller was attached to the crankshaft flange, which had separated from the engine. The crankshaft flange fracture surfaces exhibited signatures consistent with overload. Both propeller blades were attached to the hub and exhibited leading edge gouging. One blade was bent aft, and the other blade was twisted aft, and its tip was separated. Additionally, the spinner was attached to the propeller and sustained impact damage.

Submitted by: Albert Nixon