



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

April 07, 2022

WRECKAGE EXAMINATION SUMMARY REPORT

WPR22LA127

This document contains 8 embedded photos.

A. ACCIDENT

Location: St George, Utah
Date: March 24, 2022
Aircraft: N111NW
NTSB IIC: Andrew Swick

B. PARTICIPANTS

Andrew Swick
Aviation Accident Investigator-IIC
National Transportation Safety Board
Phoenix, Arizona

Kathryn Whitaker
Air Safety Investigator
Piper Aircraft Company
Phoenix, Arizona

Mark Platt
Air Safety Investigator
Lycoming Engines
Phoenix, Arizona

C. SUMMARY

Examination of the airframe and engine was conducted at Air Transport in Phoenix, Arizona on April 07, 2022. The examination of the airframe and engine revealed no evidence of preaccident mechanical malfunctions or anomalies that would have precluded normal operation.



Figure 1-Main wreckage during the follow-up examination.

D. Engine Examination

The engine was examined and was found to be undamaged. The propeller assembly remained attached to the crankshaft propeller flange and both blades had aft bending. Engine control continuity was established from the cabin. Fuel lines were found intact and secure to their respective fuel system component. The fuel lines were also free of internal obstructions to flow when teste. Fuel system components were examined and found to be unremarkable. Fuel was present during multiple fuel system component examinations. Water detection paste was used and was negative for water contamination.



Figure 2-Right forward view of the engine and propeller assembly.

The upper spark plugs were removed and examined. The spark plug electrodes were undamaged. The electrode areas revealed combustion deposits consistent with normal operation.



Figure 3-Upper spark plug electrodes.

The crankshaft was rotated by hand easily with the propeller assembly. Cylinder compression was established at each cylinder in proper order. The cylinder overhead components moved normally during the crankshaft rotation and were lubricated and undamaged. Internal gear continuity was also established throughout the engine and accessory section. The cylinders were boroscoped revealing normal combustion deposits and undamaged combustion chambers.



Figure 4-Left cylinder overhead components.



Figure 5-Right cylinder overhead components.

E. Airframe Examination

The fuselage was buckled and bent in multiple locations. The cabin area structure was buckled and the instrument panel was deformed. The instruments were undamaged and two instruments were removed for further inspection and download of internal flight data. The structure area surrounding the fuel selector handle was deformed and the fuel selector valve was undamaged and found in the right tank position. During the fuel selector valve disassembly, fuel was found in the bowl and the screen was free of contamination. The fuel selector valve tested normally. The fuel boost pump was activated and operated normally. The airframe fuel lines were tested normally with exception to the fuel line connecting the electric boost pump and the firewall which had impact damage.

All flight control cable continuity was established. The flap lever was found in the 40-degree position and flap control was established.



Figure 6-Fuselage and wings during the examination.

The left wing had impact damage throughout its length and the main spar fractured near the wing root area. The main landing gear separated from the wing. The left wing fuel tanks remained attached to the wing. The outboard wing fuel tank was undamaged and the fuel tank cap remained attached to the filler neck. The inboard wing fuel tank had impact damage. The fuel tank vent was tested and operated normally. No blockages were noted in the left wing tank fuel lines.

The right wing had impact damage and the main landing gear separated. The wing fuel tanks remained intact and the fuel tank cap remained attached to the filler neck. The fuel tank vent was tested and operated normally. No blockages were noted in the right wing tank fuel lines.



Figure 7-Left wing lower surface.



Figure 8-Right wing upper surface.

The stabilator trim barrel trim screw showed about 1/2 inch [2 threads] extension from the barrel which correlates to partial nose down trim.

Submitted by: Andrew Swick