

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR22FA255

AIRFRAME AND ENGINE EXAMINATION

Factual Report

July 22, 2022

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A. ACCIDENT

Location: Lake McMurray, Washington
Date: 07/16/2022
Time: 0730 PDT
1430 UTC
Airplane: N2588C, Aeronca 7BCM

B. AIRFRAME AND ENGINE EXAMINATION PARTICIPANTS

NTSB-IIC	Albert Nixon NTSB, AS-WPR Phoenix, Arizona
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C. SUMMARY

The examination of the airplane wreckage was conducted at the facilities of Avtech Services at the Auburn Municipal Airport (S50) Auburn, Washington. The postaccident examination of the airframe and engine revealed no evidence of failures or malfunctions that would have precluded normal operation of the airplane.

DETAILS OF THE EXAMINATION

1.0 Airframe and Engine Prior to the Examination

The airplane wreckage was examined at the facility and on the flatbed trailer when it was recovered. The engine and wings were separated from the fuselage for recovery.

1.1 Airframe Examination

The airframe sustained impact damage and significant thermal damage to the fuselage and wings. The empennage was relatively intact. The vertical stabilizer was attached and sustained impact and thermal damage. The rudder was attached and sustained impact damage. The left horizontal stabilizer and elevator were attached and relatively intact and the right horizontal stabilizer and elevator were attached and sustained thermal damage.

Flight control continuity to the cockpit controls was established. The front control stick was distorted from the impact and the rear control stick was partially intact. Both

control sticks were connected to the control tube. The left aileron continuity was established to the bell crank and from the wing root to the aileron. The right aileron bell crank, and hardware were present and sustained thermal damage. Continuity was established through breaks in the cables. Rudder continuity was established to the pulleys through the rudder pedals. Elevator continuity was established from the control sticks to the elevator horn.

The elevator trim sustained thermal damage and was unable to be determined.



Figure 1: The airplane's empennage as viewed from the right side.

In the cockpit all instruments and levers were destroyed by thermal damage with the exception of the magneto switch which was in the "BOTH" position.

The fuel gascolator was not located. The main fuel tank had been breached in several areas on top and fuel was not present. The fittings and line were connected with no anomalies noted. The top quantity indicator was out about 5 inches. The wing tank was relatively intact but was breached and had a small amount of residue fuel present.

Each main landing gear had separated at the attachment point to the fuselage and sustained impact damage.

1.2 Engine Examination

The engine was separated from the fuselage for the recovery and sustained impact and significant thermal damage. The top engine mounts were intact and the bottom engine mounts sustained impact damage. No catastrophic damage was noted. The rocker covers were removed and there was evidence of heat distress from thermal damage on the left-side cylinders, and on the right- side cylinders, the valves were appropriately lubricated. Rotational continuity was unable to be established due to extensive thermal damage. The top spark plugs were removed, and the electrodes were undamaged and exhibited coloration consistent with normal wear in accordance with Champion AV-Chart.

The Nos. 1, 3, and 4 cylinders were removed and examined. Examination revealed no anomalies. The connecting rods had appropriate movement, all piston rings were in place, all valves were set properly, and there was no carbon or heat distress noted. All the push rods were intact, and no anomalies were noted when examined.



Figure 2: The engine as viewed from the right side.

The crankshaft and cam lobes were observed, and no anomalies were noted. All rod caps and cotter pins were observed. All valve springs were examined, and no anomalies were noted. The No. 2 cylinder was unable to be removed due to extensive thermal damage.

The engine carburetor sustained extensive thermal damage and was removed for examination. The floats were present, and no anomalies were noted. The area where the gasket would be present was distorted consistent with fuel exiting from this area. The throttle control was intact but sustained thermal damage and was frozen in place.

The engine accessories sustained extensive thermal damage and were destroyed. Several areas of molten metal were present in the area. The bottom of the oil sump was destroyed by thermal damage and made for a large, exposed area. The exhaust tubing sustained impact damage. .

The spinner exhibited impact damage. The two-bladed propeller was attached to the crankshaft. One blade was bent aft about mid-span, and the other blade was bent aft at the tip. Wiring consistent with some type of engine instrumentation, was wrapped around the crankshaft several times.

Submitted by:

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