

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR24LA087

AIRFRAME AND ENGINE EXAMINATION SUMMARY

Factual Report

Mar 12, 2024

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A. ACCIDENT

Location: Burley, Idaho
Date: 2/10/2024
Time: 1245 MST
1945 UTC
Airplane: C-FLQQ, Mooney M20K

B. AIRFRAME AND ENGINE EXAMINATION SUMMARY PARTICIPANTS

NTSB-IIC	Albert Nixon NTSB, AS-WPR Phoenix, Arizona
FAA	Craig Carroll FAA Aviation Safety Inspector Boise, Idaho

C. SUMMARY

Examination of the airplane wreckage was conducted on Mar 12, 2024, at the facilities of The Flight Doctor, at the Burley Municipal Airport (BYI) Burley, Idaho. No evidence of preimpact mechanical failures or malfunctions that would have precluded normal operation were noted during the examination of the airplane wreckage.

D. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

The wings were attached, and the flap and aileron were attached to each wing. The left wing about mid-span sustained a large impact damage consistent with striking a metal container. The right wing had an impact damage sustained to the leading edge about mid-span.

The flap handle was found in the spring loaded down position and the flaps appeared to be down. All circuit breaks were in except the Gear Actuator circuit breaker.

Flight control continuity was confirmed to the from the cabin flight controls to the ailerons, elevators, and rudder.

Damage was noted to the bottom of the fuselage. External examination of the aircraft, revealed a very minimal amount of oil residue noted on the bottom of the fuselage, wings, the engine compartment, and the bottom engine cowling, and no anomaly that would be consistent with a major oil leak.

The fuel selector valve was found in the OFF position and moved appropriately to each detent. Fuel continuity to the engine was confirmed by operation of the fuel pump and fuel flowing from the injectors. The fuel was collected and was blue in color, clear of contaminants, and tested negative for water contamination.

The fuel cap seals were intact and in good condition. The left fuel tank indicator on the wing indicated about 16 gallons and the right fuel tank indicated about 0 gallons consistent with the tank being breached.

The empennage remained attached to the fuselage and the vertical stabilizer and horizontal stabilizer were relatively intact.

3.0 Exterior Engine Site Examination

The engine was attached to the fuselage. The intake and exhaust tubing was intact. The propeller remained attached to the crankshaft propeller flange.

One blade was bent slight aft about mid-span and the other blade was loose at the hub. The spinner was attached and sustained impact damage.

All sparkplugs were removed and examined. All sparkplug electrodes showed normal-worn out, wear conditions when compared to the Champion Check-A-Plug chart, except the No. 2 top spark plug electrode, which was missing. Additionally, the Nos. 3 and 5 bottom spark plugs were oil coated. The rocker covers were removed from the cylinders. The engine was rotated through the propeller and thumb compression was established at each cylinder and appropriate valve movement was noted. The cylinder overhead components were lubricated and undamaged.

The cylinders were borescoped and the piston and valve heads were undamaged and showed normal operational signatures. The Nos. 5 and 6 bottoms of the cylinders had excessive oil present.

The fuel pump was operational at the high and low settings.

The magnetos were removed and examined. During manual rotation of the engine, the magnetos produced spark at all leads.

The oil filter was removed and examined, and the pleats were clear of contaminants. The oil suction pickup screen was removed and examined and was clear of contaminants. The governor oil screen was removed and examined and was clear of contaminants.

The fuel and oil lines to the engine were secure and intact.

The engine control continuity was established from the cockpit controls to the engine.

The engine turbo rotated, and the bearing was intact, and was clear of debris. The turbo exhaust was clean and unremarkable.

Initially, only about ¼ inch of oil was noted on the dip stick. After 4 quarts of oil were added, the engine was motored from the starter. 34 psi of oil pressure was registered. The oil quantity measured from the dip stick was about 6 quarts, consistent with about 2 quarts of oil initially present. During the motoring, no oil leaks were detected.

The examination of the engine and the airframe revealed no evidence of pre-impact mechanical failures or malfunctions that would have precluded normal operation.

Submitted by:

Albert Nixon
Senior Aviation Accident Investigator