

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



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FOLLOW-UP EXAMINATION SUMMARY

February 23, 2024

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A. ACCIDENT

Location: Provo, Utah
Date: November 14, 2023
Time: 1008 mountain standard time (MST)
1708 Coordinated Universal Time (UTC)
Airplane: N3971L

B. FOLLOW-UP EXAMINATION SUMMARY

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C. SUMMARY

On November 14, 2023, about 1008 Mountain standard time (MST), a Cessna 172G, N3971L, was substantially damaged when it was involved in an accident near Provo, Utah. Both pilots were fatally injured, and the passenger sustained serious injuries. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight. The Civil Air Patrol received an emergency locator transmission the day of the accident, about 1117 MST. A search by a local law enforcement agency ensued and the airplane wreckage was discovered on a rising face of Slate Canyon about 2,000 ft below the summit, about 6 nm northeast of Spanish Fork Municipal Airport.

The passenger reported that they were on a multi-legged cross-country flight from KSPK to Driggs airport (KDIJ), Driggs ID. According to Automatic Dependent Surveillance Broadcast (ADS-B) data revealed that shortly after departure, the airplane maneuvered north and east of Provo Municipal Airport (KPVU), outside of the Class-D airspace and entered Slate Canyon towards rising terrain. The passenger added that he does not know why the pilot turned toward the canyon. He further added that he noted windy conditions, heard the stall warning horn and, that the airplane was in a nose high attitude prior to impacting trees.t/Woodhouse Field (KSPK), Spanish Fork, Utah.

Examination of the wreckage took place on February 24, 2024, in Phoenix, Arizona with the airframe manufacturer. Examination of the airframe and engine revealed no mechanical anomalies.

D. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

The fuselage, empennage, and wings were damaged consistent with impact. Both wings and the right horizontal and elevator were separated from the fuselage for aircraft recovery. Flight control continuity was established from the cockpit controls to all surfaces. The elevator trim actuator was found to be 5° tab up and the flaps were in the up position.

2.0 Engine Examination

Engine Manufacturer: Lycoming
Engine Model Number: O-360-A1D
Engine Serial Number: L-9361-36A

Examination of the recovered engine revealed that the engine remained attached to the airframe via the impact damaged engine mounts. All four cylinders and all engine accessories remained attached. The engine was removed from the firewall. All fuel and oil lines that were removed were tight. No evidence of any mechanical damage was observed to the engine crankcase. No metal was present in the oil filter.

The rocker box covers were removed. The intake and exhaust rocker arms were intact, and oil coated residue was seen in all cylinders. All intake and exhaust valve springs were in place and visually appeared to be undamaged. The upper spark plugs were removed, and all cylinders were examined internally using a lighted borescope. A normal amount of combustion deposits was observed within the combustion dome of each cylinder and piston face. All the intake and exhaust valves were unremarkable. The crankshaft was rotated by hand using the propeller. Rotational continuity was established throughout the engine and valve train. Thumb compression and suction were obtained on all cylinders.

The top engine spark plugs were removed from the engine, and they were the massive electrode type. The sparkplugs exhibited black deposits within the electrode area. All spark plugs exhibited signatures consistent with NORMAL when compared to the Champion Check-A-Plug comparison chart. Both magnetos were rotated using a power drill and sparks were observed on all leads.

The carburetor remained attached and was secured. The throttle and mixture control cable remained attached to the carburetor. The throttle and mixture control moved the available length. The carburetor was removed, and fuel was found in the carburetor bowl. Fuel was tested for water using water finding paste with a negative result.

3.0 Propeller Examination

The two-bladed propeller and hub assembly remained attached to the crankshaft. All length of each blade was recovered. Chordwise and spanwise scratches were found mid-span to the tip of each blade. Gouges were found on the leading edge of the outer blade sections from one blade.

4.0 Performance Calculations

According to Cessna's Pilot Operating Handbook, at a gross weight of 2,000 pounds gross weight and at 5,000 ft msl and 41°F, the maximum rate of climb is 610 ft per min at 66 knots. At 10,000 ft msl and 23°F, the maximum climb rate is 380 ft per minute at 64 knots. The last recorded altitude on ADS-B data was around 7,000 feet above sea level with a ground speed of 90 knots. The peak top that the plane had to clear was approximately 10,100 feet msl and 2 miles from the last recorded data point.

For the airplane to clear 10,150 ft msl at a maximum climb rate of 610 ft/min, the airplane would need about 8 minutes, covering about 10 nm and at a max climb rate of 380 ft/min, the airplane would need about 5 minutes covering about 6.5 nm. If the airplane wanted to maintain a 90 knots (groundspeed), the airplane would need to a climb rate of about 2,300 ft per minute, a 14.5° climb angle, which would clear 10,150 ft msl in about 1.5 minutes, covering about 2 nm.

Submitted by:

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