

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA23FA109

AIRWORTHINESS FACTUAL REPORT

December 19, 2023

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A. ACCIDENT

Location: Dawsonville, Georgia
Date: January 12, 2023
Time: 2017 local
0117 UTC
Airplane: Piper PA28-180, N4254T

B. AIRWORTHINESS FACTUAL REPORT

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C. SUMMARY

On January 12, 2023, about 2017 eastern standard time, a Piper PA28-180 airplane, N4254T, was destroyed when it impacted terrain near Dawsonville, Georgia. The private pilot was fatally injured. The airplane was operated by the pilot as a personal flight conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91.

D. DETAILS OF THE INVESTIGATION

The NTSB investigator-in-charge traveled to the accident site and examined the wreckage on January 14-15. He was assisted by party members from Piper Aircraft, Lycoming Engines, and the FAA. The wreckage was recovered on January 15, 2023, and was transported to Atlanta Air Recovery, in Griffin, Georgia.

E. WRECKAGE AND IMPACT INFORMATION

The airplane impacted wooded terrain near the top of rising terrain at an elevation of about 1,250 ft msl. The wreckage was highly fragmented and was located largely in one compact area. All major portions of the airframe were located. The engine was co-located with the cockpit and fuselage debris. There was no evidence of a post-crash fire or thermal damage to the wreckage.

F. AIRFRAME EXAMINATION

Flight control continuity was established from all primary flight control surfaces to the cockpit except for separations consistent with impact forces. Each flight control cable separation was consistent with tensile overload.

The fuel selector valve was separated from the airframe and heavily impact damaged. The handle remained attached and was not oriented with either tank position or the off position. When the fuel selector handle and shaft were rotated manually, the ball did not rotate. When low air pressure was applied to the fuel supply ports on the valve, no air was observed coming from the outlet.

The electric fuel boost pump remained attached to a portion of the airframe. Electrical power was applied to the fuel boost pump, and it was heard to operate. Both fuel tanks were impact damaged and breeched. No fuel was observed but the odor of fuel was present in the ground around the main wreckage.

The cockpit, switches, levers, and flight instruments were all severely damaged by impact related damage. Several of the gauges/ switches were not readable or their position was unreliable due to impact damage. The tachometer was found indicating 2200RPM. The tachometer hour meter read 5560 hours.

The directional gyro was disassembled, and its gyro and housing were observed. Evidence of rotationally scoring was observed inside the housing and on the gyro.

The flap handle was observed in the debris and had separated from the airframe. Its position was unreliable. Each landing gear were located in the debris field.

G. ENGINE EXAMINATION

The engine was a Lycoming O-360-A4A 180-horsepower piston engine (S/N L-16266-36A). The engine exhibited impact damage and had partially separated from the airframe.

The propeller and crankshaft flange were partially separated from the engine crankshaft. The crankcase nose was fractured near the crankshaft flange. The pushrod tubes were impact damaged. The #2 cylinder rocker cover was separated, and the #2 cylinder head was impact damaged. The exhaust and induction tubing were impact damaged. The alternator and carburetor were impact separated from the engine. The exhaust mufflers were unobstructed.

The engine was partially disassembled to facilitate the examination. The engine crankshaft flange could not be rotated using a tool inserted in the vacuum pump drive pad. The #2 and #4 cylinders and pistons were removed, and the interior of the crankcase viewed through the cylinder base pads.

Continuity of the crankshaft to the rear gears and to the valve train was confirmed visually. The connecting rods, camshaft, cylinders, and pistons were observed with no anomalies noted.

The carburetor was fractured across the throttle bore and separated from the engine. The throttle and mixture cables were separated from the carburetor throttle and mixture control arms. The carburetor fuel inlet hose was separated from the carburetor. The fuel inlet screen was absent of debris. The carburetor was partially disassembled, and no damage observed to the brass floats or other internal components. No liquid was observed in the carburetor float bowl.

The engine driven fuel pump remained partially attached to the engine. The pump was removed and observed fractured between the drive portion and the pumping section. The pumping section was partially disassembled and no damage to the rubber diaphragms or internal check valves observed. No fuel was observed in the pump.

The spark plugs were removed and examined. When compared to the Champion Check-A-Plug chart, all top spark plugs exhibited normal worn condition.

The magnetos remained attached to the engine. They both exhibited spark at all leads when rotated by an electric drill.

The oil filter was removed, cut open and spread out. There were no metal contaminants observed. Oil was observed in the engine. The oil suction screen was absent of debris.

The vacuum pump remained attached to the engine accessory section. When the pump was partially assembled, its gears were intact, and the unit appeared normal.

The fixed pitch Sensenich propeller remained attached to a portion of the crankshaft propeller flange. The propeller exhibited blade polishing, chordwise scratches, and s-bending. The outboard tips of the propeller had fragmented and were located in the debris.

H. AIRWORTHINESS SUMMARY

There was no evidence of preimpact mechanical malfunctions or failures with the airframe or engine based upon the on-site examination of the wreckage. The propeller signatures were consistent with the engine operating under power at the time of impact.

I. MAINTENANCE INFORMATION

According to the maintenance records, the most recent annual inspection occurred on March 19, 2022. The tachometer at the time of this inspection was 5454. The airplane had flown a total of 106 hours since this inspection. The engine was last overhauled on December 16, 2006. The engine time since major overhaul was 1525 hours.

J. PHOTOGRAPHS AND FIGURES



Photo 1: View of the wreckage as found at the accident site.



Photo 2: View of the wreckage as found at the accident site.



Photo 3: View of the initial tree impact area.



Photo 4: View of the heavily fragmented cockpit



Photo 5: View of the engine.



Photo 6: View of the propeller.



Photo 7: View of the propeller.



Photo 8: View of the propeller.



Photo 9: View of the vacuum pump after it had been removed from the engine by the investigative team.



Photo 10: View of the directional gyro during disassembly by the investigation team.



Photo 11: View of the internal case of the directional gyro.



Photo 12: Fuel sample from the departure airport.

Submitted by:

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