

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA23FA136

WRECKAGE EXAMINATION

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A. ACCIDENT

Location: Blue Ridge Skyport Airport

Date: March 5, 2023

Time: 1114

Aircraft: Piper PA-22

Registration: N3410Z

B. WRECKAGE EXAMINATION

Investigation Team:

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C. SUMMARY

- D.** On March 5, 2023, at approximately 1114 Eastern Standard Time, a Piper PA-22 (N3410Z) was substantially damaged in an accident near Blue Ridge, Georgia. The private pilot sustained fatal injuries. The aircraft was operating under Title 14 of the Code of Federal Regulations, Part 91, for a personal flight.

E. DETAILS OF THE EXAMINATION

1.0 Accident Site

The wreckage was found approximately 500 feet to the left of the departure end of runway 18 at 57GA and came to rest about 20 feet up in a tree. The airplane was removed from the tree for further examination. All flight control surfaces were accounted for at the wreckage site and remained attached to the airframe. The flight controls within the cockpit were also impact damaged. Continuity of the flight control cables to the flight surfaces was confirmed. The

engine had separated from the airframe and was located about 30 feet in front of the fuselage. The engine controls inside the cockpit were damaged due to impact. An unspecified amount of fuel was observed leaking from both fuel tanks during the initial observation of the airplane.

2.0 Airframe Examination

The wreckage was inspected and documented at the accident site from March 6 to 7, 2023.

2.1 Fuselage

An examination of the fuselage showed that the wings remained attached but were impact damaged. The empennage was bent downward yet still attached. The horizontal stabilizer, vertical stabilizer, elevators, and rudder control surfaces remained connected to the empennage. All flight control surfaces were intact, and continuity of the flight control cables was confirmed from all surfaces to the cockpit.

2.2 Empennage

The vertical stabilizer and rudder remained securely attached to the airframe. The left horizontal stabilizer and elevator stayed attached to the airframe and showed no signs of impact damage. Similarly, the right horizontal stabilizer and elevator remained attached to the airframe without any visible impact damage.

2.3 Wings

Both wings remained partially attached to the fuselage, showing twisting and buckling along the entire wingspan. Each aileron remained attached to its respective wing at the hinges, and flight control cable continuity was confirmed through both wings to the cockpit. The flaps were also attached to the wings at the hinge points, and push-pull tube continuity for the flaps was established to the cockpit.

The left-wing fuel tank remained in position but showed signs of impact damage and crushing. The fuel filler cap was damaged but remained in place within the filler neck opening. The forward and aft finger screens were removed for examination and appeared clear of any blockages. However, the fuel lines were found to be breached during the inspection.

The right-wing fuel tank also stayed in position but exhibited impact damage and crushing. The fuel filler cap remained secured in the filler neck opening. The forward and aft finger screens were removed for examination and were

found to be free from blockages. The fuel lines were discovered to be breached during the examination.

2.4 Landing Gear

The fixed main landing gear remained attached to the fuselage and was folded inward. The nose gear was broken away from the engine mount and located within the wreckage site.

2.5 Cockpit

The cockpit was crushed, with the instrument panel and firewall detached from the forward fuselage. The windshield was shattered and destroyed. The pilot's seat remained intact and securely mounted. Flight control cables were continuous from the cockpit to each control surface and remained attached. The flap handle and surrounding structure were damaged due to impact.

The fuel primer plunger on the instrument panel was not in the stowed and locked position. The fuel strainer bowl on the lower firewall was intact and secured with a cotter pin, which was removed for examination. No fuel was found in the strainer bowl, and the strainer screen appeared clear of blockages. The sump bowl for the right-wing fuel tank, located under the passenger seat, was intact but contained no fuel. The fuel selector valve, a non-Piper valve with handle and placard installed by STC, was positioned between the "right" and "both" settings as indicated on the placard. All fuel lines to and from the selector valve were broken or separated near the valve. The valve body showed signs of impact damage, and the handle shaft appeared bent. Due to impact damage, the positions of the engine controls at the time of ground impact could not be determined.

2.6 Survivability

The accident was not survivable. The cockpit seats were fitted with 3-point restraints; all seats and restraints were impact damaged.

2.7 Fuel/Fuel System

The airframe's fuel system was damaged upon impact. The fuel lines were found broken throughout the system. However, the fuel caps were found to be securely locked. Recovery personnel drained several gallons of fuel from both tanks after removing the wings from the fuselage. Photos taken by first responders showed the fuel selector positioned between the right tank and both positions. According to the fuel selector's manufacturer's Supplemental Type Certificate (STC), if the selector is in the 45° position, it will shut off fuel flow. In the positions between definitive tank selections, fuel flow is limited. An

inspection of the fuel selector showed that all detents were intact and operated normally. No anomalies noted that would prevent normal operation.

3.0 Engine Examination

The engine case halves were impact damaged, and the crankshaft was rotated 720°, with valve train movement and compression observed in all cylinders. The cylinders were inspected with a borescope, and no anomalies were found. The magnetos were rotated, and spark was observed on all leads of both magnetos.

The spark plugs were removed for examination, showing normal wear and dark coloring when compared to a Champion Check-a-Plug chart, with no fouling present. The oil screen was removed and found clean, free of debris. The carburetor had separated from the engine, but its bowl was clean. The oil filter was marked with a change date of 6/24/2022. Upon opening the filter, no metallic debris was found in the filter element.

No fuel was present in the lines from the fuel pump to the carburetor. The fuel strainer was opened, and the screen was clean and unobstructed. The lever-action pump operated normally when manually activated. An examination of the engine did not reveal any preimpact mechanical malfunctions or failures that would have precluded normal operation.

4.0 Propeller Examination

The Sensenich two-bladed, fixed-pitch propeller remained attached to the engine upon impact. One blade exhibited forward bending, while the other showed slight aft bending and deformation.

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Submitted by:

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