

NATIONAL TRANSPORTATIONS SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594

SUMMARY OF AIRCRAFT EXAMINATION

-- CEN19FA093 --

A. ACCIDENT

Location: Summersville, Missouri
Date: March 5, 2019
Time: 2204 Central Daylight Time
Aircraft: Piper PA-28-180

B. PARTICIPANTS

Jennifer Rodi
Senior Aviation Accident Investigator
National Transportation Safety Board

Louie Bettis
Aviation Safety Inspector
Federal Aviation Administration

Kathryn Whitaker
Air Safety Investigator
Piper Aircraft

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C. ACCIDENT SUMMARY

On March 5, 2019, about 2204 central standard time, a Piper PA 28-180 airplane, N7369W, was substantially damaged when it impacted trees and terrain 4 miles northwest of Summersville, Missouri. The pilot was fatally injured. The airplane was owned and piloted by private individuals and operated under the provisions of Title 14 *Code of Federal Regulations* Part 91 without a flight plan. Dark night visual meteorological conditions prevailed at the time of the accident. The cross-country flight departed New River Valley Airport (PSK), Dublin, Virginia, at an unknown time and was en route to Downtown Airport (3DW), Springfield, Missouri.

D. AIRCRAFT INFORMATION

Summary of Aircraft Examination

According to Federal Aviation Administration records, the airplane, a Piper PA 28-180 (serial no. 28-1251), was manufactured in 1963. The airplane was powered by a Lycoming O-360 A3A engine (serial no. L-21343-36A) rated at 180 horsepower at 2,700 rpm. The engine was equipped with a 2-blade Sensenich propeller.

A review of the maintenance records indicated that an annual inspection had been completed on April 25, 2018, at an airframe total time of 4905.7 hours. The tachometer in the airplane read 557.9.

E. DESCRIPTION OF ACCIDENT SITE

The accident site was characterized by deciduous walnut trees and hilly terrain vegetated in short grass. The wreckage came to rest on a measured heading of 99° at an elevation of 1,310 ft. A GPS measured the coordinates as 37°11'37" North and 91°42'14" West.

The initial impact point was located at the top of a 45 ft tree, characterized by broken branches. The main wreckage came to rest about 76 ft east of the initial impact point. A section of the right wing, broken branches, and paint chips were scattered on the ground between the initial impact point and a second tree. The second tree was about 45 ft high and exhibited broken branches near the top of the tree and witness marks consistent with impact with the airplane. Additional branches, plexiglass, paint chips, torn metal from the wing, torn fiberglass, the baggage door, and a fragmented red lens cover were scattered over 45 ft between the second tree and the main wreckage.

The main wreckage included the fuselage, empennage, left wing, and engine and propeller assembly. The right wing came to rest about 14 ft north of the main wreckage.

F. DETAILS OF AIRCRAFT EXAMINATIONS

A 4 ft section of the outboard leading edge of the right wing was located north east of the initial impact point. The wing piece exhibited scratch marks and transfer along the top of the wing skin at the separation point and at the leading edge, consistent with impact with tree branches.

The fuselage included the instrument panel, and cabin area. The cowling and forward fuselage were crushed up and aft about a 45° angle. The nose landing gear assembly was impact separated and came to rest beneath the wreckage. Both sides of the forward windscreen and the pilot-side side windscreen were impact separated and fragmented. The side and upper fuselage, aft of the baggage compartment, was wrinkled and the baggage door separated.

The instrument and switch panel remained attached and exhibited impact damage. The Kolsman window displayed 30.07. The tach read 0557.9. The control tunnel for the flight controls was crushed up and aft and the damage precluded free movement of the controls in the cabin. The flap Johnson bar was down and secure against the floorboard consistent with the flaps being retracted. When actuated the left flap extended incrementally as designed. The mixture control was out about 1/4 inch. The throttle control was out about an inch. The landing light circuit breaker was out but all other breakers were secure.

Summary of Aircraft Examination

The pilot side seat was partially impact separated from the seat track. The shoulder harness was impact separated from its ceiling mount. The lap belt was not buckled but was reported to be fastened by first responders.

The right wing included the right aileron, right flap, and the right main landing gear. The leading edge of the right wing, adjacent the inboard edge of the fuel tank, exhibited a circular dent consistent with impact with branches. The upper and lower wing skin, right flap, and right aileron all exhibited marks and scrapes consistent with branch impact. The right flap appeared to be up or retracted and was bent up at the outboard trailing edge. The right aileron remained attached and the skin was torn in half about midspan. The right aileron cable was continuous from the separation point outboard to the control. The separation points exhibited signatures consistent with overload separation. The right main landing gear wheel pant was impact damaged, but the assembly was otherwise unremarkable. The right fuel tank was not compromised and contained less than a cup of fuel.

The left wing remained attached to the fuselage at the wing spar. The left wing included the left flap, left aileron, and left main landing gear. The left red navigation light lens was impact separated. The left aileron remained attached. Impact damage precluded free travel of the aileron cables, but examination confirmed continuity. The aileron was otherwise unremarkable. The left flap remained attached and appeared to be up. The flap exhibited a dent on the bottom center skin. The left main landing gear was collapsed out and partially separated. The left fuel tank was not compromised and contained no fuel.

The empennage included the vertical stabilizer, rudder, and the stabilator. The vertical stabilizer exhibited scratches on the upper leading edge consistent with impact with trees and branches. Tree bark was embedded in the fairing on the right side. The rudder control remained attached and was otherwise unremarkable. The rudder cables were continuous from the control forward to the cabin. Both sides of the stabilator exhibited leading edge dents and scratches consistent with impact with trees and branches. The outboard tip of the right stabilator was impact separated. The stabilator trim measured 1.4 inches consistent with a neutral position. The stabilator control cables were continuous but impact damage precluded free movement of the control.

The engine remained attached to the fuselage and the engine mounts were intact and the tubing was bent down. The 2-blade propeller remained attached at the flange. One propeller blade was extended in the air and exhibited chordwise scratches along the entire chambered face of the blade. The second blade was bent and imbedded in the ground. The blade was bent aft slightly, exhibited chordwise scratches on the cambered face of the blade, and several leading-edge nicks.

The carburetor was partially separated from the engine and remained attached through the control cables. At the carburetor the engine throttle control cable remained attached to the arm and the arm was against the full throttle stop. The mixture cable remained attached to the carburetor mixture control arm and the arm was positioned against the full rich stop. The carburetor air box was impact damaged and the position of the carburetor heat valve was undetermined.

The propeller, engine cowling, upper bank of spark plugs, and valve covers were removed to facilitate the engine examination. The spark plugs exhibited grey coloration and normal signatures. The engine was rotated through using a tool at the vacuum pump

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drive and valve movement, engine continuity, and thumb compression were confirmed. The magnetos were removed and when actuated exhibited spark on each point.

The vacuum pump was disassembled and found unremarkable. Engine driven fuel pump and electrical pump line contained a trace amount of fuel. The fuel pump was actuated by hand and pressure was tactile detected. Disassembly revealed no anomalies. The carburetor contained liquid consistent with fuel. The brass floats were intact, and no anomalies were noted. The alternator belt was impact damaged and the alternator and starter remained attached.