

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA23FA280

WRECKAGE EXAMINATION SUMMARY

July 5, 2023

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A. ACCIDENT

Location: North Myrtle Beach, South Carolina
Date: July 2, 2023
Time: 1102
Airplane: Piper PA-32R-300
Registration: N5524F

B. WRECKAGE EXAMINATION SUMMARY

Investigative Team:

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C. SUMMARY

On July 2, 2023, at about 1102 eastern daylight time, a Piper PA-32R-300, N5524F, was destroyed when it was involved in an accident near North Myrtle Beach, South Carolina. The private pilot and four passengers were fatally injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The airplane impacted trees and terrain in a wooded area approximately 2 miles west of the runway 23 centerline. The wreckage path was oriented on a 170° magnetic heading. The airplane descended through hardwood trees at a downward angle of

approximately 35°. Propeller cut marks were noted on several branches, including one branch with three evenly spaced cuts approximately 17 inches apart.

2.0 Airframe Examination

The wreckage was examined and documented at the accident site on 7/2 and 7/4, 2023.

2.1 Fuselage

The fuselage was destroyed by fire and impact forces. Molten metal was found throughout the wreckage. Flight control cables were visible along the remnants of the floor structure, extending to the yoke controls in the cockpit.

2.2 Empennage

The empennage was destroyed by fire and impact forces. Portions of the vertical and horizontal stabilizers were identified but showed evidence of fire and impact damage. The stabilator cables were found intact and continuous from the stabilator control rod and bob weight to the control column. The horizontal stabilizer and stabilator were consumed by fire. The rudder cables remained attached from the rudder bar in the cockpit to their respective attachment points at the base of the rudder.

2.3 Wings

The right wing was separated from the fuselage and located at the base of a tree at the wreckage site. It exhibited fire damage, and the flight control surfaces—aileron and flap—remained attached. The flight control cables from the right wing were separated from the wing structure due to impact damage.

The left wing was found beneath the fuselage and was destroyed by fire. Remnants of the flight control surfaces were also located under the fuselage. The left aileron was found separated from the fuselage at the wreckage site. The flight control cables from the left wing remained attached to the wing structure. The main landing gear was still attached to the wing.

2.4 Landing Gear

The right main landing gear was found in the extended position and exhibited both impact and fire damage. The left main landing gear was located beneath the main cabin and became visible when the aircraft was moved. The nose landing gear was found in the retracted position and showed evidence of impact and fire damage. The landing gear selector in the cockpit was found in the retracted position.

2.5 Cockpit

The instrument panel sustained impact damage and was partially consumed by fire. Heavy soot accumulation was observed on several instruments. While a few instruments remained partially readable, the readings were deemed unreliable due to impact damage. Both horns of each control yoke were found intact.

2.6 Fuel/Fuel System

The fuel system was found partially intact, with fuel present throughout the system components during removal. The engine-driven fuel pump was securely installed and removed for examination. When actuated by hand, suction and compression were noted at the pump's inlet and outlet ports.

The fuel servo was intact with minor impact damage. The throttle plate moved freely, the fuel inlet screen was clean and unobstructed, and fuel was present in the inlet hose upon removal. All diaphragms within the fuel servo were free of tears and debris.

The flow divider was securely mounted atop the engine with all fuel lines properly attached. Fuel was present in the inlet line upon removal. The diaphragm within the flow divider was intact and free of damage or contamination. All fuel injectors were removed and found to be unobstructed.

3.0 Engine Examination

The top spark plugs, and all rocker box covers were removed from the engine, along with the rear-mounted vacuum pump, to facilitate engine rotation via the vacuum pump drive. The engine rotated freely, and suction and compression were achieved on all cylinders. All valves and rocker arms actuated normally during rotation.

The oil suction screen and oil filter were securely installed and removed for examination. The suction screen was clean and unobstructed. The oil filter element appeared unremarkable, with no signs of contamination. The filter had a date of 1/27/22 and a tach time of 4272.4 written on its side.

The vacuum pump was found tightly installed on the accessory section of the engine. Upon disassembly, the rotor and all internal vanes were found intact and undamaged.

The single-drive dual magneto was securely mounted to the accessory section with all ignition harness leads attached. The magneto was removed and manually rotated; spark was produced at all leads with no anomalies noted.

4.0 Propeller Examination

The propeller flange was slightly bent and initially obstructed engine rotation. After the flange was pried away from the engine case, the engine rotated freely. During manual rotation, compression was noted at all six top spark plug holes. Rotation of the engine-driven accessories was also observed.

5.0 Pilot Information

The pilot held a private pilot certificate with ratings for airplane single-engine land and instrument airplane. He was issued BasicMed eligibility on December 24, 2022, and had previously held a third-class medical certificate. No pilot logbooks or documentation of a recent flight review were recovered during the investigation.

6.0 Aircraft Information

Fueling records indicated that the airplane was last serviced with 69.4 gallons of aviation gasoline on June 30, 2023, at the departure airport. No evidence was found of any additional flights between that fueling and the accident flight.

Based on a maximum allowable gross weight of 3,600 pounds, weight and balance calculations—derived from estimated occupant weights and the recovered remains of luggage and burned items (refer to Weight and Balance worksheet)—indicated the airplane exceeded the maximum gross weight by approximately 53.50 pounds at takeoff. The calculated center of gravity (CG) was 92.25 inches aft of the datum, which is beyond the aft CG limit.

7.0 Meteorological Information

There were no known weather phenomena

Submitted by:

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