

National Transportation Safety Board

Office of Aviation Safety

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WRECKAGE EXAMINATION

November 2, 2024

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A. ACCIDENT

Location: Wilder, Tennessee 38589
Date: October 31, 2024
Time: 1837 CDT
2337 UTC
Airplane: N8110S; Cessna 150F

B. WRECKAGE EXAMINATION

Investigation Team:

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C. SUMMARY

On October 31, 2024, about 1837 central daylight time, a Cessna 150F airplane, N8110S, was destroyed when it was involved in an accident near Wilder, Tennessee. The student pilot was 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 crashed in wooded, mountainous terrain at coordinates 36.317286, -85.092206. The accident site was about 22 nm north of Crossville Memorial Airport (CSV), Crossville, Tennessee. CSV was the departure airport for the accident flight.

The aircraft initially impacted near the tops of 100-ft-tall trees and came to rest inverted near the base of the final tree impact. The wreckage distribution area was about 250-ft-long by 125-ft-wide. Portions of wing skin and windshield fragments were found along the first 165 ft of the wreckage path. The heading between the first tree impact and the main wreckage was about 140° (Figures 1 and 2).

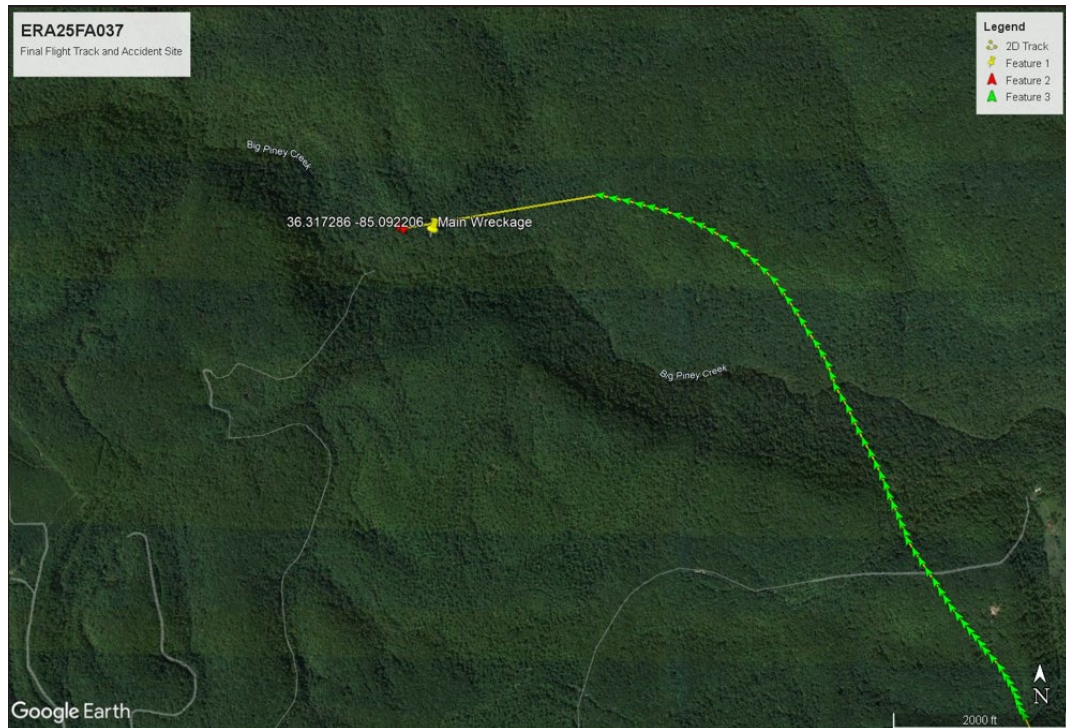


Figure 1 – Flight Path and Accident Site

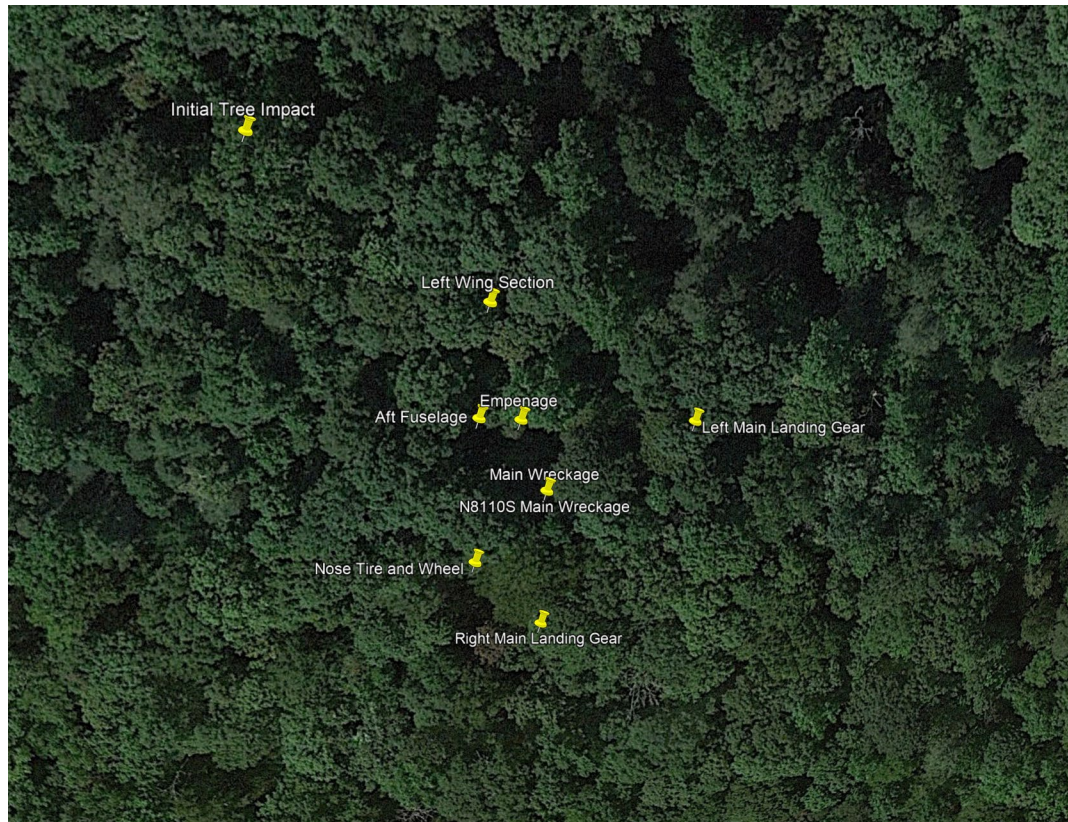


Figure 2 - Wreckage Distribution

2.0 Airframe Examination

The wreckage was examined and documented at the accident site on November 2, 2024.

2.1 Fuselage

The aft fuselage separated into a single section from a point just aft of the baggage compartment to the empennage separation. The aft fuselage was found about 150 ft southeast of the initial impact point.

2.2 Empennage

The empennage separated into a single section from the aft fuselage at the stabilizer bulkhead. It was located about 175 ft southeast of the initial impact point.

The elevator push/pull rod from the cockpit control to the elevator bellcrank below the cockpit floorboard was intact. The elevator bellcrank below the

cockpit floorboard was not observed and believed to have been consumed by fire. The clevis ends that attach to the elevator control cable turnbuckle near the bellcrank were examined with the attaching hardware intact. The elevator control cables were fracture-separated at the turnbuckles. The elevator control cables were complete from the turnbuckle fracture to the aft elevator bellcrank. The elevator trim chain was in place around the elevator trim actuator in the empennage.

The rudder control cables remained attached to the rudder pedal torque tubes and were fractured in a manner consistent with tensile overload in an area near where the aft fuselage separated from the cabin section. The rudder control cable remained attached to the rudder control horns at the rudder. The cockpit section of the elevator trim chain was observed with the chain in place around the sprocket. The cables were fractured about 2 ft from the chain terminations.

2.3 Wings

Partial flight control continuity was established. The aileron control cable chains were in place around the sprockets. The aileron control cables were separated near the wing roots in a manner consistent with tensile overload. The right-wing aileron control cables remained connected to the aileron wing bellcrank. The left wing remained suspended in a tree and was not examined.

The outboard half of the left wing and a portion of the left aileron fracture-separated and remained suspended about 80 ft up a tree along the wreckage path. This wing section was found about 120 ft southeast of the initial impact point.

2.4 Landing Gear

All two main landing gear and the nose gear wheel/tire separated during the crash sequence. The left main landing gear was found about 80 ft east-northeast of the main wreckage. The right main landing gear was found about 70 ft south of the main wreckage. The nose landing gear wheel/tire was found about 50 ft southwest of the main wreckage.

2.5 Cockpit

The cockpit and wing roots sustained thermal damage. The cockpit structure, instrument panel, and avionics were mostly consumed by fire.

2.6 Survivability

The accident was not survivable.

The emergency locator transmitter was not located.

The seat rails sustained thermal damage. The seats were found loose in the wreckage. One seat had the seat rail still attached to the seat.

2.7 Fuel/Fuel System

The fuel shutoff valve was thermally damaged and in the open position. The fuel strainer bowl was thermally damaged with a portion of the bowl consumed by fire, opening the bowl. The filter screen was clean. Ashes and debris were observed in the bowl. The left-wing fuel tank was partially consumed by fire. The fuel filter screen was found in the wreckage debris. The right-wing fuel tank was thermally damaged and bulged outward. The right filter screen was not examined. Only sections of aluminum fuel line less than 1 ft in length were observed. All sections sustained thermal damage. The fuel vent lines were not observed in place and existed in an area where the structure was consumed by fire.

3.0 Engine Examination

The engine was a Continental O-200A, S/N 61334-5-A.

The magnesium engine accessory case was consumed by fire. The magnetos were thermally damaged and could not be functionally tested. The camshaft and crankshaft gears remained intermeshed and intact. The starter and magneto drive gear were found loose in the wreckage. The crankshaft could not be rotated and cylinder compression could not be ascertained due to impact and fire damage. The valve covers were removed for examination. The valve springs were thermally damaged and could be compressed by hand. Valve rockers and pushrods were intact. Visual examination into the engine case from the accessory end of the engine did not reveal preimpact anomalies with the crankshaft assembly or valve train.

The spark plug wires were thermally damaged. The top spark plugs were removed and examined; they were normal in color and showed minimal wear when compared to a Champion Check-a-Plug chart.

The carburetor sustained thermal damage. The bowl was removed from the carburetor for examination. The composite floats were melted. The venturi was thermally damaged and deformed from its original shape.

The engine-driven vacuum pump was removed and disassembled; the interior vanes and rotor were normal in appearance and undamaged.

4.0 Propeller Examination

The propeller was a McCauley 1A101/DCM, S/N 41714.

The propeller remained attached to the crankshaft. Blade A was bent aft midspan and sustained thermal damage near the tip. Blade B remained straight. Multiple tree limbs from two to five inches in diameter with 45° cuts were observed along the wreckage path.

Submitted by:

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