



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

July 16-17, 2022

EXAMINATION SUMMARY

ERA22FA218

A. ACCIDENT

Location: Shelby, Michigan
Date: July 15, 2022
Time: 1815 EDT
Airplane: Cessna 210C, N3659Y

B. INVESTIGATION PARTICIPANTS

Ralph E. Hicks - IIC
Eastern Region Aviation (ERA)
National Transportation Safety Board
Marietta, Georgia

Peter Basile
Textron Aviation Inc.
Wichita, Kansas

Michael W. Matthews
Airworthiness Aviation
Safety Inspector
Grand Rapids, Michigan FSDO

C. SUMMARY

On July 15, 2022, about 1815 eastern daylight time, a Cessna 210C, N3659Y, was destroyed when it was involved in an accident near Shelby, Michigan. The private pilot and one passenger were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

1.0 Wreckage Examination

The aircraft descended through trees and into terrain in an approximate 50° nose-down, right-wing-low flight attitude, about 1.5 NM southeast of Oceana County Airport (C04), Shelby, MI. The aircraft initially impacted the top of a mature pine tree on an easterly heading; several downed limbs were observed on the ground. Smooth, angular cuts, consistent with propeller blade cuts were found on several tree branches scattered throughout the wreckage path.

The right wing struck a large diameter tree and was impact-separated from the aircraft. The right wing was located about 30 ft west of the fuselage. The right flap and a portion of the outboard right aileron were separated from the crushed wing structure. The nose of the aircraft impacted soft, sandy soil and the propeller was embedded about 4 ft deep in the ground.

The left wing was also impact-separated and was located about 40' east of the fuselage. The left wing was fractured into multiple pieces. The majority of the left flap and the left aileron remained attached to a section of the aft spar. An approximately 2' section of the inboard left flap was separated.

The empennage sustained significant compression damage and remained attached to the crushed fuselage. The left and right horizontal stabilizer and both elevators remained attached. The vertical stabilizer and rudder sustained tree impact damage at approximately mid-span. An approximate 3 ft section of the top of the rudder, with the balance weight attached, was found next to the tail.

Control cable continuity was not established due to the general fragmentation of the wreckage and multiple impact-related cable separations.

The elevator trim actuator was extended 1.7", which equated to approximately 5° tab up.

The hydraulic flap actuators indicated the flaps were in the fully retracted position.

The fuel tanks were fragmented and pieces of rubber bladder were observed throughout the accident site. A section of the left wing fuel filler port was found with the fuel cap loosely attached by the chain. The right fuel filler port was partially crushed; the right fuel cap was not observed. The fuel strainer assembly and fuel selector valve were not observed.

The cabin was crushed and the seats were found separated from the floor structure. Restraint usage was undetermined.

The instrument panel was fractured into multiple pieces. The directional gyro, attitude indicator, and turn coordinator were found near the impact crater. The gyro instruments were disassembled. All three gyros exhibited minor scoring indicative of rotation at the time of impact.

The airspeed indicator was recovered from the impact crater. The needle had bent aft near 230 knots indicated airspeed.

Engine compression and valve train continuity were not established due to impact damage. The crankcase was fractured just aft of the crankshaft propeller flange and cylinder 6 sustained significant impact damage. The magnetos were found loose on top of the engine. Both magnetos sustained impact damage and spark was not produced. The top spark plugs were removed and exhibited normal color and wear. The engine accessories, including the engine driven hydraulic pump, fuel pump, vacuum pump, and STC installed alternator, were impact separated from the engine. The fuel pump drive coupling and vacuum pump coupling were found intact. The fuel control inlet screen and fuel manifold screen were clean. Fuel was observed inside the manifold during disassembly. The oil filter paper element was clean.

The propeller was found in the impact crater. Propeller blade 1 (randomly marked by investigators for clarity) was separated from the hub. It was twisted, bent aft, and exhibited polishing and chordwise scratches on the cambered side. Propeller blade 2 remained attached to the hub. It was bent aft approximately 90 degrees at mid span. Chordwise scratches were observed on the face of blade 2 near the propeller hub indicative of rotation at the time of bending and impact with the engine cowl.