



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

March 5, 2020

EXAMINATION SUMMARY

ERA19FA059

A. ACCIDENT

Location: Apalachicola, Florida
Date: November 30, 2018
Time: 1805 EST
Airplane: Cessna 210D, N3995Y

B. INVESTIGATION PARTICIPANTS

Ralph E. Hicks - IIC
Eastern Region Aviation (ERA)
National Transportation Safety Board
Marietta, Georgia 30068
[REDACTED]

Scott Olson
FAA Accident Coordinator (A/W)
Aviation Safety Inspector
FAA Orlando FSDO
[REDACTED]

Mike Council
Continental Motors Inc.
Mobile, AL
[REDACTED]

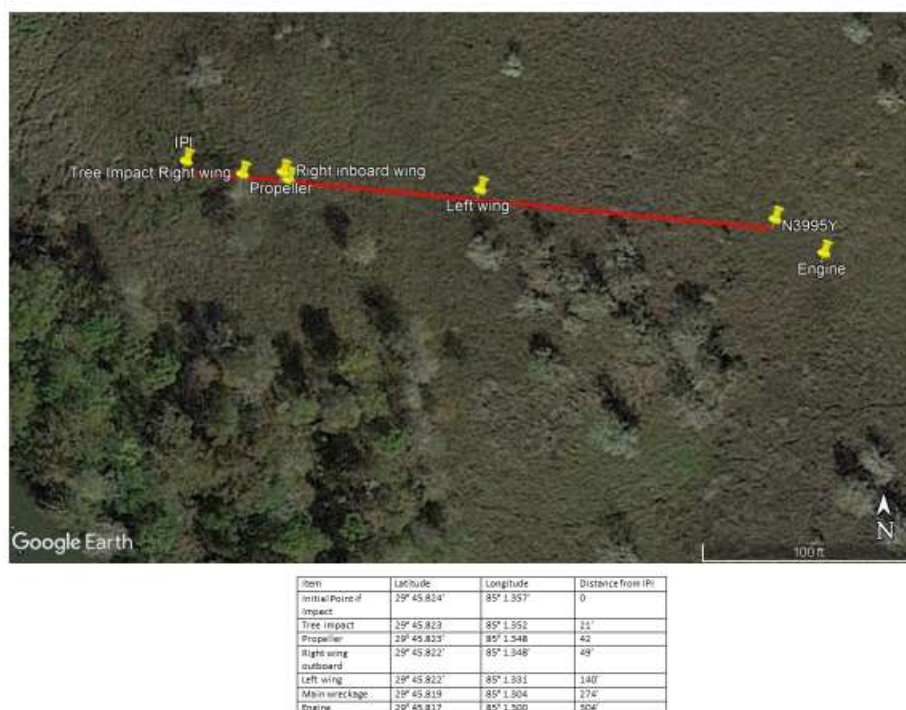
Andrew Hall
Sr. Air Safety Investigator
Textron Aviation
Wichita, KS
[REDACTED]

C. SUMMARY

On November 30, 2018, about 1805 eastern standard time, a Cessna 210D, N3995Y, was destroyed when it was involved in an accident at Apalachicola, Florida. The private pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

1.0 Accident Site

The accident site examination was conducted on December 2, 2018. The airplane impacted a marsh, adjacent to the Apalachicola River, about 2 miles north of AAF. The coordinates of the main wreckage were 29° 45.819N, 085° 1.304W. The right wing impacted the base of a cypress tree near the point of initial impact. Components of the airplane located near the point of initial impact included right wing components, a main landing gear strut, and the propeller. The wreckage path was oriented on a heading of 100° and was about 304 feet in length. The main wreckage, located about 274 ft from the point of initial impact, included the fuselage, cockpit, left wing, and empennage. Postaccident fire signatures were observed on the main wreckage. The engine was separated from the airframe and was found about 304 ft from the point of initial impact.



Wreckage Diagram ERA19FA059 N3995Y 11-30-18

Figure 1 – Wreckage Diagram

2.0 Airframe Examination

The wreckage was examined on scene on December 2, 2018 and at a wreckage storage facility in Jacksonville, Florida on February 6, 2019. The engine was observed separated from the fuselage and the propeller was observed separated from the engine. The right wing was observed with tree impact and ground impact damage to the leading edge. The right wing was observed in two main sections. One right wing section was the root/fuel tank outboard to approximately the lift strut attachment, and the second section was from the lift strut attachment outboard to the tip. The left wing was observed in two sections. The first from the wing root to wing station 136.00, and the other from station 136.00 outboard to the tip. Both outboard wings exhibited significant impact damage to the leading edges. The empennage was observed separated at fuselage station 166.40; however, it remained attached to the main fuselage by the control cables. The cabin overhead was observed separated from the main fuselage section and exhibited fire damage. The main fuselage consisted of the cabin floor structure and instrument panel.

The elevator trim tab actuator was measured at 1.20 inches extension which is beyond the travel limits of 10° in the tab down position. The rudder and elevator control cables were observed cut by the recovery personnel. All cables were observed attached at both the input and output locations. The aileron cables were observed separated in tension overload type separations.

Both the left and right fuel tanks were observed with both impact and fire damage.

The left main gear was observed in the down and locked position; the right main gear was observed separated from the fuselage. The nose gear was observed separated from the fuselage; however, the nose landing gear actuator was observed in the down position. The ELT was not observed at the site or at the review.

Parts of three seats were observed in the wreckage. One seat remained intact and was determined to have been the co-pilot's seat. The pilot's seat exhibited impact and fire damage with the front two legs and attachment feet separated and not observed. The rear inboard attachment feet were observed separated at the top of the foot attachment. The outboard seat feet remained with the seat base and were observed with distortion.

The autopilot was a Century II. All circuit breakers were observed in the connected (IN) position. The vacuum pump after removal from the engine was free to rotate and the drive was intact.

3.0 Engine Examination

The engine was shipped to the manufacturer's facility in Mobile, Alabama and was examined by the investigation team on May 29 and 30, 2019. The inspection of this engine did not reveal any pre-impact anomalies that would have prevented its ability to produce rated horsepower.

The exhaust components were impact damaged.

The forward balance tube was crushed. The induction elbows and connectors were impact damaged.

The left magneto points were contaminated due to water immersion. Points were cleaned and the magneto produced spark at all ignition leads when bench tested. The impulse coupling released normally.

The right magneto points were contaminated due to water immersion. Points were cleaned and the magneto produced spark at all ignition leads when bench tested. The impulse coupling released normally,

The ignition harness hardware exhibited corrosion due to saltwater immersion.

All spark plugs were contaminated with undetermined debris/sediment and corrosion due to saltwater immersion.

Fuel pump: The drive gear and coupling were intact. The pump exhibited corrosion from saltwater immersion and would not turn manually. Impeller blades were intact. Fuel fittings were impact separated.

Throttle body metering unit: control arms were secured, and the fuel screen was clean.

Fuel manifold valve: Assembly screws were properly secured, and a lead seal was present. The spring, diaphragm and fuel screen were intact. A small amount of contamination was found in the valve body.

Fuel nozzles and lines: All fuel injectors were open. All fuel injection lines were open and undamaged.

Oil sump: The oil sump was impact damaged and the quick drain was partially separated.

Oil pickup tube/screen: The pick-up screen was clean, but the mounting brace was impact damaged.

Oil pump: The oil pump exhibited normal wear with no evidence of hard particle passage. Pump gears, relief valve and spring were intact.

Oil screen: The oil screen was clean with no metal contamination. A small amount of undetermined contamination was present due to saltwater immersion.

Oil cooler: The oil cooler coils were contaminated with mud, but no impact damage was noted.

Cylinder #1: Other than debris in the cooling fins and corrosion damage to cylinder wall surfaces, the cylinder was unremarkable.

Cylinder #3: Other than debris in the cooling fins and corrosion damage to cylinder wall surfaces, the cylinder was unremarkable.

Cylinder #5: Other than debris in the cooling fins and corrosion damage to cylinder wall surfaces, the cylinder was unremarkable.

Cylinder #2: Other than debris in the cooling fins and corrosion damage to cylinder wall surfaces, the cylinder was unremarkable.

Cylinder #4: Other than debris in the cooling fins and corrosion damage to cylinder wall surfaces, the cylinder was unremarkable.

Cylinder #6: Other than debris in the cooling fins and corrosion damage to cylinder wall surfaces, the cylinder was unremarkable.

Valves and guides: All valves were intact and exhibited normal combustion deposits.

Rocker arms and shafts: All rocker arms, shafts, valves springs and retainers were intact.

#1 PISTON, RINGS AND PIN: The piston exhibited normal combustion deposits. Rings exhibited corrosion due to saltwater immersion.

#3 PISTON, RINGS AND PIN: The piston exhibited normal combustion deposits. Rings exhibited corrosion due to saltwater immersion.

#5 PISTON, RINGS AND PIN: The piston exhibited normal combustion deposits. Rings exhibited corrosion due to saltwater immersion.

#2 PISTON, RINGS AND PIN: The piston exhibited normal combustion deposits. Rings exhibited corrosion due to saltwater immersion.

#4 PISTON, RINGS AND PIN: The piston exhibited normal combustion deposits. Rings exhibited corrosion due to saltwater immersion.

#6 PISTON, RINGS AND PIN: The piston exhibited normal combustion deposits. Rings exhibited corrosion due to saltwater immersion.

Crankcase: The crankcase assembly was unremarkable.

#1 MAIN BEARINGS: The bearing exhibited normal wear patterns.

#2 MAIN BEARINGS: The bearing exhibited normal wear patterns.

#3 MAIN BEARINGS: The bearing exhibited normal wear patterns.

#4 MAIN BEARINGS: The bearing exhibited normal wear patterns.

#5 MAIN BEARINGS: The bearing exhibited normal wear patterns.

Crankshaft: The crankshaft exhibited normal wear on bearing surfaces with a small amount of corrosion damage due to saltwater immersion.

Transfer collar: Unremarkable. The bearing surfaces were normal.

Counter weights: The counter weights were intact and moved freely on pins. All clips and plates were intact and unremarkable.

Connecting rods: All connecting rods, bolts and nuts were intact and unremarkable.

#1 CONNECTING ROD BEARING: The rod bearings exhibited normal wear patterns.

#3 CONNECTING ROD BEARING: The rod bearings exhibited normal wear patterns.

#5 CONNECTING ROD BEARING: The rod bearings exhibited normal wear patterns.

#2 CONNECTING ROD BEARING: The rod bearings exhibited normal wear patterns.

#4 CONNECTING ROD BEARING: The rod bearings exhibited normal wear patterns.

#6 CONNECTING ROD BEARING: The rod bearings exhibited normal wear patterns.

Camshaft: The lobe bearing surfaces exhibited pitting from corrosion.

Lifters: Lifter faces exhibited a slight amount of surface pitting.

Accessory gears: Accessory gears were unremarkable.

Starter: The starter motor would not rotate manually due to saltwater immersion.

Starter adapter: Unremarkable

Alternator: Unremarkable.

Vacuum pump: The vacuum pump rotated manually, and shear drive couplings were intact. The carbon rotor and individual vanes were intact.

Propeller governor: Unremarkable.

4.0 Propeller Examination

The propeller was observed separated from the engine. Propeller blade #1 was observed twisted. Propeller blade #2 was observed displaced at a 45° angle at approximately mid span towards the flat side of the blade and exhibited some leading-edge scratching near the tip.