



**National Transportation
Safety Board**

Memorandum For The Record

DATE: May 31, 2019

FROM: Courtney Liedler, NTSB IIC

SUBJECT: Details of Aircraft Wreckage Examination for N2583V

On May 29-30, 2019, the NTSB, Textron, and CMI completed an initial on-site documentation of the accident scene. On May 31, 2019 the wreckage was removed from the field by family members.

Airframe

The engine and instrument panel were displaced aft into the cabin and the left and right wing sustained impact compression damage along their entire lengths. The tail exhibited accordion compression damage and the leading edge of the vertical stabilizer also sustained ground impact damage.

Control cable continuity was established from the rudder, elevator, and elevator trim tab to the forward cabin floor assembly. The S-TEC autopilot pitch servo bridle cable remained wound around the capstan and was securely clamped to the elevator cables. The "UP" elevator cable was observed attached to the forward elevator bellcrank. The "DOWN" elevator cable was not observed at the forward bellcrank due to compression damage. The rudder pedal cable connections at the rudder torque tubes were also not observed due to compression damage. The elevator trim cables were observed swaged to the forward chain assembly which remained engaged on the forward sprocket.

The left and right aileron cables were continuous from the aileron bellcranks in the wings to the aft door posts where they had been cut by first responders. The aileron carry-through cable was continuous from bellcrank to bellcrank. The S-TEC autopilot roll servo bridle cable remained wound around the capstan and was securely clamped to the aileron cables in the left wing. The left and right aileron chains remained engaged on the sprockets at the control wheels. The aileron interconnect cable located behind the instrument panel had been cut by first responders just above the interconnect pulley assembly.

The flap actuator indicated the flaps were retracted. The flap cables were continuous from bellcrank to bellcrank.

The fuel selector valve handle was found near BOTH. The fuel selector valve was not removed from the aircraft due to floor compression damage.

The left and right main landing gear remained attached to the aircraft. The nose gear was separated from the firewall and was found under the fuselage.

The cockpit instrument panel was fragmented, with many of the instruments missing or crushed.

Engine

The engine was located at the impact crater and was partially surrounded by the firewall and instrument panel. The engine was hoisted from the ground and separated from the airframe by cutting or detaching the various lines, cables and wiring.

All four engine mount legs were fractured. The induction and exhaust systems exhibited impact damage. The oil sump was mostly fractured into several small pieces exposing the bottom side of the crankcase.

The fuel pump had separated from the engine and was located near the impact crater and exhibited impact damage. The mixture control arm turned freely by hand from stop to stop. All the fuel pump's fuel line fittings were fractured.

The fuel manifold valve remained partially attached to the engine and was disassembled. The diaphragm was intact, and the retaining nut was secure. The fuel screen was free of obstruction. A small amount of fuel was observed in the manifold valve cavity.

The fuel nozzles, except for the No. 4 fuel nozzle, were removed and found to be free of obstruction. The No. 4 fuel nozzle could not be removed due to impact damage.

The throttle body was found in the aircraft debris field and exhibited impact damage. The throttle plate moved freely by hand from stop to stop.

The magnetos and ignition harness were removed from the engine and exhibited impact damage. The ignition harness was cut and frayed on all ignition leads. The right magneto drive turned freely by hand with impulse coupling engagement noted. The left magneto drive did not turn freely by hand but was turned with a wrench. Neither magneto produced spark, they were disassembled, and no anomalies were noted.

The top spark plugs were removed and exhibited light grey combustion deposits. The electrodes were "normal to severe" worn, when compared with the Champion Check a Plug chart.

The valve covers were removed, except for the No. 5 cylinder which the top of the cylinder head was impact separated from the cylinder. All the valves and springs were intact with a coating of oil.

Continuity from the front of the engine to the rear of the engine was visually observed through the bottom of the crankcase. No signs of internal failure of the crankshaft, camshaft or connecting rods were noted.

Propeller

The two-bladed McCauley constant-speed propeller was separated from the engine. A portion of the propeller hub and spinner remained attached to the crankshaft. Both propeller blades were impact separated; one propeller blade remained in the initial impact hole and the other blade was found about 30' to the right of fuselage.

Both blades exhibited leading edge gouges and chordwise scoring. One propeller blade exhibited multidirectional scratches and leading edge gouges. It was bent aft near the tip of the blade. The second blade exhibited chordwise scratches and leading-edge gouges. The blade was bent forward about midspan and bent aft closer to the tip.