



National Transportation Safety Board

Office of Aviation Safety
Central Region

Wreckage Examination Summary

NTSB Accident No:	CEN18FA236
Accident Date:	Sunday, June 24, 2018
Accident Time:	1957 EDT
Accident Location:	Detroit, Michigan 42°24'26"N 83°01'30"W 625 ft mean sea level
Aircraft Make/Model:	Cessna P210N
Aircraft Registration:	N3896P
Aircraft Serial No:	P21000071
Aircraft Airworthiness Date:	July 27, 1978
Engine Make/Model:	Continental IO-550P (modified by STC SA02918CH with a turbo-normalized system)
Engine Serial No:	1009462
Propeller Make/Model:	Hartzell HC-J3YF-1RF/F8068-2
Propeller Serial No:	JN564B
Examination Dates:	June 25-27, 2018
Examination Location:	Accident Site and Coleman A. Young Municipal Airport (DET) Detroit, Michigan 48234
Participants:	Andrew T. Fox – National Transportation Safety Board Richard K. Neibert – Federal Aviation Administration Edward S. Janos – Federal Aviation Administration Henry J. Soderlund – Textron Aviation Kurt Gibson – Continental Motors

The main wreckage was in a vacant residential lot along Milton Avenue. An onsite survey revealed a 240 ft long wreckage debris path that was oriented on a 137° magnetic heading. There were multiple broken tree branches and a severed electricity service line found along the wreckage debris path. The propeller separated from the engine and was found at the base of a tree about 75 ft from the main wreckage. An area of burnt ground surrounded the main wreckage, which consisted of the fuselage, empennage, both wings, and the engine. The main wreckage was found inverted and facing northwest. Most of the forward fuselage, including the cockpit and instrument panel, was destroyed

during the postaccident fire. The airplane's recording hour meter was destroyed during the postaccident fire. Flight control cable continuity was established from each flight control surface to its respective cockpit control. The wing flap actuator measured 2.6 inches, which was consistent with a 10° flap extension. Both wing fuel tanks were damaged during the accident. The fuel filter assembly was not located in the wreckage and was likely destroyed during the postaccident fire. The fuel selector valve was positioned to draw fuel from the right fuel tank. A functional test of the fuel selector valve did not reveal any anomalies.

The nose and right main landing gear were found fully extended and secured by their respective downlocks. The left main landing gear was found fully retracted in the wheel well and secured by its respective uplock. There were small tree branches and leaves observed in the wheel well between the left landing gear leg and the fuselage. Both main landing gear were manually moved between the retracted and extended positions without any anomalies, and their respective up and down lock assemblies secured both landing gear as designed.

The landing gear selector handle and emergency extension handle were not located in the wreckage and were likely destroyed during the postaccident fire. The landing gear motor/pump assembly was damaged during the postaccident fire and its hydraulic fluid reservoir was breached. The hydraulic fluid lines for the landing gear extension/retraction system were significantly damaged during impact and the postaccident fire. There was no evidence of an internal hydraulic fluid leak or any mechanical damage to either main landing gear actuator. The nose landing gear actuator exhibited thermal damage from the postaccident fire. The landing gear actuators were removed from the airframe to be tested after the wreckage has been recovered.

The left main landing gear downlock switch plunger appeared bent and jammed in the closed position, and the plunger did not contact the left gear leg when the gear was fully extended. A continuity check with a multimeter confirmed that the left downlock switch was stuck in the closed position. The right downlock position switch functioned normally when tested with a multimeter. The left main landing gear uplock switch plunger did not contact the left gear leg when the gear was fully retracted. There were no electrical anomalies noted with either main landing gear uplock switch when tested with a multimeter.

The engine remained attached to the firewall. The propeller remained attached to the propeller flange that had separated from the engine crankshaft. All three propeller blades remained attached to the propeller hub and exhibited minor spanwise S-shape bending and chordwise scratching. Internal engine and valve train continuity were confirmed as the engine crankshaft was rotated through a rear accessory gear. Compression and suction were noted on all cylinders in conjunction with crankshaft rotation. A borescope inspection of each cylinder did not reveal any anomalies with the cylinders, pistons, valves, valve seats, or lower spark plugs.

The left magneto remained partially attached to its installation point and provided spark on all posts while the crankshaft was rotated. The right magneto had separated from the engine; however, it provided a spark on all posts when rotated by hand. The upper spark plugs exhibited features consistent with normal engine operation.

The mechanical fuel pump remained attached to the engine and the fuel pump drive coupling was intact; however, the pump exhibited thermal damage and significant resistance when the pump was rotated by hand. The fuel pump was partially disassembled, and the internal components exhibited thermal damage. The fuel metering unit remained partially attached to the engine through fuel lines and control cables. The fuel manifold valve remained attached to the engine and exhibited impact-related damage. None of the engine fuel lines contained residual fuel.

The propeller governor remained attached to the engine and exhibited impact-related damage. The turbocharger remained attached to the engine, and the compressor was capable of normal rotation and exhibited normal operation signatures. There were no anomalies noted with the turbocharger wastegate, controller, or overboost valve.

The oil pump remained attached to the engine and exhibited thermal damage from the postaccident fire. The oil sump was dented and crushed during impact. The oil sump was removed, and no metallic material was observed within the sump. The oil pick-up tube and screen were clear of any contamination. The oil filter remained attached to the remote filter adapter. The oil filter housing was cut open and no metallic material was observed on the filter pleats. The oil filler cap remained attached to the engine; however, when the oil filler cap was removed from the engine, the lower portion of the oil gauge was missing. The missing portion of the oil gauge was not found within the oil sump.

The postaccident engine examination did not reveal any mechanical malfunctions or failures that would have precluded normal operation during the flight.