



National Transportation Safety Board

Office of Aviation Safety
Central Region

Wreckage Examination Summary

NTSB Accident No:	CEN18FA297
Accident Date:	Saturday, July 28, 2018
Accident Time:	1920 CDT
Accident Location:	Alexandria, Minnesota 45.882500°N 95.449722°W 1,402 ft mean sea level
Aircraft Make/Model:	Aeronca 7AC
Aircraft Year of Manufacture:	1946
Aircraft Registration:	N85506
Aircraft Serial No:	7AC-4246
Engine Make/Model:	Continental C90-8F
Engine Serial No:	47229-9-8
Propeller Make/Model:	Sensenich 76AK-2-43
Propeller Serial No:	23704
Examination Date:	July 29-30, 2018
Examination Location:	Accident Site and after being recovered to Chandler Field Airport (AXN) Alexandria, Minnesota 56308
Participants:	Andrew Todd Fox – National Transportation Safety Board (NTSB) Scott F Carlson – Federal Aviation Administration (FAA) Todd G Roth – Federal Aviation Administration (FAA)

The main wreckage was in a grass drainage ditch northwest of the intersection of Townhall Road and 10th Avenue. There were multiple power lines and a fractured power pole strung across the road on a northwest heading. The main wreckage, which consisted of the entire airplane, was found inverted in the drainage ditch facing south. There was no evidence of fire. Flight control cable continuity was established from each flight control surface to its respective cockpit control. Both main landing gear oleo-struts and the propeller exhibited damage consistent with an inflight wire impact. There was no evidence of a wire strike on either wing or the empennage. The recording tachometer indicated 2,665.72 hours. The forward seat throttle was positioned about ¾ full travel. The airplane was not equipped with a mixture control. The primer control was pushed in and secured. The magneto switch was on BOTH. The carburetor heat control

was OFF. The cabin heat control was OFF. The airplane was not equipped with an electric master switch, but the single 10-ampere circuit breaker was not tripped. The single communication radio was selected to the common traffic advisory frequency (123.0 MHz). The airplane was not equipped with a transponder. The fuel shutoff valve was ON. The fuel caps were installed and secured on all fuel tanks. Fuel was observed in the main/header tank and both auxiliary wing tanks. Collected fuel samples were blue in color, had an odor consistent with 100 low-lead aviation fuel, and did not exhibit any evidence of water or particulate contamination. The fuel selectors for the auxiliary wing tanks were in the OFF position. A functional test of the fuel shutoff valve did not reveal any anomalies and confirmed fuel flow was from the main/header tank. The fuselage mounted gascolator had shattered during impact and fuel was observed flowing from the fuel supply line. The postaccident examination did not reveal any anomalies that would have precluded normal airplane operation during the flight.

The engine remained attached to the firewall. The propeller remained attached to the propeller flange. One propeller blade was bent aft about midspan and exhibited chordwise scratching and leading-edge gouging that was consistent with an inflight wire strike. The other propeller blade exhibited a slight aft bend, a single leading-edge gouge, and minor chordwise scratching near the blade tip. Internal engine and valve train continuity were confirmed as the propeller was rotated. Compression and suction were noted on all cylinders in conjunction with crankshaft rotation, and acceptable cylinder pressures were measured using a differential pressure gauge. The induction manifold and intake pipes exhibited signatures of normal operation, with no excessive fuel staining observed. The upper spark plugs were removed and exhibited features consistent with normal engine operation. A borescope inspection of each cylinder did not reveal any anomalies with the cylinders, pistons, valves, valve seats, or lower spark plugs. The right magneto attached to its installation point and provided spark on all posts while the crankshaft was rotated. The left magneto remained attached to the engine; however, the impulse coupling did not function as the crankshaft was rotated. The left magneto was removed and provided a spark on all posts when rotated by hand. Right magneto-to-engine timing was confirmed to be at top-dead-center on the number 1 cylinder. A full teardown of the engine did not reveal any internal component failures. Adequate lubrication oil was observed throughout the engine and there was no evidence of oil starvation or excessive heat. No metal material was observed after a magnet was passed through the engine sump. The oil filter tube pickup and oil filter screen were free of metallic material. Throttle control cable continuity was confirmed from the cockpit to the carburetor throttle arm. The carburetor mixture arm was safety-wired in the full rich position. The carburetor bowl contained about ½ fluid ounce of fuel; however, the airplane had been inverted for nearly 24 hours before being recovered. The carburetor bowl did not contain evidence of water or particulate contamination. Disassembly of the carburetor did not reveal any anomalies with the single-piece venturi, metal floats, or needle valve. The postaccident examination did not reveal any anomalies that would have precluded normal engine operation during the flight.

The 1946-model-year airplane, serial number 7AC-4246, was a high-wing monoplane constructed of fabric-covered steel tube and wood. The airplane was powered by a 90-horsepower, 4-cylinder, Continental C90-8F reciprocating engine, serial number 47229-9-8. The engine provided thrust through a fixed-pitch, two-blade, Sensenich 76AK-2-43 propeller, serial number 23704. The two-seat airplane was equipped with a fixed conventional landing gear. The airplane had a maximum allowable takeoff weight of 1,300 pounds. According to maintenance documentation, the last annual inspection was completed on June 28, 2018, at 5,980 total airframe hours. The airplane had accumulated 11.72 hours since the last annual inspection. The engine had accumulated 791.72 hours since being overhauled on January 17, 1978. A postaccident review of the maintenance records found no unresolved airworthiness issues.