



National Transportation Safety Board

Office of Aviation Safety
Central Region

Wreckage Examination Summary

NTSB Accident No: CEN16LA228
Accident Date: June 10, 2016
Accident Time: 1520 MDT
Accident Location: Deming Municipal Airport (DMN)
Deming, New Mexico
32°15'44.6"N
107°43'08.4"W
4,314 ft mean sea level

Aircraft Make/Model: Cessna 172S
Aircraft Registration: N21767
Aircraft Serial No: 172S9635
Engine Make/Model: Lycoming IO-360-L2A
Engine Serial No: L-30620-51A
Propeller Make/Model: McCauley 1A170E/JHA7660
Propeller Serial No: YB23031

Examination Date: August 11, 2016
Examination Location: Deming Municipal Airport (DMN)
Deming, New Mexico

Participants: Geary Monckton – Federal Aviation Administration
Peter Basile – Textron Aviation
Mark Platt – Lycoming Engines

A postaccident examination was conducted by a FAA airworthiness inspector and investigators from the airframe and engine manufacturers on August 11, 2016. This wreckage examination summary was compiled from information provided to the NTSB investigator during a phone call with the participants on August 11, 2016, and from examination field notes later submitted to the NTSB investigator. The initial point-of-impact was on taxiway C adjacent to runway 4. The airplane impacted the ground in a nose-low and right-wing-low attitude. There was a propeller slash mark observed in the asphalt taxiway. The wreckage debris path was oriented on east heading. The nose landing gear strut and wheel had separated from the airplane. The forward fuselage exhibited compression damage that was consistent with a nose-down impact. The right main landing gear strut was bent upward and aft, and the right wheel and tire had separated

from the axle. The left wing remained attached to the airplane and appeared undamaged. The right wing was bent down at the wing root, and the right lift strut was fractured about midspan. The right aileron was in one piece and remained attached to the middle and inboard hinges. The tail was fractured at the forward edge of the vertical stabilizer. The elevator and rudder remained attached to their respective horizontal and vertical stabilizers. Flight control cable continuity was established from the ailerons and elevators to the control yokes. Partial control cable continuity was established from the rudder and elevator trim tab to the forward floor assembly under the pedestal where impact-related damage had jammed the rudder pedals and the elevator trim control chain. The wing flaps were found fully retracted. The wing fuel tanks were not ruptured; however, the airplane had come to rest upright and the fuel had drained out of a fractured fuel supply line forward of the firewall. The fuel caps remained attached to both wing fuel tanks. The fuel selector was found in the BOTH position. The firewall fuel shutoff valve was found open. The fuel strainer assembly did not contain any debris. The ignition switch was found in the BOTH position. The master battery and alternator switches were found ON.

The engine had separated from the firewall and was found inverted at the accident site. The engine was recovered to a hangar where it was stored upside down until the examination. Internal engine and valve train continuity were confirmed while the engine crankshaft was rotated through a rear accessory gear. Compression and suction were noted on all four cylinders in conjunction with crankshaft rotation. The spark plugs were found installed and secured at each cylinder position with their respective spark plug lead attached. The ignition harness was found attached to both magnetos and the individual spark plug leads. The ignition harness exhibited impact-related damage and was not tested. The spark plugs were removed and exhibited features consistent with normal engine operation. The upper spark plugs were covered in engine oil, consistent with the engine being upside down after the accident. The lower spark plugs were not covered in oil and their electrodes exhibited coloration consistent with normal operation. The left magneto was found securely clamped at the mounting pad. The left magneto impulse coupling was audible when the engine crankshaft was rotated, and the magneto-to-engine timing measured 25° before top dead center (BTDC) at the No. 1 cylinder. The left magneto was removed, and its drive was intact and properly secured. The left magneto produced a spark at all four plug leads when rotated by hand. The right magneto was found securely clamped at the mounting pad. The right magneto impulse coupling was audible when the engine crankshaft was rotated, and the magneto-to-engine timing measured 26° before top dead center (BTDC) at the No. 1 cylinder. The right magneto was removed, and its drive was intact and properly secured. The right magneto produced a spark at all four plug leads when rotated by hand. A lighted borescope inspection of each cylinder did not reveal any anomalies with the cylinders, pistons, valves, or valve seats. The engine compartment fuel lines were found intact and secured at their respective fittings. The fuel injection servo remained attached to the mounting pad of the plenum. The throttle and mixture controls were found attached to their respective control arm on the fuel servo. The fuel inlet screen was properly installed and free of contamination. There were no obstructions observed to the fuel servo and the associated induction system. Fuel was found in the fuel pump and manifold valve. The fuel pump was removed, and its drive mechanism was intact. The fuel injection nozzles were free of contamination or obstruction. The exhaust system gas path did not contain any oil residue, and the exhaust tubes exhibited significant ductile bending from impact-related damage. The postaccident engine examination did not reveal any anomalies that would have precluded normal operation during the flight.

The two-blade fixed-pitch propeller remained attached to the crankshaft flange, and the spinner remained attached to the propeller. Both propeller blades exhibited leading edge gouges, torsional twisting, chordwise striations across the cambered surface, and trailing edge S-shape bends. One propeller blade was missing about 6 inches of blade tip and the fracture features were consistent with impact-related damage.

The airplane's recording hour meter and tachometer indicated 9,064.8 hours and 7,416.8 hours, respectively.