

WRECKAGE EXAM
CEN19FA029
N4817M
Liberal, Kansas

The airplane was upright in a field and about 3 miles south of runway 5 at LBL. The airplane was north of a downed west/east power line. The airplane landing gear displayed features consistent with a strike with the power line. The airplane was configured with the landing gear extended, and the flaps were fully retracted. Both propellers displayed torsional features consistent with engine operation.

Wreckage Path Heading:

038 degrees

Main Wreckage Tail to Nose Heading:

023 degrees

Powerline Coordinates:

36 degrees 59.054 N

100 degrees 57.309 W

Elevation: 2770 feet

Nose Gear Coordinates:

36 degrees 59.070 N

100 degrees 57.312 degrees

Right Wing Tip Crater with Right Prop Piston Coordinates:

36 degrees 59.092 N

100 degrees 57.312 W

Main Wreckage Coordinates

36 degrees 59.107 N

100 degrees 57.313 W

Ground scarring was about 39 feet in length. The Landing gear was extended. The nose landing gear had a mark consistent with features of a strike with the top static wire strike.

Flap cockpit was up and flap jack actuator was extended about 1.9 inches which equated to 0 degrees flap extension. Pitch trim actuator was extended about 1.1 inches which equated to 5 degrees tab down. The rudder trim actuator was 3.9 inches extension equating to neutral trim. Aileron trim actuator was 1.5 inch extension which was neutral. Rudder and elevator trim from flight control to the aft wing spar to the elevator and rudder control surfaces. Flight control continuity was confirmed.

The emergency locator transmitter (ELT) was detached from its mount and the mount latch was latched. The ELT switch was in the off position. A baseball cap was found behind the aft baggage compartment bulkhead in the left corner (tail to nose) and it was not obstructing flight control cables/pulleys/hardware.

The oxygen cylinder was removed, and gas expelled for several minutes from the tank.

The airplane had an alcohol deice system for the left pilot side windshield and both propellers. The airplane had an alcohol deice system for the left pilot side windshield and both propellers. A 3-gallon alcohol tank for the de-ice system was in the nose area, and the tank's filler port was covered by the nose baggage compartment insulation that was covered by the nose baggage compartment carpeting. During post-accident examination, access to the tank's filler port was gained by removal of the carpeting and insulation. The tank was dry and exhibited corrosion and dryness of gasket material consistent with long term non-use. The lines leading from the tank to the pump did not contain fluid and were dry. The alcohol de-ice pump was functional and operated when tested. The airplane wings, stabilizer, and windshield were not equipped with anti-ice/de-ice systems. The airplane was not certified for flight into icing conditions.

Both propellers were broken off at their hubs and exhibited a 45-degree fracture face consistent with torsional overload. The right propeller was located about 30 feet east of the wreckage. The right propeller blades exhibited S-shaped bending, damage consistent with a static wire strike, and chordwise scratching/polishing. The left propeller was under the nose section of the airplane and its blades exhibited S-shaped bending and chordwise scratching/polishing.

Both wing filler caps were secure. The right wing tank leaked from the aft section of the bladder tank, which was broken open due to the impact. About 8 gallons of 100 LL fuel was recovered from the right tank. The left tank was not broken open and about 35 gallons were drained during recovery.

Both fuel selectors were in the ON position.

There was an airplane flight manual in the airplane and there was no weight and balance. There was an airworthiness certificate and a registration in the airplane.

The left fuel selector was positioned to ON and the right fuel selector was positioned to ON.

The left and right gascolators and screens did not have debris.

The attitude indicator gyro gimbals moved without binding. The gyro was rotated by hand without binding. The gyro surface and casing exhibited circumferential scoring.

The left and right engine induction and exhaust systems were intact, secure, and not obstructed. The left engine left elbow to the throttle body was separated from the risers due to impact damage. Both magnetos of both engines exhibited electrical spark in correct order when the engines were rotated through the accessory drive.

Air was expelled out of and drawn into the top spark plug holes when the engines were rotated through by hand.

The flow divider and screens did not contain debris. The flow divider diaphragms were pliable and intact. The divider springs were intact and not broken. The fuel injectors were unobstructed.

The engine oil and fuel lines were intact and secure. The right engine fuel inlet line to the metering assembly was broken off due to impact damage

Both engines were wetted with oil.

The propeller governors contained oil and their screens did not contain debris.

The throttle body screens did not contain debris.

The engine driven fuel pumps were rotated though by hand and exhibited no anomalies. The left and right auxiliary electric fuel pumps were operated without anomaly with the application of 24 VDC at high and low positions.

Engine rotation confirmed valve and drive train continuity to the accessory section.

Borescope examination did show piston scoring, valve strikes, or dentation.

Both engines' vacuum pumps produced suction when their drive shafts were rotated by hand. The vacuum pumps' rotators and vanes were intact and unbroken. The vacuum system filters on both engines were white in color and did not contain debris.

The engine oil filters were cut open and there was no metallic debris.

The top and bottom park plugs of both engines displayed features of normal combustion.

There were no mechanical anomalies that would have precluded normal aircraft operation.