

ACCIDENT SITE, AIRFRAME AND ENGINE EXAM

The accident site was located in an open field about 8 miles north-east from the departure airport. Physical evidence indicated that the airplane initially impacted a set of guy wires that were secured to the top of a 1586-foot television tower. The guy wires descended to the ground on about a 45° angle and were anchored in the field about 600 ft north and south of the tower. The guy wires were directly in line with and perpendicular to the airplane's flight path.

After impacting the guy wires, the airplane crossed a county road, and came to rest on a 044° heading about 1,100 feet west from the tower. An outboard section of the airplane's left wing, about 5 feet in length, was located about 468 ft. south of the tower. Additionally, impact marks and stripped paint found on the separated wing piece were consistent with the imprints and paint transfer from the wire.

The airplane impacted terrain in a nose down near vertical attitude and was severely deformed by impact forces. Both wings sustained significant compression damage along the entire length of the leading edge. The right wing and the inboard section of the left wing remained partially attached to the fuselage. The empennage folded over the fuselage in a "scorpion-like fashion" indicating that most likely the airplane entered a stall spin after the left wing separated. The upper rudder cap was separated, and the vertical stabilizer sustained crush damage to the left. The cockpit was crushed and deformed.

Partial control cable continuity was established due to compression damage to the cockpit and cabin area. Continuity was established from the tail flight control surfaces to approximately Fuselage Station (FS) 57 and from the aileron and flap bellcranks to the wing root.

Both control yokes were fractured. Rudder pedals were visible on the pilot side. No cables were observed due to impact damage to the fuselage.

The fuel selector handle and valve were not observed due to impact damage to the cockpit area. The right fuel tank separated with one portion remaining in the wing, another was located 68 ft south-west from the main wreckage. The left fuel cap was observed closed and secured; the right fuel cap was not observed.

All three landing gear remained attached to the aircraft. The nose landing gear was forced aft during the impact sequence. The instrument panel was destroyed during the impact sequence. The tachometer was identified in the wreckage; the needle was pegged at 2300. The propeller remained attached to the engine. One blade was bent aft at the root; the second blade exhibited S-bending. Both blades had leading edge polishing and chordwise scratches.

With the exception of the outboard section of the left wing and the portion of the right fuel tank, the entire wreckage was located within about a 50-ft radius of the main wreckage site.

The engine was imbedded in the ground with the airframe firewall wrapped around the back of the engine. The starter and vacuum pump were impact separated from the engine and exhibited damage. The crankcase had a large crack above the number three cylinder.

The carburetors upper housing was impact fractured in several pieces between the induction manifold and the fuel bowl. The throttle and mixture control arms sustained impact damage. The fuel screen was free of debris. The ignition harness was severed in several places. The right magnetos base remained attached to the accessory section, however the remainder of the right magneto was impact

separated into several pieces. The left magneto was impact separated from the engine and found loose in the aircraft debris. The left magneto sustained impact damage to the housing and the drive shaft was bent. The left magneto rotated by hand with impulse coupling engagement and produced spark at the points. The top spark plugs were removed and the electrodes were worn out normal compared to the Champion Check a Plug chart. The spark plugs exhibited light colored combustion deposits. The crankshaft could not be rotated by hand which was attributed to impact damage to the crankcase. Cylinders two and four were examined with a lighted borescope with no anomalies noted. Cylinders one and three had pistons at or near top dead center and could not be examined internally. The rocker covers were removed and no anomalies were noted.