



MEMORANDUM OF RECORD

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National Transportation Safety Board Office
of Aviation Safety - Eastern Region

NTSB Case Number: ERA19FA010

Place: Accident Site Culpeper Regional Airport
(CJR), Culpeper, Virginia

Examination date: 10/13-14/2019

Subject: Airframe and Engine Wreckage
Examination summary

Airframe Examination

Examination of the accident site revealed that the airplane came to rest 300 ft from the end of left side of runway 22. The airplane was in a 5 ft deep crater, inverted, on a 22° magnetic heading and all flight control surfaces were found at the accident site. The airplane was severely fragmented and deformed. All necessary components for flight were accounted for at the accident site. The fuselage was crushed and the main wing spar remained attached to the fuselage. The instrument panel and all instruments and switches was destroyed.

Examination of the airplane revealed the left wing sustained impact crush damage throughout its span. The left flap was crushed and remained attached to the wing's trailing edge at all attach points. The flap was observed in the up/retracted position. The left aileron, which was bent, remained attached to the trailing edge of the wing at all attach points. The push rod control end was broken and separated from the aileron. The left elevator remained attached to the left horizontal stabilizer at all attach points. The outboard section of the elevator was fragmented. The elevator control tube remained attached to the elevator bellcrank. The left horizontal stabilizer remained attached to the empennage and was deformed through its span.

Examination of the right wing revealed it sustained impact crush and fragmentation damage throughout its span. The right flap was crushed and remained attached to the wing's trailing edge at all attach points. The flap was observed in the up/retracted position. The right aileron, which was bent, remained attached to the trailing edge of the wing at all attach points. The push rod control end was broken and separated

from the aileron. The right elevator remained attached to the right horizontal stabilizer at all attach points. The right horizontal stabilizer remained attached to the empennage and was deformed through its span.

Examination of the vertical stabilizer revealed it was crushed and remained attached to the empennage. The rudder remained attached to the vertical stabilizer at all attach points and was also crushed. The rudder control cables were still attached to the rudder.

Both the left and right main landing gear were impacted damaged, but they remained attached to the fuselage at all attach points.

Aileron push-pull rods were attached to the right and left aileron bellcranks. The aileron push-pull rods had numerous breaks throughout the length of the rods. The elevator push-pull rod was attached at the elevator aft bellcrank, and at the elevator. The tube was crushed and fragmented forward to the cockpit. The push-pull rod from the bottom of the control stick to the forward elevator bellcrank was crushed. The rudder cables had tension overload-type separations at various sections throughout the length of the cables to the rudder pedals.

Powerplant Examination

The engine was crushed and remained partially attached to the airframe. The engine crankcase was cracked. The crankshaft was bent and could not be rotated. A significant amount of mud was compacted into the engine. The ignition system and parts of the fuel system were fragmented. The magnetos remained attached to the accessory section and were crushed. The ignition leads were broken away from both magneto towers. The vacuum pump separated and was not recovered. The fuel pump was separated from the mounting flange. The fuel servo was fragmented and the oil sump was destroyed. The induction system was destroyed. The top sparkplugs were removed from their respective cylinders and all displayed a light grey color consistent with lean fuel-air mixture settings. There was no sign of lead or carbon fouling.

The propeller hub remained attached to the crankshaft and was impact damaged. Both propeller blades were separated from the propeller hub. One blade was fragmented and the other was broken at the hub root.

Due to the extent of the engine damage a functional test could not be performed.