

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR21FA353

ACCIDENT SITE, AIRFRAME, AND ENGINE EXAMINATION

September 30, 2021

A. ACCIDENT

Location: Billings, Montana
Date: September 26, 2021
Time: 1922 mountain daylight time
Airplane: N354M, Beech S35

B. ACCIDENT SITE, AIRFRAME, AND ENGINE EXAMINATION

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C. DETAILS OF THE EXAMINATION

1.0 Accident Site

GPS Location: 45.715822, -108.577405
Main Wreckage Elevation: 3,158 ft msl

Examination of the accident site revealed the airplane came to rest within a tree line about 450 ft north of the runway, and about 1,938 ft northeast of the approach end the runway. All major structural components of the airplane were located within about 40 ft of the main wreckage.

Examination of the accident site revealed the airplane impacted trees about 450 ft north of runway 6, about 1938 ft east of the runway, and came to rest on a heading of about 108°.

Examination of the runway revealed that the first identified point of contact was a tire mark, consistent with the left main landing gear, about 882 ft from the approach end of the runway. An additional mark, consistent with the right main landing gear was observed about 924 ft from the approach end of the runway. A solid black track, consistent with main tire material transfer, originated from both marks and progressed toward the left side of the runway. The tracks exited the runway surface about 1,078 ft from the approach end of the runway.



Figure 1: Runway marks with annotations.

A ground scar consistent with a left wing impact was about 60 ft in length was located about 1,500 ft from the approach end of the runway, and 91 ft left of the runway edge. Additional ground scars, consistent with the main landing gear, was observed about 68 ft beyond the end of the left wing ground scar and arced toward the north and main wreckage.

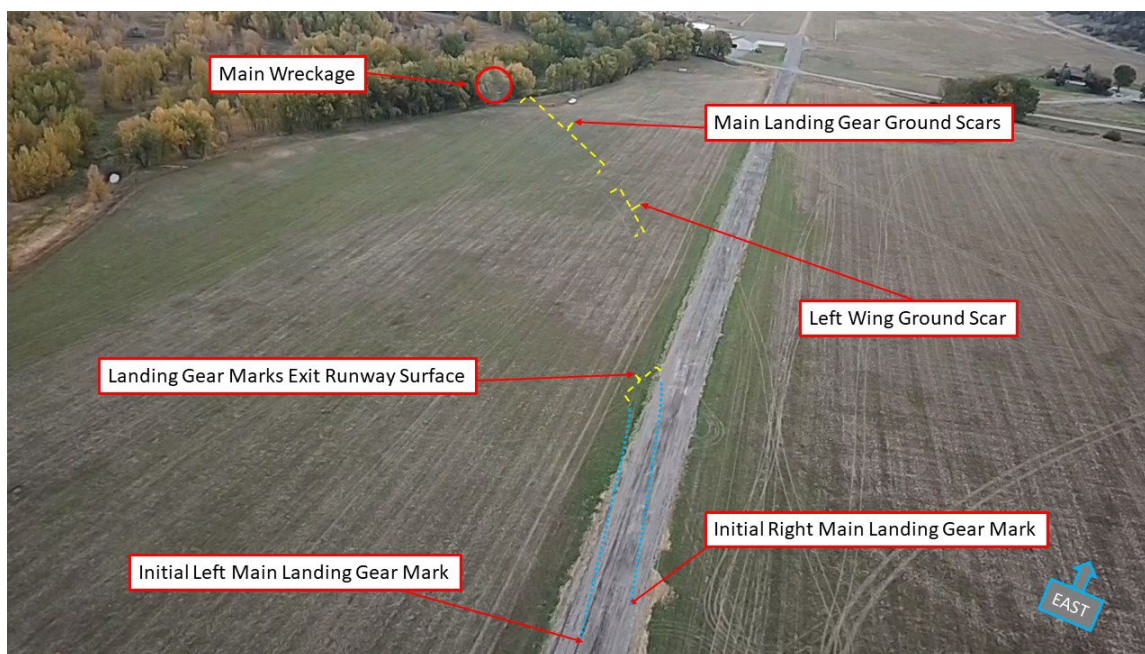


Figure 2: Accident site diagram with annotations. Photo courtesy of a witness.

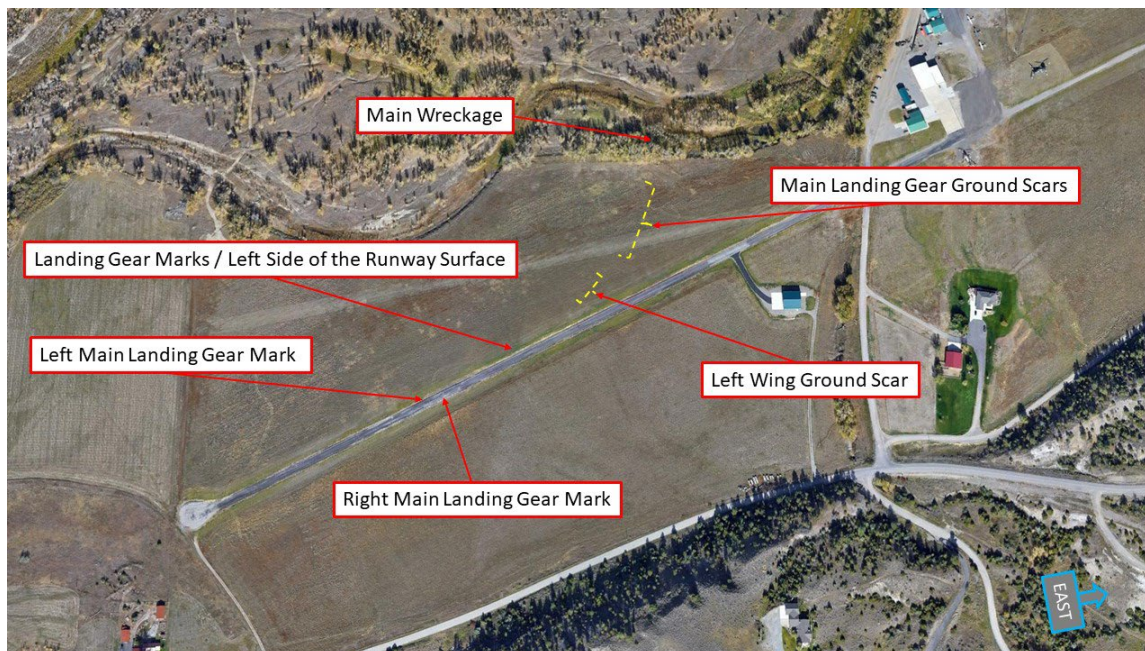


Figure 3: Accident site diagram.



Figure 4: Accident site diagram.

2.0 Airframe Examination

The fuselage was significantly fire damaged from the firewall aft to just behind the baggage area. The fuel selector valve was found in the "right" fuel tank position. The flap actuator was measured to be full down, or flaps 30°. The ELT switch was found in the "armed" position. The instrument panel and control column were mostly

consumed by fire. The empennage was intact. The left and right elevon was separated and rotated about 180°. The elevon trim was measured to be 5° tab down.

The right wing remained attached to the fuselage. The wing exhibited significant fire damage from the landing gear inboard to the root. The leading edge about 18 inches from the wing tip exhibited a large circular impression extending from the leading edge aft to the main spar. The aileron remained partially attached via the inboard mount. The flap remained attached and was in the extend position. The landing gear was in the extended position.

The left wing remained attached to the fuselage. The outboard portion of the wing from the flap/aileron junction to the wingtip was separated and located about 30 ft from the main wreckage. The middle portion of the wing between the main and aft spars was heavily fire damaged. The leading edge of the inboard portion of the wing exhibited buckling and upward compression throughout its span. The flap remained attached to the inboard portion of the wing. The outboard portion of the wing exhibited a circular impression near the wingtip. The aileron remained attached to the outboard portion of the wing.

Flight control continuity was established from the ailerons to the control column. Elevon control continuity was established from the forward spar aft to the control surfaces.

3.0 Engine And Propeller Examination

The engine remained attached to the airframe and exhibited thermal/fire damage. The propeller remained attached to the engine. Propeller blade 1 exhibited leading edge polishing near the blade tip with no other apparent damage. Propeller blade 2 was bent about 90° aft about 12 inches outboard of the hub. The propeller blade exhibited leading edge polishing about mid span with a significant leading edge nic. Propeller blade 3 was mostly undamaged with the exception of a large leading-edge gouge about mid span.

Submitted by:

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