

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR22FA214

ACCIDENT SITE, AIRFRAME, AND ENGINE EXAMINATION

August 2, 2022

A. ACCIDENT

Location: Porterville, California
Date: June 18, 2022
Time: 1454 Pacific daylight time
Airplane: N3835U, Cessna 336

B. ACCIDENT SITE, AIRFRAME, AND ENGINE EXAMINATION

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C. DETAILS OF THE EXAMINATION

1.0 Accident Site

GPS Coordinates (Initial Impact - 36.005431, -119.039570)
Elevation: 461 ft

Examination of the accident site revealed that the airplane impacted an open field immediately adjacent to highway 65 on a heading of about 338° and was about 234 ft in length.

The first identified point of contact (FIPC) was a ground crater, about 5.5 ft in length and about 8 ft wide. Adjacent to the start of the crater, was 2 distinct impact marks on the left and right side, consistent with the left and right main landing gear. Embedded within the crater was the front propeller, portions of cowling, and the nose wheel shimmy damper. Extending from the end of the crater, was two distinct impact marks and slightly displaced dirt, consistent with the left and right wing. The marks extended out to wingtip debris and were consistent with the length of the wings. Within the debris of the right wingtip, green nav light lens fragments were observed. Adjacent to the debris of the left wing, was the aileron to aileron bellcrank, embedded within the ground, at an approximate 90° angle.

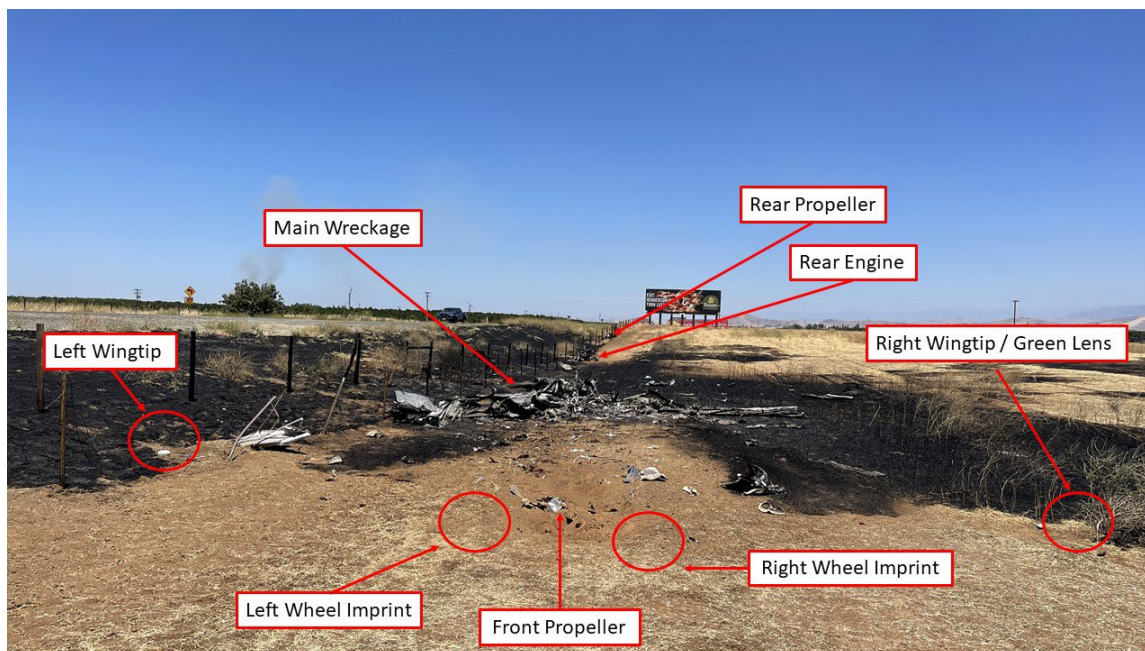


Figure 1: Wreckage diagram.



Figure 2: Wreckage diagram.

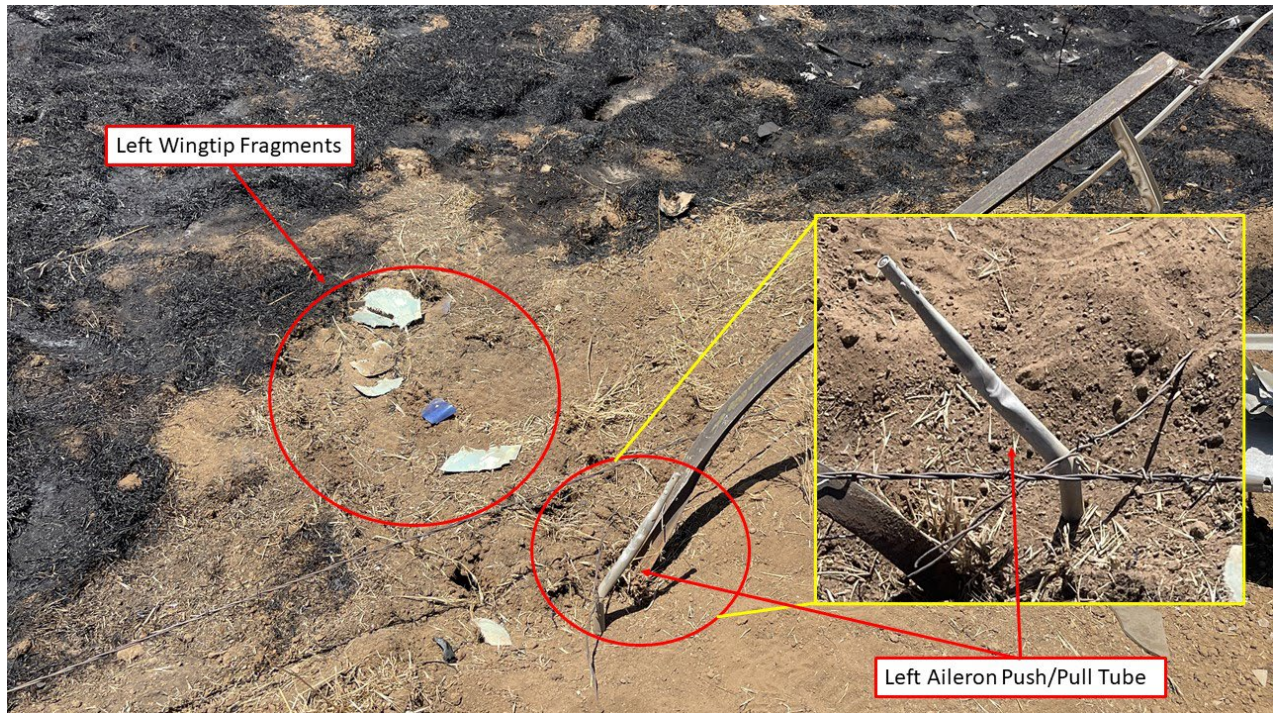


Figure 3: Fragments of the left wingtip, and left wing aileron to bellcrank torque tube.

Extending from the FIPC was portions of various instruments, fragments of avionics, cowling, and fragments of aluminum. The main wreckage, which consisted of the front engine, both wings, left and right booms, remains of the fuselage, and empennage was about 25 ft from the FIPC.

The rear engine was separated from the airframe and located about 147 ft from the FIPC. The rear propeller was located about 234 ft from the FIPC.

The fuselage was mostly consumed by fire. The tailbooms were found inverted. Remains of the throttle quadrant, rudder bar, control columns, seat rails, 2 seatbelt latches, a portion of the instrument panel, and fragments of instruments was located within the fuselage area. The gearbox and front engine were found in the upright position.

The left wing remained partially attached to the fuselage. The wing structure was compressed aft throughout the span of the wing. The forward spar was crushed aft to about 12 to 18 inches forward of the aft spar. The left outboard and inboard flaps were fire damaged and partially attached to the wing structure. The aileron remained partially attached to the wing structure.



Figure 4: Left wing.

The right wing remained partially attached to the fuselage. The wing structure was compressed aft throughout the span of the wing. The forward spar was crushed aft to about 12 to 18 inches forward of the aft spar. Remains of the outboard and inboard flaps were present, however, the flaps were mostly consumed by fire and partially attached to the wing structure. The aileron was mostly consumed by fire and remained partially attached to the wing structure.



Figure 5: Right wing.

The left and right tail booms were impact damaged and partially consumed by fire. The left and right rudders remained attached to the empennage/tail booms and were both fire damaged. The elevator remained attached to the horizontal stabilizer. The horizontal stabilizer remained attached to the tail booms. The elevator and horizontal stabilizer were impact and fire damaged.



Figure 6: Main wreckage, tail booms, and empennage.

Flight control continuity was mostly established throughout the airframe from the cockpit control column and rudder bar throughout to all primary flight control surfaces. The right left and right aileron balance cable was separated in the area of the fuselage, however, exhibited splayed (broomstraw) signatures, consistent with overload.

The front engine remained attached to the mount structure and exhibited thermal and impact damage. The forward portion of the oil sump was impact damaged and exposed the internal components of the engine (cam and crankshaft). The front propeller was separated from the engine. The front propeller blades remained attached to the propeller hub. One blade was twisted/bent opposite direction of rotation about mid span and exhibited chordwise striations/scratches from about mid span to the tip, and blade polishing from the root to the tip on the cambered side of the blade. The opposing blade exhibited chordwise striations on the cambered side of the blade.

The rear engine remained attached to the engine mount, however, was separated from the airframe. The engine was impact and thermally damaged. The rear

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propeller was separated from the engine. The rear propeller blades remained attached to the propeller hub. One propeller blade was bent forward (as it would be mounted on the airplane), about 90° approximately 6 to 8 inches outboard of the blade root. The blade exhibited chordwise striations on the aft side of the blade near the area of the bend, and unidirectional striations on the outboard portion of the blade. The opposing blade was intact and did not appear to be bent. The blade exhibited chordwise striations about mid span on the aft side of the blade.

A main wheel tire and brake assembly was located about 503 ft northeast of the main wreckage.

2.0 Recovered Wreckage Examination

Examination of the recovered wreckage on August 2, 2022, at Plain Parts, Pleasant Grove, California, found the bolt, castellated nut, and cotter pin missing that connects the balance weight to the elevator control assembly. Soot was observed within the area of both connection points, including where the bolt and washer would have been installed. The missing bolt, nut, washer, and cotter key were not located.



Figure 7: View of the separated control rod (balance weight to elevator).



Figure 8: View of the separated control rod (balance weight to elevator).

Submitted by:

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