National Transportation Safety Board
Office of Aviation Safety
Washington, DC 20594

WPR22FA254

ACCIDENT SITE EXAMINATION

July 17, 2022

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A. ACCIDENT

Location: Topeka, Kansas
Date: July 16, 2022
Time: 1153 central daylight time
Airplane: experimental amateur-bult, RV-7, N283S

B. ACCIDENT SITE EXAMINATION

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C. SUMMARY

On July 16, 2022, about 1153 central daylight time, an experimental amateur-bult, RV-7, N283S, was substantially damaged when it was involved in an accident near Topeka, Kansas. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

D. DETAILS OF THE INVESTIGATION

1.0 Accident Site

Examination of the accident site revealed that the airplane came to rest upright a in an open grass field about 375 ft southwest of the departure end of runway 19, at Buena Terra Airport, Topeka Kansas. The wreckage came to rest on a heading of about 340° magnetic, at an elevation of 1,023 ft mean sea level. All major structural components of the airplane were located at the accident location. No visible ground scars were observed in the area near the wreckage.

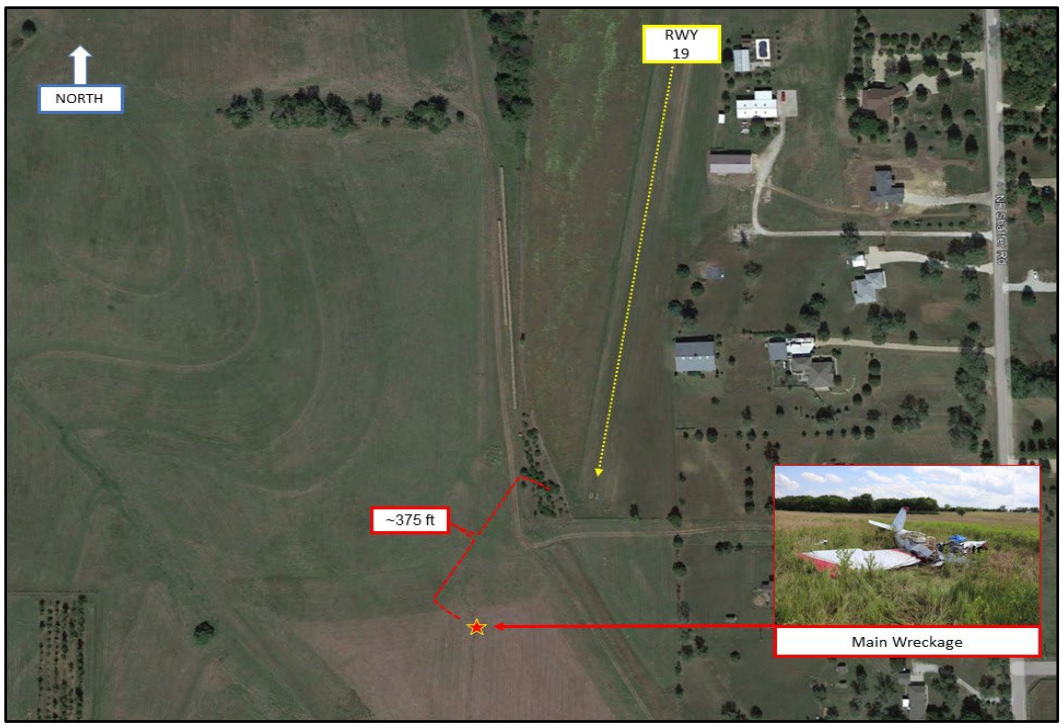

Figure 1: View of the accident site diagram.

2.0 Airframe Examination

The fuselage was mostly intact. The engine and forward portion of the fuselage were impact damaged and displaced to the right. The engine cowling was fragmented consistent with impact damage but remained attached to the fuselage. The engine mount had several fractures, consistent with impact damage.

Figure 2: Front view of accident airplane.

The forward section of the cockpit was impact damaged and crushed aft. The instrument panel was impact damaged with multiple instruments displaced.

Instrument Panel / Cockpit Documentation:

Throttle: Full forward position
Mixture: About mid-range position
Propeller: About mid-range position
Fuel Selector Lever: Left position
Electric fuel pump switch: middle position

The left wing remained attached to the fuselage. The leading edge fragmented from the wing root to about mid span. Crushing and bending was observed throughout the wing. The left-wing tip was separated from the wing and was tethered by various wires. The left flap and aileron remained attached via their mounts. The left aileron was moved by hand, the flight control stick was observed to move in the corresponding direction. The flap was observed partially extended and would rotate freely when moved by hand. The main fuel tank fuel cap location was in the fragmented section of the wing and separated from the filler neck.

Figure 3: View of left-wing.

The right-wing remained attached to the fuselage. Crushing was observed on the leading edge from the wing root to about mid span. The right flap and aileron remained attached via their mounts. The right aileron was moved by hand, the flight control stick was observed to move in the corresponding direction. The flap was

observed partially extended and would rotate freely when moved by hand. The main fuel tank fuel cap was observed in place and secure. No fuel was observed in the fuel tank.

Figure 4: View of right-wing.

The empennage remained attached to the aft fuselage. Crushing and bending was observed throughout. Both vertical and horizontal stabilizer attached. The rudder and elevator attached to their respective mounts. The rudder cables were observed attached to the rudder and the rudder pedals, no separations in the cables were observed. The trailing edge of the rudder surfaces separated, from the bottom to about mid span. The elevator torque tube remained attached and was traced to the center of the fuselage, where it had separated from the flight controls.

Figure 5: View of empennage.

3.0 Engine Examination

Engine Manufacturer: Lycoming
Engine Model Number: YO-360-A1A
Engine Serial Number: L-41228-36E

The engine remained attached to the fuselage via the engine mounts. It had sustained impact damage throughout the entire engine All four cylinders remained connected to the engine case. The carburetor with a portion of the plenum separated from the engine case, and the fracture surfaces exhibited signatures consistent with overload. The carburetor was observed in the OPEN position. The engine starter separated from the engine. The intake and exhaust remained attached to the engine.

4.0 Propeller Examination

The airplane was equipped with a two blade Hartzell propeller. The propeller and propeller hub remained attached to the engine crankshaft. Both propeller blades rotated freely with the propeller hub. For the purposes of this report the propeller blades were marked as A and B. Propeller blade A exhibited aft bending about mid span, with polishing along the leading edge. Propeller blade B exhibited polishing along the leading edge, with unidirectional striations on the cambered side of the blade.

5.0 Airport Information

The Buena Terra Airport, Topeka, Kansas, is a private airport operating under class-Golf airspace. The airport features two runways, 1 / 19 (2500 x 80 ft.) & 17 /35 (2000 x 80 ft.), are charted as left traffic, at an elevation of 950 ft.

6.0 Meteorological Information

At 1153 central daylight time, the automated weather observation station at the Philip Billard Municipal Airport (KTOP), Topeka, Kansas, located 4 miles south of the accident, reported wind from 240° at 3 knots, visibility 10 statute miles, sky clear, temperature 32°C, dew point 20°C, and an altimeter setting of 29.94 inches of mercury.

Submitted by:

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