

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR22FA253

AIRFRAME AND ENGINE EXAMINATION

February 16, 2023

A. ACCIDENT

Location: Buffalo, Wyoming
Date: July 14, 2022
Time: 1231 mountain daylight time
Airplane: N731BJ, Cessna P210N

B. AIRFRAME AND ENGINE EXAMINATION

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C. DETAILS OF THE EXAMINATION

1.0 Examination Information

Examination of the recovered wreckage was conducted on February 14 and 15, 2023.

2.0 Airframe Examination

Examination of the recovered wreckage revealed that the outboard portion of the left wing from wing station (WS) 112 to the wingtip end rib was recovered. The speed brake was observed around wing station 112. The inboard portion of the left wing spar was intact from WS 25 to WS 41. Wing structure between WS41 to WS 112 was not identified within the recovered wreckage. Three of the four wing fittings/lugs remained attached, and one wing fitting was separated. The fracture surface was consistent with overload. The recovered portions of the left wing exhibited varying degrees of impact and fire damage. About 27 inches of the outboard left aileron was located within the recovered wreckage.

The right wing spar from WS 25 to WS 94, where about a 90 degree bend in the spar was observed. The spar continued outboard to WS 143. Wing structure from WS 143 to WS 208 was not identified within the recovered wreckage. The right aileron bell crank located about WS 170 was located within the recovered wreckage, however, was separated from the right wing structure. The wing structure other than the main

wing spar was separated and not identified within the recovered wreckage. The right wing main spar lower lugs were missing and severe heat/thermal damage was observed within their respective areas. No identified remains of the right aileron or flap were observed within the recovered wreckage. The right speed brake was found in the recovered wreckage.

The flap actuator was impact and thermally damaged, and measured about 4 5/8ths inches, which was about flaps 0. Portions of flap track were observed within the wreckage debris.

The fuselage was severely fragmented and mostly consumed by fire. Portions of the instrument panel, doors, door posts, seats and instruments were located throughout the recovered debris. The fuel selector valve was located within the debris, the shaft was impact damaged, and was in a near off position. The bottom plate was removed, and extensive thermal damage was observed. The main landing gear was observed in the retracted position. The nose gear was separated.

The outboard 35 inches of the left elevator, including the left counterweight was recovered. The right elevator counterweight and 12-inch outboard portion of the right elevator was observed within the recovered wreckage. Additional portions of the right elevator, right trim tab, and portions of the right horizontal stabilizer were identified within the recovered wreckage. About 37 inches of vertical fin rear spar and 31 inches of rudder that remained attached, which included the center and lower hinges. An additional 3 portions of recovered wreckage, consistent with a portion of the rudder, and stabilizer were identified within the wreckage and exhibited significant thermal damage.

The inboard portions of the elevator of the torque tubes were observed.

The elevator trim actuators were located and measured. One was 2 ¼ inches, which equates to 20 degrees trailing edge up. The other actuator was 1 and 7/8ths, which equates to about 15 degrees trailing edge up.

The left and right aileron wing bell cranks were located within the recovered wreckage. Both the aileron and balance cable remained attached to both bell cranks. One pulley was observed on debris from the area of the cabin, which contained 3 control cables. The elevator aft bell crank was observed. The push pull tube remained attached to both elevator torque tubes. The aft bell crank up and down cables remained attached. The rudder control cable was not located within the recovered debris with the exception of a portion of cable that remained attached to the forward rudder control bell cranks.

3.0 Engine Examination

Examination of the recovered engine revealed that it was impact and thermally damaged.

The compressor section exhibited rotational signatures throughout. Multiple stages of blades bent opposite direction of rotation. The compressor rotor was split into 4 sections.

Continuity was established throughout the compressor aft to the gas producer turbine.

The gas producer turbine (N1) spun freely by hand. No evidence of any thermal distress was observed throughout the turbine. N2 blades were all fully intact, however, would not rotate due to impact damage of the exhaust collector.

A slight portion of the accessory gearbox was located, otherwise, the remainder of the gearbox was not located.

The power output shaft and gears were observed.

All engine controls were not located within the recovered wreckage.

The power and condition lever resolver and associated cables were present.

No evidence of loose "B" nuts was observed during disassembly of the engine.

Fuel nozzle appeared normal.

Submitted by:

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