

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR22FA151

AIRFRAME AND ENGINE EXAMINATION REPORT

April 16, 2022

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A. ACCIDENT

Location: Heyburn, Idaho
Date: April 13, 2022
Time: 08:35

Airplane: N928JP / Cessna 208B

B. AIRFRAME AND ENGINE EXAMINATION REPORT

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C. SUMMARY

On April 13, 2022, about 0835, a Cessna Grand Caravan, N928JP, was substantially damaged when it was involved in an accident near Heyburn, Idaho. The pilot was fatally injured. The airplane was operated as a Title 14, *Code of federal Regulations*, Part 135 cargo flight. Th pilot was on an IFR flight plan from Salt Lake City International Airport (SLC), Salt Lake City, Utah, to Burley Municipal Airport, (BYI) Burley, Idaho.

The IIC, a Federal Aviation Administration (FAA) representative, and the Party Member from Textron Aviation. travelled to the accident site to begin the on-site portion of the aviation accident investigation. The examination continued April 14, 2022. After the examination, the airplane was recovered to a secure location for further examination.

On or about July 27, 2023, a representative from Pratt & Whitney and two ASI's from the NTSB convened at Interstate Aviation, Pullman, Washington and conducted an

examination of the engine. The examination report is contained in the public docket. After the examination, it was concluded that there were no mechanical malfunctions or failures with any examined components of the engine that would have precluded normal operation.

The Aircraft Data Acquisition System (ADAS) was recovered and examined by the NTSB recorders laboratory. Examination of the ADAS unit provided no usable data for the accident.

The two Garmin G1000 data memory cards were shipped to the NTSB Recorders laboratory and provided no useful data.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The airplane came to rest on the roof of a processing plant. Lat Long coordinates: 42.551386 - 113.759731. The roof supported a single smokestack about 100 ft above ground elevation. About 220 ft west of that smokestack was a set of 6 smokestacks about the same height. The single smokestack exhibited damage in the form of gouges, dents, missing and displaced yellow safety railings, and displaced electrical conduit, and wires. The beacon was installed but the conduit line was fractured and separated.

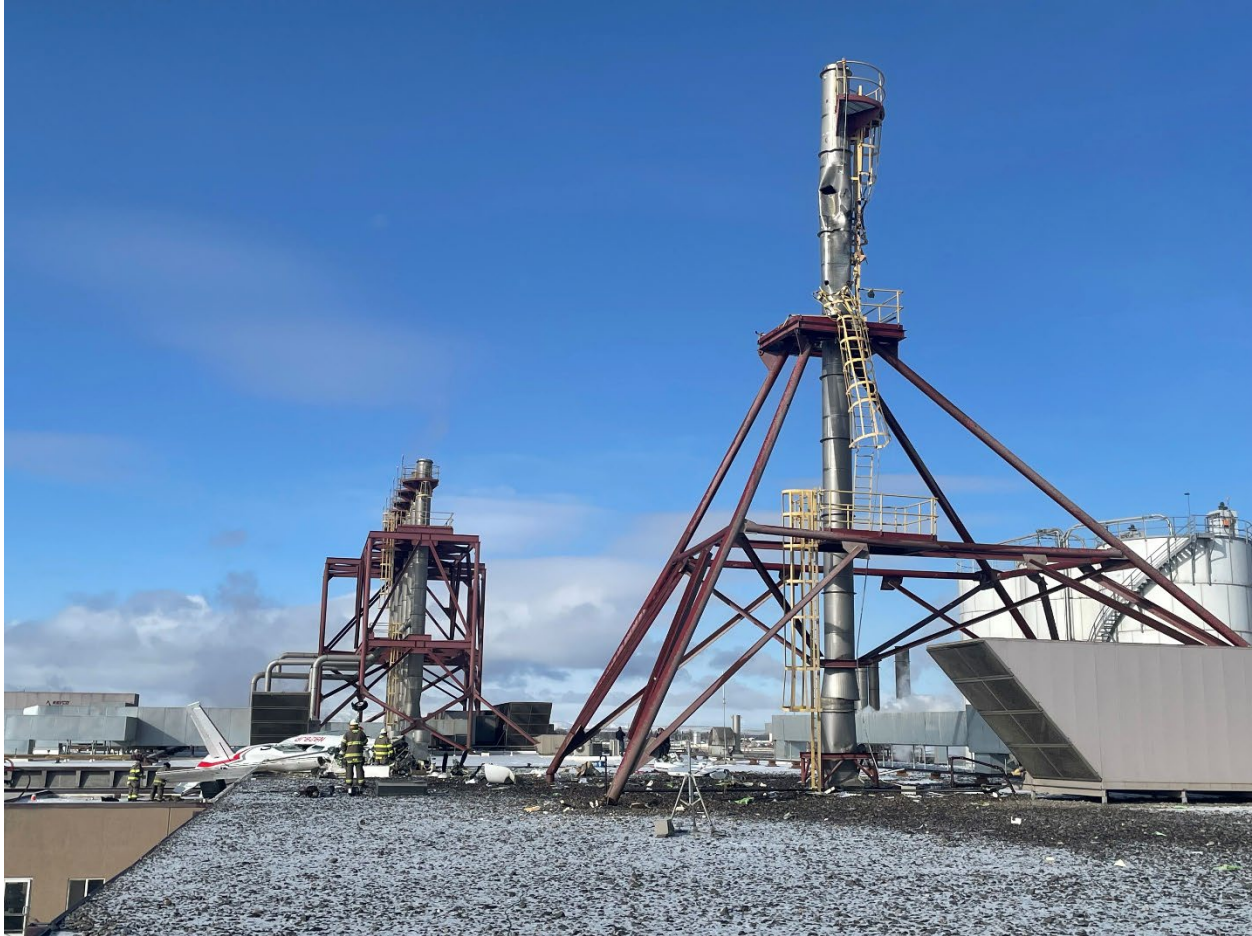


Figure 1. View of the roof top showing the agglomerate vent stack in the foreground, a row-of-six stacks in the background, and N928JP. Photo Courtesy of the Heyburn Police Department.

2.0 Airframe Examination

2.1 Fuselage

Fuselage. The airplane was resting on the right-side. Most of the right side was not accessible for examination. The lower section of the right door separated from the fuselage. The latch was in a middle position, indicating not latched or un-latched.

The right-side of the aft fuselage, from the cargo door aft to the empennage, exhibited substantial damage with dents and bending of the sheet metal throughout. The left-side of the aft fuselage exhibited substantial damage with deformation of the structure and denting and wrinkling of the sheet metal.

The top and bottom left cargo door remained attached to the fuselage. The top half was open. The lower half was open but resting on the fuselage. The left pilot's door remained attached to the fuselage and was in the opened position.

The airplane was equipped with a composite material belly pod. The belly pod had partially separated from the underside of the fuselage. The right side exhibited substantial fracturing and separation. A TKS de-icing system was located near the belly pod components. The TKS tank was breached, and no fluid was observed in the vicinity of the tank. The two pumps were secured to their respective mounts.



Figure 2. Topside of N928JP.



Figure 3. Underside of N928JP.



Figure 4. Underside cargo pod.



Figure 5. TKS tank.



Figure 6. Top-front view.

2.2 Empennage

The left side of the vertical stabilizer exhibited minor damage with wrinkling of the sheet metal near the forward dorsal section. No evidence of ice accumulation was observed on the empennage. A steel gas pipe punctured through the base of the vertical stabilizer from the right-side to the left side. The left-side of the rudder exhibited substantial damage with wrinkles and bends to the sheet metal. The left-side horizontal stabilizer remained attached to the fuselage and exhibited minor damage. The left-side elevator remained attached to the horizontal stabilizer and exhibited minor damage. The left-side elevator trim remained attached to the elevator and exhibited minor damage.

The right-side horizontal elevator remained attached to the fuselage and was bent downward in a continuous arc. The right-side elevator remained attached to the horizontal stabilizer and exhibited the same downward bend. The right-side elevator trim remained attached to the elevator and had the same downward bend.



Figure 7. Rear view.

2.3 Wings

The right wing separated from the fuselage at the root and retained its shape and integrity. The wing was found near the fuselage, underside-up. There was debris on the wing, but overall, it appeared clean without evidence of ice or TKS fluid. The leading edge exhibited minor damage except for the last 4 feet nearest the root. A large circumferential dent extended inward (aft) through the wing spar. Yellow paint transfer was observed in this area. The flap remained attached to the wing and moved freely through its limits. The electric flap actuator remained attached at the bellcrank and had about 6.5 inches of threads exposed. The right aileron remained attached to the wing at its mounts, The aileron trim remained attached at the aileron. The aileron control cables remained attached to the aileron and extended to the wing root. Both control cables exhibited broom straw appearance at the separations. The weather radome remained attached to the right wing and exhibited minor damage. A very thin layer of ice was observed on the radome but was not significant or noteworthy. The right-wing pitot-static probe remained attached to the right wing and exhibited minor damage. The right-wing strut remained attached at the wing mount, but fracture separated at the fuselage. The leading edge separated from the

wing strut and was found in the wreckage. The wing tip remained attached along with the position light. The leading edge remained intact except for the root area. The landing light remained intact and exhibited minor damage. The right-wing finger filter was clean and clear of debris.



Figure 8. View showing the left and right wing.



Figure 9. Right wing underside view.



Figure 10. Right wing topside view.

The left wing was partially attached to the fuselage by wires and control cables. Some cuts appeared to be made by first responders. A section of the upper cabin roof top remained attached to the left wing at the root. The left flap remained attached to the wing and exhibited substantial bending to about 90° near the outboard-most hinge. The left aileron remained attached to the wing and was deflected upwards. The left elevator trim remained attached to the elevator and exhibited a trailing edge down position. The wing tip remained attached to the wing along with the anti-collision light and the position light. The left-wing strut remained attached to the wing but separated from the fuselage. The leading edge of the left wing remained intact with minor damage. The left pitot-static probe remained attached to the wing and exhibited minor damage. The stall tab remained attached to the left wing and exhibited no damage. The wing appeared clean and not dirty or oily, with no trace of ice or TKS.



Figure 11. Left-wing leading-edge view.



Figure 12. Left wing topside view.



Figure 13. Flap actuator.

2.4 Landing Gear

The left and right main landing gear remained attached to the fuselage. The left wheel remained attached at the spindle, but the left brake caliper separated from the wheel assembly. The right-wheel assembly remained attached to the wheel spindle and exhibited minor damage. The nose gear separated from the upper strut section. Commercial grade white, black, and green electrical wiring was found wrapped around the nose wheel. Electrical conduit was found within the wreckage area and looked to have come from the vent stack beacon. The nose wheel spring separated from the fuselage and was in the wreckage.



Figure 14. Right-side main landing gear.



Figure 15. Left-side main landing gear.



Figure 16. Nose gear.

2.5 Cockpit

The cockpit was substantially damaged. The Garmin G1000 displays separated from the fuselage. One display fell to the ground elevation and the other remained on the roof. Two Garmin G1000 memory cards were found on the roof, resting in water. The standby altimeter, standby attitude indicator and standby airspeed indicators remained secured in the lower section of the instrument panel. The left-side control yoke was cut and removed by first responders. The left-seat was cut and removed by first responders.



Figure 17. G1000 data cards.

2.6 Survivability

There was no postaccident fire. The cockpit area was littered with debris from the cargo.

2.7 Fuel/Fuel System

The local fire department reported that they recovered about 40 gallons of jet fuel. When the wings were lowered to the ground, fuel began to spill out of their respective vents. About ten additional gallons of fuel spilled out of the wing during recovery. The finger screens were examined in the breached wings. Both were clear and unobstructed.

2.8 Other Systems

The Garmin G1000 memory cards were shipped to the NTSB Recorders Laboratory. Examination revealed that both cards were damaged and did not provide useful data for the investigation.

3.0 Engine Examination

The engine was visually examined on site and revealed extensive impact damage. The engine cowlings separated from the fuselage. The exposed engine remained attached to the displaced and fractured engine mount. The forward section of the

engine separated from the engine and was found in fractured pieces in the wreckage. Smaller components of the engine were strewn on the roof.

Excerpts of the manufacturer's examination included. The compressor, compressor turbine, and power turbine exhibited no evidence of preimpact distress. Rotational signatures found on the first stage compressor rotor, compressor turbine, and power turbine were consistent with rotation at impact.



Figure 18. Engine



Figure 19. Aircraft data acquisition system (ADAS).

4.0 Propeller Examination

The prop governor separated from the top of the engine and was found in the wreckage.

The propeller assembly separated from the engine. One of the propeller blades (prop blade A) separated from the hub. One blade (prop blade B) was identified by its tip remaining attached. Prop blade B remained attached to the hub and exhibited chord-wise bending to about 90°. The third blade (Prop C) remained attached to the hub and exhibited separation of material at the tip, along with S-bending. The prop

tip fell to the ground and was recovered. The oil dome was fractured, and oil was on the roof top where the prop came to rest. The spinner was crushed inward and remained secured to the hub.



Figure 20. Propeller blade A.



Figure 21. Propeller blade B and C, and propeller hub with spinner.



Figure 22. Propeller rear view.

5.0 Meteorological Information

A weather study was performed by the NTSB. The report is available in the public docket. Snow was reported falling about the time of the accident.

Submitted by:

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