

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA23FA330

WRECKAGE EXAMINATION

August 11, 2023

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A. ACCIDENT

Location: Junction City, Georgia
Date: August 10, 2023
Time: 1005 EDT
1405 UTC
Airplane: Cessna P210N; N210JT

B. WRECKAGE EXAMINATION

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C. SUMMARY

On August 10, 2023, at 1005 eastern daylight time, a Cessna P210N, N210JT, was substantially damaged when it was involved in an accident near Junction City, Georgia. The private pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The main wreckage of the airplane came to rest on a heading of about 179° and an elevation of about 575 ft mean sea level in a heavily wooded area. There were multiple trees that exhibited impact damage from the airplane concurrent with a near vertical impact. The final tree impact was collocated with the remaining tail section of the wreckage and the top of the tree was fractured about 40 ft up from the base.

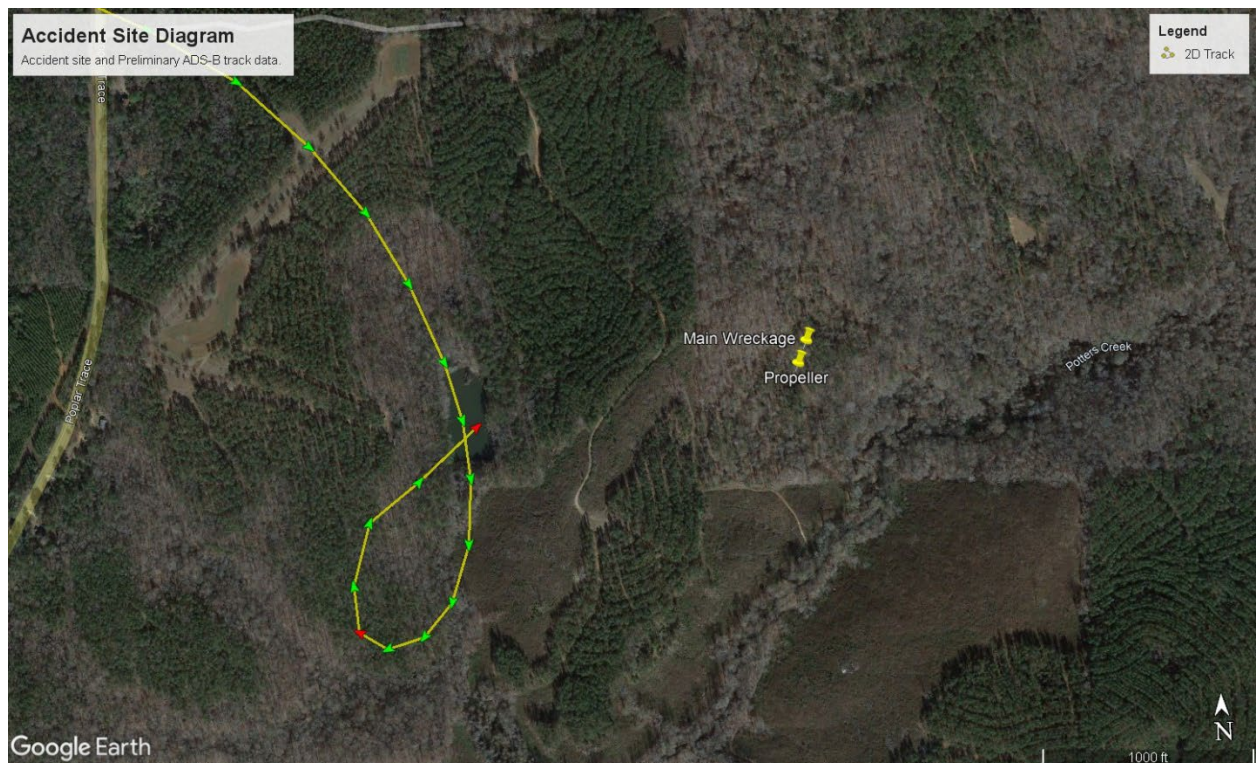


Photo 1: Accident site diagram with ADS-b track data.



Photo 2: View of tree impacts.



Photo 3: Final impact tree.

2.0 Airframe Examination

2.1 Fuselage

A majority of the fuselage was consumed by postaccident fire. The airplane was found on scene laying on it's left side and the left side of the fuselage was impact crushed inwards. The right side of the fuselage was destroyed by postaccident fire.



Photo 4: Main wreckage at the accident site.

2.2 Empennage

The horizontal stabilizer, elevator, and elevator trim separated from the airplane in flight and was not recovered. The elevator bellcrank remained in place with the cables attached. Elevator control continuity was established from the elevator bellcrank in the tail to the control in the cockpit through cuts made to facilitate recovery. The vertical stabilizer and rudder were separated just above the middle rudder hinge and were not recovered. The aft spar of the vertical stabilizer remained attached to the tail. The remaining vertical

stabilizer and rudder remained attached to the tail. Rudder control continuity was confirmed from the rudder bellcrank to the rudder pedals in the cockpit through cuts made to facilitate recovery.



Photo 5: The empennage at the accident site.



Photo 6: View of the vertical stabilizer and rudder at the recovery facility.



Photo 7: Elevator bellcrank.



Photo 8: Left side of the horizontal stabilizer box.



Photo 9: Horizontal stabilizer forward spar attachment points.



Photo 10: Right side of the horizontal stabilizer box.

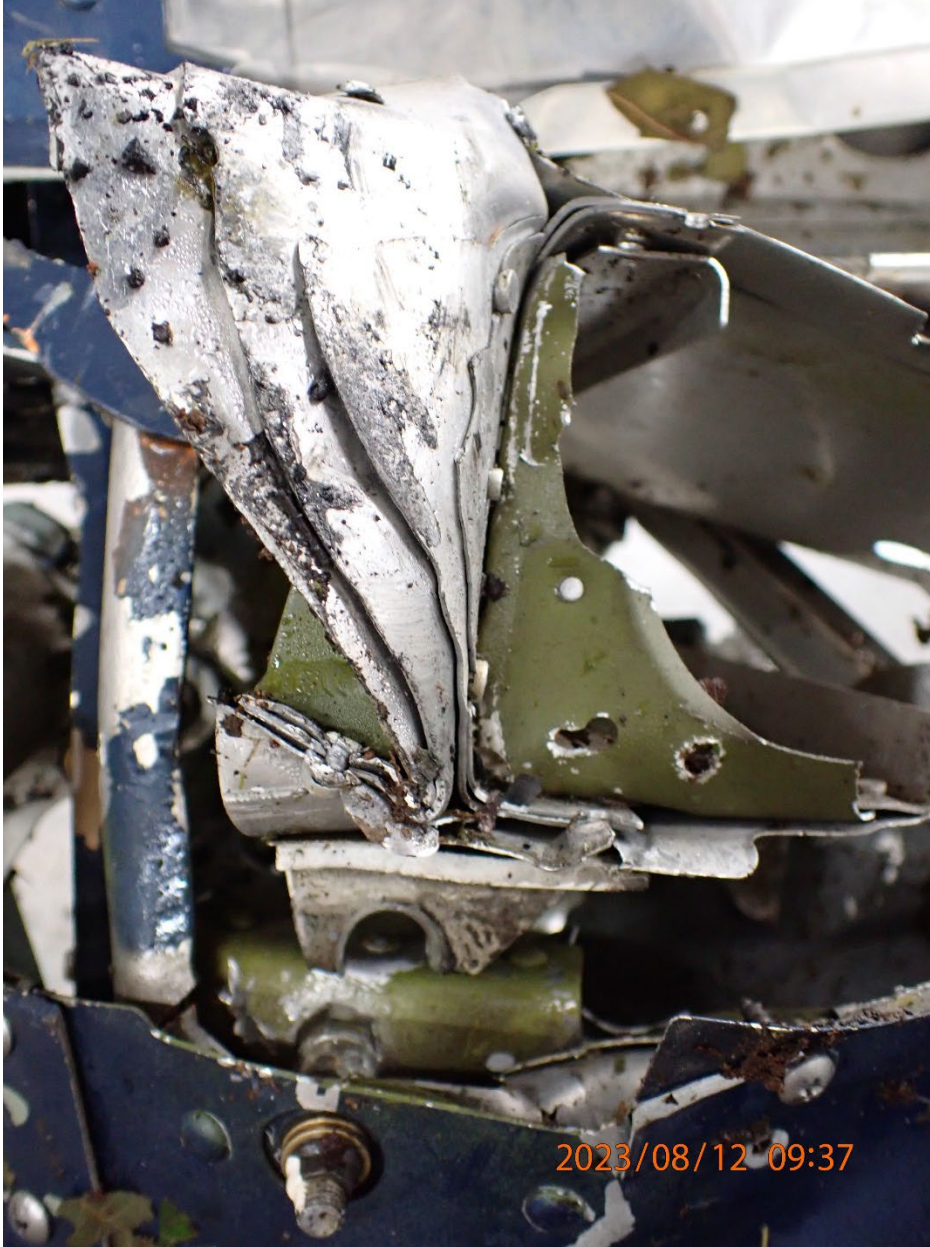


Photo 11: Aft horizontal stabilizer spar right fracture surface.

2.3 Aircraft Wings

The right wing remained attached to the fuselage and exhibited thermal damage from a postaccident fire. The right aileron remained attached at all attachment points and exhibited thermal damage. Right aileron continuity was confirmed from the control surface to an overload fracture in the forward cabin door post the cable exhibited broom straw and unraveling. The left wing separated in flight and was not recovered. Left aileron direct control cable

exhibited an overload fracture and broom straw at the forward door post and was continuous into the cabin. The aileron balance cable was continuous from the right aileron bellcrank to the stop which would normally attach to the left aileron bellcrank. The flap actuator was found in the main wreckage and examination of the flap actuator jackscrew showed the flaps were in the up position with a measurement of about 4 ¼ inches. The right flap remained attached to the right wing and exhibited thermal damage.



Photo 12: View of the top of the right wing at the accident site.



Photo 13: View of the bottom of the right wing at the recovery facility.



Photo 14: View of main wing spar.



Photo 15: Top left wing spar cap fracture surface.



Photo 16: View of the fracture surface of the top of the left wing spar.



Photo 17: Bottom left wing spar cap fracture surface.



Photo 18: Bottom left wing spar cap fracture surface.



Photo 19: View of the right aileron.



Photo 20: View of the right aileron direct control cable.



Photo 21: View of the aileron balance cable.



Photo 22: View of the left aileron direct control cable.



Photo 23: Flap actuator jackscrew. (Textron Photo)



Photo 24: View of flap control cable to left wing.



Photo 25: View of flap control cable to left wing.

2.4 Landing Gear

The landing gear was found in the up position and remained attached at all attachment points. All landing gear components were damaged by postaccident fire.



Photo 26: View of the main landing gear as found at the accident site.



Photo 27: View of the nose landing gear.

2.5 Cockpit

A majority of the cockpit was consumed by postaccident fire.



Photo 28: View of the cockpit at the accident site.

2.6 Fuel/Fuel System

The fuel selector was damaged by postaccident fire. It was modified during the installation of the STC when the airplane was converted from the original reciprocating to the current turbine engine and the position could not be determined. The right wing fuel tank fuel cap remained seated in place.



Photo 29: View of the fuel selector cockpit control.



Photo 30: View of the fuel selector.

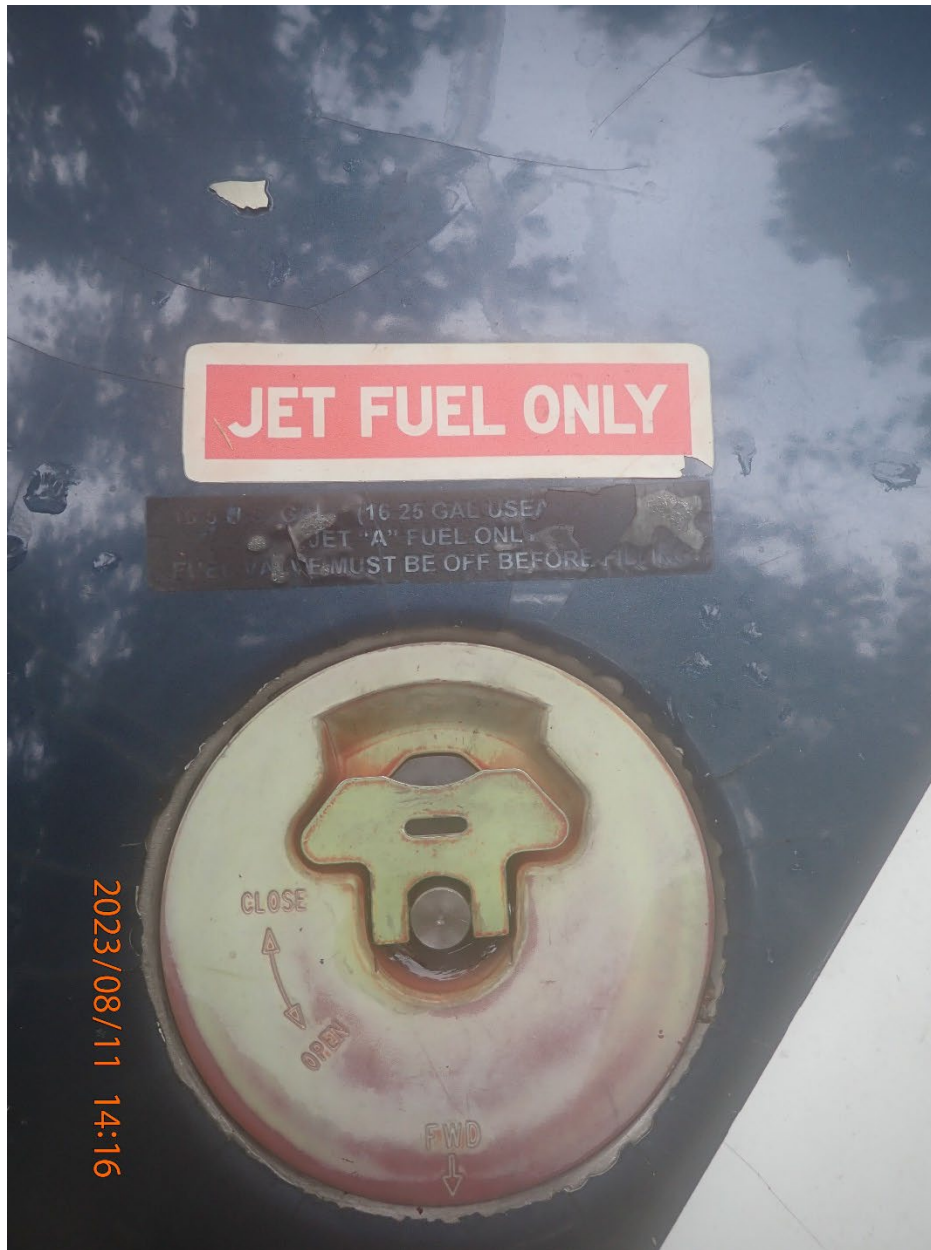


Photo 31: View of the right wing fuel tank cap.

2.7 Other Systems

The airplane was equipped with onboard weather radar. The radar transmitter/receiver was among the main wreckage and was damaged by postaccident fire. The examination was unable to determine if the onboard weather radar was operating during the accident flight. The airplane was equipped with a TKS anti-ice system and heated propeller leading edge. This system was damaged by postaccident fire, and the examination was unable to determine if the system was on or off.



Photo 32: View of the onboard weather radar sensor.

3.0 Engine Examination

On August 11-12, 2023 a wreckage examination was conducted at both the on-site and recovery location under the auspices of the NTSB IIC with the following facts being noted.

□ The engine was found in its normal relative position to the airframe and remained securely mounted to the engine mounts. The bottom left side of the engine displayed heavy impact damage from ground impact and displayed areas of a blackened coating from post-crash fire exposure.

□ The propeller gear box had fractured off forward of the accessory gear box mating flange and remained attached to the propeller along with the prop governor, the planet gears and ring gear. The sun gear remained on the beta rod at the accessory gear box.

□ Neither the N1 nor N2 drive trains could be manually rotated as recovered.

□ The compressor remained in its normal position with no external damage noted. The inlet guide vanes and visible portion of the first and second stage compressor blades and vanes were visually normal and displayed no visible damage. The bleed valve was in its normal position, open and the poppit valve could be manually actuated.

□ The right side compressor air discharge tube displayed minor impact damage and was dislodged from the outer combustion case. The left side compressor air discharge was crushed and dislodged at the outer combustion case.

□ The accessory gear box remained in position and displayed no visible external damage.

□ The turbine module and exhaust collector support remained in position. The left exhaust stack displayed crush damage with the right side exhibiting minor impact damage. Other than slight discoloration from post-crash fire the turbine was generally normal in appearance. The stage four turbine wheel as viewed through the exhaust collector revealed it to be in position with no evidence of damage.

□ The prop control had fracture from the accessory gear box. The fuel pump remained in position but exhibited a fractured leg at the gear box mating flange. The fuel control unit remained in position and other than blackened from fire exposure was visually normal.

□ The coordinator exhibited heavy post-crash fire damage.

□ The outer combustion case remained in position and exhibited heavy impact damage. The fuel nozzle and igniter were both in position.

□ At the conclusion of the recovery site engine examination and with IIC concurrence the decision was made to ship the engine to a Rolls-Royce approved facility for disassembly and further investigation.



Photo 33: View of the engine at the recovery facility as first viewed.



Photo 34: View of the bottom of the engine mount.



Photo 35: View of engine compressor inlet.



Photo 36: View of the engine.



Photo 37: View of the right exhaust pipe held in place by hoses.

4.0 Propeller Examination

The wooden composite MT 5 bade propeller with the propeller gear box and governor was impact separated from the engine and found about 100 ft southwest of the main wreckage. The propeller was equipped with an electronically heated leading edge ice protection system. All 5 blades of the propeller exhibited impact damage. One blade was mostly intact with trailing edge damage, three blades were fractures about a third of the way up from the hub, and one blade was fractured at the hub. The propeller remained attached

to the propeller gear box flange at all attachment points. The propeller gear box moved freely when rotated by hand and all gears inside rotated freely. The propeller governor remained attached to the propeller gear box at all attachment points. The propeller governor control arm head remained attached to the propeller governor. The control arm and cable were impact separated from the governor.



Photo 38: Propeller as found on scene.



Photo 39: Propeller, propeller gear box, and governor at the recovery facility.



Photo 40: View of the propeller.



Photo 41: View of the propeller gear box and governor.



Photo 42: View of the gears inside the propeller gearbox.



Photo 43: View of the propeller governor.



Photo 44: View of the propeller governor control with control arm head attached.



Photo 45: Propeller slip ring and brush block for electrically heated leading edge.

Submitted by:

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