



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

October 6, 2019

EXAMINATION SUMMARY

ERA20FA002

A. ACCIDENT

Location: Asheboro, North Carolina
Date: October 4, 2019
Time: 2030 EDT
Airplane: Piper PA-28-180, N2FB

B. INVESTIGATION PARTICIPANTS

Ralph E. Hicks - IIC
Eastern Region Aviation (ERA)
National Transportation Safety Board
Marietta, Georgia 30068
[REDACTED]

David Laycock (Ops)
FAA Accident Coordinator
Aviation Safety Inspector
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Jonathan Hirsch
Sr. Air Safety Investigator
Piper Aircraft
Vero Beach, Florida
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C. SUMMARY

On October 4, 2019, about 2030 eastern daylight time, a Piper PA-28-180, N2FB, was destroyed following a collision with terrain at Asheboro, North Carolina. The private pilot and a student-pilot rated passenger were fatally injured. The airplane was registered to the pilot and was operated under the provisions of 14 *Code of Federal Regulations* part 91 as a personal flight. Night, visual meteorological conditions prevailed, and no flight plan was filed for the flight. The flight originated at Knoxville Downtown Island Airport (DKX), Knoxville, Tennessee about 1830 and was destined for Asheboro Regional Airport (HBI), Asheboro, North Carolina.

1.0 Accident Site

Wreckage Plots:

Initial Impact Tree (Right Wing O/B Section @ 50' up): 35 36.927N, 79 52.981W

Engine/Prop: 35 36.924N, 79 52.965W

Main Wreckage/Fuselage & Empennage: 35 36.924N, 79 52.963W

Main Tire: 35 36.931N, 79 52.965W

Sheet Metal: 35 36.933N, 79 52.958W

Seat Rails: 35 36.934N, 79 52.955W

Nose Gear: 35 36.935N, 79 52.949W

Radio (Unidentified): 35 36.919N, 79 52.948W

Neck Pillow/Plexiglass: 35 36.929N, 79 52.939W

The wreckage path was 208' long X 108' wide. Wreckage path heading 080 deg.

Ground elevation at initial impact point was 829'.

Approximate angle from right wing section (lodged in tree) to main wreckage = 40 deg.

2.0 Fuselage

Observed at the accident site, the fuselage was destroyed by impact forces. The nose landing gear fork with wheel and tire assembly was fracture separated from the oleo and located in the debris field. The instrument panel and firewall were fragmented and destroyed with remnants of both embedded and conformed to the rear of the engine. Portions of the lower forward fuselage, including the forward seat tracks, were embedded in the terrain adjacent to the crater containing the engine and propeller. The remainder of the fuselage was approximately 15' further along the debris path. The cabin top, above the windows, was separated from the lower portion of the cabin at the window frame posts. The lower portion of the cabin door remained attached to a fragment of the forward door frame by the hinges. The upper portion of the cabin door was separated and found in the debris field. The aft baggage door was separated from the fuselage and found in the debris field. The two front seats and the rear bench seat were separated from their respective mounts. Crumpling, crushing, and tearing of the airframe was observed through

the entire fuselage. The main wing spar was fractured mid span and separated from the fuselage. The rudder control cables remained attached to the torque tubes and were continuous to the rudder horn at the empennage. The stabilator control cables remained attached to the tee-bar in the cockpit and were continuous to the balance tube in the tailcone. The aileron cables were continuous from the cockpit to the aileron bellcranks in each wing. The aileron balance cable was separated with each end exhibiting a “broom-straw” appearance consistent with failure under tension overload. The flap handle was separated from its mount and the flap handle mount was separated from the fuselage. The flap torque tube was separated from the fuselage and the cable was separated from the handle. Flap position could not be determined. The fuel selector valve was impact damaged with the handle shaft fracture separated. The fuel selector handle was not observed in the wreckage. Low air pressure was applied to the left tank inlet port on the fuel selector valve and the air passed freely through the valve and exited the fragmented fuel line going to the engine. Approximately 2 tablespoons of liquid, having an odor consistent with 100LL, drained from the fuel line fragments attached to the fuel selector valve. The fuel strainer bowl was separated from the fuselage and located among the debris. The fuel strainer screen was not observed among the wreckage. The avionics and instruments were impact damaged and destroyed which prevented the recording of usable data. A gyro and gyro housing were located among the debris. The gyro housing exhibited scoring on the inner wall consistent with rotation at the time of impact. The vacuum pump was removed from the engine and disassembled by the Piper investigator to facilitate examination. The coupling was sheared and the rotor was fractured.

3.0 Left Wing

Observed at the accident site, the left wing exhibited aft crushing of the leading edge along its span. The aileron and flap remained attached to their hinges. The outer portion of the wing forward of the aileron was torn chordwise and mostly separated from the inboard section. The aileron bellcrank was separated from its mount but remained captured within the wing structure. The main landing gear was impact damaged but remained attached to the wing. The pitot mast was separated from its mount and only remained attached by hoses and wires.

4.0 Right Wing

Observed at the accident site, the right wing only remained attached to the rest of the fuselage by the aileron cable. Approximately 3' of the inboard wing, forward of the main spar, was separated from the rest of the wing and located near the engine. The wing was torn chordwise and separated near the outboard end of the flap. The outboard portion of the wing, including the aileron, was located approximately 50' AGL in a tree at the initial point of impact. The flap was separated from its hinges and located in the debris field. The right main wheel assembly was fracture separated from the strut and located in the debris field.

5.0 Empennage

Observed at the accident site, the stabilator remained attached to the tailcone by its hinges. The right side of the stabilator, including the trim tab, were torn chordwise separating the outer portion. The outer portion was located at the base of a tree which was the initial point of impact. The stabilator trim jackscrew was extended approximately 1" above the barrel with ~8 threads exposed which corresponds to a partial aircraft nose up trim setting. The vertical stabilizer remained attached to the tailcone and the rudder remained attached to the vertical stabilizer at its hinges.

6.0 Engine

Observed at the accident site, the engine was partially buried in the terrain. The engine remained attached to the truss mount and the truss mount was separated from the fuselage. The engine exhibited impact damage throughout. The left magneto was separated from the engine and impact damaged to an extent that prevented testing. The right magneto remained attached to the engine and was impact damaged. The carburetor was broken and separated from the induction system.

7.0 Propeller

Observed at the accident site, the fixed-pitch aluminum propeller was partially buried in the terrain. Some twisting was observed on the blade protruding from the ground. Following removal of the engine from the crater by aircraft recovery personnel, it was observed that the other propeller blade was fracture separated near the hub. The separated blade exhibited polishing and chordwise scoring to the cambered face and curling near the tip. Sections of timber were located along the debris path exhibiting angled cuts consistent with cutting by the propeller under power.