National Transportation Safety Board

Office of Aviation Safety

Washington, D.C. 20594-2000

December 2, 2015

STRUCTURES EXAM FACTUAL REPORT FIELD NOTES

CEN15FA034

A. Accident

Location: Wichita, KS Mid-Continent Airport
Date: October 30, 2014
Time: 0948 CDT
Vehicle: Raytheon Super King Air 200, BB1686, N52SZ,
Engine: Pratt Whitney PT-6A-42, 850 SHP
Propeller: Hartzell Propeller, Inc.

B. Investigators

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C. Summary

On October 30, 2014, about 0948 central daylight time, a Raytheon Aircraft Company King Air B200, N52SZ, operated by a private individual, was destroyed shortly after takeoff when it impacted a building at the Wichita Mid-Continent Airport (KICT), Wichita, KS. The private pilot sustained fatal injuries. Visual meteorological conditions prevailed for the personal flight conducted under Title 14 Code of Federal Regulations Part 91. The flight originated from KICT and was destined for Mena Intermountain Municipal Airport (KMEZ), Mena, AR.

The airplane was taking off from Runway 1R. Shortly after takeoff, the pilot reported that power was lost in the left engine. Witnesses reported that the airplane started turning left, leveled wings briefly, and then began a descending left bank. The airplane descended rapidly and hit the east wall and roof of the Cessna Citation Learning Center, operated by Flight Safety International, Inc. The impact and post-crash fire resulted in three additional fatalities inside a flight simulator in the building. Four flight simulators in the north end of the building were substantially damaged.

The airplane was powered by two Pratt Whitney PT-6A turboprop engines.

1.0 Recent Airplane History

The airplane, including engines and propellers, had undergone major overhaul and inspection at Hawker Beechcraft Services (KICT). After maintenance, the airplane also had undergone two functional check flights (FCF). The airplane was refueled at Signature Flight Support (KICT) at 0740 CST on October 30, 2014.

2.0 Fueling History

The two outboard tanks (usable 193 gallon capacity each)[1] were reported to have been filled to capacity. The two auxiliary tanks (usable 79 gallons capacity each)[2] were reported as empty. The fueling ticket noted that 57 gallons Jet A was added to the left main tank and 53 gallons Jet A was added to the right main tank.

3.0 Building Information

The airplane struck the northeast corner of the building, impacting the east wall and roof of the north simulator bay. The simulator room is two stories high and is about 198 feet (east-west) by 42 feet (north-south).

Most of the airplane sustained severe fire damage. A majority of the left outboard wing, flap and aileron were found at the foot of the exterior east wall. The left engine, propeller and left main landing gear were found on the floor just inside the building. The fuselage, tail section, cockpit, right engine, right main landing gear travelled across the top of the building. The cockpit, instrument panels, right engine and right gear strut traveled about 160 feet to the south wall. The right engine and propeller came to rest next to the cockpit area. The cabin area of the fuselage, portions of the wing center section and all of the tail section crossed the south wall and fell on the roof of the attached building. The right wing had separated and crossed the south wall, and came to rest on the roof of an attached building about 120 feet from the initial impact point. A portion of a propeller blade from the left propeller was near the right wing. A separated propeller blade tip was found about 150 feet northeast from the initial impact point.

[1] The main fuel system in each wing consists of: two wing leading-edge bladder tanks, two wing box-section bladder tanks, integral (wet wing) outboard aft wing tank, and a bladder nacelle tank. All these fuel tanks are interconnected and gravity feed into the bladder nacelle tank.

[2] The auxiliary fuel tanks consist of a bladder fuel tank on each side between the fuselage and the engine nacelles. When the auxiliary fuel system is being used, fuel is transferred from it to the main fuel system by a jet pump mounted adjacent to the outlet strainer and drain in the auxiliary fuel tank.

4.0 Structure

The cabin area of the fuselage and empennage came to rest inverted on the lower, west roof. The cabin area was substantially consumed by post impact fire. The empennage was thermally damaged by post impact fire. The horizontal stabilizers remained attached to the vertical stabilizer with the elevators attached. The elevator trim tabs remained attached to their respective elevator. One elevator trim tab exhibited slight trailing edge up when visually compared to its corresponding elevator trailing edge. The vertical stabilizer remained attached to the aft fuselage with the rudder attached. The rudder trim tab remained attached to the rudder.

The cockpit area came to rest on the upper, north roof.

5.0 Landing gear

The left main landing gear structure was found in the extended position with the down lock latched in place. The structure of the right main landing gear was not intact. Only the strut, wheel and tire of the nose gear assembly were found on the ground outside the building. Witness and video evidence show that the three gears were extended at impact.

6.0 Flap actuators (see other document)

Right Inboard Flap – N/O
Right Outboard Flap – N/O
Left Inboard Flap – N/O
Left Outboard Flap – 3 1/16” = 3.0625” = Approximately 10 degrees extended

Any of the three flap positions, UP, APPROACH or DOWN may be selected by moving the flap selector lever up or down to the selected switch position indicated on the pedestal. The flaps cannot be stopped in-between any of the three positions. UP is 0°, APPROACH is 14° (+ or – 1°), DOWN is 35° (+1°/-2°). After the wreckage had been recovered and transported to ASOD, on 01-14-15 the flap switch handle was found in the UP detent.

7.0 Trim actuators (see other document)

Rudder – 3” = approximately >15 degrees tab left (rudder right, nose right.
Left Elevator – 1 15/16” = 1.9375” = Approximately 0 degrees
Right Elevator – 2 1/16” = 2.0625” = Approximately 0 degrees
Aileron – 2 3/8” = 2.375”= Approximately 9 degrees tab up (right wing up)

8.0 Control cables

The control cables in the tail section were examined. One rudder cable had the ball swage fitting still attached. The other three cables (one rudder and two elevators) were separated with a rust color at the separation point. The three cables were stiff for about 3-9 inches from the fracture surface, consistent with high temperature oxidation and separation. The remainders of the cables

were flexible, typical of a control cable. The cable lengths will be measured at the storage facility.

Rudder flight control continuity was confirmed from the rudder to the flight control cables. One cable terminated at the aft fuselage in a thermal separation, the other cable terminated at a more forward position at a cable end.

Down elevator control continuity was confirmed from the elevator surface to the aft fuselage. The up elevator aft bell crank segment separated with the flight control cable attached. Both cables terminated at the aft fuselage in thermal separations.

Further examination of the flight control systems was confirmed at Air Salvage of Dallas (ASOD) on 01-14-15. The primary and secondary flight control cables continuity was confirmed from the cockpit to each respective flight control surface with cable separations that exhibited signatures consistent with thermal separation, tensile overload, and/or being cut during recovery.

9.0 Photos and drawings

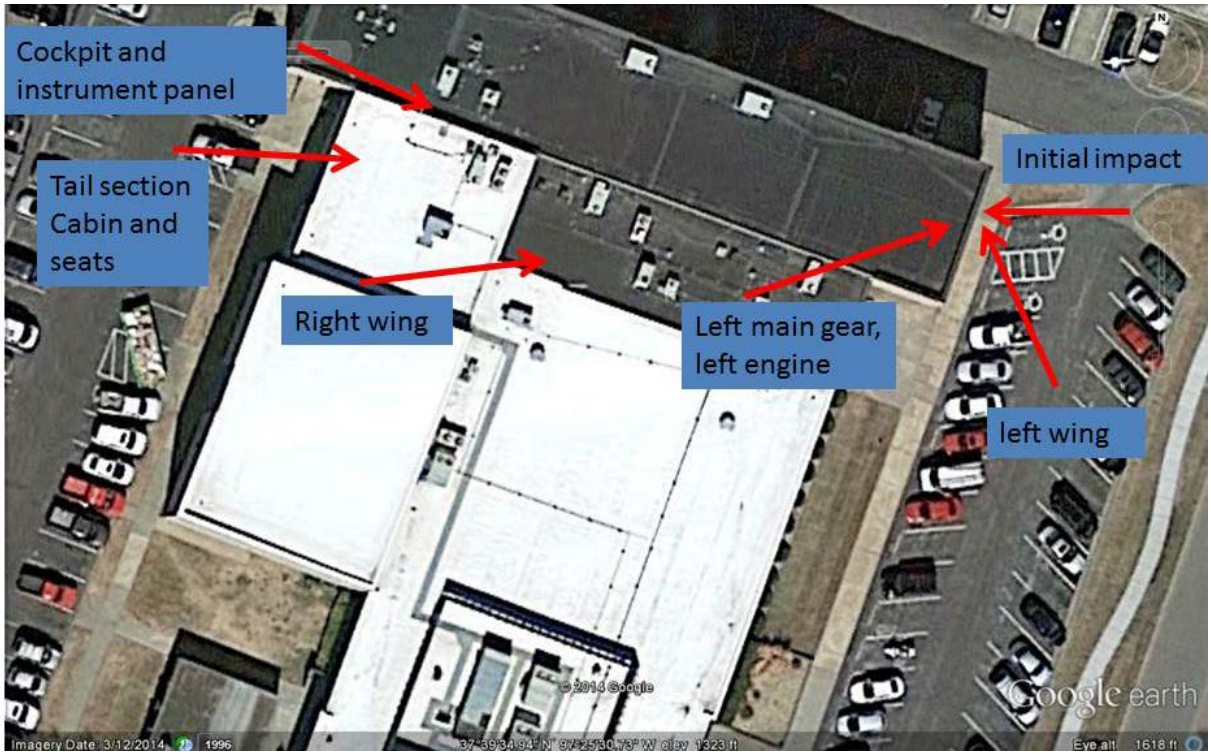

Photo 1 – Overview of wreckage scatter

Photo 2 – Northeast corner of simulator bay

Photo 3 – Portion of left wing and flap at northeast corner

Photo 4 – Left main landing gear and lock in place

Photo 5 – Area of fuselage and instrument panel on top roof level. The initial impact area is at the top of the photo.

Photo 6 – Cabin top is inverted, vertical tail and rudder to the right on 2nd roof level

Photo 7 – Vertical and Horizontal surfaces on 2nd roof level

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Photo 8 – Right wing on 3rd roof level

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