

NATIONAL TRANSPORTATIONS SAFETY BOARD
Office of Aviation Safety
Washington, DC 20594

SUMMARY OF AIRCRAFT EXAMINATION

-- CEN19LA049 --

A. ACCIDENT

Location: Sioux Falls, South Dakota
Date: December 25, 2018
Time: 1703 Central Standard Time
Aircraft: Beech 58P

B. PARTICIPANTS

Jennifer Rodi
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Raymond Peterson
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C. ACCIDENT SUMMARY

On December 25, 2018, about 1703 central standard time, a Beech 58P, N6745V, was destroyed when it impacted houses and terrain 3 miles south of the Sioux Falls Regional Airport (FSD), Sioux Falls, South Dakota. A post impact fire ensued. The pilot and passenger were fatally injured. The airplane was owned and operated by a private individual under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Instrument meteorological conditions prevailed and an instrument flight rules flight plan was filed for the flight. The flight originated from Gerald R. Ford

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International Airport (GRR), Grand Rapids, Michigan, about 1407 and was en route to Marv Skie-Lincoln County Airport (Y14), Tea, South Dakota.

D. AIRCRAFT INFORMATION

The accident airplane, a Beech 58P (serial number TJ-272), was manufactured in 1980. It was registered with the FAA and held a standard airworthiness certificate for normal operations. Two Teledyne Continental TSIO-520-WB engines (s/n 518957 left engine and 518958 right engine) rated at 325 horsepower at 2,700 rpm powered the airplane. The engines were equipped with a 3-blade, constant speed, Hartzell propeller.

The instrument panel was destroyed by the postimpact fire and investigators were unable to determine the airplane total time.

The maintenance records were not located during the investigation. Copies of the last annual inspection were provided by the insurance company. The last annual inspection was completed on February 15, 2018. The airframe total time was recorded as 5,585.7.

E. DESCRIPTION OF ACCIDENT SITE

Due to the government furlough, neither the National Transportation Safety Board, nor the Federal Aviation Administration responded to the accident site. The on-scene documentation for this accident was conducted by the Sioux Falls Police Department.

The initial impact point was located in trees and along the back of a structure in a residential area. All major components of the airplane were located at the accident scene. Both engines, the left side of the wing, the right side of the wing, and the empennage separated during the impact sequence and were located within the debris field. One landing gear assembly was located across the street from the main wreckage.

F. DETAILS OF AIRCRAFT EXAMINATIONS

The wreckage of the airplane was recovered from the scene and relocated to a secure facility in Lakeville, Minnesota. The recovery of the wreckage was hampered by severe weather in the form of heavy snow and below freezing temperatures.

The airplane was fragmented and charred, melted, and partially consumed by fire.

The fuselage was impact and fire damaged and fragmented. The instrument panel was impact and fire damaged. The left side instruments included an Aspen Avionics EFD1000 that was impact damaged. The right side Kollsman window on the analog altimeter was set at 30.18 inches. The airspeed indicator needle pointed at less than 20.

The right wing was fragmented into multiple pieces and exhibited exposure to heat and fire. Remains of the right flap and right aileron were identified in the recovered wreckage. The outboard 3.5 ft of the right wing separated and was impact damaged. The leading edge of the right wing, including the rubber deice boot was fragmented. The center section of the wing exhibited a circular aft crush. The right aileron was impact damaged. The right flap was impact damaged and exhibited a circular crush, forward to aft. The flap actuator was extended 5 inches which is consistent with 20° of flaps. The

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deice boots were impact and fire damaged and could not be functionally tested. The flight control cables were impact damaged and separated and continuity could not be confirmed.

The left wing was fragmented into multiple pieces and exhibited exposure to heat and fire. Remains of the left flap and left aileron were identified in the recovered wreckage. The outboard 3.5 ft of the left wing separated and was impact damaged. About 5 ft of the inboard portion of the wing was impact and fire damaged. The left flap was bowed up and wrinkled. The left aileron was impact separated, wrinkled, and exhibited exposure to heat and fire on the inboard half of the control. The aileron trim tab remained attached to the left aileron. The control linkage was damaged and displaced. The trim actuator cables were impact separated and the actuator was outside of normal travel range. The flap actuator was extended 5 in. which is consistent with 20° of flaps. The boots were impact and fire damaged and could not be functionally tested. The flight control cables were impact damaged and separated and continuity could not be confirmed.

The empennage was impact damaged, fragmented, and exhibited exposure to heat and fire. The vertical stabilizer was impact damaged at the root. The deice boot was fire damaged and could not be functionally tested. The rudder separated from the vertical stabilizer and was impact damaged. The rudder control cables were impact damaged and separated and continuity could not be confirmed.

The left horizontal stabilizer was impact and fire damaged and separated from the empennage assembly. The left elevator remained partially attached and was impact and fire damaged. The left trim tab actuator measurement of 1.4 in. was equivalent to about 20° tab down.

The right horizontal stabilizer was fragmented the deice boots on both sides were impact and/or fire damaged and could not be functionally tested. The right elevator separated from the horizontal stab and was impact damaged. The right trim tab actuator measurement of 1.8 in. was outside of the normal operating range. Both trim tab actuator push/pull tubes were impact separated. The elevator control cables were impact damaged and separated and continuity could not be confirmed.

There was no evidence of soot streaking or molten metal spatter on any of the tail surfaces.

Engine A was impact damaged and separated from the airplane assembly. The upper bank of spark plugs and valve covers were removed to facilitate the examination. The upper bank of spark plugs exhibited normal signatures when compared to a Champion Spark Plug Check a Plug chart. The spark plug wires were impact damaged and could not be functionally tested. The fuel pump remained attached and when examined the spline was intact and the unit rotated when actuated by hand. The engine was rotated through at the propeller. Valve and air movement was observed on all cylinders. Both magnetos remained attached and were removed to facilitate the examination. Both units were actuated with a powered drill. A blue spark was observed at each lead.

The oil sump was impact damaged. The instrument air pump separated from the engine. When examined the rotor and vanes were intact. The fuel manifold was examined, and a trace amount of fuel was found with no visible contamination.

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The turbocharger assembly was impact separated. The vanes were impact and fire damaged and would not rotate when actuated by hand. The propeller governor was impact damaged. The alternator was impact damaged but remained attached.

All three propeller blades remained attached and were labeled AA, AB, and AC for identification purposes. Blade AA was bent aft, about 4 inches outboard of the blade root. The blade exhibited chordwise scratching across the cambered surface. Blade AB was bent aft, about 4 inches outboard of the blade root and again at the tip of the blade. Blade AC exhibited a forward bend at the blade root. Neither blade AB or AC exhibited chordwise scratching or leading edge damage.

Engine B was impact damaged and separated from the airplane assembly. The upper bank of spark plugs and valve covers were removed to facilitate the examination. The upper bank of spark plugs exhibited normal signatures when compared to a Champion Spark Plug Check a Plug chart. The spark plug wires were impact damaged and could not be functionally tested. The fuel pump remained attached and when examined the spline was intact and the unit rotated when actuated by hand. The engine was rotated through at the propeller. Valve and air movement was observed on all cylinders except the No. 1 cylinder. The No. 1 cylinder push rods were impact separated. One magneto remained attached and was removed to facilitate the examination. The unit was actuated with a powered drill. A blue spark was observed at each lead.

The oil sump was impact damaged. The instrument air pump separated from the engine. When examined the rotor and vanes were intact. The fuel manifold was examined, and a trace amount of fuel was found with no visible contamination. The alternator was impact damaged and separated.

The turbocharger assembly was impact damaged and remained attached to the engine. The vanes rotated when actuated by hand.

All three propeller blades remained attached and were labeled BA, BB, and BC for identification purposes. Blade BA was bent aft about 16 in. outboard of the blade root. The blade exhibited chordwise scratches across the cambered surface and damage along the leading edge of the blade. Blade BB was bent aft, about 90° 14 in. outboard of the blade root. The blade exhibited scratches across the cambered surface and damage along the leading edge of the blade. Blade BC was bent aft about 16 in. outboard of the blade root. The blade exhibited chordwise scratches across the cambered surface and damage along the leading edge of the blade.