

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

SUMMARY OF AIRPLANE EXAMINATION

-- CEN22FA021 --

A. ACCIDENT

Location: Lena, Wisconsin
Date: October 27, 2021
Time: 1817 central daylight time
Aircraft: Beech B36TC (s/n EA-402), N75RM

B. PARTICIPANTS

Timothy Sorensen
Senior Aviation Accident Investigator
National Transportation Safety Board
Denver, Colorado

Jennifer Barclay
Air Safety Investigator
Textron Aviation
Wichita, Kansas

C. ACCIDENT SUMMARY

On October 27, 2021, about 1817 central daylight time, a Beech B36TC airplane, N75RM, was substantially damaged when it was involved in an accident near Lena, Wisconsin. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

D. DETAILS OF EXAMINATIONS

An on-scene airframe examination was completed on October 28, 2021, by the NTSB investigator-in-charge with the assistance of an FAA inspector and a technical representative from Textron Aviation. The airplane was recovered to Myers Aviation, Oshkosh, Wisconsin. Follow-up airframe and engine examinations were completed on October 29, 2021, by the NTSB IIC and Textron technical representative.

E. DESCRIPTION OF ACCIDENT SITE

The accident site was located in a corn field. The impact path was about 150 ft long and oriented on a 025° heading. The airplane came to rest upright on a 076° heading.

Summary of Airplane Examination

F. SUMMARY OF AIRPLANE EXAMINATION¹

Beech B36TC (s/n EA-402)

The lower fuselage was deformed from the nose to the cockpit area consistent with impact forces. The cockpit floor in the area of the pilot's seats was buckled and deformed upward. The cabin area remained intact. The pilot and passenger seats remained securely attached to the seat rails, and the seat rails to the cockpit/cabin floor structure. The front seat rail stops were installed.² The pilot's lap belt and shoulder harness were intact and secured at the anchor points. The lap belt latch and the shoulder harness inertia reel operated normally. The aft portion of the fuselage appeared undamaged.

The instrument panel and center pedestal/throttle quadrant were dislocated and crushed upward. Both control wheels were intact and remained attached to the control columns. They exhibited free movement; however, movement of the control wheels did not result in corresponding movement of the ailerons or elevators. This was consistent with a loss of control cable tension due to the fuselage damage. The rudder pedals remained attached to the torque tubes and associated linkage. The pedals were not free to move consistent with the fuselage damage.

The cockpit fuel selector assembly was dislocated consistent with the adjacent fuselage damage; however, the selector assembly appeared intact and was free to rotate. The selector was positioned to the right fuel tank when observed on-scene. Fuel line continuity was confirmed from the wing root to the selector, and from the selector to the sump. A sample recovered from the gascolator sump was consistent in color and odor to 100 low lead aviation fuel. The sample was clear and free of water, debris, or sediment.

Both wings remained attached to the fuselage. The right-wing navigation/strobe light lens was broken out; otherwise, both wings appeared intact. The main landing gear and wing flaps were retracted. The landing gear and flap actuator positions corresponded to the observed positions. The ailerons appeared undamaged and exhibited free and full movement. The fuel tank caps were securely installed, and neither fuel tank appeared to have been compromised. About 35 gallons of fuel were recovered from the left fuel tank. There was no fuel in the right fuel tank.³

The horizontal and vertical stabilizers remained attached to the fuselage and appeared undamaged, with exception of a small leading dent on the right horizontal stabilizer. The elevators and rudder remained attached to the stabilizers. They appeared intact and exhibited free and full movement. The elevator trim tabs were intact.

Flight control continuity was confirmed from each control surface – ailerons, elevators, rudder – to the cockpit. Elevator trim continuity was confirmed. The elevator trim actuator extensions – left and right – were about 1.3 inches, which corresponded to a neutral setting.⁴ The aileron trim actuator extension was about 1.6 inches, which

¹ Directions related to accident site placement and component damage/deformation are with respect to an intact airframe unless otherwise noted.

² The pilot and co-pilot seat rail stops were removed to facilitate the examination.

³ Recovery personnel drained each fuel tank on-scene and provided the remaining fuel.

⁴ The airframe manufacturer provided the trim setting corresponding to the measured actuator extension.

Summary of Airplane Examination

F. SUMMARY OF AIRPLANE EXAMINATION *(continued)*

corresponded to a neutral to slight left wing down setting.⁵ The trim tab positions were consistent with the observed actuator extensions.

The airplane was equipped with an on-board oxygen system. The oxygen tank was installed laterally under the pilot and co-pilot seats. The tank appeared to be intact and was securely installed. The valve appeared to be in the ON position. The actuating cable from the instrument panel remained attached to the valve. The instrument panel control knob was pulled out consistent with the position of the tank valve. The on-tank regulator was dislocated, and the regulator fitting was damaged consistent with impact forces. The oxygen supply line was separated at the tank fitting consistent with impact forces. Continuity of the oxygen supply line from the co-pilot (right) sidewall outlet to the separated tank fitting was confirmed. The oxygen tank pressure gauge on the pilot (left) sidewall appeared to be undamaged. It indicated zero at the time of the examination. The line appeared to be securely attached at the tank.

A portable on-demand oxygen delivery device was on the co-pilot's seat at the time of the on-scene examination. A supply line was installed from the co-pilot (right) sidewall oxygen outlet to an in-line pressure regulator and, from there, to the "Oxygen In" port on the device. Cannulas were installed at the "Pilot 1" and "Pilot 2" ports on the device.⁶ The supply line and cannulas were intact and unobstructed at the time of the examination.

Continental IO-550-B-EE (s/n 578775)

Hartzell PHC-C3YF-1RF/F8068 (s/n QG741B)

The engine was dislocated consistent with the forward fuselage damage. The upper portion of the crankcase and the cylinders appeared intact and undamaged. The lower portion of the engine, induction system, exhaust system, and fuel servo exhibited damage consistent with impact. The fuel control unit housing was fractured and separated from the engine. It was retained by the throttle cable. The butterfly valve was intact and rotated under hand pressure. The mixture control was separated near the cable rod end at the fuel control unit. Throttle and mixture control cable continuity was confirmed from the cockpit levers to the engine compartment. The fuel flow divider and associated fuel lines were intact. The unit was disassembled and was unremarkable.

Internal engine continuity was confirmed via crankshaft rotation. Compression/suction was obtained on all cylinders. The upper spark plugs were intact and exhibited normal combustion signatures. The lower spark plugs were not removed. The magnetos were securely installed and appeared undamaged. They produced spark across the ignition harness leads corresponding to the upper spark plug leads. The magneto and ignition harness leads corresponding the lower spark plugs were not tested.

The turbocharger was dislocated consistent with the impact damage but appeared otherwise intact. The impeller was rotated freely. The waste gate assembly was secure and appeared undamaged.

The propeller remained attached to the engine. One blade was bent aft about 90° over the length of the span; the blade exhibited leading edge gouges near the tip. The remaining blades were bent aft about 20° over the outboard portion of the span. Each blade

⁵ The airframe manufacturer provided the trim setting corresponding to the measured actuator extension.

⁶ Local authorities stated that the pilot was wearing a cannula when they arrived on-scene.

Summary of Airplane Examination

F. SUMMARY OF AIRPLANE EXAMINATION *(concluded)*

exhibited scraping damage. The propeller governor remained secured to the engine and appeared intact. Propeller control cable was secured to the governor.

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