

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

SUMMARY OF AIRPLANE EXAMINATION

-- CEN21FA345 --

ACCIDENT DETAILS

Location: Hartford, Wisconsin
Date: July 31, 2021
Time: 1130 cdt
Airplane: Piper J3C-65

EXAMINATION PARTICIPANTS

IIC John Brannen
 NTSB IIC
 Denver, Colorado

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 Milwaukee, Wisconsin

SUMMARY

On July 31, 2021, about 1130 central daylight time, a Piper J3C-65 airplane, N42522, was substantially damaged when it was involved in an accident near Hartford, Wisconsin. The flight instructor was fatally injured and the pilot receiving instruction was seriously injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 instructional flight.

EXAMINATION DETAILS

The airplane impacted an agricultural bean field about 1,100 ft west of the departure end of runway 27 at Hartford Municipal Airport (HFX). The NTSB IIC was not present for the recovery of the airplane from the accident site. The airplane had been moved from the site to a hangar on HFX. It was reported by the FAA Inspector that was on-scene that the airplane came to rest in the field in an upright position with evidence of a nose-low impact with the ground.



Figure 1. Photograph of the accident site (NTSB Photo)

The airplane was examined within a hangar at HFX on August 1, 2021. The airplane was positioned upright and was supported under its fuselage by wooden pallets. A sawhorse supported the front of the airplane.



Figure 2. Airplane during examination viewed from front left (NTSB Photo).



Figure 3. Airplane during examination viewed from front right. (NTSB Photo)

The fuselage of the airplane was predominately intact. The tail surfaces remained attached to the fuselage and were undamaged. The right fuselage side aft of the cockpit was undamaged. The left fuselage side had a bent lower longeron about 2 feet aft of the rear window of the airplane. But was otherwise undamaged. The forward fuselage was crushed rearward and upward with additional deformation in the cabin section of the fuselage. The cabin door area of the fuselage exhibited cuts made by first responders for extrication of the occupants. The landing gear was partially separated from the fuselage and both right and left gear legs remained attached by the rear attachment points.

The forward fuselage was crushed aft into the front seat pilot cockpit area. The deformation was limited to the area where the front pilot rudder pedals were and where the front pilot feet would be positioned. The airplane did not have shoulder harnesses installed. Only lap belts were present. The top of the instrument panel was bent forward.



Figure 4. Aft fuselage of airplane and tail viewed from rear left. (NTSB Photo)

Both wings remained partially attached to the fuselage and all four struts exhibited bending from impact.

The right-wing remained attached to the fuselage at both spar attachment points. The leading edge was intact with little damage. Both wing struts were bent due to impact. The aileron remained attached with all hinges intact and was not damaged.

The left wing was still attached to the fuselage by non-structural fairings. The front and rear spars were torn from the fuselage mounts. The left-wing leading edge was crushed aft at the tip. Both struts were bent due to impact. The aileron remained attached with all hinges intact and the aileron was not damaged.



Figure 5. Left wing showing tip damage. (NTSB Photo)

The flight control system continuity was verified by actuation of the pilot control stick and noting movement of the control surfaces, or movement of the associated control cables. There were no cable breaks discovered and they were continuous from the cockpit controls to the control surfaces.

The engine was still attached to the engine mount and was bent downward relative to the firewall. The engine crankshaft flange was bent downward, and the propeller was still attached to the crankshaft flange. The propeller was removed to facilitate engine examination. With the propeller and upper set of spark plugs removed, the engine crankshaft could be rotated by the crankshaft flange. Valve train continuity was established by removing the rocker covers and observing valve motion during crankshaft rotation.



Figure 6. Engine during examination. (NTSB Photo)

The spark plug leads were removed and the crankshaft rotated to check spark. Both magnetos produced spark from all leads.

The carburetor attachment flange portion of the intake was broken off with the flange remaining attached to the carburetor. The carburetor was disassembled, and no anomalies were noted. The fuel bowl was clean, and the floats were intact.



Figure 7. Carburetor during examination. (NTSB Photo)

The metal propeller remained attached to the crankshaft flange. Both blades were intact but bent rearward. One blade exhibited more bending than the other. Both blades had evidence of chordwise abrasion on the front surfaces.

John Brannen
NTSB IIC