

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN24LA077

EXAMINATION SUMMARY

April 30, 2024

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A. ACCIDENT

Location: Washington, Missouri
Date: December 30, 2023
Time: 1500 central standard time
Aircraft: Bellanca 17-30A, N678MJ

B. PARTICIPANTS

Investigator-in-Charge (IIC) Timothy Sorensen
Aviation Accident Investigator
National Transportation Safety Board
Denver, Colorado

Party Representative Norman Loftsgard
Principal Maintenance Inspector
FAA Flight Standards
St. Ann, Missouri

Party Representative Gregory Shelley
Aviation Safety Inspector
FAA Flight Standards
St. Ann, Missouri

C. ACCIDENT SUMMARY

On December 30, 2023, about 1500 central standard time, a Bellanca 17-30A airplane, N678MJ, was substantially damaged when it was involved in an accident near Washington, Missouri. The pilot sustained serious injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

Post-recovery airframe and engine examinations were conducted on April 30, 2024, at Midwest Air Recovery (Carbondale, Illinois). The examinations were conducted under direct oversight of the NTSB and with the assistance of FAA inspectors.

D. EXAMINATION SUMMARY

1.0 Airframe Examination¹

Bellanca 17-30A (s/n 79-30941)

The airframe examination was limited to the fuel system and engine controls. Engine control continuity – throttle, mixture, propeller – from each cockpit control to the throttle and control unit or the propeller governor, as appropriate, was confirmed.

Low pressure compressed air was provided at each wing root fuel inlet. Pronounced air flow was obtained at the firewall fuel supply line. Air flow corresponded to the position of the cockpit fuel selector. Air flow was observed when the selector was set to the corresponding wing and no air flow was observed when the selector was set to the opposite wing or to the off position. Each fuel selector position detent was pronounced.

The fuel lines within the fuselage appeared secure. The gascolator was crushed upward consistent with impact forces. The fuel screen exhibited minor deformation; however, it was otherwise intact and clear of any debris or sediment.

2.0 Engine Examination

Continental IO-550-F (17) (s/n1031332)

The engine remained in position relative to the airframe. The forward left engine mount was fractured. The crankcase and cylinders appeared intact and secure. The valve covers were secure and intact. The intake ducting was secure, undeformed, and unobstructed. The air filter housing was undamaged and secure. The filter element was intact.

The aft portion of the exhaust was crushed upward consistent with impact damage. The exhaust ducting was secure to the cylinders, intact, and unobstructed. The exhaust collectors were secure. Borescope examination of both the left and right collectors was unremarkable.

Internal engine continuity was confirmed via crankshaft rotation. Compression and suction were obtained on all cylinders. The valve springs and rocker arms were unremarkable and exhibited normal movement.

The throttle and control unit was secure and appeared undamaged. The butterfly valve was intact, and movement of the valve corresponded to movement of the throttle control. The mixture control cable remained attached, and movement of

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

the control arm corresponded to movement of the cockpit mixture control. The fuel screen was secure, intact, and free of debris or sediment.

The magnetos were securely installed and appeared undamaged. Both ignition harnesses remained attached to their respective magnetos and to each spark plug. The spark plugs were secure. Each spark plug electrode was intact and exhibited normal combustion signatures. Both magnetos provided a spark at each spark plug electrode via the harness leads during rotation of the crankshaft.

The fuel distributor valve and fuel injector lines were intact and secure. Each fuel injector was secure and unobstructed. The distributor valve was disassembled. The diaphragm was intact, the screen free of debris or sediment, and the spring was unremarkable.

The fuel pump was securely attached and appeared undamaged. The drive coupling was intact, and the pump rotated freely by hand.

The propeller governor was secure and appeared undamaged. The control arm was intact and rotated freely stop to stop corresponding to movement of the cockpit propeller control. The component was not examined further.

The oil lines were secure, and no evidence of an oil leak was observed. The oil filter was undamaged and securely installed to the remote base at the firewall. No anomalies were observed.

The engine was equipped with two mufflers. Both mufflers appeared to be intact and securely installed. Neither muffler was equipped with a flame cone, and no support brackets were observed within the muffler housings. Additionally, there was also no evidence of spot welds commonly used to secure the flame cone supports on the muffler housings.

3.0 Propeller Examination

The propeller remained attached to the engine crankshaft (propeller) flange. The spinner exhibited minor scraping/scuffing damage. However, there were no obvious rotational signatures. Each propeller blade was retained by the hub, and no blades were fractured. One blade was bent aft about 30° near mid span. The remaining blades appeared undeformed. None of the blades exhibited any obvious damage such as leading-edge gouges or scraping.

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