

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA25LA053

WRECKAGE AND ENGINE EXAM REPORT

04/18/2025

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A. ACCIDENT

Location: Doylestown PA.
Date: November 18, 2024
Time: 12:21 EST
17:21 UTC
Airplane: Beechcraft A36 Bonanza

B. WRECKAGE AND ENGINE EXAM REPORT

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C. SUMMARY

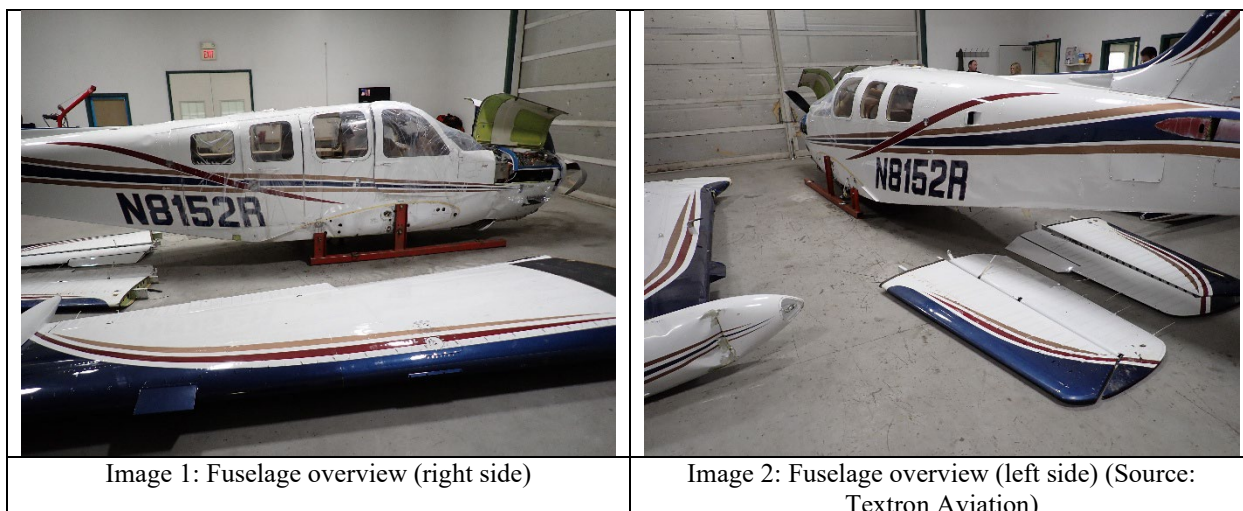
The examination of the wreckage did not reveal any anomalies that would have precluded normal operation. The engine was prepared for shipment to Continental Aerospace Technologies for additional examination and test run.

D. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

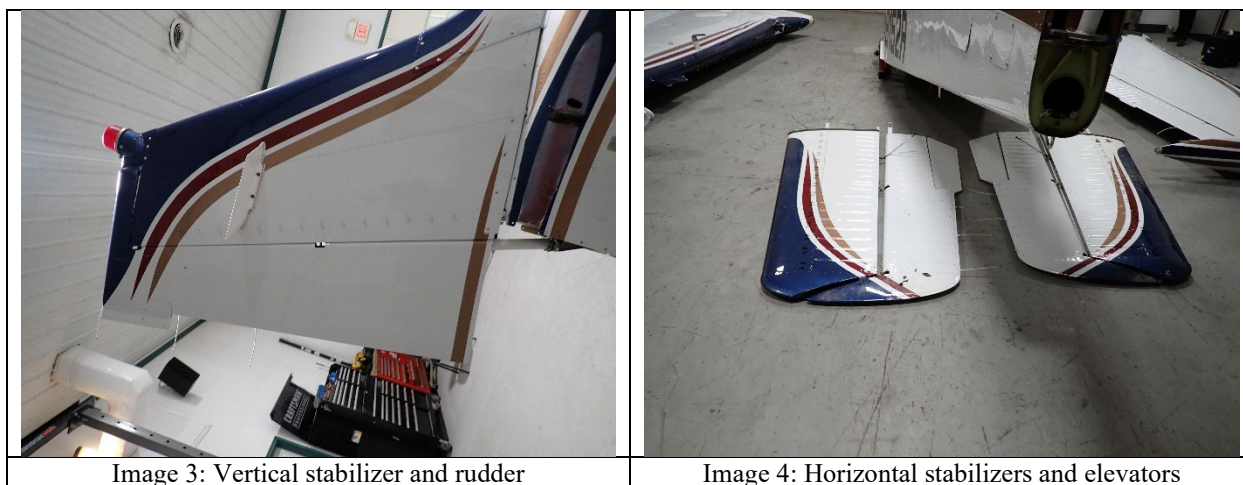
1.1 Fuselage

Examination of the fuselage revealed that the front windshield had shattered. The pilot's windshield post was damaged from impact. The upper fuselage was damaged in multiple places, and the forward door frame was impact-damaged, which prevented the pilot's door from fully closing. There was substantial damage to the lower fuselage.



1.2 Empennage

The horizontal stabilizers were removed by the recovery personnel prior to the examination. Both elevators were still attached to the horizontal stabilizers. No damage or abnormalities were found in any section of the empennage.



1.3 Wings

The wings were removed from the fuselage by the recovery personnel prior to the examination. The left wing sustained impact damage to the leading edge at the root and 10 inches outboard of the root. The left wing tip tank was damaged at the nav light and along the bottom. The right wing sustained minor damage to the lower skin. The stall warning vane operated normally.



Image 5: Left wing overview (wing inverted)



Image 6: Right wing overview

1.4 Flight and Engine Controls

The control cables for the rudder and elevators were disconnected from the empennage bellcranks. The aileron cables were disconnected at the turnbuckles in the wings. Confirmed freedom of movement of both ailerons and their attached bell cranks. The flaps were found to be extended to 15 degrees down. Verified control cable continuity from the yoke and pedestal to the aileron cables, elevator cables, rudder cables and trims. No abnormalities found. Engine controls were moved through their full range of motion. All controls had freedom of movement to their respective stops.

1.5 Landing Gear

The landing gear motor was found in the up position. The landing gear handle was found in the down position.

1.6 Cockpit and Avionics

The seats and interior floor panels were removed by the recovery personnel. The instrument glare shield was broken into multiple pieces. A Shadin Ful/Airdata Computer (P/N: 912802, S/N: 087), a JPI EDM-900 (P/N 790000-A-1862, S/N: 03051), and a Garmin Aero 796 (S/N: 2CY014482) were removed and shipped to the NTSB Recorders Laboratory in Washington, D.C. for data download.



Image 7: Instrument panel overview

1.7 Fuel/Fuel System

Both main wing bladder type fuel cells were intact and undamaged. The right and left wing tip tanks had scraping damage along the lower length of the pod. The left tip tank was breached along the outboard side of the pod. All the fuel caps were intact with pliable seals. Both wing tank vents were free from obstruction. Both wing tank finger screens were clean. The fuel selector valve was found in the "OFF" position. The fuel selector handle assembly exhibited positive detents and passed air from the tank outlets to the firewall bulkhead fitting as selected. Fuel was found in the strainer assembly. The residual fuel was free of contaminants and water and had the color and odor consistent with 100LL Avgas. The airframe electrically power fuel pump switch was found in the "OFF" position.

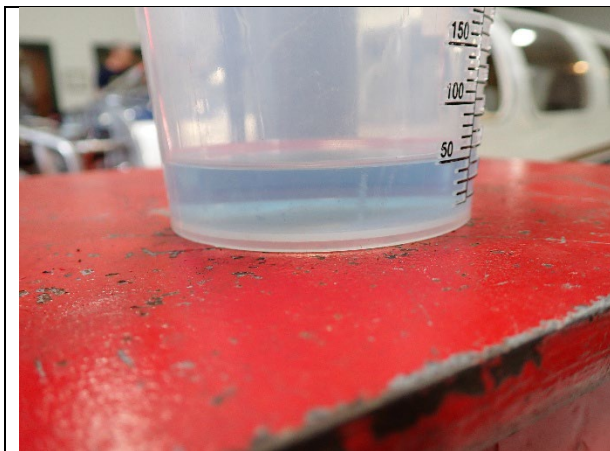


Image 8: Recovered fuel



Image 9: Airframe fuel strainer screen

2.0 Engine Examination

The top spark plugs were removed. The electrodes displayed normal operating and wear signatures. The cylinders were inspected using a lighted borescope; the cylinder walls, piston

faces, and valve heads displayed normal operating and combustion signatures. Continuity was established between the crankshaft, camshaft, connecting rods, and associated components by rotating the crankshaft 720°. All six cylinders displayed thumb pressure and suction during crankshaft rotation. The magneto impulse couplings operated normally during crankshaft rotation. The engine throttle and fuel metering inlet screen contained light debris but no blockage that would prevent normal fuel flow. No evidence of leakage was found in the fuel system between the firewall and the engine injectors. The fuel injectors were GAMI injectors, and all were found to match the placarded locations. All 4 engine mounts were impact damaged and broken. As a result, the engine was removed and crated for shipment to Continental Aerospace Technologies for further testing.



Image 10: Engine overview (right side)



Image 11: Engine overview (left side)

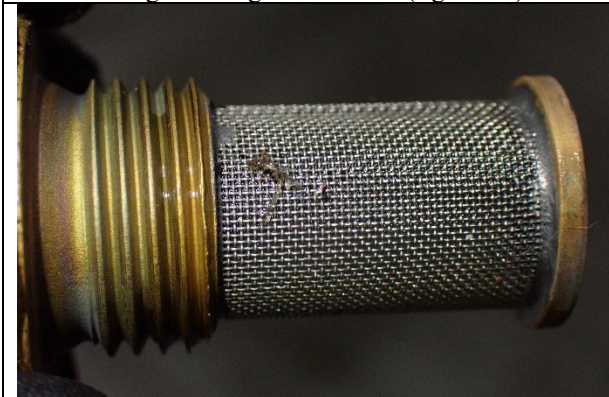
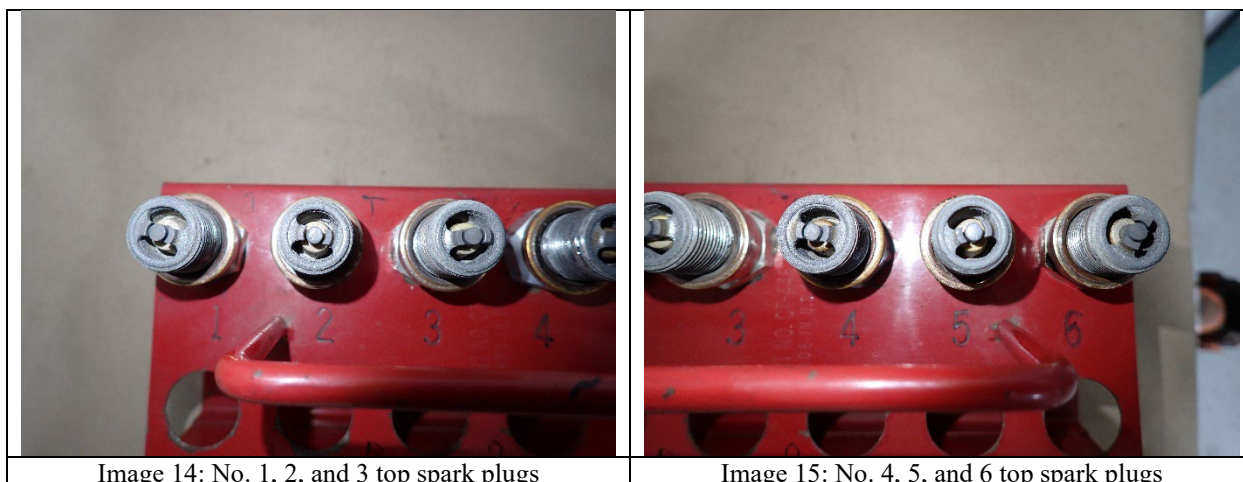


Image 12: Throttle and fuel metering assembly inlet screen



Image 13: Throttle and fuel metering assembly inlet screen



3.0 Propeller Examination

The propeller remained attached to the engine and displayed impact damage. The propeller blades were marked “A”, “B”, and “C” for identification purposes. The propeller blade marked “A” displayed aft bending and twisting deformation, polishing of the cambered end, and the face side. The propeller blade marked “B” displayed aft bending and twisting deformation, polishing of the cambered end, and the face side. A portion of the blade tip was missing. The propeller blade marked “C” displayed aft bending with minor tip curling.

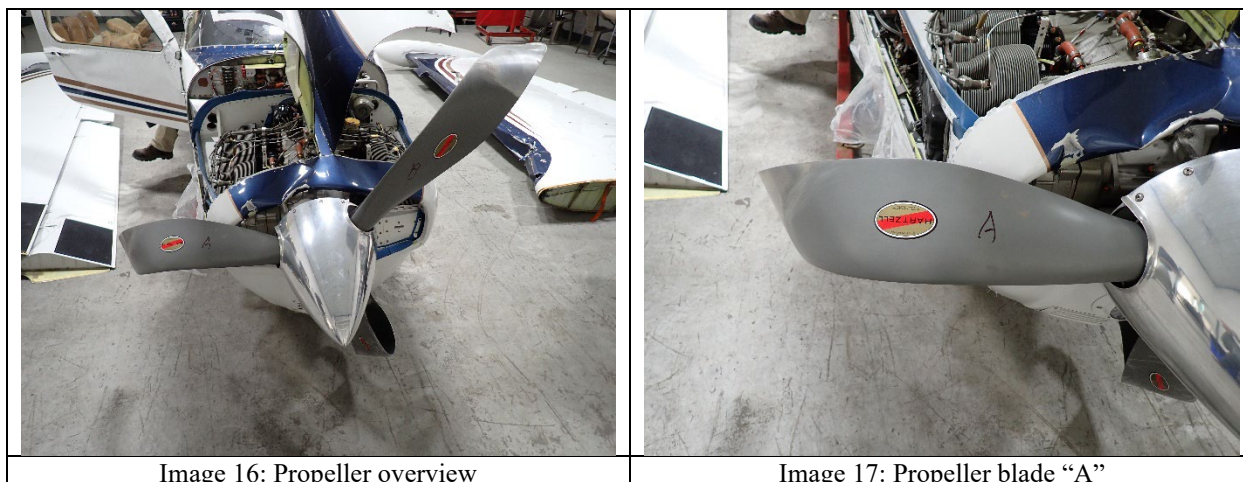




Image 18: Propeller blade "A"



Image 19: Propeller blade "A"



Image 20: Propeller blade "B"



Image 21: Propeller blade "B"



Image 22: Propeller blade "B"



Image 23: Propeller blade "C"



Image 24: Propeller blade "C"



Image 25: Propeller blade "C"

Submitted by:

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