

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN24LA104

EXAMINATION SUMMARY

February 26, 2024

A. ACCIDENT

Location: Cherokee, Oklahoma
Date: February 2, 2024
Time: 1042 central standard time
Airplane: Piper PA-24-260 / N4284

B. EXAMINATION SUMMARY

Party Representative James Wirt
Principal Maintenance Inspector
Federal Aviation Administration
Oklahoma City, Oklahoma

Party Representative Austin Woods
Aviation Safety Inspector
Federal Aviation Administration
Oklahoma City, Oklahoma

Party Representative Troy Helgeson
Air Safety Investigator
Lycoming Engines
Williamsport, Pennsylvania

C. SUMMARY

On February 2, 2024, at about 1042 central standard time, a Piper PA-24-260 airplane, N4284, was substantially damaged when it was involved in an accident near Cherokee, Oklahoma. The pilot was not injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

A post-recovery airframe and engine examination was conducted on February 26, 2024, in the pilot's hangar located at the Enid Woodring Airport. The examination was conducted by FAA inspectors with the assistance of Lycoming Engines. In addition, a mechanic from Wren Aviation provided exam support.

A secondary examination of both magnetos was conducted under the direction and oversight of the investigator-in-charge.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The airplane impacted the airport perimeter fence followed by a barbed-wire fence during an attempted go-around and came to rest in a pasture about 500 feet south of the runway threshold.

2.0 Airframe Examination

Piper PA-24-260 (s/n 24-4284)

The airframe sustained damage to the fuselage and both wings consistent with impact forces. Examination of the airframe fuel system did not reveal any anomalies related to a lack of sufficient fuel flow to the engine for normal operation. All fuel lines were clear. The airframe fuel screen was intact and unobstructed. The fuel selector valve functioned normally with no anomalies noted.

3.0 Engine Examination

Lycoming IO-540-D4A5 (s/n L-1727-48)

The engine remained attached to the engine mount and firewall. The engine mount exhibited minor deformation. Visual examination of the engine was unremarkable. The air filter was embedded with grass and dirt. The intake air and exhaust ducting were securely attached to the cylinders and appeared intact. The left muffler was secure. The internal vanes within the left muffler appeared warped but remained secure. The flame cone appeared secure and undamaged. The right muffler was secure and appeared intact.

Internal engine and valve train continuity were confirmed via crankshaft rotation. Compression and suction were obtained at each cylinder. Borescope examination of each cylinder was unremarkable, and the pistons and valves were intact. The spark plugs were securely installed. The electrodes were intact and displayed normal combustion signatures.

Both magnetos were secure. Timing was determined to be approximately 25° BTDC.¹ A spark was observed across each ignition lead when the engine crankshaft was rotated. Further examination of both magnetos revealed that the contacts and points were worn and eroded, and the interior surfaces exhibited a slight oil residue. A secondary examination of both magnetos confirmed the initial findings. A spark was observed at each terminal when run on a test bench.

The engine driven fuel pump was secure and appeared undamaged. The drive coupling was intact, and the input drive rotated freely by hand. Fuel pressure was obtained at the outlet during operational testing. No anomalies were observed.

The fuel flow divider was secure and intact. The spring and diaphragm were undamaged. The housing cavity was free of debris or sediment. The fuel injectors secure and clear. The fuel servo was intact, and the inlet fuel screen was free of debris.

Both the throttle and mixture cables were securely attached to the throttle and mixture control arms. The control arms operated freely from stop to stop.

¹ BTDC - Before top dead center.

The propeller governor remained securely attached to the engine and appeared intact. The propeller control cable remained attached to the propeller governor control arm. The control arm rotated freely from stop to stop.

4.0 Propeller Examination

Hartzell HC-C3YR-1RF/F7590 (s/n PA2180B)

The propeller remained attached to the engine crankshaft. Two blades were bowed forward, and the third blade was bent aft. All three blades exhibited leading edge polishing and gouging.

Submitted by:

Timothy Sorensen

Senior Aircraft Accident Investigator