

National Transportation Safety Board

Office of Aviation Safety

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CEN24LA039

ENGINE EXAMINATION

January 30, 2024

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A. ACCIDENT

Location: Ozark, Missouri
Date: November 17, 2023
Time: 1524 Central Standard Time
2124 Coordinated Universal Time
Airplane: N16253, Piper PA-32-300

B. ENGINE EXAMINATION

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C. SUMMARY

An examination of the engine was conducted to determine a reason for the loss of engine power.

D. DETAILS OF THE EXAMINATION

1.0 Engine Examination

The engine had been impact separated from the airplane and was hoisted to facilitate the examination. The propeller remained attached to the engine via the propeller flange.

There was no obvious damage to the crankcase or accessories. All fuel lines appeared to be properly secured. Since the engine was separated from the fuselage, engine control continuity could not be established.



Figure 1 Engine (NTSB Photo)

The engine was a Lycoming IO-540-K1A5 engine, s/n L-10762-48A.



Figure 2 Data Tag (NTSB Photo)

The top spark plugs were removed and were unremarkable.



Figure 3 Top Spark Plugs (NTSB Photo)

An initial examination of the engine was conducted at the accident scene by Federal Aviation Administration inspectors. The fuel pump had been removed at that time, and partially mounted back to the engine prior to the examination. The accessory side of the fuel pump exhibited rust, which was not observed initially, so it likely developed when the engine was stored outside. The fuel pump spline rotated smoothly when actuated by hand. Disassembly of the engine driven fuel pump did not find any evidence of malfunction or failure within the component.

The engine rocker box covers removed and the propeller was rotated by hand. Engine valve train and thumb compression was established to all cylinders. The magnetos would not produce spark during engine rotation, so they were removed. Both magnetos contained a substantial amount of water, likely due to the engine being stored outside. Attempts to dry and get the magnetos to produce spark were not successful. The ignition harness was impact damaged in multiple locations and could not be functionally tested.

The throttle and mixture arms on the fuel servo actuated without resistance from stop to stop. The fuel inlet screen was removed and found to be clear of debris. A residual amount of fuel was extracted from the fuel servo and tested for the presence of water using a water-detection paste; the fuel tested did not contain water.



Figure 4 Inlet Fuel Screen (NTSB Photo)

The fuel divider was removed and examined. No contamination or defect was detected with the internal components. The fuel lines from the divider to the cylinders were unobstructed. All fuel nozzles were removed and found to be clear of debris.

2.0 Propeller Examination

Blade A exhibited leading polishing, but remained relatively straight and undamaged.



Figure 5 Blade A

Blade B had several nicks and gouges on its leading edge. There was also leading edge polishing and chordwise scratches. The blade was bent slightly rearward near the blade root.



Figure 6 Blade B

Submitted by:

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