

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR22LA213

AIRFRAME & ENGINE EXAMINATION SUMMARY

August 16, 2022

TABLE OF CONTENTS

A. ACCIDENT	3
B. AIRFRAME & ENGINE EXAMINATION SUMMARY	3
C. SUMMARY	3
D. DETAILS OF THE EXAMINATION.....	3
1.0 AIRFRAME EXAMINATION.....	3
1.1 Fuel/Fuel System.....	4
2.0 ENGINE EXAMINATION	5
3.0 PROPELLER EXAMINATION	6

A. ACCIDENT

Location: Auburn, Washington
Date: June 11, 2022
Time: 1836 Pacific standard time
Airplane: Piper PA-24-250, N7482P

B. AIRFRAME & ENGINE EXAMINATION SUMMARY

IIC Eleazar Nepomuceno
National Transportation Safety Board
Federal Way, Washington

C. SUMMARY

On June 11, 2022, about 1836 Pacific standard time, a Piper PA-24-250, Comanche, N7428P, was substantially damaged when it was involved in an accident near Auburn, Washington. The pilot and passenger were not injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

The pilot reported prior to his approach to land at his destination airport, the pilot moved the fuel selector lever from left to right. While on his approach to Auburn Municipal Airport (S50) after a local flight, he performed his prelanding and reduced the engine power setting to 15 inches of manifold pressure and slowly advanced the propeller lever forward when the engine lost all power. The pilot immediately verified that the position of the mixture was full rich, and that the fuel boost pump was on. Simultaneously, the pilot moved the fuel selector lever from the right main tank to left main tank, but then decided to switch back to the right main tank. The engine briefly started but then lost all power. The pilot completed a forced landing to an open field and during the landing roll, the airplane impacted a dirt berm, and the landing gear collapsed.

The airplane and engine were recovered and stored at Avtech Services LLC in Auburn, WA.

D. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

The wreckage examination (figure 1) was performed at Avtech Services LLC in Auburn, WA. Examination of the airframe revealed that the right wing was substantially damaged. Flight control continuity was established throughout the airframe from the cockpit to all primary flight controls surfaces. The right main fuel tank, left auxiliary,

and right auxiliary had fuel and appeared to be all full. The left main tank had about a gallon of fuel. The throttle, mixture, carburetor heat, and propeller governor lever in the cockpit and on the engine were found intact and maintained continuity.



Figure 1. View of airplane wreckage at examination

1.1 Fuel/Fuel System

All fuel and oil lines were secured. Inspection of the engine-driven fuel pump revealed it operated satisfactory when operated by hand; no defects were noted. Residual fuel was noted inside the pump and in the inlet and outlet flexible fuel lines to the engine-driven fuel pump. The fuel was consistent with 100 low lead. The carburetor was removed, and inspection of the inlet screen revealed it was clean. The carburetor was disassembled and there were about 5 ounces of fuel in the carburetor bowl; the metal floats were not crushed. The fuel in the carburetor bowl was tested using water finding paste and no water was detected. The float height was not measured. The accelerator pump checked good when the throttle lever was actuated, and the needle valve and seat checked good during hand movement of the float.

The fuel selector was in the off detent when first viewed. Detents were felt at the fuel selector for all 4 (right and left main tanks and left and right auxiliary tanks) positions. The fuel selector was then positioned to each tank position and fuel was seen escaping the fuel strainer/drain. The detents were audible and could be felt. The fuel supply and vent lines in both wing fuel tanks were free of obstructions.

2.0 Engine Examination

Lycoming O-540-A1D5, Serial No. L-6333-40; TSOH:2133.38 TT: 4465.77
Last Engine Annual Inspection: 3/1/2022



Figure 2. View of engine at engine examination

Examination of the recovered engine revealed that the engine remained intact with no signs of visible impact damage. The engine stayed secure in the engine compartment throughout the examination. The engine, to include the mounts and engine truss, had no visible impact damage to the cylinders or crankcase. The attached engine its accessories were found intact and secured to its corresponding mount pad.

All spark plug wire ignition leads were disconnected. The top spark plugs were removed. The rocker box covers were removed. The intake and exhaust rocker arms were intact, and oil coated residue was seen in all cylinders. All intake and exhaust valve springs were in place and visually appeared to be undamaged. The upper spark plugs were removed, and all six cylinders were examined internally using a lighted borescope. A normal amount of combustion deposits was observed within the combustion dome of each cylinder and piston face. All the intake and exhaust valves were unremarkable. The crankshaft was rotated by hand using the propeller. Rotational continuity was established throughout the engine and valve train. Thumb compression and suction was obtained on all six cylinders.

The ignition wire harness from the right and left magneto distributor caps were followed and revealed that all leads were routed to the appropriate spark plug. Bottom ignition lead springs mating with bottom spark plugs for no. 2, no. 4, and no. 6 revealed signs of corrosion. The magnetos were removed, spun by a mechanical device and noted to spark at all ignition leads. The spark plugs were checked for gap, wear, and color using the Champion Aviation Check-A-Plug chart and all were normal. There were no indications of rich or lean condition. Each P-Lead were tightly installed; no issues were identified with either P-Lead.

The engine had 12 quarts of oil. The oil filter was removed and cut open. The internal filter element was clear any metallic debris. The intake and exhaust tubes did not sustain impact damage.

3.0 Propeller Examination

Inspection of the three-bladed propeller revealed one blade was bent aft approximately 20 degrees beginning about 8 inches from the hub and exhibited chordwise scratches on the cambered side of the blade, while the other blades was not damaged with minimal scratches.

Submitted by:

Eleazar Nepomuceno
Aviation Accident Investigator