

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR24LA082

NTSB WRECKAGE EXAMINATION REPORT

May 21, 2024

TABLE OF CONTENTS

A. ACCIDENT.....	3
B. PARTICIPANTS.....	3
C. SUMMARY	3
D. DETAILS OF THE EXAMINATION.....	4
1.0 AIRFRAME EXAMINATION.....	4
1.1 Fuselage.....	4
1.2 Empennage	4
1.3 Wings.....	5
1.4 Cockpit.....	7
1.5 Fuel/Fuel System.....	7
2.0 ENGINE EXAMINATION	8
3.0 PROPELLER EXAMINATION	10

A. ACCIDENT

Location: Eden, Oregon
Date: January 26, 2024
Time: 1329 Pacific standard time
1800 UTC
Airplane: Piper PA-18A-150 Supercub

B. PARTICIPANTS

IIC	Stephen Stein National Transportation Safety Board Federal Way, Washington
Party member	Troy Helgeson Lycoming Engines Williamsport, Pennsylvania
Investigator	Scott Johnson National Transportation Safety Board Coeur d'Alene, Idaho

C. SUMMARY

On January 26, 2024, about 1329 Pacific standard time, a Piper PA-18A-150, N7473D, was substantially damaged when it was involved in an accident near Eden, Oregon. The pilot was seriously injured, and the passenger received minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the pilot and passenger both stated that they had a limited recollection of the accident flight. The pilot reported that they departed Joseph State Airport (JSY), Joseph, Oregon at 0955 with 36 gallons of fuel on board, for a scenic flight. At an unknown point during the flight they landed on a private airstrip owned by the passenger. The passenger reported that they were returning from his property when they impacted the ground, approximately three hours into the flight. The pilot and passenger could not remember any further details.

D. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

1.1 Fuselage

The fuselage remained mostly intact with some bent structural tubes at the top of the cabin. The forward seat foot well was crushed upward and the right rudder pedal was displaced. The instrument panel was unremarkable.



Figure 1: Airplane prior to wreckage examination

1.2 Empennage

The empennage was intact and undamaged. The right horizontal stabilizer and elevator were also undamaged, but had been disassembled by recovery personnel. The elevator control cables were continuous from the flight control stick to the empennage. The rudder remained attached to the empennage and rudder control continuity was confirmed from the rudder pedals at the cockpit to the flight control surface.



Figure 2: Empennage

1.3 Wings

Both wings were removed by recovery personnel. The right wing was separated inboard; however, the aileron and flap remained attached. Both the right and left wing struts were damaged. The left wing remained intact and the left aileron and flap remained secured at their respective attachment points. The left and right aileron cables were continuous from their flight control surfaces to the wing roots.



Figure 3: Left wing



Figure 4: Right wing

1.4 Cockpit

The throttle and mixture control remained attached to the airframe. The fuel selector was unremarkable and was found in the OFF position. The master switch, circuit breakers, and fuel sight gauge panel was located on the right side of the forward cockpit above the pilot's seat. The panel was damaged, and the master switch was disconnected. The magneto switches were on left wall of the cockpit and found in the off position.

1.5 Fuel/Fuel System

The airplane was equipped with two metal fuel tanks that were installed at the wing root of the right and left wings. Both fuel tanks were filled with about 5 gallons of water. The water in both wings was expelled from the lower fuel port, which revealed that neither tank was compromised. The fuel lines were continuous from their disconnection at the wing roots to the engine at the carburetor. The fuel strainer bowl was free of contamination and the strainer filter a trace amount of debris.



Figure 5: Fuel strainer filter

2.0 Engine Examination

The airplane was equipped with a Lycoming Engines O-320-A2B, a 180 hp, horizontally opposed, air cooled, normally aspirated, reciprocating engine. The engine remained intact and mostly undamaged with exception of the engine air filter, which was partially crushed upward. The cylinder 2 exhaust tube was bent upwards near the engine fire wall and the tube was cracked and partially displaced at the cylinder when compared to the exhaust tube for cylinder 1 and 3. The airplane had no evidence of oil staining on the fuselage or in the cowling. There was a trace amount of oil staining below the nut of the cylinder 4 oil return line, but no evidence of a leak.

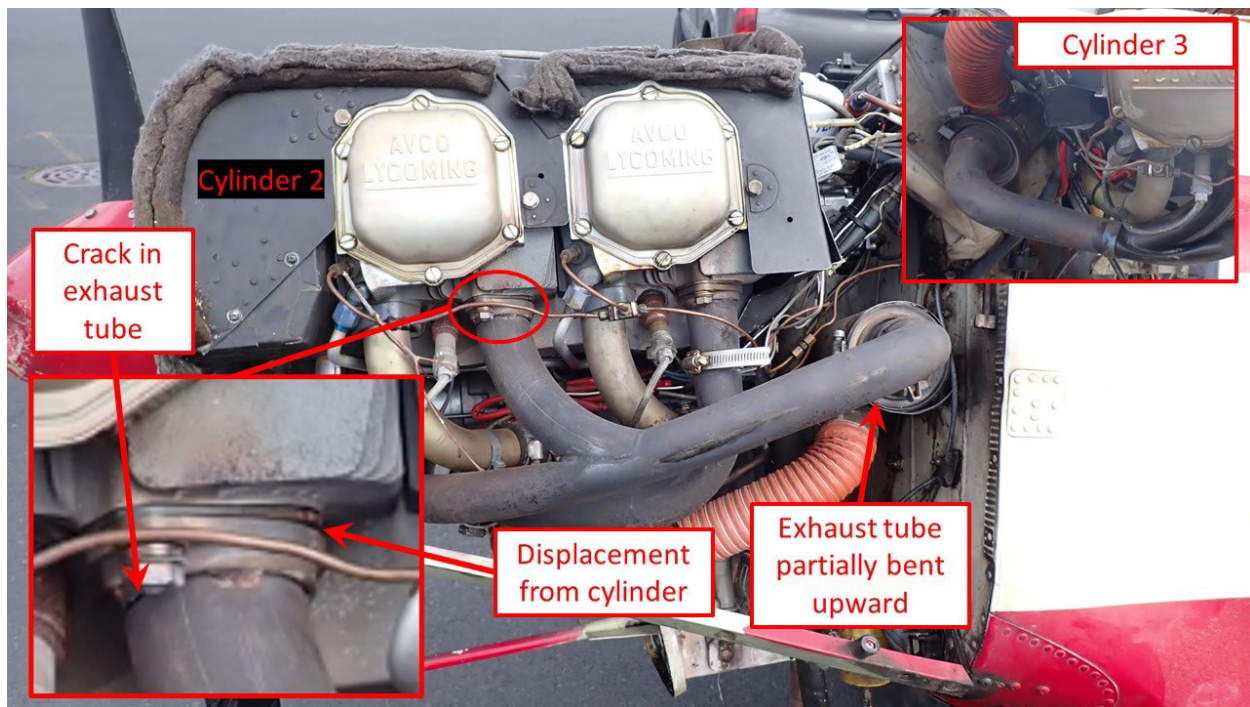


Figure 6: Cylinder 2 crack and displacement

The engine hours below were taken from the aircraft logbooks.

Engine Hours

TSMOH: 1,186.36 hrs

TT: 6,768.12 hrs

2.1 Crankshaft, valve train, and compression

Mechanical continuity was established throughout the rotating group, valve train and accessory section as the crankshaft was manually rotated at the propeller by hand. Thumb compression was achieved at all four cylinders in the proper firing order and most of the valves displayed normal lift when the crankshaft was rotated. The cylinders were not examined with a lighted borescope.

2.2 Ignition system

All eight of the ignition harness wires remained attached at the magnetos and corresponding spark plugs. The top spark plugs were Champion REM 38S fine wire plugs and were free of mechanical damage. Each of the top plugs displayed coloration consistent with normal wear with some evidence of rust and corrosion. The electrodes were undamaged.



Figure 7: Top spark plugs

2.3 Engine Run

100 low lead aviation grade gasoline was plumbed into the left wing fuel line at the wing root to facilitate an engine run. Approximately 4 shots of primer were applied and the mixture control was advanced to the full rich position. As the master switch was disconnected, the engine was started by cutting the starter wire and contacting a 12v jumper cable to the open wire. The engine started up and idled for about 30 seconds and the throttle was subsequently advanced to the 50% position. The tachometer was not observed at this time due to the position of the operator in relation to the instrument. The engine ran smooth and continuous during the entire engine run. A small oil leak was observed at the cylinder 3 exhaust tube and the engine was subsequently shut down for safety reasons.

3.0 Propeller Examination

The McCauley 2 bladed fixed blade propeller remained attached to the propeller hub. One propeller blade exhibited tip curling and the other blade was slightly bent aft. The camber and face sides were both unremarkable.



Figure 8: View of propeller blades from front of airplane

Submitted by:

Stephen Stein
Senior Aviation Accident Investigator