

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA22LA191

WRECKAGE EXAMINATION SUMMARY

July 12, 2022

Table of Contents

A. ACCIDENT	3
B. WRECKAGE EXAMINATION SUMMARY	3
C. DETAILS OF THE INVESTIGATION	3
D. AIRFRAME EXAMINATION.....	4
1.0 FUSELAGE.....	4
2.0 WINGS.....	6
3.0 EMPENNAGE	7
E. ENGINE EXAMINATION	8
F. PROPELLER EXAMINATION.....	14

A. ACCIDENT

Location: Grantsville, Maryland
Date: April 16, 2022
Time: 1952 EDT
Airplane: Piper PA-32-260, N3618W

B. WRECKAGE EXAMINATION SUMMARY

IIC	Heidi Kemner NTSB Ashburn, VA
Party Coordinator	Jon Hirsh Piper Aircraft Vero Beach, FL
Party Coordinator	Ryan Enders Lycoming Engines Williamsport, PA

C. DETAILS OF THE INVESTIGATION

On April 16, 2022, about 1952 eastern daylight time, a Piper PA-32-260, N3618W, was substantially damaged when it was involved in an accident near Grantsville, Maryland. The commercial pilot and two passengers received minor injuries. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

According to the pilot, he performed a preflight inspection with no anomalies noted, received a weather briefing, and departed with an instrument flight rules clearance. About 2 hours into the flight, the airplane was about 11,000 ft mean sea level approaching clouds and the pilot increased engine power and turned the pitot heat on. The airplane was "underperforming and unable to climb over the clouds." After entering the clouds, he noticed the airspeed decreasing and the autopilot was increasing the pitch of the airplane to maintain altitude. The pilot disengaged the autopilot, decreased the pitch attitude of the airplane, and noted that it was "difficult to maintain pitch control." He examined the wings and windscreen for any signs of ice but was unable to see any.

D. AIRFRAME EXAMINATION

1.0 Fuselage

The fuselage remained intact and exhibited wrinkling on the left side. The wings and empennage were cut to facilitate recovery. Flight control cable continuity was confirmed from the flight controls in the cockpit to the flight control surfaces through multiple cuts made by recovery personnel and tensile overload fractures.



Figure 1. View of fuselage.

The baggage door was impact separated and recovered.

The fuel strainer was removed from the fuselage. The screen did not contain debris. The strainer bowl contained unknown debris and fluid that smelled similar to 100LL aviation fuel. The fuel selector was noted between the right tip tank and the right main fuel tank. The fuel selector valve was noted in the right main fuel tank position.

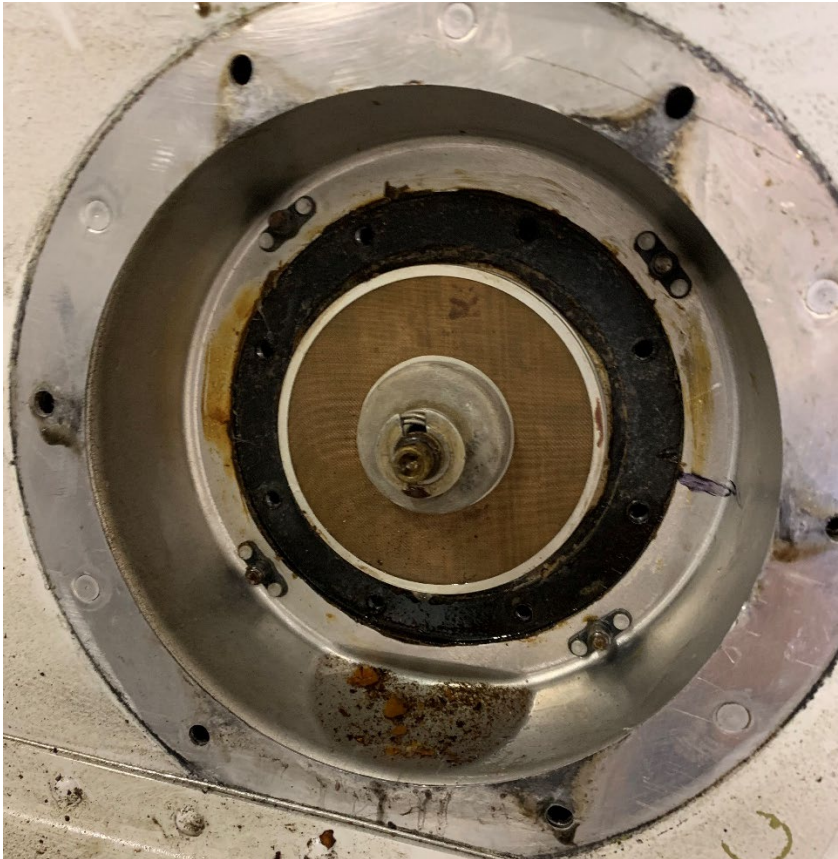


Figure 2. Fuel strainer.

The ELT remained inside the aft section of the fuselage. It was removed and it was in the OFF position.



Figure 3. View of ELT.

2.0 Wings

The wings were cut from the fuselage for recovery. They were cut into multiple sections. All components of the wings were recovered. Both left and right wings exhibited leading edge impact damage. All fuel tanks were breeched and no fuel was present.



Figure 4. View or right wing.



Figure 5. View of left wing.

The pitot mast was impact separated but remained attached to the left wing through wires. It was removed, power was applied, and the pitot mast heated.

The lift detector was examined and electric continuity was confirmed.

3.0 Empennage

The empennage was separated from the fuselage to facilitate recovery. The stabilator balance weight remained attached. The stabilator trim tab remained attached to the stabilator. The vertical stabilizer remained attached to the empennage. The rudder remained attached to the vertical stabilizer.



Figure 6. View of Empennage.

A hornet's nest was located in the top of the rudder.

The pitch trim was measured and noted in the full nose up position.

E. ENGINE EXAMINATION

The engine was removed to facilitate examination. All cylinders remained attached to the crankcase and compression was observed on all cylinders. Crankshaft and valvetrain continuity were confirmed when the propeller was rotated by hand. The cylinders were examined with a lighted boroscope and no anomalies were noted.



Figure 7. View of engine.

The top and bottom spark plugs were removed. They all exhibited "worn out - normal" condition when compared to the Champion-Check-A-Plug Chart. The No. 5 bottom spark plug contained debris similar to carbon. The Nos. 1 & 2 bottom spark plugs were oil soaked.



Figure 8. View of spark plugs.

The oil filter was removed and examined. No debris was noted in the filter element. Oil was present in the oil sump. When measured, the dipstick indicated about 3 quarts of oil. The oil suction screen was removed from the engine and no debris was noted. The oil cooler remained attached to the engine.

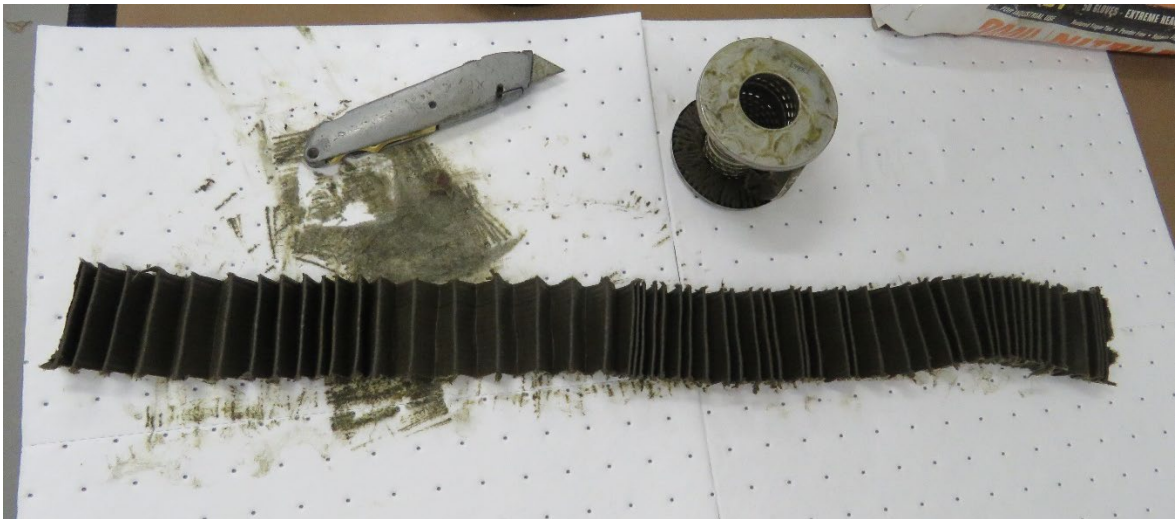


Figure 9. View of oil filter element.

The magnetos were removed from the engine. The right magneto sparked on all towers. The left magneto sparked on all towers.

The vacuum pump was removed from the engine and disassembled. All vanes remained intact and the rotor remained intact as well. The pump could be rotated by hand.

The fuel pump remained attached to the engine firewall. The line from the airframe to the pump remained intact and the line from the fuel pump to the carburetor was impact separated. No fuel was noted in the line from the airframe to the fuel pump. The fuel pump was disassembled and fuel was noted in the fuel pump. Furthermore, the interior of the pump was corroded. The fuel pump diaphragm was examined and no anomalies were noted.



Figure 10. View of disassembled fuel pump.

The carburetor was removed from the engine and disassembled. The throttle and mixture control cables remained attached to their respective arms and could be operated by hand. The carburetor bowl was examined and corrosion was noted at the bottom of the bowl. No liquid was present in the bowl. The fuel screen was examined and no debris was noted. The accelerator pump actuated when moved by hand. The carburetor floats remained intact with no anomalies noted.

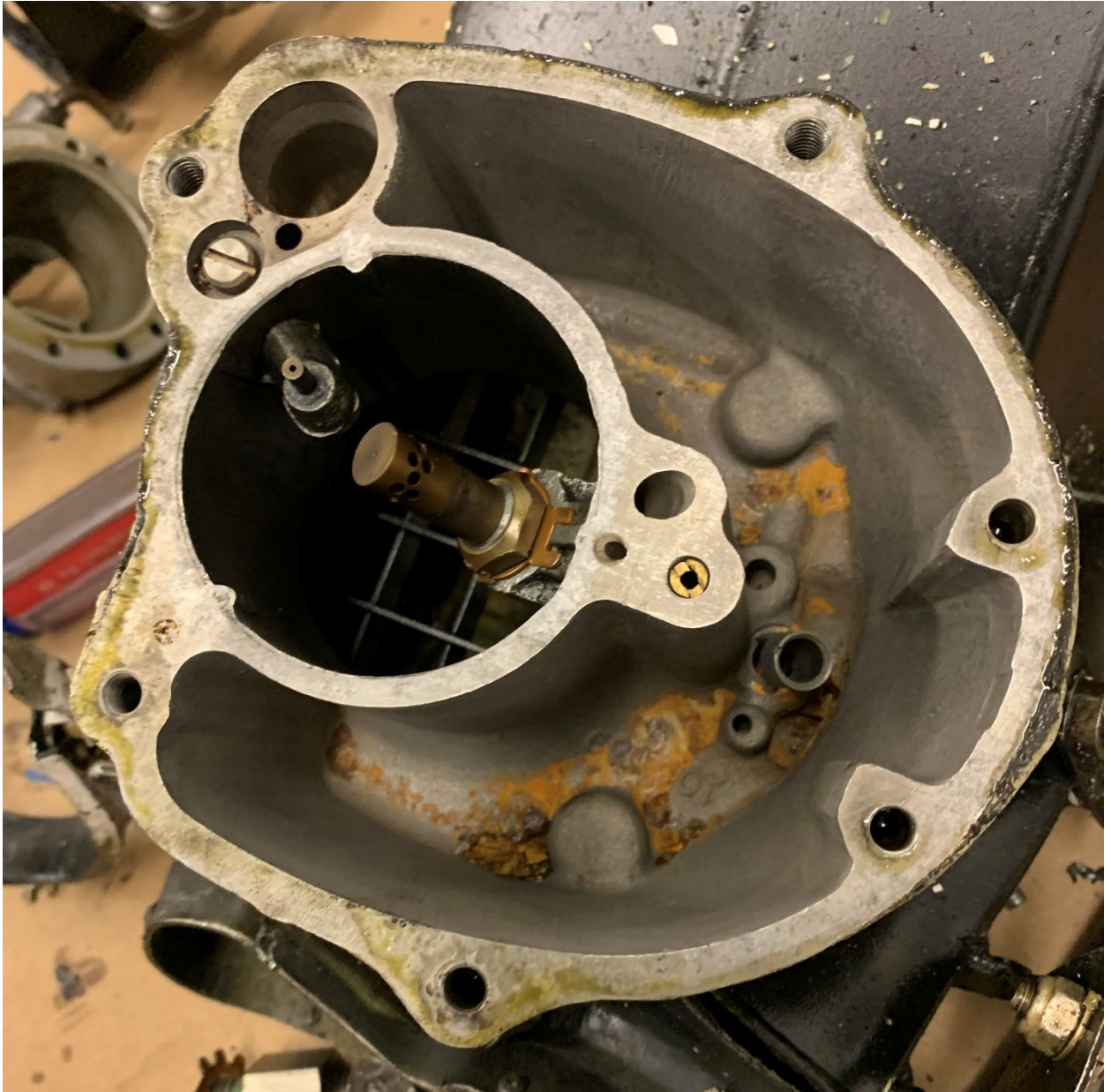


Figure 11. View of Carburetor Bowl.

The air inlet box was impact damaged and remained attached to the carburetor. The filter was removed and not obstructed.



Figure 12. View of air inlet filter.

The propeller governor was removed from the engine. The propeller governor control cable remained attached to the control arm but was cut to facilitate recovery. The propeller governor oil screen was examined and no debris was noted.



Figure 13. View of propeller governor screen.

F. PROPELLER EXAMINATION

The propeller remained attached to the engine. It could be rotated through 360° of motion. All three blades remained attached to the propeller.

Blade 1 exhibited tip damage and remained straight.

Blade 2 tip was curled, and the tip was torn.

Blade 3 remained straight and the tip was torn.



Figure 14. View of propeller blades.

Submitted by:

Heidi Kemner
Senior Air Safety Investigator