

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR23LA232/192406

AIRWORTHINESS

July 12, 2023

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A. ACCIDENT

Location: Rochester, Nevada
Date: June 16, 2023
Time: 2257 Pacific Daylight Time
Airplane: Piper PA-28-140, N3508K

B. AIRWORTHINESS

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NTSB
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C. SUMMARY

On June 16, 2023, at 2257 Pacific daylight time, a Piper PA-28-140, N3508K, was substantially damaged when it was involved in an accident near Rochester, Nevada. The pilot was uninjured, and the passenger received minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot stated that about three hours into the flight, while flying at 11,500 ft, there was a loss of engine RPM and he observed the fuel flow increasing. The engine RPM continued to decay until the engines stopped. The pilot stated he did not hear any unusual noises from the engine at the time of the failure, and the propeller did not win mill after the loss of engine power. The pilot stated he ran the emergency checklist but was unable to restart the engine. He said at the time of the accident there would have been about 30 gallons of fuel remaining on board and he was flying on the left fuel tank. He said he had swapped fuel tanks about one hour prior to the event.

The pilot was able to land the airplane in relatively flat terrain. During the landing all three landing gear collapsed and both wings and the fuselage were substantially damaged (figure 1). The right wing fuel tank was breached. About 15 gallons of liquid consistent with 100LL AvGas was removed from the left wing fuel tank by recovery personnel following the accident.



Figure 1 - Airplane Accident Site

D. DETAILS OF THE EXAMINATION

The wreckage was examined by the NTSB IIC July 12th, 2023, at a secure location near Sacramento CA. Both wings and horizontal stabilizers were separate from the fuselage. The engine remained attached to the airframe (figures 2 and 3).



Figure 2 - Wings and Horizontal Stabilizers

1.0 Fuel/Fuel System

Both wings were removed and separated from the fuselage. The right wing fuel tank was impact damaged and compromised. The left wing fuel tank remained intact. The interior upholstery on the left side of the cockpit where the fuel selector valve was located had been removed during recovery and the fuel lines leading to the fuel selector valve had been disconnected. The fuel lines were intact from the fuel selector through both the electrical and mechanical fuel pumps. There were two Dynon Avionics fuel flow sensors installed in the fuel line immediately prior to the carburetor. Fuel line continuity was broken at the fuel line fitting between the second fuel flow sensor and the carburetor (figure 3).

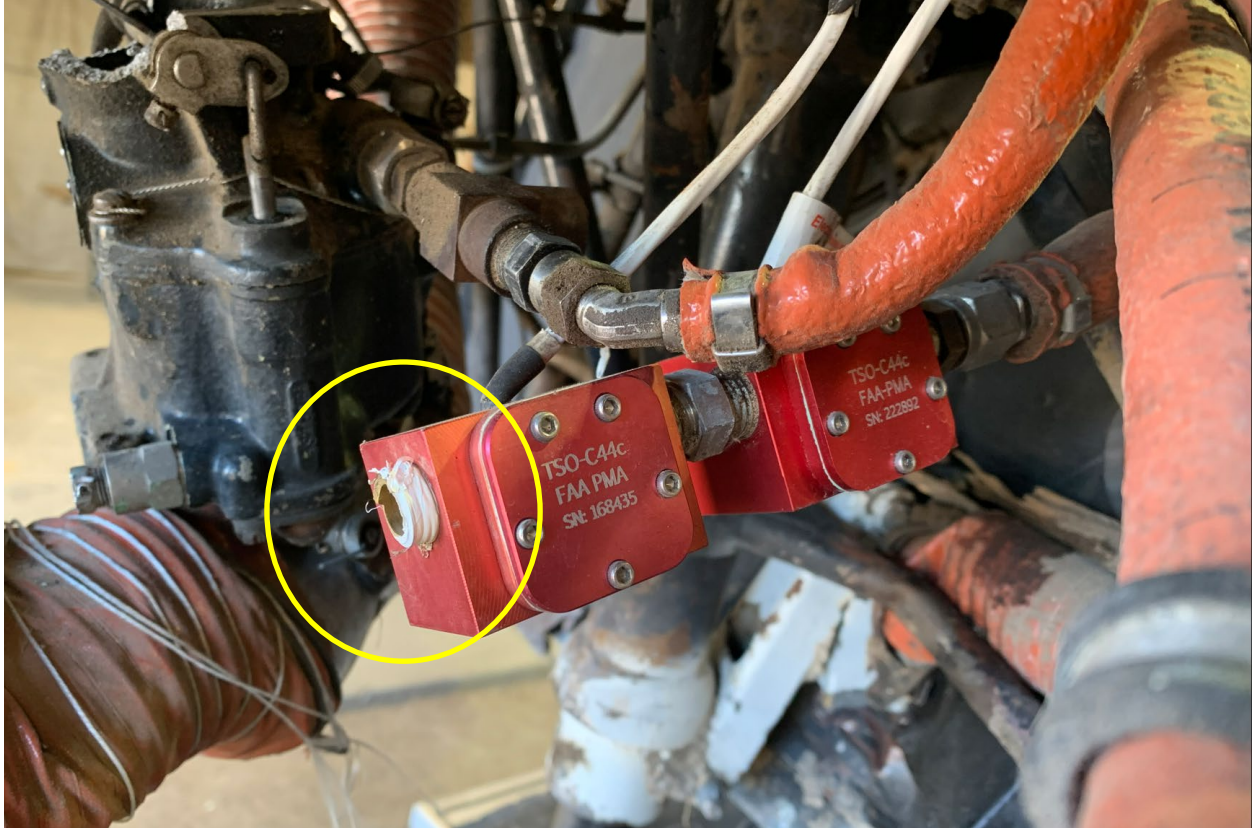


Figure 3 - Broken Fuel Line at Fuel Flow Sensor

Electrical power was applied to the aircraft using the installed battery and the electric fuel boost pump switch was placed on. The electric fuel boost pump ran as commanded with the activation of the switch. The fuel boost pump was activated and 2-3 oz of light blue colored liquid consistent with 100 LL fuel was recovered. There were no contaminants or water observed in the liquid.

The carburetor was impact damaged and separated from the intake at the carburetor throat. Throttle and mixture controls were secure at the carburetor and there was continuity between the throttle and mixture controls in the cockpit to the carburetor. The throttle control was impact damaged in the cockpit that limited control movement. The mixture control linkage was damaged near the carburetor which limited the range of travel of the mixture control.

The carburetor was removed from the engine. Throttle and mixture controls moved freely as commanded and without restriction when disconnected from the airframe mounted controls.

The carburetor heat control was found pulled out about 1/2 inch and continuity was verified to the carburetor. Control movement was restricted due to impact damage to the carburetor heat air box. The carburetor heat airbox was impact

damaged, which limited the carburetor heat control flapper travel to about 20 degrees of movement between the heat on and heat off positions.

The mechanical fuel pump was removed from the engine. A small amount of liquid consistent in smell with 100 LL fuel escaped the unit when it was removed. Suction was felt on the intake side of the pump when the pump was manually operated following removal.

2.0 Engine Examination

The engine was examined while it remained attached to the airframe. Impact damage prevented an operational check of the engine/engine run. The top four spark plugs were removed from the engine. Each spark plug electrodes were whitish in color consistent with normal wear as compared to a Champion Aerospace spark plug wear chart. Rust was present on the No. 1 cylinder spark plug threads.

Engine continuity was verified by observing proper intake and exhaust valve movement when the propeller was rotated by hand. Additionally, the left Magneto impulse coupling fired and spark was observed at each associated plug lead when the propeller was turned. Thumb compression was verified at each cylinder.

Oil quantity measured 5 quarts on the engine dipstick and the oil appeared in like new condition.

No anomalies were noted with the engine that would have prevented the normal production of power.

3.0 Propeller Examination

The propeller remained attached to the engine. Both propeller blades were generally straight. One blade exhibited length wise scratches along the length of the blade. The second blade exhibited some chordwise scratches.



4.0 Additional Information

A Dynon EFIS-D10A was removed from the airframe and retained for further evaluation.

The liquid recovered from the left wing tank was contained in a drum at the storage facility. The liquid was estimated to be about 15 gallons and was blue in color and consistent with 100LL AvGas. The liquid was not tested for contaminants or water due to the unknown condition of the container used to store the liquid.

Submitted by:

Dan Baker
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