

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN26LA074

EXAMINATION SUMMARY

January 22, 2026

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A. ACCIDENT

Location: Carbondale, Illinois
Date: 12/31/2025
Time: 1603 CST
2203 UTC
Airplane: N 401MS, Pitts S1S

B. EXAMINATION SUMMARY

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C. SUMMARY

On December 31, 2025, at 1603 central standard time, a Pitts S1S airplane, N401MS, was substantially damaged when it was involved in an accident near Carbondale, Illinois. The pilot received minor injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he had completed three touch-and-go landings on runway 36R. He then completed a low approach over runway 18L and began a climb near the departure end of the runway. Upon reaching 400 ft above ground level (agl), the engine lost power. The pilot was able to momentarily restore partial power by manually actuating the emergency fuel pump; however, the engine lost power again. Unable to maintain altitude, the pilot completed a forced landing on an airport perimeter road, then exited the road to the right and struck a power pole. The left wing separated from the airplane during the impact.

The tail mounted video camera captured the accident sequence, and the video was provided for the investigation. The airplane's engine monitoring system data card and the airplane have been retained for further examination.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The accident site was not visited. The airplane had been moved to a T-hangar on the airport after the accident occurred.

2.0 Airframe Examination

The airplane was resting on the hangar floor. The main landing gear was bent

2.1 Fuselage

The steel tube fuselage was predominately intact. The forward lower portion of the fuselage, including the area where the main landing gear attached was bent upward and rearward. The tail surfaces were still attached and undamaged. Control system continuity was established by actuating the cockpit controls. The elevator and rudder controls were intact, as were the controls to the right wings and ailerons. The left upper and lower wings were fragmented, and complete left aileron control continuity could not be established; however, the pushrod exiting the left fuselage side moved with control stick movement. There were no pre-impact anomalies detected during examination of the fuselage or control system.



Figure 1. Airplane as recovered from accident site.

2.2 Empennage

The airplane's tail surfaces were intact and appeared undamaged. There were no pre-impact anomalies detected during examination of the tail surfaces.

2.3 Wings

The right lower wing was intact. The left lower wing was fragmented due to impact damage. The left half of the one-piece upper wing was fragmented due to impact damage. There were no pre-impact anomalies detected during examination of the wings.

2.4 Landing Gear

The landing gear was partially separated from the fuselage and bent aft.

2.5 Fuel/Fuel System

The airplane had two fuel tanks, one in the upper wing, and one in the fuselage. Only the main fuselage tank was connected and in use during the accident. The 19-gallon main fuel tank still contained a significant amount of fuel but the remaining quantity was not measured.. The fuel system plumbing had reportedly been replaced recently. Integrity of the fuel system was verified by turning the fuel selector on and actuating the emergency hand fuel pump. When this was done and the return line on the fuel control disconnected, fuel was pushed from the tank and through the fuel lines to the fuel servo, verifying the fuel was present and could be delivered to the fuel servo via the hand pump.

2.6 Other Systems

3.0 Engine Examination

The engine was still securely attached to the airframe. During the examination an unknown quantity of oil was present beneath the airplane and on the floor of the hangar. The engine did not have a data plate but appeared to be a narrow-flange IO-320 engine. The crankshaft propeller flange was bent, preventing rotation of the engine with the propeller attached. An engine hoist connected to the engine's lifting strap was used to support the engine at working height. After removal of the propeller and starter ring support, the engine could be rotated using a short pry bar on the crankshaft flange.



Figure 2. Engine during examination.

The upper spark plugs were removed. The No. 1 plug showed signatures consistent with rich combustion. The remaining three plugs showed normal burn signatures.



Figure 3. Upper spark plugs as removed.

After removal of the upper spark plugs, the engine was rotated and suction and compression were verified on cylinders 1,3, and 4. Initially, cylinder # 2 would not produce compression or suction. The #2 rocker cover was bent from impact and was removed. A borescope was used to inspect the interior of the cylinder with no anomalies noted. The valves were "staked" using a rubber hammer after which the cylinder produced compression and suction on engine rotation. Movement of the rocker arms during rotation confirmed accessory gear continuity. During rotation, fuel was pumped from the disconnected fuel servo line, indicating that the engine driven fuel pump was capable of pumping fuel.

The magneto "P"-leads were disconnected, and spark was verified on all 8 spark plug leads during engine rotation.

The fuel distribution manifold "spider" was disassembled. The four screws securing the cover did not have safety wire. All four screws were loose and required almost no breakout force to remove. The diaphragm had been coated with red silicone on both sides. The diaphragm was stiff and had cracks, although none of the cracks extended through the full thickness of the diaphragm. There was no fuel within manifold.

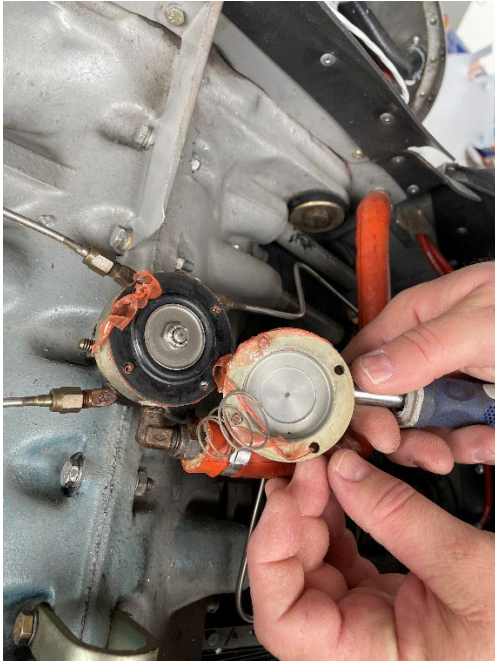


Figure 4. Fuel distribution manifold showing silicone sealant.



Figure 5. Fuel distribution manifold diaphragm.

The fuel servo was securely attached to the engine sump. The fuel screen on the fuel servo was clean with no anomalies noted. The throttle cable was still attached and was secured. The mixture control cable inner wire was securely attached to the mixture arm, but the outer sheath was not installed on a bracket. The first support of the outer sheath aft of the fuel servo was where the cable was secured to the engine mount tube using adel clamps. This location was about 1 foot aft of the cable attachment to the mixture arm. The cable outer sheath had signatures consistent with it rubbing on the engine mount tube. The rub marks indicated that the outer sheath had moved aft about 1 inch. The mixture control arm was about mid-range with the cockpit control in the full rich position. There was safety wire wrapped around the outer sheath of the mixture control cable near its end, but the safety wire was not connected to anything except the cable itself.



Figure 5. Fuel servo mixture arm.

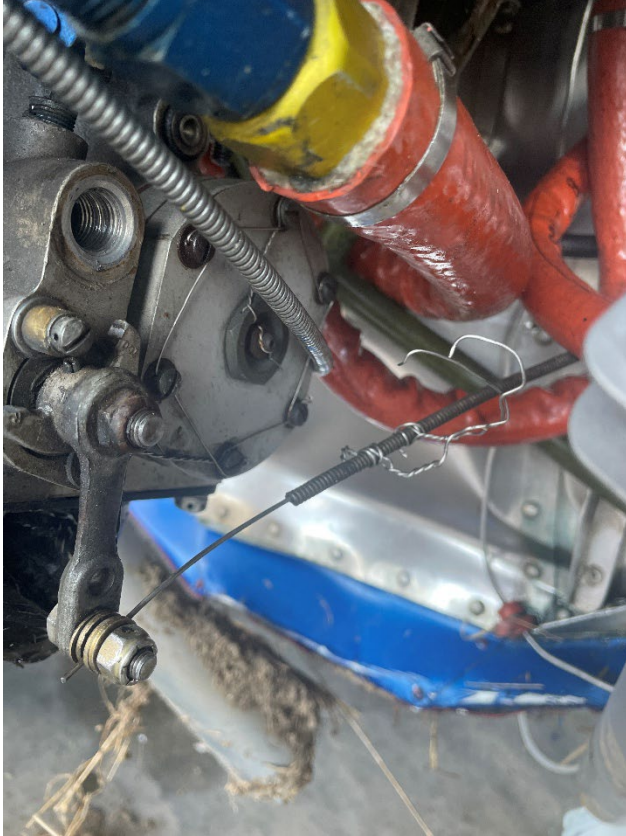


Figure 6. Mixture cable with safety wire.

4.0 Propeller Examination

The propeller was a fixed pitch metal propeller. It remained securely attached to the engine crankshaft flange. One blade was straight with no apparent damage and the other was bent aft about 30 degrees, with the bend starting just outboard of the propeller hub.

Submitted by:

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