

National Transportation Safety Board

Office of Aviation Safety

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WRECKAGE EXAMINATION SUMMARY

November 18, 2023

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A. ACCIDENT

Location: Micanopy, Florida
Date: November 14, 2023
Time: 1408 EST
1908 UTC
Airplane: Piper PA-28-180, N7806W

B. WRECKAGE EXAMINATION SUMMARY

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C. SUMMARY

On November 14, 2023, at 1408 eastern standard time, a Piper PA-28-180, N7806W, was destroyed when it was involved in an accident near Micanopy, Florida. The private pilot was fatally injured. The airplane was operated as a Title 14 Code of Federal Regulations (CFR) Part 91 personal flight.

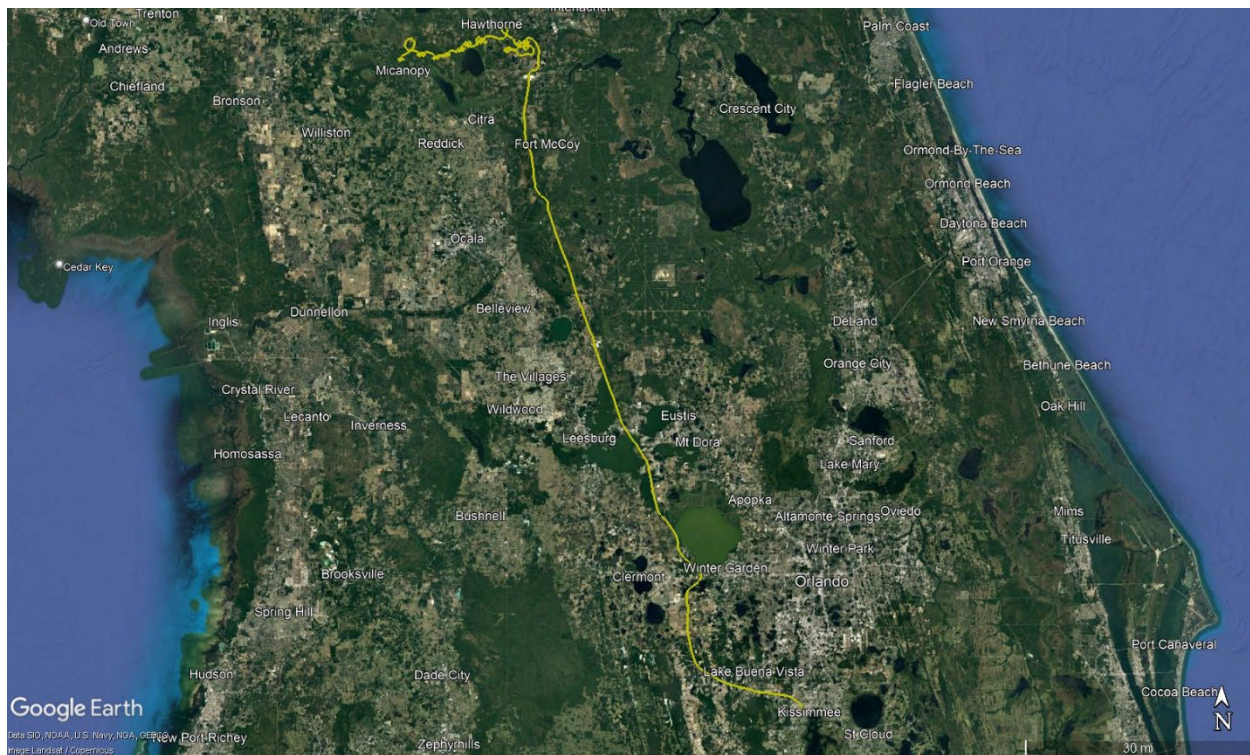


Figure 1. Overview of accident flight track.

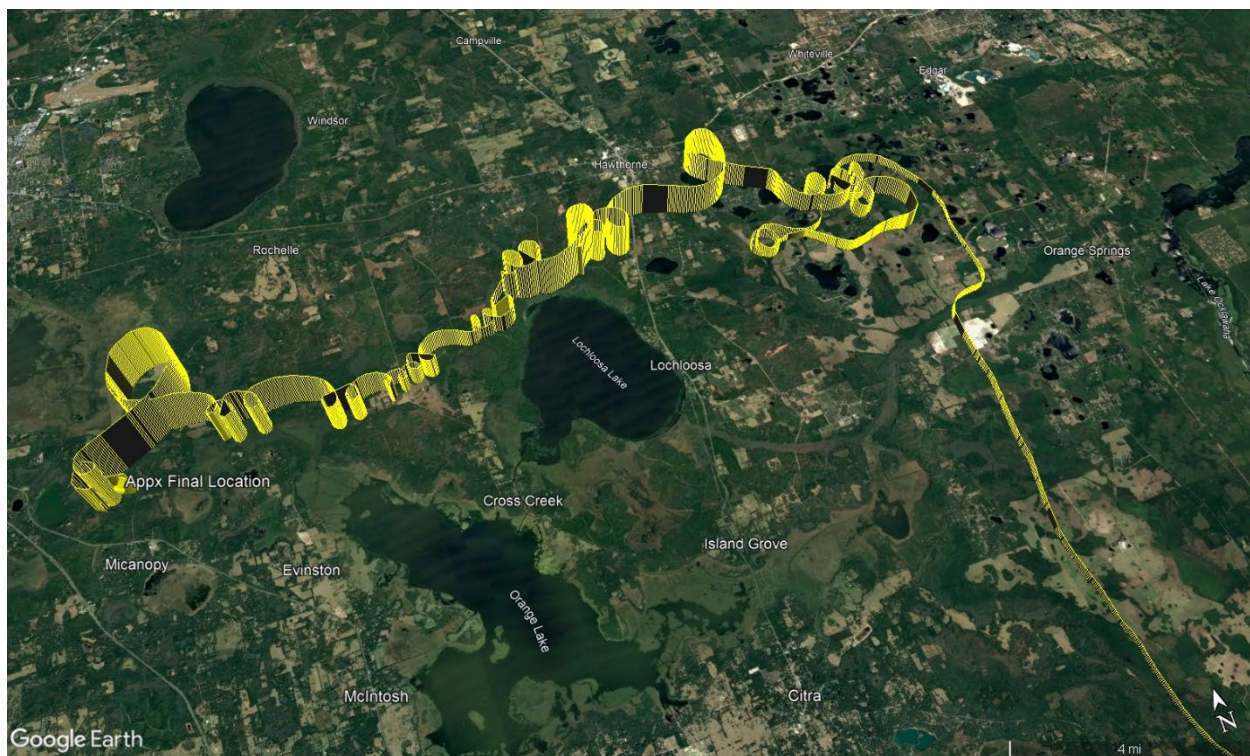


Figure 2. End of the accident flight track.

D. DETAILS OF THE EXAMINATION

1.0 Accident Site

The airplane came to rest in a state park at an elevation of 100 ft mean sea level. It struck several trees before impacting the ground. The airplane came to rest in a crater that was about 4 ft deep. All major components of the airplane were located in the vicinity of the main wreckage.

According to the local sheriff, during the initial on-scene investigation, the evening of the accident, a scent of fuel noted at the accident site.



Figure 3. Overview of Accident Site

2.0 Airframe Examination

2.1 Fuselage

The fuselage was fragmented and the cabin was crushed forward. The instrument panel was fragmented but remained intact through wires and cables. All seats were impact separated from the airframe. Flight control continuity was

established from the cabin to all flight control surfaces through multiple cuts made by first responders and overload separations.

The baggage and cabin door were both impact separated from the fuselage and located in the vicinity of the main wreckage.

2.2 Empennage

The empennage was impact separated from the fuselage. The stabilator remained attached to the empennage. The trim tab remained attached to the stabilator. The trim drum was measured and it corresponded to between the neutral and nose down position. The vertical stabilizer was impact separated and located in the vicinity of the main wreckage. The rudder was impact separated from the vertical stabilizer and located in the vicinity of the main wreckage. The stabilator balance weight remained attached to the stabilator.



Figure 4. View of empennage.



Figure 5. View of rudder and vertical stabilizer.

2.3 Wings

The right wing was separated from the fuselage at the wing root. The forward section of the right wing was impact crushed aft. The right fuel tank cap was not seated. The outboard approximate 4 ft of the wing was impact separated and located along the debris path. The right aileron remained attached to the right wing by the inboard attach point. The right flap remained attached to the right wing through the inboard attach point. The right-wing tip was separated and located along the debris path. The right-wing tip light lens cover was located to the right of the impact crater. The right-wing fuel tank was breached.



Figure 6. View of right wing layout.

The left wing was fragmented. The inboard section of the left wing was impact crushed aft. The left aileron was impact separated and located in the vicinity of the main wreckage. The left flap remained attached to the inboard section of the left wing. The left-wing tip was separated and located in the vicinity of the main wreckage. The left-wing fuel tank was breached.



Figure 7. View of left wing layout.

2.4 Landing Gear

The airplane was equipped with fixed tricycle landing gear. The nose landing gear was impact separated from the fuselage and located near the wreckage. The right main landing gear remained attached to the right wing by a hydraulic line. The left main landing gear remained attached to the left wing.

2.5 Cockpit

The cockpit was impact crushed and fragmented. The control yokes were fragmented. The throttle was noted in the full forward position.

The attitude indicator was separated from the instrument panel and disassembled. Rotational scoring was noted on the gyroscope and the gyroscope housing.

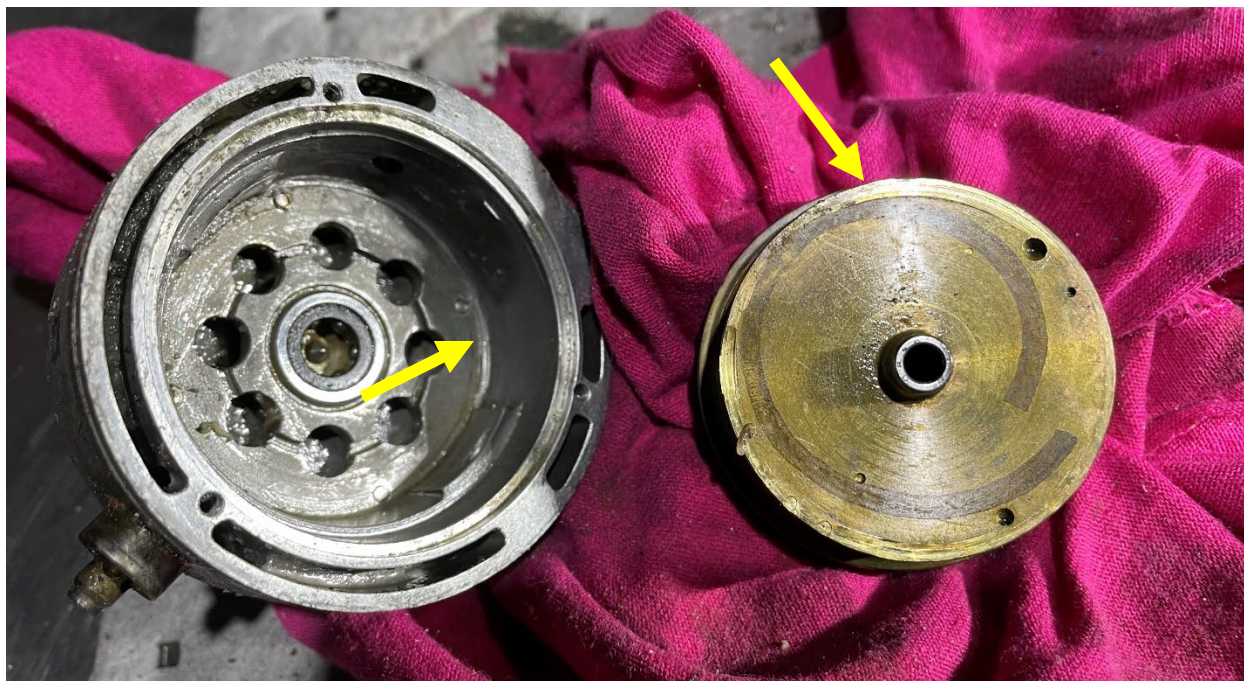


Figure 8. View of attitude indicator gyroscope and gyroscope housing. Yellow arrows point to rotational scoring.

The turn and bank indicator was removed from the instrument panel. It was electronically powered. It was disassembled and vertical scoring was noted on the gyroscope.



Figure 9. View of turn and bank electronic gyroscope and gyroscope housing.

The heading indicator was removed from the instrument panel and examined. The gyroscope was noted in the instrument.

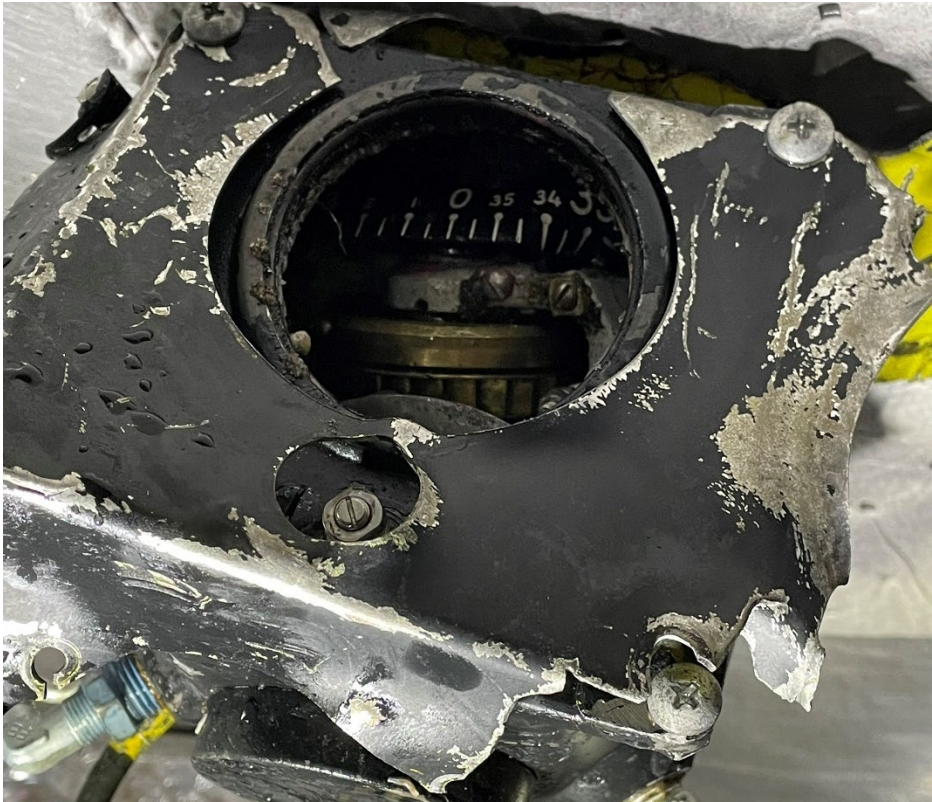


Figure 10. View of heading indicator.

The compass was separated from the instrument panel. During examination, the compass float moved when the instrument was manipulated.

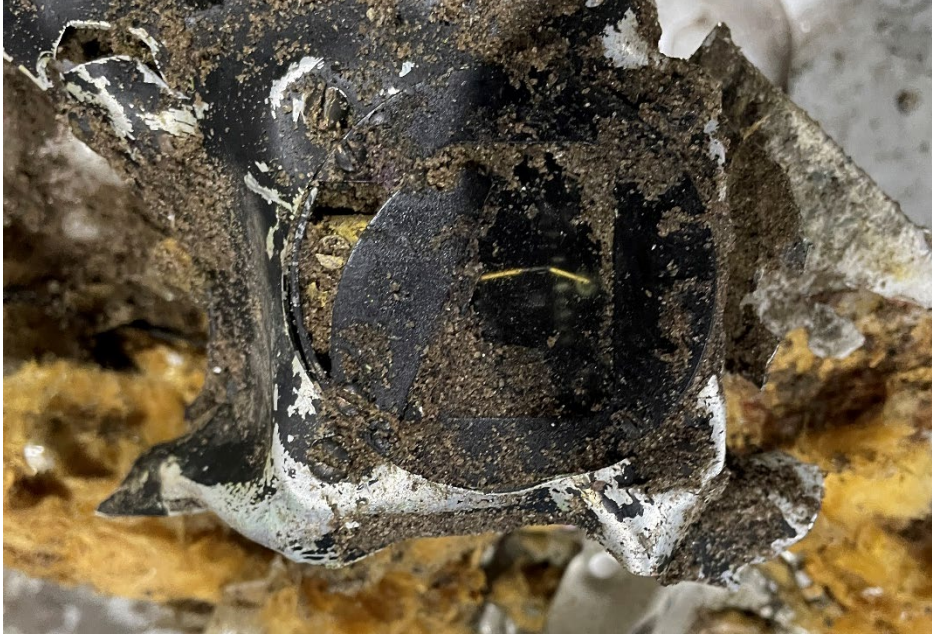


Figure 11. View of compass as found.

The airspeed indicator was located separated from the instrument panel. The airspeed needle was located in the maximum position on the instrument.



Figure 12. View of airspeed indicator as found. Note needle position.

2.6 Other Systems

The ELT was located in the vicinity of the main wreckage. The housing was fractured and the battery expiration date noted on the house was May 2025. According to the FAA inspector, during the initial on-scene investigation the ELT was heard operating.



Figure 13. View of ELT.

3.0 Engine Examination

The engine remained attached to the forward section of the fuselage through all engine mounts. The engine mounts and cables were cut to facilitate the engine examination. The crankshaft could not be rotated by hand. The propeller flange was impact bent but remained attached to the crankshaft. The rocker box covers were removed, and no anomalies were noted with the rocker arms. The cylinders were examined with a light boroscope, sand and oil were noted in the cylinders, but no anomalies were noted.

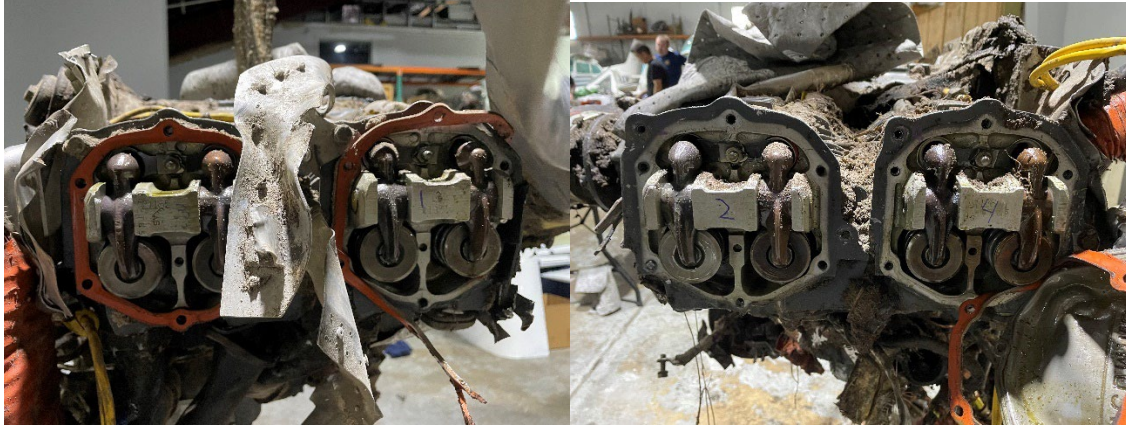


Figure 14. View of left and right side of engine with rocker box covers removed.

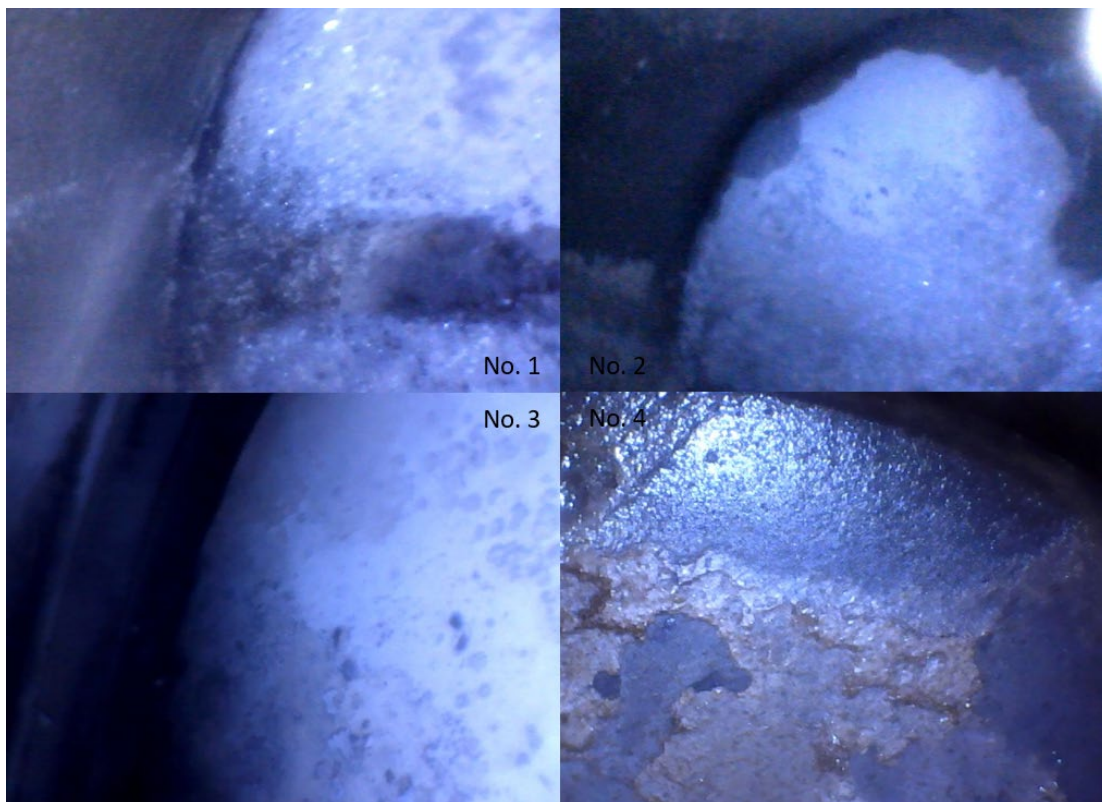


Figure 15. Boroscope photographs of piston faces for all cylinders.

The vacuum pump was removed from the accessory section of the engine and disassembled. The rotor and vanes remained intact, and the drive splines were intact.



Figure 16. View of disassembled vacuum pump.

The carburetor was impact separated from the engine but remained attached through cables. The fuel filter was removed, and no debris was noted in the filter. The carburetor was disassembled. The butterfly valve operated when the arm was moved by hand. The carburetor bowl did not contain fuel, however the carburetor floats exhibited hydraulic deformation. The needle valve was examined with no anomalies noted.



Figure 17. View of disassembled carburetor.

The mechanical fuel pump was removed from the engine and exhibited impact damage.

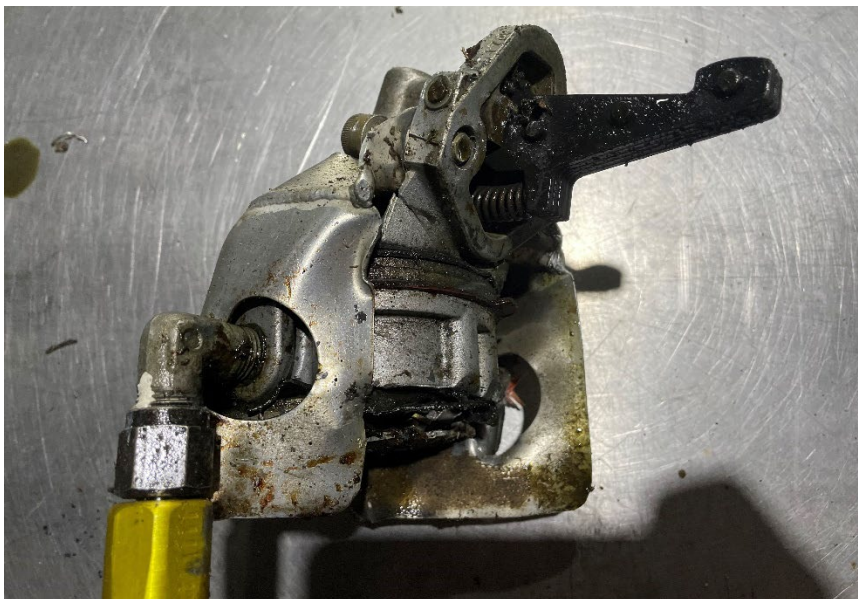


Figure 18. View of mechanical fuel pump as found.

All spark plugs were removed except the No. 2 bottom spark plug, which was impact damaged. The spark plugs were massive electrode type, all were light grey in color, and exhibited worn out - normal wear when compared to the Champion Check-A-Plug Chart. The No. 4 top spark plug was oil soaked.



Figure 19. View of spark plugs.

The magnetos were removed from the engine. Both magnetos were operated using an electric drill and sparked on all towers.



Figure 20. View of magnetos.

The starter was impact separated from the engine but located in the vicinity of the main wreckage. The starter ring gear remained on the engine but was impact damaged.

The alternator was impact damaged but remained attached to the engine.

The oil filter was removed from the accessory section of the engine and disassembled. No metallic debris was noted in the filter. The oil suction screen was removed from the oil sump and was not obstructed. The oil filler neck was impact separated and located in the vicinity of the engine. The oil dip stick remained inside the oil filler neck.



Figure 21. View of disassembled oil filter.

4.0 Propeller Examination

The airplane was equipped with a 2-blade, fixed pitch, McCauley propeller. Blade A was impact separated from the propeller hub and exhibited chordwise scratching, S-bending, and 6-inches of the propeller tip was torn from the blade and located about 30 ft from the main wreckage. Blade B remained attached to the propeller hub, it exhibited chordwise scratching and S-bending.



Figure 22. View of propeller blades.

Furthermore, a branch that was about 2 inches in diameter was cut at a 45-degree angle.



Figure 23. View of wood located near accident site.

Submitted by:

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