

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA23LA117

WRECKAGE EXAMINATION SUMMARY

March 21, 2023

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A. ACCIDENT

Location: Buford, Georgia
Date: January 24, 2023
Time: 1611 EST
2111 UTC
Airplane: N7470R, Piper PA-28-140

B. WRECKAGE EXAMINATION SUMMARY

Participants:

NTSB IIC Ralph E. Hicks
 National Transportation Safety Board
 Marietta, Georgia

Party Coordinator James Childers
 Lycoming Engines
 Williamsport, Pennsylvania

C. SUMMARY

On January 24, 2023, about 1642 eastern standard time, a Piper PA-28-140 airplane, N7470R, was substantially damaged when it was involved in an accident near Buford, Georgia. The flight instructor and a student pilot were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 instructional flight.

The flight instructor reported that she and the student pilot practiced several maneuvers in the local area and were returning to their home airport. She asked the student to switch fuel tanks, since it was time to do so. Shortly thereafter, the engine unexpectedly lost all power. She confirmed that the throttle was full forward and the mixture was full rich. Unable to reach an airport, the flight instructor performed a forced landing to a local interstate highway. During the landing, the airplane's nose landing gear collapsed and the right wing was damaged.

An inspector with the Federal Aviation Administration responded to the accident site and examined the wreckage. He reported that the right wing was substantially damaged.

D. DETAILS OF THE EXAMINATION

1.0 Engine Examination

As first viewed, the aircraft fuselage was secured to the bed of a truck. The engine remained attached to the firewall through the tubular mount. The mount and the nose landing gear mount were impact damaged. The propeller remained attached to the engine crankshaft flange and both blades were visibly bent. The engine cowling had been removed and an external fuel tank plumbed to the inlet side of the airframe electric boost pump.

The lower spark plugs were removed and the crankshaft was rotated by turning the propeller. Continuity of the crankshaft to the rear gears and to the valve train was confirmed. Compression and suction were observed from all four cylinders.

The engine was reassembled and an unsuccessful attempt made to start the engine. The "P" leads were cut to removed the ignition switch from the system and spark was confirmed from the leads of the left magneto (impulse coupling equipped). Fuel flow to the carburetor was confirmed.

The engine was started and ran normally from idle to about 2,100 and back to idle over a time of about 2 minutes.

After engine shutdown, the carburetor was removed and about 1 ounce of cloudy water observed on the carburetor float bowl.

1.1 Induction and Exhaust System

The induction air and carb heat box were impact damaged and removed to facilitate the engine run. The left side exhaust pipe was also impact damaged and removed to facilitate the engine run. The exhaust system was impact damaged and pushed on the mixture control cable.

1.2 Magnetos

Both magnetos remained securely attached to the engine. The left magneto produced spark from all ignition leads when the propeller was rotated by hand. The engine was started and ran normally from idle to 2,100 RPM. The magnetos were not removed.

1.3 Ignition System

The starter motor remained attached in place and operated normally. The ignition could not be located to activate the aircraft ignition system so the P leads were removed from the magnetos. The spark plugs electrodes exhibited light brown coloration and worn normal condition. The engine ran normally and no damage to the ignition harness was noted.

1.4 Fuel System

The carburetor remained attached to the engine and no damage was noted. The air filter had been removed previously. The induction air box and the carburetor throat were observed unobstructed. The throttle cable mixture cable and carburetor heat cable remained attached to the carburetor throttle arm, carburetor mixture arm and the air box carburetor heat arm. The carburetor was removed from the engine. When the throttle arm was actuated and the accelerator pump expelled liquid, water droplets were observed on the throttle plate. The carburetor was partially disassembled and no damage to the composite floats or other internal components noted. About one ounce of cloudy water was observed when the clear blue fuel was poured from the float bowl into a clear container.

The engine driven fuel pump remained attached to the engine. No damage was noted and it was not removed.

The gascolator contained about 2 ounces of clean, blue fuel. There was no water observed inside the bowl.

The wing fuel tanks were examined. The right wing fuel tank was breached and empty of fuel. The right wing tank filler cap was in place and secure. The rubber seal was supple and undamaged. The left wing fuel tank was undamaged and empty of fuel. The left wing tank filler cap was in place and secure. The rubber seal was supple and undamaged.

The position of the cockpit fuel selector handle prior to the accident could not be determined.

1.5 Lubrication System

Oil was observed in the engine. The oil suction screen was not removed. The oil filter media was unobstructed. A few small shiny particles were observed in the oil on the filter media.

2.0 Propeller Examination

The propeller remained attached to the engine crankshaft flange and both blades were visibly bent. One blade exhibited trailing edged damage near the tip. The other blade exhibited chord-wise abrasion and paint transfer consistent with the paint color of a trailer that the propeller contacted during the landing on a highway.

Submitted by:

Ralph E. Hicks
Sr. Air Safety Investigator