

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA22LA363

ENGINE EXAMINATION SUMMARY

November 16, 2022

TABLE OF CONTENTS

A. ACCIDENT	3
B. ENGINE EXAMINATION SUMMARY	3
C. SUMMARY	3
D. DETAILS OF THE EXAMINATION.....	4
1.0 ENGINE EXAMINATION	4
1.1 Induction and Exhaust System	6
1.2 Magnetos	8
1.3 Ignition System.....	10
1.4 Fuel System.....	10
1.5 Lubrication System	11
2.0 PROPELLER EXAMINATION	12

A. ACCIDENT

Location: Ellenville, New York
Date: August 7, 2022
Time: 0935 EDT
1335 UTC
Airplane: N50439, Cessna 150H

B. ENGINE EXAMINATION SUMMARY

NTSB Oversight	Joshua Young
On Behalf of IIC	National Transportation Safety Board
Ralph Hicks	Ashburn, Virginia

NTSB Oversight	Aaron McCarter
On Behalf of IIC	National Transportation Safety Board
Ralph Hicks	Ashburn, VA

Party Coordinator	Casey Love
	Textron Aviation Inc.
	Wichita, KS

C. SUMMARY

On August 7, 2022, about 0935 eastern daylight time, a Cessna 150H, N50439, was substantially damaged when it was involved in an accident near Ellenville, New York. The commercial pilot sustained minor injuries, and a pilot-rated passenger was not injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

The pilot-rated passenger performed the takeoff with 10° of flaps for "extra lift to get us away from the ground." The airplane lifted off with about 1,000 ft of runway remaining and climbed "fine" until it reached about 100 ft above ground level. At that point, the airplane would no longer continue to climb. With mountains approaching, the commercial pilot took the controls and looked for a place to land. The stall warning horn sounded, and the nose was lowered to maintain flying speed. As the airplane approached two sets of power lines, he pitched up to clear the first set of wires, and once clear, he cut power to the engine and raised the flaps. The airplane dropped about 30 ft and crashed onto the roadway.

D. DETAILS OF THE EXAMINATION

1.0 Engine Examination

The engine remained attached to the airframe and was elevated by a telehandler to facilitate examination. The engine battery was charged with an external battery charger and an external fuel tank was plumbed into the left-wing fuel system at the wing root. The grounding leads from the magnetos were removed and the airplane was started. It ran smoothly with no pops or crackles from idle to about 2300 RPM. With the engine warm compression and suction were observed on all cylinders through 4 - 720° rotations.



Figure 1: Front view of airplane on telehandler



Figure 2: View of right side of airplane on telehandler



Figure 3: View of engine from right side

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.



Figure 4: Induction air and carb heat box removed



Figure 5: Removed left side exhaust pipe

1.2 Magnetos

Both magnetos remained attached to the engine accessory case and operated normally. Two of the right magneto leads were impact damaged near the distributor cap. The cap and leads were replaced with a compatible unit to facilitate an engine run.



Figure 6: Left magneto attached to accessory case

1.3 Ignition System

The starter motor remained attached to the accessory case 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 top and bottom spark plugs were removed and showed normal wear when compared to Champion Aviation Check-a-plug. There was slight carbon fouling on the 4T and 3B plugs.



Figure 7: Top and bottom spark plugs

1.4 Fuel System

The throttle cable was broken through overstress and a cable was attached to facilitate engine run. The mixture cable was adjusted to compensate for the exhaust system damage to allow full travel of the mixture. A portable fuel container was fixed to the support equipment and plumbed into the left-wing tank fuel line and 100LL aviation fuel was added to the container. Fuel flowed through the fuel system to the right wing, which was capped. The fuel selector valve was selected to OFF, no fuel was present at the carburetor. With the fuel selector valve selected to ON, fuel was present at the carburetor.

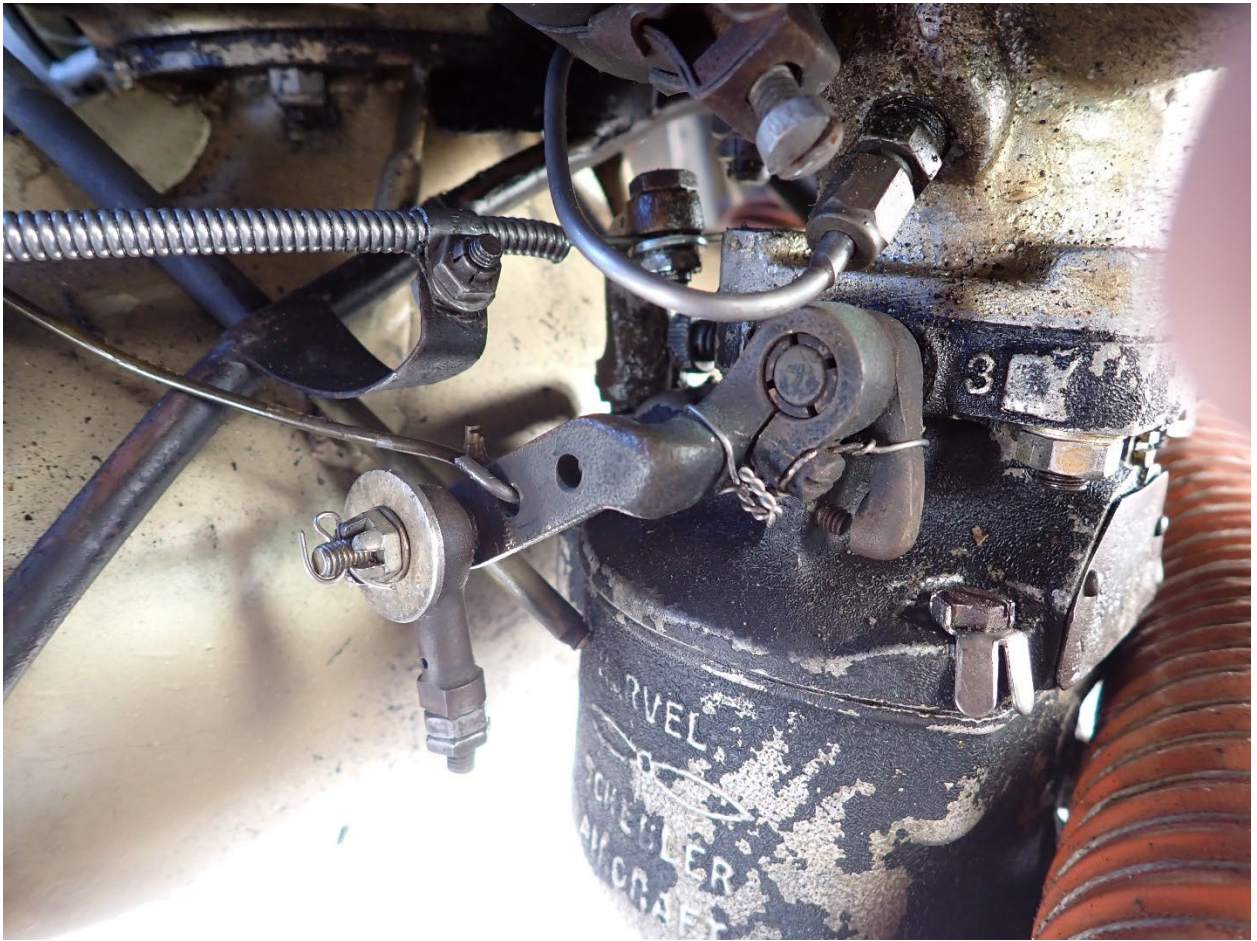


Figure 8: Broken throttle cable and replacement fashioned to facilitate engine run

1.5 Lubrication System

The quick oil drain was impact separated and the engine contained no visible oil on the dip stick. The oil sump drain plug was impact separated. A wooden plug was inserted into the drain to prevent leakage and 4 quarts of oil was added for the test run. The oil pressure line from the accessory housing was fractured. A cap was used to prevent leakage. 4 quarts of 20w-50 aviation oil was added to the system.



Figure 9: Broken oil quick drain

2.0 Propeller Examination

McCauley 69 inch fixed pitch propeller remained attached to the engine at the hub with 1 tip bent aft. The propeller had a measured pitch of 16°. One of the propeller blades was bent aft approximately 45 degrees near the tip. The blade was straightened to within about 10 degrees of straight.



Figure 10: Propeller

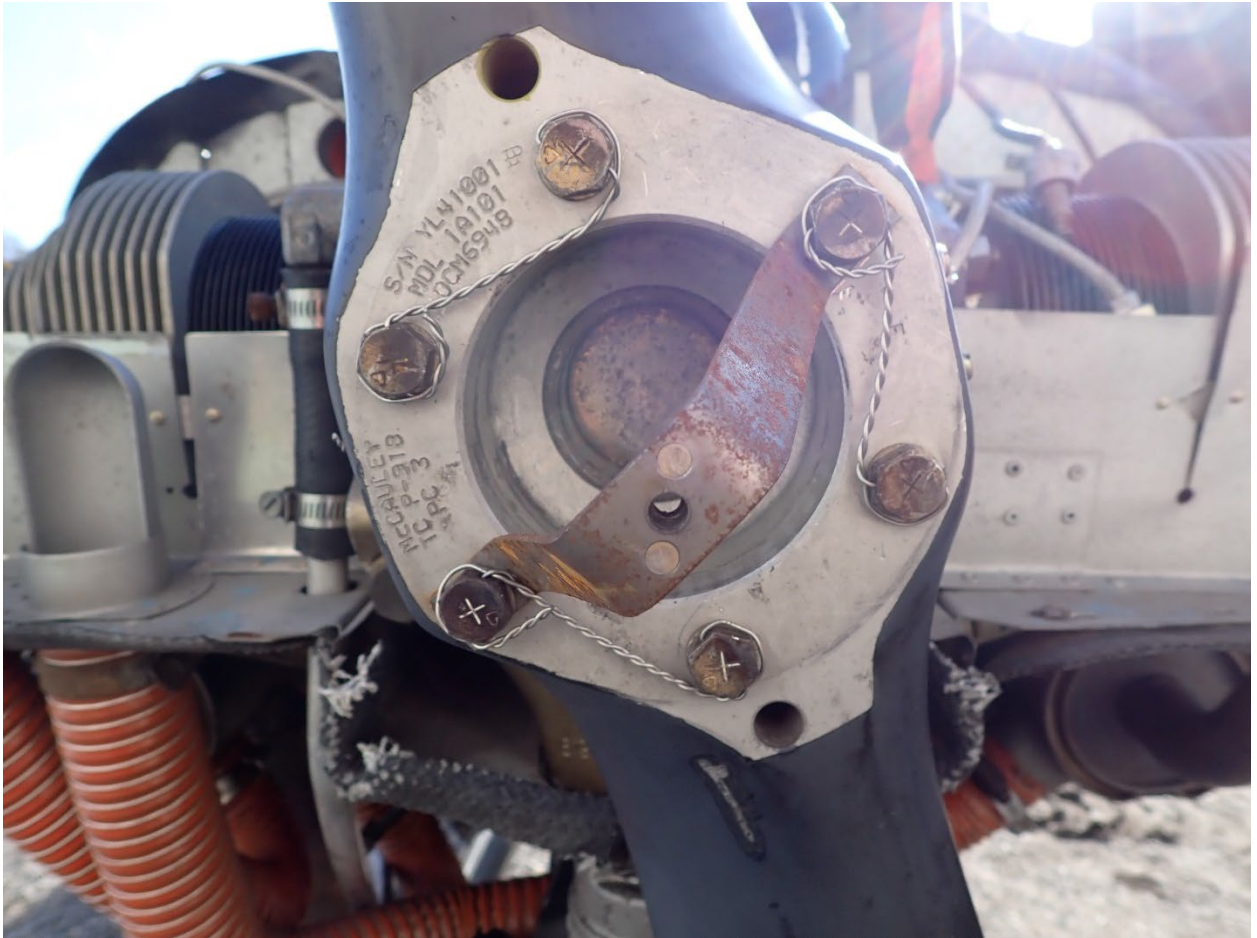


Figure 11: Propeller hub

Submitted by:

Joshua Young
Air Safety Investigator