

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA21LA384

WRECKAGE EXAMINATION

November 30, 2021

A. ACCIDENT

Location: Hobe Sound, Florida
Date: September 28, 2021
Time: 1453 eastern daylight time

Airplane: Cessna 150M, Registration N4100V

B. WRECKAGE EXAMINATION

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C. SUMMARY

On September 28, 2021, at 1453 eastern daylight time, a Cessna 150M, N4100V, was substantially damaged when it was involved in an accident in Hobe Sound, Florida. The pilot sustained serious injuries. The airplane was operated as a Title 14 *Code of Federal Regulations (CFR)* Part 91 personal flight.

D. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

Flight control continuity was established from the cockpit to all flight controls, through recovery cuts. The elevator trim indicator showed nearly full nose up. The trim tab actuator extension was measured as 1.0 inches, which equates to 10° tab trailing edge down (airplane nose up).



Figure 1 Elevator Trim Indicator



Figure 2 - Elevator Trim Actuator - Measurement

The flaps were found in the up position, and the flap actuator was found in the up position.

The left flap cable was fracture separated between the wing root and the bell crank. Some corrosion was found on the cable near the fracture.



Figure 3 - Left Flap Cable Fracture

1.1 Cockpit

The carburetor heat control was off (in) , the throttle control was full (in), the mixture control was full rich (in) and each operated normally.



Figure 4 - Engine Controls

The primer control was in and locked. The magneto switch was in the "both" position. The recording tachometer read 4,683.1 hours, the hour meter read 770.7 hours.



Figure 5 - Tachometer



Figure 6 - Hour Meter

1.2 Survivability

The pilot's shoulder harness was not attached to the lap buckle post. The lap belt was unbuckled, the webbing was intact and not cut.

1.3 Fuel/Fuel System

The fuel selector was in the ON position. The fuel strainer was absent of debris. Fuel sampled from the strainer was blue in color and tested negative for water using water finding paste.



Figure 7 - Fuel Selector Handle



Figure 8 - Fuel Selector Placard



Figure 9 - Fuel Sampled from Fuel Strainer

2.0 Engine Examination

Engine crankshaft and valve train continuity were confirmed by rotating the crankshaft by hand and observing its rotation at the front and rear of the engine, and noting motion of all valve rocker arms. Thumb compression and suction was observed for all four cylinders. The crankcase was intact and contained about 4 quarts of oil, and oil was present in each cylinder's valve rocker box.



Figure 10 - Engine Data Plate

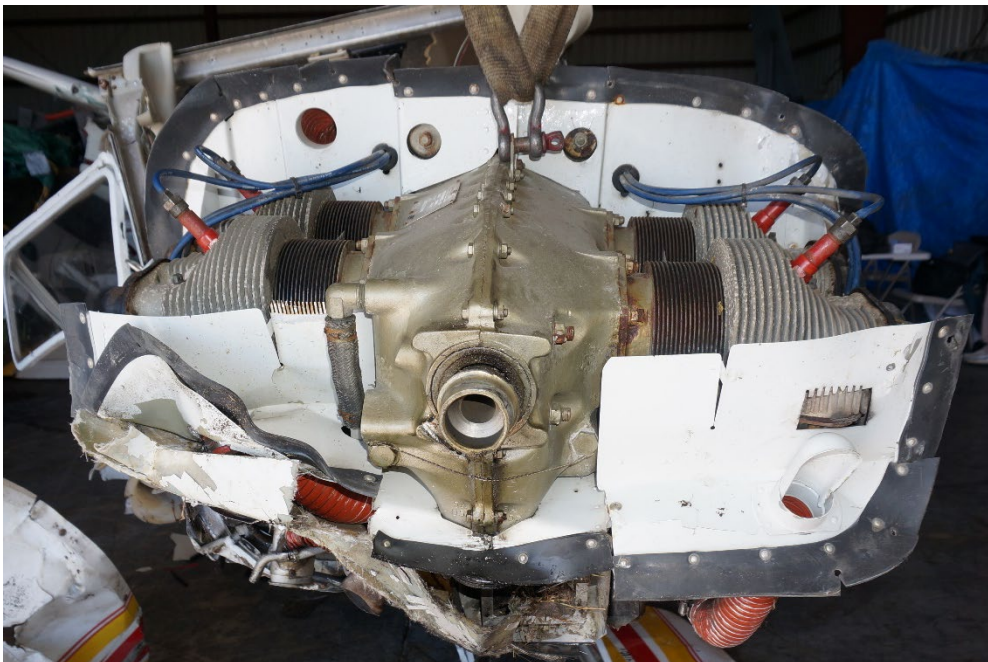


Figure 11 Engine View from Front



Figure 12 Engine View from Left - Valve Covers Removed

Both magnetos produced spark on all 4 towers when rotated. The top spark plugs were removed. The electrodes were light grey in color and appeared "worn-normal" when compared to a Champion check-a-plug chart.



Figure 13 - Top Spark Plugs

The carburetor was fracture separated from the intake manifold. The throttle, mixture and carburetor heat control cables remained attached to their respective control arms. The fuel inlet screen was unobstructed. The bowl was dry and contained a trace amount of debris. The metal float assembly and needle valve/seat were intact.

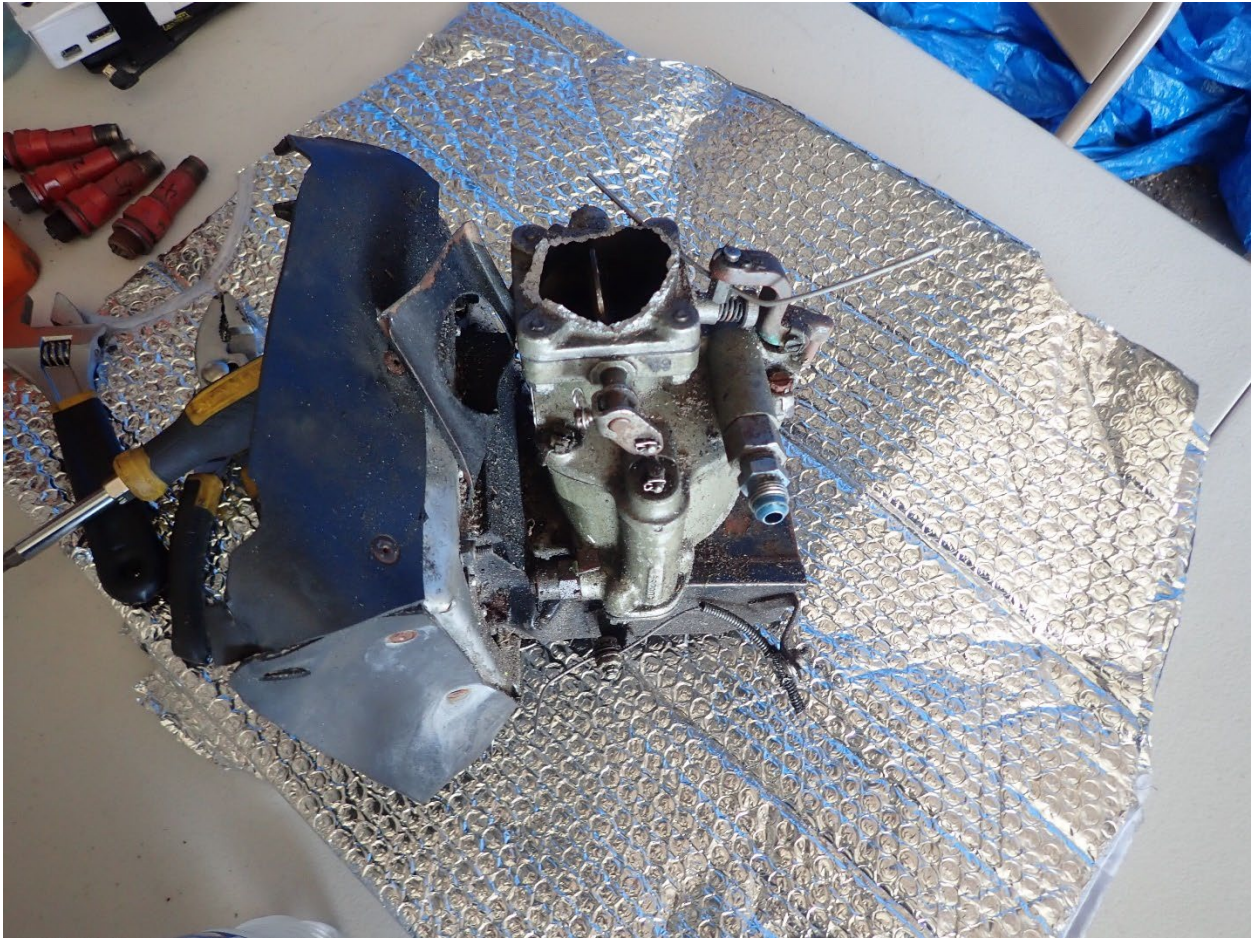


Figure 14 - Carburetor Assembly



Figure 15 - Carburetor Fuel Inlet Screen



Figure 16 - Carburetor Bowl



Figure 17 - Carburetor Float Assembly

3.0 Propeller Examination

The propeller was separated from the engine. The flange was fractured circumferentially, at its base. A portion of the fracture surfaces exhibited corrosion/rust.



Figure 18 - Propeller Flange Fracture



Figure 19 - Propeller Flange Fracture - Crankshaft Side

One propeller blade was bent 90° about mid span, the other blade as bent aft with a slight twist, about 10 inches from the tip. No leading edge gouges or chordwise scratch marks were noted on either blade.



Figure 20 - Propeller Blade "A"



Figure 21 - Propeller Blade "B"