



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

September 29, 2021

EXAMINATION SUMMARY

ERA21LA288

A. ACCIDENT

Location: Lebanon, Tennessee
Date: July 15, 2021
Time: 1000 CDT
Airplane: Dehavilland Canada DHC-1 Chipmunk X

B. INVESTIGATION PARTICIPANTS

Ralph E. Hicks - IIC
Eastern Region Aviation (ERA)
National Transportation Safety Board
Marietta, Georgia 30068
[REDACTED]

David Alderman
Aviation Safety Inspector
Nashville FSDO
Nashville, TN 37217
[REDACTED]

C. SUMMARY

On July 15, 2021, about 1000 eastern daylight time, a Dehavilland Canada DHC-1 Chipmunk X, N47YC, was substantially damaged during a forced landing at Lebanon, Tennessee. The commercial pilot was seriously injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he was flying his airplane from Fall Creek Airport (TN96) in Lebanon, Tennessee to Lebanon Municipal Airport. After uneventful ground operations, he took off on runway 18 on the left tank position, which was a full tank. The right tank was reportedly half full. During the initial climb, at an altitude between 100 and 150 ft, the engine lost all power; however, it did not seize. He was unable to turn back to the airport, so he prepared for a forced landing. He maneuvered the airplane between trees and the airplane descended into the trees and the ground. The pilot was met by first responders and taken to a hospital for treatment for his injuries.

1.0 Engine

Engine: Dehavilland Gipsy Major 10 Mk. II, S/N 10496

The engine was examined at the facilities of AMF Aviation, LLC, Springfield, Tennessee on September 29, 2021. The engine remained attached to the airframe. There was impact damage to the propeller, engine mount, firewall, and the lower and left side of the engine.

The engine was turned through by manually rotating the propeller. The two forward cylinders did not show compression or suction when the engine was rotated. Further examination revealed impact damage to the rocker covers and internal components in the cylinder heads. A lighted borescope was then inserted inside both cylinders. The pistons moved up and down normally and valve action was correct. There were no holes or damage to the pistons or valves. The aft two cylinders were undamaged. When the engine was rotated, compression and suction were observed on both aft cylinders.

The dual engine-driven fuel pumps were removed for examination. Fuel was found inside the lines from the fuel pumps to the carburetor. The fuel strainers were opened; both strainers were full of fuel and the screens were clean and unobstructed. The lever-action pumps functioned normally when operated by hand.

The suction oil filter was removed for examination. The unit contained oil. The screen was removed and no particulates or contamination were observed.

The spark plugs were removed for examination. The electrodes were normal in wear and dark in color when compared to a Champion Check-a-Plug chart.

The magnetos were removed and tested by rotating with a power drill. Both magnetos produced spark when rotated.

The carburetor was examined on the engine. All cockpit controls were connected and exhibited full travel when manipulated by hand.

2.0 Propeller

Propeller: Fairey Aviation Co. Ltd. A66751/X1

The fixed-pitch Fairey Aviation Co. Ltd. two-bladed aluminum propeller remained securely attached to the engine. The propeller spinner was undamaged. The propeller blades exhibited minor impact damage with slight aft bending at the tips noted.

The propeller was rotated manually. The engine turned freely through 360° with no binding or unusual noise evident.

3.0 Fuselage and Wings

The leading edge of the right wing sustained impact damage that penetrated the rubberized bladder fuel tank. No fuel remained in the tank. The left wing fuel tank was undamaged and contained an adequate supply of fuel. The cockpit fuel selector was found in the "RIGHT" tank position. No contamination or obstructions were found in the fuel system.