



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

March 2, 2022

ENGINE EXAMINATION SUMMARY

WPR21LA204

This document contains 6 embedded photos.

A. ACCIDENT

Location: Eugene, OR
Date: May 20, 2021
Aircraft: Glasair III, N54CB
NTSB Investigator-in-Charge: Tealeye Cornejo

B. DETAILS OF THE INVESTIGATION

1.0 Accident Flight Summary

On May 20, 2021, about 1030 Pacific daylight time, an experimental McClure Glasair III, N54CB, was destroyed when it was involved in an accident near Eugene, Oregon. The pilot was seriously injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

The pilot had departed Aurora State Airport (UAO), Aurora, Oregon, about 1000 with a destination of Mahlon Sweet Field Airport (EUG), Eugene, Oregon.

The pilot was cleared to land runway 16R at EUG and an air traffic controller cautioned him for wake turbulence. During the approach, the pilot reported, "going down, going down." The airplane crashed in an open field about 1.5 miles north of the EUG airport.

The wreckage debris field was in tall grass. The first identified point of contact was with the left-wing tip. The wreckage debris field continued for about 50 yards to where the engine was located. All major components of the airplane were identified.

The airplane and engine were recovered and stored at Nu Venture Air Service, LLC in Dallas, Oregon.

2.0 Engine Examination

Examination of the recovered engine was conducted on March 2, 2022, at the facilities of Nu Venture Air Services, LLC. The engine a Lycoming IO-540-K1H5, serial no. L-24507-48A was separated from the airframe during recovery.



Figure 1. Picture of accident engine

The top spark plugs were removed, and all spark plug electrodes were intact with carbon build-up; all spark plugs revealed symmetrical wear. The crankshaft was manually rotated using the propeller; thumb compression, mechanical and valve train continuity were established except at the No. 6 exhaust valve, which had sustained impact damage to the exhaust pushrod tube. Compression was found in all 6 cylinders.



Figure 2. Picture of six top spark plugs

Slick Magnetos manufactured both magnetos. According to the data plate, both magnetos were overhauled by Quality Aircraft Accessories. The right magneto model No. 6320, serial No. U4102486, remained secure at its mounting pads on the engine and the left magneto model No 6351, Serial No. 15090674, sustained impact energy damage at the magneto-mounting flange and was partially displaced from the mounting pad. The magneto to engine

timing checks revealed that the right magneto was set to 23° before top dead center. The left magneto's timing could not be verified due to it being displaced.

Both magnetos were removed and manually rotated and produced spark at each plug lead.

The ignition harness was intact, and each lead remained connected to its appropriate spark plug. All contact springs were found unremarkable.

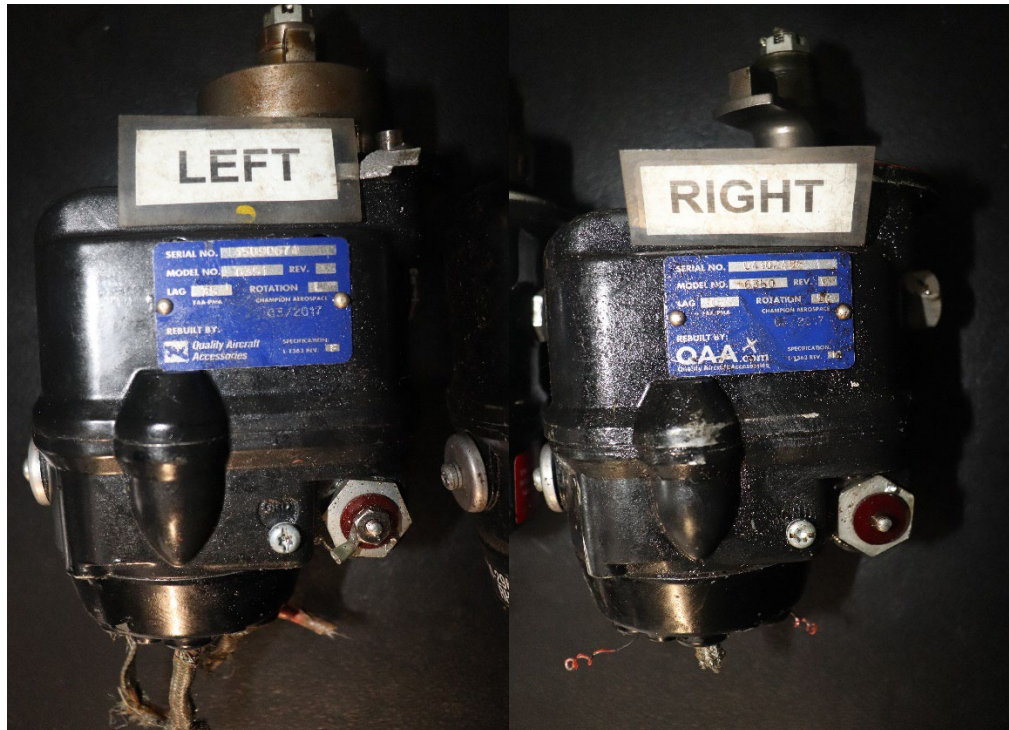


Figure 3. Picture of left and right magnetos showing data plates

The fuel flow divider remained intact. All six output fuel lines to the cylinders remained intact and connected to its respective fuel nozzle. The fuel flow divider cover was removed and revealed that the diaphragm and spring were intact. No water or contaminants were found within the cavity.



Figure 4. A close-up picture of the fuel flow divider showing diaphragm

The fuel flow servo body remained secured on its mounting pad. The input and output fuel lines were impact damage. Fuel was not found within the cavity of the servo. The internal fuel filter was removed and found unremarkable.

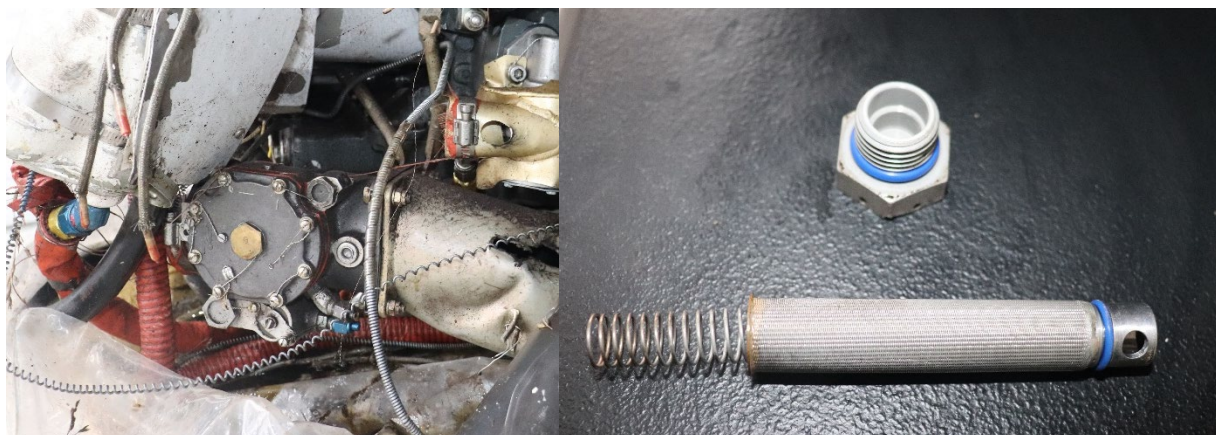


Figure 5. Close-up views of fuel flow servo and internal fuel filter

The mechanical fuel pump remained intact and secure at its mounting pad on the accessory case. It was removed and disassembled. The diaphragm and internal components were unremarkable.



Figure 6. A picture of the disassembled fuel pump

Submitted by: Eleazar Nepomuceno