

# National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR22LA301

## **ENGINE EXAMINATION**

Factual Report

April 18, 2023

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## **A. ACCIDENT**

Location: Laurel, Montana  
Date: 08/11/2022  
Time: 1735 MDT  
2335 UTC  
Airplane: N5780F, Piper PA-28-140

## **B. ENGINE EXAMINATION PARTICIPANTS**

NTSB-IIC                      Albert Nixon  
                                     NTSB, AS-WPR  
                                     Phoenix, Arizona

## **C. SUMMARY**

The examination of the engine revealed no evidence of preimpact mechanical failures or malfunctions that would have precluded normal operation.

## **D. DETAILS OF THE EXAMINATION**

### **1.0 Engine Prior to the Examination**

The engine and cowling assembly remained attached to the airframe during the relocation of the wreckage from the accident site. The airplane wreckage had its wings removed from the recovery.



**Figure 1: Airplane in field as viewed from the right side.**

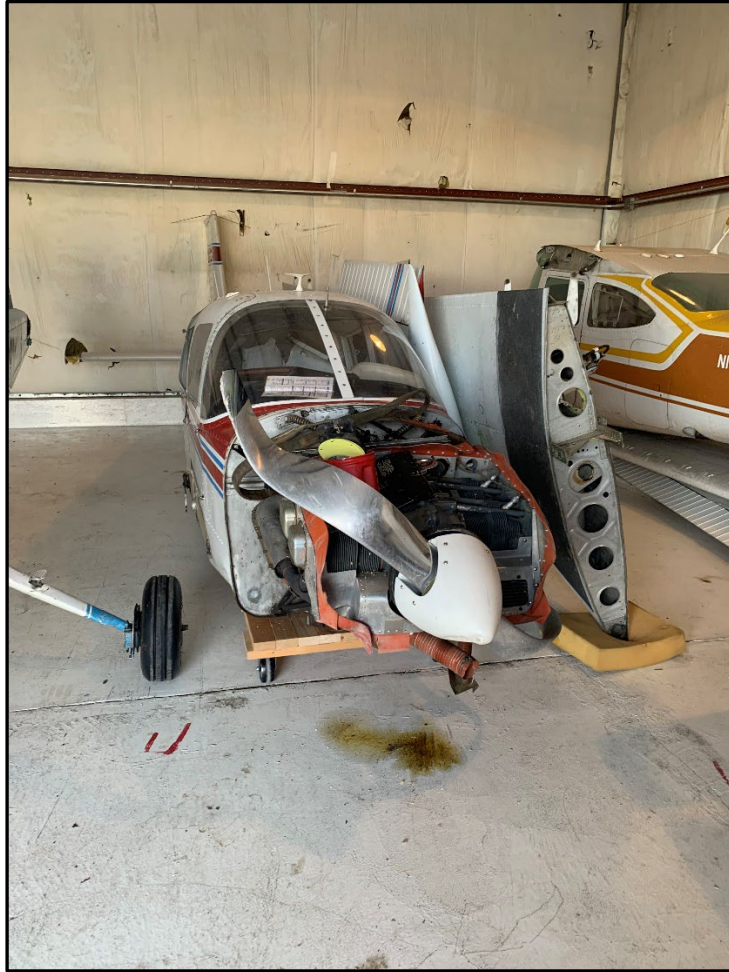
## **1.1 Exterior Engine Examination**

The Lycoming O-320-E3D engine, serial number L-32865-27A, was securely attached to the airframe and no damage was noted to the engine mounts or engine mounting carriage. No impact damage was observed on the exterior.

The propeller was attached, and one blade was bent aft and twisted about mid-span and the other blade sustained impact damage.

## **1.2 Engine Examination**

Control continuity between the cabin engine controls and the engine were verified. The cylinder rocker covers were removed, and all the cylinder overhead components were unremarkable. The top spark plugs were removed and examined, and the electrodes were undamaged and displayed normal wear. A borescope examination of the combustion chambers revealed normal operating signatures. Manual rotation was able to be accomplished and thumb compression was established at each cylinder and appropriate valve movement was observed.



**Figure 2-Front view of the airplane wreckage.**

The magnetos were examined and produced spark at all leads when manually rotated.

The oil quantity indicated about nearly full, from the oil quantity indicator stick.

The fuel selector was examined, and no anomalies were noted. Fuel continuity was established through the fuel lines.

Submitted by:

Albert Nixon  
Senior Aviation Accident Investigator