

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN22LA413

ENGINE EXAMINATION

November 15, 2022

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A. ACCIDENT

Location: Bulverde, Texas
Date: September 9, 2022
Time: 0750 Local
1215 UTC
Airplane: Piper PA32-300T

B. ENGINE EXAMINATION

IIC Jason Aguilera
National Transportation Safety Board
Denver, CO

Party Member Ryan Harsanyi
Lycoming Engines
Dallas, Texas

C. SUMMARY

D. DETAILS OF THE EXAMINATION

1.0 Engine Information

The accident engine was a TIO-540-S1AD, serial number L-5162-61A. Information provided by the owner showed the engine had accrued about 3,672.56 hours and 1,192.76 hours since the last overhaul. The most recent inspection was a 100-hour inspection performed on March 4, 2022, at 3,655.12 hours.

2.0 Engine Examination

The rocker box covers were removed and abnormal discoloring around the #4 exhaust valve area.

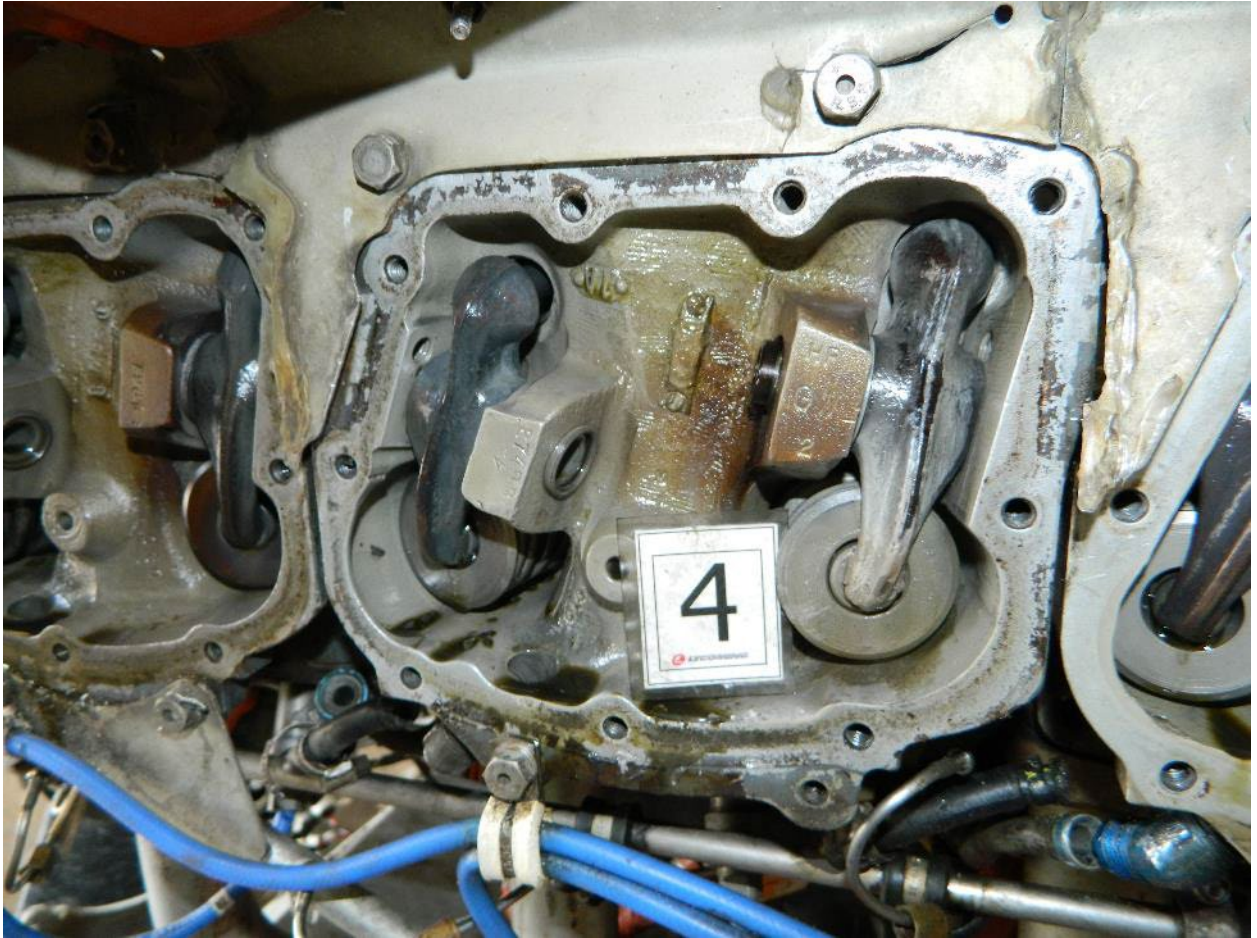


Figure 1 Cylinder No. 4 Rocker Arms

The top sparkplugs were removed and were found to be in good condition. The cylinders were examined via borescope. Thumb compression and valve train continuity was established throughout the engine.

Further examination of the #4 exhaust arm showed a large amount of carbon build up on the rocker arm, rocker shaft, and valve springs. The rotator cap, rocker arm, and springs were removed. The rotator cap had carbon deposits and a wear pattern which suggested a lack of rotation of the cap.

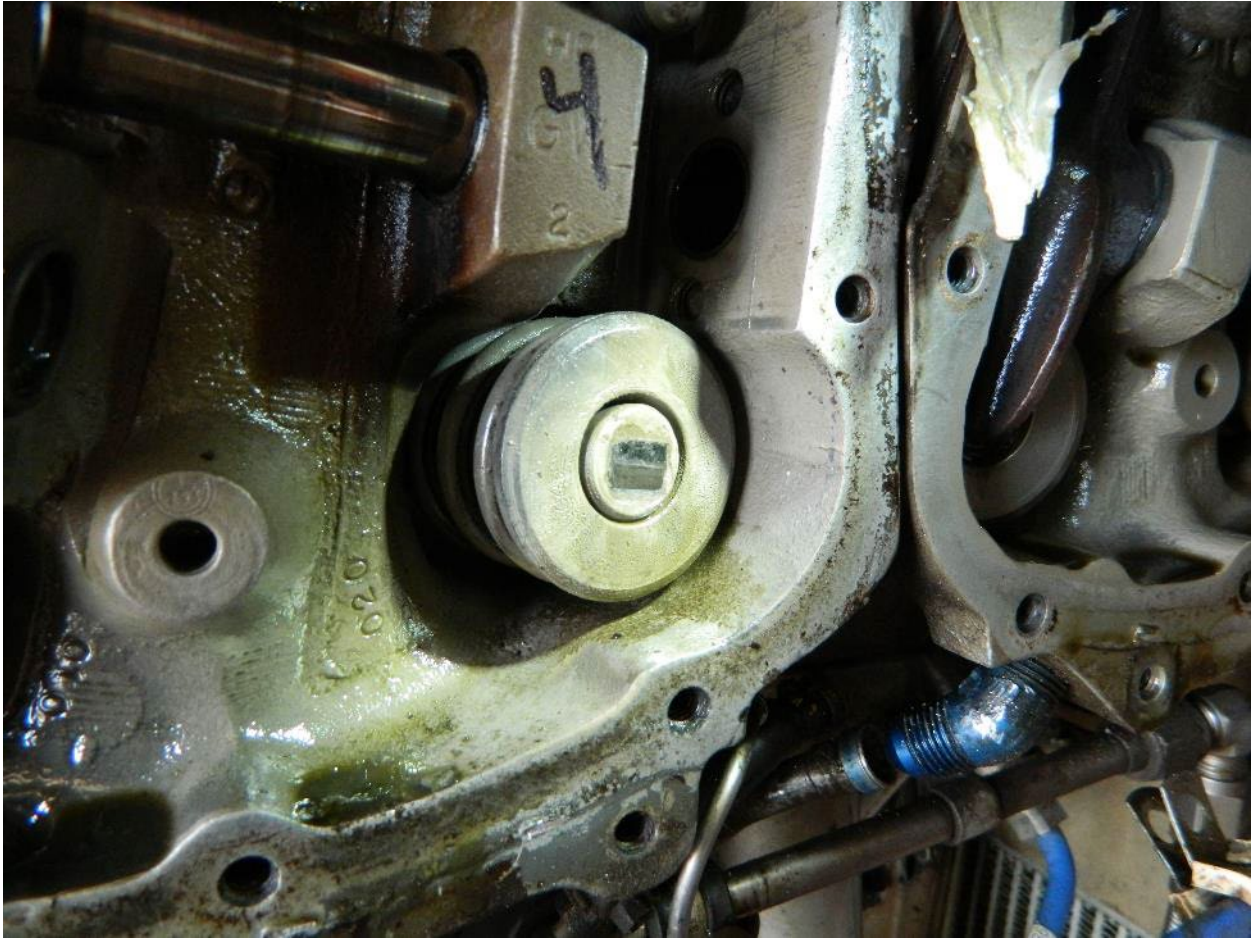


Figure 2 Rotator Cap With Wear



Figure 3 Cylinder No. 4 Exhaust Cap, Rocker Arm, and Springs (Picture from Lycoming)

When the exhaust valve was moved within the valve guide, it had excessive wobble and movement within the guide. The valve face had a dark coloration consistent with exposure to high heat.

The No. 5 cylinder exhaust valve also showed signs of carbon buildup, but no wear was found on the rocker arm or rotator cap.

Examination of the fuel system, dual magneto, oil filter, and turbo were unremarkable.

Submitted by:

Jason Aguilera
Senior Air Safety Investigator