



Memorandum of Record

Dan Baker
Senior Air Safety Investigator
Western Pacific Region

Date: 08/12/2022

Subject: WPR22FA188, N5532R, No. 4 Engine Cylinder Examination Notes

A Cessna C172, N5532R, was involved in an accident near Show Low, Arizona , on May 25, 2022. During a post-accident examination, the exhaust valve on the No. 4 engine cylinder was found stuck closed. The engine cylinder was removed from the engine to facilitate further examination.

The No. 4 cylinder was further examined on August 12, 2022. During disassembly the exhaust valve stem was observed stuck in the sleeve in the cylinder head. Wear/polishing was noted on one side of the exhaust stem that protruded from the sleeve (figure 1) and the stem appeared to be off center from the sleeve (figure 2). The exhaust valve was removed from the cylinder using a brass punch and a hammer.

Upon removal a black substance consistent with carbon buildup was noted along the length of the exhaust valve stem (figure 3). The valve stem diameter measured .4134 at the base of the stem and .4325 at the top. The specified measurements for the valve stem indicated a minimum diameter of .4335 for P/N 629404 and .4325 for P/N 3921. The P/N of the removed exhaust valve was not determined.

The cylinder and exhaust valve were retained for further examination.



Figure 1 – Polishing on valve stem.

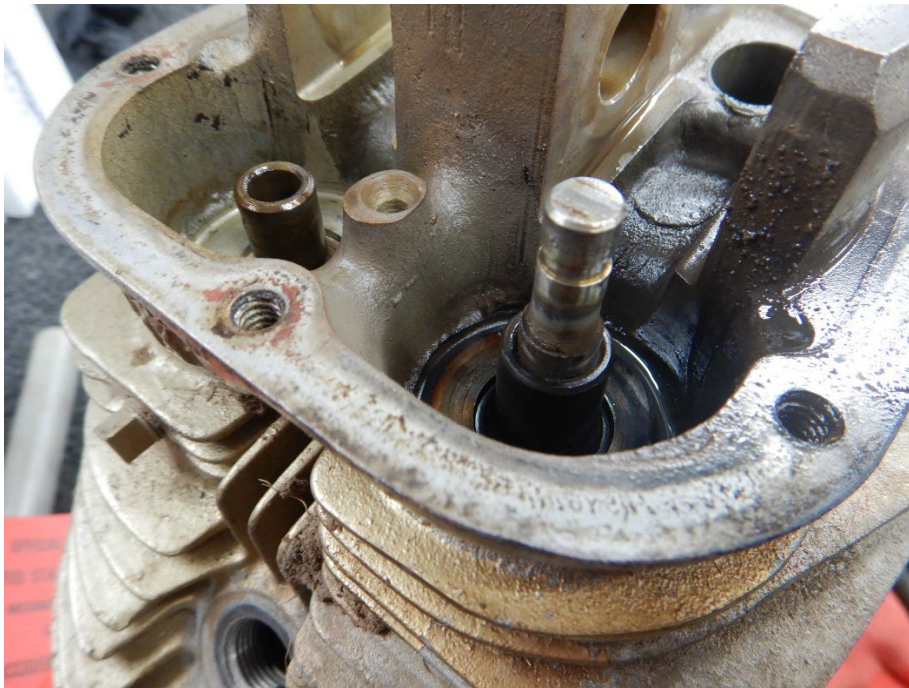


Figure 2 – Valve Stem Alignment



Figure 3 – Exhaust Valve