

Robert Gretz
Senior Air Safety Investigator
Eastern Region Aviation

Date: 06/13/2025

Subject: ERA24LA392

Contact: Matt Fox, Ph.D., NTSB Materials Laboratory

The following was extracted from an email sent by Dr. Fox on this date:

“Lycoming Materials Laboratory Investigation Report LN-19240 was reviewed. The examined part was cylinder assembly number 3 from a type O-320-D3G engine submitted by the NTSB in support of the subject investigation. The documentation in the report appears to be complete and sufficiently satisfies the NTSB request for evaluation. The number 3 exhaust valve was stuck in the open position. Results of the examination showed rough residues and patches in the valve guide and valve guide material adhered to the exhaust valve stem. Caked residues were observed around the exhaust valve tip. Coked oil deposits appeared to be present in the rocker box around the exhaust valve guide, and cylinder head cooling fins around the exhaust port appeared heat tinted white around the exhaust port. Measurements of the exhaust valve guide bore inside diameter were all below specification for a new valve guide, and the diametral valve to guide clearances were also below specification at the middle and inboard ends of the guide. Exhaust valve spring forces were measured in the valve open and closed positions. While loads were within specification at the valve open position, the spring forces were slightly below specification at the valve closed position for both the inner and outer springs. The slightly reduced spring forces in the closed position is not considered a likely cause for the exhaust valve sticking.”