



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety

March 4, 2021

ENGINE EXAMINATION

WPR19FA235

A. ACCIDENT EXAM

Location: Air Salvage of Dallas (ASOD)
Date: March 4, 2021
Aircraft: Meyers Midget Mustang
NTSB IIC: Samantha Link

B. EXAMINATION PARTICIPANTS:

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C. SUMMARY

Examination of the recovered engine was conducted on March 4th, 2021, at the facilities of Air Salvage of Dallas (ASOD).

The engine was placed on a table for the examination, later, the engine was hung in order to rotate the crankshaft.

The engine had a two-bladed fixed pitch wooden propeller, the blades were broken off just outside of the hub.

A preliminary inspection of the engine noted that the two left cylinder's pushrod tubes were damaged or missing. The oil sump was partly crushed had been punctured, the carburetor was broken from the case, and the case was absent any holes or obvious pre-impact abnormalities.

No preimpact abnormality was identified, that would have prevented the engine from making rated horsepower.

D. DETAILS OF THE INVESTIGATION

- The engine was equipped with a remote mounted spin-on oil filter, the filter was absent an installation date/engine time. The oil filter canister was cut open and the filter element inspected.
- The carburetor was recovered from a bag that contained miscellaneous airplane pieces
 - The bowl was dry and clear of contaminants, both metal floats were partly "crushed"

- The top set of sparkplugs were removed; normal wear on the electrodes was noted.
- The P-leads were disconnected from each of the magnetos. The engine timing was checked and appeared to about 28 degrees BTDC.
- Each magneto's impulse coupling was heard; When rotated by hand, spark was observed on each magneto terminal.
- Thumb compression and suction test was conducted on each cylinder, the cylinders that had the damaged pushrods were noted, and continuity thru the valve train and accessory drive was confirmed.
- The No #3 valve cover sustained impact damage
- Each cylinder was borescoped: no problems were identified with intake and exhaust valves.
- The firewall mounted fuel gascolator was missing.
- There were no preimpact anomalies noted during the engine examination.

E. Exam Photos





Remote mounted oil filter was cut open and the filter element examined; the element was absent metal contamination.



Right side of engine, note damage to the valve cover.



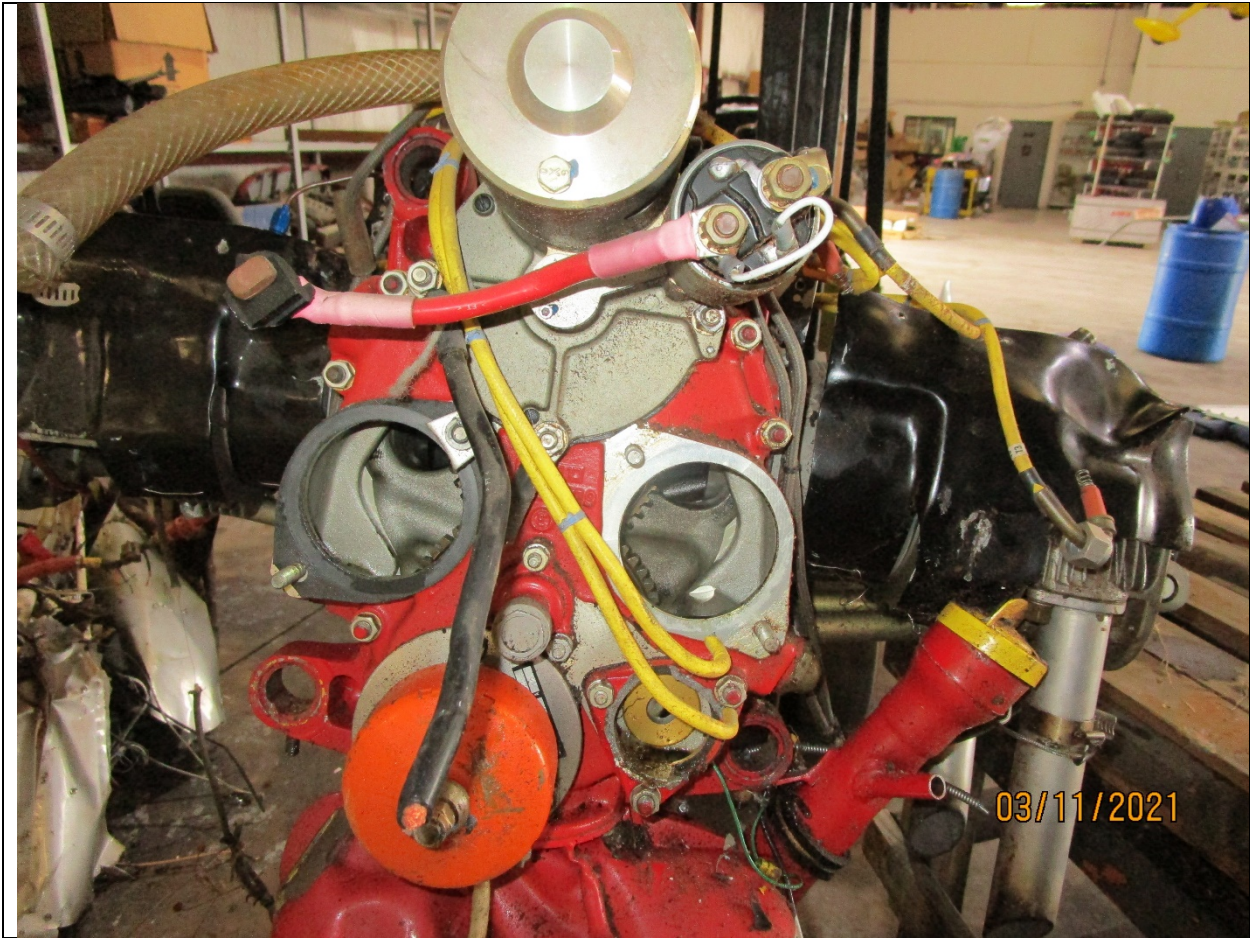
Sparkplugs exhibited normal wear and deposits



Missing pushrod and tube, the left front cylinder also has a mangled pushrod/tube



A drill motor was attached to each magneto; both magnetos produced spark on each terminal



When the crankshaft was turned by hand, continuity thru the valve train and accessory section was noted.



Carburetor was disassembled, both floats appeared to be “crushed”



Borescope of the cylinders, showing intake and exhaust valves.

END.