



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Western Pacific Region

March 4, 2021

AIRFRAME AND ENGINE EXAMINATION

WPR21FA057

This document contains 9 embedded photos.

A. ACCIDENT

Location:	Arlington, Washington
Date:	November 19, 2020
Aircraft:	Blevins Kamron Odyssey, N562TB
NTSB Investigator-in-Charge:	Maja Smith

B. PARTICIPANTS

Joshua Cawthra
Senior Aviation Accident Investigator
National Transportation Safety Board
Federal Way, Washington

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Air Safety Investigator
National Transportation Safety Board
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C. SUMMARY

The examination of the recovered engine revealed no evidence of any mechanical anomalies that would have precluded from normal operation.

D. DETAILS OF THE INVESTIGATION

Engine Examination

Engine Manufacturer: HKS
Engine Model Number: 700
Engine Serial Number: 101272

Examination of the recovered engine revealed that, the engine mount had impact separated from the fuselage, but the engine remained attached to the engine mounts. The two cylinders and the engine accessories case remained attached. The carburetor's and the starter had impact separated. The right cylinder exhaust remained attached but had impact damaged throughout. The left cylinder exhaust had impact separated. The top flywheel cover and the top accessories case had impact damage. The top of the engine crank case had impact damage near the flywheel cover and accessories case. Additional impact damage was observed to the upper area of the left cylinder and the cylinder rocker box cover.



Figure 1. View of engine from the right-side cylinder

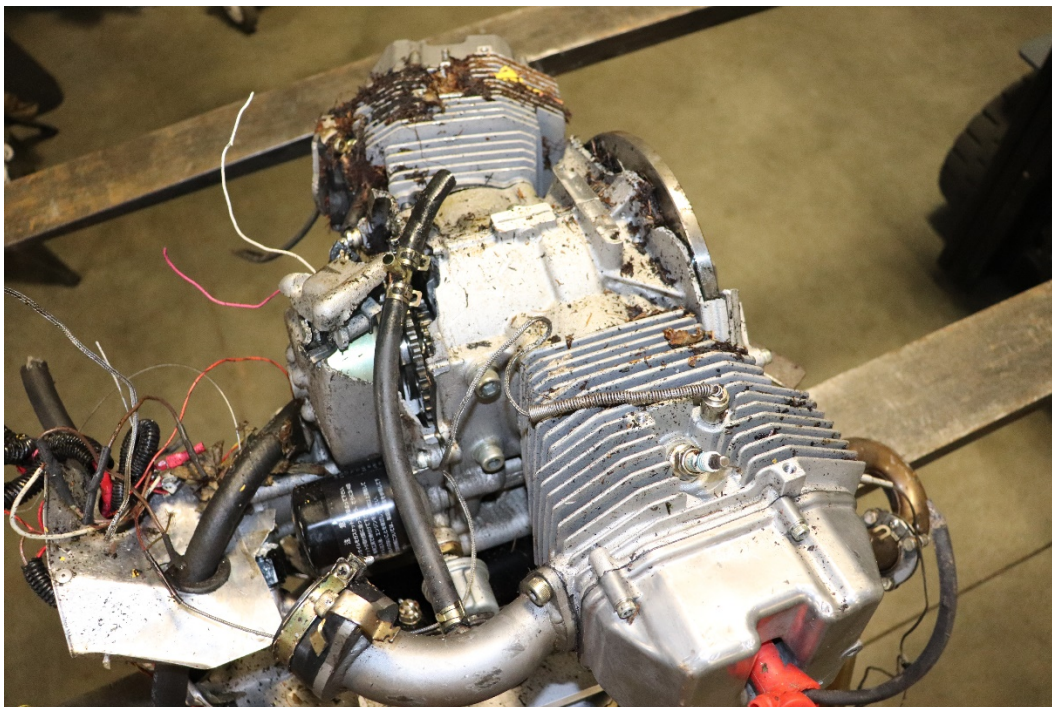


Figure 2. View of the engine from above

The rocker box covers were removed. The intake and exhaust rocker arms were intact and oil coated on all cylinders. All intake and exhaust valve springs were in place and visually appeared to be undamaged.



Figure 3. View of right cylinder rocker arm and valves

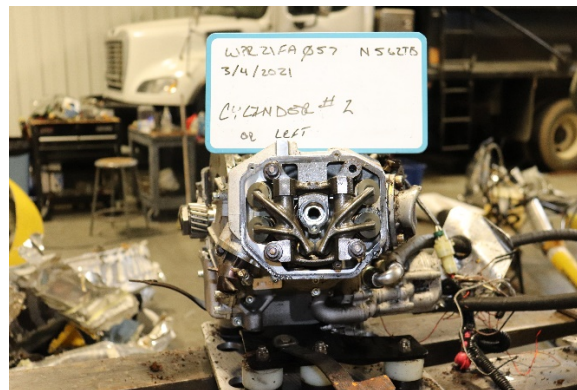


Figure 4. View of left cylinder rocker arm and valves

Both cylinders were removed and examined internally. A normal amount of combustion deposits was observed within the combustion dome of each cylinder and piston face. All of the intake and exhaust valves were unremarkable.



Figure 5. View of right cylinder piston face



Figure 6. View of right cylinder combustion dome



Figure 7. View of left cylinder piston face



Figure 8. View of left cylinder combustion dome

The left cylinder had fracture on the bottom area. The fracture was consistent with impact damage to the top of the cylinder.



Figure 9. View of left cylinder fracture

The top area of the accessories case had impact damage causing the stator assembly and the rotor assembly to impinge. Removing the accessories case removed the impingement and rotational continuity was established throughout the engine.

The top and bottom spark plugs were removed from the engine and they were automotive type spark plugs. The sparkplugs exhibited normal operational signatures.

A carburetor was separated and exhibited impact damage to the top of the diaphragm cover. The float bowl was free of debris and found unremarkable. The throttle lever was intact and undamaged. The throttle lever moved freely from stop to stop. The needle valve was removed and found unremarkable.

The electric fuel pump was tested by connecting it to a battery. The fuel pump emitted a mechanical noise and liquid was expelled from the outlet fuel line.

Submitted by: Joshua Cawthra