



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Central Region

January 26, 2021

AIRFRAME AND ENGINE EXAMINATION

CEN21LA109

This document contains 10 embedded photos.

A. ACCIDENT

Location: Albany, TX
Date: January 9, 2021
Aircraft: Robinson R44, Registration N322SH, Serial #13391
NTSB IIC: Samantha Link

B. EXAMINATION PARTICIPANTS:

Samantha Link (via Telephone)
Aviation Accident Investigator
National Transportation Safety Board
Denver, CO 80239

Troy Helgeson
Air Safety Investigator
Lycoming Engines
Williamsport, PA

Thom Webster (via telephone)
Manager Air Safety
Robinson Helicopters
Torrance, CA 90505

Corey Wehmeyer
Aviation Safety Inspector - Airworthiness
Federal Aviation Administration
Lubbock, TX 79424

Jacey Shack
S2 Helicopter Services LLC
Pilot
Albany, TX 76430

C. SUMMARY

Examination of the airframe and engine was conducted on January 26, 2021, at the helicopter's hangar at the Albany Municipal Airport (T23), Albany Texas.

D. DETAILS OF THE INVESTIGATION

1.0 Engine Run and Examination

- The airframe was properly secured to facilitate an engine run.
- An initial overview examination of the airframe and engine did not reveal any catastrophic anomalies.
- The V-Belts were examined and exhibited normal operating signatures.
 - They were cut from the engine to facilitate an engine run.
- The engine started easily and operated normally.

- Once the engine was warmed up a magneto check was conducted, when the ignition key was moved the following was noted:
 - Left position: the engine RPM dropped slightly
 - Right position: the engine RPM did not change
 - Both position: The engine RPM was consistent and continuous
 - Off position: The engine continued to run consistently. The key was jiggled, manipulated, and even removed from the ignition switch, but the engine continued to run. The key was then cycled several times between all positions with the same indications.
- The engine was shut down after about 13 minutes of operation.
- The ignition switch was confirmed to be wired properly and electrical continuity was established from the ignition switch to the magnetos.
- The grounding wires for the magnetos were examined and appeared to be properly secured.
 - They were disconnected; then pulled and manipulated with no anomalies noted.
 - A Volt/Ohm meter was attached to the grounding wires.
 - Both leads grounded properly when the switch was active to its respective positions.
- With the P Leads disconnected, the engine was started a second time.
 - Jumper leads were attached to the grounding terminals on the magnetos. When each jumper lead was grounded manually the magnetos performed properly.
- The grounding wires were reinstalled for each magneto and the engine was restarted.
 - The engine operated normally. They conducted several magneto checks, which were all normal. The engine was then shut down after a few minutes of operation.
- The magnetos were removed from the engine and the caps were removed.
 - All internal components were consistent with normal operations.
 - There were no abnormal indications or discoloration.
- The ignition switch was also removed and disassembled, with no anomalies noted.
- Mr. Helgeson provided the below photographs from the examination:

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1.1 Examination Photos



Figure 1: Left Side of Helicopter



Figure 2: Right Side of Helicopter

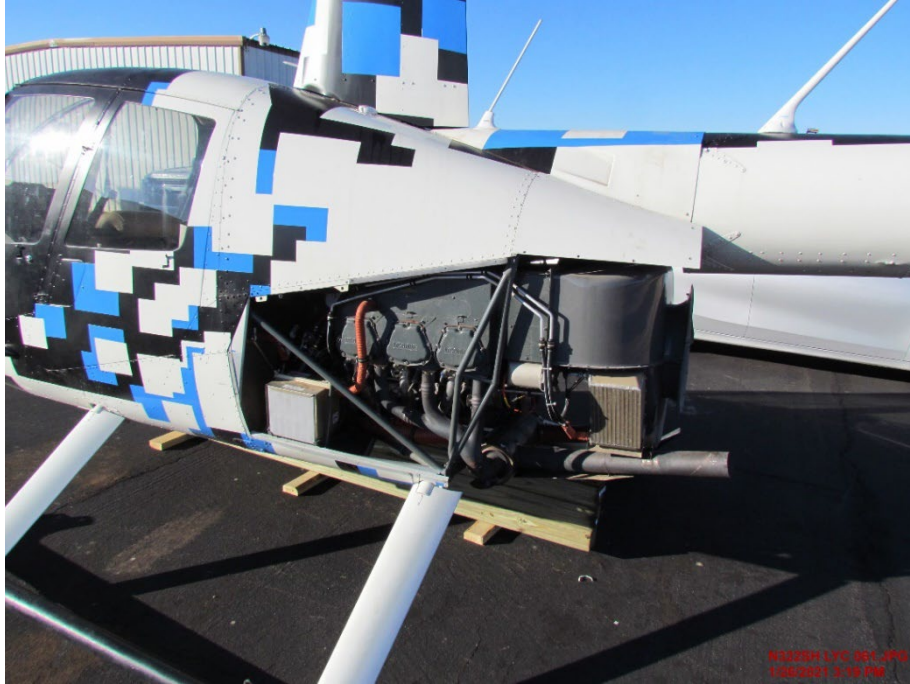


Figure 3: Engine Compartment



Figure 4: Lower Instrument Panel



Figure 5: Ignition Switch

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Figure 6: Right Magneto

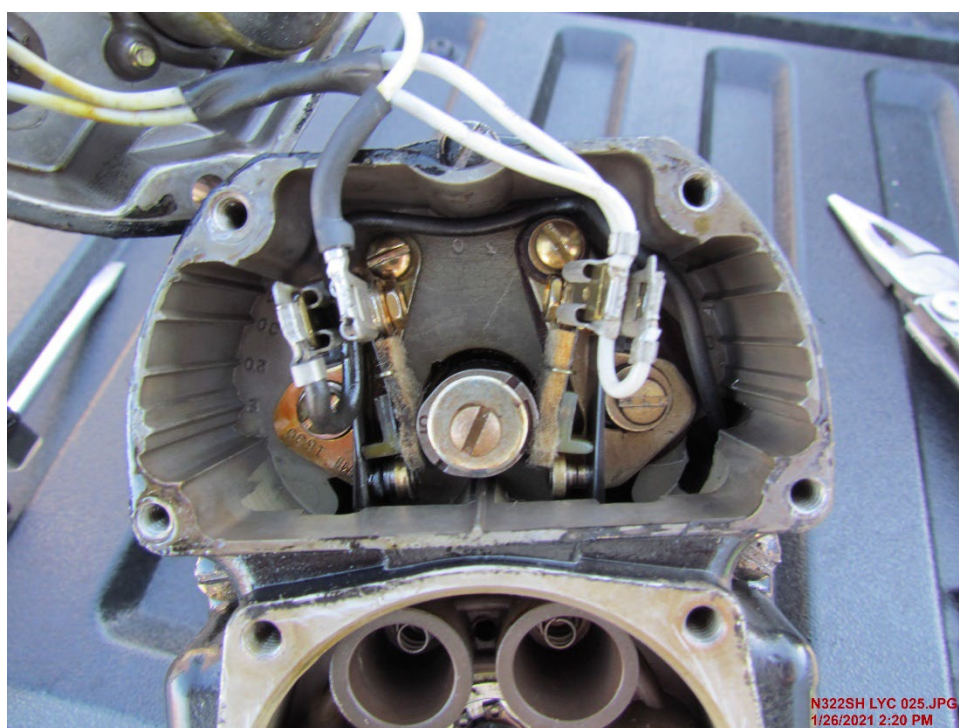


Figure 7: Cap Removed from Right Magneto



Figure 8: Left Magneto



Figure 9: Cap Removed from Left Magneto



Figure 10: Inside of the Ignition Switch

END.

Submitted by: Samantha Link