

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



ERA24LA276

WRECKAGE EXAMINATION REPORT

December 11, 2024

TABLE OF CONTENTS

A. ACCIDENT.....	3
B. WRECKAGE EXAMINATION REPORT	3
C. SUMMARY	3
D. DETAILS OF THE EXAMINATION.....	3
1.0 AIRFRAME EXAMINATION.....	3
2.0 ENGINE EXAMINATION	5
3.0 PROPELLER EXAMINATION	11
4.0 AIRCRAFT INFORMATION	11

A. ACCIDENT

Location: New Ipswich, New Hampshire
Date: June 25, 2024
Time: 12:55 EDT
16:55 UTC
Airplane: Robert Snyder Searey (N453TS)

B. WRECKAGE EXAMINATION REPORT

IIC Kurt Gibson
NTSB
Washington, D.C

C. SUMMARY

On December 11, 2024, the wreckage was examined by the NTSB IIC. The exhaust muffler and tailpipe assembly was not attached to the exhaust risers and according to the FAA and the recovery personnel, the exhaust muffler and tailpipe assembly was not found at the accident site. The propeller blades displayed damage consistent with impact with an object. There were no further anomalies noted during the examination that would have precluded normal operation of the airplane or engine.

D. DETAILS OF THE EXAMINATION

1.0 Airframe Examination

At the time of the examination, both wings had been removed from the airplane to facilitate recovery. The fuselage, empennage, and wings displayed impact damage signatures; however, the engine mounting section of the fuselage was undamaged. Flight control continuity was established for all flight controls from the cockpit controls to their respective flight control surfaces. The continuity of the throttle and choke control cables was established from the cockpit controls to both carburetors.

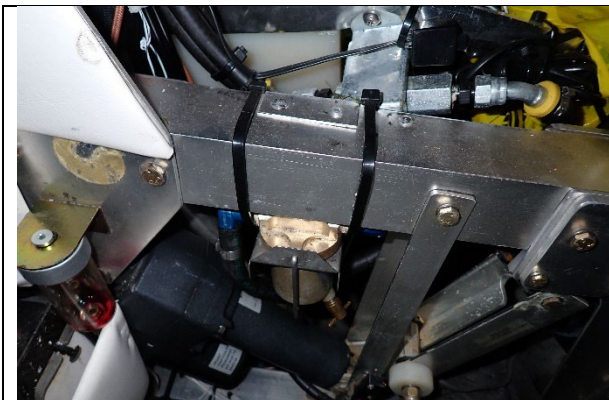


Photograph 1: Airframe overview



Photograph 2: Wings overview

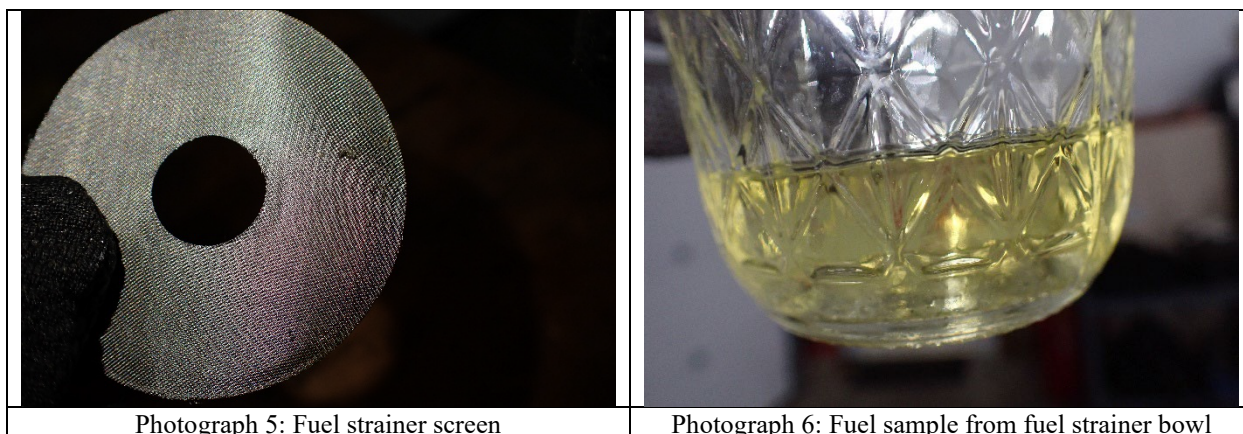
The airplane's fuel tank remained installed in the fuselage and contained approximately 2/3rd of a tank of fluid that had the odor and color consistency of automotive fuel. No placards were observed stating the approved fuel type or total fuel quantity. The fuel shutoff valve was found in the "OFF" position. The airplane was equipped with a shutoff valve for the fuel vent system which was also found in the "OFF" position. The airframe electrically driven fuel pump remained attached to its installation point and was undamaged. The fuel pump inlet and outlet fuel lines remained secured to their respective fuel fittings and the electrical wires were secure. The fuel pump was removed and connected to a 12V battery; the fuel pump operated normally. The fuel strainer bowl was secured to the airframe through zip ties and fuel lines. The inlet and outlet fuel lines were secure and there were no signs of fuel leaks. It was noted that the fuel line routing, and the strainer bracket design prevented the fuel bowl from being removed without removing the fuel line and removing the securing arm forcefully. The fuel bowl was removed and was full of fuel with the odor and color consistency of automotive fuel. The fuel screen was removed and a small amount of debris was noted in the screen; however, the screen was not obstructed.



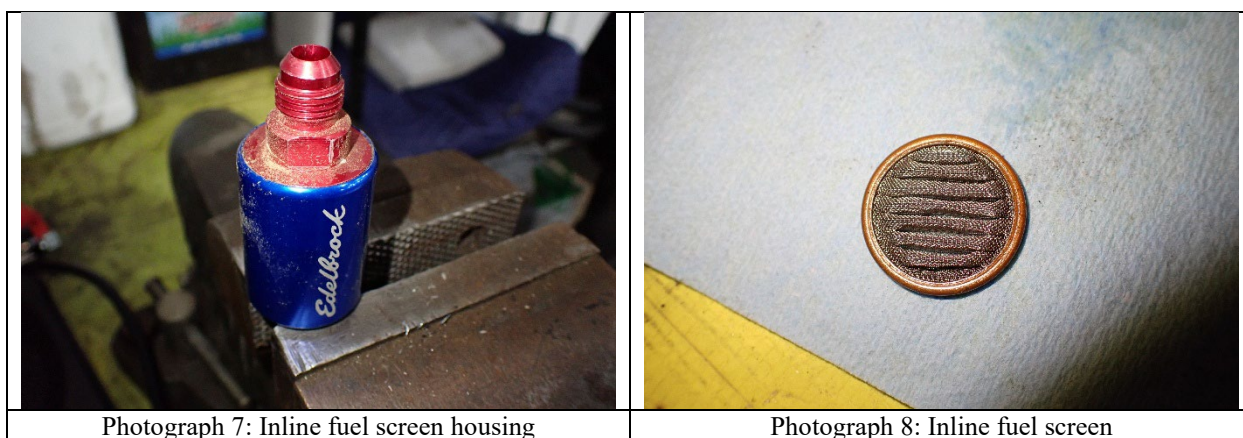
Photograph 3: Fuel strainer bowl installation



Photograph 4: Fuel strainer screen



The fuel lines going to the engine were noted to be secure to the engine driven fuel pump and to the carburetors. Low pressure air was blown into the airframe and engine fuel lines, and it was noted that the lines were unobstructed. An inline fuel screen was located near the engine. The fuel screen was disassembled, and the fuel screen was noted to be clear of any contamination and was unobstructed.

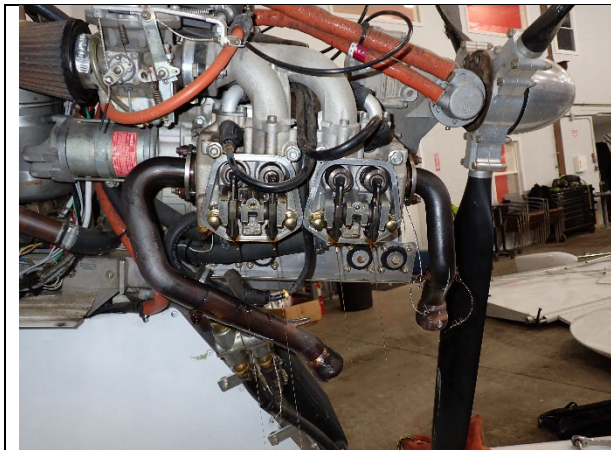


2.0 Engine Examination

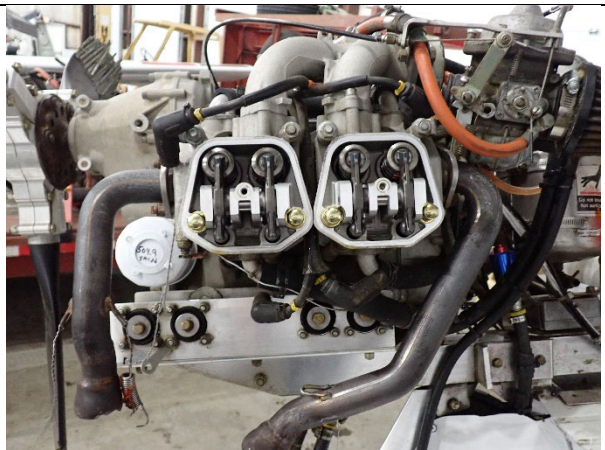
The engine remained attached to the airframe through its engine mounts, hoses, cables, and wires and displayed minimal damage. Both carburetors had disconnected from their respective induction hoses; however, both carburetors were undamaged.

Continuity was established between the propeller shaft, gearbox, crankshaft, camshaft, connecting rods, and associated components by rotating the propeller shaft manually. There were no signs of binding within the internal components noted during rotation. Thumb compression and suction was established for all four of the cylinders and the rocker arms and valves operated normally during propeller shaft rotation. The cylinders were inspected using a lighted borescope; the piston faces,

cylinder walls, and valve heads displayed normal operating and combustion signatures and there were no signs of overheating of the cylinders. The oil filter was removed, cut open, and the filter pleats were inspected. There were no anomalies noted within the filter pleats.



Photograph 9: No. 1, No.3 Cylinders



Photograph 10: No. 2, No. 4 Cylinders



Photograph 11: Oil Filter



Photograph 12: Oil filter pleats

The magneto and electronic ignition units were undamaged and all of the wiring remained secured. The ignition leads remained secured to both the electronic ignition system and to each spark plug and there were no signs of chafing or arcing noted. The spark plugs were removed from their cylinders and visually inspected. The spark plugs displayed normal operating and wear signatures.

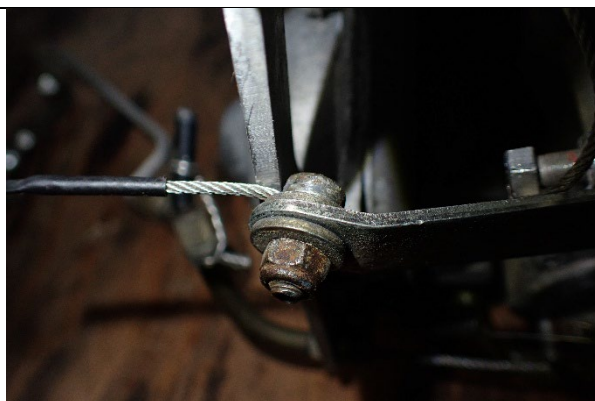
The engine driven fuel pump remained secured to its installation point and the inlet and outlet fuel lines were secure to the pump. During propeller shaft rotation, the fuel pump was noted to pump residual fuel out of the fuel pump. The fuel lines going to the carburetors remained secured and there were no signs of fuel leaks.

The carburetors were removed from the engine to facilitate examination. The throttle arm carburetor for the No. 1 and the No. 3 cylinders was noted to be slightly bent and would contact the carburetor frame and bracket during operation. The throttle valve operated normally during throttle arm movement. The carburetor was disassembled, and the internal components were examined. The fuel bowl contained fuel that had the odor and color consistency of automotive fuel. The fuel bowl also

displayed signs of corrosion consistent with exposure to water; however, there were no signs of water within the fuel in the fuel bowl. Both floats remained intact and were capable of normal movement. The float needle valve remained installed and operated normally when manually manipulated. The needle valve was removed and the valve displayed normal seating signatures. The carburetor diaphragm was intact and pliable, and the jet needle was installed and displayed normal operating signatures. The main fuel jet was clear of any obstructions.



Photograph 13: No. 1, No. 3 Carburetor



Photograph 14: No. 1, No. 3 carburetor throttle arm



Photograph 15: No. 1, No. 3 Carburetor Bowl



Photograph 16: No. 1, No. 3 carburetor after disassembly

The throttle arm carburetor for the No. 2 and the No. 4 cylinders was noted to operate normally without contacting the rest of the carburetor. The throttle valve operated normally during throttle arm movement. The carburetor was disassembled, and the internal components were examined. The fuel bowl contained fuel that had the odor and color consistency of automotive fuel. The fuel bowl also displayed signs of corrosion consistent with exposure to water; however, there were no signs of water within the fuel in the fuel bowl. Both floats remained intact and were capable of normal movement. The float needle valve remained installed and operated normally when manually manipulated. The needle valve was removed and the valve displayed normal seating signatures. The carburetor diaphragm was intact and pliable, and the jet needle was installed and displayed normal operating signatures. The main fuel jet was clear of any obstructions.



Photograph 17: No. 2, No. 4 carburetor



Photograph 18: No. 2, No. 4 carburetor bowl



Photograph 19: No. 2, No. 4 carburetor after disassembly

The induction system remained intact and was undamaged. Both carburetor air filters remained attached to their respective carburetor and were unobstructed. There were no signs of induction leaks or obstructions noted during the examination.

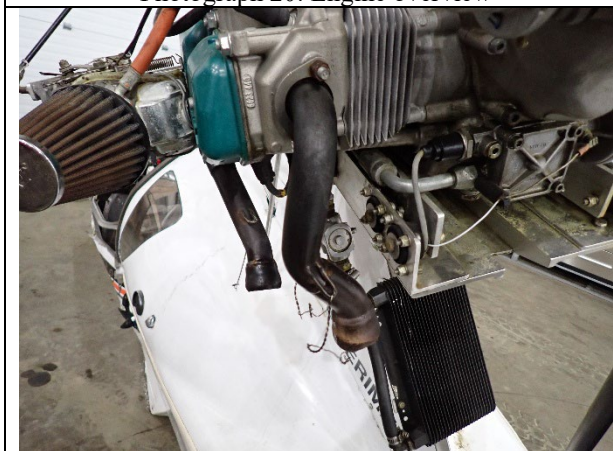
All four exhaust risers remained attached to their respective cylinders; however, the No. 1, No 3, and the No. 4 exhaust risers were found to be loose at the attach point to the cylinder. The exhaust muffler and tailpipe had separated from the exhaust risers and was not with the wreckage. According to the FAA and the recovery personnel, the exhaust muffler and tailpipe assembly was not located at the accident site. Only one of the exhaust springs remained attached to the exhaust risers. The spring remained attached to some safety wire of the No. 2 exhaust riser. The rest of the exhaust risers contained varying amounts of safety wire attached to the exhaust spring brackets that were welded to the exhaust risers. Several of the exhaust spring brackets were noted to have deep gouges/grooves in the bracket that were consistent with excessive wear. The No. 1, No. 3, and the No. 2 exhaust risers displayed deformation around the exhaust riser end that would be inserted into the exhaust muffler and tailpipe assembly; the No. 4 exhaust riser end was undamaged.



Photograph 20: Engine overview



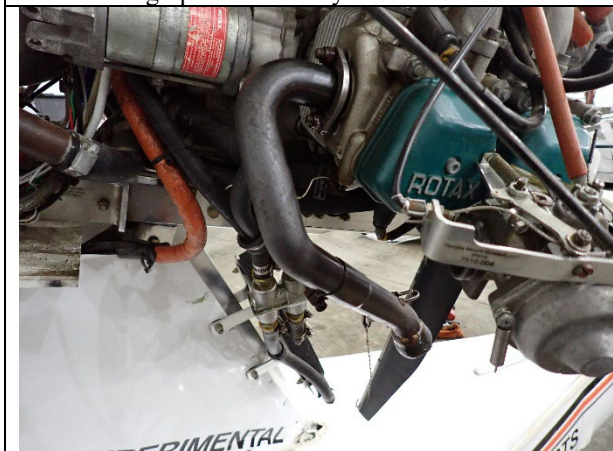
Photograph 21: Engine overview



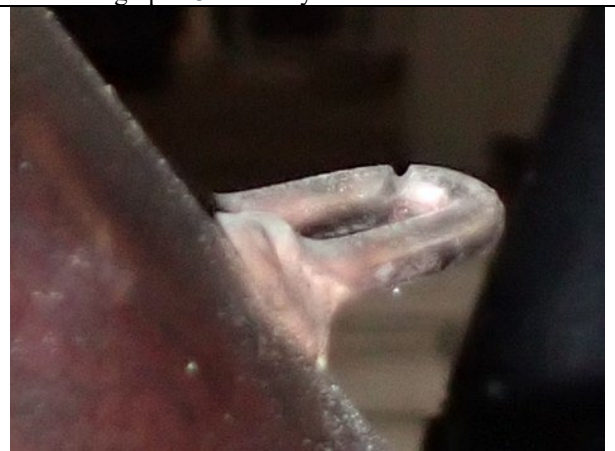
Photograph 22: No. 1 cylinder exhaust riser



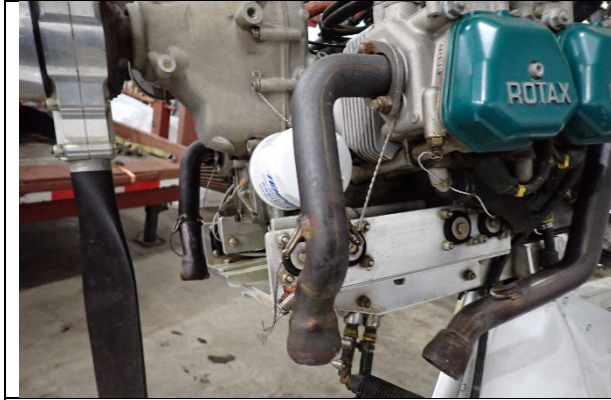
Photograph 23: No. 1 cylinder exhaust riser end



Photograph 24: No. 3 cylinder exhaust riser



Photograph 25: No. 3 cylinder exhaust spring loop



Photograph 26: No. 2 cylinder exhaust riser



Photograph 27: No. 2 cylinder exhaust spring



Photograph 28: No. 2 cylinder exhaust spring end



Photograph 29: No. 2 cylinder exhaust riser safety wire



Photograph 30: No. 4 cylinder exhaust riser



Photograph 31: No. 4 cylinder exhaust riser end

3.0 Propeller Examination

The three blade, fixed pitch propeller remained attached to the propeller shaft and the blades displayed impact damage signatures. One propeller blade was broken approximately in half, another blade was missing the blade tip and a large section of the cambered side of the blade, the third blade displayed only minor impact damage signatures. According to the recovery personnel, the separated portions of the propeller blades were not located at the accident site.



Photograph 32: Propeller overview

4.0 Aircraft Information

The last maintenance on the engine was performed on May 20th, 2024, and was an owner performed oil and filter change. The last condition inspection was performed on August 1, 2023, at a tachometer time of 489.0.

Submitted by:

Kurt Gibson
Aviation Accident Investigator