

# National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR24FA277

## **ENGINE EXAMINATION SUMMARY**

March 25, 2025

## Table of Contents

|                                         |   |
|-----------------------------------------|---|
| A. ACCIDENT .....                       | 3 |
| B. PARTICIPANTS.....                    | 3 |
| C. DETAILS OF THE EXAMINATION.....      | 4 |
| 1.0 Engine Inspection.....              | 4 |
| 2.0 Engine Examination .....            | 5 |
| 3.0 Propeller Assembly .....            | 7 |
| 4.0 Summary of Engine Examination ..... | 7 |

## **A. ACCIDENT**

Location: Eureka, Utah  
Date: 07/07/2024  
Time: 1800 Local  
Airplane: N969RC FANTASY AIR SRO

## **B. PARTICIPANTS**

|     |                                                                                  |
|-----|----------------------------------------------------------------------------------|
| IIC | Scott Johnson<br>National Transportation Safety Board<br>Federal Way, Washington |
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|----------------------------------|------------------------------------------------------------------------------------|
| Chief Air Safety<br>Investigator | Jordan Paskevich<br>Rotax-Rotech Flight Safety<br>Vernon, British Columbia, Canada |
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## C. DETAILS OF THE EXAMINATION

### 1.0 Engine Inspection



**Figure 1 Crated Engine**



Model number: ROTAX 912 UL  
Serial number: 4408478  
Production Year: 04.05.2007

The engine was removed from the main wreckage under NTSB oversight at the co-owner's hanger in Spanish Fork, UT, crated and shipped from Utah Helicopters in Spanish Fork, UT. The engine was shipped to Rotech Motor Ltd, at the Vernon Regional Airport, Vernon, British Columbia, in Canada. The follow-up examination was conducted on March 25, 2025, with the NTSB-IIC and Rotax investigator in attendance. The shipping box was undamaged in Canada.

## 2.0 Engine Examination

The spark plugs were removed from the bottom of each of the cylinders. All spark plugs were model NGK DCPR7E type. The spark plug electrode areas had normal amounts of combustion deposits and coloring. Due to engine position the spark plug electrode areas were oil saturated.



**Figure 2 Bottom cylinder spark plugs**

Internal wearing was noted on components in the reduction gear box due to impact damage. Once the propeller and reduction gear box was removed the crankshaft moved freely by hand and engine continuity was established.

The cylinder rocker covers were removed and all cylinder overhead components were undamaged and were covered in a light residue of oil. The crankshaft was rotated and pushrods and valves operated normally.

The cylinder heads were removed and valves were observed as normal on all of the piston heads. The cylinder barrels were removed and cylinder skirts exhibited no damage and appeared in good physical condition.

The crankcase was inspected and found to be in good physical condition with no anomalies observed.



**Figure 3 Engine with reduction gearbox attached**

The propeller assembly remained attached to the crankshaft propeller flange. The reduction gearbox had a one-inch hole on the upper portion of the casing. The ignition system was damaged and displaced from its mounts. A portion of the engine support structure remained attached to the engine mounts. The carburetors were missing from the intake manifolds and not available for testing. The mechanical fuel pump was missing from its mounting pad and not available for testing. The engine was oil soaked and about a ½ quart of oil drained out of the top oil tank area as the engine was manipulated. The oil tank was not attached to the top lid portion of the tank and was not available for inspection. The oil filter was broken off and displaced from impact damage and was not available for inspection. The oil lines were breached, and the oil cooler was damaged from the impact. Evidence of proper oil lubrication was observed during the engine examination and breakdown. The coolant lines were found breached, and the coolant radiator was not available for inspection. However, there was no evidence of overheating or an issue with the cooling system.

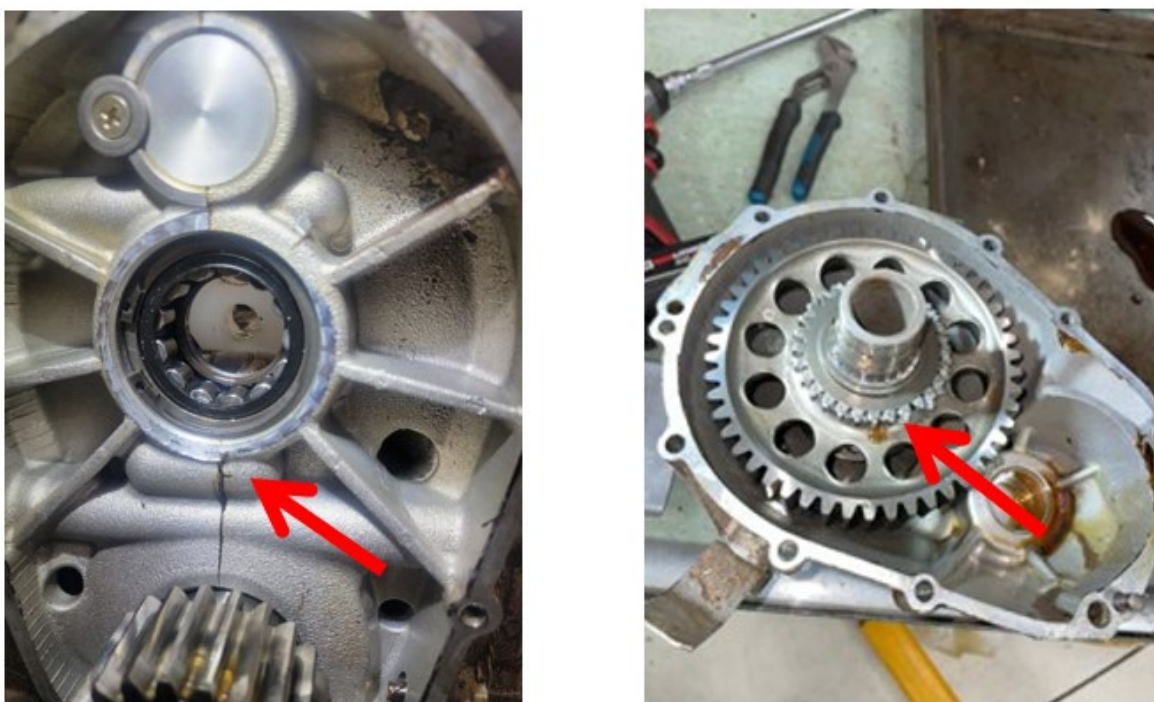
The crankshaft was inspected and found to be in good condition, with no signs of damage from an oil starvation or excessive heat situation.

The crankshaft rotated with ease once interference from the reduction gearbox was cleared. The camshaft was examined and was found to be in good condition, with no evidence of oil starvation or excessive wear/pitting on the cam lobes.

No anomalies were discovered with the crankcase, crankshaft, or camshaft.

### **3.0 Propeller Assembly**

The propeller assembly was attached to the crankshaft propeller flange. Initially the engine could not be rotated by hand. Only one of the composite blades remained and was fractured mid-span with the other two sheared off during impact. This evidence likely suggests the engine was developing power at the time of impact. The gearbox assembly had been pushed into the engine case restricting engine movement. Once the reduction gearbox was removed, the engine could be rotated by hand.



**Figure 4 View of reduction gear box assembly and engine case contact**

### **4.0 Summary of Engine Examination**

The engine sustained significant damage during impact. There were no pre-accident mechanical failures or malfunctions found with the engine that would have precluded normal operation. The evidence suggests the engine was running at the time of impact, with damage primarily attributable to the crash rather than pre-existing issues.

Submitted by:

Scott Johnson  
Aviation Accident Investigator