

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN24FA101

ENGINE 2 EXAMINATION SUMMARY

April 11, 2024

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A. ACCIDENT

Location: Ranchitos Las Lomas, Texas
Date: January 29, 2024
Time: 1441 CDT
Airplane: N315GW- Aircam, S/N AC283-3

B. ENGINE 2 EXAMINATION SUMMARY

IIC	Andrew Finne NTSB Aurora, Colorado
Party Member	Jordan Paskevich Rotax Aircraft Engines Gunskirchen, Austria

C. SUMMARY

A follow-up examination of Engine #2, Rotax 912ULS - S/N 9570192, was performed in Laredo, Texas with a Rotax Engines party member present. The examination revealed that there were no preaccident mechanical failures or malfunctions with the engine that would have precluded normal operation.

D. DETAILS OF THE EXAMINATION

1.0 Engine Examination

Initial condition of Engine as presented before detailed inspection

The engine was detached from the airframe and positioned on a pallet, still affixed to the engine mount. It was stored in an outdoor fenced lot at the Laredo, Texas Highway Patrol facility.

Both carburetors were disconnected from the intake manifolds, and the crossover tube linking the two intake manifolds was broken on the 2/4 intake manifold due to impact; however, it remained attached to the 1/3 intake manifold.

The coolant radiator was significantly damaged from the impact, while the oil cooler remained undamaged. Two of the three blades of the Warp Drive carbon fiber propeller blades were broken approximately one foot from the center hub.

Spark Plugs

All spark plugs were NGK BR8ES.

All spark plugs remained connected to their respective spark plug boots. They were all in good physical condition and exhibited a good burn pattern, showing no anomalies. Additionally, all spark plug boots were the new style designed to be used with ROTAX branded spark plugs.

Ignition System

The ignition modules and ignition coils were undamaged and in good physical condition.

Fuel System

The fuel system, including the fuel lines, was breached due to impact. The fuel pump was a BCD Torino brand with a Part Number 893115 and Serial Number 17.3049.

There was no fuel return line installed in the fuel system.

A Facet electric fuel pump was installed in the fuel system.

The gascolator was found damaged from impact. Both the 1/3 and 2/4 carburetors were displaced from the intake manifolds and had minor impact damage. The float bowls were removed and inspected. A small amount of liquid with the consistency and smell of automotive fuel was found contained within both float bowls. No contamination was found inside either of the float bowls. The main jet was examined, and no obstructions were observed. Both main jets of the 1/3 and 2/4 carburetors were a No. 155.

Lubrication system

The lubrication system had impact related damage. When the No. 1 cylinder sparkplug was removed oil poured out. The position of the stored engine put the No. 1 cylinder in the lowest position in relation to the other cylinders and oil sump. Upon removal of all the valve covers, signs of oil lubrication were evident. The oil appeared to be very clean. The oil filter installed was an original ROTAX branded oil filter and of the proper type.

The oil pump was found undamaged and appeared to be in good overall condition.

Cylinders

The cylinders and cylinder heads were externally examined. Damage was found on some of the cylinder cooling fins due to impact. The engine crankshaft was rotated by hand turning the remaining propeller blades. Continuity and compression were felt in all cylinders by thumb compression. The valvetrain operated and functioned correctly when the crankshaft was turned by hand.

Cooling system

The cooling system had impact damage, with remnants of coolant found in the expansion tank.

Air Filter system

Both air filters were found damaged from impact.

Exhaust system

The exhaust system sustained damage from impact and was partially disconnected from the engine.

Gearbox

The gearbox was intact. The propeller shaft was rotated by hand and continuity established.

Crankcase and crankshaft

The crankcase was externally examined and found to be in good overall condition. Continuity was established with the crankshaft while rotating the propeller shaft by hand using the remaining propeller blades.

Engine Maintenance and Journey Log

No maintenance or journey logs were provided for review.

Due to the physical condition of the engine and the impact damage it sustained, conducting an engine run was not feasible.

Submitted by:
Andrew Finne
Air Safety Investigator