

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



WPR23FA053

FOLLOW UP EXAMINATION REPORT

April 14, 2022

A. ACCIDENT

Location: Lakeport, California

Date: December 2, 2021

Time: 1115 Pacific standard time

Gyrocopter: Experimental Amateur-built, Vortex Gyrocopter, N425RD

B. FOLLOW UP EXAMINATION REPORT

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C. SUMMARY

On December 2, 2021, about 1115 Pacific standard time, an experimental amateur-built, Vortex gyrocopter, N425RD, was substantially damaged when it was involved in an accident near Lakeport, California. The pilot was fatally injured. The gyrocopter was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

Two witnesses, located about 2 miles west of the accident site, observed the gyrocopter in level flight, and then saw it tumble tail over nose, three times before they lost sight of it behind a tree line.

Postaccident examination of the gyrocopter revealed no evidence of any preaccident mechanical malfunctions or failures that would have precluded normal operation.

D. DETAILS OF THE EXAMINATION

Airframe

The two main rotor blades remained intact and connected through the mast to the cockpit. The blades were marked A and B for the purposes of identification during the examination. Blade A was coned slight down about a-third of the way from the root – just past the plate with screws. The leading edge had no nicks or gouges and about 2 feet of the trailing edge was ripped/torn. The blade remained relatively intact with no S-bending.

Blade B - the leading was undamaged. The trailing edge near the bracket had ripped and had some s-bending from the root to more than halfway down the span of the blade. It was crushed from the trailing edge to the leading edge.

Both pitch change link/tubes remained attached to the main rotor system. One pitch change link/tube remained straight, while the other one was bent.

The strut supports remained intact and connected. The gyrocopter has a tricycle landing gear set up, with an additional small wheel located at the tail for on ground moving. All 3-landing gear remained attached to the airframe. The left main landing gear support was broken. The right main cross tube had impact damage and was separated.

Flight control continuity established from the cyclic through to the rotor mast, which could be moved freely from side-to-side and up-and-down.

The rudder cables remained attached from the rudder pedals to the rudder horn and were free to move. The right-side rudder cable had some fraying on it near the tail section. The right-side rudder cable was trapped in the cockpit due to impact damage, however, the cable was continuous to the rudder pedal.

The throttle was in the idle position and the pre-rotator was in the OFF position. Both levers were stuck in position and could not be moved. The No 1 mag was in the OFF position and the cover had separated. The No. 2 mag was in the OFF position, but the cover remained attached. The gold lever on the right side remained attached and the cable was connected from the cockpit to the main rotor head.

The tail section remained mostly intact and the rudder and left stabilizer were attached. The right stabilizer was mostly separated but remained connected.

ENGINE

Engine valve train and mechanical continuity established through manual rotation of the engine via the propeller.

Both carburetors were separated from the engine due to impact damage. The magneto side carburetor was intact with a miniscule amount of fuel present in the bowl. The power takeoff side carburetor had some impact damage to the side of the carburetor. The floats of both carburetors were weighed and were within the 7oz range. The floats were undamaged.

The fuel pump was opened exposing the dual diaphragms - no tears or debris was inside the divider.

The fuel tank was breached. The oil can was breached, but oil remained in the can. The rotor shaft lubricating oil sump had oil in it but the sump had sustained some damage. The coolant container had some coolant in it and was connected to the coolant line to the engine. However, the coolant area had been breached.

E. PHOTOGRAPHS



Photo 1. View of Gyrocopter



Photo 2. Left Side of Gyrocopter



Photo 3. Rear View of Gyrocopter



Photo 4. View of Flight Controls



Photo 5. View of Engine Area



Photo 6. View of the Fuel Pump



Photo 7. View of Tail Section



Photo 8. Main Rotor Brake

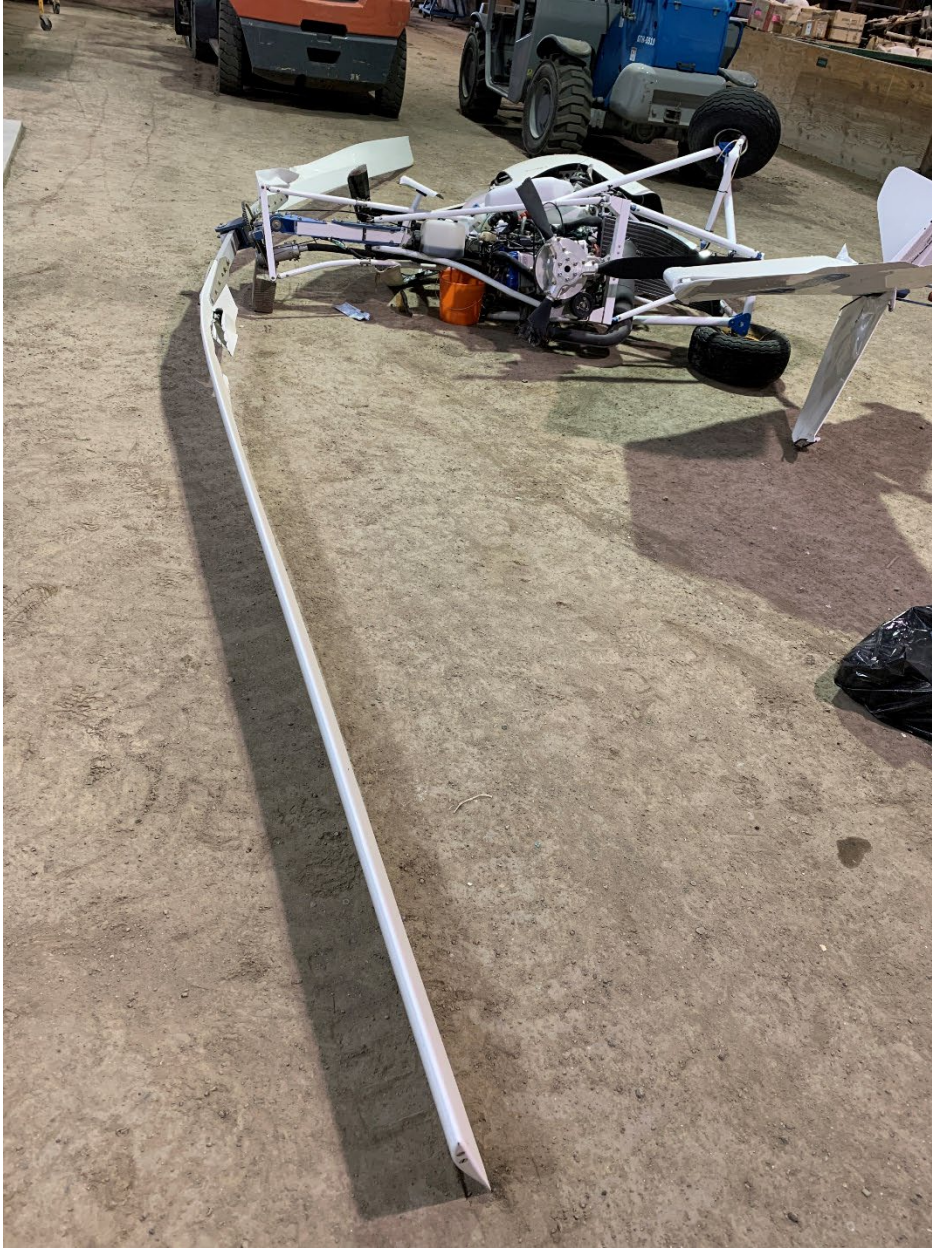


Photo 9. Rear View of Gyrocopter



Photo 10. Main Rotor Systems



Photo 11. Main Rotor Blade "A"



Photo 12. Main Rotor Blade "B"

Submitted by:

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