

WRECKAGE EXAMINATION
NTSB Accident Number
ERA23FA194

ACCIDENT

Location:	Andrews, NC
Date:	April 15, 2023
Time:	1039 EDT
Aircraft:	Velocity
Registration	N2357

PARTICIPANTS (On Scene)

Robert Gretz
Sr. Air Safety Investigator
National Transportation Safety Board
Eastern Region Aviation

Michael Guidice
Aviation Safety Inspector
FAA CLT FSDO

James Childers
Lycoming Engines
Williamsport, PA

HISTORY OF FLIGHT

On April 15, about 1039 eastern daylight time, an experimental, amateur-built Velocity, N2357, was destroyed when it was involved in an accident near Andrews, North Carolina. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

According to the current airplane owner, who was the fifth owner, the airplane suffered a landing accident in 2004, and the second owner sold it to a salvage facility. That facility removed the engine and avionics, then sold it to a fourth owner, who installed a newly overhauled engine with turbocharger. The current owner purchased the airplane and added a new propeller and avionics. At the time of the accident, the engine had about 54 hours of operation since overhaul in 2012. Due to the modifications, a Federal Aviation Administration designated airworthiness representative (DAR) inspected the airplane, issued an amended airworthiness certificate with revised operating limitations, and endorsed the airframe logbook on April 1, 2023. The accident flight was the first flight since that endorsement.

The current owner further stated that he is a private pilot with about 90 hours of flight experience; of which, about 10 hours are in the make and model airplane. Since he had little experience, he hired the accident pilot to fly the first flight since modification/DAR approval. The accident pilot also inspected the airplane for about 1.5 hours prior to the accident takeoff. The owner saw the airplane take off, but lost sight of it behind buildings.

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Witnesses reported that the airplane took off on runway 26 and climbed about 300 ft above ground level while flying a left traffic pattern back to runway 26. Near the crosswind to downwind turn, the engine sounded loud, and the airplane descended into a wooded field and a postcrash fire ensued.

The owner further stated that the engine was equipped with a fixed-pitch cruise propeller. With the turbocharger engaged, the engine would obtain 2,300 rpm; however, with the turbocharger bypassed, the engine would only obtain about 2,050 rpm. At that lower rpm, the airplane would not be able to fly with one pilot and full fuel, which it had for the accident takeoff.

PERSONNEL INFORMATION

Pilot information was provided to NTSB IIC by FAA inspector Michael Guidice.

AIRCRAFT INFORMATION

The experimental, amateur-built airplane was assembled in 1996 and currently equipped with a Lycoming IO-360-A1D, 180-hp engine, driving a two-bladed MT fixed pitch propeller. Review of the airframe logbook revealed that the airplane's most recent annual condition inspection was completed on March 31, 2023. At that time, the airplane had accrued 197 total hours of operation.

METEOROLOGICAL INFORMATION

KRHP 151429Z AUTO 26006KT 10SM SCT012 BKN029 OVC034 17/12 A3005

COMMUNICATIONS

N/A

FLIGHT RECORDERS

N/A

WRECKAGE AND IMPACT INFORMATION

The wreckage came to rest inverted, oriented about a 075° magnetic heading, and an approximate 50-ft debris path was observed. The left wing was separated, resting against a tree inverted at the beginning of the debris path. The main wreckage was consumed by fire at the end of the debris path. No cockpit controls or instrumentation was identified. No seats or restraints were identified.

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The left aileron and left rudder separated were recovered near the left wing. The right wing and canard remained with the main wreckage and were consumed by fire. The flight controls consisted of control rods and push-pull tubes. Flight control continuity and trim continuity could not be verified due to fire damage.

The engine came to rest inverted, separated from the airframe. The two-blade propeller remained attached to the hub. One blade appeared undamaged while the other blade exhibited charring and tip separation. The top spark plugs were removed; their electrodes were intact and light gray in color (The Nos. 1 & 3 electrodes were oil soaked). Borescope examination of the cylinders did not reveal any anomalies. The crankshaft was rotated via an accessory gear drive. Crankshaft, camshaft, and valve train continuity were confirmed to the rear accessory section of the engine, and thumb compression was attained on all cylinders. Both magnetos had separated from the engine. One magneto was recovered and it produced spark at all leads when rotated via electric drill. The other magneto was not located. Due to thermal damage, the fuel system could not be tested. The turbocharger wastegate was found in an approximate half-open position. The alternate air valve was not located.



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MEDICAL AND PATHOLOGICAL INFORMATION

TBD.

WITNESS STATEMENTS AND CONTACT INFORMATION

Witness statements obtained by FAA.

ADDITIONAL INFORMATION

Wreckage Recovery: AMF Aviation, Springfield, TN