



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Colonial Beach, Virginia	<b>Accident Number:</b>	ERA23FA260
<b>Date &amp; Time:</b>	June 7, 2023, 10:15 Local	<b>Registration:</b>	N835BC
<b>Aircraft:</b>	Vans RV6	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>	Aerodynamic stall/spin	<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot and passenger were flying back to their home airport after an overnight stay with some friends. A witness, and friend of the pilot and passenger, stated he watched the airplane as it made two circles around his house. On the second circle, he noticed the airplane was in a very steep bank angle and making a tight circle about 100 ft above the ground. He then noticed the nose of the airplane drop down and the airplane impact the ground in a near-vertical attitude. He stated the engine was running well the entire time.

Postaccident examination of the airframe and engine revealed no evidence of preimpact mechanical malfunctions or failures that would have precluded normal operation. Thus, it is likely that while performing the low altitude circling maneuver, the pilot maintained insufficient airspeed and banked too steeply, which resulted in an exceedance of the airplane's critical angle of attack and a subsequent aerodynamic stall.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to maintain adequate airspeed while maneuvering at low altitude, which resulted in an exceedance of the airplane's critical angle of attack and a subsequent aerodynamic stall.

## Findings

Personnel issues	Aircraft control - Pilot
Aircraft	Airspeed - Not attained/maintained
Aircraft	Angle of attack - Capability exceeded

# Factual Information

## History of Flight

Maneuvering-low-alt flying	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On June 7, 2023, at 1015 eastern daylight time, an experimental amateur-built Vans RV-6, N835BC, was destroyed when it was involved in an accident near Colonial Beach, Virginia. The pilot and passenger were fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

A witness reported that, after an overnight visit, he dropped the pilot and passenger off at a neighbor’s private airstrip about 0945 for their flight home. He then returned to his house and, about 30 minutes later when he was standing in his driveway, he watched the airplane make two circles around his house. On the second circle, the airplane was very steep, “knife-edge” bank in a tight circle about 100 ft above the ground. The nose of the airplane then dropped and the airplane impacted the ground beside his driveway in a near-vertical attitude. He stated the engine was “running well the entire time.” The owner of the grass airstrip reported a similar account.

The accident site was located between a driveway and corn field at a personal residence about 1/2 mile from the private, unregistered airport from which it departed. The airplane impacted the ground in a nose-down attitude and came to rest upright, oriented on a magnetic heading of 345°. A postimpact fire consumed most of the airplane. The wreckage site was compact and all major components of the airplane were located at the accident site.

Both wings were accordion-crushed aft and remained attached to the fuselage. The right wing flap was separated and located behind the main wreckage. The right aileron was still attached to the wing by the linkage. The left wing flap and aileron remained attached to the left wing. The fuselage, instrument panel, cabin, seats, control cables, and inboard wings were all consumed by fire. The empennage was fire damaged; however, the rudder, elevator, and vertical stabilizer were all intact.

The engine was fire damaged and all the accessories were also fire damaged and mostly melted. The engine’s crankshaft was rotated via the propeller hub and thumb compression, valve action, and crankshaft continuity were confirmed on three of the four cylinders. Powertrain and valvetrain continuity was established through the engine and accessory case. Borescope examination of all cylinders revealed no anomalies. The wood propeller was fractured in several pieces and located near the impact crater.

An autopsy of the pilot was performed by the Commonwealth of Virginia's Office of the Chief Medical Examiner. According to the autopsy report, the cause of death was blunt force injuries and the manner of death was accident.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	28,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	December 10, 2019
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	April 4, 2023
<b>Flight Time:</b>	355 hours (Total, all aircraft), 9999 hours (Total, this make and model)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Vans	<b>Registration:</b>	N835BC
<b>Model/Series:</b>	RV6	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2005	<b>Amateur Built:</b>	Yes
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	21605
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	November 22, 2022 Condition	<b>Certified Max Gross Wt.:</b>	1600 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	832 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	IO-320-EXP
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	100
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	XSA,135 ft msl	<b>Distance from Accident Site:</b>	17 Nautical Miles
<b>Observation Time:</b>	10:15 Local	<b>Direction from Accident Site:</b>	165°
<b>Lowest Cloud Condition:</b>	Scattered / 3400 ft AGL	<b>Visibility</b>	4 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.74 inches Hg	<b>Temperature/Dew Point:</b>	21°C / 11°C
<b>Precipitation and Obscuration:</b>	Moderate - None - Haze		
<b>Departure Point:</b>	Colonial Beach, VA (PVT)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Tappahannock, VA (XSA)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	10:10 Local	<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	1 Fatal	<b>Aircraft Fire:</b>	On-ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 Fatal	<b>Latitude, Longitude:</b>	38.118334,-76.973895(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Boggs, Daniel
<b>Additional Participating Persons:</b>	Peter Hantelman; FAA/FSDO; Richmond, VA Ryan Enders; Lycoming Engines; Bridgeport, PA
<b>Original Publish Date:</b>	June 26, 2024
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=192326">https://data.nts.gov/Docket?ProjectID=192326</a>

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