Aviation Investigation Final Report

Location:	Fallston, Maryland	**Accident Number:**	ERA23LA195
Date & Time:	April 13, 2023, 15:12 Local	**Registration:**	N412RS
Aircraft:	RICHARD SPATZ RV-14A	**Aircraft Damage:**	Substantial
Defining Event:	Aerodynamic stall/spin	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

After flying two visual approaches to southwest runway, the pilot initiated a left, 270° turn to enter a right base for the northeast-oriented runway. He turned onto final approach about ¼-nautical mile (nm) from the approach end threshold and about 200 ft above ground level (agl). Although the pilot did not recall the final approach due to his injuries, recorded GPS and engine data indicated that the airplane's vertical rate of descent increased greatly during the last few seconds of flight, and the engine speed increased, as if the pilot were performing a go-around. Also, the airplane was in a steep right bank just before impact. The airplane impacted an open field about 50 feet short of the runway, resulting in substantial damage to the airplane and serious injuries to the pilot.

The postaccident examination of the wreckage, including the flight controls, fuel system, and engine, did not reveal evidence of a malfunction or anomaly that would have precluded normal operation of the airplane. The pilot also reported that there were no mechanical failures or anomalies with the airplane during the flight.

Given the available information, it is likely that the pilot initiated the base-to-final turn too close to the runway and tried to salvage an unstable approach. The airplane entered a steep right turning descent while at a low altitude, most likely while in an aerodynamic stall, from which the pilot was unable to recover from before impact with the terrain.

Probable Cause and Findings

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

The pilot’s failure to discontinue an unstabilized approach, resulting in an aerodynamic stall and collision with terrain.

Findings

Aircraft	Descent rate - Not attained/maintained
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Approach-VFR pattern final	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On April 13, 2023, about 1512 eastern daylight time, an experimental amateur-built Spatz RV-14A airplane, N412RS, was substantially damaged when it was involved in an accident near Fallston, Maryland. The private pilot was seriously injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The airplane impacted a corn field about 50 ft from the approach end of runway 4 (2,200-ft-long) at the Fallston Airport (W42), Fallston, Maryland. There were no known witnesses to the accident.

The wreckage came to rest upright and there was no fire. The right wing separated during the impact sequence and was located adjacent to the main wreckage. The forward fuselage was twisted and buckled. The engine remained attached to the fuselage and the propeller remained attached to the engine. The empennage exhibited minor damage. The landing gear were buckled under the fuselage.

The pilot reported that, due to his injuries, he did not recall the final approach. He reported on his NTSB Form 6120.1 (Pilot/Operator Aircraft Accident Report) that there were no mechanical malfunctions or failures associated with the accident.

The wreckage was recovered to an aircraft salvage facility where further examination was performed. The examination of the wreckage, including the flight controls, fuel system, and engine, did not reveal evidence of a malfunction or anomaly that would have precluded normal operation of the airplane.

The airplane was equipped with a Garmin G3Xi flight display system. Flight, engine, and systems information was recorded in non-volatile memory and downloaded by the investigation team. The data indicated that the airplane took off from Harford County Airport (0W3), Churchville, Maryland at 1456. The pilot initiated a left, climbing turn to the southwest toward W42, which was about 10 nm away. The pilot appeared to circle the field at W42 and then flew two approaches to runway 22. After the second approach, he commenced a climbing, left 270° turn to a right base leg for runway 4. He turned onto final approach about 1/4 nm south-southeast of the runway threshold at about 200 ft agl.

The G3Xi data showed that the engine speed increased during the final phase of flight, peaking at 2,580 rpm about one second before ground impact. The airplane heading and roll parameters indicated a right turn in the 5 seconds before impact, with the roll angle increasing from about 18 degrees right to 54 degrees right 2 seconds before impact, before decreasing to

8 degrees right 1 second before impact. The vertical speed decreased from a 166 ft/min descent about 5 seconds before impact to a 1,017 ft/min descent 1 second before impact. Additionally, the device was capable of recording a parameter for angle of attack, but no data for that parameter were recorded. Additionally, the parameter “CAS Alert” recorded the value “AOA UNCAL” for the entire duration of the accident flight.

Pilot Information

Certificate:	Private	**Age:**	75,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	BasicMed	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 6, 2021
Flight Time:	(Estimated) 576 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	RICHARD SPATZ	**Registration:**	N412RS
Model/Series:	RV-14A	**Aircraft Category:**	Airplane
Year of Manufacture:	2019	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	140253
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	September 23, 2022 Condition	**Certified Max Gross Wt.:**	2050 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	83 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	C126 installed	**Engine Model/Series:**	YIO-390-EXP98
Registered Owner:	On file	**Rated Power:**	210 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KMTN,21 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	13:57 Local	**Direction from Accident Site:**	181°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	140°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.92 inches Hg	**Temperature/Dew Point:**	27°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Churchville, MD (0W3)	**Type of Flight Plan Filed:**	None
Destination:	Fallston, MD	**Type of Clearance:**	None
Departure Time:	14:56 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Fallston Airport W42	**Runway Surface Type:**	Asphalt
Airport Elevation:	460 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:	4	**IFR Approach:**	None
Runway Length/Width:	2200 ft / 50 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	39.498425,-76.413377(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	Dedrick P. Richard; FAA/FSDO; Baltimore, MD Ryan Enders; Lycoming Engines; Williamsport, PA
Original Publish Date:	June 5, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=107065