Aviation Investigation Final Report

Location:	Richmond, Indiana	**Accident Number:**	CEN21LA200
Date & Time:	April 25, 2021, 07:42 Local	**Registration:**	N417R
Aircraft:	AEROPRO CZ S R O A240	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot obtained a weather briefing and filed a visual flight rules flight plan a few minutes before takeoff. An AIRMET advisory for instrument flight rules conditions was in effect, and the weather at the airport about the time of the accident included a cloud ceiling of 200 ft above ground level and 1/2-mile visibility in fog.

After takeoff, the airplane entered a climbing right turn and reached an altitude of approximately 2,045 ft with a right bank angle of about 40°. The airplane continued in a right turn and began to descend; its bank angle ultimately reached about 90°, and the average descent rate during the final portion of the flight was about 2,041 ft per minute.

The airplane impacted an open field about 1/2 mile south-southwest of the airport and was destroyed by a postimpact fire. Postaccident airframe and engine exams did not reveal any anomalies consistent with a preimpact failure or malfunction; however, the examinations were limited by the extent of the post-impact fire.

The pilot held a student pilot certificate, and he did not hold a medical certificate. Autopsy findings and health information revealed that the pilot had an enlarged heart, high blood pressure, severe coronary artery disease, and a history of five-vessel coronary artery bypass surgery. While the pilot's cardiovascular disease placed him at an increased risk for a sudden cardiac event, given the circumstances of this crash, it is unlikely that sudden incapacitation from the pilot's cardiovascular disease was a factor in this accident.

Postmortem toxicology testing detected gabapentin prescribed for chronic nerve pain and duloxetine prescribed for general anxiety. Both medications are impairing especially when first prescribed or with dosage adjustments. It is unknown how long the pilot was taking these medications and whether any side effects had been experienced; however, it is unlikely that effects from the pilot's use of duloxetine and gabapentin were factors in the accident.

The low visibility conditions at the time of the accident and the pilot's lack of training in instrument flight were conducive to the development of spatial disorientation, and the airplane's flight track after takeoff was consistent with the known effects of spatial disorientation. It is likely that the pilot experienced spatial disorientation after takeoff into instrument meteorological conditions, which resulted in a loss of control.

Probable Cause and Findings

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

The noninstrument-rated pilot's intentional flight into instrument meteorological conditions, which resulted in spatial disorientation and loss of airplane control.

Findings

Personnel issues	Spatial disorientation - Pilot
Personnel issues	Aircraft control - Pilot
Personnel issues	Decision making/judgment - Pilot

Factual Information

History of Flight

Initial climb	Loss of control in flight (Defining event)

On April 25, 2021, at 0742 eastern daylight time, an Aeropro CZ A240 light sport airplane, N417R, was destroyed when it was involved in an accident near Richmond, Indiana. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

At 0737, the pilot obtained a weather briefing and filed a visual flight rules (VFR) flight plan to Festus Memorial Airport (FES), Festus, Missouri, using his ForeFlight account with an estimated departure time of 0750.

Data recovered from an onboard Appareo Stratus device revealed that the pilot departed runway 24 at 0740. After an initial climb over the runway, the airplane leveled off briefly and drifted left of the runway centerline. The airplane subsequently entered a climbing right turn and reached an altitude of approximately 2,045 ft with a right bank angle of about 40°. The airplane then entered a descent as the right turn continued. The bank angle decreased to about 30° before it increased again, reaching about 90°. The descent continued until the data ended about 2 seconds later. The final data point was recorded at 0742:38 at an altitude about 1,284 ft. The approximate elevation at the accident site was 1,144 ft mean sea level. The average descent rate over the final 22 seconds of data was about 2,041 ft per minute.

At 0750, an individual driving near the airport contacted local authorities after he observed a fire and subsequently identified it as an airplane. It was fully engulfed when he initially saw it. There were no known witnesses to the accident itself.

Pilot Information

Certificate:	Student	**Age:**	78,Male
Airplane Rating(s):	None	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	100 hours (Total, all aircraft)		

The pilot enrolled in the private pilot training program at Sporty's Academy in June 2017. He subsequently purchased a Luscombe airplane and transitioned to the sport pilot training program. He soloed as part of that program. In May 2018, the pilot was involved in a hand-propping accident with the Luscombe airplane. The pilot withdrew from the Sporty's Academy training program after that accident.

The pilot's logbook was not available for review. The pilot noted a total civilian flight time of 100 hours, with 50 hours in the previous 6 months, on an airman medical certificate application dated August 28, 2019.

The pilot was issued a limited duration, third-class Federal Aviation Administration (FAA) medical certificate on September 9, 2019, which expired on September 30, 2020. He was not eligible to use a driver's license for medical certification due to withdrawal of his special issuance authorization on October 27, 2020.

Aircraft and Owner/Operator Information

Aircraft Make:	AEROPRO CZ S R O	**Registration:**	N417R
Model/Series:	A240	**Aircraft Category:**	Airplane
Year of Manufacture:	2009	**Amateur Built:**	
Airworthiness Certificate:	Special light-sport (Special)	**Serial Number:**	29 309
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	August 5, 2020 Condition	**Certified Max Gross Wt.:**	1235 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	827.7 Hrs as of last inspection	**Engine Manufacturer:**	Rotax
ELT:		**Engine Model/Series:**	912ULS
Registered Owner:	On file	**Rated Power:**	100 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The airplane was equipped with flight instrumentation that included an attitude indicator, airspeed indicator, altimeter, vertical speed indicator, and turn coordinator.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	RID,1140 ft msl	**Distance from Accident Site:**	0.5 Nautical Miles
Observation Time:	07:45 Local	**Direction from Accident Site:**	360°
Lowest Cloud Condition:		**Visibility**	0.5 miles
Lowest Ceiling:	Overcast / 200 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	270°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.94 inches Hg	**Temperature/Dew Point:**	6°C / 6°C
Precipitation and Obscuration:	Moderate - None - Fog		
Departure Point:	Richmond, IN (RID)	**Type of Flight Plan Filed:**	VFR
Destination:	Festus, MO (FES)	**Type of Clearance:**	None
Departure Time:	07:40 Local	**Type of Airspace:**	Class G

At the time of the accident, an AIRMET advisory for instrument conditions was in effect.

Airport Information

Airport:	Richmond Municipal RID	**Runway Surface Type:**	
Airport Elevation:	1140 ft msl	**Runway Surface Condition:**	Vegetation
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	39.748056,-84.851833

The airplane impacted an open field about 1/2 mile south-southwest of the airport. It came to rest upright on a northwesterly heading. A postimpact fire consumed the fuselage, empennage, and inboard wings with exception of the tubular airframe structure. The fuselage and wing structure were deformed consistent with impact forces. The cockpit instrumentation was destroyed.

Postaccident airframe and engine exams did not reveal any anomalies consistent with a preimpact failure or malfunction; however, the examinations were limited by the extent of the post-impact fire.

Medical and Pathological Information

The pilot's special issuance medical certificate authorization, issued due to a history of coronary artery disease and coronary bypass surgery, was withdrawn because follow-up stress testing revealed myocardial ischemia. The pilot had reported taking gabapentin, metoprolol,

amlodipine, ramipril, rosuvastatin, and clopidogrel. In addition to the coronary artery disease, the pilot reported having chronic back pain, high blood pressure, and high cholesterol.

According to the autopsy report, the cause of the pilot's death was multiple blunt force injuries. In addition to the injuries, the forensic pathologist reported that the pilot had an enlarged heart (610 grams), 90% atherosclerosis in his left anterior descending coronary artery, 50% stenosis of his left circumflex artery, and evidence of coronary artery bypass grafts.

Toxicology testing performed by the FAA Forensic Sciences Laboratory detected gabapentin in the pilot's cavity blood at 1,426 ng/mL and liver tissue. Duloxetine was detected in the pilot's cavity blood at 219 ng/mL and liver tissue. Metoprolol, rosuvastatin, cimetidine, and pantoprazole were detected in the pilot's cavity blood and liver tissue.

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Cory A. Irwin; FAA Flight Standards; Indianapolis, IN Jordan Paskevich; Rotech Flight Safety; Vernon, BC
Original Publish Date:	August 19, 2022
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=102975