



Aviation Investigation Final Report

Location:	Whitewater, Wisconsin	Accident Number:	CEN21LA232
Date & Time:	May 15, 2021, 21:15 Local	Registration:	N4144B
Aircraft:	CIRRUS DESIGN CORP SR22	Aircraft Damage:	Substantial
Defining Event:	Flight instrument malf/fail	Injuries:	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that, during an instrument flight rules flight, he began receiving conflicting information from the flight instruments and digital flight information display. He stated that the turn coordinator and GPS were displaying opposite information, the heading bug was moving erratically, and he felt as if he was flying in circles. After determining that he could not rely on the information from the flight instruments, he elected to activate the Cirrus airframe parachute system. The airplane came to rest in a stand of trees, resulting in substantial damage.

Postaccident testing of the electronic horizontal situation indicator, directional gyro, and horizon reference indicator revealed no anomalies except for the directional gyro counterclockwise heading stability, which exceed the testing limits by about 3°. The heading stability finding, although outside the testing limits, would not result in the instrument anomalies reported by the pilot. The reason for the flight instrument disagreement/malfunction could not be determined based on the available information.

Probable Cause and Findings

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

An inflight instrument malfunction for reasons that could not be determined based on available information, which led to the pilot’s decision to activate the airframe parachute system.

Findings

Aircraft

(general) - Malfunction

Factual Information

History of Flight

Enroute	Flight instrument malf/fail (Defining event)
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On May 15, 2021, about 2115 central daylight time, a Cirrus SR22, N4144B, sustained substantial damage when it was involved in an accident near Whitewater, Wisconsin. The pilot and passengers were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations (CFR)* Part 91 personal flight.

According to the pilot, while on an instrument flight rules flight, he began receiving conflicting information from the flight instruments and digital flight information display. He stated that the turn coordinator and GPS were displaying opposite information, the heading bug was moving erratically, and he felt as if he was flying in circles. After determining that he could not rely on the information from the flight instruments, he elected to activate the Cirrus airframe parachute system. The airplane came to rest in a stand of 60-ft-tall trees, resulting in substantial damage.

The airplane was equipped with a Sandel SN3308 electronic horizontal situation indicator (EHSI), Mid-Continent 4305-150 directional gyro, BF Goodrich Aerospace horizon reference indicator, and the pilot was utilizing Foreflight on a personal tablet.

A postaccident examination of the airplane revealed no pre-impact mechanical anomalies that would have precluded normal operation. External power was supplied to the airplane and all instruments powered up normally. The airplane was situated on a movable dolly cart which allowed for it to be manipulated to verify instrument functionality. The turn coordinator operated as designed when the empennage was moved, as did the horizon reference indicator. The EHSI powered up but displayed a configuration error; however, the remote gyro wire harness wires were cut during recovery and the flux detector was disconnected.

The EHSI, directional gyro, and horizon reference indicator were removed and subsequently tested. The EHSI was connected to an automated tester, which tested the inputs and outputs of the unit. The unit passed all tests. The directional gyro was connected to 28V DC power. The heading was steady and did not drift. The unit passed all testing with the exception of counterclockwise heading stability. The limit for the test was $\pm 2^\circ$, but the unit was at $+5^\circ$. When the unit was shut down, the rotor coasted in excess of 9 minutes, consistent with a free and stable rotor. The horizon reference indicator was connected to an external power source and allowed time to steady the gyro. After caging the gyro, the unit was pitched up and down as well as rolled left and right. The unit responded as designed through all movements. Power was removed and the gyro coasted to a stop, consistent with a free gyro.

Pilot Information

Certificate:	Private	Age:	50, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	February 1, 2021
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	January 23, 2020
Flight Time:	588.7 hours (Total, all aircraft), 280.1 hours (Total, this make and model), 491.1 hours (Pilot In Command, all aircraft), 15.8 hours (Last 90 days, all aircraft), 9.5 hours (Last 30 days, all aircraft), 1.3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CIRRUS DESIGN CORP	Registration:	N4144B
Model/Series:	SR22	Aircraft Category:	Airplane
Year of Manufacture:	2001	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	0131
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	December 30, 2020 Annual	Certified Max Gross Wt.:	3400 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	3637.6 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	C126 installed, activated, did not aid in locating accident	Engine Model/Series:	IO550
Registered Owner:	On file	Rated Power:	310
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Night
Observation Facility, Elevation:	KJVL,808 ft msl	Distance from Accident Site:	18 Nautical Miles
Observation Time:	20:45 Local	Direction from Accident Site:	236°
Lowest Cloud Condition:		Visibility	4 miles
Lowest Ceiling:	Overcast / 400 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	210°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.13 inches Hg	Temperature/Dew Point:	13°C / 13°C
Precipitation and Obscuration:	Moderate - None - Mist		
Departure Point:	Sheboygan, WI (KSBM)	Type of Flight Plan Filed:	IFR
Destination:	Burlington, WI (KBUU)	Type of Clearance:	IFR
Departure Time:	20:10 Local	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	2 None	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	42.787917,-88.684086

Administrative Information

Investigator In Charge (IIC):	Williams, David
Additional Participating Persons:	Michael Dziengel; FAA; Milwaukee, WI Brad Miller; Cirrus Aircraft; Duluth, MN Ken Kochi; Sandel; Vista, CA Mark Smith; Mid-Continent Instruments and Avionics; Wichita, KS
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.nts.gov/Docket?ProjectID=103136

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).