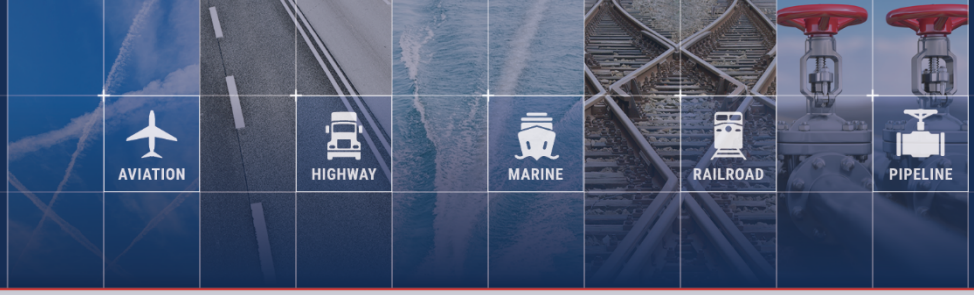

Aviation Investigation Final Report

Location:	Bennett, Colorado	**Accident Number:**	CEN11LA164
Date & Time:	January 30, 2011, 05:58 Local	**Registration:**	N787CB
Aircraft:	CIRRUS DESIGN CORP SR22	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that he was practicing night instrument approaches in visual flight rules conditions. During the accident approach, he said he was in a right turn and had turned his head to the right to look at some instrumentation. He felt the airplane accelerate and looked at his flight displays, which indicated he was in an extreme unusual attitude, possibly inverted. He attempted to recover from the unusual attitude but realized that he had severe vertigo and spatial disorientation, so he activated the airplane's ballistic parachute recovery system. After the parachute deployed, the airplane struck terrain in a nose low attitude, sustaining substantial damage. Postaccident inspection of the airplane disclosed no preimpact mechanical problems with the airplane. Federal Aviation Administration guidance indicates, that if neither horizon nor surface references exist, the attitude of an airplane must be determined by artificial means from the flight instruments. However, during periods of low visibility and night conditions, the supporting senses sometimes conflict with what is seen; when this happens, a pilot is particularly vulnerable to disorientation.

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 control of the airplane during an instrument approach due to spatial disorientation.

Findings

Personnel issues	Spatial disorientation - Pilot
Environmental issues	Dark - Contributed to outcome
Aircraft	Directional control - Not attained/maintained

Factual Information

History of Flight

Approach	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On January 30, 2011, about 0558 Mountain Standard Time, a Cirrus SR-22, N787CB, sustained substantial damage after impacting terrain near Bennett, Colorado, following the activation of the Cirrus Airframe Parachute System (CAPS). The airplane was registered to Fitch Bergner Aviation LLC, and operated by the pilot. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91, without a flight plan. Dark night, visual meteorological conditions prevailed at the time of the accident. The solo private pilot reported minor injuries. The local flight originated from the Centennial Airport (APA), Denver, Colorado.

According to the pilot, he was practicing night instrument approaches at Front Range Airport (FTG). He received air traffic control clearance to fly a practice GPS 35 approach at FTG under his own navigation from the “AVNEW” intersection, which is the initial approach fix. Upon reaching AVNEW, he initiated a right turn toward the next approach fix (HRMER intersection). During the right turn, the pilot stated that he looked to his right to cross check the GPS and set up the autopilot for a coupled approach. He felt the airplane start to accelerate rapidly, and he looked back to the Primary Flight Display (PFD) which was “showing all brown with no sky and 6-7 chevrons, indicating a severe unusual attitude.” He tried to correct the unusual attitude, but said that he had severe vertigo, and was unable to regain control of the airplane. He elected to deploy the ballistic recovery parachute, and the aircraft impacted terrain in a nose low attitude in a creek bed.

The nearest weather reporting facility to the accident site is FTG. The 0555 surface observation at FTG recorded: wind 220 degrees at 3 knots; 10 statute miles visibility; sky condition clear; temperature zero degrees Celsius (C); dew point minus four degrees C; altimeter 29.92 inches of mercury. Sunrise was at 0708 MST.

Examination of the airplane at the accident site by the NTSB investigator-in-charge (IIC) revealed that the front cowling was crushed aft and the engine firewall had impact damage and buckling. A postaccident examination of the airplane was done by representatives of the airplane manufacturer and the engine manufacturer, under the direction of the NTSB. No anomalies consistent with a preimpact failure or malfunction associated with the airframe or engine were observed.

The airplane was equipped with Avidyne Entegra Primary Flight Display (PFD) and Multi-Function Displays (MFD). This equipment displays flight and navigational data to the pilot, and also records data regarding airplane pitch, roll, airspeed, altitude, heading, acceleration forces,

GPS position, and engine data. The PFD and MFD were removed from the airplane, and sent to the NTSB's Vehicle Recorder Division for download. The downloaded data showed that, just prior to the accident, the airplane went through a series pitch and roll oscillations, with maximum pitch values of approximately 26 degrees nose up, and 75 degrees nose down. The airplane reached maximum roll values of approximately 83 degrees right wing down, and 120 degrees left wing down. The maximum indicated airspeed, which occurred just prior to the parachute deployment, was 190 knots. This data corroborates the pilot's description of events.

Pilot Information

Certificate:	Private	**Age:**	60,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	November 1, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	December 22, 2010
Flight Time:	1740 hours (Total, all aircraft), 1042 hours (Total, this make and model), 1715 hours (Pilot In Command, all aircraft), 18 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CIRRUS DESIGN CORP	**Registration:**	N787CB
Model/Series:	SR22	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	0787
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	October 12, 2010	**Certified Max Gross Wt.:**	3400 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	1754 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	C126 installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-550 SERIES
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night/dark
Observation Facility, Elevation:	KFTG,5122 ft msl	**Distance from Accident Site:**	1526 Nautical Miles
Observation Time:	05:55 Local	**Direction from Accident Site:**	340°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	3 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	220°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.9 inches Hg	**Temperature/Dew Point:**	0°C / -4°C
Precipitation and Obscuration:			
Departure Point:	Englewood, CO (APA)	**Type of Flight Plan Filed:**	None
Destination:	Watkins, CO (FTG)	**Type of Clearance:**	VFR flight following
Departure Time:	05:30 Local	**Type of Airspace:**	

Airport Information

Airport:	Front Range Airport FTG	**Runway Surface Type:**	
Airport Elevation:	5512 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	Global positioning system
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	39.543609,-104.431663

Administrative Information

Investigator In Charge (IIC):	Shaver, Christopher
Additional Participating Persons:	James J Muldoon; FAA FSDO; Denver, CO Brannon Meyer; Cirrus Aircraft; Duluth, MN Rodney Martinez; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	November 17, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=78243