National Transportation Safety Board
Aviation Accident Final Report

Location:	Belleville, Illinois	**Accident Number:**	CEN10FA125
Date & Time:	February 21, 2010, 18:26 Local	**Registration:**	N350WF
Aircraft:	Piper PA 46-350P	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was on an instrument flight in night instrument meteorological conditions approaching the destination airport. The pilot contacted the approach control facility by radio and was subsequently cleared for an instrument landing system (ILS) approach to the destination airport. During the approach, the air traffic approach controller advised the pilot twice that the airplane was to the right of the approach course. The controller suggested a left turn of 5 to 7 degrees to the pilot. Once the airplane was back on the inbound course, the approach controller instructed the pilot to contact a tower controller. The pilot never contacted the tower controller, but later reestablished contact with the approach controller, who provided radar vectors for a second attempt at the ILS approach. During the second approach, the controller again advised the pilot that the airplane was to the right of the approach course and provided the pilot a low altitude alert. The airplane then started a climb and a turn back toward the inbound course. The controller advised the pilot that the airplane would intercept the inbound course at the locator outer marker (LOM) for the approach and asked if the pilot would like to abort the approach and try again. The pilot declined and responded that he would continue the approach. No further transmissions were received from the pilot. The airplane impacted a building about 0.4 nautical miles from the LOM. The building and airplane were almost completely consumed by the postimpact fire. A postaccident examination revealed no evidence of mechanical malfunction or failure. The airplane's turning ground track and the challenging visibility conditions were conducive to the onset of pilot spatial disorientation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot’s spatial disorientation and subsequent failure to maintain airplane control during the instrument approach.

Findings

Aircraft	(general) - Not attained/maintained
Personnel issues	Spatial disorientation - Pilot
Personnel issues	Aircraft control - Pilot

Factual Information

HISTORY OF FLIGHT

On February 21, 2010, about 1826 central standard time, a Piper PA 46-350P, N350WF, was destroyed when it impacted a building and the ground near Belleville, Illinois. The airplane was approaching to land at the St. Louis Downtown Airport (CPS), Cahokia, Illinois, when the accident occurred. The airplane was registered to Bingham Capital Markets St. Louis, Inc., and was piloted by a private pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Instrument meteorological conditions prevailed and the airplane was on an instrument flight rules (IFR) flight plan. The pilot and passenger received fatal injuries. The flight originated from the Vero Beach Municipal Airport (VRB), Vero Beach, Florida, about 1320.

The pilot had flown to VRB to receive training in the accident airplane and was on the return trip when the accident occurred. The certificated flight instructor (CFI) that administered the training stated that training was conducted on February 19, 2010, to February 21, 2010. The CFI stated that a significant portion of the training time was spent on operation of the Garmin global positioning system (GPS) installed in the airplane. The pilot initially had problems with the pilot interface of the GPS, but the CFI stated that upon completion of the training the pilot had met the requirements of the "Private Pilot/Instrument Rating Practical Test Standards." The CFI indicated that the training constituted an "Instrument Proficiency Check" and that the pilot's logbook was so endorsed.

According to flight service station records, the pilot telephoned the Washington, D.C., automated flight service station (AFSS) at 1155. During the call, the pilot filed an IFR flight plan from VRB to CPS, and received a preflight weather briefing. The pilot estimated the flight duration as 4 hours 30 minutes and stated that the airplane had 7 hours of fuel on board. The briefer told the pilot that an airman's meteorological information (AIRMET) for IFR conditions was issued for an area encompassing the destination airport.

The pilot was in radio communications with various air traffic control facilities during the departure and en route portion of the flight. At 1805:51, the pilot contacted the St. Louis (STL) terminal radar approach control facility (TRACON) informing the controller that he was on frequency at an altitude of 7,000 feet mean sea level (msl) descending to 6,000 feet msl. The TRACON controller acknowledged and instructed the pilot to expect an instrument landing system (ILS) approach to runway 30L at CPS. Federal Aviation Administration (FAA) radar track data from the St. Louis air route surveillance radar (ARSR) showed the airplane was about 42 nautical miles from CPS at an altitude of 6,800 feet msl. The controller subsequently directed the pilot toward the final approach course for the ILS runway 30L approach and cleared the pilot for the approach at 1814:31. The airplane was about 19 nm from CPS at 3,700 feet msl. At 1816:55, the controller informed the pilot that he was to the right of the inbound course for the approach. At this time, the airplane was about 13.8 nautical miles (nm) from CPS at an altitude of 2,900 feet msl, and 0.9 nm right of the inbound course. The pilot acknowledged and said that he would make a course correction. At 1817:32, the controller again informed the pilot that he was to the right of the inbound course. The pilot again

acknowledged and the controller suggested a 5 to 7 degree left turn to the pilot as an appropriate course correction. At 1818:43, when the airplane was on the inbound course, the controller instructed the pilot to contact the CPS air traffic control tower (ATCT); however, the pilot did not contact the CPS ATCT. Radar track data showed that the airplane crossed the inbound course for the approach and continued a left turn away from the course centerline. At 1820:50, the pilot re-established contact with the STL TRACON controller. At this time, the airplane was 8.8 nm from CPS on a heading of about 200 degrees and at an altitude of 2,300 feet msl. The pilot was subsequently given radar vectors for a second attempt at the CPS runway 30L ILS approach. During the radio communications, the pilot stated that he was having problems with the airplane's autopilot, but later stated that the problems had been resolved. At 1823:05, the controller instructed the pilot to fly a heading of 330 degrees and maintain an altitude of 2,100 feet until established on the instrument approach, and again cleared the pilot for the CPS runway 30L ILS approach. The airplane was about 11 nm from CPS and the assigned heading provided an intercept course for the localizer portion of the approach. The airplane's track continued through the inbound course for the instrument approach procedure. At 1824:22, the controller informed the pilot that he had received a low altitude alert and the airplane was again to the right of the inbound course. At this time the airplane was about 0.6 nm right of the inbound course at 1,700 feet msl. Radar data showed that the airplane then turned left and initiated a climb. About 30 seconds later, the controller informed the pilot that the airplane would intercept the inbound course at the outer marker and inquired whether the pilot wanted to abort the approach and try it again. The pilot declined and responded that he would continue the approach. No further transmissions were received from the accident airplane. The radar track showed that the airplane intercepted the inbound course about 0.3 nm from the locator outer marker at an altitude of 1,800 feet. This location was the last radar position of the airplane. The accident site was located 0.4 nm and 317 degrees from the last recorded radar position.

PERSONNEL INFORMATION

The pilot, age 65, held a private pilot certificate with airplane single engine land, airplane multiengine land, and instrument airplane ratings. The pilot's flight logbooks were reportedly in the airplane when he departed from VRB and were not located during the investigation.

The pilot also held a third class medical certificate issued on June 29, 2009. The medical certificate stated that the pilot must wear corrective lenses when operating an aircraft. The pilot last reported having 1,750 hours of total flight experience on his application for the medical certificate.

AIRCRAFT INFORMATION

The six-seat, low-wing, retractable-gear airplane, serial number 4622082, was manufactured in 1989. It was powered by a Lycoming model TIO-540-AE2A engine, rated to produce 350 horsepower. The aircraft maintenance records were not located during the investigation; however, the mechanic that performed the most recent annual inspection provided copies of the entries that had been recorded in the airplane maintenance records. Those copies indicated

that the most recent annual inspection was completed on November 12, 2009, at a recording hour meter reading of 3,208.9 hours, airframe total time of 3,208.9 hours, and engine total time of 1,133.5 hours.

METEOROLOGICAL INFORMATION

At 1824, the weather conditions recorded at CPS were wind from 70 degrees at 6 knots, 2 statute miles visibility, rain and mist, cloud conditions broken at 400 feet and 1,800 feet above ground level and overcast clouds at 4,800 feet above ground level.

AIRPORT INFORMATION

CPS was a publicly owned airport located in Cahokia, Illinois. The airport had 3 runways and 3 instrument approach procedures were published at the time of the accident. Runway 30L was 6,997 feet long and had 2 instrument approach procedures, a GPS runway 30L approach, and an ILS or localizer runway 30L approach. The ILS runway 30L approach listed an inbound course of 302 degrees and a standard 3 degree glideslope. The locator outer marker for the approach was listed as 4.8 miles from the approach end of the runway.

WRECKAGE AND IMPACT INFORMATION

The airplane struck a multi-purpose building about 4.7 nm from the approach end of runway 30L, and about 0.1 nm from the locator outer marker. The building was located adjacent to a grass airstrip and was used as a residence, a business, and a hangar for storage of parked airplanes and other vehicles owned by the property owner. The airplane came to rest within the building and a post impact fire ensued. The airplane, the building, and the buildings contents were almost completely consumed by the fire. The accident airplane wreckage was removed from the accident site and transported to a storage facility where subsequent examination was performed. The airplane was severely fragmented with burning and melting of the various components. Examination of the recovered wreckage included examination of all identifiable flight control system components, engine components, and airframe components. The examination of the recovered remains revealed no evidence of a preimpact mechanical malfunction.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot on February 22, 2010, at the St. Elizabeth's Hospital in Belleville, Illinois, as authorized by the St. Clair County Coroner.

No toxicology samples were submitted to the FAA for examination.

History of Flight

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

Pilot Information

Certificate:	Private	**Age:**	65,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:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	June 29, 2009
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	1750 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N350WF
Model/Series:	PA 46-350P	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	4622082
Landing Gear Type:		**Seats:**	6
Date/Type of Last Inspection:	November 12, 2009 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3209 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, not activated	**Engine Model/Series:**	TIO-540-AE2A
Registered Owner:		**Rated Power:**	310 Horsepower
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:	KCPS,413 ft msl	**Distance from Accident Site:**	5 Nautical Miles
Observation Time:	18:24 Local	**Direction from Accident Site:**	300°
Lowest Cloud Condition:	Unknown	**Visibility**	2 miles
Lowest Ceiling:	Broken / 400 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.76 inches Hg	**Temperature/Dew Point:**	5°C / 4°C
Precipitation and Obscuration:	N/A - None - Mist		
Departure Point:	Vero Beach, FL (VRB)	**Type of Flight Plan Filed:**	IFR
Destination:	Cahokia, IL (CPS)	**Type of Clearance:**	IFR
Departure Time:	13:20 Local	**Type of Airspace:**	

Airport Information

Airport:	St. Louis Downtown Airport CPS	**Runway Surface Type:**	
Airport Elevation:	413 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	ILS
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	On-ground
Total Injuries:	2 Fatal	**Latitude, Longitude:**	38.521945,-90.058334

Administrative Information

Investigator In Charge (IIC):	Brannen, John
Additional Participating Persons:	Lawrence Sadowski; STL FSDO; St. Louis, MO Mike McClure; Piper Aircraft; Prosper, TX Mike Childers; Textron Lycoming; Elizabethton, TN
Original Publish Date:	June 27, 2011
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=75400