National Transportation Safety Board
Aviation Accident Final Report

Location:	Paris, Texas	**Accident Number:**	CEN13FA131
Date & Time:	January 12, 2013, 08:54 Local	**Registration:**	N5339V
Aircraft:	Piper PA46-500TP	**Aircraft Damage:**	Destroyed
Defining Event:	Loss of control in flight	**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Executive/Corporate		

Analysis

The instrument-rated pilot obtained a weather briefing prior to departure that contained surface observations along the route of flight, as well as significant meteorological (SIGMET) and airman's meteorological (AIRMET) information. The briefing also included convective weather advisories, a convective outlook, the area forecast, pilot reports, radar summary, and winds aloft information. The area forecast included overcast ceilings at 1,500 feet mean sea level (msl) with cloud tops at 6,000 feet msl, visibility between 3 and 5 miles, light rain and mist, and isolated thunderstorms with cumulonimbus tops to 35,000 feet msl. After the pilot departed, he established contact with air traffic control; the airplane was initially observed on radar heading toward the destination airport. An analysis of radar from the day of the accident indicated that isolated thunderstorms existed and that, almost 4 minutes after departing, the airplane encountered an area of developing rain showers and vertical updrafts. The airplane began a descending right turn followed by a brief climb, then another descent; its ground speed slowed from 202 knots to 110 knots before the data ended. At that time, the airplane was at 4,500 feet msl. A witness said he heard the airplane but was unable to see it due to the low cloud layer. A few moments later, he saw the airplane exit the cloud layer in a spin before it impacted the ground. A postaccident examination revealed no mechanical deficiencies that would have precluded normal operation of the airplane and engine.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's encounter with convective weather, which resulted in a loss of airplane control.

Findings

Personnel issues	Aircraft control - Pilot
Environmental issues	Thunderstorm - Effect on operation

Factual Information

History of Flight

Enroute-climb to cruise Loss of control in flight (Defining event)

On January 12, 2013, about 0854 central standard time, a Piper PA-46-500T, N5339V, was destroyed when it impacted terrain shortly after departure from Cox Field Airport (PRX), Paris, Texas. The commercial pilot and the two passengers were fatally injured. The airplane was registered to and operated by Celtic Bank Special Assets LLC, Salt Lake City, Utah. An instrument flight rules (IFR) flight plan was filed for the flight that was destined for Austin Executive Airport (EDC), Austin, Texas. Instrument meteorological conditions prevailed for the business flight conducted under 14 Code of Federal Regulations Part 91.

A review of Federal Aviation Administration (FAA) air traffic control (ATC) communications revealed the pilot was issued an IFR clearance at 0844 from Paris to Austin. Shortly after takeoff, about 0850, the pilot contacted the Fort Worth Air Route Traffic Control Center. A controller issued a Mode C transponder code and current altimeter setting. At 0852:59, a controller advised the pilot he was five miles south of Paris and to confirm his altitude. The pilot responded that he was nearing 5,000 feet. At 0853:28, the controller then instructed the pilot to climb and maintain 16,000 feet, and the pilot acknowledged. At 0853:33, the controller advised the pilot to contact Fort Worth Center on another frequency, but the pilot did not acknowledge the instruction and there was no further communication with him.

The airplane was first observed on radar at 0852:22. It was on a south westerly heading at an altitude of 4,200 feet. About 36 seconds later the airplane reached an altitude of 4,700 feet and a ground speed of 249 knots. At 0853:46, the airplane had climbed to 5,100 feet and slowed to a ground speed of 214 knots. The airplane then entered a descending right hand turn. At 0853:58, the airplane was at an altitude of 4,800 feet and ground speed of 202 knots. At 0854:22, the airplane continued to turn right and climbed to 5,200 feet and slowed to a ground speed of 115 knots. The last radar return was received at 0854:34. At that time, the airplane was at 4,500 feet at a ground speed of 110 knots.

A witness was standing behind his shop around 0900 when he first heard the airplane. He said it sounded "funny" and was "very loud", unlike other airplanes he has heard fly over the area. The witness then looked up in the direction of where the noise was coming from, about a ¼ mile to the west, when he saw the airplane exit the low cloud layer. He said the airplane's nose was pointed down toward the ground about 80-85 degrees and was "spinning out of control" to the right. It made two revolutions before it impacted the ground and exploded. The witness said the engine was operating and sounded "loud." He said there was a low cloud layer but was not sure of how high the base of the clouds was above the ground. It was not raining or foggy at the time of the accident.

A second witness, who was working outside about a half-mile southeast of the accident site, said he heard the sound of an airplane engine overhead just before 0900. The witness said he looked up toward the noise, but was unable to see the airplane due to low clouds and fog. The witness said the airplane's engine revved up and down about three times before the engine noise just stopped. He did not hear the

sound of an impact. The witness went back to his farm chores and about 10-15 minutes later when he went behind his barn he saw black smoke. The witness immediately responded to the accident site, but by the time he got to the airplane, the fire department had already arrived.

Another witness was working outside of a natural gas power plant about two miles northwest of the accident site, when he heard the sound of an engine "back firing" about 4-5 times. It was between 0830 and 0900. At first the witness thought the noise came from within the power plant, but realized later that day that it was the accident airplane's engine he had heard. The witness described the sound as being similar to the sound of the power plant's turbine engines when they "flame out." The witness described the weather on the morning of the accident as "foggy and drizzly."

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	49
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	July 25, 2012
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2365 hours (Total, all aircraft), 127 hours (Total, this make and model), 2128 hours (Pilot In Command, all aircraft), 57 hours (Last 90 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

The pilot's logbook was located in the wreckage. This logbook was marked "#3" and the first entry was made on May 30, 2009, and the last complete entry was made on January 11, 2013. According to the logbook, the pilot had accrued a total of 2,365.7 hours; of which, 126.9 were in the same make/model as the accident airplane. The pilot also accrued a total of 118.3 hours of actual instrument conditions and 86.3 hours of simulated instrument conditions. He logged 57.3 hours on the last 90 days and 4.3 hours in the 24 hours prior to the accident.

A review of the airplane's registration records revealed that Celtic Bank registered the accident airplane on July 13, 2012. According to the pilot's logbook, he began transition training in the accident airplane on June 29, 2012, and received a total of 10.1 hours of instruction.

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N5339V
Model/Series:	PA46-500TP	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	4697110
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	June 28, 2012 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Turbo prop
Airframe Total Time:	1614 Hrs as of last inspection	**Engine Manufacturer:**	P&W
ELT:	Installed, not activated	**Engine Model/Series:**	PT6-42A
Registered Owner:		**Rated Power:**	750 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PRX,547 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	08:55 Local	**Direction from Accident Site:**	40°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Overcast / 400 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	120°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.85 inches Hg	**Temperature/Dew Point:**	16°C / 15°C
Precipitation and Obscuration:			
Departure Point:	Paris, TX (PRX)	**Type of Flight Plan Filed:**	IFR
Destination:	Austin, TX (EDC)	**Type of Clearance:**	IFR
Departure Time:	08:50 Local	**Type of Airspace:**	

Weather at Cox Field Airport, at 0855, was reported as wind from 120 degrees at 5 knots, visibility 10 miles, overcast clouds at 400 feet, temperature 16 degrees C, dewpoint 15 degrees C, and a barometric pressure setting of 29.85 inches Hg.

A National Transportation Safety Board (NTSB) meteorologist reviewed weather products that were made available to the pilot and performed a weather study. According to the study, a stationary front was located just north of the accident site through the area at the time of the accident. Associated with the stationary front were scattered showers, brief heavy precipitation, dropping temperatures, and dense fog.

The study revealed that the pilot obtained a weather briefing via the Dual User Access Terminal (DUAT) prior to the accident flight. The DUAT briefing contained surface observations along the route of flight, significant meteorological (SIGMETS) and airman's meteorological (AIRMET) information. The briefing also included convective weather advisories, a convective outlook, the area forecast, pilot reports, radar summary and winds aloft information.

No SIGMET's were valid for the accident site at the time of the accident. However, a center weather advisory was issued at 0731 for an area in northeast Texas containing the accident site. The advisory was for low IFR conditions with areas of ceilings below 500 feet and/or visibility below 1 mile in mist and fog.

AIRMET Sierra was issued at 0845 and valid at the time of the accident. The advisory forecasted IFR conditions along the accident route of flight with ceilings below 1,000 feet and visibility below 3 miles with precipitation and mist.

The area forecast was issued at 0445 and valid at the time of the accident. The forecast was for overcast ceilings at 1,500 feet msl with tops at 6,000 feet msl; visibility between 3 and 5 miles, light rain and mist, and isolated thunderstorms with cumulonimbus tops to 35,000 feet msl.

Terminal Doppler weather radar (TDWR) data was captured from two separate antenna locations as part of the weather study. The airplane's radar track was superimposed with the TDWR data. This data revealed that at 0856 and 0857, the airplane was operating in an area of developing rain showers and updrafts. These updrafts and rain showers were then observed over the accident site after 0900. The upper air sounding from Fort Worth, Texas, revealed that the meteorological environment around the accident site supported developing rain showers with vertical updraft speeds as high as 62 knots possible.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	2 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 Fatal	**Latitude, Longitude:**	33.662498,-95.547775(est)

The airplane came to rest upright in an open pasture approximately nine miles southwest of Cox Field Airport on a heading of 128 degrees. The airplane remained relatively intact except for the horizontal stabilizer/rudder, which had separated from the airframe and was found about 30-feet behind the main wreckage. A post-impact fire consumed a majority of the cockpit, right wing and fuselage.

A wreckage review was conducted on January 16 and 17, 2013, under the supervision of the NTSB Investigator-in-Charge. Examination of the airplane revealed that the flaps and landing gear were fully

retracted. Flight control continuity was established for all major flight control surfaces from the surface to the cockpit. Elevator trim continuity was also confirmed. The elevator trim tab was found in the 8 degree nose down setting. Continuity of the autopilot system could not be established due to impact and fire damage.

The airplane was delivered with an Avidyne Flightmax 750 multi-function and primary flight display unit; two Garmin 530 global positioning system units, and a weather radar system. Each of the units sustained impact and extensive thermal damage. These units did not contain any non-volatile memory.

The back-up attitude indicator (electric) was disassembled and rotational scoring was found on the pendulous vane and on the interior of the pendulous vane housing. The back-up airspeed indicator needle was frozen at 110 knots.

The four-bladed propeller assembly remained attached to the engine; however two of the blades had separated the hub. These blades were found imbedded in the ground directly below the hub. Each of the blades exhibited leading edge nicks and chordwise scratches. The propeller spinner displayed impact damage and rotational deformation.

Examination of the engine revealed damage consistent with the engine operating at the time of impact. No mechanical malfunctions or failures were observed that would have precluded normal operation of the engine.

Medical and Pathological Information

An autopsy was conducted on the pilot by American Forensics, Dallas, Texas, on January 13, 2013. The cause of death was determined to be, "Blunt force trauma and thermal burns."

Toxicological testing was conducted on the pilot by the FAA's Accident Research Laboratory in Oklahoma City, Oklahoma. The results were negative for all items tested.

Administrative Information

Investigator In Charge (IIC):	Yeager, Leah
Additional Participating Persons:	Michael McLure; Piper Aircraft Company; Duncanville, TX David Shugart; FAA/FSDO; Dallas, TX
Original Publish Date:	April 23, 2014
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=86006

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available here.