



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Mill Creek, IN	<b>Accident Number:</b>	CHI07FA022
<b>Date &amp; Time:</b>	11/13/2006, 2003 EST	<b>Registration:</b>	N611BB
<b>Aircraft:</b>	Cessna T303	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	5 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation -		

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## Analysis

The pilot departed his home airport at 0502 and landed at another airport where he picked up employees of a marketing company to fly them to an out of state meeting. The accident occurred at 2003 shortly after taking off on the return trip to fly the employees back home. Shortly before departure a fourth passenger was added to the flight after his commercial flight was cancelled. A person who worked for the fixed base operator at the departure airport stated the pilot looked tired or just ready to go home. The pilot received his clearance for the IFR flight prior to takeoff. The pilot misread the clearance back to the controlled and was corrected. Radar data showed the pilot initially flew the assigned south-southwest heading prior to the airplane turning right to a westerly heading. The controller queried the pilot and issued a heading to intercept the VOR. The pilot corrected the heading and shortly thereafter the airplane once again began a right turn back toward the west. The airplane continued to climb throughout the heading changes. Radar data showed the airplane then began another left turn during which time it entered a spiraling rapid descent. According to weather data, the airplane was in instrument meteorological conditions when this occurred. The airplane impacted the terrain in an open cornfield. Weight and balance calculations indicate the airplane was at least 383 pounds over gross weight. Post accident inspection of the airplane and engines did not reveal any preexisting failure/malfunction.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot became spatially disoriented and as a result failed to maintain control of the airplane. Factors associated with the accident were the instrument meteorological conditions aloft and the pilot being fatigued.

## Findings

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Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: CLIMB - TO CRUISE

### Findings

1. AIRCRAFT WEIGHT AND BALANCE - EXCEEDED - PILOT IN COMMAND
2. (F) WEATHER CONDITION - CLOUDS
3. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
4. (C) SPATIAL DISORIENTATION - PILOT IN COMMAND
5. (F) FATIGUE - PILOT IN COMMAND

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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

### Findings

6. TERRAIN CONDITION - GROUND

## Factual Information

### HISTORY OF FLIGHT

On November 13, 2006, at 2003 (all times are eastern standard time unless noted), a Cessna T303, N611BB, collided with the terrain near Mill Creek, Indiana, following a loss of control while climbing to cruise altitude after takeoff. The private pilot and four passengers on board were fatally injured. The airplane was destroyed. The 14 Code of Federal Regulation Part 91 flight was operating in instrument meteorological conditions aloft and an instrument flight rules (IFR) flight plan was filed. The flight originated from the South Bend Regional Airport (SBN), at 1956. The intended destination for the flight was the Ankeny Regional Airport (IKV), Ankeny, Iowa.

The pilot departed the Atlantic Municipal Airport (AIO), Atlantic, Iowa, at 0502 central standard time (cst), on the day of the accident. He flew to IKV where he picked up passengers who were all employees of the same marketing company. The flight then departed at 0559 cst en route to SBN where it landed at 0854. Upon landing, the pilot instructed a line technician at the fixed base operator (FBO) to top off the airplane with fuel.

The pilot waited in South Bend while the passengers attended a business meeting. A person who worked for the FBO stated the pilot and three passengers were preparing to depart when they received word that another employee's commercial flight had been cancelled. She stated the pilot and one of the passengers left to pick up that employee on the other side of the airport. She stated that when they returned, the pilot and all four passengers departed in the accident airplane. In addition, she stated that the pilot looked tired or just ready to go home. The pilot filed two flight plans prior to departure. One flight plan was from SBN to IKV and the other was from IKV to AIO.

At 1941, the pilot contacted clearance delivery and was given a clearance for the flight. The pilot read back the clearance incorrectly and was corrected by the controller. The first portion of the clearance was to proceed direct to the KNOX very high frequency omni directional range (VOR).

At 1953, the pilot contacted the control tower stating he was ready for takeoff. The pilot was issued a departure heading of 220 degrees. After takeoff the pilot attempted to contact departure control while still on the tower frequency and prior to having been instructed to do so. Upon departure the pilot flew a westerly heading. The departure controller then instructed the pilot that the KNOX VOR was a 200 degree heading from his current position to which the pilot responded, "I'll look at it." Twenty seconds later the pilot radioed "South Bend approach one bravo bravo how's it looking now?" The control responded that the heading looked better and cleared the pilot direct to the KNOX VOR. The pilot acknowledged the radio call. One minute and twenty six seconds later the pilot transmitted his call sign. This was the last radio contact with the airplane.

### PERSONNEL INFORMATION

The pilot, age 45, held a private pilot certificate with airplane single-engine land, airplane multi-engine land, and instrument airplane ratings. This certificate was issued on December 6, 2002, when the pilot added the multi-engine land rating. The pilot was issued a second-class medical certificate on February 4, 2005. This certificate did not contain any limitations.

The pilot's logbooks were not located during the investigation. He reported having a total of 504 hours of flight time as of February 4, 2005, when he applied for his last medical certificate. According to one of the co-owners of the accident airplane, the pilot's family estimated that he had between 800 and 900 total hours of flight time of which 100 hours were in the accident airplane. The pilot's father reported the accident pilot had been flying the accident airplane in excess of four years.

The pilot's father, a certified flight instructor, reported he gave the accident pilot a biennial flight review on November 13, 2005, and a 2-hour instrument proficiency check on October 17, 2006. The pilot's father provided copies of his own logbook, which showed entries for these flights.

#### AIRCRAFT INFORMATION

The accident airplane was a 1982 Cessna T303, s/n T30300145. It was a multi-engine, low wing, six-place airplane with retractable landing gear. The pilot was one of the owners of the airplane. A review of the maintenance logbooks indicated the most recent annual inspection was completed on May 10, 2006, at an hour meter reading of 1,345 hours. A review of the maintenance records indicate the airplane had a total time of approximately 4,476.8 hours as of October 20, 2006.

The airplane was equipped with two 250-horsepower, fuel injected, Continental TSIO-520-AE engines. The left engine, serial number 246158-R, was a zero time factory-rebuilt engine that was installed on N611BB on October 24, 1997, at an aircraft hour meter reading of 173.6 hours. The last maintenance entry for this engine was dated October 20, 2006, at an hour meter reading of 1,383 hours. The right engine, serial number 246712-R, was a zero time factory-rebuilt engine that was installed on N611BB on March 4, 2003, at an hour meter time of 862.1 hours. The last maintenance entry for this engine was dated October 6, 2006, at an hour meter time of 1,376.2 hours.

#### METEOROLOGICAL CONDITIONS

At 1613, the pilot telephoned the Terre Haute Automated Flight Service Station (AFSS). He requested a weather briefing and filed IFR flight plans for flights from SBN to IKV, and from IKV to AIO. The briefer provided the current and forecast weather along the route of flight. The briefer also provided two advisories. One was for occasional rime or mixed icing in the clouds and in precipitation for Indiana and the northeastern quarter of Illinois from the freezing level to 16,000 feet. The other advisory was for IFR conditions from SBN into eastern Iowa. The pilot was issued a pilot report that stated the cloud tops in the SBN area were at 10,500 feet. He was also issued the winds aloft for 9,000 feet, which were from 280 degrees at 20 knots. The pilot then filed the flight plans stating a departure time of 1830 (2330 UTC) at an altitude of 10,000 feet with a total of 4 people on board.

At 1908, the pilot called the Terre Haute AFSS for an updated briefing. The pilot was issued flight advisories for IFR conditions to Dubuque and possible icing conditions west of Chicago. The briefer also provided the pilot with the current SBN weather.

Weather conditions recorded at SBN, located approximately 8 miles northeast of the accident site at 1954 were: Wind from 220 degrees at 5 knots; visibility 6 statute miles; scattered clouds

600 feet, ceiling 1,100 feet broken; temperature 4 degrees Celsius; dew point 2 degrees Celsius; altimeter 30.01 inches of mercury.

#### WRECKAGE AND IMPACT INFORMATION

The wreckage was located in a large cornfield about 8 miles west-southwest of SBN. The nearest road intersection was RR 200N and 925E. The terrain elevation was 884 feet. The main wreckage came to rest on a heading of 020 degrees. The majority of the wreckage was located in one area. There were pieces of wreckage scattered along a path that extended approximately 300 feet in a 110 magnetic degree direction from the main wreckage. The piece of wreckage furthest away from the main wreckage was an electric fuel pump. The other scattered wreckage consisted mainly of wing skin, fuselage skin, and seat components.

The airframe was fragmented and all of the main structure and flight controls surfaces were located at the accident site. The empennage was folded upward coming to rest on top of the rear fuselage. The cockpit area was destroyed. The top of the aft fuselage was crushed to the floorboards.

The top leading edge of the vertical stabilizer was crushed back to the rudder. The right horizontal stabilizer and elevator were intact with impact damage. The left horizontal stabilizer and elevator were separated from the empennage. Both wings and wing spars were heavily damaged. Flight control continuity was established to the extent possible. All cable separations exhibited overload characteristics. The aileron, rudder, and elevator trim cables were all pulled during the impact sequence. The elevator trim was measured at the actuator and the measurement equated to 10 degrees nose down trim.

The wings, horizontal stabilizers, and vertical stabilizer were equipped with deice equipment.

All of the seats were fragmented. The seat belts were found buckled with torn webbing with the exception of one seat belt buckle, which was heavily damaged and open. The directional gyro was located. The instrument was opened and rotational scoring was visible on the gyro and its housing. The tachometer was located. The left needle was present and the right needle was missing. The left needle was bent along with the faceplate and the needle indicated 2,900 rpm.

Both engines were recovered with the left engine being partially buried in the ground. Both engines sustained heavy impact damage. The engines were examined on site and subsequently shipped to Teledyne Continental Motors for a complete teardown inspection.

Both the left and right turbochargers sustained impact damage. The turbine wheel housing of both turbochargers exhibited rotational scoring.

All of the propeller blades were separated from their respective hubs. Neither propeller governor was located at the accident site. Five of the propeller blades were located with their respective engines. One propeller blade was located approximately 100 feet from the main wreckage. To a varying degree the propeller blades contained chordwise scratches, gouges, bending, and twisting.

#### MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy of the pilot was performed on November 16, 2006, at the St. Joseph Regional medical Center, South Bend, Indiana. The final autopsy report listed the cause of death as "Multiple severe injuries."

Toxicological samples were not obtained.

## TESTS AND RESEARCH

Both engines were shipped to Continental Teledyne Motors for a complete teardown inspection under the supervision of the Safety Board. The teardown revealed that both engines sustained substantial impact damage. Both engines and their related components exhibited normal operating signatures and wear. There was no evidence of any pre-existing failures/malfunctions of the engines or their associated components.

The aircraft weight and balance was calculated using the pilot's weight as reported on his FAA Medical Certificate and the passengers weight as reported on their driver licenses. This calculation also considered a full load of fuel (155 gallons) and an estimated 100 pounds of baggage. The aircraft weight was calculated to be 5,533 pounds. The maximum gross takeoff weight for the airplane is 5,150 pounds. The center of gravity could not be calculated as it is unknown where the passengers were seated.

Radar data shows that after takeoff the airplane flew a heading of 219 degrees. Shortly thereafter, it began a right turn to a westerly heading. The airplane then entered a left turn back to a heading of approximately 200 degrees. This turn coincided with the controller questioning the pilot regarding his heading. The data shows the airplane then entered another right turn back to a heading of 257 degrees. The airplane continued to climb as it began a turn back to the left. Upon reaching a maximum altitude of 5,600 feet, the airplane began a rapid spiraling descent as it continued in the left turn.

## ADDITIONAL INFORMATION

The chief financial officer (CFO) for the marketing company stated during a telephone interview that a number of their clients were located outside of Iowa. He stated they had recently been exploring ways for their employees to be able to attend out of state meetings with clients and return home the same day. He stated they recently began doing research regarding the possibility of chartering airplanes for this purpose.

The CFO stated that he believes the company president, who was a passenger on the airplane, was acquainted with the pilot and that the president made the arrangements for this flight. The accident pilot had also flown company employees on a trip earlier in the month. The CFO stated the agreement with the pilot was that they would pay him an amount to cover the cost of operating the airplane, but to his knowledge, the pilot had not yet been paid.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	45, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without Waivers/Limitations	<b>Last FAA Medical Exam:</b>	02/01/2005
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	11/01/2005
<b>Flight Time:</b>	504 hours (Total, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N611BB
<b>Model/Series:</b>	T303	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	T30300145
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	05/01/2006, Annual	<b>Certified Max Gross Wt.:</b>	5150 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	4577 Hours as of last inspection	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	TSIO-520-AE
<b>Registered Owner:</b>	CPRT Investment, Inc.	<b>Rated Power:</b>	250 hp
<b>Operator:</b>	CPRT Investment, Inc.	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night
Observation Facility, Elevation:	SBN, 799 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	1954 EST	Direction from Accident Site:	70°
Lowest Cloud Condition:	Scattered / 600 ft agl	Visibility	6 Miles
Lowest Ceiling:	Overcast / 1100 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	220°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.01 inches Hg	Temperature/Dew Point:	4° C / 2° C
Precipitation and Obscuration:			
Departure Point:	South Bend, IA (SBN)	Type of Flight Plan Filed:	IFR
Destination:	Ankeny, IA (IKV)	Type of Clearance:	IFR
Departure Time:	1856 CST	Type of Airspace:	

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	4 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	5 Fatal	Latitude, Longitude:	41.632222, -86.518056

## Administrative Information

Investigator In Charge (IIC):	Pamela S Sullivan	Report Date:	03/31/2008
Additional Participating Persons:	Alan Steinke; FAA; South Bend, IN Timothy Sokol; FAA; South Bend, IN Jason Lukasik; Teledyne Continental; Mobile, AL Jan Smith; Cessna; Wichita, KS		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).