



National Transportation Safety Board Aviation Accident Final Report

Location:	Connersville, Indiana	Accident Number:	CEN11FA201
Date & Time:	February 23, 2011, 20:02 Local	Registration:	N3875C
Aircraft:	Cessna 421C	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

A witness reported that, despite the darkness, he was able to see the navigation lights on the airplane as it flew over the south end of the airport at an altitude of 150 to 200 feet above the ground. The airplane made a left turn to the downwind leg of the traffic pattern and continued a descending turn until the airplane impacted the ground in a near-vertical attitude. Due to the airplane's turn, the 10- to 20-knot quartering headwind became a quartering tailwind. The airplane was also turned toward a rural area with very little ground lighting. A postaccident examination of the airplane and engines did not reveal any preimpact anomalies that would have precluded normal operation of the airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot did not maintain control of the airplane while making a low-altitude turn during dark night conditions.

Findings

Personnel issues	Aircraft control - Pilot
Environmental issues	(general) - Effect on operation
Environmental issues	Dark - Contributed to outcome
Aircraft	(general) - Not attained/maintained

Factual Information

HISTORY OF FLIGHT

On February 23, 2011, at 2002 eastern standard time, a Cessna 421C, N3875C, collided with the terrain following a loss of control approximately 1.5 miles east of the Mettel Airport (CEV), Connersville, Indiana. The private pilot, the sole occupant, received fatal injuries. The airplane was substantially damaged. The personal flight was being operated under 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and no flight plan was filed. The flight departed from the Metropolitan Airport (UMP), Indianapolis, Indiana, about 1940.

A witness, who had some flight training, reported hearing the airplane and seeing the airplane's navigation lights prior to the accident. This witness was in a parked vehicle on the west side of the airport and toward the south end of the runway. The witness stated it was very dark outside and the weather was clear with a southeasterly wind at 15 to 20 knots. The witness added the airplane flew from west to east over his vehicle at an altitude of 150 to 200 feet above the ground. He stated that everything seemed and sounded normal, except that the airplane was "way too low. He reported the airplane made a left turn as if turning onto a downwind leg for runway 18. The airplane did not roll out of the bank, but rather continued in the descending left-bank until upside down. The airplane then disappeared behind the tree line.

A review of radar data revealed that an aircraft with a transponder code of 1200 was located just south of UMP at 1940. This radar target was at an altitude of 1,100 feet. The radar target continued on a southeasterly ground track toward CEV, climbing to a maximum altitude of 3,400 feet prior to beginning a descent. The last primary radar contact was at 2,000 feet about 5 miles east of CEV at 1954.

PERSONNEL INFORMATION

The pilot, age 47, held a private pilot certificate with single-engine land, multi-engine land, instrument, and helicopter ratings. He held a second-class airman medical certificate dated September 16, 2010. The medical certificate did not contain any limitations.

The pilot's last logbook, which was made available during the investigation, was marked as logbook number 3. This logbook contained entries from April 8, 2008, through December 14, 2010. Based on this logbook it is estimated the pilot had a total flight time of about 1,360 hours which included about 860 hours in multi-engine airplanes. The pilot completed an updated insurance policy application on December 20, 2010. On this paperwork, the pilot reported having 558 hours of flight time in the Cessna 421C. The last flight logged in a Cessna 421C was dated December 14, 2010.

According to the pilot's logbook, since May 2010, the majority of his flight time was in helicopters. The pilot was issued his helicopter rating on July 30, 2010.

AIRCRAFT INFORMATION

The low-wing, pressurized, retractable-gear airplane, serial number 421C0127, was manufactured in 1976. The airplane was powered by two Continental GTSIO-520 engines.

According to the airframe logbook, the last annual inspection on the airplane was conducted on December 8, 2009, at a total aircraft time of 4,126.6 hours. Based on the aircraft and pilot logbooks, the airplane had a total time of approximately 4,158 hours at the time of the accident.

According to the engine logbook, the left engine, a Continental GTSIO-520-L-(3), s/n 292373-R, was rebuilt and installed on the airplane on February 18, 1999. The engine received a 100 hour inspection on December 8, 2009, and the time since rebuild was listed as 1,380.9 hours.

The right engine, a Continental GTSIO-520-NcL, s/n 265040-R, was overhauled by Ram Aircraft on October 7, 2002, at an engine total time of 2,873.3 hours. The engine received a 100 hour inspection on December 8, 2009, at a time since major overhaul of 555.5 hours, total time of 3,428.8 hours.

The last known fueling of the airplane was on December 14, 2010. Records show that on that day about 40 gallons of fuel was added to the airplane at UMP and an additional 100 gallons were added at CEV.

METEOROLOGICAL INFORMATION

The recorded surface observation weather data from the Shelbyville Municipal Airport (KGEZ), Shelbyville, Indiana, located about 37 miles west south-west of the accident site, revealed the conditions at 1953 were wind from 130 degrees at 8 knots; visibility 10 miles; ceiling 5,000 feet broken; temperature 4 degrees Celsius; dewpoint minus 1 degree Celsius; and altimeter setting 30.02 inches of mercury.

WRECKAGE AND IMPACT INFORMATION

The airplane impacted in an open field about 1.5 miles east of the south end of the runway at CEV. The field was approximately 760 yards long by 240 yards wide, and was surrounded by trees up to 100 feet tall. The airplane impacted the terrain in a near vertical, nose-down attitude and came to rest on a heading of about 215 degrees. All of the wreckage was located within the vicinity of the main wreckage. Both engines were buried about 4 feet into the terrain. A narrow impact mark indicative of the leading edge of the wing was visible extending outboard from the location of the engines.

The cabin floor was crushed back to the wing spar area. The cockpit and cabin sustained substantial impact damage which opened the structure back to the empennage. The main landing gears were in the extended position. The nose gear was separated from the airplane. The leading edge of the vertical stabilizer was crushed rearward. The rudder, both horizontal stabilizers and elevators sustained little impact damage compared to the rest of the airplane and they remained attached in their respective positions. The elevator trim tab remained attached.

Both wings sustained extensive impact damage. The right wing was separated from the

fuselage and the left wing remained partially attached. The left aileron and both flaps remained attached to their respective wings. The right aileron was separated from the wing and located alongside the main wreckage. Fuel was observed dripping from a fuel line to the left wing during the aircraft recovery process. First responders reported a strong smell of fuel in the area when they arrived at the accident site.

The control continuity for the elevators and rudder was established from the control surfaces to the cabin area under the front seats. The aileron control continuity was established from the bellcranks to each wing root and from the aileron sector forward to the cabin area under the front seats. Continuity could not be established forward of the front seats due to the amount of impact damage. The flap chains were separated; however, based on the point of separation it is estimated that the flaps were extended to 15 degrees.

Many of the cockpit instruments were damaged beyond readability. The left attitude indicator along with the left and right side heading indicators were located and disassembled. Scoring was observed on the rotors and rotor housings. The face and glass of the airspeed indicator was intact. There were two areas of missing paint on the indicator's face plate that aligned with the 215 knot mark. The glass of the tachometer was broken and the face plate was bent with both needles positioned at 1,800 rpm.

Both engines were washed down with water to remove the mud after they were unearthed. Both propellers were separated from their respective engines with portions of the propeller flanges attached to the crankshafts. The propellers were located buried with the engines. All of the propeller blades were bent forward to varying degrees.

Both engines were torn down and a postaccident examination was conducted. No anomalies were noted that would have prevented normal operation of the engines.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot on February 24, 2011, December 31, 2010, by the East Central Indiana Pathologists, P.C., Muncie, Indiana, at the direction of the Fayette County Coroner.

Forensic toxicology was performed on specimens from the pilot by the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The test results were negative for all substances tested.

ADDITIONAL INFORMATION

According to the CEV airport manager, the accident pilot had flown into the airport several times in the past to purchase fuel. The fuel pumps at CEV were self-serve. Airport fueling records show that the pilot had purchased fuel at CEV 5 times in 2010. Four of the five flights were during daylight hours. The airport rotating beacon was out of service at the time of the accident. The runway lights are set to be on low from dusk to dawn and are pilot controlled for higher intensity. The lights were checked following the accident and they operated normally. It could not be determined if the accident pilot had increased the runway light intensity.

The witness reported the airplane flew east over the airport and was turning to the north when the accident occurred. The town of Connersville is to the south of the airport and the airplane was turning away from the town. The direction in which the airplane was turning was rural, mostly open land with very few lights to provide a ground reference.

History of Flight

Approach-VFR pattern downwind	Loss of control in flight (Defining event)
Approach-VFR pattern downwind	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Private	Age:	47, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	September 16, 2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	1360 hours (Total, all aircraft), 558 hours (Total, this make and model), 1168 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N3875C
Model/Series:	421C	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	421C0127
Landing Gear Type:	Tricycle	Seats:	8
Date/Type of Last Inspection:	December 8, 2009 Annual	Certified Max Gross Wt.:	7610 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	4158 Hrs as of last inspection	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, not activated	Engine Model/Series:	GTSIO-520-NcL
Registered Owner:		Rated Power:	375 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Night
Observation Facility, Elevation:	GEZ, 803 ft msl	Distance from Accident Site:	37 Nautical Miles
Observation Time:	19:53 Local	Direction from Accident Site:	258°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 5000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	130°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.02 inches Hg	Temperature/Dew Point:	4°C / -1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Indianapolis, IN (UMP)	Type of Flight Plan Filed:	Unknown
Destination:	Connersville, IN (CEV)	Type of Clearance:	None
Departure Time:	19:40 Local	Type of Airspace:	Class E

Airport Information

Airport:	Mettel CEV	Runway Surface Type:	
Airport Elevation:	867 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	39.690555,-85.690551

Administrative Information

Investigator In Charge (IIC):	Sullivan, Pamela
Additional Participating Persons:	Doug Nelson; FAA-AGL-IND; Indianapolis, IN Paul Vanover; FAA-AGL-IND; Indianapolis, IN Henry Soderlund; Cessna; Wichita, KS Rodney Martinez; Continental Motors; Mobile, AL
Original Publish Date:	June 14, 2012
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=78414

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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](#).