Aviation Investigation Final Report

Location:	Louisville, Kentucky	**Accident Number:**	NYC08LA152
Date & Time:	April 6, 2008, 14:56 Local	**Registration:**	N734JV
Aircraft:	Cessna P210N	**Aircraft Damage:**	Substantial
Defining Event:	Aerodynamic stall/spin	**Injuries:**	1 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

At the end of a long cross country flight, while on a straight-in approach to the runway, the pilot was advised by the tower that there was another airplane in front of him, and to perform S-turns for spacing. Two witnesses then saw the airplane begin a nose-high left turn, then saw the left wing dip. One of the witnesses, a pilot waiting for departure, noted that the airplane was in the landing configuration with landing gear and flaps extended. It appeared that the airplane did not increase airspeed, yet the more it turned, the steeper the angle of bank became. The witness then saw the airplane enter a spin with the left wing low and the right wing high. The airplane made 1 1/2 revolutions before disappearing below a tree line. Tower controller observations were similar to those of the witnesses. Postcrash examination of the airplane revealed no mechanical anomalies.

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 airspeed while maneuvering, which resulted in an inadvertent stall/spin.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Maneuvering-low-alt flying	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On April 6, 2008, at 1456 eastern daylight time, a Cessna P210N, N734JV, was substantially damaged when it crashed in a residential area while approaching Bowman Field (LOU), Louisville, Kentucky. The certificated private pilot was seriously injured. Visual meteorological conditions prevailed, and the flight was operating on an instrument flight rules flight plan from Garfield County Regional Airport (RIL), Rifle, Colorado. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.

A review of the Federal Aviation Administration (FAA) air traffic control accident package information revealed that the airplane departed Rifle about 0925 (0725 mountain daylight time) and climbed to 19,000 feet, direct to Louisville. En route, the pilot received a clearance change to proceed direct to an intersection, then direct to Louisville. About 3 hours into the flight, the pilot requested, and received a clearance to descend to 11,000 feet to avoid icing.

Approaching Louisville, the airplane was cleared for a straight in approach to runway 6. The tower controller advised the pilot that there was a Piper Cherokee ahead and to his right, at 2 miles and 1,500 feet, and the pilot responded that he was looking for it. After controlling other traffic, the tower controller advised the pilot that the Cherokee was "on a mile and a half final" at 1,300 feet. The pilot then asked if the other airplane was landing on runway 6, and the controller replied that it was, and, "you might need some S-turns on final." The pilot then responded, "I'm low on fuel."

About 5 seconds later, the pilot stated, "got him in my sight," and the controller subsequently replied, "S-turns on final are approved, you're number two, cleared to land." There were no further transmissions from the airplane.

According to a witness, a private pilot in another airplane holding for a departure clearance next to runway 6, he noticed the accident airplane on final approach. The airplane appeared to be slightly high, but should have had no problem losing altitude to complete the landing. The witness had the radio tuned to the ground control frequency at the time, and could not hear what was being said over the tower frequency. However, he saw the accident airplane level off for a few seconds, then make a climbing left turn. The whole time, the airplane was in the landing configuration with landing gear and flaps extended. It appeared that the airplane did not increase airspeed, yet the more it turned, the steeper the angle of bank became. The witness then saw the airplane enter a spin with the left wing low and the right wing high. The airplane made 1 1/2 revolutions before disappearing below a tree line.

Another witness, who was not a certificated pilot, but had previously soloed an airplane, was watching airplanes when he saw the accident airplane on approach, then "saw what looked like the pilot punch the power and start to go around." The airplane started a left turn, and about half way around the turn, the airplane's nose was high, and the left wing "dipped." The airplane's nose then "went down" and the airplane descended without spinning. The airplane then disappeared behind trees.

In their written statements, two Bowman Tower controllers stated that they saw the airplane in a left turn, followed by a steep descent. A third controller stated that the airplane was making a left turn about 1/2 mile from the runway, then made a "very steep left spiraling descent" and disappeared below the tree line.

The last six radar/altitude encoder returns of the airplane, at approximately 5-second intervals, indicated that the airplane was headed inbound to runway 6 at 1,000 feet, then briefly descended to 900 feet followed by the beginning of a turn and a climb to 1,000 feet. The airplane completed the turn at 900 feet, and remained at that altitude for one additional altitude readout.

Photographs of the accident scene revealed that the airplane initially impacted terrain in a yard, slid across a residential street, and came to rest upright, against two small trees in another yard. The left wing was broken about mid-span, and the outboard portion was pointed down toward the ground. The empennage was broken to the right where it impacted a tree. The left landing gear was extended, as were the flaps. The right main landing gear and the nose landing gear were broken off. The engine was displaced from the fire wall, and attached to the airframe by wires and hoses. One propeller blade was sticking up, and appeared to have no leading edge damage.

The left wing and the cockpit area exhibited charring, and the right wingtip auxiliary fuel tank was missing, with the attaching area charred.

The airplane was subsequently moved to a secure hangar where Federal Aviation Administration inspectors and investigators from the airplane and the engine manufacturers further examined it. The examination confirmed control continuity to all flight controls except the rudder. The flaps were extended approximately 25 degrees, and the flap control handle was full down and bent to the right. The elevator trim measurement equated to approximately 20 degrees tab up.

The left wing was bent downwards approximately 90 degrees, mid-span. The left composite wingtip fuel tank was partially damaged by fire. No fuel was found in the left main fuel tank at that time. The fuel tank selector valve was in the "Left" tank position, and both auxiliary fuel tank switches were in the "Off" position.

The three-bladed propeller remained attached to the engine. Two of the blades had aft

bending, with one of them exhibiting some S-bending, and the other exhibiting diagonal scratches along the blade face. The third blade had little leading edge damage.

An examination of the engine confirmed crankshaft continuity, and compression in all six cylinders. The turbocharger assembly turbine and compressor shaft rotated freely by hand, and there was scoring observed in the turbine section of the housing. Both magnetos remained attached to the crankcase, and impulse coupling engagement resulted in spark on all ignition leads.

No anomalies were noted with the fuel supply system to the engine, and all fuel nozzles were free of obstructions. The fuel control was intact, the throttle lever and throttle plate were observed to be in the "idle" position, and the mixture control lever was observed to be about "mid-position."

Due to the extent of his injures, including head trauma, the pilot was not interviewed until July 13, 2009. At that time, the pilot stated that he had almost no recollection of that day and didn't even remember taking off. The pilot did recall that his final destination was Norfolk, Virginia. When asked about the airplane's fuel quantity approaching the airport, the pilot stated that he could not recall, but that he had made similar trips many times utilizing Cincinnati, Ohio, as a fuel stop.

A review of the pilot's flight plan indicated that he had filed direct from Rifle to Louisville. Internet flight planning software yielded a great circle distance of 1,033 nautical miles (nm) between the two and total time flown en route was about 5.5 hours.

Although comparative power settings and fuel flows were not known, utilizing the pilot's logbook entries plus the flight planning software yielded two flights flown from Rifle to Cincinnati Lunken Airport (LUK), Cincinnati, Ohio, (distance of 1,081 nm) with 6.0 hours logged, and a third flight logged as 5.5 hours' duration. There was also one flight from Rifle to Port Columbus (CMH), Columbus, Ohio, (distance of 1,144 nm) with 5.75 hours logged, and one flight from Rifle to Burke Lakefront (BKL), Cleveland, Ohio, (distance of 1,191 nm) with 6.0 hours logged.

According to a Louisville Division of Fire report, upon arrival at the accident scene, firefighters laid hand lines to extinguish the fire and extricate the pilot. The report also noted "aviation fuel leaking from the plane in the rescue area."

The pilot held a private pilot certificate, with single engine land and instrument airplane ratings. According to entries in the pilot's logbook, including the accident flight, the pilot had logged about 2,220 hours of flight time. The pilot's latest FAA third class medical certificate was issued on December 5, 2006.

Post accident toxicological testing was performed on a small amount of urine remaining in a urinal found in the wreckage. The testing was positive for an unspecified level of tolterodine.

The pilot had noted the use of the medication on his most recent FAA medical certificate application.

Weather, recorded at the airport about the time of the accident, included clear skies and variable winds at 4 knots.

Pilot Information

Certificate:	Private	**Age:**	68,Male
Airplane Rating(s):	Single-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 2	**Last FAA Medical Exam:**	December 5, 2006
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 13, 2008
Flight Time:	2220 hours (Total, all aircraft), 20 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N734JV
Model/Series:	P210N	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	236444
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	August 23, 2008 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3484 Hrs as of last inspection	**Engine Manufacturer:**	Teledyne Continental Motors
ELT:	Installed	**Engine Model/Series:**	TSIO-520-P
Registered Owner:	On file	**Rated Power:**	310 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	LOU,546 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	14:53 Local	**Direction from Accident Site:**	60°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.97 inches Hg	**Temperature/Dew Point:**	17°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Rifle, CO (RIL)	**Type of Flight Plan Filed:**	IFR
Destination:	Louisville, KY (LOU)	**Type of Clearance:**	IFR
Departure Time:	09:25 Local	**Type of Airspace:**	

Airport Information

Airport:	Bowman Field LOU	**Runway Surface Type:**	Asphalt
Airport Elevation:	546 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	06	**IFR Approach:**	Visual
Runway Length/Width:	4357 ft / 75 ft	**VFR Approach/Landing:**	Straight-in

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious	**Latitude, Longitude:**	38.228332,-85.66333(est)

Administrative Information

Investigator In Charge (IIC):	Cox, Paul
Additional Participating Persons:	Jeffrey S Neuin; FAA/FSDO; Louisville, KY Seth Buttner; Cessna Aircraft Company; Wichita, KS Rodney Martinez; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	March 23, 2010
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=67757