Aviation Investigation Final Report

Location:	Charleston, South Carolina	**Accident Number:**	ATL07FA029
Date & Time:	December 22, 2006, 13:35 Local	**Registration:**	N808RA
Aircraft:	Cessna 340A	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	4 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to an airport employee at the Charleston Executive Airport (JZI), Charleston, South Carolina, the pilot contacted the JZI UNICOM radio frequency to request an airport advisory. The airport employee informed the pilot that the "winds were from 180 at 12 knots gusting to 17." The pilot then responded that he would be landing on runway 18, and was advised by the employee that there was no "runway 18." The pilot then stated that he would land on runway 27, and shortly thereafter said that he would land on runway 22. The employee said that out of curiosity he stepped outside to witness the approach of the airplane. He said that the airplane was southwest of the airport moving northeast perpendicular to runway 22, at an altitude of approximately 500 feet. He watched as the airplane was on a left base for runway 22. He said that the airplane overshot the runway and began a "tight, low right turn" away from the airport. Shortly thereafter, the airplane stalled and completed two revolutions before it was lost from his sight. Examination of the airframe, flight controls, engine assemblies and accessories revealed no evidence of a pre-crash mechanical failure or malfunction. A forensic toxicology test was performed on specimens from the pilot by the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The specimens contained, Tramadol (also known by the trade name Ultram), which is used for the management of moderate to severe pain. The level of Tramadol found in the pilot's blood on post-mortem toxicology testing was at least twice that of maximal regular doses of the substance. Single doses have been shown to cause mild impairment of psychomotor abilities in healthy volunteers. Diphenhydramine was also found in the blood of the pilot. The pilot may have been impaired, at that time, due to the use of Tramadol or Diphenhydramine or both.

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 during a turn from base to final, resulting in an inadvertent stall/spin. Contributing to the accident was the impairment of the pilot due to the combination of drugs found in his toxicological report.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH - VFR PATTERN - BASE LEG/BASE TO FINAL

Findings
1. (C) STALL/SPIN - INADVERTENT - PILOT IN COMMAND
2. (C) IMPAIRMENT(DRUGS) - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
3. TERRAIN CONDITION - WATER

Factual Information

HISTORY OF FLIGHT

On December 22, 2006, at 1335 eastern standard time, a Cessna 340A, N808RA, registered to and operated by a private pilot, as a 14 Code of Federal Regulations Part 91 personal flight, collided with the Stono River during a visual approach into Charleston Executive Airport (JZI), Charleston, South Carolina. Instrument meteorological conditions prevailed at the time of the accident, and an instrument flight rules flight plan was filed. The private pilot and three passengers were fatally injured, and the airplane sustained substantial damage. The flight departed Rock Hill Airport-Bryant Field, Rock Hill, South Carolina on December 22, 2006, at 1130.

According to Charleston Approach Control personnel, at 1330, the pilot was cleared for the ILS 09-approach into Charleston Executive Airport. The pilot elected to cancel his IFR handling and maintain 2,000 feet. Approach control notified the pilot to squawk 1200, and radar services were terminated. No further radio or radar contact was made with the flight.

According to an airport employee at JZI, the pilot contacted the JZI UNICOM radio frequency to request an airport advisory. The airport employee informed the pilot that the "winds were from 180 at 12 knots gusting to 17." The pilot then reported that he would be landing on runway 18. The airport employee advised the pilot that there was no "runway 18." The pilot then stated that he would land on runway 27, and then said that he would land on runway 22. The employee stepped outside to witness the approach of the airplane. He reported that the airplane was southwest of the airport moving northeast, perpendicular to runway 22, at an altitude of approximately 500 feet. He witnessed the airplane on a left base for runway 22. He said that the airplane overshot the runway and began a "tight, low right turn" away from the airport. He then witnessed the airplane stall and completed two revolutions before it was lost from his sight.

PERSONNEL INFORMATION

The pilot, age 58 held a private pilot certificate with ratings for airplane single engine land, and multi-engine land issued on November 27, 2005,and a third-class medical certificate issued December 22, 2005 with limitations for corrective lenses. Review of the pilot's logbook revealed he had accumulated 1504 total flight hours, of which 129.6 hours were in the Cessna 340A. The pilot had logged 19.7-flight hour's, which were flown in the last 90 days.

AIRCRAFT INFORMATION

The six-seat, low-wing, fixed-gear airplane, serial number (S/N) 340A0796, was manufactured

in 1979. It was powered by two Continental TSIO-520-NB 300-hp engines and equipped with McCauley 3AF32C93-NR constant speed propellers. Review of the maintenance logbook records showed an annual inspection was completed October 20, 2006, at a recorded tachometer reading of 3494.9 hours, airframe total time of 3828.9 hours, and engine time since major overhaul of 1173.8 hours. The tachometer and Hobbs hour-meter were integrated in the Chelton Electronic Flight Information System, however, damage to the system precluded determining the current readings.

METEOROLOGICAL INFORMATION

A review of recorded data from the Charleston Air Force Base/International Airport automated weather observation station, elevation 46 feet, revealed at 1318, conditions were winds 170 degrees at 14 knots, with gust to 24 knots, visibility 2.5 statute miles with light rain and fog; cloud conditions broken at 2,800 feet, overcast at 4,800 feet.

WRECKAGE AND IMPACT INFORMATION

Examination of the wreckage revealed that the airplane crash into the Stono River and came to rest 15 feet below the surface of the river. The airplane was recovered to the bank of the river for examination.

Examination of the recovered airframe and flight control system components revealed no evidence of preimpact mechanical malfunction. Examination of the airplane revealed the nose section was partially separated from the fuselage and crushed. The nose wheel assembly remained attached to the nose section and was in the extended position. Examination of the cockpit revealed both engine controls in the cockpit were in the full forward position and both fuel selectors were in the main tank positions. The underside of the cockpit and cabin section of the fuselage was buckled upwards. The empennage aft of the pressure bulkhead was separated from the fuselage and remained attached by the elevator and rudder control cables. The main landing gear assemblies were in the down and locked position. Flight control cable continuity was established throughout the aircraft to all flight control surfaces. Both engines were partially attached to the wing by the engine mounts and the oil supply lines. Examination of the recovered engines and system components revealed no evidence of preimpact mechanical malfunction.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot on December 23, 2006, by Medical University of South Carolina, Department of Pathology and Lab Medicine, Charleston, South Carolina, as authorized by the deputy coroner of Charleston, South Carolina. The autopsy findings included "multiple blunt force injuries," and the report listed the specific injuries. The cause of death was reported as two of the listed injuries.

Forensic toxicology was performed on specimens from the pilot by the FAA Bioaeronautical

Sciences Research Laboratory, Oklahoma City, Oklahoma. The toxicology report stated no ethanol was detected in the liver or muscle, and Atenolol, Tramadol, Diphenhydramine, and Bupropion were detected in the blood. Atenolol, Tramadol, Diphehydramine, Hydrocodone, Dihydrocodeine, and Bupropion were detected in the urine.

An autopsy was performed on the three passengers on December 23, 2006, by Medical University of South Carolina, Department of Pathology and Lab Medicine, Charleston, South Carolina, as authorized by the deputy coroner of Charleston, South Carolina. The autopsy findings reported cause of death was due to blunt force trauma. Forensic toxicology was performed on specimens from the passengers, and the toxicology report stated negative for drugs and alcohol.

TEST AND RESEARCH

The airplane was equipped with an Insight Instrument Gemini 610 1200 Series Twin Engine system displays. An internal inspection revealed moderate signs of corrosion due to fluid exposure. The internal backup-battery was intact but showed signs of corrosion. Due to extensive corrosion damage, the unit could not be powered-up successfully. A non-volatile memory chip was identified on the main PC board, and sent to the manufacturer for data recovery. The memory chip was returned to the NTSB, and the manufacturer reported that the memory chip was corrupted, and that no flights were recoverable from the memory device.

Pilot Information

Certificate:	Private	**Age:**	58,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 Without waivers/limitations	**Last FAA Medical Exam:**	December 1, 2005
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	February 1, 2006
Flight Time:	1504 hours (Total, all aircraft), 129 hours (Total, this make and model), 19 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N808RA
Model/Series:	340A	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	340A0796
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	October 1, 2006 Annual	**Certified Max Gross Wt.:**	5975 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	3828.9 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-520-NB
Registered Owner:	Ray Baxter Armistead	**Rated Power:**	310 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:	KCHS,46 ft msl	**Distance from Accident Site:**	12 Nautical Miles
Observation Time:	13:18 Local	**Direction from Accident Site:**	360°
Lowest Cloud Condition:	Unknown	**Visibility**	2.5 miles
Lowest Ceiling:	Broken / 2800 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	14 knots / 24 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	17°C / 16°C
Precipitation and Obscuration:	Light - None - Rain		
Departure Point:	Rock Hill, SC (KUZA)	**Type of Flight Plan Filed:**	IFR
Destination:	Charleston, SC (KJZI)	**Type of Clearance:**	None
Departure Time:	11:30 Local	**Type of Airspace:**	

Airport Information

Airport:	CHARLESTON EXECUTIVE JZI	**Runway Surface Type:**	Asphalt
Airport Elevation:	17 ft msl	**Runway Surface Condition:**	Wet
Runway Used:	22	**IFR Approach:**	Visual
Runway Length/Width:	4313 ft / 150 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 Fatal	**Latitude, Longitude:**	32.718055,-79.987777

Administrative Information

Investigator In Charge (IIC):	Alleyne, Eric
Additional Participating Persons:	Lewis Blackwell; Columbia FSDO-13; Columbia, SC Seth D Buttner; Cessna Aircraft Company; Wichita, KS Jason Lukasik; Teledyne Continental Motors; Mobile, AL Tom Knopp; McCauley Propeller Systems; Vandalia, OH
Original Publish Date:	April 30, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=65066