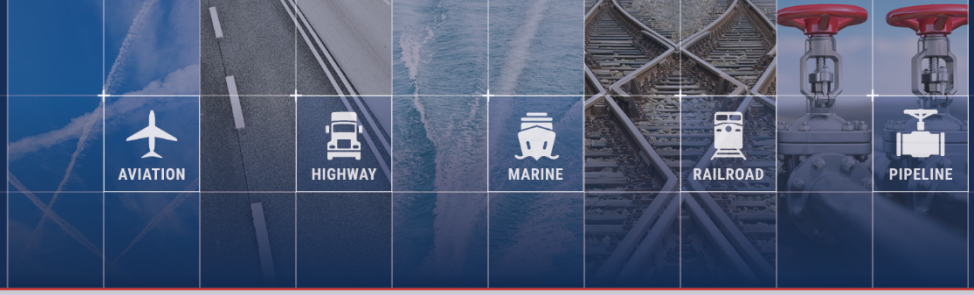

Aviation Investigation Final Report

Location:	Montgomery, Alabama	**Accident Number:**	ATL02FA017
Date & Time:	December 12, 2001, 16:10 Local	**Registration:**	N99DC
Aircraft:	Beech BE-55	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	3 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot departed Montgomery, Alabama, on an IFR flight plan with a 700 feet overcast ceiling. Shortly after takeoff the pilot informed the controller, "we are coming back for a minute." The pilot did not state why. The controller asked the pilot to say his request. The pilot stated, "uh I'm going to circle to the left or right either one and land again." The controller instructed the pilot to circle to the right and asked him if he had the airport in sight and if he would like vectors to the ILS. The pilot replied, "no we'll go to the right." There was no other recorded radio communication with the pilot. Review of radar data revealed the airplane was last observed at 800 feet with a decrease in groundspeed. Examination of the crash site revealed the airplane collided with the terrain in a vertical descent in a slight right turn. There was no evidence of a crash debris line at the crash site. The lower surface of the wing skin displayed evidence of upward compression. There was no evidence of a pre-crash mechanical failure of the airframe, flight controls, engine assemblies or propellers.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilots failure to maintain airspeed while maneuvering in instrument flight conditions resulting in an inadvertence stall/spin (vertical descent) and subsequent in-flight collision with trees and terrain.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MANEUVERING

Findings
1. WEATHER CONDITION - CLOUDS
2. (C) AIRSPEED - NOT MAINTAINED - PILOT IN COMMAND
3. STALL/SPIN - ENCOUNTERED - PILOT IN COMMAND

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

Findings
4. TERRAIN CONDITION - GROUND

Factual Information

HISTORY OF FLIGHT

On December 12, 2001, at about 1610 Central Standard Time, a Beech BE-55, N99DC, registered to a private owner, operating as a 14 CFR Part 91 business flight, crashed after takeoff from Montgomery Regional Airport (Dannelly Field) in the vicinity of Montgomery, Alabama. Instrument meteorological conditions prevailed and an instrument flight plan was filed. The airplane was consumed by post crash fire. The private pilot pilot-in-command, airline transport rated passenger and one passenger were fatally injured. The flight originated from Montgomery, Alabama, at 1608.

Witnesses who were located adjacent to the runway in the vicinity of Miltope Corporation stated they heard an airplane departing from runway 10. One witness stated one of the engines sounded like it was running smooth and the other engine sounded like it was sputtering. He looked towards the runway and observed the airplane on the takeoff roll. He then heard both engines, which sounded erratic. He then wondered why the pilot did not abort the takeoff. The airplane was observed to rotate and the engine roughness continued. The airplane did not appear to climb very fast and disappeared into the clouds, which appeared lower than usual. A short time later he felt a vibration and heard a thud. He went around the building and observed black smoke coming up above the trees. The other witness stated he heard the airplane on takeoff and the engine sounded as if it was backfiring. He looked towards the direction of the engine noise and observed the airplane north of the airport. He stated to the other witnesses, "There's no way I would be on an airplane sounding like that." The airplane disappeared from view into the clouds and he could not hear it any more. A short time later he heard a thud and went around the other side of the building with the other witnesses and observed black smoke rising above the tree line. He informed another witness to call 911. A flight line refueler stated he observed the airplane taxi out and the engines sounded ok. He observed the airplane takeoff and the engines sounded ok. He further stated, "Nothing seemed to out of the ordinary with this plane or its departure."

Review of communication between Montgomery ground control, Local control, and N99DC revealed that N99DC was cleared for takeoff at 2207:44 (16:07:44 CST.) N99DC acknowledged the clearance at 2207:52. At 2209:01, N99DC stated, "delta Charlie we are coming back for a minute." The local controller stated at 2209:04, "November zero delta Charlie roger (unintelligible) say request." N99DC stated at 2209:09, "uh I'm going to circle to the left or the right either one and land again." The controller replied at 2209:14, "November zero delta charlie circle to the right do you have the airport in sight sir or would you like vectors to the ILS." N99DC replied at 2209:18, "no we'll go to the right. There was no other recorded radio communication with N99DC.

Review of the continuous data recording (CDR) visually viewed by the FAA coordinator and the CDR data received by the NTSB revealed that at 2208:34, N99DC was at 400 feet with a groundspeed of 101. At 2208:43 ,N99DC altitude was 500 feet with a groundspeed of 103. At 2208:52, N99DC altitude was 600 feet with a groundspeed of 106. At 2209:01, N99DC altitude was 700 feet with a groundspeed of 103. At 2209:10, N99DC altitude was 900 feet with a groundspeed of 97. At 2209:19, N99DC altitude is 800 feet with a groundspeed of 93. There was no other CDR data.

PERSONNEL INFORMATION

Review of information on file with the FAA Airman's Certification Division, Oklahoma City, Oklahoma, revealed the pilot-in-command was issued a private pilot certificate on March 7, 1968 with ratings for airplane single engine land, airplane multiengine land, and instrument airplane. The pilot held a third class medical certificate issued on December 5, 2000 with the restriction must have available glasses for near vision and a miscellaneous restriction was assigned. The pilot indicated on his application for the FAA third class medical certificate that he had accumulated 7,700 hours with 70 hours being flown in the last 6 months. The pilot's logbook was not located. Review of insurance records obtained from APOPA Insurance Agency, Inc., the pilot indicated on his aircraft insurance application dated February 12, 2001, that he had accumulated 7,700 total flight hours, 530 hours in make and model, and he had flown 480 hours in the last 12 months. The pilot informed the insurance agent at AOPA on August 13, 2001, that his biennial flight review was conducted on January 9, 2001.

Review of information on file with the FAA Airman's Certification Division, Oklahoma City, Oklahoma, revealed the airline transport pilot rated passenger was issued an airline transport pilot certificate on August 28, 1991, with ratings for airplane multiengine land/airline transport pilot, airplane single engine land/ commercial pilot, and instrument airplane. The pilot held a first class medical certificate issued on November 7, 2001 with the restriction must wear corrective lenses. The pilot indicated on his application for the FAA first class medical certificate that he had accumulated 3,900 hours with 400 hours flown in the last 6 months. The pilot's logbook was not located. According to family members the pilot logbook was normally located in the airplane glove box.

AIRCRAFT INFORMATION

According to the Chief Inspector for ARK-LA-TEX Avionics located in Shreveport, Louisiana, the logbooks for N99DC were located in a bag in the rear baggage compartment of N99DC. In addition, the last recorded altimeter system, static pressure system, and transponder test was conducted on July 11, 2000. Records on file with Deville & Deville located in Shreveport, Louisiana, revealed that the last known recorded annual inspection was conducted on April 25, 2001; in accordance with invoice No. 99DC-1053 dated May 8, 2001.

METEOROLOGICAL INFORMATION

The nearest weather reporting facility at the time of the accident was Montgomery Regional Airport, Montgomery, Alabama. The 1554 surface weather observation was: wind 100-degrees at 8 knots, visibility 2 miles, ceiling 700 overcast, temperature 61 degrees Fahrenheit, dew point temperature 61 degrees Fahrenheit, and altimeter 30.13. Instrument meteorological conditions prevailed at the time of the accident. According to the Anniston Automated Flight Service Station, the pilot of N99DC called at 2137:53, filed an IFR flight, received an abbreviated weather briefing, which was terminated at 2142:13.

WRECKAGE AND IMPACT INFORMATION

The wreckage of N99DC was located in a wooded area about 1.15 nautical miles east of the airport at coordinates N 32.17.9 W 086.22.1.

Examination of the crash site revealed the airplane collided with the terrain in a vertical descent right wing low on a heading of 224-degrees magnetic in a slight right turn. The wings were perpendicular to the fuselage. There was no evidence of a crash debris line. The cabin area was consumed by a post crash fire extending from the nose baggage compartment aft to the rear of the aft baggage compartment. The nose gear was in the retracted position. The aft baggage compartment door separated and was located behind the right wing. The rear fuselage tail cone was buckled. The right horizontal stabilizer and elevator remained attached to the rear fuselage. The vertical stabilizer remained attached to the rear fuselage. The two upper rudder hinge assemblies were separated from the vertical stabilizer. The rudder and rudder trim tab were buckled. The left horizontal stabilizer was buckled upward and separated from the rear fuselage, and the elevator remained attached to the stabilizer. The right engine assembly was bucked at the firewall. The right propeller assembly separated behind the propeller flange. The propeller spinner exhibited no evidence of rotation. One propeller blade was bent aft and the remaining propeller blade was not damaged. There was no evidence of torsional twisting or "S" bending. The wing area inboard of the engine well was consumed by post crash fire to include the main fuel tank and wheel well. The right main landing gear is retracted. The leading edge of the right wing was buckled outboard of the engine nacelle extending outboard to the wing tip. The main fuel tank was ruptured and consumed by post crash fire. The right fuel cap was removed by hand and the o-ring was intact. There was no visible deformation to the adapter assembly edges of the fuel tank. The right auxiliary fuel tank was ruptured and sustained fire damage. The right main auxiliary fuel cap was consumed by post crash fire. The lower surface of the wing skin displayed evidence of upward compression. The right flap assembly separated and was torn and twisted. The flap was in the retracted position. The flap actuator housing was consumed by fire. The left wing upper wing and leading edge was not damaged except for the main fuel tank and auxiliary fuel tank that was damaged by post crash fire. The left main fuel cap required force to remove the fuel cap due to fire damage. The o-ring was consumed by post crash fire. There was no visible deformation to the adapter assembly edges of the fuel tank. The auxiliary fuel tank cap was consumed by post crash fire. The lower surface of the left wing skin displayed evidence of upward compression. The left flap and aileron remained attached to the wing. The flap and aileron

exhibited evidence of over travel. The flap actuator and jackscrew were consumed by fire. The left main landing gear was in the retracted position. The left engine nacelle exhibits evidence of downward and upward crushing. The propeller separated from the engine assembly. The propeller spinner had evidence of rotation. Torsional twisting and aft bending was present on both propeller blades.

Examination of the airframe, and flight controls revealed no evidence of a precrash mechanical failure or malfunction. All components necessary for flight were present at the crash site. Continuity of the flight control system was confirmed for pitch, roll, and yaw.

The left and right engine assembly and left and right propeller assembly were transported to Atlanta Air Salvage located in Griffin, Georgia, for further analysis. The left and right engine assembly and accessories sustained extensive fire damage. Disassembly of the left and right engine assembly and accessories revealed no evidence of a precrash mechanical failure or malfunction.

Disassembly of the left and right propeller was conducted in the presence of the NTSB. Hartzell Propeller concluded "The left propeller was rotating with power on at the time of impact. The amount of power could not be determined. The right propeller right propeller was rotating at the time of impact. It had little or no power. There were no propeller discrepancies noted that could have precluded normal operation. All damage was consistent with impact damage."

Examination of the left and right Weston G-455 vacuum pumps revealed they were both exposed to extreme fire damage. Both vacuum pumps were disassembled. The vanes and drive shaft were intact. The drive could be turned by hand after disassembly.

The attitude indicator, vertical speed indicator, turn and bank indicator, directional gyro, and altimeter were not recovered.

MEDICAL AND PATHOLOGICAL INFORMATION

Dr.Herawi Mehsati, Deputy Medical Examiner, Montgomery, Alabama conducted postmortem examination of the pilot-in-command, on December 13, 2001. The cause of death was blunt force trauma. The Forensic Toxicology Research Section, Federal Aviation Administration, Oklahoma City, Oklahoma performed postmortem toxicology of specimens from the pilot. The results were negative for carbon monoxide, cyanide, and ethanol. Phenobarbital was detected in the blood and urine.

Dr. Herawi Mehsati, Deputy Medical Examiner, Montgomery, Alabama, conducted postmortem examination of the airline transport pilot rated passenger, on December 13, 2001. The cause of death was blunt force trauma. The Forensic Toxicology Research Section, Federal Aviation Administration, Oklahoma City, Oklahoma performed postmortem toxicology of specimens

from the pilot. The results were negative for ethanol and drugs. Carbon monoxide and cyanide testing was not performed.

Dr. Herawi Mehsati, Deputy Medical Examiner, Montgomery, Alabama conducted postmortem examination of the passenger located in the left rear center seat, on December 13, 2001. The cause of death was blunt force trauma. No toxicology was requested.

TEST AND RESEARCH

A fuel sample was taken from the fueling nozzle of Montgomery Aviation's refueler No. 13. The sample was transported to Dixie Services Incorporated, Galena Park, Texas for further analysis. No deficiencies were noted with the fuel sample.

ADDITIONAL INFORMATION

The wreckage of N99DC was released to Clayton F. Collins, Atlanta Air Salvage, Griffin, Georgia, on January 11, 2002.

A weight and balance form was computed for N99DC The weight at the time of the accident was 4,797 pounds. Review of Beechcraft Baron 95-B55 Section V Performance, reveals on Page 5-23, Stall Speeds-Power Idle that at 4,900 pounds with flaps up in a wings level attitude the airplane will stall at 78 KIAS. The airplane will stall at 84 KIAS in a 30-degree bank. The airplane will stall at 107 KIAS in a 60-degree bank. The airspeed indicator in the airplane wreckage was recorded at 58 KIAS.

Pilot Information

Certificate:	Private	**Age:**	82,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:**	
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	December 5, 2000
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	January 9, 2001
Flight Time:	7700 hours (Total, all aircraft), 530 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N99DC
Model/Series:	BE-55	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TC1490
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	April 25, 2001 Annual	**Certified Max Gross Wt.:**	5100 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO0470-L
Registered Owner:	Ralph O. Kiper	**Rated Power:**	260 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:	MGM,221 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	15:54 Local	**Direction from Accident Site:**	280°
Lowest Cloud Condition:		**Visibility**	2 miles
Lowest Ceiling:	Overcast / 700 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	16°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Montgomery, AL (MGM)	**Type of Flight Plan Filed:**	IFR
Destination:	Shreveport, LA (DTN)	**Type of Clearance:**	IFR
Departure Time:	16:08 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	Montgomery Regional MGM	**Runway Surface Type:**	
Airport Elevation:	221 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

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:**	
Total Injuries:	3 Fatal	**Latitude, Longitude:**	32.285831,-86.366943

Administrative Information

Investigator In Charge (IIC):	Smith, Carrol A.
Additional Participating Persons:	Emile Cirone; FAA FSDO-09; Vestavia Hills, AL Paul E Yoos; Raytheon Aircraft Company; Wichita, KS John V Bures; Continental Motors; New Bem, NC Thomas J McCreary; Hartzell Propellers; Piqua, OH
Original Publish Date:	September 20, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=53919