		NTSB ID: ATL04FA107		Aircraft Registration Number: N91514	
		Occurrence Date: 05/03/2004		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Cary		State NC	Zip Code 27513	Local Time 1520	Time Zone EDT
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 10			
Aircraft Information Summary					
Aircraft Manufacturer Mooney		Model/Series M20M		Type of Aircraft Airplane	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>*** Note: NTSB investigators either traveled in support of this investigation or conducted a significant amount of investigative work without any travel, and used data obtained from various sources to prepare this aircraft accident report. ***</p> <p>HISTORY OF FLIGHT</p> <p>On May 3, 2004, at 1520 eastern daylight time, a Mooney M20M, N91514, registered to TLSB INC. and operated by private pilot collided with trees and a lake, and sank in 8 feet of water while attempting an approach to Raleigh Durham International Airport (RDU), Cary, North Carolina. The flight was operated under the provisions of Title 14 CFR Part 91 with an instrument flight plan filed. Instrument meteorological conditions prevailed at the time of the accident. The private pilot and passenger were fatally injured, and the airplane sustained substantial damage. The flight departed Columbia Owens Airport, Columbia, South Carolina, on May 3, 2004 at 1350.</p> <p>Review of the transcription of voice recordings revealed, at 1018, the pilot received a preflight briefing from Anderson, South Carolina Automated Flight Service Station. The pilot received a standard briefing for the requested route of flight. Included in the briefing was an AIRMET covering the Raleigh-Durham area calling for occasional ceilings below 1,000 feet above ground level and visibility below three miles in precipitation, mist, and fog, with conditions ending between 1700 and 1900. At 1254, the pilot requested to file an instrument flight plan to Raleigh-Durham International Airport, North Carolina.</p> <p>At 1350, the flight departed Columbia Owens Airport and the pilot established radio contact with Columbia approach for cross-country instrument flight to Raleigh Durham International Airport. At 1436, the pilot established radio contact with Raleigh approach control, reported altitude, heading and speed. Raleigh Approach control informed the pilot when established on the localizer he was cleared for the ILS runway 5L approach. Between 1445, and 1448 the airplane was observed by approach control to be approximately ½ mile to the right of runway 5L localizer, and not maintaining assigned altitudes. At 1450, Raleigh approach control contacted the pilot and allowed the pilot to fly whatever heading he needed, and to maintain an altitude above 2000 feet. The pilot was provided heading instructions, and reissued ILS runway 5L approach clearance.</p> <p>Between 1449, and 1451, Raleigh approach control issued the pilot no-gyro turn away vectors from the other traffic approaching the localizer. Review of the radar plot showed the airplane making a series of maneuvers the pilot described as a "spiral". The pilot recovered from the spiral, and climbed up to 4,100 feet and maintained his altitude on top of the weather. At 1454, the pilot contacted Raleigh Approach control and stated: " he was back under control again, and felt good". He requested another approach attempt to RDU. Raleigh Approach control advised the pilot that he was in a continuous left turn and encouraged the pilot to level out and check his flight instrument. Between 1457 and 1458, approach control provided the pilot with VFR alternatives to the Greensboro and Winston-Salem Airports. The pilot requested another RDU ILS approach, and control issued a heading to verify the pilot's capability and ability to hold an assigned heading.</p>					
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AVIATION

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Occurrence Date: 05/03/2004

Occurrence Type: Accident

Narrative (Continued)

At 1503, Raleigh Approach control contacted the pilot to confirm that he had the appropriate approach plate for RDU. The pilot responded that he should be able to handle it, and he just got things screwed up here. The pilot informed approach control that he did not have weather like this in Arizona. Raleigh approach control advised the pilot that he would remain VFR until established on final approach course, then descending into the clouds while in straight and level flight.

During the approach to runway 5L approach control advised the pilot that he was drifting to the right of the localizer. The pilot acknowledged and was issued a correction to rejoin the localizer. The pilot continued to head further right of the localizer. Raleigh approach control issued an emergency surveillance approach, and radar vectors to rejoin the approach centerline with instructions to continue his descent.

Between 1514 and 1517, the pilot turned to the right off of the approach centerline, and was issued an altitude assignment to avoid an antenna. The pilot acknowledged the instructions and reported that he was climbing to 3,000 feet with the wings level. Raleigh approach control radioed the pilot stated there concern for his fuel remaining to complete a diversion to VFR weather at Greensboro Airport. The pilot responded that he wanted to try the approach one more time. Approach control reissued another heading and altitude assignment. The airplane began a descending turn with an increasing ground speed of 151 knots. Radar and radio contact were lost with the pilot as approach control attempted to make contact with no response. At 1545 the Wake County rescue located the downed airplane in a lake within an apartment complex.

Witnesses at the crash site reported seeing the airplane come in at a shallow angle turned sideways. The airplane collided with trees and then a small lake.

PILOT INFORMATION

Review of the pilot's flight records revealed, he was issued a private pilot certificate on October 27, 1994, with airplane single-engine land and an instrument rating. Review of the pilot's last insurance application it was reported that he had a total flight time of 2,493 hours, 2224 flight hours in type, and 1,272 flight hours in model and make. The private pilot held a third-class medical certificate dated September 9, 2003, and valid when wearing corrective lenses.

AIRCRAFT INFORMATION

Review of aircraft maintenance logbooks revealed that the last recorded altimeter, static, and transponder system checks were completed on January 1, 2003. The last annual inspection was conducted on May 1, 2003. The tachometer time at the annual inspection was 2116 hours.

METEOROLOGICAL INFORMATION

The Terminal Area Forecast (TAF) for RDU effective at 1300, forecast wind variable at three knots, greater than six miles visibility, broken clouds at 900 feet, overcast clouds at 2,500 feet. Between 1300 and 1500 the forecast called for a greater than 50 percent chance of three miles visibility in light rain and mist with overcast clouds at 1,200 feet.

From 1500 to 1800, conditions were forecast to include wind from 010 degrees 8 at 10 knots, greater than six miles visibility, broken clouds at 2,500 and overcast at 5,000 feet. From 1800 to 0000, weather conditions were forecast to include winds from 350 degrees at 10 knots, greater than six miles visibility, with broken clouds at 4,000 feet. Between 1900 and 2300 the weather forecast called for a greater than 50 percent chance of visibility five miles in light rain showers with broken clouds at 2,500 feet.

WRECKAGE EXAMINATION

The airplane wreckage was located approximately 5-miles south of the Raleigh-Durham Airport in a small lake in an apartment complex. The debris from the airplane submerged on the northwest side of the lake in approximately 8 feet of water.

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Narrative (Continued)

Examination of the wreckage site revealed freshly broken trees at the beginning of the wreckage path. Approximately 300 feet from the first broken tree there was another tree with freshly broken branches, and an impact mark along the shoreline of a small lake. The airplane was recovered from the lake, and taken to a facility for examination.

Examination of the inboard left wing assembly revealed it was separated from at the mid-section of the wing and crush damaged. The mid-section of the left wing revealed leading crush damage and fragmented. The left wing tip, aileron and flap were fragmented. The left main landing gear was in the stowed position.

Examination of the fuselage and cockpit section revealed it was damaged and fragmented, and the instrument panel was shattered. All flight instruments displayed crush damage.

Examination of the vertical and horizontal stabilizer revealed the left horizontal stabilizer was shattered and the elevator was buckled. The right horizontal stabilizer was separated at the mid-section and the outboard section was fragmented. Examination of the vertical stabilizer revealed it was buckled and crushed.

Examination of the right wing assembly revealed it was separated from the wing root, and broken mid-span of the wing. The leading edge displayed crush damage. The right wing tip was fragmented. The right main landing gear was in the stowed position. The right aileron was buckled, and the right flap was fragmented.

The nose section of the airplane was broken and the engine separated from the airframe. The nose wheel was separated from the airframe.

Examination of the flight control push pull tube system revealed the control tubes were broken at the separation points. Flight control tubes were traced to cockpit controls, and flight control surface attachment points. Examination of the flight, and communication instruments revealed that they sustained heavy damage. Post- accident examination of the airframe did not reveal any flight control anomalies.

Examination of the engine revealed the engine exhibited external damage. Crankshaft rotation was performed and compression was attained in all engine cylinders. The accessory case gears rotated when the crankshaft was rotated. Rocker arm movement was noted on cylinder#1 and #2. The push rods on 4,5,6,3, cylinders were damaged. Spark plug #2 and #5 were damaged. The top plugs for all cylinders were damaged. The vacuum pump, fuel pump, and oil pump was damaged. The fuel servo, fuel manifold, turbo, magnetos, waste gate, alternator, and oil sump were separated from the engine and damaged. The fuel servo filter screen was free of debris. The oil suction screen, and oil filter was free of debris.

Examination of the propeller blades exhibited forward and aft bending on one blade, and chord wise bending and scoring on all three blades. The constant speed propeller hub was damaged. The ignition harness on the engine was damaged. All cockpit power control levers were damaged. The left and right magneto shaft was rotated and all leads displayed spark. Fuel manifold was free of debris. Post examination of the engine did not reveal any mechanical anomalies.

PATHOLOGICAL INFORMATION

The Office of the Chief Medical Examiner, Chapel Hill, North Carolina performed the postmortem examination of the private pilot on May 4, 2004. The reported cause of death was "massive blunt force trauma." The toxicology of examination for the pilot were negative for carbon monoxide, cyanide, drugs and alcohol.

ADDITIONAL INFORMATION

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Occurrence Date: 05/03/2004


Occurrence Type: Accident

Narrative (Continued)

Federal Aviation Administration Advisory Circular 61-23C (Pilot's Handbook of Aeronautical Knowledge), revised 1997 stated the following:

Chapter 9 - Spatial Disorientation and Illusions in Flight Many different illusions can be experienced in flight. Some can lead to spatial disorientation. Others can lead to landing errors. Illusions rank among the most common factors cited as contributing to fatal aircraft accidents. Various complex motions and forces and certain visual scenes encountered in flight can create illusions of motion and position. Spatial disorientation from these illusions can be prevented only by visual reference to reliable, fixed points on the ground or to flight instruments. An abrupt correction of a banked attitude that has been entered too slowly to stimulate the motion sensing system in the inner ear (the leans) can create the illusion of banking in the opposite direction. The disoriented pilot will roll the aircraft back into its original dangerous attitude or, if level flight is maintained, will feel compelled to lean in the perceived vertical plane until this illusion subsides. Any time an attitude is maintained for an extended period, the ears will try to deceive the pilot into believing that the aircraft is in straight-and-level flight. An abrupt head movement in a prolonged constant-rate turn that has ceased stimulating the motion sensing system can create the illusion of rotation or movement in an entirely different axis. An abrupt change from climb to straight-and-level flight can create the illusion of tumbling backwards, while an abrupt upward vertical acceleration, usually by an updraft, can create the illusion of being in a climb. The most overwhelming of all illusions in flight may be prevented by not making sudden, extreme head movements, particularly while making prolonged constant-rate turns under instrument flight rule conditions.

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		Occurrence Date: 05/03/2004			
		Occurrence Type: Accident			
Landing Facility/Approach Information					
Airport Name	Airport ID:	Airport Elevation	Runway Used	Runway Length	Runway Width
RALEIGH-DURHAM INTERNATIONAL	RDU	435 Ft. MSL	5	7500	150
Runway Surface Type: Unknown					
Runway Surface Condition: Unknown					
Approach/Arrival Flown: ILS					
VFR Approach/Landing: Unknown					
Aircraft Information					
Aircraft Manufacturer		Model/Series		Serial Number	
Mooney		M20M		27-0119	
Airworthiness Certificate(s): Normal					
Landing Gear Type: Retractable - Tricycle					
Amateur Built Acft? No	Number of Seats: 4	Certified Max Gross Wt.	3368 LBS	Number of Engines: 1	
Engine Type:	Engine Manufacturer:	Model/Series:	Rated Power:		
Reciprocating	Lycoming	TIO-540	270		
- Aircraft Inspection Information					
Type of Last Inspection	Date of Last Inspection	Time Since Last Inspection	Airframe Total Time		
Annual	05/2003	Hours	2116 Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type Yes /	ELT Operated? No	ELT Aided in Locating Accident Site? No			
Owner/Operator Information					
Registered Aircraft Owner		Street Address			
TLSB INC		3511 SILVERSIDE RD APT 105AP			
		City	State	Zip Code	
		WILMINGTON	DE	19810	
Operator of Aircraft		Street Address			
Jerome Forrest Kurtz		1303 W. Aviator Circle			
		City	State	Zip Code	
		Payson	AZ	85541	
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: Part 91: General Aviation					
Type of Flight Operation Conducted: Personal					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: ATL04FA107
	Occurrence Date: 05/03/2004
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 66
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Sex: M	Seat Occupied: Left	Occupational Pilot? Unknown	Certificate Number: On File
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Certificate(s): Private

Airplane Rating(s): Single-engine Land

Rotorcraft/Glider/LTA: None

Instrument Rating(s): Airplane

Instructor Rating(s): None

Current Biennial Flight Review?

Medical Cert.: Class 3	Medical Cert. Status: Valid Medical--w/ waivers/lim.	Date of Last Medical Exam: 09/2003
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- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	2493	1272	1272							
Pilot In Command(PIC)										
Instructor										
Instruction Received										
Last 90 Days	213									
Last 30 Days										
Last 24 Hours										

Seatbelt Used? Yes	Shoulder Harness Used? Yes	Toxicology Performed? Yes	Second Pilot? No
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Flight Plan/Itinerary

Type of Flight Plan Filed: IFR

Departure Point COLUMBIA	State SC	Airport Identifier CUB	Departure Time 1320	Time Zone EDT
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Destination RALEIGH/DURHAM	State NC	Airport Identifier RDU	
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Type of Clearance: IFR

Type of Airspace: Class C

Weather Information

Source of Wx Information:
Flight Service Station

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: ATL04FA107
	Occurrence Date: 05/03/2004
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Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
RDU	1538	EDT	435 Ft. MSL	5 NM	197 Deg. Mag.
Sky/Lowest Cloud Condition: Unknown			Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken		900 Ft. AGL		Visibility: 0.05 SM	Altimeter: 29.91 "Hg
Temperature: 11 °C	Dew Point: 11 °C	Weather Conditions at Accident Site: Instrument Conditions			
Wind Direction: 30		Wind Speed: 7		Wind Gusts:	
Visibility (RVR): Ft.		Visibility (RVV) SM			
Precip and/or Obscuration:					

Accident Information		
Aircraft Damage: Substantial	Aircraft Fire: None	Aircraft Explosion: None

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers	1				1
- TOTAL ABOARD -	2				2
Other Ground					
- GRAND TOTAL -	2				2

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National Transportation Safety Board

FACTUAL REPORT
AVIATION



NTSB ID: ATL04FA107

Occurrence Date: 05/03/2004

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

Eric H. Alleyne

Additional Persons Participating in This Accident/Incident Investigation:

Richard King
Greensboro FSDO
Greensboro, NC

Edward Rogalski
Lycoming Textron
Williamport, PA