		NTSB ID: ATL02FA069		Aircraft Registration Number: N2BX	
		Occurrence Date: 03/31/2002		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Apex	State NC	Zip Code 27502	Local Time 1153	Time Zone EST	
Airport Proximity: Off Airport/Airstrip		Distance From Landing Facility: 9.5			
Aircraft Information Summary					
Aircraft Manufacturer Piper		Model/Series PA-34-200T		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 March 31, 2002, at 1153 eastern standard time, a Piper PA-34-200T, N2BX, registered to and co-owned by the pilot, experienced an in-flight break-up following maneuvers, and a rapid descent in Apex, North Carolina. The personal flight was operated by the private pilot under the provisions of Title 14 CFR Part 91, and instrument flight rules (IFR). Instrument meteorological conditions prevailed and an IFR flight plan was filed for the personnel flight to Raleigh-Durham International Airport. The pilot and passenger received fatal injuries, and the airplane was destroyed. The flight originated at Malcolm McKinnon Airport in Brunswick, Georgia, at 1000 on March 31, 2002.</p> <p>A review of radar data and recorded voice communications and transcripts between the pilot and Raleigh-Durham (RDU) Air Traffic Controllers (ATC) found that at 1142:50, N2BX was approximately 30 miles south southwest of RDU north departure radar (N-DR) controller and advised he was inbound to the airport at 9,000 feet with information "Romeo." The N-DR controller advised the pilot to expect the ILS runway 5R approach. The pilot read back 5L and the N-DR controller corrected him to expect 5R. At 1145:29 N2BX was approximately 22 miles south southwest of the airport at a ground speed of 186 knots when the N-DR controller instructed the pilot to descend and maintain 4,000 feet and turn 10 degrees to the left. N2BX's Mode C indicated 9,100. At 1146:58 the N-DR controller instructed the pilot to fly heading 320 degrees Mode C indicated 8,000 feet at a ground speed of 203 knots. The pilot acknowledged both transmissions.</p> <p>At 1148:49, N2BX was approximately 13 miles southwest of RDU and the N-DR controller advised, "are you gonna make the descent I'm turning you into the final in about 3 to 4 miles." N2BX's Mode C indicated 7,100 feet at a speed of 164 knots. The pilot acknowledged that he would expedite his descent. At 1149:39, N2BX was approximately 12 miles southwest of RDU when the N-DR controller advised the pilot, "4 miles from the final approach fix turn right heading 010 maintain at or above 2,400 till established on the localizer clear ILS runway 5R approach." SPUNK is the final approach fix for the procedure and is located approximately 7 miles southwest of the airport. The approach extends from the airport southwest with an inbound course along a 052-degree bearing. Mode C indicated 5,400 feet at a speed of 191 knots. At 1150:24, the N-DR controller observed N2BX going through the localizer and instructed the pilot to turn left heading 090 degrees to rejoin. The pilot acknowledged the transmission. N2BX's Mode C indicated 4,100 feet at a speed of 211 knots. At 1150:29, radar data was no longer providing Mode C readout. At 1150:47, the data block indicated the track entered "coast" status and could no longer associate the flight plan information with the radar returns. At 1150:55, the N-DR controller requested the pilot state his altitude. The pilot did not respond. The N-DR controller made several more attempts to contact N2BX. No further communications were received. Search and rescue notifications were initiated.</p>					
FACTUAL REPORT - AVIATION					
					Page 1

National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: ATLO2FA069

Occurrence Date: 03/31/2002

Occurrence Type: Accident

## Narrative (Continued)

Witnesses in the area reported hearing airplane engine noises, then seeing the airplane come out of the fog straight down, with one wing coming down separately and debris continuing to fall afterwards.

## PERSONNEL INFORMATION

A review of information on file with the Federal Aviation Administration (FAA) Airman's Certification Division, Oklahoma City, Oklahoma, revealed the pilot was issued a private pilot certificate on June 19, 1993, with rating for airplane single engine land, multiengine land, and instrument airplane. A review of the pilot's logbook revealed his last recorded biennial flight review was conducted on November 21, 2000. The logbook also revealed that the pilot had accumulated a total time of 619 hours with 206 in single engine airplanes and 410 in multiengine airplanes. A review of records on file with the FAA Aeromedical Certification Division revealed the pilot held a third class medical certificate issued on October 23, 2001.

## AIRCRAFT INFORMATION

A review of the aircraft maintenance records revealed the last recorded annual inspection was completed on March 1, 2002, at 3,443.5, hour's total time and 7.0 hours since that inspection at the time of the accident.

## METEOROLOGICAL INFORMATION

The nearest weather reporting facility at the time of the accident was Raleigh-Durham, North Carolina RDU. The 1151 surface weather observation was: winds from 040-degrees at 7 knots; 1 1/2 statute miles visibility, mist, broken at 500 feet and overcast at 5,500 feet. Temperature was reported at 13-degrees Celsius, dew point 12-degrees Celsius, and altimeter setting of 30.03.

## WRECKAGE AND IMPACT INFORMATION

Initial examination found the wreckage scattered approximately three-quarters of a mile throughout a wooded and residential area. The cabin and empennage sections of the fuselage and the vertical fin were found inverted in a wooded area with both engines in close proximity. The nose cone was found 530 feet from the fuselage on a bearing of 304 degrees magnetic. The majority of the left wing outboard of the engine nacelle was found 540 feet from the fuselage on a bearing of 081 degrees magnetic. A portion of the outboard left wing with the stall warning port was found 740 feet from the fuselage on a bearing of 267 degrees magnetic. The tip of the left wing was found 775 feet from the fuselage on a bearing of 288 degrees magnetic. The right wing outboard of the engine nacelle was found 170 feet from the fuselage on a bearing of 308 degrees magnetic. The right side of the horizontal stabilator was found 395 feet from the fuselage on a bearing of 219 degrees magnetic. Portions of the left horizontal stabilator were not located.

The main wreckage consisted of the fuselage, vertical fin and rudder, and both engines. The main wreckage was found inverted. The cabin and fuselage were crushed. Blue marks were displayed on the left side of the fuselage near the pilot's side and top section of the cabin area. The left fuel selector valve was found in the off position, the right valve was found in the cross feed position. The flap handle was found in the flap up position. The landing gear lever was found in the down position. The left side of the vertical fin had blue marks. The left and right side of the stabilator was separated. Blue and black marks were displayed on the left and right side near the aft tie down area. The surface skin separation area near the root on both the left and right side was bent downward. The trim drum measured 1 3/8 inches and displayed 14 threads, which translates to neutral position. The left stabilator balance weight on the inner surface area, had damage and scoring in an aft direction. The left stabilator tip was separated. The rest of the left side of the stabilator was not found. The trim tab was separated in half. The left and right side of the trim tab was curved in a downward manner. The right side of the stabilator balance weight was separated and not found. Several trees and surrounding brush were also damaged.

Examination of the left wing, aileron and flap were found that the wing was cut near the wing root for aircraft recovery. The wing was separated approximately 7 feet from the wing root. The bottom spar separation area was bent upward approximately 45-degrees.

National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: ATLO2FA069

Occurrence Date: 03/31/2002

Occurrence Type: Accident

## Narrative (Continued)

The matting surface for the top spar, approximately 6 inches, was not found. This spar section was located behind the inboard fuel tank area, and this section of the wing measured 6 feet in length. The top spar separation area on the 6-foot section of the wing displayed tension and was bent upward, and 9 inches outboard. The top spar was bent downward approximately 45-degrees. The skin section on the top spar displayed buckling. The bottom section of the spar in the same location was broken. The first piece measured 25 inches the second section, which displayed compression, measured 9.5 inches. Behind the inboard fuel tank the main spar, displayed reapplied zinc chromate. The left fuel cap was not in-place. The left aileron was separated from its attachment points. The aileron was bent in a "V" like shape. The balance weight was attached. The aileron cables were attached to the bell crank and separated near the mid wing area. The cable separation was unwound. The aileron stops were in-place and intact. A section of the left main spar was sent to the NTSB's metallurgical laboratory in Washington, DC for further examination.

Examination of the right wing found the wing, flap and aileron impact damaged. The wing was separated at the wing root. The main landing gear was found in the down and locked position. The upper main spar cap at the wing root separation displayed compression damage, and the bottom spar cap separation displayed tension damage. Outboard of the right engine nacelle, the wing was also separated. This section of the spar displayed upward bending. The separated area of the upper spar cap displayed plastic hinging and the bottom spar cap displayed tension overload.


Examination of the left engine found it to be a Teledyne Continental engine model TSIO-360-EB, S/N: 809018-R, and was found with impact and fire damage. The propeller was broken free of the engine at the propeller flange. The top of the engine and the induction system were destroyed. The engine and part of the left wing were found upside down on the right side of the aircraft. The induction tubes, throttle body and metering valve was crushed. Both were broken free of the engine and fire damaged. Spark plug wires were destroyed. The fuel manifold valve was intact; all fuel injection lines were crushed. The turbo-charger was intact and the turbines turned freely, the alternator was impact and fire damaged. Fuel was found in the manifold divider. Brown sludge was found in the manifold fuel screen. The oil sump was removed and the camshaft was intact and in-placed. Both magnetos were broken free of the engine and were impact and fire damaged however, the right magneto produced spark in a field test. Approximately two quarts of oil was drained from the engine. The oil sump was removed. The valley was clean with no debris. The oil pickup tube and screen were clear of debris. The camshaft, crankshaft, and lifters exhibited normal lubricating signatures. The cylinders, push rods, exhibited normal operating signatures. The fuel pump rotated by hand. The left propeller had impact damage. Blade labeled "A" had smeared dirt. Blade "B" had leading edge scratches on the camber side. Other than impact and fire damage, no discrepancies were found that would have prevented the engine from operating normally.

Examination of the right engine found it to be a Teledyne Continental engine model TSIO-360-E, S/N: 306017, and was found with impact damage. The fuel pump, induction tubes, spark plug wires, oil lines, and turbo-charger tail exhaust were impact damage. The turbo-charger bracket was broken however, the turbines turned freely by hand. The alternator, exhaust runners, and prop spinner were impact damaged. The fuel pump fuel supply line elbow was broken, vapor tower was impact damaged and the coupling was intact. The fuel pump rotated freely when turned by hand. The number six fuel injection line and fuel supply line were broken at the valve. The valve was separated and contained clean fuel. Crankshaft continuity was established through the gear train, cylinder movement and push rod movement by rotating the propeller 90-degrees. The vacuum pump was intact; the vanes were intact, and turned freely when rotated by hand. Other than impact damage, no discrepancies were found that would have prevented the engine from operating normally.

The right propeller blades were impact damaged. Propeller blade "A" was bent aft 90 degrees. The leading edge had "S" bending and two-inches of the blade tip was missing and not located. Propeller blade "B" had cord wise scratches near the hub and had "S" bending on the outboard portion of the blade. The blade tip had two-inches missing and not located.

## MEDICAL AND PATHOLOGICAL INFORMATION

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 tests were not performed.

 <p>National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION</p>	NTSB ID: ATL02FA069
	Occurrence Date: 03/31/2002
	Occurrence Type: Accident

## Narrative (Continued)

The Office of the Chief Medical Examiner, Chapel Hill, North Carolina, conducted a postmortem examination of the pilot-in-command, on April 1, 2002. The cause of death was blunt force trauma.


## TEST AND RESEARCH


Components from the left wing main spar were forwarded to the NTSB Materials Laboratory for further analysis. All fractures examined by the NTSB Materials Laboratory were typical of overstress separations, and there was no preexisting cracking such as fatigue noted.

## ADDITIONAL INFORMATION

The wreckage was released to Atlanta Air Recovery on April 2, 2002. The components forwarded to the NTSB Material Laboratory for further analysis were released to Atlanta Air Recovery on May 20, 2002.

A review of the airplane's operations manual found that the Manufacturers recommended Vne speed for this airplane was not to exceed 195 knots. In addition was the following, "Do not exceed this speed in any operation." In either indicated or calibrated airspeed expressed in knots.

 <b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: ATL02FA069				
		Occurrence Date: 03/31/2002				
		Occurrence Type: Accident				
<b>Landing Facility/Approach Information</b>						
Airport Name Raleigh/Durham International		Airport ID: RDU	Airport Elevation 436 Ft. MSL	Runway Used 5R	Runway Length 7500	Runway Width 150
Runway Surface Type: Asphalt						
Runway Surface Condition: Wet						
Approach/Arrival Flown: ILS						
VFR Approach/Landing: None						
<b>Aircraft Information</b>						
Aircraft Manufacturer Piper		Model/Series PA-34-200T		Serial Number 34-7770344		
Airworthiness Certificate(s): Normal						
Landing Gear Type: Retractable - Tricycle						
Amateur Built Acft? No		Number of Seats: 6		Certified Max Gross Wt. 3400 LBS	Number of Engines: 2	
Engine Type: Reciprocating		Engine Manufacturer: Continental		Model/Series: TSIO-360-E		Rated Power: 200 HP
- Aircraft Inspection Information						
Type of Last Inspection Annual		Date of Last Inspection 03/2002		Time Since Last Inspection 7 Hours		Airframe Total Time 3443 Hours
- Emergency Locator Transmitter (ELT) Information						
ELT Installed?/Type Yes /		ELT Operated? No		ELT Aided in Locating Accident Site? No		
<b>Owner/Operator Information</b>						
Registered Aircraft Owner  Louis Miller Scheidt, Jr.		Street Address 6216 Trevor Court				
		City Raleigh		State NC	Zip Code 27613	
Operator of Aircraft  Louis Miller Scheidt, Jr.		Street Address 6216 Trevor Court				
		City Raleigh		State NC	Zip Code 27613	
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><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: ATL02FA069
	Occurrence Date: 03/31/2002
	Occurrence Type: Accident

**First Pilot Information**

Name On File	City On File	State On File	Date of Birth On File	Age 47
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Sex: M	Seat Occupied: Left	Occupational Pilot? <b>Business</b>	Certificate Number: On File
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Certificate(s): **Private**

Airplane Rating(s): **Multi-engine Land; Single-engine Land**

Rotorcraft/Glider/LTA:

Instrument Rating(s): **Airplane**

Instructor Rating(s): **None**

Current Biennial Flight Review? **11/2000**

Medical Cert.: <b>Class 3</b>	Medical Cert. Status: <b>With Waivers/Limitations</b>	Date of Last Medical Exam: <b>10/2001</b>
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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	619	410	206	410	40	46	37			
Pilot In Command(PIC)	519	410	206	410	40	46	37			
Instructor										
Instruction Received										
Last 90 Days	13	13		13						
Last 30 Days	5	5		5	1					
Last 24 Hours	1	1		1						

Seatbelt Used? <b>Yes</b>	Shoulder Harness Used? <b>Yes</b>	Toxicology Performed? <b>Yes</b>	Second Pilot? <b>No</b>
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**Flight Plan/Itinerary**

Type of Flight Plan Filed: **IFR**

Departure Point <b>Brunswick</b>	State <b>GA</b>	Airport Identifier <b>SSI</b>	Departure Time <b>1000</b>	Time Zone <b>EST</b>
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Destination <b>Raleigh-Durham</b>	State <b>NC</b>	Airport Identifier <b>RDU</b>	
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Type of Clearance: **IFR**

Type of Airspace: **Class C**

**Weather Information**


Source of Wx Information:  
**Flight Service Station**

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: ATL02FA069
	Occurrence Date: 03/31/2002
	Occurrence Type: Accident

<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
RDU	1151	EST	436 Ft. MSL	5 NM	30 Deg. Mag.
Sky/Lowest Cloud Condition: Thin Broken			500 Ft. AGL	Condition of Light: Day	
Lowest Ceiling: Broken		500 Ft. AGL		Visibility: 1.5 SM	Altimeter: 30.03 "Hg
Temperature: 13 °C	Dew Point: 12 °C	Weather Conditions at Accident Site: Instrument Conditions			
Wind Direction: 40		Wind Speed: 7		Wind Gusts:	
Visibility (RVR): Ft.		Visibility (RVV) SM			
Precip and/or Obscuration:					

<b>Accident Information</b>		
Aircraft Damage: Destroyed	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

 National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION	NTSB ID: ATL02FA069	
	Occurrence Date: 03/31/2002	
	Occurrence Type: Accident	

Administrative Information

Investigator-In-Charge (IIC)

Butch Wilson

Additional Persons Participating in This Accident/Incident Investigation:

Tony Burnhart  
Federal Aviation Administration  
Greensboro, NC

Robert Martellotti  
The New Piper Aircraft, Inc.  
Vero Beach, FL

Albert Butler  
Continental Motors  
Daphne, AL