National Transportation Safety Board
Aviation Accident Final Report

Location:	Homerville, GA	**Accident Number:**	ATL03FA068
Date & Time:	03/27/2003, 0113 EST	**Registration:**	N53LG
Aircraft:	Rockwell 690B	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Analysis

The flight was in cruise flight at 27,000 feet when the airplane encountered unforecasted severe turbulence. The pilot made a "mayday" on the airplane radio to Jacksonville Center. Within several seconds the airplane accelerated from 175 knots through 300 knots groundspeed and descended from 27,000 feet to 16,500 feet. The airplane disappeared from radar coverage and was located by Sheriff Department personnel 15 miles north of Homerville, Georgia, in a swampy area. Airframe components recovered from the accident site were submitted to the NTSB Materials laboratory for examination. The examinations revealed all failures were due to overload. Examination of the airframe revealed that the airframe design limits were exceeded. The pilot did not obtain a weather briefing before the flight departed.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An in-flight encounter with unforecasted severe turbulence in cruise flight resulting in the design limits of the airplane being exceeded due to an overload failure of the airframe, and collision with a swampy area.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: CRUISE

Findings
1. (C) WEATHER CONDITION - TURBULENCE

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: DESCENT - UNCONTROLLED

Occurrence #3: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: DESCENT - UNCONTROLLED

Findings
2. (C) AIRFRAME - OVERLOAD
3. DESIGN STRESS LIMITS OF AIRCRAFT - EXCEEDED - PILOT IN COMMAND

Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings
4. TERRAIN CONDITION - SWAMPY

Factual Information

HISTORY OF FLIGHT

On March 27, 2003, at 0113 eastern standard time, a Rockwell 690B, N53LG, registered to Haulers Insurance Company Inc., operating as a 14 CFR Part 91 positioning flight, broke up in-flight while descending in the vicinity of Homerville, Georgia. Instrument meteorological conditions prevailed at flight altitude and an instrument flight plan was filed. The airplane was destroyed. The airline transport rated pilot and the sole passenger received fatal injuries. The flight originated from Mount Pleasant, Tennessee, after the pilot received an instrument flight rules clearance and departed on March 26, 2003, at 2300 central standard time.

Communication with Air Traffic Control Facilities along the route of flight before initial contact with Jacksonville Air Route Traffic Control Center (ARTCC) were normal. A review of radio communications between Jacksonville ARTCC and the pilot revealed the pilot had contacted Jacksonville ARTCC at 00:53:26. The pilot stated, "good evening Jacksonville commander five three lima golf with you at flight level two seven zero." At 01:12:10, a pilot stated, "mayday mayday." There was no other known recorded communications with the crew of N53LG.

A review of radar and performance data revealed that the airplane was at 27,000 feet mean sea level (MSL), at 175 knots groundspeed, and heading southeast at 01:11:41. At 01:11:55, the airplane was at 26,600 feet in a left turn at 200 knots. At 01:11:57, the airplane was at 25,700 feet at 200 knots. At 01:12:04, the airplane was heading northeast at 23,200 feet at 245 knots. At 01:12:10, the airspeed was 275 knots. The last radar return was at 01:12:16, and the airplane was at 16,500 feet at 299 knots. The airplane was located by Sheriff Department personnel at 0615.

PERSONNEL INFORMATION

A review of information on file with the FAA Airman's Certification Division, Oklahoma City, Oklahoma, revealed the pilot was issued an airline transport pilot certificate and flight instructor certificate on December 11, 2001, with ratings for airplane single engine land, multiengine land and instrument airplane. The pilot held a second-class medical certificate issued on October 14, 2002, with no restrictions. A review of the pilot's logbook revealed the last recorded entry was on February 21, 2003. The pilot had logged 3,569.4 hours of which 35.6 were in the Rockwell 690B. The pilot's first recorded flight in the Rockwell 690B was on October 21, 2002. A review of documents obtained from the registered owner of the airplane revealed the pilot had flown an additional 10.2 hours between March 7, 2003, and March 23, 2003.

The pilot filed a computer direct user access terminal service (DUATS) instrument flight plan from Mount Pleasant, Tennessee, to Titusville, Florida. The pilot listed himself as pilot, checked NOTAMS, and terminated the DUATS briefing at 12:39:53. The pilot filed a second computer flight plan from Titusville to Mount Pleasant. The pilot listed himself as the PIC, checked NOTAMS, and terminated the DUATS briefing at 12:41:24. No enroute weather information was requested during the DUAT sessions.

AIRCRAFT INFORMATION

The Model 690B is a high wing, all metal twin-engine pressurized aircraft and is designed primarily for executive transportation. The aircraft environmental system consists of the cabin

pressurization and air conditioning system and includes provisions for ram air ventilation during unpressurized flight. The overall environmental system is designed to provide desired passenger and crew comfort during all phases of aircraft operation.

A review of information on file with the FAA Aircraft Records Division, Oklahoma City, Oklahoma, revealed the airplane had no recorded accident or incident history. Both engines had been removed from the airplane on December 4, 2001. According to the engine logbooks, the left engine was overhauled and reconfigured to a TPE-331-10T-516K, with 5,000-hours of time remaining before overhaul on March 8, 2002. The right engine was overhauled and reconfigured to a TPE-331-10T-516K, with 5,000-hours of time remaining before overhaul on March 11, 2002. The left and right engines were reinstalled on the airplane and the last recorded periodic inspection was conducted on April 4, 2002, at Hobbs time 1846.3.The aircraft total time at installation was 6168.3. The pitot system check and transponder inspection was conducted on April 4, 2002. The last recorded logbook entry was on February 21, 2003, at Hobbs time 1,983.4. According to the registered owner the airplane had flown 10.2 hours since February 21, 2003.

A review of refueling records revealed the airplane was last refueled on March 26, 2003, with 250 gallons of Jet A fuel.

METEOROLOGICAL INFORMATION

The Surface Analysis Chart for 0100 depicted a low-pressure area in the Gulf of Mexico south of Louisiana with a frontal wave. A stationary front was depicted extending northeast from the low front across the Florida panhandle into southeast Alabama, into central Georgia, before turning into a cold front across South Carolina, North Carolina, and off the Atlantic Coast. A cold front extended to the south of the low-pressure system with a trough of low pressure to the east, which extended into northern Florida. Ahead of the cold front and south of the stationary front a squall line was depicted in the Gulf of Mexico off the Florida west Coast. The accident site was located south of the stationary front and downstream of the low-pressure system.

The Constant pressure charts for 1900 on March 26, 2003, depicted two defined jet streams with wind in excess of 50 knots north and south of the accident site, with the accident site in the confluence region between the two systems. The subtropical jet stream was depicted over central Florida to the south of the accident site with indicated winds of 125 knots at 30,000 feet, which resulted in an approximately 60 knots per 150 mile horizontal wind shear from the accident site to the maximum wind across central Florida.

FAA Advisory Circular 00-45 identifies the potential for moderate turbulence when horizontal wind shears exceed 18 knots per 150 miles, and vertical shears exceed 6 knots per 1,000 feet. Severe turbulence is possible where horizontal shears exceed 40 knots per 150 miles, and vertical shears exceed 10 knots per 1,000 feet.

The Upper Air Data sounding for Jacksonville, Florida, at 1900 on March 26, 2003, at 27,000 feet, showed an isothermal layer or a shallow layer where no temperature occurred. Winds increased rapidly above 30,000 feet with several layers with vertical wind shears greater than 5 knots per 1,000 feet, which are associated with severe turbulence. At 31,000 feet there was a 100 percent probability of severe turbulence. The 1900 Upper Air Sounding for Jacksonville shows at 24,100 feet a 100 percent probability of severe turbulence.

The Satellite Data imagery surrounding the time of the accident depicted a large area of high "cirrostratus" type cloud cover that was indicated by enhanced colors over eastern Georgia, and

northern Florida, which extended over the accident site. The cloud band had a defined edge located approximately 30 miles west and northwest of the accident site which corresponded to cloud tops near 33, 000 feet.

The nearest weather reporting facility at the time of the accident was Moody Air Force Base, Valdosta, Georgia, located 15 miles west-southwest of the accident site. The 0056 surface weather observation was: wind 010 at 2 knots, visibility 8 miles in mist, 7,500 scattered, 15,000 broken, 25,000 overcast, temperature 64 degrees Fahrenheit, dew point temperature 59 degrees Fahrenheit, and altimeter 29.87.

There were no pilot reports (PIREPs) recorded over Georgia between 1900 to 0700 in the FAA database. After 0900 there were several reports of light to moderate turbulence reported between 33,000 to 35,000 feet, and one isolated report of moderate to severe turbulence at 7,000 feet over Georgia. A Boeing 727 pilot who was in the vicinity of the accident flight stated he was at 31,000 feet in instrument flight conditions with light chop and possible light rime icing when they heard the initial "may day" call. He was asked by the controller to descend to 27,000 feet and attempt to contact the accident airplane. The Boeing 727 pilot was unable to contact the accident airplane. He remained in instrument flight conditions with the same approximate flight conditions.

Review of in-flight weather advisories revealed there were no areas of organized turbulence forecasted. There was no record of the accident pilot contacting any FAA Automated Flight Service Station to receive a formal weather briefing.

WRECKAGE AND IMPACT INFORMATION

The main wreckage was located 15 miles north of Homerville, Georgia, off Hwy 168 adjacent to Couch Road in a swampy area. The crash debris line was on a heading of 024-degrees magnetic and extended for 8,081 feet. Examination of the crash site revealed the airplane collided with swamp in an upright nose down attitude. The airplane came to rest on a heading of 035-degrees magnetic.

The left and right elevators were located 2,351 down the debris line and 3,233 feet left of the debris line. The left outboard wing section was located 4,235 feet down the debris line and 16 feet right of the debris line. The vertical stabilizer was located 5,839 feet down the debris line and 127 feet left of the debris line. The left horizontal stabilizer was located 6, 258 feet down the debris line and 213 feet left of the debris line. The right horizontal stabilizer was located 7, 960 feet down the debris line and 920 feet right of the debris line. The rudder was located 8,081 feet down and on the crash debris line.

The nose section was displaced to the left at the windshield frame 78 inches aft of the radar dome. The radar dome was separated from the nose section and located directly forward of the nose dome. The left and right windshields separated from the upper attach point and remained attached to the center post. The nose gear was in the retracted position.

The cockpit was displaced to the left and aft 163-inches. The cockpit was crushed upward and inward on the right side of the fuselage. The left and right rudder cable arms were separated at the rudder pedal torque tubes. Continuity was confirmed from the broken rudder cable arms to aft of the cabin area where the rudder control cables were cut for recovery. Control cable continuity was established from both flight control yokes to the aileron master bellcrank aft of

the cabin area where the aileron cables were cut for recovery. The elevator control torque tubes were separated between the control columns and the elevator control bellcrank. Elevator control cable continuity was confirmed from the elevator bellcrank aft to the aft cabin area where the elevator control cables were cut for recovery. The aft cabin area was displaced to the right rearward to the main wing spar. The left hand cabin overhead was displaced upward and to the left and downward below the cabin window.

The right wing spar upper cap was attached to the wing root, and the right wing was displaced aft. The upper spar cap was bent downward 24-inches outboard of the aircraft centerline. The leading edge of the inboard wing was crushed inward with diagonal crushing extending outboard from the wing root to the right engine nacelle. All inner wing bladder fuel tanks were ruptured. The right engine assembly was displaced to the right and the engine was attached to the engine mounts. The front engine mounts were attached to the engine and the rear mounts were attached to the engine and airframe. The right wing outboard of the right engine nacelle was bent upward. The leading edge of the right wing sustained diagonal crushing extending 6 feet outboard of the engine nacelle. The outboard wing section separated 178-inches outboard of the airplane centerline. A diagonal tear was present 178-inches outboard of the aircraft center line extending aft and inboard from the leading edge of the wing to a point on the trailing edge of the wing located 142-inches outboard of the center line of the airplane. The outboard fuel bladder tanks were ruptured. The right aileron separated and was not recovered. The inboard flap was attached at the hinge point and was in the retracted position. The outboard flap separated from the hinge point. The right aileron control cable was attached to the bellcrank arm. The bellcrank arm separated from the aileron torque tube. The balance aileron control cable exhibited evidence of was broomstrawing.

The right engine was removed and shipped to Honeywell in Phoenix, Arizona, for further examination. The engine was covered with dried mud and debris and displayed evidence of impact damage. The nose cone assembly was removed from the engine and the propeller shaft bearing was free to rotate. A 45-degree segment of the propeller flange was bent aft about 0.1 inch, and one propeller alignment dowell was missing from the propeller flange. The nose cone housing was not damaged and oil was present in the nose cone cavity. The chip detector was removed and a sliver of magnetic metal about 0.2 inches long was adhered to the magnet. The planet carrier and gear assembly, and planetary spur gear and ring gear support were not damaged. The intermediate housing and gearbox assembly was intact and all gears were free to rotate. The oil pump spline was intact and rotated freely. The bull gear and high-speed pinion assembly was intact and rotated freely. The ring gear mount dowels were laterally displaced. The accessory drive gear case was damaged and covered with dirt and mud. The inlet portion of the housing was crushed. The gearbox portion of the housing was penetrated in two locations and a small quantity of oil was present in the gearbox. All interior components were oil wetted. All accessory drive-housing bearings were free to rotate. The torque sensor system was not damaged; all bearings were oil wetted and free to rotate. All gears in the direct drive fuel control train were free to rotate.

The compressor section was not disassembled. The leading edges of the 1st stage impellers were examined from the inlet duct. Several blades were bent in the direction opposite of rotation. The combustion plenum was intact and covered with dried mud and debris. The combustion chamber inner skirt, outer transition liner, and fuel nozzle cooling ducts were covered with dried mud. Radial streaking was present upon the complete circumference of the outer transition liner. Rotational scoring was present on all blade tips of the first stage turbine

rotor. Metal spray deposits were present on the suction side of the 1st stage turbine rotor. Rotational scoring was present through 15-degrees on the 2nd stage turbine blade tip shroud, and rotational scoring was present on the tips of the 2nd stage turbine rotor. Metal spray deposits were present on the suction side of the vanes of the 2nd stage turbine nozzle. Metal spray deposits were present on the suction side of the blades in the 2nd stage turbine rotor, and on the suction side of the vanes of the 3rd stage turbine nozzle. The fuel filter was removed and contained fuel. The oil tank was intact and contained residual oil.

The right propeller assembly was separated from the engine at the engine propeller flange. The piston and cylinder assembly separated from the hub and was held on by a link arm. The spinner dome was torn with missing pieces, and the spinner bulkhead was dented and crushed on one side. The propeller attachment bolts were either fractured or the hub threads were stripped. All three propeller blades remained in the blade clamps, one propeller blade rotated about 20-degrees toward low pitch. Two propeller blades were bent aft 90-degrees and twisted toward low pitch. Deep gouges were present along the leading edge and blade tip on one propeller blade. The remaining propeller blade was bent forward 20-degrees with a large radius bend. The outer one-inch of the propeller blade tip had separated and was missing. No rotational scoring was present in the paint on any of the propeller blades.

The tailcone separated aft of the hood farmer and was displaced to the right. The tailcone was crushed and twisted to the right extending rearward from the hood farmer aft 440-inches, where the empennage separated from the tailcone. The left hand rudder cable was attached to the left hand bellcrank. The bellcrank was separated from the rudder torque tube and the rudder stops were intact. The right hand rudder cable exhibited evidence of broomstrawing and was not attached to the bellcrank. The right hand rudder bellcrank was missing. The left and right elevator cables were located off their respective pulleys.

The right horizontal stabilizer separated from the frame 455-inches aft of the radar dome. The horizontal stabilizer forward and rear spars were separated. The leading edge of the horizontal stabilizer spar was crushed inward 23-inches outboard of the horizontal stabilizer root and extended outboard 53-inches from the horizontal stabilizer root. The remaining of the leading edge sustained diagonal crushing. The elevator separated from the stabilizer attachment point. A faint blue paint transfer was present 53-inches outboard of the stabilizer root. The right elevator outboard section separated at the inboard hinge and the leading edge sustained impact damage.

The left horizontal stabilizer separated from the frame 455-inches aft of the radar dome. The left elevator separated at the hinge point with the stabilizer attach points, and the leading edge sustained impact damage.

The vertical stabilizer separated at the fuselage tailcone frame with sections of the frame attached. The vertical stabilizer rear spar separated from the fuselage frame and was broken out at the horizontal attachment points. The rudder torque tubes remained attached to the vertical stabilizer. The upper rudder attachment point was broken out. The lower rudder attachment point separated from the vertical stabilizer and remained attached to the rudder. The vertical stabilizer leading edge was twisted to the right of centerline. The rudder torque tube attachment fitting was broken out. The lower rudder hinge was intact with a section of the vertical stabilizer attachment point. The upper rudder attachment point was twisted to the left

of centerline and the rudder cap with balance weight was missing. The left side of the rudder skin was torn from a point at the upper hinge aft and downward 1foot 9-inches. The rudder was buckled to the right 2½ feet from the rudder torque tube attachment point.

The left wing was attached to the wing root, and was displaced forward. The leading edge of the left inboard wing sustained wrinkling 1 foot outboard of the wing root and a dent in the leading edge with aft crushing was noted 4 feet outboard of the wing root. The inboard fuel bladder tanks were not ruptured. The engine assembly remained attached to the airframe. The inboard and outboard flaps were attached to the flap hinges and the flaps were in the retracted position. Two of the six outboard fuel bladder tanks were ruptured. The left wing separated 178-inches outboard of the aircraft centerline with the aileron attached. The leading edge of the wing outboard of the nacelle sustained crushing 1 foot outboard of the engine nacelle extending outboard 3 ½ feet and aft about 2-inches. The aileron was not recovered. The separated outboard wing leading edge sustained diagonal crushing 2 feet outboard of the separation. The wing tip separated and was not recovered. The left main landing gear was in the retracted position. The left aileron control cable was attached to the bellcrank arm. The bellcrank arm separated from the aileron pivot torque tube. The balance aileron control cable exhibited evidence of broomstrawing.

The left engine was removed and shipped to Honeywell in Phoenix, Arizona, for further examination. The engine displayed evidence of impact damage and the propeller shaft was free to rotate. The nose cone assembly was removed from the engine and oil was present in the nose cone cavity. The chip detector was removed and was free of magnetic particles. The planet carrier and gear assembly, and planetary spur gear and ring gear support were not damaged. The intermediate housing and gearbox assembly was intact and all gears were free to rotate. The sun gear teeth were not damaged. The bull gear and high-speed pinion assembly was intact and rotated freely. The ring gear mount dowels were laterally displaced. All accessory drives were free to rotate. The accessory drive housing contained about 1 liter of engine oil. The hydraulic pump spline was sheared. The torque sensor system was not damaged; all bearings were oil wetted and free to rotate. All gears in the direct drive fuel control train were free to rotate.

The compressor section was not disassembled. The leading edges of the 1st stage impellers were examined from the inlet duct. Several blades were bent in the direction opposite of rotation. As the turbine assembly was removed from the combustor housing, organic debris and dirt was observed in the cavity. A portion of the debris showed evidence of burning. The igniter plug cooling holes were plugged with debris. The inner transition liner was not damaged but filled with organic debris and dirt. Rotational scoring was present on the 2nd stage turbine shroud corresponding with 2nd stage turbine rotor tip rub. Metal spray deposits were present on the suction side of the blades of the 1st stage turbine rotor. Metal spray deposits were present on the suction side of the vanes of the 2nd stage turbine nozzle. Metal spray deposits were present on the suction sides of the blades in the 2nd stage turbine rotor. Metal spray deposits were present on the suction side of the vanes of the 3rd stage turbine nozzle, and on the suction side of the blades of the 3rd stage turbine rotor.

The left propeller spinner remained attached to the propeller hub. The propeller assembly was attached to the engine propeller flange. The left propeller was removed from the engine for examination. One propeller blade was separated from the propeller clamp and was embedded in the left side of the cabin fuselage. The remaining two propeller blades did not rotate and

remained in their clamps. Two link arms were undamaged and one link arm was bent. One propeller blade was bent aft 90-degrees, another blade was bent aft 45-degrees, the remaining propeller blade was bent forward at mid-blade and bent aft. All three-propeller blades were twisted toward low pitch.

The left and right fuel control unit was forwarded through the NTSB Northwest Regional Office for examination at the manufacturer. Functional testing of both units was not possible due to the extent of damage to the fuel control units. Both units were disassembled. All levers assemblies and springs within the control were in good condition. All bleeds and orifices were removed and examined for contamination. No blockage was noted. The orifice heater box on the left fuel control unit was loose on the attachment plate and the drive shaft assembly was in good position. The torsion shaft and ratio levers on the left fuel control unit were in good condition. The drive shaft assembly on the right fuel control unit would not rotate smoothly due to damage. All flyweights and spool bearing assemblies on the right fuel control unit were in good condition, and the torsion shaft was distorted. No abnormal conditions were noted on the left and right fuel control units metering valve, governor, acceleration bellows, and bypass assemblies. No internal contamination was noted and all packing and gaskets were in good condition.

Two pieces of the left wing, two pieces of the right wing, a piece of fuselage skin, upper and lower pieces of the vertical stabilizer, a piece of rudder, a piece of the left horizontal stabilizer, and a piece of the right horizontal stabilizer were submitted to the NTSB Materials Laboratory for further examination. All fracture surfaces were overstress fractures. There was no evidence of preexisting cracking or fatigue observed on any fracture surface. Fracture surfaces that were not damaged generally appeared matte gray and were on slant planes. The left wing, left and right horizontal stabilizer fractured in downward bending. The right wing fractured in upward bending. The vertical stabilizer fractured from the fuselage with the leading edge moving upward relative to the fuselage. The rudder tip fractured moving to the left and aft relative to the rudder.

MEDICAL AND PATHOLOGICAL INFORMATION

The Georgia Bureau of Investigation Medical Examiner conducted a postmortem examination of the airline transport rated pilot, on March 28, 2003. The cause of death was generalized 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, ethanol, and basic, acidic, and neutral drugs.

The Georgia Bureau of Investigation Medical Examiner conducted a postmortem examination of the passenger on March 28, 2003. The cause of death was generalized 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. Paroxetine, an antidepressant was detected in the blood, urine, and liver.

TEST AND RESEARCH

Twin Commander Aircraft Corporation Service Bulletin No.220, dated February 1, 1995, MANDATORY REDUCTION IN SPEED DURING TURBLENCE states, " there have been two accidents involving Model 690 series aircraft resulting in loss of the aircraft, due to

encountering turbulence while descending at high airspeed....Excessive airspeed in turbulence can cause structural damage or loss of the aircraft.

Review of the PILOT'S OPERATING HANDBOOK, SECTION III EMERGENCY PROCEDURES, FLIGHT IN MODERATE TO SEVERE TURBLENCE, states," If moderate to severe turbulence cannot be avoided, the following procedure is recommended: Avoid control action which could give rapid changes in attitude, altitude, or airspeed; whenever possible achieve steady flight conditions prior to entry into turbulence. Flaps should be fully retracted and autopilot disengaged. Slow to VA speed in severe turbulence, or turbulence penetration speed in moderate turbulence, keep pilot control movements to a minimum and fly a straight course through the turbulence, as far as practicable concentrating on attitude and disregarding altitude.

WARNING Failure to slow to VA can result in structural damage or loss of airplane due to the magnitude of the gust loads or loss of control.

WARNING DO NOT retard power levers aft of FLT IDLE stop to reduce the airplane speed. In-flight operation aft of FLT IDLE stop may result in structural damage or loss of airplane.

NOTE Since a finite period of time is required to reduce speed from the onset of turbulence, a speed reduction should be accomplished in anticipation of suspected turbulence, whenever possible."

The placard in the airplane states, "WARNING MAXIMUM AIRSPEED IN MODERATE TURBLENCE 180 KTS, MAXIMUM AIRSPEED IN SEVERE TURBLENCE OR ABRUPT CONTROL MOVEMENT 148 KTS AT MAX WEIGHT."

ADDITIONAL INFORMATION

The wreckage was released to Atlanta Air Recovery, Griffin, Georgia, on March 29, 2003. The airplane logbooks and Chief pilot logbooks were released to the President of Haulers Insurance Company Inc., April 11, 2003. The outboard section of the left wing, right wing top and bottom main spar section, left and right horizontal stabilizer, right side vertical stabilizer rudder top hinge point, right side lower vertical stabilizer right side stabilizer section, rudder cap attach area, and outboard tailcone section were released to Atlanta Air Recovery, Griffin, Georgia, on September 24, 2003.

Pilot Information

Certificate:	Airline Transport; Commercial	**Age:**	39, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	10/14/2002
Occupational Pilot:		**Last Flight Review or Equivalent:**	06/19/2000
Flight Time:	3581 hours (Total, all aircraft), 47 hours (Total, this make and model), 3571 hours (Pilot In Command, all aircraft), 20 hours (Last 90 days, all aircraft)		

Other Flight Crew Information

Certificate:	Commercial	**Age:**	60, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	12/07/2001
Occupational Pilot:		**Last Flight Review or Equivalent:**	10/03/2002
Flight Time:	15000 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Rockwell	**Registration:**	N53LG
Model/Series:	690B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	11523
Landing Gear Type:	Retractable - Tricycle	**Seats:**	8
Date/Type of Last Inspection:	04/04/2002, Continuous Airworthiness	**Certified Max Gross Wt.:**	10375 lbs
Time Since Last Inspection:	149 Hours	**Engines:**	2 Turbo Prop
Airframe Total Time:	6317 Hours at time of accident	**Engine Manufacturer:**	Airesearch
ELT:	Installed, not activated	**Engine Model/Series:**	TPE331-10T
Registered Owner:	Haulers Insurance Company Inc	**Rated Power:**	776 hp
Operator:	Haulers Insurance Company Inc	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Night
Observation Facility, Elevation:	VAD, 203 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	0056 EST	**Direction from Accident Site:**	210°
Lowest Cloud Condition:	Scattered / 7500 ft agl	**Visibility**	8 Miles
Lowest Ceiling:	Broken / 15000 ft agl	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	10°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	18°C / 15°C
Precipitation and Obscuration:			
Departure Point:	Mount Pleasant, TN (MRC)	**Type of Flight Plan Filed:**	IFR
Destination:	Titusville, FL (TIX)	**Type of Clearance:**	IFR
Departure Time:	2300 CST	**Type of Airspace:**	Class A

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	31.105556, -82.947222

Administrative Information

Investigator In Charge (IIC):	Carrol A Smith	**Report Date:**	07/29/2004
Additional Participating Persons:	George Bowles; Atlanta FSDO-11; College Park, GA Geoffrey Pence; Twin Commander; Arlington, WA Harald Reichel; Honeywell; Phoenix, AZ Tom Mc Creary; Hartzell Propellers; Piqua, OH		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/.		