



National Transportation Safety Board Aviation Accident Factual Report

Location:	N Myrtle Beach, SC	Accident Number:	ATL06FA044
Date & Time:	02/03/2006, 2045 EST	Registration:	N266EB
Aircraft:	Beech 200	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	6 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

HISTORY OF FLIGHT

On February 3, 2006, at 2045 eastern standard time, a Beech 200, N266EB, registered to Weekend Air Charter Services Inc., and operated by an individual as a Title 14 CFR Part 91 personal flight, crashed while on final approach to runway 23, at the Grand Strand Airport, North Myrtle Beach, South Carolina. Night visual meteorological conditions prevailed and a visual flight rules flight plan was filed. The airline transport-rated pilot, and five passengers received fatal injuries and the airplane was destroyed. The flight originated from the Trenton Mercer Airport, Trenton, New Jersey on February 3, 2006, at 1900.

According to witnesses, the airplane made two approaches to runway 23. During the first approach the airplane was observed, "fish tailing" while about 30' feet over the runway. The airplane appeared to regain control and continued flying over the runway until passing the air traffic control tower, at which time the airplane began a climbing left turn. The witnesses stated that they heard the pilot tell the air traffic controller that he was doing a go-around. The controller asked the pilot if he had problems with the sea fog. The pilot responded back to the controller "no that his left engine kept power up a little too much and would not come back." The witnesses observed the airplane circle the airport to the left, and watched it line up on runway 23 for the second time. The witnesses stated, that as the airplane descended to the runway, and without any indication of trouble, the airplane "climbed and rolled left, went inverted and nosed down into the grass to the left of the runway and burst into flames." The witnesses told someone to call the fire department and they proceeded to the airplane to see if they could give assistance. When they arrived at the airplane, it was fully engulfed in flames.

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, for airplane single engine land, multiengine land, and a commercial pilots certificate for airplane single engine sea and multiengine sea. In addition, the pilot was issued a flight instructor certificate for airplane single and multiengine instrument airplanes. The pilot most recent second-class medical

certificate was issued on May 11, 2005, with a restriction that he must wear corrective lenses. The pilot reported on his medical certificate application that his total civilian flight hours were 3,400. The pilot's logbook was not located and was believed to have been in the airplane at the time of the accident.

AIRCRAFT INFORMATION

A review of information on file with the FAA Aircraft Registry, Oklahoma City, Oklahoma revealed that N266EB, A Beach King Air BE200, Serial Number BB-266, was issued an airworthiness certificate on April 16, 1998.

A review of the airframe maintenance records revealed that the airplane was inspected under the current manufacturer's phase program per 14 CFR Part 91.409 (f) (3), Beech Super King Air 200 series inspection program. Phases 1, 2, 3, and 4 were complied with on October 13, 2005, at a total airframe time of 8,154.9 hours and Hobbs time of 611.0 hours. The four phase inspections were performed by Air Wilmington, Inc. a FAA certified repair station, certificate number FFFR869D, located in Wilmington, North Carolina. In addition to the four primary phases, numerous other phase checks were performed, including number 35, power lever stop pin inspection, Raiseback 200 hour propeller inspection, and 400-hour fuel nozzle flow test. In addition, a Airworthiness Directive 2004-17-02, replacement of pedestal cross shaft bolts with drilled headed bolts per Beech Service Bulletin SB73-3634 was accomplished. In addition, during this time both the pilot's and copilot's altimeters and transponders were found to comply with 14 CFR Part 91.413 altimeter and transponder checks.

Maintenance records also indicated that on March 21, 2003, the left engine power cable was repaired when binding was observed at the push pull connection, at a total airframe time of 7,880.2 and a Hobbs time of 339.6 hours. This work was performed by Segrave Aviation, Inc, certificated repair station number S8AR675W, located in Kinston, North Carolina.

A review of engine maintenance records revealed that the right engine, part number PT6A-41, serial number PCE80560, was overhauled in accordance with the Pratt and Whitney overhaul manual number 3021443, on April 25, 2002, by Dallas Airmotive, FAA certified repair station number QT2R121L. From the time of overhaul until the date of the accident, the engine underwent scheduled inspection/maintenance checks, one on August 4, 2004 at 56.1 hours since overhaul (SOH) and one on October 13, 2005 at 274.7 hours SOH. The records indicated that only routine maintenance was performed, including fuel nozzle flow test, internal turbine temperature calibration and compressor wash.

A review of engine maintenance records revealed that the left Pratt and Whitney engine, part number PT6A-41, serial number PCE80573, was overhauled by Daimler-Benz Aerospace, MTU Motor-und Turbine-Union Ludwigsfelde GmbH, a JAR 145.50 repair station, certificate number LBA.0003, on May 26, 1997. From the time of overhaul until the date of the accident, this engine had seen many shop visits. One on February 28, 1998- for a "C" flange split for Hot Section Inspection (HSI). One on June 18, 1999 for a Flight idle torque reset. One on September 26, 2000 for a "C" flange split for exhaust outlet repair. One on April 16, 2001 for a

"C" flange split for T5 harness replacement. One on May 1, 2001 for a "C" flange split for Hot Section Inspection (HSI). One on August 26, 2003 for a Fuel Control Unit (FCU) and Fuel Pump change, and one on October 13, 2005 for a "C" flange split for T5 harness replacement.

A review of Propeller Maintenance records found that both propellers were overhauled by US Propeller and Accessories, Inc, Gibsonville, North Carolina, FAA certificated repair station, number YX4R690M, on April 18, 2002. Following overhaul both propellers were installed on the airplane by Raytheon Aircraft Services, FAA certificated repair station R14R104Y, on April 23, 2002, airframe total time 7,807.2 hours. No other propeller maintenance was recorded after the April 2002 overhaul date.

METEOROLOGICAL INFORMATION

The nearest weather reporting facility at the time of the accident was North Myrtle Beach, South Carolina. The 1953 surface weather observation was: clear of clouds, no ceiling, visibility 7 statute miles, temperature 13-degrees Celsius, dew point temperature 13-degrees Celsius, wind 150-degrees at 6 knots, and altimeter 29.84. Night visual meteorological conditions prevailed at the time of the accident.

WRECKAGE AND IMPACT INFORMATION

Examination of the airplane on-scene, found the empennage of the airplane upright resting against the airport perimeter fence. The cockpit area was destroyed by impact and fire. The right engine had separated from the right wing. The left engine remained partially attached to the left wing. Both propellers had separated from their engines and were observed imbedded into the ground forward of the cockpit area.

The airplane came to rest on airport property on a heading of 280-degrees, 634 feet to the left of the centerline of runway 23, and 950 feet from the approach end of runway 23. There was an impact crater made by the nose of the aircraft and flanked by two additional impact craters containing the propellers. A ground scar was observed in-line and to the right of the nose crater and propellers, made by the right wing. The right wing tip position light was found buried at the far end of this ground scar. The ground scars and impact craters showed that the airplane collided with the terrain in a steep nose down, slightly right wing low attitude.

The cabin back to the rear pressure bulkhead was partially consumed by post impact fire. Two seat frames were found outside and to the rear of the airplane. The cabin door was found intact and in the closed position. The interior of the door was damaged by post impact fire. Three seat frames were found separated from the airplane in the remnants of the cockpit area. Seven seat frames were observed along with a small divan in the forward right side of the cabin. It is not known what seats were occupied at the time of the accident. One seat belt, portions of two seat belt buckles and three shoulder harness reels were observed. All were damaged by post impact fire. The aft fuselage and empennage was partially separated aft of the rear pressure bulkhead, and came to rest atop the airport perimeter fence. The aft fuselage remained attached to the forward section by flight control cables, electrical wire bundles, and instrument airlines. The

elevators and rudder were intact and remained attached to the respective stabilizers. The rudder trim and the left elevator trim remained intact and attached to the respective flight control. The right elevator trim remained attached to the right elevator but the control rod was separated, allowing the trim surface to rotate around and come to rest on top of the elevator. The leading edge of the right stabilizer was bent aft and down in a circular manner.

The majority of the right wing remained attached to the fuselage. The right wing was heavily damaged by impact forces and post impact fire. A portion of the outboard right wing partially separated at the aileron. The right aileron remained attached to the outboard section of wing. The outboard right wing section remained attached to the rest of the wing by the aileron control cables. The right wing tip was bent aft. The inboard right flap remained attached to the wing; the outboard right flap was destroyed by post impact fire.

The left wing was heavily damaged by post impact fire from the wing root to the left engine nacelle. The left wing was bent up and aft along its length, outboard of the left engine nacelle. The left inboard and outboard flaps, left aileron and aileron trim tab remained intact and attached. Fuel caps were found intact and installed. The inboard right fuel cap and left fuel caps were removed and the o-rings were found intact.

The right main landing gear piston, gear actuator and wheel assemblies were found separated from the airframe. The left main landing gear assembly remained partially attached in the left gear well. Measurements of the left and right main gear actuators indicate that the landing gear was extended at the time of the accident. The nose gear was found folded under the cockpit wreckage.

Control cable continuity was established to all primary flight controls. Rudder and elevator control cables were traced to the cockpit area where they ended at the bellcrank attach fittings. The rudder and elevator bellcranks were not observed. The aileron cables were traced to the cockpit. One aileron cable was found separated in overstress approximately 2 feet from the control column. Aileron continuity was confirmed through the control column. The right inboard, and both left flap actuators were measured and indicate the flaps were extended at 35-degrees at the time of the accident. The housing of the left outboard flap actuator was burned away and could not be measured. Aileron trim was determined to be approximately 5-degrees up (left wing up). Elevator trim was determined to be approximately 2-degrees up (nose down). Rudder trim was determined to be approximately 1-degree left (nose right). The left engine was found resting just forward of the left wing and the right engine was found approximately 10-feet in front of the right wing in an upside down orientation. The engine mounting structure on the wing for both engines was melted.

The left propeller was buried face down (propeller spinner imbedded into the earth) in mud approximately 1-foot into the ground. All 4-propeller blades were intact and remained attached to the hub. The propeller pitch feedback ring was visible and intact. The forward portion of the fractured engine propeller shaft was still attached to the propeller. With the propeller removed from the mud, examination of the spinner revealed no exit penetrations or holes, just impact damage and deformation, and examination of the propeller revealed that all four blades were

intact with slight aftward bending.

Examination of the left-hand propeller blades found slight aft bending and twisting toward low pitch. None had rotational scoring or significant leading edge damage. All the blades of the left-hand propeller were at a blade angle position lower than the hydraulic low pitch (HLP) stop angle as evidenced by the extension of the pitch change rod, the position of the blade counterweights and the damage to the pitch change mechanism. The measured blade angle of the propeller was 70-degrees, a position 10-degrees from the HLP and 20-degrees from full reverse. No abnormal pre-impact conditions were found that would have interfered with normal operation of the left propeller.

The left engine was found resting on its bottom (6:00 o'clock position) closest to its normal installed location on the aircraft. The wing near the engine nacelle and the nacelle itself were fire damaged. The engine mounting structure had separated from the aircraft but was present around the engine. The lower engine cowling and air inlet were trapped under the engine while the upper cowling was missing. Molten silvery metal covered the top of the engine. The propeller shaft was fractured approximately 1-1/2 inch ahead of the reduction gearbox housing forward flange. The reduction gearbox appeared intact.

The propeller governor control cable was found attached to the propeller governor. The left exhaust stub was no longer attached and was found approximately 20 feet from the engine while the right exhaust stub was fractured and was located with the engine. The engine exhaust duct was buckled and fractured exposing the power turbine blades. All the power turbine blades were intact and remained installed in the power turbine disk. Circumferential rub marks were noted on the aft side of the blade roots and disk-fir-tree slots.

The wiring harness on the lower section of the engine was burned. The inlet screen was covered with molten silvery metal and was distorted. The accessory gearbox housing was melted and missing material exposing the internal gears and bearings. The fuel control housing was melted exposing the internal mechanism.

The left engine was disassembled for further examination. The examination found that the propeller shaft was fractured in bending about 1-1/2 inch ahead of the reduction gearbox (RGB) housing forward flange. The RGB housing was intact and the internal cavity contained residual oil. All of the internal mechanisms were oil wetted. All gears and bearings were intact and displayed no anomalies. The accessory gearbox (AGB) housing was largely fire consumed exposing the internal mechanisms. All the gearwheels and bearings recovered from the accessory gearbox were intact and displayed no anomalies. The compressor assembly, including the blades and shrouds, were intact and showed no indication of pre-impact distress. The compressor turbine assembly displayed no indication of pre-impact distress. The compressor turbine blades and compressor turbine vane ring and airfoils were intact. The vane ring inner drum displayed circumferential rubbing, and light frictional heat discoloration.

The power turbine housing was intact. All the power turbine blades were intact and remained installed in the power turbine disk. The power turbine section displayed rotational scoring on

the inner and outer diameters throughout all the stages between the rotating wheels and stationary rings. The fuel control input shaft and the governor flyweights were exposed and did not display pre-impact damage. The input shaft bearing rotated and all its roller elements were present and not seized. The flyweight bearings were free to rotate. The drive splines of the fuel pump were intact. The torque limiter, overspeed governor, and propeller governor were disassembled and no abnormal condition was found. No abnormal pre-impact conditions were found on any part of the left engine.

The right propeller was buried face down in mud, approximately 2-feet into the ground. Two of the four propeller blades were not visible because they were imbedded beneath the ground while the tips of the other two blades were partially visible. Three curved-shaped ground scars were observed in the mud near the propeller. The upper and lower forward cowling panels, including the air inlet of the right engine, were found resting near the propeller. The forward portion of the fractured engine propeller shaft was still attached to the propeller. With the propeller removed from the mud, examination of the spinner revealed no exit penetrations or holes, just impact damage and deformation, and examination of the propeller revealed that all 4 blades were intact and attached to the hub. Two consecutive blades exhibited "U" shaped bending in the direction opposite rotation and one blade was bent at the mid-span in the direction of rotation.

Examination of the right-hand propeller blades found large radius bending ranging from mild to severe with angles ranging from 20-degrees to 90-degrees. Two blades were bent in the direction of rotation and two were bent opposite direction of rotation. The two blades bent opposite to the direction of rotation indicate that they contacted the ground prior to the hub at an angle less than vertical. The two blades bent in the direction of rotation were likely bent due to contact with the ground after the propeller was stopped. All of the blades had a slight twisting towards low pitch. None had rotational scoring or significant leading edge damage. The blades of the right propeller were at different angles, at or beyond the feather position. There were no discrepancies found in the right propeller system that would have interfered with normal operation.

The right engine was found separated from the nacelle. Some of the engine mounting structure was still attached to the engine. The reduction gearbox housing and propeller shaft were fractured exposing the internal gearbox mechanism. The forward portions of the fractured gearbox housing and propeller shaft were still attached to the right propeller. The fracture surface of the propeller shaft exhibited 45-degree shear lips along with some localized blue discoloration. The oil transfer tube was also fractured.

The engine exhaust duct was buckled and fractured exposing the power turbine blades. All the power turbine blades were intact and remained installed in the power turbine disk. One exhaust stub was fractured. The inlet screen was dented but intact. The reduction gearbox oil supply and scavenged tubes were fractured. A heavy oil slick was observed on the ground near the engine. The accessory gearbox was fractured, exposing the internal gearing. The fuel control unit housing was fractured. The engine sustained very little fire damage.

The right engine was disassembled for further examination. The examination found that the propeller shaft was fractured in bending about 5 inches inside of the RGB housing forward flange. The RGB forward housing was fractured but the internal cavity contained residual oil. Additionally, there were puddles of oil directly beneath the gearbox at the accident site. All gears and bearings were intact and displayed no anomalies. There was no metallic debris found in the RGB. The AGB housing was fractured, exposing the internal mechanism. All the gearwheels and bearings recovered from the accessory AGB were intact and displayed no anomalies. The compressor assembly, including the blades and shrouds, were intact and showed no pre-impact distress. The compressor turbine assembly displayed no pre-impact distress. The compressor turbine blades and compressor turbine vane ring and airfoils were intact. The blade platforms and the disc hub spigot were circumferentially scored.

The power turbine housing was intact. All the power turbine blades were intact and remained installed in the power turbine disk. The power turbine section displayed rotational scoring on the inner and outer diameters throughout all the stages of the rotating wheels and stationary rings. The fuel control unit housing was fractured and could not be functionally tested. The propeller governor and the torque limiter were functionally tested and found to be within field adjustable limits. The overspeed governor could not be functionally tested but was disassembled and no abnormal condition was found internally. No abnormal pre-impact conditions were found on any part of the right engine.

See the Powerplants Group Chairman's Factual Report of Investigation for the complete report of these examinations.

MEDICAL AND PATHOLOGICAL INFORMATION

The Forensic Pathologist, Horry County Coroners Office, Conway, South Carolina, conducted a postmortem examination of the pilot on February 4, 2006. The reported cause of death was "multiple trauma and burns sustained in airplane crash." 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 drugs.

TEST AND RESEARCH

A cassette copy of air traffic control transmissions recorded at the tower at Grand Strand Airport was sent to the audio laboratory at the National Transportation Safety Board on June 15, 2006. A sound spectrum study was completed on the recording to identify any background sound signatures that could be associated with the aircraft.

Because voice signatures tend to dominate the audio obscuring aircraft sound signals, the focus of the sound spectrum study was on the non-voice sections of the pilot's transmissions, such as pauses between words or after speaking, but before releasing the microphone key.

Examination of the recording found that because the signals were only present during the transmission from the accident aircraft, it was clear that the aircraft produced the signals, but the specific noise sources could not be determined. In consultation with Raytheon Aircraft, it does not appear that the signals evident in the transmissions correspond with known propeller rotational frequencies, engine signatures or aircraft aural warnings. A possible explanation for the signals could be undocumented noise from a fan or avionics in the cockpit, or electrical bleed-through or cross-talk interference within the communication system.

No recorded radar data for the flight was located that captured the airplane's two attempted landings. Information contained in the Super King Air 200 Pilot's Operating Handbook (POH) and FAA Approved Flight Manual (AFM) showed the stall speed with gear extended, 40-degree flaps, and zero bank angle as 84 knots Indicated Air Speed.

ADDITIONAL INFORMATION

The wreckage was released to Kern and Wooley LLP, on June 8, 2006.

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	49, Male
Airplane Rating(s):	Multi-engine Land; Multi-engine Sea; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):		Restraint Used:	Seatbelt
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	Yes
Medical Certification:	Class 2 Without Waivers/Limitations	Last FAA Medical Exam:	05/01/2005
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	3400 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N266EB
Model/Series:	200	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	BB-266
Landing Gear Type:	Retractable - Tricycle	Seats:	11
Date/Type of Last Inspection:	10/01/2005, AAIP	Certified Max Gross Wt.:	12500 lbs
Time Since Last Inspection:		Engines:	2 Turbo Prop
Airframe Total Time:	8154.9 Hours as of last inspection	Engine Manufacturer:	Pratt & Whitney Canada
ELT:	Installed, not activated	Engine Model/Series:	PT-6A-41
Registered Owner:	Weekend Air Charter Services, Inc.	Rated Power:	1050 hp
Operator:	Jon Kraut	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night
Observation Facility, Elevation:	CRE, 32 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1953 EST	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Visibility	7 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.84 inches Hg	Temperature/Dew Point:	13° C / 13° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Trenton, NJ (KTTN)	Type of Flight Plan Filed:	VFR
Destination:	N Myrtle Beach, SC (KCRE)	Type of Clearance:	VFR
Departure Time:	1900 EST	Type of Airspace:	

Airport Information

Airport:	Grand Strand (CRE)	Runway Surface Type:	Asphalt
Airport Elevation:	32 ft	Runway Surface Condition:	Dry
Runway Used:	23	IFR Approach:	None
Runway Length/Width:	5996 ft / 100 ft	VFR Approach/Landing:	Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	5 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	6 Fatal	Latitude, Longitude:	33.816667, -78.728889

Administrative Information

Investigator In Charge (IIC):	Butch Wilson
Additional Participating Persons:	Laurin J Kaasa; Columbia FSDO; Columbia, SC Michael J Gibbons; Raytheon Aircraft Company; Wichita, KS Thomas Berthe; Pratt & Whitney Canada; Montreal, Thomas McCreary; Hartzell Propeller; Picqua, OH Thomas Conway; Columbia FSDO; Columbia, SC Russell Schrock; Raytheon Aircraft; Wichita, KS James E Parten; Federal Aviation Administration; College Park, GA
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.nts.gov/pubdms/ .