



National Transportation Safety Board Aviation Accident Final Report

Location:	CULLMAN, AL	Accident Number:	ATL99FA044
Date & Time:	01/14/1999, 0918 CST	Registration:	N780BF
Aircraft:	Beech 300	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Executive/Corporate		

Analysis

The airplane descended to 2,600 feet to the NDB, and initiated the approach upon crossing the NDB. As the airplane descended below 1,500 feet MSL, Huntsville lost radar contact. The next communication with the airplane was when the pilot radioed that he was initiating the missed approach. The published missed approach procedure is, 'Climbing lift turn to 2,700 direct CPP NDB and hold.' The airplane made a series of turns within the next one minute and 24 seconds. Additionally, the airplane's altitude varied but it never climbed above the altitude of 1,700 feet. The airplane wreckage was located approximately 3.5 miles north of the airport on a 345 degree heading on the opposite side of the outbound course to the NDB. Witnesses in the immediate area stated that they could hear the airplane flying low over their homes but could not see it due to the foggy conditions. A review of pilot records did not show the pilot having any fixed wing airplane experience.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to adhere to the missed approach procedure resulting in a collision with terrain. Contributing factors were fog and the rotorcraft rated pilot's lack of fixed wing certification/experience.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: MISSED APPROACH (IFR)

Findings

1. (F) WEATHER CONDITION - FOG
2. (C) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
3. (F) LACK OF CERTIFICATION - UNQUALIFIED PERSON

Factual Information

HISTORY OF FLIGHT

On January 14, 1999, at 0918 central standard time a Beech 300, N780BF, collided with the ground following a missed approach to Folsom Field in Cullman, Alabama. USA Healthcare-Leasing had recently purchased the airplane. It had been purchased for the purpose of entering in into service under the provisions of Title 14 CFR Part 91, as an executive/corporate airplane. Instrument meteorological conditions prevailed and an IFR flight plan was filed. However, the pilot filed an IFR flight plan using a reserved registration number N66FB, and type of aircraft as a BE-200. The purpose of the flight was to reposition the newly purchased airplane to Folsom Field for the new owner, USA Healthcare. The pilot and passenger sustained fatal injuries and the airplane was destroyed. The airplane departed Greenville, South Carolina, 0800, eastern standard time.

According to the Huntsville Air Traffic Controller (ATC), the ATC handling of the flight from Greenville was uneventful until the pilot initiated the "NDB RWY 20" approach at Folsom Field. The pilot received instructions from the air traffic controller to descend to 2,700 feet to "COLE SPRING (CCP) NDB", the initial approach fix, till established on the approach. The pilot, on his read back, stated, "cleared to 2,600..." The controller missed the error and did not correct the pilot. The airplane descended to 2,600 feet to the NDB, and initiated the approach. As the airplane descended below 1,500 feet MSL, radar contact was lost. The next communication with the airplane was when the pilot radioed that he was initiating the missed approach. The published missed approach procedure is, "Climbing left turn to 2,700 direct CCP NDB and hold."

The airplane made a series of turns within the next one minute and 24 seconds. It initially turned left to a heading of approximately 160 degrees, then left to approximately 040 degrees, then turned left to a heading of approximately 250 degrees and flew through the course to the NDB. After flying through the course, the airplane turned back right to the final radar indicated heading of approximately 020 degrees. The airplane never established a course direct to the NDB, and the airplane's altitude varied but it never climber above the altitude of 1,700 feet. The airplane collided with the ground approximately 3.5 miles north of the airport on a 345 degree heading on the opposite side of the outbound course to the NDB. Witnesses in the immediate area stated that they could hear the airplane flying low over their homes but could not see it due to the foggy conditions.

PERSONNEL INFORMATION

The pilot was certificated as a commercial pilot with instrument and helicopter ratings. The pilot reported having 4,100 hours civilian total time on his last medical examination. The pilot's most recent second class medical was issued on November 20, 1997. Information on the pilot's most recent flight review was not found, nor was his current pilot log book. Additional pilot information may be obtained in this report on page 2 and 3 under the section titled Owner/Operator and First Pilot Information.

Five Temporary Airman Certificates (FAA Form 8060-4 [8-70]) photo-copied onto 8 1/2 by 11 inch paper were found at the accident site in a black flight bag type carrier. The first certificate indicated that the pilot had commercial privileges and was certificated in rotorcraft helicopter, instrument helicopter, airplane multiengine land, and instrument airplane. The second

certificate indicated that the pilot had Airline Transport Pilot (ATP) privileges and was certificated in rotorcraft helicopter, instrument helicopter, airplane multiengine land, instrument airplane, and held a type rating in the Beechcraft King Air 300. The third certificate indicated that the pilot had commercial privileges and was certificated in rotorcraft helicopter, instrument helicopter, airplane multiengine land, instrument airplane, and held a type rating in the BE-300. The fourth certificate was blank, however there was a white substance in each of the blocks of the certificate similar to whiteout. The fifth certificate was completely blank. (see attached Airman Certificates).

The first certificate was issued on December 29, 1998, and the two subsequent certificates had a date of issuance of January 9, 1999. All three certificates were signed by the same FAA Inspector, who was located in the Birmingham, Alabama Flight Standards District Office (FSDO). According to the FAA Examiner whose name appeared on each certificate, only the first certificate was valid and was issued based on military competency requirements the pilot presented to the FAA Inspector.

Examination of copies of the military records (DA Form 759) dated January through August 1998, provided to the FAA, showed that the pilot was assigned to the USAAVNC Ft. Rucker, Alabama. The records showed that the pilot had accumulated 954 hours as pilot in command (PIC) in multi-engine fixed wing aircraft, 184 hours as co-pilot, for a total of 1138 hours in multi-engine fixed wing aircraft. In addition, the records showed that the pilot had accumulated 3090 hours as PIC in single engine rotary wing aircraft, 427 hours as co-pilot, 217 hours in helicopter flight simulators, for a total of 3517 hours in single engine rotary wing aircraft. The pilot's combined total time was 4044 hours as PIC, 611 hours as co-pilot, for a total combined time of 4655 hours of which 752 hours were in instrument weather conditions. Further examination of the records showed that the pilot had accumulated his multi-engine time in an Army C-12. (civilian equivalent Beech King-Air 200). (see attached comp records).

In addition to the above information the flight records showed that the pilot had completed the following: Instrument qualification, on August 22, 1998; medical examination renewed on September 13, 1998; standardization flight evaluations were completed in the C12 August 1998, and in the OH58 in September 1998. Also, his annual written was completed in September 1998, and that he had completed all of the military currency (AAPART) requirements.

According to the flight records section at Ft. Rucker, Alabama the DA Form 759 given to the FAA, was last used by the Ft. Rucker records section in 1989, and the approving authority shown on the DA Form 759 was not assigned to Ft. Rucker. The new form (DA Form 759) was now a computer generated form. (see attached DA Form 759).

Military records were requested from the US Army National Archives, and National Personnel Records Center in St. Louis, Missouri. A review of the pilot's records revealed that he had been honorably discharged from the US Army National Guard on October 16, 1990. Examination of the flight records did not show that the pilot had received a fixed wing rating or qualification. (see attached military records).

On January 9, 1999 the pilot completed familiarization flight training from the King Air 200 to the King Air 300 at the SimCom Training Center in Scottsdale, Arizona. As a result of the training the pilot received three Proficiency Certificates, one for completing the course, one for VFR Proficiency referencing AC61-91H par 7(i), and one for FAR 61.57(d) Instrument Proficiency.

A witness who attended and participated in the SimCom Training course with the pilot, stated that about three/four months prior to the accident, the pilot contacted him to see if he would be interested in flying a BE-300 for USA Healthcare leasing in Cullman, Alabama. The pilot stated that they were in the process of buying an aircraft and they would fly it in support of their corporate travel needs. He also was going to explore the possibility of placing it into FAR 135 operations. The witness stated that he was concerned about the experience level of the pilot in fixed wing aircraft and was told by the pilot that he would be getting his fixed wing certificate through the FAA as a military competency certificate. The witness figured that if he met the requirements, then everything would be in order. The witness stated that he would be interested if it did not conflict with his scheduled flight operations for his present employer. With that agreement reached, the witness and the pilot scheduled a training program at SimCom Training Center in Scottsdale, Arizona. The training period was from January 5, 1999 through January 9, 1999. Both of the pilots started the training program in the BE-200 simulator with differences to the BE-300 simulator as contracted. During the initial period of training, the witness stated that he was surprised to see the lack of proficiency of the pilot during the simulator sessions and stated that he had discussed this with the pilot. The pilot blamed the simulator for the poor performance. The witness stated that the below standard level of performance continued and on the third day, January 8th, 1999, copies of ILS plots were obtained by the witness. In addition, the witness spoke with their lead Instructor and expressed his concern for the obvious inability of the pilot to fly under instrument conditions. (see attached SimCom records).

AIRCRAFT INFORMATION

The Beechcraft Super King Air 300 was a nine (9) seat corporate, twin turboprop airplane, and was purchased by USA Healthcare Leasing on January 8, 1999. The aircraft had undergone a Phase 1 through Phase 4 inspection prior to delivery on January 14, 1999. These inspections were performed in compliance with the purchase agreement on the aircraft. All discrepancies found during the four phase inspections were repaired prior to delivery. Additional aircraft information may be obtained in this report on page 2 under the section titled aircraft information.

METEOROLOGICAL INFORMATION

According to witnesses in the local area, the weather was obscured with fog and light rain. Ceiling was less than 200 feet and visibility was less than one half mile. Additional meteorological information may be obtained in this report on page 4 under the section titled Weather Information.

COMMUNICATIONS

As the pilot neared Folsom Field, the following radio transmissions took place (times used are UTC, as provided by Huntsville [HSV] Approach Control):

1501:00 ER king air six foxtrot bravo huntsville approach descend pilots
discretion maintain six thousand expect uh ndb runway two zero approach at the
cullman airport.

1502:00 N66FB down to six and expect the ndb

1502:04 ER king air six foxtrot bravo the current huntsville weather is wind
calm visibility seven few clouds at three hundred ceiling two thousand six hundred

broken five thousand five hundred broken and altimeter three zero one zero.
1502:19 N66FB three zero one zero.
1506:03 ER king air six foxtrot bravo descend and maintain three thousand
and uh can you take a heading to the northeast uh like a three hundred heading.
1506:11 N66FB that's fine sir we'll turn to three hundred on down to three.
1509:55 ER king air six foxtrot bravo uh turn left heading --- two niner zero.
1510:01 N66FB two nine zero six fox bravo.
1511:48 ER king air six foxtrot bravo turn uh left heading --- two zero zero.
1511:53 N66FB to the left two zero zero six foxtrot bravo.
1512:18 ER king air six foxtrot bravo maintain uh two thousand --- seven
hundred until established on final approach course cleared ndb runway two zero
approach to the cullman airport you're five miles from cold springs.
1512:30 N66FB okay sir five miles from cold springs and two thousand six
till established.
1512:44 ER six foxtrot bravo is that uh heading uh going to allow you to join
uh I'm showing you just left of the final approach course.
1512:52 N66FB yes sir it should be pretty close.
1514:06 ER king air six foxtrot bravo is over cold springs radar service
terminated frequency change to advisory report canceling your ifr with me or flight
service on the ground.
1514:16 N66FB and six fox bravo thank you sir.
1516:29 N66FB and huntsville king air six six fox bravo
1516:39 ER november six foxtrot bravo understand you're canceled.
1516:41 N66FB that's a negative sir we're missed approach we're going to
come back around and try it again.
1516:46 ER november six foxtrot bravo roger climb and maintain two
thousand seven hundred ident (alarm in background).
1516:50 N66FB two thousand seven hundred and identifying.
1518:08 ER six bravo uh six foxtrot bravo did you climb to two thousand
seven hundred.
1518:18 ER king air six six foxtrot bravo approach.

Huntsville Approach attempted (unsuccessfully) for another 20 minutes to make radio contact with the pilot. (see attached ATC Radar Information).

WRECKAGE AND IMPACT INFORMATION

The airplane wreckage was located approximately 3.5 miles north of the airport on a 345 degree heading in a rolling terrain field at an elevation of approximately 1,100 feet MSL. The impact site showed that the airplane collided with the ground at a steep nose down attitude,

approximately 63 degrees. The wreckage debris was spread over an area of about 550 feet by 150 feet wide, in the direction of travel. The GPS Coordinates for the impact crater was; N34 18.58 & W086 51.62. The direction of flight was a 305 degree heading, on the west side of the NDB approach path. Inspection of the airspeed indicators revealed that the needle of one of the indicators (unknown if it was from the pilot's or the copilot's side) was displaying a reading of 265 knots (stuck against the "barber pole" needle for the maximum limit). Onsite inspection confirmed that the flaps were up and the landing gear was in the retracted position at the time of impact.

The airplane was equipped with an autopilot system. However, as a result of impact damage, it was not possible to ascertain if the autopilot was engaged at the time of impact. The airplane was also equipped with a Dorn & Margolin ELT, Model DM ELT 8.1, serial number 5389, with a battery inspection due date of September 1999. The ELT was destroyed on impact and did not activate.

The left wing was separated from the airplane and was located approximately 25 feet northwest of the impact point. All controls cables were separated in what appeared to be tension overload at approximately the point of wing separation. The left engine and nacelle was found separated from the wing, with the engine remaining in the impact depression. Fuel cells ruptured on impact; a strong odor of fuel and evidence of fuel spill was present at the site.

The right wing was separated from the airplane and fragmented into multiple pieces. All flight control cables were separated in what appeared to be tension overload at the various fracture points of the wing and flight control surfaces. Fuel cells ruptured on impact, leaving a strong odor of fuel and evidence of fuel spill.

The fuselage was separated into multiple pieces. The cabin area sustained major damage. Both pilot seats were separated from their attachment points and exited the airplane on impact. Both occupants, according to statements made by rescue personnel, wore lap belts and shoulder harnesses. The empennage fractured into multiple pieces upon impact. The control cables and rods inspected were separated in what appeared to be tension overload, as a result of impact forces.

The airplane was recovered by Atlanta Air Salvage, on January 18, 1999, and transported to their facility in Griffin, Georgia. The engines were subsequently shipped to Pratt & Whitney Canada, and the propellers were shipped to Hartzell Propeller Inc. Piqua, Ohio for further examination.

The left engine displayed severe impact damage, including complete structural separation of the power and gas generator sections. Strong circumferential rubbing and machining were displayed by the compressor turbine, the 1st stage power turbine vane ring, the 1st stage power turbine, the 2nd stage power turbine vane ring, and the 2nd stage power turbine. The compressor turbine shroud, and the 1st and 2nd stage power turbine shrouds displayed heavy circumferential rubbing and machining. The 2nd stage power turbine blades were fractured, and the reduction gearbox 2nd stage carrier web was fractured in torsion from the propeller shaft coupling.

The right engine displayed severe impact damage, including compressional deformation and partial rupturing of the exhaust duct. Strong circumferential rubbing and machining were displayed by the compressor turbine, the 1st stage power turbine vane ring, the 1st stage power turbine, the 2nd stage power turbine vane ring, and the 2nd stage power turbine. The

compressor turbine blade tips and shroud, and the 1st and 2nd power turbine blade tips and shrouds displayed heavy circumferential rubbing and machining. The reduction gearbox 2nd stage carrier web was fractured in torsion from the propeller shaft coupling.

Examination of the propellers found both spinner domes and spinner bulkheads missing: 3 of the 4 blades had been broken off of the hub of each propeller. The piston/cylinder assembly was also broken off of the hub of each propeller; 5-1/2 blade clamp assemblies were missing as well as some small parts (some mounting bolts, link arms, link screws...). Both propellers were very similar in appearance and had similar impact damage.

MEDICAL AND PATHOLOGICAL INFORMATION

A post mortem examination of the pilot was conducted by the Alabama Department of Forensic Sciences, in Huntsville, Alabama. On March 4, 1999, a toxicology examination of the pilot was conducted by the FAA Toxicology Research Laboratory. The examination revealed no drugs detected in kidney. 13 (mg/dl, mg/hg) Ethanol detected in Kidney and 19 (mg/dl, mg/hg) Ethanol detected in Muscle. Carbon Monoxide and Cyanide tests were not conducted due to the lack of suitable specimens.

TESTS AND RESEARCH

The powerplant investigation was performed on March 3rd & 4th, 1999, at the Pratt & Whitney Canada Service Investigation Facilities at Bridgeport, West Virginia. The following organizations were present during the examination: NTSB, Raytheon Aircraft Company, and Pratt & Whitney Canada.

According to Pratt & Whitney Canada, there were no indications of any operational dysfunction to any of the engine components examined regarding impact damage. Both the left and right engines displayed similar rotational signatures to their internal components characteristic of the engines' producing power at impact, likely a middle to high power range. The engines displayed no indications of any pre-impact anomalies or distress that would have precluded normal operation prior to impact. For more information (See attached P&W Canada Teardown Report).

The propeller examination was performed on April 16, 1999, at Hartzell Propeller Inc., Piqua, Ohio. The following organizations were present during the examination: FAA, Raytheon Aircraft company, Hartzell Propeller.

These types of propellers were a 4-bladed single acting, hydraulically operated, constant speed model with full feathering and reversing capabilities. Oil pressure from the primary propeller governor is used to move the blades to the low pitch (blade angle) direction. Blade mounted counterweights and feathering springs actuate the blades towards the high pitch direction in the absence of governor oil pressure. The blades are of aluminum construction. The hub and blade clamps are steel. Propeller rotation is clockwise as viewed from the rear.

According to Hartzell Propeller, both propellers were rotating at the time of impact. Neither propeller was feathered. No meaningful estimate of blade angle or power at the time of impact could be made. There were no propeller discrepancies noted that could have precluded normal operation. All damage was consistent with impact damage. For more Information (See Attached Hartzell Propeller teardown report).

ADDITIONAL INFORMATION

Several witnesses were interviewed during the course of this investigation. The following is a brief summary of some of those statements. For more information (see attached witness statements).

A witness from the Mississippi Guard stated that the pilot had been in the process of applying for membership in the Mississippi Guard as a helicopter pilot, to fly OH58 helicopters. His application had just been instituted and very little information was on record. No resume was on file, however, the witness recalled that the pilot had been out of the Alabama Guard for about 8 years. He could not recall any conversation with the pilot regarding any fixed wing flying experience.

A management pilot for the US Army at Ft. Rucker, Alabama, who works in the Department of Evaluation and Standards for the US Army, stated that he had no recollection of the pilot having completed any flight training or flight operation over the previous two years. He verified this with another Officer of the same unit. He also verified that all flight records, DA form 759 and DA form 759-1 were computer generated, not typed (as were the forms submitted by the pilot to the Birmingham FSDO). In addition, he verified that on the DA form 759 submitted by the pilot the signature of the operations officer was not valid. There was no Major by that name assigned to Ft. Rucker as an Operations Officer.

The Manager of Flight Safety International, provider of flight training to the military in C12 (BE-200) and other King Air Equipment, reviewed the training records and found no record of the pilot completing any fixed wing flight training at their facility from 1983 through 1999.

A witness from Rotor Wing Helicopter who knew the pilot and had worked for him during the period from 1986 through 1989, said that he was a fairly competent helicopter pilot, but he was not aware that the pilot having any fixed wing experience. He said the pilot flew out of Pell City, Alabama, in the reserve, but only flew helicopters. He never saw him fly any fixed wing aircraft. He mentioned that the pilot was relieved from his employment with Rotor Wing in 1989.

The Chief Pilot of Life Saver Flight Operations, Caraway Medical Center, helicopter operations knew the pilot from flight operations with the Reserve. He also had received a copy of a resume from the pilot approximately January, 1998. His knowledge of the pilot did not include him flying any fixed wing aircraft, nor was any fixed wing time reported in the resume.

In addition to the FAA, parties to the investigation were; Raytheon Aircraft Company, Pratt & Whitney Canada and National Air Traffic Controllers Association (NATCA).

The wreckage was released to the owner USA Healthcare Leasing, 401 Arnold Street NE, Cullman, Alabama, 35055, on March 12, 1999. (see attached wreckage release).

Pilot Information

Certificate:	Commercial	Age:	43, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last Medical Exam:	07/20/1997
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	4100 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Beech	Registration:	N780BF
Model/Series:	300 300	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	FA-70
Landing Gear Type:	Retractable - Tricycle	Seats:	11
Date/Type of Last Inspection:	01/14/1999, AAIP	Certified Max Gross Wt.:	14100 lbs
Time Since Last Inspection:	3 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	7687 Hours	Engine Manufacturer:	P&W
ELT:	Installed, not activated	Engine Model/Series:	PT6A-60A
Registered Owner:	USA HEALTHCARE LEASING, INC.	Rated Power:	1050 hp
Operator:	USA HEALTHCARE-LEASING	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	HSV, 629 ft msl	Observation Time:	0920 CST
Distance from Accident Site:	30 Nautical Miles	Direction from Accident Site:	360°
Lowest Cloud Condition:	Unknown / 0 ft agl	Temperature/Dew Point:	12° C / 12° C
Lowest Ceiling:	Broken / 700 ft agl	Visibility	2 Miles
Wind Speed/Gusts, Direction:	9 knots, 270°	Visibility (RVR):	0 ft
Altimeter Setting:	30 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	GREENEVILLE, SC (GMU)	Type of Flight Plan Filed:	IFR
Destination:	, AL (3A1)	Type of Clearance:	IFR
Departure Time:	0908 EST	Type of Airspace:	Class E

Airport Information

Airport:	FOLSOM (3A1)	Runway Surface Type:	Asphalt
Airport Elevation:	960 ft	Runway Surface Condition:	Wet
Runway Used:	20	IFR Approach:	ADF/NDB
Runway Length/Width:	5500 ft / 100 ft	VFR Approach/Landing:	None

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:	

Administrative Information

Investigator In Charge (IIC):	BUTCH WILSON	Adopted Date:	01/18/2001
Additional Participating Persons:	EDWARD JESZKA; BIRMINGHAM, AL		
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.nts.gov/pubdms/ .		

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