



National Transportation Safety Board Aviation Accident Final Report

Location:	DALTON, GA	Accident Number:	MIA97FA232
Date & Time:	08/14/1997, 0611 EDT	Registration:	N74EJ
Aircraft:	Beech 200	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Fatal

Flight Conducted Under: Part 91: General Aviation - Positioning

Analysis

The pilot was cleared for a localizer approach by Atlanta Center & told to maintain 5,000 ft until crossing the final approach fix (FAF). Normal altitude at the FAF was 2,700 ft. The pilot was unable to land from this approach & performed a missed approach. He was handed off to Chattanooga Approach, then was cleared to cross the FAF at 3,000 ft & perform another localizer approach. About 1 mile from the FAF, the pilot was told to change to the airport advisory frequency. The pilot acknowledged, then there was no further communication with the aircraft. A short time later, witnesses heard the aircraft crash near the approach end of the runway. Examination of the crash site showed the aircraft had touched down in a grass area about 1,100 ft from the end of the runway, while on the localizer. Propeller slash marks showed both engines were operating at approach power & the aircraft was at approach speed. No evidence of precrash mechanical failure or malfunction of the aircraft structure, flight controls, systems, engines, or propellers was found. The 0621 weather was in part: 300 ft overcast & 1/2 mile visibility with fog. Minimum descent altitude (MDA) for the localizer approach was 1,180 ft msl; airport elevation was 710 ft. The pilot had flown 8 flight hrs, was on duty for 13.6 hrs the day before the accident, was off duty for about 6 hrs, & had about 4 hrs of sleep before the accident flight.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's improper IFR procedure, by failing to maintain the minimum descent altitude (MDA) during the ILS localizer approach, until the runway environment was in sight, which resulted in a collision with terrain short of the runway. Factors relating to the accident were: darkness, low ceiling, fog, pilot fatigue, and improper scheduling by the aircraft operator.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings

1. (F) LIGHT CONDITION - DARK NIGHT
2. (F) WEATHER CONDITION - LOW CEILING
3. (F) WEATHER CONDITION - FOG
4. (C) IFR PROCEDURE - IMPROPER - PILOT IN COMMAND
5. (C) MINIMUM DESCENT ALTITUDE - NOT MAINTAINED - PILOT IN COMMAND
6. (F) FATIGUE(FLIGHT AND GROUND SCHEDULE) - PILOT IN COMMAND
7. (F) INSUFF STANDARDS/REQUIREMENTS,OPERATION/OPERATOR - COMPANY/OPERATOR MGMT

Factual Information

HISTORY OF THE FLIGHT

On August 14, 1997, about 0611 eastern daylight time, a Beech BE-200, N74EJ, registered to Colvin Air Charter, Inc., operating as flight GHP740, collided with terrain while making a localizer approach to runway 14 at Dalton Municipal Airport, Dalton, Georgia, while on a Title 14 CFR Part 91 positioning flight. Instrument meteorological conditions prevailed at the time and an instrument flight rules flight plan was filed. The aircraft received substantial damage and the airline transport-rated pilot was fatally injured. The flight originated from Athens, Georgia, the same day about 0517.

Representatives of Colvin Air Charter, Inc. reported the pilot was positioning the empty aircraft from the home base at Athens, to Dalton, where he was to pick up four passengers. He was then scheduled to depart Dalton with the passengers as a Title 14 CFR Part 135 air taxi flight to Roanoke, Virginia. The Colvin Aviation flight log found in the aircraft after the accident showed the pilot was scheduled to fly to Williamsburg, Virginia after Roanoke, to Muscle Shoals, Alabama after Williamsburg, and back to Dalton after Muscle Shoals.

Transcripts of air traffic control communications showed a person identifying himself as the pilot of GHP740 called the FAA Macon Flight Service Station at about 0450 and requested a weather briefing for a flight from Athens to Dalton and then on to Roanoke, Virginia. He was told that early morning instrument meteorological conditions were forecast for the area.

At about 0513, the pilot of GHP740 called on the aircraft radio to the FAA Atlanta Center, while on the ground at Athens, and was given an instrument flight rules clearance from Athens to Dalton. At 0518, the pilot reported to Atlanta Center he was climbing through 2,700 feet. At 0537, as the flight approached Dalton, the pilot was asked by controllers what instrument approach at Dalton he requested to fly and if he wanted to start the approach at the final approach fix or initial approach fix. The pilot requested the final approach fix. At 0541, the pilot was told to maintain 5,000 feet until the final approach fix and that he was cleared for a localizer 14 approach at Dalton. The normal altitude for passing the final approach fix is 2,700 feet. The pilot was asked at this time if he had the local weather and the pilot replied "that's affirmative." The pilot was unable to land from this approach and called Atlanta Center at 0555, reporting that he had missed approach and requested to go to the initial approach fix for another approach.

At 0600, the FAA Chattanooga Approach Control opened for the day, and the pilot of GHP740 was told by Atlanta Center to contact Chattanooga Approach. At 0601, the pilot of GHP740 contacted Chattanooga Approach, reporting he was level at 4,000 feet. The flight was cleared to 3,000 feet and given the Chattanooga altimeter setting. The pilot inquired about the weather at Chattanooga, and the controller reported visual meteorological conditions existed at Chattanooga at the time. The controller then issued radar vectors to the flight to place it on the final approach course. At 0606, the controller reported to the pilot he was 5 miles northwest of the "Hardwick radio beacon" and that he was cleared for the localizer runway 14 approach at Dalton. The final approach fix for the localizer runway 14 approach to Dalton is the Whitfield radio beacon and the pilot did not question the controllers use of Hardwick radio beacon. At 0607, the controller told the pilot he was 1 mile northwest of the "Hardwick" radio beacon,

change to advisory frequency. The pilot acknowledged this and no further transmissions were received from the pilot.

Recorded radar data from Atlanta Center showed that GHP740 descended to 1,300 feet during the first approach to Dalton, reaching that altitude over the airport. During the second approach to Dalton the flight is last observed on radar at time 0602:32, at 3,600 feet, while initiating a left turn to intercept the final approach course. The flight was about 4 miles southwest of the Chattanooga VOR at this point. No further radar returns were received from the aircraft after this.

Witnesses reported hearing the aircraft crash near the approach end of runway 14 at Dalton Municipal Airport and seeing the postcrash fire. The first report of the crash to rescue personnel was at 0616.

PERSONNEL INFORMATION

The pilot held an airline transport pilot certificate with airplane multiengine land, airplane single engine land, and Learjet ratings, last issued on June 14, 1997. The pilot held a certified flight instructor certificate with airplane single engine and multiengine land and instrument airplane ratings, last issued on April 15, 1996. The pilot held a first class medical certificate with no limitations, last issued on April 8, 1997. At the time of the accident the pilot had accumulated 2,398 total flight hours, with 103 flight hours in the Beech King Air.

Company records show that the pilot flew 8 flight hours and was on duty for 13.6 hours the day before the accident. His duty time ended at 2135, and according to company personnel he would have spent about another hour getting the aircraft prepared for the flights on the day of the accident. The pilot's roommates reported the pilot lived about 20 minutes from the airport and arrived home about 2330, ate, and went to bed between 0000 and 0030, on August 14, 1997. After the accident, the pilot's alarm clock was found set for 0400. Company personnel stated the pilot was seen at the airport by maintenance personnel and other pilots at about 0430.

Federal Aviation Regulation Title 14 CFR Part 135.265 states that "no certificate holder may schedule a flight crewmember, and no flight crewmember may accept an assignment, for flight time during the 24 consecutive hours preceding the scheduled completion of any flight segment without a scheduled rest period during that 24 hours of at least" 9, 10, or 11 consecutive hours, depending on the length of the scheduled flights.

Additional personnel information is included in this report under First Pilot Information and in attachments to this report.

AIRCRAFT INFORMATION

At the time of the accident the aircraft had accumulated 6,328 total flight hours. The aircraft was last inspected on May 14, 1997, 78 flight hours before the accident, when it received an inspection in accordance with an approved aircraft inspection program. The pilot altimeter, first officer altimeter, pitot static system, transponder, and altitude encoder were last tested as required by Federal Aviation Regulations, on March 25, 1997. Additional aircraft information is included in this report under Aircraft Information and in attachments to this report.

METEOROLOGICAL INFORMATION

The Dalton Municipal Airport is equipped with a automated weather observing system (AWOS). At 0601 the AWOS reported the weather as clouds overcast at 300 feet, visibility 3/4 of a mile, temperature 75 F., dewpoint temperature 75 F., wind 160 degrees at 1 knot, and altimeter 30.01 in. Hg.

At 0621 the AWOS reported the Dalton Municipal Airport weather as clouds overcast at 300 feet, visibility 1/2 of a mile, temperature 75 F., dewpoint temperature 75 F., wind 170 degrees at 0 knots, and altimeter 30.02 in. Hg.

Sun and moon information indicates that at the time of the accident the sun was at -9.6 degrees on a bearing of 66 degrees, and the moon was at -38.3 degrees on a bearing of 275.4 degrees. Sunrise at Dalton on August 14, 1997, was at 0657.

Additional meteorological information is contain in this report under Weather Information and in attachments to this report.

AIDS TO NAVIGATION

Runway 14 at the Dalton Municipal Airport is equipped with a localizer approach system. The localizer provides the pilot with only course guidance to the runway and does not provide vertical guidance. The localizer for runway 14 is offset about 3 degrees to the left of the runway heading and according to the approach chart the "final approach course crosses runway centerline extended 5,200' from threshold." (See attached approach charts)

WRECKAGE AND IMPACT INFORMATION

Examination of the crash site showed the aircraft first impacted the ground about 1,100 feet from the runway approach end and about 50 feet to the left of runway center line. The initial impact point was on the localizer course and the aircraft was heading 134 degrees. The touchdown point was on slightly rising terrain and consisted of three sets of tire tracks. The left and right main tire tracks were about 17 feet apart, which match the dimensions of the Beech BE-200 main landing gear. Multiple propeller cuts in the ground were present at the left and right main tire tracks. The cuts measured about 21 inches apart initially and became further apart as the aircraft moved forward. In the area of the initial impact were debris from the belly of the aircraft, pieces of propeller blade imbedded in the ground, and hydraulic oil spills from the main landing gear.

After initial impact the aircraft traveled southeasterly, separating the main and nose landing gear. About 350 feet from the point of initial impact the aircraft crossed a road which was cut across the approach path and impacted an embankment on the southeast side of the road. After impact with the embankment the aircraft traveled on an easterly heading and came to rest on a 065 degree heading, about 700 feet from the runway approach end and 135 feet to the left of the runway center line. The right wing outer panel separated after impact with the embankment and was found 75 east of the main wreckage. A fire erupted in the area of the right inboard wing causing damage to the right inboard wing, right engine, right side of the fuselage, and tail section of the aircraft.

Postcrash examination of the aircraft showed that all components of the aircraft which are necessary for flight were located on the aircraft or along the wreckage line. Continuity of the elevator, rudder, aileron, elevator trim, rudder trim, and aileron trim systems was confirmed and all separation points of cables and components were consistent with overstress separation. The flaps were found in the fully extended position and the landing gear were

extended at impact. The elevator trim tab was found 5 degrees down or aircraft nose up. The rudder trim tab was found 2 degrees right or aircraft nose left. The aileron trim tab on the left aileron was found 4 degrees up or left wing up. Each of the autopilot actuators were found in the disengaged position.

Teardown examination of the left and right engines showed each had debris and dirt ingestion into the compressor sections and dirt was found passing through the engine into the turbine sections. All compressor and turbine wheels and blades were in place. A small amount of molten metal was present on the turbine blades. Rotational scaring was found on several components and continuity of all drive shafts and accessory drives was confirmed. Testing or disassembly of each of the engine controls showed no evidence of precrash failure or malfunction.

Teardown examination of the left and right propellers showed each propeller blade had damage consistent with rotating at the time of ground impact. No evidence of precrash failure or malfunction of either propeller was found. (See attached Hartzell Propeller, Inc. report.)

Examination of the pilot's altimeter showed it was set to 29.97 in. Hg. And the pointer needle was reading 470 feet. The drum portion of the altimeter was reading 600 feet. Testing of the altimeter showed the encoder was also set to 470 feet. Examination showed the front face plate had sustained impact damage. After securing the front face the unit was tested and found to operate normally.

Examination of the copilot's altimeter showed it was set to 30.03 in. Hg. And was reading -140 feet. Teardown examination showed the unit had sustained impact damage and the internal pivot point had pulled out of the resting point making the unit inoperative.

The aircraft was equipped with a radar altimeter which was found in the on position and reading 10 feet above ground level. The unit was set to activate an alarm as the aircraft passed through 250 feet above ground level. The light which activates along with a horn at the set altitude was examined and found to be operative after the accident. The radar altimeter had sustained very little impact damage and the light bulb filament was not stretched or distorted.

Examination of light bulbs from the master warning, master caution, and annunciator panels showed none of the light bulbs exhibited stretched filaments. Examination of cockpit lighting bulbs from under the glare shield showed many had stretched filaments consistent with operating at the time of ground impact.

The pilot's course indicator or horizontal situation indicator was found showing a heading of 132 degrees, set to a course of 134 degrees, and showing a course needle about 3/4 of a dot to the left. The unit was operating on the No. 1 navigation radio which was set to 110.9, the frequency for the localizer runway 14 at Dalton.

MEDICAL AND PATHOLOGICAL INFORMATION

Postmortem examination of the pilot was performed by Geoffrey P. Smith, M.D., Associate Medical Examiner, Georgia Division of Forensic Sciences, Atlanta, Georgia. The cause of death was reported as blunt force injuries. Findings during the postmortem examination was the presence of severe atherosclerotic coronary artery disease. Injuries were consistent with the pilot operating the aircraft at the time of the accident.

Postmortem toxicology studies on specimens obtained from the pilot were performed by Dennis V. Canfield, Ph.D., Manager FAA Toxicology Laboratory, Oklahoma City, Oklahoma.

The tests were negative for carbon monoxide, cyanide, ethanol, basic, acidic, and neutral drugs.

Additional medical and pathological information is contained in Supplement K to this report and in attachments to this report.

TESTS AND RESEARCH

Examination of the propeller slash marks from the left and right propellers at the initial point of impact showed the first 4 to 5 marks were about 21 inches apart. Computer analysis of this information showed that to make these marks the propellers would have to rotate at 1,900 rpm, the normal approach rpm setting, and the aircraft would have to be travelling forward at 98 knots. The normal approach speed for the aircraft at the weight and in the configuration at the time of the accident is about 100 knots. (See attached propeller slash analysis.)

ADDITIONAL INFORMATION

The aircraft wreckage was released to Colvin Air Charter, Inc., on August 21, 1997. All components retained by NTSB for further examination were returned to Colvin Air Charter, Inc.

Additional parties to the NTSB investigation were James Tate, Colvin Aviation and Andre Spits, Pratt and Whitney Engines,

Pilot Information

Certificate:	Airline Transport; Flight Instructor	Age:	29, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
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 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	04/08/1997
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	2398 hours (Total, all aircraft), 103 hours (Total, this make and model), 1772 hours (Pilot In Command, all aircraft), 208 hours (Last 90 days, all aircraft), 77 hours (Last 30 days, all aircraft), 9 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N74EJ
Model/Series:	200 200	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	BB-340
Landing Gear Type:	Retractable - Tricycle	Seats:	10
Date/Type of Last Inspection:	05/14/1997, AAIP	Certified Max Gross Wt.:	12500 lbs
Time Since Last Inspection:	78 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	6328 Hours	Engine Manufacturer:	P&W
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	PT6A-41
Registered Owner:	COLVIN AIR CHARTER, INC.	Rated Power:	850 hp
Operator:	COLVIN AIR CHARTER, INC.	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	ESYA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	DNN, 710 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	0621 EST	Direction from Accident Site:	140°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	0.5 Miles
Lowest Ceiling:	Overcast / 300 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:	Variable	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	24° C / 24° C
Precipitation and Obscuration:			
Departure Point:	ATHENS, GA (AHN)	Type of Flight Plan Filed:	IFR
Destination:	(DNN)	Type of Clearance:	IFR
Departure Time:	0518 EDT	Type of Airspace:	Class E

Airport Information

Airport:	DALTON MUNICIPAL (DNN)	Runway Surface Type:	Asphalt
Airport Elevation:	710 ft	Runway Surface Condition:	Dry
Runway Used:	14	IFR Approach:	Localizer Only
Runway Length/Width:	5000 ft / 100 ft	VFR Approach/Landing:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	JEFFREY L KENNEDY	Report Date:	09/04/1998
Additional Participating Persons:	PAUL J HERON; COLLEGE PARK, GA PAUL E YOOS; WICHITA, KS ROGER E SOUTHGATE; CEDAR RAPIDS, IA ROGER STALLKAMP; 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.nts.gov/pubdms/ .		

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