Aviation Investigation Final Report

Location:	PEARCY, Arkansas	**Accident Number:**	FTW99FA074
Date & Time:	January 29, 1999, 16:30 Local	**Registration:**	N260LH
Aircraft:	Beech 95-B55	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation		

Analysis

During the global positioning system (GPS) runway 5 approach to Hot Springs Memorial Airport, in instrument meteorological conditions, the twin-engine airplane impacted mountainous terrain at 1,020 feet msl, about one nautical mile (nm) right of the final approach course, and approximately 9 nm southwest of the airport. According to the approach plate, the airplane should have been at an altitude no lower than 2,300 feet on this segment of the approach. The last radar hit recorded was at 1622:44, as the airplane was descending through 2,800 feet, 14.2 nautical miles southwest of the airport. Two witnesses located near the accident site reported that about 1630 they heard a small aircraft coming from southwest of their farm, heading towards them at a 'very low' altitude. They heard the aircraft for about 10 seconds, then the sound of the engines was 'gone.' The witnesses also reported that the weather was 'extremely foggy,' and that they could not see the top of the mountain located behind their property. The missed approach procedure for the approach calls for a climbing right turn to 3,000 feet. Examination of the accident site indicated the airplane impacted trees while in a right turn. No anomalies were found with the airframe or engines that would have prevented normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain the minimum descent altitude during the instrument approach. Contributing factors were the pilot's failure to follow the instrument approach procedure, trees, mountainous terrain, low ceilings and foggy weather conditions.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: APPROACH - IAF TO FAF/OUTER MARKER (IFR)

Findings
1. (F) OBJECT - TREE(S)
2. (C) MINIMUM DESCENT ALTITUDE - NOT MAINTAINED - PILOT IN COMMAND
3. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
4. (F) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
5. (F) WEATHER CONDITION - LOW CEILING
6. (F) WEATHER CONDITION - FOG

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On January 29, 1999, approximately 1630 central standard time (CST), a Beech 95-B55 twin-engine airplane, N260LH, was destroyed upon impact with mountainous terrain near Pearcy, Arkansas. The instrument rated commercial pilot and his sole passenger sustained fatal injuries. The airplane was owned and operated by Hi Tech Engineering, Inc., of Hot Springs, Arkansas. Instrument meteorological conditions prevailed, and an instrument flight rules (IFR) flight plan was filed for the 14 Code of Federal Regulations Part 91 business flight. The cross-country flight originated from Hattiesburg, Mississippi, about 1417, and was en route to Hot Springs. At the time of the accident, the airplane was executing a global positioning system (GPS) instrument approach to runway 05 (Rwy 5) at the Hot Springs Memorial Airport.

Federal Aviation Administration records revealed that the pilot called the Greenwood Automated Flight Service Station (AFSS) by telephone at 1314, and obtained an abbreviated pilot weather briefing for an IFR flight from Hattiesburg, Mississippi, to Hot Springs, Arkansas. After receiving the weather briefing, the pilot filed an IFR flight plan from Hattiesburg to Hot Springs.

Following takeoff from Hattiesburg, the pilot established initial contact with Memphis Air Route Traffic Control Center (ARTCC) at 1426. At 1555, the pilot was advised to expect holding at Hot Springs. At 1557, the pilot was cleared to the Hot Springs VOR and instructed to maintain 6,000 feet msl. The pilot acknowledged the clearance. The pilot was then instructed to descend and maintain 5,000 feet. The pilot reported out of 6,000 for 5,000 feet and requested to proceed to Hossy (the final approach fix for the GPS Rwy 5 approach) and hold. Memphis Center cleared the aircraft to proceed to Hossy, hold as published, and maintain 5,000 feet. The pilot acknowledged the clearance.

At 1601, the pilot was given the Hot Springs weather as "... the wind zero seven zero at ten knots visibility one zero miles overcast four hundred..." The pilot requested to go to the Marki waypoint on the GPS Rwy 5 approach "and then turn inbound." The controller cleared the pilot to proceed direct to Marki and hold southwest. The pilot then requested to "hold between marki and skimp intersection." (Skimp waypoint is located between Marki and Hossy on the GPS Rwy 5 approach.) The controller replied "that's fine I don't have the approach plates sir you can hold at your discretion."

At 1602, the controller cleared the pilot "direct skimp and you can hold southwest on the ah two three zero radial ah southwest of skimp expect ah clearance expect further clearance two two one five [1615 CST]." The pilot did not acknowledge the clearance. After reestablishing radio communications with the airplane, the controller instructed the pilot to change to

frequency 118.85. At 1604, the pilot was given the Hot Springs altimeter setting, and the controller reissued the holding instructions and the expect further clearance time. The pilot acknowledged, "two two one five and hold on the ah two three zero degree radial at skimp, zero lima hotel wilco and say altimeter sir."

At 1612, the pilot was instructed to maintain 3,000 feet until Skimp, and "cleared gps runway five approach to hot springs." The pilot replied, "I tell you what sir, why don't you go ahead and get some of that traffic off of hot springs if you can, and I'll just hold out here for a few more minutes, we're bout ah six miles out of skimp now at five, we'll start our descent down." The controller replied, "okay well maintain five for right now sir."

At 1617, the controller inquired if the pilot wanted to start the approach at the initial approach fix Hossy, or from Skimp. The pilot replied, "like to start at skimp, we'll just hold between skimp and marki as soon as you give me the clearance to get me down I'll turn in." The pilot offered to let a Lear Jet land first; however, the controller informed the pilot he would have to go ahead of the Lear Jet.

At 1619, the pilot was instructed to descend and maintain 3,500 feet. The pilot reported out of 5,000 for 3,500 feet. At 1620, the controller instructed the pilot to "maintain ah 3,000 until skimp, cleared ah gps approach to hot springs." The pilot acknowledged the clearance.

At 1622:05, the pilot reported, "established on the localizer inbound sir for the gps runway five." The controller replied "frequency change approved, report your arrival time on this freq or your ah arrival on this frequency." The pilot acknowledged. Memphis ARTCC had no further communications with the pilot. See the enclosed communication transcripts.

Radar data was obtained from Memphis ARTCC. A plot of the radar data showed the aircraft did not hold southwest of Skimp on the inbound course as instructed, but held south of Skimp using non-standard turns (left). At 1621:32, the radar data indicated the airplane was over Skimp at 3,300 feet, entered a turn to the right and continued on a northeast heading towards the airport. The last radar hit recorded was at 1622:44, as the airplane was descending through 2,800 feet, 14.2 nautical miles southwest of the airport. See the enclosed NTSB radar study.

According to the Director of the Hot Springs Memorial Airport, at approximately 1630, the pilot of a Big Sky Airlines airplane heard the accident pilot call "5 miles" on the airport's common traffic advisory frequency.

Two witnesses, located near the accident site, reported that about 1630, they were feeding their horses when they heard a small aircraft coming from southwest of their farm, heading toward them. "We could tell it was very low. It kept getting louder and closer to us. We thought it was coming on top of us." They heard the aircraft for about 10 seconds. "All of a sudden the sound of the engines [was] gone." They did not "hear a crash or [an] explosion, but became concerned about a crash since it appeared to be flying so low."

PERSONNEL INFORMATION

The flight logbook of the 47-year-old pilot was not located; therefore, instrument flight time and total flight time could not be determined. The date of the pilot's last biennial flight review also could not be determined. According to FAA records, the pilot was issued a commercial pilot certificate with an instrument rating on October 25, 1979. According to the pilot's most recent second class medical certificate application, dated June 1, 1998, he had accumulated a total of 2,500 civilian flight hours. According to data provided by the operator, the pilot had accumulated 170.5 hours in the year preceding the accident, of which 60 hours were accumulated in the previous 90 days, and 17.6 hours in the previous 30 days.

AIRCRAFT INFORMATION

Examination of the airplane's maintenance records, by the NTSB investigator-in-charge (IIC), revealed that the 1972 model Beech 95-B55's most recent annual inspection was completed on August 25, 1998, at an airframe total time of 3,753.6 hours. At the time of the annual inspection, the left engine had accumulated 987.7 hours since major overhaul (SMOH), and the right engine had accumulated 1,477.5 hours SMOH.

Review of the maintenance records revealed no evidence of any uncorrected maintenance discrepancies. The aircraft's maximum takeoff weight is 5,100 pounds, and an estimate of the aircraft's weight at the time of the accident placed it within weight and balance limits.

According to maintenance records, the airplane had been modified with a Colemill Conversion that replaced the two original Continental IO-470-L engines equipped with Hartzell PHC-C3YF-2F propellers with two Continental IO-520-E2B engines equipped with Hartzell ECH-A3VF-2B-V7636D propellers. According to the Major Repair And Alteration, FAA Form 337, dated January 9, 1978, this modification was applied utilizing the instructions contained within STC SA432SO.

Although no vortex generators were found during the wreckage examination, maintenance records indicate that vortex generators had been installed on the wings, vertical stabilizer, and strakes were installed on the engine nacelles. According to the Major Repair And Alteration, FAA Form 336, dated July 24, 1996, this modification was applied utilizing Drawing List MA2005 and Installation Instructions MA2004, per STC SA5789NM.

The aircraft was equipped with a Garmin GNC 300 GPS receiver coupled to the horizontal situation indicator (HSI). The GPS was installed in the aircraft on August 6, 1996, and was certified for IFR navigation. The aircraft's Flight Manual was revised to include the Garmin GNC 300 Operating Handbook and FAA approved flight manual supplement.

METEOROLOGICAL INFORMATION

The Hot Springs Memorial Airport special weather observation at 1619, reported overcast ceiling at 300 feet, visibility 2 1/2 miles in light drizzle and mist, altimeter 30.05 inches of mercury, wind from 060 degrees at 7 knots gusting to 15 knots, and temperature and dew point 43 degrees Fahrenheit.

The accident witnesses reported that the weather was "extremely foggy," and they estimated the visibility to be less than 1/4 mile. The witnesses stated that they could not see the top of the mountain located behind their property.

AERODROME INFORMATION

The published weather minimums for the GPS Rwy 5 approach are a ceiling of 400 feet and 1/2-mile visibility. The distance from Skimp to Hossy is 12.1 nautical miles (nm). The minimum altitude for this segment of the approach is 2,300 feet. The distance from Hossy to the missed approach point at the approach end of runway 5 is 5.1 nm. From Hossy to a fix 2.0 nm from the runway, the minimum altitude is 1,240 feet. The Minimum Descent Altitude (MDA) for a straight-in landing to runway 5 is 880 feet. The missed approach procedure for the GPS Rwy 5 approach is a climbing right turn to 3,000 feet direct Socks waypoint and hold.

WRECKAGE IMPACT INFORMATION

The airplane wreckage was located in a ravine within mountainous wooded terrain, about one mile right of the final approach course and approximately 9 nautical miles southwest of the Hot Springs Memorial Airport, at latitude 34 degrees 22.995 minutes north and longitude 93 degrees 14.306 minutes west. The airplane struck the tops of three trees, located on top of a mountain at an elevation of about 1,020 feet. The measured magnetic heading from the first tree to the second tree was 120 degrees, and the measured magnetic heading from the second tree to the third tree was 130 degrees. The airplane continued downslope on an approximate heading of 170 degrees, striking several trees before impacting the ground inverted on a measured magnetic heading of 190 degrees. The aircraft came to rest next to the impact crater, at an elevation of about 817 feet. The aircraft was consumed by a fire. All avionics, including the GPS receiver, were destroyed by impact forces and fire.

During the examination of the aircraft, control continuity was established from all flight control surfaces to the cockpit area; however, the aileron control cables routed in the left wing were separated in two places. The fractured aileron control cable ends with the attached fractured bell crank, were sent to the NTSB Materials Laboratory for examination.

Both the left and right engines were found with the main wreckage. Both engines were sent to the manufacturer for further examination. The right propeller was separated from the engine, aft of the crankshaft propeller flange. The propeller was found in the impact crater, and all three blades remained attached to the hub. The left propeller was found attached to the engine, with two blades consumed by the fire. The other blade was separated from the propeller hub and found in the impact crater. Both propeller assemblies were sent to the

manufacturer for further examination.

MEDICAL AND PATHOLOGICAL INFORMATION

The Arkansas State Crime Laboratory, Little Rock, Arkansas, performed an autopsy of the pilot. Toxicological tests performed by the FAA's Toxicology and Accident Research Laboratory were positive for Brompheniramine. Levels of 0.034 (mg/dl, mg/hg) Brompheniramine was detected in heart and non-quantified Brompheniramine was detected in liver. According to Dr. Leonelli, FAA, Southwest Regional Flight Surgeon's Office, "Brompheniramine maleate is an antihistamine prescribed for allergic rhinitis. Sedative effects may occur."

FIRE

No evidence of pre-impact fire was found during the investigation.

TESTS AND RESEARCH

The fractured aileron control cable ends with the attached fractured bell crank were examined at the NTSB Materials Laboratory on February 26, 1999. The examination revealed that "the fractures and associated features in the cables were typical of separations as a result of exposure to elevated temperatures." See the enclosed Metallurgist's Factual Report for details of the examination.

A teardown examination of the two Continental IO-520-E engines, serial number 556354 (right) and serial number 556353 (left), was conducted at the Teledyne Continental Motor facility in Mobile, Alabama on March 3, 1999, under the supervision of the NTSB IIC. No discrepancies were noted during the examination that would have precluded normal operation prior to ground impact. See the enclosed manufacturer report for details of the examination.

A teardown examination of the Hartzell propellers was conducted at the Hartzell Propeller facility in Piqua, Ohio, on March 23, 1999, under the supervision of the NTSB IIC. There were no discrepancies noted during the examination that would have precluded normal operation prior to ground impact. See the enclosed manufacturer report for details of the examination.

ADDITIONAL DATA

The airplane was released to a representative of the owner.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	47,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	June 1, 1998
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2671 hours (Total, all aircraft), 60 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N260LH
Model/Series:	95-B55 95-B55	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TC-1426
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	August 25, 1998 Annual	**Certified Max Gross Wt.:**	5100 lbs
Time Since Last Inspection:	158 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	3912 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-520-E
Registered Owner:	HI TECH ENGINEERING INC.	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	HOT ,540 ft msl	**Distance from Accident Site:**	10 Nautical Miles
Observation Time:	16:19 Local	**Direction from Accident Site:**	48°
Lowest Cloud Condition:	Unknown	**Visibility**	2.5 miles
Lowest Ceiling:	Overcast / 300 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots / 15 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	60°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	6°C / 6°C
Precipitation and Obscuration:	N/A - None - Fog		
Departure Point:	HATTIESBURG , MS (HBG)	**Type of Flight Plan Filed:**	IFR
Destination:	HOT SPRINGS , AR (HOT)	**Type of Clearance:**	IFR
Departure Time:	14:16 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	MEMORIAL FIELD HOT	**Runway Surface Type:**	
Airport Elevation:	540 ft msl	**Runway Surface Condition:**	
Runway Used:	5	**IFR Approach:**	
Runway Length/Width:	6595 ft / 150 ft	**VFR Approach/Landing:**	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	34.429565,-93.299034(est)

Administrative Information

Investigator In Charge (IIC):	Wigington, Douglas
Additional Participating Persons:	BUDDY M KOELLNER; LITTLE ROCK , AR STUART E BOTHWELL; WICHITA , KS GEORGE M HOLLINGSWORTH; MOBILE , AL
Original Publish Date:	January 18, 2001
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=45697