



National Transportation Safety Board Aviation Accident Final Report

Location:	Eagleton, AR	Accident Number:	FTW03FA059
Date & Time:	12/09/2002, 1140 CDT	Registration:	N127YV
Aircraft:	Beech 1900C	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	3 Fatal
Flight Conducted Under:	Part 91: General Aviation - Ferry		

Analysis

The aircraft collided with mountainous terrain in a level descent during a visual approach to the destination airport. According to recorded radar data, 10 minutes after descending from 15,000 feet, the flight impacted about 200 feet below the top of the partially obscured ridgeline (elevation of 2550 feet), and 8 miles from the destination. The data indicates the flight path was similar to the global positioning satellite (GPS) approach to the airport. Six minutes before the accident, and the pilot's last transmission to air traffic control, he was informed and acknowledged that radar service was terminated. The flight was 12.4 miles from the accident site when radar contact was lost. Reduced visibility due to fog hampered search & rescue efforts, and the aircraft wreckage was located the next day. The aircraft was equipped with a GPS navigation system; however the installation was incomplete, restricting its use to visual flight rules (VFR) only. The investigation did not determine if the GPS was being used at the time. A non-enhanced Ground Proximity Warning System was also installed. The maximum elevation figure listed on the sectional aeronautical chart covering the area of the accident site and destination airport was 3000 feet mean sea level. The chart also shows an advisory for the area to use caution due to rapidly rising.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: In-flight collision with terrain due to the pilot's failure to maintain clearance and altitude above rapidly rising terrain while on a VFR approach. Contributing factors were the obscuration of the terrain due to clouds.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: APPROACH

Findings

1. TERRAIN CONDITION - RISING
2. TERRAIN CONDITION - MOUNTAINOUS/HILLY
3. (F) WEATHER CONDITION - CLOUDS
4. (F) WEATHER CONDITION - OBSCURATION
5. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
6. (F) PHYSICAL IMPAIRMENT(CARDIOVASCULAR) - PILOT IN COMMAND
7. (F) DIVERTED ATTENTION - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On December 9, 2002, approximately 1140 central daylight time (CDT), a Beech 1900C twin turboprop airplane, N127YV, registered to Raytheon Aircraft Credit Corporation of Wichita, Kansas, and operated by Raytheon Aircraft Services Inc., of Wichita, Kansas, was destroyed when it collided with terrain approximately 8 miles north of the Mena Intermountain Municipal Airport (M39), Mena, Arkansas. The airline transport pilot and 2 airline transport pilot rated passengers sustained fatal injuries. The flight originated from Mid-Continent Airport (ICT), Wichita, Kansas, at 1043, and its intended destination was Mena, Arkansas. Visual meteorological conditions prevailed en route from Wichita toward Mena, and a flight plan was not filed for the Title 14 Code of Federal Regulations Part 91 business flight. VFR flight following was requested by the pilot after takeoff from Wichita.

The airplane had been in Mena, Arkansas, at Rose Aviation Inc., undergoing refurbishment and final preparations for a acceptance/delivery flight to its new owner. Rangeflyers Inc., of Wichita, Kansas, was contracted by Raytheon Credit Corporation to provide pilot services to Rose Aviation to facilitate delivery of the airplane to Hageland Airlines, of Anchorage, Alaska. On the morning of the accident the airplane departed Mena at 0620 with two Rangeflyers pilots; one acting as the pilot-in-command (PIC), and the other pilot who, according to Rangeflyers, was listed as a pilot rated passenger. The intent of the flight was to pick up the CEO/President of Hageland Airlines, who was the airline's representative to accept delivery and finalize the purchase of the airplane. The airplane landed at Wichita approximately 0745 after an uneventful flight from Mena. The airplane parked approximately 2.5 hours at the Raytheon Aircraft Services ramp at Wichita waiting to make a return flight to Mena. The intent of the flight from Wichita to Mena was to transport the CEO of Hageland Airlines to Mena (Rose Aviation) so he could authorize a pre-purchase agreement for another 1900C, after which, he was going to fly from Mena to Wichita with a Rangeflyers PIC to accept delivery of N127YV.

Just prior to takeoff from Wichita, a Raytheon employee witnessed the non-PIC Rangeflyers pilot close the main cabin door. According to air traffic control (ATC) records provided by the FAA, at 1031, the PIC of N127YV contacted Wichita Clearance Delivery and requested "VFR to Mena, Arkansas," at 17,500 feet. Wichita Clearance Delivery acknowledged the request and assigned transponder code "0451." At 1043, the airplane departed Wichita en route to Mena. At 1049, Wichita Departure Control contacted N127YV and advised them that radar services were terminated, and to squawk "VFR." N127YV then requested radar flight following en route to Mena. Wichita Departure Control then assigned N127YV to Kansas City Center for radar flight following. At 1128, N127YV switched frequencies from Kansas City Center to Memphis Center, and advised Memphis Center that they were at an altitude of 15,500 feet and "VFR." Memphis Center acknowledged, "report Mena airport in sight, Fort Smith altimeter [setting] three zero three six."

From recorded radar data provided by the FAA, the airplane began what appeared to be a steady descent out of 15,500 feet at 1130:22. At 1132:35, radar showed the airplane descending through 11,900 feet. At 1133:09, radar showed the airplane descending thru 9,800 feet, at 241 knots ground speed, on a bearing of 122 degrees. The last recorded radar data point, at 1135:58, showed the airplane at 5,100 feet, at 190 knots ground speed, on a bearing of 126

degrees. At 1136:43, Memphis Center advised N127YV that radar contact was lost and radar services were terminated (which was normal for the mountainous area in which the airplane was flying). At 1136:49, the pilot of N127YV acknowledged, "thanks, have a good one." No further radio transmissions were received from N127YV. The airplane did not arrive in Mena. A missing airplane search was initiated by the Civil Air Patrol (CAP) and local law enforcement. The wreckage was spotted in rugged mountainous terrain near the top of a 2,550-foot ridge line by a CAP airplane on the afternoon of December 10, 2002. Foot access to the accident site was hindered by rain, fog and steep, rocky terrain.

When plotted on a topographical chart, the distance between the last radar contact of the airplane and the accident site was approximately 12.4 nautical miles. The distance between the accident site and the airplane's intended destination (Mena) was approximately 8 nautical miles.

PERSONNEL INFORMATION

The pilot's personal flight logbook was not reviewed. FAA records showed that the pilot held a valid airline transport pilot certificate, issued on August 1, 2002. He was type-rated in the BE-1900, ME-300, and BE-400 and had completed the Flight Safety International 1900D airliner pilot recurrent course on February 28, 2001. He also held an instrument rating and instructor ratings for single engine land, multi-engine land, and instrument airplane. The pilot held a valid FAA first class medical certificate dated, July 8, 2002, with no limitations. As of the date of his last medical certificate application, the pilot reported 10,108 total flight hours with 150 flight hours in the previous 6 months.

The pilot had been contracted by Range flyers, Inc. to provide pilot services in support of the pending sale of the accident airplane. As of the date of the accident, the pilot had completed seven check flights in the accident airplane, totaling 4.3 hours.

AIRCRAFT INFORMATION

The 1990 model Beechcraft 1900C Airliner, serial number UC-127, was configured as a passenger transport, and was powered by 2 Pratt & Whitney, Canada, Inc., PT6A-65B turbo propeller engines. Each engine was equipped with a Hartzell Propeller, Inc., HC-B4MP-3A four-bladed (composite blades), hydraulically operated, constant-speed propeller with feathering and reversing capabilities. The airplane had seating for 19 passengers, two aircrew stations, and dual flight controls. A cockpit voice recorder system was installed. A flight data recorder system was not installed. The airplane had a separate pitot static system for the pilot's flight instruments and for the co-pilot's flight instruments, and was equipped with dual communication and navigation radios.

Time Summary

Airframe

S/N UC-127: Approximately 12,473.7 hours since manufactured.

Left Engine

S/N GG32390: Approximately 12,128.9 hours since new, 462.1 hours since overhaul.

Left Propeller

S/N FWA3367: Approximately 11,064 hours since new.

Right Engine:

S/N GG32543: Approximately 12,537.9 hours since new, 462.1 hours since overhaul.

Right Propeller

S/N FWA3368: Approximately 10,625 hours since new.

A GPS navigation system was installed, and the airplane was equipped with a non-enhanced GPWS (ground proximity warning system). A review of the Honeywell GPWS Pilot Guide revealed the following listed system constraint: A non-enhanced GPWS may give little or no advanced warning time for flight into precipitous terrain where there are few or no preceding obstructions. This particularly applies if the aircraft is in a stabilized descent at a normal approach descent rate, and there is no ILS glide slope signal being received or not available.

A review of FAA registration records revealed that the airplane was purchased by Beech Acceptance Corporation, Inc. on November 30, 1990, and was leased to Mesa Airlines during the period, December 4, 1990, to January 5, 1996. Beech Acceptance Corporation, Inc. became Raytheon Credit Corporation, Inc. The airplane was leased to Raytheon Aircraft Services during the period, April 1, 1997, until November 28, 1999.

A review of the airplane's logbooks revealed that Raytheon Aircraft Services (RAS) located in Rockford, Illinois, inspected the airplane on February 21, 2000, at 12,460.0 hours total airframe time and 0.0 hour meter time. On March 7, 2000, and March 17, 2000, RAS conducted routine maintenance. Cutter Aviation, Inc., located in Albuquerque, New Mexico, made logbook entries to reflect the airplane was being maintained in preservation during the period September 11, 2000, until October 17, 2001. Airplane flight log records showed that the airplane was delivered to Rose Aircraft Services, Inc., located at Mena Intermountain Municipal Airport on September 24, 2002, at a airplane total time of 12,467.5 hours, and hour meter 10.6 hours. According to the flight logs, seven maintenance flights were flown by the accident pilot between November 21, 2002, and December 6, 2002, totaling 4.3 hours. It was noted in the logs that during the first maintenance flight, the hour meter was not operating. The hour meter read 13.8 hours on December 6, 2002, at the completion of the last maintenance flight. The flight logs and aircraft records did not show any outstanding discrepancies.

Hageland Airlines had contracted with Raytheon Aircraft Airline Sales (RAAS) to purchase UC-127 after their specified alterations had been completed. RAAS contracted Rose Aviation, which is located at Mena Intermountain Municipal Airport, to perform the work. That work included paint and interior modifications and the installation of a Bendix/King KLN 90B GPS navigation system. The airframe and engines were inspected, and the propellers were overhauled. Rangeflyers, Inc. was contracted by RAAS to provide pilot support to Rose Aviation for function maintenance flights and for the delivery of the airplane.

A review of the airplane FAA Form 337 revealed A KLN 90B GPS installation was completed on November 11, 2002. The Form 337 installation description reported that the KLN90B system was coupled to the installed Collins HPU 74 EHSI (pilot's horizontal situation indicator) through a switching unit controlled by a switch labeled NAV/GPS. The Form 337 reported that a placard stating "GPS Approved For VFR Use Only" had been installed on the pilot instrument panel, and the requirements of FAR 91.407 (b) had not been complied with.

The AlliedSignal Aerospace KLN 90B Pilot's Guide, P/N 006-08773-000, Chapter 1 - KLN 90B

System Components states the following: "A basic KLN 90B system consists of a panel mounted KLN 90B GPS sensor/navigation computer, a data base cartridge, and an antenna. An altitude input is required to obtain full navigation and operational capabilities. Additional system components may be added or interfaced to the KLN 90B which increases its features and capabilities. Some of these optional components include an external course deviation indicator (CDI) or HSI, RMI, fuel management system, air data system, ARTEX ELS 10 emergency locator transmitter (ELT), autopilot, and external annunciators."

"The KLN 90B panel mounted unit contains the GPS sensor, the navigation computer, a CRT display, and all controls required to operate the unit. It also houses the data base cartridge which plugs directly into the back of the unit." (The data base can be updated by either replacing the data cartridge or by interfacing a laptop computer to the panel mounted unit. The data base is updated every 28 days.)

The Pilot's Guide, Chapter 6, states the following caution: "CAUTION: The KLN 90B obtains approach information from the database. Therefore, it is extremely important that the database is current. The KLN 90B is approved for IFR non-precision approaches only when the database is current. If you attempt to select an approach when the database is out of date, you will be given the status-message: "OUTDATED DB" in the bottom center portion of the screen as a reminder."

"In some installations the aircraft will have a NAV/GPS switch to select which navigation source is displayed on the primary HIS or CDI."

A review of the KLN 90B installation FAA Form 337 revealed that the IFR QAI installation procedures had not yet been completed, consequently there was a placard stating "GPS Approved For VFR Use Only" installed on the pilot instrument panel. There was no record that the database had been updated. The instrument panel was examined at the accident site and again at ASOD, but the NAV/GPS switch could not be identified. The KLN 90B panel mounted unit and the pilot's EHSI unit were consumed by the post impact fire. It is unknown whether or not the KLN 90B was being utilized for navigation at the time of the accident.

METEOROLOGICAL INFORMATION

Verbal reports from local law enforcement, rescue personnel, and the Civil Air Patrol were given to the NTSB IIC. Low clouds and reduced visibility had initially restricted air search efforts and ground crews from reaching the accident site. Interviews of residents in the valley below the ridgeline, revealed that they recalled the ridgeline to be partially obscured about the time of the accident. The local sheriff reported that he recalled that cloud layers were obscuring the ridgeline about the time of the accident, and that it was "typical" for the ridgeline to be obscured at that time of the year in the late morning hours.

The following are METAR reports from available weather reporting facilities within 50 miles of the accident site:

Mount Ida, Arkansas (MWT), located about 33 miles southeast of the accident site, at 1153 reported calm wind, visibility 10 miles, overcast 5,500, temperature 6 degrees Celsius, dew point 1 degree Celsius.

Poteau, Oklahoma (RKR), located about 35 miles to the northeast of the accident site, at 1131 reported wind from 040 at 3 knots, overcast 5,000, temperature 6 degrees Celsius, dew point 2

degrees Celsius.

AIDS TO NAVIGATION

Recorded radar information was obtained from the FAA, and was plotted on a topographic map along with the position of M39 Runway 17/ 35, the accident site position, and the M39 GPS RWY 17 approach. A review of the FAA radar information and the plot revealed the airplane started a descent from 15,500 feet MSL at 1130 CST, while tracking 125 degrees over the ground. The last recorded radar contact was recorded at 1135:58 CST, at which time the airplane was at 5,100 feet MSL, and had been on a ground track of about 125 degrees and at a ground speed of about 190 knots. When the radar ground track was extended it intersected the GPS RWY 17 approach for M39 at the BATEZ initial approach fix (IAF). The accident site location was 0.6 nm right of the GPS RWY 17 inbound course and before (north) of the approaches MIDHY final approach fix (FAF). The approach's published minimum altitude between the IAF and FAF positions was "no lower than" 3,600 feet MSL altitude. The highest point in the immediate area of the accident site is identified on the current Memphis Sectional Aeronautical Chart as being 2,570 msl.

The current Sectional Aeronautical Chart had the following caution associated with the mountainous area north of Mena: "Rapidly Rising Terrain Use Caution During Periods Of Low Ceiling And Visibility." The Maximum Elevation Figure (MEF) denoted on the Memphis Sectional in the quadrant that encompasses both the accident site and Mena Intermountain Airport was 3,000 feet msl. The MEF, which is annotated on sectional charts in large, bold, blue numerals, is based on information available concerning the highest known feature in each quadrangle, including terrain and obstructions.

FLIGHT RECORDERS

The cockpit voice recorder (CVR) was recovered and transported to the NTSB Vehicle Recorder Laboratory in Washington, DC. CVR's housing was intact but showed evidence of thermal distress on the outside. When opened in the laboratory, the internal components displayed severe thermal damage and the recorder's tape could not be downloaded. No information was derived from the CVR. See NTSB CVR Group Chairman's Report for further details. The airplane was not equipped, nor was it required to be equipped, with a flight data recorder.

WRECKAGE AND IMPACT INFORMATION

Initial examination of the wreckage at the accident site commenced on December 12, 2002. The wreckage was located on rising, heavily wooded, mountainous terrain, Global Positioning System (GPS) coordinates; North 34 degrees 41 minutes 15 seconds West 94 degrees 13 minutes 09 seconds, about 8 nautical miles north of the Mena Intermountain Airport. The accident site elevation by GPS was 2,050 feet msl, about 200 feet below the top of a mountain ridgeline. The wreckage path was oriented upslope on a measured 26-degree incline within an area that was densely populated with mature 30 to 40- foot tall pine trees. Evidence at the site showed that the airplane had collided with multiple pine trees along its flight path, prior to coming to rest on the rocky ground. Based on the swath that was cut through the trees, the airplane's attitude at the time of initial tree contact was near wings level, slightly nose down. The energy path through the trees was measured to be approximately 130 degrees magnetic.

Mostly all of the cockpit and main cabin sections of the fuselage were found consumed by fire rearward to the aft pressure bulkhead. Cockpit instrumentation on the left side of the instrument panel was found severely impact damaged or consumed by fire. The right side's

instrumentation was also severely fire damaged. The right side altimeter indicated "750" feet and had an altimeter setting of 30.31 inches of mercury. The right side Bearing/Distance/Heading Indicator (BDHI) indicated a heading of 132 degrees. One engine inter-turbine temperature (ITT) indicator (side unknown) was found with its needle position showing "790" degrees. The cockpit voice recorder box was found laying within the ash and molten slag in the vicinity of cabin seat row #8. One cam lock from the air stair door and the outside door handle were located. The cam lock was in the locked position. Both engines were entangled within mangled airframe structure, preventing inspection of their respective gas generator, turbine, and compressor sections. All eight propeller blades (composite) were found shattered and fragmented throughout the accident area. Portions of blade fragments were found severely burned within the hot areas of the post-impact fire, and numerous unburned blade fragments were found down slope of the main wreckage. Some trees exhibited marks and gouges corresponding to propeller blade strikes.

The left wing was found separated from the fuselage attach point. The left engine, nacelle, and left main landing gear strut were found separated from the wing. The aileron trim actuator extension was 1 1/2 inches, which is a full retracted screw jack position and would correspond to a 15 degrees tab down position. One left flap actuator (unknown whether it was an inboard or an outboard actuator) was found extended 3 1/4 inches. (Note: According to data provided by the manufacturer, a 3 1/4 inch extension on an outboard flap actuator would correspond to the "TAKEOFF FLAP" position of 10 degrees, and that extension has no meaningful (selectable) position for an inboard flap actuator.) The left wingtip was found approximately 100 feet beyond the main wreckage.

Detailed examination of the left engine and propeller assemblies could not be accomplished due to the terrain and orientation of the wreckage. However, the engine had severe thermal damage on its exterior and the accessory gearbox (AGB) and compressor inlet section was consumed by post-impact fire. The left propeller hub was found attached to the reduction gearbox (RGB) were found separated approximately 45 feet to the right of the left engine, and the constant speed unit (CSU) was still attached. Large sections of two propeller blades from the left assembly were found adjacent to the left side of the fuselage. The left propeller piston was found severely fragmented and melted. The second stage planet gears were found approximately 40 feet beyond the left engine, and the gears were free to rotate by hand. As viewed from the left exhaust duct, the power turbine blades appeared to be intact. The visible sector of the compressor rotor appeared to be intact with visible burn residues on the first stage. The left engine's fuel control unit (FCU) was found separated in proximity to the left AGB.

The right wing was found attached to the fuselage, but was folded back along the fuselage at about a 45-degree angle. The right engine and propeller, nacelle, and flaps remained attached to the wing and were not exposed to the post impact fire. Access to the flap actuators was attempted but was not successful at the accident site. Visually, the flaps were not fully retracted. The right wingtip was found at the beginning of the tree strikes. At the accident site the rudder was found separated from the vertical stabilizer, the horizontal stabilizer separated from the vertical stabilizer, and the horizontal stabilizer separated into two pieces. The elevator trim tab actuator extensions were dimensioned; one actuator was found to be fully extended and the other actuator was fully retracted, which cannot be commanded positions. The rudder trim actuator housing was separated. The case pieces were aligned and the actuator extension dimensioned. The actuator extension was measured to be 2 3/16 inches,

which corresponds to 6 degrees tab right. Elevator and rudder flight control cables were traced from the rear cabin area through the rear fuselage to their respective attachment to the elevator and rudder bell cranks.

Detailed examination of the right engine and propeller assemblies could not be accomplished due to the terrain and orientation of the wreckage. However, inspection of the visible section of the compressor rotor did not show signs of distress, and was free to rotate by hand. The P3 and Py pneumatic lines appeared to be intact, and the engine's AGB was found attached and intact. The right engine FCU and fuel pump was found intact with control cables connected. The right propeller's piston/cylinder/spring assembly was found partially separated from the propeller hub.

Further detailed examinations of the airframe, engines, and propeller assemblies were conducted after the wreckage was recovered to Air Salvage of Dallas (ASOD), Lancaster, Texas.

MEDICAL AND PATHOLOGICAL

An autopsy on the pilot was performed by the Medical Examiner, Arkansas State Crime Laboratory, Little Rock, Arkansas, on December 13, 2002. The cause of death was listed on the front page of the autopsy report:

1. "Multiple Traumatic Injuries"
2. "Coronary Artery Arteriosclerotic Disease with Right Coronary Hemorrhagic Dissection"

On page 5 of the autopsy report, the following is an excerpts from the "Opinion" section:

"In consideration of the circumstances of death and after autopsy of the body, it is our opinion that [the pilot], a white male, died of multiple traumatic injuries. A contributing factor in his death will be listed as coronary artery arteriosclerotic disease with right coronary artery hemorrhagic dissection."

Toxicology tests were performed at the FAA's Civil Aeromedical Institute (CAMI), Oklahoma City, Oklahoma. The tests were negative for ethanol and drugs. Tests for carbon monoxide and cyanide could not be performed.

TESTS AND RESEARCH

On November 25, 2003, at ASOD, the airframe wreckage was re-examined and the propeller assemblies were disassembled. The engines were crated and forwarded to Pratt & Whitney Canada for a disassembled examination. On May 18, 2004, at Pratt & Whitney, Montreal, Canada, the engine disassembly inspection was performed on both engines.

Airframe:

To facilitate the examination, the wreckage debris was laid out and oriented to resemble the four corners of the airplane. During the examination, the left stabilon was found separated into multiple pieces. Visual examination of the leading edge of the left stabilon did not reveal soot deposits. The right stabilon had separated from the rear fuselage about 12-inches outboard of its attachment, and the remainder was not found. Visual examination of the leading edge of the inboard 12 inches of stabilon did not reveal soot deposits. Visual examination of the bottom of the rear fuselage and the attached dorsal fin did not reveal soot deposits.

The tail navigation light bulb was removed and examined visually. The light bulb filaments

were intact and the glass bulb was intact.

Due to the extensive fragmentation and post impact thermal damage to the airframe, flight control continuity from the cockpit to the flight control surfaces could not completely be established. All of the damage and separations found appeared to be consistent with impact forces. From the cockpit, the control column was laid out along with the two control yokes. The right horizontal arm of the control column was separated from the main vertical column. The aileron control cable remained attached to the left aileron control chain, which was found engaged in the left aileron control sprocket. The right aileron control cable and chain assembly was separated, but was found with the control column remains. The right control yoke was intact and had not been exposed to the post impact fire. The left control yoke had the right horn separated, and the yoke exhibited thermal damage consistent with the post impact fire. All four rudder pedals were separated from the airplane. The left rudder bell crank was separated from the airplane and had been partially consumed by the post impact fire. No rudder flight control cables were found attached. Visual examination of the leading edges of the horizontal and vertical stabilizers did not reveal soot deposits.

The wet compass interior trim covering was examined. Visual examination of the white plastic trim did not reveal soot deposits, nor exposure to excessive heat. The caution annunciator light panel and the warning annunciator light panel were recovered. Both annunciator panels were exhibited thermal distress consistent to their proximity of the post impact fire. The copilot RMI heading card was oriented on 134 degrees, and both the double needle and single needle were pointing 109 degrees. The pilot's electric turn and bank indicator was indicating a left turn. Other than impact fragmentation and post impact fire damage, no pre-impact anomalies were found during the examination of airframe wreckage

Propeller Assemblies:

Both left and right propeller assemblies were disassembled and examined, but due to impact damage, a pre-impact blade angle could not be determined. The fragmentation of the composite blades was extensive, and according to the manufacturer, the extent of fragmentation is indicative of significant speed, power, or both at the time of impact. The most notable observations with relation to the propellers, were torsional wrinkles found in the exhaust duct housings of both engines. According to the manufacturer, the almost symmetrical wrinkles would coincide with both propellers having rotational energy and similar power at the time of impact. Other than impact and thermal damage, no pre-impact anomalies were found during the examination of the propeller assemblies.

Engine Assemblies:

The left engine exhibited engine displayed severe fire damage, including complete fire consumption of the accessory gearbox, inlet case, compressor bleed valve. The front portion of the RGB was fractured and the second stage reduction gears and propeller shaft were not received. The engine related controls and accessories displayed severe fire and impact damage. The airframe R/H exhaust nozzle was crushed, the L/H nozzle was severed off the exhaust case and not received. All oil, air, fuel and electrical lines were either crushed or severed on the complete engine. Compressive damage was noted on the exhaust case, however, no twisting deformation was visible. The front of the engine from the exhaust case forward was found displaced to the right of its axis. Disassembly of the left engine revealed that all compressor and turbine blades were intact. Rubbing contact marks, both axial and radial, were found on

various discs and blades. Compressor and power turbine rotors were capable of rotation when removed, and all bearings were found in place.

The right engine exhibited torsional deformations of its exhaust case, consistent with a radial (twisting motion) of the nose section. The forward part of the case was displaced to the right of its longitudinal axis. Disassembly of the engine showed that all compressor and turbine blades were intact. Axial and radial rubbing contact marks (similar to the left engine) were found on various rotating discs and blades. Compressor and power turbine rotors were capable of rotation when removed, and all bearings were found in place.

The contact rubs found within both engines appeared to be symmetrical. No mechanical anomalies were discovered that would have precluded the engines from producing power prior to impact.

ADDITIONAL INFORMATION

The wreckage was released to the owner's representative.

Pilot Information

Certificate:	Airline Transport; Flight Instructor; Commercial	Age:	41, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Unknown
Other Aircraft Rating(s):		Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine	Toxicology Performed:	Yes
Medical Certification:	Class 1 Without Waivers/Limitations	Last FAA Medical Exam:	07/01/2002
Occupational Pilot:		Last Flight Review or Equivalent:	06/01/2002
Flight Time:	10200 hours (Total, all aircraft)		

Co-Pilot Information

Certificate:	Age:
Airplane Rating(s):	Seat Occupied:
Other Aircraft Rating(s):	Restraint Used:
Instrument Rating(s):	Second Pilot Present: No
Instructor Rating(s):	Toxicology Performed:
Medical Certification:	Last FAA Medical Exam:
Occupational Pilot:	Last Flight Review or Equivalent:
Flight Time:	

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N127YV
Model/Series:	1900C	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	UC-127
Landing Gear Type:	Retractable - Tricycle	Seats:	21
Date/Type of Last Inspection:	12/01/2002, AAIP	Certified Max Gross Wt.:	16600 lbs
Time Since Last Inspection:		Engines:	2 Turbo Prop
Airframe Total Time:	12473 Hours at time of accident	Engine Manufacturer:	Pratt & Whitney Canada
ELT:	Installed, activated, aided in locating accident	Engine Model/Series:	PT6A-65B
Registered Owner:	Raytheon Aircraft Credit Corporation	Rated Power:	1000 hp
Operator:	Raytheon Aircraft Company	Operating Certificate(s) Held:	None
Operator Does Business As:	Raytheon Aircraft Services Inc.	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Partial Obscuration	Visibility	10 Miles
Lowest Ceiling:	Broken / 6000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	Calm /	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.31 inches Hg	Temperature/Dew Point:	6°C / 1°C
Precipitation and Obscuration:	Fog		
Departure Point:	Wichita, KS (BEC)	Type of Flight Plan Filed:	VFR
Destination:	Mena, KS (M39)	Type of Clearance:	VFR Flight Following
Departure Time:	1030 CDT	Type of Airspace:	

Airport Information

Airport:	Mena Intermountain Municipal (M39)	Runway Surface Type:	
Airport Elevation:	1079 ft	Runway Surface Condition:	
Runway Used:	NA	IFR Approach:	Visual
Runway Length/Width:		VFR Approach/Landing:	Straight-in

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 Fatal	Latitude, Longitude:	34.687500, -94.219167

Administrative Information

Investigator In Charge (IIC): Alexander Lemishko **Report Date:** 09/13/2005

Additional Participating Persons: Will Keith; FAA FSDO; Little Rock, AR
Paul Yoos; Raytheon; Wichita, KS
Doug Hardy; Pratt & Whitney Canada; Montreal,
Tom McCreary; Hartzell; 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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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).