



Aviation Investigation Final Report

Location:	De Queen, Arkansas	Accident Number:	CEN11FA285
Date & Time:	April 15, 2011, 08:30 Local	Registration:	N3959W
Aircraft:	Hawker-Beechcraft E-55	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was on a cross-country flight and had spent a night at an en route airport to allow thunderstorms to move past his route of flight. After the storms and rain passed, the pilot continued on his flight the next morning. Witnesses reported that the airplane departed at a steep angle from the runway and that the engines sounded like they were cutting out. One witness added that, when the airplane was an estimated 300 to 500 feet in the air, it looked like the airplane was trying to make a 180-degree turn back to the runway when it appeared to enter an aerodynamic stall and spin to the ground.

A postaccident examination of the airplane revealed that the landing gear and flaps were retracted. The airplane's wing fuel tanks were breached; however, the wing top skin panels displayed hydraulic deformation consistent with a quantity of fuel being present in the fuel tanks at the time of impact. Further examination of the engines did not reveal any anomalies that would have prevented the engines from producing rated power. The examination of the airframe confirmed that the flight control lock was not installed in the pilot's control column. Additionally, damage and marks found on the front baggage door and cabin nose area were consistent with the door being closed at the time of the accident. Flight control continuity was established. No preimpact abnormalities were found and a reason for the loss of control could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's loss of control during takeoff for undetermined reasons.

Findings

Personnel issues

Aircraft

(general) - Not specified (general) - Not specified

Factual Information

History of Flight

Takeoff	Unknown or undetermined
Emergency descent	Loss of control in flight (Defining event)
Emergency descent	Aerodynamic stall/spin
Emergency descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On April 15, 2011, about 0830 central daylight time, a Hawker-Beechcraft E-55 airplane, N3959W, impacted terrain shortly after departure from the J Lynn Helms Sevier County Airport (DEQ), De Queen, Arkansas. The private pilot, sole occupant, was fatally injured. The airplane was substantially damaged during the accident. The aircraft was registered to Rose Resources Oil & Gas, Inc., Tulsa, Oklahoma, and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight, which operated without a flight plan.

Reportedly, the flight originated the day before from the pilot's home airport near Lafayette, Louisiana, and was destined for Tulsa, Oklahoma. En route to his destination, the pilot spent the night at DEQ to allow thunderstorms to move east of his route of flight. The pilot was continuing his flight after the storms and rain passed when the accident occurred.

The airplane departed DEQ, runway 26. A witness reported when the airplane was an estimated 300 to 500 feet in the air, the engines sounded like they were cutting out. The witness added that it appeared the airplane was trying to make a 180-degree turn back to the runway, that the airplane was at a high pitch angle and looked like it stalled and spun into the ground. Another witness, who saw the airplane through trees, reported the airplane climbing at a high pitch angle from the runway and it "sounded like the engines weren't getting enough gas."

PERSONNEL INFORMATION

The pilot held a private pilot certificate for airplane single-engine land, multiengine land and instrument ratings. His last third-class Federal Aviation Administration, (FAA) medical was issued on March 26, 2010. A logbook was located and the last entry was dated June 6, 2008, at which time the pilot had approximately 322 total flight hours with about 162 in multiengine airplanes. A more current logbook was not located.

AIRCRAFT INFORMATION

The 1973 model Beech E55 Baron, serial number TE-959, was a low wing, semi-monocoque airplane, with a retractable landing gear, configured for a maximum of six occupants. The airplane was powered by two, direct drive, horizontally opposed, fuel injected, normally aspirated, six-cylinder, Continental IO-520-C engines, each rated at 285 horsepower. Each engine drove a 3-bladed constant speed Hartzell propeller.

According to the airframe logbook, the airplane's most recent annual inspection was completed on May 6, 2010, with a total time of 1,946.3 hours. At the time of the accident, the airframe had accumulated a total of 1,999.8 hours, 53.5 hours since the last inspection.

The engine logbooks revealed that both engines had been inspected in accordance with a 100hour inspection on May 6, 2010. At the time of the inspection the right engine had accumulated a total of 1,946.3 hours and 831.0 hours since major overhaul. The left engine had accumulated a total of 1,946.3 hours.

There was no record of the airplane having received fuel at DEQ.

METEOROLOGICAL INFORMATION

At 0853, the automated weather observation facility located at DEQ reported winds from 230 degrees at 11 knots, visibility 10 miles, clear skies, temperature 56 Fahrenheit (F), dew point 46 F, and a barometric pressure of 29.65 inches of Mercury.

AIRPORT INFORMATION

J Lynn Helms Sevier County Airport (DEQ), is a public use airport, located about 3 miles west of De Queen, Arkansas. The airport is non-towered and pilots are to use the Common Traffic Advisory Frequency (CTAF). The airport features a single asphalt runway. Runway 26-08 is 5,001-foot long and 75-foot wide.

WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board Investigator-In-Charge (IIC), inspectors from the Federal Aviation Administration (FAA), and a technical representative from the airframe manufacturer examined the airplane wreckage on site. The airplane came to rest in an open area, east of the approach end of runway 08. Additionally, the initial impact point and main wreckage, was located over a small drainage ditch. Several pieces of the airplane were located forward of the main wreckage and all major components of the airplane were accounted for on scene. There was no postimpact fire.

The airplane wreckage was resting on its belly, with extensive damage to the front cabin/instrument panel area. The cabin roof pillars were cut by rescue personnel. The left and right engine fuel selectors were each found in the "ON" position. The gear handle was in the up (retracted) position.

The right wing remained attached to the fuselage with damage along the leading edge and bottom of the wing. The right aileron and right flap remained attached to the wing. The aileron control cables remained attached to the aileron bell crank in the outboard section of the wing. The cables extended inboard to the cabin area below the front seat floorboard. The right flap was found in the up position. The right side fuel tank was breached and absent of fuel.

The right propeller assembly separated from the engine crankshaft and was found forward of the wreckage. One blade was bent, starting near the base of the blade, towards the non-cambered side. Additionally, the blade had two gouges located on the leading edge, along with lengthwise scratching, starting near the base. Blade two contained a slight bend, starting at mid-span, towards the non-cambered side. There was some leading edge polishing near the tip of the blade. The third blade was absent any leading edge gouges or chordwise scratches.

The left wing remained attached to the fuselage. The wing and engine nacelle area had extensive damage. The left aileron and left flap remained attached to the wing. The aileron control cables remained attached to the aileron bell crank in the outboard section of the wing. The left flap was found in the up position. The left side fuel tank was breached and absent of fuel. Both the left and right wing top skin panels displayed hydraulic deformation, consistent with a quantity of fuel being present in the fuel tanks, at the time of the ground impact.

The left propeller assembly was also broken from the crankshaft just behind the propeller flange. The propeller remained in front of the left engine. One propeller blade was bent, starting near the hub, towards the non-chambered side. The blade contained two leading edge gouges near the tip. There were no leading edge gouges or chordwise scratches. Blade 2 exhibited a slight bend to the non-cambered side. Propeller blades number 2 and 3 appeared absent edge gouges or chordwise scratches.

The empennage did not exhibit damage to the horizontal and vertical stabilizers. The rudder remained undamaged and attached by all hinge points with the trim tab located about five degrees to the right. The elevator remained attached via their respective hinges with both trim tabs found in the five degrees tab down (nose up) position. The flight control cables were connected to each control surface; however, the cables appeared "pinched" by the damage to the fuselage floor.

MEDICAL AND PATHOLOGICAL INFORMATION

The Arkansas State Crime Laboratory, Medical Examiner Division, Little Rock, Arkansas

conducted an autopsy on the pilot. The cause of death was determined to be "multiple blunt force injuries."

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed forensic toxicology on specimens from the pilot. The results of analysis of the specimens were negative for carbon monoxide, cyanide, volatiles, and tested drugs.

TEST AND RESEARCH

Examinations of the left and right engines were conducted at a salvage facility under the supervision of the Investigator-In-Charge (IIC).

The left engine sustained impact damage including damage to the oil sump, intake pipes, and all four mounting legs. The cylinders were examined using a lighted borescope. The cylinders had normal combustion deposits on the piston heads and the cylinder domes. All of the valves were in place. The crankshaft was rotated by hand; continuity was confirmed to each cylinder and to the accessory drive section of the engine. A thumb compression and suction test was confirmed to each cylinder. The top set of sparkplugs were removed and had normal wear when compared to the Champion Check-A-Plug comparison chart.

The oil filter was opened and the filter element was absent any metal particles. The magnetos were in place on the engine. The left magneto was timed at 25 degrees before top dead center; the right magneto was timed at 20 degrees before top dead center. A spark at each terminal was observed when the crankshaft was rotated. The fuel pump was in place and not damaged. The drive coupling was intact. The fuel metering unit was in place and had sustained impact damaged. The throttle and mixture controls were attached and were free to move. The throttle interconnect was also attached. The fuel screen was clean and clear of any debris or contaminates.

The right engine sustained similar damage, as the left engine. The cylinders were examined using a lighted borescope. The cylinders had normal combustion deposits on the piston heads and the cylinder domes. All of the valves were in place. The crankshaft was rotated by hand; continuity was confirmed to each cylinder and to the accessory drive section of the engine. A thumb compression and suction test was confirmed to each cylinder. The top set of sparkplugs were removed and had normal wear when compared to the Champion Check-A-Plug comparison chart.

The fuel pump was in place and had impact damage. The low pressure set screw was pushed into the back of the pump. The drive coupling was not damaged. The fuel metering unit was in place and had heavy impact damage. The mixture control arm had separated by the impact.

The mixture and throttle controls were free to move, from stop to stop. The fuel screen was clean and clear. The oil filter was opened and the filter element was absent any metal particles.

The left magneto was found to be timed at 22 degrees before top dead center, and the right magneto was timed at 21 degrees before top dead center. Both magnetos sparked at each terminal when the crankshaft was rotated.

The examination of the left and right engines did not reveal any abnormalities that would have prevented normal operation.

The examination of the airframe confirmed that the flight control lock, was not installed in the pilot's control column. Additionally, damage and marks found on the front baggage door and cabin nose area were consistent with the door being closed at the time of the accident.

Certificate:	Private	Age:	52,Male
Airplane Rating(s):	Single-engine land; Single-engine sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without waivers/limitations	Last FAA Medical Exam:	March 26, 2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 322 hours (Total, all aircraft)		

Pilot Information

Aircraft and Owner/Operator Information

Aircraft Make:	Hawker-Beechcraft	Registration:	N3959W
Model/Series:	E-55	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	TE-959
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	May 6, 2010 Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	1946 Hrs as of last inspection	Engine Manufacturer:	Teledyne Continental
ELT:	C91A installed, activated, did not aid in locating accident	Engine Model/Series:	IO-520
Registered Owner:	ROSE RESOURCES OIL & GAS INC	Rated Power:	285 Horsepower
Operator:	ROSE RESOURCES OIL & GAS INC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	DEQ	Distance from Accident Site:	
Observation Time:	08:53 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	11 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	230°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.64 inches Hg	Temperature/Dew Point:	13°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	De Queen, AR	Type of Flight Plan Filed:	Unknown
Destination:	Tulsa, OK	Type of Clearance:	None
Departure Time:		Type of Airspace:	

Airport Information

Airport:	J Lynn Helms Sevier County KDEQ	Runway Surface Type:	Asphalt
Airport Elevation:		Runway Surface Condition:	Unknown
Runway Used:	26	IFR Approach:	None
Runway Length/Width:	5001 ft / 75 ft	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	34.046943,-94.399444(est)

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Heather Metzler; FAA FSDO; Little Rock, AR Paul Yoos; Hawker Beechcraft; Wichita, KS John Kent; Teledyne Continental Motors; Mobile, AL
Original Publish Date:	February 23, 2012
Last Revision Date:	
Investigation Class:	<u>Class</u>
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=78874

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, "accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person" (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB's statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available here.