Aviation Investigation Final Report

Location:	BRINKLEY, Arkansas	**Accident Number:**	FTW01LA057
Date & Time:	February 1, 2001, 06:38 Local	**Registration:**	N448DH
Aircraft:	Beech BE-58	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that during cruise flight, he noticed the right engine cylinder head temperature (CHT) was rising above "350 degrees and the oil temperature [was rising] above the top of the green arc." The pilot reported that he secured the engine and advised air traffic control he needed to land at an alternate airport. The controllers repeatedly advised the pilot of the location and distance to the nearest airport. The pilot reported that he was looking for the airport, and he was not able to control the airplane. The pilot did not locate the airport, and he executed a precautionary landing to a muddy field. Neither propeller was found in the feathered position. FAA inspectors found no anomalies with the flight and engine controls. The right and left engines were test run at 1,500 rpm at the accident site, and subsequently, test run in a test cell at various power settings for 2 hours with no anomalies noted. The CHT gauge was examined by the airframe manufacturer and no anomalies were noted. Continuity was confirmed for the wiring from the right CHT probe to the CHT gauge. Toxicological testing for the pilot indicated 2.296 (ug/ml, ug/g) nefazodone detected in serum. Nefazodone is a prescription antidepressant, often known by the name Serzone. The pilot's medical records indicated the routine use of nefazodone as well as alprazolam, a prescription tranquilizer, and zolpidem, a prescription medication used to treat insomnia. All three medications have potential effects on performance. FAA medical records revealed that the pilot did not report the use of the aforementioned drugs on his most recent medical application. The FAA considers these drugs disqualifying for issuance of a medical certificate.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's poor inflight planning and decision making which resulted in his executing a precautionary landing in a soft field. A contributing factor was the lack of suitable terrain for

the precautionary landing.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE - NORMAL

Findings
1. 1 ENGINE
2. ENGINE SHUTDOWN - INTENTIONAL - PILOT IN COMMAND
3. (C) IN-FLIGHT PLANNING/DECISION - POOR - PILOT IN COMMAND
4. USE OF INAPPROPRIATE MEDICATION/DRUG - PILOT IN COMMAND
5. PRECAUTIONARY LANDING - PERFORMED - PILOT IN COMMAND

Occurrence #2: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: LANDING - ROLL

Findings
6. (F) TERRAIN CONDITION - NONE SUITABLE
7. TERRAIN CONDITION - SOFT

Factual Information

On February 1, 2001, 0638 central standard time, a Beech BE-58 multi-engine airplane, N448DH, was substantially damaged during a precautionary landing to a soft muddy field near Brinkley, Arkansas. The airplane was registered to and operated by Market Aviation of Hot Springs, Arkansas. The instrument-rated private pilot, sole occupant of the airplane, received minor injuries. Visual meteorological conditions prevailed and an instrument flight plan was filed for the 14 Code of Federal Regulations Part 91 personal flight. The flight originated from Memphis International Airport (MEM), Memphis, Tennessee, at 0613, and was destined for Little Rock, Arkansas.

A review of the air traffic control data by the NTSB investigator-in-charge (IIC), revealed that at 0622:22, the pilot reported to the Memphis Air Route Traffic Control Center (ARTCC) controller that the airplane was level at 4,000 feet msl. At 0630:47, the pilot advised the controller of an overheat indication on a cylinder, and that he needed to land the airplane at the nearest airport. At 0631:08, the controller advised the pilot that Brinkley was at the 12 o'clock position, 9 miles. At 0631:58, the pilot stated "stuff going on here and have to trouble shoot." At 0632:45, the controller called the position of the airport as 12 o'clock, 5 miles. At 0632:50, the pilot transmitted that he was looking for the airport. At 0633:28, the controller advised the pilot to turn the airplane 15 degrees left and that the airport was at 10 o'clock, 3 miles. At 0633:28, the pilot reported that he was having a "control problem, airplane shaking, not sure got control, but it's intermittent." At 0634:21, the controller advised the airport was 1 1/2 miles south of the airplane. At 0644:44, the pilot stated that he was looking. At 0635:37, the pilot advised that he was not going to make the airport, losing altitude, and not able to control the airplane very well. At 0637:11, the pilot advised that he was going to land the airplane in a field. At 0723:14, another aircraft in the area picked up the emergency locator transmitter (ELT) signal and located the airplane in a field 4.9 nautical miles from the airport.

During a telephone interview conducted by the NTSB IIC, the pilot reported that prior to his flight, a local fixed based operator fueled the airplane with a total of 80 gallons of fuel. After the pilot's preflight of the airplane, he received a weather briefing, and filed an instrument flight plan direct to Little Rock. During cruise flight at 4,000 feet, the pilot set the propeller and throttle controls to 2,300 rpm and 23" of manifold pressure respectively, and the cylinder head temperature (CHT) gauge was indicating 180 degrees on each engine. Approximately 20 minutes into the flight, the pilot noticed the right engine CHT was rising above "350 degrees and the oil temperature [was rising] above the top of the green arc." (The airplane's CHT gauge maximum temperature (red line) is 238 degrees centigrade, and the gauge maximum indication is 250 degrees centigrade.) The pilot stated that he "shut down the engine, feathered the propeller, and cutoff the fuel." The pilot advised ARTCC that he needed to land the airplane at the nearest airport, and he received air traffic control vectors to the Frank Federer Memorial Airport (M36) near Brinkley, Arkansas. Approximately 6 miles from M36, the

pilot stated the airplane began to "porpoise," and he was having trouble maintaining altitude and airspeed. Due to the lack of daylight, the pilot was unable to locate the airport, and he executed a precautionary landing to a muddy field. During the landing roll, the nose landing gear separated, and the right main landing gear collapsed. In addition, the pilot reported that the CHT ran high (out of the green arc) on the right engine while taxiing a few months prior to the accident.

On the NTSB Pilot/Operator Aircraft Accident Report (NTSB Form 6120.1/2), the pilot reported that he had accumulated 2,700 total hours in the accident aircraft make and model, and 3,500 multi-engine airplane hours.

On February 1, 2001, FAA inspectors, who responded to the accident site, reported the nose and right main landing gears separated from the airplane, the fuselage was wrinkled, and the propeller blades on both propellers were bent aft. The inspectors found the throttle levers in the "full" forward position, the right propeller lever in the "mid range" position, and the left propeller lever in the full aft (feather) position. The inspectors reported the flight and engine controls were manipulated and found to operate with no anomalies noted. The left and right propellers were not found in the feather position.

On February 2, 2001, an FAA inspector, an airframe manufacturer representative, and an engine manufacturer representative examined the aircraft and engines at the accident site. The 300-horsepower Teledyne Continental IO-550-C (31) engines were test run on the airplane in the field to 1,500 rpm, and a successful magneto check was performed. There were no anomalies noted with the engine test run. At the time of the accident, the airframe and engines had accumulated 110.0 hours.

On March 16, 2001, the CHT gauge (P/N 58-380104-5, S/N D201039) was examined by the airframe manufacturer, under the supervision of the FAA, and no anomalies were noted during the examination.

A mechanic at Dawson Aircraft, Clinton, Arkansas, was requested by the NTSB IIC, to perform a continuity check of the right engine CHT probe electrical wire #E13A20, which runs from the probe to the gauge. Continuity was confirmed on wire E13A20.

On March 20 and 21, 2001, the engines were examined under NTSB supervision at the Teledyne Continental Motors facility in Mobile, Alabama. The right engine (serial number 684402) was run in a test cell for 2 hours; at a takeoff power setting for 10 minutes, and at a cruise (75% HP) power setting for 1.5 hours. During the test run, rapid power changes were applied to the engine with no anomalies noted. The number 2 CHT (probe location for the cockpit indication) did not exceed it's maximum limits during the 2-hour test run, and the CHT remained consistent with the other 5 CHTs. The left engine (serial number 684410) was run in a test cell for 2 hours at the same power settings and duration as the right engine. The CHTs for the left engine were consistent with the CHTs from the right engine. There were no indications of an overheating cylinder on either engine, and no anomalies were noted during

the examinations.

Toxicological testing on the pilot's blood and serum was performed at the FAA Civil Aeromedical Institute (CAMI) Forensic Toxicology and Accident Research Center in Oklahoma City, Oklahoma. The toxicological test indicated that 2.296 (ug/ml, ug/g) of nefazodone was detected in the serum. Nefazodone is a prescription antidepressant, often known by the trade name Serzone. According to medical information obtained under subpoena, from 2/11/00 to 9/22/01, the pilot was taking Serzone for depression, Xanax (alprazolam, a perscription tranquilizer) for anxiety, and Ambien (zolpidem, a perscription hypnotic medication) for insomnia. Between 2/11/00 and 1/30/01, prescriptions were filled for the pilot for alprazolam, Ambien, and Serzone. Medical records obtained from the FAA Civil Aeromedical Institute Aeromedical Certification Division revealed that the pilot did not report the use of the aforementioned drugs on his most recent medical application dated March 16, 2000. The FAA's 1999 Guide for Aviation Medical Examiners notes that "the use of a psychotropic drug is considered disqualifying. This includes all sedatives, tranquilizers, antipsychotic drugs, antidepressant drugs (including SSRI's), analeptics, anxiolytics, and hallucinogens."

Pilot Information

Certificate:	Private	**Age:**	52,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):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	March 16, 2000
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	October 1, 2000
Flight Time:	5300 hours (Total, all aircraft), 2700 hours (Total, this make and model), 5100 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N448DH
Model/Series:	BE-58	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TH-1961
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	5700 lbs
Time Since Last Inspection:	110 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	110 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	IO-550-C (31)
Registered Owner:	Market Aircraft	**Rated Power:**	300 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dawn
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	20 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Memphis, TN (MEM)	**Type of Flight Plan Filed:**	IFR
Destination:	Little Rock, AR (LIT)	**Type of Clearance:**	IFR
Departure Time:	05:45 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	34.917778,-91.281387

Administrative Information

Investigator In Charge (IIC):	Roach, Joyce
Additional Participating Persons:	Wesley D Crook; FAA FSDO; Little Rock, AR John Kent; Teledyne Continental Motors; Mobile, AL Paul Yoos; Raytheon Aircraft Company; Wichita, KS
Original Publish Date:	June 18, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=51419