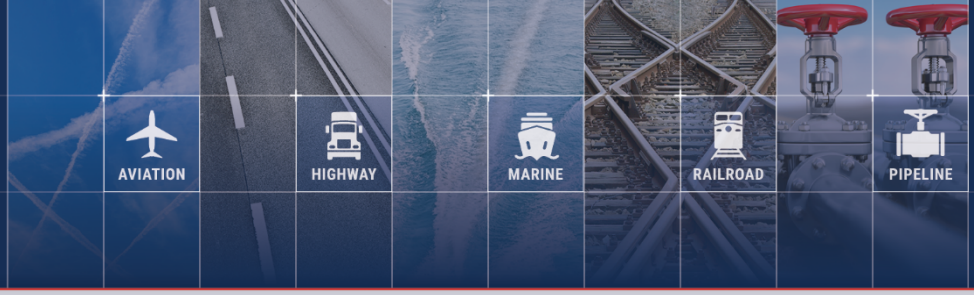

Aviation Investigation Final Report

Location:	Claremore, Oklahoma	**Accident Number:**	CEN11LA101
Date & Time:	December 3, 2010, 17:40 Local	**Registration:**	N211DS
Aircraft:	Beech 95-C55	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

While in the traffic pattern at the destination airport, the pilot experienced a loss of engine power on the left engine followed by a loss of engine power on the right engine. The pilot reported that there was not enough airspeed or altitude to reach the airport so he performed an off-field landing resulting in substantial damage to the airplane. The pilot reported that he had encountered a loss of engine power on both engines on two previous occasions. Both events were preceded by the reduction of engine power under rich mixture conditions. An examination of the left and right engines, and right side fuel system revealed no anomalies. The left fuel tank and fuel system were damaged by the fire and could not be examined for continuity. Data recovered from the engine monitor illustrated a decrease in exhaust gas temperature on the right engine approximately one minute prior to the decrease of exhaust gas temperature on the left engine. The reason for the loss of engine power on both engines could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A loss of engine power on both engines for undetermined reasons.

Findings

Aircraft	(general) - Failure
Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Approach-VFR pattern base	Loss of engine power (total)
Emergency descent	Loss of engine power (total) (Defining event)

On December 3, 2010, approximately 1740 central standard time, a twin-engine Beech 95-C55 airplane, N211DS, was substantially damaged during a forced landing near Claremore Regional Airport (KGCM), Claremore, Oklahoma. A post impact fire ensued. Night visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted under the provisions of 14 Code of Federal Regulations Part 91 on an instrument flight rules flight plan. The pilot sustained serious injuries and his passenger sustained minor injuries. The flight departed Jacksonville, Texas, approximately 1610 and was en route to KGCM.

In a written statement submitted by the pilot, he had just reduced the engine power, while turning to final for runway 17, when the left engine lost power. As he started to prepare for single engine operations, the right engine lost power. The pilot reported that there was not enough airspeed or altitude to reach the airport so he performed an off-field landing. He stated that prior to the reduction in power, the fuel selector valves were selected to the main tanks, the fuel boost pumps were off, the mixture was set at rich, and all four fuel tanks indicated "adequate fuel."

According to a Federal Aviation Administration (FAA) airworthiness inspector who traveled to the scene, the left wing separated from the airplane and had burned. The empennage separated from the airframe and was located in the debris field. The team that recovered the wreckage reported that the right main fuel tank was full of fuel, and the left main fuel tank was burnt with signatures consistent with a fuel fed fire. Both auxiliary fuel tanks were empty.

The pilot wrote that he had encountered a loss of engine power on both engines within the preceding few months. One event was experienced while the airplane was at 18,000 feet and the second event was experienced when the airplane was below 2,000 feet. Both events were preceded by the reduction of engine power under rich mixture conditions. The pilot felt that in both cases the root cause of the problem was never identified and was related to "fuel delivery that exceeds that required for stable combustion." Both engines had been modified with a Merlyn Products turbonormalizing system (Supplemental Type Certificate Number SA01663SE).

An examination of the right engine revealed residual fuel in the fuel lines and signatures of normal operation on the spark plugs when compared to the Champion Spark Plug chart. The engine was rotated through by hand and valve movement was observed and air movement was heard on all six cylinders. Both magnetos were manually rotated and produced a blue

spark at all leads.

An examination of the right fuel tank and fuel system revealed no anomalies. The right fuel selector valve was tight, illustrated specific detent positions, and functioned as designed when tested with shop air.

The left engine exhibited extensive impact and fire damage. The damage prevented the rotation of the engine and magnetos. The spark plugs exhibited signatures of normal operation when compared to the Champion Spark Plug chart.

The left fuel tank and fuel system were damaged by the fire and could not be examined for continuity. The left fuel selector valve did not demonstrate specific detent positions, but functioned as designed when tested with shop air. Further examination revealed tape securing one ball bearing within the valve's yoke assembly. The second ball bearing was missing.

The airplane was equipped with a fuel flow indicator, two oil pressure and temperature gauges (for the right and left engines respectively), and an engine monitor, all containing non-volatile memory. The units were shipped to the National Transportation Safety Board Vehicle Recorders Laboratory for data recovery. Details on these units and the recovered data is available in the engine instruments factual report available with this accident report docket.

The fuel flow indicator recorded 66.8 gallons of fuel remaining, based upon the information loaded by the pilot prior to the flight. Data recovered from the engine monitor illustrated a decrease in exhaust gas temperature on the right engine approximately one minute prior to the decrease of exhaust gas temperature on the left engine. The two oil pressure and temperature gauges illustrated a decrease in oil pressure and temperature towards the end of the recorded data; however, due to the lack of a time stamp with this data, a correlation could not be performed.

The reason for the loss of engine power on both engines could not be factually determined.

Pilot Information

Certificate:	Private	**Age:**	56,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:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	October 25, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 13, 2010
Flight Time:	404 hours (Total, all aircraft), 298 hours (Total, this make and model), 297 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 11 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N211DS
Model/Series:	95-C55	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TE-237
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	May 11, 2010 Annual	**Certified Max Gross Wt.:**	5700 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	4820 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:		**Engine Model/Series:**	IO 520 C15B
Registered Owner:	On file	**Rated Power:**	285 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	KGCM	**Distance from Accident Site:**	
Observation Time:	17:59 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	13 knots / 17 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	16°C / 0°C
Precipitation and Obscuration:			
Departure Point:	Jacksonville, TX (KJSO)	**Type of Flight Plan Filed:**	IFR
Destination:	Clairmore, OK (KGCM)	**Type of Clearance:**	None
Departure Time:	16:10 Local	**Type of Airspace:**	

Airport Information

Airport:	Claremore Regional Airport KGCM	**Runway Surface Type:**	
Airport Elevation:	733 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 Minor	**Latitude, Longitude:**	36.292499,-95.479446(est)

Administrative Information

Investigator In Charge (IIC):	Rodi, Jennifer
Additional Participating Persons:	Gail Sober; FAA Flight Standards District Office; Oklahoma City, OK John Kent; Teledyne Continental Motors; Mobile, AL Hugh Evans; Merlyn Products Inc Mike Gibbons; Hawker Beechcraft; Wichita, KS
Original Publish Date:	August 11, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=77972