National Transportation Safety Board
Aviation Accident Data Summary

Location:	Calhoun, KY	**Accident Number:**	ERA12FA262
Date & Time:	04/01/2012, 1600 CDT	**Registration:**	N9448Q
Aircraft:	BEECH 58	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot was departing his home airport to fly to another airport to refuel the airplane. Witnesses reported that the airplane lifted off from the 1,800-foot-long grass runway; however, none of the witnesses observed the airplane crash shortly after takeoff. The airplane rolled left and impacted the ground inverted in a wooded area near the departure end of the runway; there was no postcrash fire. Examination of the flight controls revealed no evidence of preimpact failure or malfunction. Damage to one of the right engine propeller blades was consistent with engine power at impact, whereas the left engine propeller blades showed no evidence of power at impact. Thus it is likely that the left engine experienced a total loss of power just after takeoff, which the pilot was unable to control. Both engines were removed, transported to the manufacturer's facility, and test run with no mechanical discrepancies noted.

Rust-colored water was detected in various fuel system components from both engines. Further, the strainer drain lines and outer tank drains in both engines' fuel systems were partially blocked by rust-colored debris. Postaccident examination revealed evidence of long-term water contamination of both engines' fuel systems due to leakage past the fuel caps, which are normally replaced on an "on-condition" basis during maintenance. The engine failure was likely due to the water contamination in the fuel system, which was not detected by the pilot during the preflight inspection.

Further, the leaking fuel caps most likely existed, but went undetected, when the airplane's most recent annual inspection was performed about 4 months earlier. A review of airplane maintenance records revealed that the only entry related to the fuel filler caps since the airplane was manufactured in 1972 was dated July 2010, at which time the left fuel filler cap was replaced and an outer o-ring of the incorrect dimension was installed. In April 2011, as a result of a 2008 investigation of a Canadian registered Beech 58 airplane that had water enter the fuel tank due to deteriorated fuel filler cap o-rings, the manufacturer revised the maintenance manual of Beech 55 and 58-series airplanes to require fuel cap overhaul. Maintenance manual guidance in effect when the accident airplane's most recent annual inspection was performed excluded the accident airplane (by serial number) from this overhaul. Since this accident, the manufacturer has revised its Beech 55 and 58 maintenance manuals to include the fuel cap overhaul requirement for all potentially affected airplanes, including the accident airplane.

Flight Events

Takeoff - Loss of engine power (total)
Initial climb - Loss of control in flight
Uncontrolled descent - Collision with terr/obj (non-CFIT)

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be:
The failure of the pilot to maintain airplane control after experiencing a loss of power from the left

engine due to water contamination of the fuel system. Contributing to the accident was the pilot's inadequate preflight inspection of the airplane and maintenance personnel's inadequate annual inspection, because both failed to detect the long-term water contamination of the fuel system and the deteriorated outer o-rings on both fuel caps. Also contributing to the water contamination of the fuel system was the inaccurate information and instructions in the airplane maintenance manual pertaining to overhaul requirements of the fuel filler caps.

Findings

Aircraft-Aircraft handling/service-Maintenance/inspections-Scheduled maint checks-Inadequate inspection - F
Aircraft-Aircraft handling/service-Maintenance/inspections-(general)-Related maintenance info - F
Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Directional control-Not attained/maintained - C
Personnel issues-Task performance-Inspection-Preflight inspection-Pilot - F

Pilot Information

Certificate:	Commercial; Private	**Age:**	46
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Instrument Rating(s):**	Airplane
Other Aircraft Rating(s):	None	**Instructor Rating(s):**	None
Flight Time:	1747 hours (Total, all aircraft), 2 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	BEECH	**Registration:**	N9448Q
Model/Series:	58	**Engines:**	2 Reciprocating
Operator:	Daniel J. Woosley	**Engine Manufacturer:**	CONT MOTOR
Air Carrier Operating Certificate:	None	**Engine Model/Series:**	IO-520-C
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	OWB, 407 ft msl	**Weather Information Source:**	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	**Lowest Ceiling:**	None
Condition of Light:	Day	**Wind Speed/Gusts, Direction:**	11 knots/ 16 knots, 230°
Temperature:	31°C / 17°C	**Visibility**	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Calhoun, KY (96KY)	**Destination:**	Madisonville, KY (2I0)

Airport Information

Airport:	Woosley Field Airport (96KY)	**Runway Surface Type:**	Grass/turf
Runway Used:	27	**Runway Surface Condition:**	Unknown
Runway Length/Width:	1800 ft / 100 ft		

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None

Administrative Information

Investigator In Charge (IIC):	Timothy W Monville	**Adopted Date:**	08/13/2013
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=83261		

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