Aviation Investigation Final Report

Location:	Knox, Indiana	**Accident Number:**	CEN18LA319
Date & Time:	August 4, 2018, 15:00 Local	**Registration:**	N533JW
Aircraft:	Beech 35	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The private pilot and three passengers were on a cross-country flight in a single-engine airplane. About 10 miles from the destination airport, the pilot switched to the fullest fuel tank, entered the traffic pattern, and reduced the throttle to slow the airplane. While on final approach, he advanced the throttle; however, the engine did not respond. The pilot turned the boost pump on to "emergency – high," but the engine still did not respond. Shortly after, the pilot turned the boost pump off and conducted a forced landing in a field, during which the engine was bent downward from the firewall and the fuselage sustained substantial damage.

The on-site examination found sufficient fuel available in each of the wing fuel tanks. Additionally, fuel was present in the fuel lines near the engine's fuel manifold. A detailed engine examination and download of the engine monitor were conducted after airplane recovery. A review of the engine data for the day of the accident found three files. The last file corresponded to the accident flight, and the monitor indicated 30.4 gallons used. The pilot reported the fuel at last takeoff was 33 gallons.

The engine examination did not find any evidence of mechanical malfunctions or failures that would have precluded normal operation.

Although data from the engine monitor indicated that the airplane was very low on fuel, the on-site examination showed various levels of fuel available in the fuel tanks. Thus, it is likely that the airplane's engine monitor did not accurately reflect the airplane's correct fuel state. Based on the available evidence, the reason for the total loss of engine power could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The total loss of engine power for reasons that could not be determined based on the available evidence.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Approach	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Emergency descent	Collision with terr/obj (non-CFIT)

On August 4, 2018, about 1500 central daylight time, a Beech 35 airplane, N533JW, impacted terrain after a loss of engine power during an approach to the Starke County Airport (OXI), Knox, Indiana. The pilot and three passengers were not injured, and the airplane was substantially damaged during the accident. The airplane was registered to and operated by a private individual, under the provisions of 14 *Code of Federal Regulations* Part 91 as personal flight. Visual meteorological conditions prevailed at the time. The flight originated from Lacon, Illinois, about 1400.

The pilot reported he leveled off at 5,500 ft for the cross-country flight, and selected the left main fuel tank, which indicated just under ½ tank. About 10 miles from the destination airport, he switched to the fullest fuel tank. He then entered the traffic pattern and reduced the throttle to slow the airplane. While on final approach, to arrest a decent, he advanced the throttle; however, the engine did not respond. The pilot turned the boost pump on to "emergency – high" and the engine still did not respond. The pilot then reduced the throttle to idle and slowly advanced the throttle, again the engine did not respond, so he turned the boost pump off and prepared for the forced landing.

The responding Federal Aviation Administration (FAA) inspector found the airplane had impacted a cornfield and terrain just short of the runway. The airplane's engine was bent downward from the firewall and fuselage sustained substantial damage during the accident. The inspector opened the fuel tanks, and noted fuel was available at various levels. The inspector also disconnected the lines near the fuel manifold, and fuel was present in the lines.

The airplane was recovered to a secure facility and examined by a National Transportation Safety Board (NTSB) investigator and a technical representative from the engine manufacturer.

Data from the airplane's engine monitor was downloaded. A review of the data found for August 4th, found 3 files. The first file contained information for a 1.85 hr flight, starting at 1810 UTC. The data block field for fuel used started with 0.0 and ended with 19.1 gallons used. The second file indicated the engine monitor was powered on for just over a minute. The third file, started at 2108 UTC and was for 0.94 hr. The last file corresponded to the accident flight, and the monitor indicated 30.4 gallons used. The pilot reported his fuel at last takeoff was 33 gallons.

During the examination, the propeller shaft was rotated by hand and drivetrain continuity was confirmed through the valve train, and to the accessory section of the engine. Suction and compression were noted on all cylinders. No anomalies were found that would have prevented the engine from producing rated horsepower.

Pilot Information

Certificate:	Private	**Age:**	62
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	December 1, 2017
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	512 hours (Total, all aircraft), 31 hours (Total, this make and model), 497 hours (Pilot In Command, all aircraft), 32 hours (Last 90 days, all aircraft), 24 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N533JW
Model/Series:	35 J35	**Aircraft Category:**	Airplane
Year of Manufacture:	1958	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	D-5696
Landing Gear Type:	Retractable - Tricycle	**Seats:**	
Date/Type of Last Inspection:	July 29, 2018 Annual	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	Reciprocating
Airframe Total Time:	5368 Hrs	**Engine Manufacturer:**	Continential
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470
Registered Owner:		**Rated Power:**	250
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KMHE,683 ft msl	**Distance from Accident Site:**	3 Nautical Miles
Observation Time:	19:53 Local	**Direction from Accident Site:**	328°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	270°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.78 inches Hg	**Temperature/Dew Point:**	32°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lacon, IL (C75)	**Type of Flight Plan Filed:**	None
Destination:	Knox, IN (OXI)	**Type of Clearance:**	None
Departure Time:	14:00 Local	**Type of Airspace:**	

Airport Information

Airport:	Starke County Airport OXI	**Runway Surface Type:**	Asphalt
Airport Elevation:	685 ft msl	**Runway Surface Condition:**	
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	4401 ft / 75 ft	**VFR Approach/Landing:**	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 None	**Latitude, Longitude:**	41.29,-86.630554

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Spencer Cull; FAA FSDO; Des Plaines, IL Chris Lang; Continental Motors; Mobile, AL
Original Publish Date:	November 19, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=98011