



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Bowman, North Dakota	<b>Accident Number:</b>	CEN18LA354
<b>Date &amp; Time:</b>	August 26, 2018, 11:55 Local	<b>Registration:</b>	N666WW
<b>Aircraft:</b>	Beech 35	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Fuel starvation	<b>Injuries:</b>	1 Serious, 1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The commercial pilot and the passenger departed on a cross-country personal flight; the pilot indicated that, shortly after takeoff, the engine started "sputtering" and then lost power. The pilot attempted to restore engine power to no avail and performed a forced landing to a field, during which the airplane sustained substantial damage to the wing spars. A postaccident examination of the airframe, fuel system, and engine revealed no evidence of mechanical failures or malfunctions that would have precluded normal operation. Although both main fuel tanks were full, further examination revealed that there was no fuel in the fuel lines, fuel pump, or engine forward of the airplane firewall and fuel selector. Thus, it is likely that the fuel selector valve was not secured in the detent properly, which resulted in a loss of engine power due to fuel starvation.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power due to fuel starvation.

## Findings

<b>Aircraft</b>	Fuel - Fluid management
<b>Personnel issues</b>	Use of equip/system - Pilot

# Factual Information

## History of Flight

Initial climb	Fuel starvation (Defining event)
Initial climb	Loss of engine power (total)
Emergency descent	Off-field or emergency landing
Landing-flare/touchdown	Hard landing

On August 26, 2018, about 1150 mountain daylight time, a Beech 35 airplane, N666WW, lost engine power shortly after takeoff from the Bowman Regional Airport (KBWW), Bowman, North Dakota. The commercial pilot sustained serious injury and the passenger sustained minor injuries. The airplane sustained substantial damage. The personal flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed and no Federal Aviation Administration (FAA) flight plan had been filed for the flight.

According to the pilot, the cross-country flight was originating at the time of the accident and was en route to Dickinson-Theodore Roosevelt Regional Airport (KDIK), Dickinson, North Dakota. Shortly after takeoff, about 400 ft agl, the engine started "sputtering" and lost power. The pilot turned on the fuel pump and attempted to restore engine power without success. The pilot performed a forced landing to a field. During the landing, both main landing gear were pushed up through the wings and both wing spars were substantially damaged.

According to the FAA inspector who responded to the accident site, both main fuel tanks were full of fuel. Further examination revealed that there was no fuel in the fuel lines, fuel, pump, or engine, forward of the airplane firewall and fuel selector. The fuel selector valve was found in the "OFF" position. An examination of the airplane, fuel system, and engine, conducted by the National Transportation Safety Board and FAA, revealed no mechanical anomalies that would have precluded normal operations.

## Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	65, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	BasicMed Without waivers/limitations	<b>Last FAA Medical Exam:</b>	December 21, 2017
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	July 26, 2017
<b>Flight Time:</b>	1597 hours (Total, all aircraft), 83 hours (Total, this make and model), 1597 hours (Pilot In Command, all aircraft), 39 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Beech	<b>Registration:</b>	N666WW
<b>Model/Series:</b>	35 B33	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1962	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	CD-572
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	August 6, 2018 Annual	<b>Certified Max Gross Wt.:</b>	3050 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	9480.2 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	IO-470-K
<b>Registered Owner:</b>		<b>Rated Power:</b>	225
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KHEI,2705 ft msl	<b>Distance from Accident Site:</b>	28 Nautical Miles
<b>Observation Time:</b>	18:53 Local	<b>Direction from Accident Site:</b>	90°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Overcast / 1600 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	10 knots / 15 knots	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	140°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.7 inches Hg	<b>Temperature/Dew Point:</b>	21°C / 15°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Bowman, ND (KBWW)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Dickinson, ND (DIK )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	11:50 Local	<b>Type of Airspace:</b>	Class E

## Airport Information

<b>Airport:</b>	Bowman KBWW	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	2965 ft msl	<b>Runway Surface Condition:</b>	Dry;Rough;Vegetation
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 Minor	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 1 Minor	<b>Latitude, Longitude:</b>	46.165279,-103.300834(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Rodi, Jennifer
<b>Additional Participating Persons:</b>	Jeff Vigdal; Federal Aviation Administration; Fargo, ND
<b>Original Publish Date:</b>	September 27, 2019
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=98173">https://data.nts.gov/Docket?ProjectID=98173</a>

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).