



# **Aviation Investigation Final Report**

Location: Blackfoot, Idaho Accident Number: WPR13LA320

Date & Time: July 9, 2013, 20:00 Local Registration: N703C

Aircraft: Stinson 108-3 Aircraft Damage: Substantial

**Defining Event:** Loss of engine power (partial) **Injuries:** 1 None

Flight Conducted Under: Part 91: General aviation - Personal

#### **Analysis**

The noncertificated pilot reported that the airplane had been airborne for about 15 minutes and was about 1,000 feet above ground level when the engine experienced a partial loss of power and the airplane began to lose altitude. The pilot switched fuel tanks, but there was no change in power, so he then made a forced landing to a wheat field. During the landing, the airplane flipped over and then came to rest inverted. The pilot estimated that about 4 to 5 gallons of fuel were on board at the time of the accident. The right fuel tank was not breached, and it contained residual quantities of fuel below the usable limit. The left fuel tank was not breached; however, its fuel tank cap was displaced during the accident sequence, so an accurate assessment of the quantity of fuel in the left tank could not be determined; however, a 4.5-foot-diameter area of fuel-soaked soil was found near the left wing. Although water was found in the left tank, it may have entered through the displaced fuel tank cap. A postaccident engine examination revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

#### **Probable Cause and Findings**

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

A partial loss of engine power during cruise flight for reasons that could not be determined because postaccident examination revealed no mechanical malfunctions or failures that would have precluded normal operation.

### Findings

Not determined

(general) - Unknown/Not determined

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#### **Factual Information**

#### **History of Flight**

**Enroute** 

Loss of engine power (partial) (Defining event)

On July 09, 2013, about 2000 mountain daylight time, a Stinson 108-3, N703C, experienced a total loss of engine power and landed in a field in Blackfoot, Idaho. The airplane was registered to, and operated by, the non-certificated pilot under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The non-certificated pilot, the sole occupant, was not injured; the airplane sustained substantial damage. The personal local flight departed from McCarley Field Airport, Blackfoot, about 1945. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot stated that he departed for a short practice flight with about 8-9 gallons of fuel on board. After about 15 minutes airborne, with the airplane about 1,000 feet above ground level (agl), he heard a knocking sound from the engine compartment. Shortly thereafter, the engine power reduced about 50 percent and the airplane began to lose altitude. He switched the fuel selector to the other fuel tank and selected a wheat field where he could make a forced landing. During the landing roll, the airplane flipped over and came to rest inverted. The pilot estimated that he had about 4 to 5 gallons of fuel on board at the time of the accident.

A Federal Aviation Administration (FAA) certificated airframe and powerplant mechanic completed a post accident examination.

He noted that at the accident site, the right fuel cap remained secure in place on the wing and the right fuel tank was not breached. There was an eight inch diameter area of blithe and fuel-soaked soil near the right wing. Upon recovery he was able to drain 30 ounces of fuel. The left fuel cap was located in the soil adjacent to the wing; the tanks were not breached. The mechanic stated there was a 4.5 foot diameter area of blithe and fuel-soaked soil near the left wing. Upon recovery, the mechanic obtained 10 ounces of auto fuel and 2 tablespoons of water from the left tank. Disassembly of the gascolator revealed that the bowl was about half full of cloudy fuel and the screen was free of debris.

The fuel selector rotated freely, although the mechanic noted that the detents could not be felt, only a click could be heard. The mechanic found no evidence of mechanical malfunctions or failures that would have precluded normal operation.

The airplane's fuel system was designed to supply the engine via two aluminum fuel tanks located in both the left and right wing. Each tank holds 25 gallons, of which 2 gallons was unusable in level flight conditions. A strainer was located in the outlet of each tank and from there, fuel was gravity fed to the fuel selector valve, which contained an option of the following selections "23 GAL L," "23 GAL R," and on the bottom "FUEL OFF." The selector handle was shorter on the indicating/pointing side. From the selector, fuel would flow to another strainer and continue to the engine's carburetor.

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#### **Pilot Information**

Certificate:	None	Age:	34
Airplane Rating(s):	None	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:	None	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	200 hours (Total, all aircraft), 55 hours (Total, this make and model)		

# **Aircraft and Owner/Operator Information**

Aircraft Make:	Stinson	Registration:	N703C
Model/Series:	108-3	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	108-3703
Landing Gear Type:	Tailwheel	Seats:	4
Date/Type of Last Inspection:	May 1, 2012 Annual	Certified Max Gross Wt.:	2400 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	FRANKLIN
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	6A4165 SERIES
Registered Owner:	On file	Rated Power:	165 Horsepower
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:	KIDA,4744 ft msl	Distance from Accident Site:	22 Nautical Miles
Observation Time:	01:53 Local	Direction from Accident Site:	60°
<b>Lowest Cloud Condition:</b>	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	190°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.11 inches Hg	Temperature/Dew Point:	31°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Blackfoot, ID (U02)	Type of Flight Plan Filed:	None
Destination:	Blackfoot, ID (U02)	Type of Clearance:	None
Departure Time:	19:45 Local	Type of Airspace:	

### **Airport Information**

Airport:	MCCARLEY FLD U02	Runway Surface Type:	
Airport Elevation:	4491 ft msl	Runway Surface Condition:	Dry;Vegetation
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

# Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	43.235279,-112.316947(est)

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#### **Administrative Information**

Investigator In Charge (IIC): Keliher, Zoe

Additional Participating Persons:

Original Publish Date: December 15, 2014

Last Revision Date:

Investigation Class: Class

Note:

Investigation Docket: https://data.ntsb.gov/Docket?ProjectID=87436

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, "accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person" (Title 49 Code of Federal Regulations section 831.4). Assignment of fault or legal liability is not relevant to the NTSB's statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 United States Code section 1154(b)). A factual report that may be admissible under 49 United States Code section 1154(b) is available here.

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