



# Aviation Investigation Final Report

<b>Location:</b>	Salt Lake City, Utah	<b>Accident Number:</b>	WPR09LA382
<b>Date &amp; Time:</b>	August 3, 2009, 13:15 Local	<b>Registration:</b>	N373C
<b>Aircraft:</b>	Stinson 108-2	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	1 Minor, 1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

During cruise flight, the pilot experienced a complete loss of engine power and initiated a forced landing to an open field. During the landing roll, the airplane encountered a ditch, which resulted in substantial damage to the airplane's fuselage. A Federal Aviation Administration airworthiness inspector reported damage to the accessory section of the engine. A subsequent postaccident examination of the engine by a second inspector revealed that the crankshaft gear had failed, which resulted in significant damage to all the gears in the accessory section of the engine. Over 50 percent of the crankshaft gear could not be found, and the crankshaft gear appeared to have fractured and failed through both dowel pin slots. The engine was manufactured in 1947 and was the original engine installed by the factory at the time of the airframe's manufacture. The engine had accumulated 2,520 hours time in service and was overhauled 147 hours prior to the accident.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A total loss of engine power during cruise flight due to the failure of the crankshaft gear.

## Findings

<b>Aircraft</b>	Recip eng rear section - Failure
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## Factual Information

### History of Flight

<b>Enroute-cruise</b>	Powerplant sys/comp malf/fail
<b>Enroute-cruise</b>	Loss of engine power (total) (Defining event)
<b>Emergency descent</b>	Off-field or emergency landing
<b>Landing-landing roll</b>	Collision with terr/obj (non-CFIT)

On August 3, 2009, about 1315 mountain daylight time, a Stinson 108-2, N373C, sustained substantial damage after making a forced landing due to a total loss of engine power about 2 miles east of the Salt Lake City International Airport (SLC), Salt Lake City, Utah. The commercial pilot was not injured, and the sole passenger sustained minor injuries. Visual meteorological conditions prevailed for the cross-country flight, which was operated in accordance with Title 14 Code of Federal Regulations (CFR) Part 91, and a flight plan was not filed. The flight departed the Rock Springs-Sweetwater County Airport (RKS), Rock Springs, Wyoming, about 1130, and was destined for the Bolinder Field-Tooele Valley Airport (TVY), Tooele, Utah.

The pilot reported that while in cruise flight at 10,500 feet mean sea level (msl) "...the engine suffered a catastrophic failure." The pilot stated that he set up a glide for SLC, but seeing he was not going to make it he elected to land in an field east of the airport. The airplane sustained substantial damage to the fuselage in the area where both main landing gear were attached.

A Federal Aviation Administration (FAA) airworthiness inspector, who responded to the accident site, reported damage to the accessory section of the Franklin 6A4-165 engine. A subsequent post-accident examination of the engine by a second inspector revealed that the crankshaft gear had failed, which resulted in the damage to the accessory section of the engine. The inspector further reported that all accessory gears exhibited mechanical damage. Over 50 percent of the crankshaft gear could not be found, and that the crankshaft gear appeared to have failed at both dowel pins slots.

The engine was a Franklin 6A4-165B-3 that was manufactured in 1947 and was the original engine installed by the Stinson factory at the time of the airframe manufacture. The engine had accumulated 2,520 hours time in service and was overhauled 147 hours prior to the accident.

## Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	62, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	February 5, 2008
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	June 22, 2008
<b>Flight Time:</b>	1992 hours (Total, all aircraft), 1992 hours (Pilot In Command, all aircraft), 53 hours (Last 90 days, all aircraft), 253 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Stinson	<b>Registration:</b>	N373C
<b>Model/Series:</b>	108-2	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	108-3373
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	January 7, 2009 Annual	<b>Certified Max Gross Wt.:</b>	2230 lbs
<b>Time Since Last Inspection:</b>	53 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2520 Hrs at time of accident	<b>Engine Manufacturer:</b>	Franklin
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	6A4-165 B-3
<b>Registered Owner:</b>	Honey S. McDermott	<b>Rated Power:</b>	165 Horsepower
<b>Operator:</b>	Charles R. McDermott	<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>	SLC,4227 ft msl	<b>Distance from Accident Site:</b>	2 Nautical Miles
<b>Observation Time:</b>	12:53 Local	<b>Direction from Accident Site:</b>	275°
<b>Lowest Cloud Condition:</b>	Few / 14000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 20000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	160°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.03 inches Hg	<b>Temperature/Dew Point:</b>	34°C / 1°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Rock Springs, WY (RKS )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Tooele, UT (TVY )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	11:30 Local	<b>Type of Airspace:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<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 Minor, 1 None	<b>Latitude, Longitude:</b>	40.76139,-111.971107(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Little, Thomas
<b>Additional Participating Persons:</b>	Brent A Robinson; Federal Aviation Administration; Salt Lake City, UT
<b>Original Publish Date:</b>	December 15, 2009
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=74438">https://data.ntsb.gov/Docket?ProjectID=74438</a>

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