Aviation Investigation Final Report

Location:	Port Alsworth, Alaska	**Accident Number:**	ANC10LA081
Date & Time:	August 28, 2010, 18:35 Local	**Registration:**	N9569K
Aircraft:	Stinson 108-2	**Aircraft Damage:**	Substantial
Defining Event:	Aircraft structural failure	**Injuries:**	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was on a personal cross-country flight and had landed at an off-airport site. While taxiing to park, the right wheel broke and the plane tipped on its right wing. The right wing, wing spar, and aileron were damaged when the wing struck the ground. He reported no mechanical problems with the airplane prior to the accident. A postaccident examination of the broken wheel showed the center of the wheel casting adjacent to the inner bearing race had fractured around its circumference, and the casting piece and bearing race had separated from the wheel, allowing the axle to pivot. An examination at the National Transportation Safety Board's materials laboratory revealed features indicative of overstress separation of the flange. No indications of fatigue, corrosion or other preexisting conditions were noted.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The overstress fracture and failure of a main landing gear wheel during landing, resulting in the right wing striking the ground.

Findings

Aircraft	Wheel/ski/float - Failure
Aircraft	Wheel/ski/float - Capability exceeded
Environmental issues	Rough terrain - Contributed to outcome

Factual Information

History of Flight

Landing-landing roll	Aircraft structural failure (Defining event)

On August 28, 2010, about 1835 Alaska daylight time, a Stinson 108-2 airplane, N9569K, sustained substantial damage during an off airport landing, about 48 miles west of Port Alsworth, Alaska. The airplane was being operated by the pilot as a visual flight rules personal cross-country flight under the provisions of 14 Code of Federal Regulations Part 91, when the accident occurred. The commercial pilot and the two passengers were not injured. Visual meteorological conditions prevailed, and company flight following procedures were in effect. The flight departed Port Alsworth about 1730.

In a written report to the National Transportation Safety Board (NTSB) dated September 6, the pilot reported that he was taking his sons on a camping trip. He reported that after scouting a ridge west of Port Alsworth, he decided to land since it was a familiar tundra landing area that he had used in the past. He said he flew over the landing area three times to gauge wind conditions, and to be sure there were no new obstacles to be avoided in the landing area. After touching down and braking almost to a stop, he said he was taxiing into the area where he planned to park, when the right wheel broke, and the plane tipped on its right wing. He said the right wing, wing spar, and aileron were damaged when the wing struck the ground.

On September 2, the NTSB investigator-in-charge (IIC) examined the broken wheel. The wheel had been mounted with 35 inch Alaskan Bush Wheels. The center of the wheel casting adjacent to the inner bearing race had fractured around its circumference, and the casting piece and bearing race had separated from the wheel, allowing the axle to pivot.

On February 16, 2011, an examination of the fractured wheel was completed at the National Transportation Safety Board's materials laboratory. The investigation revealed features indicative of overstress separation of the flange. No indications of fatigue, corrosion or other preexisting conditions were noted.

Pilot Information

Certificate:	Commercial	**Age:**	33,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	February 16, 2010
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	June 24, 2010
Flight Time:	4725 hours (Total, all aircraft), 85 hours (Total, this make and model), 4684 hours (Pilot In Command, all aircraft), 253 hours (Last 90 days, all aircraft), 86 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Stinson	**Registration:**	N9569K
Model/Series:	108-2	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	108-2569
Landing Gear Type:	Tailwheel	**Seats:**	4
Date/Type of Last Inspection:	November 3, 2009 Annual	**Certified Max Gross Wt.:**	2330 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3106 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	C126 installed, not activated	**Engine Model/Series:**	IO-360 SER
Registered Owner:	MOVING UP 2 INC	**Rated Power:**	210 Horsepower
Operator:	Glen Alsworth Jr	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	PALJ,288 ft msl	**Distance from Accident Site:**	48 Nautical Miles
Observation Time:	16:39 Local	**Direction from Accident Site:**	90°
Lowest Cloud Condition:	Scattered / 800 ft AGL	**Visibility**	20 miles
Lowest Ceiling:	Broken / 3000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	230°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.86 inches Hg	**Temperature/Dew Point:**	11°C / 11°C
Precipitation and Obscuration:			
Departure Point:	Port Alsworth, AK (AK51)	**Type of Flight Plan Filed:**	None
Destination:	Port Alsworth, AK (AK51)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	

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:**	60.199886,-154.280685(est)

Administrative Information

Investigator In Charge (IIC):	Lewis, Lawrence
Additional Participating Persons:	Jon Edmonds; FAA FSDO-03; Anchorage, AK
Original Publish Date:	May 19, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=77153