Aviation Investigation Final Report

Location:	Grangeville, Idaho	**Accident Number:**	WPR10LA421
Date & Time:	August 23, 2010, 09:45 Local	**Registration:**	N29100
Aircraft:	Cessna U206	**Aircraft Damage:**	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Positioning		

Analysis

The pilot reported that, during the landing roll on a turf airstrip, he noticed rattling and shaking after the nosewheel touched down, but had no problem holding a straight line. After taxiing to the tie-down area and parking the airplane, the pilot inspected the nose gear and found that the upper end of the nose gear scissor had separated from the casting and was lying on the tire. The pilot reported that he walked out to where he touched down and observed tire tracks on the grass, and it appeared that the nosewheel track began after a large ground squirrel hole. The pilot contacted his mechanic, who informed him that he should be able to fly home if he tied the nose gear scissor up. Before departing, the pilot taxied about 1,000 feet on the runway and made two 180-degree turns with no problems encountered. During the landing at his destination, the pilot held the nose gear off of the ground for about 1,500 feet. When the nosewheel contacted the ground, the airplane made a hard left turn that the pilot could not stop with right rudder and brake. When the airplane reached the edge of the runway, it nosed over. The pilot indicated that the nosewheel had evidently cocked 90 degrees prior to the landing.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's decision to fly with a known defective nosewheel assembly, which resulted in a loss of directional control and nose-over on landing after the assembly shifted out of alignment during the flight.

Findings

Aircraft	Nose/tail landing gear - Malfunction
Aircraft	Directional control - Attain/maintain not possible
Personnel issues	Decision making/judgment - Pilot

Factual Information

History of Flight

Landing-landing roll	Sys/Comp malf/fail (non-power) (Defining event)
Landing-landing roll	Loss of control on ground
Landing-landing roll	Runway excursion
Landing-landing roll	Nose over/nose down

On August 23, 2010, about 0945 Pacific daylight time, a Cessna U206C, N29100, nosed over during landing at Idaho County Airport, Grangeville, Idaho. The pilot/owner was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91 as a positioning flight. The commercial pilot was not injured; the airplane sustained substantial damage to the fuselage, wings, and empennage. The airplane departed Concord airstrip (25 miles southeast of Idaho County Airport) at 0930, en route to Grangeville. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot reported that he began the day at Grangeville at 0615, for a 14 CFR Part 135 flight to Campbell's Ferry on the Main Salmon River. After landing and unloading his passenger, he departed for the airstrip at Concord.

The pilot stated that during the landing he noticed that the airplane was rattling and shaking, but he had no problem maintaining a straight line on roll out. He taxied back to the tie down area, and parked the airplane. The pilot inspected the landing gear and observed the nose gear scissor lying on the tire; the upper end had snapped off (separated from the casting). He walked out to where he touched down, and observed good tracks on the grass in the morning dew. He saw that the nose wheel track first appeared after a large ground squirrel hole. The pilot reported that earlier in the summer he had filled in some of the holes.

The pilot contacted his mechanic, who informed him that he should be able to fly home if he tied the nose gear scissor up. After doing that, the pilot taxied about 1,000 feet on the runway, and made two 180-degree turns with no problems encountered. The pilot then departed for Grangeville.

During the landing, the pilot held the nose off for about 1,500 feet, and then eased the nose down. The airplane made a hard left turn that he could not stop with right rudder and brake. When the airplane reached the edge of the runway, it nosed over.

The pilot indicated that the nose wheel had evidently cocked 90 degrees prior to the landing.

Pilot Information

Certificate:	Commercial; Private	**Age:**	53,Male
Airplane Rating(s):	Single-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:**	April 1, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 1, 2009
Flight Time:	2770 hours (Total, all aircraft), 955 hours (Total, this make and model), 2700 hours (Pilot In Command, all aircraft), 54 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N29100
Model/Series:	U206 C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	U206-1072
Landing Gear Type:	Tricycle	**Seats:**	6
Date/Type of Last Inspection:	November 1, 2009 Annual	**Certified Max Gross Wt.:**	3600 lbs
Time Since Last Inspection:	54 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	6146 Hrs at time of accident	**Engine Manufacturer:**	Teledyne Continental Motors
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO-520-F4B
Registered Owner:	Karl E. Urquhart	**Rated Power:**	300 Horsepower
Operator:	Karl E. Urquhart	**Operating Certificate(s) Held:**	On-demand air taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KLWS,144 ft msl	**Distance from Accident Site:**	48 Nautical Miles
Observation Time:	09:56 Local	**Direction from Accident Site:**	290°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	30°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.75 inches Hg	**Temperature/Dew Point:**	22°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Concord, ID	**Type of Flight Plan Filed:**	None
Destination:	Granville, ID (S80)	**Type of Clearance:**	None
Departure Time:	09:30 Local	**Type of Airspace:**	

Airport Information

Airport:	Grangeville Idaho County S80	**Runway Surface Type:**	Asphalt
Airport Elevation:	3314 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	07	**IFR Approach:**	None
Runway Length/Width:	5101 ft / 75 ft	**VFR Approach/Landing:**	Full stop

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:**	45.942501,-116.123611(est)

Administrative Information

Investigator In Charge (IIC):	Plagens, Howard
Additional Participating Persons:	Jim Bening; FAA Spokane FSDO; Spokane, WA
Original Publish Date:	March 20, 2012
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=77049