



Aviation Investigation Final Report

Location:	Scappoose, Oregon	Accident Number:	WPR12LA366
Date & Time:	August 23, 2012, 16:30 Local	Registration:	N222BP
Aircraft:	Piper PA-30 B	Aircraft Damage:	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that the landing gear would not fully extend before landing. He attempted to extend the gear manually but was unsuccessful. The pilot decided to make a gear-up landing on the grass median next to the runway. During the landing, the airplane sustained substantial damage to the lower fuselage. A postaccident examination of the airplane revealed that there was a failure of the landing gear transmission assembly, which prevented the full extension of the nose landing gear. After the accident, the transmission was replaced, and the failed transmission was not retained for further testing, which precluded a determination of the reason for the failure of the landing gear to fully extend.

Probable Cause and Findings

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

The failure of the landing gear to fully extend as a result of a failure of the landing gear transmission assembly for reasons that could not be determined based on the available evidence.

Findings

Not determined	(general) - Unknown/Not determined
Environmental issues	Soft surface - Contributed to outcome
Aircraft	Landing gear actuator - Malfunction

Factual Information

History of Flight

Landing	Sys/Comp malf/fail (non-power) (Defining event)
Landing-flare/touchdown	Off-field or emergency landing

On August 23, 2012, about 1630 Pacific daylight time (PDT), a Piper PA-30 B, N222BP, made a gear up landing at Scappoose Industrial Airpark, Scappoose, Oregon. The owner/pilot was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The private pilot was not injured; the airplane sustained substantial damage to the underbelly structure during the landing on the grass next to runway 33. The cross-country personal flight departed Vancouver, Washington, about 1600. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot reported that prior to landing, he lowered the landing gear, but it would not fully extend. He attempted to manually extend the gear but was unsuccessful. The pilot determined that due to his low fuel state he would perform a gear up landing. He elected to land on the soft infield grass adjacent to runway 33 versus on the runway itself in an attempt to minimize the damage to the airplane.

After recovery of the airplane, it was determined that the lower fuselage had sustained substantial damage to the structure as a result of the soft ground ripping the aluminum sheet metal and belly frame structure. The airplane was secured for further examination of the landing gear.

The airplane was examined by maintenance personnel and an inspector from the Federal Aviation Administration (FAA). During the examination, it was found that there was a failure of the landing gear transmission assembly, which prevented the extension of the nose landing gear. The landing gear transmission assembly was replaced, but the damaged assembly was not retained for further testing due to a miscommunication with the repair facility.

Pilot Information

Certificate:	Private	Age:	38
Airplane Rating(s):	Single-engine land; 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 3 Without waivers/limitations	Last FAA Medical Exam:	February 22, 2008
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	774 hours (Total, all aircraft), 138 hours (Total, this make and model), 580 hours (Pilot In Command, all aircraft), 130.3 hours (Last 90 days, all aircraft), 33.5 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N222BP
Model/Series:	PA-30 B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	30-1510
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	August 22, 2011 Annual	Certified Max Gross Wt.:	3600 lbs
Time Since Last Inspection:	141 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	5656.5 Hrs at time of accident	Engine Manufacturer:	LYCOMING
ELT:	Installed, not activated	Engine Model/Series:	IO-320 SERIES
Registered Owner:	On file	Rated Power:	150 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:	SPB,48 ft msl	Distance from Accident Site:	
Observation Time:	16:53 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Scattered / 6000 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots / 16 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	300°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.09 inches Hg	Temperature/Dew Point:	20°C / 6°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Vancouver, WA (VUO)	Type of Flight Plan Filed:	None
Destination:	Scappoose, OR (SPB)	Type of Clearance:	None
Departure Time:	16:00 Local	Type of Airspace:	

Airport Information

Airport:	Scappoose Industrial Airpark SPB	Runway Surface Type:	Grass/turf
Airport Elevation:	58 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

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:	45.769165,-122.856941(est)

Administrative Information

Investigator In Charge (IIC):	Jones, Patrick
Additional Participating Persons:	Marty Conroy; Federal Aviation Administration; Portland, OR Gary Burns; Federal Aviation Administration; Portland, OR
Original Publish Date:	March 26, 2015
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=84779

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