



National Transportation Safety Board Aviation Accident Final Report

Location:	Doylestown, Pennsylvania	Accident Number:	ERA13LA409
Date & Time:	September 8, 2013, 10:30 Local	Registration:	N57JK
Aircraft:	Piper PA-31P	Aircraft Damage:	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Following a normal landing, the pilot felt no wheel braking action on the left wheel, and the brake pedal went to the floor. The pilot attempted to maintain directional control; however, the airplane departed the right side of the runway and traveled into the grass. The landing gear collapsed, and the airplane came to a stop, sustaining structural damage to the left wing spar. Postaccident examination confirmed that the left brake was inoperative and revealed a small hydraulic fluid leak at the shaft of the parking brake valve in the pressurized section of the cabin. Air likely entered the brake line at the area of the leak while the cabin was pressurized, rendering the left brake inoperative.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A leaking parking brake valve, which allowed air to enter the left brake line and resulted in the eventual failure of the left wheel brake during the landing roll.

Findings

Aircraft	Master cylinder/brake valve - Malfunction
Aircraft	Directional control - Attain/maintain not possible

Factual Information

On September 08, 2013, about 1030 eastern daylight time, a Piper PA-31P airplane, N57JK, was substantially damaged following a runway excursion during landing at Doylestown, Pennsylvania (DYL). The commercial pilot was not injured. The flight was conducted under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed and no flight plan was filed for the flight.

The pilot reported that, following a normal landing on runway 5, the left brake pedal went to the floor and there was no braking action on the left side. He tried pumping the brakes to regain left braking action, but was unsuccessful. The airplane departed the right side of the runway, into the grass. The landing gear collapsed and the airplane came to a stop.

An inspector with the Federal Aviation Administration responded to the accident site and inspected the airplane. He confirmed substantial damage to the left wing spar. The left brake was not operational when he inspected the airplane. Further examination of the wheel brake system revealed a leak at the shaft for the parking brake valve. He reported that this condition allowed air to enter the brake system in between the master cylinder and wheel cylinder when the aircraft was pressurized.

History of Flight

Landing-landing roll	Sys/Comp malf/fail (non-power) (Defining event)
Landing-landing roll	Runway excursion
Landing-landing roll	Landing gear collapse

Pilot Information

Certificate:	Commercial	Age:	64
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	December 19, 2012
Occupational Pilot:	No	Last Flight Review or Equivalent:	April 10, 2013
Flight Time:	1612 hours (Total, all aircraft), 1054 hours (Total, this make and model), 1424 hours (Pilot In Command, all aircraft), 21 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N57JK
Model/Series:	PA-31P	Aircraft Category:	Airplane
Year of Manufacture:	1975	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	31P-7530020
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	November 2, 2012 Annual	Certified Max Gross Wt.:	7800 lbs
Time Since Last Inspection:	35 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	3952 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	C126 installed, not activated	Engine Model/Series:	TIGO-541SER
Registered Owner:		Rated Power:	400 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:	DYL, 394 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	10:54 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Few / 3500 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	290°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	29.87 inches Hg	Temperature/Dew Point:	24° C / 17° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cambridge, MA (CGE)	Type of Flight Plan Filed:	IFR
Destination:	Doylestown, PA (DYL)	Type of Clearance:	IFR
Departure Time:	09:45 Local	Type of Airspace:	

Airport Information

Airport:	Doylestown Airport DYL	Runway Surface Type:	Asphalt
Airport Elevation:	394 ft msl	Runway Surface Condition:	Dry
Runway Used:	05	IFR Approach:	None
Runway Length/Width:	3004 ft / 60 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:	40.333057, -75.122222(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	
Original Publish Date:	February 3, 2014
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=88015

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