



National Transportation Safety Board Aviation Accident Final Report

Location:	BILLINGS, MT	Accident Number:	SEA99LA103
Date & Time:	07/01/1999, 1445 MDT	Registration:	N3513A
Aircraft:	Piper PA-22	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The pilot reported that upon touchdown the aircraft began to drift left, and right rudder was applied to correct with no effect. As the drift continued, the pilot applied right brake, increasing brake pressure until he 'was pushing against the seat.' The aircraft continued to veer left, tightening its turn radius until it had rotated more than 180 degrees counter-clockwise. During the rotation, the aircraft settled to the left in line with the runway lights and came to a stop. Post-crash examination by a certified mechanic revealed that the left main landing gear shock strut tube had separated at its attach point to the left main wheel assembly. This would have allowed the release of the left main landing gear, permitting it to pivot into a flat (collapsed) position.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The separation of the left main landing gear shock strut for undetermined reasons.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: LANDING - ROLL

Findings

1. (C) LANDING GEAR,MAIN GEAR SHOCK ABSORBING STRUT - SEPARATION
2. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: GEAR COLLAPSED
Phase of Operation: LANDING - ROLL

Factual Information

On July 1, 1999, approximately 1445 mountain daylight time, a tailwheel equipped Piper PA-22, N3513A, registered to and being flown by a private pilot, was substantially damaged during the collapse of the left main landing gear on landing rollout at the Billings International Airport, Billings, Montana. The pilot and passenger were uninjured. Visual meteorological conditions existed, and no flight plan had been filed. The flight, which was personal, was to have been operated under 14CFR91, and originated from Helena, Montana, at 1234.

The pilot reported that upon touchdown on runway 28R the aircraft began to drift left, and right rudder was applied to correct with no effect. As the drift continued, the pilot applied right brake, increasing brake pressure until he "was pushing against the seat." The aircraft continued to veer left, tightening its turn radius until it had rotated more than 180 degrees counter-clockwise. During the rotation, the aircraft settled to the left in line with the runway lights and came to a stop. The pilot and passenger exited and noted the left main landing gear separated from its bungee (shock strut,) but still attached to the airframe.

Post-crash examination by an IA certified mechanic revealed that the left main landing gear shock strut tube had separated at its attach point to the left main wheel assembly (refer to DIAGRAM I). This would have allowed the release of the left main landing gear, permitting it to pivot into a flat (collapsed) position.

Pilot Information

Certificate:	Private	Age:	49, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	01/02/1998
Occupational Pilot:	Last Flight Review or Equivalent:		
Flight Time:	569 hours (Total, all aircraft), 400 hours (Total, this make and model), 520 hours (Pilot In Command, all aircraft), 80 hours (Last 90 days, all aircraft), 63 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N3513A
Model/Series:	PA-22 PA-22	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	22-1785
Landing Gear Type:	Tailwheel	Seats:	4
Date/Type of Last Inspection:	08/08/1998, Annual	Certified Max Gross Wt.:	1950 lbs
Time Since Last Inspection:	99 Hours	Engines:	1 Reciprocating
Airframe Total Time:	2480 Hours	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-290-D2
Registered Owner:	CHADWICK, THOMAS, K.	Rated Power:	135 hp
Operator:	CHADWICK, THOMAS, K.	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BIL, 3649 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1456 MDT	Direction from Accident Site:	0°
Lowest Cloud Condition:	Scattered / 6500 ft agl	Visibility	10 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	24° C / 4° C
Precipitation and Obscuration:			
Departure Point:	HELENA, MT (HLN)	Type of Flight Plan Filed:	None
Destination:	(BIL)	Type of Clearance:	
Departure Time:	1234 MDT	Type of Airspace:	Class C

Airport Information

Airport:	BILLINGS LOGAN INTERNATIO (BIL)	Runway Surface Type:	Asphalt
Airport Elevation:	3485 ft	Runway Surface Condition:	Dry
Runway Used:	28R	IFR Approach:	None
Runway Length/Width:	10528 ft / 150 ft	VFR Approach/Landing:	Full Stop; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	STEVEN A MCCREARY	Report Date:	08/10/2000
Additional Participating Persons:	DON PAUL; HELENA, MT		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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