



National Transportation Safety Board Aviation Accident Final Report

Location:	Marshall, MN	Accident Number:	CHI07LA002
Date & Time:	10/02/2006, 1605 CDT	Registration:	N71TA
Aircraft:	Piper PA-23-250	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None

Flight Conducted Under: Part 91: General Aviation - Instructional

Analysis

The airplane was substantially damaged during landing when the nose gear failed to properly extend. The pilot reported that during touch-and-goes at MDS the nose gear would not extend prior to landing. The pilot diverted to MML and conducted a fly-by where ground personnel reported that the nose gear tire appeared to be cocked inside the gear well. The pilot reported that several attempts to lower the nose gear were unsuccessful. The pilot landed in the grass adjacent to the runway with the main gear extended and the nose gear retracted. Post accident investigation could not duplicate the problem. Operational checks of the landing gear retraction and extension after the accident were normal.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the nose gear to properly extend for undetermined reasons, which resulted in damage to the forward fuselage during landing.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: APPROACH

Findings

1. (C) LANDING GEAR,NOSE GEAR - FAILURE
 2. (C) REASON FOR OCCURRENCE UNDETERMINED
 3. (C) LANDING GEAR,EMERGENCY EXTENSION ASSEMBLY - FAILURE
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Occurrence #2: WHEELS UP LANDING
Phase of Operation: EMERGENCY LANDING

Findings

4. FUSELAGE - BENT
5. TERRAIN CONDITION - GRASS

Factual Information

On October 2, 2006, about 1605 central daylight time, a Piper PA-23-250, N71TA, piloted by a flight instructor and dual student, was substantially damaged during landing on runway 12 (5,010 feet by 100 feet, asphalt) at the Southwest Minnesota Regional Airport (MML), Marshall, Minnesota. The nose gear failed to extend properly prior to landing and attempts to use the emergency gear extension system were not successful. The instructional flight was being conducted under 14 CFR Part 91 without a flight plan. Visual meteorological conditions prevailed. The flight instructor and dual student were not injured. The flight departed Madison Municipal Airport (MDS), Madison, South Dakota, about 1430.

The flight instructor reported to the Federal Aviation Administration that he was on an instructional flight with the owner of the airplane who was not rated to fly the aircraft. The instructor and the student were doing touch-and-goes at MDS. On the fourth landing, the retractable nose gear would not extend.

The instructor wanted ground personnel to get a visual of the gear so he diverted to MML to conduct a fly-by. Ground personnel reported that the nose gear doors were fully open; however, the gear remained in the well and the nose gear tire appeared to be cocked.

Several attempts to lower the gear using emergency extension procedures failed. The instructor reported using the CO₂ bottle as a last resort, which also failed to lower the gear. He subsequently decided to land the airplane in the grass adjacent to runway 12 at MML with the main gear extended and the nose gear retracted. The forward fuselage was subsequently damaged during the emergency landing.

Post accident investigation conducted by the FAA revealed that when the nose gear assembly was turned slightly left the axle bolt area would contact the door structure. There were visible nose wheel marks on the right gear door. Examination also revealed that the gear system worked satisfactorily using normal operations as well as the emergency hand pump.

Maintenance records indicated that, five days prior to the accident, during the 100-hour inspection, the nose gear was removed, disassembled and reinstalled. The records also stated that the upper nose gear trunnion was repaired at that time. The records indicated that the gear was cycled five times following the repair.

Maintenance personnel reported that wheel marks were observed on the right nose gear door at the time of the 100-hour inspection.

Flight Instructor Information

Certificate:	Airline Transport; Flight Instructor; Commercial	Age:	31, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Helicopter	Toxicology Performed:	No
Medical Certification:	Class 1 With Waivers/Limitations	Last FAA Medical Exam:	02/01/2006
Occupational Pilot:		Last Flight Review or Equivalent:	07/01/2006
Flight Time:	6400 hours (Total, all aircraft), 73 hours (Total, this make and model), 5900 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 35 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N71TA
Model/Series:	PA-23-250	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	27-7654068
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	09/01/2006, Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	5855 Hours as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	TIO-540
Registered Owner:	Brian D. Woldt	Rated Power:	250 hp
Operator:	Brian D. Woldt	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	MML, 1180 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1555 CDT	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	290°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.96 inches Hg	Temperature/Dew Point:	13° C / 7° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Madison, SD (MDS)	Type of Flight Plan Filed:	None
Destination:	Marshall, MN (MML)	Type of Clearance:	None
Departure Time:	1430 CDT	Type of Airspace:	

Airport Information

Airport:	Southwest Minnesota Regional (MML)	Runway Surface Type:	
Airport Elevation:	1180 ft	Runway Surface Condition:	
Runway Used:	NA	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	44.450556, -95.825000

Administrative Information

Investigator In Charge (IIC):	Tim Sorensen	Report Date:	12/20/2007
Additional Participating Persons:	William Johnson; FAA-Minneapolis FSDO; Minneapolis, MN		
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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