



National Transportation Safety Board Aviation Accident Final Report

Location:	Jackson, TN	Accident Number:	ERA10LA131
Date & Time:	02/03/2010, 1348 CST	Registration:	N97075
Aircraft:	CESSNA 172	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	1 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The student pilot landed, taxied back to the runway, and departed again. She stayed in the traffic pattern and then landed again with a slight crosswind at about 3 knots. During the subsequent takeoff with full power, the airplane veered to the left. The student pilot applied right rudder, but the airplane continued to the left and veered into a snow bank. A postaccident examination of the airplane's nose landing gear revealed that the right bearing rod-end had broken off the arm assembly of the nose gear steering rod. Further examination of both components through magnified optics revealed deformation and fracture surface features consistent with bending overstress separations in both components. No indications of preexisting conditions, such as fatigue or corrosion, were found.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The student pilot's loss of directional control during the takeoff roll, which resulted in a collision with a snow bank.

Findings

Aircraft	Directional control - Not attained/maintained (Cause)
Personnel issues	Aircraft control - Student pilot (Cause)

Factual Information

On February 3, 2010, at 1348 central standard time, a Cessna 172P, N97075, sustained substantial damage when it collided with a snow bank during a takeoff attempt at McKellar-Sipes Regional Airport (MKL) Jackson, Tennessee. The certificated student pilot was not injured. Visual meteorological conditions prevailed and a visual flight rules flight plan was filed for the instructional flight. The airplane was registered to and operated by the Civil Air Patrol under the provisions of 14 Code of Federal Regulations Part 91. The flight originated at Savannah-Hardin County Airport (SNH), Savannah, Tennessee, at 1245.

According to the student pilot, she landed on runway 2 at MKL, taxied back and took off with closed traffic. She landed again on runway 2, with the winds being from 320-degrees at 3 knots. She stated that during the accident takeoff with full power, the airplane veered to the left. She added more right rudder to compensate for the left drift, but felt a jerk, and the airplane continued to turn left. The airplane impacted a snow bank on the left side of the runway, at which time the nose landing gear collapsed and the propeller made contact with the runway surface.

Examination of the airplane by a Federal Aviation Administration (FAA) inspector confirmed that the airplane had impacted a snow bank off the left side of the runway, collapsing the nose landing gear and damaging the firewall. Further examination of the nose gear found the right “bearing-rod end” broken off the “arm assembly-nose gear steering rod.” The bearing-rod end and the arm assembly were sent to the NTSB’s Materials Laboratory for further examination.

The examination of the bearing-rod end and the arm assembly-nose gear steering rod through magnified optical inspections revealed deformation and fracture surface features consistent with bending overstress separations in both components. No indications of preexisting conditions, such as fatigue or corrosion, were noted.

History of Flight

Takeoff	Loss of control on ground (Defining event) Ground collision
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Student Pilot Information

Certificate:	Student	Age:	16, Female
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last Medical Exam:	11/02/2009
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	35 hours (Total, all aircraft), 35 hours (Total, this make and model), 35 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N97075
Model/Series:	172 P	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	1726152
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	12/11/2009, Annual	Certified Max Gross Wt.:	2550 lbs
Time Since Last Inspection:	20 Hours	Engines:	1 Reciprocating
Airframe Total Time:	3958 Hours	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	O360-A4M
Registered Owner:	On file	Rated Power:	180 hp
Operator:	On file	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	MKL, 434 ft msl	Observation Time:	1253 CDT
Distance from Accident Site:	0 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	0°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	6° C / -2° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	3 knots, 320°	Visibility (RVR):	
Altimeter Setting:	30.27 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Jackson, TN (MKL)	Type of Flight Plan Filed:	None
Destination:	Jackson, TN (MKL)	Type of Clearance:	VFR
Departure Time:	1315 CST	Type of Airspace:	Unknown

Airport Information

Airport:	McKellar-Sipes Regional (MKL)	Runway Surface Type:	Asphalt
Airport Elevation:	434 ft	Runway Surface Condition:	Dry
Runway Used:	02	IFR Approach:	None
Runway Length/Width:	6006 ft / 150 ft	VFR Approach/Landing:	Stop and Go

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	Ralph L Wilson	Adopted Date:	04/12/2011
Additional Participating Persons:	Troy Hart; FAA/FSDO; Memphis, TN		
Publish Date:	04/12/2011		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=75337		

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