



Aviation Investigation Final Report

Location:	Racine, Wisconsin	Accident Number:	CHI03LA222
Date & Time:	July 19, 2003, 17:30 Local	Registration:	N355ST
Aircraft:	Cessna 195	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The aircraft was substantially damaged during landing when it departed the runway surface. The pilot reported the left brake locked during landing causing the aircraft to drift to the left of the runway centerline. He stated that as the aircraft returned to the runway centerline the left wheel began to vibrate and the left axle failed. He reported the aircraft veered off the right side of the runway and ground looped 180 degrees before coming to rest. A post-accident examination determined the left axle had failed. The axle showed no evidence of corrosion or pitting. The brake rotor showed no discoloration. Since the brake line was separated between the wheel and the strut, the integrity of the brake system at the time of the accident could not be determined.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the left main landing gear axle resulting in the brake being locked and subsequent loss of directional control.

Findings

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

Findings

1. (C) LANDING GEAR,NORMAL BRAKE SYSTEM - LOCKED
2. (C) LANDING GEAR,AXLE - FAILURE,TOTAL

Occurrence #2: LOSS OF CONTROL - ON GROUND/WATER
Phase of Operation: LANDING - ROLL

Findings

3. (C) DIRECTIONAL CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER
Phase of Operation: LANDING - ROLL

Findings

4. (F) TERRAIN CONDITION - GRASS

Factual Information

On July 19, 2003, at 1730 central daylight time, a Cessna 195, N355ST, piloted by private pilot, was substantially damaged when it departed the runway surface during landing rollout on runway 14 (4,423 feet x 100 feet, asphalt) at the John H. Batten Airport (RAC), Racine, Wisconsin. Visual meteorological conditions prevailed at the time of the accident. The local flight was operating under 14 CFR Part 91 and was not on a flight plan. The pilot and passenger reported no injuries. The flight departed RAC at 1700.

The pilot's written statement reported that upon touchdown the left brake locked, causing the airplane to drift to the left. He stated that "hard right rudder" was applied in an attempt return to the runway centerline. According to the pilot, "as the aircraft was brought to the center of the runway the left wheel began to vibrate." He noted that as he felt the left brake release, the wheel began to "excessively camber and subsequently the left axle failed." As the left axle failed, the aircraft veered off the right side of the runway. According to the pilot, the left landing gear strut subsequently "knifed" into the grass adjacent to the runway and the aircraft ground looped 180 degrees before coming to rest.

A post accident examination determined the left axle had failed causing the left wheel assembly to separate from the strut. The axle showed no evidence of corrosion or pitting. The brake rotor showed no discoloration. Since the brake line was separated between the wheel and the strut, the integrity of the brake system at the time of the accident could not be determined.

Pilot Information

Certificate:	Private	Age:	61, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	Last FAA Medical Exam:	May 20, 2003
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	250 hours (Total, all aircraft), 51 hours (Total, this make and model), 173 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N355ST
Model/Series:	195	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal; Utility	Serial Number:	7285
Landing Gear Type:	Tailwheel	Seats:	5
Date/Type of Last Inspection:	March 19, 2003 Annual	Certified Max Gross Wt.:	3350 lbs
Time Since Last Inspection:	11 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4113 Hrs at time of accident	Engine Manufacturer:	Jacobs
ELT:	Installed, not activated	Engine Model/Series:	R-755-B2
Registered Owner:	On file	Rated Power:	275 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:	RAC,674 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	16:53 Local	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	10 knots / 0 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.06 inches Hg	Temperature/Dew Point:	24°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Racine, WI (RAC)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	17:00 Local	Type of Airspace:	Class G

Airport Information

Airport:	John H Batten RAC	Runway Surface Type:	Asphalt
Airport Elevation:	674 ft msl	Runway Surface Condition:	Dry
Runway Used:	14	IFR Approach:	None
Runway Length/Width:	4423 ft / 100 ft	VFR Approach/Landing:	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:	42.760555,-87.815277

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Robert Gay; FAA – Milwaukee FSDO; Milwaukee, WI
Original Publish Date:	March 2, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=57625

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).