



Aviation Investigation Final Report

Location:	Cahokia, Illinois	Accident Number:	CHI01LA079
Date & Time:	February 2, 2001, 16:08 Local	Registration:	N4249C
Aircraft:	Cessna 310R	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The left landing gear collapsed during landing. The airplane and its landing gear system were inspected and no anomalies were found that could be associated with a pre-impact condition. All fractured portions of the landing gear system had signatures consistent with overload failure. The airplane's left main landing gear collapsed on two prior occasions. The first was on June 27, 1998, and the cause of the gear collapse was undetermined. The second occurrence was on May 15, 2000, and was attributed to the failure of a through-bolt in the gear retraction linkage. The accident flight was the second flight since the maintenance release for the damages that were incurred during the May 15, 2000, accident. The first flight was a maintenance test flight and no anomalies were noted during the flight.

Probable Cause and Findings

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

Findings

Occurrence #1: GEAR COLLAPSED
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

1. (C) REASON FOR OCCURRENCE UNDETERMINED

Factual Information

On February 2, 2001, at 1608 central standard time, a Cessna 310R, N4249C, piloted by a certified flight instructor (CFI), sustained substantial damage when the landing gear collapsed while landing on runway 12R (6,997 feet by 100 feet, dry/asphalt) at the St. Louis Downtown Airport (CPS), Cahokia, Illinois. Visual meteorological conditions prevailed at the time of the accident. The instructional flight was operating under the provisions of 14 CFR Part 91 and was not on a flight plan. The pilot and the dual student were not injured. The local flight departed CPS at 1530 and was returning to CPS at the time of the accident.

According to the CFI's written statement, after completing training maneuvers in the practice area the CFI decided to return to CPS and conduct touch-and-go landings. The CFI reported that when they extended the landing gear the three green landing gear position lights illuminated. The CFI stated that they attempted a normal landing and, "Upon touch down the aircraft continued to sink on the left side indicating a problem." The CFI reported that the dual student aborted the landing and they departed the traffic pattern in order to assess the problem. The CFI stated that he cycled the landing gear and the three green landing gear position lights illuminated when the landing gear were extended. The CFI reported that he performed a fly-by past the control tower and the air traffic control (ATC) personnel indicated that all three landing gear were extended. The CFI stated that he attempted another landing and the airplane continued to drop on the left side subsequent to the touchdown. The CFI reported that he aborted the landing and made the decision to attempt a gear-up landing on the next landing attempt. The CFI stated that on the next landing approach the decision was made to go-around and during the go-around the ATC personnel informed him that his left landing gear was "[hanging] by itself". The CFI reported that he then decided to attempt a landing with the landing gear extended. The CFI stated that, "Upon touch down the left gear collapsed as it did the other two times I tried to keep [the airplane] on the right gear as long as possible. As we slowed the left wing and prop touched the ground and pulled us off the left side of [runway] 12R hitting a runway light."

A representative of the Federal Aviation Administration performed a post-accident inspection of the airplane and its landing gear system. No anomalies were found with the landing gear system that could be associated with a pre-impact condition. All fractured portions of the landing gear system had signatures consistent with overload failure.

The accident airplane was involved with two previous occurrences in which the left landing gear had collapsed. The first was on June 27, 1998, and the cause of the gear collapse was undetermined. The second occurrence was on May 15, 2000, and was attributed to the failure of a through-bolt in the gear retraction linkage. The accident flight was the second flight since the maintenance release for the damages that were incurred during the May 15, 2000, accident. The first flight was a maintenance test flight and no anomalies were noted during

the flight.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	24, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	January 25, 2001
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	March 31, 2000
Flight Time:	1356 hours (Total, all aircraft), 15 hours (Total, this make and model), 1271 hours (Pilot In Command, all aircraft), 55 hours (Last 90 days, all aircraft), 21 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Commercial	Age:	24, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim	Last FAA Medical Exam:	December 5, 2000
Occupational Pilot:	No	Last Flight Review or Equivalent:	November 21, 2000
Flight Time:	230 hours (Total, all aircraft), 0 hours (Total, this make and model), 155 hours (Pilot In Command, all aircraft), 5 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N4249C
Model/Series:	310R	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	R1380
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	January 25, 2001 Continuous airworthiness	Certified Max Gross Wt.:	5500 lbs
Time Since Last Inspection:	2.3 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	7019.6 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	IO-520-M
Registered Owner:	Parks College of Saint Louis University	Rated Power:	285 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	CPS, 413 ft msl	Distance from Accident Site:	
Observation Time:	15:53 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.37 inches Hg	Temperature/Dew Point:	-6°C / -17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cahokia, IL (CPS)	Type of Flight Plan Filed:	None
Destination:	Cahokia, IL (CPS)	Type of Clearance:	VFR
Departure Time:	15:30 Local	Type of Airspace:	Class D

Airport Information

Airport:	St. Louis Downtown Airport CPS	Runway Surface Type:	Asphalt
Airport Elevation:	413 ft msl	Runway Surface Condition:	Dry
Runway Used:	12R	IFR Approach:	None
Runway Length/Width:	6997 ft / 100 ft	VFR Approach/Landing:	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	38.570663,-90.169616(est)

Administrative Information

Investigator In Charge (IIC):	Fox, Andrew
Additional Participating Persons:	Grant F Gillian; Federal Aviation Administration - St. Louis FSDO; St. Ann, MO
Original Publish Date:	May 21, 2002
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=51707

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