



# Aviation Investigation Final Report

<b>Location:</b>	Mesquite, Nevada	<b>Accident Number:</b>	WPR09LA236
<b>Date &amp; Time:</b>	May 10, 2009, 12:35 Local	<b>Registration:</b>	N73017
<b>Aircraft:</b>	Cessna 140	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Sys/Comp malf/fail (non-power)	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot reported that he made a normal landing on the runway. During rollout, he felt a vibration coming from the landing gear. When he exited the runway, the airplane turned abruptly to the left, as if the left brake had locked up. The uncommanded sharp left turn resulted in the airplane exiting the pavement and impacting a cement culvert. The examination of the runway revealed witness marks consistent with a locked left wheel brake. An examination of the airplane's left wheel assembly revealed that the tire rotated freely. No external evidence of brake failure was found. The reason for the intermittent anomaly associated with the brake assembly or cylinder was not determined.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's loss of directional control during landing resulting from binding of the left wheel's brake actuating system for an undetermined reason.

## Findings

<b>Aircraft</b>	Directional control - Attain/maintain not possible
<b>Aircraft</b>	Brake - Not specified

## Factual Information

### History of Flight

Landing-landing roll	Sys/Comp malf/fail (non-power) (Defining event)
Landing-landing roll	Loss of control on ground
Landing-landing roll	Collision with terr/obj (non-CFIT)

On May 10, 2009, about 1235 Pacific daylight time, a Cessna 140, N73017, ground looped following landing at the Mesquite Airport, Mesquite, Nevada. The accident occurred as the pilot taxied off the runway. The pilot owned and operated the airplane, and it was substantially damaged. Neither the commercial certificated pilot nor passenger was injured during the personal flight. Visual meteorological conditions prevailed, and no flight plan was filed. The flight was performed under the provisions of 14 Code of Federal Regulations Part 91, and it originated from Mesquite about 1155.

The pilot reported to the National Transportation Safety Board investigator that, following a normal landing, he felt a "substantial vibration coming from the landing gear" as the airplane rolled out on the runway. When the pilot exited the runway, the airplane "turned abruptly to the left." The pilot opined that the airplane's left brake may have locked up. The uncommanded sharp left turn resulted in the airplane exiting the pavement.

The pilot reported to the Federal Aviation Administration (FAA) coordinator that he attempted to maintain directional control by applying right brake and rudder, but his efforts were ineffective. As the airplane approached a cement drainage culvert, the pilot applied full left rudder in order to avoid going into the culvert. This action kept the airplane from entering the culvert. However, the empennage contacted the cement edge of the culvert, which resulted in substantial airframe damage. Two airframe bulkheads and stringers were deformed, and the empennage was partially crushed. At the time of the mishap, the wind was light and variable.

The FAA coordinator examined the runway. He reported observing tire witness marks that were consistent with a stuck brake on the airplane's left main landing gear wheel. According to the FAA coordinator, the left wheel and brake assembly were examined externally. The wheel was found to rotate freely. No evidence of a brake cylinder failure was noted. However, the FAA stated that "there is a good possibility of an intermittent failure of a brake cylinder consistent with possible momentary contamination of the system."

The pilot reported having 7,250 total hours of flight time, of which 150 hours were obtained flying the accident model of airplane. The FAA coordinator indicated that he believed the pilot had sufficient flying experience to not have inadvertently applied improper brake pressure.

## Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	58, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Glider	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	April 20, 2009
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	July 25, 2007
<b>Flight Time:</b>	7250 hours (Total, all aircraft), 150 hours (Total, this make and model), 7000 hours (Pilot In Command, all aircraft), 3 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N73017
<b>Model/Series:</b>	140	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	10222
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	April 19, 2009 Annual	<b>Certified Max Gross Wt.:</b>	1450 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3609 Hrs at time of accident	<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-200 SERIES
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	100 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	67L, 1978 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	11:55 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Scattered / 20000 ft AGL	<b>Visibility</b>	20 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.94 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 38°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Mesquite, NV (67L)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Mesquite, NV (67L)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	11:55 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Mesquite 67L	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	1978 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	01	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	5121 ft / 75 ft	<b>VFR Approach/Landing:</b>	Full stop

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	36.833057,-114.055831(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Pollack, Wayne
<b>Additional Participating Persons:</b>	Kevin Bender; Federal Aviation Administration; Las Vegas, NV
<b>Original Publish Date:</b>	April 22, 2010
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=73801">https://data.nts.gov/Docket?ProjectID=73801</a>

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