



# Aviation Investigation Final Report

<b>Location:</b>	WAKEFIELD, Virginia	<b>Accident Number:</b>	IAD97LA013
<b>Date &amp; Time:</b>	October 26, 1996, 16:00 Local	<b>Registration:</b>	N83N
<b>Aircraft:</b>	Cessna 140	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot made an approach to the airport with a passenger aboard. The wind was calm, and the pilot proceeded with a standard traffic pattern. When the airplane touched down, main tire(s) locked, and the airplane nosed over. The pilot stated that he was in a perfect configuration for a three point landing, and there was no warning or indication of a problem until the accident occurred. Examination of the airplane revealed that the left master cylinder tension spring, which was designed to prevent the parking brake lock from engaging, was missing.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: uncommanded operation of the parking brake, due to a missing tension spring, which resulted in locked brakes and subsequent nose over of the airplane during landing.

## Findings

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

### Findings

1. (C) LANDING GEAR,PARKING BRAKE - MALFUNCTION
2. (C) MISCELLANEOUS,BOLT/NUT/FASTENER/CLAMP/SPRING - MISSING
3. (C) LANDING GEAR,NORMAL BRAKE SYSTEM - LOCKED

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Occurrence #2: NOSE OVER  
Phase of Operation: LANDING

## Factual Information

On October 26, 1996, about 1600 eastern daylight time, a Cessna 140, N83N, sustained substantial damage when it nosed over during landing at the Wakefield Municipal Airport (AKQ), Wakefield, Virginia. The certificated private pilot and passenger were not injured. Visual meteorological conditions prevailed for the flight, and no flight plan had been filed for the personal flight conducted under 14 CFR Part 91.

In a written statement, the pilot said he was on approach to runway 2 at AKQ. He further stated:

"...The winds were basically calm, as could be observed from the flags next to the airport office. I then proceeded with a standard traffic pattern...I was in a perfect configuration for a 3 point landing, but as I touched down, the airplane front tires violently and abruptly locked up. There was no warning or indication of a problem, but the airplane within seconds flipped forward on its back."

The airplane was examined by a Federal Aviation Administration Inspector. The examination revealed that left master cylinder tension spring which is designed to prevent the parking brake lock from engaging, was missing.

The Cessna 140 Airplane Operations Manual stated:

"The parking brake control is operated in conjunction with the toe brake...In setting the parking brake, first press the toe brake to the desired brake pressure then pull the control out to engage the locking lever and release the toe brake pressure...."

The pilot did recall depressing the toe brakes during the cross country flight to AKQ.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	50, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical-w/ waivers/lim	<b>Last FAA Medical Exam:</b>	April 26, 1996
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	298 hours (Total, all aircraft), 85 hours (Total, this make and model), 205 hours (Pilot In Command, all aircraft), 40 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N83N
<b>Model/Series:</b>	140 140	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	11607
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	August 19, 1996 Annual	<b>Certified Max Gross Wt.:</b>	1450 lbs
<b>Time Since Last Inspection:</b>	14 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3500 Hrs	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	C-85-12F
<b>Registered Owner:</b>	RAYMOND L. BOSSOLLA	<b>Rated Power:</b>	85 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>		<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 5500 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	0°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	19°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	BURGAW , NC (AKQ )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	(AKQ )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	17:30 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	WAKFIELD MUNICIPAL AKQ	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	113 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	2	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4000 ft / 75 ft	<b>VFR Approach/Landing:</b>	Full stop;Traffic pattern

## 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>	36.959011,-76.979255(est)

## Administrative Information

**Investigator In Charge (IIC):** Moffett, Jodi  
**Additional Participating Persons:** BOB CULBERSON;

**Original Publish Date:** March 31, 1998

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.ntsb.gov/Docket?ProjectID=28157>

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