



# Aviation Investigation Final Report

<b>Location:</b>	MURFREESBORO, Tennessee	<b>Accident Number:</b>	ATL97LA100
<b>Date &amp; Time:</b>	July 10, 1997, 07:15 Local	<b>Registration:</b>	N45CW
<b>Aircraft:</b>	Beech 55	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation		

## Analysis

While applying brakes on the landing roll, the left brake pedal collapsed, and the airplane started drifting to the right of the runway centerline. The pilot applied right engine throttle to correct for the right drift condition. The airplane rolled off the right side of the 3,800-foot-long runway approximately 3,800 feet down the runway. An examination of the left brake assembly at the accident site revealed that there was no brake fluid in the left reservoir. The left brake assembly functioned normally during subsequent testing. There were no obvious signs of fluid leakage on the reservoir or brake assemblies. A review of the aircraft maintenance logs revealed that an annual inspection had been completed on the airplane about 55 hours before the accident. The maintenance logs stated that the airplane brakes were serviced during the last annual inspection.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the aircraft braking system due to low brake pressure resulting from the undetermined loss of brake fluid from the brake reservoir.

## Findings

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

Findings

1. (C) LANDING GEAR,NORMAL BRAKE SYSTEM - PRESSURE TOO LOW
2. (C) FLUID - LOSS,TOTAL
3. (C) REASON FOR OCCURRENCE UNDETERMINED

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

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Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT  
Phase of Operation: LANDING - ROLL

Findings

4. OBJECT - TREE(S)

## Factual Information

On July 10, 1997, at 0715 central daylight time, a Beech 55, N45CW, veered off the right side of runway 18, collided with runway lights and signs, and collapsed the nose gear during a full stop landing at the Murfreesboro Municipal Airport in Murfreesboro, Tennessee. The business flight operated under the provisions of Title 14 CFR Part 91 with an instrument flight clearance. Visual weather conditions prevailed at the time of the accident. The airplane sustained substantial damage. The commercial rated pilot and her passenger were not injured. The flight departed Arlington, Tennessee, at 0600.

According to the pilot, the approach profile appeared to have been normal to touchdown. After touchdown, and while applying brakes on the landing roll, the left brake pedal collapsed, and the airplane started drifting to the right of the runway centerline. The pilot applied right engine throttle to correct for the right drift condition. The airplane rolled off the right side of the 3800 foot long runway approximately 3800 feet down the runway.

A review of the aircraft maintenance logs revealed that an annual inspection had been completed on the airplane about 55 hours before the accident. The maintenance logs stated that the airplane brakes were serviced during the last annual inspection. An examination of the left brake assembly at the accident site revealed that there was no brake fluid in the left reservoir. The left brake assembly functioned normally during subsequent testing. There were no obvious signs of fluid leakage on the brake or reservoir assemblies.

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	22,Female
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	November 22, 1996
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1200 hours (Total, all aircraft), 140 hours (Total, this make and model), 150 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Beech	<b>Registration:</b>	N45CW
<b>Model/Series:</b>	55 55	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	TC-1319
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	March 30, 1997 Annual	<b>Certified Max Gross Wt.:</b>	5000 lbs
<b>Time Since Last Inspection:</b>	80 Hrs	<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	2680 Hrs	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	IO-470
<b>Registered Owner:</b>	UNIVERSAL ASSET MANAGEMENT	<b>Rated Power:</b>	165 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>	MBT ,615 ft msl	<b>Distance from Accident Site:</b>	360 Nautical Miles
<b>Observation Time:</b>	07:00 Local	<b>Direction from Accident Site:</b>	1°
<b>Lowest Cloud Condition:</b>	Scattered / 6000 ft AGL	<b>Visibility</b>	7 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>	0°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30 inches Hg	<b>Temperature/Dew Point:</b>	
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	ARLINGTON , TN (LHC )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	(MBT )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	06:00 Local	<b>Type of Airspace:</b>	Class E

## Airport Information

<b>Airport:</b>	MURFREESBORO MUNICIPAL MBT	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	615 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	18	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	3898 ft / 100 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>	35.979831,-86.510803(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Powell, Phillip
<b>Additional Participating Persons:</b>	LEIGHTON WRIGHT; NASHVILLE , TN
<b>Original Publish Date:</b>	April 24, 1998
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=3871">https://data.ntsb.gov/Docket?ProjectID=3871</a>

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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](#).