



# Aviation Investigation Final Report

<b>Location:</b>	NASHVILLE, Tennessee	<b>Accident Number:</b>	ATL99LA115
<b>Date &amp; Time:</b>	July 20, 1999, 11:28 Local	<b>Registration:</b>	N56AW
<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 - Instructional		

## Analysis

According to the pilot, the multi-engine training flight was cleared for a landing on runway 20C. The pilot reported that the before landing checklist was completed, and the landing gear extension was verified by both pilots. The landing on the main wheels, was described as normal, but when the nose wheel was lowered on the runway, both pilots heard a 'pop' followed by the collapse of the nose wheel assembly. The airplane slid 2500 feet before stopping on the runway. The post-accident examination of the airplane disclosed that the nose landing gear aft drag brace had broken. Maintenance history of the failed component was not available.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The total failure of the nose gear extension and retraction assembly that resulted in the collapse of the nose gear during landing.

## Findings

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

### Findings

1. (C) LANDING GEAR,NOSE GEAR
2. (C) LANDING GEAR,NORMAL RETRACTION/EXTENSION ASSEMBLY - FAILURE,TOTAL

-----

Occurrence #2: NOSE GEAR COLLAPSED  
Phase of Operation: LANDING

## Factual Information

On July 20, 1999, at 1128 central daylight time, a Beech 55, N56AW, nose wheel assembly collapsed during a landing on runway 20C at the Nashville International Airport in Nashville, Tennessee. The instructional flight was operated by the pilot under the provisions of Title 14 CFR part 91 with no flight plan filed. Visual weather conditions prevailed at the time of the accident. The airplane sustained substantial airframe damage. The certified flight instructor and the commercial pilot were not injured. The initial departure time from Nashville, Tennessee, at 0900.

According to the pilot, the multi-engine training flight was cleared for a landing on runway 20C. The pilot reported that the before landing checklist was completed, and the landing gear extension was verified by both pilots. The landing on the main wheels, was described as normal, but when the nose wheel was lowered on the runway, both pilots heard a "pop" followed by the collapse of the nose wheel assembly. The airplane slid 2500 feet before stopping on the runway.

The post-accident examination of the airplane disclosed that the nose landing gear aft drag brace had broken. The drag brace broke at the point where the retraction rod attaches to the nose gear retract idler tangs. Maintenance history of the failed component was not available, however according to the 100 hour inspection card, a visual and security check is required for nose gear linkage components (see attached copy, illustrated parts catalog, and copy, shop manual, 100-hour inspection).

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	50, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<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>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	December 1, 1997
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	2500 hours (Total, all aircraft), 16 hours (Total, this make and model), 12 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Beech	<b>Registration:</b>	N56AW
<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-110
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	5
<b>Date/Type of Last Inspection:</b>	Annual	<b>Certified Max Gross Wt.:</b>	5500 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	3500 Hrs	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	IO-470-L
<b>Registered Owner:</b>	AIRCRAFT SUPPORT SERVICES	<b>Rated Power:</b>	260 Horsepower
<b>Operator:</b>	ROBERT M. WHITMORE	<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>	BNA ,599 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	10:53 Local	<b>Direction from Accident Site:</b>	360°
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 250 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	0°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 23°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	(BNA )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	09:00 Local	<b>Type of Airspace:</b>	Class B

## Airport Information

<b>Airport:</b>	NASHVILLE INTERNATIONAL BNA	<b>Runway Surface Type:</b>	Concrete
<b>Airport Elevation:</b>	599 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	20C	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	8000 ft / 150 ft	<b>VFR Approach/Landing:</b>	Full stop

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<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>	36.109794,-86.660339(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Powell, Phillip
<b>Additional Participating Persons:</b>	CRAIG ROBERTS; NASHVILLE , TN
<b>Original Publish Date:</b>	November 30, 2000
<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=47013">https://data.ntsb.gov/Docket?ProjectID=47013</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).