Aviation Investigation Final Report

Location:	NASHVILLE, Tennessee	**Accident Number:**	ATL99LA115
Date & Time:	July 20, 1999, 11:28 Local	**Registration:**	N56AW
Aircraft:	Beech 55	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	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.

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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

Certificate:	Commercial	**Age:**	50,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Glider	**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 1, 1997
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2500 hours (Total, all aircraft), 16 hours (Total, this make and model), 12 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N56AW
Model/Series:	55 55	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TC-110
Landing Gear Type:	Retractable - Tricycle	**Seats:**	5
Date/Type of Last Inspection:	Annual	**Certified Max Gross Wt.:**	5500 lbs
Time Since Last Inspection:		**Engines:**	2 Reciprocating
Airframe Total Time:	3500 Hrs	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470-L
Registered Owner:	AIRCRAFT SUPPORT SERVICES	**Rated Power:**	260 Horsepower
Operator:	ROBERT M. WHITMORE	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BNA ,599 ft msl	**Distance from Accident Site:**	
Observation Time:	10:53 Local	**Direction from Accident Site:**	360°
Lowest Cloud Condition:	Unknown	**Visibility**	10 miles
Lowest Ceiling:	Broken / 250 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	29°C / 23°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(BNA)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	09:00 Local	**Type of Airspace:**	Class B

Airport Information

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

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:**	36.109794,-86.660339(est)

Administrative Information

Investigator In Charge (IIC):	Powell, Phillip
Additional Participating Persons:	CRAIG ROBERTS; NASHVILLE , TN
Original Publish Date:	November 30, 2000
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=47013