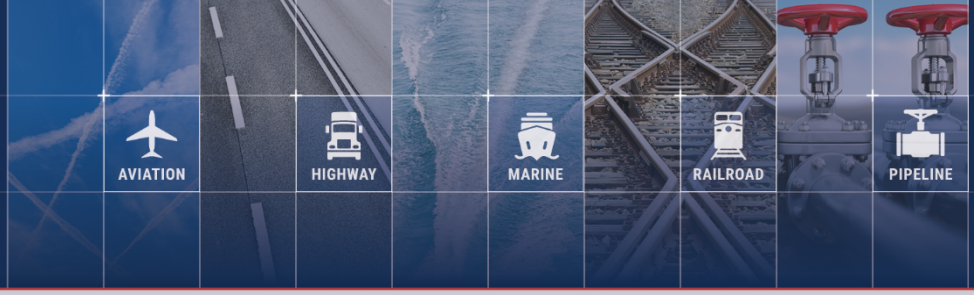

Aviation Investigation Final Report

Location:	Winston-Salem, North Carolina	**Accident Number:**	ERA13LA129
Date & Time:	February 7, 2013, 11:05 Local	**Registration:**	N458P
Aircraft:	Beech 58	**Aircraft Damage:**	Substantial
Defining Event:	Landing gear collapse	**Injuries:**	3 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

While performing an instrument landing system approach, the pilot lowered the landing gear and confirmed that it was extended by observing the cockpit gear indication. Immediately after landing, the left main landing gear collapsed, and the airplane veered to the left. After departing the side of the runway, the airplane struck a taxiway sign, which resulted in substantial damage to the left wing. Examination of the main gear rigging showed that the emergency gear handle was able to rotate one full turn before hitting the internal stops. However, the Beech Aircraft Maintenance Manual states that there should only be 1/8- to 1/4-turn between the gear handle extended position and the internal stop during rigging checks. According to the manual, there are no down-position locks and, therefore, over-center tension is the only down-locking system. Therefore, the improper rigging of the landing gear during a maintenance check did not provide adequate down tension and prevented the landing gear from fully extending.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the left main landing gear to fully extend due to improper rigging by maintenance personnel during a maintenance check.

Findings

Aircraft	Gear extension and retract sys - Malfunction
Personnel issues	Scheduled/routine maintenance - Maintenance personnel

Factual Information

History of Flight

Prior to flight	Aircraft maintenance event
Landing-landing roll	Landing gear collapse (Defining event)

On February 7, 2013, about 1105 eastern standard time, a Beech 58, N458P, registered to and operated by a private individual, was substantially damaged when the left main landing gear collapsed while landing at Smith Reynolds Airport (INT), Winston-Salem, North Carolina. The private pilot and two passengers were not injured. Visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the personal flight which was conducted under the provisions of 14 Code of Federal Regulations Part 91. The flight originated from Butler County Regional Airport (HAO), Hamilton, Ohio about 0955.

According to the pilot, while performing the Instrument Landing System (ILS) approach to runway 33, he extended the landing gear and confirmed that the three landing gear were extended by observing the "green" indicator light on the instrument panel. Immediately after touchdown, the left main gear collapsed, and the airplane veered to the left. After departing the side of the runway the airplane struck a taxiway sign which resulted in substantial damage to the left wing.

Federal Aviation Inspectors (FAA) examined the main gear rigging and determined the emergency gear handle was able to rotate one full turn before hitting the internal stops. The Beech Aircraft Maintenance Manual states there should be 1/8 to 1/4 turn between the extended position and the internal stop. According to the Aircraft Maintenance Manual there are no down position locks and over center is the only down locking system.

According to FAA records, the pilot held a private pilot certificate, with ratings for single-engine land, multiengine land, and instrument airplane. The pilot's most recent FAA third-class medical certificate was issued on March 28, 2012. The pilot reported 1,011 total hours of flight experience; of which, 95 of those hours were in the same make and model as the accident airplane.

The six-seat, low-wing, retractable tricycle-gear airplane, serial number TH119, was manufactured in 1970. It was powered by two Continental Motors IO-520-C, 285-horsepower engines, equipped with McCauley controllable-pitch propellers. Review of the airplane's logbooks revealed that its most recent annual inspection was completed on July 09, 2012. At the time of the inspection, the airplane had accumulated 5,690 total hours of time in service. The left and right engines accumulated approximately 1,152 and 30 total hours, respectively since new. The airplane had accumulated about 28 hours since the most recent annual inspection.

The 1054 recorded weather observation at INT, included wind from 070 degrees at 7 knots, 8 miles visibility, overcast at 1,300 feet, temperature 3 degrees C, dew point minus 1 degree C, and a barometric altimeter setting of 30.30 inches of mercury.

Pilot Information

Certificate:	Private	**Age:**	48,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	March 28, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 20, 2012
Flight Time:	1011 hours (Total, all aircraft), 95 hours (Total, this make and model), 935 hours (Pilot In Command, all aircraft), 75 hours (Last 90 days, all aircraft), 31 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N458P
Model/Series:	58	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TH119
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	July 9, 2012 Annual	**Certified Max Gross Wt.:**	5400 lbs
Time Since Last Inspection:	28 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	5690 Hrs as of last inspection	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed, not activated	**Engine Model/Series:**	IO-520-C
Registered Owner:	On file	**Rated Power:**	285 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	INT,969 ft msl	**Distance from Accident Site:**	
Observation Time:	10:54 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Thin Overcast / 1300 ft AGL	**Visibility**	8 miles
Lowest Ceiling:	Overcast / 1300 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.29 inches Hg	**Temperature/Dew Point:**	3°C / -1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	HAMILTON, OH (HAO)	**Type of Flight Plan Filed:**	IFR
Destination:	WINSTON SALEM, NC (INT)	**Type of Clearance:**	IFR
Departure Time:	09:55 Local	**Type of Airspace:**	

Airport Information

Airport:	Smith Reynolds Airport INT	**Runway Surface Type:**	Asphalt
Airport Elevation:	969 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	33	**IFR Approach:**	ILS
Runway Length/Width:	6655 ft / 150 ft	**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	3 None	**Latitude, Longitude:**	36.133609,-80.221946(est)

Administrative Information

Investigator In Charge (IIC):	Neylon, John
Additional Participating Persons:	Michael K Foster; FAA FSDO; Greensboro, NC
Original Publish Date:	December 11, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=86167

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.