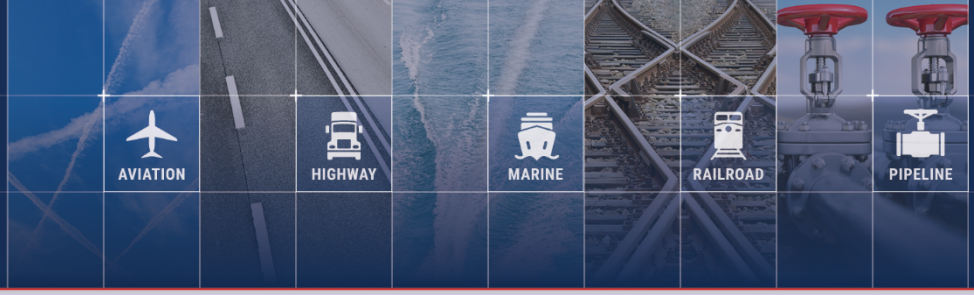

Aviation Investigation Final Report

Location:	Latrobe, Pennsylvania	**Accident Number:**	ERA19LA123
Date & Time:	March 12, 2019, 13:36 Local	**Registration:**	N945WS
Aircraft:	Beech A100	**Aircraft Damage:**	Substantial
Defining Event:	Landing gear collapse	**Injuries:**	4 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

According to the pilot, while lowering the landing gear handle in preparation for landing, he and the co-pilot heard a crunching noise. He noticed that the landing gear indicator lights did not turn green, and the crew was unable to extend the gear manually. The crew diverted to an airport with emergency equipment and a control tower. Following a fly-by, the tower controller reported that the landing gear appeared to be extended; however, during the landing roll, the left main landing gear collapsed, followed by the right main landing gear, resulting in substantial damage to the airplane. Examination of the airplane revealed that the main landing gear mechanical linkage was compromised, and the right main landing gear actuator shaft was broken. A mechanic examined the airplane and found that the actuator pinion bearing support had separated from the actuator for undetermined reasons, causing a side load to the actuator and initiating the fracture.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A landing gear collapse due to the separation of the actuator pinion bearing support from the actuator, which resulted in the failure of the actuator shaft.

Findings

Aircraft	Landing gear actuator - Failure

Factual Information

History of Flight

Landing-landing roll	Landing gear collapse (Defining event)

On March 12, 2019, about 1336 eastern daylight time, a Beech A100, N945WS, was substantially damaged after the main landing gear collapsed during landing at Arnold Palmer Regional Airport (LBE), Latrobe, Pennsylvania. The two airline transport pilots and two passengers were not injured. Visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the flight that originated from Capital City Airport (CXY), Harrisburg, Pennsylvania, and was destined for Rostraver Airport (FWQ), Monongahela, Pennsylvania. The business flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91.

According to the pilot, the airplane was on approach to FWQ when he lowered the landing gear handle and heard a crunching noise. He noticed there were no green cockpit indicator lights to confirm that the landing gear was down and locked. The pilot then asked the co-pilot to circle the airport while he reviewed the emergency procedures for extending the landing gear in the airplane flight manual. He tried to extend the landing gear manually, but it appeared to be jammed. The pilot and co-pilot discussed the situation and decided to fly to LBE as that airport had a control tower and emergency equipment.

The pilot flew by the tower and asked if tower personnel could see the landing gear down. The tower controller told him that the landing gear appeared to be down. During the subsequent landing roll, the left main landing gear collapsed, followed shortly by the right main landing gear. The airplane then slid to a stop on the centerline of the runway and the flight crew and passengers egressed the airplane.

Examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed that the main landing gear mechanical linkage was compromised, and the right main landing gear actuator shaft was broken. The actuator was retained for further examination.

The airplane was repaired at LBE with oversight from the FAA. During the repair, the right main landing gear actuator was observed to be fractured. Additionally, the actuator pinion bearing had separated from the actuator, which could cause a side load to the actuator and initiate the fracture.

Pilot Information

Certificate:	Airline transport; Commercial; Flight instructor	**Age:**	79,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	December 3, 2018
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	August 1, 2018
Flight Time:	20611 hours (Total, all aircraft), 850.7 hours (Total, this make and model), 10.1 hours (Last 90 days, all aircraft)		

Co-pilot Information

Certificate:	Airline transport; Commercial; Private	**Age:**	66,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Glider	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With waivers/limitations	**Last FAA Medical Exam:**	April 10, 2018
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	August 1, 2018
Flight Time:	9400 hours (Total, all aircraft), 50 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N945WS
Model/Series:	A100 UNDESIGNAT	**Aircraft Category:**	Airplane
Year of Manufacture:	1972	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	B-94
Landing Gear Type:	Retractable - Tricycle	**Seats:**	9
Date/Type of Last Inspection:	March 1, 2019 AAIP	**Certified Max Gross Wt.:**	11500 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo prop
Airframe Total Time:	10984 Hrs as of last inspection	**Engine Manufacturer:**	Honeywell
ELT:	C91A installed, not activated	**Engine Model/Series:**	TPE-331
Registered Owner:	On file	**Rated Power:**	715 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:	KLBE,1199 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	17:47 Local	**Direction from Accident Site:**	33°
Lowest Cloud Condition:	Clear	**Visibility**	20 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	10 knots / None	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.34 inches Hg	**Temperature/Dew Point:**	4°C / -7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Harrisburg, PA (CXY)	**Type of Flight Plan Filed:**	IFR
Destination:	Monongahela, PA (FWQ)	**Type of Clearance:**	IFR
Departure Time:	12:00 Local	**Type of Airspace:**	

Airport Information

Airport:	Arnold Palmer Rgnl LBE	**Runway Surface Type:**	Asphalt
Airport Elevation:	1198 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	24	**IFR Approach:**	None
Runway Length/Width:	8222 ft / 100 ft	**VFR Approach/Landing:**	Full stop;Precautionary landing

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 None	**Latitude, Longitude:**	40.273056,-79.408332(est)

Administrative Information

Investigator In Charge (IIC):	Boggs, Daniel
Additional Participating Persons:	Dean Glasser; FAA; Allegheny, PA
Original Publish Date:	December 3, 2020
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=99100