Aviation Investigation Final Report

Location:	Huntsville, Alabama	**Accident Number:**	ERA24LA170
Date & Time:	March 30, 2024, 12:30 Local	**Registration:**	N222MA
Aircraft:	BETA BIZ LLC LX7	**Aircraft Damage:**	Substantial
Defining Event:	Sys/Comp malf/fail (non-power)	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot of the experimental amateur-built airplane had completed an uneventful cross-country flight until the arrival to his destination airport. When the landing gear was lowered on approach, the pilot observed a “gear unsafe” message and the hydraulic pump continuously operated. The nose landing gear (NLG) indicated down and locked, but neither main landing gear lights illuminated. The pilot cycled the landing gear, however, there was no change in the unsafe gear condition. He then circled away from the airport and performed an emergency gear extension, but that also did not resolve the gear configuration malfunction. Subsequently, the pilot completed an emergency landing at the destination airport with only the NLG down and locked. Upon touchdown, both main landing gear collapsed, and the airplane skidded on its empennage and rudder to a stop, which resulted in substantial damage.

Postaccident examination revealed that the NLG actuator forward hydraulic fitting had sheared, which allowed hydraulic fluid and pressure to empty from the system, preventing the main landing gear from fully extending and locking into place. Following the accident, the pilot identified that the hydraulic fitting had sheared. He subsequently replenished the hydraulic fluid, capped the fitting that had failed, and was able to lower the main landing gear normally and tow the airplane back to the ramp.

The pilot, who was also the owner/repairman for the airplane, had replaced the nose landing gear actuator two times, with the most recent replacement occurring 3.4 hours prior to the accident. The pilot reported that the prior actuators would leak, resulting in the hydraulic pump running continuously. During the most recent installation, the pilot adjusted the hydraulic fitting because it was not aligned with the actuator. He performed several gear swings and flew six flights without issue after this maintenance.

Probable Cause and Findings

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

The failure of the nose landing gear actuator forward hydraulic fitting, which resulted in a main landing gear collapse during landing due to the loss of hydraulic fluid and pressure.

Findings

Aircraft	Landing gear actuator - Failure

Factual Information

History of Flight

Landing	Sys/Comp malf/fail (non-power) (Defining event)
Landing	Landing gear collapse

Pilot Information

Certificate:	Private	**Age:**	63,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	BasicMed With waivers/limitations	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 7, 2022
Flight Time:	2902 hours (Total, all aircraft), 360 hours (Total, this make and model), 2709 hours (Pilot In Command, all aircraft), 9 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BETA BIZ LLC	**Registration:**	N222MA
Model/Series:	LX7 NO SERIES	**Aircraft Category:**	Airplane
Year of Manufacture:	2020	**Amateur Built:**	Yes
Airworthiness Certificate:	Experimental (Special)	**Serial Number:**	014
Landing Gear Type:	Retractable - Tricycle	**Seats:**	4
Date/Type of Last Inspection:	March 10, 2024 Condition	**Certified Max Gross Wt.:**	3750 lbs
Time Since Last Inspection:	3 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	354 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	Installed, not activated	**Engine Model/Series:**	TSIO-550E
Registered Owner:	BETA BIZ LLC	**Rated Power:**	350 Horsepower
Operator:	BETA BIZ LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	HSV,644 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	12:53 Local	**Direction from Accident Site:**	307°
Lowest Cloud Condition:	Few / 5000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	9 knots / 17 knots	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	240°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	30.05 inches Hg	**Temperature/Dew Point:**	23°C / 8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Clarksdale, MS (CKM)	**Type of Flight Plan Filed:**	IFR
Destination:	Huntsville, AL	**Type of Clearance:**	IFR
Departure Time:	11:00 Local	**Type of Airspace:**	Class C

Airport Information

Airport:	Huntsville International Airport HSV	**Runway Surface Type:**	Asphalt;Concrete
Airport Elevation:	628 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	18R/36L	**IFR Approach:**	None
Runway Length/Width:	12600 ft / 150 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	34.646367,-86.782303

Administrative Information

Investigator In Charge (IIC):	Gerhardt, Adam
Additional Participating Persons:	Richard Hudgins; FAA/FSDO; Vestavia Hills, AL
Original Publish Date:	July 18, 2024
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=194046