



# Aviation Investigation Final Report

<b>Location:</b>	Abingdon, Virginia	<b>Accident Number:</b>	ERA21LA358
<b>Date &amp; Time:</b>	September 13, 2021, 09:47 Local	<b>Registration:</b>	N5644F
<b>Aircraft:</b>	ALON A2	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Sys/Comp malf/fail (non-power)	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot reported that during the landing rollout, as the nosewheel touched down, the airplane turned about 30° to the left. He applied right rudder; however, the airplane did not respond. As the airplane departed the runway into the wet grass, he applied the brakes, which "had little effect." The airplane struck an embankment, nosed over, and sustained substantial damage to the horizontal and vertical stabilizers.

Examination of the airplane revealed that one of the nosewheel steering actuator arms was fractured.

## Probable Cause and Findings

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

The failure of a nosewheel steering actuator arm, which resulted in a loss of control during the landing rollout.

## Findings

<b>Aircraft</b>	Landing gear steering system - Failure
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## Factual Information

### History of Flight

<b>Landing-landing roll</b>	Sys/Comp malf/fail (non-power) (Defining event)
<b>Landing-landing roll</b>	Loss of control on ground
<b>Landing-landing roll</b>	Runway excursion
<b>Landing-landing roll</b>	Collision with terr/obj (non-CFIT)
<b>Landing-landing roll</b>	Nose over/nose down

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	68, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine sea	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	February 19, 2020
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	July 24, 2020
<b>Flight Time:</b>	3150 hours (Total, all aircraft), 20 hours (Total, this make and model), 36 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	ALON	<b>Registration:</b>	N5644F
<b>Model/Series:</b>	A2	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1967	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	A-244
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	August 16, 2021 Annual	<b>Certified Max Gross Wt.:</b>	1450 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	1954 Hrs at time of accident	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	C91A installed	<b>Engine Model/Series:</b>	C90-16F
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	90 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	VJI,2070 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	09:35 Local	<b>Direction from Accident Site:</b>	176°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	4 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	250°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.33 inches Hg	<b>Temperature/Dew Point:</b>	19°C / 18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Lancaster, OH (LHQ)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Abingdon, VA	<b>Type of Clearance:</b>	VFR flight following
<b>Departure Time:</b>	07:15 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	VIRGINIA HIGHLANDS VJI	<b>Runway Surface Type:</b>	Concrete
<b>Airport Elevation:</b>	2087 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	06	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4471 ft / 75 ft	<b>VFR Approach/Landing:</b>	Straight-in

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	36.687103,-82.033327(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Brazy, Douglass
<b>Additional Participating Persons:</b>	Richard Brady; FAA/FSDO; Charleston, WV
<b>Original Publish Date:</b>	May 25, 2022
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 4</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=103864">https://data.ntsb.gov/Docket?ProjectID=103864</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](#).