Aviation Investigation Final Report

Location:	Roanoke, Virginia	**Accident Number:**	ERA23LA312
Date & Time:	July 21, 2023, 10:40 Local	**Registration:**	N524DS
Aircraft:	DIAMOND AIRCRAFT IND INC DA 40	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control on ground	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor and student pilot were practicing crosswind landings in the traffic pattern. On the first landing attempt, the student pilot crabbed into the wind and as the airplane was over the runway, he applied left aileron in order to straighten the airplane over centerline and the flight instructor called to perform a go around maneuver. While in the traffic pattern, the flight instructor explained that using the rudder was normal practice to straighten out the airplane instead of the aileron and to try again on the second landing. During the second landing attempt, the student applied left rudder to straighten out over runway centerline. Before the airplane touched down, he added more left rudder. Again, the flight instructor called to perform a go around maneuver, however, the wheels touched down and the airplane bounced to the left. The student pilot applied full engine power and the airplane veered to the left.

The flight instructor took over the flight controls and attempted to correct the turn by applying right rudder, however the airplane continued to drift to the left. The airplane continued off the side of the runway and impacted the ground, resulting in the nose landing gear collapsing and the empennage partially separating from the airplane. The airplane slid and came to rest on a taxiway. The airplane incurred substantial damage to the empennage.

After the accident, the flight instructor remarked that the student pilot might have had his foot on the left rudder, which may have been why the instructor's right rudder input was not sufficient. Furthermore, a Federal Aviation Administration inspector asked the student pilot if he released the left rudder when the flight instructor took control of the airplane and he noted that he was unsure, since the accident sequence happened so quickly. The flight instructor

reported no preimpact mechanical malfunctions or failures with the airplane that would have precluded normal operation.

Probable Cause and Findings

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

The student pilot's failure to maintain directional control during the landing, and the flight instructor's inadequate remedial action.

Findings

Aircraft	Directional control - Not attained/maintained
Personnel issues	Aircraft control - Student/instructed pilot
Personnel issues	Delayed action - Instructor/check pilot

Factual Information

History of Flight

Landing-aborted after touchdown	Loss of control on ground (Defining event)

Flight instructor Information

Certificate:	Commercial; Flight instructor	**Age:**	22
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	Yes
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	January 14, 2019
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	324 hours (Total, all aircraft), 303 hours (Total, this make and model), 190 hours (Pilot In Command, all aircraft), 44 hours (Last 90 days, all aircraft), 32 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	None	**Age:**	33,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	3-point
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	DIAMOND AIRCRAFT IND INC	**Registration:**	N524DS
Model/Series:	DA 40	**Aircraft Category:**	Airplane
Year of Manufacture:	2003	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	40.260
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	July 19, 2023 100 hour	**Certified Max Gross Wt.:**	2535 lbs
Time Since Last Inspection:	4 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3813.5 Hrs at time of accident	**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	IO-360-M1A
Registered Owner:	On file	**Rated Power:**	180 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:	ROA,1176 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	09:54 Local	**Direction from Accident Site:**	170°
Lowest Cloud Condition:	Scattered / 4500 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	250°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.89 inches Hg	**Temperature/Dew Point:**	28°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Roanoke, VA	**Type of Flight Plan Filed:**	None
Destination:	Roanoke, VA	**Type of Clearance:**	VFR
Departure Time:		**Type of Airspace:**	

Airport Information

Airport:	ROANOKE-BLACKSBURG RGNL/WOODRUM FLD ROA	**Runway Surface Type:**	Asphalt
Airport Elevation:	1175 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	24	**IFR Approach:**	None
Runway Length/Width:	6800 ft / 150 ft	**VFR Approach/Landing:**	Go around;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	2 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	37.327507,-79.976343(est)

Administrative Information

Investigator In Charge (IIC):	Kemner, Heidi
Additional Participating Persons:	Steven Harness; FAA/FSDO; Richmond, VA
Original Publish Date:	August 31, 2023
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=192709