Aviation Investigation Final Report

Location:	Richmond, Virginia	**Accident Number:**	ERA23LA299
Date & Time:	July 7, 2023, 14:51 Local	**Registration:**	N759HD
Aircraft:	Cessna 182	**Aircraft Damage:**	Substantial
Defining Event:	Hard landing	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and one passenger were on an instrument flight rules (IFR) flight plan, but the pilot cancelled the IFR clearance near the destination airport and proceeded under visual flight rules (VFR) even though there were nearby thunderstorms with associated convective activity. He reported that during the approach and while in ground effect, the winds were 5 to 10 knots with no turbulence, and he had at least one notch of flaps extended. During the flare to land the airplane abruptly pitched up without command and then nosed down, bouncing the airplane off the nose. The pilot added full throttle to abort the bounced landing and climbed to the traffic pattern altitude. He performed a right turn instead of a left turn due to the location of a rain cloud on the left side of the runway. He remained in right traffic for the runway and, when preparing to flare, a wind gust pushed the airplane across the runway. He performed a go-around but, because the rain cloud was no longer on the left side of the runway, he made standard left traffic for the runway. The pilot then landed uneventfully and taxied to the ramp.

Postaccident examination of the airplane's flight controls revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation. Based on this information, it is likely that while flaring to land, the airplane encountered low-level wind shear associated with a forecasted nearby thunderstorm. The airplane then descended and landed hard on the nose landing gear, substantially damaging the airplane's fuselage.

Probable Cause and Findings

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

The pilot’s delay in performing a go-around after a likely encounter with low-level wind shear, resulting in a hard landing. Contributing to the accident were the pilot’s failure to recognize the severity of the actual and forecasted weather near the airport and his continued approach to the airport with a thunderstorm and associated convective activity.

Findings

Personnel issues	Delayed action - Pilot
Environmental issues	Windshear - Decision related to condition
Environmental issues	Thunderstorm - Decision related to condition
Personnel issues	Understanding/comprehension - Pilot

Factual Information

History of Flight

Landing-flare/touchdown	Windshear or thunderstorm
Landing-flare/touchdown	Hard landing (Defining event)

On July 7, 2023, about 1451 eastern daylight time, a Cessna 182Q, N759HD, was substantially damaged when it was involved in an accident near Richmond, Virginia. The private pilot and one passenger were not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot stated that the morning before the flights he obtained and extensively reviewed weather products consisting of METARS, Terminal Area Forecasts, and Daily Forecasts for all intended airports. In preparation of the first flight he performed a standard preflight inspection of the airplane with a checklist and then departed on two separate, uneventful flights. After landing at each airport he obtained abbreviated weather briefing data. Before departing on the accident flight, he requested and received an IFR clearance from Ingalls Field Airport (HSP), Hot Springs, Virginia, to Richmond Executive-Chesterfield County Airport (FCI), Richmond. The flight departed and before arrival he cancelled his IFR clearance and proceeded under VFR while performing a practice RNAV approach to runway 15.

The pilot reported that he made a straight-in approach. He added one notch of flaps when he arrived at the final approach fix (FAF), but he did not recall if he added another notch of flaps when he arrived at the decision height (DH). He stated that he typically maintains 90 knots until the DH and then gradually slows to 70 knots until landing. He reported that while in ground effect the winds were 5 to 10 knots with no turbulence and he had at least one notch of flaps extended. During the flare to land the airplane abruptly pitched up without command and then nosed down, bouncing the airplane off the nose. The pilot added full throttle to abort the landing after the bounced landing and climbed to the traffic pattern altitude (he did not recall hearing the stall warning horn, but the event happened quickly). He performed a right turn instead of a left turn due to the location of a rain cloud on the left side of the runway. He remained in right traffic for runway 15 and, when preparing to flare, a wind gust pushed the airplane across the runway. He performed another go-around but, because the rain cloud was no longer on the left side of the runway, he made standard left traffic for runway 15. The pilot landed uneventfully and taxied to the ramp.

Postaccident examination of the airplane was performed by a Federal Aviation Administration airworthiness inspector. He reported that the nose landing gear was partially attached to the firewall and was pushed forward away from the firewall at an angle, and the bottom mounting

points for the nose landing gear were broken. He also reported that the floor by the rudder pedals was “wrinkled” and the rudder torque tube was bent. There were no discrepancies with the aileron, rudder, or elevator primary flight controls. The rudder and elevator trims were both neutral.

Archived wind information was not available from the accident airport but wind at an airport about 11 nautical miles northeast of the accident airport about 3 minutes after the accident was from 230° at 8 knots. A convective SIGMET, which implied updrafts and downdrafts, severe or greater turbulence, severe icing, and low-level wind shear, was issued for the accident airport area at 1255, or about 44 minutes before the accident flight departed. The convective SIGMET indicated a developing line of thunderstorms with tops to 42,000 ft. Weather radar data showed thunderstorms and rain showers all around the area, including right near the accident airport. A review of the weather radar near the accident airport going back to 1230, which was about 1 hour 9 minutes before the accident flight departed, revealed thunderstorms and associated convective weather.

Pilot Information

Certificate:	Private	**Age:**	66,Male
Airplane Rating(s):	Single-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:**	August 25, 2020
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	May 31, 2022
Flight Time:	573 hours (Total, all aircraft), 28 hours (Total, this make and model), 500 hours (Pilot In Command, all aircraft), 11 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N759HD
Model/Series:	182 Q	**Aircraft Category:**	Airplane
Year of Manufacture:	1977	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18265999
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	June 20, 2023 Annual	**Certified Max Gross Wt.:**	2950 lbs
Time Since Last Inspection:	26 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	1806 Hrs at time of accident	**Engine Manufacturer:**	Continental
ELT:	C91 installed	**Engine Model/Series:**	O-470-U
Registered Owner:	Cypress 6 LLC	**Rated Power:**	230 Horsepower
Operator:	Wingnuts Flying Club	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KFCI,237 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	14:56 Local	**Direction from Accident Site:**	138°
Lowest Cloud Condition:	Scattered / 3400 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 4400 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	Convective / Convective
Wind Direction:		**Turbulence Severity Forecast/Actual:**	Extreme / Unknown
Altimeter Setting:		**Temperature/Dew Point:**	26°C / 24°C
Precipitation and Obscuration:	Moderate - None - Rain		
Departure Point:	Hot Springs, VA (HSP)	**Type of Flight Plan Filed:**	IFR
Destination:	Richmond, VA	**Type of Clearance:**	IFR
Departure Time:	13:39 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	Richmond Executive-Chesterfield County FCI	**Runway Surface Type:**	Asphalt
Airport Elevation:	236 ft msl	**Runway Surface Condition:**	Dry;Unknown
Runway Used:	15	**IFR Approach:**	None
Runway Length/Width:	5500 ft / 100 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:		**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	37.409962,-77.528436(est)

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	Peter C. Hantelman; FAA/FSDO; Richmond, VA
Original Publish Date:	June 26, 2024
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=192626