



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Burlington, Vermont	<b>Accident Number:</b>	CEN23LA292
<b>Date &amp; Time:</b>	July 5, 2023, 15:45 Local	<b>Registration:</b>	N64AF
<b>Aircraft:</b>	Cessna 172R	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Hard landing	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

According to the flight instructor, the student pilot was a little high on the final approach for the short field landing, which resulted in a steeper approach. Before touch down, the student decreased the pitch attitude, and there was little to no flare. The airplane landed flat, bounced, then hit the nosewheel first as they touched down and bounced a second time. During the second bounce, both pilots heard a noise, the student felt a vibration in the rudder pedals, and initiated a go-around. The flight instructor assumed control of the airplane during climb out and confirmed there were no anomalies with the rudder system before transferring the controls back to the student.

During the next landing, the flight instructor stated that the student flared a little high and the airplane ballooned before touchdown. During the landing roll, the airplane veered to the right and neither pilot was able to maintain directional control. The nose landing gear collapsed as both pilots applied the brakes. The airplane impacted a taxiway light and came to rest on the runway. The airplane sustained substantial damage to the firewall and lower fuselage at the nose landing gear support structure. Based on the pilot's statements it is likely the nose landing gear was compromised during the first landing attempt.

The flight instructor reported that there were no anomalies with the airplane before the first landing. He added that the accident could have been prevented if they had performed a go-around if a stabilized approach was not established.

# Probable Cause and Findings

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

The student pilot’s improper landing flare, which resulted in a hard, bounced landing and the flight instructor’s delayed remedial action.

## Findings

Personnel issues	Training with equipment - Student/instructed pilot
Aircraft	(general) - Incorrect use/operation
Environmental issues	(general) - Ability to respond/compensate
Personnel issues	Decision making/judgment - Instructor/check pilot

## Factual Information

### History of Flight

Landing-flare/touchdown	Hard landing (Defining event)
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### Pilot Information

Certificate:	Commercial; Flight instructor	Age:	20, Male
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:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	Toxicology Performed:	
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	July 13, 2022
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 10, 2023
Flight Time:	(Estimated) 261 hours (Total, all aircraft), 122 hours (Total, this make and model), 172 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 12 hours (Last 30 days, all aircraft)		

### Student pilot Information

Certificate:	Student	Age:	56, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	May 16, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 81 hours (Total, all aircraft), 79 hours (Total, this make and model), 8 hours (Pilot In Command, all aircraft), 16 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N64AF
<b>Model/Series:</b>	172R	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1997	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	17280069
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	May 31, 2023 Annual	<b>Certified Max Gross Wt.:</b>	2550 lbs
<b>Time Since Last Inspection:</b>	78.3 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	13302.5 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	C126 installed, not activated	<b>Engine Model/Series:</b>	IO-360-L2A
<b>Registered Owner:</b>	Vermont Flight Academy Inc	<b>Rated Power:</b>	180 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	Pilot school (141)

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KBTW,332 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	15:54 Local	<b>Direction from Accident Site:</b>	149°
<b>Lowest Cloud Condition:</b>	Few / 5500 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	29.93 inches Hg	<b>Temperature/Dew Point:</b>	33°C / 19°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	South Burlington, VT (KBTW)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Burlington, VT	<b>Type of Clearance:</b>	Traffic advisory
<b>Departure Time:</b>	14:17 Local	<b>Type of Airspace:</b>	Class C

## Airport Information

<b>Airport:</b>	Burlington International Airport KBVT	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	335 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	01	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4112 ft / 75 ft	<b>VFR Approach/Landing:</b>	Traffic pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	44.471955,-73.153276(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Galbraith, Damian
<b>Additional Participating Persons:</b>	Thomas Cote; FAA; Portland, ME
<b>Original Publish Date:</b>	November 16, 2023
<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.nts.gov/Docket?ProjectID=192579">https://data.nts.gov/Docket?ProjectID=192579</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](#).