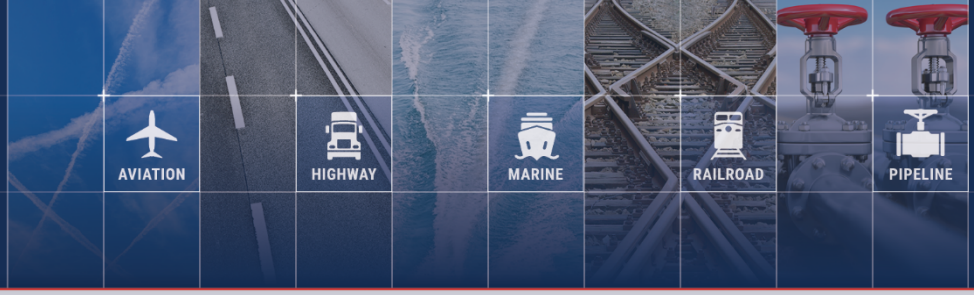

Aviation Investigation Final Report

Location:	Crystal, Minnesota	**Accident Number:**	CEN23LA398
Date & Time:	September 3, 2023, 19:00 Local	**Registration:**	N321BT
Aircraft:	Van's Aircraft RV-12	**Aircraft Damage:**	Substantial
Defining Event:	Abnormal runway contact	**Injuries:**	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was landing the light-sport airplane on the runway when it bounced two times. The nose gear collapsed, the propeller struck the ground, and the airplane came to rest upright on the runway in a nose-down attitude. The two occupants were able to exit the airplane without further incident. The airplane sustained substantial damage to the lower fuselage.

A postaccident metallurgical examination of the fractured nose landing gear strut revealed features consistent with ductile overstress fracture. There was no evidence of any pre-existing damage to the nose landing gear strut.

It is likely the pilot did not attain a proper landing flare, which resulted in the airplane bouncing twice and subsequently sustaining an overstress fracture of the nose landing strut.

Probable Cause and Findings

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

The pilot’s improper landing flare, which resulted in a bounced landing and an overstress fracture of the nose landing gear strut.

Findings

Personnel issues	Aircraft control - Pilot
Personnel issues	Incorrect action performance - Pilot
Aircraft	Landing flare - Not attained/maintained
Aircraft	Nose/tail landing gear - Failure
Aircraft	Nose/tail landing gear - Capability exceeded

Factual Information

History of Flight

Landing-flare/touchdown	Abnormal runway contact (Defining event)
Landing-flare/touchdown	Part(s) separation from AC
Landing-flare/touchdown	Landing gear collapse
Landing-flare/touchdown	Loss of control on ground
Landing-flare/touchdown	Nose over/nose down
Post-impact	Evacuation

On September 3, 2023, about 1900 central daylight time, a Van's Aircraft RV-12iS airplane, N321BT, sustained substantial damage when it was involved in an accident near Crystal, Minnesota. The pilot sustained minor injuries and the passenger sustained no injury. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The light-sport airplane departed from the Major Gilbert Field Airport (4R5), La Pointe, Wisconsin, about 1725, for the cross-country flight. The intended destination was the Crystal Airport (MIC), Minneapolis, Minnesota. During the landing at MIC, the airplane touched down on runway 24R, which was a dry asphalt runway, and bounced two times. The nose gear collapsed, the propeller struck the ground, and the airplane came to rest upright on the runway in a nose-down attitude. The two occupants were able to exit the airplane without further incident. The airplane sustained substantial damage to the lower fuselage.

A postaccident metallurgical examination of the fractured nose landing gear strut revealed features consistent with ductile overstress fracture. There was no evidence of any pre-existing damage to the nose landing gear strut.

The Federal Aviation Administration has published the Airplane Flying Handbook (FAA-H-8083-3C), which discusses bounced landings and states in part:

Since a bounce occurs when the airplane makes contact with the ground before the proper touchdown attitude is attained, it is almost invariably accompanied by the application of excessive back-elevator pressure. This is usually the result of the pilot realizing too late that the airplane is not in the proper attitude and attempting to establish it just as the second touchdown occurs.

Pilot Information

Certificate:	Sport Pilot	**Age:**	46,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	5-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Sport pilot None	**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 21, 2023
Flight Time:	(Estimated) 193 hours (Total, all aircraft), 193 hours (Total, this make and model), 114 hours (Pilot In Command, all aircraft), 55 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Van's Aircraft	**Registration:**	N321BT
Model/Series:	RV-12 iS	**Aircraft Category:**	Airplane
Year of Manufacture:	2022	**Amateur Built:**	
Airworthiness Certificate:	Experimental light sport (Special)	**Serial Number:**	12110
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	April 18, 2023 Annual	**Certified Max Gross Wt.:**	1320 lbs
Time Since Last Inspection:	77.2 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	206.6 Hrs at time of accident	**Engine Manufacturer:**	Rotax Aircraft Engines
ELT:	C91A installed, not activated	**Engine Model/Series:**	912iS
Registered Owner:	LIGHT SPORT AVIATION SERVICES LLC	**Rated Power:**	100 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None
Operator Does Business As:	None	**Operator Designator Code:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KMIC,864 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	19:06 Local	**Direction from Accident Site:**	153°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	None / None
Wind Direction:	180°	**Turbulence Severity Forecast/Actual:**	N/A / N/A
Altimeter Setting:	29.71 inches Hg	**Temperature/Dew Point:**	33°C / 19°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	La Pointe, WI (4R5)	**Type of Flight Plan Filed:**	None
Destination:	Crystal, MN	**Type of Clearance:**	VFR
Departure Time:	17:25 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	CRYSTAL MIC	**Runway Surface Type:**	Asphalt
Airport Elevation:	869 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	06L/24R	**IFR Approach:**	None
Runway Length/Width:	2500 ft / 75 ft	**VFR Approach/Landing:**	Full stop;Straight-in

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 1 None	**Latitude, Longitude:**	45.064506,-93.352806(est)

Administrative Information

Investigator In Charge (IIC):	Hodges, Michael
Additional Participating Persons:	Edward Martin; FAA Minneapolis FSDO; Minneapolis, MN Rian Johnson; Van's Aircraft; Aurora, OR Bernhard Kobylik (Accredited Representative); Federal Safety Investigation Authority; Vienna, OF Jordan Paskevich (Technical Advisor); Rotax Aircraft Engines; Vernon, OF
Original Publish Date:	May 14, 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=193009