Aviation Investigation Final Report

Location:	Vero Beach, Florida	**Accident Number:**	ERA23LA211
Date & Time:	April 8, 2023, 11:00 Local	**Registration:**	N600LD
Aircraft:	AEROPILOT S R O LEGEND 600	**Aircraft Damage:**	Substantial
Defining Event:	Abnormal runway contact	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The student pilot departed from the turf runway at his home airport, which he described as "extremely rough," for a solo flight in the airport traffic pattern. The pilot stated that the first 300 feet of the runway past the displaced threshold was "a very soft area" and a cone had been placed there, so he landed the airplane about 700 feet from the displaced threshold. The airplane bounced back into the air to a height of about 7 to 8 feet and the pilot added power and increased back pressure on the control wheel to hold the nose wheel off the runway. The airplane then touched down again on the main landing gear and the nose wheel again touched down on the runway. The nose wheel then contacted 3 to 5 "bumps" before settling into the turf, the lower portion of the nose landing gear separated, and the airplane nosed over, coming to rest inverted. The student pilot received minor injuries and the airplane's fuselage and empennage were substantially damaged.

The pilot reported that there were no preaccident mechanical malfunctions or failures of the airplane that would have precluded normal operation. Review of the student pilot's logbook revealed that his presolo aeronautical knowledge endorsement indicated that he was aware of the flight characteristics and operational limitations of the airplane, as well as the airspace rules and procedures for the airport, which he had flown the airplane in and out of and landed at on at least 18 separate occasions. He therefore should also have been aware of the runway conditions. Given this information, it is likely that the student pilot's landing technique was not appropriate for the condition of the turf runway, and that the techniques he used to recover from the bounced landing resulted in subsequent nose landing gear collapse and noseover.

Probable Cause and Findings

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

The pilot's improper recovery from a bounced landing, which resulted in a nose landing gear collapse and subsequent noseover. Contributing was the rough condition of the runway, as described by the pilot, and his decision to operate from it.

Findings

Aircraft	Landing flare - Not attained/maintained
Personnel issues	Aircraft control - Student/instructed pilot
Personnel issues	Decision making/judgment - Pilot
Environmental issues	Soft surface - Decision related to condition

Factual Information

History of Flight

Landing	Abnormal runway contact (Defining event)
Landing	Attempted remediation/recovery
Landing-landing roll	Landing gear collapse
Landing-landing roll	Nose over/nose down

Student pilot Information

Certificate:	Student	**Age:**	43,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	April 1, 2023
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	81 hours (Total, all aircraft), 69 hours (Total, this make and model), 4 hours (Pilot In Command, all aircraft), 35 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AEROPILOT S R O	**Registration:**	N600LD
Model/Series:	LEGEND 600	**Aircraft Category:**	Airplane
Year of Manufacture:	2016	**Amateur Built:**	
Airworthiness Certificate:	Special light-sport (Special)	**Serial Number:**	1531
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	February 1, 2023 Annual	**Certified Max Gross Wt.:**	1320 lbs
Time Since Last Inspection:	23 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	721 Hrs at time of accident	**Engine Manufacturer:**	Rotax
ELT:	Installed, not activated	**Engine Model/Series:**	912 ULS
Registered Owner:	On file	**Rated Power:**	100 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:	KVRB,19 ft msl	**Distance from Accident Site:**	6 Nautical Miles
Observation Time:	14:53 Local	**Direction from Accident Site:**	77°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Broken / 11000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	12 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	120°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	28°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Vero Beach, FL (X52)	**Type of Flight Plan Filed:**	None
Destination:	Vero Beach, FL (X52)	**Type of Clearance:**	None
Departure Time:	11:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:	NEW HIBISCUS AIRPARK X52	**Runway Surface Type:**	Grass/turf
Airport Elevation:	25 ft msl	**Runway Surface Condition:**	Vegetation
Runway Used:	18	**IFR Approach:**	None
Runway Length/Width:	3120 ft / 150 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	27.632255,-80.527554(est)

Administrative Information

Investigator In Charge (IIC):	Gunther, Todd
Additional Participating Persons:	Daxton Barkely; FAA/FSDO; Orlando, FL
Original Publish Date:	November 16, 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=107163