Aviation Investigation Final Report

Location:	Emmett, Idaho	**Accident Number:**	WPR23LA265
Date & Time:	July 8, 2023, 13:52 Local	**Registration:**	N74778
Aircraft:	ROBINSON HELICOPTER R22 BETA	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	2 Minor
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor reported that he was demonstrating a turning autorotation to his student. The instructor entered the glide, turned, and kept the engine and rotor RPM gauges in the green arc, while maintaining an airspeed of about 55 knots. He increased the throttle setting and raised the collective lever as the helicopter descended through 200 ft AGL, however, the rotor RPMs fell below the green arc. The instructor made the decision to continue the autorotation with ground contact and applied aft cyclic to reduce the decent rate. The helicopter landed hard and nosed over onto its right side, resulting in substantial damage to the tailboom and tail rotor assembly. The instructor reported that there were no preaccident mechanical malfunctions or failures 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 instructor's failure to maintain airspeed during a simulated turning autorotation, which resulted in a hard landing.

Findings

Personnel issues	Aircraft control - Instructor/check pilot
Aircraft	Airspeed - Not attained/maintained

Factual Information

History of Flight

Maneuvering	Loss of control in flight (Defining event)
Autorotation	Hard landing

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	25,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	3-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	Yes
Instructor Rating(s):	Instrument helicopter	**Toxicology Performed:**	
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	December 27, 2022
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	January 27, 2023
Flight Time:	571.6 hours (Total, all aircraft), 391.3 hours (Total, this make and model), 523 hours (Pilot In Command, all aircraft), 228.8 hours (Last 90 days, all aircraft), 67.8 hours (Last 30 days, all aircraft), 1.5 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Student	**Age:**	Male
Airplane Rating(s):	None	**Seat Occupied:**	Right
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:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	April 12, 2022
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	70.4 hours (Total, all aircraft), 70.4 hours (Total, this make and model), 1.4 hours (Pilot In Command, all aircraft), 42.3 hours (Last 90 days, all aircraft), 17.1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER	**Registration:**	N74778
Model/Series:	R22 BETA	**Aircraft Category:**	Helicopter
Year of Manufacture:	2005	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	3968
Landing Gear Type:	Skid	**Seats:**	2
Date/Type of Last Inspection:	June 14, 2023 100 hour	**Certified Max Gross Wt.:**	1370 lbs
Time Since Last Inspection:	58.75 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	7283.75 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Not installed	**Engine Model/Series:**	O-360-J2A
Registered Owner:	On file	**Rated Power:**	145 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	Rotorcraft external load (133), On-demand air taxi (135), Pilot school (141)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KEUL,2429 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	13:56 Local	**Direction from Accident Site:**	204°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/ Convective
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/ Light
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	31°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Caldwell, ID (KEUL)	**Type of Flight Plan Filed:**	Company VFR
Destination:	Caldwell, ID (KEUL)	**Type of Clearance:**	None
Departure Time:	13:22 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	2 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	2 Minor	**Latitude, Longitude:**	43.794444,-116.54444

Administrative Information

Investigator In Charge (IIC):	Blocher, Kristyn
Additional Participating Persons:	Jeremy Blanford; Federal Aviation Administration; Boise, ID
Original Publish Date:	November 2, 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=192583