



Aviation Investigation Final Report

Location:	Mesa, Arizona	Accident Number:	WPR22LA359
Date & Time:	September 26, 2022, 08:10 Local	Registration:	N252SC
Aircraft:	ROBINSON HELICOPTER R22 BETA	Aircraft Damage:	Substantial
Defining Event:	Hard landing	Injuries:	2 Minor
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

While conducting an instructional flight, the flight instructor reported that, he assumed control of the helicopter to demonstrate a left 180° autorotation, and the maneuver began normally. Part way through the maneuver, the pilot noticed that the helicopter was lower in altitude than he expected. He reported that he applied right cyclic and aft cyclic, attempting to slow the rate of descent. The helicopter landed hard and skidded to a stop. When stopped, the flight instructor and the student pilot exited the helicopter, and a postimpact fire ensued. The tail boom and fuselage sustained substantial damage. The pilot reported that there were no preaccident mechanical malfunctions or failures with the helicopter 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 flight instructor's failure to maintain control of the helicopter's rate of descent, resulting in a hard landing.

Findings

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

Factual Information

History of Flight

Autorotation	Hard landing (Defining event)
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Flight instructor Information

Certificate:	Commercial; Flight instructor	Age:	39, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	3-point
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine; Helicopter; Instrument helicopter	Toxicology Performed:	
Medical Certification:	Class 2 None	Last FAA Medical Exam:	November 21, 2021
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	August 29, 2022
Flight Time:	(Estimated) 918 hours (Total, all aircraft), 278 hours (Total, this make and model), 788 hours (Pilot In Command, all aircraft), 67 hours (Last 90 days, all aircraft), 29 hours (Last 30 days, all aircraft)		

Student pilot Information

Certificate:	Student	Age:	22, 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 1 With waivers/limitations	Last FAA Medical Exam:	June 6, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 53.7 hours (Total, all aircraft), 53.7 hours (Total, this make and model), 10.1 hours (Pilot In Command, all aircraft), 17.7 hours (Last 90 days, all aircraft), 3.1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER	Registration:	N252SC
Model/Series:	R22 BETA	Aircraft Category:	Helicopter
Year of Manufacture:	2005	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	3893
Landing Gear Type:	Skid	Seats:	2
Date/Type of Last Inspection:	September 14, 2022 Continuous airworthiness	Certified Max Gross Wt.:	1370 lbs
Time Since Last Inspection:	11.6 Hrs	Engines:	1
Airframe Total Time:	6257.6 Hrs at time of accident	Engine Manufacturer:	
ELT:	Not installed	Engine Model/Series:	
Registered Owner:		Rated Power:	
Operator:		Operating Certificate(s) Held:	Pilot school (141)
Operator Does Business As:	California Aeronautical University	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KFFZ, 1394 ft msl	Distance from Accident Site:	4 Nautical Miles
Observation Time:	07:54 Local	Direction from Accident Site:	180°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	50°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.94 inches Hg	Temperature/Dew Point:	29°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Mesa, AZ (FFZ)	Type of Flight Plan Filed:	None
Destination:	Mesa, AZ	Type of Clearance:	VFR
Departure Time:	07:30 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	2 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	2 Minor	Latitude, Longitude:	33.54,-111.71(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Michael		
Additional Participating Persons:	Darren Henley; FAA; Scottsdale, AZ		
Original Publish Date:	January 9, 2023	Investigation Class:	4
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=106015		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).