



Aviation Investigation Final Report

Location:	Fallston, Maryland	Accident Number:	ERA22LA140
Date & Time:	March 1, 2022, 11:20 Local	Registration:	N786SH
Aircraft:	ROBINSON HELICOPTER COMPANY R22	Aircraft Damage:	Substantial
Defining Event:	Dynamic rollover	Injuries:	1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The flight instructor and his student were performing maneuvers as part of a flight lesson. About 40 minutes into the flight, while attempting a left pedal turn, the helicopter descended just enough to touch the left rear skid, which surprised the student, who then added right lateral cyclic control. The helicopter’s right skid dug in the ground, and the helicopter rolled over on to its right side, which resulted in substantial damage to the fuselage and main rotor blades.

The helicopter manufacturer’s flight maneuvers guide advised that a 5-foot hover should be used for all taxi and hover operations, and a minimum 5-foot hover was the policy of the flight school.

After the accident, the flight school had discussions with all their helicopter instructors to emphasize the need to maintain proper height above the ground, the need to closely guard the controls while instructing, and the need for improved awareness of the capabilities and experience of the students.

Probable Cause and Findings

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

The student pilot's unstabilized hover, which resulted in ground contact and a dynamic rollover. Contributing to the accident was the flight instructor's inadequate supervision of the student and his delayed remedial action.

Findings

Aircraft	Altitude - Not attained/maintained
Aircraft	Lateral/bank control - Not attained/maintained
Personnel issues	Aircraft control - Student/instructed pilot
Personnel issues	Identification/recognition - Student/instructed pilot
Personnel issues	Use of equip/system - Student/instructed pilot
Personnel issues	Decision making/judgment - Instructor/check pilot
Personnel issues	Delayed action - Instructor/check pilot
Personnel issues	Total experience - Student/instructed pilot

Factual Information

History of Flight

Maneuvering-hover	Low altitude operation/event
Maneuvering-hover	Altitude deviation
Maneuvering-hover	Attempted remediation/recovery
Maneuvering-hover	Dynamic rollover (Defining event)

Flight instructor Information

Certificate:	Commercial	Age:	30, 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):	Helicopter; Instrument helicopter	Toxicology Performed:	
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	April 8, 2021
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	March 6, 2021
Flight Time:	1038 hours (Total, all aircraft), 828 hours (Total, this make and model), 969 hours (Pilot In Command, all aircraft), 126 hours (Last 90 days, all aircraft), 776 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Private	Age:	35, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	January 27, 2022
Occupational Pilot:	No	Last Flight Review or Equivalent:	November 14, 2019
Flight Time:	143 hours (Total, all aircraft), 2 hours (Total, this make and model), 83 hours (Pilot In Command, all aircraft), 2 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER COMPANY	Registration:	N786SH
Model/Series:	R22	Aircraft Category:	Helicopter
Year of Manufacture:	2004	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	3626
Landing Gear Type:	Skid	Seats:	2
Date/Type of Last Inspection:	February 2, 2022 Annual	Certified Max Gross Wt.:	1370 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	7473.86 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	O-360-J2A
Registered Owner:	SPITZER HELICOPTER LLC	Rated Power:	180 Horsepower
Operator:	Fly For Fun Aircraft LLC	Operating Certificate(s) Held:	Pilot school (141)
Operator Does Business As:	Middle River Flight Center	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KMTN,21 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	11:54 Local	Direction from Accident Site:	181°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 12000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	7 knots / None	Turbulence Type Forecast/Actual:	/
Wind Direction:	130°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.13 inches Hg	Temperature/Dew Point:	7°C / 2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Baltimore, MD (MTN)	Type of Flight Plan Filed:	None
Destination:	Fallston, MD (W42)	Type of Clearance:	None
Departure Time:	10:50 Local	Type of Airspace:	Class G

Airport Information

Airport:	Fallston Airport W42	Runway Surface Type:	Asphalt
Airport Elevation:	460 ft msl	Runway Surface Condition:	Dry
Runway Used:	22	IFR Approach:	None
Runway Length/Width:	2200 ft / 50 ft	VFR Approach/Landing:	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor, 1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Minor, 1 None	Latitude, Longitude:	39.501324,-76.411335(est)

Administrative Information

Investigator In Charge (IIC):	Gunther, Todd
Additional Participating Persons:	Dedrick P. Richards; FAA / FSDO; Baltimore, MD
Original Publish Date:	July 5, 2022
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=104715

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](#).