



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Frederick, MD	<b>Accident Number:</b>	ERA14CA217
<b>Date &amp; Time:</b>	05/01/2014, 1910 EDT	<b>Registration:</b>	N802CP
<b>Aircraft:</b>	ROBINSON HELICOPTER R22 BETA	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Dynamic rollover	<b>Injuries:</b>	2 Minor
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Instructional		

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## Analysis

According to the flight instructor, his student was practicing hover operations over a grassy area of the airport. This was the first flight in a helicopter for the student pilot. The helicopter drifted to the right while descending. The right skid contacted the grass and the helicopter rolled to the right and the main rotor blades contacted the ground. The helicopter continued to roll over and came to rest on its right side. An inspector from the Federal Aviation Administration examined the helicopter and confirmed substantial damage to the fuselage, tail boom, and main rotor blades. The pilots reported no pre-impact 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 student pilot's failure to maintain directional control during the hover, and the flight instructors lack of remedial action, resulting in a dynamic rollover and structural damage to the helicopter.

## Findings

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<b>Aircraft</b>	Directional control - Not attained/maintained (Cause)
<b>Personnel issues</b>	Aircraft control - Student pilot (Cause) Lack of action - Instructor/check pilot (Cause)

## Factual Information

### History of Flight

Maneuvering-hover	Dynamic rollover (Defining event)
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### Flight Instructor Information

<b>Certificate:</b>	Flight Instructor; Commercial	<b>Age:</b>	32
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane; Helicopter	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine; Helicopter; Instrument Airplane; Instrument Helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without Waivers/Limitations	<b>Last Medical Exam:</b>	06/14/2013
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	01/18/2014
<b>Flight Time:</b>	3060 hours (Total, all aircraft), 208 hours (Total, this make and model), 2990 hours (Pilot In Command, all aircraft), 140 hours (Last 90 days, all aircraft), 47 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

### Student Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	50
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Without Waivers/Limitations	<b>Last Medical Exam:</b>	04/22/2013
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 3361 hours (Total, all aircraft), 1 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	ROBINSON HELICOPTER	Registration:	N802CP
Model/Series:	R22 BETA BETA	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	2270
Landing Gear Type:	Skid;	Seats:	2
Date/Type of Last Inspection:	04/09/2014, Annual	Certified Max Gross Wt.:	1369 lbs
Time Since Last Inspection:	45 Hours	Engines:	1 Reciprocating
Airframe Total Time:	6621 Hours	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	0-320 SERIES
Registered Owner:	ADVANCED HELICOPTER CONCEPTS INC	Rated Power:	160 hp
Operator:	ADVANCED HELICOPTER CONCEPTS INC	Air Carrier Operating Certificate:	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	FDK, 306 ft msl	Observation Time:	1845 EDT
Distance from Accident Site:	0 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Scattered / 6000 ft agl	Temperature/Dew Point:	22° C / 11° C
Lowest Ceiling:	Broken / 9000 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	9 knots, 310°	Visibility (RVR):	
Altimeter Setting:	29.75 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Frederick, MD (FDK)	Type of Flight Plan Filed:	None
Destination:	Frederick, MD (FDK)	Type of Clearance:	None
Departure Time:	1830 EDT	Type of Airspace:	

## Airport Information

Airport:	FREDERICK MUNI (FDK)	Runway Surface Type:	N/A
Airport Elevation:	306 ft	Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

## Wreckage and Impact Information

Crew Injuries:	2 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Minor		

## Administrative Information

Investigator In Charge (IIC): Ralph E Hicks

Adopted Date: 06/05/2014

**Additional Participating Persons:**

Publish Date: 07/09/2015

Note: This accident report documents the factual circumstances of this accident as described to the NTSB.

Investigation Docket: <http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=89154>

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