



# Aviation Investigation Final Report

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<b>Location:</b>	Coldfoot, Alaska	<b>Accident Number:</b>	ANC14CA042
<b>Date &amp; Time:</b>	June 18, 2014, 09:45 Local	<b>Registration:</b>	N74713
<b>Aircraft:</b>	ROBINSON HELICOPTER COMPANY R44 II	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Settling with power/vortex ring state	<b>Injuries:</b>	3 None
<b>Flight Conducted Under:</b>	Part 135: Air taxi & commuter - Non-scheduled		

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## Analysis

The commercial helicopter pilot reported that the purpose of the flight was to transport two technicians to a remote site in an area of mountainous terrain. The pilot fueled the helicopter and flew approximately 30 minutes to a staging area. After loading the two passengers and their gear, he flew to the planned landing zone (LZ), in a narrow box-valley at about 2,550 feet MSL. The proposed LZ was evaluated while performing an out-of-ground-effect hover, but the pilot determined the LZ was unsuitable. A second LZ was evaluated using the same process and also found unsuitable.

While hovering out of ground effect, above a third potential LZ, the helicopter began to descend and the pilot added collective pitch to stop the descent. He said the low rotor annunciator horn then sounded and the helicopter continued to descend. In an attempt to avoid landing in an area of uneven terrain, the pilot said he opted to turn the helicopter to the right and downslope, while trying to override the engine governor to attain additional engine power. The helicopter's skids subsequently struck an area of uneven, down sloping terrain. During touchdown, the helicopter nosed down, pivoted to the left, and rolled onto its left side. The helicopter sustained substantial damage to the fuselage, tail boom and main rotor drive system. The pilot reported no preaccident mechanical anomalies with the helicopter that would have precluded normal operation.

The pilot characterized the down sloping wind conditions as light and variable.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain adequate main rotor rpm while maneuvering at a low altitude, which

resulted in an emergency landing on uneven terrain.

## Findings

<b>Personnel issues</b>	Aircraft control - Pilot
<b>Aircraft</b>	Prop/rotor parameters - Not attained/maintained
<b>Environmental issues</b>	Sloped/uneven terrain - Contributed to outcome

## Factual Information

### History of Flight

<b>Maneuvering-hover</b>	Settling with power/vortex ring state (Defining event)
<b>Emergency descent</b>	Collision with terr/obj (non-CFIT)

### Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	46
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Helicopter; Instrument helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	April 24, 2014
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	May 13, 2014
<b>Flight Time:</b>	3700 hours (Total, all aircraft), 2700 hours (Total, this make and model), 3600 hours (Pilot In Command, all aircraft), 160 hours (Last 90 days, all aircraft), 110 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	ROBINSON HELICOPTER COMPANY	<b>Registration:</b>	N74713
<b>Model/Series:</b>	R44 II Raven II	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	2006	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	11220
<b>Landing Gear Type:</b>	N/A; Skid	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	June 5, 2014 100 hour	<b>Certified Max Gross Wt.:</b>	2500 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3175 Hrs at time of accident	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	C126 installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	IO-540 SER
<b>Registered Owner:</b>	QUICKSILVER AIR INC	<b>Rated Power:</b>	245 Horsepower
<b>Operator:</b>	QUICKSILVER AIR INC	<b>Operating Certificate(s) Held:</b>	On-demand air taxi (135)

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	PABT,643 ft msl	<b>Distance from Accident Site:</b>	83 Nautical Miles
<b>Observation Time:</b>	18:53 Local	<b>Direction from Accident Site:</b>	207°
<b>Lowest Cloud Condition:</b>	Few / 1600 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Overcast / 13000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	3 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	30°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.43 inches Hg	<b>Temperature/Dew Point:</b>	14°C / 11°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	COLDFOOT, AK (CXF )	<b>Type of Flight Plan Filed:</b>	Company VFR
<b>Destination:</b>	Coldfoot, AK	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	2 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	3 None	<b>Latitude, Longitude:</b>	67.769447,-149.748336(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Shaver, Christopher
<b>Additional Participating Persons:</b>	Clark Miller; FAA Fairbanks FSDO; Fairbanks, AK
<b>Original Publish Date:</b>	August 14, 2014
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=89480">https://data.nts.gov/Docket?ProjectID=89480</a>

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.

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