



# National Transportation Safety Board Aviation Accident Final Report

<b>Location:</b>	Bountiful, UT	<b>Accident Number:</b>	WPR09CA105
<b>Date &amp; Time:</b>	02/01/2009, 1200 MST	<b>Registration:</b>	N944U
<b>Aircraft:</b>	ROBINSON HELICOPTER COMPANY R44 II	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Low altitude operation/event	<b>Injuries:</b>	1 Minor, 3 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

## Analysis

While en route to her destination, the pilot elected to fly the helicopter up a canyon toward rising terrain. Soon after making a low pass over a ridge above 8,000 feet mean sea level, the pilot increased collective in order to climb over upcoming higher terrain. As the collective was increased, the rotor rpm started to drop. The pilot immediately increased throttle, reversed course to fly downhill, and lowered the collective. During the turn, the helicopter encountered a quartering tailwind and began to settle toward the snow-covered down-sloping terrain. Soon thereafter the helicopter contacted the terrain, bounced back into the air, and a main rotor blade severed the tail boom. The helicopter rotated 180 degrees, impacted the terrain, and rolled over. According to the pilot there was no evidence of an engine power loss or any anomaly with the flight control system.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper decision to fly at low altitude while maneuvering in mountainous terrain in a canyon and inadvertently exceeding the climb capability of the helicopter. Contributing to the accident were a high density altitude, mountainous terrain, and a tailwind encountered during the attempted course reversal.

## Findings

<b>Aircraft</b>	Climb rate - Capability exceeded (Cause)
<b>Personnel issues</b>	Decision making/judgment - Pilot (Cause)
<b>Environmental issues</b>	Mountainous/hilly terrain - Effect on operation (Factor) Tailwind - Effect on equipment (Factor) High density altitude - Effect on equipment (Factor)

## Factual Information

### History of Flight

**Maneuvering-low-alt flying** Low altitude operation/event (Defining event)

### Pilot Information

<b>Certificate:</b>	Flight Instructor; Commercial	<b>Age:</b>	21, Female
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Helicopter	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without Waivers/Limitations	<b>Last Medical Exam:</b>	01/20/2009
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	08/23/2008
<b>Flight Time:</b>	524 hours (Total, all aircraft), 101 hours (Total, this make and model), 433 hours (Pilot In Command, all aircraft), 194 hours (Last 90 days, all aircraft), 63 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Manufacturer:</b>	ROBINSON HELICOPTER COMPANY	<b>Registration:</b>	N944U
<b>Model/Series:</b>	R44 II	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	10766
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	01/28/2009, 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>	2035 Hours	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	IO-540-AE1A5
<b>Registered Owner:</b>	TUMBLEWEED LEASING COMPANY INC	<b>Rated Power:</b>	205 hp
<b>Operator:</b>	UPPER LIMIT AVIATION	<b>Air Carrier Operating Certificate:</b>	None

## Meteorological Information and Flight Plan

Observation Facility, Elevation:		Observation Time:	
Distance from Accident Site:		Condition of Light:	Day
Direction from Accident Site:		Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	, Variable	Visibility (RVR):	
Altimeter Setting:		Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	SALT LAKE CITY, UT (kslc)	Type of Flight Plan Filed:	None
Destination:	MORGAN, UT (42u)	Type of Clearance:	None
Departure Time:	1130 MST	Type of Airspace:	

## Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 Minor, 2 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor, 3 None		

## Administrative Information

Investigator In Charge (IIC):	Orrin K Anderson	Adopted Date:	04/15/2009
Additional Participating Persons:	Walter Alexander; Salt Lake FAA FSDO; Salt Lake City, UT		
Publish Date:	04/16/2009		
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.		
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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.