



Aviation Investigation Final Report

Location:	Bountiful, Utah	Accident Number:	WPR09CA105
Date & Time:	February 1, 2009, 12:00 Local	Registration:	N944U
Aircraft:	ROBINSON HELICOPTER COMPANY R44 II	Aircraft Damage:	Substantial
Defining Event:	Low altitude operation/event	Injuries:	1 Minor, 3 None
Flight Conducted Under:	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

Aircraft	Climb rate - Capability exceeded
Personnel issues	Decision making/judgment - Pilot
Environmental issues	Mountainous/hilly terrain - Effect on operation
Environmental issues	Tailwind - Effect on equipment
Environmental issues	High density altitude - Effect on equipment

Factual Information

History of Flight

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

Certificate:	Commercial; Flight instructor	Age:	21, Female
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	January 20, 2009
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	August 23, 2008
Flight Time:	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

Aircraft Make:	ROBINSON HELICOPTER COMPANY	Registration:	N944U
Model/Series:	R44 II	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	10766
Landing Gear Type:	Skid	Seats:	4
Date/Type of Last Inspection:	January 28, 2009 100 hour	Certified Max Gross Wt.:	2500 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2035 Hrs at time of accident	Engine Manufacturer:	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-540-AE1A5
Registered Owner:	TUMBLEWEED LEASING COMPANY INC	Rated Power:	205 Horsepower
Operator:	UPPER LIMIT AVIATION	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
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:	11:30 Local	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	Latitude, Longitude:	41.231666,-111.805557(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	Walter Alexander; Salt Lake FAA FSDO; Salt Lake City, UT
Original Publish Date:	April 15, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=73303

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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](#).