



National Transportation Safety Board Aviation Accident Final Report

Location:	Ogden, UT	Accident Number:	WPR11CA121
Date & Time:	02/03/2011, 1720 MST	Registration:	N441TB
Aircraft:	ROBINSON R44	Aircraft Damage:	Substantial
Defining Event:	Hard landing	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

After completing several practice landings and autorotations at the airport, the certified flight instructor (CFI) and student pilot departed for the practice area. The CFI demonstrated straight-in and 180-degree autorotations; the first 180-degree attempt began at 6,000 feet mean sea level and at 55-60 knots. During the second 180-degree attempt, he started about 200 feet lower. The airspeed bled off to about 50 knots during the turn, and the main rotor blades' rpms began decaying rapidly. About 200 feet above ground level the CFI attempted a power recovery, but the rpms did not increase with an increase in throttle. He unsuccessfully attempted to flair to bring the rpms back before attempting a full down autorotation. He put the helicopter in a level attitude prior to contact with the ground and the helicopter bounced upon initial contact; on the second contact, the right skid dug into the muddy ground and the helicopter rolled onto its right side. The helicopter sustained substantial damage to the airframe and rotor blades. The pilots stated that the helicopter had no mechanical failures or malfunctions prior to the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The certified flight instructor's failure to maintain adequate main rotor blade rpm during a practice autorotation, resulting in a hard landing and rollover.

Findings

Aircraft	Prop/rotor parameters - Not attained/maintained (Cause)
Personnel issues	Aircraft control - Instructor/check pilot (Cause)
Environmental issues	Wet/muddy terrain - Contributed to outcome

Factual Information

History of Flight

Autorotation	Hard landing (Defining event)
Landing-flare/touchdown	Roll over

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	Age:	24, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 1 Without Waivers/Limitations	Last Medical Exam:	06/02/2006
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	07/29/2009
Flight Time:	964 hours (Total, all aircraft), 661 hours (Total, this make and model), 806 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 55 hours (Last 30 days, all aircraft)		

Student Pilot Information

Certificate:	Private	Age:	30, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without Waivers/Limitations	Last Medical Exam:	07/29/2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	172 hours (Total, all aircraft), 109 hours (Pilot In Command, all aircraft), 29 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	ROBINSON	Registration:	N441TB
Model/Series:	R44 UNDESIGNAT	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	0631
Landing Gear Type:	Skid;	Seats:	4
Date/Type of Last Inspection:	01/13/2011, 100 Hour	Certified Max Gross Wt.:	
Time Since Last Inspection:	32 Hours	Engines:	1 Reciprocating
Airframe Total Time:	1676 Hours	Engine Manufacturer:	Lycoming
ELT:	Not installed	Engine Model/Series:	O-540-F1B5
Registered Owner:	AV8 LLC	Rated Power:	250 hp
Operator:	Whirlybird Helicopters LLC	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	KOGD, 4473 ft msl	Observation Time:	1753 MST
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:	-4° C / -14° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	Calm	Visibility (RVR):	
Altimeter Setting:	30.47 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Ogden, UT (OGD)	Type of Flight Plan Filed:	Company VFR
Destination:	Ogden, UT (OGD)	Type of Clearance:	None
Departure Time:	1645 MST	Type of Airspace:	

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	Howard D Plagens	Adopted Date:	06/08/2011
Additional Participating Persons:	Kent Gibbons; FAA FSDO; Salt Lake City, UT		
Publish Date:	06/08/2011		
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=78278		

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