



National Transportation Safety Board Aviation Accident Final Report

Location:	Prescott, AZ	Accident Number:	WPR16LA156
Date & Time:	08/02/2016, 1027 MST	Registration:	N22UH
Aircraft:	ROBINSON R22	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	2 Minor
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The flight instructor and student pilot were practicing straight-in autorotations in the helicopter. During the autorotative descent, about 400 ft above ground level with the student at the controls, the instructor noticed a high rate of descent and a decay in main rotor rpm. The instructor told the student that he had the controls and started applying collective and throttle to recover rpm. He felt the collective go up and again told the student that he had the controls. The instructor was unable to arrest the descent before the helicopter landed hard and rolled over. The instructor reported that there were no pre-impact mechanical malfunctions or failures with the airframe or engine that would have precluded normal operation. He further stated that the accident could have been prevented if he had stayed ahead of his student and the helicopter.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The flight instructor's delayed remedial action to address a low rotor rpm condition, which resulted in an excessive descent rate and a subsequent hard landing.

Findings

Aircraft	Descent/approach/glide path - Not attained/maintained (Cause)
Personnel issues	Aircraft control - Student pilot (Cause)
	Monitoring other person - Instructor/check pilot (Cause)
	Delayed action - Instructor/check pilot (Cause)

Factual Information

On August 2, 2016, about 1027 mountain standard time (MST), a Robinson R22 helicopter, N22UH, landed hard at Ernest A Love Field Airport, Prescott, Arizona. The certificated flight instructor and student pilot received minor injuries. The helicopter sustained substantial damage to the fuselage and the tail boom. The helicopter was registered to Alba Leasing Services and operated by Universal Helicopters under the provisions of Title 14 *Code of Federal Regulations* (CFR) Part 91 as an instructional flight. Visual meteorological conditions prevailed, and no flight plan was filed. The local flight departed Prescott, Arizona, about 0950.

The student pilot and the flight instructor were practicing straight in autorotations. During the glide, with the student pilot at the controls, about 400 feet above ground level, the flight instructor noticed a fast rate of decent and a decay in rotor RPM. The flight instructor stated to the student that he had the controls and started applying collective and throttle control to recover RPM. The instructor felt the collective go up and stated again to the student that he had the controls. The flight instructor was unable to arrest the decent or recover RPM prior to the hard landing. During touchdown, the landing skids collapsed, the main rotor blades connected with and severed the tail boom. The helicopter came to rest on its left side.

The flight instructor reported no pre-impact mechanical malfunctions or failures with the airframe or engine that would have precluded normal operation.

History of Flight

Autorotation	Loss of control in flight (Defining event)
Landing	Hard landing

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	Age:	34, Male
Airplane Rating(s):		Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	3-point
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:	02/26/2014
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	10/02/2014
Flight Time:	1119.4 hours (Total, all aircraft), 779.9 hours (Total, this make and model), 1046.6 hours (Pilot In Command, all aircraft), 123.8 hours (Last 90 days, all aircraft), 71.1 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Student Pilot Information

Certificate:	Student	Age:	26, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without Waivers/Limitations	Last FAA Medical Exam:	03/01/2016
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	56 hours (Total, all aircraft), 56 hours (Total, this make and model), 56 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON	Registration:	N22UH
Model/Series:	R22 BETA	Aircraft Category:	Helicopter
Year of Manufacture:	2015	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	4676
Landing Gear Type:	Skid	Seats:	2
Date/Type of Last Inspection:	06/28/2016, 100 Hour	Certified Max Gross Wt.:	1370 lbs
Time Since Last Inspection:	30 Hours	Engines:	1 Reciprocating
Airframe Total Time:	882.7 Hours at time of accident	Engine Manufacturer:	Lycoming
ELT:	Not installed	Engine Model/Series:	O-360-J2A
Registered Owner:	Alba Leasing Services	Rated Power:	145 hp
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KPRC, 5052 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1725 UTC	Direction from Accident Site:	203°
Lowest Cloud Condition:	Scattered / 3000 ft agl	Visibility	10 Miles
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.26 inches Hg	Temperature/Dew Point:	24° C / 18° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Prescott, AZ (PRC)	Type of Flight Plan Filed:	None
Destination:	Prescott, AZ (PRC)	Type of Clearance:	VFR
Departure Time:	0950 MST	Type of Airspace:	Class D

Airport Information

Airport:	ERNEST A LOVE FIELD (PRC)	Runway Surface Type:	Asphalt
Airport Elevation:	5044 ft	Runway Surface Condition:	Dry
Runway Used:	21R	IFR Approach:	None
Runway Length/Width:	4846 ft / 60 ft	VFR Approach/Landing:	Simulated Forced Landing

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	Latitude, Longitude:	34.660833, -112.416389

Administrative Information

Investigator In Charge (IIC):	Patrick H Jones	Report Date:	09/10/2018
Additional Participating Persons:	Chris Kennedy; Federal Aviation Administration; Scottsdale, AZ		
Publish Date:	09/10/2018		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=93744		

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