National Transportation Safety Board
Aviation Accident Final Report

Location:	Tampa, FL	**Accident Number:**	ERA13LA104
Date & Time:	01/02/2013, 1810 EST	**Registration:**	N345VH
Aircraft:	ROBINSON HELICOPTER R22 BETA	**Aircraft Damage:**	Substantial
Defining Event:	Hard landing	**Injuries:**	2 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The flight instructor and her student were practicing autorotations. The student entered a practice autorotation at 500 feet above ground level (agl) and at 70 knots. About 40 feet agl, the student bled off airspeed by flaring the helicopter. The student advanced the throttle, but the rpm started to decay. The instructor had her hands on the controls and added throttle to arrest the rpm decay. When the rpm continued to decay, she took the controls and performed a hovering autorotation. The helicopter impacted a grassy area next to the runway, bounced, and rolled over, coming to an immediate stop. The fuselage and main rotor sustained substantial damage. The flight instructor reported that there was excessive play in the left throttle and that she had reported the condition to the operator's mechanic twice previously. Examination of the throttle system found it to be in an airworthy condition.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The student pilot's delayed throttle application during the practice autorotation and the flight instructor's lack of immediate remedial action, which resulted in a hard landing.

Findings

Aircraft	Descent rate - Not attained/maintained (Cause)
Personnel issues	Use of equip/system - Student pilot (Cause) Delayed action - Instructor/check pilot (Cause)

Factual Information

On January 2, 2013, about 1810 eastern standard time, a Robinson R22 Beta, N345VH, was substantially damaged following a practice autorotation to runway 22 at Peter O Knight Airport (TPF), Tampa, Florida. The flight instructor and a student pilot were not injured. The helicopter was operated by Helicopter Academy under the provisions of 14 Code of Federal Regulations Part 91 as an instructional flight. Visual meteorological conditions prevailed and no flight plan was filed. The flight originated at Clearwater, Florida (PIE) about 1715.

The flight instructor reported that she landed at PIE to pick up her student and proceeded to TPF for approaches and practice autorotations. The first three approaches were uneventful. During the fourth approach to runway 22, the student entered a practice autorotation at 500 feet above ground level (agl) and at 70 knots. About 40 feet agl, the student bled off airspeed by making “baby flares.” She reported that the student rolled on the throttle, but the governor did not catch and the rpm started to decay. The instructor had her hands on the controls and added throttle to arrest the rpm decay. When the rpm continued to decay, she took the controls and performed a hovering autorotation. The helicopter impacted a grassy area next to the runway, bounced, and rolled over, coming to an immediate stop.

A Federal Aviation Administration (FAA) inspector responded to the accident site and examined the wreckage. The inspector confirmed substantial damage to the airframe. Both main rotor blades were bent in several places. The engine firewall was buckled. The tail boom was crushed at the fuselage attachment point and the horizontal stabilizer was bent about 90 degrees. The flight instructor reported to the inspector that there was excessive “play” in the left throttle and she had reported the condition to the operator’s maintenance personnel twice previously, and was informed that the play was normal.

On January 8, 2013, the FAA re-inspected the helicopter throttle system with the assistance of a technical representative from Robinson Helicopter Company. The inspector reported that, based on the description of the throttle rigging provided to the technical representative, the throttle was in an airworthy condition.

Recorded weather at PTF at the time of the accident included calm surface wind.

History of Flight

Autorotation	Hard landing (Defining event)

Flight Instructor Information

Certificate:	Flight Instructor; Commercial	**Age:**	41, Female
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	Helicopter	**Toxicology Performed:**	No
Medical Certification:	Class 2 With Waivers/Limitations	**Last Medical Exam:**	09/05/2012
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	08/15/2012
Flight Time:	871 hours (Total, all aircraft), 820 hours (Pilot In Command, all aircraft), 89 hours (Last 90 days, all aircraft), 56 hours (Last 30 days, all aircraft)		

Student Pilot Information

Certificate:	Student	**Age:**	35, Male
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	None	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 2 With Waivers/Limitations	**Last Medical Exam:**	08/05/2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	68 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	ROBINSON HELICOPTER	**Registration:**	N345VH
Model/Series:	R22 BETA	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Normal	**Serial Number:**	2314
Landing Gear Type:	Skid	**Seats:**	2
Date/Type of Last Inspection:	11/12/2012, 100 Hour	**Certified Max Gross Wt.:**	1370 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3417 Hours	**Engine Manufacturer:**	LYCOMING
ELT:	Not installed	**Engine Model/Series:**	O-320 SERIES
Registered Owner:	SPITZER MATTHEW L	**Rated Power:**	180 hp
Operator:	Helicopter Academy	**Air Carrier Operating Certificate:**	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	TPF, 7 ft msl	**Observation Time:**	1815 EST
Distance from Accident Site:	0 Nautical Miles	**Condition of Light:**	Dusk
Direction from Accident Site:		**Conditions at Accident Site:**	Visual Conditions
Lowest Cloud Condition:	Scattered / 6000 ft agl	**Temperature/Dew Point:**	21°C / 17°C
Lowest Ceiling:	None	**Visibility**	10 Miles
Wind Speed/Gusts, Direction:	Calm	**Visibility (RVR):**	
Altimeter Setting:	30.04 inches Hg	**Visibility (RVV):**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Clearwater, FL (PIE)	**Type of Flight Plan Filed:**	None
Destination:	Tampa, FL (TPF)	**Type of Clearance:**	None
Departure Time:	1715 EST	**Type of Airspace:**	

Airport Information

Airport:	Peter O Knight Airport (TPF)	**Runway Surface Type:**	Asphalt
Airport Elevation:	7 ft	**Runway Surface Condition:**	Dry
Runway Used:	22	**IFR Approach:**	None
Runway Length/Width:	3580 ft / 100 ft	**VFR Approach/Landing:**	Simulated Forced Landing

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):	Ralph E Hicks	**Adopted Date:**	08/07/2013
Additional Participating Persons:	Michael Singleton; FAA/FSDO; Tampa, FL		
Publish Date:	08/07/2013		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=85946		

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