National Transportation Safety Board
Aviation Accident Data Summary

Location:	Catano, PR	**Accident Number:**	ERA15FA096
Date & Time:	01/10/2015, 1032 AST	**Registration:**	N348VH
Aircraft:	ROBINSON HELICOPTER R22 BETA	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The student helicopter pilot was on a solo training flight in the airport traffic pattern. He had completed eight approaches via a right downwind approach to the runway, when the air traffic controller advised him that he was number three for his next approach. About 1 minute later, the student pilot requested a left 360-degree turn. The controller then instructed him to hold at his current location and expect to be number four in sequence. During the next 6 minutes, the controller made three attempts to have the student pilot report the traffic to follow on final approach in sight, and the student pilot advised that it was hard for him to hear the controller's instructions due to wind noise. The controller then advised the student pilot to follow an airplane on short final approach, and the student pilot reported the traffic in sight. About 1 minute later, the controller advised the pilot of another airplane to follow the helicopter on the approach. The airplane pilot observed the helicopter ascend in a series of right, 360-degree turns for about 100 to 200 ft. As it climbed, white smoke consistent with a rapid increase in engine rpm and an engine overspeed trailed the helicopter. When the helicopter climbed to an apex of about 800 ft, the ends of both rotor blades coned upward to where the tips were nearly vertical, consistent with a low rotor rpm condition. The helicopter then entered a right, spiraling descent until it impacted the water.

A postaccident examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures with the helicopter that would have precluded normal operation. The main rotor blade elastomeric teeter stops were missing, consistent with low rotor rpm blade flapping. Although the temperature and dew point were conducive to carburetor icing, its formulation likely would not have allowed the helicopter to climb as high as it did just before the accident. More likely, the student pilot became distracted while he attempted to track other aircraft in the traffic pattern and sequence the helicopter for the approach, which led to his failure to maintain rotor rpm. Toxicological testing performed on specimens from the pilot identified butalbital in liver (1.24 ug/g) and in muscle (0.468 ug/g). Estimated corresponding blood levels were likely below the therapeutic window for butalbital, and unlikely to have been directly impairing at the time of the accident.

Flight Events

Approach-VFR pattern downwind - Abrupt maneuver
Approach-VFR pattern downwind - Loss of control in flight
Uncontrolled descent - Collision with terr/obj (non-CFIT)

Probable Cause

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

The student pilot's failure to maintain rotor rpm while maneuvering in the airport traffic pattern, which resulted in the helicopter's uncontrolled descent to the water. Contributing to the accident was the student's distraction with other aircraft operating in the traffic pattern.

Findings

Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Prop/rotor parameters-Not attained/maintained - C
Personnel issues-Task performance-Use of equip/info-Aircraft control-Student/instructed pilot - C

Student Pilot Information

Certificate:	Student	**Age:**	59
Airplane Rating(s):	None	**Instrument Rating(s):**	None
Other Aircraft Rating(s):	None	**Instructor Rating(s):**	None
Flight Time:	91 hours (Total, all aircraft), 91 hours (Total, this make and model), 9 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER	**Registration:**	N348VH
Model/Series:	R22 BETA	**Engines:**	1 Reciprocating
Operator:	VERTICAL SOLUTIONS HELICOPTER COMPANY LL	**Engine Manufacturer:**	LYCOMING
Operating Certificate(s) Held:	None	**Engine Model/Series:**	O-320 SERIES
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	TJIG, 10 ft msl	**Weather Information Source:**	Weather Observation Facility
Lowest Ceiling:	None	**Wind Speed/Gusts, Direction:**	12 knots / , 100°
Temperature:	27°C	**Visibility**	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	San Juan, PR (TJIG)	**Destination:**	San Juan, PR (TJIG)

Airport Information

Airport:	Fernando Luis Ribas Dominicci (TJIG)	**Runway Surface Type:**	Asphalt
Runway Used:	9	**Runway Surface Condition:**	Dry
Runway Length/Width:	5539 ft / 100 ft		

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Latitude, Longitude:	18.456667, -66.098333 (est)		

Administrative Information

Investigator In Charge (IIC):	Paul R Cox	**Adopted Date:**	01/26/2017
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=90589		