



National Transportation Safety Board Aviation Accident Data Summary

Location:	Medford, NJ	Accident Number:	ERA17FA317
Date & Time:	09/08/2017, 1300 EDT	Registration:	N204HF
Aircraft:	SCHWEIZER 269C	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The purpose of the flight was to provide an orientation/pleasure flight to the passenger, who was scheduled to perform in a concert on the airport later that evening. Several minutes after takeoff, the pilot reported over the airport UNICOM frequency that he was unable to control engine rpm with throttle inputs. He reported that he could "roll" the twist-grip; however, there was no corresponding change in engine power when he did so.

Three helicopter flight instructors, one a Federal Aviation Administration (FAA) inspector, one an FAA designated examiner, and a company flight instructor, joined the conversation on the radio to discuss with the pilot remedial actions and landing options. These options included a shallow, power-on approach to a run-on landing, or a power-off, autorotational descent to landing. The instructors encouraged the pilot to perform the run-on landing, but the pilot reported that a previous run-on landing attempt was unsuccessful. He then announced that he would shut down the engine and perform an autorotation, which he said was a familiar procedure that he had performed numerous times in the past. The instructors stressed to the pilot multiple times that he should delay the engine shutdown and autorotation entry until the helicopter was over the runway surface.

Video footage from a vantage point nearly abeam the approach end of the runway showed the helicopter about 1/4 to 1/2 mile south of the runway as it entered a descent profile consistent with an autorotation. Toward the end of the video, the descent profile steepened and the rate of descent increased before the helicopter descended out of view. Witnesses reported seeing individual rotor blades as the main rotor turned during the latter portion of the descent.

The increased angle and rate of descent and slowing of the rotor blades is consistent with a loss of rotor rpm during the autorotation. Despite multiple suggestions from other helicopter instructors that he initiate the autorotation above the runway, the pilot shut down the engine and entered the autorotation from an altitude about 950 ft above ground level between 1/4 and 1/2 mile from the end of the runway. Upon realizing that the helicopter would not reach the runway, the pilot could have landed straight ahead and touched down prior to the runway or performed a 180° turn to a field directly behind the helicopter; however, he continued the approach to the runway and attempted to extend the helicopter's glide by increasing collective pitch, an action that resulted in a decay of rotor rpm and an uncontrolled descent.

Examination of the wreckage revealed evidence consistent with the two-piece throttle control tie rod assembly having disconnected in flight. The internally threaded rod attached to the bellcrank and an externally threaded rod-end bearing attached to the throttle control arm displayed damage to the three end-threads of each. The damage was consistent with an incorrectly adjusted throttle control tie rod assembly with reduced thread engagement, which led to separation of the rod end bearing from the tie rod and resulted in loss of control of engine rpm via the throttle twist grip control.

Flight Events

Maneuvering - Powerplant sys/comp malf/fail

Autorotation - Hard landing

Probable Cause

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

The pilot's early entry into and failure to maintain rotor rpm during a forced landing autorotation after performing an engine shutdown in flight, which resulted in an uncontrolled descent.

Contributing to the accident was the failure of maintenance personnel to properly rig the throttle control tie-rod assembly, which resulted in an in-flight separation of the assembly and rendered control of engine rpm impossible.

Findings

Aircraft-Aircraft propeller/rotor-Main rotor system-Main rotor blade system-Incorrect use/operation - C

Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Descent/approach/glide path-Not attained/maintained - C

Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Descent rate-Not attained/maintained - C

Aircraft-Aircraft power plant-Engine controls-Power lever-Failure - F

Personnel issues-Task performance-Use of equip/info-Aircraft control-Pilot - C

Personnel issues-Action/decision-Info processing/decision-Decision making/judgment-Pilot - C

Personnel issues-Task performance-Maintenance-Scheduled/routine maintenance-Maintenance personnel - F

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	30
Airplane Rating(s):	None	Instrument Rating(s):	Helicopter
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	Helicopter; Instrument Helicopter
Flight Time:	480 hours (Total, all aircraft), 300 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	SCHWEIZER	Registration:	N204HF
Model/Series:	269C 1	Engines:	1 Reciprocating
Operator:	Helicopter Flight Services	Engine Manufacturer:	Lycoming
Operating Certificate(s) Held:	Pilot School (141)	Engine Model/Series:	HIO-360-C1A
Flight Conducted Under:	Part 91: General Aviation - Personal		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KVAY, 53 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:	None	Wind Speed/Gusts, Direction:	13 knots / 18 knots, 260°
Temperature:	21 °C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Medford, NJ (N14)	Destination:	Medford, NJ (N14)

Airport Information

Airport:	FLYING W (N14)	Runway Surface Type:	Asphalt
Runway Used:	01	Runway Surface Condition:	Dry; Vegetation
Runway Length/Width:	3496 ft / 75 ft		

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	1 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:	39.934167, -74.807222 (est)		

Administrative Information

Investigator In Charge (IIC):	Brian C Rayner	Adopted Date:	11/05/2018
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=95968		

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