National Transportation Safety Board
Aviation Accident Preliminary Report

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		

On September 8, 2017, about 1300 eastern daylight time, a Schweizer 269C-1 helicopter, N204HF, operated by Helicopter Flight Services, was substantially damaged during collision with terrain while performing a forced landing to Runway 01 at Flying W Airport (N14), Medford, New Jersey. The commercial pilot and passenger were fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight which was conducted under the provisions of 14 *Code of Federal Regulations* Part 91.

According to the chief flight instructor for the operator, 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 he could "roll" the twist-grip, but that there was no corresponding change in engine rpm when he did so.

The company flight instructor and another certificated helicopter flight instructor were monitoring the frequency and engaged the pilot in conversation about potential courses of action to affect the subsequent landing. Options discussed included a shallow approach to a run-on landing, or a power-off, autorotational descent to landing. The pilot elected to stop the engine and perform an autorotation, which was a familiar procedure he had performed numerous times in the past. Prior to entering the autorotation, the pilot was advised to initiate the maneuver over the runway.

The company flight instructor reported that the helicopter entered the autorotation about 950 ft above ground level, and that the helicopter was quiet during its descent "because the engine was off." During the descent, the rotor rpm decayed to the point where the instructor could see the individual rotor blades. The helicopter descended from view prior to reaching the runway threshold and the sounds of impact were heard. Both instructors reported that a high-pitched "whine" could be heard from the helicopter during the latter portion of the descent.

A video forwarded by local police showed the helicopter south of the runway as it entered what appeared to be a descent profile consistent with an autorotation. Toward the end of the video,

the descent profile became more vertical and the rate of descent increased before the helicopter descended out of view. No sound could be heard from the helicopter.

The pilot held commercial and instructor pilot certificates, each with ratings for rotorcraft-helicopter and instrument helicopter. His most recent Federal Aviation Administration (FAA) second-class medical certificate was issued April 12, 2017.

Excerpts of the pilot's logbook revealed he had logged 480.9 total hours of flight experience. It was estimated that he had accrued over 300 total hours of flight experience in the accident helicopter make and model. The last entry logged was for 1.2 hours in the accident helicopter on the day of the accident.

The company training records indicated the pilot had received the training required by the operator for employment as a flight instructor, and his last airman competency check was completed satisfactorily on April 19, 2017 in the accident helicopter.

According to FAA records, the helicopter was manufactured in 2000 and had accrued approximately 7,900 total aircraft hours. Its most recent 100-hour inspection was completed August 17, 2017 at 7,884 total aircraft hours.

At 1254, the weather recorded at South Jersey Regional Airport (VAY), 2 miles west of N14, included clear skies and wind from 260° at 13 knots gusting to 18 knots. The temperature was 21°C, and the dew point was 9°C. The altimeter setting was 30.13 inches of mercury. Airmen's Meteorological Information (AIRMET) Sierra for instrument meteorological conditions and mountain obscurations was in effect for the area surrounding the accident site at the time of the accident.

The wreckage was examined at the accident site, and all major components were accounted for at the scene. The initial ground scar was about 10 ft prior to the main wreckage, which was about 220 ft prior to the threshold of runway 01 and aligned with the runway.

The cockpit was significantly deformed by impact damage, and the tailboom was separated at the fuselage. The engine and main transmission remained mounted in the airframe, and all main rotor blades were secured in their respective grips, which remained attached to the main rotor head and mast. The pitch-change link for the yellow rotor blade was fractured, with fracture signatures consistent with overstress. Each of the three blades was bent significantly at its respective blade root. The blades showed little to no damage along their respective spans toward the blade tips, which was consistent with low rotor rpm at ground contact.

Flight control continuity was established from the individual flight controls, through breaks, to the main rotor head and tail rotor. Drivetrain continuity was also established to the main and tail rotors.

The engine was rotated by hand at the cooling fan, and continuity was confirmed from the powertrain through the valvetrain, to the accessory section. Compression was confirmed on all cylinders using the thumb method. The magnetos were removed, actuated with a drill, and

spark was produced at all terminal leads. Borescope examination of each cylinder revealed signatures consistent with normal wear, with no anomalies noted.

The carburetor was separated from the engine, displayed impact damage, and was found near the initial ground scar. The throttle and mixture arms were actuated by hand and moved smoothly through their respective ranges. The filter screen was removed, and was absent of debris. The carburetor contained fuel which appeared absent of water and debris.

The collective control and jackshaft assembly as well as the associated throttle cable, push-pull tube, and bellcrank assemblies were retained for further examination at the NTSB Materials Laboratory.

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	SCHWEIZER	**Registration:**	N204HF
Model/Series:	269C 1	**Aircraft Category:**	Helicopter
Amateur Built:	No		
Operator:	Helicopter Flight Services	**Air Carrier Operating Certificate:**	Pilot School (141)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	KVAY, 53 ft msl	**Observation Time:**	1254 EDT
Distance from Accident Site:	2 Nautical Miles	**Temperature/Dew Point:**	21°C / 9°C
Lowest Cloud Condition:	Clear	**Wind Speed/Gusts, Direction:**	13 knots/ 18 knots, 260°
Lowest Ceiling:	None	**Visibility:**	10 Miles
Altimeter Setting:	30.13 inches Hg	**Type of Flight Plan Filed:**	None
Departure Point:	Medford, NJ (N14)	**Destination:**	Medford, NJ (N14)

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
Total Injuries:	2 Fatal	**Latitude, Longitude:**	39.934167, -74.807222 (est)

Administrative Information

Investigator In Charge (IIC):	Brian C Rayner
Additional Participating Persons:	Stephan Koza; FAA/FSDO; Philadelphia, PA Michael D Binder; Sikorsky; Coatsville, PA David Harsanyi; Lycoming; Williamsport, PA
Note:	The NTSB traveled to the scene of this accident.