



Aviation Investigation Final Report

Location:	New Hill, North Carolina	Accident Number:	ERA24LA244
Date & Time:	May 31, 2024, 20:40 Local	Registration:	N331PF
Aircraft:	Vertical Aviation Hummingbird	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Flight test		

Analysis

During an evening test flight, the pilot was hovering the experimental amateur-built helicopter just above the ground to track the main rotor blades with light emitting diodes (LEDs) attached to the blade tips to address a main rotor vibration. He stated that he was distracted by the LED lights and lost control of the helicopter and that “there was nothing wrong with the aircraft.” The helicopter came to rest on its side and sustained substantial damage to the fuselage and empennage.

Probable Cause and Findings

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

The pilot's failure to maintain control of the helicopter hovering.

Findings

Personnel issues	Aircraft control - Pilot
Aircraft	Pitch control - Not attained/maintained

Factual Information

History of Flight

Maneuvering-hover	Loss of control in flight (Defining event)
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Pilot Information

Certificate:	Airline transport	Age:	71,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Unknown
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	BasicMed Unknown	Last FAA Medical Exam:	August 27, 2023
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	September 21, 2023
Flight Time:	15000 hours (Total, all aircraft), 85 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Vertical Aviation	Registration:	N331PF
Model/Series:	Hummingbird 300L	Aircraft Category:	Helicopter
Year of Manufacture:	2021	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	1907
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	February 21, 2024 Annual	Certified Max Gross Wt.:	2800 lbs
Time Since Last Inspection:	85.3 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	85.3 Hrs at time of accident	Engine Manufacturer:	Continental
ELT:	Not installed	Engine Model/Series:	VA540NND1NG
Registered Owner:	On file	Rated Power:	280 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Dusk
Observation Facility, Elevation:	TTA,247 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	20:45 Local	Direction from Accident Site:	234°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	Unknown / Unknown
Wind Direction:		Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.24 inches Hg	Temperature/Dew Point:	16°C / 13°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	New Hill, NC	Type of Flight Plan Filed:	None
Destination:	New Hill, NC	Type of Clearance:	None
Departure Time:		Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	35.68111,-78.93555(est)

Administrative Information

Investigator In Charge (IIC):	Spencer, Lynn
Additional Participating Persons:	Jerry Toms; FAA/FSDO; Greensboro, NC
Original Publish Date:	July 2, 2024
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=194381

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).