



Aviation Investigation Final Report

Location:	Verbena, Alabama	Accident Number:	ERA19FA047
Date & Time:	November 16, 2018, 11:30 Local	Registration:	N510CP
Aircraft:	Bell OH 58C	Aircraft Damage:	Substantial
Defining Event:	Low altitude operation/event	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Positioning		

Analysis

The pilot was repositioning the helicopter for routine maintenance with a passenger onboard. According to witness statements, the helicopter approached a river and flew over it at a low altitude. The helicopter then impacted power lines that spanned the river, descended, and came to rest in the water.

Postaccident examination of the engine and airframe revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation. Therefore, it is likely that the pilot was flying low over the river and did not see the power lines before the helicopter struck them.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper decision to conduct a low-level flight over a river, and his failure to see and avoid power lines, which resulted in the helicopter's impact with power lines and the water.

Findings

Environmental issues	Wire - Awareness of condition
Personnel issues	Monitoring environment - Pilot
Personnel issues	Decision making/judgment - Pilot

Factual Information

History of Flight

Maneuvering-low-alt flying	Low altitude operation/event (Defining event)
Maneuvering	Controlled flight into terr/obj (CFIT)

On November 16, 2018, about 1130 central standard time, a Bell OH-58C helicopter, N510CP, was substantially damaged when it was involved in an accident near Verbena, Alabama. The pilot and passenger were fatally injured. The airplane was operating as a Title 14 *Code of Federal Regulations* Part 91 positioning flight.

According to the mechanic, the helicopter was being repositioned to the Chilton County Airport (02A), Clanton, Alabama, for routine maintenance. On the day of the accident, the pilot departed Columbus Airport, Columbus, Georgia (CSG), then stopped at Auburn University Regional Airport (AUO) to pick up a passenger before continuing to 02A.

According to witness statements, the helicopter approached a river from the east and then flew north over the river at a low altitude before doing a maneuver to head south. One witness saw the helicopter "catch and turn" then impact the water. Another witness reported hearing a loud explosion, and when he went to the river, the wreckage was below where the power lines were, but the power lines were no longer across the river.

After the accident, a severed power line was located in the river.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	53, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	Yes
Medical Certification:	BasicMed	Last FAA Medical Exam:	August 9, 2017
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	4283 hours (Total, all aircraft)		

Passenger Information

Certificate:	Student	Age:	22, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N510CP
Model/Series:	OH 58C No Series	Aircraft Category:	Helicopter
Year of Manufacture:	1970	Amateur Built:	
Airworthiness Certificate:	Certificate of authorization or waiver (COA)	Serial Number:	40734
Landing Gear Type:	High skid	Seats:	4
Date/Type of Last Inspection:	September 7, 2018 Annual	Certified Max Gross Wt.:	1745 lbs
Time Since Last Inspection:		Engines:	1 Turbo shaft
Airframe Total Time:	6123.6 Hrs as of last inspection	Engine Manufacturer:	Rolls-Royce
ELT:	C91 installed, not activated	Engine Model/Series:	M250
Registered Owner:	Columbus Police Department	Rated Power:	250 Horsepower
Operator:	Columbus Police Department	Operating Certificate(s) Held:	Certificate of authorization or waiver (COA)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KSCD, 569 ft msl	Distance from Accident Site:	22 Nautical Miles
Observation Time:	11:35 Local	Direction from Accident Site:	20°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	290°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.19 inches Hg	Temperature/Dew Point:	11°C / 3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Auburn, AL (AUO)	Type of Flight Plan Filed:	None
Destination:	Clanton, AL (02A)	Type of Clearance:	None
Departure Time:		Type of Airspace:	Class D

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:	32.822223,-86.459167

At the accident site, the Coosa River was about 1,500 ft wide; the wreckage was located midway across the river, about 700 ft from shore and about 400 ft downstream from power lines.

The helicopter main rotor hub and blades were not recovered. The main rotor mast exhibited an overstress fracture where the main rotor hub had separated from the mast; deformation of the mast was visible near this fracture. The upper wire strike protection was examined and was intact.

The main transmission input shaft was not recovered. The freewheeling unit could be rotated in the freewheeling direction. The first segment of the tail rotor drive shaft, between the engine reduction gearbox and the oil cooler blower, was fractured but remained connected at its ends. Tail rotor control continuity was confirmed from the tail rotor blades to the forward section of the tail boom. Manipulation of the tail rotor drive shaft at the forward section of the tail boom resulted in movement of the tail rotor. In addition, continuity was confirmed from the forward section of the tail boom to the tail rotor pitch links. Tail rotor control continuity from the bellcrank forward of the main rotor transmission to aft fuselage, where the tail boom separation occurred, was confirmed through multiple overload fractures. The tail rotor blades were whole and did not exhibit impact damage.

The main rotor transmission was separated from its right-side pylon mount but remained connected to its left-side pylon mount. Both the left and right transmission pylon mounts remained installed on the airframe. The main rotor hydraulic actuators remained installed on the airframe and its attachments were secure. The main transmission input shaft coupling exhibited an overload fracture.

Main rotor flight control continuity was confirmed from the main rotor swash plate and collective lever to main rotor hydraulic actuators, and subsequently to the broom closet through multiple overload fractures. Both cyclic controls were impact separated from their respective mounts but remained attached to the cockpit structure via electrical wiring through the mounts. The left collective control remained attached to the fuselage through wires. No pedal controls or the right collective control were located.

Fuel was present in the fuel supply line to the fuel spray nozzle and no debris was noted in the fuel.

The engine controls were impact separated from the engine control attachment points. The engine control on the left collective control appeared to be intact and continuous through the cable until the steel sheath was pulled, but not separated.

The engine oil reservoir contained engine oil. The engine bleed valve could be operated by hand. The N1 and N2 turbines could not be rotated. The compressor vanes were impact damaged. A few of the 1st stage compressor blades were bent opposite the direction of travel. In addition, rotational scoring was noted on the compressor blade case. The oil cooler blower could be rotated by hand. The 1st stage power turbine blades that were examined with a borescope showed no thermal damage. Examination of the engine did not reveal evidence of any preimpact damage, failure, or fire.

Medical and Pathological Information

The autopsy of the pilot was performed by the Alabama Department of Forensic Sciences, Montgomery, Alabama. The cause of death was blunt impact injuries.

Toxicology testing performed at the Federal Aviation Administration Forensic Sciences Laboratory tested negative for carbon monoxide and ethanol. Rosuvastatin was identified in blood and urine specimens, which is a prescription cholesterol-lowering medication that is not considered impairing.

Preventing Similar Accidents

Manage Risk: Good Decision-making and Risk Management Practices are Critical (SA-023)

The Problem

Although few pilots knowingly accept severe risks, accidents can also result when several risks of marginal severity are not identified or are ineffectively managed by the pilot and compound into a dangerous situation. Accidents also result when the pilot does not accurately perceive situations that involve high levels of risk. Ineffective risk management or poor aeronautical decision-making can be associated with almost any type of fatal general aviation accident.

What can you do?

- Develop good decision-making practices that will allow you to identify personal attitudes that are hazardous to safe flying, apply behavior modification techniques, recognize and cope with stress, and effectively use all resources. Understand the safety hazards associated with human fatigue and strive to eliminate fatigue contributors in your life.
- Understand that effective risk management takes practice. It is a decision-making process by which you can systematically identify hazards, assess the degree of risk, and determine the best course of action.
- Be honest with yourself and your passengers about your skill level and proficiency. Refuse to allow external pressures, such as the desire to save time or money or the fear of disappointing passengers, to influence you to attempt or continue a flight in conditions in which you are not comfortable.
- Be honest with yourself and the FAA about your medical condition. If you have a medical condition or are taking any medication, do not fly until your fitness for flight has been thoroughly evaluated.
- Plan ahead with flight diversion or cancellation alternatives, and brief your passengers about the alternatives before the flight.

See <https://www.nts.gov/Advocacy/safety-alerts/Documents/SA-023.pdf> for additional resources.

The NTSB presents this information to prevent recurrence of similar accidents. Note that this should not be considered guidance from the regulator, nor does this supersede existing FAA Regulations (FARs).

Administrative Information

Investigator In Charge (IIC):	Hill, Millicent
Additional Participating Persons:	Clay Caessens; FAA/FSDO; Birmingham, AL Mark Stutzner; Bell Helicopter; Fort Worth, TX Jack Johnson; Rolls-Royce; Indianapolis, IN
Original Publish Date:	December 3, 2020
Last Revision Date:	
Investigation Class:	Class 2
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=98646

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](#).