



National Transportation Safety Board Aviation Accident Preliminary Report

Location:	Elba, NY	Accident Number:	ERA22FA207
Date & Time:	April 26, 2022, 13:00 Local	Registration:	N507TJ
Aircraft:	BELL HELICOPTER TEXTRON CANADA 429	Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional		

On April 26, 2022, at 1300 eastern daylight time, a Bell Helicopter Textron Canada, 429, N507TJ, was substantially damaged when it was involved in an accident near Elba, New York. The instructor pilot and company pilot were fatally injured. The helicopter was operated as a Title 14 Code of Federal Regulations Part 91 instructional flight.

A representative of the operator, Mercy Flight Inc., stated that the instructional flight was a flight review being conducted by the helicopter manufacturer's flight instructor with multiple flight reviews planned throughout the day; the accident flight was the second flight of the day.

Preliminary Automatic Dependent Surveillance-Broadcast (ADS-B) data revealed that the flight departed Genesee County Airport (GVQ) Batavia, New York about 1110 and performed multiple maneuvers in the immediate vicinity of the airport before departing to the east. About 20 minutes later, the helicopter returned to the airport and performed additional maneuvers in the airport traffic pattern for about 30 minutes before again departing the traffic pattern. Shortly after, the helicopter climbed to 2,600 ft mean sea level (msl) at 70 knots while on a track of 069° magnetic. Over the next 40 seconds, the helicopter descended to 1,900 ft msl at 94 knots as it entered a right turn, completing an oval ground track as it climbed and leveled at 2,450 ft msl and 55 knots for several seconds, before descending to 1,975 ft msl (1,227 ft above ground level) while maintaining between 20 and 13 knots.

Several eyewitnesses observed and heard the helicopter flying overhead before to the accident. One stated that he observed the helicopter "almost stationary" after it flew over, and then as it started to fly away, he heard a loud "bang", and the helicopter began to descend out of control. An additional witness stated that the helicopter was hovering before it "fell apart" with the fuselage falling separately and another witness stated she did not see the helicopter but heard what sounded like an engine making a "whooshing" sound, then "three loud and rapid cracks" in succession. She further stated that she heard the helicopter impact the ground and heard the rotor blades striking the ground rapidly.

The helicopter fuselage containing the cockpit, engine, transmission, and rotor assembly struck electrical distribution wires as it impacted the terrain at an elevation of about 1,220 ft

msl. The helicopter came to rest on its left side and a small post-crash fire developed but was quickly extinguished by first responders. The wreckage path was about 1,900 ft long and oriented in a direction of 250°. The tail boom, containing the tail rotor, drive shaft, vertical fin and horizontal stabilizer remained largely intact and was discovered about 390 ft from the main wreckage, on a heading of about 075°. A section of the tail boom and carbon fiber tail rotor shaft was discovered 1,620 ft and 072° from the main wreckage; it exhibited an angled fracture line consistent with main rotor blade contact. (Figure 1)



Figure 1 Figure 1 Tail rotor and main rotor blade slice in tail boom.

All four main rotor blades were separated from the main rotor head and discovered within 550 ft northwest of the main wreckage. The span of all four blades were recovered. The cyclic and collective push-pull tubes were traced to their respective control inputs and actuators. Fractures in the system were consistent with overload. Control continuity was confirmed for both collective and cyclic controls.

The main rotor drive system gear box remained partially attached to the airframe with both left and right longitudinal pitch restraints separated from their respective stops. Both input driveshafts could be manually rotated counterclockwise in the freewheeling direction but could not be manually rotated in the clockwise direction, likely due to impact damage.

The tail rotor input controls were physically actuated confirming control continuity. The tail rotor drive shaft remained connected to the main gearbox but was fractured about midway to blower.

Both engines were located within the main wreckage. Examination revealed damage

consistent with impact damage. The engine switches in the cockpit located in the center below the glareshield exhibited minor deformation. The No. 1 engine switch was undamaged and functioned smoothly. It was discovered in the “OFF” position. The No. 2 engine switch was slightly bent and was discovered in the “ON” position.

Multiple electronic recording devices were removed from the wreckage and retained for download of the non-volatile memory. The remaining wreckage was retained for further examination.

Aircraft and Owner/Operator Information

Aircraft Make:	BELL HELICOPTER TEXTRON CANADA	Registration:	N507TJ
Model/Series:	429 NO SERIES	Aircraft Category:	Helicopter
Amateur Built:			
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Designator Code:			

Meteorological Information and Flight Plan

Conditions at Accident Site:	VMC	Condition of Light:	Day
Observation Facility, Elevation:	ROC, 540 ft msl	Observation Time:	12:54 Local
Distance from Accident Site:	21 Nautical Miles	Temperature/Dew Point:	12°C / 4°C
Lowest Cloud Condition:		Wind Speed/Gusts, Direction:	10 knots / , 290°
Lowest Ceiling:	Broken / 3400 ft AGL	Visibility:	10 miles
Altimeter Setting:	30.07 inches Hg	Type of Flight Plan Filed:	None
Departure Point:	Batavia, NY (CVQ)	Destination:	Elba, NY

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	43.063838, -78.139356

Administrative Information

Investigator In Charge (IIC): Mccarter, Lawrence

Additional Participating Persons: Matthew Rigsby; FAA AVP; Haslet, TX
Beverly Harvey; Transportation Safety Board of Canada; Gatineau, OF
Dennis Crandall; Mercy Flight Inc.; Buffalo, NY
Benoit Albert; Bell Helicopters ; OF
Merryn Spielman; Pratt and Whitney Canada; OF

Note: