



Aviation Investigation Factual Report

Location:	North Charleston, South Carolina	Accident Number:	ERA23LA319
Date & Time:	August 1, 2023, 15:30 Local	Registration:	N31PB
Aircraft:	BELL HELICOPTER TEXTRON CANADA 407	Aircraft Damage:	Substantial
Defining Event:	Flight control sys malf/fail	Injuries:	1 Minor
Flight Conducted Under:	Public aircraft		

Factual Information

On August 1, 2023, about 1530 eastern daylight time, a Bell Helicopter Textron Canada 407, N31PB, was substantially damaged when it was involved in an accident near North Charleston, South Carolina. The commercial pilot sustained minor injuries. The helicopter was operated as a public aircraft.

The helicopter, operated by the Charleston County Sheriff's Office, was on a positioning flight from Sumter Airport (SMS), Sumter, South Carolina, to Charleston AFB International Airport (CHS), North Charleston, South Carolina. The pilot reported that, after about 35 minutes of flight, the helicopter started to yaw slowly to the right. The pilot applied left pedal with no response. The pilot stated, "It felt as if the pedals were not attached." He contacted CHS tower and declared an emergency. He set up for a straight-in approach to runway 15. While crossing the runway threshold, about 20 ft above ground level, the helicopter started to yaw to the right. He lowered the collective, but the helicopter continued to yaw right. He then reduced the throttle and attempted to maintain a level attitude. The helicopter struck the ground adjacent to runway 15 at a high rate of descent, coming to rest in the grass. The tail rotor boom severed during the impact sequence.

Inspectors with the Federal Aviation Administration (FAA) responded to the accident site and examined the wreckage. They confirmed substantial damage to the fuselage, main rotor system, and tail rotor system. They found 1 of the 2 bolts that secured the tail rotor pitch change lever assembly was missing (Photo 1). The lever assembly was disconnected from the trunnion. The other bolt that connected the levers to the rod assembly was in place, but loose; the cotter pin for its attachment nut was missing (Photo 2).



Photo 1: Tail rotor Pitch Change Lever Assembly. Red arrow points to area of missing bolt.

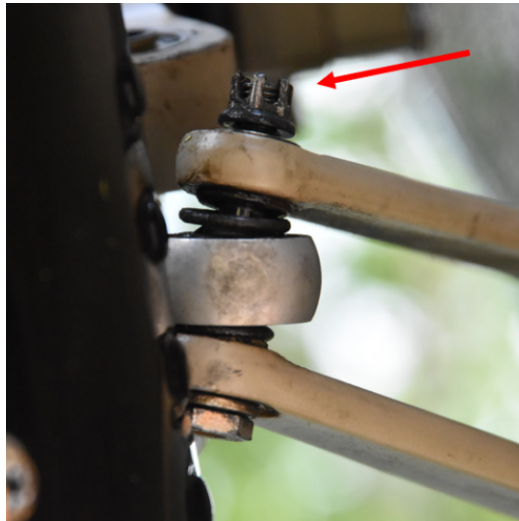


Photo 2: Pitch Change Lever Assembly. Red arrow points to loose nut on bolt; cotter pin was missing.

A review of the maintenance records by FAA inspectors revealed that a 300 hour/3 month inspection was performed on the helicopter on June 28, 2023. The helicopter had been flown about 15.4 hours since this inspection. According to Bell Helicopter technical support personnel, the inspection/lubrication procedure that was accomplished on June 28 would not require removal of the lever assembly bolts; however, the nuts and bolts should have been clearly visible during the inspection of the area. The mechanic who performed the inspection stated that he must have overlooked them.

Pilot Information

Certificate:	Commercial	Age:	57, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	October 28, 2022
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	February 2, 2022
Flight Time:	3743 hours (Total, all aircraft), 333 hours (Total, this make and model), 3505 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL HELICOPTER TEXTRON CANADA	Registration:	N31PB
Model/Series:	407	Aircraft Category:	Helicopter
Year of Manufacture:	2012	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	54321
Landing Gear Type:	Emergency float; High skid	Seats:	7
Date/Type of Last Inspection:	June 28, 2023 Annual	Certified Max Gross Wt.:	5250 lbs
Time Since Last Inspection:	15 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	4617 Hrs at time of accident	Engine Manufacturer:	Rolls-Royce
ELT:	C91A installed, activated, did not aid in locating accident	Engine Model/Series:	C47B
Registered Owner:	COUNTY OF CHARLESTON	Rated Power:	
Operator:	Charleston County Sheriff's Office	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KCHS,48 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	15:56 Local	Direction from Accident Site:	165°
Lowest Cloud Condition:	Scattered / 4500 ft AGL	Visibility	10 miles
Lowest Ceiling:	Broken / 5500 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	110°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.03 inches Hg	Temperature/Dew Point:	31°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sumter, SC (SMS)	Type of Flight Plan Filed:	None
Destination:	North Charleston, SC	Type of Clearance:	VFR
Departure Time:	14:45 Local	Type of Airspace:	Class C

Airport Information

Airport:	Charleston AFB International CHS	Runway Surface Type:	Concrete
Airport Elevation:	46 ft msl	Runway Surface Condition:	Dry
Runway Used:	15	IFR Approach:	None
Runway Length/Width:	9001 ft / 150 ft	VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	32.90605,-80.04328(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	Charles Lewis; FAA/FSDO; Columbia, SC Nora Vallée; Transportation Safety Board of Canada; Gatineau, OF Gary Howe; Bell Helicopter; Ft. Worth , TX
Report Date:	
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=192772

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](#).