



Aviation Investigation Preliminary Report

Location:	Nashua, IA	Accident Number:	CEN24FA287
Date & Time:	July 29, 2024, 13:30 Local	Registration:	N94XA
Aircraft:	Bell 206	Injuries:	1 Fatal
Flight Conducted Under:	Part 137: Agricultural		

On July 29, 2024 about 1330 central standard time, a Bell 206-B3 Helicopter, N94XA, was destroyed when it was involved in an accident near Nashua, Iowa. The pilot was fatally injured. The helicopter was operated as a Title 14 *Code of Federal Regulations* Part 137 aerial application flight.

The operator reported that the pilot was scheduled to spray insecticide and fungicide over local cornfields. Preliminary data retrieved from an onboard GPS aerial application guidance system showed that the helicopter departed from a farm, about 3 statute miles west of Nashua, at 0905, and proceeded to spray several fields south of the accident site. At 1244, the helicopter began a back-and-forth pattern in an east/west direction over a field bisected by a power transmission line. The flight track ceased at 1326:50, about 1,750 feet west of the accident site.

The helicopter came to rest inverted in a cornfield about 200 feet southeast of a powerline tower and was oriented on a heading of 280° true. All the major structural components of the helicopter were located at the accident site. The first piece of wreckage found was a section of the main rotor blade afterbody (upper and lower blade skins and sandwiched aluminum honeycomb) located about 10 feet east of the powerlines. Two severed powerline conductors were observed near the wreckage, and an illegible black and white sticker was removed by investigators from the intact west conductor that sustained abrasion damage.

The airframe was found fragmented into multiple pieces consistent with impact forces. The nose section of the fuselage was found underneath the main fuselage at the accident site. A fracture of the semi-monocoque aft fuselage was observed and found about 40 ft west of the main fuselage. The tail boom exhibited several fractures and was strewn about the wreckage site. The upper wire strike cutter did not show evidence of any contact with wires. The lower wire strike cutter exhibited evidence of contact with wires. The main rotor hub and blades were found about 80 feet southeast of the main fuselage. Both blade spars were intact from the grip

to the blade tips. Both blades remained attached to the hub through their respective blade bolts. The mast nut remained attached to the mast. The mast was fractured just below the main rotor hub static contact stop area consistent with bending overload during the accident sequence. The mast remained installed in the main transmission. The transmission drive input was rotated by hand, and free movement through the transmission was observed with corresponding mast rotation. The main driveshaft was fractured in overload at the forward main transmission flexures consistent with impact forces during the impact sequence. The isolation mount under the forward KAflex coupling sustained substantial gouging consistent with rotational contact from the KAflex coupling during the accident sequence. The aft tail boom section and attached tail rotor were found about 110 ft east of the main fuselage. The aft tail boom was fractured about 4 feet forward of the tail rotor gearbox. The tail rotor assembly remained intact and attached to its mounting pads. The tail rotor assembly was rotated by hand, and free rotation through the tail rotor gearbox input was observed. Pitch change through the tail rotor blades was observed by hand twisting the blades. The airframe did not reveal signs of pre-impact anomalies that would have precluded normal operation.

The engine was discovered to be separated between the gearbox & exhaust collector support/hot section. The hot section was located about 45 feet from the main fuselage. The turbine section, including outer combustion & compressor discharge tubes, contained extensive crush damage. The compressor & scroll assembly remained securely attached to the gearbox and was located in the area of the engine compartment. All engine mounts were fractured. The KAflex driveshaft remained securely attached to the freewheeling unit & engine gearbox PTO drive. The KAflex shaft had separated at the main rotor transmission & associated flexor straps. The internal driveshaft and freewheeling unit operated properly when rotated by hand. N1 continuity was established from the compressor inlet through the gearbox & starter generator by hand rotation. All associated gearbox N1 drive pads were continuous & smooth. N2 continuity was established throughout the gearbox, KAflex shaft & all associated drive pads by hand rotation. A straw-colored fluid with the odor of Jet A1 was evident in the airframe filter, engine filter, & fuel tubes between the engine-driven pump and fuel control unit (FCU). The fuel pump & filter were removed and examined. Both the airframe & engine fuel filters contained an amount of foreign material but were not occluded. The fuel collected appeared clean & clear of debris. The engine did not reveal signs of pre-impact anomalies that would have precluded normal operation.

A representative of the helicopter operator flew in a similar Bell 206 helicopter, the last known flight path, towards the wires along the tree line from west to east (090° heading). He reported that the wires were masked by a hill in front of the helicopter's route and were practically invisible with the background of the cornfield. He also stated that while flying on the south side of the tree line at spray height, he could not see the transmission tower to his left, and the next tower to his right was out of his field of view.

An automated 911 call was made from the pilot's iPhone as a result of the impact.

The helicopter was recovered and transported to a secure location for further examination at a later date.

Aircraft and Owner/Operator Information

Aircraft Make:	Bell	Registration:	N94XA
Model/Series:	206 B	Aircraft Category:	Helicopter
Amateur Built:			
Operator:	Xtreme Aviation LLC	Operating Certificate(s) Held:	Agricultural aircraft (137)
Operator Designator Code:			

Meteorological Information and Flight Plan

Conditions at Accident Site:	VMC	Condition of Light:	Day
Observation Facility, Elevation:	KCCY,1125 ft msl	Observation Time:	13:35 Local
Distance from Accident Site:	8 Nautical Miles	Temperature/Dew Point:	28°C /23°C
Lowest Cloud Condition:	Few / 2500 ft AGL	Wind Speed/Gusts, Direction:	/ ,
Lowest Ceiling:	Broken	Visibility:	10 miles
Altimeter Setting:	29.85 inches Hg	Type of Flight Plan Filed:	None
Departure Point:	Nashua, IA	Destination:	Nashua, IA

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	42.961671,-92.49061

Administrative Information

Investigator In Charge (IIC):	Brown, Zane
Additional Participating Persons:	Michael Newhall; FAA Flight Standards; Des Moines, IN Nick Shepler; Rolls-Royce; Indianapolis, IN Mark C. Stuntzner; Bell Helicopter Flight Safety; Fort Worth , TX Helen Tsai; Canada TSB
Investigation Class:	Class 3
Note:	