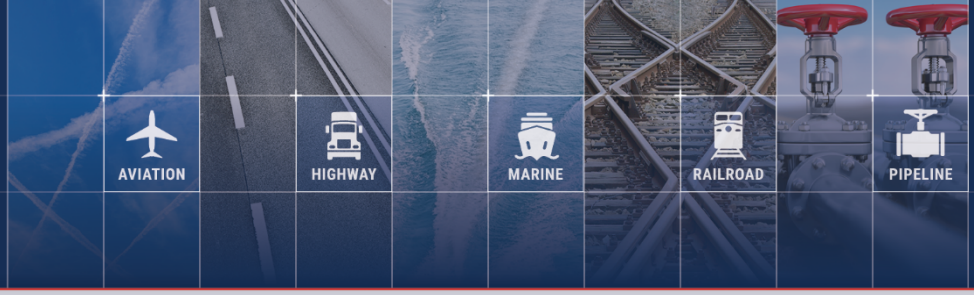

Aviation Investigation Final Report

Location:	Oakdale, Illinois	**Accident Number:**	CEN23FA340
Date & Time:	July 31, 2023, 13:11 Local	**Registration:**	N567VF
Aircraft:	RICHARDS HEAVYLIFT HELO INC UH-1H	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot was flying an aerial application flight in a pattern consisting of north-south passes starting on the western edge of the field with turns to the east to work the field. ADS-B and on-board GPS devices that recorded the accident flight showed that before the accident, for undetermined reasons, the helicopter turned to the west, descended, and impacted terrain.

An examination of the helicopter and its engine did not detect any preimpact anomalies that would have contributed to a loss of control. A visual examination of the nearby power lines did not show evidence of arcing or damage to the lines or power pole.

The pilot's severe coronary artery disease increased his risk of experiencing a sudden impairing or incapacitating cardiac event, such as arrhythmia, chest pain, or heart attack. The autopsy does not provide evidence that such an event occurred; however, such an event does not leave reliable autopsy evidence if it occurs shortly before death. Even severe coronary artery disease may not cause major symptoms.

Toxicology results indicate that the pilot had used the medication cetirizine. The cetirizine levels in his cavity blood and tissue indicate a possibility that the pilot may have been experiencing some associated impairing effects, such as mild sedation, at the time of the accident. However, it is also possible that the pilot was not experiencing any impairing effects of his cetirizine use.

Probable Cause and Findings

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

An in-flight loss of control for undetermined reasons.

Findings

Personnel issues	Aircraft control - Pilot
Not determined	(general) - Unknown/Not determined
Aircraft	(general) - Unknown/Not determined

Factual Information

History of Flight

Maneuvering-low-alt flying	Unknown or undetermined
Maneuvering-low-alt flying	Loss of control in flight (Defining event)
Maneuvering-low-alt flying	Collision with terr/obj (non-CFIT)

On July 31, 2023, about 1311 central daylight time (CDT), a Richard's Heavylift Helo UH-1H helicopter, N567VF, was substantially damaged when it was involved in an accident near Oakdale, Illinois. The pilot was fatally injured. The helicopter was operated as a Title 14 *Code of Federal Regulations* Part 137 aerial application flight.

ADS-B data showed the helicopter departed the Mount Vernon Airport, Mount Vernon, Illinois, about 0714 CDT (all times CDT unless noted). After spraying several fields, the helicopter began to work the field closest to the accident site at 1305. The helicopter made several passes over the field from the north and south. Each pass appeared consistent with turns to the east to continue spraying the field. At 1310, the helicopter made a turn to the west over the powerlines and then impacted terrain.

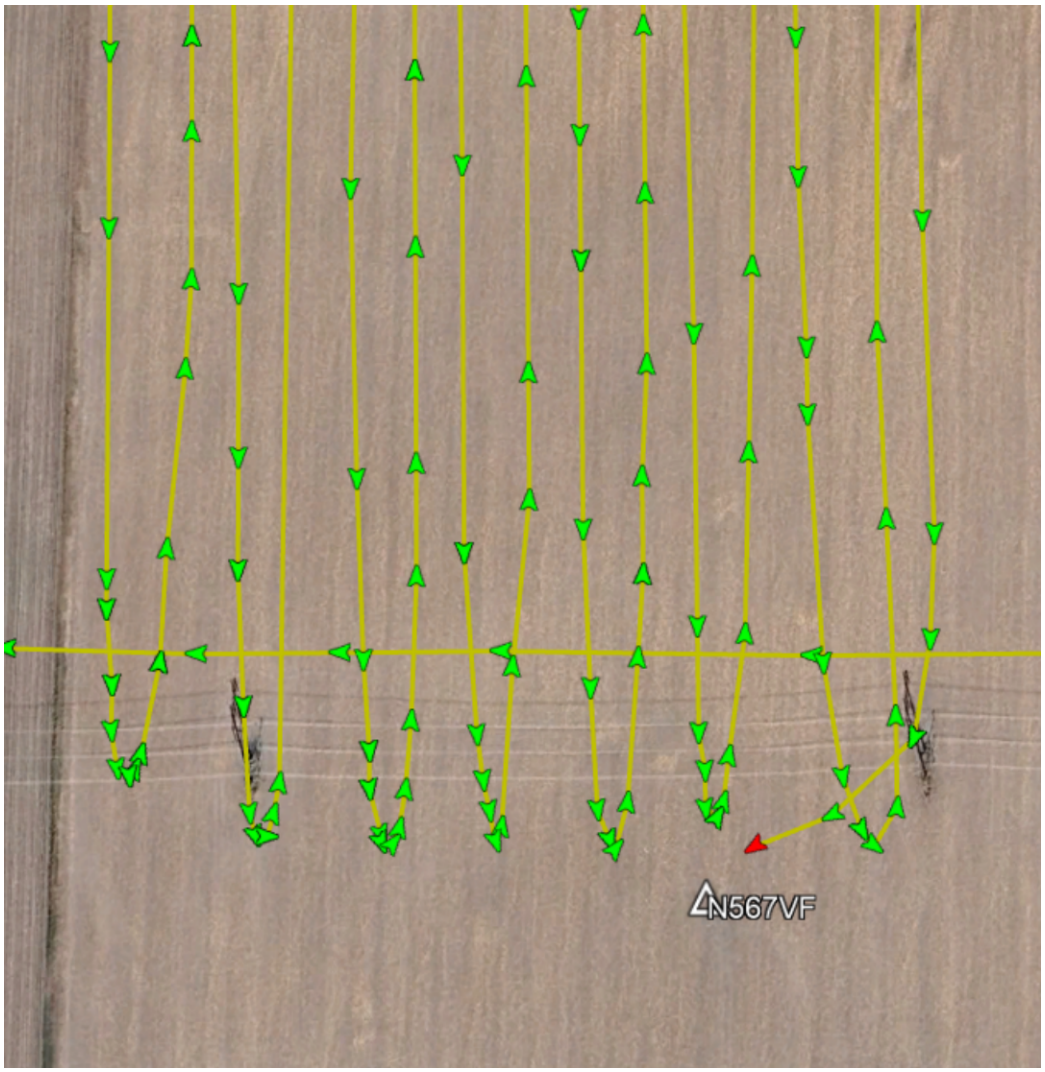

Figure 1. ADS-B Data with Wreckage Location

A resident who lives about 1.4 miles to the west of the accident site reported hearing and seeing the helicopter as it sprayed the field. The engine sounded normal until she did not hear an engine sound. When she looked over towards the field, she saw a plume of dust.

Pilot Information

Certificate:	Commercial	**Age:**	41,Male
Airplane Rating(s):	None	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	4-point
Instrument Rating(s):	Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	Helicopter	**Toxicology Performed:**	Yes
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	January 16, 2023
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	February 14, 2023
Flight Time:	(Estimated) 8103.7 hours (Total, all aircraft), 163.7 hours (Last 90 days, all aircraft), 130.2 hours (Last 30 days, all aircraft), 1.5 hours (Last 24 hours, all aircraft)		

Flight records could not be located for the pilot.

Partial flight times were extracted from company dispatch logs and records on file with the FAA.

The pilot also worked part time as an air ambulance pilot. The air ambulance company reported that the pilot passed a check ride in a Bell 407 helicopter on February 14, 2023.

Aircraft and Owner/Operator Information

Aircraft Make:	RICHARDS HEAVYLIFT HELO INC	**Registration:**	N567VF
Model/Series:	UH-1H	**Aircraft Category:**	Helicopter
Year of Manufacture:	1965	**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	65-10016
Landing Gear Type:	High skid	**Seats:**	2
Date/Type of Last Inspection:	April 1, 2023 Annual	**Certified Max Gross Wt.:**	9500 lbs
Time Since Last Inspection:	130 Hrs	**Engines:**	1 Turbo shaft
Airframe Total Time:	8113.5 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming (Ozark)
ELT:	Not installed	**Engine Model/Series:**	T-53-L-703
Registered Owner:	KASH HELICOPTER SERVICES LLC	**Rated Power:**	1125 Lbs thrust
Operator:	KASH HELICOPTER SERVICES LLC	**Operating Certificate(s) Held:**	Agricultural aircraft (137)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KSAR,538 ft msl	**Distance from Accident Site:**	14 Nautical Miles
Observation Time:	13:15 Local	**Direction from Accident Site:**	243°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	60°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.15 inches Hg	**Temperature/Dew Point:**	28°C / 20°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Mount Vernon, IL (KMVN)	**Type of Flight Plan Filed:**	None
Destination:	Mount Vernon, IL (KMVN)	**Type of Clearance:**	None
Departure Time:	07:14 Local	**Type of Airspace:**	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	N/A	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	38.25428,-89.43689

The helicopter came to rest in a corn field. All major helicopter components were located at the accident site. The main wreckage consisted of the fuselage, transmission, engine, tail boom, and tail rotors. The main rotor mast was fractured at a point even with the bottom of the main rotor mast hub. Both main rotor blades were impact damaged and remained attached to the rotor hub. Blade skin was found around the main wreckage site. A debris field of smaller items from the helicopter were located mainly to the west, north, and east of the main wreckage.

The helicopter was equipped with an Ag-NAV Guia Platinum P771, which is a compact GPS device used to provide customizable agricultural spray application data on a color moving map. A Garmin Aera 510, which is a portable GPS receiver capable of storing date, route-of-flight, and flight-time information was also located in the wreckage. The devices were removed and shipped to the NTSB Recorders Laboratory for data download. See the Test and Research section for additional information.

An extensive review of the helicopter systems is contained in the Helicopter Specialist Factual Report in the public docket for this report. No preimpact anomalies were found with the airframe or engine that would have contributed to the accident.

Ag-Nav Guia Platinum P771 & Garmin Aera 510

The downloaded Ag-Nav P771 data contained files related to the accident flight. For the accident flight, data was recorded from 0718:04 to 1310:11.9. The data was recorded at 5 cycles per second.

Data extracted from the Garmin Aera 510 included the accident flight and recorded data from 0710:31 to 1311:12. The data rate varied from 1 second per sample to greater than 60 seconds per sample.

Figure 2. Charted Ag-Nav & Garmin GPS Data

Altitude data recorded by both devices were consistent with the pilot flying over the southern power lines for each turn to reverse course. The Ag-Nav did not record the helicopter's final climb.

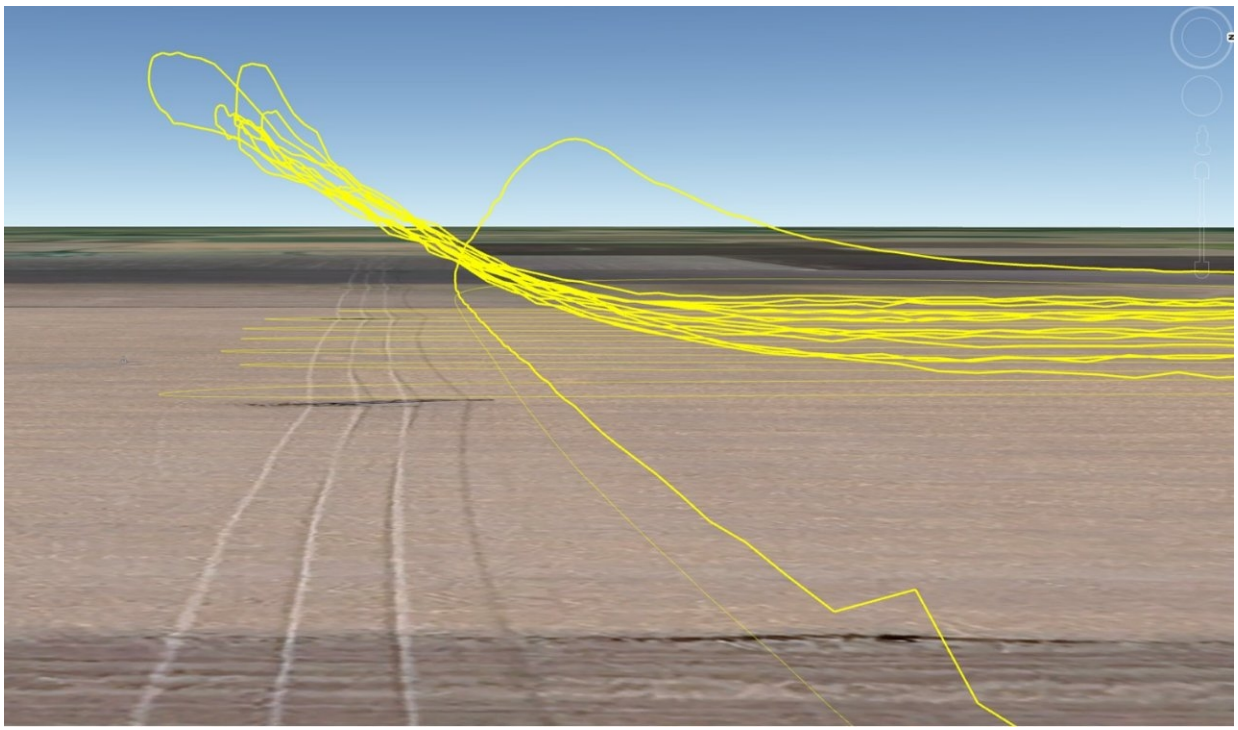

Figure 3. AgNav data plots

The Garmin recorded the helicopter's climb and westerly turn and showed a close path near a power pole; however, no wire damage or signatures of arcing were observed on the power lines that were located about 45 yards north of the accident site. No electrical arcing or evidence of a wire strike was seen on the wreckage.

Medical and Pathological Information

An autopsy of the pilot was performed as authorized by the Washington County Coroner. The autopsy report listed the cause of death as blunt force injuries. The pilot's autopsy identified coronary artery disease, with calcific plaque causing 90% narrowing of the left anterior descending coronary artery and 75% narrowing of the right coronary artery. The remainder of the autopsy examination, including visual examination of the heart, did not identify other significant natural disease.

The FAA Forensic Sciences Laboratory performed toxicological testing on specimens from the pilot, which detected the presence of cetirizine and meloxicam.

Cetirizine is a second-generation antihistamine medication that is available over the counter and is commonly used to treat allergy symptoms. Cetirizine often carries a warning that users may experience drowsiness and should be careful when driving a motor vehicle or operating machinery. Data on sedation and psychomotor impairment from cetirizine are mixed, with some studies finding some sedating and impairing effects. The FAA states that pilots should wait 48 hours after using cetirizine before flying, to allow time for the drug to be cleared from circulation.

Meloxicam is a prescription non-steroidal anti-inflammatory (NSAID) medication commonly used to treat arthritis pain. It conveys some increased risk of cardiovascular thrombotic events such as heart attack. However, it is not typically impairing.

The pilot did not report using any medications on his most recent application for an FAA medical certificate, dated January 16, 2023.

Administrative Information

Investigator In Charge (IIC):	Aguilera, Jason
Additional Participating Persons:	Jess Reynolds; FAA FSDO; St. Louis, MO Ken Essary; Ozark Aeroworks; Springfield, MO
Original Publish Date:	July 23, 2025
Last Revision Date:	
Investigation Class:	Class 3
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=192758