



Aviation Investigation Final Report

Location:	Atchison, Kansas	Accident Number:	CEN23LA308
Date & Time:	July 13, 2023, 16:15 Local	Registration:	N533DR
Aircraft:	Hughes 369D	Aircraft Damage:	Substantial
Defining Event:	Collision with terr/obj (non-CFIT)	Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot reported that, during an aerial application pass in a helicopter, he failed to observe a second lower powerline near a previously observed high-tension powerline. The pilot attempted to maneuver under the lower powerline but was unsuccessful, and the helicopter impacted the lower powerline and subsequently the terrain. The helicopter sustained substantial damage to the main rotor system, the tail boom, and the tail rotor system. The pilot reported there were no preaccident mechanical failures or malfunctions with the helicopter that would have precluded normal operation.

Probable Cause and Findings

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

The pilot's failure to adequately survey a field for obstructions prior to a low-level aerial application pass, which resulted in an impact with a powerline.

Findings

Personnel issues	Identification/recognition - Pilot
Environmental issues	Wire - Effect on operation

Factual Information

History of Flight

Maneuvering-low-alt flying	Collision with terr/obj (non-CFIT) (Defining event)
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Pilot Information

Certificate:	Commercial	Age:	32, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	3-point
Instrument Rating(s):	Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	October 21, 2022
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	November 18, 2022
Flight Time:	2045 hours (Total, all aircraft), 842 hours (Total, this make and model), 1985 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hughes	Registration:	N533DR
Model/Series:	369D	Aircraft Category:	Helicopter
Year of Manufacture:	1979	Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	490533D
Landing Gear Type:	Skid	Seats:	4
Date/Type of Last Inspection:	June 1, 2023 Annual	Certified Max Gross Wt.:	3000 lbs
Time Since Last Inspection:		Engines:	1 Turbo shaft
Airframe Total Time:	9071.9 Hrs at time of accident	Engine Manufacturer:	Rolls-Royce
ELT:	C126 installed	Engine Model/Series:	M250-C20,C20B
Registered Owner:	KANSAS FARM & RANCH INC	Rated Power:	420 Horsepower
Operator:	Heinen Bros Ag	Operating Certificate(s) Held:	Agricultural aircraft (137)
Operator Does Business As:	N/A	Operator Designator Code:	HN9G

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KSTJ,807 ft msl	Distance from Accident Site:	12 Nautical Miles
Observation Time:	16:53 Local	Direction from Accident Site:	44°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	20°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.84 inches Hg	Temperature/Dew Point:	30°C / 22°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:		Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	39.63563,-95.096776(est)

Preventing Similar Accidents

Preventing Obstacle Collisions in Agricultural Operations (SA-035)

The Problem

Accidents involving collisions with obstacles, including poles, wires, guy wires, meteorological evaluation towers (MET), or trees, are among the most common types of agricultural aircraft accidents. Some collisions involved obstacles that the pilots did not see (even during survey flights) but others involved obstacles that were known to the pilot and/or had characteristics that would make them visibly conspicuous.

What can you do?

- Maintain a quick-reference document (paper or electronic) at the operations base that contains field maps, charts, photographs, and details of all known obstacles. Frequently review current aeronautical charts for information about obstacles.
- Before you leave the ground, spend time becoming familiar with all available information about the target field and programming navigation equipment. Such preflight action can help reduce the potential for confusion or distraction in flight.
- Conduct aerial surveys of the target field but do not rely solely on an aerial survey to identify potential obstacles.
- Conduct regular ground surveys of fields. Some towers can be erected in hours, and obstacles can change since you last worked that field.
- When possible, use ground crews. They may be in a better position to see certain obstacles and help you ensure that your aircraft remains clear of them.
- Watch for shadows and irregularities in growth patterns to help identify obstacles.
- Speak with farmers and land owners to raise awareness about obstacle hazards.
- Use GPS and other technology to maintain awareness of obstacle locations.
- Be aware that workload, fatigue, sun glare, and distractions in the cockpit can adversely affect your ability to see, avoid, or remember obstacles.
- Understand the performance limitations and requirements for your aircraft, particularly when operating with heavier loads and at higher density altitudes.
- The National Agricultural Aviation Association's Professional Aerial Applicators' Support System reminds pilots that, when ferrying an aircraft or transitioning between sites, flying above 500 feet reduces obstacle collision risks: "Ferry Above Five and Stay Alive."

See <https://www.nts.gov/Advocacy/safety-alerts/Documents/SA-035.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):	Finne, Andrew
Additional Participating Persons:	Terrell, Richard; FAA-FSDO; Wichita, KS
Original Publish Date:	September 28, 2023
Last Revision Date:	
Investigation Class:	Class 4
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=192632

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](#).