



National Transportation Safety Board Aviation Accident Final Report

Location:	Randolph, Wisconsin	Accident Number:	CEN21LA349
Date & Time:	July 31, 2021, 09:30 Local	Registration:	N285RG
Aircraft:	ROBINSON HELICOPTER COMPANY R44 II	Aircraft Damage:	Substantial
Defining Event:	Collision with terr/obj (non-CFIT)	Injuries:	1 Serious
Flight Conducted Under:	Part 137: Agricultural		

Analysis

The pilot reported that while making a turn at the end of a field following an aerial application pass, the helicopter struck power lines and subsequently impacted the ground. The helicopter sustained substantial damage to the fuselage and main rotor system. The pilot did not report any preaccident mechanical malfunctions or failures with the helicopter that would have precluded normal operations. The pilot reported he was aware of the power lines but misjudged the position of the helicopter with reference to the lines and realized that he did not have sufficient room to make the turn without impacting the lines. The pilot stopped the turn and lowered the collective to attempt to pass under the power lines. The helicopter impacted the lower string of lines and impacted the ground, coming to rest almost upright.

Probable Cause and Findings

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

The pilot's failure to maintain clearance from power lines during a low-level aerial application flight.

Findings

Personnel issues	(general) - Pilot
Personnel issues	Monitoring environment - Pilot

Factual Information

History of Flight

Maneuvering-low-alt flying	Loss of visual reference
Maneuvering-low-alt flying	Collision with terr/obj (non-CFIT) (Defining event)

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	54, 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; Instrument helicopter	Toxicology Performed:	
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	June 4, 2021
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	March 27, 2020
Flight Time:	7321 hours (Total, all aircraft), 5960 hours (Total, this make and model), 7125 hours (Pilot In Command, all aircraft), 287 hours (Last 90 days, all aircraft), 205 hours (Last 30 days, all aircraft), 9 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON HELICOPTER COMPANY	Registration:	N285RG
Model/Series:	R44 II	Aircraft Category:	Helicopter
Year of Manufacture:	2006	Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	11323
Landing Gear Type:	Skid	Seats:	4
Date/Type of Last Inspection:	Annual	Certified Max Gross Wt.:	2500 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	3320 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	IO-540-AE1AS
Registered Owner:		Rated Power:	260 Horsepower
Operator:		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:	KUNU, 936 ft msl	Distance from Accident Site:	15 Nautical Miles
Observation Time:	10:15 Local	Direction from Accident Site:	117°
Lowest Cloud Condition:	Clear	Visibility	7 miles
Lowest Ceiling:	Overcast / 600 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	240°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.05 inches Hg	Temperature/Dew Point:	18° C / 16° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Randolph, WI	Type of Flight Plan Filed:	None
Destination:	Randolph, WI	Type of Clearance:	None
Departure Time:	09:30 Local	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:		Aircraft Explosion:	None
Total Injuries:	1 Serious	Latitude, Longitude:	43.55696, -89.03637(est)

Preventing Similar Accidents

Preventing Obstacle Collisions in Agricultural Operations

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.

Agricultural pilots should do the following:

- 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 leaving 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. Speak with farmers and land owners to raise awareness about obstacle hazards.
- 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. 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. Heavier loads and higher density altitudes can affect the performance of your aircraft.

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 http://www.nts.gov/safety/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):	Lemishko, Alexander		
Additional Participating Persons:	Peter Hupfer; FAA FSDO; Milwaukee, WI		
Original Publish Date:	February 8, 2022	Investigation Class:	4
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=103607		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).