



# Aviation Investigation Final Report

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<b>Location:</b>	Fowlerton, Texas	<b>Accident Number:</b>	CEN23LA086
<b>Date &amp; Time:</b>	January 10, 2023, 12:40 Local	<b>Registration:</b>	N811S
<b>Aircraft:</b>	ROBINSON HELICOPTER R44	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Collision with terr/obj (non-CFIT)	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Aerial observation		

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## Analysis

The pilot reported that the flight’s purpose was to guide cattle while at low altitude. During a turn with trees in the vicinity, the pilot heard a noise and felt a bump in the flight controls. The helicopter began to spin uncontrollably and impacted terrain, which resulted in substantial damage to the main rotor system, tail rotor system, fuselage, and tail boom.

Examination revealed that the tail rotor gear box and tail rotor (TR) blades were separated from the helicopter. The gear box housing fracture surfaces were consistent with overload. The size/shape of the dents and tree debris lodged in the leading edge of the TR blades was consistent with the size/shape of the tree branches that were broken.

The pilot reported that there were no preaccident mechanical malfunctions or failures 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 maintain clearance with trees, which resulted in an uncontrollable spin due to tail rotor damage.

## Findings

<b>Personnel issues</b>	Monitoring environment - Pilot
<b>Aircraft</b>	Altitude - Not attained/maintained
<b>Environmental issues</b>	Tree(s) - Contributed to outcome

## Factual Information

### History of Flight

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

<b>Certificate:</b>	Commercial	<b>Age:</b>	67, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Helicopter	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	October 14, 2022
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	August 14, 2021
<b>Flight Time:</b>	36920 hours (Total, all aircraft), 3500 hours (Total, this make and model), 128 hours (Last 90 days, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	ROBINSON HELICOPTER	<b>Registration:</b>	N811S
<b>Model/Series:</b>	R44	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>	2020	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	30072
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	October 28, 2022 Annual	<b>Certified Max Gross Wt.:</b>	2400 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	691 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	0540F-1B5
<b>Registered Owner:</b>		<b>Rated Power:</b>	210
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KCOT,472 ft msl	<b>Distance from Accident Site:</b>	28 Nautical Miles
<b>Observation Time:</b>	18:53 Local	<b>Direction from Accident Site:</b>	296°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.06 inches Hg	<b>Temperature/Dew Point:</b>	24°C / 15°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Cotulla, TX (PRI)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Cotulla, TX (PRI)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	10:30 Local	<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	28.255431,-98.739375(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Folkerts, Michael		
<b>Additional Participating Persons:</b>	Keenon Wood; Flight Standards District Office; San Antonio, TX		
<b>Original Publish Date:</b>	March 23, 2023	<b>Investigation Class:</b>	4
<b>Note:</b>	The NTSB did not travel to the scene of this accident.		
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=106607">https://data.nts.gov/Docket?ProjectID=106607</a>		

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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](#).