



# Aviation Investigation Final Report

<b>Location:</b>	ZACHARY, Louisiana	<b>Accident Number:</b>	FTW83FA232
<b>Date &amp; Time:</b>	May 15, 1983, 12:00 Local	<b>Registration:</b>	N739B
<b>Aircraft:</b>	BELL 47G	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Serious, 1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

THE TAIL ROTOR GEAR BOX SEPARATED FROM THE ACFT DURING PRACTICE AUTOROTATION. THE ACFT BEGAN TO SPIN RAPIDLY AND NOSE DOWN. INCREASING THE POWER BROUGHT THE NOSE UP BUT INCREASED THE SPEED OF ROTATION. THE ACFT HIT ON ONE SKID STILL IN A RAPID SPIN. THE OCCUPANTS WERE ABLE TO EXIT THE WRECKAGE AND CRAWL AWAY. THE TAILROTOR GEAR BOX WAS FOUND 100 YDS AWAY. AN EXAM REVEALED THAT THE GEARBOX STUDS HAD FAILED FROM FATIGUE.

## Probable Cause and Findings

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

### Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: LANDING - FLARE/TOUCHDOWN

#### Findings

1. (C) ROTOR DRIVE SYSTEM, TAIL ROTOR GEARBOX(90 DEG) - FATIGUE
  2. (C) ROTOR DRIVE SYSTEM, TAIL ROTOR GEARBOX(90 DEG) - SEPARATION
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Occurrence #2: FORCED LANDING  
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

3. AUTOROTATION - PERFORMED - PILOT IN COMMAND(CFI)

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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: LANDING - FLARE/TOUCHDOWN

## Factual Information

### Pilot Information

<b>Certificate:</b>	Airline transport; Flight instructor	<b>Age:</b>	56,U
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Unknown	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	23210 hours (Total, all aircraft), 1550 hours (Total, this make and model), 210 hours (Last 90 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	BELL	<b>Registration:</b>	N739B
<b>Model/Series:</b>	47G 47G	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>		<b>Serial Number:</b>	
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	3
<b>Date/Type of Last Inspection:</b>	Unknown	<b>Certified Max Gross Wt.:</b>	2350 lbs
<b>Time Since Last Inspection:</b>	0 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	FRANKLIN
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	6V4
<b>Registered Owner:</b>		<b>Rated Power:</b>	240 Horsepower
<b>Operator:</b>	JAMES T LEWIS	<b>Operating Certificate(s) Held:</b>	
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	BTR	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	16:50 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	7 miles
<b>Lowest Ceiling:</b>	Broken / 5000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	12 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	170°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	-18°C / -18°C
<b>Precipitation and Obscuration:</b>	N/A - None - Haze		
<b>Departure Point:</b>	BAKER , LA	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	00:00 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>		<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>		<b>Runway Surface Condition:</b>	
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious, 1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 1 Minor	<b>Latitude, Longitude:</b>	

## Administrative Information

**Investigator In Charge (IIC):** Daugherty, J

**Additional Participating Persons:**

**Original Publish Date:**

**Last Revision Date:**

**Investigation Class:** [Class](#)

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=20723>

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.

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