



# Aviation Investigation Final Report

<b>Location:</b>	LAKE OZARK, Missouri	<b>Accident Number:</b>	CHI91LA257
<b>Date &amp; Time:</b>	August 10, 1991, 20:05 Local	<b>Registration:</b>	N61SD
<b>Aircraft:</b>	BELL 47G	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation		

## Analysis

THE PILOT SAID THAT SHORTLY AFTER TAKEOFF HE HEARD A LOUD SNAP, FOLLOWED BY AN UNCOMMANDED RIGHT YAW. AN EMERGENCY AUTOROTATION WAS EXECUTED WHICH RESULTED IN A HARD WATER LANDING. POST ACCIDENT INVESTIGATION REVEALED THE CHROMEMOLY TUBING HAD FAILED IN FRONT OF THE TAIL ROTOR YOKE, IN FLIGHT.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE ROTORCRAFT'S TAIL BOOM IN FLIGHT. FACTORS RELATED TO THE ACCIDENT WERE REDUCED AIRCRAFT CONTROL AVAILABLE TO THE PILOT.

## Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: TAKEOFF - INITIAL CLIMB

### Findings

1. (C) MISC ROTORCRAFT, TAIL BOOM - FAILURE, TOTAL
2. AUTOROTATION - PERFORMED - PILOT IN COMMAND
3. (F) AIRCRAFT CONTROL - REDUCED - PILOT IN COMMAND

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Occurrence #2: FORCED LANDING  
Phase of Operation: DESCENT - EMERGENCY

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Occurrence #3: HARD LANDING  
Phase of Operation: DESCENT - EMERGENCY

Findings

4. TERRAIN CONDITION - WATER

## Factual Information

### Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	29, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	December 26, 1991
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1017 hours (Total, all aircraft), 227 hours (Total, this make and model), 698 hours (Pilot In Command, all aircraft), 159 hours (Last 90 days, all aircraft), 57 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	BELL	<b>Registration:</b>	N61SD
<b>Model/Series:</b>	47G 47G	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	3551
<b>Landing Gear Type:</b>	Float	<b>Seats:</b>	3
<b>Date/Type of Last Inspection:</b>	August 2, 1991 Continuous airworthiness	<b>Certified Max Gross Wt.:</b>	2950 lbs
<b>Time Since Last Inspection:</b>	15 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	9065 Hrs	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	VO-435-AIF
<b>Registered Owner:</b>		<b>Rated Power:</b>	260 Horsepower
<b>Operator:</b>	CENTRAL WISCONSIN HELICOPTERS	<b>Operating Certificate(s) Held:</b>	None
<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>	AIZ ,575 ft msl	<b>Distance from Accident Site:</b>	1 Nautical Miles
<b>Observation Time:</b>	20:56 Local	<b>Direction from Accident Site:</b>	1°
<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>	3 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	40°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	BAGNELL DAM , MO	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	20:05 Local	<b>Type of Airspace:</b>	Class G

## 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 None	<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 None	<b>Latitude, Longitude:</b>	38.179832,-92.619132(est)

## Administrative Information

**Investigator In Charge (IIC):** Hruban, John

**Additional Participating Persons:** DOUG MILES;

**Original Publish Date:** March 9, 1993

**Last Revision Date:**

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

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=15153>

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