



# Aviation Investigation Final Report

<b>Location:</b>	OZARK, Missouri	<b>Accident Number:</b>	MKC89LA195
<b>Date &amp; Time:</b>	September 2, 1989, 12:15 Local	<b>Registration:</b>	N182JR
<b>Aircraft:</b>	BELL 47G	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

WHILE PRACTICING AUTOROTATION LANDINGS, THE TAIL BOOM BEGAN TO RISE AFTER TOUCHDOWN WHICH RESULTED IN THE HELICOPTER ROLLING TO THE RIGHT AND THE MAIN ROTOR BLADES STRIKING THE TERRAIN. THE HELICOPTER CAME TO REST ON IT'S RIGHT SIDE. ACCIDENT INVESTIGATION REVEALED THAT THE RIGHT SKID, FORWARD OF THE FRONT UPRIGHT HAD FRACTURED. THE BROKEN PORTION OF THE SKID HAD CUT A GROOVE IN THE GRASS A DISTANCE OF ABOUT 2 FEET BEFORE IMBEDDING ITSELF, CAUSING THE HELICOPTER TO STOP. THE FORWARD INERTIA BOUGHT THE TAIL BOOM UP WHICH RESULTED IN THE ROTOR STRIKE AND ROLL OVER.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: THE FAILURE OF THE DUAL STUDENT TO PROPERLY FLARE DURING AN AUTOROTATIVE LANDING RESULTING IN A HARD LANDING AND PARTIAL FAILURE OF THE RIGHT SKID. THE CFI ALSO FAILED TO PROPERLY MONITOR THE STUDENT'S ACTIONS ON THE FLIGHT CONTROLS.

## Findings

Occurrence #1: HARD LANDING  
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

1. (C) AUTOROTATION - MISJUDGED - DUAL STUDENT
2. (F) LANDING GEAR,SKID ASSEMBLY - FAILURE,PARTIAL
3. (C) SUPERVISION - INADEQUATE - PILOT IN COMMAND(CFI)

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Occurrence #2: NOSE OVER

Phase of Operation: LANDING - FLARE/TOUCHDOWN

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Occurrence #3: ROLL OVER

Phase of Operation: LANDING - FLARE/TOUCHDOWN

## Factual Information

### Pilot Information

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	47, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Unknown
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Helicopter	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	March 17, 1989
<b>Occupational Pilot:</b>	UNK	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	379 hours (Total, all aircraft), 160 hours (Total, this make and model), 265 hours (Pilot In Command, all aircraft), 74 hours (Last 90 days, all aircraft), 33 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	BELL	<b>Registration:</b>	N182JR
<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>	22
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	July 13, 1989 100 hour	<b>Certified Max Gross Wt.:</b>	2350 lbs
<b>Time Since Last Inspection:</b>	76 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	10707 Hrs	<b>Engine Manufacturer:</b>	FRANKLIN
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	6V-335-53
<b>Registered Owner:</b>		<b>Rated Power:</b>	210 Horsepower
<b>Operator:</b>	DICK HILL INT. FLIGHT SCHOOL	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	DICA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	SGF ,1267 ft msl	<b>Distance from Accident Site:</b>	10 Nautical Miles
<b>Observation Time:</b>	12:15 Local	<b>Direction from Accident Site:</b>	340°
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	7 miles
<b>Lowest Ceiling:</b>	Overcast / 1200 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	5 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	60°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>		<b>Temperature/Dew Point:</b>	24°C / 21°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	OZARK , MO (2K2 )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>		<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	11:45 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	AIR PARK SOUTH 2K2	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	1340 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	17	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	800 ft / 100 ft	<b>VFR Approach/Landing:</b>	Simulated forced landing

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 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>	2 None	<b>Latitude, Longitude:</b>	37.009571,-93.199249(est)

## Administrative Information

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

**Additional Participating Persons:** STEVE DAVIS;

**Original Publish Date:** July 11, 1990

**Last Revision Date:**

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

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=34861>

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