



# Aviation Investigation Final Report

<b>Location:</b>	CHINO, California	<b>Accident Number:</b>	LAX90LA029
<b>Date &amp; Time:</b>	November 10, 1989, 14:39 Local	<b>Registration:</b>	N6324X
<b>Aircraft:</b>	Bell-Kitz Kopters 47D1	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

THE STUDENT PILOT WAS PRACTICING TOUCH AND GO TAKEOFFS AND LANDINGS. WHILE ON THE DOWNWIND LEG THE STUDENT PILOT RPTD THAT THE HELICOPTER BEGAN TO VIBRATE AND THEN VIOLENTLY PITCHED UP. THE STUDENT PILOT IMMEDIATELY EXECUTED AN AUTOROTATION INTO A COW PASTURE. THE WRECKAGE EXAM DSCLSD THE MAIN ROTOR STABILIZER BAR SEPARATED IN FLT AND IT WAS NOT FOUND. THE ATTACH SECTION OF THE BAR REMAINED CONNECTED AT ITS ATTACH POINTS. METALLURGICAL EXAM DSCLSD THE INNER BAR AND THE TIE ROD FRACTURED IN FATIGUE WHICH HAD PROPAGATED VERY SLOWLY, AND CRACKS WOULD HAVE BEEN EVIDENT. BELL HELICOPTER HAD ISSUED SERVICE BULLETIN 47-(04-2)73-1 REQUIRING DAILY INSPECTION OF THE BAR FOR CRACKS. THE TIE ROD NUT WAS A BOGUS PART AND EXCESSIVELY WORN.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A FATIGUE FAILURE OF BOTH THE MAIN ROTOR STABILIZER BAR TUBE AND THE TIE ROD. IN ADDITION, THE TIE ROD NUT WAS LOOSE AND DID NOT CONFORM TO ENGINEERING DRAWING SPECIFICATIONS. COMPANY PERSONNEL FAILED TO DETECT THE FATIGUE CRACKS DURING DAILY INSPECTIONS.

## Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: APPROACH - VFR PATTERN - DOWNWIND

Findings

1. (C) ROTOR SYSTEM,STABILIZER BAR - FAILURE,TOTAL
2. (C) ROTOR SYSTEM,STABILIZER BAR - BENT
3. (C) ROTOR SYSTEM,STABILIZER BAR - FATIGUE
4. (C) ROTOR SYSTEM - UNAPPROVED PART
5. (C) MAINTENANCE,INSPECTION - INADEQUATE - COMPANY MAINTENANCE PERSONNEL
6. (C) MAINTENANCE,INSTALLATION - INTENTIONAL - COMPANY MAINTENANCE PERSONNEL

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Occurrence #2: FORCED LANDING

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

7. AUTOROTATION - PERFORMED - PILOT IN COMMAND

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Occurrence #3: ROLL OVER

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

8. (F) TERRAIN CONDITION - SOFT

## Factual Information

### Pilot Information

<b>Certificate:</b>	Student	<b>Age:</b>	28, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	October 3, 1988
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	40 hours (Total, all aircraft), 40 hours (Total, this make and model)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Bell-Kitz Kopters	<b>Registration:</b>	N6324X
<b>Model/Series:</b>	47D1 47D1	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	T-610
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	100 hour	<b>Certified Max Gross Wt.:</b>	2200 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	FRANKLIN
<b>ELT:</b>	Not installed	<b>Engine Model/Series:</b>	6V4
<b>Registered Owner:</b>	RAYMOND PETKOW	<b>Rated Power:</b>	200 Horsepower
<b>Operator:</b>	PETKOW, RAYMOND	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>	MEADOWLARK AVIATION	<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>	CNO	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>		<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	30 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	/	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	0°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	(CNO )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	(CNO )	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	00:00 Local	<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	CHINO CNO	<b>Runway Surface Type:</b>	Dirt
<b>Airport Elevation:</b>	1600 ft msl	<b>Runway Surface Condition:</b>	Wet
<b>Runway Used:</b>	0	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Touch and go;Traffic pattern

## 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>	33.999855,-117.679786(est)

## Administrative Information

**Investigator In Charge (IIC):** Llorente, A.

**Additional Participating Persons:** ROGER W BROWNLOW; RIVERSIDE , CA

**Original Publish Date:** January 23, 1992

**Last Revision Date:**

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

**Note:**

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=26682>

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