Aviation Investigation Final Report

Location:	CHINO, California	**Accident Number:**	LAX90LA029
Date & Time:	November 10, 1989, 14:39 Local	**Registration:**	N6324X
Aircraft:	Bell-Kitz Kopters 47D1	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	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

Occurrence #2: FORCED LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
7. AUTOROTATION - PERFORMED - PILOT IN COMMAND

Occurrence #3: ROLL OVER
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
8. (F) TERRAIN CONDITION - SOFT

Factual Information

Pilot Information

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

Aircraft and Owner/Operator Information

Aircraft Make:	Bell-Kitz Kopters	**Registration:**	N6324X
Model/Series:	47D1 47D1	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	T-610
Landing Gear Type:	Skid	**Seats:**	2
Date/Type of Last Inspection:	100 hour	**Certified Max Gross Wt.:**	2200 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	FRANKLIN
ELT:	Not installed	**Engine Model/Series:**	6V4
Registered Owner:	RAYMOND PETKOW	**Rated Power:**	200 Horsepower
Operator:	PETKOW, RAYMOND	**Operating Certificate(s) Held:**	None
Operator Does Business As:	MEADOWLARK AVIATION	**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	CNO	**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	30 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(CNO)	**Type of Flight Plan Filed:**	None
Destination:	(CNO)	**Type of Clearance:**	VFR
Departure Time:	00:00 Local	**Type of Airspace:**	Class D

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	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.ntsb.gov/Docket?ProjectID=26682