



Aviation Investigation Final Report

Location:	RICHMOND, California	Accident Number:	LAX92FA267
Date & Time:	June 29, 1992, 12:42 Local	Registration:	N83858
Aircraft:	ROBINSON R22	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

THE STUDENT HAD RECORDED HER PRIMARY FLIGHT LESSON ON A TAPE RECORDER. AFTER REACHING THE PRACTICE AREA, THE CFI INSTRUCTED THE STUDENT TO TURN 180 DEG LEFT. THE STUDENT COMPLIED AND PERFORMED A SHALLOW BANK TURN. SECONDS LATER, WHILE CRUISING AT 2,200 FT, THE CFI BEGAN TALKING. IN MIDSSENTENCE AN UNDETERMINED EVENT OCCURRED WHICH INTERRUPTED HIS SPEECH. A WIND-LIKE BACKGROUND NOISE STARTED, AND THE STUDENT EXCLAIMED 'HELP.' RADAR DATA CONFIRMED WITNESS REPORTS THAT THE TAIL BOOM AND M/R HAD SEPARATED IN LEVEL FLT. EXAM OF THE WRECKAGE INDICATED MAST BUMPING HAD OCCURRED, A M/R BLADE CRUSHED THE LEFT SIDE OF THE INBOARD TAIL CONE, AND THE ENTIRE MAST WITH ATTACHED M/R BLADES BROKE OUT OF THE TOP OF THE TRANSMISSION. THE OUTBOARD TAIL BOOM AND ROTOR ASSEMBLY HAVE NOT BEEN FOUND. EVIDENCE OF A MAIN ROTOR BLADE DIVERGENCE WAS FOUND. SPECTRUM ANALYSIS OF THE TAPE REVEALED NO ANOMALIES UNTIL THE CFI'S VOICE WAS TERMINATED. WITHIN 2 SECONDS THE ROTOR SPEED APPEARED TO SIGNIFICANTLY OSCILLATE AND ABRUPTLY END.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A DIVERGENCE OF THE MAIN ROTOR FROM ITS NORMAL PLANE OF ROTATION FOR AN UNDETERMINED REASON(S) WHICH RESULTED IN ROTOR CONTACT TO THE TAILBOOM.

Findings

Occurrence #1: DITCHING

Phase of Operation: CRUISE

Findings

1. (C) ROTOR SYSTEM - UNDETERMINED

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	36, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	Helicopter	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	August 1, 1991
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	2200 hours (Total, all aircraft), 2000 hours (Total, this make and model), 2000 hours (Pilot In Command, all aircraft), 70 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	ROBINSON	Registration:	N83858
Model/Series:	R22 R22	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	0337
Landing Gear Type:	Skid	Seats:	2
Date/Type of Last Inspection:	May 26, 1992 Annual	Certified Max Gross Wt.:	1370 lbs
Time Since Last Inspection:	12 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4021 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	O-320-B2C
Registered Owner:	SKYLINE HELICOPTERS, INC.	Rated Power:	160 Horsepower
Operator:	SIERRA ACADEMY OF AERONAUTICS	Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	NGZ ,14 ft msl	Distance from Accident Site:	13 Nautical Miles
Observation Time:	13:00 Local	Direction from Accident Site:	147°
Lowest Cloud Condition:	Scattered / 1800 ft AGL	Visibility	15 miles
Lowest Ceiling:	Broken / 12000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	11 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	180°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	19°C / 13°C
Precipitation and Obscuration:	Light - None - Rain		
Departure Point:	OAKLAND , CA (OAK)	Type of Flight Plan Filed:	None
Destination:	(OAK)	Type of Clearance:	None
Departure Time:	12:25 Local	Type of Airspace:	Class G

Airport Information

Airport:		Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	Pollack, Wayne
Additional Participating Persons:	BILL YUEN; OAKLAND , CA JOHN LYNCH; WASHINGTON , DC TODD ROY; WALDORF , MD GREGORY ERIKSON; WAYNE , IL
Original Publish Date:	April 2, 1996
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=27438

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).