



Aviation Investigation Final Report

Location:	WILLITS, California	Accident Number:	LAX95LA030
Date & Time:	October 31, 1994, 16:30 Local	Registration:	N5088J
Aircraft:	BELL UH-1E	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 133: Rotorcraft ext. load		

Analysis

THE PILOT WAS CONDUCTING A SERIES OF SLING LOAD LOGGING OPERATIONS. THE PILOT DEPARTED THE LOGGING AREA AFTER SETTING DOWN THE LAST LOG. DURING THE CLIMB-OUT, THE TAIL ROTOR ASSEMBLY STRUCK A TREE AND SEPARATED FROM ITS ATTACH BRACKET. THE PILOT EXECUTED AN AUTOROTATION. THE HELICOPTER SUSTAINED A HARD LANDING AT THE COMPLETION OF THE AUTOROTATION. METALLURGICAL EXAMINATION OF THE HELICOPTER'S 90-DEGREE GEARBOX DISCLOSED NO EVIDENCE OF ANY FATIGUE ON THE FRACTURED SURFACES. THE WRECKAGE EXAMINATION REVEALED NO EVIDENCE OF ANY PREEXISTING AIRFRAME OR ENGINE MALFUNCTIONS OR FAILURES.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: that the pilot misjudged the distance between the helicopter and the trees.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: CLIMB

Findings

1. OBJECT - TREE(S)
2. (C) CLEARANCE - MISJUDGED - PILOT IN COMMAND

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

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

Factual Information

On October 31, 1994, at 1630 hours Pacific standard time, a Bell UH-1E helicopter, N5088J, sustained a hard landing about 12 miles southwest of Willits, California, while executing an autorotation. The pilot was conducting a local visual flight rules external logging operation under Title 14 CFR 133. The helicopter, operated by the pilot, doing business as D&R Helicopters, Marysville, California, sustained substantial damage. The certificated commercial pilot, the sole occupant, sustained minor injuries. Visual meteorological conditions prevailed. The flight originated from a privately owned helipad near Willits, California, at an undetermined time.

The pilot submitted the required Pilot/Operator Aircraft Accident Report, National Transportation Safety Board Form 6120.1/2. He said he had been conducting logging operations for 6.2 hours before the accident.

The accident flight was the last flight of the day and he had just ". . . sit a log down in the log landing area . . ." and the helicopter was hovering about 200 feet above the ground. The helicopter was ". . . clear of all trees by at least 250 feet in all directions . . ." He then heard a loud noise emanating from the rear of the helicopter and then the helicopter pitched forward and began spinning to the right.

The pilot said he tried to roll the throttle off, but was unsuccessful. He reduced the rate of the right spin by lowering the collective. The helicopter's main rotor blades struck a tree when it was between 15 and 20 feet above the ground.

A Federal Aviation Administration (FAA) airworthiness inspector from Oakland [California] Flight Standards District Office conducted the on-scene investigation. The inspector reported that the pilot dropped a log at the accident area and began a climb. During the climb, the helicopter's 90-degree tail rotor gearbox struck a tree. The pilot immediately executed an autorotation, but sustained a hard landing.

At the insurer's request, Scanning Electron Analysis Laboratories, El Segundo, California, conducted a metallurgical examination on the tail rotor's 90-degree gearbox attach bracket. The metallurgist reported in a telephone interview conducted on March 23, 1994, that the examination revealed no evidence of any fatigue on the bracket's fractured surfaces. The fractured surfaces displayed overload characteristics.

Pilot Information

Certificate:	Commercial	Age:	48, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	August 24, 1993
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	16585 hours (Total, all aircraft), 2098 hours (Total, this make and model), 15970 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 92 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	BELL	Registration:	N5088J
Model/Series:	UH-1E UH-1E	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	154696
Landing Gear Type:	Skid	Seats:	2
Date/Type of Last Inspection:	October 10, 1994 Annual	Certified Max Gross Wt.:	9500 lbs
Time Since Last Inspection:	1400 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	7309 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	T53-L-13B
Registered Owner:	GARLICK HELICOPTERS, INC.	Rated Power:	1400 Horsepower
Operator:	DAWSON, DONALD E.	Operating Certificate(s) Held:	
Operator Does Business As:	D&R HELICOPTERS	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Dusk
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	15 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	15°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	00:00 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:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	39.489589,-123.360458(est)

Administrative Information

Investigator In Charge (IIC):	Llorente, A.
Additional Participating Persons:	RAY MURPHY; OAKLAND , CA JACK H SHUTTLE, JR.; FORT WORTH , TX
Original Publish Date:	May 16, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=28978

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).