



Aviation Investigation Final Report

Location:	REDMOND, Oregon	Accident Number:	SEA84LA174
Date & Time:	July 16, 1984, 07:20 Local	Registration:	N1043L
Aircraft:	HILLER UH-12E	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 137: Agricultural		

Analysis

THE ACFT COLLIDED WITH THE GROUND AFTER A IN-FLT MAIN ROTOR BLADE SEPARATION DURING AN AERIAL APPLICATION FLT. INSPECTION OF THE FRACTURE SURFACE OF THE FAILED BLADE REVEALED CHARACTERISTICS CONSISTANT WITH THE HIGH STRESS, LOW CYCLE FATIGUE. LAB FINDINGS WILL BE COMPARED WITH SIMILIAR FAILURES WHICH HAVE OCCURRED SUBSEQUENT TO THE EXISTING AIRWORTHINESS DIRECTIVE (AI 80-14-12) REQUIRING SPECIAL INSPECTION OF THE SAME FAILURE AREA.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) ROTOR SYSTEM,MAIN ROTOR BLADE - FATIGUE
 2. (C) ROTOR SYSTEM,MAIN ROTOR BLADE - SEPARATION
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Findings

3. (C) AUTOROTATION - NOT POSSIBLE - PILOT IN COMMAND

Factual Information

Pilot Information

Certificate:	Commercial	Age:	36, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	July 8, 1983
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	5400 hours (Total, all aircraft), 5400 hours (Total, this make and model), 5200 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HILLER	Registration:	N1043L
Model/Series:	UH-12E UH-12E	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	59-2739
Landing Gear Type:	Skid	Seats:	4
Date/Type of Last Inspection:	100 hour	Certified Max Gross Wt.:	2750 lbs
Time Since Last Inspection:	29 Hrs	Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	VO-540-C2A
Registered Owner:	GARY D. ZUBER	Rated Power:	340 Horsepower
Operator:		Operating Certificate(s) Held:	
Operator Does Business As:	PROJECT HELICOPTERS	Operator Designator Code:	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	RDM ,700 ft msl	Distance from Accident Site:	12 Nautical Miles
Observation Time:	07:00 Local	Direction from Accident Site:	270°
Lowest Cloud Condition:	Clear	Visibility	45 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	19°C / 6°C
Precipitation and Obscuration:	N/A - None - Smoke		
Departure Point:		Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	07:00 Local	Type of Airspace:	Class G

Airport Information

Airport:	UNKNOWN	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:	44.259159,-121.220466(est)

Administrative Information

Investigator In Charge (IIC): Daily jr, H

Additional Participating Persons: LESTER BRIGGS /FSDO-64; HILLSBORO , OR

Original Publish Date:

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=39969>

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](#).