



Aviation Investigation Final Report

Location:	WISCONSIN DELLS, Wisconsin	Accident Number:	CHI82FA304
Date & Time:	August 12, 1982, 14:40 Local	Registration:	N3748Z
Aircraft:	HILLER UH12L4	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious, 1 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

DURING CLIMB, AT ABOUT 200 FT AGL, THE M/R LOST RPM. DURING AUTOROTATION THE ENG RPM INCREASED BEYOND THE RED LINE WHEN THE PLT ADDED POWER. THE HELICOPTER MADE A HARD LANDING IN A RESIDENTIAL AREA. INSPECTION OF THE MERCURY CLUTCH REVEALED THAT THE EXTERIOR SURFACE OF THE CLUTCH DRUM EXHIBITED EVIDENCE OF EXCESSIVE OVERHEATING. THE INSIDE SURFACE OF THE DRUM SHOWED SEVERE GLAZING & DISCOLORATION IN THE CLUTCH SHOE WEAR AREA. THERE WERE ALSO SEVERAL CRACKS IN THE CLUTCH DRUM. THE HOUSING BEARING JOURNAL HAD EXPERIENCED SEVERE PITTING. THERE WAS ALSO SEVERE WEAR IN THE BEARING JOURNAL AREA. THE CLUTCH SHOES SHOWED SIGNIFICANT GLAZING & SURFACE CRACKING, & WERE SEVERELY WORN.

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: TAKEOFF - INITIAL CLIMB

Findings

1. VERTICAL TAKEOFF - PERFORMED - PILOT IN COMMAND
2. (C) ROTOR DRIVE SYSTEM,CLUTCH ASSEMBLY - WORN
3. (C) ROTOR DRIVE SYSTEM,CLUTCH ASSEMBLY - FAILURE,TOTAL

Occurrence #2: FORCED LANDING

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

4. AUTOROTATION - PERFORMED - PILOT IN COMMAND

Factual Information

Pilot Information

Certificate:	Commercial	Age:	25, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Unknown
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-w/ waivers/lim	Last FAA Medical Exam:	February 23, 1982
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	431 hours (Total, all aircraft), 354 hours (Total, this make and model), 354 hours (Pilot In Command, all aircraft), 139 hours (Last 90 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HILLER	Registration:	N3748Z
Model/Series:	UH12L4 UH12L4	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:		Serial Number:	2545
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	3100 lbs
Time Since Last Inspection:	59 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1513 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	VO-540-2CA
Registered Owner:	NELSONIND, INC.	Rated Power:	250 Horsepower
Operator:	NELSONIND, INC.	Operating Certificate(s) Held:	
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:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	25 miles
Lowest Ceiling:	Unknown	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:	0°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	WISCONSIN DELLS, WI	Type of Flight Plan Filed:	None
Destination:	WISCONSIN DELLS, WI	Type of Clearance:	None
Departure Time:	00:00 Local	Type of Airspace:	

Airport Information

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

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious, 1 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 Minor, 1 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):

Additional Participating Persons:

Original Publish Date: August 12, 1983

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=73081>

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](#).