



Aviation Investigation Final Report

Location:	PALISADE, Minnesota	Accident Number:	CHI82DA301
Date & Time:	August 10, 1982, 08:00 Local	Registration:	N5594N
Aircraft:	HILLER 12E	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

AIRCRAFT LOST POWER, PILOT AUTOROTATED AT 20 FEET AGL. MADE HARD FORCED LANDING AND AIRCRAFT ROLLED OVER. PISTON ROD FAILED BECAUSE CAP BOLT WAS UNDERTORQUED.

Probable Cause and Findings

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

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - MECH FAILURE/MALF
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) ENGINE ASSEMBLY,CONNECTING ROD - UNDERTORQUED
2. (C) MAINTENANCE,OVERHAUL - INADEQUATE - OTHER MAINTENANCE PERSONNEL
3. (C) ENGINE ASSEMBLY,CONNECTING ROD - FAILURE,TOTAL

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

Findings

4. AUTOROTATION - INITIATED - PILOT IN COMMAND

Occurrence #3: ROLL OVER

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

5. LANDING GEAR,SKID ASSEMBLY - OVERLOAD

6. LANDING GEAR,SKID ASSEMBLY - FAILURE,TOTAL

Factual Information

Pilot Information

Certificate:	Commercial	Age:	22, 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:	July 1, 1982
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	
Flight Time:	675 hours (Total, all aircraft), 195 hours (Total, this make and model), 417 hours (Pilot In Command, all aircraft), 190 hours (Last 90 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HILLER	Registration:	N5594N
Model/Series:	12E 12E	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:		Serial Number:	1453
Landing Gear Type:	Skid	Seats:	3
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	2100 lbs
Time Since Last Inspection:	45 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4014 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	VO-540-C2A
Registered Owner:	DAGNON AVIATION	Rated Power:	305 Horsepower
Operator:	DAGNON AVIATION	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	20 miles
Lowest Ceiling:	Unknown	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	360°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	PALISADE , MN	Type of Flight Plan Filed:	None
Destination:	PALISADE , MN	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:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):

Additional Participating Persons:

Original Publish Date: August 10, 1983

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=72141>

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](#).