



Aviation Investigation Final Report

Location:	ULYSESS, Kansas	Accident Number:	MKC87LA145
Date & Time:	July 23, 1987, 06:45 Local	Registration:	N67139
Aircraft:	HILLER 12E	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 137: Agricultural		

Analysis

DURING A HELICOPTER AERIAL APPLICATION OPERATION, ACFT SUFFERED A MAIN ROTOR SYSTEM HUB FAILURE. PIC WAS UNABLE TO CONTROL THE ACFT AND AN UNCONTROLLED DESCENT RESULTED. ACFT STRUCK THE TERRAIN AND WAS SUBSTANTIALLY DAMAGED AND THE PIC SUFFERED MINOR INJURIES. PIC STATED THAT THE COMPLETE ROTOR HEAD, BLADES AND PADDLES, HAD JUST BEEN REINSTALLED, AND AFTER A FLIGHT OF LESS THAN ONE MILE, THE FAILURE OCCURRED. PIC FURTHER STATED THAT THE LINKAGE PIN THAT GOES THROUGH THE MAST AND PITCH CHANGE MECHANISM WAS NOT ALIGNED CAUSING THE FAILURE.

Probable Cause and Findings

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

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CRUISE

Findings

1. (C) ROTOR SYSTEM,MAIN ROTOR HUB - FAILURE,TOTAL
2. (C) MAINTENANCE,INSTALLATION - IMPROPER - OTHER MAINTENANCE PERSONNEL

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

Pilot Information

Certificate:	Commercial	Age:	34, Male
Airplane Rating(s):	None	Seat Occupied:	Center
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:	October 10, 1986
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	1520 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	HILLER	Registration:	N67139
Model/Series:	12E 12E	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Restricted (Special)	Serial Number:	1623
Landing Gear Type:	Skid	Seats:	1
Date/Type of Last Inspection:	June 2, 1987 100 hour	Certified Max Gross Wt.:	3100 lbs
Time Since Last Inspection:	83 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1845 Hrs	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	O-540
Registered Owner:	TRI-ROTOR SPRAY	Rated Power:	305 Horsepower
Operator:	TRI ROTOR SPRAY	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:	None	Visibility (RVR):	
Wind Speed/Gusts:	13 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	200°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	21°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:	Dirt
Airport Elevation:		Runway Surface Condition:	Dry
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:	37.570087,-101.349197(est)

Administrative Information

Investigator In Charge (IIC):	Hruban, John
Additional Participating Persons:	GLENN L MARTIN; WICHITA , KS
Original Publish Date:	November 8, 1988
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=34418

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](#).