



Aviation Investigation Final Report

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|--------------------------------|---|-------------------------|-------------|
| Location: | CAPAC, Michigan | Accident Number: | CHI87LA045 |
| Date & Time: | November 29, 1986, 17:08 Local | Registration: | N48209 |
| Aircraft: | HILLER UH-12B | Aircraft Damage: | Substantial |
| Defining Event: | | Injuries: | 1 None |
| Flight Conducted Under: | Part 91: General aviation - Instructional | | |

Analysis

TEN MINUTES AFTER TAKEOFF AND JUST PRIOR TO LETDOWN FROM 350 FEET AGL A MAIN ROTOR BLADE DRAG STRUT FAILED DUE TO PROGRESSIVE FATIGUE THROUGH A THREADED PORTION OF THE STRUT. ONLY PARTIAL CONTROL OF THE HELICOPTER WAS POSSIBLE AFTER THE FAILURE. THE PILOT LOST CONTROL OF THE AIRCRAFT AT ONE POINT, BUT REGAINED CONTROL IN TIME TO PERFORM A HARD, SLIDING LANDING IN A FIELD. SUBSTANTIAL DAMAGE OCCURRED. THE ENTIRE SEQUENCE OF EVENTS TOOK PLACE IN 10-15 SECONDS. THE PLT HAD A PRIVATE CERT FOR FIXED WING AND A STUDENT CERT FOR ROTORCRAFT.

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: CRUISE - NORMAL

Findings

1. (F) ROTOR SYSTEM - FATIGUE
2. (C) MAINTENANCE, INSPECTION - INADEQUATE - OTHER MAINTENANCE PERSONNEL
3. (F) ROTOR SYSTEM - FAILURE, PARTIAL

Occurrence #2: HARD LANDING

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

4. (C) PROPER GLIDEPATH - NOT POSSIBLE - PILOT IN COMMAND
5. (C) DIRECTIONAL CONTROL - REDUCED - PILOT IN COMMAND

Factual Information

Pilot Information

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|----------------------------------|--|--|-----------------|
| Certificate: | Student | Age: | 28, Male |
| Airplane Rating(s): | Single-engine land | 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-w/ waivers/lim | Last FAA Medical Exam: | October 9, 1986 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | 208 hours (Total, all aircraft), 23 hours (Total, this make and model), 146 hours (Pilot In Command, all aircraft), 10 hours (Last 90 days, all aircraft), 2 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|------------------------|---------------------------------------|-----------------|
| Aircraft Make: | HILLER | Registration: | N48209 |
| Model/Series: | UH-12B UH-12B | Aircraft Category: | Helicopter |
| Year of Manufacture: | | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 508 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 4 |
| Date/Type of Last Inspection: | March 22, 1986 Annual | Certified Max Gross Wt.: | 2500 lbs |
| Time Since Last Inspection: | 32 Hrs | Engines: | 1 Reciprocating |
| Airframe Total Time: | 5229 Hrs | Engine Manufacturer: | FRANKLIN |
| ELT: | Not installed | Engine Model/Series: | 6V3355D |
| Registered Owner: | MARK W. SMITH | Rated Power: | 210 Horsepower |
| Operator: | MARK W. SMITH | Operating Certificate(s) Held: | None |
| Operator Does Business As: | | Operator Designator Code: | |

Meteorological Information and Flight Plan

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|---|----------------------------------|---|---------|
| 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: | Scattered / 4000 ft AGL | Visibility | 7 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: | 6°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | LAPEER , MI (D95) | Type of Flight Plan Filed: | None |
| Destination: | | Type of Clearance: | None |
| Departure Time: | 16:58 Local | Type of Airspace: | Class G |

Airport Information

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|-----------------------------|---|----------------------------------|----------------|
| Airport: | | Runway Surface Type: | |
| Airport Elevation: | | Runway Surface Condition: | |
| Runway Used: | 0 | IFR Approach: | None |
| Runway Length/Width: | | VFR Approach/Landing: | Forced landing |

Wreckage and Impact Information

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|----------------------------|--------|-----------------------------|---------------------------|
| 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: | 43.010288,-82.920516(est) |

Administrative Information

Investigator In Charge (IIC): Benzon, Robert

Additional Participating Persons: A WARNER; BELLEVILLE , MI

Original Publish Date:

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=13709>

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.

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