



Aviation Investigation Final Report

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|--------------------------------|---------------------------|-------------------------|-------------|
| Location: | DONALDSON, Minnesota | Accident Number: | CHI85LA275 |
| Date & Time: | July 6, 1985, 08:30 Local | Registration: | N7856S |
| Aircraft: | BELL 47G-3B-1 | Aircraft Damage: | Substantial |
| Defining Event: | | Injuries: | 1 None |
| Flight Conducted Under: | Part 137: Agricultural | | |

Analysis

WHEN THE PLT APPLIED PWR TO LEVEL OFF WHILE ENTERING A SPRAY THE ENG DID NOT PRODUCE SUFFICIENT PWR TO STOP THE DESCENT.HE ATTEMPTED A RUN ON LANDING BUT THE UNEVEN TERRAIN CAUSED SUBSTANTIAL DAMAGE TO THE HELICOPTER. INSPECTION OF THE ENG REVEALED THE ACTUATING ROD FOR THE ACTUATOR TO THE WASTEGATE OF THE TURBOCHARGER WAS FROZEN TO THE HOUSING OF THE UNIT.

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(PARTIAL) - MECH FAILURE/MALF
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) ENG ASSEMBLY, BLOWER/IMPELLER/INTEGRAL SUPERCHARGER - FAILURE, PARTIAL

Occurrence #2: FORCED LANDING
Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: HARD LANDING
Phase of Operation: LANDING

Findings

2. TERRAIN CONDITION - SOFT

Factual Information

Pilot Information

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|----------------------------------|--|--|-------------|
| Certificate: | Commercial; Private | Age: | 29, Male |
| Airplane Rating(s): | Single-engine land | Seat Occupied: | Left |
| 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: | May 1, 1985 |
| Occupational Pilot: | Yes | Last Flight Review or Equivalent: | |
| Flight Time: | 647 hours (Total, all aircraft), 80 hours (Total, this make and model), 586 hours (Pilot In Command, all aircraft), 173 hours (Last 90 days, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|-----------------------------|---------------------------------------|-----------------|
| Aircraft Make: | BELL | Registration: | N7856S |
| Model/Series: | 47G-3B-1 47G-3B-1 | Aircraft Category: | Helicopter |
| Year of Manufacture: | | Amateur Built: | |
| Airworthiness Certificate: | Restricted (Special) | Serial Number: | 6624 |
| Landing Gear Type: | Skid | Seats: | 2 |
| Date/Type of Last Inspection: | September 22, 1984 Annual | Certified Max Gross Wt.: | 2950 lbs |
| Time Since Last Inspection: | 81 Hrs | Engines: | 1 Reciprocating |
| Airframe Total Time: | 6431 Hrs | Engine Manufacturer: | LYCOMING |
| ELT: | Installed, not activated | Engine Model/Series: | TV0-435-D1B |
| Registered Owner: | RAY LARSON MIDWEST AVIATION | Rated Power: | 230 Horsepower |
| Operator: | | Operating Certificate(s) Held: | |
| 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: | Day |
| Observation Facility, Elevation: | | Distance from Accident Site: | |
| Observation Time: | | Direction from Accident Site: | |
| Lowest Cloud Condition: | Clear | Visibility | 15 miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | 2 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 180° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | | Temperature/Dew Point: | 18°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | | Type of Flight Plan Filed: | None |
| Destination: | | Type of Clearance: | None |
| Departure Time: | 08:29 Local | Type of Airspace: | Class G |

Airport Information

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|-----------------------------|-------------|----------------------------------|----------------|
| 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: | 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: | 48.570827,-96.889244(est) |

Administrative Information

Investigator In Charge (IIC): Mc avoy, Edward

Additional Participating Persons: J. L WHITE; FARGO , ND
DAVE R WILLMAN; MINNEAPOLIS , MN

Original Publish Date:

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=13129>

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](#).