# Aviation Investigation Final Report

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| **Location:** | AITKIN, Minnesota | **Accident Number:** | CHI96LA313 |
| **Date & Time:** | August 22, 1996, 19:05 Local | **Registration:** | N4797Q |
| **Aircraft:** | Cessna A188B | **Aircraft Damage:** | Substantial |
| **Defining Event:** | | **Injuries:** | 1 Serious |
| **Flight Conducted Under:** | Part 137: Agricultural | | |

## Analysis

A witness on the ground who was assisting the pilot with the aerial application as flagman said that the pilot had said to him over the radio that the sun was getting in his eyes and that he was having difficulty seeing him. The pilot had made a pass on the field from west to the east and turned left to head westbound into the sun. 'I turned away to step off for the next pass, heard my wife scream and looked over to see the airplane skid to a halt.' As the witness was going to the airplane, he noticed the power lines were down. Another witness on the ground, the flagman's wife, saw the airplane make a left turn at the east end of the field 'to come back west which was into the sun. The left side of the airplane was a little low at that point. He (the pilot) was coming down fast and hit the ground.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's failure to maintain clearance from known transmission lines. Factors relating to this accident were the transmission lines and the sunglare which hindered the pilot's ability to see the transmission lines.

### Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
2. (F) OBJECT - WIRE,TRANSMISSION
3. (F) LIGHT CONDITION - SUNGLARE
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

## Factual Information

On August 22, 1996, at 1905 central daylight time (cdt), a Cessna A188B, operated by a commercial pilot, sustained substantial damage when while performing aerial application, 8 miles north of Aitkin, Minnesota, it struck a power line. The airplane subsequently impacted the terrain. Visual meteorological conditions prevailed at the time of the accident. The aerial application flight was being conducted under 14 CFR Part 137. No flight plan was on file. The pilot sustained serious injuries. The local flight originated at Aitkin, Minnesota, at 1820 cdt.

The pilot's son stated in a telephone interview conducted September 18, 1996, that the pilot sustained a serious head injury and could not recall any of the events pertaining to the accident.

A witness on the ground who was assisting the pilot with the aerial application as flagman said that the airplane was spraying from east to west. The pilot had made a pass to the east and turned to head westbound into the sun. "I turned away to step off for the next pass, heard my wife scream and looked over to see the airplane skid to a halt." The witness went around the field to get to the pilot. As he was going to the airplane, the witness noticed the power lines were down. "The engine sounded normal until impact." The witness stated that the pilot had said to him over the radio that the sun was getting in his eyes and that he was having difficulty seeing the flagman.

Another witness on the ground, the flagman's wife, saw the airplane make a left turn at the east end of the field "to come back west which was into the sun. The left side of the airplane was a little low at that point. He (the pilot) was coming down fast and hit the ground."

The Federal Aviation Administration (FAA) inspector who examined the wreckage at the accident site found the airplane resting on the side of a dike which bordered a rice field. A set of high tension power lines ran north to south along the top of the dike. A ground scar was located approximately one-third of the way down from the top of the dike. The main wreckage, consisting of the fuselage, right wing and empennage was found at the bottom of the dike approximately 65 yards from the ground scar. The fuselage was oriented on a 360 degree magnetic heading. The left side of the fuselage was crushed inward and showed skin wrinkling along its entire length. The airplane cage (cockpit area) was broken upward. The pilot seat had separated at the seat rails. The right main fuel tank was empty. The left wing of the airplane had separated from fuselage at the wing root and was broken into two pieces. The inboard one-third of the left wing had come to rest 60 yards north of the ground scar. It was crushed along the leading edge aft to the spar. The outboard section of the left wing came to rest near the ground scar. It was bent and exhibited a gash in the leading edge approximately 2 feet inboard of the wing tip. The engine had separated from the engine mounts at the firewall and was found approximately 35 yards east of the initial ground scar.

The propeller separated from the engine at the flange and was found imbedded vertically in the ground near the initial ground scar. One propeller blade showed a gash in its leading edge. Both blades were twisted. Flight control continuity was confirmed. The engine, engine controls and other airplane systems displayed no anomalies.

## Pilot Information

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| **Certificate:** | Commercial | **Age:** | 67,Male |
| **Airplane Rating(s):** | Single-engine land | **Seat Occupied:** | Front |
| **Other Aircraft Rating(s):** | None | **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:** | May 22, 1996 |
| **Occupational Pilot:** | Yes | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 6000 hours (Total, all aircraft) | | |

## Aircraft and Owner/Operator Information

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| **Aircraft Make:** | Cessna | **Registration:** | N4797Q |
| **Model/Series:** | A188B A188B | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | | **Amateur Built:** | |
| **Airworthiness Certificate:** | Restricted (Special) | **Serial Number:** | 18802536T |
| **Landing Gear Type:** | Tailwheel | **Seats:** | 1 |
| **Date/Type of Last Inspection:** | June 30, 1996 Annual | **Certified Max Gross Wt.:** | 3300 lbs |
| **Time Since Last Inspection:** | | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | | **Engine Manufacturer:** | Continental |
| **ELT:** | | **Engine Model/Series:** | IO-520-D |
| **Registered Owner:** | WILLARD HENRY KIEHM | **Rated Power:** | 300 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:** | AIT ,1205 ft msl | **Distance from Accident Site:** | 7 Nautical Miles |
| **Observation Time:** | 18:55 Local | **Direction from Accident Site:** | 180° |
| **Lowest Cloud Condition:** | Clear | **Visibility** | 10 miles |
| **Lowest Ceiling:** | None | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 3 knots / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 310° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 30 inches Hg | **Temperature/Dew Point:** | 21°C / 11°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | (AIT ) | **Type of Flight Plan Filed:** | None |
| **Destination:** | | **Type of Clearance:** | None |
| **Departure Time:** | 18:20 Local | **Type of Airspace:** | Class E |

## 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:** | None |

## Wreckage and Impact Information

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| **Crew Injuries:** | 1 Serious | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 1 Serious | **Latitude, Longitude:** | 46.53062,-93.710083(est) |

## Administrative Information

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| **Investigator In Charge (IIC):** | Bowling, David |
| **Additional Participating Persons:** | DON BROWN; MINNEAPOLIS , MN<br>LANCE MENEGHELLI; MINNEAPOLIS , MN |
| **Original Publish Date:** | December 16, 1996 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=10376 |