



# National Transportation Safety Board Aviation Accident Final Report

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|--------------------------------|--------------------------------------|-------------------------|------------|
| <b>Location:</b>               | HAMILTON, ND                         | <b>Accident Number:</b> | CHI99LA020 |
| <b>Date &amp; Time:</b>        | 11/03/1998, 1355 CST                 | <b>Registration:</b>    | N285BB     |
| <b>Aircraft:</b>               | Becker Wag Aero SUPER SPORT          | <b>Aircraft Damage:</b> | Destroyed  |
| <b>Defining Event:</b>         |                                      | <b>Injuries:</b>        | 1 Fatal    |
| <b>Flight Conducted Under:</b> | Part 91: General Aviation - Personal |                         |            |

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## Analysis

A witness reported that he saw the airplane about 1,000 to 2,000 feet above ground and 'falling' from the sky. He reported a wing had separated from the airplane. The wreckage was located in a field and the right wing was found about 450 feet to the southwest of the main wreckage. The pilot had built the experimental airplane with his brothers in 1985. The airplane had approximately 1,800 hours total time. A metallurgical examination of the lower right wing strut attachment bracket revealed fatigue fractures of the lower sheet of the attachment bracket. Each side of the lower sheet contained a bend relief slot at the location of maximum bend in the lower sheet. The examination revealed that the fracture through the lower sheet extended across the bracket from one bend relief slot to the other. Aircraft fabric covered over the location of the fracture and it could not be observed during a normal pre-flight. To properly inspect the area where the fracture occurred, the fabric needed to be cut and pulled back from the aircraft frame.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the fatigue failure of the lower wing strut attachment bracket.

## Findings

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

### Findings

1. (C) WING,BRACING STRUT - FATIGUE  
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

### Findings

2. TERRAIN CONDITION - OPEN FIELD

## Factual Information

### History of Flight

On November 3, 1998, at 1355 central standard time (CST), a Becker Wag-Aero Super Sport, N285BB, was destroyed near Hamilton, North Dakota, when it impacted the terrain after an in-flight breakup. The commercial pilot was fatally injured. The 14 CFR Part 91 flight had departed Cavalier Municipal Airport, Cavalier, North Dakota, at approximately 1330 CST on a local flight. Visual meteorological conditions prevailed and no flight plan had been filed.

A witness reported he saw the airplane at about 1,000 to 2,000 feet above ground and "falling" from the sky. He reported a wing had separated from the airplane.

The airplane impacted the ground in a field.

### Personnel Information

The pilot was a commercially rated pilot with single engine land and glider ratings. He held a Second Class medical certificate. He had a total of about 1,581 hours of flight time. The pilot had owned the accident airplane since 1985, but it was not determined how many hours he had flown in the accident airplane. The pilot's flight logbook was not recovered. The pilot was also a certified Airframe and Powerplant (A&P) mechanic.

### Aircraft Information

The airplane was a single engine experimental Becker Wag-Aero Super Sport, serial number BA-2-85. The airplane seated two and had a maximum gross weight of 1,400 pounds. The engine was a 150 horsepower O-320 Lycoming engine. The total hours flown on the airplane was approximately 1,800 hours.

The pilot's brother reported that he, the pilot, and another of his brothers had built the airplane. He reported the aircraft plans had been purchased by an unidentified builder associated with the Fargo, North Dakota, chapter of the Experimental Aircraft Association (EAA). The airplane was partially built and then sold to a member of the Grand Forks, North Dakota, EAA chapter. He reported the pilot and brothers purchased the partially built airplane, and then completed building the airplane in 1985. The airplane was certified on April 25, 1985.

### Meteorological Conditions

At 1353 CST, weather conditions reported at Grand Forks International Airport, Grand Forks, North Dakota, were VMC. The sky had few clouds at 3,500 feet and a broken layer at 25,000 feet with 10 miles visibility. The temperature was 37 degrees Fahrenheit and the winds were 040 degrees at 11 knots.

### Wreckage and Impact Information

The wreckage was located in a field about four miles east of Hamilton, North Dakota. The right wing was found about 450 feet to the southwest of the main wreckage. The main wreckage impacted the ground in a nose low attitude.

### Medical and Pathological Conditions

An autopsy was performed at Altru Hospital, Grand Forks, North Dakota.

A Forensic Toxicology Fatal Accident Report was prepared by the FAA Civil Aeromedical Institute. The results were negative.

#### Tests and Research

The lower right wing strut attachment bracket was sent to the National Transportation Safety Board's Materials Laboratory for examination. The examination revealed fatigue fractures of the lower sheet of the attachment bracket. Each side of the lower sheet contained a slot (referred to as a bend relief slot) at the location of the maximum bend in the lower sheet. The examination revealed that the fracture through the lower sheet extended across the bracket from one bend relief slot to the other. (See Materials Laboratory Factual Report)

#### Additional Information

The brother of the pilot reported that aircraft fabric covered over the location of the fracture. He reported the fracture could not be observed during a normal pre-flight. He reported that to properly inspect the area where the fracture occurred, the fabric would need to be cut and pulled back from the aircraft frame.

The Federal Aviation Administration and Wag-Aero Inc. were a parties to the investigation.

The aircraft wreckage was released to the brother of the pilot.

#### Pilot Information

|                                  |                                  |  |            |
|----------------------------------|----------------------------------|--|------------|
| <b>Certificate:</b>              | Commercial                       | <b>Age:</b>                              | 59, Male   |
| <b>Airplane Rating(s):</b>       | Single-engine Land               | <b>Seat Occupied:</b>                    | Front      |
| <b>Other Aircraft Rating(s):</b> | Glider                           | <b>Restraint Used:</b>                   | Seatbelt   |
| <b>Instrument Rating(s):</b>     | Airplane                         | <b>Second Pilot Present:</b>             | No         |
| <b>Instructor Rating(s):</b>     | None                             | <b>Toxicology Performed:</b>             | Yes        |
| <b>Medical Certification:</b>    | Class 2 Unknown                  | <b>Last FAA Medical Exam:</b>            | 08/30/1997 |
| <b>Occupational Pilot:</b>       |                                  | <b>Last Flight Review or Equivalent:</b> |            |
| <b>Flight Time:</b>              | 1581 hours (Total, all aircraft) |  |            |

## Aircraft and Owner/Operator Information

|                               |                        |                                |                 |
|-------------------------------|------------------------|--------------------------------|-----------------|
| Aircraft Make:                | Becker Wag Aero        | Registration:                  | N285BB          |
| Model/Series:                 | SUPER SPORT SUPER SPOR | Aircraft Category:             | Airplane        |
| Year of Manufacture:          |                        | Amateur Built:                 | Yes             |
| Airworthiness Certificate:    | Experimental           | Serial Number:                 | BA-2-85         |
| Landing Gear Type:            | Tailwheel              | Seats:                         | 2               |
| Date/Type of Last Inspection: | Unknown                | Certified Max Gross Wt.:       | 1400 lbs        |
| Time Since Last Inspection:   |                        | Engines:                       | 1 Reciprocating |
| Airframe Total Time:          |                        | Engine Manufacturer:           | Lycoming        |
| ELT:                          | Not installed          | Engine Model/Series:           | O-320           |
| Registered Owner:             | ALLEN BECKER           | Rated Power:                   | 150 hp          |
| Operator:                     | ALLEN BECKER           | Operating Certificate(s) Held: | None            |

## Meteorological Information and Flight Plan

|                                  |                         |                                      |                   |
|----------------------------------|-------------------------|--------------------------------------|-------------------|
| Conditions at Accident Site:     | Visual Conditions       | Condition of Light:                  | Day               |
| Observation Facility, Elevation: | GFK, 844 ft msl         | Distance from Accident Site:         | 65 Nautical Miles |
| Observation Time:                | 1353 CST                | Direction from Accident Site:        | 170°              |
| Lowest Cloud Condition:          | Scattered / 4500 ft agl | Visibility                           | 10 Miles          |
| Lowest Ceiling:                  | Broken / 25000 ft agl   | Visibility (RVR):                    | 0 ft              |
| Wind Speed/Gusts:                | 11 knots /              | Turbulence Type Forecast/Actual:     | /                 |
| Wind Direction:                  | 40°                     | Turbulence Severity Forecast/Actual: | /                 |
| Altimeter Setting:               | 30 inches Hg            | Temperature/Dew Point:               | 3° C / 3° C       |
| Precipitation and Obscuration:   |                         |                                      |                   |
| Departure Point:                 | CAVALIER, ND (ND06)     | Type of Flight Plan Filed:           | None              |
| Destination:                     |                         | Type of Clearance:                   | None              |
| Departure Time:                  | 1330 CST                | Type of Airspace:                    | Class G           |

## Wreckage and Impact Information

|                     |         |                      |           |
|---------------------|---------|----------------------|-----------|
| Crew Injuries:      | 1 Fatal | Aircraft Damage:     | Destroyed |
| Passenger Injuries: | N/A     | Aircraft Fire:       | None      |
| Ground Injuries:    | N/A     | Aircraft Explosion:  | None      |
| Total Injuries:     | 1 Fatal | Latitude, Longitude: |           |

## Administrative Information

Investigator In Charge (IIC): JIM SILLIMAN Report Date: 03/31/2000

Additional Participating Persons: DAVE JACOBS; FARGO, ND

Publish Date:

Investigation Docket: NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at [pubinq@ntsb.gov](mailto:pubinq@ntsb.gov), or at 800-877-6799. Dockets released after this date are available at <http://dms.nts.gov/pubdms/>.

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).