



National Transportation Safety Board Aviation Accident Factual Report

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|--------------------------------|---|-------------------------|-------------|
| Location: | Kalamazoo, MI | Accident Number: | CHI04LA097 |
| Date & Time: | 04/02/2004, 0909 EST | Registration: | N986AV |
| Aircraft: | Cessna 172R | Aircraft Damage: | Substantial |
| Defining Event: | | Injuries: | 1 None |
| Flight Conducted Under: | Part 91: General Aviation - Instructional | | |

HISTORY OF FLIGHT

On April 2, 2004, at 0909 eastern standard time, a Cessna 172R, operated by Western Michigan University (WMU) as an instructional airplane, received substantial damage during landing when it veered off runway 05 at Kalamazoo/Battle Creek International Airport (AZO), Kalamazoo, Michigan. The airplane impacted two runway lights and a taxiway sign. Visual meteorological conditions prevailed at the time of the accident. The 14 CFR Part 91 solo instructional flight was not operating on a flight plan. The student pilot was uninjured. The local flight originated from AZO at 0808.

The student pilot reported that his last dual instructional flight was with his flight instructor on April 1, 2004, at which time they discussed his assigned solo flight for the morning of April 2, 2004. The student pilot reported that he used runway 05 (3,466 feet by 100 feet, asphalt) during his first solo flight, which he described as fine.

On the day of the accident, the student pilot checked winds, which were reported to be 360 degrees at 10 knots. He filled out his dispatch release sheet and had it signed by the flight instructor on duty. The student pilot then departed using runway 35 and performed eight touch and go's on runway 35. Another Kalamazoo air traffic controller (ATC) then changed the runway in use for aircraft to runway 05. The student pilot complied with the runway change and performed one touch and go on runway 05. As the airplane touched down, it felt to the student pilot as if the left wing lifted up. The airplane rolled down the runway on the right main and nose wheel. He regained control of the airplane before he put flaps up, continued the roll out, and took off. He then decided that he would end his flight and requested a full stop landing. He indicated that he felt confident that he could land the airplane safely. He selected 30 degrees of flaps and while in ground effect he applied two quick nose-up trims to flair easier, which his instructor recommended. He noted that the airplane was crabbing on final and touched down on the left main landing gear and the right main landing gear. The wind caught the wing and forced the airplane to nose down. The airplane began to fishtail and skid hitting the runway 05 apron sign and shearing off the left main landing gear off coming to rest in grass.

PERSONNEL INFORMATION

The pilot was enrolled in WMU's Aviation Science and Administration program on January 2, 2004. He was issued an airman medical certificate on November 22, 2003. He received his first solo endorsement on March 30, 2004, in a Cessna 172R at a total flight time of 22.5 hours. He accumulated a total flight time of 25.5 hours at the time of his second solo flight, which was the accident flight.

According to WMU's Flight Dispatch Sheet, dated April 2, 2004, and signed by the an "authorizing instructor," the pilot had maximum wind limitations as follows:

Maximum wind: 12 knots

Maximum crosswind: 5 knots

AIRPLANE INFORMATION

The 1998 Cessna 172R, serial number 17280580, was registered to and operated by WSU as an instructional airplane used in the College of Aviation. The airplane accumulated a total time of 2,647 hours.

According to the Cessna 172R Skyhawk Information Manual, "When landing in a strong crosswind, use the minimum flap setting required for the field length. If flaps settings greater than 20 degrees are used in sideslips with full rudder deflection, some elevator oscillation may be felt at normal approach speeds. However, this does not affect the control of the airplane. Although the crab or combination method of drift correction may be used, the wing low method gives the best control. After touchdown, hold a straight course with the steerable nose wheel and occasional braking if necessary.

"The maximum allowable crosswind velocity is dependent upon pilot capability as well as airplane limitations. Operation in direct crosswinds of 15 knots has been demonstrated."

METERLOGICAL INFORMATION

The AZO Automated Surface Observing System recorded wind for the following time periods:

0653: wind 350 degrees at 10 knots

0753: wind 350 degrees at 10 knots

0853: wind 340 degrees at 13 knots

0923: wind 340 degrees at 13 knots

0953: wind 360 degrees at 12 knots

1053: wind 350 degrees at 12 knots

There were no wind gusts recorded on the day of the accident until 1253 at which time the wind was from 360 degrees at 13 knots, gust 17 knots.

AIRPORT INFORMATION

Runway 17-35 was a 6,500 feet by 150 feet grooved asphalt runway.

Runway 05-23 was a 3,436 feet by 100 feet grooved asphalt runway.

According to the airport manager, only runway 17-35 was part of a runway use program, which was voluntary for jet aircraft noise abatement.

TESTS AND RESEARCH

The pilot stated during an interview that he "thinks" the maximum demonstrated cross wind for the accident airplane is 15 knots. He said that prior to the accident he did not know what the crosswind landing flaps setting and procedures were, but he received instruction in these area following the accident. He said that the air traffic controller who initiated the runway change was different from the one prior to the change. The change in runways occurred about 0910. The pilot said that the reason he did not request a different runway was due to his being a new student; he felt belittled by the "tower" and was intimidated by air traffic control.

The airport manager said that the airport has a voluntary runway in use program that is "strictly" for noise abatement for noise abatement and only for runway 17-35. The noise abatement is mainly designed for jet aircraft.

According to Federal Aviation Administration Order 8400.9, National Safety and Operational Criteria for Runway Use Programs, section 3-5-1:

a. Except where a "runway use" program is in effect, use the runway most nearly aligned with the wind when 5 knots or more or the "calm wind" runway when less than 5 knots (set tetrahedrons accordingly) unless use of another runway:

NOTE -

1 - If a pilot prefers to use a runway different from that specified, the pilot is expected to advise ATC.

2 - At airports where a "runway use" program is established, ATC will assign runways deemed to have the least noise impact. If in the interest of safety a runway different from that specified is preferred, the pilot is expected to advise ATC accordingly. ATC will honor such requests and advise pilots when the requested runway is noise sensitive.

The student pilot did not advise ATC of his preference of runways to use.

Student Pilot Information

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|----------------------------------|--|--|----------------------------|
| Certificate: | Student | Age: | 30, Male |
| Airplane Rating(s): | None | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | Seatbelt, Shoulder harness |
| Instrument Rating(s): | None | Second Pilot Present: | No |
| Instructor Rating(s): | None | Toxicology Performed: | No |
| Medical Certification: | Class 1 None | Last FAA Medical Exam: | 11/20/2003 |
| Occupational Pilot: | | Last Flight Review or Equivalent: | |
| Flight Time: | 28 hours (Total, all aircraft), 28 hours (Total, this make and model), 2 hours (Pilot In Command, all aircraft), 28 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

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|-------------------------------|-----------------------------|--------------------------------|------------------|
| Aircraft Make: | Cessna | Registration: | N986AV |
| Model/Series: | 172R | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | No |
| Airworthiness Certificate: | Normal | Serial Number: | 17280580 |
| Landing Gear Type: | Tricycle | Seats: | 4 |
| Date/Type of Last Inspection: | 01/28/2004, AAIP | Certified Max Gross Wt.: | 2450 lbs |
| Time Since Last Inspection: | 63.6 Hours | Engines: | 1 Reciprocating |
| Airframe Total Time: | 2647 Hours | Engine Manufacturer: | Textron Lycoming |
| ELT: | Installed, not activated | Engine Model/Series: | IO-360-L2A |
| Registered Owner: | Western Michigan University | Rated Power: | 160 hp |
| Operator: | Western Michigan University | Operating Certificate(s) Held: | None |
| Operator Does Business As: | | Operator Designator Code: | JX8S |

Meteorological Information and Flight Plan

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|----------------------------------|---------------------|--------------------------------------|------------------|
| Conditions at Accident Site: | Visual Conditions | Condition of Light: | Day |
| Observation Facility, Elevation: | AZO, 892 ft msl | Distance from Accident Site: | 0 Nautical Miles |
| Observation Time: | 0853 EST | Direction from Accident Site: | |
| Lowest Cloud Condition: | Clear | Visibility | 10 Miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | 13 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 340° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29.98 inches Hg | Temperature/Dew Point: | 6°C / -4°C |
| Precipitation and Obscuration: | | | |
| Departure Point: | Kalamazoo, MI (AZO) | Type of Flight Plan Filed: | None |
| Destination: | (AZO) | Type of Clearance: | VFR |
| Departure Time: | 0808 EST | Type of Airspace: | Class D |

Airport Information

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|----------------------|--------------------------------------|---------------------------|----------------------------|
| Airport: | KALAMAZOO/BATTLE CREEK INTERNA (AZO) | Runway Surface Type: | Asphalt |
| Airport Elevation: | 874 ft | Runway Surface Condition: | |
| Runway Used: | 05 | IFR Approach: | None |
| Runway Length/Width: | 3436 ft / 100 ft | VFR Approach/Landing: | Full Stop; Traffic Pattern |

Wreckage and Impact Information

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|----------------------------|--------|-----------------------------|-----------------------|
| Crew Injuries: | 1 None | Aircraft Damage: | Substantial |
| Passenger Injuries: | N/A | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 1 None | Latitude, Longitude: | 42.234722, -85.551944 |

Administrative Information

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| Investigator In Charge (IIC): | Mitchell F Gallo |
| Additional Participating Persons: | John Beeby; Federal Aviation Administration; Grand Rapids, MI |
| Investigation Docket: | NTSB accident and incident docket 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 , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ . |