# National Transportation Safety Board
# Aviation Accident Final Report

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| **Location:** | Grand Forks, ND | **Accident Number:** | CEN09CA404 |
| **Date & Time:** | 07/02/2009, 0830 CDT | **Registration:** | N538ND |
| **Aircraft:** | CESSNA 172S | **Aircraft Damage:** | Substantial |
| **Defining Event:** | Hard landing | **Injuries:** | 1 None |
| **Flight Conducted Under:** | Part 91: General Aviation - Instructional | | |

## Analysis

The accident occurred during the student pilot's third landing on his first solo flight. He reported that his first two landings were uneventful, but the airplane landed hard on the third landing for unknown reasons. An after-flight inspection revealed that one of the propeller blade tips was curled from contact with the runway and that the engine firewall was substantially deformed.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The student pilot's improper landing flare that resulted in a hard landing.

### Findings

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| **Aircraft** | |
| **Personnel issues** | Aircraft control - Student pilot (Cause) |

# Factual Information

## History of Flight

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| **Landing-flare/touchdown** | Hard landing (Defining event)<br>Abnormal runway contact |

## Student Pilot Information

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|---|---|---|---|
| **Certificate:** | Student | **Age:** | 23, 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 Without Waivers/Limitations | **Last Medical Exam:** | 05/28/2009 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 23 hours (Total, all aircraft), 23 hours (Total, this make and model), 0 hours (Pilot In Command, all aircraft), 23 hours (Last 90 days, all aircraft), 23 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft) | | |

## Aircraft and Owner/Operator Information

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|---|---|---|---|
| **Aircraft Manufacturer:** | CESSNA | **Registration:** | N538ND |
| **Model/Series:** | 172S | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | | **Amateur Built:** | No |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 172S10832 |
| **Landing Gear Type:** | Tricycle | **Seats:** | 4 |
| **Date/Type of Last Inspection:** | 06/29/2009, AAIP | **Certified Max Gross Wt.:** | 2550 lbs |
| **Time Since Last Inspection:** | | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 558 Hours | **Engine Manufacturer:** | Lycoming |
| **ELT:** | Installed, not activated | **Engine Model/Series:** | IO-360-L2A |
| **Registered Owner:** | UND Aerospace Foundation | **Rated Power:** | 180 hp |
| **Operator:** | UND Aerospace Foundation | **Air Carrier Operating Certificate:** | None |

## Meteorological Information and Flight Plan

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| **Observation Facility, Elevation:** | KGFK, 845 ft msl | **Observation Time:** | 0853 CDT |
| **Distance from Accident Site:** | 0 Nautical Miles | **Condition of Light:** | Day |
| **Direction from Accident Site:** | | **Conditions at Accident Site:** | Visual Conditions |
| **Lowest Cloud Condition:** | Few / 25000 ft agl | **Temperature/Dew Point:** | 19°C / 15°C |
| **Lowest Ceiling:** | None | **Visibility** | 10 Miles |
| **Wind Speed/Gusts, Direction:** | 5 knots, 10° | **Visibility (RVR):** | |
| **Altimeter Setting:** | 30.07 inches Hg | **Visibility (RVV):** | |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | Grand Forks, ND (KGFK) | **Type of Flight Plan Filed:** | None |
| **Destination:** | Grand Forks, ND (KGFK) | **Type of Clearance:** | VFR |
| **Departure Time:** | 0820 CDT | **Type of Airspace:** | Class D |

## Airport Information

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| **Airport:** | Grand Forks International (KGFK) | **Runway Surface Type:** | Asphalt |
| **Airport Elevation:** | 845 ft | **Runway Surface Condition:** | Dry |
| **Runway Used:** | 35L | **IFR Approach:** | None |
| **Runway Length/Width:** | 7349 ft / 150 ft | **VFR Approach/Landing:** | Stop and Go; 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 | | |

## Administrative Information

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| **Investigator In Charge (IIC):** | Andrew T Fox | **Adopted Date:** | 11/09/2009 |
| **Additional Participating Persons:** | John G Vold; Federal Aviation Administration - Fargo FSDO; Fargo, ND | | |
| **Publish Date:** | 11/09/2009 | | |
| **Note:** | This accident report documents the factual circumstances of this accident as described to the NTSB. | | |
| **Investigation Docket:** | http://dms.ntsb.gov/pubdms/search/dockList.cfm?mKey=74182 | | |

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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