



Aviation Investigation Final Report

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| Location: | MACKINAC ISLAND, Michigan | Accident Number: | CHI00LA264 |
| Date & Time: | August 19, 2000, 16:00 Local | Registration: | N9174W |
| Aircraft: | Piper PA-28-235 | Aircraft Damage: | Substantial |
| Defining Event: | | Injuries: | 2 None |
| Flight Conducted Under: | Part 91: General aviation - Personal | | |

Analysis

The pilot said his flight was uneventful until the final approach to landing on runway 08 at the Mackinac Island, Michigan, Airport (MCD). The airport winds were reported as 3-4 knots from the north. "Over the threshold, the left wing [of the airplane] went up to approximately 35-40 degrees." The pilot said that he was able to "stabilize the aircraft just prior to touchdown. The initial landing was hard, and the plane porpoised prior to the second touchdown." The pilot said the airplane then veered to the left. "The plane continued on to the grassy area on the left side of the runway and the nose gear collapsed." Following the accident, the pilot observed a large American flag, south of the runway, "standing straight out (north to south)." An examination of the airplane revealed no anomalies. Nine minutes prior to the accident, the automated weather observation system at the airport reported clear skies, 10 miles visibility, winds 360 degrees at 6 knots, temperature 65 degrees F, dew point 35 degrees F, and altimeter 30.27 inches of Mercury. Six minutes prior to the accident, the Automated Surface Observation System at Alpena, Michigan, 66 miles from MCD at 140 degrees, reported clear skies, 10 miles visibility, winds 320 degrees at 11 knots, gusts to 18 knots, temperature 65 degrees F, dew point 37 degrees F, and altimeter 30.26 inches of Mercury. The Airport/Facilities Directory for the Mackinac Island Airport, states in the remarks section, "AWOS-3 winds unreliable due to trees north of the runway."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot not maintaining aircraft control in response to the uncommanded roll, and the excessive descent to the runway resulting in the hard landing. Factors relating to the accident were the pilot's attempted recovery from the uncommanded roll, the high crosswind, the pilot's recovery from the bounced landing, and his inadequate preflight planning in preparing for the

wind conditions at the airport.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: APPROACH - VFR PATTERN - FINAL APPROACH

Findings

1. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
 2. (F) REMEDIAL ACTION - ATTEMPTED - PILOT IN COMMAND
 3. (F) WEATHER CONDITION - CROSSWIND
 4. (F) WEATHER CONDITION - HIGH WIND
 5. (F) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND
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Occurrence #2: HARD LANDING

Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings

6. (C) DESCENT - EXCESSIVE
 7. (F) RECOVERY FROM BOUNCED LANDING - PERFORMED - PILOT IN COMMAND
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Occurrence #3: NOSE GEAR COLLAPSED

Phase of Operation: LANDING - ROLL

Findings

8. LANDING GEAR, NOSE GEAR - FRACTURED

Factual Information

On August 19, 2000, at 1600 eastern daylight time (edt), a Piper PA-28-235, N9174W, operated by a private pilot, sustained substantial damage during a hard landing on runway 8 (3,501 feet by 75 feet, dry asphalt) at the Mackinac Island Airport (MCD). Visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted under 14 CFR Part 91. No flight plan was on file. The pilot and passenger, on board the airplane, reported no injuries. The cross-country flight originated at Jackson, Michigan, and was en route to Mackinac Island, Michigan.

In his written statement, the pilot said his flight was uneventful until the final approach to landing. He said that the airport winds were reported as 3-4 knots from the north. "Over the threshold, the left wing [of the airplane] went up to approximately 35-40 degrees." The pilot said that he was able to "stabilize the aircraft just prior to touchdown. The initial landing was hard, and the plane porpoised prior to the second touchdown." The pilot said the airplane then veered to the left.

"The plane continued on to the grassy area on the left side of the runway and the nose gear collapsed."

Following the accident, the pilot said he observed a large American flag, located near the tree line south of the runway, "standing straight out (north to south)." The pilot said the airport manager told him that the north winds come over the top of the trees, descend to the ground, start swirling, and continue south across the runway.

A Federal Aviation Administration inspector examined the airplane at the Mackinac Island Airport. The propeller showed torsional bending, chordwise scratches, tip curling, and several nicks in the leading and trailing edges of the blades. The nose gear was broken aft. The firewall was bent rearward. Several of the bottom fuselage rails were bent inward. One of the rails was punctured inward. Flight control continuity was confirmed. An examination of the engine and other airplane systems revealed no anomalies.

At 1551 edt, the automated weather observation system (AWOS) at the Mackinac Island Airport, reported clear skies, 10 miles visibility, winds 360 degrees at 6 knots, temperature 65 degrees F, dew point 35 degrees F, and altimeter 30.27 inches of Mercury.

At 1554 edt, the automated surface observation system (ASOS) at Alpena, Michigan, 66 miles from MCD at 140 degrees, reported clear skies, 10 miles visibility, winds 320 degrees at 11 knots, gusts to 18 knots, temperature 65 degrees F, dew point 37 degrees F, and altimeter 30.26 inches of Mercury.

The Airport/Facilities Directory, East Central U.S. for the Mackinac Island Airport, states in the communications/navigation aids remarks section, AWOS-3 winds unreliable due to trees north of the runway.

Pilot Information

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|----------------------------------|--|--|-------------------|
| Certificate: | Private | Age: | 67, Male |
| Airplane Rating(s): | Single-engine land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | |
| Instrument Rating(s): | Airplane | Second Pilot Present: | No |
| Instructor Rating(s): | None | Toxicology Performed: | No |
| Medical Certification: | Class 2 Valid Medical-w/ waivers/lim | Last FAA Medical Exam: | September 1, 2000 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | 1033 hours (Total, all aircraft), 850 hours (Total, this make and model), 822 hours (Pilot In Command, all aircraft), 18 hours (Last 90 days, all aircraft), 4 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|--------------------------|---------------------------------------|-----------------|
| Aircraft Make: | Piper | Registration: | N9174W |
| Model/Series: | PA-28-235 PA-28-235 | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 28-10829 |
| Landing Gear Type: | Tricycle | Seats: | 4 |
| Date/Type of Last Inspection: | July 22, 2000 Annual | Certified Max Gross Wt.: | 2900 lbs |
| Time Since Last Inspection: | 4 Hrs | Engines: | 1 Reciprocating |
| Airframe Total Time: | 1632 Hrs | Engine Manufacturer: | Lycoming |
| ELT: | Installed, not activated | Engine Model/Series: | O-540-B4B5 |
| Registered Owner: | RONALD J. PARKER | Rated Power: | 235 Horsepower |
| Operator: | | Operating Certificate(s) Held: | None |
| 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: | MCD ,740 ft msl | Distance from Accident Site: | 1 Nautical Miles |
| Observation Time: | 15:51 Local | Direction from Accident Site: | 260° |
| Lowest Cloud Condition: | Clear | Visibility | 10 miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | 6 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 360° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 30 inches Hg | Temperature/Dew Point: | 65°C / 35°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | JACKSON , MI (JXN) | Type of Flight Plan Filed: | None |
| Destination: | (MCD) | Type of Clearance: | None |
| Departure Time: | 13:00 Local | Type of Airspace: | Class G |

Airport Information

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|-----------------------------|-----------------------------|----------------------------------|---------------------------|
| Airport: | MACKINAC ISLAND AIRPORT MCD | Runway Surface Type: | Concrete |
| Airport Elevation: | 740 ft msl | Runway Surface Condition: | Dry |
| Runway Used: | 8 | IFR Approach: | None |
| Runway Length/Width: | 3501 ft / 75 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: | 1 None | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 2 None | Latitude, Longitude: | 45.850936,-84.619346(est) |

Administrative Information

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| Investigator In Charge (IIC): | Bowling, David |
| Additional Participating Persons: | DON FINNEY; GRAND RAPIDS , MI |
| Original Publish Date: | October 17, 2001 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | The NTSB traveled to the scene of this accident. |
| Investigation Docket: | https://data.ntsb.gov/Docket?ProjectID=50098 |

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](#).