# Aviation Investigation Final Report

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| **Location:** | Plattsburgh, New York | **Accident Number:** | ERA09LA244 |
| **Date & Time:** | April 12, 2009, 09:00 Local | **Registration:** | N258PA |
| **Aircraft:** | De Havilland DHC2 | **Aircraft Damage:** | Substantial |
| **Defining Event:** | Nose over/nose down | **Injuries:** | 2 None |
| **Flight Conducted Under:** | Part 91: General aviation - Personal | | |

## Analysis

The pilot, seated in the left seat, was performing touch-and-go practice in the tailwheel-equipped airplane and had just performed a short-field landing and takeoff. Upon landing again, the pilot began to apply braking to the airplane. The owner/pilot-rated passenger, seated in the right seat, felt the "tail coming off the ground" and applied full back pressure on the control column. As the owner informed the pilot to "get off the brakes," the pilot applied more toe brake pressure, causing the tail of the airplane to rise and the propeller to strike the runway. Postaccident examination of the airplane revealed that the right wing aft attachment point was fractured. Metallurgical examination revealed that the right wing failed in forward bending due to an overstress event; the most likely source of the overstress was the propeller strike.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper application of brakes during the landing rollout.

### Findings

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| **Personnel issues** | Aircraft control - Pilot |
| **Aircraft** | Surface speed/braking - Incorrect use/operation |
| **Aircraft** | Attach fittings (on wing) - Capability exceeded |

# Factual Information

## History of Flight

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| **Landing-landing roll** | Loss of control on ground |
| **Landing-landing roll** | Nose over/nose down (Defining event) |

HISTORY OF FLIGHT

On April 12, 2009, about 0900 eastern daylight time, a deHavilland DHC2 III, N258PA, was substantially damaged during touch-and-go landing practice at Plattsburgh International Airport (PBG), Plattsburgh, New York. Visual meteorological conditions prevailed and no flight plan was filed for the flight, which departed Lake Placid Airport (LKP), Lake Placid, New York about 0730. The certificated commercial pilot and the airplane's owner/pilot-rated passenger were not injured. The personal flight was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

During a telephone interview, the pilot, who had been seated in the left front seat, reported that on the day before the accident, they flew to Adirondack Regional Airport (SLK), Saranac Lake, New York. While at SLK, they practiced touch-and-go crosswind landings and then returned to LKP after approximately 2 hours. The day of the accident, they departed LKP and flew to SLK to fuel the airplane. On arrival, the fixed base operator reported to them via radio that the fuel truck was inoperative and was unable to supply fuel. Due to their state of fuel, they elected to fly to PBG and perform some more touch-and-go pattern work, then fuel the airplane and return to LKP.

During the flight from SLK to PBG, the pilot stated that there was a slight "buffet feeling" in the control column; however, he did not know what caused the "buffet." After performing about four "normal" touch-and-go landings, the owner of the airplane informed the pilot that they should practice short field landings. The owner further informed the pilot that upon landing, differential braking was required to "steer the airplane."

The pilot performed one short field landing, departed, and on the subsequent landing, adjusted the propeller to the beta setting and applied toe brakes. The tail of the airplane began to rise and he and the owner utilized full back pressure on the control yoke in order to try and lower the tail. As the tail continued to rise and the airplane was almost stopped, the sound of the propeller contacting the runway was heard. The pilot further stated that the wing tip fuel tanks were almost full and held about 30 gallons of fuel per tank, and that the main fuselage tanks were almost empty. Prior to being towed to parking, the owner/pilot elected to gravity transfer the fuel from the tip tanks to the fuselage tank, in order to reduce the weight on the wings.

According to the owner/pilot, who had been seated in the right front seat, the flying pilot was

practicing touch-and-go pattern work at PBG. Upon landing on runway 35, the pilot began to apply braking to the airplane. The owner stated that he felt the "tail coming off the ground" and applied full back pressure on the control column. As the owner informed the flying pilot to "get off the brakes," the flying pilot applied more toe brake pressure, allowing the tail of the airplane to rise, striking the propeller on the runway. After exiting the airplane and examining the wing, the owner saw what he perceived to be a gap seal coming apart and the airplane was towed to an airplane parking ramp.

## PERSONNEL INFORMATION

The pilot, age 44, held a commercial pilot certificate, with ratings for airplane single-engine land, airplane multiengine land and instrument airplane. He also held a private pilot certificate, with a rating for airplane single-engine sea. His most recent Federal Aviation Administration (FAA) third-class medical certificate was issued on July 2, 2007. At the time of the accident, the pilot reported that he had 1,095 total hours of flight experience, and about 6 hours of flight experience in the accident airplane make and model. He completed his commercial checkride on January 10, 2009.

The owner/pilot-rated passenger, age 52, held a commercial pilot and certified flight instructor certificate. His most recent FAA second-class medical certificate was issued on May 30, 2008. At the time of the accident, the owner/pilot reported that he had 2,000 total hours of flight experience, 500 hours of flight experience in the accident airplane make and model, and 100 hours of flight experience in the make and model as an instructor. His most recent flight review was conducted on March 25, 2009.

## AIRCRAFT INFORMATION

According to the FAA records, the airplane was manufactured in 1968 and was registered to the owner in October 2003.

According to written documentation from the owner, the airplane's most recent annual inspection was completed on June 20, 2008, at which time it had accumulated approximately 15,000 total hours. During a telephone interview, the owner reported that in 2004 the wings of the airplane were rebuilt and all attachment fittings were replaced with new parts. A Baron MK Beaver Wing Angle modification was also installed at that time. Since 2004, the airplane had flown approximately 200 total flight hours and was stored in a hangar when it was not flying.

## METEOROLOGICAL INFORMATION

The reported weather at PBG, at 0853, included wind from 010 degrees at 13 knots, visibility 10 miles, few clouds at 4,200 feet and at 5,500 feet, temperature minus 1 degree C, dew point minus 11 degrees C, altimeter 30.14 inches of mercury.

## WRECKAGE AND IMPACT INFORMATION

The FAA inspector responding to the accident examined the airplane. On further examination, it was noted that the right wing aft spar attachment point had been fractured and the trailing edge of the right wing was canted downward.

TEST AND RESEARCH

The right and left wing attach points were removed and sent to the NTSB Materials Laboratory for analysis. The parts were examined on November 24, 2009. The left attachment point had no visible fracture nor was there any visible bending or elongation at the attachment point. The right wing attachment points had fractures and physical deformation consistent with ductile and tensile overstress, and the wing spar was bent forward outboard of the attachment point. There was no indication of fatigue on any fracture surface.

## Pilot Information

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| **Certificate:** | Commercial; Private | **Age:** | 44,Male |
| **Airplane Rating(s):** | Single-engine land; Single-engine sea; Multi-engine land | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | |
| **Instrument Rating(s):** | Airplane | **Second Pilot Present:** | Yes |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | No |
| **Medical Certification:** | Class 3 Without waivers/limitations | **Last FAA Medical Exam:** | July 2, 2007 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | January 10, 2009 |
| **Flight Time:** | 1096 hours (Total, all aircraft), 6 hours (Total, this make and model), 27 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft) | | |

## Flight instructor Information

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| **Certificate:** | Commercial; Flight instructor | **Age:** | 52,Male |
| **Airplane Rating(s):** | Single-engine land; Single-engine sea; Multi-engine land | **Seat Occupied:** | Right |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | |
| **Instrument Rating(s):** | Airplane | **Second Pilot Present:** | Yes |
| **Instructor Rating(s):** | Airplane multi-engine; Airplane single-engine; Instrument airplane | **Toxicology Performed:** | No |
| **Medical Certification:** | Class 2 Without waivers/limitations | **Last FAA Medical Exam:** | May 30, 2008 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | March 25, 2009 |
| **Flight Time:** | (Estimated) 2000 hours (Total, all aircraft), 500 hours (Total, this make and model), 1850 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 20 hours (Last 30 days, all aircraft) | | |

## Aircraft and Owner/Operator Information

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| **Aircraft Make:** | De Havilland | **Registration:** | N258PA |
| **Model/Series:** | DHC2 III | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 1690TB58 |
| **Landing Gear Type:** | Tailwheel | **Seats:** | 9 |
| **Date/Type of Last Inspection:** | June 20, 2008 Annual | **Certified Max Gross Wt.:** | 5370 lbs |
| **Time Since Last Inspection:** | | **Engines:** | 1 Turbo prop |
| **Airframe Total Time:** | 15000 Hrs as of last inspection | **Engine Manufacturer:** | Pratt and Whitney Canada |
| **ELT:** | Installed, not activated | **Engine Model/Series:** | PT6-20 |
| **Registered Owner:** | Clemente Motor Inc | **Rated Power:** | 550 Horsepower |
| **Operator:** | Clemente Motor Inc | **Operating Certificate(s) Held:** | None |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | PBK,234 ft msl | **Distance from Accident Site:** | |
| **Observation Time:** | 08:53 Local | **Direction from Accident Site:** | |
| **Lowest Cloud Condition:** | Few / 4200 ft AGL | **Visibility** | 10 miles |
| **Lowest Ceiling:** | None | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 13 knots / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | 10° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 30.13 inches Hg | **Temperature/Dew Point:** | -1°C / -11°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | Lake Placid, NY (LKP ) | **Type of Flight Plan Filed:** | None |
| **Destination:** | Plattsburgh, NY (PBG ) | **Type of Clearance:** | None |
| **Departure Time:** | 07:30 Local | **Type of Airspace:** | |

## Airport Information

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| **Airport:** | Plattsburgh International PBG | **Runway Surface Type:** | Asphalt;Concrete |
| **Airport Elevation:** | 234 ft msl | **Runway Surface Condition:** | Dry |
| **Runway Used:** | 35 | **IFR Approach:** | None |
| **Runway Length/Width:** | 11758 ft / 200 ft | **VFR Approach/Landing:** | Touch and go;Traffic pattern |

## Wreckage and Impact Information

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| **Crew Injuries:** | 2 None | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 2 None | **Latitude, Longitude:** | 44.650554,-73.467498 |

## Administrative Information

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| **Investigator In Charge (IIC):** | Etcher, Shawn |
| **Additional Participating Persons:** | Alan K Miller; FAA/FSDO; Albany, NY |
| **Original Publish Date:** | August 12, 2010 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=73659 |