



# Aviation Investigation Final Report

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|--------------------------------|--------------------------------------|-------------------------|-------------|
| <b>Location:</b>               | Chesapeake, Ohio                     | <b>Accident Number:</b> | CEN11LA169  |
| <b>Date &amp; Time:</b>        | January 30, 2011, 13:50 Local        | <b>Registration:</b>    | N55212      |
| <b>Aircraft:</b>               | Cessna 172P                          | <b>Aircraft Damage:</b> | Substantial |
| <b>Defining Event:</b>         | Loss of engine power (partial)       | <b>Injuries:</b>        | 2 Minor     |
| <b>Flight Conducted Under:</b> | Part 91: General aviation - Personal |                         |             |

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## Analysis

The pilot reported that the takeoff run was normal, but during the initial climb the engine started to sound as if it was running rough. He immediately executed a steep left turn to return and land on the runway. On the final approach the airplane was high and fast, and floated down the runway. The airplane touched down about 2,000 feet down the runway and the pilot applied the toe brakes without effect. He applied full power and attempted to retract the flaps to avoid hitting the trees that were beyond the departure end of the runway. With the airspeed about 60 knots, the stall horn sounded and the airplane impacted the tree tops. The left wing dropped and the airplane rotated to the left with the nose impacting the ground. A postaccident examination of the airplane revealed no airframe or engine anomalies. Based on the temperature and dew point about the time of the accident, the conditions were favorable for serious icing at any power setting.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The partial loss of engine power due to carburetor icing and the pilot's delayed use of carburetor heat and failure to attain the proper touchdown point on the runway during the precautionary landing.

## Findings

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|                             |  |
|-----------------------------|--|
| <b>Environmental issues</b> | Conducive to carburetor icing - Contributed to outcome |
| <b>Personnel issues</b>     | Incorrect action performance - Pilot                   |

## Factual Information

### History of Flight

|                             |   |
|-----------------------------|---|
| <b>Initial climb</b>        | Loss of engine power (partial) (Defining event) |
| <b>Takeoff</b>              | Abrupt maneuver                                 |
| <b>Takeoff</b>              | Collision with terr/obj (non-CFIT)              |
| <b>Uncontrolled descent</b> | Collision with terr/obj (non-CFIT)              |

On January 30, 2011, about 1350 eastern standard time, a Cessna 172P, N55212, sustained substantial damage when it impacted the terrain after it hit trees during an aborted landing from runway 26 (3001 feet by 70 feet, asphalt) at the Lawrence County Airport (HTW), South Point, Ohio. The private pilot and passenger received minor injuries. The airplane was registered to and operated by Attitude Aviation under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed and no flight plan was filed. The flight departed HTW at 1335 en route to Logan, West Virginia.

In an interview with inspectors from the Federal Aviation Administration (FAA), the pilot reported that when he arrived at the airport, he noted that the accident airplane had just returned from a flight. He conducted a preflight inspection of the rental airplane and noted that there were about 12 gallons of fuel in the right tank and 11 gallons in the left tank. He sumped the fuel tanks and found the fuel free of contaminants. After engine start, he taxied to the ramp's run-up area and conducted the engine run-up. He checked the magnetos and carburetor heat and found no anomalies. After completing his run-up, he back taxied on runway 8 into position for takeoff. After a final inspection of engine instruments and flight instruments/controls, he proceeded to apply full throttle for the takeoff run.

He stated that the takeoff was normal. He continued to climb on the runway heading and noted that he had cleared the high terrain that lies just north of the airport. The pilot reported that the engine suddenly and continuously started to sound as if it was running "rough" and "missing". He stated he did not check engine instruments, keeping his focus outside. He immediately executed a steep left turn to return and land. Upon completing the turn, he realized he was too high for his intended landing on runway 26. He retarded the throttle to idle, extended full flaps, executed a forward slip, and began a series of shallow S-turns to lose altitude. He did not remember if he applied carburetor heat, although that was his normal practice.

On the final approach for runway 26, he knew he was too high and "slightly" fast. He stated that the airspeed was 70-75 knots as the airplane crossed the threshold and began to "float" down the runway. The airplane touched down about 2,000 feet down the runway, and he applied the toe brakes without effect. He stated his focus was on the tree line at the end of the runway. He stated as the aircraft approached the tree line, he realized he was going to hit the

trees. He applied full power and attempted to retract the flaps “one notch” to avoid hitting the trees low, still not intending to go-around with a “faulty” engine. He stated that the flaps came “all the way up” as he raised the nose to avoid hitting the trees. He reported that the airspeed indicator read 60 knots as the stall horn sounded and the airplane impacted the tree tops. The left wing dropped and the airplane rotated to the left with the nose impacting the ground. The airplane came to rest in an upright position facing the runway. The pilot and passenger evacuated the airplane out the passenger’s door.

FAA inspectors examined the airplane at the accident site. It was substantially damaged, but generally in one piece. The first impact scar and matching paint chips indicated that the left wingtip made first contact with the ground. The wing and fuselage were substantially damaged. One propeller blade exhibited tip curl. The other blade was bent forward, but the leading edge exhibited nicks and gouges. Inspection of the instrument panel indicated that the carburetor heat was on, the throttle was full open, and the flaps were set at 0 degrees. First responders reported that they had moved the fuel selector/mixture to the OFF position. The engine oil level was found to be at 5.25 quarts and both wing fuel tanks were found to be approximately 3/4 full. Fuel sumped from wing tanks and lower sump was found to be clean and free of contaminants. An engine continuity field test was performed and no anomalies were noted. Spark plugs, filters, fuel lines, magnetos, carburetor, and engine compression were all found to be satisfactory. The inspection of the aircraft logbook entries and all required documentation revealed no discrepancies.

The student pilot, who had flown the accident airplane prior to the accident flight, reported that he did not experience any engine problems or icing conditions during his 0.6 hour flight.

At 1351, the reported surface weather observation at (HTS) located 5 nautical miles southwest of HTW was: wind 040 degrees at 7 knots, 10 miles visibility, sky clear, temperature 7 degrees Celsius (C), dew point 1 degree C, altimeter 30.10.

The Carburetor Icing Chart indicates that “Serious Icing – Any Power” exists with a temperature of 7 degrees C and a dew point of 1 degrees C.

## Pilot Information

|                                  |  |  |                    |
|----------------------------------|--|--|--------------------|
| <b>Certificate:</b>              | Private  | <b>Age:</b>                              | 48, Male           |
| <b>Airplane Rating(s):</b>       | Single-engine land   | <b>Seat Occupied:</b>                    | Left               |
| <b>Other Aircraft Rating(s):</b> | None   | <b>Restraint Used:</b>                   |                    |
| <b>Instrument Rating(s):</b>     | None   | <b>Second Pilot Present:</b>             | No                 |
| <b>Instructor Rating(s):</b>     | None   | <b>Toxicology Performed:</b>             | No                 |
| <b>Medical Certification:</b>    | Class 2 With waivers/limitations   | <b>Last FAA Medical Exam:</b>            | September 16, 2010 |
| <b>Occupational Pilot:</b>       | No   | <b>Last Flight Review or Equivalent:</b> | November 6, 2010   |
| <b>Flight Time:</b>              | 220 hours (Total, all aircraft), 59 hours (Total, this make and model), 179 hours (Pilot In Command, all aircraft), 6 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft) |  |                    |

## Aircraft and Owner/Operator Information

|                                      |   |                                       |                 |
|--------------------------------------|---|---------------------------------------|-----------------|
| <b>Aircraft Make:</b>                | Cessna  | <b>Registration:</b>                  | N55212          |
| <b>Model/Series:</b>                 | 172P  | <b>Aircraft Category:</b>             | Airplane        |
| <b>Year of Manufacture:</b>          |   | <b>Amateur Built:</b>                 |                 |
| <b>Airworthiness Certificate:</b>    | Normal  | <b>Serial Number:</b>                 | 17275136        |
| <b>Landing Gear Type:</b>            | Tricycle  | <b>Seats:</b>                         | 4               |
| <b>Date/Type of Last Inspection:</b> | October 23, 2010 Annual                                     | <b>Certified Max Gross Wt.:</b>       | 2220 lbs        |
| <b>Time Since Last Inspection:</b>   |   | <b>Engines:</b>                       | 1 Reciprocating |
| <b>Airframe Total Time:</b>          | 8498 Hrs at time of accident                                | <b>Engine Manufacturer:</b>           | LYCOMING        |
| <b>ELT:</b>                          | C91A installed, activated, did not aid in locating accident | <b>Engine Model/Series:</b>           | 0-320-D2J       |
| <b>Registered Owner:</b>             | ATTITUDE AVIATION INC                                       | <b>Rated Power:</b>                   | 160 Horsepower  |
| <b>Operator:</b>                     | ATTITUDE AVIATION INC                                       | <b>Operating Certificate(s) Held:</b> | None            |

## Meteorological Information and Flight Plan

|   |                        |   |                  |
|---|------------------------|---|------------------|
| <b>Conditions at Accident Site:</b>     | Visual (VMC)           | <b>Condition of Light:</b>                  | Day              |
| <b>Observation Facility, Elevation:</b> | HTS,828 ft msl         | <b>Distance from Accident Site:</b>         | 5 Nautical Miles |
| <b>Observation Time:</b>                | 13:51 Local            | <b>Direction from Accident Site:</b>        | 220°             |
| <b>Lowest Cloud Condition:</b>          | Clear                  | <b>Visibility</b>                           | 10 miles         |
| <b>Lowest Ceiling:</b>                  | Broken                 | <b>Visibility (RVR):</b>                    |                  |
| <b>Wind Speed/Gusts:</b>                | 7 knots /              | <b>Turbulence Type Forecast/Actual:</b>     | /                |
| <b>Wind Direction:</b>                  | 40°                    | <b>Turbulence Severity Forecast/Actual:</b> | /                |
| <b>Altimeter Setting:</b>               | 30.1 inches Hg         | <b>Temperature/Dew Point:</b>               | 7°C / 1°C        |
| <b>Precipitation and Obscuration:</b>   |                        |   |                  |
| <b>Departure Point:</b>                 | South Point, OH (HTW ) | <b>Type of Flight Plan Filed:</b>           | None             |
| <b>Destination:</b>                     | Logan, WV (6L4 )       | <b>Type of Clearance:</b>                   | None             |
| <b>Departure Time:</b>                  | 13:45 Local            | <b>Type of Airspace:</b>                    |                  |

## Airport Information

|                             |                             |                                  |                       |
|-----------------------------|-----------------------------|----------------------------------|-----------------------|
| <b>Airport:</b>             | Lawrence County Airpark HTW | <b>Runway Surface Type:</b>      | Asphalt               |
| <b>Airport Elevation:</b>   | 568 ft msl                  | <b>Runway Surface Condition:</b> | Dry                   |
| <b>Runway Used:</b>         | 26                          | <b>IFR Approach:</b>             | None                  |
| <b>Runway Length/Width:</b> | 3001 ft / 70 ft             | <b>VFR Approach/Landing:</b>     | Precautionary landing |

## Wreckage and Impact Information

|                            |         |                             |                      |
|----------------------------|---------|-----------------------------|----------------------|
| <b>Crew Injuries:</b>      | 1 Minor | <b>Aircraft Damage:</b>     | Substantial          |
| <b>Passenger Injuries:</b> | 1 Minor | <b>Aircraft Fire:</b>       | None                 |
| <b>Ground Injuries:</b>    | N/A     | <b>Aircraft Explosion:</b>  | None                 |
| <b>Total Injuries:</b>     | 2 Minor | <b>Latitude, Longitude:</b> | 38.418609,-82.500556 |

## Administrative Information

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|--|---|
| <b>Investigator In Charge (IIC):</b>     | Silliman, James   |
| <b>Additional Participating Persons:</b> | John Crowley; FAA Cincinnati FSDO; Cincinnati, OH   |
| <b>Original Publish Date:</b>            | June 13, 2011   |
| <b>Last Revision Date:</b>               |   |
| <b>Investigation Class:</b>              | <a href="#">Class</a>   |
| <b>Note:</b>                             |   |
| <b>Investigation Docket:</b>             | <a href="https://data.nts.gov/Docket?ProjectID=78264">https://data.nts.gov/Docket?ProjectID=78264</a> |

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](#).