



Aviation Investigation Final Report

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|--------------------------------|---|-------------------------|-------------|
| Location: | Cahokia, Illinois | Accident Number: | CEN17CA140 |
| Date & Time: | February 23, 2017, | Registration: | N51827 |
| Aircraft: | Cessna 172R | Aircraft Damage: | Substantial |
| Defining Event: | Unknown or undetermined | Injuries: | N/A |
| Flight Conducted Under: | Part 91: General aviation - Instructional | | |

Analysis

The airplane was parked on the operator's ramp when Federal Aviation Administration inspector(s), during a routine ramp inspection, found that the airplane had substantial damage to the firewall and structure aft of the firewall. Airplane maintenance records showed an entry stating that the damage was due to a suspected hard landing. The operator stated that the damage must have occurred between the airplane's 100-hour inspection on September 27 and an oil change performed on October 24, 2016. The operator's mechanic stated that the damage was found when the engine cowl was removed for the oil change.

A review of airplane flight logs showed about 20 different people had flown the airplane over 48 flights between the time of the 100-hour inspection and the oil change. On October 8, 2016, a student pilot was performing touch and gos when the airplane bounced two or three times during the flight's final landing. The student pilot stated that, when she turned off the runway onto the taxiway, she noticed the airplane was not steering properly and reported to the air traffic control tower that she had some mechanical difficulty that required maintenance assistance. The student pilot's flight instructor and a company lineman responded and noticed that the airplane had a flat nosewheel tire. The lineman inflated the tire, and the student pilot and flight instructor taxied the airplane to the operator's maintenance facility. The flight instructor informed the operator's mechanic of the bounced landing and flat tire. The mechanic stated that he replaced the nose tire, performed a brief exterior walk-around visual inspection of the airplane, noting it appeared airworthy, and returned it to service. A hard landing inspection was not performed. Other than the bounced landing reported on October 8, 2016, no other concerns about the other flights were reported to the operator.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A hard landing for reasons that could not be determined based on the available evidence.

Findings

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| Not determined | (general) - Unknown/Not determined |
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Factual Information

History of Flight

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|----------------|--|
| Unknown | Unknown or undetermined (Defining event) |
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Information

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| Certificate: | Age: |
| Airplane Rating(s): | Seat Occupied: |
| Other Aircraft Rating(s): | Restraint Used: |
| Instrument Rating(s): | Second Pilot Present: |
| Instructor Rating(s): | Toxicology Performed: |
| Medical Certification: | Last FAA Medical Exam: |
| Occupational Pilot: | Last Flight Review or Equivalent: |
| Flight Time: | |

Aircraft and Owner/Operator Information

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|--------------------------------------|------------------------------|---------------------------------------|-----------------|
| Aircraft Make: | Cessna | Registration: | N51827 |
| Model/Series: | 172R | Aircraft Category: | Airplane |
| Year of Manufacture: | 2002 | Amateur Built: | |
| Airworthiness Certificate: | Normal; Utility | Serial Number: | 17281108 |
| Landing Gear Type: | Tricycle | Seats: | 4 |
| Date/Type of Last Inspection: | September 27, 2016 100 hour | Certified Max Gross Wt.: | 2457 lbs |
| Time Since Last Inspection: | | Engines: | 1 Reciprocating |
| Airframe Total Time: | | Engine Manufacturer: | Lycoming |
| ELT: | C91 installed, not activated | Engine Model/Series: | IO-360-L2A |
| Registered Owner: | B D Aviation LLC | Rated Power: | 160 Horsepower |
| Operator: | Ideal Aviation | Operating Certificate(s) Held: | None |

Meteorological Information and Flight Plan

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|---|---------|---|--------------|
| Conditions at Accident Site: | Unknown | Condition of Light: | Not reported |
| Observation Facility, Elevation: | | Distance from Accident Site: | |
| Observation Time: | | Direction from Accident Site: | |
| Lowest Cloud Condition: | | Visibility | |
| Lowest Ceiling: | | Visibility (RVR): | |
| Wind Speed/Gusts: | / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | | Temperature/Dew Point: | |
| Precipitation and Obscuration: | | | |
| Departure Point: | | Type of Flight Plan Filed: | Unknown |
| Destination: | | Type of Clearance: | Unknown |
| Departure Time: | | Type of Airspace: | Unknown |

Airport Information

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|-----------------------------|-------------------------------|----------------------------------|---------|
| Airport: | St Louis Downtown Airport CPS | Runway Surface Type: | |
| Airport Elevation: | 413 ft msl | Runway Surface Condition: | Unknown |
| Runway Used: | | IFR Approach: | Unknown |
| Runway Length/Width: | | VFR Approach/Landing: | Unknown |

Wreckage and Impact Information

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|----------------------------|-----|-----------------------------|---------------------------|
| Crew Injuries: | N/A | Aircraft Damage: | Substantial |
| Passenger Injuries: | | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | N/A | Latitude, Longitude: | 38.570278,-90.154998(est) |

Administrative Information

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| Investigator In Charge (IIC): | Gallo, Mitchell |
| Additional Participating Persons: | Dennis Mueller; Federal Aviation Administration; STL FSDO; St. Ann, MO |
| Original Publish Date: | June 7, 2017 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | This accident report documents the factual circumstances of this accident as described to the NTSB. |
| Investigation Docket: | https://data.nts.gov/Docket?ProjectID=94925 |

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](#).