



# National Transportation Safety Board Aviation Incident Final Report

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|--------------------------------|--------------------------------------|-------------------------|------------|
| <b>Location:</b>               | Hillsboro, OR                        | <b>Incident Number:</b> | LAX08IA093 |
| <b>Date &amp; Time:</b>        | 04/02/2008, 1423 PDT                 | <b>Registration:</b>    | N456       |
| <b>Aircraft:</b>               | Bennett Lancair 320                  | <b>Aircraft Damage:</b> | Minor      |
| <b>Defining Event:</b>         | Sys/Comp malf/fail (non-power)       | <b>Injuries:</b>        | 2 None     |
| <b>Flight Conducted Under:</b> | Part 91: General Aviation - Personal |                         |            |

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## Analysis

While in cruise flight, the airplane lost electrical power. The pilot went through emergency procedures to conserve electrical power, and returned to the airport. He attempted to extend the electrically operated landing gear, but only heard the right main gear come down and lock. There was no emergency gear extension system available on the airplane. Air traffic controllers in the airport tower later confirmed that the gear did not appear to be in the normal down and locked position. The pilot landed on runway 30, the nose and left main gear collapsed, and the right main gear snapped off. The airplane went off the left side of the runway onto the grass, shearing off an intersection marker and causing substantial damage to the wing spar. Postaccident examination revealed that the battery had a dead cell, and the alternator had several discrepancies.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: The malfunction of the airplane's battery and alternator that resulted in the failure of the landing gear to extend and lock in place.

## Findings

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|                             |   |
|-----------------------------|---|
| <b>Aircraft</b>             | Battery/charger - Malfunction (Cause)<br>Alternator-generator drive sys - Malfunction (Cause) |
| <b>Environmental issues</b> | Sign/marker - Not specified   |

## Factual Information

\*\*This report was modified on 10/28/2014. Please see the public docket for this accident to view the original report.\*\*

On April 2, 2008, about 1423 Pacific daylight time, an experimental Bennett Lancair 320, N456, landed with the nose gear and left main landing gear retracted at Portland-Hillsboro Airport, Portland, Oregon. The pilot/owner was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The certificated private pilot and one passenger were not injured; the airplane sustained damage to the wing spar that was determined not to be substantial. The local personal instructional flight departed Hillsboro at 1300. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot stated that while in cruise flight, the airplane lost electrical power. The pilot immediately turned off the radios and intercom in order to try to save electrical power. He also went through emergency procedures for a loss of electrical power. The pilot flew back to the Hillsboro airport through Columbia Gorge in case he had to make an emergency landing.

The pilot attempted to bring the gear down, but only heard the right main gear go down and lock. The left main gear and the nose gear did not seem to go down. The pilot stated that he went through the emergency checklist, but there is no emergency gear extension system installed on the airplane. He returned to the Hillsboro area, and received a green light-gun signal to land from the local tower. While landing, the landing gear collapsed about 500 or 600 feet down runway 30. The airplane skidded and the right main gear snapped off. The airplane went off the left side of the runway onto the grass, shearing off an intersection marker.

The pilot reported that after the occurrence, tower personnel told him that when he had flown by, the gear "did not look good." Several times during the flight the pilot checked and did not see any blown fuses. He had pulled a fuse himself and then reset it in order to "relieve pressure from the system."

After the occurrence, the pilot tested the battery and found that it had a dead cell. He also found discrepancies with the alternator. He found no anomalies within the wiring or fuses.

## History of Flight

|                      |   |
|----------------------|---|
| Enroute-cruise       | Sys/Comp malf/fail (non-power) (Defining event)             |
| Landing-landing roll | Landing gear collapse<br>Collision with terr/obj (non-CFIT) |

## Pilot Information

|                           |   |                                   |            |
|---------------------------|---|-----------------------------------|------------|
| Certificate:              | Private   | Age:                              | 55, Male   |
| Airplane Rating(s):       | Single-engine Land  | Seat Occupied:                    |            |
| Other Aircraft Rating(s): | None  | Restraint Used:                   |            |
| Instrument Rating(s):     | None  | Second Pilot Present:             | No         |
| Instructor Rating(s):     | None  | Toxicology Performed:             | No         |
| Medical Certification:    | Class 3   | Last Medical Exam:                | 03/01/2006 |
| Occupational Pilot:       | No  | Last Flight Review or Equivalent: |            |
| Flight Time:              | 300 hours (Total, all aircraft), 200 hours (Total, this make and model) |                                   |            |

## Aircraft and Owner/Operator Information

|                               |                        |                                    |                 |
|-------------------------------|------------------------|------------------------------------|-----------------|
| Aircraft Manufacturer:        | Bennett                | Registration:                      | N456            |
| Model/Series:                 | Lancair 320            | Aircraft Category:                 | Airplane        |
| Year of Manufacture:          |                        | Amateur Built:                     | Yes             |
| Airworthiness Certificate:    | Experimental           | Serial Number:                     | 5               |
| Landing Gear Type:            | Retractable - Tricycle | Seats:                             |                 |
| Date/Type of Last Inspection: | 08/01/2007, Annual     | Certified Max Gross Wt.:           |                 |
| Time Since Last Inspection:   |                        | Engines:                           | 1 Reciprocating |
| Airframe Total Time:          |                        | Engine Manufacturer:               | Lycoming        |
| ELT:                          | Not installed          | Engine Model/Series:               | 0-320           |
| Registered Owner:             | On file                | Rated Power:                       | 150 hp          |
| Operator:                     | On file                | Air Carrier Operating Certificate: | None            |

## Meteorological Information and Flight Plan

|                                  |                                  |                              |                   |
|----------------------------------|----------------------------------|------------------------------|-------------------|
| Observation Facility, Elevation: | HIO, 208 ft msl                  | Observation Time:            | 1353 PDT          |
| Distance from Accident Site:     |                                  | Condition of Light:          | Day               |
| Direction from Accident Site:    |                                  | Conditions at Accident Site: | Visual Conditions |
| Lowest Cloud Condition:          | Clear                            | Temperature/Dew Point:       | 12°C / -1°C       |
| Lowest Ceiling:                  | None                             | Visibility                   | 10 Miles          |
| Wind Speed/Gusts, Direction:     | Calm                             | Visibility (RVR):            |                   |
| Altimeter Setting:               | 30.17 inches Hg                  | Visibility (RVV):            |                   |
| Precipitation and Obscuration:   | No Obscuration; No Precipitation |                              |                   |
| Departure Point:                 | Hillsboro, OR (HIO)              | Type of Flight Plan Filed:   | None              |
| Destination:                     |                                  | Type of Clearance:           | VFR               |
| Departure Time:                  | 1300 PDT                         | Type of Airspace:            |                   |

## Airport Information

|                             |                          |                                  |                       |
|-----------------------------|--------------------------|----------------------------------|-----------------------|
| <b>Airport:</b>             | PORTLAND-HILLSBORO (HIO) | <b>Runway Surface Type:</b>      | Asphalt               |
| <b>Airport Elevation:</b>   | 208 ft                   | <b>Runway Surface Condition:</b> | Dry                   |
| <b>Runway Used:</b>         | 30                       | <b>IFR Approach:</b>             | None                  |
| <b>Runway Length/Width:</b> | 6600 ft / 150 ft         | <b>VFR Approach/Landing:</b>     | Precautionary Landing |

## Wreckage and Impact Information

|                            |        |                            |       |
|----------------------------|--------|----------------------------|-------|
| <b>Crew Injuries:</b>      | 1 None | <b>Aircraft Damage:</b>    | Minor |
| <b>Passenger Injuries:</b> | 1 None | <b>Aircraft Fire:</b>      | None  |
| <b>Ground Injuries:</b>    | N/A    | <b>Aircraft Explosion:</b> | None  |
| <b>Total Injuries:</b>     | 2 None |                            |       |

## Administrative Information

|  |  |                      |            |
|--|--|----------------------|------------|
| <b>Investigator In Charge (IIC):</b>     | Howard D Plagens   | <b>Adopted Date:</b> | 08/28/2008 |
| <b>Additional Participating Persons:</b> | John Judge; Federal Aviation Administration; Portland, OR  |                      |            |
| <b>Publish Date:</b>                     | 11/13/2014   |                      |            |
| <b>Investigation Docket:</b>             | NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> . |                      |            |

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