Aviation Investigation Final Report

Location:	Laurel, Montana	**Accident Number:**	LAX07CA288
Date & Time:	September 30, 2007, 15:05 Local	**Registration:**	N41695
Aircraft:	Bellanca 7GCBC	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

During an instructional flight, the left main landing gear assembly broke during rollout following a normal landing. An examination of the gear assembly revealed evidence that a step had been spot welded onto the gear. Over time, corrosion developed in the vicinity of the weld, and the gear fractured due to corrosion induced fatigue and separated. No evidence of gear maintenance specific to the welding of the step to the gear assembly was documented in the airplane's maintenance records.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Corrosion and fatigue-induced failure of the landing gear structure.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: LANDING - ROLL

Findings
1. (C) LANDING GEAR,MAIN GEAR - CORRODED

2. (C) LANDING GEAR,MAIN GEAR - FATIGUE
3. (C) LANDING GEAR,MAIN GEAR - SEPARATION

Factual Information

On September 30, 2007, about 1505 mountain daylight time, a Bellanca 7GCBC, N41695, experienced the breakage and separation of its left main landing gear during landing rollout at the Laurel Municipal Airport, Laurel, Montana. The airplane was owned and operated by the private pilot, who was receiving flight instruction from his airline transport certificated flight instructor (CFI). The airplane was substantially damaged. Neither pilot was injured. Visual meteorological conditions prevailed at the time, and no flight plan had been filed. The flight was performed under the provisions of 14 CFR Part 91, and it originated from Billings, Montana, about 1400.

The CFI reported to the National Transportation Safety Board investigator that he was providing transition flight training to the student, and they had performed a series of uneventful takeoffs and landings. During the accident landing down the center of runway 22, the left main gear separated at the point where a step had been attached, and as the airplane rolled to a stop, the left wing's lift strut buckled.

The Federal Aviation Administration (FAA) coordinator reported that his examination of the airframe revealed evidence that the step had been spot welded onto the spring steel gear assembly. The assembly fatigued and broke in the vicinity of the spot weld. The FAA coordinator stated that evidence of corrosion was observed in the area where the gear assembly fractured. No evidence of gear maintenance, including the welding of the step to the gear assembly, was documented in the airplane's maintenance records.

Flight instructor Information

Certificate:	Airline transport; Flight instructor	**Age:**	77,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	
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 3	**Last FAA Medical Exam:**	February 1, 2007
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	17415 hours (Total, all aircraft), 9 hours (Total, this make and model), 52 hours (Last 90 days, all aircraft), 15 hours (Last 30 days, all aircraft)		

Student pilot Information

Certificate:	Private	**Age:**	53,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	Yes
Instructor Rating(s):		**Toxicology Performed:**	No
Medical Certification:	Class 3	**Last FAA Medical Exam:**	June 1, 2006
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	154 hours (Total, all aircraft), 5 hours (Total, this make and model), 5 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Bellanca	**Registration:**	N41695
Model/Series:	7GCBC	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Restricted (Special)	**Serial Number:**	593-73
Landing Gear Type:	Tailwheel	**Seats:**	
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	Lycoming
ELT:		**Engine Model/Series:**	O-320-A2B
Registered Owner:	Robert J. Guilfoyle	**Rated Power:**	
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Laurel, MT (S68)	**Type of Flight Plan Filed:**	None
Destination:	Laurel, MT (S68)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	

Airport Information

Airport:	Laurel Municipal 6S8	**Runway Surface Type:**	Asphalt
Airport Elevation:	3517 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	22	**IFR Approach:**	None
Runway Length/Width:	5200 ft / 75 ft	**VFR Approach/Landing:**	

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	Pollack, Wayne
Additional Participating Persons:	Will Willbanks; Federal Aviation Administration; Helena, MT
Original Publish Date:	November 29, 2007
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.ntsb.gov/Docket?ProjectID=66972