Aviation Investigation Final Report

Location:	Carlsbad, California	**Accident Number:**	SEA08LA040
Date & Time:	November 21, 2007, 16:15 Local	**Registration:**	N1831L
Aircraft:	Beech 95-B55	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	2 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

As the nosewheel settled onto the runway during landing, the pilot felt a strong vibration in the rudder pedals and he abruptly applied backpressure on the control yoke and the airplane became airborne again. As the pilot relieved the backpressure on the control yoke, the airplane landed on the nosewheel and started to porpoise. After four oscillations, the airplane slowed to a point where the pilot was able to initiate a turn onto a taxiway. As the airplane exited the runway, the nose of the airplane settled onto the asphalt surface. Examination of the airplane revealed that the fuselage was buckled along the cabin area above the left and right wing roots. The nosewheel was found separated from the piston and fork assembly. No anomalies were noted with the flight control system or nose wheel fork and strut assembly. Examination of the nosewheel axel and rim fractures disclosed features and deformation that were consistent with overstress fractures and no evidence of preexisting cracks was observed. The inner race and rolling elements of the left bearing were displaced to the left and bent in the area of the displacement. The upper surface of the axle exhibited a circumferential crack at the location corresponding to the right edge of the left bearing inner race. An impact mark was observed on the upper surface of the axle consistent with heavy contact to the left bearing inner race.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper flare resulting in a porpoise and hard landing.

Findings

Occurrence #1: HARD LANDING
Phase of Operation: LANDING - FLARE/TOUCHDOWN

Findings
1. (C) FLARE - IMPROPER - PILOT IN COMMAND
2. (C) PORPOISE/PILOT-INDUCED OSCILLATION - ENCOUNTERED - PILOT IN COMMAND

Occurrence #2: NOSE GEAR COLLAPSED
Phase of Operation: LANDING - ROLL

Findings
3. LANDING GEAR,NOSE GEAR - OVERLOAD

Factual Information

On November 21, 2007, about 1615 Pacific standard time, a Beech 95-B55 airplane, N1831L, was substantially damaged when the nose wheel landing gear collapsed during landing roll at the Mc Clellan-Palomar Airport (CRQ), Carlsbad, California. The airline transport pilot and his passenger were not injured. The airplane was registered to a private individual and operated by the pilot. Visual meteorological conditions prevailed and a flight plan was not filed for the 14 Code of Federal Regulations Part 91 personal flight. The local flight originated from CRQ at 1559.

According to the pilot, as the nose wheel landing gear settled onto the runway during landing, he felt a strong vibration in the rudder pedals. The pilot "abruptly" applied backpressure on the control yoke and the airplane became airborne. As he relieved the backpressure on the control yoke, the airplane landed on the nose wheel landing gear and "started to porpoise." The pilot stated that after the fourth oscillation, he applied full backpressure, and as the airplane slowed, he initiated a turn onto a taxiway. As the airplane exited the runway, the nose of the airplane settled onto the asphalt surface.

Examination of the airplane by a Federal Aviation Administration (FAA) inspector revealed that the fuselage was buckled along the cabin area above the left and right wing roots. The nose wheel was found separated from the piston and fork assembly. No anomalies were noted with the flight control system or nose wheel fork and strut assembly. The separated portion of the nose wheel assembly was sent to the NTSB Office of Research and Engineering, Materials Laboratory Division for further examination.

Examination of the nose wheel rim revealed that the inboard half of the wheel rim was fractured and the outboard half of the wheel rim was deformed and cracked. The Senior Materials Engineer reported that the fracture features and deformation of both halves were consistent with overstress fractures. No evidence of preexisting cracks was observed. The nose wheel axel was separated into two portions, with the outboard piece remaining in the nose wheel and inboard piece remaining in the nose wheel strut. The fracture surface of the axel was on slant planes and exhibited matte gray features consistent with overstress fractures. No evidence of preexisting cracks was observed.

The portion of the axel remaining in the nose wheel was removed. The inner race and rolling elements of the left bearing were displaced about 0.6 inches to the left. The axle was bent in the area of the displaced left bearing location. The upper surface of the axle exhibited a circumferential crack at the location corresponding to the right edge of the left bearing inner race. An impact mark was observed on the upper surface of the axle consistent with heavy contact to the left bearing inner race in its assembled location.

Pilot Information

Certificate:	Airline transport; Flight engineer; Flight instructor	**Age:**	60,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	April 1, 2007
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 1, 2006
Flight Time:	24044 hours (Total, all aircraft), 83 hours (Total, this make and model), 18317 hours (Pilot In Command, all aircraft), 16 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N1831L
Model/Series:	95-B55	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	TC-1960
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	November 1, 2007 Annual	**Certified Max Gross Wt.:**	5000 lbs
Time Since Last Inspection:	16 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	3500.02 Hrs at time of accident	**Engine Manufacturer:**	Teledyne Continental
ELT:	Installed, not activated	**Engine Model/Series:**	IO-470-L
Registered Owner:	On file	**Rated Power:**	260 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	CRQ,315 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	10:01 Local	**Direction from Accident Site:**	0°
Lowest Cloud Condition:	Scattered / 2100 ft AGL	**Visibility**	3 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	70°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	13°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Carlsbad, CA (CRQ)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	VFR
Departure Time:	10:07 Local	**Type of Airspace:**	

Airport Information

Airport:	Mc Clellan-Palomar Airport CRQ	**Runway Surface Type:**	Asphalt
Airport Elevation:	331 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	24	**IFR Approach:**	None
Runway Length/Width:	4897 ft / 150 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 None	**Latitude, Longitude:**	33.128055,-117.113334

Administrative Information

Investigator In Charge (IIC):	Cawthra, Joshua
Additional Participating Persons:	Michael J Rauchle; Federal Aviation Administration; San Diego, CA
Original Publish Date:	February 28, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=67196