Aviation Investigation Final Report

Location:	SAN CARLOS, California	**Accident Number:**	LAX97LA132
Date & Time:	March 27, 1997, 09:48 Local	**Registration:**	N60TJ
Aircraft:	Beech 100	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

According to the aircraft operator, during a landing, the aircraft dropped approximately 10 feet onto the runway. The aircraft touched down with enough force as to warrant concern by the operator and the pilot. The pilot stated that the gear warning horn was activated after the landing. He examined the landing gear and bent the squat switches to silence the horn, then conducted a test flight. Before landing, three green gear down lights were observed; however, the left landing gear collapsed during the rollout. Before coming to rest, the aircraft struck a sign and three runway lights. The aircraft landing gear was inspected by the FAA and a technical representative (tech rep) from Raytheon Aircraft Company. The tech rep reported that the downlock plates were bent from the hard landing. Review of the logbooks revealed that the aircraft did not have a primary 150-hour inspection, since August 1993, and was in an unairworthy condition. Due to the extent of damage to the landing gear, no preexisting anomalies in those components could be identified.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot's improper flare, which resulted in a hard landing; his improper adjustment of the landing gear warning horn squat switch(es); and his decision to attempt flight with known equipment deficiencies.

Findings

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

Findings
1. (C) FLARE - IMPROPER - PILOT IN COMMAND
2. LANDING GEAR,GEAR LOCKING MECHANISM - BENT

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

Findings
3. (C) MAINTENANCE,ADJUSTMENT - IMPROPER - PILOT IN COMMAND
4. LANDING GEAR,GEAR WARNING SYSTEM - MALFUNCTION
5. (C) OPERATION WITH KNOWN DEFICIENCIES IN EQUIPMENT - ATTEMPTED - PILOT IN COMMAND
6. GEAR DOWN AND LOCKED - NOT ATTAINED

Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT
Phase of Operation: LANDING

Findings
7. OBJECT - AIRPORT SIGN/MARKER
8. OBJECT - RUNWAY LIGHT

Factual Information

On March 27, 1997, at 0948 hours Pacific standard time, a Beech 100, N60TJ, was substantially damaged when the left landing gear collapsed during landing on runway 12 at the San Carlos, California, airport. The aircraft struck a sign and three runway lights. The airline transport pilot, the sole occupant, was not injured. Visual meteorological conditions existed for the local business flight and no flight plan was filed.

In an interview with Federal Aviation Administration (FAA) inspectors from the San Jose, California, Flight Standards District Office, the pilot stated that after landing the first time at the airport he had a gear warning horn on taxiing. After adjusting the squat switch to terminate the horn he decided to do a test hop to check it out. On landing rollout the aircraft started to veer off the runway. The pilot reported that he corrected as much as he could but the aircraft continued off the runway. Prior to touchdown he observed three green gear down lights. He reported that approximately 6 to 8 months ago all three gears were replaced with rebuilt gears per an airworthiness directive.

Following his statement, the pilot subsequently declined to provide any information to either the Safety Board or the FAA.

In a separate report, a representative of the company which owns the aircraft said that upon landing the aircraft dropped approximately 10 feet onto the runway in a hard landing. The operator stated that the passenger departed the aircraft and the pilot made a visual inspection of the landing gear, then made a decision to test fly the aircraft in the pattern and make a landing before the passenger returned from his business meeting. The operator reported that the pilot told them that the flight went well and all systems checked out, including a recycling of landing gear. The landing went well but on rollout to taxi the left landing gear collapsed.

According to records at the San Carlos Air Traffic Control Tower, the initial landing was 15 to 20 minutes prior to the accident. The pilot made a full stop, taxied in, taxied out, went around the pattern, and then landed. That was when the accident occurred.

A technical representative for the Raytheon Aircraft Company examined the aircraft under the supervision of the FAA. He reported that the right main gear downlock plate was bent approximately 25 degrees, and the left main gear downlock plate was bent 45 degrees. He further stated that the downlock plates appeared to have been bent from the hard landing. The downlock blocks were engaged which prevented the drag legs from moving into a retracted position. The aircraft landed normally with the downlocks holding the landing gear into position. Upon going into reverse and the weight of the aircraft shifting aft, the left-hand lock plate bent 45 degrees which released it from the downlock allowing the left-hand main gear to collapse. The consultant stated that the excessive load placed on the actuator would have

caused the mount to fail, dislodging the actuator and bending the shaft.

The FAA inspector stated that there were no preexisting anomalies found with the landing gear due to the damage.

A review of the aircraft's logbooks was conducted by the FAA inspectors. They reported that this aircraft has a history of being in an "unairworthy" condition. Since August 1993, this aircraft has not had a primary 150-hour inspection per Beech maintenance program requirements. In June 1995, the aircraft was inspected at a Beech maintenance facility, who told the owner that it was in an unairworthy condition. The owner then removed the aircraft from the facility with no further work performed by the facility. On August 24, 1995, the aircraft's landing gear was overhauled and deficient items noted by the previous company were corrected, with no mention of the primary 150-hour inspection. The aircraft was flown to Texas for engine work, where it remained for approximately 5 months. The engines were disassembled and inspected. A logbook entry notes that per customer's request the engines were reassembled for shipping purposes only and not reinstalled on the aircraft. It was noted by the company in Texas in the same entry that the aircraft was in an unairworthy condition. See attached file Record of Log Book Review.

Pilot Information

Certificate:	Airline transport	**Age:**	52,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine sea	**Seat Occupied:**	Left
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 2 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	September 13, 1996
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	1500 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	**Registration:**	N60TJ
Model/Series:	100 100	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	BE-21
Landing Gear Type:	Retractable - Tricycle	**Seats:**	11
Date/Type of Last Inspection:	Unknown	**Certified Max Gross Wt.:**	10600 lbs
Time Since Last Inspection:		**Engines:**	2 Turbo prop
Airframe Total Time:		**Engine Manufacturer:**	Airesearch
ELT:		**Engine Model/Series:**	TPE-331
Registered Owner:	ANDREA LEASING	**Rated Power:**	210 Horsepower
Operator:	A&A REOMIX CONCRETE MIX INC.	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

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**	
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	0°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	(SQL)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	VFR
Departure Time:	09:48 Local	**Type of Airspace:**	Class D

Airport Information

Airport:	SAN CARLOS SQL	**Runway Surface Type:**	Asphalt
Airport Elevation:	2 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	12	**IFR Approach:**	
Runway Length/Width:	2600 ft / 75 ft	**VFR Approach/Landing:**	Full stop

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	37.48933,-122.25933(est)

Administrative Information

Investigator In Charge (IIC):	Cornejo, Tealeye
Additional Participating Persons:	JIM FRIEL; SAN JOSE , CA MARGARET J FREYDOZ; SAN JOSE , CA
Original Publish Date:	June 26, 1998
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=29750