Aviation Investigation Final Report

Location:	Avalon, California	**Accident Number:**	LAX02LA135
Date & Time:	March 24, 2002, 11:00 Local	**Registration:**	N61737
Aircraft:	Cessna 172M	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	4 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The rental airplane porpoised on landing and sustained substantial damage to the firewall. The pilot said that the approach was normal. The flap position indicator ceased to function during the flight and the pilot estimated that he used 20 degrees of flaps for the approach and landing. He said that once he had the runway made, he reduced the throttle to idle and flared. He stated that even though the throttle was all the way to the rear, the engine continued to produce "quite a bit of power" that he estimated was between 1,200 and 1,600 rpms. The aircraft bounced after the initial touchdown and he lowered the nose in an attempt to get the airplane to settle onto the runway. The aircraft bounced three more times during this process. The pilot stated that the only way he could get the engine to cease producing excess thrust was to move the mixture control to the idle cutoff position. After moving the mixture, the engine continued to run for 30 or more seconds until it finally shutdown. Examination of the maintenance records disclosed that the engine had been overhauled on January 16, 2002, and was installed on the airframe on March 12, 2002, about 17 hours prior to the accident. The records listed the carburetor as having been overhauled at the time of engine overhaul. Safety Board investigators examined the airplane and engine at the operator's maintenance facility. The carburetor exhibited fuel staining from the parting surface gasket. Continuity of the power controls was established between the cockpit and the carburetor. The carburetor was removed from the engine and taken to a carburetor overhaul facility, where it was installed on a calibrated fuel flow test bench. The carburetor flowed to specification and the float stopped the flow at the correct level. Following the functional test, the unit was disassembled. The screws securing the bowl chamber to the carburetor body were tight. The brass floats were intact and set correctly. The jets were intact and clear. According to the NOAA Airport Facility Directory entry for the Catalina Airport, runway 22 is asphalt and 3,240 feet long by 100 feet wide with a 1.7 percent upslope for the first 2,000 feet. The runway is equipped with a Visual Approach Slope Indicator set to 3 degrees.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate bounced landing recovery technique, which resulted in an inadvertent porpoise.

Findings

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

Findings
1. (C) RECOVERY FROM BOUNCED LANDING - INADEQUATE - PILOT IN COMMAND
2. (C) PORPOISE/PILOT-INDUCED OSCILLATION - INADVERTENT - PILOT IN COMMAND

Factual Information

On March 24, 2002, at 1100 Pacific standard time, a Cessna 172M, N61737, porpoised on landing at the Catalina Island Airport, Avalon, California. The airplane, which sustained substantial damage to the firewall, was operated by the Long Beach Flying Club and rented by the pilot for a personal cross-country flight under the provisions of 14 CFR Part 91 of the Federal Aviation Regulations. The commercial pilot and three passengers were not injured. Visual meteorological conditions prevailed and no flight plan was filed for the flight that originated at the Long Beach, California, airport at 1000.

In both written and verbal statements, the pilot said that the approach was normal. The flap position indicator ceased to function during the flight and the pilot estimated that he used 20 degrees of flaps for the approach and landing. He said that once he had the runway made, he reduced the throttle to idle and flared. He stated that even though the throttle was all the way to the rear, the engine continued to produce "quite a bit of power" that he estimated was between 1,200 and 1,600 rpms. The aircraft bounced after the initial touchdown and he lowered the nose in an attempt to get the airplane to settle onto the runway. The aircraft bounced three more times during this process. The pilot stated that the only way he could get the engine to cease producing excess thrust was to move the mixture control to the idle cutoff position. After moving the mixture, the engine continued to run for 30 or more seconds until it finally shutdown.

Examination of the maintenance records disclosed that the engine, a Lycoming O-320-E2D, Serial Number L-39946-27A, had been overhauled on January 16, 2002, and was installed on the airframe on March 12, 2002, about 17 hours prior to the accident. The records listed the carburetor, a Marvel Schebler MA4-SP, serial number 10-5135, as having been overhauled at the time of engine overhaul.

Safety Board investigators examined the airplane and engine on April 18, 2002, at the operator's maintenance facility. The data plates for the engine and carburetor matched those listed in the maintenance records. The carburetor exhibited fuel staining from the parting surface gasket. Continuity of the power controls was established between the cockpit and the carburetor. There were no data tags or placards found on the carburetor and the data plate carried a "MF" stamp. The carburetor was removed from the engine and taken to a carburetor overhaul facility, where it was installed on a calibrated fuel flow test bench. The carburetor flowed to specification and the float stopped the flow at the correct level. Following the functional test, the unit was disassembled. According to the technician who performed the disassembly, the screws securing the bowl chamber to the carburetor body were tight, but not as tight as he usually sees on most carburetors that come in for overhaul. The brass floats were intact and set correctly. The jets were intact and clear.

According to the NOAA Airport Facility Directory entry for the Catalina Airport, runway 22 is asphalt and 3,240 feet long by 100 feet wide with a 1.7 percent upslope for the first 2,000 feet. The runway is equipped with a Visual Approach Slope Indicator set to 3 degrees.

Pilot Information

Certificate:	Commercial	**Age:**	27,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 Valid Medical--no waivers/lim.	**Last FAA Medical Exam:**	March 29, 2001
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	December 22, 2000
Flight Time:	1707 hours (Total, all aircraft), 1030 hours (Total, this make and model), 1231 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N61737
Model/Series:	172M	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	17264173
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	March 12, 2002 100 hour	**Certified Max Gross Wt.:**	2300 lbs
Time Since Last Inspection:	18 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4669 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-320-E2D
Registered Owner:	Frederick D. Callison, Sr.	**Rated Power:**	160 Horsepower
Operator:	Long Beach Flying Club	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	AVX,1602 ft msl	**Distance from Accident Site:**	
Observation Time:	10:51 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Scattered / 1100 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Overcast / 1600 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots / 0 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	300°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	11°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Long Beach, CA (KLGB)	**Type of Flight Plan Filed:**	None
Destination:	Avalon, CA (KAVX)	**Type of Clearance:**	None
Departure Time:	10:00 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Catalina AVX	**Runway Surface Type:**	Asphalt
Airport Elevation:	1602 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	22	**IFR Approach:**	None
Runway Length/Width:	3240 ft / 100 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	3 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	4 None	**Latitude, Longitude:**	33.379001,-118.450332(est)

Administrative Information

Investigator In Charge (IIC):	Rich, J.
Additional Participating Persons:	Bill Franklin; Federal Aviation Administration; Long Beach, CA
Original Publish Date:	November 25, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=54513