



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	CHANDLER, AZ	<b>Accident Number:</b>	LAX00LA031
<b>Date &amp; Time:</b>	11/02/1999, 1140 MST	<b>Registration:</b>	N98909
<b>Aircraft:</b>	Cessna 172N	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

The pilot stated that he flared high and the airplane landed flat on all three landing gear and bounced three times. The nose tire went flat and the propeller contacted the ground. Subsequent inspection revealed the firewall was buckled. The pilot said there were no mechanical malfunctions or failures prior to the hard landing.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's misjudged landing flare and failure to maintain an adequate airspeed margin, which resulted in a stall/mush and hard landing.

## Findings

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

### Findings

1. (C) FLARE - MISJUDGED - PILOT IN COMMAND
2. (C) AIRSPEED(VREF) - NOT MAINTAINED - PILOT IN COMMAND
3. STALL/MUSH - INADVERTENT - PILOT IN COMMAND

## Factual Information

On November 2, 1999, about 1140 hours mountain standard time, a Cessna 172N, N98909, sustained substantial damage during a hard landing at the Chandler, Arizona, municipal airport. Sawyer Aviation operated the airplane, which was rented by the pilot, under the provisions of 14 CFR Part 91. The private pilot, the sole occupant, was not injured. The local area personal flight departed Sky Harbor Airport, Phoenix, Arizona, about 1130. Visual meteorological conditions prevailed and no flight plan was filed.

The pilot stated that he flared high and the airplane landed flat on all three landing gear and bounced three times. The nose tire went flat and the propeller contacted the ground. Subsequent inspection revealed the firewall was buckled. In his written statement, the pilot said there were no mechanical malfunctions or failures prior to the hard landing.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	19, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	11/18/1997
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	56 hours (Total, all aircraft), 33 hours (Total, this make and model), 2 hours (Last 90 days, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N98909
Model/Series:	172N 172N	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	17276377
Landing Gear Type:	Tricycle	Seats:	4
Date/Type of Last Inspection:	10/09/1999, Annual	Certified Max Gross Wt.:	2400 lbs
Time Since Last Inspection:	49 Hours	Engines:	1 Reciprocating
Airframe Total Time:	9811 Hours	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	O-320-D2J
Registered Owner:	SAWYER AVIATION	Rated Power:	160 hp
Operator:	SAWYER AVIATION	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	IWA, 1382 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	1050 MST	Direction from Accident Site:	65°
Lowest Cloud Condition:	Scattered / 20000 ft agl	Visibility	30 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	14 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	80°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	29° C / -2° C
Precipitation and Obscuration:			
Departure Point:	PHOENIX, AZ (PHX)	Type of Flight Plan Filed:	None
Destination:	(CHD)	Type of Clearance:	VFR
Departure Time:	1130 MST	Type of Airspace:	Class D

## Airport Information

Airport:	CHANDLER MUNICIPAL (CHD)	Runway Surface Type:	Asphalt
Airport Elevation:	1243 ft	Runway Surface Condition:	Dry
Runway Used:	4L	IFR Approach:	None
Runway Length/Width:	4401 ft / 75 ft	VFR Approach/Landing:	Full Stop

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	

## Administrative Information

<b>Investigator In Charge (IIC):</b>	HOWARD D PLAGENS	<b>Report Date:</b>	05/09/2001
<b>Additional Participating Persons:</b>	BRUCE SMITH; SCOTTSDALE, AZ		
<b>Publish Date:</b>			
<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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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).