



# Aviation Investigation Final Report

<b>Location:</b>	SEDONA, Arizona	<b>Accident Number:</b>	LAX87LA133
<b>Date &amp; Time:</b>	February 16, 1987, 18:15 Local	<b>Registration:</b>	N161A
<b>Aircraft:</b>	CESSNA 310G	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

THE ACFT LANDED HARD ON RWY 3 WHILE ON A NIGHT VFR PLEASURE FLIGHT. THE PLT INDICATED THAT IT WAS A DARK NIGHT AND HE ELECTED TO FLY THE NDA-A IAP TO INSURE TERRAIN CLEARANCE WHILE LOOKING FOR THE RWY. WHILE ON FINAL APCH HE ACTIVATED THE MRL ON THE TRAFFIC ADVISORY FREQ. THE PLT STATED, 'THE LIGHTS APPEARED TO BE DIM AND THE LANDING LIGHTS DID NOT ILLUMINATE THE RWY SURFACE.' THE PLT ADJUSTED THE ACFT PITCH ATTITUDE TO A SLIGHT NOSE UP AND ADDED POWER. THE PLT STATE THAT THE LANDING WAS 'SUFFICIENTLY HARD TO DAMAGE THE INTERNAL WING STRUCTURE OF THE ACFT.' THE PLT WAS REQUIRED TO WEAR CORRECTIVE LENSES FOR DISTANT VISION AND POSSESS CORRECTIVE LENSES FOR NEAR VISION. THE PLT'S NIGHT VISUAL ACUITY IS DEGRADED BY THE PHYSIOLOGICAL ASPECT OF HIS VISION. THIS ASPECT BEING THE NEED FOR CORRECTIVE LENSES. THE EFFECTS OF ALT, HYPOXIA, WILL HAVE AN IMPACT ON NIGHT VISION. DETERIORATION IN NIGHT VISION CAN OCCUR AT CABIN PRESSURE ALTS AS LOW AS 5,000 FT.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

### Findings

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

#### Findings

1. (F) LIGHT CONDITION - DARK NIGHT
2. (C) VISUAL LOOKOUT - REDUCED - PILOT IN COMMAND
3. (C) PROPER DESCENT RATE - EXCEEDED - PILOT IN COMMAND
4. (F) VISUAL/AURAL PERCEPTION - PILOT IN COMMAND

## Factual Information

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	76, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical--w/ waivers/lim	<b>Last FAA Medical Exam:</b>	February 13, 1986
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	4142 hours (Total, all aircraft), 3500 hours (Total, this make and model), 4000 hours (Pilot In Command, all aircraft), 21 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	CESSNA	<b>Registration:</b>	N161A
<b>Model/Series:</b>	310G 310G	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	3100022
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	5
<b>Date/Type of Last Inspection:</b>	August 22, 1986 Annual	<b>Certified Max Gross Wt.:</b>	4990 lbs
<b>Time Since Last Inspection:</b>	42 Hrs	<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	4435 Hrs	<b>Engine Manufacturer:</b>	LYCOMING
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	T10-540
<b>Registered Owner:</b>	AIRCRAFT DEVELOPMENT CORP.	<b>Rated Power:</b>	290 Horsepower
<b>Operator:</b>	AIRCRAFT DEVELOPMENT CORP.	<b>Operating Certificate(s) Held:</b>	None
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Night/dark
<b>Observation Facility, Elevation:</b>	FLG ,7011 ft msl	<b>Distance from Accident Site:</b>	18 Nautical Miles
<b>Observation Time:</b>	17:47 Local	<b>Direction from Accident Site:</b>	7°
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	20 miles
<b>Lowest Ceiling:</b>	Broken / 3500 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	310°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29 inches Hg	<b>Temperature/Dew Point:</b>	1°C / -3°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	PHOENIX , AZ (PHX )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	SEDONA , AZ (SEZ )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	17:35 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	SEDONA SEZ	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	4827 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	3	<b>IFR Approach:</b>	ADF/NDB
<b>Runway Length/Width:</b>	5135 ft / 75 ft	<b>VFR Approach/Landing:</b>	Full stop;Straight-in

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	34.940292,-111.939453(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Wilcox, Thomas
<b>Additional Participating Persons:</b>	WILLIAM P OZANUS; SCOTTSDALE , AZ
<b>Original Publish Date:</b>	November 8, 1988
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=25534">https://data.ntsb.gov/Docket?ProjectID=25534</a>

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