



# Aviation Investigation Final Report

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<b>Location:</b>	Watsonville, California	<b>Accident Number:</b>	WPR12LA286
<b>Date &amp; Time:</b>	June 24, 2012, 12:40 Local	<b>Registration:</b>	N55DN
<b>Aircraft:</b>	Cessna 182	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	1 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation - Skydiving		

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## Analysis

The pilot stated that he departed the airport for the 15-minute skydiving flight with about 20 gallons of fuel onboard. After completing a jump run, he was returning to the airport and maneuvered the airplane on final approach. When the airplane was about 3 miles from the runway and about 1,200 feet above ground level, the engine experienced a partial loss of power. The pilot configured the airplane for the best glide speed, and, shortly thereafter, the engine quit producing any power. The airplane subsequently collided with trees in an orchard about 600 yards from the approach end of the runway.

At the accident site, there was no fuel in the right wing; the remaining fuel from the left wing totaled about 5 gallons. Neither of the tanks were breached; however, the airplane was inverted and some fuel was slowly dripping out the vent, thus it was not possible to determine the exact quantity of fuel in the tanks at the time of the accident. The fuel selector was in the "BOTH ON" position and the unusable fuel for each 30-gallon tank was 2.5 gallons; therefore, the left wing tank had usable fuel at the time of the accident. A postaccident engine examination revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A total loss of engine power during approach for reasons that could not be determined because postaccident examination did not reveal any mechanical malfunctions or failures that would have precluded normal operation.

## Findings

**Not determined**

(general) - Unknown/Not determined

## Factual Information

### History of Flight

<b>Approach-VFR pattern final</b>	Loss of engine power (total) (Defining event)
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#### HISTORY OF FLIGHT

On June 24, 2012, about 1240 Pacific daylight time, a Cessna 182, N55DN, collided into an orchard following a total loss of engine power while on approach to the Watsonville Municipal Airport, Watsonville, California. Skydive Surfcity was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The commercial pilot, the sole occupant, sustained minor injuries. The airplane sustained substantial damage. The local skydiving flight departed from Watsonville about 1200. Visual meteorological conditions prevailed, and no flight plan had been filed.

The pilot stated that he completed a normal pre flight inspection of the airplane and departed the airport with about 20 gallons of fuel onboard. After completing a jump run, he was returning back to the airport and maneuvered the airplane on final approach for runway 20. When the airplane was about 3 miles from the runway and about 1,200 feet above ground level (agl), the engine experienced a partial loss of power. The pilot configured the airplane for the best glide speed, and shortly thereafter, the engine quit producing any power. The airplane collided with trees in an orchard about 600 yards from the approach end of the runway.

The wreckage was sold following recovery and the engine underwent a teardown. The mechanic that performed the teardown inspection stated that there was no evidence of mechanical malfunction or failure aside from the engine case being damaged from the accident. The gear train, pistons, cylinders, camshaft and crankshaft all appeared normal.

#### AIRCRAFT INFORMATION

The Cessna 182 single-engine airplane, serial number 33257, was manufactured in 1956. The airplane was equipped with the a Texas Skyways O-520-F/TS engine, serial number 686835, which was installed in May 2005. A review of the airplane maintenance logbooks revealed that at the time of the last annual inspection the engine had accumulated 1,588 hours since major overhaul. The last annual inspection was dated as having been completed June 24, 2012, on the day of the accident.

The mechanic that performed the annual inspection of the airplane was the first person on-scene after the accident. He stated that there was no fuel in the right wing and, by request of the Federal Aviation Administration (FAA) inspectors, he drained the remaining fuel from the left wing, which totaled about 5 gallons. He noted that neither of the tanks were breached,

although the airplane was inverted and some fuel was slowly dripping out the vent. The fuel selector was in the "BOTH ON" position.

### Fuel System

The airplane's fuel system was designed to supply the engine via two bladder-type fuel tanks located in both the left and right wing. Each tank holds 30 gallons, of which 2.5 gallons was unusable in level flight conditions. A fuel vent was located in the right wing and a vent line interconnected the two tanks. From the tanks fuel was gravity fed to the fuel selector valve, which contained an option of the following selections "BOTH OFF," "LEFT TANK," "RIGHT TANK," and "BOTH ON." From the selector, fuel would flow to the strainer and continue to the engine's carburetor.

### ADDITIONAL INFORMATION

The FAA issued a pamphlet titled "Flying for Skydive Operations," (P-8740-62), where it stated that one of the three common skydiving operation accidents is fuel exhaustion/starvation accidents because the pilots will commonly fly with "reduced fuel to accommodate heavier payloads while maintain weight and balance limits."

#### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	48, Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Glider	<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 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	March 20, 2012
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	3250 hours (Total, all aircraft), 998 hours (Total, this make and model), 3173 hours (Pilot In Command, all aircraft), 290 hours (Last 90 days, all aircraft), 123 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N55DN
<b>Model/Series:</b>	182	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	33257
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	1
<b>Date/Type of Last Inspection:</b>	June 24, 2012 100 hour	<b>Certified Max Gross Wt.:</b>	2950 lbs
<b>Time Since Last Inspection:</b>	1 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	6132 Hrs	<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-520 Series
<b>Registered Owner:</b>	Volker Haag	<b>Rated Power:</b>	230 Horsepower
<b>Operator:</b>	Skydive Surfcity	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	WVI,163 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	12:53 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	10 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	250°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.04 inches Hg	<b>Temperature/Dew Point:</b>	18°C / 7°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Watsonville, CA (WVI)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Watsonville, CA (WVI)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	12:00 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Watsonville Municipal Airport WVI	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	163 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	20	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4501 ft / 149 ft	<b>VFR Approach/Landing:</b>	Forced landing;Traffic pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor	<b>Latitude, Longitude:</b>	36.935554,-121.789443

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Keliher, Zoe
<b>Additional Participating Persons:</b>	Jefferey Ebey; Federal Aviation Administration; San Jose, CA
<b>Original Publish Date:</b>	September 5, 2013
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=84166">https://data.nts.gov/Docket?ProjectID=84166</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).