# Aviation Investigation Final Report

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| **Location:** | Oak Harbor, Washington | **Accident Number:** | WPR15LA201 |
| **Date & Time:** | June 29, 2015, 20:13 Local | **Registration:** | N9980T |
| **Aircraft:** | Cessna 182D | **Aircraft Damage:** | Substantial |
| **Defining Event:** | Fuel exhaustion | **Injuries:** | 1 Serious, 1 Minor |
| **Flight Conducted Under:** | Part 91: General aviation - Skydiving | | |

## Analysis

The commercial pilot reported that, during a skydiving flight, the engine experienced a total loss of power during final approach for landing. The pilot initiated a forced landing to a field, and during the landing sequence, the airplane impacted a tree.

No fuel was observed in the fuel tanks or fuel lines during recovery of the wreckage. Postaccident examination revealed no mechanical failures or malfunctions that would have precluded normal operation of the airplane. The company fuel log indicated that about 18.2 gallons of useable fuel were onboard the accident airplane before the first flight of the day; the accident occurred during the third flight. Although the amount of fuel onboard would have likely been adequate for three of the operator's 20-minute average flights, several flight delays occurred, and the airplane was flown a total of 2.1 hours between the three flights. Given the airplane's average fuel consumption, the fuel consumed during the three flights closely corresponded to the fuel available at the beginning of the day. Therefore, it is likely that the loss of engine power was the result of fuel exhaustion.

## Probable Cause and Findings

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

The pilot's improper preflight fuel planning, which resulted in a total loss of engine power due to fuel exhaustion.

## Findings

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| **Personnel issues** | Fuel planning - Pilot |
| **Aircraft** | Fuel - Fluid level |
| **Environmental issues** | Tree(s) - Contributed to outcome |

# Factual Information

## History of Flight

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| **Approach-VFR pattern final** | Fuel exhaustion (Defining event) |
| **Landing** | Collision with terr/obj (non-CFIT) |

On June 29, 2015, about 2013 Pacific daylight time, a Cessna 182D, N9980T, sustained substantial damage during a forced landing following a loss of engine power during an approach for landing at the AJ Eisenberg Airport (OKH) Oak Harbor, Washington. The commercial pilot was seriously injured and the passenger sustained minor injuries. The airplane was registered to Sinclair Aviation LLC., and operated by the pilot under the provisions of 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed and no flight plan was filed for the skydiving flight. The local flight departed OKH about 1935.

The pilot reported that the engine lost power during the final turn to the runway. Not being able to make the runway, he initiated a forced landing to a field, just south of the airport. During the landing sequence, the airplane struck a tree. The first responder's, on-scene commander, did not observe any fuel leaking from the airplane. Further, another witness, observed only a small amount of fuel dripping from the airplane at the accident site.

Postaccident examination of the airplane at the accident site, by a Federal Aviation Administration inspector, the following morning, revealed that substantial damage was sustained to the wings and fuselage. Further, there was no fuel leaking from the airplane or remaining in the tanks. The ground below the accident site appeared to be dry, and no fuel stains were visible. The wreckage was recovered to a secure location for further examination. According to the airplane's owner, during the recovery, no fuel was observed in the fuel tanks or lines.

Further examination of the airframe and engine by the National Transportation Safety Board, investigator-in-charge, and a representative from Textron Aviation, and Continental Motors, revealed no anomalies with the airframe or engine that would preclude normal operation. Only a small amount of fuel was observed in the carburetor bowl.

A company fuel log indicated that the accident airplane had about 12.6 gallons of useable fuel on board at the start of the day. According to the owner, and the company fuel log, the airplane was refueled on the day of the accident, for an amount of 5.6 gallons, and his review of receipts confirmed this. Therefore, the total amount of fuel on the airplane on the first flight was estimated to be about 18.2 gallons. According to the owner, the average jump flight was usually about 20 minutes in duration, but on the accident day, air traffic control delays were encountered that extended the flights. According to the company fuel log, the accident occurred on the third flight of the day, after the airplane was flown for about 2.1 flight hours.

According to the owner, the average fuel burn of the accident airplane was about 14 gallons an hour. The airplane's Pilot Operating Handbook (POH) fuel burn charts did not replicate the jump profile flown, where the airplane climbs and then descends back to the airfield. However, most of the cruise flight profiles fuel burn rates were lower. The airplane's POH states that 10 gallons of fuel were unusable during all flight conditions. However, in level flight conditions, only 1.5 gallons per tank was unusable. Potentially, 7 additional gallons would have been available, if the airplane was flown in level flight conditions. The fuel consumption for 2.1 flight hours flown the day of the accident was calculated using the company burn rate average and then compared to the accident airplane's total fuel quantity, which included the additional 7 gallons of fuel available in level flight conditions. The airplane's fuel burn rate closely corresponded to the consumption of all the remaining fuel.

## Pilot Information

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| **Certificate:** | Commercial | **Age:** | 46,Male |
| **Airplane Rating(s):** | Single-engine land; Single-engine sea; Multi-engine land | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | 3-point |
| **Instrument Rating(s):** | Airplane | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | No |
| **Medical Certification:** | Class 2 Without waivers/limitations | **Last FAA Medical Exam:** | April 9, 2014 |
| **Occupational Pilot:** | UNK | **Last Flight Review or Equivalent:** | March 28, 2015 |
| **Flight Time:** | (Estimated) 1020 hours (Total, all aircraft), 57 hours (Total, this make and model), 889 hours (Pilot In Command, all aircraft), 15 hours (Last 90 days, all aircraft), 3 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft) | | |

## Passenger Information

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| **Certificate:** | | **Age:** | Male |
| **Airplane Rating(s):** | | **Seat Occupied:** | Rear |
| **Other Aircraft Rating(s):** | | **Restraint Used:** | Lap only |
| **Instrument Rating(s):** | | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | | **Toxicology Performed:** | No |
| **Medical Certification:** | | **Last FAA Medical Exam:** | |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | | | |

## Aircraft and Owner/Operator Information

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| **Aircraft Make:** | Cessna | **Registration:** | N9980T |
| **Model/Series:** | 182D D | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | 1960 | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 18253080 |
| **Landing Gear Type:** | Tricycle | **Seats:** | |
| **Date/Type of Last Inspection:** | June 23, 2015 100 hour | **Certified Max Gross Wt.:** | 2348 lbs |
| **Time Since Last Inspection:** | | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | | **Engine Manufacturer:** | CONT MOTOR |
| **ELT:** | C91 installed, activated, aided in locating accident | **Engine Model/Series:** | O-470-L |
| **Registered Owner:** | On file | **Rated Power:** | 230 Horsepower |
| **Operator:** | On file | **Operating Certificate(s) Held:** | None |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Visual (VMC) | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | NUW,47 ft msl | **Distance from Accident Site:** | 6 Nautical Miles |
| **Observation Time:** | 19:56 Local | **Direction from Accident Site:** | 7° |
| **Lowest Cloud Condition:** | Few / 7000 ft AGL | **Visibility** | 10 miles |
| **Lowest Ceiling:** | None | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 5 knots / | **Turbulence Type Forecast/Actual:** | / None |
| **Wind Direction:** | 250° | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | 30.14 inches Hg | **Temperature/Dew Point:** | 15°C / 10°C |
| **Precipitation and Obscuration:** | No Obscuration; No Precipitation | | |
| **Departure Point:** | OAK HARBOR, WA (OKH ) | **Type of Flight Plan Filed:** | None |
| **Destination:** | OAK HARBOR, WA (OKH ) | **Type of Clearance:** | None |
| **Departure Time:** | 19:35 Local | **Type of Airspace:** | Class G |

## Airport Information

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| **Airport:** | AJ EISENBERG OKH | **Runway Surface Type:** | |
| **Airport Elevation:** | 193 ft msl | **Runway Surface Condition:** | Dry;Vegetation |
| **Runway Used:** | | **IFR Approach:** | None |
| **Runway Length/Width:** | | **VFR Approach/Landing:** | Forced landing |

## Wreckage and Impact Information

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| **Crew Injuries:** | 1 Serious | **Aircraft Damage:** | Substantial |
| **Passenger Injuries:** | 1 Minor | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 1 Serious, 1 Minor | **Latitude, Longitude:** | 48.25,-122.655281(est) |

## Administrative Information

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| **Investigator In Charge (IIC):** | Nixon, Albert |
| **Additional Participating Persons:** | Jocelyn MacGregor; Federal Aviation Administration; Renton, WA<br>Kurt Gibson; Continental Motors; Mobile, AL<br>Henry Soderlund; Textron Aviation; Wichita, KS |
| **Original Publish Date:** | March 19, 2018 |
| **Last Revision Date:** | |
| **Investigation Class:** | Class |
| **Note:** | The NTSB did not travel to the scene of this accident. |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=91464 |