Aviation Investigation Final Report

Location:	San Luis Obispo, California	**Accident Number:**	WPR11FA120
Date & Time:	February 3, 2011, 09:45 Local	**Registration:**	N47503
Aircraft:	Aeronca O-58C	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Fatal, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was in cruise flight at 3,500 feet mean sea level when the engine lost power. The pilot restarted the engine, and it ran for about 20 seconds before again losing power. He applied carburetor heat, but the cycle of losing power and restarting for a few seconds occurred several times. The pilot attempted to land in a field, but collided with trees at the edge of the field. There was no evidence of preimpact mechanical malfunction found during a postaccident examination of the airframe and engine. The meteorological conditions at the time of the accident were conductive to serious carburetor icing at cruise power. Although the pilot applied carburetor heat after the initial power loss, the engine likely did not run long enough to melt the ice and restore power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's delay in using carburetor heat, which resulted in a loss of engine power due to an encounter with carburetor icing conditions.

Findings

Environmental issues	Conducive to carburetor icing - Contributed to outcome
Environmental issues	Tree(s) - Contributed to outcome
Aircraft	Intake anti-ice, deice - Not used/operated
Personnel issues	Use of equip/system - Pilot
Personnel issues	Delayed action - Pilot

Factual Information

History of Flight

Maneuvering	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On February 3, 2011, about 0945 Pacific standard time, an Aeronca 0-58C, N47503, collided with trees near San Luis Obispo, California. The pilot/owner was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The private pilot sustained minor injuries, and one passenger sustained fatal injuries; the airplane sustained substantial damage to the fuselage and wings. The cross-country personal flight departed Paso Robles, California, about 0920, with a planned destination of Oceano, California. Visual meteorological conditions prevailed, and no flight plan had been filed.

A Federal Aviation Administration (FAA) inspector interviewed the pilot, and provided the following information. The pilot stated that the airplane was in cruise flight at 3,500 feet mean sea level (msl). The engine started to cough and lose power. He attempted to restart the engine, and it ran for about 20 seconds. He then applied carburetor heat, but the cycle of losing power and restarting for a few seconds occurred several times. The pilot attempted to land in a field, but collided with trees at the edge of the field.

PERSONNEL INFORMATION

The pilot reported that he held a private pilot certificate with a rating for airplane single-engine land. He was issued a third-class medical certificate on July 19, 2010, with the limitation that he must wear corrective lenses.

The pilot reported that he had a total flight time of 315 hours. He logged 4.1 hours in the last 90 days, and 0.5 in the last 30 days. He stated that he had 20 hours in this make and model, and completed a biennial flight review on September 3, 2010.

AIRCRAFT INFORMATION

The airplane was an Aeronca O-58C (L-3B), serial number 43-8212. The owner reported that the airplane had a total airframe time of 910 hours. It had an annual inspection on April 30, 2010.

The engine was a Continental Motors A-65-8, serial number 5292968.

METEOROLOGICAL INFORMATION

The closest official weather observation station was San Luis Obispo, California (KSBP), which was 4 nautical miles (nm) southeast of the accident site. The elevation of the weather observation station was 212 feet msl.

An aviation routine weather report (METAR) for KSBP was issued at 0956 PST. It stated: wind calm; visibility 10 miles; sky clear; temperature 9/48 degrees Celsius/Fahrenheit; dew point 4/39 degrees Celsius/Fahrenheit; altimeter 30.48 inches of mercury; relative humidity 71 percent.

TESTS AND RESEARCH

Examination of the airframe and engine was conducted on February 8, 2011, at the facilities of Aircraft Recovery Services, Pearblossom, California. No evidence of preimpact mechanical malfunction was noted during the examination of the airframe and engine. Detailed examination notes are in the public docket.

ADDITIONAL INFORMATION

The FAA Aircraft Certification Service published Special Airworthiness Information Bulletin (SAIB) CE-09-35 on June 30, 2009, to inform pilots of the potential hazards associated with carburetor icing.

The SAIB noted that carburetor icing doesn't just occur in freezing conditions; it can occur at temperatures well above freezing temperatures when there is visible moisture or high humidity. It states that icing can occur in the carburetor at temperatures above freezing. Because vaporization of fuel, combined with the expansion of air as it flows through the carburetor (the venturi effect) causes sudden cooling, a significant amount of ice can build up within a fraction of a second. The SAIB contains a graph that illustrates the probability of carburetor icing for various temperature and relative humidity conditions.

The conditions for this accident fell within the range of serious icing at cruise power.

The FAA's Handbook of Aeronautical Knowledge states that application of carburetor heat will cause a further reduction in power, and possibly engine roughness as melted ice goes through the engine. It states that these symptoms can last from 30 seconds to several minutes, depending on the severity of the icing.

Pilot Information

Certificate:	Private; Sport Pilot	**Age:**	66,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 19, 2010
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	September 3, 2010
Flight Time:	313 hours (Total, all aircraft), 20 hours (Total, this make and model), 205 hours (Pilot In Command, all aircraft), 4 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Aeronca	**Registration:**	N47503
Model/Series:	O-58C	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	43-8212
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	April 30, 2010 Annual	**Certified Max Gross Wt.:**	1260 lbs
Time Since Last Inspection:		**Engines:**	1
Airframe Total Time:	910 Hrs	**Engine Manufacturer:**	
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	
Registered Owner:	Jeffrey B Wells	**Rated Power:**	
Operator:	Jeffrey B Wells	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KSBP,212 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	09:56 Local	**Direction from Accident Site:**	150°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.47 inches Hg	**Temperature/Dew Point:**	9°C / 4°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Paso Robles, CA	**Type of Flight Plan Filed:**	None
Destination:	Oceano, CA	**Type of Clearance:**	None
Departure Time:	09:20 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Minor	**Latitude, Longitude:**	35.312778,-120.675003(est)

Administrative Information

Investigator In Charge (IIC):	Plagens, Howard
Additional Participating Persons:	Wilbert Robinson; FAA FSDO; San Jose, CA Andrew Swick; Teledyne Continental Motors; Sacramento, CA
Original Publish Date:	May 3, 2012
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=78275