Aviation Investigation Final Report

Location:	Boulder, Colorado	**Accident Number:**	CEN13LA525
Date & Time:	September 1, 2013, 11:00 Local	**Registration:**	N6460A
Aircraft:	Cessna 182	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Minor
Flight Conducted Under:	Part 91: General aviation - Skydiving		

Analysis

The pilot reported that he had flown a group of skydivers to altitude for an intentional parachute jump about 3 miles north of the airport and was returning for landing at the time of the accident. The airplane was on final approach when the engine lost power. The pilot's attempts to restore engine power were unsuccessful, and he ditched the airplane into a lake short of the runway. The pilot reported using carburetor heat during the descent; however, the pilot did not periodically apply engine power (clear the engine) during the descent. According to FAA Advisory Circular 20-113, Pilot Precautions and Procedures to be Taken in Preventing Aircraft Reciprocating Engine Induction System and Fuel System Icing Problems, "Heat should be applied for a short time to warm the induction system before beginning a prolonged descent with the engine throttled and left on during the descent. Power lever advancement should be performed periodically during descent to assure that power recovery can be achieved." A postaccident engine examination did not reveal any anomalies consistent with a preimpact failure or malfunction. Local weather conditions were conducive to the formation of carburetor icing.

Probable Cause and Findings

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

The pilot's failure to adequately clear carburetor icing, resulting in a loss of engine power on final approach following a descent at idle power.

Findings

Environmental issues	Conducive to carburetor icing - Effect on equipment
Aircraft	(general) - Inoperative
Personnel issues	Incorrect action performance - Pilot

Factual Information

History of Flight

Approach-VFR pattern final	Loss of engine power (total) (Defining event)
Emergency descent	Ditching

This report was modified on 1/30/2014. Please see the public docket for this accident to view the original report.

On September 1, 2013, about 1100 mountain daylight time, a Cessna 182 airplane, N6460A, was substantially damaged when the pilot ditched the airplane into a lake following a loss of engine power on approach to the Boulder Municipal Airport (BDU), Boulder, Colorado. The pilot sustained minor injuries. The airplane was registered to and operated by N6460A LLC under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed for the flight, which was not operated on a flight plan. The local flight originated from BDU about 1035.

The pilot reported that he had flown a group of skydivers to altitude for an intentional parachute jump about 3 miles north of the airport and was returning for landing at the time of the accident. The airplane was on final approach to runway 8 (4,100 feet by 75 feet, asphalt) when the engine lost power. His attempts to restore engine power were unsuccessful and he subsequently ditched into Hayden Lake short of the runway. He reported a clear sky with a light and variable wind.

A postaccident engine examination conducted by a National Transportation Safety Board investigator did not reveal any anomalies consistent with a preimpact failure or malfunction. Approximately 11 gallons of fuel were recovered from the airplane after the accident. The Pilot's Operating Handbook for the accident airplane noted that up to 5 gallons of fuel is unusable in all flight conditions, with 2 gallons of fuel being unusable in level flight.

Weather conditions recorded at the Rocky Mountain Metropolitan Airport (BJC), located about 9 miles southeast of BDU, at 1047, included an ambient temperature and dew point of 21 degrees Celsius and 11 degrees Celsius, respectively.

According to a Federal Aviation Administration (FAA) inspector, the pilot had reported using carburetor heat during the descent after the skydivers left the airplane; however, the pilot did not periodically apply engine power (clear the engine) during the descent. Information provided by the FAA regarding carburetor icing noted a possibility of serious icing at glide power under those conditions.

According to FAA Advisory Circular 20-113, *Pilot Precautions and Procedures to be Taken in Preventing Aircraft Reciprocating Engine Induction System and Fuel System Icing Problems*, "Heat should be applied for a short time to warm the induction system before beginning a prolonged descent with the engine throttled and left on during the descent. Power lever advancement should be performed periodically during descent to assure that power recovery can be achieved."

Pilot Information

Certificate:	Commercial	**Age:**	31
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
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:**	August 1, 2013
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	1031 hours (Total, all aircraft), 747 hours (Total, this make and model), 919 hours (Pilot In Command, all aircraft), 235 hours (Last 90 days, all aircraft), 87 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N6460A
Model/Series:	182	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	33260
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed	**Engine Model/Series:**	O-470-4
Registered Owner:	N6460A LLC	**Rated Power:**	225 Horsepower
Operator:	N6460A LLC	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	BJC,5673 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	10:47 Local	**Direction from Accident Site:**	136°
Lowest Cloud Condition:		**Visibility**	20 miles
Lowest Ceiling:	Broken / 10000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.29 inches Hg	**Temperature/Dew Point:**	21°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Boulder, CO (BDU)	**Type of Flight Plan Filed:**	None
Destination:	Boulder, CO (BDU)	**Type of Clearance:**	None
Departure Time:	10:35 Local	**Type of Airspace:**	

Airport Information

Airport:	Boulder Municipal BDU	**Runway Surface Type:**	Asphalt
Airport Elevation:	5288 ft msl	**Runway Surface Condition:**	Water-calm
Runway Used:	08	**IFR Approach:**	None
Runway Length/Width:	4100 ft / 75 ft	**VFR Approach/Landing:**	Forced landing;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor	**Latitude, Longitude:**	39.908889,-105.117225(est)

Administrative Information

Investigator In Charge (IIC):	Sorensen, Timothy
Additional Participating Persons:	Christopher Lang; FAA -- Denver Flight Standards; Denver, CO
Original Publish Date:	February 3, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=87974