



# Aviation Investigation Final Report

---

<b>Location:</b>	Grove, Oklahoma	<b>Accident Number:</b>	CEN18LA131
<b>Date &amp; Time:</b>	March 31, 2018, 08:15 Local	<b>Registration:</b>	N2485C
<b>Aircraft:</b>	Cessna 180	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	1 Minor, 1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

---

## Analysis

The airline transport pilot reported that, while in cruise flight, the engine "coughed once, then died." The pilot attempted to restore power without success, then performed a forced landing to a rodeo arena. The pilot also stated that he did not apply carburetor heat following the loss of engine power. A postaccident examination of the airframe and engine revealed no evidence of mechanical malfunction or failures that would have precluded normal operation. A review of the recorded weather information in the area indicated that the atmospheric conditions at the time of the accident were conducive to the accumulation of serious icing at any power setting. The total loss of engine power was likely due to an accumulation of carburetor ice. Had the pilot immediately applied carburetor heat, it is possible that it would have cleared the ice and restored engine power.

## 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 due to carburetor ice accumulation. Contributing to the accident was the pilot's failure to apply carburetor heat immediately following the loss of engine power.

## Findings

---

<b>Environmental issues</b>	Conducive to carburetor icing - Effect on equipment
<b>Aircraft</b>	Intake anti-ice, deice - Not used/operated
<b>Personnel issues</b>	Use of equip/system - Pilot
<b>Aircraft</b>	Intake anti-ice, deice - Related operating info

## Factual Information

### History of Flight

<b>Enroute</b>	Loss of engine power (total) (Defining event)
<b>Enroute</b>	Fuel related
<b>Enroute</b>	Other weather encounter
<b>Landing-landing roll</b>	Collision with terr/obj (non-CFIT)

On March 31, 2018, about 0815 central daylight time, a Cessna 180 airplane, N2485C, was substantially damaged during a forced landing near Grove, Oklahoma. The airline transport pilot was not injured and the passenger sustained minor injuries. The flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed and no Federal Aviation Administration (FAA) flight plan had been filed for the flight. The flight departed Circle S Farms Airport (AR91), Lowell, Arkansas, about 0800, and was en route to Grove Municipal Airport (KGMJ), Grove, Oklahoma.

According to the pilot, he departed AR91 and was en route to KGMJ to purchase fuel. While en route the engine quit producing power. During a forced landing to a rodeo arena, both wings, the empennage, and the fuselage were substantially damaged.

An examination of the airplane, including the engine and fuel system, revealed no mechanical anomalies that would have precluded normal operation.

The closest routine aviation weather report, taken at 0815, recorded a temperature of 54°F and a dewpoint temperature of 41°F. A review of the carburetor icing probability chart, located in the Federal Aviation Administration's Special Airworthiness Information Bulletin CE-09-35, dated June 30, 2009, revealed that the airplane was operating in an area favorable for the formation of serious carburetor icing at any power setting.

## Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight engineer; Flight instructor	<b>Age:</b>	49, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	November 6, 2017
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	December 19, 2017
<b>Flight Time:</b>	21327 hours (Total, all aircraft), 124.3 hours (Total, this make and model), 11250 hours (Pilot In Command, all aircraft), 112.1 hours (Last 90 days, all aircraft), 41.2 hours (Last 30 days, all aircraft), 0.2 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N2485C
<b>Model/Series:</b>	180	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1954	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	30785
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	February 15, 2018	<b>Certified Max Gross Wt.:</b>	2550 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	2777.3 Hrs at time of accident	<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	C91 installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	O470-J
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	225 Horsepower
<b>Operator:</b>	On file	<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>	KGMJ,830 ft msl	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	08:15 Local	<b>Direction from Accident Site:</b>	90°
<b>Lowest Cloud Condition:</b>	Scattered / 12000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots /	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>	170°	<b>Turbulence Severity Forecast/Actual:</b>	/ N/A
<b>Altimeter Setting:</b>	30.06 inches Hg	<b>Temperature/Dew Point:</b>	12°C / 5°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Lowell, AR (AR91)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Grove, OK (KGMJ)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	08:00 Local	<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 Minor	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Minor, 1 None	<b>Latitude, Longitude:</b>	36.608055,-94.728057(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Rodi, Jennifer
<b>Additional Participating Persons:</b>	Adama Allmond; Federal Aviation Administration; Oklahoma City, OK
<b>Original Publish Date:</b>	March 18, 2019
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=96958">https://data.ntsb.gov/Docket?ProjectID=96958</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](#).