



# Aviation Investigation Final Report

<b>Location:</b>	Hallsville, Missouri	<b>Accident Number:</b>	CEN17LA352
<b>Date &amp; Time:</b>	September 13, 2017, 17:17 Local	<b>Registration:</b>	N5906F
<b>Aircraft:</b>	Cessna 210G	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The private pilot reported that, while in cruise flight, a total loss of engine power occurred. After unsuccessful attempts to restart the engine, he landed the airplane gear up in a cornfield, which resulted in substantial damage to the fuselage. Postaccident examination of the airplane revealed that the engine mixture control cable had fractured about 9 inches from its attachment point at the engine. A metallurgical examination of the mixture control cable with a scanning electron microscope revealed fracture surface features that were consistent with a fatigue failure. It is likely that the engine mixture control cable fractured in flight, which led to a total loss of engine power.

## Probable Cause and Findings

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

The total loss of engine power due to a fatigue failure of the engine mixture control cable.

## Findings

<b>Aircraft</b>	(general) - Fatigue/wear/corrosion
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# Factual Information

## History of Flight

Enroute-cruise	Loss of engine power (total) (Defining event)
Emergency descent	Off-field or emergency landing
Landing	Landing gear not configured
Landing	Hard landing

On September 13, 2017, about 1717 central daylight time, a Cessna 210G airplane, N5906F, was substantially damaged during a forced landing following a loss of engine power near Hallsville, Missouri. The private pilot was not injured. The airplane was registered to and operated by AWG Aviation LLC under the provisions of Title 14 *Code of Federal Regulations* Part 91 as a personal flight. Day visual meteorological conditions prevailed for the flight, which departed without a flight plan from Columbia Regional Airport (COU), Columbia, Missouri, about 1704, with a destination of Washington Municipal Airport (AWG), Washington, Iowa.

According to the pilot, after climbing to 3,500 ft above mean sea level, he leaned the engine's mixture. While in cruise flight, he observed a total loss of engine power and the propeller continuing to windmill. After unsuccessful attempts to restart the engine, the pilot landed, gear up, in a cornfield, damaging the fuselage.

Postaccident examination of the airplane by a Federal Aviation Administration inspector revealed the engine mixture control cable had fractured about nine inches from its attachment point at the engine. The cable was sent to the National Transportation Safety Board (NTSB) Materials Laboratory for further examination.

Digital microscope images of the wire strands indicated the fracture surfaces were flat and perpendicular to the axes of the strands. No necking or thinning of the individual strands consistent with overstress separation was observed.

Several wires were sectioned examined using a Zeiss Auriga 40 field emission scanning electron microscope (SEM). Post separation impact damage was observed around the outer circumference of the fracture surface. Feathery features consistent with fatigue were observed on the fracture surface. The full NTSB Materials Laboratory report is available in the official docket of this investigation.

## Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	38,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	May 24, 2017
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	June 1, 2017
<b>Flight Time:</b>	95 hours (Total, all aircraft), 40 hours (Total, this make and model), 60 hours (Pilot In Command, all aircraft), 38 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N5906F
<b>Model/Series:</b>	210G	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1967	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	21058906
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	December 2, 2016 100 hour	<b>Certified Max Gross Wt.:</b>	3395 lbs
<b>Time Since Last Inspection:</b>	58 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3737 Hrs at time of accident	<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	Installed	<b>Engine Model/Series:</b>	IO 520 SERIES
<b>Registered Owner:</b>		<b>Rated Power:</b>	285 Horsepower
<b>Operator:</b>		<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>	COU,778 ft msl	<b>Distance from Accident Site:</b>	15 Nautical Miles
<b>Observation Time:</b>	16:54 Local	<b>Direction from Accident Site:</b>	231°
<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>	7 knots /	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>	330°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.75 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 8°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Columbia, MO (COU )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	WASHINGTON, IA (AWG )	<b>Type of Clearance:</b>	VFR flight following
<b>Departure Time:</b>	17:04 Local	<b>Type of Airspace:</b>	Class E

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<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 None	<b>Latitude, Longitude:</b>	39.123054,-92.118057(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Folkerts, Michael
<b>Additional Participating Persons:</b>	Rod McLaughlin; Flight Standards District Office; Kansas City, MO Chris Lang; Continental Motors; Mobile, AL
<b>Original Publish Date:</b>	April 8, 2019
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=96014">https://data.nts.gov/Docket?ProjectID=96014</a>

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).