



National Transportation Safety Board Aviation Accident Final Report

Location:	Hallsville, MO	Accident Number:	CEN17LA352
Date & Time:	09/13/2017, 1717 CDT	Registration:	N5906F
Aircraft:	CESSNA 210G	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 None
Flight Conducted Under:	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

Aircraft	Engine (reciprocating) - Fatigue/wear/corrosion (Cause)
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Factual Information

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.

History of Flight

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

Pilot Information

Certificate:	Private	Age:	38, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Lap Only
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:	05/24/2017
Occupational Pilot:	No	Last Flight Review or Equivalent:	06/01/2017
Flight Time:	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

Aircraft Make:	CESSNA	Registration:	N5906F
Model/Series:	210G	Aircraft Category:	Airplane
Year of Manufacture:	1967	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	21058906
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	12/02/2016, 100 Hour	Certified Max Gross Wt.:	3395 lbs
Time Since Last Inspection:	58 Hours	Engines:	1 Reciprocating
Airframe Total Time:	3737 Hours at time of accident	Engine Manufacturer:	CONT MOTOR
ELT:	Installed	Engine Model/Series:	IO 520 SERIES
Registered Owner:	AWG Aviation LLC	Rated Power:	285 hp
Operator:	AWG Aviation LLC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	COU, 778 ft msl	Distance from Accident Site:	15 Nautical Miles
Observation Time:	1654 CDT	Direction from Accident Site:	231°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	330°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.75 inches Hg	Temperature/Dew Point:	29° C / 8° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Columbia, MO (COU)	Type of Flight Plan Filed:	None
Destination:	WASHINGTON, IA (AWG)	Type of Clearance:	VFR Flight Following
Departure Time:	1704 CDT	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	39.123056, -92.118056 (est)

Administrative Information

Investigator In Charge (IIC):	Michael J Folkerts	Report Date:	04/08/2019
Additional Participating Persons:	Rod McLaughlin; Flight Standards District Office; Kansas City, MO Chris Lang; Continental Motors; Mobile, AL		
Publish Date:	04/08/2019		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=96014		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).