



# Aviation Investigation Final Report

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<b>Location:</b>	La Grange, Texas	<b>Accident Number:</b>	CEN13LA056
<b>Date &amp; Time:</b>	November 9, 2012, 07:21 Local	<b>Registration:</b>	N732BL
<b>Aircraft:</b>	Cessna 210L	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of engine power (total)	<b>Injuries:</b>	3 Minor
<b>Flight Conducted Under:</b>	Part 91: General aviation		

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## Analysis

The pilot reported that the airplane was in cruise flight at 7,000 ft mean sea level when he noticed that the engine oil pressure had dropped to an unacceptable level. He then attempted to divert to land at a nearby airport. However, when the airplane was on the downwind leg and after the landing gear had been extended, the engine experienced a total loss of power, so the pilot made an off-airport landing. During the landing on a soft, plowed field, the airplane flipped over and then came to rest inverted.

Review of maintenance records revealed that recent maintenance, which included the replacement of the engine oil filter, had been performed on the engine. A postaccident examination of the airframe revealed an abundance of engine oil on the airplane's belly; the oil extended from the engine compartment to the tail surfaces. A teardown examination of the engine revealed that a connecting rod had released from the crankshaft due to lubrication distress. An examination of the oil filter revealed that the oil filter adapter fiber seal washer was torn where the adaptor attaches to the oil pump housing and that the washer and the oil filter adaptor were misaligned. The improper installation of the oil filter adaptor likely caused the loss of oil to the engine and the subsequent 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 the loss of oil to the engine. Contributing to the accident was maintenance personnel's improper installation of the engine oil filter adaptor, which resulted in the loss of oil to the engine.

## Findings

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<b>Aircraft</b>	Recip eng oil sys - Damaged/degraded
<b>Personnel issues</b>	Incorrect action performance - Maintenance personnel
<b>Aircraft</b>	(general) - Failure
<b>Aircraft</b>	Recip eng oil sys - Incorrect service/maintenance

## Factual Information

### History of Flight

<b>Prior to flight</b>	Aircraft maintenance event
<b>Enroute-cruise</b>	Miscellaneous/other
<b>Approach</b>	Loss of engine power (partial)
<b>Emergency descent</b>	Loss of engine power (total) (Defining event)
<b>Emergency descent</b>	Off-field or emergency landing
<b>Landing</b>	Collision with terr/obj (non-CFIT)
<b>Landing</b>	Nose over/nose down
<b>Post-impact</b>	Cabin safety event

On November 9, 2012, about 0721 central standard time, N732BL, a Cessna 210L, single engine airplane, was substantially damaged during a forced landing near Fayette Regional Air Center Airport (3T5), La Grange, Texas. The pilot and both passengers sustained minor injuries. The airplane was registered to and operated by a private individual. Day visual meteorological conditions (VMC) prevailed at the time of the accident and an instrument flight rules (IFR) flight plan had been filed for the 14 Code of Federal Regulations Part 91 business flight. The airplane departed San Marcos Municipal Airport (HYI), San Marcos, Texas, about 0650 destined for Baytown Airport (HPY), Baytown, Texas.

The airplane was in cruise flight at 7,000 feet mean sea level when the pilot noticed that the engine oil pressure had dropped to an unacceptable level. The pilot requested a descent and vectors to divert for landing at 3T5. Radar data showed the airplane was about 2,500 feet above ground level when it overflew 3T5. When the airplane was on downwind and after the lowering the landing gear the pilot reported that he had a total loss of engine power and made an off-airport landing about a mile north from 3T5. During the landing on a soft plowed field the airplane flipped and came to rest inverted.

A review of aircraft maintenance logbook entries showed that maintenance had been performed on the engine about three weeks prior to the accident. That maintenance included replacement of the engine oil filter.

A postaccident examination of the airframe revealed an abundance of engine oil on the belly of the airplane which extended from the engine compartment all the way to the tail surfaces. A teardown examination of the engine revealed lubrication distress, and mechanical damage on all connecting rod journals with damage concentrated where the number four connecting rod had released from the crankshaft and had penetrated through the crankcase. An examination of the oil filter showed that it contained an abundance of flakes and slivers from the damaged internal engine components. The oil filter adapter fiber seal washer was observed to be torn where the adaptor attaches to the oil pump housing and had signatures of misalignment with the oil filter adaptor.

## Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor	<b>Age:</b>	36
<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>	Lap only
<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 With waivers/limitations	<b>Last FAA Medical Exam:</b>	June 8, 2011
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	July 14, 2011
<b>Flight Time:</b>	(Estimated) 6642 hours (Total, all aircraft), 418 hours (Total, this make and model), 5402 hours (Pilot In Command, all aircraft), 28 hours (Last 90 days, all aircraft), 17 hours (Last 30 days, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N732BL
<b>Model/Series:</b>	210L	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1976	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	21061386
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	October 15, 2012 Annual	<b>Certified Max Gross Wt.:</b>	3800 lbs
<b>Time Since Last Inspection:</b>	17 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3128 Hrs at time of accident	<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	Installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	IO 520 SERIES
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	300 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>	K3TS,324 ft msl	<b>Distance from Accident Site:</b>	1 Nautical Miles
<b>Observation Time:</b>	07:15 Local	<b>Direction from Accident Site:</b>	182°
<b>Lowest Cloud Condition:</b>	2900 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 2900 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	4 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	150°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.04 inches Hg	<b>Temperature/Dew Point:</b>	19°C / 17°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	San Marcos, TX (HYI)	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Baytown, TX (HPY)	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	06:50 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Fayette Regl Air Center Airpor 3T5	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	324 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	16	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	5000 ft / 75 ft	<b>VFR Approach/Landing:</b>	Forced landing;Traffic pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Minor	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	2 Minor	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	3 Minor	<b>Latitude, Longitude:</b>	29.928333,-96.946388(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Latson, Thomas
<b>Additional Participating Persons:</b>	Del Scott; FAA Houston FSDO; Houston, TX Peter J Basile; Cessna Aircraft Company; Wichita, KS John Kent; Continental Motors, Inc.; Mobile, AL
<b>Original Publish Date:</b>	March 10, 2015
<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.nts.gov/Docket?ProjectID=85551">https://data.nts.gov/Docket?ProjectID=85551</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](#).