Aviation Investigation Final Report

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

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

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

Factual Information

History of Flight

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

Certificate:	Airline transport; Commercial; Flight instructor	**Age:**	36
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	June 8, 2011
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	July 14, 2011
Flight Time:	(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

Aircraft Make:	Cessna	**Registration:**	N732BL
Model/Series:	210L	**Aircraft Category:**	Airplane
Year of Manufacture:	1976	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	21061386
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	October 15, 2012 Annual	**Certified Max Gross Wt.:**	3800 lbs
Time Since Last Inspection:	17 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3128 Hrs at time of accident	**Engine Manufacturer:**	CONT MOTOR
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	IO 520 SERIES
Registered Owner:	On file	**Rated Power:**	300 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	K3TS,324 ft msl	**Distance from Accident Site:**	1 Nautical Miles
Observation Time:	07:15 Local	**Direction from Accident Site:**	182°
Lowest Cloud Condition:	2900 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 2900 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	150°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	19°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	San Marcos, TX (HYI)	**Type of Flight Plan Filed:**	IFR
Destination:	Baytown, TX (HPY)	**Type of Clearance:**	IFR
Departure Time:	06:50 Local	**Type of Airspace:**	Class G

Airport Information

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

Wreckage and Impact Information

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

Administrative Information

Investigator In Charge (IIC):	Latson, Thomas
Additional Participating Persons:	Del Scott; FAA Houston FSDO; Houston, TX Peter J Basile; Cessna Aircraft Company; Wichita, KS John Kent; Continental Motors, Inc.; Mobile, AL
Original Publish Date:	March 10, 2015
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=85551