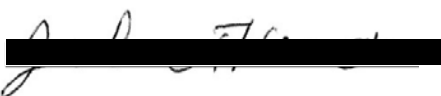




Continental Motors

ENGINE FIELD INSPECTION REPORT

ENGINE MODEL	IO-520-BA10B
ENGINE SERIAL NUMBER	814345-R
AIRCRAFT MAKE & MODEL	Beechcraft V35B Bonanza
AIRCRAFT SERIAL NUMBER	D-10079
AIRCRAFT REGISTRATION	N246JT
FILE NUMBER	14-374

NAME	SIGNATURE	DATE
John T. Kent		2/3/2015

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GENERAL INFORMATION

EXAMINATION		ACCIDENT DATA	
DATE	01/29/2015	NTSB ACCIDENT #	ERA15LA092
FACILITY	Atlanta Air Recovery	NTSB INVESTIGATOR	Bob Gretz
ADDRESS	[REDACTED], Griffin, Georgia 30224 [REDACTED]	FAA INVESTIGATOR	Rene Gonzalez
		ACCIDENT DATE	01/06/2015
		ACCIDENT LOCATION	Hickory, North Carolina

ENGINE INFORMATION

ENGINE POSITION	Front
TOTAL TIME	1,561.49 as of 7/16/2014
TIME SOH	NA
TYPE & TIME SLI	Unknown
BUILD DATE	12/08/1998
IN SERVICE DATE	02/23/1999

Significant logbook information: The engine was installed on the aircraft on 2/23/1999. A top overhaul was performed on the engine on 06/12/2006 by Mr. Donald Blue AP-[REDACTED] at a tachometer time of 2473. The cylinders were ground to +10 during the top overhaul. During a 100 hour inspection on 05/14/2009, at 1004.52 hours total time, cylinders one, two, and six were removed and sent to Triad Aviation in Burlington, North Carolina for repairs. They were installed on the engine after the repairs by AP-[REDACTED] IA. The last 100 hour inspection was performed on the engine by AP-[REDACTED] IA on 07/16/2014 at an engine total time of 1,561.49 hours.

Report Summary:

Search Code(s):

One of the aft counterweights was separated from the crankshaft, and the number one connecting rod was separated from the crankshaft. The engine oil sump contained oil, and all of the crankshaft journals were coated with oil.

Disposition of engine following exam: The engine was shipped to the Continental Motors Inc. analytical department for further examination. The accessories were retained at Atlanta Air Recovery.

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PAGE 3 of 25**INSPECTION WITNESSES**

NAME	John T. Kent	NAME	Todd Thaxton
ADDRESS	2039 South Broad Street, Mobile, Alabama 36615	ADDRESS	Griffin, Georgia
ORGANIZATION	Continental Motors	ORGANIZATION	Atlanta Air Recovery
PHONE	██████████	PHONE	██████████
NAME	Ralph Hicks	NAME	
ADDRESS	Atlanta, Georgia	ADDRESS	
ORGANIZATION	NTSB	ORGANIZATION	
PHONE	██████████	PHONE	
NAME	Henry Soderlund	NAME	
ADDRESS	Wichita, Kansas	ADDRESS	
ORGANIZATION	Textron Aviation	ORGANIZATION	
PHONE	██████████	PHONE	

EXTERNAL INSPECTION OF ENGINE

The engine was intact with all of the accessories attached, except the left magneto which was separated and hanging by the ignition leads, and the standby alternator. The intake and exhaust pipes had impact damage. The number one rocker cover was crushed inward. The oil cap and dipstick were missing. The oil filter was dented, and a small hole was observed in the left crankcase half, over the number two cylinder attachment point. The throttle, mixture, and propeller governor controls were hooked up and were free to move.

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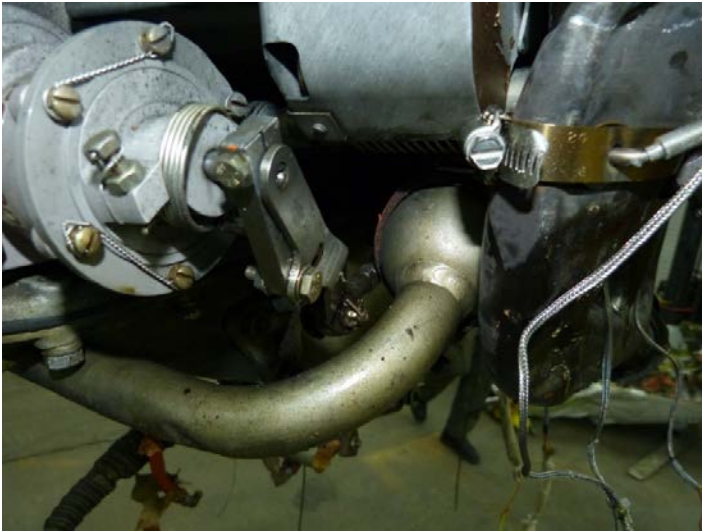
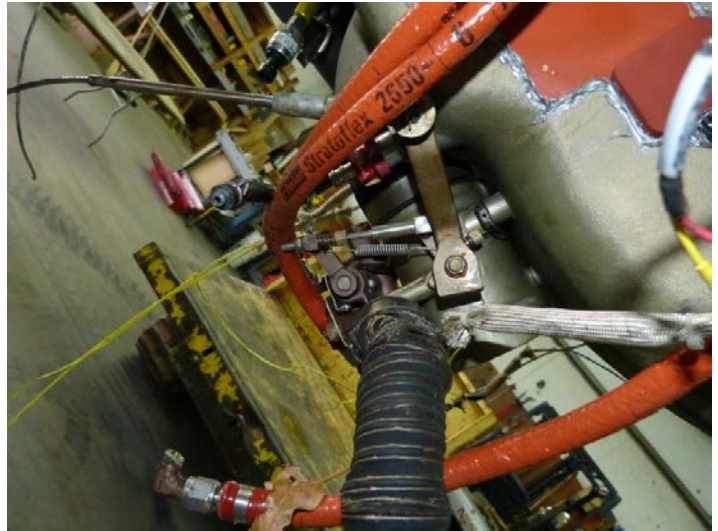
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ENGINE TEARDOWN AND COMPONENT EXAMINATION

EXHAUST SYSTEM

Condition:

The exhaust system was in place and had impact damage.



INDUCTION SYSTEM

Condition:

The induction system was in place and had impact damage.



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PAGE 7 of 25**IGNITION SYSTEM****LEFT
MAGNETO**

Manufacturer: TCM

P/N: Illegible

S/N: Illegible

Condition: The magneto was separated from the engine and was hanging by the ignition harness. It had an Aero Accessories tag. The magneto drive shaft was rotated using an electric drill and a spark was observed at all terminals.

**RIGHT
MAGNETO**

Manufacturer: TCM

P/N: 10-349350-5

S/N: K219816FR

Condition: The magneto was in place and not damaged. It had an Aero Accessories tag. The magneto drive shaft was rotated using an electric drill and a spark was observed at all terminals.



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SPARK PLUGS

Manufacturer: Champion

P/N: RHB-32E

Condition:

All of the spark plugs were removed and examined. They had normal wear in the electrode areas when compared with the Champion Check-A-Plug comparison card. Bottom spark plugs two, four, five, and six had oil in the electrodes. The remainder of the spark plugs had light gray deposits in the electrode areas.



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FUEL SYSTEM

FUEL PUMP

Manufacturer: TCM

P/N: 646212-2

S/N:K1098165R

Condition:

The fuel pump was in place on the rear of the engine. The fuel inlet and vapor return lines were separated. The low pressure set screw on the rear of the pump was impact damaged. The drive coupling (653359B) was intact and not damaged. The safety wire and lead seal were in place. The drive shaft was free to rotate. The unit was disassembled and no internal damage was observed.



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THROTTLE BODY METERING UNIT

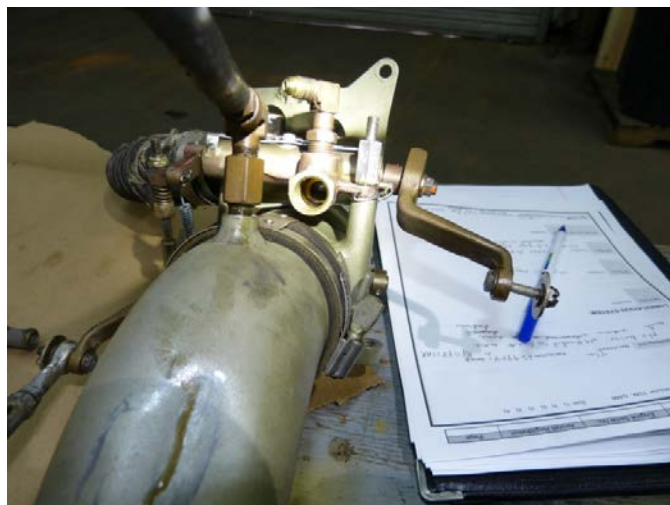
Manufacturer: TCM

P/N: 629904-2

S/N: K109811AR

Condition:

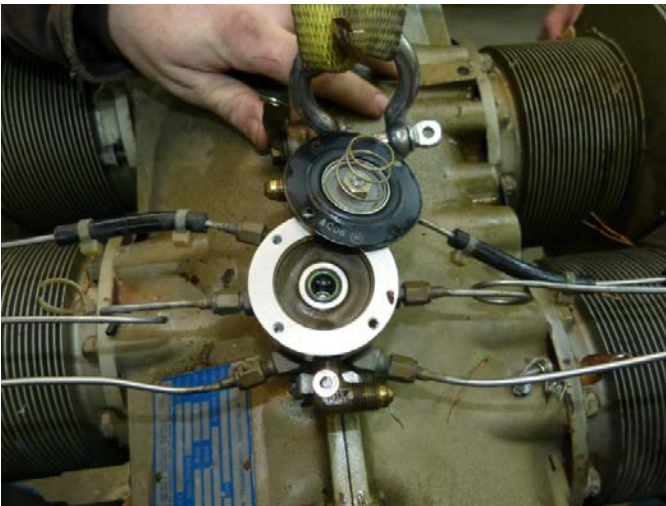
The metering unit was not damaged. The throttle and mixture controls were hooked up and were free to move. Some debris was observed on the fuel screen.



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FUEL MANIFOLD VALVE	Manufacturer: TCM	P/N: 631427-2A	S/N: K109813CR
Condition:	The safety wire and lead seal were in place. The unit was opened and the diaphragm and spring were not damaged. The screen was clean and clear. The nut was tight on the plunger. Fuel was observed in the unit.		



FUEL NOZZLES AND LINES	Manufacturer: GAMI					
Position	#1	#3	#5	#2	#4	#6
Size	J168	G251	G143	G162	G151	G143
Condition:	The number one injector was bent. The remainder of the injectors were not damaged, and were clean and clear.					

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LUBRICATION SYSTEM

OIL SUMP

Condition: The oil sump was in place and not damaged.



OIL PICK-UP TUBE & SCREEN

Condition: The oil pick-up screen and tube were not damaged. Some metal was observed on the screen.



OIL PUMP

Condition: The oil pump was in place and not damaged. The gears were coated with oil and were free to rotate. Some indications of hard particle passage were noted.

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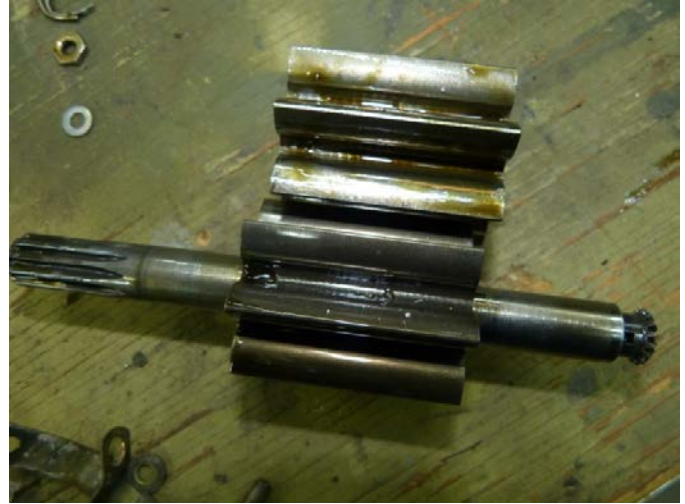
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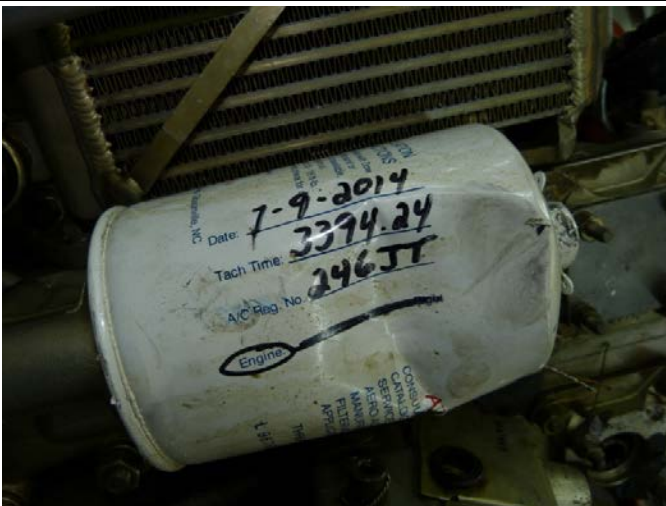
OIL FILTER

Manufacturer: Tempest

P/N:AA48109

Condition:

The oil filter was in place and dented. The filter was cut open and small amounts of metal were observed in the element.



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OIL COOLER

Manufacturer: Niagara

P/N: 10278A

S/N: H98-2750-830

Condition:

The oil cooler was in place and not damaged.



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Cylinders: NT, 654961

All of the cylinders were removed, except the number two cylinder, which could not be removed because of impact damage. They had normal wear and normal combustion deposits in the domes. All of the valves were in place.



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Pistons: 654850B P010

Pistons one and two could not be removed from their cylinders. The remainder of the pistons had impact damage marks from the valves on their faces. Otherwise they had normal combustion deposits and all of the rings were in place.



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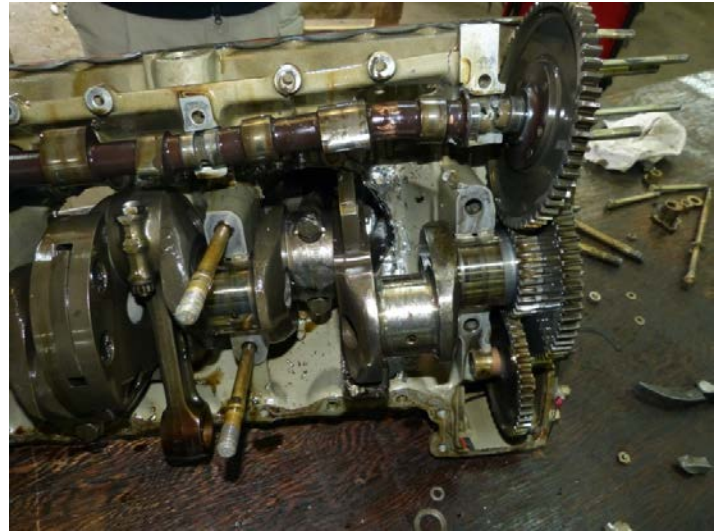
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Crankshaft: SN-G309204N

The crankshaft was intact, except that one of the aft counterweights was separated, and the counterweight hanger was damaged. All of the journals were coated with oil and no heat damaged was observed on the crankshaft. Parts of the counterweight were recovered, including three and one half retainer clips, three retainer plates, and one counterweight pin, with the number A101. All of the other counterweights were in place and free to move.



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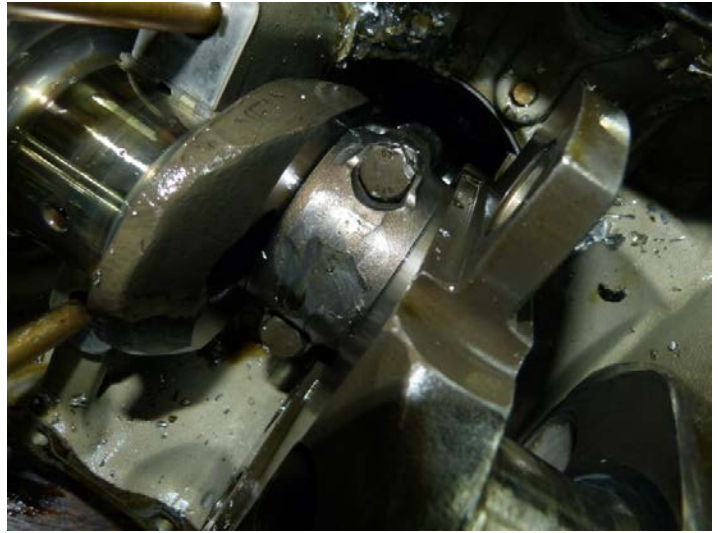
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Camshaft and valve lifters:

The camshaft and valve lifters remained in the crankcase halves and were impact damaged.



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Connecting Rods: The connecting rods remained attached to the crankshaft and were free to move, except the number one connecting rod, which was separated by impact damage, and partly destroyed. The number two connecting rod remained attached to the crankshaft, but could not be moved because the cylinder remained attached.



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Starter: Energizer, PN-646238, SN-J299836

The starter was in place and not damaged. The drive shaft was free to rotate.

Starter Adapter: The starter adapter was in place and not damaged. The drive shaft was free to rotate.



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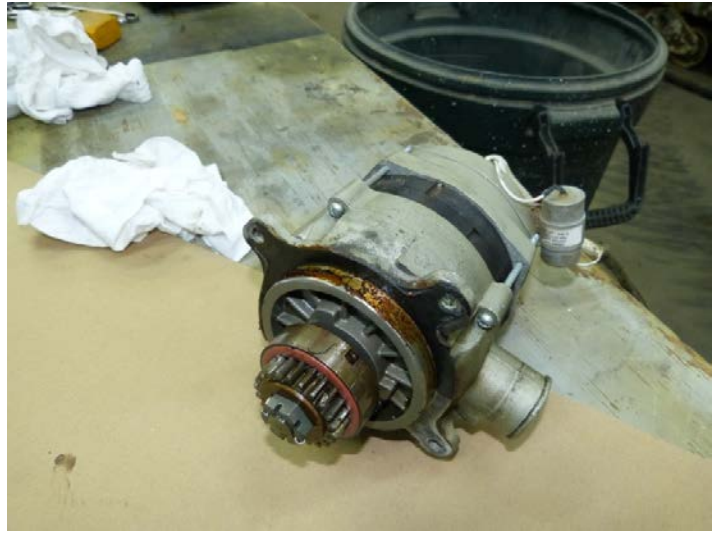
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Alternator: Kelly Aerospace, ALX-9524R, SN-H100808

The alternator was in place and had light impact damage. The drive shaft was free to rotate.



Propeller Governor: Aero Technologies PCU 5000, PN-ATD 210 760, SN-08301859

The propeller governor was in place and had light impact damage. The drive shaft was very hard to rotate. The oil screen was clean and clear.

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Propeller: McCauley, 3A32C76-S-MR, SN-774724

The propeller was separated from the crankshaft attachment flange and had impact damage on the spinner. Two blades had very little impact damage, and the third blade was twisted in the hub and bent near the tip.

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