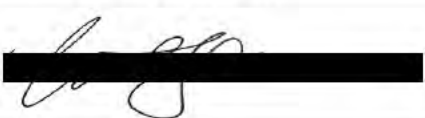




Continental Motors

ENGINE EXAMINATION REPORT

ENGINE MODEL	IO-520-F13B
ENGINE SERIAL NUMBER	247849
AIRCRAFT MAKE & MODEL	Cessna 207A
AIRCRAFT SERIAL NUMBER	20700427
AIRCRAFT REGISTRATION	N7379U
FILE NUMBER	18-089

NAME	SIGNATURE	DATE
Nicole L. Chamon		12/20/2018

ENGINE EXAMINATION REPORT**FILE NUMBER:**

18-089

ENGINE S/N:

247849

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EXAMINATION		ACCIDENT DATA	
DATE	12/20/2018	NTSB ACCIDENT #	ANC18LA064
FACILITY	Continental Motors	NTSB INVESTIGATOR	Clint Johnson
ADDRESS	2039 South Broad Street Mobile, AL 36615	FAA INVESTIGATOR	Jack Devlin
		ACCIDENT DATE	08/07/2018
		ACCIDENT LOCATION	Iliamna, Alaska

ENGINE INFORMATION

ENGINE POSITION	Single Engine
TOTAL TIME	10,126.9 Hours
TIME SOH	1,234.6 Hours
TYPE & TIME SLI	100-hour inspection 51.2 hours prior to accident
BUILD DATE	07/02/1987
IN SERVICE DATE	Unknown

Significant logbook information:

The engine was overhauled on October 13, 2014 at an engine total time of 8,892.3 hours. It was installed on the accident airplane on November 22, 2014 at a tachometer time of 2,764.6 hours. On June 25, 2018, at a tachometer time of 3,948.0 hours and a time since overhaul of 1,177.4 hours, the #2 and #3 cylinders were removed and replaced with overhauled cylinders. The #2 cylinder had a yellow tag work order number of 23713 and indicated that the time since new was 839.3 hours. Since its installation in June 2018, the #2 and #3 cylinders accumulated a total of 51.2 hours.

Report Summary:

Search Code(s): 14-13-30, 43-05-29, 50-02-08

The #2 piston was eroded on the bottom side and a hole was burned through, consistent with a pre-ignition/detonation event. The piston and cylinder head were also mechanically damaged by loose piston ring debris. The top and bottom sparkplug electrodes were eroded and mechanically damaged and deformed. The #2 bottom, #4 top and #6 bottom sparkplug insulators were cracked and mechanical damage was noted around those sparkplug bays. Closer examination of the #2 cylinder head revealed re-solidified molten metal around the bottom Heli-Coil tang notch. No other pre-accident anomalies were noted with the engine that would have precluded its normal operation.

Disposition of engine following exam:

The engine core components were boxed for core reclamation. The airframe components were boxed for shipment back to the operator. A final wreckage release is pending from the NTSB investigator-in-charge.

ENGINE EXAMINATION REPORT

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INSPECTION WITNESSES

NAME	Nicole L. Charnon	NAME	Lisa Jersild
ADDRESS	Washington, DC	ADDRESS	Mobile, AL
ORGANIZATION	Continental Motors	ORGANIZATION	Continental Motors
PHONE		PHONE	
NAME	Randy Bryant	NAME	Clint Johnson
ADDRESS	Mobile, AL	ADDRESS	Anchorage, AK
ORGANIZATION	Continental Motors	ORGANIZATION	NTSB
PHONE		PHONE	
NAME	Eric Swenson	NAME	
ADDRESS	Anchorage, AK	ADDRESS	
ORGANIZATION	NTSB	ORGANIZATION	
PHONE		PHONE	

EXTERNAL ENGINE CONDITION



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ENGINE EXAMINATION SUMMARY

The engine was disassembled. The #2 piston was eroded and burned through consistent with a pre-ignition/detonation event. The #2 top and bottom sparkplugs were eroded and mechanically damaged with deformed electrodes. The bottom sparkplug insulator was fractured. The bottom sparkplug Heli-Coil showed evidence of re-solidified molten metal concentrated at the tang notch.

The #4 and #6 pistons and cylinders displayed mechanical damage consistent with piston ring debris found throughout the induction system.

The magneto-to-engine timing was checked with the left magneto timed to 23° BTDC and the right magneto being timed to 25° BTDC. The magnetos were placed on a test bench and both produced a spark from each of their leads in firing order with no pre-accident anomalies noted.

The fuel system components were flow tested on production test stands with no pre-accident anomalies noted.

ENGINE COMPONENT EXAMINATION

IGNITION SYSTEM

LEFT MAGNETO



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RIGHT MAGNETO



IGNITION HARNESS



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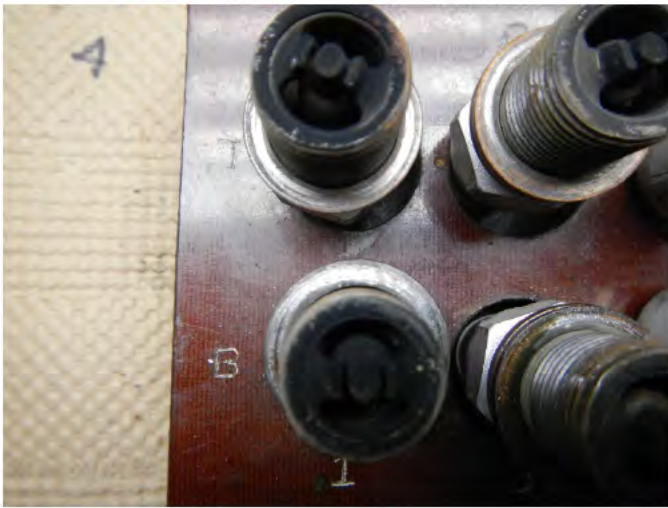
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SPARK PLUGS



1 T&B



3 T&B



5 T&B



2 T&B

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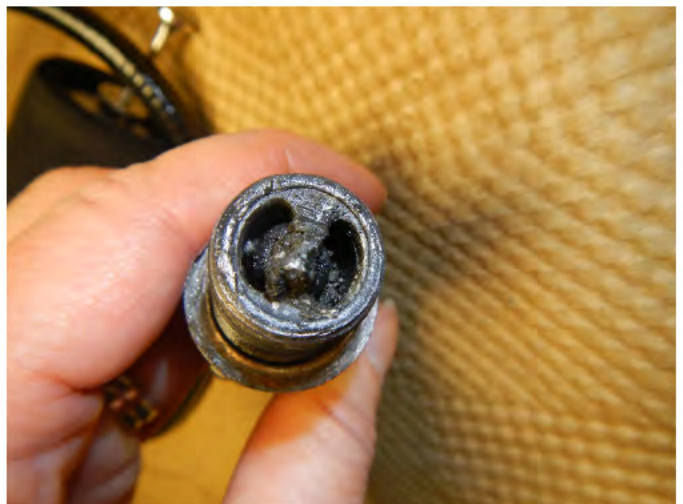
4 T&B



6 T&B



2B



2B



2B



2B

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2B



2B



2T



2T

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CYLINDERS

CYLINDER #2



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