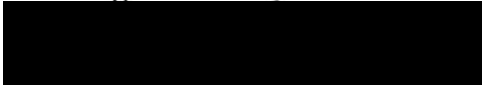




Continental Motors

ENGINE RUN REPORT

ENGINE MODEL	IO-520-D23A, converted to an O-470-50 (P. Ponk STC)
ENGINE SERIAL NUMBER	552352, converted to P. Ponk SN: 2518
AIRCRAFT MAKE & MODEL	Cessna 180J
AIRCRAFT SERIAL NUMBER	18052344
AIRCRAFT REGISTRATION	N180LP
FILE NUMBER	17-151

NAME	SIGNATURE	DATE
Nicole L. Charnon		12/22/2017

ENGINE RUN REPORT			
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GENERAL INFORMATION			
EXAMINATION		ACCIDENT DATA	
DATE	12/19/2017	NTSB ACCIDENT #	CEN17FA332
FACILITY	Continental Motors	NTSB INVESTIGATOR	Todd Fox
ADDRESS	[REDACTED] Mobile, Alabama 36615	FAA INVESTIGATOR	Robert Holdridge
		ACCIDENT DATE	08/28/2017
		ACCIDENT LOCATION	Gaylord, Michigan

INSPECTION WITNESSES			
NAME	Phillip Grice	NAME	Lisa Jersild
ADDRESS	Mobile, AL	ADDRESS	Mobile, AL
ORGANIZATION	Continental Motors	ORGANIZATION	Continental Motors
PHONE	[REDACTED]	PHONE	[REDACTED]
NAME	Greg Eastburn	NAME	Edward Malinowski
ADDRESS	Mobile, AL	ADDRESS	Chicago, IL
ORGANIZATION	Continental Motors	ORGANIZATION	NTSB – Central Region
PHONE	[REDACTED]	PHONE	[REDACTED]
NAME	Peter Basile	NAME	
ADDRESS	Wichita, KS	ADDRESS	
ORGANIZATION	Textron Aviation	ORGANIZATION	
PHONE	[REDACTED]	PHONE	

EXTERNAL INSPECTION OF ENGINE

The engine was placed in the crate with the carburetor separated from the engine. No differences were noted from the last time it was inspected at the accident site.

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ENGINE RUN REPORT

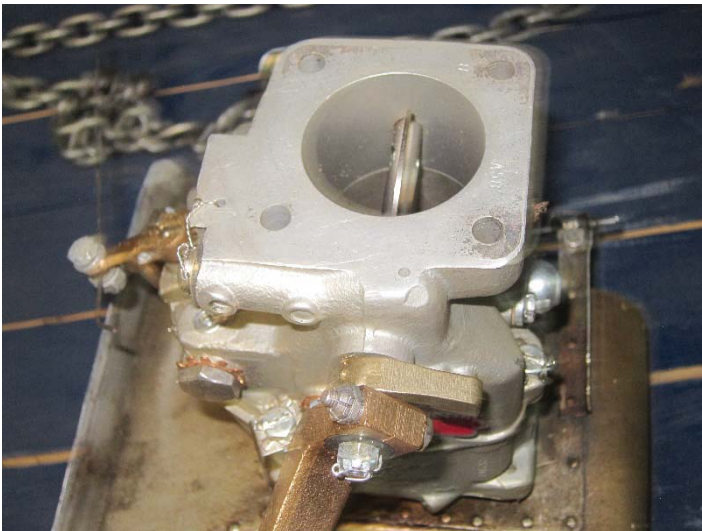
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ENGINE RUN REPORT**FILE NUMBER:**

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PAGE 5 of 8**ENGINE PREPARATION PRIOR TO RUN**

There were a number of airframe related items removed in preparation for operation on the CMI test bed. The removed items included the alternator, vacuum pump, and propeller governor.

The following substitute or repaired parts were required for engine operation: all four engine mounts, starter adapter, starter motor, balance tube, oil filter, oil sump, and intake manifold.

The carburetor was disassembled and inspected at the accident site. The carburetor was reassembled and reinstalled on the engine without adjustments to the pre-accident settings.

The magneto-to-engine timing was checked and with the following results:

Magneto-to-Engine Timing (Specified):	Left Magneto:	Right Magneto:
22°BTDC	20°BTDC	20°BTDC

A cylinder leakage test was performed prior to the test run in accordance with the latest revision of CMI Service Bulletin SB03-3 with the engine at room temperature with the following results (master orifice reading – 43 PSI):

Cylinder #1 - 28/80 PSI (exhaust valve)

Cylinder #2 - 65/80 PSI (rings)

Cylinder #3 - 06/80 PSI (exhaust valve)

Cylinder #4 - 69/80 PSI (rings)

Cylinder #5 - 16/80 PSI (exhaust valve)

Cylinder #6 - 25/80 PSI (exhaust valve)

(*) – Leakage Source

The engine was not disassembled prior to the engine run. The crankshaft deflection measured 0.003" and the run-out was 0.001". The engine was then prepared for operation by installing the appropriate thermocouples, pressure lines and test pads for monitoring purposes. The engine was then moved to CMI test cell number 43, mounted for operation, and fitted with a test club propeller.

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DESCRIPTION OF RUN

The engine started without hesitation or difficulty. The engine was run through various parameters at 5-minute intervals. Please see the engine test log for more details. The throttle was then moved rapidly from idle to full power on multiple occasions with no interruption or hesitation in power production. No pre-accident anomalies were noted during the engine run. An oil leak was noted, but was a result of a damaged exhaust pushrod and pushrod housing for cylinder #5. The pushrod housing damage was in the same area as the fractured engine mount and punctured oil sump.



ENGINE RUN REPORT

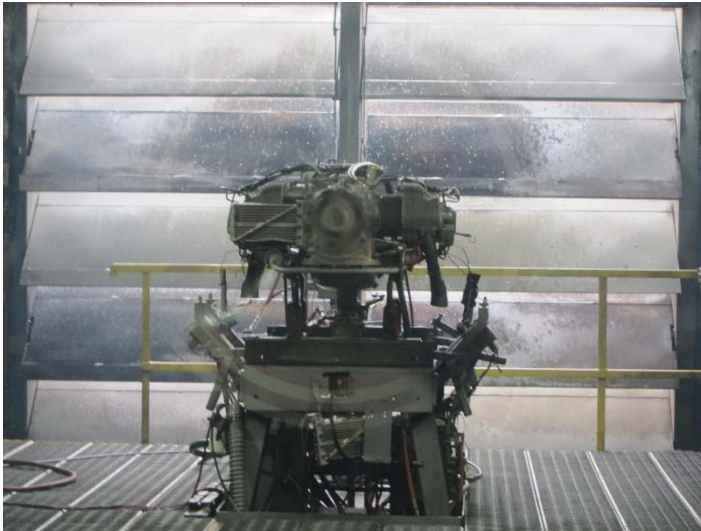
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A cylinder leakage test was performed after the test run in accordance with the latest revision of CMI Service Bulletin SB03-3 with the engine hot with the following results (master orifice reading – 43 PSI):

Cylinder #1 - 70/80 PSI (exhaust valve)

Cylinder #2 - 67/80 PSI (exhaust valve)

Cylinder #3 - 72/80 PSI (exhaust valve)

Cylinder #4 - 72/80 PSI (exhaust valve)

Cylinder #5 - 68/80 PSI (exhaust valve)

Cylinder #6 - 62/80 PSI (exhaust valve)

(*) – Leakage Source

Following the engine run, the oil filter that was installed at the time of the accident was cut open for inspection. There was no visible sign of contamination within the filter pleats or pre-accident anomalies.

ENGINE RUN PARAMETERS

Time		RPM	MP " Hg	Oil		Fuel				Cell °F	Cylinder Head Temperature °F					
Reading	Minutes			PSI	°F	Lbs/Hr	Nozzle PSI	Pump PSI	Fuel °F		# 1	# 2	# 3	# 4	# 5	# 6
1	5	1200	15.92	80	125	27.99	N/A	N/A	68	72	309	227	229	213	256	182
2	5	1600	17.70	76	145	40.20	N/A	N/A	68	72	349	245	244	226	283	198
3	5	2100	20.58	67	162	75.08	N/A	N/A	68	72	378	270	283	256	324	228
4	5	2450	23.96	56	180	112.98	N/A	N/A	69	72	398	293	339	280	357	260
5	5	F/T 2660	26.67	72	158	148.9	N/A	N/A	72	72	337	324	325	291	332	248
6	5	Idle 656	16.36	30	168	8.59	N/A	N/A	73	73	294	266	261	221	237	176

7 The throttle was rapidly moved from idle to full power multiple times with no hesitations or pre-accident anomalies noted.

Ambient Air Temperature °F	Ambient Air Pressure	Transfer Collar Δ P		Maximum Rated Power Engine Operational Parameters				
		IN	OUT	RPM	" Hg MP	Fuel Flow Lbs/Hr	Metered PSI	Unmetered PSI
70.4	29.31	71	77	*	*	*	*	*

Notes: Operator – Lisa Jersild. Transfer collar pressure delta measured at full throttle power setting.

Engine Performance Test				
Test RPM	Left Magneto	Left Magneto	Right Magneto	Right Magneto
	RPM	RPM Drop	RPM	RPM Drop
2100	1992	108	1976	124

* See P-Ponk STC for maximum rated power parameters.