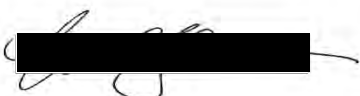




Continental Motors

ENGINE EXAMINATION REPORT

ENGINE MODEL	O-200-A38
ENGINE SERIAL NUMBER	61818-5-A
AIRCRAFT MAKE & MODEL	Cessna 150F
AIRCRAFT SERIAL NUMBER	15062179
AIRCRAFT REGISTRATION	N8879S
FILE NUMBER	17-087

NAME	SIGNATURE	DATE
Nicole L. Charnon		08/18/2017

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GENERAL INFORMATION

EXAMINATION		ACCIDENT DATA	
DATE	08/17/2017	NTSB ACCIDENT #	CEN17LA298
FACILITY	Air Salvage of Dallas	NTSB INVESTIGATOR	John Brannen
ADDRESS	Ferris Road Lancaster, Texas	FAA INVESTIGATOR	Christopher Wright
		ACCIDENT DATE	08/01/2017
		ACCIDENT LOCATION	Bullard, Texas

ENGINE INFORMATION

ENGINE POSITION	Single Engine
TOTAL TIME	Unknown
TIME SOH	Unknown
TYPE & TIME SLI	Unknown
SHIPPED DATE	09/08/1965
IN SERVICE DATE	Unknown

Significant logbook information:

Aircraft maintenance records were not received or reviewed prior to this report's writing.

Report Summary:

Search Code(s):

15-12-68

No pre-accident anomalies were noted with the engine, or engine-related systems that would have precluded its ability to produce full, rated power.

Disposition of engine following exam:

No components were retained by the investigative team. The wreckage was left at the aircraft recovery facility awaiting final disposition from the NTSB investigator-in-charge.

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NAME	Nicole L. Charnon	NAME	Christopher Wright
ADDRESS	Washington, DC	ADDRESS	Dallas, TX
ORGANIZATION	Continental Motors	ORGANIZATION	FAA – North Texas FSDO
PHONE		PHONE	
NAME	Henry Soderlund	NAME	Michael Graham
ADDRESS	Wichita, KS	ADDRESS	Wichita, KS
ORGANIZATION	Textron Aviation	ORGANIZATION	Textron Aviation
PHONE		PHONE	

EXTERNAL ENGINE CONDITION

The engine was displaced aft into the firewall with the nose of the engine pointing up. The fixed-pitch propeller remained attached to the crankshaft, but the crankshaft just aft of the propeller flange was bent and cracked. The engine cowling was accordion crushed aft on the left side. The vacuum pump mount was fractured and the pump protruded from the engine cowling through the induction filter opening.

Removal of the engine cowling revealed that the exhaust system and oil sump sustained impact-related deformation and puncture damage. The carburetor mounting flange was fractured, but the carburetor remained attached to the engine via a bracket, the throttle and mixture control cables, and the fuel supply line.

The airframe engine mounts had to be cut to facilitate the removal of the engine from the firewall. There were no external pre-accident anomalies noted with the engine or engine-related systems. The right magneto was displaced slightly from the mounting pad and was rotated out of its original, pre-impact, position. A few of the ignition harness leads displayed pinching damage.

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ENGINE COMPONENT EXAMINATION

EXHAUST SYSTEM

Condition:

The exhaust system sustained deformation damage that displaced and deformed the right muffler. The left muffler remained attached to its exhaust risers.



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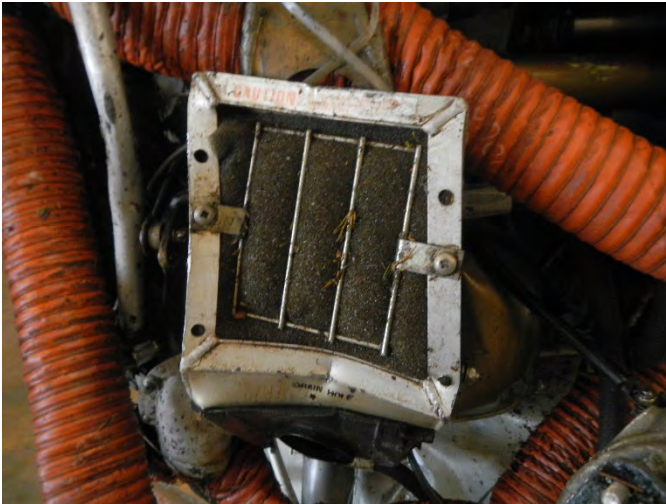
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INDUCTION SYSTEM

Condition: The induction filter remained attached to its bracket and it was deformed and displaced from the cowling. There were no pre-accident anomalies noted with the intake filter. The induction air box was deformed up around the carburetor. The carburetor mounting flange was fractured and the carburetor was separated from the intake tubes. The throttle control cable remained attached to the throttle control lever and the throttle valve was in the full open position.



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IGNITION SYSTEM

LEFT MAGNETO	Manufacturer: Slick	P/N: 1301	S/N:12051965
Condition:	The left magneto remained attached to the backside of the engine and manual manipulation of the magneto revealed it was secured in place. The ignition harness remained attached to the magneto. A functional test of the magneto revealed it was capable of producing a spark through its ignition harness to the top left sparkplugs during rotation of the crankshaft and snap of the impulse coupling.		



RIGHT MAGNETO	Manufacturer: Slick	P/N: 1301	S/N: 12071121
Condition:	The magneto remained attached to the backside of the engine, but it was displaced aft slightly and rotated on its mounting pad. A functional test of the magneto revealed it was capable of producing a spark through its ignition harness to the top right sparkplugs during rotation of the crankshaft and snap of the impulse coupling.		



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IGNITION HARNESS

Manufacturer: Slick

S/N: Left M1755 Right M1745

Condition: The ignition harness remained attached to the magnetos and the terminals remained attached to their respective sparkplugs. A few of the ignition leads sustained pinching and separation damage from being displaced into the firewall. Functional test of the magnetos revealed no pre-accident anomalies with the ignition harness.



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SPARK PLUGS

Manufacturer: Champion

P/N: REM40E

Condition:

The sparkplugs remained secured to their respective cylinders and the ignition terminals remained secured to the sparkplugs. The top sparkplugs were removed and the bottom sparkplugs were examined and documented via a lighted borescope. The sparkplugs displayed normal wear signatures and combustion deposits with no signs of lead or carbon fouling.



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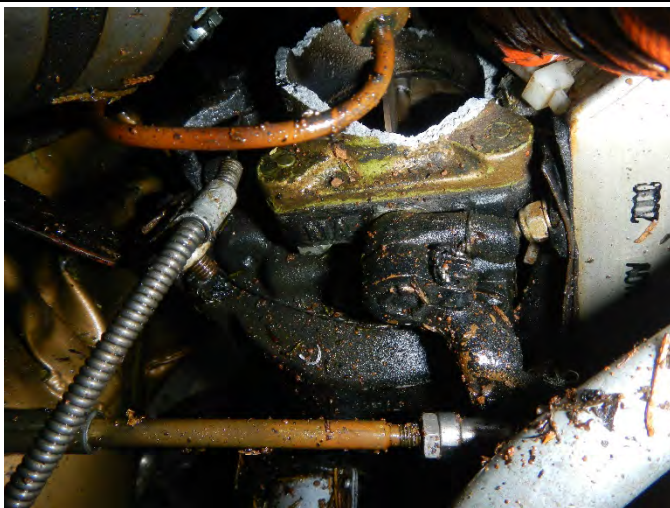


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FUEL SYSTEM

CARBURETOR	Manufacturer: Marvel Schebler MA-3 SHA	P/N: 10-4115-1	S/N: AV23055
Condition:	The induction air box and filter remained attached and displaced around the carburetor. The carburetor remained attached to the engine via an attach bracket, the mixture and throttle control cables, and the fuel inlet line. However, the attach flange was fractured and the throttle valve was visible (it was found in the full open position). The carburetor was removed from the throttle and mixture control cables and attach bracket. The fuel inlet line was disconnected and the inlet fuel screen was clear. The mixture control lever was displaced due to impact damage and could not be moved through its normal range. It was found in the full rich setting. The carburetor was disassembled and the metallic floats appeared to be intact and fuel consistent in color and odor as 100LL was observed in the bowl. Some sediment was observed in the bowl, but the nozzle appeared clear. Movement of the floats resulted in a coinciding movement of the needle valve. Rust covered the base of the accelerator pump and fuel did not discharge from the accelerator pump nozzle during rapid actuation of the throttle lever prior to disassembly.		



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LUBRICATION SYSTEM

OIL SUMP

Condition:	The oil sump was deformed and punctured. The quick drain plug was missing, but there were no signs of lubrication distress with any of the components.
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OIL PICKUP TUBE & SCREEN

Condition:	The oil pickup tube and screen were not observed, but there was no sign of lubrication distress with any of the components.
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OIL PUMP

Condition:	The oil pump was not observed, but there was no sign of lubrication distress with any of the components.
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OIL FILTER

Condition:	The oil filter remained attached and safety-wired to the oil filter adapter. The filter sustained deformation damage
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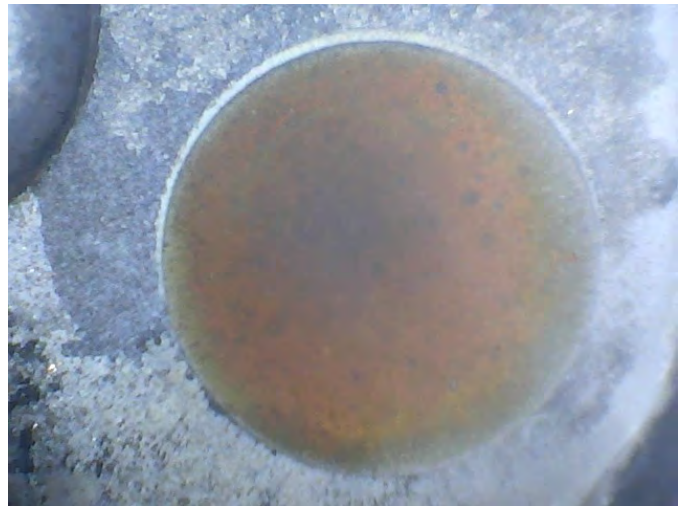
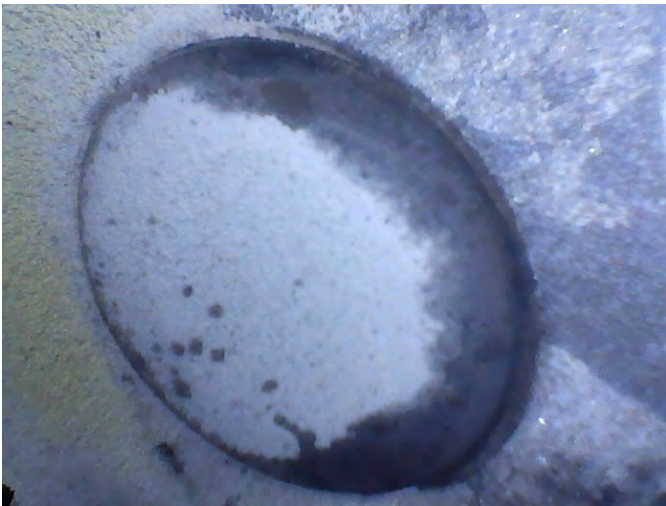
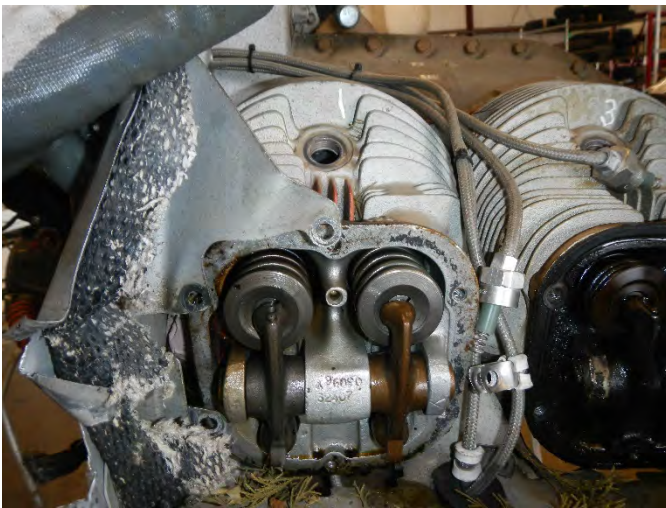
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CYLINDERS

NOTE: The photographs that follow the cylinder condition descriptions represent the cylinder overhead components, the piston, intake valve, and exhaust valve, in that order, unless otherwise specified.

CYLINDER #1

Condition: The cylinder remained attached to the crankcase with no external pre-accident anomalies noted. The rocker cover was removed and no pre-accident anomalies were noted with the rockers and valve springs. The cylinder was borescope inspected with no pre-accident anomalies noted with the piston, valves, or valve seats. Thumb compression was obtained and valve movement was observed during crankshaft rotation.



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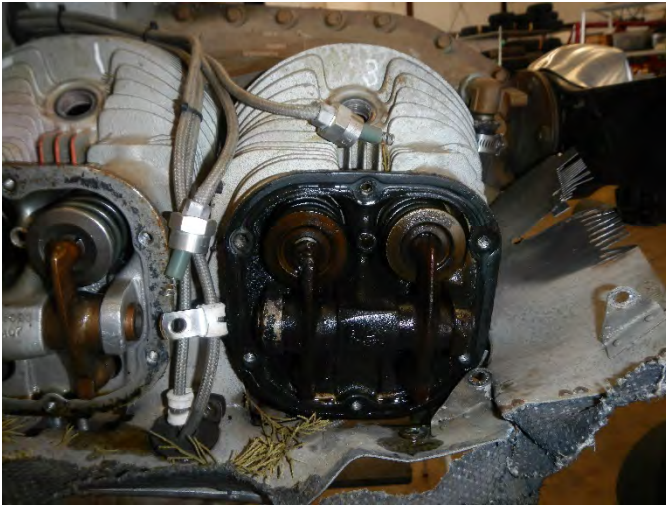
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CYLINDER #3

Condition: The cylinder remained attached to the crankcase with no external pre-accident anomalies noted. The rocker cover was removed and no pre-accident anomalies were noted with the rockers and valve springs. The cylinder was borescope inspected with no pre-accident anomalies noted with the piston, valves, or valve seats. Thumb compression was obtained and valve movement was observed during crankshaft rotation.



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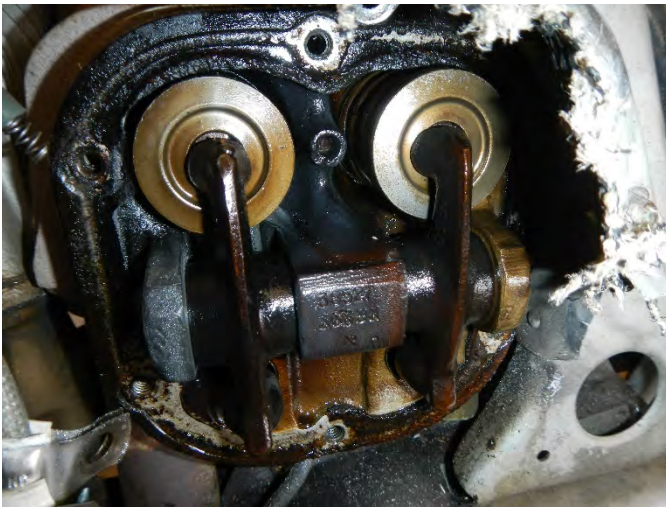
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CYLINDER #2

Condition: The cylinder remained attached to the crankcase with no external pre-accident anomalies noted. The rocker cover was removed and no pre-accident anomalies were noted with the rockers and valve springs. The cylinder was borescope inspected with no pre-accident anomalies noted with the piston, valves, or valve seats. Thumb compression was obtained and valve movement was observed during crankshaft rotation.



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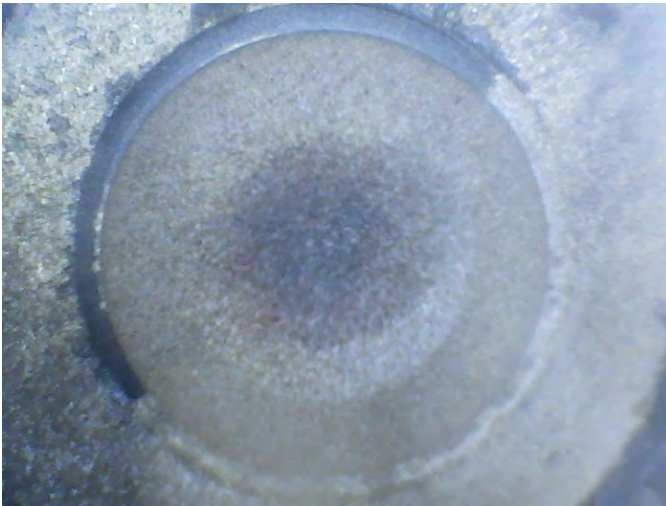
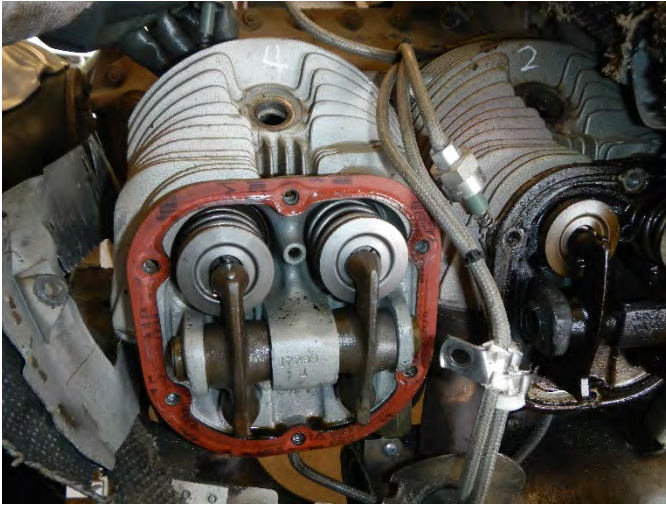
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CYLINDER #4

Condition: The cylinder remained attached to the crankcase with no external pre-accident anomalies noted. The rocker cover was removed and no pre-accident anomalies were noted with the rockers and valve springs. The cylinder was borescope inspected with no pre-accident anomalies noted with the piston, valves, or valve seats. Thumb compression was obtained and valve movement was observed during crankshaft rotation.



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CRANKCASE ASSEMBLY

CRANKCASE

Condition: The crankcase halves remained intact and all cylinders remained attached. During crankshaft rotation, there was no sign of binding with any of the main bearings.



CRANKSHAFT ASSEMBLY

CRANKSHAFT

Condition: Though the crankshaft was not observed in its entirety, crankshaft continuity was confirmed from the propeller flange aft to the accessory end and out to each connecting rod during a thumb compression test on the cylinders. The crankshaft aft of the propeller flange was bent and cracked.



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CAMSHAFT

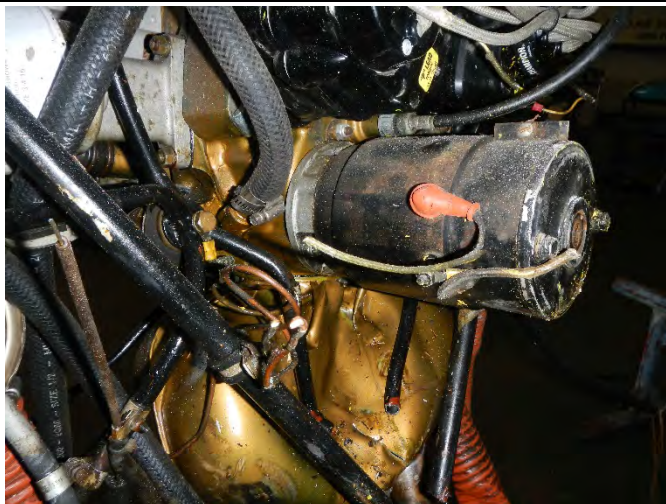
CAMSHAFT	
Condition:	Though the camshaft was not observed, camshaft continuity was confirmed during a thumb compression test when all eight rockers moved through their normal range of motion. No pre-accident anomalies were noted with the camshaft and valve train components.

ACCESSORIES

STARTER	Manufacturer: Not recorded	P/N: Not recorded	S/N: Not recorded
Condition:	The starter remained attached to the backside of the engine with no pre-accident anomalies noted.		



ALT/GEN #2	Manufacturer: Not recorded	P/N: Not recorded	S/N: Not recorded
Condition:	The generator was not examined as part of the investigation.		



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VACUUM PUMP	Manufacturer: Not recorded	P/N: Not recorded	S/N: Not recorded
Condition:	The vacuum pump mounting flange was fractured and its drive coupling was bent. The pump remained attached to the engine via its oil lines. The pump was not examined in any detail as part of this investigation.		



PROPELLER

PROPELLER	Manufacturer: Not recorded	P/N: Not recorded	S/N: Not recorded
Condition:	The propeller remained attached to the crankshaft propeller flange. The spinner was displaced aft around the propeller hub. Both fixed-pitch propeller blades displayed chord-wise scrapes and paint erosion. One blade also displayed deep leading edge gouges and a twist toward low pitch.		



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