



# Continental Motors

## ENGINE FIELD INSPECTION REPORT

|                        |             |
|------------------------|-------------|
| ENGINE MODEL           | IO-550-N27B |
| ENGINE SERIAL NUMBER   | 917331      |
| AIRCRAFT MAKE & MODEL  | Cirrus SR22 |
| AIRCRAFT SERIAL NUMBER | 1160        |
| AIRCRAFT REGISTRATION  | N508AJ      |
| FILE NUMBER            | 15-638      |

| NAME             | SIGNATURE                                                                            | DATE          |
|------------------|--------------------------------------------------------------------------------------|---------------|
| Christopher Lang |  | July 21, 2016 |

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## GENERAL INFORMATION

| EXAMINATION |                                                                         | ACCIDENT DATA     |                  |
|-------------|-------------------------------------------------------------------------|-------------------|------------------|
| DATE        | July 19, 2016                                                           | NTSB ACCIDENT #   | CEN16FA214       |
| FACILITY    | AMF Aviation                                                            | NTSB INVESTIGATOR | Aaron Sauer      |
| ADDRESS     | [REDACTED]<br>Springfield Robertson<br>Airport<br>Springfield, TN 37172 | FAA INVESTIGATOR  | Adama Allmond    |
|             |                                                                         | ACCIDENT DATE     | June 10, 2016    |
|             |                                                                         | ACCIDENT LOCATION | Marion, Illinois |

## ENGINE INFORMATION

|                 |                                         |
|-----------------|-----------------------------------------|
| ENGINE POSITION | Front                                   |
| TOTAL TIME      | Unknown                                 |
| TIME SOH        | Unknown                                 |
| TYPE & TIME SLI | Unknown                                 |
| BUILD DATE      | 10/06/2004                              |
| IN SERVICE DATE | 11/05/2004 Certificate of airworthiness |

**Significant logbook information:** Logbooks have not been reviewed by this writer at the time this report was written.

**Report Summary:** Examination of this engine revealed no pre-impact anomalies that would have precluded normal operation and production of horsepower.

Search Code(s):

**Disposition of engine following exam:** Storage at AMF Aviation

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|                     |                                              |                     |                                                                       |
|---------------------|----------------------------------------------|---------------------|-----------------------------------------------------------------------|
| <b>NAME</b>         | Christopher Lang                             | <b>NAME</b>         | Brannon Mayer                                                         |
| <b>ADDRESS</b>      | <div></div><br>Mobile, Alabama 36615         | <b>ADDRESS</b>      | <div></div><br>Duluth, Minnesota 55811                                |
| <b>ORGANIZATION</b> | Continental Motors                           | <b>ORGANIZATION</b> | Cirrus Aircraft                                                       |
| <b>PHONE</b>        | <div></div>                                  | <b>PHONE</b>        | <div></div>                                                           |
| <b>NAME</b>         | Jim Ruckman                                  | <b>NAME</b>         | Chris Ferraraccio                                                     |
| <b>ADDRESS</b>      | <div></div><br>Nashville, Tennessee<br>37217 | <b>ADDRESS</b>      | <div></div><br>Springfield Robertson Airport<br>Springfield, TN 37172 |
| <b>ORGANIZATION</b> | Federal Aviation<br>Administration           | <b>ORGANIZATION</b> | AMF Aviation                                                          |
| <b>PHONE</b>        | <div></div>                                  | <b>PHONE</b>        | <div></div>                                                           |
| <b>NAME</b>         |                                              | <b>NAME</b>         |                                                                       |
| <b>ADDRESS</b>      |                                              | <b>ADDRESS</b>      |                                                                       |
| <b>ORGANIZATION</b> |                                              | <b>ORGANIZATION</b> |                                                                       |
| <b>PHONE</b>        |                                              | <b>PHONE</b>        |                                                                       |

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### EXTERNAL INSPECTION OF ENGINE

The engine had separated from the airframe and exhibited impact damage. The oil sump was crushed and two of the four engine mount legs were broken.



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**PAGE 5 of 15****ENGINE TEARDOWN AND COMPONENT EXAMINATION****EXHAUST  
SYSTEM****Condition:**

The exhaust system exhibited impact damage and was bent and pushed upward.

**INDUCTION  
SYSTEM****Condition:**

The induction system was relatively intact with the exception of the air filter portion forward of the throttle body, which was detached and not observed during this exam.

**IGNITION SYSTEM****LEFT  
MAGNETO**

Manufacturer: CMI

P/N: BL-500556-1

S/N: D12EA074R

**Condition:**

The left magneto was removed from the engine and turn freely by hand with impulse coupling engagement noted. The magneto was placed in a vice and the drive was turned with an electric drill. The magneto produced spark on all six spark plug leads.



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|                      |                   |                  |                |
|----------------------|-------------------|------------------|----------------|
| <b>RIGHT MAGNETO</b> | Manufacturer: CMI | P/N: BL-500556-1 | S/N: D12EA083R |
|----------------------|-------------------|------------------|----------------|

|            |                                                                                                                                                                                                                                                                     |  |  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Condition: | The right magneto was partially separated from the engine and turn freely by hand with impulse coupling engagement noted. The magneto was placed in a vice and the drive was turned with an electric drill. The magneto produced spark on all six spark plug leads. |  |  |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|



|                         |                         |      |      |
|-------------------------|-------------------------|------|------|
| <b>IGNITION HARNESS</b> | Manufacturer: Illegible | P/N: | S/N: |
|-------------------------|-------------------------|------|------|

|            |                                                                    |  |  |
|------------|--------------------------------------------------------------------|--|--|
| Condition: | The ignition harness displayed several cut or partially cut leads. |  |  |
|------------|--------------------------------------------------------------------|--|--|

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|             |                                                                                                                                                                                                            |              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| SPARK PLUGS | Manufacturer: Champion                                                                                                                                                                                     | P/N: RHB32SE |
| Condition:  | The top spark plugs had previously been removed by recovery personnel. Three of the top spark plugs were noted during the exam and exhibited normal wear when compared to the Champion Check A Plug chart. |              |



## FUEL SYSTEM

|            |                                                                                                                                                                                                                                                                                              |                 |               |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------|
| FUEL PUMP  | Manufacturer: TCM                                                                                                                                                                                                                                                                            | P/N: 655921-3A1 | S/N: B04FA015 |
| Condition: | The fuel pump was removed and the drive coupling was intact. The fuel pump drive turned freely by hand and the mixture lever turned freely from stop to stop. Due to fractured fuel line fittings, the pump could not be operationally checked and was disassembled with no anomalies noted. |                 |               |



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| THROTTLE<br>BODY<br>METERING UNIT | Manufacturer: TCM                                                                             | P/N: 653353-8A2 | S/N: A041A236 |
|-----------------------------------|-----------------------------------------------------------------------------------------------|-----------------|---------------|
| Condition:                        | The throttle body exhibited no anomalies and the control lever moved freely from stop to stop |                 |               |



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|                     |                                                                                                                                                                                |                 |               |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------|
| FUEL MANIFOLD VALVE | Manufacturer: TCM                                                                                                                                                              | P/N: 646433-9A1 | S/N: C04FA015 |
| Condition:          | The fuel manifold valve had been previously removed and partially disassembled. The diaphragm was intact and the retaining nut was secure. The fuel screen was free of debris. |                 |               |



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### LUBRICATION SYSTEM

#### OIL PUMP

Condition: The oil pump was disassembled and exhibited no anomalies.



#### OIL FILTER

Manufacturer: Champion

P/N: CH48109-1

Condition: The impact damaged oil filter was removed and cut open. No evidence of metal was noted in the oil filter element.



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|------------|-----------------------------------------------------------------------------|-------------|------|
| OIL COOLER | Manufacturer: Niagra                                                        | P/N: 10281A | S/N: |
| Condition: | The oil cooler remained attached to the engine and exhibited impact damage. |             |      |



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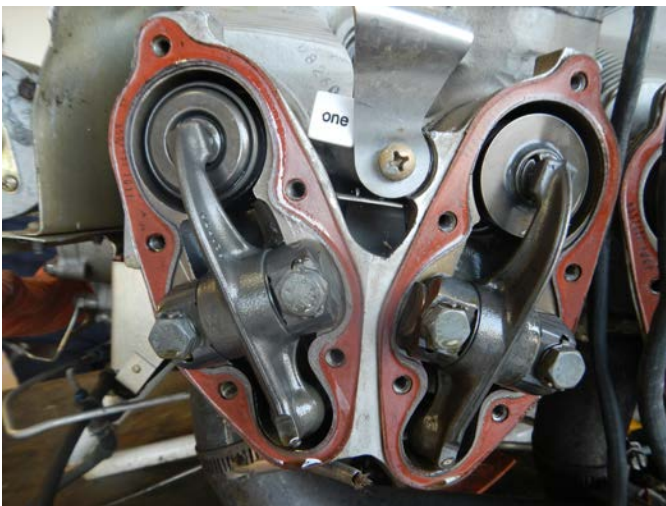
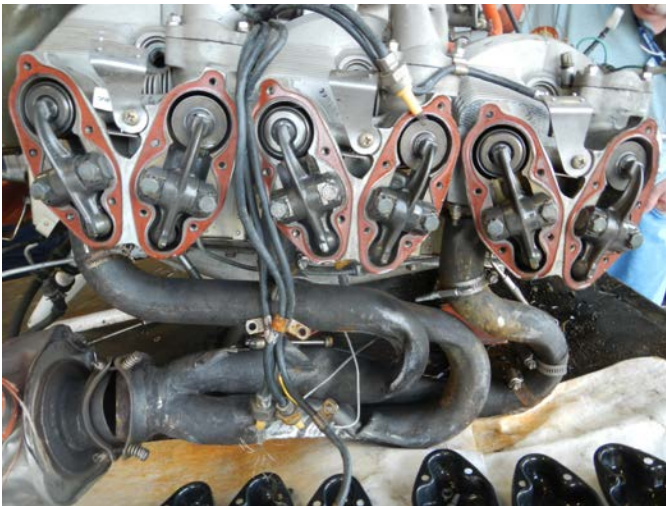
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### CYLINDERS

Condition: The cylinders remained attached to the crankcase. The combustion chambers were examined with a lighted bore scope and no anomalies were noted. The crankshaft was rotated by hand using a tool in an accessory gear. Continuity throughout the valve train was noted and thumb compression was obtained on all six cylinders.



### ACCESSORY GEARS

Condition: Continuity throughout the accessory section was noted when the crankshaft was rotated by hand.

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Manufacturer: Iskra

P/N: 656181B24V

S/N: 04 238 0030

Condition:

The starter remained attached to the engine and exhibited no anomalies.

**STARTER  
ADAPTER**

P/N:

Condition:

The starter adaptor remained attached to the engine and exhibited no anomalies.

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| ALT        | Manufacturer:                                                                            | P/N: | S/N: |
| Condition: | The alternator had been fractured from the engine and was not observed during this exam. |      |      |



|                                     |                                                                                                                                                                                                                                                                                                                                                                                      |  |  |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| PROPELLER/<br>PROPELLER<br>GOVERNOR |                                                                                                                                                                                                                                                                                                                                                                                      |  |  |
| Condition:                          | The propeller had separated from the engine. All three blades exhibited chord wise scratches and nicks in the leading edges. Two of the blades were bent and twisted. The propeller governor remained attached to the engine and the control lever was broken from the governor. The governor was removed and the drive turned freely by hand. The gasket screen was free of debris. |  |  |



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