

# TELEDYNE CONTINENTAL<sup>®</sup> AIRCRAFT ENGINE

## SERVICE INFORMATION LETTER

CATEGORY 5

### SIL99-1

Technical Portions FAA  
Approved  
Supersedes M91-5

**CONTAINS USEFUL INFORMATION PERTAINING TO THE  
CONTINENTAL AIRCRAFT ENGINE**

**SUBJECT: ENGINE PRESERVATION FOR ACTIVE AND STORED  
AIRCRAFT**

**PURPOSE:** Provide current engine preservation information

**COMPLIANCE:** During periods as specified by this document

**MODELS  
AFFECTED:** All Continental Engine Models

### GENERAL

There is no practical procedure that will insure corrosion prevention on installed aircraft engines. Susceptibility to corrosion is influenced by geographical location, season and usage. The owner/operator is responsible to recognize the conditions that are conducive to corrosion and take appropriate precautions.

### ENGINE PRESERVATION

Corrosive attack can occur in engines that are flown only occasionally regardless of geographical location. In coastal areas and areas of high humidity, corrosive attack can occur in as little as two days. The best method of reducing the likelihood of corrosive attack is to fly the aircraft at least once every week for a minimum of one hour.

### NOTE...

Corrosive attack may reduce engine service life. Of primary concern are cylinders, piston rings, valves, valve guides, camshaft and lifters.

**TEMPORARY STORAGE** (Aircraft that are not flown for 30 to 90 days)

Preparation for storage.

1. Remove oil sump drain plug and drain oil. Replace drain plug, torque and safety. Remove oil filter. Install new oil filter, torque and safety. Service engine to proper sump capacity with oil conforming to MIL-C-6529 Type II.

2. Perform a ground run-up. Perform a pre-flight inspection and correct any discrepancies. Fly the aircraft for one hour at normal operation temperatures.

### WARNING

**To prevent possibility of serious bodily injury or death, before moving the propeller accomplish the following:**

- a. Disconnect all spark plug leads.
- b. Verify magneto switches are connected to magnetos, that they are in the "OFF" Position and "P" leads are grounded.
- c. Throttle position "CLOSED."
- d. Mixture control "IDLE-CUT-OFF."
- e. Set brakes and block aircraft wheels. Insure that aircraft tie-downs are installed and verify that the cabin door latch is open.
- f. Do not stand within the arc of the propeller blades while turning the propeller.

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3. After flight remove all spark plug leads and remove the top spark plugs. Protect the ignition lead ends with AN-4060 Protectors. Using a common garden sprayer or equivalent, spray atomized preservative oil that meets MIL-P - 46002, Grade 1, at room temperature through upper spark plug hole of each cylinder with the piston at bottom dead center position. Rotate crankshaft as opposite cylinders are sprayed. Stop crankshaft with none of the pistons at top dead center.
4. Re-spray each cylinder. To thoroughly cover all surfaces of the cylinder interior move the nozzle or spray gun from the top to the bottom of the cylinder.
5. Install top spark plugs but do not install spark plug leads.
6. Seal all engine openings exposed to the atmosphere using suitable plugs and covers. Attach a red "REMOVE BEFORE FLIGHT" streamer at each location.
7. Tag each propeller in a conspicuous place with the following notation on the tag: DO NOT TURN PROPELLER - ENGINE PRESERVED - PRESERVATION DATE \_\_\_\_\_.

**NOTE...**

If the engine is not returned to flyable status on or before the 90-day expiration, it must be preserved in accordance with "Indefinite Storage" procedures in this document.

**INDEFINITE STORAGE (Aircraft that are not flown for 90 days)**

**PREPARATION FOR STORAGE**

1. Remove oil sump drain plug and drain oil. Replace drain plug, torque and safety. Remove oil filter Install new oil filter torque and safety. Service engine to proper sump capacity with oil conforming to MIL-C-6529 Type II.
2. Perform a ground run-up. Perform a pre-flight inspection and correct any discrepancies. Fly the aircraft for one hour at normal operation temperatures.

**WARNING**

**To prevent possibility of serious bodily injury or death, before moving the propeller accomplish the following:**

- a. **Disconnect all spark plug leads.**
- b. **Verify magneto switches are connected to magnetos, that they are in the "OFF" Position and "P" leads are grounded.**
- c. **Throttle position "CLOSED."**
- d. **Mixture control "IDLE-CUT-OFF."**
- e. **Set brakes and block aircraft wheels. Insure that aircraft tie-downs are installed and verify that the cabin door latch is open.**
- f. **Do not stand within the arc of the propeller blades while turning the propeller.**

3. After flight remove all spark plug leads and remove the spark plugs. Protect the ignition lead ends with AN-4060 Protectors. Install protective plugs P/N 22671 in bottom spark plug holes. Using a common garden sprayer or equivalent, spray atomized preservative oil that meets MIL-P-46002, Grade 1, at room temperature through upper spark plug hole of each cylinder with the piston at bottom dead center position. Rotate crankshaft as opposite cylinders are sprayed. Stop crankshaft with none of the pistons at top dead center.
4. Re-spray each cylinder. To thoroughly cover all surfaces of the cylinder interior move the nozzle or spray gun from the top to the bottom of the cylinder.
5. Install dehydrator plugs MS27215-1 or -2 in each of the upper spark plug holes. Make sure each plug is blue in color when installed.

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6. Attach a red "REMOVE BEFORE FLIGHT" streamer to each bag of desiccant. Place a bag of desiccant in the exhaust pipes and seal the openings.
7. Seal all engine openings exposed to the atmosphere using suitable plugs and covers.
8. Tag propeller in a conspicuous place with the following notation on the tag: DO NOT TURN PROPELLER - ENGINE PRESERVED - PRESERVATION DATE \_\_\_\_\_.

***INDEFINITE STORAGE INSPECTION PROCEDURES***

1. Aircraft prepared for indefinite storage must have the cylinder dehydrator plugs visually inspected every 15 days. The plugs must be changed as soon as they indicate other than a dark blue color. If the dehydrator plugs have changed color in one-half or more of the cylinders, all desiccant material on the engine must be replaced.
2. The cylinder bores of all engines prepared for indefinite storage must be re-sprayed with corrosion preventive mixture every 90 days.

***RETURNING AN ENGINE TO SERVICE AFTER STORAGE***

1. Remove seals and all desiccant bags.
2. Remove cylinder dehydrators and plugs or spark plugs from upper and lower spark plug holes.
3. Remove oil sump drain plug and drain the corrosion preventive mixture. Replace drain plug, torque and safety. Remove oil filter. Install new oil filter torque and safety. Service the engine with oil in accordance with the manufacturer's instructions.

**WARNING**

**To prevent possibility of serious bodily injury or death, before moving the propeller accomplish the following:**

- a. **Disconnect all spark plug leads.**
- b. **Verify magneto switches are connected to magnetos, that they are in the "OFF" Position and "P" leads are grounded.**
- c. **Throttle position "CLOSED."**
- d. **Mixture control "IDLE-CUT-OFF."**
- e. **Set brakes and block aircraft wheels. Insure that aircraft tie-downs are installed and verify that the cabin door latch is open.**
- f. **Do not stand within the arc of the propeller blades while turning the propeller.**

4. Rotate propeller by hand several revolutions to remove preservative oil.
5. Service and install spark plugs and ignition leads in accordance with the manufacturer's instructions.
6. Service engine and aircraft in accordance with the manufacturer's instructions.
7. Thoroughly clean the aircraft and engine. Perform visual inspection.
8. Correct any discrepancies.
9. Conduct a normal engine start.
10. Perform operational test in accordance with "Operational Inspection," of the applicable Maintenance Manual.
11. Correct any discrepancies.
12. Perform a test flight in accordance with airframe manufacturer's instructions.
13. Correct any discrepancies prior to returning aircraft to service.
14. Change oil and filter after 25 hours of operation.

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**SERVICE BULLETIN****SB20-03**

Compliance Will Enhance Safety

TECHNICAL PORTIONS  
FAA APPROVED**SUBJECT:** Engine Preservation during COVID-19 Pandemic**PURPOSE:** Alternative instructions for engine preservation and storage**COMPLIANCE:** As necessary, effective immediately and shall remain in effect for 12 months, or until COVID-19 restrictions are lifted by your governing airworthiness authority, whichever occurs first.**MODELS****AFFECTED:** Continental Aerospace Technologies aviation gasoline (AvGas) engines.**I. GENERAL INFORMATION**

Many customers and airworthiness authorities have contacted Continental Aerospace Technologies recently with questions about the engine preservation instructions in M-0, Section 9-1.4. Due to the COVID-19 pandemic, current government restrictions in many locations prevent full compliance with certain steps contained in the instructions in M-0, Section 9-1.4. The availability of Engine Preservation Oil (MIL-PRF-46002) is also in short supply due to the multitude of aircraft placed in storage at this time.

**II. ENGINE PRESERVATION AND STORAGE**

The instructions in M-0, Standard Practice Maintenance Manual, Section 9-1.4 afford the best protection against corrosion resulting from aircraft inactivity.

*CAUTION: Continental recommends servicing the engine and spraying the cylinder walls of the engine with MIL-PRF-46002, Engine Preservation Oil. The probability of corrosion forming on the cylinder walls if the engine is not serviced with MIL-PRF-46002 increases in areas of high humidity and is highest in coastal areas near salt water.*

If compliance with the instructions in M-0, Section 9-1.4 is permitted, and MIL-PRF-46002, Engine Preservation Oil is available, proceed as instructed in M-0.

If MIL-PRF-46002, Engine Preservation Oil is available, *but flight is prohibited*, an exception is granted to omit the one hour flight (M-0, Section 9-1.4, steps 2 through 5) prior to placing the engine in storage, until flight restrictions associated with COVID-19 are lifted. Perform all remaining “Engine Preservation and Storage” steps in M-0, Section 9-1.4.

If MIL-PRF-46002, Engine Preservation Oil is *not available, and flight is prohibited*, due to government restrictions applied to counteract the spread of COVID-19, an exception is granted to omit the one hour flight (M-0, Section 9-1.4, steps 1 through 5, 9, and 10) and servicing the engine with MIL-PRF-46002, until flight restrictions associated with COVID-19 are lifted. Drain the engine oil, replace the engine oil filter, and service the engine with Grade 50 SAE J-1966 mineral oil (M-0, Table 3-2) instead of MIL-PRF-46002. Perform all remaining “Engine Preservation and Storage” steps in M-0, Section 9-1.4.

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### III. RETURNING THE ENGINE TO SERVICE AFTER STORAGE

When permitted to return to “normal” operations; perform the inspections and maintenance listed in Section 6-4.4 of M-0, before resuming normal flight operations, including:

1. cylinder visual inspection
2. engine borescope
3. differential pressure check, *and*
4. instructions in Section 9-1.6, “Return an Engine to Service after Storage.”