Cub Crafters, Inc. Considers Compliance Mandatory

This Service Bulletin meets requirements of ASTM F2295-06.
It is a Safety Directive for the purpose of compliance with 14 CFR 91.327(b)(4).

EFFECTIVE DATE: This Service Bulletin is effective ***December 12, 2014.***

SUBJECT: *OIL TEMPERATURE PROBE RELOCATION*

MODELS AFFECTED: *CC11-160 S/N 00294 THROUGH 00347*

COMPLIANCE TIME: *DUE WITHIN 100 HOURS OR AT NEXT ANNUAL CONDITION INSPECTION WHICHEVER OCCURS FIRST.*

PURPOSE: CC11-160 aircraft S/N 00294 through 00347 are equipped with the Titan 340CC engine. This engine has a lighter magnesium accessory case with different oil flow paths. Due to the new accessory case, the oil temperature probe must be relocated. The reading from the new probe location will reflect the mix of warm and cooled oil instead of only measuring the oil coming from the oil cooler.

WARRANTY: All aircraft will be provided parts at no cost and receive up to 2 hours of labor if work is performed at a Cub Crafters Authorized Service Center. For aircraft equipped with Standard Panel, World VFR Panel, and MyPanel, SB00030 must be completed concurrently and labor reimbursement will be 6.5 hours for both. Please contact Cub Crafters Customer Support for assistance.

PARTS LIST	DESCRIPTION	APPLICABLE PANEL	QTY
SP71233-003	OIL TEMPERATURE PROBE, 1/8" NPT	STANDARD AND EXECUTIVE GLASS TOUCH	**1**
SP71233-005	OIL TEMP PROBE, 1/8" NPT THREAD, K-TYPE THERMOCOUPLE	MYPANEL AND WORLD VFR	**1**
SP71301-105	OIL TEMP PROBE	EXECUTIVE GLASS AND DYNON SKYVIEW	**1**
RM0567-001a	LOCTITE 567 THREAD SEALANT	ALL	**AR**
VP6050-001	PLUG, 5/8-18 UNF-2A X .65	ALL	**1**
VP6051-001	WASHER	ALL	**1**
AN315-3	NUT, PLAIN HEX (10-32)	STANDARD ONLY	**1**
AN363-1032	NUT, HI-TEMP LOCK	STANDARD ONLY	**1**
AN526-1032R24	TRUSS HEAD SCREW, 10-32 X 1-1/2”	STANDARD ONLY	**1**
AN823-3D	45 DEGREE ELBOW, ALUMINUM	STANDARD ONLY	**1**
AN910-1D	COUPLING, ALUMINUM	STANDARD ONLY	**1**
AN970-4	WASHER, WIDE AREA	STANDARD ONLY	**2**
MS21919WDG16	CLAMP, ADEL	STANDARD ONLY	**1**
SC71113-001	WIRING HARNESS	STANDARD ONLY	**1**
SP71234-001	ELECTRONIC OIL TEMP, PRESSURE GAUGE	STANDARD ONLY	**1**
SP71200-001	OIL PRESSURE SENDER	STANDARD ONLY	**1**
AVAILABLE LOCALLY			
RM1075-002	CABLE TIES, 5.8”	ALL	**AR**
RM0013-002	SILICONE, 26C RTV HIGH TEMP, RED	STANDARD ONLY	**AR**

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INSTRUCTIONS:

If plug shown below in Figure 1 is installed, skip to step 17.

Read all instructions before beginning any work.

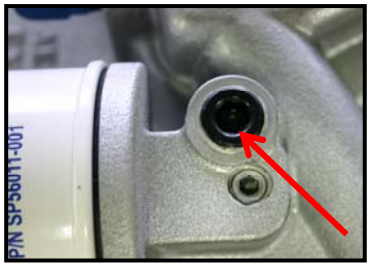

FIGURE 1 – Hex Plug

1. Remove engine cowl, retaining all fasteners (Ref. SSC10020AMM 6.3.14).
2. Position a rag and a modified oil quart bottle (see Figure 2 at right) to catch any oil drips.
3. Locate oil temperature probe wiring (see Figure 3 below). Disconnect the wiring by removing the cable ties securing the wire bundles and unplugging them from the harness. Some probes may be butt spliced to the harness. If so, the butt splice needs to be cut.
4. Remove safety wire from oil temperature probe, if applicable.

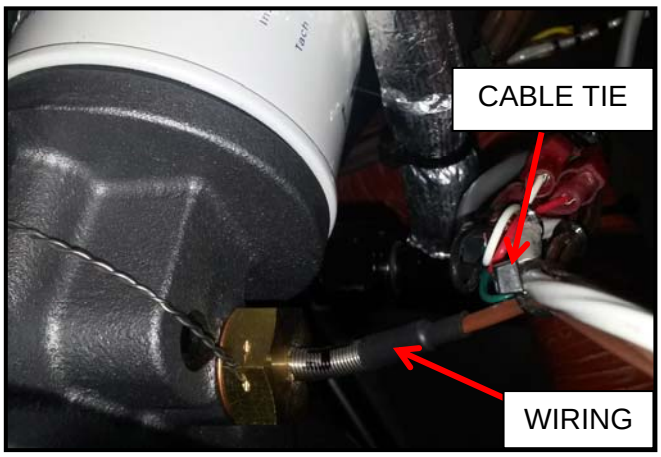

FIGURE 3 – Probe Wiring

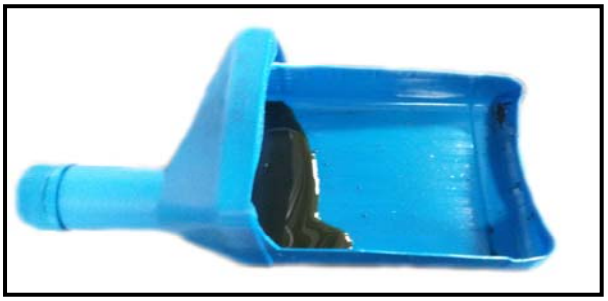

FIGURE 2 – Modified Oil Quart Bottle

5. Remove the existing oil temperature probe and adapter plug if applicable (see Figure 4).

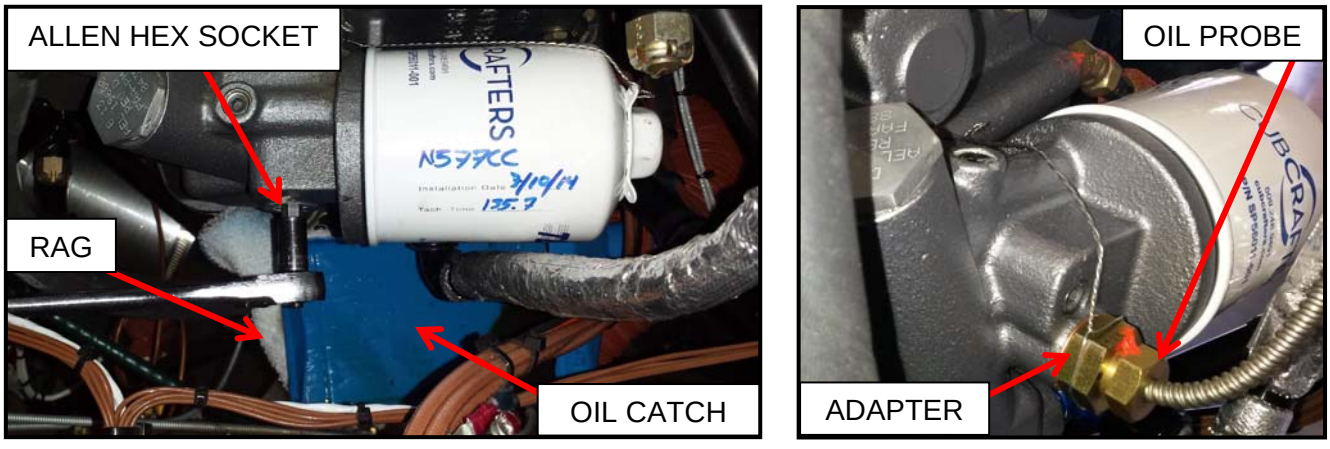

FIGURE 4 - Removal of Existing Port Plug, Bourbon Tube Probe (and Adapter if applicable)

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6. Remove hex head plug using a 3/16" or 5/16" Allen wrench. If plug is brass and won't back out using the Allen wrench alone, try soaking the plug with a penetrating oil such as Aerokroil. Apply a torque wrench at a low clutch setting to give a hammer motion to aid in loosening the plug. Apply heat using a heat gun if required to further loosen the plug.

WARNING

DO NOT USE A TORCH TO HEAT THE ACCESSORY CASE TO REMOVE THE HEX PLUG.

7. Apply Loctite 567 Thread Sealant to the new aluminum hex plug threads and install the new aluminum hex plug and washer into the old 5/8" oil probe location (see Figure 5). Torque the plug to 83-87 inch-pounds.
8. For Standard Panel aircraft, go to Appendix A for further instructions.
9. Ensure that you have the right sensor for your engine (refer to Parts List on page 1). Apply Loctite 567 Thread Sealant to the new oil temperature probe and install in the new location as shown below.
10. Connect wiring appropriate to your specific panel and oil temperature gauge. See below for further detail. Do not cut the oil temperature probe harness.

FIGURE 5 – Aluminum Hex Plug and Washer

SP71233-003 	STANDARD AND EXECUTIVE GLASS TOUCH	Install appropriate butt splice or spade terminals to connect new probe wiring to original aircraft wiring, the wires do not have polarity.
SP71233-005 	MYPANEL AND WORLD VFR	Install appropriate butt splice or spade terminals to connect new probe wiring to original aircraft wiring, red to red and yellow to yellow.
SP71301-005 	EXECUTIVE GLASS AND DYNON SKYVIEW	Unscrew the nut from the stud on the oil temperature probe. Slip the ring terminal onto the stud and secure the nut over it.

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FIGURE 6 - Probe and Hex Plug Installed

11. Secure all wiring and ensure no chafing will occur with engine vibration. Make sure there is enough slack in wires going to the engine to allow for movement of the engine without pulling on the wire bundles.

12. Install safety wires on the plug and the probe as shown in Figure 6.

13. Clean off any oil from the engine and firewall.

14. Perform a run-up and check oil temperature and pressure gauge readings (per SSC10020AFM 4.4.3.1) (see Figure 7 for electronic analog gauge).

15. Check for leaks post run-up.

16. Reinstall engine cowling (Ref. SSC10020AMM 6.3.14)

17. Make logbook entry stating the oil temperature probe has been changed including the part number of new probe.

18. Make logbook entry stating that SB00027 Rev C has been complied with.

FIGURE 7 – Electronic Analog Oil Gauge

If you are no longer in possession of this aircraft, please forward this information to the present owner/operator and notify Cub Crafters, Inc. Contact the customer service department at:

Cub Crafters, Inc.
1918 S. 16th Avenue
Yakima, WA 98903
1-509-248-9491
1-877-484-7865
support@cubcrafters.com

Please include the aircraft registration number, serial number, current name, and address of the owner and/or operator.

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APPENDIX A: STANDARD PANEL ANALOG GAUGE REPLACEMENT

1. Locate oil pressure line forward of firewall. Disconnect from firewall through fitting (see Figure 8).

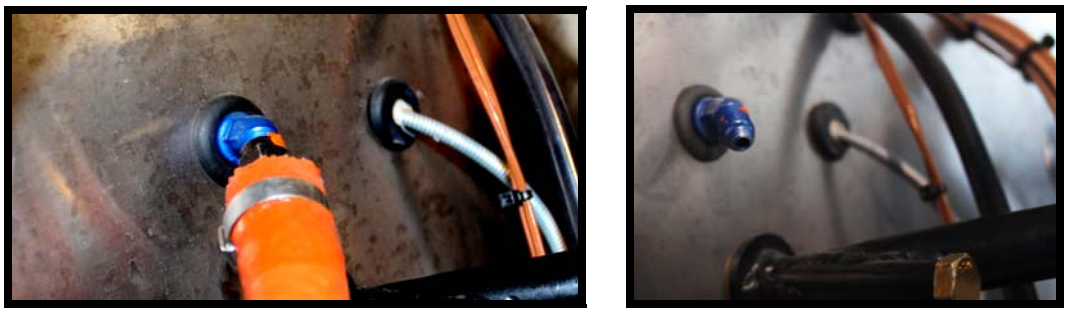

FIGURE 8 – Oil Pressure Line (as viewed from the RH side looking aft)

2. Remove existing copper line from the back of the analog gauge and at aft side of the firewall. Discard line. Remove old firewall oil line pass through fitting and grommet and discard.
3. Remove four screws from analog oil temperature/pressure instrument. Remove instrument from panel and carefully push the temperature probe bourbon tube from the engine compartment though the firewall grommet and remove the instrument from the aircraft (see Figure 9).

NOTE

Manifold pressure line might need to be disconnected for clearance and grommet removed from firewall for removal of temperature sensor from aircraft. If grommet and MP line were removed, reinstall and connect prior to proceeding.

FIGURE 9 – Analog Gauge and Oil Temperature Probe

4. From interior, install one AN526-1032-R24 screw with threads facing forward, and one AN970-4 washer through the existing hole where the oil pressure feed through fitting was removed. Install the other AN970-4 washer on the engine side of the firewall. Center on hole and tighten AN315-3 nut. This makes a stud for mounting the oil pressure sensor (see Figure 10).
5. Install oil pressure sender (SP71200-001) to stud using MS21919WDG16 Adel clamp and AN363-1032 nut. Attach new oil pressure sender to existing oil pressure line disconnected on step 18 using one AN823-3D 45 degree elbow and AN910-1D coupling. Use Loctite 567 sealant on all pipe threads.

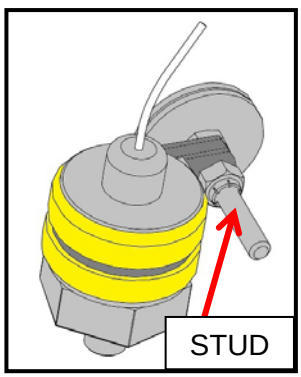

FIGURE 10 – Oil Pressure Sensor Stud

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6. Install the new electronic gauge where the analog gauge was removed using original hardware.
7. Install the new wiring harness to back of electronic gauge, route power and ground wires behind the panel and attach to power and ground per wiring harness (see Figure 11 & 12 below).
8. Route oil temperature and pressure wires through firewall grommet where original temperature probe was.
9. Route to appropriate senders using butt splices, and connect per Figure 12. Reseal the firewall grommet using RTV High Temp Red 26C Silicone.

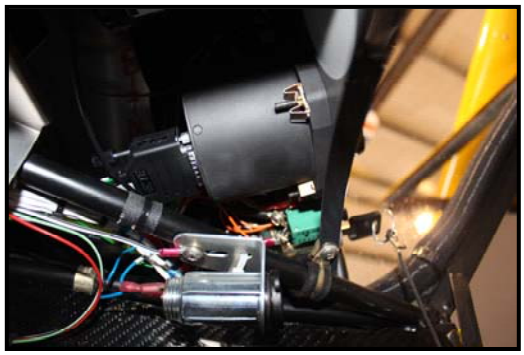

FIGURE 11 – Electronic Gauge as Installed

10. Secure all new wiring between instrument and firewall using cable ties along existing wiring bundles where able (see Figure 13).
11. Resume original steps at Step 11.

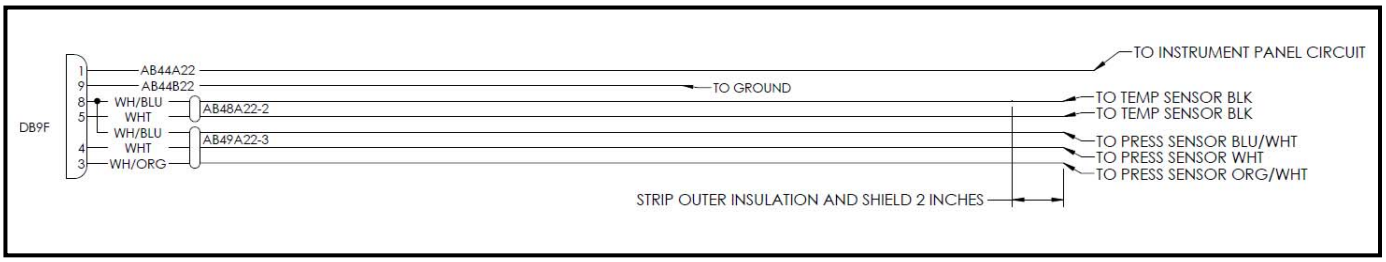

FIGURE 12 – Electronic Gauge Harness (FOR REFERENCE ONLY)

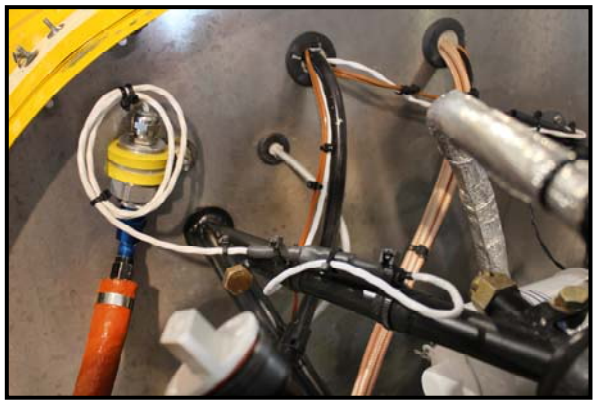

FIGURE 13 – Wire Routing to Sensor (Trim SENSOR wire as needed)