SERVICE INSTRUCTION

EFFECTIVE DATE: This Service Instruction is effective August 9th, 2012.

SUBJECT: Over - Under Voltage Sensor Installation.

MODELS AFFECTED: CC11-160 S/N 00093 through 00192.

COMPLIANCE TIME: It is highly recommended that this SI is installed at the next maintenance event.

CONTINUED INSPECTION: Recommended operational check of under voltage indication at every annual.

PURPOSE: The purpose of this SI is to provide.instructions for the installation of an over-under voltage sensor which will allow the pilot to monitor the electrical system of the aircraft more effectively.

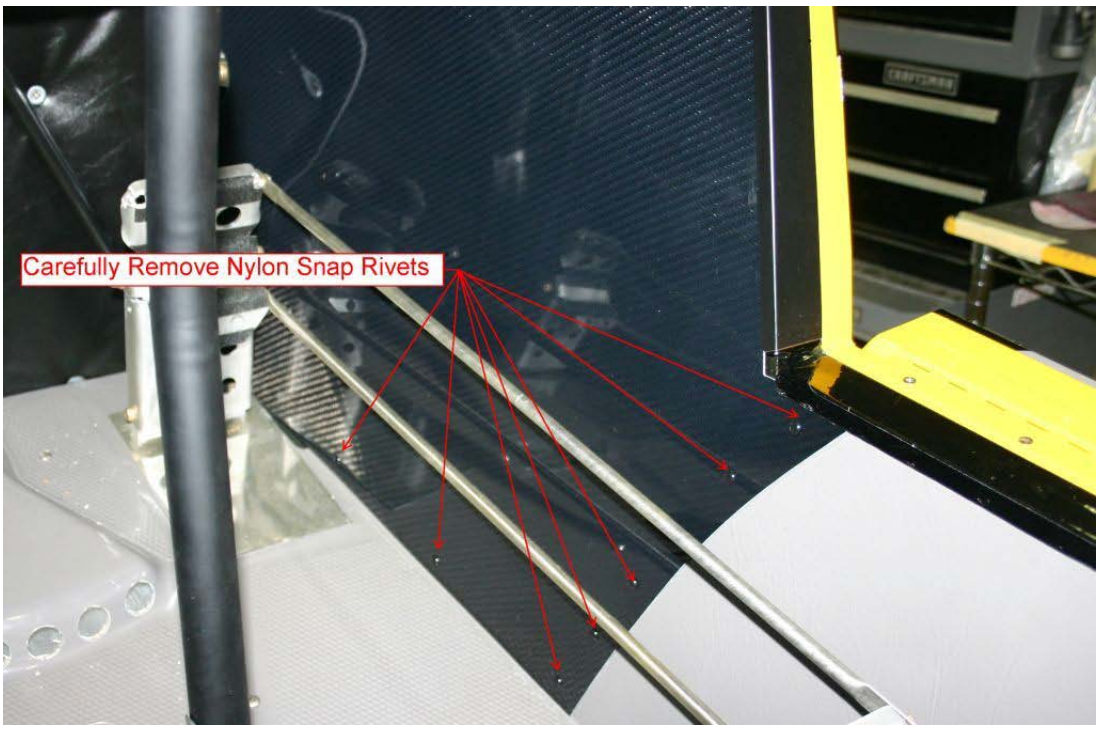
PARTS LIST:

PART	DESCRIPTION	QTY
SP55012-001	Overvolt - Undervolt Sensor	1
SC56080-001	Radio Frequency Filter Assembly	1
SC71055-003	Warning LED Assembly	1
AN742D12	Tube Clamp	1
AN936-A6	Lock Washer #6	3
AN526C832R6	Screw, 8-32 x 3/8	1
AN526C832R8	Screw, 8-32 x 1/2	1
AN960-8L	Washer, Flat, Thin	2
AN364-832A	Nut, Nylon Lock	2
MS25171-1S	Boot, Electrical 90°	1
SC-A10A20O	CB To LV Module (Wire with Labels)	56"
SC-A10B20O	LV Module to Ground (Wire with Labels)	50"
SC-A10C20O	LV Module to Volt Light (Wire with Labels)	35”
SC-A10D20O	Volt Light to Ground (Wire with Labels)	35"
VP6001-001	Terminal Ring, 22-18G #6 Stud	4
VP6001-035	Terminal Ring, 22-18G #10 Stud	1
VP6001-039	Terminal Ring, 22-18G #8 Stud	1
VP6007-005	Solder Sleeve (Ø.105)	2
RM1070-001	Friction Tape, Electrical	3"

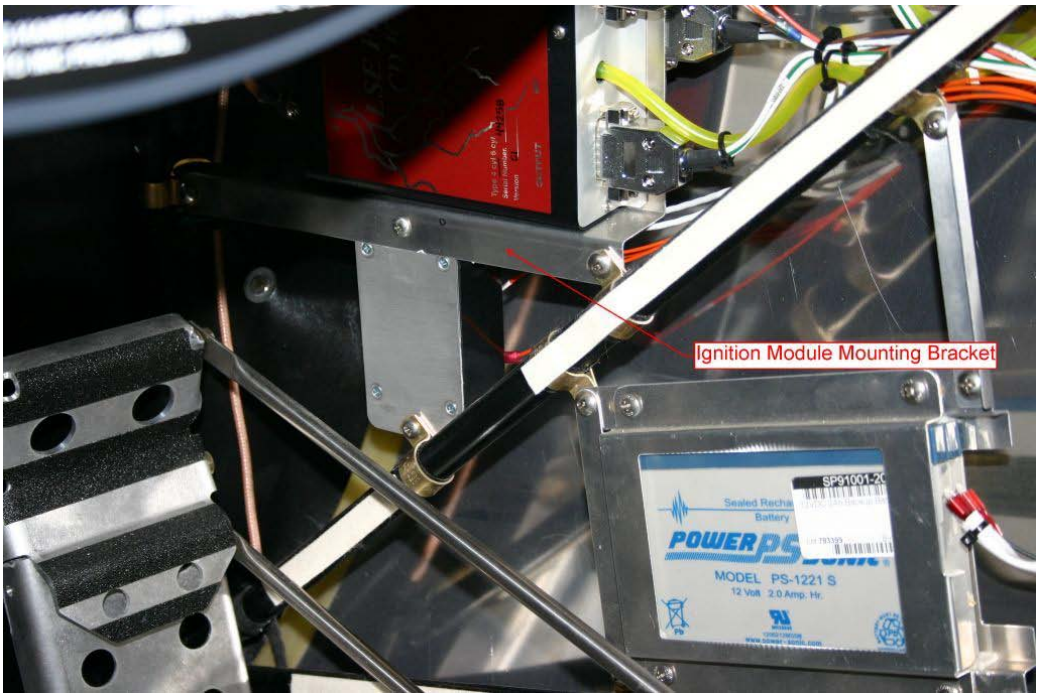
INSTALLATION INSTRUCTIONS:

1. Gain access and disconnect Main Battery
    a. Unpin and slide pilot seat fully forward
    b. Tip pilot seat up and forward
    c. Disconnect main battery.

2. Remove right forward interior access panel.



3. Drill sensor mounting hole in ignition module mounting bracket, refer to Figure 1.



   a. Size: Ø0.180 - Ø0.1875 (between #15 and 3/16).

b. 4.4 inches (approx 4 3/8") from aft edge.

c. Vertically centered in the flange.

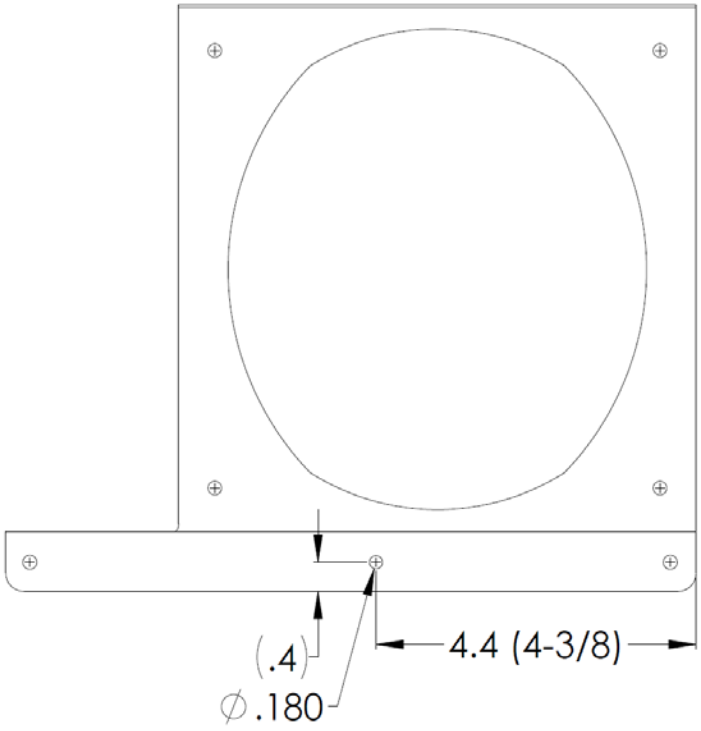
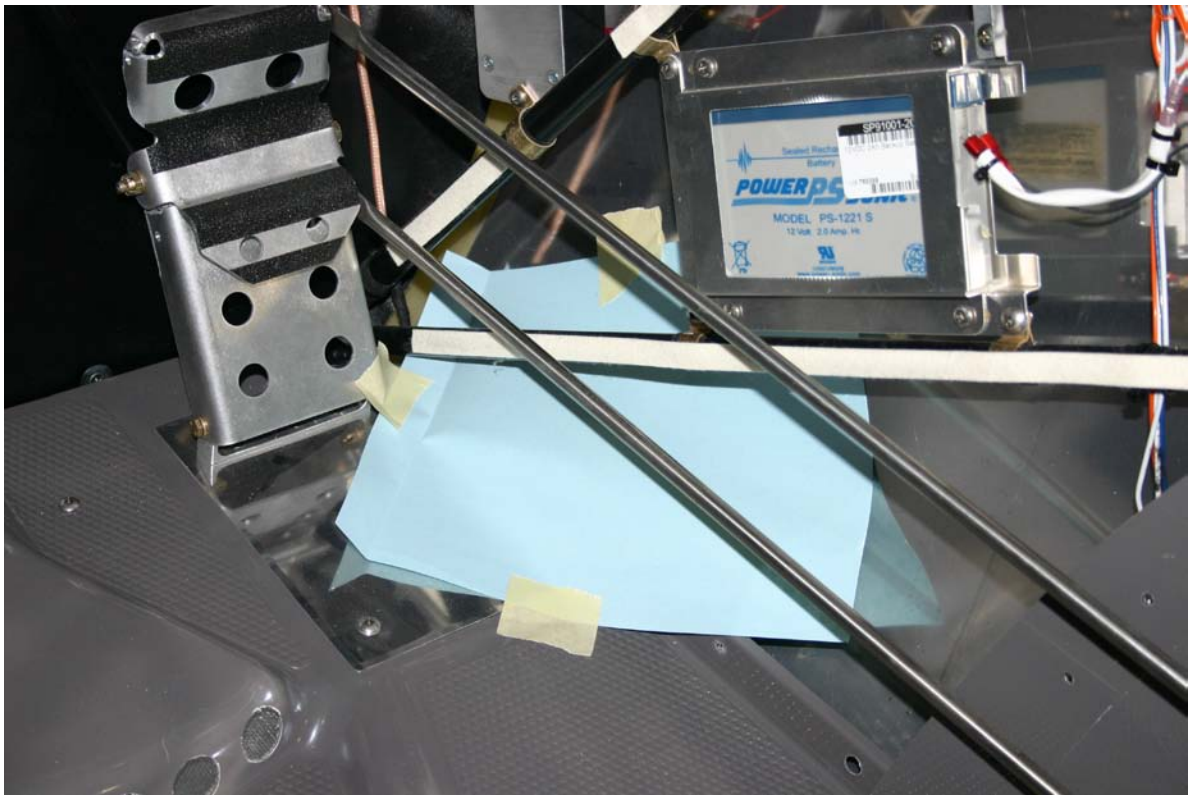


FIGURE 1: Looking Outboard

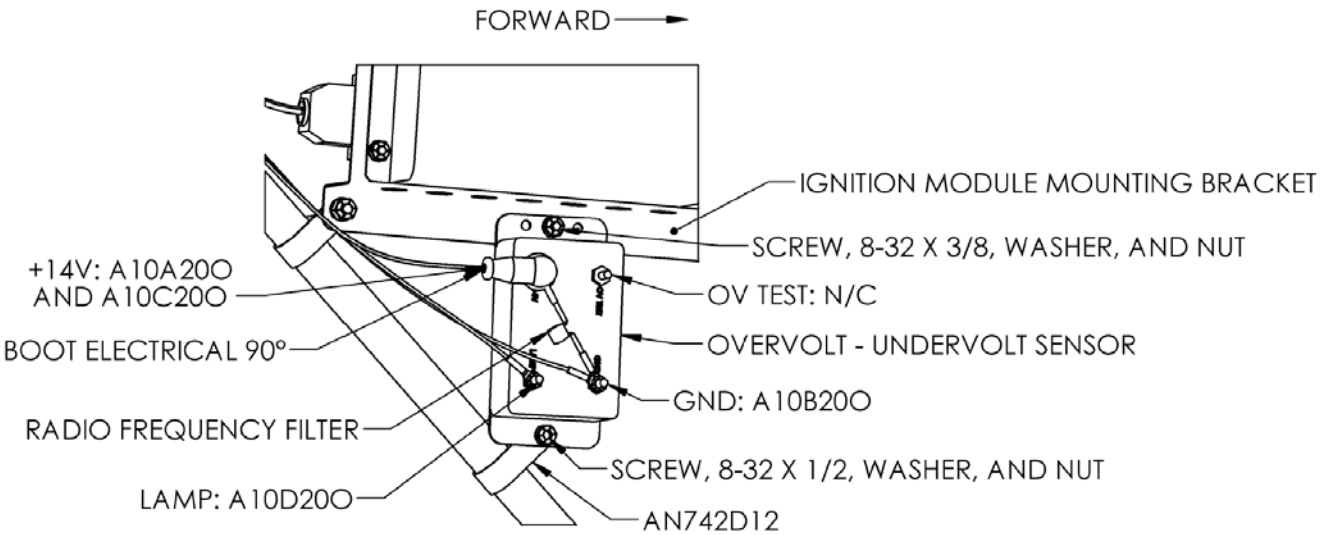
4. Suggestion: tape a piece of paper to the inside of the boot cowl that will redirect any dropped hardware inside onto the floor and keep it from sliding down the inside of the boot cowl where access is difficult.



5. Prepare sensor module
    a. "OV TEST" post
        i. Remove and discard top nut and 2 flat washers.
    b. "+14V" post,
        i. Remove and discard 2 flat washers, retain nut.
        ii. Install one end of Radio Frequency Filter Assembly, SC56080-001.
        iii. Install A10A20O and A10C20O through boot, MS25171-1S.
        iv. Install lock washer, AN936-A6.
        v. Reinstall nut.
    c. "LAMP" post,
        i. Remove and discard 2 flat washers.
        ii. Install A10D20O.
        iii. Install lock washer.
        iv. Reinstall nut.

d. "GND" post,
    i. Remove and discard 2 flat washers, retain nut.
    ii. Install other end of Radio Frequency Filter Assembly.
    iii. Install A10B20O.
    iv. Install lock washer.
    v. Reinstall nut.

6. Mount sensor module
    a. Place sensor module flange on outboard side of ignition module bracket and fasten with 8-32 x 3/8 screw, washer, and nut.
    b. Use tube clamp, AN742D12, 8-32 x 1/2 screw, washer and nut to secure the lower flange of the sensor to the fuselage. If desired, cushion clamp with friction tape wrapped around fuselage.
    c. See Hardware Detail Figure below.



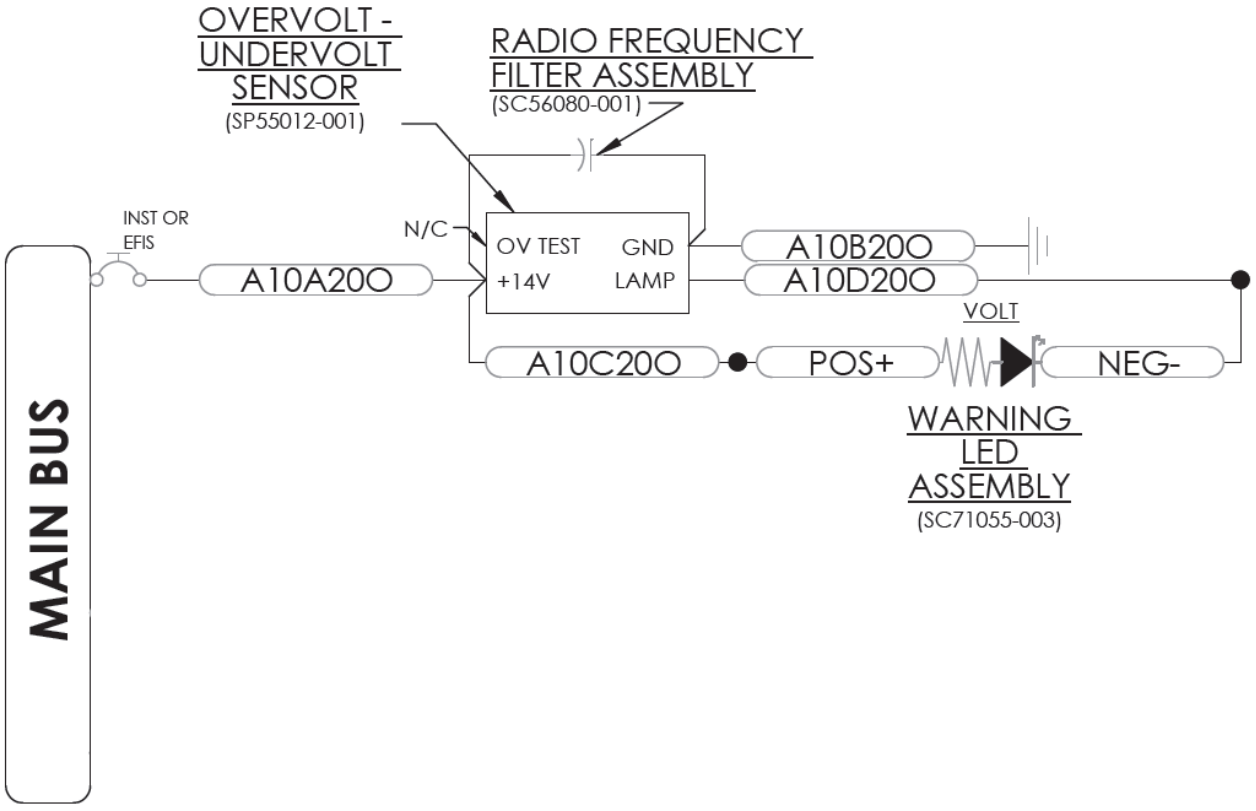
OVERVOLT - UNDERVOLT SENSOR HARDWARE DETAIL
LOOKING INBOARD

7. Route wires,
    a. Route wire A10A20O from "+14V" post up to main bus. Connect to EFIS or INSTR circuit breaker LINE.
    b. Route wire A10B20O to ground bus behind instrument panel and connect.
    c. Route A10C20O and A10D20O to amber warning LED in instrument panel, do not connect yet.

8. Replace panel mounted warning LED,
    a. Cut, cap, and stow old wires connecting to warning LED.
    b. Remove currently installed warning LED from instrument panel.
    c. Install supplied warning LED, SC71055-003, in same place.

9. Connect wires to new warning LED using supplied solder sleeves, or solder and heat shrink.
    a. Connect A10C20O to the "POS+" warning LED lead wire.
    b. Connect A10D20O to the "NEG-" warning LED lead wire.

10. Final electrical circuit:



Voltage Warning System Schematic

11. Secure all wiring and ensure no connections or mounting hardware are loose.

12. Reconnect main battery and restore seat to previous position.
13. Turn on master switch and verify system operation:
    a. When bus voltage is below 12.6V, the warning light will illuminate.
        i. It may be necessary to load the electrical system until the battery voltage is below 12.6V.
    b. When bus voltage is above12.6V, the warning light will extinguish.
        i. If an external battery charger does not bring voltage above 12.6V, it may be necessary to run aircraft.
14. Turn off master switch and reinstall right forward panel.
15. Weight of 0.3 lbs is a negligible addition.
16. No POH change required, operation of light unchaged.
17. Recommended operational check of under voltage indication at every annual.

MAJOR REPAIR AND ALTERATION (MRA): Installation of this service instruction is a major alteration per ASTM F2483 Section 9 and therefore an MRA form must be issued by Cub Crafters Inc. for installation in a given aircraft.

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

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