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CRS# RSUR804H

Instructions for Continued Airworthiness
for
B&C Specialty Products BC425 Standby Alternator System

Applicable to:

Cessna 182T

modified by STC#SA00673DE dated 01/09/2009

Rev. 1

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REVISIONS

DATE	DESCRIPTION	PAGE
01/09/2009	Rev. 1	1 thru 7

TABLE OF CONTENTS

DESCRIPTION	PAGE
Cover	1
Revision Log	2
Table of Contents	3
Introduction	4
Revisions & Amendments	4
System Description	4
Special Operating Information	4
Service Information	4
Troubleshooting	5
Parts Removal & Replacement	5
Placards	5
Data	5
Inspections	6
Recommended Overhaul Periods	6
Airworthiness Limitations	6
Implementation & Record Keeping	7
Assistance	7
Tools	7

INTRODUCTION

This document is intended to provide for the continued airworthiness of modifications set forth in STC#SA00673DE dated 1/09/2009 for Cessna 182. It is specifically concerned with the maintenance of the installed standby alternator. For all items not related to the installed standby alternator, refer to the basic airplane model service and parts manuals.

REVISIONS & AMENDMENTS

No revisions to any section of the ICA are permitted without an associated revision and FAA acceptance to Virginia Aviation Standby Alternator Master Data List, 182MDL and this ICA. All ICA changes will be submitted to the FAA for review and acceptance by the Aircraft Certification Office and the Airplane Evaluation Group.

SYSTEM DESCRIPTION

The BC425 Standby alternator system consists of an engine driven 20 amp alternator, an alternator controller, current sensor, "**STBY ALT**" master switch, "**STBY ALT ON**" annunciator, "**STBY ALT**" circuit breaker, and "**STBY ALT Sense**" circuit breaker. The system is automatically engaged when the "**STBY ALT**" master switch is turned on and the system senses that the primary alternator system has failed. The standby alternator is active when the "**STBY ALT ON**" annunciator is illuminated. Should the "**STBY ALT ON**" annunciator be flashing then the pilot should reduce electrical load until the annunciator stops flashing. This system will provide 20 amps of continuous current to the aircraft electrical system.

SPECIAL OPERATING INFORMATION

See the Airplane Flight Manual Supplement Document # 182SA for any special operating information.

SERVICE INFORMATION

Refer to Virginia Aviation Document # T182SA-3. The Standby Alternator can be accessed by removing the left and right halves of the engine cowling. The unit is located on the rear accessory drive pad of the engine. The alternator controller can be accessed by removing the forward lower left interior panel. The switches, circuit breakers, and annunciator are located on the pilot's instrument panel.

TROUBLESHOOTING

An electrical schematic is provided in Virginia Aviation Document # T182SA-3 this document may be used for electrical troubleshooting. The probable malfunctions and how to recognize them are listed below.

“STBY ALT ON” Annunciator fails to illuminate – Check that the “STBY ALT ON” indicator lamps are operational. Check that the “STBY ALT” master switch is on and functioning correctly. Check that both the “STBY ALT” and “STBY ALT SENSE” circuit breakers are closed and operational. Check the Standby Alternator Controller by using a calibrated digital voltmeter sensing directly between terminals 1 and 7 of the regulator with the engine at over 2000 RPM and Bus load under 3 amps. The voltage should be 26.0 +/- 0.2 volts. Deviation from this point may indicate the need for repair or replacement of the controller. Should the Alternator Controller check pass then check the alternator itself for rated output to the “STBY ALT” circuit breaker. This should also be 26.0 +/- 0.2 volts.

“STBY ALT ON” Annunciator is Flashing – Reduce Electrical Load. If this does not stop the annunciator from flashing check the current being supplied to the system by using a calibrated current meter on the alternator side of the “STBY ALT” 40 amp circuit breaker. This value should be less than 20 amps. If it is less than 20 amps check the current sensor.

PARTS REMOVAL AND REPLACEMENT

Installation: Refer to Virginia Aviation Drawing # T182SA-3

Parts: Refer to Virginia Aviation Drawing # T182SA-3

PLACARDS

Four placards are required in conjunction with this modification:

A) A “STBY ALT SENSE” placard is required next to the circuit breaker for the BC203-2D Standby Alternator Controller.

(1) Required.

B) A “STBY ALT” placard is located next to the Standby Alternator Primary Circuit breaker.

(1) Required.

C) An “IF Annunciator Flashing Reduce Load” placard is required on the pilot's instrument panel either next to the “STBY ALT” annunciator or master switch.

(1) Required.

D) A “STBY ALT ON” placard is required next to the standby alternator master switch.

(1) Required

DATA

All information to support the continued airworthiness of this modification is contained in:

- Refer to Virginia Aviation Document # T182SA-3
- The applicable basic model airplane service and parts manual

INSPECTION

Annual and/or 100 hour inspection

1. The modified systems require no service other than inspection at normal inspection intervals.
2. At each annual or 100 hour inspection the following tests should be performed.
 - Perform a Normal Engine Start and allow the engine to reach proper temperature for run-up RPM.
 - Assure that the "STBY ALT" and "STBY ALT SENSE" circuit breakers and the "STBY ALT" Master switch are in the "ON" position.
 - Reduce system electrical loads to approximately 10-15 amps.
 - Set Engine to 2000 RPM Minimum
 - Switch the Primary Alternator Field Switch to OFF
 - Check that the "STBY ALT" ON Annunciator Lights
 - Increase the Electrical load to over 20 amps the "STBY ALT ON" Annunciator should be flashing. Reduce the electrical load to less than 20 amps, the "STBY ALT ON" annunciator should be on steadily.
 - Switch the primary alternator field switch to on. The "STBY ALT ON" annunciator should go off.
 - The switch should be inspected during the engine run-up to determine that it does turn the system on.
 - The "STBY ALT" and "STBY ALT SENSE" circuit breakers should be opened to determine that they cause the "STBY ALT ON" Annunciator to extinguish.
3. Refer to VA Aviation Document T182SA-3 – Inspect the alternator for security of mounting. Inspect the Standby Alternator Controller for security of mounting and the security of the wiring. Inspect the wiring throughout the installation for evidence of deterioration or chaffing.

RECOMMENDED OVERHAUL PERIODS

The alternator should be returned to B&C Specialty for Overhaul at 1700 hours or when the engine is overhauled.

AIRWORTHINESS LIMITATIONS

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sec. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations are required.

IMPLEMENTATION AND RECORD KEEPING

Not applicable

ASSISTANCE

For questions or assistance regarding these Instructions for Continued Airworthiness, contact Aviation Resources Inc. d/b/a Virginia Aviation 970 Airport Road P.O. Box 4209 Lynchburg Regional Airport Lynchburg, VA 24502 CRS# RSUR804H 434-237-8420.

TOOLS

There are no special tools required to install this system. The installer should have normal hand tools, a calibrated Inch-pound Torque wrench, a crows foot Snap-on P/N FC014 or equivalent to tighten nuts on alternator, and a digital multimeter.