B & C Specialty Products
123 East 4th Street
Newton KS, 67114-0894

Instructions for Continued Airworthiness
for
B&C Specialty Products BC400 Primary Alternator System

Applicable to:

Piper Model PA-18 and PA-19 series airplanes
modified by STC SA01343WI

Dated: July 11, 2005

Original Issue

Written: Tim Hedding, Electrical Engineer

REVISIONS

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INTRODUCTION

This document is intended to provide for the continued airworthiness of modifications set forth in STC SA01343WI for Piper PA-18 and PA19 series airplanes. It is specifically concerned with the maintenance of the modified alternator and electrical system installations. For all items not related to the modified alternator and electrical system installations, 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 approval to B&C, Piper PA-18/19 Alternator Drawing List, 400LST1.doc and this ICA. All ICA changes will be submitted to the FAA for review and approval by the Aircraft Certification Office and the Airplane Evaluation Group prior to issuance to the field.

Once approved by the ACO and AEG, these revisions will be added as a notice to the internet web site of B & C Specialty Products and mailed as a Service Bulletin via the USPS to the owners of aircraft that are recorded as having the subject STC installed. Failures, malfunctions or defects will be reported to the Wichita ACO and will be sent to holders of the STC by means of a Service Bulletin unless an AD is deemed appropriate by the ACO.

SYSTEM DESCRIPTION

The airplane systems as modified by STC SA01343WI calls for the installation of a B&C Specialty Products BC400, 40 Amp, belt-drive alternator, an external BC201 controller, and supporting wiring as required. This alternator furnishes power for operation of all electrical equipment in the airplane and recharges the airplane's battery. The controller regulates the electrical bus to the correct system voltage, provides protection against a regulator over-voltage failure, and annunciates low bus voltage in the case of a charging system failure.

SPECIAL OPERATING INFORMATION

See the Airplane Flight Manual Supplement or Supplemental Airplane Flight Manual for STC SA01343WI for any special operating information.

SERVICE INFORMATION

Installation: Refer to B&C Specialty Products Drawing 400-500

Parts: Refer to B&C Specialty Products Drawing 400-500

TROUBLESHOOTING

Refer to B&C drawing 400-500 for mounting fastener torques and drive belt tension. An electrical schematic is also provided in this drawing that may be used for electrical troubleshooting. Additional troubleshooting tips may be found on B&C Specialty Products web site at www.BandC.biz , under "Downloads", referenced by controller model number BC201 (LR3C-14/28).

PARTS REMOVAL AND REPLACEMENT

Installation: Refer to Drawing 400-500

Parts: Refer to Drawing 400-500

PLACARDS

Refer to Drawing 400-500 and the Airplane Flight Manual Supplement

Three placards are required in conjunction with this modification:

A) A "Field" placard is required next to the Field circuit breaker. If an airframe manufacturer provided placard is present and legible, it may be used. If not B&C p/n 400-401 may be used.
(1) Required.

B) A "Sense" placard p/n 400-402 located next to the Bus Sense circuit breaker,
(1) Required.

C) An "Alt" placard is required next to the alternator output circuit breaker. If an airframe manufacturer provided placard is present and legible it may be used. If not, B&C p/n 400-403 may be used.
(1) Required.

D) An "Alt" placard is required next to the alternator master switch. If an airframe manufacturer provided placard is present and legible it may be used. If not, B&C p/n 400-403 may be used.
(1) Required

DATA

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

- Installation Drawing 400-500
- 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 check the operation of the low-voltage warning light, if provided. Turn on the battery master without the engine running and with no ground power applied. The low-voltage light should flash when the bus is below 12.6 volts. This light may not be provided on airplanes equipped with other means of annunciating low voltage to the pilot (such as an engine monitoring device).

3. At each Annual or 100 hour inspection check the operation of the over-voltage protection circuit. Turn On the battery master and alternator master switches without the engine running. Connect a jumper wire between Terminals 2 and 6 of the BC201 regulator. The Field circuit breaker should trip. Remove the jumper and re-set the Field circuit breaker.

4. At each Annual or 100 hour inspection check the operation of the charging system. Perform a normal engine run-up, adding and removing electrical loads while monitoring the ammeter or bus voltmeter. Ascertain that the bus remains at proper charging voltage, or that the ammeter does not show discharge, or both. For heavy electrical loads, higher RPM may be required.

5. At each Annual or 100 hour inspection check the alternator drive belt condition and tension. The belt should not be cracked or frayed. It should not be possible to turn the alternator pulley by hand while preventing propeller rotation.

6. At each Annual inspection check the alternator bearings. Release the belt tension. Check for radial and axial alternator shaft play and for smooth rotation. Reject an alternator that has rough rotation or shaft play. Re-tension the belt.

RECOMMENDED OVERHAUL PERIODS

No additional overhaul time limitations.

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 B & C Specialty Products, P.O. Box B, Newton, Kansas, 67114-0894 316-283-8000 or the Kansas City AEG office, 816-329-3241.