

United States Of America
Department of Transportation - Federal Aviation Administration
Supplemental Type Certificate

Number **SA02283AK**

This Certificate issued to: **Backstrom: Fabrications, LLC**
3420 Wiley Post Loop
Anchorage, AK 99517

certifies that the change in the type design for the following product meets the limitations and conditions therefore as specified herein with the airworthiness requirements of Part 21 of the Civil Air Regulations.

Current Product Type Certificate Number: * See Approved Model List No.
Model: SA02283AK, Revision A, dated February
4, 2006, or later FAA approved
revision.

Description of Type Design Change

Installation of a 30 amp permanent magnet generator system in accordance with Master Airwing List 40433-H, Appendix C, dated 12-12-2006, or later FAA approved revision.

Limitations and Conditions

- 1) Compatibility of this design change with previously approved modifications must be determined by the installer.
- 2) If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.
- 3) For INSTRUCTIONS FOR CONTINUED AIRWORTHINESS, refer to "INSTRUCTIONS FOR CONTINUED AIRWORTHINESS (ICAI) OF THE 30 AMP permanent magnet generator with PMSD Regulator and 505-1PM/0V kit", Document Number: 60433-H, Appendix A, dated 12-12-06, or later FAA approved revision.
- 4) "Instructions for installation of the 30 amp permanent magnet generator with PMSD regulator and 505-1PM/0V kit", Document Number: 60433-H, Appendix E, dated 12-12-06, or later FAA approved revision is a required part of this modification.
- 5) This installation approval is limited to aircraft models equipped with a Continental C75-12, -12P, -12VA; C85-12, -12P, -12VA, -14P; C30-12P, -14P; C145-2, 2H; O-200-A, -B, -C or O-300-A, B, C or O-300 A, C, D, E engine in accordance with FAA approved data.

This certificate and the supporting data which is the basis for approval shall remain in effect until superseded, suspended, or voided or a termination date as otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: July 15, 2006

Date received: November 26, 2007
February 4, 2008

Date of issuance: December 18, 2006

Date received: November 26, 2007
February 4, 2008



By signature of the Administrator

Gregory J. Holt

Gregory J. Holt
Manager
Anchorage Aircraft Certification Office

(1515)

FAA Approved Model List (AML) No. SA02283AK

Endowment Enterprises, LLC
 3420 Wiley Post Loop
 Anchorage, AK 99517

Revision History

Revision
Level

Date

Original

November 26, 2007

A

February 4, 2008

Description of Type Design Change

Installation of a 30 amp permanent magnet generator system in accordance with Master Drawing List BC433-II, Appendix C, dated 12-12-2006, or later FAA approved revision.

AIRPLANE MAKE / MODEL	TYPE CERTIFICATE NUMBER	CERTIFICATION BASIS FOR ALTERATION
American Champion 7EC, 7ECA, S7EC, 7FC, 7IC	A-759	CAR 3
Cessna 120, 140	A-768	CAR 3
Cessna 140A	SA2	CAR 3
Cessna 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, A150L, 150M, A150M	3A19	CAR 3
Cessna 170, 170A, 170B	A-799	CAR 3
Cessna 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H	3A12	CAR 3
Cessna P172D, 175, 175A, 175B, 175C	3A17	CAR 3
Luscombe 8, 8A, 8B, 8C, 8D, 8E, 8F, T-8F	A-694	CAR 3
Piper PC-65, PC-65S, PA-11, PA-11S	A-691	CAR 3
Rogers (Aeronca) 15AC, S15AC	A-802	CAR 3

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AIRPLANE MAKE / MODEL	TYPE CERTIFICATE NUMBER	CERTIFICATION BASIS FOR ALTERATION
Swift Museum Foundation, Inc. GC-1A, GC-1B	A-766	CAR 3
Taylorcraft Aviation 19, F19	1A9	CAR 3
Taylorcraft Aviation BC12-D-4-85, BCS12- D 4 85	A-696	CAR 3
Univair Aircraft 415-D, E, G, F-1, F- 1A, A-2, M-10	A-787	CAR 3

----- End of List -----

FAA APPROVED:



Manager, Anchorage Aircraft Certification Office
Federal Aviation Administration
Anchorage, Alaska

Date: February 8, 2008

FAA Approved Model List (AML) No. SA02283AK

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Cessna 120, 140	A-768	CAR 3
Cessna 140A	SA2	CAR 3
Cessna 150, 150A, 150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, 150L, A150L, 150M, A150M	3A19	CAR 3
Cessna 170, 170A, 170B	A-799	CAR 3
Cessna 172, 172A, 172B, 172C, 172D, 172E, 172F, 172G, 172H	3A12	CAR 3
Cessna P172D, 175, 175A, 175B, 175C	3A17	CAR 3
Luscombe 8, 8A, 8B, 8C, 8D, 8E, 8F, T-8F	A-694	CAR 3
Piper PC-65, PC-65S, PA-11, PA-11S	A-691	CAR 3
Rogers (Aeronca) 15AC, S15AC	A-802	CAR 3

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**STC- FAA APPROVALS for AIRCRAFT NOT ON THE FAA AML listing or otherwise
MODIFIED by FAA APPROVED ENGINE CHANGES**

Installation of the Lightweight alternator in vintage aircraft is APPROVED for aircraft OTHER THAN those listed on the FAA AML, by specific language in the STC SA02283AK cover sheet:

How that works:

STC certification is obtained to a set of standards related to the STC application. An approved model list is then issued by the FAA which designates those KNOWN type certificated airplanes for which the STC is an applicable installation.

In the case of many older airplanes, engines like the A-65 or C-75 Continental have been replaced with upgraded versions like the C-75-12, C-85-12, C-90-12 or -14, O-200, the O-300, or the GO-300. Each of those improved engines can be FAA approved for installation on certain airframes by either FAA field approvals, FAA STCs, or FAA approved service letters that modify the type design criteria- any of which can be cited by the mechanic as "FAA APPROVED DATA" substantiating the change on an FAA form 337.

It is not possible to list on the FAA approved STC AML, a comprehensive listing ALL of those potential combinations, since many are one-off change approvals, or otherwise obscure FAA approved data that is not readily available to the FAA engineering personnel or the STC holder/applicant.

Since MANY older airplanes have been modified with engine changes, where the installed engine CAN NOW ACCOMMODATE AN ALTERNATOR, because the engine has a suitable generator drive pad drive, the FAA has addressed such changes with a general approval in the limitations and conditions of the STC itself. The Alternator STC SA02283AK has such a condition and FAA approval at paragraph 5 of the cover sheet.

It states:

- 5) This installation approval is limited to aircraft models equipped with a Continental C-75-12, -12F, -12FJ; C-85-12, -12F, -12FJ, -14F; C-90-12, -14F; C-145-2, -2H; O200-A, -B, -C, O300-A, -B, -C, or GO-300-A, -B, -C, -D, -E engine in accordance with FAA approved data.**

This set of FAA 'open approval' instructions in the STC were developed with the FAA's full understanding and knowledge that such vintage airplanes often swapped engines for performance and availability reasons.

This FAA APPROVAL CONDITION was intentionally added to address the inherently restrictive nature of an AML, and to provide greater options to the end users and operators who wish to incorporate a modern, lightweight electrical generating system into their vintage airplane which has already adopted other upgrades or safety enhancements.

The installation of electrical busses, and other wiring in the airplane may of course be approved pursuant to original factory TC data, by FAA field approvals, or simply by a reference to the acceptable data in sections and paragraphs within AC43.13-1B & 2A, on the FAA form 337.