

DepartmentofTransportation_FederalAviationAdministration

Supplemental Type Certificate

Number SA01420SE*This certificate, issued to***Cascade Flying Service LLC
903 Grinell Road
Garfield, WA 99130**

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 8 of the Civil Aviation Regulations.

Original Product—Type Certificate Number:

A4SW

Make:

Thrush

Model:

S-2R, S2R-R3S, -R1340, -R1820

Description of the Type Design Change: Install a Walter M601-E11 or M601-D11 engine and Avia V508-E-AG 106/A propeller per Cascade Aircraft Conversions Master Drawing List FW-CAC090-90 Revision G, dated October 19, 2008, and Cascade Aircraft Conversions Document FW-CAC090-12, Revision IR, dated June 2, 2004, Installation Manual for Thrush Aircraft S2R Series, Walter Turbine Installation or later FAA approved revisions to either of these documents.

Limitations and Conditions: Additionally, approval of this change in type design applies to the above model aircraft only. This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated unless it is determined that the relationship between this change and any of those other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that aircraft.

The modified aircraft must be maintained in accordance with Cascade Aircraft Conversions Document FW-CAC090-13, Revision IR, dated June 3, 2004. A copy of this Certificate, dated August 16, 2004, and the Aircraft Flight Manual Supplement FW-CAC090-11-E, Revision IR, dated June 8, 2004 for the M601-E11 engine installation, or FW-CAC090-11-D dated August 16, 2004 for the M601-D11 engine installation or later FAA approved revisions to any of these documents, must be maintained as part of the permanent records of the modified aircraft. See page 3 for limitations.

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

Date of application: March 9, 2001*Date reissued:**Date of issuance:* June 8, 2004*Date amended:* August 20, 2004, October 15, 2004
January 14, 2009*By direction of the Administrator*

(Signature)

Manager, Seattle Aircraft
Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

United States of America
 Department of Transportation Federal Aviation Administration
Supplemental Type Certificate
 (Continuation Sheet)

Number SA01420SE

1. ENGINES

- a) NUMBER OF ENGINES 1
- b) ENGINE MANUFACTURER WALTER
- c) ENGINE MODEL NUMBER M601-E11
- d) OPERATING LIMITS

Power Setting	SHP	Torque ft-lb	Max. ITT °C	Gas Speed Ng RPM	Prop Speed Np RPM	Oil Pressure psig (MPa)	Oil Temp °F (°C)
Take-off	751	1895 100%	735	36660 100%	2080	26.1-39.1 (.18 to .27)	+20-+85 (-6 to +29)
Max Cont.	657	1895 100%	690	35560 97%	1950	26.1-39.1 (.18 to .27)	+20-+85 (-6 to +29)

e) POWERPLANT INSTRUMENT MARKINGS:

INSTRUMENT	Redline Minimum	Green Arc Normal	Yellow Arc Caution	Redline Maximum
Torque	N/A	0-100	100-106	106
Tach RPM Ng	60	60-97	97-100	100
Tach RPM Np	N/A	800-2080	N/A	2080
Temp ITT (°C)	N/A	430-690	690-735	735
Oil Press (MPa)	.12	.18-.27*	.12-.18 & .27-.35**	.35
Oil Temp (°C)	N/A	20-95	-20-+20	95
Fuel Press Eng (kPa)	N/A	0-120	N/A	120
Fuel Press Filter (psig)	2	N/A	N/A	N/A

*Earlier versions were marked from .18 -.25 MPa. This revised marking is acceptable for the earlier versions.

** Earlier versions were marked .12-.28 and .25-.35 MPa. This revised marking is acceptable for the earlier versions.

- f) NUMBER OF ENGINES 1
- g) ENGINE MANUFACTURER WALTER
- h) ENGINE MODEL NUMBER M601-D11
- i) OPERATING LIMITS

Power Setting	SHP	Torque ft-lb	Max. ITT °C	Gas Speed Ng RPM	Prop Speed Np RPM	Oil Pressure psig (MPa)	Oil Temp °F (°C)
Take-off	604	1630 86%	735	36660 100%	1950	26.1 to 39.1 (.18 to .27)	+20 to +85 (-6 to +29)
Max Cont.	604	1630 86%	690	36110 98.5%	1950	26.1 to 39.1 (.18 to .27)	+20 to +85 (-6 to +29)

j) POWERPLANT INSTRUMENT MARKINGS:

INSTRUMENT	Redline Minimum	Green Arc Normal	Yellow Arc Caution	Redline Maximum
Torque	N/A	0-86	-	86
Tach RPM Ng	60	60 - 98.5	98.5 - 100	100
Tach RPM Np	N/A	800-2080	N/A	2080
Temp ITT (°C)	N/A	430-690	690-735	735
Oil Press (MPa)	.12	.18-.27	.12 - .18 & .27 - .35	.35
Oil Temp (°C)	N/A	20-95	-20 - +20	95
Fuel Press Eng (kPa)	N/A	0-120	N/A	120
Fuel Press Filter (psig)	2	N/A	N/A	N/A

2. PROPELLERS:

- | | |
|---------------------------------------|---|
| (a) Number of propellers | 1 |
| (b) Propeller Manufacturer | Avia Propellers |
| (c) Blade Model | 106/A |
| (d) Number of Blades | 3 |
| (e) Hub Model | V508E-AG |
| (f) Propeller Type | Hydraulically Operated, Constant Speed Full Feathering, Reversible. |
| (g) Diameter | |
| Maximum 106 inches, no cutoff allowed | |

END

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.