

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

A61EU  
Revision 3  
Vulcan Air S.p.A.  
SF600  
SF600A  
  
December 6, 2007

TYPE CERTIFICATE DATA SHEET No. A61EU

This data sheet which is part of Provisional Type Certificate No. A61EU prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder.                      Vulcan Air S.p.A.  
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Italy

**I. Model SF600 (Normal Category), approved October 4, 1990.**

Engine.    2 Detroit Diesel Allison 250-B17C turboprops

Fuel.    Commercial Kerosene Jet A-1 conforming to ASTM D1655 specification.  
When ambient temperature is lower than +5°C (105.8°F) the fuel must contain anti-icing additive conforming to MIL-I-27686E in amount of not less than 0.060 and no more than 0.15 by volume.

Oil.     According to Airplane Flight Manual.

Engine Ratings.                                Take off and Max continuous 420 SHP

<u>Engine Limits.</u>	<u>Percent</u>	<u>Torque Meter Pressure</u>
<u>Torque</u>		
Takeoff and Max continuous	100	107
<u>Propeller Speed (N2)</u>		
Take off, O.E.I. climb and Max continuous	100	2030
Transient (15 seconds)	110	2233
<u>Turbine Outlet Temperature</u>		
Takeoff and Max Continuous		810°C
Transient (6 seconds)		843°C
Starting (10 seconds)		810-927°C

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Propeller and Propeller Limits.

Model	Hartzell HC-B3T
Hub	HC-B3TF-7A
Blade	T10173-11R
Diameter	90 3/8 inches (no reduction permitted)
Blade angle at 30 inch station low pitch	+ 9.5° ± 0.5°
feathering	80° (only for reference)
reverse	- 11 ± 0.5°
Governor	Woodward model 8210-018
Overspeed governor	Woodward model 8210-011
Spinner	Hartzell P/N 835-39

Airspeed Limits.

	<u>IAS (Knots)</u>
Max operating speed - VMO	166
Maneuvering - VA	146
Max Flap Extended - VFE	125
Min Control Speed - VMC with critical (left) engine inoperative	77
Max speed with cargo door open	111
Max speed with windows open	131

Center of Gravity Range.

5.320 m (209.45 in.) to 5.560 m (218.9 in.) at 3400 kg (7495 lbs.)  
5.208 m (205.04 in.) to 5.560 m (218.9 in.) at 2600 kg (5732 lbs.) or less  
Straight line variation between points given.

Reference Datum.

5.00 m (196.85 in.) forward of wing leading edge.

Mean Aerodynamic Chord.  
(MAC)

1.6 m (62.99 in.) (L.E. at STA 196.85)

Leveling Means.

Seat rails in cargo compartment

Maximum Weights.

Take-off weight:	3400 kg. (7495 lbs.)
Landing weight:	3180 kg. (7010 lbs.)
Zero Fuel Weight:	3275 kg. (7220 lbs.)

Minimum Crew.

One pilot required in left seat.

Number of Seats.

11 (2 pilots, 9 passengers)  
2 at 2.950 m (116.14 in.), 2 at 3.921 m (154.37 in.)  
2 at 4.734 m (186.38 in.), 2 at 5.572 m (219.37 in.)  
2 at 6.410 m (252.36 in.), 1 at 7.706 m (303.385 in.)

Maximum Baggage.

250 kg. (550 lbs.) at 8.322 m (327.638 in.)

Fuel Capacity.

Four wing tanks total 1024 l. (270.6 U.S. Gal.)  
usable 998 l. (263.7 U.S. Gal.)

See Note 1 for data on unusable fuel.

<u>Oil Capacity.</u>	Total capacity 14 l., (3.7 U.S. Gal.) 7 l. (1.85 U.S. Gal.) for each engine at 4.480 m (176.4 in.)		
<u>Maximum Operating Altitude.</u>	20,000 ft.		
<u>Control Surface Movements.</u>	Wings flaps		Down $30^{\circ} \pm 1^{\circ}$
	Aileron	Up $25^{\circ} \pm 1^{\circ}$	Down $15^{\circ} \pm 1^{\circ}$
	Aileron tab (with respect to aileron chord)	Up $20^{\circ} \pm 1^{\circ}$	Down $20^{\circ} \pm 1^{\circ}$
	Elevator	Up $24^{\circ} \pm 1^{\circ}$	Down $15^{\circ} \pm 1^{\circ}$
	Elevator tab (with respect to elevator chord)	Up $26^{\circ}30' \pm 1^{\circ}$	Down $27^{\circ}30' \pm 1^{\circ}$
	Rudder	Left $23^{\circ} \pm 1^{\circ}$	Right $23^{\circ} \pm 1^{\circ}$
	Rudder tab (with rudder in neutral position)	Left $14^{\circ} \pm 1^{\circ}$	Right $14^{\circ} \pm 1^{\circ}$

## **II. Model SF600A (Normal Category), approved May 8, 1996.**

(Same as Model SF600 except: Increased take-off weight; increased maximum landing weight; increased zero fuel weight, new powerplant system; wing aerodynamic modifications; main landing gear supporting structure modifications).

<u>Engine.</u>	2 Detroit Diesel Allison 250-B17F/1 turboprops.		
<u>Fuel.</u>	Commercial Kerosene Jet A-1 conforming to ASTM D1655 specification. When ambient temperature is lower than $+5^{\circ}\text{C}$ ( $105.8^{\circ}\text{F}$ ) the fuel must contain anti-icing additive conforming to MIL-I-27586E in amount of not less than 0.060 and no more than 0.15 by volume.		
<u>Oil.</u>	According to Airplane Flight Manual.		
<u>Engine Ratings.</u>	Takeoff and Max. Continuous 450 SHP		
<u>Engine Limits.</u>			<u>Torque Meter Pressure</u>
	<u>Torque</u>		
	Take off and Max continuous		111 P.S.I.
	<u>Propeller Speed (N2)</u>	<u>Percent</u>	<u>RPM</u>
	Take off, O.E.I. climb and Max continuous	105	2132
	Transient (15 seconds)	110	2233
	<u>Turbine Outlet Temperature</u>		
	Take off and Max Continuous		810°C
	Transient (6 seconds)		899°C
	Starting (10 seconds)		810-927°C

<u>Propeller and Propeller Limits.</u>	Model	Hartzell HC-B3T
	Hub	HC-B3TF-7A
	Blade	T10173-11R
	Diameter	90 3/8 inches (no reduction permitted)
	Blade angle at 30 inch station	
	low pitch	+ 9.5° ± 0.5°
	feathering	80° (only for reference)
	reverse	- 11 ± 0.5°
	Governor	Woodward model 8210-018
	Overspeed governor	Woodward model 8210-011
	Spinner	Hartzell P/N 835-39
<u>Airspeed Limits.</u>		<u>IAS (Knots)</u>
	Max operating speed - V <sub>MO</sub>	162
	Maneuvering - V <sub>A</sub>	150
	See A.F.M. for variations with weight	
	Max with Flap Ext. - V <sub>FE</sub>	121
	Min Control Speed - V <sub>MC</sub> with critical (left) engine inoperative	88
	Max speed with cargo door open (Flaps up)	109
	Max speed with windows open	129
<u>Center of Gravity Range.</u>	5.349 m (210.59 in.) to 5.560 m (218.9 in.) at 3605 kg (7947 lbs.) 5.208 m (205.04 in.) to 5.560 m (218.9 in.) at 2600 kg (5732 lbs.) or less Straight line variation between points given.	
<u>Reference Datum.</u>	5.00 m (196.85 in.) forward of wing leading edge.	
<u>Mean Aerodynamic Chord (MAC)</u>	1.6 m (62.99 in.) (L.E. at STA 196.85)	
<u>Leveling Means.</u>	Seat rails in cargo compartment.	
<u>Maximum Weights.</u>	Ramp weight	3625 Kg. (7991 lbs.)
	Take-off weight	3605 Kg. (7947 lbs.)
	Landing weight	3400 Kg. (7495 lbs.)
	Zero Fuel weight	3350 Kg. (7385 lbs.)
<u>Minimum Crew.</u>	One pilot required in left seat.	
<u>Number of Seats.</u>	11 (2 pilots, 9 passengers) 2 at 2.950 m (116.14 in.), 2 at 3.921 m (154.37 in.) 2 at 4.734 m (186.38 in.), 2 at 5.572 m (219.37 in.) 2 at 6.410 m (252.36 in.), 1 at 7.706 m (303.385 in.)	
<u>Maximum Baggage.</u>	250 kg. (550 lbs.) at 8.322 m (327.638 in.)	

<u>Fuel Capacity.</u>	Four wing tanks total 1024 l. (270.6 U.S. Gal.) usable 998 l. (263.7 U.S. Gal.)		
	See Note 1 for data on unusable fuel.		
<u>Oil Capacity.</u>	Total capacity (tank + engine) 18.5 l. (4.9 U.S. Gal.) 9.25 l. (2.45 U.S. Gal.) for each engine at 4.480 m (176.4 in.)		
<u>Maximum Operating Altitude.</u>	20,000 ft.		
<u>Control Surface Movements.</u>	Wings flaps		Down $30^{\circ} \pm 1^{\circ}$
	Aileron	Up $25^{\circ} \pm 1^{\circ}$	Down $15^{\circ} \pm 1^{\circ}$
	Aileron tab (with respect to aileron chord)	Up $20^{\circ} \pm 1^{\circ}$	Down $20^{\circ} \pm 1^{\circ}$
	Elevator	Up $24^{\circ} \pm 1^{\circ}$	Down $15^{\circ} \pm 1^{\circ}$
	Elevator tab (with respect to elevator chord)	Up $26^{\circ}30' \pm 1^{\circ}$	Down $27^{\circ}30' \pm 1^{\circ}$
	Rudder	Left $19^{\circ} \pm 1^{\circ}$	Right $19^{\circ} \pm 1^{\circ}$
	Rudder tab (with rudder in neutral position)	Left $24^{\circ} \pm 1^{\circ}$	Right $24^{\circ} \pm 1^{\circ}$

#### **DATA PERTINENT TO ALL MODELS.**

<u>Serial Number Eligible.</u>	<p>The Registro Aeronautico Italiano (R.A.I.) Certificate of Airworthiness endorsed as noted below under "Import Requirements" must be submitted for each individual aircraft for which application for certification is made.</p> <p>Vulcan Air SF600 airplane models have the following serial numbers No. 005 thru 009.</p> <p>Vulcan Air SF600A airplane models have the following serial numbers No. 010 thru 999.</p> <p>Additional numbers may be added by petition submitted by the Type Certificate holder.</p>
<u>Certification Basis.</u>	<p>(a) SF600 Federal Aviation Regulations - 14 CFR Section 21.29 and 14 CFR FAR 23 effective 1 February 1965, including amendments 23-1 through 23-32.</p> <p>14 CFR SFAR 27 amendments 27-1 through 27-5.</p> <p>14 CFR Part 36 effective 1 December 1969 including amendments 36-1 through 36-15.</p> <p>Equivalent safety finding exist with respect to the following regulation:</p> <p>- 14 CFR Section 23.1545(b)(5): Marking of airspeed indicator for <math>V_{yse}</math></p> <p>Date of initial application for Type Certificate July 31, 1986 with re-application August 1, 1989.</p>

(b) SF600A

14 CFR Part 23, dated February 1, 1965, including amendments 23-1 through 23-35, amendment 23-36 for para. 23.2, 23.1413, amendment 23-40 for the paragraph 23.951, amendments 23-42 for the paragraphs 23.67, 23.75, 23.161, 23.331, 23.351, 23.421, 23.423, 23.425, 23.427, 23.441, 23.443, 23.455, 23.677, 23.701, 23.939, 23.1323, 23.1325.

Equivalent safety finding exist with respect to the following regulation:

- 14CFR Section 23.1545(b)(5): Marking of airspeed indicator for  $V_{yse}$
- 14 CFR Part 34 effective September 10, 1990.
- 14 CFR Part 36 dated December 1, 1969, as amended through amendments 36-20 effective September 16, 1992.

Date of initial application for Type Certificate October 24, 1990.

Import Requirements.

To be considered eligible for operation in the United States, each aircraft manufactured under this type certificate must be accompanied by a certificate of airworthiness for export or certifying statement endorsed by the exporting foreign civil airworthiness authority which states (in the English language): This aircraft conforms to its U.S. type design (Type Certificate No. A61EU) and is in a condition for safe operation.

The U.S. airworthiness certification basis for aircraft for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is FAR Sections 21.183(c) or 21.185(c).

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 exported from countries other than the country of manufacture (e.g., third party country) is FAR Sections 21.183(d) or 21.183(b).

Equipment.

The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the aircraft for certification. In addition, the following items are required:

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- a) Pre-stall warning indicator, Safe Flight Instrument Corp., Type 164.
- b) Agusta SF600 Flight Manual, R.A.I. approved dated June 5, 1987 (Approval No. 231.129/T) or later R.A.I. approved revision.
- c) Engine Armoring Kit installed in accordance with Drawing FI-504046.

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SF600A R.A.I. approved Airplane Flight Manual (600-00-38-03) dated September 27, 1993 and subsequent approved revisions.

NOTESNOTE 1.

Current weight and balance report including list of equipment in certificated empty weight, and loading instructions, must be provided for each aircraft at the time of original certification.

The certificated empty weight and corresponding center of gravity location must include:

Unusable Fuel in internal tanks:		18 kg. (38.5 lbs.) at 5.650 m. (222.4 in.)
Unusable Fuel in external tanks:		3 kg. (6 lbs.) at 5.650 m. (222.4 in.)
Engine Oil (total):	for SF600	12 kg. (27 lbs.) at 4.480 m. (176.4 in.)
	for SF600A	15.85 kg. (35 lbs.) at 4.48 m. (176.4 in.)

NOTE 2.

All placards required in the AFM must be installed in the appropriate location.

NOTE 3.

Instructions for Continued Airworthiness and Service Life Limits of components are contained in the SF600A Maintenance Manual (SIAI Marchetti Report 600-00-39-01). Revisions to Airworthiness Limitations must be FAA approved.

All manufacturer's service bulletins (and other manual material) which contain a statement that the document is approved by the exporting airworthiness authority (RAI) may be interpreted as FAA approved. These approvals pertain to the type design only.

All service bulletins classified as Mandatory by the Italian Civil Aviation Authority are identified to that effect and are subject to an Airworthiness Directive issued by the FAA.

Aircraft eligible for a standard airworthiness certificate must not be issued an airworthiness certificate unless the FAA has approved the Instructions for Continued Airworthiness.

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