DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A86EU
Revision 1
AEROMACCHI S.p.A.
S.211A

May 14, 1997

TYPE CERTIFICATE DATA SHEET No. A86EU

This data sheet which is a part of Type Certificate No. A86EU 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. AERMACCHI S.p.A.
Via P. Foresio, 1
21040 Venegono Superiore (VA)
Italy

I - Model SIAI Marchetti S.211A (Acrobatic Category), Approved June 16, 1995

Engine: 1 Pratt & Whitney Aircraft of Canada,
JT15D-5C turbofan

Fuel: Jet A-1 or Jet B conforming to ASTM-D-1655
JP-4 conforming to MIL-6-83133
JP-5 conforming to MIL-T-5624
JP-8 conforming to MIL-T-83133
Anti-icing additive: for operations at external temperatures lower than +5 ºC, Ethylene Glycol Monomethyl Ether conforming to MIL-I-27686E must be blended into the aircraft fuel in concentrations not less than 0.06 percent or more than 0.15 percent by volume.
For emergency use of Aviation Gasoline and fueling procedures, refer to Airplane Flight Manual.

Oil: According to Airplane Flight Manual.

Engine Limits: Static Thrust standard day, sea level:

Take-off	1,418.9 daN	(3190 Lbs)
Maximum continuous	1,418.9 daN	(3190 Lbs)

Max permissible engine rotor operating speeds:

NL (Fan)	16,540 r.p.m.	104 percent
NH (Gas gen)	31,450 r.p.m.	96 percent

Max permissible interturbine gas temperatures:

Take-off	700º C
Maximum continuous	700º C

Airspeed Limits	VMO (maximum operating)		KIAS	KCAS
	Between 8,000 ft e 17,500 ft		350	353
	at 8,000 ft		210 (*)	213
	at sea level		250 (*)	253
	(*) linear variation for intermediate altitudes.			
	M_{MO}	above 17,500 ft	0.72 Mach	.72 Mach
	V_A	(design maneuvering) at 2900 Kg (6.394 Lbs) See A.F.M. for variations with weight	280	283
	V_O	(operational maneuvering) at 2900 Kg. (6394 lbs) See A.F.M. for variations with weight.	260	263
	V_{FE}	(flap extended)	160	162
	V_{LE}	(landing gear extended)	160	162
	V_{LO}	(landing gear operating)	160	162

C.G. Range (Landing gear retracted)

FORWARD:
+5.235 m.(206.1 in) (18.0% MAC) at 2,350 Kg (5181 Lbs) or less
+5.296 m. (208.5 in) (21.66% MAC) at 2,900 Kg (6394 Lbs).

AFT:
+5.391 m. (212.3 in) (27.5% MAC) at all weights
Linear variation between weights.

Mean Aerodynamic Chord (MAC): 1.646 m. (64.80 in); % MAC at 4.939 m. (194.44 in) (from Datum)

Datum: 1.775 m. (69.88 in) in front of the forward cabin pressurized bulkhead

Leveling: Lateral: traverse bar placed on the cockpit sills
Longitudinal: left hand cockpit sill

Maximum Weight:

Take-off	2,900 Kg (6394 Lbs)
Landing	2,900 Kg (6394 Lbs)
Zero Wing Fuel	2,420 Kg (5335 Lbs)

Equipment and Baggage Weight: 20 Kg (44 Lbs) in the ventral fuselage compartment, arm 4.337 m (170.75 in).

Minimum Crew: 1 pilot (front cockpit)

Number of Seats: 2 (front and rear cockpit)

Fuel Capacity: Total: 894 Lt. (236 U.S. Gal.);
Total usable: 867 Lt. (229 U.S. Gal.).
(See Note 1).

Engine oil Capacity — Total 9.0 Lt. (2.39 U.S. Gal.)
Usable 9.9 Lt. (0.5 U.S. Gal.)
(See Note 1).

Maximum Operating Altitude. 40,000 ft

Outside Temperature Limits. Between -25º C and + 45º C at sea level.

Control Surface Movements

Flap				Down 35º ± 1º
Aileron	Up	24 º ± 1º	Down	16º ± 1º
Aileron trim	Up	6º 20´ ± 1º	Down	5º 40´ ± 1º
Elevator	Up	25º ± 1º	Down	12º 30´ ± 1º
Elevator servo tab	Up	8º 45´± 1º	Down	17º 30´ ± 1º
Rudder	Right	20º ± 1º	Left	20º ± 1º
Rudder trim	Up	10º ± 1º	Down	10º ± 1º
Stabilizer trim	Up	0º 30´ ± 15'	Down	5º ± 15'
Speedbrake			Down	37º

Serial Nos. Eligible. Each individual aircraft manufactured under this type certificate must be accompanied by an Export Certificate of Airworthiness as noted below under "Import Requirements" when an application for a U.S. airworthiness certificate is made.

Model No. Siai Marchetti S211A: 201 and 202.

Instructions to be accomplished to bring aircraft to the configuration required for receiving a U.S. Airworthiness Certificate are reported in SIAI Marchetti Technical Instruction Notes 211A-00-22-11 (S/N 201) and 211A-00-22-12 (S/N 202).

Import Requirements. Country of Manufacturer: A U.S. airworthiness certificate may be issued on the basis of an Export Certificate of Airworthiness approved by an authorized representative of the Registro Aeronautico Italiano including the following statement:

> "The aircraft covered by this certificate has been examined, tested, and found to conform to the type design approved under Type Certificate A86EU and is in a condition for safe operation."

Country other than Manufacturer (U.S. bilateral agreement and the original Export Certificate of Airworthiness issued by the country of manufacture must exist):
A U.S. airworthiness certificate may be issued on the basis of a log book certifying statement endorsed by an authorized representative of the civil aviation authority of the exporting country. It is incumbent upon the exporting civil aviation authority to determine that the certifying statement includes evidence of acceptable service history and modification deviations and the following statement:

> "The aircraft covered by this certificate has been examined, tested, inspected in accordance with the provisions of FAR 21.183(d) or its equivalent, and found to conform to the type design approved under Type Certificate A86EU and is in a condition for safe operation."

Certification Basis

- FAR Part 23 dated February 1, 1965 as amended through amendment 23-44 effective August 18, 1993.
- Special Conditions (SC-23-ACE-80) effective June 16, 1995 in lieu of FAR 23.45, 23.51, 23.53, 23.65; 23.75; 23.77; 23.1581; 23.1583; 23.1585; 23.1587; 23.1589, and SC23.63; SC23.69; SC23.71; SC23.73.
- Equivalent level of safety for FAR 23.562, [ACE No. 95-4], 23.677 (a) [ACE No. 95-5], 23.777 (f) (1) [ACE No. 95-6], 23.807 (b)(5) [ACE No. 95-11], 23.841 (a) and (b) (5) (6) [ACE No. 95-7], 23.971 (a) and (b) [ACE No. 95-8] 23.1182 [ACE No. 95-10], 23.1557 (d) [ACE No. 95-9] effective April 6, 1995.
- FAR PART 34 effective September 10, 1990.
- FAR PART 36 dated December 1, 1969, as amended through Amendment 36-20 effective September 16, 1992.

Date of application for Type Certificate, July 9, 1993.

Validation Basis. Type Certificate A86EU was issued pursuant to FAR 21.29 in validation of Registro Aeronautico Italiano certification of compliance with the aforementioned certification basis, and in accordance with the standard airworthiness certificate provisions of FAR 21.183(c).

NOTE: The airworthiness provisions of FAR 21.183(d) may be cited as the basis for issuance of standard airworthiness certificates for aircraft imported from a country other than the country of manufacture.

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

(a) Siai Marchetti S211A-R.A.I. approved Airplane Flight Manual P/N 211A-00-38-01, dated June 6, 1995, or later RAI approved revisions.

NOTES

NOTE 1. Current weight and balance report including list of equipment in the certificated empty weight, and loading instructions, must be provided for each aircraft at the time of original airworthiness certification, and at all time thereafter.
The certificated empty weight and corresponding center of gravity location must include:

- Unusable fuel:
  20.5 Kg (45 Lbs) at 5.185 m. (204.13 in) and 1.6 Kg (3,6 Lbs) at 5.561 m. (218.93 in) for JP-5.
  20.1 Kg (44 Lbs) at 5.185 m. (204.13 in) and 1.6 Kg (3,6 Lbs) at 5.561 m. (218.93 in) for JP-8/JET A-1
  18.9 Kg (41,5 Lbs) at 5.185 m. (204.13 in) and 1.5 Kg (3,3 Lbs) at 5.561 m. (218.93 in) for JP-4
  17.8 Kg (39 Lbs) at 5.185 m. (204.13 in) and 1.4 Kg (3 Lbs) at 5.561 m. (218.93 in) for AVGAS

- Full Engine Oil: 8.6 Kg (19 lbs) at 7.3 m (287.4 in).

- Undrainable Engine Oil:

0.5 Kg (1,1 Lbs) at 7.300 m. (287,4 in).

NOTE 2 Placards (Refer to SIAI Marchetti Dwgs. B2-85001, B2-00416, B2- 21637, B2-25330, B2-21807, for a complete listing):
All required placards as listed in the approved Airplane Flight Manual must be installed in the appropriate locations.

(1) The following placard must be displayed in clear view of the pilot:
"THE MARKING AND PLACARDS INSTALLED IN THIS AIRPLANE CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THE ACROBATIC CATEGORY. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THIS CATEGORY ARE CONTAINED IN THE AIRPLANE FLIGHT MANUAL."

(2) Refer to the Airplane Flight Manual, Section 2, Limitations for a listing of other required placards.

NOTE 3 Instructions for Continued Airworthiness and Service Life Limits of components are contained in the S211A Maintenance Manual (SIAI Marchetti Report 211A-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.

Service documents required: S211A Maintenance Manual.

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

NOTE 4. As of January 1, 1997, AERMACCHI S.p.A. has acquired SIAI Marchetti S.r.L.

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