European Aviation Safety Agency

EASA

TYPE CERTIFICATE DATA SHEET

SUP-AIR Hot Air Balloons

Manned Free Hot Air Balloon

Type Certificate Holder:

SUP-AIR Ballon Egyesület
Budapest, Hungary

For variants: SUP-AIR Series

Issue: 2, 6 March 2014
Issue: 1, 3 December 2010

List of effective pages:

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SECTION 1 GENERAL, all models

I. General

1.	Data Sheet No: EASA.BA.022	Issue Date: 6 March 2014
2.	Type / Variant or Model	
	- Type:	SUP-AIR Hot Air Balloons
	- Variant or Model:	SUP-AIR Series: D-AX 5, F-AX 7, B-AX 8, C-AX 9, E-AX-10
3.	Airworthiness Category:	Normal
4.	Type Certificate Holder:	SUP-AIR Ballon Egyesület 1154 Budapest, Szerencs u. 180. Hungary
5.	Manufacturer:	SUP-AIR Ballon Egyesület 1154 Budapest, Szerencs u. 180. Hungary Magyar Repülőszövetség Központi Re.és Eje.javitó Üzem 8002 Börgönd Airport *Central Repair Shop for Aeroplanes and Parachutes, Hungarian Aeronautical Association* Marylla Bőrdíszműgyártó és Kereskedelmi Kft. 8700 Marcali Marczali H. u. 12. *Leather Goods and Trade Ltd.*
6.	National CAA HU Certification Date:	Refer to Section 2
7.	CAA HU Initial Application Date:	Refer to Section 2
8.	EASA Application Date:	n/a
9.	EASA Type Certification Date:	Refer to Section 2
10.	Certification History	This TCDS EASA.BA.022 replaces the Hungarian TCDSs: n° 57HB50, issued 16 March 1992; n° 57HB70, n° 57HB80, n° 57HB90 and n° 57HB10, all issued 24 February 1994.

II. Certification Basis

1.	Reference Date for determining the applicable requirements:	Refer to Section 2, see Table 2.1
2.	CAA HU Type Certificate Data Sheet No:	57HB10, 57HB50, 57HB70, 57HB80, 57HB90
3.	Certification Basis:	40.sz Légügyi Előirás *Aviation Regulation no. 40*
4.	Airworthiness Requirements:	Equivalent to: CAP 494, BCAR Part 31, Part 31 - Manned Free Balloons, August 1984
5.	Special Conditions:	None
6.	Reversion and Exemptions:	None
7.	Equivalent Safety Findings:	None

III. Technical Characteristics and Operational Limitations

1.	Type Design Definition:	Refer to Section 2, Table 2.1	
2.	Description:	Manned free hot-air balloon with the natural shape envelope of 1 200 – 6 000 m³ volume, (horizontal cutting) construction with 12, 16, 20 and 24 gores; parachute in top for control and rapid deflation; turning valves optional. . Heater system with double or quad burners. Conventional wicker baskets suspended beneath the envelope by steel cables and karabiners. Duraluminium fuel cylinders and other equipment/instruments fixed to the inner side of the basket wall.	
3.	Equipment:	- Altimeter - Rate of climb/descent indicator - Melting link indicator for the envelope overheating - Thermometer - Burner fuel pressure gauge	
4.	Envelope:	Refer to Section 2, see Table 2.2	
5.	Burner:	Refer to Section 2, see Table 2.3	
6.	Basket:	Refer to Section 2, see Table 2.4	
7.	Mass:	Maximum take-off mass:	Refer to Section 2 see Table 2.1
8.	Envelope Temperature:	Polyester fabric:	137°C (max. continuous limit) 147°C (max. short time limit)
		Polyamide fabric:	130°C (max. continuous limit) 137°C (max. short time limit)
9.	Minimum Flight Crew:	1 Pilot	
10.	Maximum number of persons on board:	See Flight Manual	
11.	Other Limitations:	Life limited parts – see Airworthiness Limitations (ALS) in the Maintenance Manual	

IV. Operating and Service Instructions

1. Légi üzemeltetési és Kiszolgálási Utasítás, jóváhagyva a Légügyi Igazgatóság L.1/11201/93 számú eljárásában 1994. április 29-én, vagy az EASA által jóváhagyott későbbi változat
   Flight and Service Manual, approved by the Hungarian Civil Aviation Inspectorate (HCAI) with reference L.1/11201/93, dated 29 April 1994, or later EASA approved version
2. Operating Instructions:

   Sup-Air Balloon Flight Manual, Edition 1./Revision 0, 23 January 2014,
   or later EASA approved supplements and revisions, (see also V.4.)

   Service Instructions:

   Sup-Air Balloon Maintenance Manual, Edition 1/Revision 0, 23 January 2014, (see also V.4.)

V. Notes

1. Manufacturing confined to approved Part 21 Subpart F or Subpart G organisation (Commission Regulation (EU) No 748/2012 of 3 August 2012).
2. SUP-AIR fuel cells approved for use with all SUP-AIR basket and burner models (at least 2 per model): Gas tanks that have been modified or specially manufactured for hot air balloon operation, as prescribed by Aviation Regulation no. 40.
3. Fuel cells produced by Cameron Balloons Ltd. (EASA.BA.013) or Schroeder fire balloons (EASA.BA.016) may be used as described by each of the manufacturer's Flight Manuals.
   These fuel cells may also be used for SUP-AIR baskets and burners. In this case the SUP-AIR burner fuel hoses couplings shall conform to the fuel cell's coupling system.
4. The Operating and Service Instructions under IV.2. are mandatory for SUP-AIR balloons of serial number 54 and up.

SECTION 2: SUP-AIR Series type definition and certification data

Table 2.1: Type Design

Model	Type design document n°	Reference date	Airworthiness Requirements (see II.4)	Certification basis (see II.3)	Approval date
SUP-AIR/D-AX 5	L.1.1./363/92	12 Dec 1990	BCAR 31	Aviation Regulation no. 40	16 March 1992
SUP-AIR/F-AX 7	L.1./363/92 L.1/11201/93	29 Dec 1993	BCAR 31	Aviation Regulation no. 40	24 February 1994
SUP-AIR/B-AX 8	L.1./363/92 L.1/11201/93	29 Dec 1993	BCAR 31	Aviation Regulation no. 40	24 February 1994
SUP-AIR/C-AX 9	L.1./363/92 L.1/11201/93	29 Dec 1993	BCAR 31	Aviation Regulation no. 40	24 February 1994
SUP-AIR/E-AX-10	L.1./363/92 L.1/11201/93	29 Dec 1993	BCAR 31	Aviation Regulation no. 40	24 February 1994

Table 2.2: Envelopes

Model	Drawing n°.	Volume [m³]	Gores [-]	MTOM [kg]	Approval date
SUP-AIR/D AX-5	D-100-00 AX-5	1 200	12	380	16 March 1992
SUP-AIR/F AX-7	F-100-00 AX-7	2 200	16	690	24 February 1994
SUP-AIR/B AX-8	B-100-00 AX-8	3 000	20	950	24 February 1994
SUP-AIR/C AX-9	C–100-00 AX-9	4 000	20	1 260	24 February 1994
SUP-AIR/E AX-10	E–100-00 AX-10	6 000	24	1 900	24 February 1994

Table 2.3: Burners

Model	Drawing n°.	Description	Applicable load frames [mm]	Certification basis (see II.3)	Approval date
RSz 04/1	RSZ 03/1-200-00	double	540 x 540 or 1000 x 1000	BCAR 31	24 February 1994
Kögáz III-2-1	634-00-00	double	600 x 600	BCAR 31	24 February 1994
Kögáz IV-4-0	633-00-00	quad	800 x 800	BCAR 31	24 February 1994

Table 2.4: Baskets

Model	Drawing n°.	Description [m]	Occupants [pilot+pax]	Certification basis (see II.3)	Approval date
SUP-AIR/AX-5	BA-10-000-5	1.0 x 1,2	1 + 0	BCAR 31	16 March 1992
SUP-AIR/AX-5/7	BA-10-000-5	1.0 x 1,2	1 + 2	BCAR 31	16 March 1992
SUP-AIR/AX-8	BA-10-000-5	1.25 x 1,5	1 + 4	BCAR 31	24 February 1994
SUP-AIR/AX-9	BA-10-000-5	1.25 x 2,0	1 + 6	BCAR 31	24 February 1994
SUP-AIR/AX-10	BA-10-000-6	1.5 x 2.7 single T	1 + 10	BCAR 31	24 February 1994
SUP-AIR/AX-10	BA-10-000-6	1.5 x 2.7 double T	1 + 10	BCAR 31	24 February 1994

Table 2.5: Approved configurations of envelopes and burners SUP-AIR Series

Envelope Model	Burner		
	RSz 04/1 double	Kögáz III-2-1double	Kögáz IV-4-0 quad
SUP-AIR/D AX-5	-	●	-
SUP-AIR/F AX-7	●	●	-
SUP-AIR/B AX-8	●	●	-
SUP-AIR/C AX-9	●	●	-
SUP-AIR/E AX-10	-	-	●

Table 2.6: Approved configurations of envelopes and baskets for SUP-AIR Series

Envelope Model	Basket				
	SUP-AIR/AX-5/7	SUP-AIR/AX-8	SUP-AIR/AX-9	SUP-AIR/AX-10 single T	SUP-AIR/AX-10 double T
SUP-AIR/D AX-5	●	-	-	-	
SUP-AIR/F AX-7	●	-	-	-	
SUP-AIR/B AX-8	●	●	-	-	
SUP-AIR/C AX-9	-	-	●	-	
SUP-AIR/E AX-10	-	-	-	●	●

Table 2.7: Approved combinations of SUP-AIR Series envelopes with other manufacturers' burners

Note: Only baskets, burners and load frames of the same manufacturer may be combined.

		Envelope Model				
	Burner	SUP-AIR/D AX-5	SUP-AIR/F AX-7	SUP-AIR/B AX-8	SUP-AIR/C AX-9	SUP-AIR/E AX-10
Cameron Balloons	**Colt C2, double, B2-100**	●	-	-	-	-
Schroeder fire balloons	**Optima IV, double**	-	-	●	-	-

Table 2.8: Approved combinations of SUP-AIR Series envelopes with other manufacturers' baskets/load frames

Note: Only baskets, burners and load frames of the same manufacturer may be combined.

		Envelope Model				
	Basket; Load Frame	SUP-AIR/D AX-5	SUP-AIR/F AX-7	SUP-AIR/B AX-8	SUP-AIR/C AX-9	SUP-AIR/E AX-10
Cameron Balloons	**CB3051; with CB2203, CB 2598, CB2562, CB2224, CB2560, CB2231, CB2847, CB2226**	●	-	-	-	-
Schroeder fire balloons	**III/4; with 201.2, 201.6, 201.7**	-	-	●	-	-

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