

European Aviation Safety Agency

EASA

**TYPE CERTIFICATE
DATA SHEET**

BB-S

Special Shape Manned Free Hot-Air Balloon

Type Certificate Holder: **BALÓNY KUBÍČEK spol. s r.o.**
Francouzská 8
602 00 Brno
CZECH REPUBLIC

Manufacturer: **BALÓNY KUBÍČEK spol. s r.o.**
Francouzská 8
602 00 Brno
CZECH REPUBLIC

For Variants: Special Shape Hot Air Balloon Type

Issue 4: 10 December 2007
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SECTION A1 GENERAL, BB-S Type Design

A I. General

- | | |
|----------------------------------|--|
| 1. Data Sheet No: EASA.BA.017 | Issue Date: 10 December 2007 |
| 2. Type / Variant or Model | |
| - Type: | BB-S |
| - Variant or Model: | Refer to Section A2 |
| 3. Airworthiness Category: | Normal |
| 4. Type Certificate Holder: | BALÓNY KUBÍČEK spol. s r.o.
Francouzská 81
602 00 Brno
Czech Republic |
| 5. Manufacturer: | BALÓNY KUBÍČEK spol. s r.o.
Francouzská 81
602 00 Brno
Czech Republic |
| 6. National Certification Date: | N/A |
| 7. CAA CZ Application Date: | N/A |
| 8. EASA Application Date: | Refer to Section A2, see Table 2 |
| 9. EASA Type Certification Date: | Refer to Section A2, see Table 2 |

A II. Certification Basis

- | | |
|--|--|
| 1. Reference Date for determining the applicable requirements: | Refer to Section A2, see Table 2 |
| 2. CAA CZ Type Certificate Data Sheet No: | N/A |
| 3. EASA Certification Basis: | See CRI A-01, dated – refer to Section A2, Table 2 |
| 4. Airworthiness Requirements: | Refer to Section A2, see Table 2 |
| 5. Special Conditions: | None |
| 6. Reversion and Exemptions: | None |
| 7. Equivalent Safety Findings: | - FAR 31.47 (d) endurance test for KOMET DUO burner from S/N 105
- CRI E-01, issue 2, dated February 15, 2007:
FAR § 31.47 (d)) endurance test for IGNIS burner |

A III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Refer to Section A2, see Table 2
2. Description: The free hot-air balloon with the non-conventional shaped envelopes of 1,000-6,000 m³ volume, vertical or horizontal constructions with 8-32 gores. The parachute or Smart Vent is used for closing of the vent opening. As option, the envelope can be equipped with rotation vent. The single backed up, double or triple burner is the heat source for the envelope. The basket is cane-work connected with the envelope by means of stainless-steel wires and karabiners with a screw gate. Preference of the basket and burner type should be provide with respect to the envelope size. Stainless, duralumin or titanium fuel cylinders (approved models see Flight Manual) fixed in the basket, the equipment and instruments are fixed on the inner side of the basket.
3. Equipment:
 - Altimeter
 - A rate of climb/descent indicator (variometer)
 - Melting link for the envelope overheating check
 - Fuel quantity gauge
 - Double ignition equipment
 - Drop line
 - Fire extinguisher
 - Heat-resistant cloth
4. Envelope: Refer to Section A2, see Table 2
5. Burner: Refer to Section A2, see Table 3
6. Basket: Refer to Section A2, see Table 4
7. Mass: Maximum take-off mass: Refer to Section A2, see Table 1
8. Envelope temperature: In accordance with the used fabric as follows:
 - Nylon, Polyurethane coated
Hot Air Balloons fabric max. 110°C
 - Polyester, Polyurethane or Acrylic coated
Hot Air Balloons fabric max. 124°C
9. Minimum Flight Crew: 1 Pilot
10. Maximum number of persons on board: In accordance with approved Flight Manual
11. Other Limitations:
 - For BB-S the single-unit burner type must not be used. It is applicable for bulletin BB/22b-1 too (see Section A V. Notes 1.)
 - VFR Day operations only

A IV. Operating and Service Instructions

1. Flight Manual for use with the Hot Air Balloon (Document No.: B.0102)
- issue refer to Section A2, see Table 1 or later EASA approved revision
2. Flight Manual Supplement for use with the special shaped hot-air balloon
(Document No.: refer to Section A2, see Table 1)
- issue refer to Section A2, see Table 1 or later EASA approved revision
3. Maintenance manual for use with the hot-air balloon (Document No.: B.0202)
- issue refer to Section A2, see Table 1 or later approved revision

A V. Notes

1. Applicable range of balloon parts or equipment from the other manufacturers – see the Optional Bulletin No. BB/22b-1.
2. The master documents of the Operating and Service Instructions listed in Section A IV. are issued in English language. Other languages may be provided by the Type Certificate holder.

SECTION A2: BB-S Type Definition and Certification Data

Table 1: BB-S Type Family

Model	Volume [m ³]	Gores [pcs.]	MTOM [kg]	Envelope	Burner	Basket	Flight Manual	Flight Manual Supplement	Maintenance Manual
CUBE	3400	16 Z-type	950	CUBE	III	II, III	<u>Issue 10</u> 9.1.2007	<u>B.0102-CUBE</u> <u>Issue 1</u> 5.2.2007	<u>Issue 8</u> 9.1.2007
FORKLIFT	3400	18 Z-type	900	FORKLIFT	III	I, II, III	<u>Issue 10</u> 9.1.2007	<u>B.0102-FORKLIFT</u> <u>Change 0</u> 29.3.2007	<u>Issue 8</u> 9.1.2007
SILO	3400	16 Z-type	950	SILO	III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-SILO</u> <u>Change 0</u> 30.7.2007	<u>Issue 8</u> 9.1.2007
ICE	2850	20 Z-type	800	ICE	III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-ICE</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007
BEAR	3000	20 Z-type	800	BEAR	III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-BEAR</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007
DHL	2600	24 Z-type	850	DHL	III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-DHL</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007
JUPOL	2500	16 Z-type	650	JUPOL	III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-JUPOL</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007
JAG	2400	14 Z-type	650	JAG	III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-JAG</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007
BEMB	3600	20 Z-type	950	BEMB	II,III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-BEMB</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007
JAGER	1800	14 Z-type	450	JAGER	II,III	I, II	<u>Issue 11</u> 17.7.2007	<u>B.0102-JAGER</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007
KRIGL	2600	14 Z-type	700	KRIGL	II,III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-KRIGL</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007
HEART	2400	18 Z-type	700	HEART	II,III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-HEART</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007
JAGER 28	2800	14 Z-type	800	JAGER 28	III	I, II, III	<u>Issue 11</u> 17.7.2007	<u>B.0102-JAGER 28</u> <u>Change 0</u> 10.12.2007	<u>Issue 8</u> 9.1.2007

Table 2: Envelopes

Model	EASA appl. date	Reference date for det. Airw.	EASA certification date	Certification basis	Airworthiness requirements	Drawing document No.
CUBE	11.9.2006	11.9.2006	2.3.2007	<u>CRI A-01</u> 11.12.2006	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053440</u> 1.11.2006
FORKLIFT	25.1.2007	25.1.2007	12.4.2007	<u>CRI A-01</u> 9.3.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053450</u> 20.2.2007
SILO	6.4.2007	6.4.2007	8.8.2007	<u>CRI A-01</u> 15.5.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053460</u> <u>20.4.2007</u>
ICE	23.5.2007	23.5.2007	10.12.2007	<u>CRI A-01</u> 10.12.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053530</u> 26.7.2007
BEAR	23.5.2007	23.5.2007	10.12.2007	<u>CRI A-01</u> 10.12.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053560</u> 26.7.2007
DHL	23.5.2007	23.5.2007	10.12.2007	<u>CRI A-01</u> 10.12.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053540</u> 26.7.2007
JUPOL	23.5.2007	23.5.2007	10.12.2007	<u>CRI A-01</u> 10.12.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053520</u> 26.7.2007
JAG	23.5.2007	23.5.2007	10.12.2007	<u>CRI A-01</u> 10.12.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053490</u> 26.7.2007
BEMB	23.5.2007	23.5.2007	10.12.2007	<u>CRI A-01</u> 10.12.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053510</u> 26.7.2007
JAGER	23.5.2007	23.5.2007	10.12.2007	<u>CRI A-01</u> 10.12.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053500</u> 26.7.2007
KRIGL	23.5.2007	23.5.2007	10.12.2007	<u>CRI A-01</u> 10.12.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053550</u> 26.7.2007
HEART	30.5.2007	30.5.2007	10.12.2007	<u>CRI A-01</u> 10.12.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053480</u> 26.7.2007
JAGER 28	14.5.2007	14.5.2007	10.12.2007	<u>CRI A-01</u> 12.8.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>55-053470</u> <u>20.6.2007</u>

Table 3: Burners

Model	CAA CZ appl. date	Reference date	CAA CZ certification date	Certification basis	Airworthiness requirements	Drawing document No.
	EASA appl. date		EASA certification date			
HB2	8.7.1992	8.7.1992	3.7.2002	---	FAR 31, Amdt. 31-4, September 11, 1980	<u>80-050450</u> 12.1.1999
	---		25.2.2005			
H3-D	8.7.1992	8.7.1992	10.2.1993	---	FAR 31, Amdt. 31-4, September 11, 1980	<u>80-050306</u> 7.3.1994
	---		25.2.2005			
KOMET DUO, from S/N 105	8.7.1992	8.7.1992	10.2.1993	---	FAR 31, Amdt. 31-7, April 24, 1996	<u>81-050676</u> Modification No. 99BB 22.7.2002
	---		25.2.2005			
IGNIS	---	16.11.2005	---	<u>CRI A-01</u> 15.2.2007	FAR 31, Amdt. 31-7, April 24, 1996	<u>84-053115.00</u> <u>84-053128.00</u> <u>84-053241.00</u>
	30.10.2005		2.3.2007			

Table 3a: Burners Category

Burner Category	Burner Model	Burner Description	Applicable Burners Frames
II	H3-D	Double burner with crossvent (crossflow vent)	Fixed Frame - H3 type
III	HB2 KOMET DUO from S/N 105 IGNIS - two units	Double burner with crossvent (crossflow vent) High Power Double burner High Power Double burner	Fixed Frame - H7 type Fixed / Vario Frame – basic, K25P Fixed / Vario Frame – basic, K25P

Table 4: Baskets

Model	CAA CZ appl. date	Reference date	CAA CZ certification date	Dimension	Certification basis	Airworthiness requirements	Drawing document No.
	EASA appl. date		EASA certification date				
K10	8.7.1992	8.7.1992	10.2.1993	0.85 x 1.00 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	61-050097 10.3.1993
	---		25.2.2005				
K12	8.7.1992	8.7.1992	10.2.1993	1.16 x 1.16 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	<u>61-050556</u> 10.3.1993
	---		25.2.2005				
K12A	8.7.1992	8.7.1992	10.2.1993	1.16 x 1.16 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	<u>61-050586</u> 10.3.1993
	---		25.2.2005				
K15	8.7.1992	8.7.1992	10.2.1993	1.16 x 1.25 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	<u>61-050111</u> 10.3.1993
	---		25.2.2005				
K16	8.7.1992	8.7.1992	10.2.1993	1.16 x 1.40 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	<u>61-050125</u> 10.3.1993
	---		25.2.2005				
K18	8.7.1992	8.7.1992	10.2.1993	1.16 x 1.55 m, height 1.10 m	---	FAR 31, Amdt. 31-4 September 11, 1980	<u>61-050135</u> 10.3.1993
	---		25.2.2005				
K22	8.7.1992	8.7.1992	10.2.1993	1.25 x 1.79 m, height 1.10 m	---	FAR 31, Amdt. 31-7 April 24, 1996	<u>62-052680</u> 19.7.2002
	---		25.2.2005				
J1	23.6.1992	23.6.1992	5.11.1992	1.23 x 1.23 m, height 1.00 m	---	FAR 31, Amdt. 31-4 September 11, 1980	<u>500 000</u> 17.2.1992
	---		10.12.2007				
J2	23.6.1992	23.6.1992	5.11.1992	1.23 x 1.35 m, height 1.00 m	---	FAR 31, Amdt. 31-4 September 11, 1980	<u>500 000</u> 17.2.1992
	---		10.12.2007				

Table 4a: Baskets Category

Basket Category	Basket Model	Basket Description	Applicable Burners Frames
I	K10	Open	Fixed / Vario Frame – basic
II	K12, K12A, K15, J1, J2	Open	Fixed / Vario Frame – basic
III	K16, K18, K22	Open	Fixed / Vario Frame – basic
