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# TYPE CERTIFICATE DATA SHEET

No. EASA.BA.011

**for**  
K-STU

**Type Certificate Holder**  
Ballonbau Wörner GmbH

Flughafenstraße 20  
86169 Augsburg  
Germany

For Models: K-STU/300  
K-STU/630  
K-STU/780  
K-STU/945  
K-STU/1000  
K-STU/1260  
K-STU/1680



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## SECTION 1: K-STU/300

### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | K-STU  |
| 1.2 Model                                     | K-STU/300  |
| 2. Airworthiness Category                     | Standard   |
| 3. Type Certificate Holder                    | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 4. Manufacturer                               | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 5. Type Certification Application Date to LBA | 9 February 1967  |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 12 November 1968   |
| 8. Type Certificate n°                        | EASA: EASA.BA.011<br>(LBA: 8002/BA, until Issue 12, November 1989)   |
| 9. EASA Type Certification Date               | 28 September 2003, in accordance with CR (EU)<br>1702/2003, Article 2, 3., (a), (i), 2 <sup>nd</sup> bullet, 1 <sup>st</sup> indented<br>bullet. |

### II. Certification Basis

- |   |  |
|---|--|
| 1. Reference Date for determining the applicable requirements | 9 February 1967  |
| 2. Certification Basis  | Defined by DVL/PfL/LBA letter I/30-8002/67 (H. Frieß),<br>dated 29 March 1967  |
| 3. Airworthiness Requirements                                 | 3.1 Bau- und Prüfvorschriften für Freiballone,<br>Ausgabe Februar 1938<br>(Design and inspection requirements for free<br>balloons, issue February 1938)<br><br>3.2 Vorläufige Lufttüchtigkeitsforderungen für bemannte<br>Gasballone (vLFGB),<br>(Preliminary airworthiness requirements for manned<br>gas balloons (vLFGB)), see also note V.3 |
| 4. Special Conditions   | none   |
| 5. Deviations   | none   |
| 6. Equivalent Safety Findings                                 | none   |

### III. Technical Characteristics and Operational Limitations

- |                           |  |
|---------------------------|--|
| 1. Type Design Definition | 1.1 Drawing list for free gas balloon type K-STU<br>comprising variant K-STU/300, issue November 1968,<br>LBA-approved, as well as approved subsequent<br>supplements and changes before 30 November 1989<br><br>1.2 Drawing list for free gas balloon type K-STU<br>comprising variants K-STU/300 up to K-STU/1680,<br>issue October 1989, LBA-approved 30 November |
|---------------------------|--|



1989, as well as approved subsequent supplements and changes, see also note V.2

## 2. Description

Manned free gas balloon with net.

Envelope: Spherical envelope of about 300 m<sup>3</sup> total volume, diameter approx. 8.3 m, net, lines and coated fabric electrostatically conductive; manually controllable lifting gas valve at the top.

Baskets: Conventional braided basket reinforced by wooden laths

Basket size	Dimensions [cm]	max. permissible number of occupants
I	80 x 65 x 110	1
II	95 x 80 x 110	2
III	110 x 95 x 110	3

Loading:

Loading size	for basket size
I	I, II, III

## 3. Equipment

1 Altimeter

1 Rate of climb indicator

## 4. Minimum Ballast

2 sacks à 15 kg

## 5. Occupants

Maximum: 3

Minimum: 1

## 6. Maximum Mass

348 kg

## 7. Life-limited Parts

see Maintenance Manual

## 8. Lifting Gas

Hydrogen (H<sub>2</sub>), Helium (He), Illuminating (coal) gas

## IV. Operating and Service Instructions

### 1. Operating Instructions

1.1 Flight and Operation Manual for the Free Gas Balloon, Issue January 1964 including supplement, dated November 1968, as well as subsequent approved supplements and changes

1.2 Up to and including Serial-No. 131:

Flight and Operation Manual, Issue January 1983, and subsequent approved supplements and changes

1.3 Subsequent serial numbers from Serial-No. 131 onwards: Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.2

### 2. Service Instructions

2.1 Flight and Operation Manual for the Free Gas Balloon, issue January 1964 including supplement, dated November 1968, as well as subsequent approved supplements and changes

2.2 Up to and including Serial-No. 131:

Flight and Operation Manual, issue January 1983, and subsequent approved supplements and changes, see note V.2

2.3 Subsequent serial numbers from Serial-No. 131 onwards: Flight and Operation Manual, issue August



1989, and subsequent approved supplements and changes, see note V.2

#### V. Notes

1. Manufacturing is confined to industrial production
2. According to Technical Note TN 8002-8 the Flight and Operation Manual, issue 3, dated August 1989, LBA-approved, dated 30 November 1989 is mandatory from Serial-No. 0322 onwards or when supplying spare parts.
3. From Serial-No. 1040 onwards the "Airworthiness Requirements for Manned Gas Balloon" (LFGB), issued 20 September 1993, are also applicable instead of "vLFGB" in II.3.2.
4. Maximum permissible number of occupants in the baskets may be limited according to Technical Note TN 8002-12 including revisions.

\* \* \*



## SECTION 2: K-STU/630

### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | K-STU  |
| 1.2 Model                                     | K-STU/630  |
| 2. Airworthiness Category                     | Standard   |
| 3. Type Certificate Holder                    | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 4. Manufacturer                               | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 5. Type Certification Application Date to LBA | 27 February 1963   |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 17 August 1964   |
| 8. Type Certificate n°                        | EASA: EASA.BA.011<br>(LBA: 8002/BA, until Issue 12, November 1989)   |
| 9. EASA Type Certification Date               | 28 September 2003, in accordance with CR (EU)<br>1702/2003, Article 2, 3., (a), (i), 2 <sup>nd</sup> bullet, 1 <sup>st</sup> indented<br>bullet. |

### II. Certification Basis

- |   |  |
|---|--|
| 1. Reference Date for determining the applicable requirements | 2 March 1963   |
| 2. Certification Basis  | Defined by LBA letter 3-8002/Tgb.-Nr. 497/63 (Rehm),<br>dated 2 March 1963   |
| 3. Airworthiness Requirements                                 | 3.1 Bau- und Prüfvorschriften für Freiballone,<br>Ausgabe Februar 1938<br>(Design and inspection requirements for free<br>balloons, issue February 1938)<br><br>3.2 Vorläufige Lufttüchtigkeitsforderungen für bemannte<br>Gasballone (vLFGB),<br>(Preliminary airworthiness requirements for manned<br>gas balloons (vLFGB)), see also note V.3 |
| 4. Special Conditions   | none   |
| 5. Deviations   | none   |
| 6. Equivalent Safety Findings                                 | none   |

### III. Technical Characteristics and Operational Limitations

- |                           |  |
|---------------------------|--|
| 1. Type Design Definition | 1.1 Drawing list for free gas balloon type K-STU<br>comprising variant K-STU/630, issue March 1963, LBA-<br>approved, as well as approved subsequent<br>supplements and changes before 30 November 1989<br><br>1.2 Drawing list for free gas balloon type K-STU<br>comprising variants K-STU/300 up to K-STU/1680,<br>issue October 1989, LBA-approved 30 November |
|---------------------------|--|



1989, as well as approved subsequent supplements and changes, see also note V.2

## 2. Description

Manned free gas balloon with net.

Envelope: Spherical envelope of about 361 m<sup>3</sup> until 630 m<sup>3</sup> total volume, diameter approx. 10.6 m, net, lines and coated fabric electrostatically conductive; manually controllable lifting gas valve at the top, see also note V.2

Baskets: Conventional braided basket reinforced by wooden laths

Basket size	Dimensions [cm]	max. permissible number of occupants
II	95 x 80 x 110	2
III	110 x 95 x 110	3
IV	125 x 105 x 110	4
V	135 x 115 x 110	5

Loadring:

Loadring size	for basket size
II, IIa	II, III, IV, V

## 3. Equipment

1 Altimeter

1 Rate of climb indicator

## 4. Minimum Ballast

4 sacks à 15 kg

## 5. Occupants

Maximum: 5

Minimum: 1

## 6. Maximum Mass

731 kg

## 7. Life-limited Parts

see Maintenance Manual

## 8. Lifting Gas

Hydrogen (H<sub>2</sub>), Helium (He), Illuminating (coal) gas

## IV. Operating and Service Instructions

### 1. Operating Instructions

1.1 Flight and Operation Manual for the Free Gas Balloon, Issue January 1964 including supplement, dated August 1964, as well as subsequent approved supplements and changes

1.2 Up to and including Serial-No. 134:  
Flight and Operation Manual, Issue January 1983, and subsequent approved supplements and changes

1.3 Subsequent serial numbers from Serial-No. 134 onwards: Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.3

### 2. Service Instructions

2.1 Flight and Operation Manual for the Free Gas Balloon, issue January 1964 including supplement, dated August 1964, as well as subsequent approved supplements and changes

2.2 Up to and including Serial-No. 134:  
Flight and Operation Manual, issue January 1983, and subsequent approved supplements and changes

2.3 Subsequent serial numbers from Serial-No. 134 onwards:



Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.3

V. Notes

1. Manufacturing is confined to industrial production
2. The use of an envelope of the balloon K-630/1-Ri is permitted if the modification is performed according to the Modification Note No. 2 of Ballonfabrik Augsburg, dated 7 August 1964
3. According to Technical Note TN 8002-8 the Flight and Operation Manual, issue 3, dated August 1989, LBA-approved, dated 30 November 1989 is mandatory from Serial-No. 0322 onwards or when supplying spare parts.
4. From Serial-No. 1040 onwards the "Airworthiness Requirements for Manned Gas Balloon" (LFGB), issued 20 September 1993, are also applicable instead of "vLFGB" in II.3.2.
5. Maximum permissible number of occupants in the baskets may be limited according to Technical Note TN 8002-12 including revisions.

\* \* \*





### SECTION 3: K-STU/780

#### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | K-STU  |
| 1.2 Model                                     | K-STU/780  |
| 2. Airworthiness Category                     | Standard   |
| 3. Type Certificate Holder                    | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 4. Manufacturer                               | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 5. Type Certification Application Date to LBA | 4 March 1968   |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 27 March 1968  |
| 8. Type Certificate n°                        | EASA: EASA.BA.011<br>(LBA: 8002/BA, until Issue 12, November 1989)   |
| 9. EASA Type Certification Date               | 28 September 2003, in accordance with CR (EU)<br>1702/2003, Article 2, 3., (a), (i), 2 <sup>nd</sup> bullet, 1 <sup>st</sup> indented<br>bullet. |

#### II. Certification Basis

- |   |  |
|---|--|
| 1. Reference Date for determining the applicable requirements | 25 March 1968  |
| 2. Certification Basis  | Defined by LBA letter I 30-8002/68 (H. Frieß),<br>dated 25 March 1968  |
| 3. Airworthiness Requirements                                 | 3.1 Bau- und Prüfvorschriften für Freiballone,<br>Ausgabe Februar 1938<br>(Design and inspection requirements for free<br>balloons, issue February 1938)<br><br>3.2 Vorläufige Lufttüchtigkeitsforderungen für bemannte<br>Gasballone (vLFGB),<br>(Preliminary airworthiness requirements for manned<br>gas balloons (vLFGB)), see also note V.3 |
| 4. Special Conditions   | none   |
| 5. Deviations   | none   |
| 6. Equivalent Safety Findings                                 | none   |

#### III. Technical Characteristics and Operational Limitations

- |                           |  |
|---------------------------|--|
| 1. Type Design Definition | 1.1 Drawing list for free gas balloon type K-STU<br>comprising variant K-STU/780, issue March 1968, LBA-<br>approved, as well as approved subsequent<br>supplements and changes before 30 November 1989<br><br>1.2 Drawing list for free gas balloon type K-STU<br>comprising variants K-STU/300 up to K-STU/1680,<br>issue October 1989, LBA-approved 30 November |
|---------------------------|--|



1989, as well as approved subsequent supplements and changes, see also note V.2

## 2. Description

Manned free gas balloon with net.

Envelope: Spherical envelope of about 631 m<sup>3</sup> until 780 m<sup>3</sup> total volume, diameter approx. 11.4 m, net, lines and coated fabric electrostatically conductive; manually controllable lifting gas valve at the top

Baskets: Conventional braided basket reinforced by wooden laths

Basket size	Dimensions [cm]	max. permissible number of occupants
III	110 x 95 x 110	3
IV	125 x 105 x 110	4
V	135 x 115 x 110	5
VI	145 x 125 x 110	6
Lightweight basket	125 x 105 x 110	4

Loading:

Loading size	for basket size
II, IIa	III, IV, V, VI Lightweight basket

## 3. Equipment

1 Altimeter

1 Rate of climb indicator

## 4. Minimum Ballast

4 sacks à 15 kg

## 5. Occupants

Maximum: 6

Minimum: 1

## 6. Maximum Mass

905 kg

## 7. Life-limited Parts

see Maintenance Manual

## 8. Lifting Gas

Hydrogen (H<sub>2</sub>), Helium (He), Illuminating (coal) gas

## IV. Operating and Service Instructions

### 1. Operating Instructions

1.1 Flight and Operation Manual for the Free Gas Balloon, Issue January 1964 including supplement, dated March 1968, as well as subsequent approved supplements and changes

1.2 Up to and including Serial-No. 305:  
Flight and Operation Manual, Issue January 1983, and subsequent approved supplements and changes

1.3 Subsequent serial numbers from Serial-No. 305 onwards:  
Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.2

### 2. Service Instructions

2.1 Flight and Operation Manual for the Free Gas Balloon, issue January 1964 including supplement, dated March 1968, as well as subsequent approved supplements and changes

2.2 Up to and including Serial-No. 305:



Flight and Operation Manual, issue January 1983, and subsequent approved supplements and changes

2.3 Subsequent serial numbers from Serial-No. 305 onwards:

Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.2

#### V. Notes

1. Manufacturing is confined to industrial production
2. According to Technical Note TN 8002-8 the Flight and Operation Manual, issue 3, dated August 1989, LBA-approved, dated 30 November 1989 is mandatory from Serial-No. 0322 onwards or when supplying spare parts.
3. From Serial-No. 1040 onwards the "Airworthiness Requirements for Manned Gas Balloon" (LFGB), issued 20 September 1993, are also applicable instead of "vLFGB" in II.3.2.
4. Maximum permissible number of occupants in the baskets may be limited according to Technical Note TN 8002-12 including revisions.

\* \* \*



## SECTION 4: K-STU/945

### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | K-STU  |
| 1.2 Model                                     | K-STU/945  |
| 2. Airworthiness Category                     | Standard   |
| 3. Type Certificate Holder                    | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 4. Manufacturer                               | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 5. Type Certification Application Date to LBA | 9 May 1963   |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 17 August 1964   |
| 8. Type Certificate n°                        | EASA: EASA.BA.011<br>(LBA: 8002/BA, until Issue 12, November 1989)   |
| 9. EASA Type Certification Date               | 28 September 2003, in accordance with CR (EU)<br>1702/2003, Article 2, 3., (a), (i), 2 <sup>nd</sup> bullet, 1 <sup>st</sup> indented<br>bullet. |

### II. Certification Basis

- |   |  |
|---|--|
| 1. Reference Date for determining the applicable requirements | 14 May 1963  |
| 2. Certification Basis  | Defined by LBA letter 3-8002/Tgb.-Nr. 1422/63 (Rehm),<br>dated 14 May 1963   |
| 3. Airworthiness Requirements                                 | 3.1 Bau- und Prüfvorschriften für Freiballone,<br>Ausgabe Februar 1938<br>(Design and inspection requirements for free<br>balloons, issue February 1938)<br><br>3.2 Vorläufige Lufttüchtigkeitsforderungen für bemannte<br>Gasballone (vLFGB),<br>(Preliminary airworthiness requirements for manned<br>gas balloons (vLFGB)), see also note V.3 |
| 4. Special Conditions   | none   |
| 5. Deviations   | none   |
| 6. Equivalent Safety Findings                                 | none   |

### III. Technical Characteristics and Operational Limitations

- |                           |  |
|---------------------------|--|
| 1. Type Design Definition | 1.1 Drawing list for free gas balloon type K-STU<br>comprising variant K-STU/945, issue August 1964,<br>LBA-approved, as well as approved subsequent<br>supplements and changes before 30 November 1989<br><br>1.2 Drawing list for free gas balloon type K-STU<br>comprising variants K-STU/300 up to K-STU/1680,<br>issue October 1989, LBA-approved 30 November |
|---------------------------|--|



1989, as well as approved subsequent supplements and changes, see also note V.2

## 2. Description

Manned free gas balloon with net.

Envelope: Spherical envelope of about 781 m<sup>3</sup> until 945 m<sup>3</sup> total volume, diameter approx. 12.2 m, net, lines and coated fabric electrostatically conductive; manually controllable lifting gas valve at the top

Baskets: Conventional braided basket reinforced by wooden laths

Basket size	Dimensions [cm]	max. permissible number of occupants
IV	125 x 105 x 110	4
V	135 x 115 x 110	5
VI	145 x 125 x 110	6
Lightweight basket	125 x 105 x 110	4

Loading:

Loading size	for basket size
III	IV, V, VI Lightweight basket

## 3. Equipment

1 Altimeter

1 Rate of climb indicator

## 4. Minimum Ballast

5 sacks à 15 kg

## 5. Occupants

Maximum: 6

Minimum: 1

## 6. Maximum Mass

1 100 kg

## 7. Life-limited Parts

see Maintenance Manual

## 8. Lifting Gas

Hydrogen (H<sub>2</sub>), Helium (He), Illuminating (coal) gas

## IV. Operating and Service Instructions

### 1. Operating Instructions

1.1 Flight and Operation Manual for the Free Gas Balloon, Issue January 1964 including supplement, dated August 1964, as well as subsequent approved supplements and changes

1.2 Up to and including Serial-No. 283:

Flight and Operation Manual, Issue January 1983, and subsequent approved supplements and changes

1.3 Subsequent serial numbers from Serial-No. 283 onwards:

Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.2

### 2. Service Instructions

2.1 Flight and Operation Manual for the Free Gas Balloon, issue January 1964 including supplement, dated August 1964, as well as subsequent approved supplements and changes

2.2 Up to and including Serial-No. 283:

Flight and Operation Manual, issue January 1983, and



subsequent approved supplements and changes

2.3 Subsequent serial numbers from Serial-No. 283  
onwards:

Flight and Operation Manual, issue August 1989, and  
subsequent approved supplements and changes,  
see note V.2

#### V. Notes

1. Manufacturing is confined to industrial production
2. According to Technical Note TN 8002-8 the Flight and Operation Manual, issue 3, dated August 1989, LBA-approved, dated 30 November 1989 is mandatory from Serial-No. 0322 onwards or when supplying spare parts.
3. From Serial-No. 1040 onwards the "Airworthiness Requirements for Manned Gas Balloon" (LFGB), issued 20 September 1993, are also applicable instead of "vLFGB" in II.3.2.
4. Maximum permissible number of occupants in the baskets may be limited according to Technical Note TN 8002-12 including revisions.

\* \* \*



## SECTION 5: K-STU/1000

### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | K-STU  |
| 1.2 Model                                     | K-STU/1000   |
| 2. Airworthiness Category                     | Standard   |
| 3. Type Certificate Holder                    | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 4. Manufacturer                               | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 5. Type Certification Application Date to LBA | 1 June 1971  |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 16 March 1972  |
| 8. Type Certificate n°                        | EASA: EASA.BA.011<br>(LBA: 8002/BA, until Issue 12, November 1989)   |
| 9. EASA Type Certification Date               | 28 September 2003, in accordance with CR (EU)<br>1702/2003, Article 2, 3., (a), (i), 2 <sup>nd</sup> bullet, 1 <sup>st</sup> indented<br>bullet. |

### II. Certification Basis

- |   |   |
|---|---|
| 1. Reference Date for determining the applicable requirements | 10 June 1971  |
| 2. Certification Basis  | Defined by LBA letter I 32-8002/71 (K. Koplin), dated 10 June 1971  |
| 3. Airworthiness Requirements                                 | 3.1 Bau- und Prüfvorschriften für Freiballone,<br>Ausgabe Februar 1938<br>(Design and inspection requirements for free balloons, issue February 1938)<br><br>3.2 Vorläufige Lufttüchtigkeitsforderungen für bemannte Gasballone (vLFGB),<br>(Preliminary airworthiness requirements for manned gas balloons (vLFGB)), see also note V.4 |
| 4. Special Conditions   | Preliminary guidelines for the prevention of accidents due to electrostatic charge with free balloons   |
| 5. Deviations   | none  |
| 6. Equivalent Safety Findings                                 | none  |

### III. Technical Characteristics and Operational Limitations

- |                           |  |
|---------------------------|--|
| 1. Type Design Definition | 1.1 Drawing list for free gas balloon type K-STU comprising variant K-STU/1000, issue March 1972, LBA-approved, as well as approved subsequent supplements and changes before 30 November 1989<br><br>1.2 Drawing list for free gas balloon type K-STU comprising variants K-STU/300 up to K-STU/1680, |
|---------------------------|--|



issue October 1989, LBA-approved 30 November 1989, as well as approved subsequent supplements and changes, see also note V.3

## 2. Description

Manned free gas balloon with net.

Envelope: Spherical envelope of about 946 m<sup>3</sup> until 1 000 m<sup>3</sup> total volume, diameter approx. 12.4 m, net, lines and coated fabric electrostatically conductive; manually controllable lifting gas valve at the top

Baskets: Conventional braided basket reinforced by wooden laths

Basket size	Dimensions [cm]	max. permissible number of occupants
IV	125 x 105 x 110	4
V	135 x 115 x 110	5
VI	145 x 125 x 110	6
Lightweight basket	125 x 105 x 110	4

Loading:

Loading size	for basket size
III	IV, V, VI Lightweight basket

## 3. Equipment

1 Altimeter

1 Rate of climb indicator

## 4. Minimum Ballast

5 sacks à 15 kg

## 5. Occupants

Maximum: 6

Minimum: 1

## 6. Maximum Mass

1 160 kg

## 7. Life-limited Parts

see Maintenance Manual

## 8. Lifting Gas

Hydrogen (H<sub>2</sub>), Helium (He), Illuminating (coal) gas

## IV. Operating and Service Instructions

### 1. Operating Instructions

1.1 Flight and Operation Manual for the Free Gas Balloon, Issue January 1964 including supplement, dated March 1972, as well as subsequent approved supplements and changes

1.2 Up to and including Serial-No. 312:

Flight and Operation Manual, Issue January 1983, and subsequent approved supplements and changes

1.3 Subsequent serial numbers from Serial-No. 312 onwards:

Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.3

### 2. Service Instructions

2.1 Flight and Operation Manual for the Free Gas Balloon, issue January 1964 including supplement, dated March 1972, as well as subsequent approved supplements and changes

2.2 Up to and including Serial-No. 312:





Flight and Operation Manual, issue January 1983, and subsequent approved supplements and changes

2.3 Subsequent serial numbers from Serial-No. 312 onwards:

Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.3

#### V. Notes

1. Manufacturing is confined to industrial production
2. The use of basket, load ring, net and valve of the type and variant K-1050/3-Ri together with an envelope of the variant K-STU/1000 according to Technical Note 8002-5, dated 11 April 1989 is permitted
3. According to Technical Note TN 8002-8 the Flight and Operation Manual, issue 3, dated August 1989, LBA-approved, dated 30 November 1989 is mandatory from Serial-No. 0322 onwards or when supplying spare parts.
4. From Serial-No. 1040 onwards the "Airworthiness Requirements for Manned Gas Balloon" (LFGB), issued 20 September 1993, are also applicable instead of "vLFGB" in II.3.2.
5. Maximum permissible number of occupants in the baskets may be limited according to Technical Note TN 8002-12 including revisions.

\* \* \*



## SECTION 6: K-STU/1260

### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | K-STU  |
| 1.2 Model                                     | K-STU/1260   |
| 2. Airworthiness Category                     | Standard   |
| 3. Type Certificate Holder                    | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 4. Manufacturer                               | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 5. Type Certification Application Date to LBA | 9 May 1963   |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 17 August 1964   |
| 8. Type Certificate n°                        | EASA: EASA.BA.011<br>(LBA: 8002/BA, until Issue 12, November 1989)   |
| 9. EASA Type Certification Date               | 28 September 2003, in accordance with CR (EU)<br>1702/2003, Article 2, 3., (a), (i), 2 <sup>nd</sup> bullet, 1 <sup>st</sup> indented<br>bullet. |

### II. Certification Basis

- |   |  |
|---|--|
| 1. Reference Date for determining the applicable requirements | 14 May 1963  |
| 2. Certification Basis  | Defined by LBA letter 3-8002/Tgb.-Nr. 1422/63 (Rehm),<br>dated 14 May 1963   |
| 3. Airworthiness Requirements                                 | 3.1 Bau- und Prüfvorschriften für Freiballone,<br>Ausgabe Februar 1938<br>(Design and inspection requirements for free<br>balloons, issue February 1938)<br><br>3.2 Vorläufige Lufttüchtigkeitsforderungen für bemannte<br>Gasballone (vLFGB),<br>(Preliminary airworthiness requirements for manned<br>gas balloons (vLFGB)), see also note V.3 |
| 4. Special Conditions   | Preliminary guidelines for the prevention of accidents<br>due to electrostatical charge with free balloons   |
| 5. Deviations   | none   |
| 6. Equivalent Safety Findings                                 | none   |

### III. Technical Characteristics and Operational Limitations

- |                           |   |
|---------------------------|---|
| 1. Type Design Definition | 1.1 Drawing list for free gas balloon type K-STU<br>comprising variant K-STU/1260, issue August 1964,<br>LBA-approved, as well as approved subsequent<br>supplements and changes before 30 November 1989<br><br>1.2 Drawing list for free gas balloon type K-STU<br>comprising variants K-STU/300 up to K-STU/1680, |
|---------------------------|---|



issue October 1989, LBA-approved 30 November 1989, as well as approved subsequent supplements and changes, see also note V.2

## 2. Description

Manned free gas balloon with net.

Envelope: Spherical envelope of about 1 001 m<sup>3</sup> until 1 260 m<sup>3</sup> total volume, diameter approx. 13.4 m, net, lines and coated fabric electrostatically conductive; manually controllable lifting gas valve at the top

Baskets: Conventional braided basket reinforced by wooden laths

Basket size	Dimensions [cm]	max. permissible number of occupants
IV	125 x 105 x 110	4
V	135 x 115 x 110	5
VI	145 x 125 x 110	6

Loading:

Loading size	for basket size
III	IV, V, VI

## 3. Equipment

- 1 Altimeter
- 1 Rate of climb indicator

## 4. Minimum Ballast

6 sacks à 15 kg

## 5. Occupants

Maximum: 6  
Minimum: 1

## 6. Maximum Mass

1 462 kg

## 7. Life-limited Parts

see Maintenance Manual

## 8. Lifting Gas

Hydrogen (H<sub>2</sub>), Helium (He), Illuminating (coal) gas

## IV. Operating and Service Instructions

### 1. Operating Instructions

1.1 Flight and Operation Manual for the Free Gas Balloon, Issue January 1964 including supplement, dated August 1964, as well as subsequent approved supplements and changes

1.2 Up to and including Serial-No. 309:  
Flight and Operation Manual, Issue January 1983, and subsequent approved supplements and changes

1.3 Subsequent serial numbers from Serial-No. 309 onwards:  
Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.2

### 2. Service Instructions

2.1 Flight and Operation Manual for the Free Gas Balloon, issue January 1964 including supplement, dated August 1964, as well as subsequent approved supplements and changes

2.2 Up to and including Serial-No. 309:  
Flight and Operation Manual, issue January 1983, and subsequent approved supplements and changes

2.3 Subsequent serial numbers from Serial-No. 309



onwards:  
Flight and Operation Manual, issue August 1989, and  
subsequent approved supplements and changes,  
see note V.2

#### V. Notes

1. Manufacturing is confined to industrial production
2. According to Technical Note TN 8002-8 the Flight and Operation Manual, issue 3, dated August 1989, LBA-approved, dated 30 November 1989 is mandatory from Serial-No. 0322 onwards or when supplying spare parts.
3. From Serial-No. 1040 onwards the "Airworthiness Requirements for Manned Gas Balloon" (LFGB), issued 20 September 1993, are also applicable instead of "vLFGB" in II.3.2.
4. Maximum permissible number of occupants in the baskets may be limited according to Technical Note TN 8002-12 including revisions.

\* \* \*



## SECTION 7: K-STU/1680

### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | K-STU  |
| 1.2 Model                                     | K-STU/1680   |
| 2. Airworthiness Category                     | Standard   |
| 3. Type Certificate Holder                    | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 4. Manufacturer                               | Ballonbau Wörner GmbH<br>Flughafenstraße 20<br>86169 Augsburg<br>Germany   |
| 5. Type Certification Application Date to LBA | 19 July 1965   |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 12 April 1966  |
| 8. Type Certificate n°                        | EASA: EASA.BA.011<br>(LBA: 8002/BA, until Issue 12, November 1989)   |
| 9. EASA Type Certification Date               | 28 September 2003, in accordance with CR (EU)<br>1702/2003, Article 2, 3., (a), (i), 2 <sup>nd</sup> bullet, 1 <sup>st</sup> indented<br>bullet. |

### II. Certification Basis

- |   |  |
|---|--|
| 1. Reference Date for determining the applicable requirements | 23 July 1965   |
| 2. Certification Basis  | Defined by LBA letter 14-8002/65 (Rehm), dated 23 July 1965  |
| 3. Airworthiness Requirements                                 | 3.1 Bau- und Prüfvorschriften für Freiballone,<br>Ausgabe Februar 1938<br>(Design and inspection requirements for free<br>balloons, issue February 1938)<br><br>3.2 Vorläufige Lufttüchtigkeitsforderungen für bemannte<br>Gasballone (vLFGB),<br>(Preliminary airworthiness requirements for manned<br>gas balloons (vLFGB)), see also note V.3 |
| 4. Special Conditions   | none   |
| 5. Deviations   | none   |
| 6. Equivalent Safety Findings                                 | none   |

### III. Technical Characteristics and Operational Limitations

- |                           |   |
|---------------------------|---|
| 1. Type Design Definition | 1.1 Drawing list for free gas balloon type K-STU<br>comprising variant K-STU/1680, issue April 1966, LBA-<br>approved, as well as approved subsequent<br>supplements and changes before 30 November 1989<br><br>1.2 Drawing list for free gas balloon type K-STU<br>comprising variants K-STU/300 up to K-STU/1680,<br>issue October 1989, LBA-approved 30 November |
|---------------------------|---|



1989, as well as approved subsequent supplements and changes, see also note V.2

## 2. Description

Manned free gas balloon with net.

Envelope: Spherical envelope of about 1 261 m<sup>3</sup> until 1 680 m<sup>3</sup> total volume, diameter approx. 14.7 m, net, lines and coated fabric electrostatically conductive; manually controllable lifting gas valve at the top

Baskets: Conventional braided basket reinforced by wooden laths

Basket size	Dimensions [cm]	max. permissible number of occupants
V	135 x 115 x 110	5
VI	145 x 125 x 110	6

Loading:

Loading size	for basket size
III	V, VI

## 3. Equipment

1 Altimeter

1 Rate of climb indicator

## 4. Minimum Ballast

8 sacks à 15 kg

## 5. Occupants

Maximum: 6

Minimum: 1

## 6. Maximum Mass

1 950 kg

## 7. Life-limited Parts

see Maintenance Manual

## 8. Lifting Gas

Hydrogen (H<sub>2</sub>), Helium (He), Illuminating (coal) gas

## IV. Operating and Service Instructions

### 1. Operating Instructions

1.1 Flight and Operation Manual for the Free Gas Balloon, Issue January 1964 including supplement, dated April 1966, as well as subsequent approved supplements and changes

1.2 Up to and including Serial-No. 401:

Flight and Operation Manual, Issue January 1983, and subsequent approved supplements and changes

1.3 Subsequent serial numbers from Serial-No. 401 onwards:

Flight and Operation Manual, issue August 1989, and subsequent approved supplements and changes, see note V.2

### 2. Service Instructions

2.1 Flight and Operation Manual for the Free Gas Balloon, issue January 1964 including supplement, dated April 1966, as well as subsequent approved supplements and changes

2.2 Up to and including Serial-No. 401:

Flight and Operation Manual, issue January 1983, and subsequent approved supplements and changes

2.3 Subsequent serial numbers from Serial-No. 401 onwards:

Flight and Operation Manual, issue August 1989, and



subsequent approved supplements and changes,  
see note V.2

#### V. Notes

1. Manufacturing is confined to industrial production
2. According to Technical Note TN 8002-8 the Flight and Operation Manual, issue 3, dated August 1989, LBA-approved, dated 30 November 1989 is mandatory from Serial-No. 0322 onwards or when supplying spare parts.
3. From Serial-No. 1040 onwards the "Airworthiness Requirements for Manned Gas Balloon" (LFGB), issued 20 September 1993, are also applicable instead of "vLFGB" in II.3.2.
4. Maximum permissible number of occupants in the baskets may be limited according to Technical Note TN 8002-12 including revisions.

\* \* \*



## SECTION: ADMINISTRATIVE

### I. Acronyms and Abbreviations

DVL	Deutsche Versuchsanstalt für Luftfahrt e.V., Mülheim/Ruhr, Germany	PfL	Prüfstelle für Luftfahrt, Essen-Mülheim, Germany
LBA	Luftfahrt-Bundesamt German Federal Office for Civil Aviation		
LFGB	Lufttüchtigkeitsforderungen für bemannte Gasballone		

### II. Type Certificate Holder Record

II.1 Type Certificate Holder	Period
Ballonbau Wörner GmbH Zirbelstrasse 57c 86154 Augsburg, Germany	From 17 Sep 1999
Ballonbau Wörner GmbH Flughafenstraße 20 86169 Augsburg, Germany	since 01.09.2021

### III. Change Record

Issue	Date	Changes	TC issue
Issue 1	2 Jun 2005	Initial issue of EASA TCDS	2 June 2005
Issue 2	23 Oct 2023	SECTION 1 till 7: - I.3, I.4.: change of TC Holder and Manufacturer address - I.9: legal reference to EASA Type Certification Date added SECTION: ADMINISTRATIVE - II.1: TC Holder record updated All pages: EASA TCDS format updated	n/a

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