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# TYPE CERTIFICATE DATA SHEET

No. EASA.BA.008

**for**  
FKP-STU

**Type Certificate Holder**  
Ballonbau Wörner GmbH

Flughafenstraße 20  
86169 Augsburg  
Germany

For Models: FKP-STU/280  
FKP-STU/380  
FKP-STU/510



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## SECTION 1: FKP-STU/280

### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | FKP-STU  |
| 1.2 Model                                     | FKP-STU/280  |
| 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 | 5 March 1999   |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 20 October 1999  |
| 8. Type Certificate n°                        | EASA: EASA.BA.008<br>(LBA: 8076/BA, until Issue 3, 26 June 2000)   |
| 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 | 26 March 1999  |
| 2. Certification Basis  | Defined by LBA letter M332-8076/99.1, dated 26 March 1999, and, M332-8076/99.2, dated 28 April 1999  |
| 3. Airworthiness Requirements                                 | Airworthiness Requirements for Manned Tethered Gas Balloons for Passenger Transport, Issue 17 August 1997  |
| 4. Special Conditions   | none   |
| 5. Deviations   | none   |
| 6. Equivalent Safety Findings                                 | §1(b): (1) Anchoring to the ground can be replaced by adequate ballast attached to the winch<br>§1(b): (4, 6) Gondola replaced by seat harness<br>§27(c): Seat harness is equivalent to the safety of a gondola<br>§49(c): Manually operated valve replaced by a second overpressure valve<br>§59(c): Cross-beam cable adequate to hand hold<br>§71(c): (1, 2) Activation of the over pressure opening or the over pressure valve viewable from the ground<br>§71(c): (3) Tether cable angle warning optically/acoustically<br>§81(a): Storage of Flight Manual at the winch |



### III. Technical Characteristics and Operational Limitations

- |    |                        |   |
|----|------------------------|---|
| 1. | Type Design Definition | Drawing list for tethered gas balloon type FKP-STU, issue August 1999, LBA-approved 17 September 1999, as well as subsequent approved supplements and changes   |
| 2. | Description            | <p>Stationary operated tethered gas balloon for passenger transport.</p> <p><u>Envelope:</u> Spherical envelope of about 280 m<sup>3</sup> total volume consisting of 18 vertical envelope gores, coated fabric; load transfer by tape arch system and lines; bungee tensioned expansion gore; two automatically controlled over pressure valves, optionally one over pressure opening.</p> <p><u>Trapeze:</u> Two seat harnesses suspended beneath a stainless steel cross- beam instead of a gondola.</p> |
| 3. | Equipment              | <ul style="list-style-type: none"><li>1 Intercom system</li><li>1 suitable lighting source to illuminate the envelope during night operation</li></ul>  |
| 4. | Ground facilities with | <p>Electric cable winch as ascent/descent device with cable force delimiter and driven cable drum; stationary fixed to the ground or mounted on a mobile crawler or a platform trailer additional ballast as a counter weight.</p> <p>Winch type: Tirak X500PB</p> <p>Maximum unspooled tether cable length:</p> <p>in daytime: 75 m (246 ft)</p> <p>in night time: 40 m (131 ft)</p>   |
| 5. | Occupants              | <p>Maximum: 2</p> <p>Minimum: 0</p>   |
| 6. | Maximum Mass           | 308 kg  |
| 7. | Life-limited Parts     | see Maintenance Manual  |
| 8. | Lifting Gas            | Helium (He)   |

### IV. Operating and Service Instructions

- |    |                        |  |
|----|------------------------|--|
| 1. | Operating Instructions | Operation Manual for the tethered gas balloon FKP-STU, issue 1, LBA approved September 1999, and subsequent approved supplements and changes |
| 2. | Service Instructions   | Maintenance Manual for the tethered gas balloon FKP-STU, issue 1, September 1999, as well as subsequent supplements and changes              |

### V. Notes

- 1. Manufacturing is confined to industrial production
- 2. Certified for commercial passenger transport

\* \* \*



## SECTION 2: FKP-STU/380

### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | FKP-STU  |
| 1.2 Model                                     | FKP-STU/380  |
| 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 | 5 March 1999   |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 17 September 1999  |
| 8. Type Certificate n°                        | EASA: EASA.BA.008<br>(LBA: 8076/BA, until Issue 3, 26 June 2000)   |
| 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 | 26 March 1999   |
| 2. Airworthiness Requirements                                 | Defined by LBA letter M332-8076/99.1, dated 26 March 1999, and, M332-8076/99.2, dated 28 April 1999   |
| 3. Special Conditions   | none  |
| 4. Deviations   | none  |
| 5. Equivalent Safety Findings                                 | §1(b): (1) Anchoring to the ground can be replaced by adequate ballast attached to the winch<br>§1(b): (4, 6) Gondola replaced by seat harness<br>§27(c): Seat harness is equivalent to the safety of a gondola<br>§49(c): Manually operated valve replaced by a second overpressure valve<br>§59(c): Crossbeam cable adequate to hand hold<br>§71(c): (1, 2) Activation of the over pressure opening or the over pressure valve viewable from the ground<br>§71(c): (3) Tether cable angle warning optically/acoustically<br>§81(a): Storage of Flight Manual at the winch |



### III. Technical Characteristics and Operational Limitations

- |    |                        |   |
|----|------------------------|---|
| 1. | Type Design Definition | Drawing list for tethered gas balloon type FKP-STU, issue August 1999, LBA-approved 17 September 1999, as well as subsequent approved supplements and changes   |
| 2. | Description            | <p>Stationary operated tethered gas balloon for passenger transport.</p> <p><u>Envelope:</u> Spherical envelope of about 380 m<sup>3</sup> total volume consisting of 20 vertical envelope gores, coated fabric; load transfer by tape arch system and lines; bungee tensioned expansion gore; two automatically controlled over pressure valves, optionally one over pressure opening.</p> <p><u>Trapeze:</u> Two seat harnesses suspended beneath a stainless steel cross- beam instead of a gondola.</p> |
| 3. | Equipment              | <ul style="list-style-type: none"><li>1 Intercom system</li><li>1 suitable lighting source to illuminate the envelope during night operation</li></ul>  |
| 4. | Ground facilities with | <p>Electric cable winch as ascent/descent device with cable force delimiter and driven cable drum; stationary fixed to the ground or mounted on a mobile crawler or a platform trailer additional ballast as a counter weight.</p> <p>Winch type: Tirak X500PB</p> <p>Maximum unspooled tether cable length:</p> <p>in daytime: 75 m (246 ft)</p> <p>in night time: 40 m (131 ft)</p>   |
| 5. | Occupants              | <p>Maximum: 2</p> <p>Minimum: 0</p>   |
| 6. | Maximum Mass           | 418 kg  |
| 7. | Life-limited Parts     | see Maintenance Manual  |
| 8. | Lifting Gas            | Helium (He)   |

### IV. Operating and Service Instructions

- |    |                        |  |
|----|------------------------|--|
| 1. | Operating Instructions | Operation Manual for the tethered gas balloon FKP-STU, issue 1, LBA approved September 1999, and subsequent approved supplements and changes |
| 2. | Service Instructions   | Maintenance Manual for the tethered gas balloon FKP-STU, issue 1, September 1999, as well as subsequent supplements and changes              |

### V. Notes

- 1. Manufacturing is confined to industrial production
- 2. Certified for commercial passenger transport

\* \* \*



### SECTION 3: FKP-STU/510

#### I. General

- |   |  |
|---|--|
| 1. Type/ Model                                |  |
| 1.1 Type                                      | FKP-STU  |
| 1.2 Model                                     | FKP-STU/380  |
| 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 | 5 March 1999   |
| 6. State of Design Authority                  | EASA   |
| 7. Type Certificate Date by LBA               | 20 October 1999  |
| 8. Type Certificate n°                        | EASA: EASA.BA.008<br>(LBA: 8076/BA, until Issue 2, 26 June 2000)   |
| 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 | 26 March 1999  |
| 2. Airworthiness Requirements                                 | Defined by LBA letter M332-8076/99.1, dated 26 March 1999, and, M332-8076/99.2, dated 28 April 1999  |
| 3. Special Conditions   | none   |
| 4. Deviations   | none   |
| 5. Equivalent Safety Findings                                 | §1(b): (1) Anchoring to the ground can be replaced by<br>adequate ballast attached to the winch<br>§1(b): (4, 6) Gondola replaced by seat harness<br>§27(c): Seat harness is equivalent to the safety of a<br>gondola<br>§49(c): Manually operated valve replaced by a second<br>overpressure valve<br>§59(c): Crossbeam cable adequate to hand hold<br>§71(c): (1, 2) Activation of the over pressure opening or<br>the over pressure valve viewable from the ground<br>§71(c): (3) Tether cable angle warning<br>optically/acoustically<br>§81(a): Storage of Flight Manual at the winch |



### III. Technical Characteristics and Operational Limitations

- |    |                        |   |
|----|------------------------|---|
| 1. | Type Design Definition | Drawing list for tethered gas balloon type FKP-STU, issue August 1999, LBA-approved 17 September 1999, as well as subsequent approved supplements and changes   |
| 2. | Description            | <p>Stationary operated tethered gas balloon for passenger transport.</p> <p><u>Envelope:</u> Spherical envelope of about 510 m<sup>3</sup> total volume consisting of 22 vertical envelope gores, coated fabric; load transfer by tape arch system and lines; bungee tensioned expansion gore; two automatically controlled over pressure valves, optionally one over pressure opening.</p> <p><u>Trapeze:</u> Two seat harnesses suspended beneath a stainless steel cross- beam instead of a gondola.</p> |
| 3. | Equipment              | <ul style="list-style-type: none"><li>1 Intercom system</li><li>1 suitable lighting source to illuminate the envelope during night operation</li></ul>  |
| 4. | Ground facilities with | <p>Electric cable winch as ascent/descent device with cable force delimiter and driven cable drum; stationary fixed to the ground or mounted on a mobile crawler or a platform trailer additional ballast as a counter weight.</p> <p>Winch type: Tirak X1020PB</p> <p>Maximum unspooled tether cable length:</p> <p>in daytime: 75 m (246 ft)</p> <p>in night time: 40 m (131 ft)</p>  |
| 5. | Occupants              | <p>Maximum: 2</p> <p>Minimum: 0</p>   |
| 6. | Maximum Mass           | 561 kg  |
| 7. | Life-limited Parts     | see Maintenance Manual  |
| 8. | Lifting Gas            | Helium (He)   |

### IV. Operating and Service Instructions

- |    |                        |  |
|----|------------------------|--|
| 1. | Operating Instructions | Operation Manual for the tethered gas balloon FKP-STU, issue 1, LBA approved September 1999, and subsequent approved supplements and changes |
| 2. | Service Instructions   | Maintenance Manual for the tethered gas balloon FKP-STU, issue 1, September 1999, as well as subsequent supplements and changes              |

### V. Notes

- 1. Manufacturing is confined to industrial production
- 2. Certified for commercial passenger transport

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## SECTION: ADMINISTRATIVE

### I. Acronyms and Abbreviations

LBA      Luftfahrt-Bundesamt  
            German Federal Office for Civil Aviation

### 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 1,2 and 3: - 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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