European Aviation Safety Agency

EASA

TYPE-CERTIFICATE
DATA SHEET

Zeppelin LZ N07

Normal and Commuter Airship

Type Certificate Holder:
Zeppelin Luftschifftechnik GmbH & Co KG
Friedrichshafen, Germany

Manufacturer:
Zeppelin Luftschifftechnik GmbH & Co KG
Friedrichshafen, Germany

Variants:

LZ N07-100

Issue 1: 28 April 2005
Issue 2: 26 July 2007
Issue 3: 17 June 2008

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SECTION 1: LZ N07-100

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I. General

1. Data Sheet No. EASA.AS.001 Issue Date: 17 June 2008
2. Type/Variant or Model LZ N07-100
3. Airworthiness Category Normal and Commuter Category
4. Type Certificate Holder Zeppelin Luftschifftechnik GmbH & Co KG
   Allmannsweilerstraße 132
   88046 Friedrichshafen
   Germany
5. Manufacturer Zeppelin Luftschifftechnik GmbH & Co KG
   Allmannsweilerstraße 132
   88046 Friedrichshafen
   Germany
6. LBA Type Certification Date 26 April 2001, LBA TC No. 9004
7. LBA Application Date 15 March 1994
8. LBA Recommendation Date n/a
9. EASA Type Certification Date 28 April 2005
10. TCDS History This EASA TCDS replaces the German TCDS Nr. 9004 Issue 3 dated 21 September 2003 issued by the LBA

II. Certification Basis

1. Reference Date for Determining the Applicable Requirements 15 March 1994

Certification Basis Defined by “Type Certification Basis LBA, Document 07 TD 01 004 issue A-03” or later valid versions

Airworthiness Requirements Airworthiness Requirements for Normal and Commuter Category Airships (LFLS), issue September 1995

Additional Requirements:

- CRI C-1/Load Reliable Load Validation acc. FAR 25.301(b)
- CRI D-1/Flam Flammability of passenger seat cushions
- CRI D-13/Ditching Floating Analysis
- CRI D-15/Heating Installation of Fuel Burning Heater Equipment (Option)
- CRI E-1/Prop Remote driven thrust vector propulsion system
- CRI F-1 HIRF High intensity radiated fields (HIRF)
- CRI F-1/SWAB SW Qualification: Transition to RTCA DO-178B/ED-12B
- CRI F-3/ASIC Electronic Hardware Design Assurance (ASIC)
- CRI F-4/LCD Liquid Crystal Displays (LCD)
- CRI F-5/COTS Use of Commercial Off-The Shelf Software Avionics
## Interpretative Material

<table>
<thead>
<tr>
<th>CRI</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-2/Belt</td>
<td>Two point shoulder harness for passenger seat</td>
</tr>
<tr>
<td>D-4/Composite</td>
<td>Composite Aircraft Structure</td>
</tr>
<tr>
<td>D-5/Flight Controls</td>
<td>Interpretation of dual redundant</td>
</tr>
<tr>
<td>D-12/C39b</td>
<td>Seats shall comply with TSO C39b approved by ZLT</td>
</tr>
<tr>
<td>D-14/Evacuation</td>
<td>Emergency Evacuation Demonstration and Procedure</td>
</tr>
<tr>
<td>D-16/Toilet</td>
<td>Toilet installation in Cabin</td>
</tr>
</tbody>
</table>

## Elected to Comply Requirements

<table>
<thead>
<tr>
<th>CRI</th>
<th>Description</th>
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<tbody>
<tr>
<td>A-1/Noise</td>
<td>External noise certification LuftVG §2</td>
</tr>
<tr>
<td>A-3/CVFR</td>
<td>Minimum equipment LuftBO/FSAV/CVFR/Cabin Safety</td>
</tr>
<tr>
<td>A-4/VFR/CVFR-Night Operation</td>
<td>Minimum equipment VFR/CVFR-Night Operation</td>
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</table>

## Special Conditions

<table>
<thead>
<tr>
<th>CRI</th>
<th>Description</th>
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<tbody>
<tr>
<td>B-3/Limiter AIU</td>
<td>Speed Control/ AIU/ Limiter</td>
</tr>
<tr>
<td>B-4/Longitude</td>
<td>Longitudinal Control $\pm 30^\circ$</td>
</tr>
<tr>
<td>D-6/Controls Location</td>
<td>Controls Location with Respect to Propeller Hub</td>
</tr>
<tr>
<td>D-7/Controls Arrangement</td>
<td>Cockpit Controls Arrangement</td>
</tr>
<tr>
<td>D-8/Exit</td>
<td>Additional exit for commuter equivalent safety</td>
</tr>
<tr>
<td>F-6/LED LED Colour for EPI-PU</td>
<td>LED Colour for EPI-PU</td>
</tr>
</tbody>
</table>

## Exemptions

- none

## Equivalent Level of Safety Findings

<table>
<thead>
<tr>
<th>CRI</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>B-1/Single Engine fail</td>
<td>Single Engine Failure</td>
</tr>
<tr>
<td>B-2/All Engine out</td>
<td>All Engine Failure</td>
</tr>
<tr>
<td>D-9/Envelope Design</td>
<td>Envelope Design</td>
</tr>
<tr>
<td>D-11/Pressure System</td>
<td>Pressure System</td>
</tr>
<tr>
<td>E-2/Auxiliary Vectoring</td>
<td>Auxiliary Thrust Vectoring</td>
</tr>
<tr>
<td>F-7/Light Bow Light Dihedral Angle</td>
<td>Bow Light Dihedral Angle</td>
</tr>
</tbody>
</table>

## Environmental Standards

- German noise requirements LVL for Aircraft, dated 1 July 2003, part IV, second section
  
  *Lärmvorschrift für Luftfahrzeuge (LVL) vom 1. Juli 2003, Teil IV, zweiter Abschnitt*
III. Technical Characteristics and Operational Limitations

1. Type Design Definition

Airship Configuration List / Type Certification Definition, Document 07 TD 01 003 in the latest valid version

2. Description

Airship with pressurised envelope and rigid framework inside the envelope made of triangular carbon-fibre frames and three aluminium longerons braced by aramide cables, three engines with vectored thrust propellers and one lateral propeller, three carbon-fibre stabilizers in an inverted Y-configuration, 2-channel Fly-by-Wire flight control system for the aerodynamic surfaces and vectored thrust units, carbon-fibre cabin with two doors, forward and aft ballonet with automatically and manually operated air valves, two automatically and manually operated helium valves at the right side and one emergency helium valve at the top of the envelope.

All the main components of the airship such as cabin, empennage and engines are mounted on the rigid structure.

3. Equipment

Minimum equipment as defined by document 07 EQ 34 002 and 07 BF 25 602 in the latest valid version

4. Dimensions

<table>
<thead>
<tr>
<th>Volume</th>
<th>Unit</th>
<th>8,450 m³</th>
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<tbody>
<tr>
<td>envelope</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ballonet fwd</td>
<td>m³</td>
<td>600 m³,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>410 m³ (Option B10/20)</td>
</tr>
<tr>
<td>ballonet aft</td>
<td>m³</td>
<td>1,600 m³,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,065 m³ (Option B20)</td>
</tr>
<tr>
<td>Length</td>
<td>m</td>
<td>75.1</td>
</tr>
<tr>
<td>Diameter</td>
<td>m</td>
<td>14.2</td>
</tr>
<tr>
<td>Maximum width</td>
<td>m</td>
<td>19.5</td>
</tr>
<tr>
<td>Height</td>
<td>m</td>
<td>19.4</td>
</tr>
</tbody>
</table>

5. Powerplant

5.1 Engine

Type designation : Textron-Lycoming IO-360-C1G6
LBA-TCDS number : 4596
Number : 3
Maximum permissible RPM : 2,700 min⁻¹
Maximum permissible continuous RPM : 2,700 min⁻¹

5.2 Vectored Thrust Propeller

Type designation : Hoffmann HO-V373()-D
LBA-TCDS number : 32.130/96
Number : 3
Propeller data : 2.7 m three-bladed, pitched, wood composite with lightning protection
5.3 Lateral Thrust Propeller

Type designation : Hoffmann HO-V123F-0GV
LBA-TCDS number : 32.130/17
Number : 1
Propeller data : 2.2 m three-bladed, pitched, wood composite with lightning protection

6. Fluids

6.1 Fuels
Propulsion Engine : Right/Left engine tank : each 420 L
Aft engine tank : 320 L
Fuel : AVGAS 100LL

6.2 Lubricants
Propulsion engine : see Airship Maintenance Manual

7. Air Speeds
Manoeuvring Speed $V_A$ : 83 km/h
Never Exceed Speed $V_{NE}$ : 130 km/h
Limitations see Airship Flight Manual
Deflection angle of control surface
All control surfaces : $\pm 20^\circ$

8. Maximum Mass
Maximum airship EQ (norm condition) mass : 7,650 kg
Maximum gondola mass : 2,690 kg
Maximum static heaviness
  Take-off and landing : 400 kg
  Inflight : 500 kg
Maximum static lightness : -200 kg

9. Minimum Flight Crew
1 Pilot

10. Occupants
Maximum : 15 Occupants
Pilot seats : 2 Pilots
Passenger seats max. : 13 Passengers

11. Payload
Gondola payload max. : 1,040 kg

12. Life Limit Parts
See Airship Maintenance Manual

13. Lifting gas
Helium
Maximum permissible lifting gas pressure : 600 Pa
Minimum lifting gas pressure : 300 Pa

14. Buoyancy Centre
34.15 m aft of bow

15. Maximum Operating Altitude
Standard configuration : 3,048 m
Optional ballonet : see AFM Section 6
configuration Weight & Balance

IV. Operating and Service Instructions

1. Operating Instructions
- Airship Flight Manual and Pilot’s Operating Handbook, Document 07 ML 01 200, LBA-approved, as well as all subsequent approved supplements and changes.
- Hoffmann Propeller : Operating and Maintenance Manual No. E709, in its latest valid issue
2. Service Instructions

- Airship Maintenance Manual Document 07 ML 05 200 as well as all supplements and changes

- Hoffmann Propeller
  - Propeller HO-V373 Overhaul Manual No. E710, in its latest valid issue
  - Blade Overhaul Manual No. E573, in its latest valid issue

- Lycoming Engine
  - Lycoming Overhaul Manual No. 60294-7(), in its latest valid issue

V. Notes

1. Manufacturing is confined to industrial production
2. Certified for day / night-VFR flights
3. Certified for commercial passenger transport
4. For registration the Noise Requirements as valid on the day of the application are to be applied
5. The Certification is eligible from serial-no. 002 onwards

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