

# ***European Aviation Safety Agency***

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**EASA**

**TYPE CERTIFICATE  
DATA SHEET**

**AEROPHILE 5500**

*Tethered Gas Balloon*

**Type Certificate Holder:**

**AEROPHILE SAS**

Paris, France

Variants:

AEROPHILE 5500

Issue 1 : 26 November 2012

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## **I. General**

1. Data Sheet No. EASA.BA.020	Issue Date: 26 November 2012
2. Type/Variant or Model	AEROPHILE 5500
3. Airworthiness Category	Standard class
4. Type Certificate Holder	AEROPHILE SAS 106 avenue Félix Faure 75015 Paris France  AÉROPHILE S.A. 106 avenue Félix Faure 75015 Paris France  AÉROPHILE S.A. 19 rue du Connétable F-60500 Chantilly France
5. Manufacturer	AEROPHILE SAS 106 avenue Félix Faure 75015 Paris France  AÉROPHILE S.A. 106 avenue Félix Faure 75015 Paris France  AÉROPHILE S.A. 19 rue du Connétable F-60500 Chantilly France
6. DGAC-F Type Certification Date	30 May 2001, DGAC-France TC No. 192
7. DGAC-F Application Date	23 June 1993
8. DGAC Recommendation Date	n/a
9. EASA Type Certification Date	12 November 2012
10. TCDS History	This EASA TCDS replaces the French TCDS Nr. 192. The last issue by DGAC-France was edition 2, dated May 2005

## **II. Certification Basis**

1. Reference Date for Determining the Applicable Requirements	23 June 1993
2. Certification Basis	Defined by DGAC-France letter 54340/SFACT/N.AG, dated 13 December 1993
3. Airworthiness Requirements	Airworthiness Requirements for General Technical Conditions for free manned balloons, issue 015/A, dated 3 March 1980, completed with Complementary Technical Conditions 015/A (FAR 31 Amdt. 3 and 4, differences notified)
4. Elected to Comply Requirements	none
5. Special Conditions	none
6. Exemptions	§31.17: Climb Explanation: Not required as this balloon is tethered §31.51: Ballast Explanation: Not required as this balloon is tethered §31.85 (c): Compass Explanation: Not required as this balloon is tethered.

7. Equivalent Level of Safety Findings §31.27 (c): Gondola  
Explanation: the free-fall test has been replaced by calculation on finite elements and overload test, under the control of a certified body
- §31.49 (c): Discharge valve  
Explanation: Equivalent safety findings adjusted on flow of valve by means of lateral opening.

### **III. Technical Characteristics and Operational Limitations**

1. Type Design Definition Drawing list for tethered gas balloon type AEROPHILE 5500, Issue July 2000, DGAC-France approved 30 May 2001, or later approved revisions.
2. Description/Dimensions Stationary, manned tethered gas balloon for passenger flights
- 2.1 Envelope  
Spherical envelope of approx. 5 500 m<sup>3</sup> total volume consisting of 46 vertical envelope gores, from serial number 015 onwards the total volume is approx. 5 932 m<sup>3</sup> and from s/n 037 onwards optional approx. 6 100 m<sup>3</sup>, both with 48 gores; coated PES-fabric; load transfer by net and lines; electrically vented ballonet in lower part of the envelope; automatically and manually controllable over pressure valve; rip panel; emergency opening; optional internal lighting system
- 2.2 Gondola
- Two- or four-part gondola with octagonal gangway, aluminium frame construction, side walls with canvas cover; or,
  - Eight-part gondola with circular gangway, aluminium-fibre reinforced plastic construction (FRP)
- Outer diameter : 590 cm  
Inner diameter : 420 cm  
Height : 260 cm or 320 cm  
Inner height of gondola wall : 110 cm
3. Identification Manufacturer's identification plate is located on the load ring
4. Equipment
- 1 Envelope pressure gauge with high alarm
  - 1 Envelope thermometer
  - 1 Dynamometer in the tether system
  - 1 Wind speed anemometer
  - 1 Rate of climb indicator
  - 1 Altimeter
  - 1 Navigation light
5. Ground Facilities Stationary cable winch, electric-hydraulic ascent/descent device, with emergency back-up unit for the provision of hydraulic and electrical energy
- | Winch type                          | Maximum unspooled tether cable length |
|-------------------------------------|---------------------------------------|
| Metalliance TR99001                 | 150 m                                 |
| Metalliance TR2000                  | 300 m                                 |
| Hydrotechnics,<br>s/n 50-31667-6-97 | 150 m                                 |
6. Occupants Maximum : 31  
Minimum : 1

- |                     |   |
|---------------------|---|
| 7. Maximum Mass     | 5 650 kg  |
|                     | Permitted range of cable force<br>(measured by the load cell in the tether system): |
|                     | Maximum : 48 000 N when gondola rests on the ground                                 |
|                     | Minimum : 4 000 N with gondola loaded and lifted                                    |
| 8. Life Limit Parts | see Maintenance Manual  |
| 9. Lifting Gas      | Helium  |

#### **IV. Operating and Service Instructions**

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|---------------------------|---|
| 1. Operating Instructions | - Flight Manual for the tethered gas balloon AEROPHILE 5500, Issue 1 dated May 1994 or later approved revisions and supplements |
| 2. Service Instructions   | - Maintenance Manual for the tethered gas balloon AEROPHILE 5500, Issue 1 dated May or later revisions and supplements          |

#### **V. Notes**

1. Manufacturing is confined to industrial production
2. Certified for commercial passenger flights
3. For each balloon a "Certificate of Conformity" for the winch and the gondola with its suspension system issued by a qualified entity must be at hand when the statement of conformity is issued. In this certificate it must be stated that the parts comply with the type design definition
4. Additional operational equipment and procedures according to the determinations of the ascent permit
5. From year of manufacture 2005 onwards or when applying modification No 192MOD050302 (including subsequent revisions) the master drawing list AEROPHILE 5500 No AERO5500PNF01, Issue 6, 22 March 2012 and subsequent issues are mandatory
6. When applying 192MOD050303 (including subsequent revisions) the master drawing list AEROPHILE 5500 No AERO5500PNF01, Issue 6, 22 March 2012 and subsequent issues are mandatory.
7. When applying optional modification No 192MOD080320A (including subsequent revisions) the master drawing list AEROPHILE 5500 No AERO5500PNF01, Issue 6, 22 March 2012 and subsequent issues are mandatory
8. When applying the technical note No TN192MOD120220A (including subsequent revisions) the master drawing list AEROPHILE 5500 No AERO5500PNF01, Issue 6, 22 March 2012 and subsequent issues are mandatory. This Technical Note is applicable to S/N 019 or higher
9. When applying optional modification No 192MOD1100307A (including subsequent revisions) the master drawing list AEROPHILE 5500 No AERO5500PNF01, Issue 6, 22 March 2012 and subsequent issues are mandatory.

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