TYPE-CERTIFICATE

DATA SHEET

NO. EASA.BA.005

for
HiFlyer

Type Certificate Holder
LINDSTRAND TECHNOLOGIES Ltd.
Oswestry, United Kingdom

Manufacturer:
LINDSTRAND TECHNOLOGIES Ltd.
Oswestry, United Kingdom

Models:

9T & 203T

Issue 5 : 24 July 2017
Issue 4 : 18 August 2010
Issue 3 : 16 May 2008
Issue 2 : 25 February 2008
Issue 1 : 4 March 2005

CONTENT

SECTION 1: GENERAL, 203T Type Design

SECTION 2: GENERAL, 9T Type Design

SECTION 1

I. General

1.	Data Sheet No. EASA.BA.005	Issue Date: 18 August 2010
2.	Type/Variant or Model	203T
3.	Airworthiness Category	Standard class
4.	Type Certificate Holder	Lindstrand Technologies Ltd. Maesbury Road Oswestry, Shropshire, SY10 8HA United Kingdom
5.	Manufacturer	Lindstrand Technologies Ltd. Maesbury Road Oswestry, Shropshire, SY10 8HA United Kingdom
6.	CAA UK Type Certification Date	n/a
7.	CAA UK Application Date	9 September 2003
8.	CAA UK Recommendation Date	25 February 2005
9.	EASA Type Certification Date	4 March 2005
10.	TCDS History	n/a
11.	Serial Number Applicability	see Notes 1. and 2. in V.

II. Certification Basis

1.	Reference Date for Determining the Applicable Requirements	9 September 2003
2.	CAA UK Type Certificate Data Sheet No.	n/a
3.	Certification Basis	CRI A-01 Issue 2 (closed, dated 14 February 2005)
4.	Airworthiness Requirements	Draft CS 31TGB (final CG9 draft 27 February 2003)
5.	Elected to Comply Requirements	none
6.	Special Conditions	none
7.	Exemptions	none
8.	Equivalent Level of Safety Findings	none

III. Technical Characteristics and Operational Limitations

1.	Type Design Definition	Drawing list for tethered gas balloon type 203T, HF-001-A-001, Issue 4.0 or subsequent approved by EASA For the ascent/descent device: David Brown winch: Drawing list WI-001-A-001, Issue 1.0 and subsequent new editions and changes to it approved by EASA LTL winch: Drawing list WI-002-A-001, Issue 2.0 and subsequent new editions and changes to it approved by EASA HydroTechnics winch (see V.3): General assembly drawing ACFR-LTL-HF-HYD.WI-001-K-001, Issue 1 and subsequent new editions and changes to it approved by EASA

2. Description/Dimensions

Stationary, manned tethered gas balloon for passenger transport

2.1 Envelope
Spherical coated fabric envelope of about 5,790 m³ total volume consisting of 24 vertical gores, with load transfer by net and lines; 20% ballonet in lower part of the envelope; automatically and manually controllable over-pressure valve

2.2 Gondola
Four-part gondola with octagonal gangway, stainless steel frames; side walls with wicker or PVC covers

Outer diameter	:	520 cm
Inner diameter	:	346 cm
Height	:	210 cm
Inner height of gondola wall	:	117 cm

3. Equipment

1 Envelope pressure gauge
1 Helium temperature gauge
1 Load cell in the tether system
1 Wind speed anemometer
1 Outside air temperature gauge
1 Ballonet pressure gauge
1 Auto/manual helium valve switch

4. Ground Facilities

Stationary electric motor-driven cable winch as the ascent/descent device, usable cable length 160 m

David Brown and LTL winch:
With electric motor emergency back-up unit.

HydroTechnics winch:
Diesel powered generator as emergency back-up unit for electric power to drive the hydraulic pumps.

5. Occupants

Maximum : 31

Minimum : 1

6. Maximum Mass

2 109 kg

Permitted range of cable force measured by the load cell in the tether system (also known as 'free lift'):

Maximum : 36 228 N when gondola rests on the ground

Minimum : 8 829 N with gondola loaded and lifted

7. Life Limit Parts

see Maintenance Manuals

8. Lifting Gas

Helium

IV. Operating and Service Instructions

1. Operating Instructions

- Flight Manual for the 203T tethered gas balloon with David Brown Winch, TAOM Issue 5 and subsequent EASA approved Supplements and changes (see V.4)

- Flight Manual for the LTL winch:
  TAFM Issue 1.0, and subsequent EASA approved supplements and changes

- Flight Manual for the HydroTechnics winch:
  TAOM Issue 5.2 (see V.4)

2.	Service Instructions	-	Maintenance Manual for the 203T tethered gas balloon (not winches), TAOM MM Issue 1.9, and subsequent accepted supplements and changes Maintenance Manual for the David Brown winch: DBSP WOMM Issue 6.0 and subsequent accepted supplements and changes Maintenance Manual for the LTL winch: LTL WOMM Issue 1.0, and subsequent accepted supplements and changes Maintenance Manual for the HydroTechnics winch: HYD.WOMM-001 Issue 1 and subsequent accepted supplements and changes

V. Notes

1. Serial number applicability of TC/TCDS:
   Due to the HiFlyer having been produced in various forms since 1997 as a non-aviation product, there may be some retrospective 'catching-up' of some of these pre-existing machines as aircraft. If this takes place, it will be signified by their serial numbers being added to this TCDS (see Note 2.).

   Unless a request is made to EASA by the Type Certificate holder (LTL) to exclude specific serial numbers, it will Be assumed that Hiflyers (including their winches) produced after the date of the initial issue of the EASA Type Certificate are classified as EASA aircraft and fully covered by the type certificate exercise. If any doubts exists As to the certification status of any Hiflyer component (including the winch) the Type Certificate Holder should be contacted.

2. Serial numbers converted to aircraft post-build and in conformity with TCDS.BA.005:

   HF 010

3. The approval is limited to the HydroTechnics winch conforming to ACFR-LTL-HF-HYD.WI-001-K-001 used beneath the balloon serial number s/n HF 057

4. Flight Manual TAOM Issue 5.2 applies exclusively for operation with the HydroTechnics winch conforming to ACFR-LTL-HF-HYD.WI-001-K-001

SECTION 2

I. General

1.	Data Sheet No. EASA.BA.005	Re-Issue Date: 24 July 2017
2.	Type/Variant or Model	9T
3.	Airworthiness Category	Standard class
4.	Type Certificate Holder	Lindstrand Technologies Ltd. Maesbury Road Oswestry, Shropshire, SY10 8HA United Kingdom
5.	Manufacturer	Lindstrand Technologies Ltd. Maesbury Road Oswestry, Shropshire, SY10 8HA United Kingdom
6.	CAA UK Type Certification Date	n/a
7.	CAA UK Application Date	12 January 2017
8.	CAA UK Recommendation Date	12 July 2017
9.	EASA Type Certification Date	24 July 2017
10.	TCDS History	Re-issue to cover 9T; see Section 2, I, 1. above
11.	Serial Number Applicability	LTL-9T-001 and subsequent

II. Certification Basis

1.	Reference Date for Determining the Applicable Requirements	4 September 2016
2.	CAA UK Type Certificate Data Sheet No.	n/a
3.	Certification Basis	See Section 2, II, 3 below. No CRI A-01 raised due to simplicity of product and it being a change to an existing TCDS.
4.	Airworthiness Requirements	CS 31TGB (Issue 1)
5.	Elected to Comply Requirements	none
6.	Special Conditions	none
7.	Exemptions	none
8.	Equivalent Level of Safety Findings	none

III. Technical Characteristics and Operational Limitations

1.	Type Design Definition	Drawing list for tethered gas balloon type 9T, EG-025-A-001, Issue 1.0 or subsequent approved by EASA
2.	Description/Dimensions	Stationary, manned tethered gas balloon for passenger transport

2.1 Envelope

Spherical coated fabric envelope of approximately 255m³ total volume consisting of 16 vertical gores with load transfer via 8 load patches and ropes. Envelope fitted with rapid deflation device and automatic overpressure valve with manual override.

2.2 Trapeze

Lower attachment ropes connect to trapeze constructed from stainless steel tube. Available in 1 or 2 passenger variants.

Trapeze contains attachment points to allow connection to passenger harness/harnesses, tether ropes and control lines.

3.	Equipment	1 Envelope pressure gauge 1 Wind speed anemometer 1 Load cell
4.	Ground Facilities	3 off manual ascent/descent devices usable rope length 50m
5.	Occupants	Maximum : 2 Minimum : 1
6.	Maximum Mass	100 kg Permitted range of cable force measured by the load cell in the tether system (also known as 'free lift'): Maximum : 1226 N when on the ground Minimum : 245 N with gondola loaded and lifted
7.	Life Limit Parts	see Maintenance Manuals
8.	Lifting Gas	Helium

IV. Operating and Service Instructions

1.	Operating Instructions	- Flight Manual for the 9T, LTL 9T FM Issue 1 and subsequent EASA approved supplements and changes
2.	Service Instructions	- Maintenance Manual for the 9T, LTL 9T FM Issue 1 and subsequent EASA approved supplements and changes

V. Notes

None