



TYPE-CERTIFICATE DATA SHEET

EASA.IM.A.610

for
GB1 GameBird

Type Certificate Holder
Game Composites LLC
3201 SW I Street, Bentonville, 72712 Arkansas, USA

For models: GB1 GameBird



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SECTION A: GB1 GAMEBIRD

A.I. General

| | |
|--|--|
| 1. Type/ Model/ Variant | |
| 1.1 Type | GB1 GameBird |
| 1.2 Model | GB1 GameBird |
| 2. Airworthiness Category | CS-23, aerobatic |
| 3a. Type Certificate Holder | Game Composites LLC, 3201 SW I Street, Bentonville, 72712 AR, USA |
| 3b. Manufacturer | Same as Type Certificate holder (note 8) |
| 4. EASA Type Certification Application Date | 12 April 2013 |
| 5. State of Design Authority | EASA |
| 6. State of Design Authority Type Certificate Date | N/A |
| 7. EASA Type Certification Date | 12 April 2017 |

A.II. EASA Certification Basis

| | |
|---|--|
| 1. Reference Date for determining the applicable requirements | 31 July 2014 |
| 2. Airworthiness Requirements | CS-23, Amendment 3 dated 20 July 2012 |
| 3. Special Conditions | SC-E23-0863-01 - Smoke system SC-F23.1309-03 - Protection from the Effects of Lightning Strike, Indirect Effects; SC-F23.1309-02 - Protection from the Effects of HIRF (CRI F-52); |
| 4. Exemptions | None |
| 5. (Reserved) Deviations | None |
| 6. Equivalent Safety Findings | ELOS-B23.0207-01 Stall warning; ELOS-D23-0785d-01 - Double action seat belt system; ELOS-CS23.777/781- Position and shape of Engine Controls; ELOS-GB1-B23-0177a-01CS 23.177(a) and (d), for CS-23 aerobatic aeroplanes; |
| 7. Environmental Protection | N/A (aerobatic only). |



A.III. Technical Characteristics and Operational Limitations

| | | |
|---------------------------|--|--|
| 1. Type Design Definition | Master Document List CS-GB1-0000-00-02. | |
| 2. Description | The GB1 is a tandem two-seat, high performance aerobatic airplane. It is constructed principally from composites of carbon and glass fibres, epoxy resin and foam or honeycomb sandwich materials. | |
| 3. Equipment | Refer to AFM and related supplements. | |
| 4. Dimensions | Wingspan | 7.7m / 25.3ft |
| | Length | 6.9m / 22.6ft |
| | Height | 2.56m / 8.3ft |
| | Wing Area | 11.3m ² / 121.25ft ² |
| 5. Engine | | |
| 5.1. Model | Lycoming AEIO 580 B1A | |
| 5.2 Type Certificate | EASA IM.E.027 | |
| 5.3 Limitations | Rated power | 225 kW/ 303 hp |
| | Maximum RPM (take-off and continuous): | 2600 rpm |
| | Maximum engine oil temperature: | 118°C/245°F |
| | Oil Pressure Ranges: | |
| | Minimum at idle speed: | 1.7 bar/25 psi |
| | Normal operating: | 3.8-6.5 bar/55-95 psi |
| | During start and take-off: | up to 7.9 bar/115 psi |
| | Maximum CHT: | 240°C /465°F |
| 6. Load factors | +/-10g at TOW up to 880 kg (1940 lb) (note2) +/-6g at TOW 881 to 999 kg (2200 lb) (note 3) | |
| 7. Propeller | | |
| 7.1 Model | MT Propeller MTV-14-B-C/C190-130 | |
| 7.2 Type Certificate | EASA.P.017 | |
| 7.3 Number of blades | 4 | |
| 7.4 Diameter | 1900 mm +/- 5 mm | |
| 7.5 Sense of Rotation | clockwise | |
| 8. Fluids | | |
| 8.1 Fuel | See AFM | |
| 8.2 Oil | See AFM | |
| 8.3 Coolant | <u>N/A</u> | |
| 8.4 Oil for smoke system | See AFM | |
| 9. Fluid capacities | | |
| 9.1 Fuel | Acro tank | 95 l/25 USgal |
| | Wing tanks | 108 l/28 USgal each |
| | Total | 311 l/83 USgal |
| 9.2 Oil | 8 - 16 quarts | |



| | | |
|--|---|--------------------------|
| 9.3 Coolant system capacity | n/a | |
| 9.4 Oil capacity for smoke | 28 l/7.4 USgal | |
| 10. Air Speeds | V _O manoeuvring speed (note 4) | 175 KIAS |
| | V _{NO} maximum structural cruising speed | 200 KIAS |
| | V _{NE} never exceed speed | 234 KIAS |
| 11. Flight Envelope | Maximum Operating Altitude | 4572m/15.000ft |
| 12. Approved Operations Capability | VFR day | |
| 13. Maximum Masses | MTOW Maximum take-off weight (note 5) | 999 kg/2200 lb |
| | MLW maximum landing weight: | 999 kg/2200 lb |
| | MZFW Maximum zero wing fuel weight: | 880 kg/1940 lb |
| 14. Centre of Gravity Range | Forward Limit: | 580 mm (22.8") = 25% MAC |
| | Aft Limit: | 780 mm (31.1") = 34% MAC |
| 15. Datum | firewall, vertical face | |
| 16. Control surface deflections | Ailerons | ±22.5° |
| | Elevator | ±30° |
| | Rudder | ±30° |
| | Aileron trim tab | ±30° |
| | Elevator trim tab | 5° up, 40° down |
| 17. Levelling Means | horizontal part of canopy frame | |
| 18. Minimum Flight Crew | 1 (rear seat) | |
| 19. Maximum Passenger Seating Capacity | 1 (front seat) | |
| 20. Baggage/ Cargo Compartments | Max. 15 kg / 33lb (note 2) | |
| 21. Wheels and Tyres | Main Wheels | 5.00 x 5, 10 ply |
| | Tailwheel | 6x2 solid rubber |
| 22. (Reserved) | | |



A.IV. Operating and Service Instructions

- | | |
|--------------------------------|---|
| 1. Flight Manual | AFM-GB1-0000-00-01 (and approved supplements) AFM-GB1-0000-00-02 (and approved supplements) (note 9) |
| 2. Maintenance Manual | AMM-GB1-0000-00-01 AMM-GB1-0000-00-02 (note 9) |
| 3. Structural Repair Manual | Section 51 of AMM |
| 4. Weight and Balance Manual | Section 08 of AMM |
| 5. Illustrated Parts Catalogue | Included in AMM |



A.V. Notes

1. Reserved ;
2. The wing fuel tanks and baggage compartment must be empty for aerobatics;
3. With fuel in the wings, aerobatics and intentional spins are prohibited;
4. With empty wing tanks only: The structure is designed for full and rapid aileron deflection up to V_{NE} ;
5. Limited to 880 kg for aerobatic flights (wing fuel tanks and baggage compartment must be empty for aerobatics);
6. The structure is qualified up to 72°C/161°F;
7. Reserved;
8. GB1 airplane serials 001 and on manufactured under license. Manufacturing facility is not yet approved;
9. For aeroplanes installing the Garmin G3X touch, (as per EASA approval 10067284)



SECTION ADMINISTRATIVE

I. Acronyms & Abbreviations

| | |
|-----------------|--|
| AoA | Angle of attack (wing incidence relative to airflow) |
| AFM | Airplane Flight Manual |
| AMM | Airplane Maintenance Manual |
| CS | Certification Specifications |
| Ltd | Limited |
| MAC | Mean Aerodynamic Chord |
| CHT | Cylinder Head Temperature |
| CRI | Certification Review Item |
| HIRF | High Intensity Radiated Fields |
| KIAS | Knots Indicated Airspeed |
| MTOW | Maximum Take-Off Weight |
| MLW | Maximum Landing Weight |
| MZFW | Maximum Zero Wing Fuel Weight |
| N/A | Not Applicable |
| Qty | Quantity |
| TOW | Take-off weight |
| VFR | Visual flight rules |
| g | Vertical acceleration (9.81 m/s ²) |
| hp | Horsepower |
| kg | Kilogrammes |
| kW | Kilowatt |
| lb | Pounds |
| m | Metres |
| m ² | Square meter |
| mm | Millimetres |
| in or " | Inches; 1" = 25.4mm |
| lb | Pounds; 1 Pound = 0.45 kg |
| ft | Feet; 1 Foot = 0.3 m |
| ft ² | Square feet; 1 ft ² = 0.09 m ² |
| psi | Pounds per square inch; 1 psi = 0.07 bar |
| bar | Pressure unit; 1 bar = 105 N/m ² |
| N | Newton |
| oC | Degrees Celsius / Centigrade |
| oF | Degrees Fahrenheit |
| RPM | Revolutions per minute |
| USGal | US Gallon (3.8 litres) |
| quart | ¼ gallon = 0.94 litre |
| V _{NE} | Never exceed speed |
| V _{NO} | Maximum structural cruising speed |
| V _O | Maximum operating manoeuvring speed |



II. Type Certificate Holder Record

Game Composites Ltd.
Ground Floor Flat 56 Queen's Gate,
London, SW7 5JW, United Kingdom

As of 29th March 2019 (issue 4 of the TCDS):

Game Composites LLC
3201 SW I Street, Bentonville,
72712 Arkansas, USA

III. Change Record

| Issue | Date | Changes | TC Issue No. & Date |
|----------|-----------------|--|------------------------------|
| Issue 01 | 12 April 2017 | Initial Issue | Initial Issue, 12 April 2017 |
| Issue 02 | 23 October 2018 | Modified to include the airplane configuration with the Garmin G3X touch (approved with 10067284) | |
| Issue 03 | 27 March 2019 | Section A.II.3 and A.II.6: removed references to CRIs; Section A.V: deleted note 1 and 7; Section A.IV: added AMM-GB1-0000-00-02 | |
| Issue 04 | 29 March 2019 | Change of Type Certificate holder | |

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