

## JABIRU UL-D Model Aircraft

1. Manufacturer

JABIRU Aircraft Pty Ltd  
Hinkler Drive  
Bundaberg Airport  
Bundaberg Queensland 4670  
Australia

2. UK Importer

ST Aviation Ltd

3. Certification

BCAR-S Issue 2 Dated 31 August 1999

4. Definition of Basic Standard

Master Drawing List for JABIRU UL-D Model aircraft

5. Compliance with Microlight Definition

- (a) MTOW = 450-kg
- (b) No. Seats = 2
- (c) Maximum Wing Loading = 48-kg/m<sup>2</sup>  
Demonstrated Stall speed of 35 kts
- (d) VS0 = 35 kts
- (e) Permitted Range of Pilots 55-86 kg per seat
- (f) Typical Empty Weight (ZFW) = 255 kg
- (g) ZFW + 172-kg Crew + 1 hr fuel = 437 kg  
(14litres / 10 kg)
- (h) ZFW + 86 kg pilot + full fuel = 370 kg  
(40 ltrs / 28.8 kg)
- (i) MAX ZFW at Initial Permit Issue = 268 kg

6. Power Plant

Designation	JABIRU UL-D Model
Engine Type	AVTECH 2200B Model
Reduction Gear	Nil
Exhaust System	JABIRU P/No 4504053
Intake System	As Per Powerplant Installation Drawing
Propeller Type	JABIRU Fixed Pitch Wooden P/No C000242
Propeller Diameter and Pitch	Diameter: 1524 mm (60 inches) Pitch 1067 mm (42 inches)
Noise Type Certification No	165M
AAN Approving configuration	29078

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**NO: BM71 ISSUE: 3**

**7. Mandatory Limitations**

- (a) Max Take-Off Weight 450-kg
- (b) CG Limits
  - a. Forward Limit
    - i. 1600 mm aft of datum (20%MAC) at 393 kg or less
    - ii. 1670 mm aft of datum (27% MAC) at 450 kg
    - iii. Variation is linear between 393 and 450 kg
  - b. Aft Limit
    - i. 1685 mm aft of datum (28.5% MAC) at all weights
- (c) Cockpit Loading
  - a. Combined weight of fuel and baggage is not to exceed 28.8 kg without reference to weight and balance trim sheet given in Section 6 of the Flight Manual
- (d) Never Exceed Speed                    120 KIAS
- (e) Manoeuvring Speed                    94 KIAS
- (f) Max Flap Extend Speed                69 KIAS
- (g) Permitted Manoeuvres
  - Operations up to 10,000 ft
  - Any manoeuvre necessary for normal flying
  - Stalls (except whip stalls)
  - Steep Turns where the angle of bank does not exceed 60deg
  - Specific Manoeuvres which are not Permitted
    - Aerobatics
    - Intentional Spinning
    - Steep Turns where the angle of bank Exceeds 60deg.
- (h) Fuel Contents( Max Useable)        40-litres
- (i) Power Plant Limitations

Engine	AVTECH Pty Ltd 2200B Series
Max RPM	3050-rpm
MAX CHT	Not Above 200 deg C
MAX EGT	Not Applicable
Fuel Spec	AVGAS 100 LL Automotive Spirit 95RON or Higher
Engine Oil Spec	Aero Oil W Multigrade 15W-50 or equivalent lubricant complying with MIL-L-22851C, or Lycoming Specification 301F, or Teledyne - Continental Specification MHF-24B.
Gearbox Oil Spec	Not Applicable
Fuel/Oil Mix	Not Applicable
Coolant Temperature	Not Applicable
Oil Pressure	In Level Flight 220 kPa In Descent 80 kPa
Oil Temperature	Not to Exceed 115 Deg C
Fuel Pressure	Not Applicable

**8. Instruments Required**

ASI	Altimeter	RPM	CHT	Compass	Fuel Pressure	VSI	Slip Ball	Oil Temp	Oil Press
Required (120kts Min)	Required	Required	Required	Required			Required	Required	Required

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MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

**NO: BM71 ISSUE: 3**

9. Control Deflections

Aileron	Up $24^{\circ} \pm 1^{\circ}$ Down $13^{\circ} \pm 1^{\circ}$
Elevator	Up $18.4^{\circ} \pm 1^{\circ}$ Down $14.5^{\circ} \pm 1^{\circ}$ Elevator movements are measured with trim set at maximum travel in the same direction as the control stick is moved
Rudder	Left $19^{\circ} \pm 1^{\circ}$ Right $22^{\circ} \pm 1^{\circ}$
Wing Flaps	First stage $15.5^{\circ} \pm 1^{\circ}$ Second stage $40^{\circ} \pm 1^{\circ}$

10. Pilots Notes, Maintenance Manual References

10.1. Flight Manual

Document Reference JP-FM-ULD. Placards are referenced in the Flight Manual

10.2. Maintenance Manual

JABIRU Publication Reference: JABIRU Airframe Service Manual (Issue 4 Dated November 2004)

10.3 The following placards are to be fitted:-

Flight Limitations Placard (to be visible to pilot)

See Annex D.

Engine Limitations Placard (to be located near to engine instruments)

See Annex D.

Fuel Limitations Placard (to be located near to filler cap)

A placard is to be fitted showing fuel capacity ( litres), fuel type(s), fuel:oil ratio (if relevant) and if MTOW can be exceeded with full fuel and maximum cockpit weight, the fuel loads at MTOW for cockpit weights of 180kg / 170kg / 160kg etc. at 10kg intervals down to the maximum fuel load.

11. Mandatory Modifications/ Service Bulletins/Airworthiness Directives ETC

Any mandated by CASA Australia are mandatory within the UK.

None exist at initial issue of this TADS.

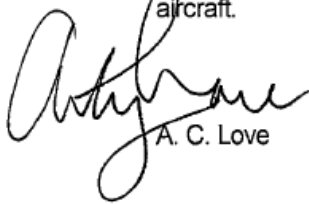
12. Minimum Performance at Max Take-Off Weight

Rate of Climb	750-ft/min	
Climb Speed	Best Rate of Climb Speed	70 KIAS
Stall Speed	Clean Configuration	49 KIAS
	Landing Flap Configuration	39 KIAS
	Take-Off Flap Configuration	43 KIAS

(Stall Speeds Recorded with Engine Stopped)

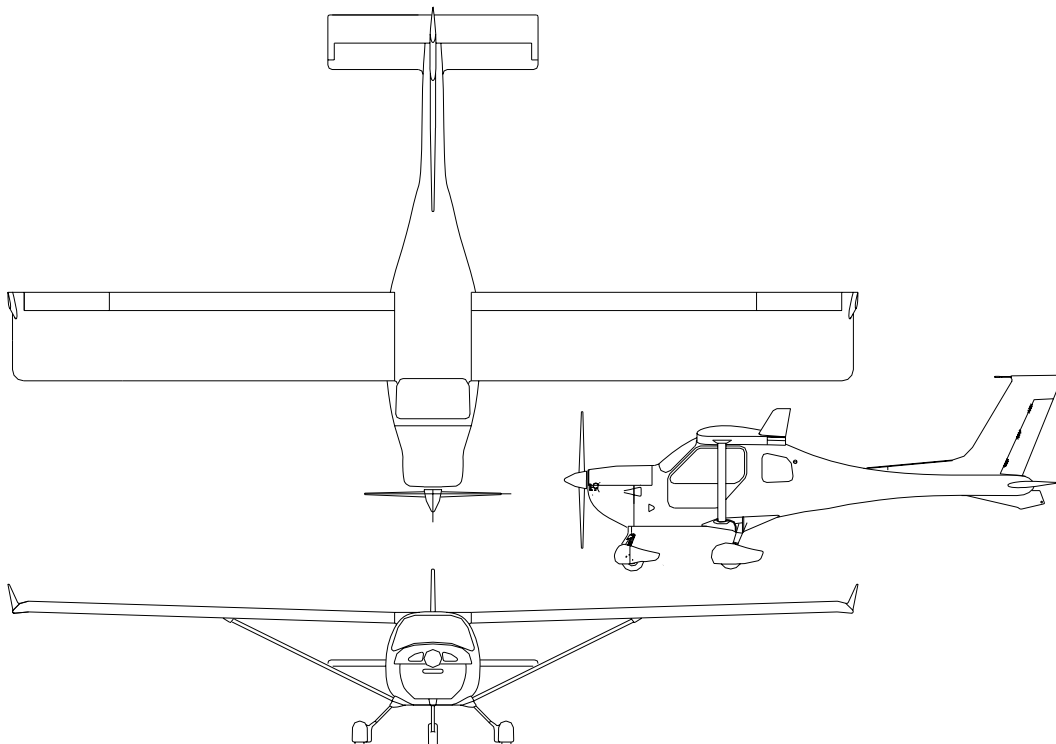
## Issue History

Issue	Date	Reason and signatory
1.	October 2005	Initial approval, validating CASA Australia approval. A. C. Love
2.	February 2007	Add Noise certificate number A. C. Love
3.	August 2009	Amend maximum zero fuel weight in line with existing assumptions for LAA aircraft.



A. C. Love

## Illustration of Aircraft



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**NO: BM71 ISSUE: 3**

### Annex A: Mandatory Modifications

None

### Annex B: Approved Optional Modifications

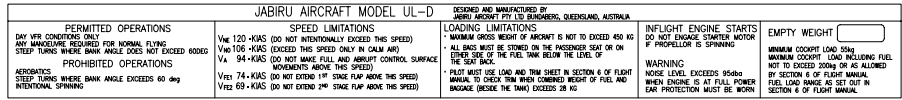




None

### Annex C: Weighing Information

- |     |                       |   |
|-----|-----------------------|---|
| (1) | CG Datum              | 1403-mm forward of the wing leading edge  |
| (2) | Weighing Attitude     | Level as determined by Spirit Level Placed on Trim Decal on the centre console  |
| (3) | Main Wheel Moment Arm | Measured for each individual aircraft   |
| (4) | Nose Wheel Moment Arm | measured for each individual aircraft   |
| (5) | Fuel Moment Arm       | 2215 mm aft of datum  |
| (6) | Crew Moment Arm       | 1700 mm aft of datum  |
| (7) | Crew Weights          | Minimum 55 kg / Maximum 172 kg  |
| (8) | Aft CG Limit          | 1685 mm aft of datum at all weights   |
| (9) | Forward Limit         | 1600 mm aft of datum up to & including 393 kg<br>1670 mm aft of datum @ 450 kg<br>Variation is linear between 393, and 450 kg |

### Annex D: Example Placards

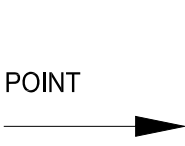
Cockpit Placards to be in full view of the Pilot

Placard Name and Part Number	Placard Format
Model Identification P/No 5A005A0D	 <p>Fitted on the Aft Face of the Forward Wing-Carry-Through Beam.</p>
Flight Manual 5036094-2	 <p>Fitted to Inside of RH Door above the Door Pocket.</p>
Door Open LHS 5027094-2	 <p>Fitted to the LHS Door Above the Door Catch Lever</p>
Door Open RHS 5028094-2)	 <p>Fitted to the RHS Door Above the Door Catch Level</p>
Door String Placard 5026094-2	 <p>Fitted on Inside of both Doors Above the Windows and Beside the Door String.</p>
Fuel Contents Gauge P/No 5110004	Fitted on the Forward Side of the Fuel Tank

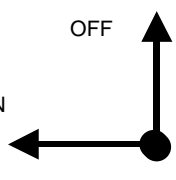

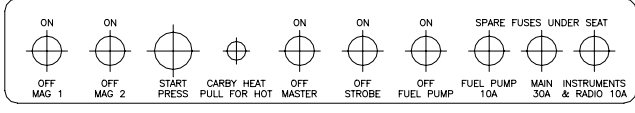
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MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

**NO: BM71 ISSUE: 3**

Baggage Label P/No 5111004	<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p align="center"><b>BAGGAGE</b></p> <p align="center">LOAD BEHIND SEATS ONLY DO NOT LOAD AFT OF THIS POINT</p> <p align="center">  </p> <p align="center">COMBINED WEIGHT OF FUEL &amp; BAGGAGE STOWED BESIDE FUEL TANK MUST NOT EXCEED 28-KG. WITHOUT REFERENCE TO FLIGHT MANUAL LOAD &amp; TRIM SYSTEM</p> </div> <p>Fitted on inside of fuselage on RHS with Line aligned with aft face of the fuel tank.</p>
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12.1.1. Cockpit Controls

Trim Position P/No5024094	<div style="border: 2px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p align="center"> <span style="margin-right: 20px;">← NOSE DOWN</span> <span style="margin-right: 20px;">NEUTRAL TRIM</span> <span style="margin-right: 20px;">→ NOSE UP</span> <span>→ BRAKE ON</span> </p> </div> <p>Fitted on the Top of the Main Beam Beside the trim control</p>
Fuel Tap Position P/No 5023094	<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p align="center"> <b>FUEL</b> </p> <p align="center">  </p> </div> <p>Fitted on the Main Beam beside the Fuel ON-OFF Valve</p>
Choke Cable P/No5051094	<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p align="center"><b>CHOKE</b></p> <p align="center">  </p> <p align="center">PULL ON</p> </div> <p>Fitted at the base of the choke cable.</p>
General Instrument Switches P/No 5046094	<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p align="center">  </p> </div> <p>Fitted In lower instrument Panel as a backing plate for the controls.</p>

12.1.2. External Fuselage

Static Port P/No 5043094-2	<div style="border: 2px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p align="center"><b>STATIC VENT KEEP CLEAR</b></p> </div> <p>Attach to LHS and RHS of Vertical Fin in line with Static Tube</p>
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CIVIL AVIATION AUTHORITY – SAFETY REGULATION GROUP

MICROLIGHT TYPE APPROVAL DATA SHEET (TADS)

**NO: BM71 ISSUE: 3**

Fuel Grade/Tank Capacity 5114024-1	<div style="border: 2px solid blue; padding: 5px; text-align: center; color: red; font-weight: bold;">                     FUEL                      AVGAS 100-LL                      40-LITRE CAPACITY                      EARTH ON POST                 </div> <p align="center">Attach to the side of the fuselage above the filler cap.</p>
Oil Filler 5A007A0D-1	<div style="border: 2px solid blue; padding: 5px; text-align: center; color: red; font-weight: bold;">                     DIPSTICK INSIDE                 </div> <p align="center">Attach to external surface of door in upper engine cowl</p>
Oil Grade 5A008A0D-a	<div style="border: 2px solid blue; padding: 5px; text-align: center; color: red; font-weight: bold;">                     ENGINE OIL                      AEROSHELL W100 – SUMMER                      AEROSHELL 15W50 – WINTER                      OR EQUIVALENT AIRCRAFT GRADE                      DETERGENT ENGINE OIL                      DO NOT USE AUTOMOTIVE GRADE OILS                 </div> <p align="center">Attach on inside face of door in upper engine cowl</p>
Wing Bolt Tightening 5039094-2	<div style="border: 2px solid black; padding: 5px; text-align: center; font-weight: bold;">                     DANGER DO NOT TIGHTEN                 </div> <p align="center">Attach to the fuselage and wings beside each wing, and lift strut attachment fitting.</p>
Tyre Pressure Main Landing Wheel 5A009A0D-1	<div style="border: 2px solid black; padding: 5px; text-align: center;">                     INFLATE MAIN WHEEL TO 25 psi (170 kPa)                 </div> <p align="center">Attach to outside face of Main Wheel Spats</p>
Tyre Pressure Nose Wheel 5A010A0D-1	<div style="border: 2px solid black; padding: 5px; text-align: center;">                     INFLATE NOSE WHEEL TO 26 psi (180 kPa)                 </div> <p align="center">Attach to LHS surface of Nose Wheel Spat</p>
No Step 5A006A0D-1	<div style="border: 2px solid blue; padding: 5px; text-align: center; color: red; font-weight: bold;">                     NO STEP                 </div> <p align="center">Attach to top surface of Main Wheel Spat</p>
DO NOT LEAN 5A013A0D-1	<p align="center">Attach to top of door</p> <div style="border: 2px solid black; padding: 5px; text-align: center;">                     DO NOT LEAN ON DOOR                 </div>