

CIVIL AVIATION AUTHORITY

TYPE APPROVAL DATA SHEET (TADS)

NO: BM-84 ISSUE: 2

TYPE: SHERWOOD SCOUT

- (1) MANUFACTURER: **The Light Aircraft Company Limited
Hangar 4
Little Snoring Airfield
Fakenham
Norfolk
NR21 0JL**
- (2) UK IMPORTER: N/A
- (3) CERTIFICATION: BCAR Section S (Issue 6)
- (4) DEFINITION OF BASIC STANDARD: TLAC Design Definition Document TSS45-DD and Mod TSS01
- (5) COMPLIANCE WITH THE MICROLIGHT DEFINITION
- | | |
|--|---|
| (a) MTOW | 450 kg |
| (b) No. Seats | 2 |
| (c) Maximum Wing Loading | 46 kg/m ² |
| (d) V _{so} | not exceeding 33 knots CAS |
| (e) Permitted range of pilot weights | 55 - 240 kg total Weight
(55 - 120 kg per Seat) |
| (f) Typical Empty Weight (ZFW) | 255 - 262 kg
(Depending on Engine) |
| (g) ZFW + 172 kg crew + 1 hr fuel
(22 litres / 16 kg – Jabiru Engine) | 443 kg |
| (h) ZFW + 86 kg pilot + full fuel
(70 litres / 50 kg) | 391 kg |
| (i) Max ZFW at initial permit issue* | 262 kg (Jabiru 2200)
266 kg (Rotax 912)
266 kg (UL 260i)
266 kg (ULS 260i) |

* The maximum ZFW is the lower of [(a)-(172kg+1hrs fuel)] or [(a)-(86kg+full fuel)]

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6) POWER PLANTS

Rotax 912 UL & ULS Variants

Designation	Sherwood Scout TSS45-R-1 Sherwood Scout TSS45N-R-1	Sherwood Scout TSS45-R-2 Sherwood Scout TSS45N-R-2	Sherwood Scout TSS45-R-3 Sherwood Scout TSS45N-R-3	Sherwood Scout TSS45-R-4 Sherwood Scout TSS45N-R-4
Engine Type	Rotax 912 UL			Rotax 912 ULS
Reduction Gear	Integral 2.27:1			
Exhaust System	CKT stainless steel exhaust part no. 87-1098			
Intake System	Rotax / Bing standard CD carburettors, K&N filters			
Propeller Type	Powerfin composite GA 3 blade	Kiev composite GA 3 blade	DUC Swirl composite GA 3 blade	Kiev composite GA 3 blade 283
Propeller Dia x Pitch	68", 12° at tip	170cm, 24°@35cm radius	1660mm, 20°@200mm from tip	1800mm 35' @36cm
Noise Type Cert No.	186M	186M	186M	186M
MAAN approving	1854	1878	2028	1878

Jabiru 2200A Variants

Designation	Sherwood Scout TSS45-J-1 Sherwood Scout TSS45N-J-1	Sherwood Scout TSS45-J-2 Sherwood Scout TSS45N-J-2	
Engine Type	Jabiru 2200A (Serial 22A710 or later)		
Reduction Gear	N/A - Direct drive		
Exhaust System	Jabiru standard		
Intake System	Bing 94/40 carb, K&N filters		
Propeller Type	Newton wood 2 blade	Newton wood 2 blade	Hercules wood 2 blade
Propeller Dia x Pitch	60" x 40" 60" x 42"	56" x 40"	60" x 34"
Noise Type Cert No.	173M	186M	173M
MAAN approving	1695 / 1962	2050	2485

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UL Power UL260i Variants

Designation	Sherwood Scout TSS45-UL
Engine Type	ULPower 260i
Reduction Gear	N/A – Direct drive
Exhaust System	ULPower stainless steel
Intake System	Fuel injection
Propeller Type	Hercules wood 2 blade
Propeller Dia x Pitch	58" x 42.5"
Noise Type Cert No.	186M
MAAN approving	2280

(7) MANDATORY LIMITATIONS:

- (a) Max Take-Off Weight 450 kg
- (b) CG Limits Aft Limit 15.5" aft of datum
Fwd Limit 9" aft of datum
- (c) CG datum 1.25" aft of wing leading edge at root
(centreline of front spar)
- (d) Cockpit Loadings Min (occupant only) 55 kg Total Weight
Max (occupants only) 120 kg Per seat
- (e) Never Exceed Speed 114 knots CAS
- (f) Manoeuvring Speed 70 knots CIAS
- (g) Permitted Manoeuvres Max 60° bank
Non Aerobatic
Normal acceleration limits, +4 / -2g
- (h) Fuel Contents (Max Usable) 70 litres

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(i) Power Plant

See Table

Engine	Rotax 912 UL	Rotax 912 ULS	Jabiru 2200A	ULPower UL260i
Max RPM	5,800	5,800	3,300	3,300
Max Continuous RPM	5,500	5,500	3,300	2,800
Max CHT	N/A	N/A	180°C (c)	160°C (f)
Max EGT	880°C	880°C	N/A	N/A
Fuel Spec	83 MON or 90 RON minimum unleaded to BS(EN)228 or 97+ octane MOGAS leaded fuel to BS 4040, or AVGAS 100LL.			95+ Octane RON unleaded to BS(EN)228 or AVGAS 100LL
Engine Oil Spec	As required by engine manual			
Gearbox oil spec	Integral with engine		N/A	N/A
Fuel/Oil Mix	N/A		N/A	N/A
Max. Coolant Temperature	120°C		N/A	N/A
Max. Oil Pressure	73 psi (a)		76 psi	75 psi (g)
Min. Oil Pressure	22 psi (b)		31 psi (d)	30 psi (h)
Oil Temperature Min-Max	50 – 140°C		40 - 100°C (e)	50 – 115°C
Fuel pressure at cruise power Min-Max	2.2 – 5.8 psi		N/A	35 – 55 psi (i)

Notes :

- (a) 102 psi max limit on start with cold oil
- (b) 12 psi min limit below 3500RPM only
- (c) Absolute Max CHT 200°C – 2 Min limit operating between 180° and 200°C
- (d) 11 psi min limit for ground running at low power only
- (e) 100° is limit for continuous operation. 118°C absolute limit permissible for short periods only
- (f) 160° is limit for continuous operation. 190°C absolute limit permissible for short periods only
- (g) 75 psi is max limit in normal operation above 2000 RPM. Up to 115 psi permissible for short periods at cold start
- (h) 30 psi is min limit in normal operation. Down to 14.5 psi permissible between 900 and 2000 RPM
- (i) Relative fuel pressure – difference between pressure in fuel lines & pressure in intake manifold

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(8) INSTRUMENTS REQUIRED:

ASI	Altimeter	RPM	EGT	Compass	Coolant Temp	CHT	Oil Temp	Oil Pressure	Fuel Pressure	Voltmeter	VSI	Slip ball
Required (to at-least 1.05 V _{NE} once calibrated)	Required	Required	Required for Rotax engines	Required	At least one required		Required for 4-stroke engines		Required for ULPower 260i	Required for ULPower 260i	Optional	Required

(9) CONTROL DEFLECTIONS:

Elevator UP:	28° ± 2°	Elevator trim tab UP:	20° ± 5°
Elevator DOWN:	28° ± 2°	Elevator trim tab DOWN	40° ± 5°
Ailerons UP:	30° ± 5°	Rudder LEFT:	28° ± 2°
Ailerons DOWN:	30° ± 5°	Rudder RIGHT:	28° ± 2°
1 st Notch Flap Down	15° ± 2°		
2 nd Notch Flap Down	28° ± 2°		
3 rd Notch Flap Down	40° ± 2°		

(10) PILOT'S NOTES, MAINTENANCE MANUALS REFERENCES:

10.1 Manuals approved for use with this aircraft.

- (a) Sherwood Scout Combined Pilot's Operating Handbook & Maintenance Manual TLAC/SS-POH/MM Issue1 (Mar 15)
- (b) Engine Manufacturer's Operation & Maintenance Manual(s) appropriate to engine type fitted to individual aircraft (Copy included in Appendix B of POH/MM)
- (c) Other manuals as listed in Appendix F of the POH/MM (Addressing specific items of equipment fitted to individual aircraft)

10.2 The following placards are to be fitted:-

- (a) Flight Limitations Placard (to be visible to pilot)
See Annex D.
- (b) Engine Limitations Placard (to be located near to engine instruments)
See Annex D.
- (c) Fuel Limitations Placards (To be located near to filler caps)
A placard is to be fitted showing fuel capacity, fuel type(s), fuel:oil ratio (if relevant). An example is shown in Annex D.

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(d) ASI Placard

A correction placard from V_{S0} to V_{NE} at no more than 10 kt intervals, and at V_{S0} , V_{S1} , V_A and best glide speed, must show the corrections from IAS to CAS. An example is shown in Annex D.

(e) Switches

See Annex D.

(11) MANDATORY MODIFICATIONS / SERVICE BULLETINS / AIRWORTHINESS DIRECTIVES ETC:

See Annex A for required modifications.

(12) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

Rate of Climb: Se Annex E

Stall or Minimum Flying Speed: 33 knots CAS at MTOW in landing configuration
35 knots CAS in cruise configuration

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Issue History

	<u>Issue No.</u>	<u>Reason and signatory</u>
1	12/08/2015	Initial Issue
		P Gibbons
2	07/06/2018	Issue 2 updates to include Mod TSS01, (reference AAN 29426).
		A Goudie

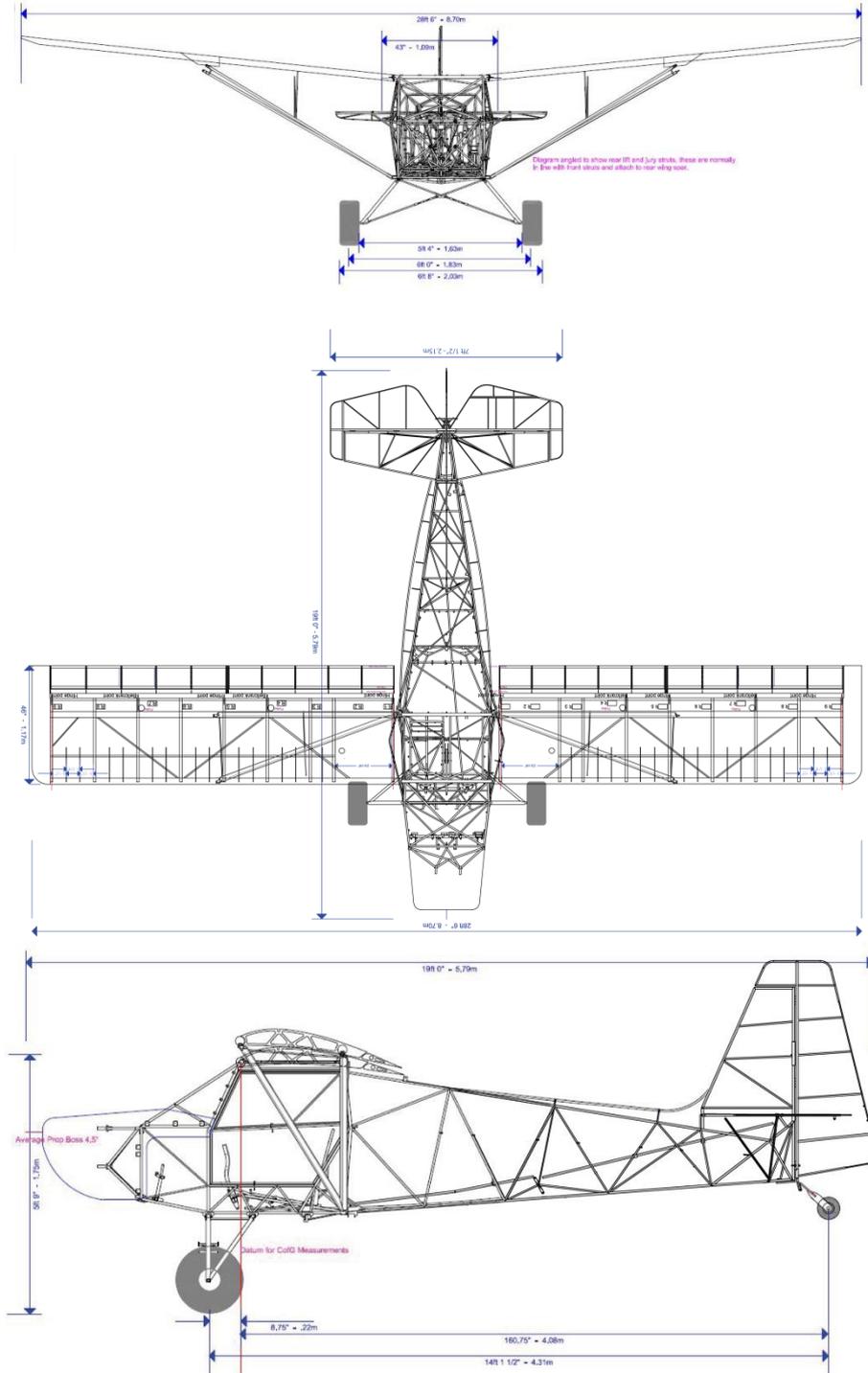
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Illustration of Aircraft - 3 View

Tail Wheel Configuration



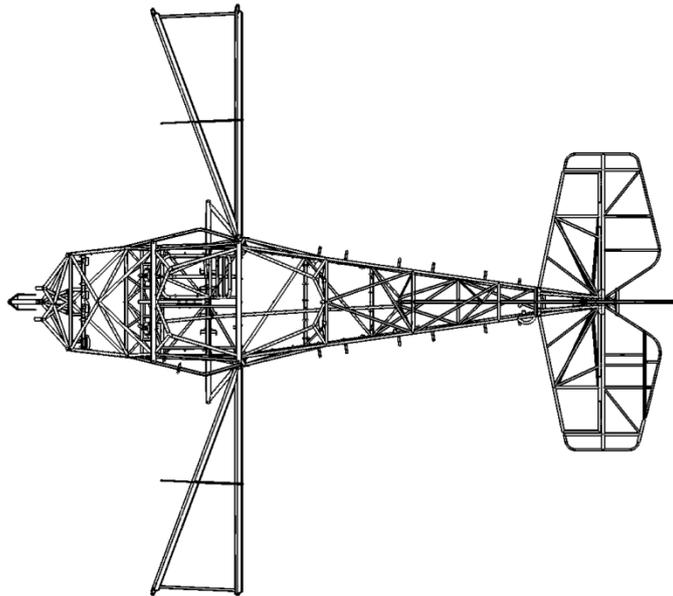
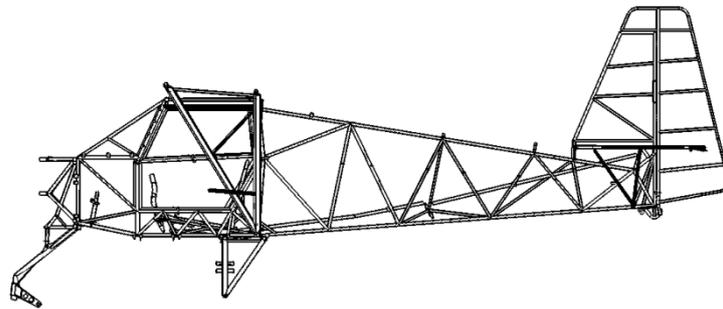
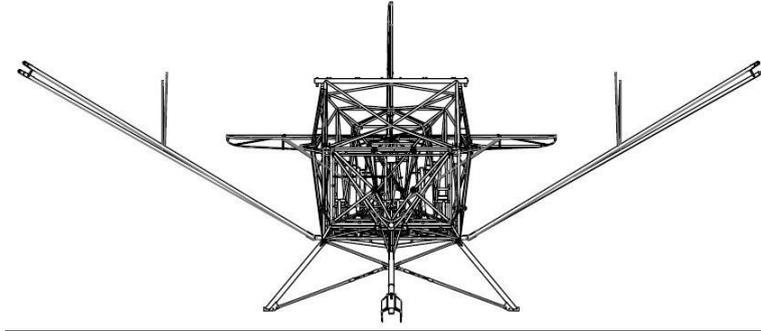
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Illustration of Aircraft - 3 View

Nose Wheel Configuration



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Illustration of Aircraft

Tail Wheel Version



Nose Wheel Version



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ANNEX A – MANDATORY MODIFICATIONS

Designation Classification Subject

ANNEX B - APPROVED OPTIONAL MODIFICATIONS

The installation of all optional modifications is to be inspected by an inspector from an Organisation approved by the CAA for the purpose and an entry made in the appropriate logbook(s). Note that other approved modifications may exist which are not listed here.

Mod No Subject

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ANNEX C - WEIGHING INFORMATION

CG Datum:	1.25" aft of wing leading edge at root (centreline of front spar)
Weighing attitude:	Headrack level, all tyre pressures to be checked (pressures as operators manual) <i>(Nose wheel variant only – this should equate to all three wheels on level surface.)</i>
Weighing attitude:	28.25" AoD (nose wheel variant) 8.75" FoD (-8.75") (tail wheel variant)
Nose wheel moment arm:	35" FoD (-35")
Tail wheel moment arm:	160.75" AoD
Fuel moment arm:	15" AoD (nominal capacity 70 litres = 50.4 kg)
Crew moment arm:	12" AoD (nominal occupant weights below 75kg) 17" AoD (nominal occupant weights above 75kg)
Baggage moment arm	55" AoD
Crew weights:	Minimum 55 kg / maximum 120 kg per seat. (Maximum reducible, not below 86 kg, if required for CG purposes)...
Max baggage weight:	35 kg. Baggage limit may be reduced if required for CG purposes.
Aft CG Limit:	15.5" AoD
Fwd CG Limit:	9" AoD

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ANNEX D

EXAMPLE PLACARDS

(a) Flight Limitations Placards (to be visible to pilot)

<u>Sherwood Scout [Engine] [Registration]</u>	
Bank angle limits:	+/- 60°
Normal Acceleration Limits:	+4 / -2g
Empty Weight:	_____ kg **
Max Take-Off Weight:	450 kg
Minimum Cockpit Weight:	55 kg
Maximum Cockpit Weight:	120 kg in each seat.
Maximum Baggage Load:	35 kg
Aerobatics and deliberate spinning prohibited.	

** This must match the most recent W&CG report for the aircraft.

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

A placard showing the limitations for all indicated engine parameters is to be mounted close to the engine instruments. Also limitations must be shown as coloured markers (red for danger, amber for caution) on the instrument displays.

(c) Fuel Limitations Placard

The following placard is to be displayed close to the fuel sight gauge or one adjacent to each filler cap, and amended according to the specific variant of the aircraft.

<u>FUEL</u>
Tank Max Capacity
35 Litres (7.7 Imp Gal)
83 MON or 90 RON minimum unleaded to BS(EN)228 or AVGAS 100LL
Note: Vent pipes in filler caps should always be pointing forward when fully tightened.

(d) Switches

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All switches must be placarded with function and sense of operation (**up=on, down=off**)

All fuses are to be placarded with rating and function

(e) ASI Placard

The following placard is to be displayed adjacent to the Air Speed Indicator

(Note : ASI Calibration is performed during production flight testing)

Kt CAS (Calibrated)	33 V _{SO}	35 V _{S1}	40	47 Best Glude	50 Approach	59 Flap Limit	60	70 V _A	80	90	100	110	114 V _{NE}
Kt IAS (Indicated)													

A red radial line is to be marked on the ASI dial at V_{NE}; a white arc is to be marked between V_{SO} and V_F. Note that this can only be done once the ASI is calibrated during initial flight testing.

(f) Pitch Trim System

Nose-up and nose-down operation are to be marked. The take-off trim setting must also be indicated on the trimmer control or display

(g) Miscellaneous Placards

The following miscellaneous placards will be displayed

Below / adjacent to each control

<u>Choke – Pull ON</u>	<u>Throttle – Push OPEN</u>
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Clearly visible in Baggage Compartment

<u>Baggage</u> <u>Max 35 Kg</u>
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ANNEX E

TAKE-OFF, LANDING and CLIMB PERFORMANCE

All performance values are at ISA S/L conditions, MTOW, fwd CG, short dry grass. Take-off and landing distances are to/from 15m (50ft) screen height.

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Tail wheel configuration

<u>Variants</u>	<u>TODR</u>	<u>LDR</u>	<u>Climb rate</u>	<u>V_Y</u>
Jabiru	300m (231m unfactored)	344m	1000 ft – 950 fpm 2000 ft – 760 fpm 3000 ft – 630 fpm 4000 ft – 540 fpm	47 KCAS
912	402m (309m unfactored)	309m	1000 ft – 840 fpm 2000 ft – 770 fpm 3000 ft – 710 fpm 4000 ft – 670 fpm	53 KCAS
ULP 260i	470m (360m unfactored)	325m	1050 fpm	53 KCAS

Nose wheel configuration

<u>Variants</u>	<u>TODR</u>	<u>LDR</u>	<u>Climb rate</u>	<u>V_Y</u>
Jabiru	365m (281m unfactored)	299m	1000 ft – 710 fpm 2000 ft – 670 fpm 3000 ft – 630 fpm 4000 ft – 590 fpm	47 KCAS
912	490m (377m unfactored)	269m	1000 ft – 1100 fpm 2000 ft – 1000 fpm 3000 ft – 900 fpm 4000 ft – 800 fpm	53 KCAS