



LAA TYPE ACCEPTANCE DATA SHEET
TADS 194
RANS S10

Issue 1		Dated 15/02/06	
Revision A	Update of TADS format & Safety Spot addition. Addition of AA179 in section 3.3.	Dated 21/01/21	MR

This TADS is intended as a summary of available information about the type and should be used during the build, operation and permit revalidation phases to help owners and inspectors. Although it is hoped that this document is as complete as possible, other sources may contain more up to date information, e.g. the manufacturer's website.

Section 1 contains general information about the type.

Section 2 contains information about the type that is **MANDATORY** and must be complied with.

Section 3 contains advisory information that owners and inspectors should review to help them maintain and operate the aircraft in an airworthy and safe condition. If due consideration and circumstances suggest that compliance with the requirements in this section can safely be deferred, is not required or not applicable, then this is a permitted judgement call. This section also provides a useful repository for advisory information gathered through defect reports and experience.

Section 1 - Introduction

1.1 UK contact

Skycraft Ltd, Riverside House, Bloodfold Farm, Ravens Bank, Holbeach, Lincolnshire, PE12 8SR

Tel: 01406 540 777

Email: dave@sky-craft.co.uk

Website: Skycraft.co.uk

1.2 Description

The RANS S10 is an amateur built aircraft which has been constructed in large numbers in the USA for sporting and aerobatic flight. The airframe is constructed from metal with a welded 4130 fuselage structure. The wings are constructed with aluminium tubular spars with an aluminium skin leading-edge forming a D box section with wing ribs being bent aluminium tube. The whole aircraft is fabric covered. All UK examples are powered by either a Rotax 532 or 582.

The RANS S10 is operated as SEP aircraft, previously known as Group A aircraft within the UK.

Note that the only propeller(s) approved for an individual aircraft are those listed on the individual aircraft's Operating Limitations document or in the [PTL/1](#) (Propeller Type List) for the type.

Section 2 – Mandatory information for owners, operators and inspectors

At all times, responsibility for the maintenance and airworthiness of an aircraft rests with the owner. A Condition of a Permit to Fly requires that: *"the aircraft shall be maintained in an airworthy condition"*.



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2.1 Fast Build Kit 51% Compliance

The fast build kit has been accepted as compliant with the 51% rule.

2.2 Build Manual

Rans supply a build manual detailing the following:

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|----------------------------|----------------------------|-----------------------------|
| 1. General Information | 12. Brake Actuation System | 23. Engine |
| 2. Wing – Fuel Tanks | 13. Floorboard | 24. Engine Cooling System |
| 3. Wing – Ailerons | 14. Rudder | 25. Engine Mount |
| 4. Wing – Struts | 15. Rudder Pedals | 26. Spinner – Cowling |
| 5. Flaperons | 16. Instrument Panel | 27. Windshield – Side Glass |
| 6. Flaperon Mixer | 17. Control Stick | 28. Canopy |
| 7. Fuselage | 18. Seat | 29. Covering |
| 8. Main Landing Gear | 19. Seat Belts | 30. Fabricated Parts |
| 9. Landing – Tailwheel | 20. Throttle | 31. Options |
| 10. Brakes | 21. Tail | 32. C.G. Operations |
| 11. Brake Actuation System | 22. Fuel System - Inverted | |

2.3 Build Inspections

Build inspection schedule 9 (Tubular Aircraft).
Inspector approval codes A-A or A-M. Inspector signing off final inspection also requires 'first flight' endorsement.

2.4 Flight Manual

Not known.

2.5 Mandatory Permit Directives

None applicable specifically to this aircraft type.

Also check the LAA website for MPDs that are non-type specific ([TL2.22](#)).

2.6 LAA Required Modifications (including LAA issued AILs, SBs, etc)

- | | |
|---------------------|---------------------------------|
| PFA-194-001 | Lap strap attachment |
| PFA-194-002 | Placards mandatory |
| PFA-194-003 | Shoulder harness attachment |
| PFA-194-004 issue 2 | Fire precautions |
| PFA-194-005 | Aileron mass balance |
| PFA-194-006 | Placards recommended |
| PFA-194-007 | Ballast installation (optional) |
| MOD/194/015 | Flying cable attach lugs |

The following modifications are required for aerobatic clearance:

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|-------------|---------------------------------|
| MOD-194-008 | 1.25" diameter elevator pushrod |
|-------------|---------------------------------|



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MOD-194-009	Substitution of Mikuni carburettors
MOD-194-010	Fuel header tank and flop tube
MOD-194-011	Four-point harnesses and secondary restraints
MOD-194-012	Addition of G meter
MOD-194-013	Revised placarding
MOD-194-014	Special Survey

2.7 Additional engine operating limitations to be placarded or shown by instrument markings

Notes:

- Refer to the engine manufacturer's latest documentation for the definitive parameter values and recommended instruments.
- Where an instrument is not fitted, the limit need not be displayed.

With Rotax 582 engine:

Maximum CHT: 150°C
 Max Coolant Temp: 80°C (with 50/50 Glycol/water coolant)
 Oil Temp Limits: 50°C to 130°C (Normal 90-110°C)
 Minimum Fuel Pressure: 0.2 bar

2.8 Control surface deflections

Ailerons	Up: 10.5 – 12.5° Down: 10.5 – 12.5°
Elevators	Up: 27 - 32° Down: 25 - 30°
Elevator tab	Up: 30° Down: 30°
Rudder	Left: 20 - 22° Right: 20 - 22°
Flap	Down: 23 - 24° (Not 29-31° as shown on drawings)

2.9 Operating Limitations and Placards

(Note that the wording on an individual aircraft's Operating Limitations document takes precedence, if different.)

1. Maximum number of occupants authorised to be carried: Two
2. The aircraft must be operated in compliance with the following operating limitations, which shall be displayed in the cockpit by means of placards or instrument markings:
 - 2.1 Aerobatic Limitations
Aerobatic manoeuvres are prohibited
Intentional spinning is prohibited
 - 2.2 Loading Limitations
Maximum Total Weight Authorised: 397 kg
CG Range: 63 inches to 67 inches aft of datum



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Datum Point is: The rear face of propeller

- 2.3 Engine Limitations
Maximum Engine RPM: 6800
- 2.4 Airspeed Limitations
Maximum Indicated Airspeed (V_{NE}): 130mph
Max Indicated Airspeed Flaps Extended: 80mph
- 2.5 Other Limitations
The aircraft shall be flown by day and under Visual Flight Rules only.
Smoking in the aircraft is prohibited.

Additional Placards:

"Occupant Warning - This Aircraft has not been Certificated to an International Requirement"

A fireproof identification plate must be fitted to fuselage, engraved or stamped with aircraft's registration letters.

2.10 Maximum permitted empty weight

Not applicable.

Section 3 – Advice to owners, operators and inspectors

3.1 Maintenance Manual

A customised version of the LAA Generic Maintenance Schedule may be used. Further information on maintenance schedules can be found in the [Aircraft Maintenance](#) section of the LAA website.

3.2 Manufacturer's/Standard Options

S-10 Sakota – Optional Aerobatic Package
S-10 Sakota – Optional Aileron Spade
S-10 Sakota – Streamline Footstep

3.3 Manufacturer's Information (including Service Bulletins, Service Letters, etc)

In the absence of any over-riding LAA classification, inspections and modifications published by the manufacturer should be satisfied according to the recommendation of the manufacturer. It is the owner's responsibility to be aware of and supply such information to their Inspector.

011790-01	Jan 1990	Cooling System filler cap
012390-03	Jan 1990	Control linkage rod ends – safety washers
092190-01	Sept 1990	Lock rings on tail cable turnbuckles
061291-01	Jun 1991	Pulley Cable Keepers



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82391-01	Aug 1991	AMW Engine Exchange Program
AD104	Feb 1993	Aft strut material
AD132	Dec 2004	Control stick connector
AD135	Sept 2007	Cable -tang failure
AD136	May 2010	Hour meter oil pressure switch leak
OA149	Jun 2001	Two blade warp drive props on 912ULS
OA160	Jan 2006	Fuel cap vent hole
OA167	Aug 2008	¼ blue fuel line & 1/8 blue primer line
OA168	Apr 2009	Fuel Filter (RANS P/N FS-FIL)
OA173	May 2013	Trim wire breakage
OA184	Mar 2018	Possible rubbing on aileron exit fairing mounting screw
AA167	Jun 2009	Incorrect gap 2 seal
AA172	Dec 2010	Incorrect shipping of AAPG-44 Rivets
AA179	Jan 2016	Incorrect sized K-1000-3 nut plate

3.4 Special Inspection Points

- Inspectors should check all metalwork supplied in the kit carefully for quality before construction commences.
- Build manual diagrams are reasonably clear and few construction problems have been reported.
- Ensure that all blind rivets are 'pulled' squarely and check that rivet heads are properly seated with a feeler gauge.
- If Rotax engine fitted, appropriate Rotax 2-stroke or Rotax 912 series installation checklist to be completed (apart from flight test section) as part of final inspections prior to applying for Permit to Fly.
- Fabric life is limited, and strength can degrade quite rapidly under adverse conditions particularly on surfaces exposed to sunlight due to the absence of an UV blocker. Dacron covers deteriorate with time and lose their strength, particularly if the aircraft is tethered outside. The Bettsometer is standard device for assessing fabric strength.
- Rans state that fading of the colours on upper surfaces compared to those on the lower surfaces is a good indication that the fabric is nearing the end of its useful life, and recommend that the Dacron be replaced when its strength is reduced to half its original value. The 'Bettsometer' can be used to check the fabric strength whilst causing minimal damage to the fabric being tested. A Bettsometer reading of 1000gsm or below is cause for closer inspection and perhaps rejection of the subject skin, replacement skins are available for all models.

3.5 Operational Issues

1. *Safety Spot* reference

The following *Safety Spot* articles are relevant to RANS S-10 aircraft:

Light Aviation [April 2012](#) *RANS S-10 Restricted Elevator*

Incorrectly assembled elevator control system gave a reduced elevator deflection. No harm was caused though illustrates the importance of inspections as reduced control deflections can be dangerous, especially in an aerobatic capable aircraft.



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3.6 Standard Modifications

None

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Please report any errors or omissions to LAA Engineering: engineering@laa.uk.com