



**LAA TYPE ACCEPTANCE DATA SHEET
TADS 188 MURPHY RENEGADE SPIRIT UK
TADS 188A MURPHY RENEGADE 912**

Issue 1	New issue	Dated 18/01/19	JP
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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 the aircraft in an airworthy 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

Nigel Smith

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Email: aerosales@airnig.co.uk

The manufacturer may be contacted using the following details:

Murphy Aircraft Manufacturing Ltd
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Chilliwack
British Columbia
B2R 4H5
Canada

Tel: 00 1 604 792 5855

Email sales: mursales@murphyair.com

Email tech support: murtech@murphyair.com

Website: www.murphyair.com

1.2 Description

The Renegade Spirit is a strut and wire-braced biplane of all-metal construction covered in fabric with a conventional tailwheel undercarriage. It is designed to be able to carry two people in open cockpits, although some LAA administered examples have been restricted to single seater status.

The fuselage is constructed using 6061-T6 aluminium tubing with custom extrusions, the fuselage members are riveted with AVEX and stainless steel blind rivets. Both wings are constant NACA 23012 airfoil sections and there is a sweepback of 10° on the upper wing. The lower wing has a dihedral of 3°. The wing mainspars are constructed from rectangular section 3.5" x 1.5" extruded 6061-T6 aluminium tubing whilst the



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rear spars are of C section 2024-T3 aluminium alloy. Wing ribs are stamped from 2024-T3 aluminium. There is an 'N-type' cabane structure and 'I-type' interplane struts. Ailerons are mounted on all four wings and there are no flaps. The tail unit is a conventional wire braced design.

The ailerons and elevators are operated by push-rods, the rudder by cables. Fuel is carried in either one or two fuel tanks (depending on the model and approval classification), mounted in the upper wing. The undercarriage utilises external bungees in tension to provide springing for the main gear; the tailwheels is a steerable, fully castoring type. The mainwheel brakes can be operated from the rear cockpit only.

There has been a total of over 30 Renegade Spirits on the LAA administered fleet over the years, the majority being the Renegade Spirit UK version. The aircraft type is not cleared for aerobatics in the UK.

The standard engines for use in the Renegade Spirit UK are the Rotax 532 and 582 two stroke engines. Some have alternatively been fitted with a Jabiru 2200A four stroke engine. The Renegade Spirit 912 is a derivative of the Renegade Spirit powered by the 80hp Rotax 912 four stroke engine and the 100hp 912ULS engine has also been installed. The Renegade F30 is a two seat Hirth powered derivative of the Renegade Spirit microlight but is classed as an SEP under LAA administration.

Another option on LAA administered Renegade Spirit UK aircraft is the installation of the BMW R100 and RT1200 two cylinder four stroke motorcycle engine. The RT1200 is a development of the R100 utilising electronic fuel injection rather than carburettors. As with the R100 engine, with the RT1200 the empty weight of the aircraft is such that it is only eligible as a single seater. The aircraft is in the microlight category as a single seater with 390 kg maximum gross weight by virtue of the fact that it was cleared initially in this category as a single seater prior to the change in microlight definition which reduced the max gross weight for single seat microlights to 300 kg.

Various propellers are used across the LAA renegade Spirit fleet, including Arplast, Catto, GSC, Hercules, Lodge, Newton and Warp Drive. 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.

The Renegade Spirit UK is classed as a microlight whereas the Renegade Spirit 912 is an SEP ('Group A') Aeroplane.

Section 2 – Mandatory information for owners, operators and inspectors

2.1 Fast Build Kit 51% Compliance

The Renegade Spirit has only been cleared by the LAA as a slow-build kit which is supplied in the form of unassembled components. In this form it easily meets the 51% rule.

2.2 Build Manual

Supplied by Murphy Aircraft with the kit.

2.3 Build Inspections

Build inspection schedule 2 (metal aircraft).



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Inspector approval codes A-A, A-M or M (Renegade Spirit UK only). Inspector signing off final inspection also requires 'first flight' endorsement.

2.4 Flight Manual

Contact Murphy Aircraft Manufacturing Ltd for availability.

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)

<i>Reference</i>	<i>Date</i>	<i>Description</i>
MOD/188/001	24 Jan 2001	Tail spring attachment cracks
MOD/188/002	24 Jan 2001	Engine mount cracks
MOD/188/003	26 Apr 2002	Shoulder strap chafing
MOD/188/004	15 Sep 2005	Inspection of wing components & placards
Airworthiness Info Letter	24 Jan 2001	MTWA increase explanatory letter

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.

2.8 Control surface deflections

Ailerons	Up	20°
	Down	15°
Elevators	Up	25°
	Down	25°
Elevator tab	Up	20°
	Down	15°
Rudder	Left	25°
	Right	25°



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2.9 Operating Limitations and Placards

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

Due to the many variations of category, engines and propellers the following are examples for information purposes only.

Microlight Versions

Renegade Spirit UK (Rotax 532/582, GSC 2 blade or GSC Tech 3 blade)

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: 390 kg (860 lbs)
CG Range: 7.96" to 18.84" aft of datum
Datum Point is: The centreline of the main landing gear axle
 - 2.3 Engine Limitation:
Maximum Engine RPM: 6500
 - 2.4 Airspeed Limitations
Maximum Indicated Airspeed (V_{NE}): 120 mph
 - 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.

Renegade Spirit UK (Jabiru 2200A, Lodge CJL 150 60" x 32")

1. Maximum number of occupants authorised to be carried: One
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



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Maximum Total Weight Authorised: 390 kg (860 lbs)
CG Range: 7.96" to 12.0" aft of datum
Datum Point is: The centreline of the main landing gear axle

- 2.4 Engine Limitation:
Maximum Engine RPM: 3300
- 2.4 Airspeed Limitations
Maximum Indicated Airspeed (V_{NE}): 120 mph
- 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.

Renegade Spirit UK (BMW RT1200, Ecoprop 174L130/3)

Maximum number of occupants authorised to be carried: One

- 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: 390 kg (860 lbs)
CG Range: 7.96" to 18.84" aft of datum
Datum Point is: The centre line of the main landing gear axle
 - 2.3 Engine Limitations:
Maximum Engine RPM: 7000
Oil Pressure: Maximum 9 Bar, Minimum 2.5 Bar
 - 2.4 Airspeed Limitations
Maximum Indicated Airspeed (V_{NE}): 120 mph
 - 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.



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SEP ('Group A') Versions

Renegade Spirit UK (Rotax 582, Newton 65" x 41"/GSC tech III 68" x 38")

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: 415 kg (915 lbs)
CG Range: 7.96" to 18.84" aft of datum
Datum Point is: The centreline of the main landing gear axle
 - 2.3 Engine Limitations:
Maximum Engine RPM: 6500
 - 2.4 Airspeed Limitations
Maximum Indicated Airspeed (VNE): 120 mph
 - 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.

Renegade 912 (Rotax 912, Newton 68" x 46")

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: 476 kg (1049 lbs)
CG Range: 7.96" to 18.84" aft of datum
Datum Point is: The centreline of the main landing gear axle
 - 2.3 Engine Limitations:
Maximum Engine RPM: 5800
Maximum Continuous RPM: 5500



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- 2.4 Airspeed Limitations
 Maximum Indicated Airspeed (VNE): 120 mph
- 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.

Renegade Spirit UK (Jabiru, Newton 62" x 34")

- 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: 415 kg (915 lbs)
 CG Range: 7.96" to 18.84" aft of datum
 Datum Point is: The centreline of the main landing gear axle
 - 2.3 Engine Limitations:
 Maximum Engine RPM: 3300
 - 2.4 Airspeed Limitations
 Maximum Indicated Airspeed (VNE): 120 mph
 - 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.

Renegade Spirit F30 (Hirth F30, Warp Drive 3 blade)

- 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:



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- 2.1 Aerobatic Limitations
Aerobatic manoeuvres are prohibited.
Intentional spinning is prohibited.
- 2.2 Loading Limitations
Maximum Total Weight Authorised: 420 kg (926 lbs)
CG Range: 7.96" to 18.84" aft of datum
Datum Point is: The centreline of the main landing gear axle
- 2.3 Engine Limitations:
Maximum Engine RPM: 5500
Maximum continuous engine RPM: 5000
- 2.4 Airspeed Limitations
Maximum Indicated Airspeed (VNE): 120 mph
- 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

A 'maximum permitted empty weight' is applicable to Renegade Spirits classed as microlights.

Further information on maximum permitted empty weights can be found in the following Technical Leaflets:

[TL 2.11: Placards, Labels and Registration Marks](#)

[TL 3.16: Guidance on Weight and Balance](#)

Section 3 – Advice to owners, operators and inspectors

3.1 Maintenance Manual

A Maintenance Manual is available from Murphy Aircraft Manufacturing. Contact technical support at murtech@murphyair.com.

3.2 Standard Options

There are no standard options.



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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.

Reference	Date	Description
Advice Bulletin No 1	n/a	Build advice, various
Advice Bulletin No 2	16 Jan 1990	Build clarification points, various
Advice Bulletin No 2a	28 Nov 1990	Preparation and painting
Advice Bulletin No 3	25 Jan 1990	Build clarification points, various
Safety Bulletin No 4	05 Mar 1990	Spinner security
Safety Bulletin No 5	27 Mar 1990	Engine over heating
Safety Bulletin No 6	n/a	Build clarification
Safety Bulletin No 7	27 Jun 1990	Build clarification
Safety Bulletin No 8	23 Jul 1990	Build clarification
Safety Bulletin No 9	24 Aug 1990	Build clarification & maintenance
Safety Bulletin No 10	16 Sep 1990	Build clarification
Safety Bulletin No 11	08 Oct 1990	Build clarification & operation
Safety Bulletin No 12	18 Feb 1991	Build clarification
Safety Bulletin No 13	27 Mar 1991	Build clarification
Safety Bulletin No 14	01 May 1991	Build clarification
Safety Bulletin No 15	28 May 1991	Build clarification & maintenance
Safety Bulletin No 16	20 Oct 1991	Build clarification
Safety Bulletin No 17	17 Dec 1991	Build clarification
Safety Bulletin No 20	13 Sep 1993	Build clarification & operation

Refer to Murphy website where bulletins can be downloaded.

3.4 Special Inspection Points

See section 2.6

3.5 Special Test Flying Issues

None known

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