



LAA TYPE ACCEPTANCE DATA SHEET
TADS 385
BRISTELL NG5 SPEED WING

Issue 3	Inclusion of tail-dragger version. Inclusion of Rotax 912iS engine. Amendments to mandatory mods. Correct typo in MOD-385-005. Additional special inspection points and flight test issues. Minor editorial changes.	Dated 22/2/19	JV
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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

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1.2 Description

The Bristell NG5 Speed Wing is a single-engined, two-seat, low-wing monoplane design of primarily riveted aluminium alloy construction. The aircraft is available to build in the UK as a 51% kit, manufactured by BRM Aero Ltd in the Czech Republic.

The fuselage is of conventional all-metal construction with sheet aluminium skins. A one-piece canopy is fitted, hinged at the front, allowing straightforward access to the side-by-side seating arrangement. The horizontal tail is a conventional one-piece tailplane/elevator fitted with an electrically activated trim tab driven by a Ray Allen servo mounted in the elevator. The wing is of conventional design, with two tapered outer panels attached to a centre section which is integral with the fuselage, including substantial root fairings. Drag and torsion loads are fed from wing to fuselage via a rear spar root fitting. The wing panels are fitted with conventional ailerons and electrically operated slotted flaps. Fuel is contained in two tanks, each of 60 litres capacity built integral with the inboard wing leading edges. The aircraft can have a fixed tricycle undercarriage with steerable nosewheel or a non-steerable tailwheel option.



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The aircraft is manufactured from aluminium alloy for all structural components, with steel fittings where appropriate. The cowlings and other fairings and the main landing gear legs are formed from composite materials. The ailerons and elevator are rod operated while the rudder is actuated via stranded steel cables. The pilots and passenger's rudder pedals are adjustable independently.

The standard powerplant configuration is a Rotax 912-ULS or 912iS fitted with an electrically variable pitch Fiti Eco propeller or a Jabiru 3300A fitted with a Sensenich 2A0J5R64ZN propeller. 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.

With a maximum gross weight of 600 kg the Bristell is only eligible as an SEP Aeroplane ("Group A") under LAA administration.

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. Condition No 3 of a Permit to Fly requires that: "*the aircraft shall be maintained in an airworthy condition*".

2.1 Fast Build Kit 51% Compliance

The type has been assessed as compliant with the '51% rule', provided that the kit is supplied as per the kit inventory received August 2012. The technical leaflet TL1.11 will be updated to show the contents of the accepted fast build kit.

2.2 Build Manual

A build manual is available from the UK agents (revision 28/04/14 at the date of this TADS issue).

2.3 Build Inspections

Build inspection schedule 'Bristell NG5'.
Inspector approval codes A-A or A-M or K. Inspector signing off final inspection also requires 'first flight' endorsement.

2.4 Flight Manual

A UK Pilots Operating Handbook has been created for the UK model and is available from the agents.

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](#)).



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

The modifications (to the standard aircraft as produced by BRM Aero) required by the LAA for acceptance of the type in the UK are as follows (details of these changes supplied by the agent, as required):

- MOD-385-001 Addition of fuel strainers at fuel pick-ups in wing tanks, to prevent blockage of fuel flow by debris entering tank. Drawing NG5W_04-KZ 24 and sketch dated 29.6.12 refers.
- MOD-385-002 Reinforcement of nosewheel steering actuating arm by increasing thickness from 1.59mm to 3.175mm, drawing NG5C_02_0201_02 refers.
- MOD-385-003 Inclusion of a warning light and two microswitches mounted on the cockpit sills adjacent to the latches, to warn the pilot if the press-to-latch canopy was not securely locked down. Drawing UK-2012-003 refers. This can be omitted if a placard is positioned in clear view of the pilot stating "check both sides of canopy are locked before flight by pushing up canopy in the centre".
- MOD-385-004 Substitution of larger span tailplane from the standard wing LSA variant.
- MOD-385-005 Inclusion of a rate controller to slow down the pitch trim to achieve a stop-to-stop time of between 19 and 25 seconds. Acceptable controllers are the Maplin pulse width modulator part number WC76H or RS Components 238-9816.
- MOD-385-006 Fitment of Facet pump type 40106 (Rotax 912-ULS engine) or type 40105 (Jabiru engines) as electric boost pump. Not required on Rotax 912iS engines.

In addition, aircraft fitted with the Rotax 912iS engine require the following:

- MOD-385-007 Fuel system installation in accordance with drawing UK-2015-037 R3.
- MOD-385-008 Engine installation in accordance with drawing UK-2015-038 R1.
- MOD-385-009 Electrical system installation in accordance with drawing GEA 24 EIS issue 4 25/03/15.
- MOD-385-010 Substitution of modified control torque tube part number NG5-01-01V1-01-IS.

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 912-ULS/912iS engine:

- Maximum CHT: 135°C
- Max Coolant Temp: 120°C (with 50/50 Glycol/water coolant)
- Max Coolant Temp: 135°C (with waterless coolant)
- Oil Temp Limits: 50°C to 130°C (Normal 90-110°C)
- Oil Pressure: 2-5 bar
- Minimum Fuel Pressure: 0.15 bar (2.8 bar on 912iS)



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With Jabiru 3300A engine:

- Maximum CHT: 180°C continuous (200°C peak)
- Maximum EGT: 720°C (680°C above 70% power)
- Oil Temp Limits: 50-118°C (max continuous 100°C)
- Oil Pressure: 80-525 kPa (normal operations 220 – 525 kPa)
- Fuel pressure limits: 5-20 kPa

2.8 Control surface deflections

Ailerons	Up: 24° ±3° Left Down: 19° ±4° Right Down: 16° ±4°
Elevators	Up: 30° ±4° Down: 15° ±4°
Elevator tab	Up: 10° ±3° Down: 25° ±3°
Rudder	Left: 30° ±3° Right: 30° ±3°
Flap	0° ±2°; 10° ±3°; 20° ±3°; 30° ±3°

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: 600 kg
CG Range: limits 13.3" to 18.6" aft of the datum point
Datum Point is: the wing leading edge at rib 4
Maximum baggage weight: 15 Kg (rear) 20 Kg(wing lockers)
 - 2.3 Engine Limitations
Rotax 912-ULS/912iS
Maximum Engine RPM: 5800
Maximum continuous engine RPM: 5500
Jabiru 3300A
Maximum Engine RPM: 3300
Maximum continuous engine RPM: 3100
 - 2.4 Airspeed Limitations
Maximum Indicated Airspeed (V_{NE}): 155 knots
Max Indicated Airspeed Flaps Extended: 75 knots



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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 maintenance and procedures manual is available from the UK agent.

3.2 Standard Options

The listing below shows the factory options that have been accepted by the LAA.

Aircraft standard features:

- 2 x 60 litre fuel capacity (tanks located in each wing).
- 3 blade electrically operated variable pitch Fiti Eco prop (Rotax engines)
- 2 blade ground adjustable Sensenich 2A0J5R64ZN prop (Jabiru engines)
- Wheel spats
- Steerable nosewheel (tricycle version)
- Electrically operated slotted flaps
- Stainless steel firewall and stainless steel exhaust
- 2 panel mounted vents
- Four point safety harness x 2
- Electrically operated elevator trimmer
- Push-pull throttle
- Tip-up canopy

Aircraft options:

1. Wing leading edge landing lights (Bristell LED X2)
2. Dual hydraulic brakes
3. Parking brake
4. Electric aileron trim
5. Trim and PTT on both control columns
6. Airworld UK wingtip navigation and strobe lights
7. Aveo wingtip and tail navigation and strobe lights
8. Adjustable rudder pedals



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9. Wing baggage locker
10. Front baggage locker
11. Wheel spats
12. Taildragger only: 6"x6.00 wheels and tyres with larger spats

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.

None at current issue date.

3.4 Special Inspection Points

- With Rotax engine fitted, 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.
- The position of the static port must be maintained as per the factory drawings (centre of the fuselage) to avoid ASI errors.
- The fuel system diagrams in the build manual leave room for misinterpretation of the correct fuel pipe feeds between the fuel system in the fuselage and the connections to the wing mounted fuel tanks. It is essential to ensure that the fuel feed from the tank feeds from the port at the bottom of each tank and that the return fuel is fed back to the port near the top of each tank. If the two connections are transposed the engine would run normally when the tanks are full but suffer fuel starvation after a small amount of fuel has been consumed, leading to an engine failure.
- With Jabiru engine installations, holes must be placed in the rear baffles to ensure a flow of cooling air over the ignition coils.

3.5 Special Test Flying Issues

- If both fuel tanks are full, select the left tank to avoid fuel overflow, as the fuel flow return from the engine routes to the left tank only.
- Use of 10° flap in the circuit aids forward vision.
- Ensure adequate cushioning behind pilot seat back to ensure full rudder travel and differential brake can be achieved – cushions should not be loose so as to pose a jamming hazard. This is particularly important on the taildragger variant to ensure forward visibility when taxiing.
- Check adjustment and satisfactory operation/effectiveness of canopy latch early in the flight test programme.
- If the aircraft exhibits a marked wing drop at the stall, check adjustment of the canopy latch mechanism and the wing lower gap seals.

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