



LAA TYPE ACCEPTANCE DATA SHEET
TADS 179
BRANDLI BX2 CHERRY

Issue 1	Initial issue	Dated 14/2/18	FD
---------	---------------	---------------	----

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

None.

1.2 Description

The Brandli BX-2 Cherry is a single-engined two-seat side-by-side monoplane design of wood/composite construction. The aircraft is fitted with a manually retractable tricycle undercarriage and is easily de-riggable for compact storage or road transportation.

The fuselage is of conventional wood and ply box construction. A fuel tank is fitted between the instrument panel and the firewall. A forward sliding canopy is fitted allowing straightforward access to the side-by-side seating arrangement. The horizontal tail is an all-flying unit, fitted with a trailing edge anti-balance tab. The wing is built in three pieces, comprising of a centre-section and outer wing panels. The outer wing panels are easily deriggable from the centre-section using a glider-style overlapping spar-tang design. Drag and torsion loads are reacted at the wing joint via a trailing edge false-spar. The wing panels are fitted with a two-piece manually actuated slotted flap each side, and ailerons which droop with flap deflection.

The aircraft has a manually retracted tricycle undercarriage. The plans call for Douglas Fir material to be used in construction, or Sitka spruce with an ultimate crushing strength parallel to the grain not less than 400 kg/cm². The fuselage is manufactured from Douglas Fir or Sitka spruce longerons, uprights and cross members, with birch ply skinning and top decking. The fuselage frames carrying undercarriage and wing attachments are manufactured from spruce and plywood, with birch ply blocks used in high-stress areas. Each wing panel has a main box spar of spruce and ply construction with a light-weight spruce and ply rear spar. The ribs are a mixture of foam for lightly loaded ribs and spruce/ply for more heavily loaded ribs at the wing root, tip and aileron/flap attachments. The wing skins are glass-cloth formed in a mouldless construction technique over contoured styrofoam blocks bonded to ribs and spars. The result is a hollow section wing with a single-faceplate foam-sandwich skin.



LAA TYPE ACCEPTANCE DATA SHEET
TADS 179
BRANDLI BX2 CHERRY

The tailplane, fin and rudder, plus flaps and ailerons, have a similar construction to the wings albeit with solid foam cores rather than individual top and bottom blocks.

The tailplane halves are mounted onto an aluminium tube that pivots on fittings bolted to the fuselage. The tailplane halves are locked in place by a pin at approximately mid semi-span which carries torque loads into the aluminium tube and prevents the tailplane halves from moving spanwise. The main undercarriage is a two-piece wood/glass-fibre/epoxy cantilever spring, while the nosewheel is made up of telescopic steel tube. Retraction is by a cable/pulley arrangement working through a single operating lever.

LAA examples have been accepted with the Continental C90 (as per drawings) and with the Rotax 912-ULS engine.

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

Not applicable: plans-built.

2.2 Build Manual

Nil. Construction drawing set provides all required information

2.3 Build Inspections

Build inspection schedule 16 (BX2 Cherry).
Inspector approval codes A-A or A-W. Inspector signing off final inspection also requires 'first flight' endorsement.

2.4 Flight Manual

Nil available

2.5 Mandatory Permit Directives

None specifically applicable to this aircraft type.

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



LAA TYPE ACCEPTANCE DATA SHEET
TADS 179
BRANDLI BX2 CHERRY

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

Modifications required by the LAA for acceptance of the type in the UK, are as follows:

- MOD-179-001 Reinforcement of Lap Strap Attachments. The centre lap-strap attachment to the fuselage has been reinforced by adding check-cables between the strap attachment and the rear fuselage. The outer lap-strap attachments have been reinforced by bolting the strap attachment through a large 5/8" thick plywood plate glued to the fuselage side between fuselage uprights.
- MOD-179-002 Reinforcement of Aileron Pushrod Attachment to Outer Wing Rib. Extra glass fibre layup to reinforce outer wing rib.
- MOD-179-003 Fastener Safety Locking. Wire-locking or lock nuts (where appropriate) or split pins rather than Loc-Tite to be used to safety various fasteners throughout the airframe.
- MOD-179-004 Limited Aileron Deflection. Aileron deflections limited to designer's recommendations (18 deg up, 14 deg down) to prevent aileron stall.
- MOD-179-005 Limiting Airspeeds. Limiting airspeed changes made in line with designer's recommendations ie Va: 170 km/hr, Vne: 219 km/hr.
- MOD-179-006 Nose Wheel. Stiffer nosewheel assembly option to be fitted as mandatory to UK aircraft.
- MOD-179-007 Rear Spar Root Attachments. Rear spar attachment fittings at the wing root have been bonded as well as bolted to the wing spars, both inboard and outboard. It is important to check that all wooden reinforcements are present as called up in the drawings. Additional 2 mm thick plywood doublers are required to be glued to the aft side of the rear spar root of the outer wing in the area of the root fittings.
- MOD-179-008 Additional 4 mm thick plywood packer required above aft inboard root fitting, as per fwd inboard root fitting.
- MOD-179-009 Flap Operating Range. Flaps placarded to state that 60 flap setting is for use as an aid to entry and exit of the aircraft only. Use of 60 degree flap setting in flight is prohibited.
- MOD-179-010 Flap Interconnect Plate. Flap interconnect plates have been extended to reduce fastener loads.
- MOD-179-011 Tufnol Block in Aileron Control System. Block, part number D074, enlarged and bolted attachment to the fuselage reinforced.
- MOD-179-012 Rudder Pedal Reinforcement. The rudder pedals are reinforced by using thicker tubing and multiple bolts.
- MOD-179-013 Fuselage Reinforcement. Glass/epoxy UD reinforcement carried out to fuselage cross-member under instrument panel.
- MOD-179-014 Gascolator Shield. Aluminium shield fitted between exhaust and gascolator.
- MOD-179-015 Fwd Fin Spar Reinforcement. Fin spar reinforced with ply around area where large cutout is made for the pitch control rod to pass through.
- MOD-179-016 Pitch Control System Mod. Improved locking of part number 10, drg D026.
- MOD 179-017 With a Rotax 912UL/ULS engine fitted, 3 degrees engine sidethrust has been found necessary to avoid an undesirable tendency to spin off a power-on stall due to excessive rudder travel needed to stay in balance at high power/low speed configuration. This change is considered desirable with a Continental engine also.



LAA TYPE ACCEPTANCE DATA SHEET
TADS 179
BRANDLI BX2 CHERRY

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

TBD.

2.9 Operating Limitations and Placards

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

Maximum number of occupants authorised to be carried: Two

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:

Aerobatic Limitations

- Intentional spinning is prohibited
- Aerobatic manoeuvres are prohibited

Loading Limitations

- Maximum Total Weight Authorised: 550 KGs
- CG Range: 11.42" to 15.75" aft of datum (with undercarriage down).
- Datum Point is: Leading edge of wing at root.

Engine Limitations (Continental C90)

- Maximum Engine RPM: 2625 rpm.
- Maximum continuous engine RPM: 2475 rpm.

Airspeed Limitations

- Maximum Indicated Airspeed: 149 Kts
- Maximum Indicated Airspeed with Flaps Extended: 77 Kts
- Maximum Manoeuvring Airspeed: 91 Kts
- Maximum Airspeed with U/C Extended: 91 kts
- Maximum Rough-Air Airspeed: 118 Kts

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.



**LAA TYPE ACCEPTANCE DATA SHEET
TADS 179
BRANDLI BX2 CHERRY**

2.10 Maximum permitted empty weight

Fuel tank contents may vary slightly between examples so it is not possible to define a universal maximum empty weight. With full fuel tank, aircraft must be able to carry a pilot weighing 170 lbs without exceeding max permitted gross weight and with two crew of 170 lbs it must be possible to fuel for at least half an hour's fast cruise flight without exceeding max gross weight.

Section 3 – Advice to owners, operators and inspectors

3.1 Maintenance Manual

Nil. In the absence of a manufacturer's schedule, refer to LAA [Generic Maintenance Schedule](#).

3.2 Standard Options

Continental C90 engine

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 known.

3.4 Special Inspection Points

Retraction checks to be carried out with the aircraft on jacks at each annual check

3.5 Special Test Flying Issues

If aircraft has not been fitted with an engine mount incorporating side thrust, large rudder angles are required in the approach to power-on stalls which can lead to a tendency to enter a rapid spin when the stall occurs. Stall tests should therefore be carried out with particular care especially if carried out power-on.

----- END -----

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