LAA TYPE ACCEPTANCE DATA SHEET TADS 094

QUICKIE Q2, Q200, TRI-Q AND TRI-Q200

Issue 1 Initial Issue dated 13.7.06

1. UK contact Nil. Previously Don Johnson of Coventry.

2. Description

The Quickie Q2 is a small two-seat tandem wing aircraft of all composite construction, which was available from Quickie Aircraft Corp (QAC) as a kit in the 1980s. Originally designed with a tailwheel undercarriage configuration (Quickie Q2 or with Continental engine, Quickie Q200), a tricycle conversion kit (known as Quickie Tri-Q or with Continental engine, Quickie Tri-Q200) was later developed and marketed by Tri-Q Developments. The tailwheel version is unusual in that the main wheels are mounted at the tips of the foreplane, relying on foreplane bending to provide the suspension action. The engine is installed in tractor configuration. The aircraft consist of a combination of pre-moulded composite parts and wet lay-up onto hot wire-cut foam cores. The wing and foreplane are one-piece components fitted permanently to the fuselage, but the rear fuselage is de-mountable for storage / transport purposes.

3. Fast Build Kit 51% Compliance

Not applicable – kit no longer available following demise of QAC in 1980s.

4. Build Manual

Q2 Build manual and drawings supplied by QAC.

5. Build Inspections

Build inspection schedule 10 (Quickie Aircraft).
Inspector approval codes A-A or A-C1. Inspector signing off final inspection also requires 'first flight' endorsement.

6. Maintenance Manual

See Q2 Pilot's Manual for maintenance issues specific to type. In the absence of a specific maintenance schedule, refer to LAMS schedule.

7. Flight Manual

Q2 Pilot's Manual supplied by QAC

8. Mandatory Permit Directives

None applicable specifically to this aircraft type, but note

MPD: 1998-019-R1 Flexible Fuel Tubing Applies to all aircraft

9. LAA Mandatory Modifications

Six modifications were required by the LAA for acceptance of the type in the UK, as follows:

LAA-94-001 Fitting of tension springs to rudder pedals to keep rudder cables taut, using short lengths of cable and pulleys mounted on firewall. LAA can provide drawing.
LAA-94-002 Single mass balance (counterweight) for elevators.
LAA-94-003 Dual elevator pitch control rods and roll trim on port side (see newsletter 20) LAA can provide drawing.
LAA-94-004 Addition of limit stops to pitch and roll controls. LAA can provide drawing.
LAA-94-005 Fitment of LeGare pitch trim tab (modified to have positive attachment of operating cable or sprocket and chain drive) superceded by aileron reflexor system
LAA-94-006 Aileron rigging – ailerons to be rigged with aileron trailing edge 3/16" up when in neutral position.

10. Service Bulletins

Refer to Quickie Newsletters 11-21 for important plans changes and service information.

Newsletter 11	Q2PC1	Optional increased shoulder width	February 1981
Newsletter 12	Q2PC3	Change to canard female jigging template	February 1981
Newsletter 12	Q2PC4	Change to canard bevelling dimension	February 1981
Newsletter 13	Q2PC5	Venting of fuel header tank	June 1981
Newsletter 13	Q2PC6	Increase canard incidence by 1 degree	June 1981
Newsletter 13	Q2PC7	Change in geometry of aileron bellcranks	June 1981
Newsletter 13	Q2PC8	Improvements to wheel brakes	June 1981
Newsletter 15	Q2PC20	Capping of ends of control surfaces	December 1981
Newsletter 15	Q2PC21	Aft canopy attachment	January 1982
Newsletter 16	Q2PC22	Fin attachment to fuselage	April 1982
Newsletter 17	Q2PC22	Revision	June 1982
Newsletter 18	Q2PC23	Layout of EM3 to match Revmaster prop flange	October 1982
Newsletter 18	Q2PC24	Material callout for C3 latch should be 6061-T6	October 1982
Newsletter 19	Q2PC25	Position of fuel filters changed	January 1983
Newsletter 19	Q2PC26	Fuel flow check. Enlarged engine cooling air inlets	January 1983
Newsletter 22	Q2PC28	Optional reinforcement of rear fuselage	Winter 1983
Newsletter 22	Q2PC29	Alteration to engine cooling air outlet	Winter 1984
Newsletter 22	Q2PC30	Fin drawing dim. changed from 20.6"to 23.5"	Winter 1984

Newsletters 12, 15, 16, 17, 18, 19, 20, 22, 24 contain many important builder tips – too many to list here. Copies available from LAA Engineering on request.

11. Standard Options

- Alternative engine choices as above
- Tricycle or tailwheel undercarriage.
- Forward opening canopy
- QAC Speed brake installation (belly board) see newsletter 25, also Tri-Q Developments version.
- NASA LS(1) or standard GU aerofoil section canard. The LS(1) canard was designed to minimise the effect off flying into rain, and had a reinforced carbon spar to allow greater max gross weight. LS(1) canard incorporates 'sparrow trainers' as standard. See newsletter 19.
- LeGare pitch trimmer (see newsletter 18 and 'AeroGare' drawings) or QAC aileron reflexor (see newsletters 19 and 20) or QBA Modified version ref QBA Newsletter Sept/Oct 1984.
- Optional QAC canard vortex generators for use with GU canard to reduce pitch change in rain. See Newsletter 24.
- Hydraulic brakes (and optional hydraulic park brake)
- Electric start for Revmaster engine
- Dual rudder pedals and dual brake pedals
- 5.00 x 5 tyres for tailwheel versions

12. Special Inspection Points

- Attention to profile accuracy and surface waviness on all flying surfaces, especially canard upper surface. See newsletter 20.
- Avoidance of excess weight
- For details of engine installation and other systems not provided on the drawing, refer to standard aircraft practise for example as contained in Bingelis books 'Sportplane Builder', 'Firewall Forward' and 'Sportplane Construction Techniques'.
- The suggested procedure for correcting a twisted wing by solar heating is not to be used, as this might cause delamination of the wing skin from the foam core.
- A suitable alternative resin system for Safe-T-Poxy is Schueffler L285 available from PRF Composites (tel 01202 680077). The standard hardener for this epoxy resin is H285 hardener which has a 45 minute pot life – slower hardeners are also available for the big lay-ups needing longer application times.
- For Tri-Q and Q200, as a result of noseleg collapses the noseleg was uprated in the 1990s and only the later reinforced type noseleg should be used. Reinforced noseleg available from Don Swing (Velocity A/C)

13. Operating Limitations and Placards

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 Gross Weight: GU canard: 454 Kg

LS(1) canard 500 Kg (subject to take off and climb performance with VW based engines)

CG Range: Refer to Q200 flight manual for weight and cg envelope.
(Forward cg limit is extended when LS(1) canard used. Newsletter 20 contains revised weight/cg envelope).

Engine Limitations

Maximum Engine RPM: Continental 0-200A: 2750

Continental C90: 2625 (Max continuous 2475)

Revmaster 2100D 3400

Limbach L2000 3400

Airspeed Limitations

Maximum Indicated Airspeed: Quickie Q2 and Tri-Q: 200mph

Q200 and TriQ200: 230 mph

Other Limitations and placards

The aircraft shall be flown by day and under Visual Flight Rules only.

Smoking in the aircraft is prohibited.

Cockpit to be placarded “When entering rain, this aircraft may experience a pitch trim change”.

Occupant Warning – This Aircraft has not been Certificated to an International Standard

Fireproof identification plate to be fitted to fuselage engraved with aircraft registration letters.

14. Special Test Flying Issues

Refer to Quickie newsletter 17 for additional advice on Q2 flight testing

- Adequacy of engine cooling (see newsletters 18 and 19)
- Leaking cylinder head gaskets on Revmaster engines (see newsletter 18)
- Check elevators in flight up-float is in range 3.5 to 6.5 degrees when cruising at mid-cg (see newsletter 18)
- Many of the tailwheel undercarriage Quickies in the UK have suffered accidents through ground loops, due to loss of directional control on the ground, frequently resulting in the fuselage breaking just forward of the fin. See newsletter 20.
- Another common problem is broken foreplanes on the tailwheel versions due to the aircraft bouncing heavily on landing. Inspect foreplane carefully for signs of overstress at root and in vicinity of wheel attachments following any heavy landing, also tailwheel spring and rear fuselage just forward of the fin (see newsletter 22)

15. Control surface deflections

Ailerons	Up:	TBD degrees
	Down:	TBD degrees
Elevators	Up:	TBD degrees
	Down:	TBD degrees
Rudder	Left	TBD degrees
	Right	TBD degrees

Approved:

F.R.Donaldson
Chief Engineer

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