LAA TYPE ACCEPTANCE DATA SHEET TADS 172A

DENNEY KITFOX MK1, 2, 3, 4, 4-1200

Issue 6	Service Bulletins that affect only Pulsar aircraft deleted	Dated 10/06/09

1. USA contact

Kitfox Aircraft LCC 123 Airport Way PO Box 997 Homedale, ID 83628 USA
Tel. 001-208.337.5111 info@kitfoxaircraft.com

Uk contact for the type, Les James, expert builder and Kitfox repairs/servicing.
Tel 01455 290258.

2. Description

The Kitfox is a kit-built, lightweight, tube and fabric aircraft with STOL capabilities. The Kitfox may only be built from kits supplied initially by Denney Aircraft, latterly by Skystar Aircraft Corp. Drawings are not available. The airframe is derived from the structurally almost identical Avid Flyer. Both aircraft are relatively conventional high wing, side by side 2-seaters. The wings are readily folded for transport or storage. Both aircraft feature an unusual flapperon arrangement where the full span flapperons are suspended a couple of inches below the trailing edge of the wing. The Kitfox Mk 1, 2 and 3 are all outwardly very similar, while the Mk 4 introduced an improved type of flapperon and flapperon control system and a flat-bottomed wing section in place of the original undercambered type. The Mk 4-1200 incorporates further structural reinforcements, while the Speedster is a clipped-wing version of the Mk 4 (not to be confused with the Optima mod, see 'Optima Wing Modification' section). Engines accepted for use on the Kitfox depends on type but includes the Rotax 532, 582 and 912.

The Mk 5 and Mk 7 are later developments of the type, both of which are now fully LAA accepted types. There are no UK examples of the Mk 6.

The Kitfox has a complex welded 4130 steel tube truss fuselage and welded steel tube tail surfaces, both of which are supplied complete in the kit and (optionally) come powder coated. The wings are built around two 6061 T-6 tubular aluminium spars. The jig-built plywood ribs are supplied ready to bond to the spars. Internal bracing within the wings is provided by diagonal tubes riveted and bonded in place. The wing structure is assembled using epoxy adhesive, which is supplied with the kit. Full span flapperons are fitted, actuated by rods connecting at the root end. The flying control system is complex and rather delicate in appearance. A bungee-sprung undercarriage is fitted to most examples, an alternative cantilever leg type gear being optional on some models. The Kitfox is covered with lightweight fabric, and thanks to the use of wide rib cap strips, fabric can be attached to ribs by fabric cement method, rib stitching is not required.

Some Kitfox Mk 1 and 2 models are eligible for approval in the microlight category and about a half dozen examples have transferred. All Kitfox 3 and later models are only Group A eligible.

In order to classify as a microlight,

a. The aircraft must have the the full length wing of the Kitfox mk 1 or 2, ie the wingspan must not have been clipped.
b. The flapperons must be operable as flaps as well as ailerons.
c. The aircraft must be issued with a Permit to Fly stating that it is a microlight in the title block of the front page of the Permit to Fly.
d. It must also be issued a CAA Noise Certificate showing correct data with regard to propeller, engine, intake and exhaust detail.
e. It is required that microlight aircraft are check weighed and a cockpit placard installed/updated every five years. Formulae to determine the maximum permitted empty weight of a two seat microlight = MTWA – 172 kg – weight of fuel consumed by the engine during one hour of flight at maximum cruise power.

3. Fast Build Kit 51% Compliance

Not applicable, these aircraft were only supplied in slow-build kit form with the fuselage and tail surfaces supplied as pre-welded assembles but the wing requiring assembly from components.

4. Build Manual

Supplied with kit.

5. Build Inspections

Build inspection schedule 9 (tubular aircraft).
Inspector approval codes A-A or A-W or A-K. Inspector signing off final inspection also requires 'first flight' endorsement

6. Maintenance Manual

Simple schedule provided in Pilots Manual. For further guidance refer to LAMS schedule. Refer to build manual for rigging instructions. For engine consult engine manufacturer's schedule.

7. Flight Manual

Flight Manual supplied with Mk 3, 4 and 4-1200 kit. For Mk1 and 2 aircraft, build manual contained basic information, for further advice see Ed Downs book 'How to Fly a Kitfox'.

8. Mandatory Permit Directives

None applicable specifically to this aircraft type, but note

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

9. LAA Mandatory Modifications

All modification/inspection information below, except for MOD/172/023, was compiled in the early 90s and was/is sent to builders on project registration. MOD/172/023 was sent to all Kitfox owners during October 2002.

Subject	***Reference***
Placards Mandatory	MOD/172/001
Placards Recommended	MOD/172/002
Stainless Steel Firewall	MOD/172/003
Heat Shields	MOD/172/004
Water Header Tank	MOD/172/005
Cooling System Pressure Test	MOD/172/006
Cooling System Bleed Procedure	MOD/172/007
Water Header Tank Inspection Hatch	MOD/172/008
Wiring Harness	MOD/172/009
Flapperons	MOD/172/010
Flap Control Gate	MOD/172/011
Elevator Reinforcement	MOD/172/012
Tailwheel Spring	MOD/172/013
Main Fuel Tank	MOD/172/014
Wing Tanks	MOD/172/015
Securing Engine Accessories	MOD/172/016
Elevator Trim Tab	MOD/172/017
Flapperon Attachment Reinforcement	MOD/172/018
Flapperon Torque Tube Bearing Inspection	MOD/172/019
Fuel Tank Sloshing Sealant Failure	MOD/172/020
Control Column Assembly	MOD/172/021
Clearance check at Flapperon pushrod	MOD/172/022
Lift strut threaded rod-end inspection	MOD/172/023

See also the following news updates:

News update 5/8/92
(This news update deals with engine mount cracking, bleeding of header tank, propeller attachment,
c of g limits and fitting a CO indicator).

News update 10/8/93
(This news covers Kitfox accidents, flying characteristics, pilots, insurance, CO problems, fuel systems, tailwheel castor angle, engine installation, seat cushions, flapperons pushrods,
flapperon drain holes, U/C bungees, flap settings).

10. Service Bulletins/Service Letters

In the absence of any over-riding LAA classification, mods and inspections published by the manufacturer should be complied with according to the manufacturer's recommendation.

SB01	Jul 14, 87	Plastic Spinner Recall	Mod 1 with 3-blade props with plastic spinner
SB02	Dec 27, 88	Fuel Valve/Line modify	Serial #'s 0 – 300
SB03	Mar 15, 89	Velocity never exceeded	Mod. I & II
SB04	Sept 05, 89	Elevator Weldment	Mod. I & II serial #'s 0-484
SB05	Oct 03, 89	Fuel Tank Filler cap	Mod I. & II (prior to this bulletin)
SB06	Mar 15, 90	582 Gearbox Recall	582 & 532 engines, serial #3799005,3799500
SB06	Feb 07, 91	Left Control Pivot Assembly	Mod. I, II & III
SB07	Sep 03, 91	Cotton Flox	Mod III & IV shipped between 4/1/91 – 9/1/91
SB08	Sep 03, 91	Sloshing Compound	All models shipped prior to 9/1/91
SB09	Sep 12, 91	Flaperon Hanger Rib	Mod. I, II & III
SB9A	Aug 28, 91	Flaperon Hanger Rib	United Kingdom Owners
SB10	Jan, 91	Inspect & Replace Alum Wing Tanks	All models with aluminium tanks
SB11	Jan 08, 92	532 & 582 Carburettor Air Vent Tube	All models with Rotax 582 & 532 engines
SB11A	Jan 29, 92	912 Carburettor Air Vent Tube	All models with Rotax 912 engines
SB12	Dec 24, 91	912 Throttle Cable	All models with Rotax 912 engines (prior to this bulletin)
SB13	N/A		
SB14	N/A		
SB15	N/A		
SB16	Jun 10,92	Great American Propellers	Mod. I & II with KFM engines
SB17	Jun 10,92	Side Rail Mounts	Mod. III with 582 engines
SB18	May 26, 92	Speedster Wing Tip s	Speedster models (prior to this bulletin)
SB19	Jun 17, 92	Magnetic Drain Plug	Specific 912 Rotax engines
SB20	Aug 14, 92	Mass Balance System	All Models
SB21	Aug 19, 92	Flaperon Hinge Bearings	Mod. I, II & III
SB21A	Aug 28, 92	Flaperon Hinge Bearings	All Models (prior to this bulletin)
SB22	Aug 28, 92	Matco Brake Caliper	All Models
SB23	Sep 23, 92	912 Engine Mount Bolts	912 engines, # 4005177 to engines prior to this bulletin
SB24	Oct 08, 92	Landing Gear Weldment Recall.	A/C shipped between 9/3/92 & 10/1/92
SB25	Nov 03,92	Model IV Style Flaperons	Model IV wings (short flaperons)
SB26	Nov 11,92	Lift Strut Attach Bracket to Fuselage	A/C manufactured between 9/1/92 & 10/16/92
SB27	Dec 08, 92	Capstrip Alignment	A/C manufactured between Aug 92 & Nov 92
SB28	Dec 11, 92	Rudder Pedal Guide Pulley Safety Tab	Model IV Serial #'s 1400 – 1722
SB29	Dec 14, 92	Fuel Line Routing/Wing Tanks And Header Tank	All models (prior to this bulletin)
SB30	Jun 11, 93	Retractable Float Main Gear Mechanism	Retractable floats 1100 series SN's 01L0492 – 44L093
SB31	Sept 8, 93	Aircraft Identification Plates	All A/C manufactured between 5/91 & 8/93

SB32	Sept 9, 93	Vixen Aft Elevator Control Tube	S5 Vixen models SN: ECV001 – ECV009, GCV010, HCV011, HCV012, ICV013 – ICV015
SB33	Oct 22, 93	Vixen Stick Pivot Connect Tube	S5 Vixen models SN: ECV001 – ECV009, GCV010,HCV011, HCV012, ICV013 – ICV018, JCV019 – JCV022
SB34	Jan 5, 94	Possible Cracking of the .118 Windshield used on Kitfox TM Speedsters	All M4 Speedsters and any model with the PN 54030.000 polycarbonate windshield
SB35	Jan 5, 94	Inboard Flaperon Hinge	All models including S5 Vixen using M4 style Flaperons Installation with the symmetrical airfoil
SB36	Jan 4, 94	Vixen Web and Angle Kit	All S5 Vixen Models
SB37	Jan 5, 94	Possible Cracking Vixen Nose Gear Fork	All S5 Vixens
SB38	May 15, 94	Rudder Pedal Reinforcements	S5 Vixens SN: DBT001, ECV001-ECV009,FCV008,GCV010, HCV011 – HCV012,ICV013 – ICV018, JCV019 – JCV022, KCV024, LCV023
SB39	Aug 25, 94	Rotax 912 Lubrication systems	All M4
SB40	N/A		
SB41	Sept 6, 94	Swaged Fittings on the Float Cross Brace Cables	All Float equipped models
SB42	Aug 30, 94	Possible Fuel Valve Leaking	All models with PN: 46018.000 fuel valve
SB42A	Oct 20, 94	Correction to SB42	All models with PN: 46018.000 & 47012.000 fuel valves
SB43	Jan 20, 95	Wing Lock Back Brace	S5 Taildraggers through 01/95
SB44	Aug 25, 95	Rotax 912 Ignition Leads	All Rotax 912 powered A/C with ignition units Mounted to engines
SB45	Sept 21, 95	Elevator Idler Bellcrank Mounting Bolt	M1, M2, M3
SB46	N/A		
SB47	May 17, 97	Cable Swaging Procedures	M4, S5 Vixen, S5 Models
SB48	N/A		
SB49	May 1, 97	Rotax 912 Exhaust Systems	All Rotax 912 Powered Models
SB50	N/A		
SB51	N/A		
SB52	Aug 11, 98	Nicopress Sleeves	All Kitfox TM Models
SB53	N/A		
SB54A	Mar 4, 01	912ULS & 912 UL engine Installations – Revised May 17, 01 –	All A/C using 912ULS & 912UL engine installation Kits shipped prior to May 2001
SB55	Dec 1,01	Series 5 Vixen/Voyager Tricycle Gear	All series 5 Vixen/Voyager Tricycle Gear A/C
SB56	Nov 11, 02	Lite Fuel Pump Primer	All Lite A/C
SB57	July 1, 03	Rudder Pedal Torque Tubes	All S5, S6 & S7 prior to this date

SL01	Finger Strainers	Early Mod. I (prior to letter)

SL02		Fuel Tank Installation	Early Mod. I (prior to letter)
SL03		Spark Plug & Shields	Early Mod. I (prior to letter)
SL04		Sinner	Early Mod. I (prior to letter)
SL05		Elevator control Tube	Mod. I Serial #'s 56 – 112
SL06	Nov 07, 86	532 Rubber Intake Flange	Specific Serial # Rotax 532 engines
SL07	May 06, 87	Wing Tank Fuel Caps	Mod. I (prior to letter)
SL08	May 06, 87	Lift Strut Modification	Mod. I Serial #'s 2 – 116
SL09	June 09, 87	Plastic Spinners	Mod. I with 3 blade Prop & plastic spinner
SL10	Aug 14, 87	Wing Tank "T" Fittings	Mod. I (prior to letter)
SL11	Aug 20, 87	Wing Tank Recall	Mod. I (prior to March 23, 87)
SL12	Jun 30, 88	¼" Propeller Bolts	Mod. I & II (prior to letter)
SL13	N/A		
SL14	Dec 27. 88	E-33 Aluminium Rear Spinner Bulkheads	Mod. I & II serial #'s 2-263,278-281
SL15	Mar 27, 89	Wing Tanks and Header Tanks	Mod. I & II serial #'s 2 – 270
SL16	Jun 07, 90	Electric Starter	Specific Rotax engines503,532 & 582 (prior to letter)
SL17	N/A		
SL18	Jul 22, 91	Pre-flight Inspection of Rudder Cables	Mod. I, II & III
SL19	Sep 03, 91	Oil Injection System	All models with Rotax engine (prior to letter)
SL20	Sep 19, 91	Shock Cords	Mod. III & IV (prior to letter)
SL21	Oct 16, 91	Cotton Flox – Micro Balloons	Mod. III & IV serial #'s 1143 – 1420
SL22	Oct 21, 92	Header Tank and Fuel Line Routing	All models using a Header tank
SL23	Dec 07, 92	Dual Brake Braking Problem	All models equipped with dual brake system
SL24	Dec 14, 92	Prop Installation, Torquing And Maintenance	All models
SL25	Dec 3, 93	Lift Strut Attachment	All models
SL25A	Dec 9, 93	Lift Strut attachment (Revised) 1. Wing Dihedral 2. Lift Strut Adjustment	 1. All non S5 Kitfox's 2. All models
SL26	Oct 10, 94	Nose Gear Piston	S5 Vixen SN: ECV001 – LCV023
SL27	May 1, 94	Airspeed Indicators and Pitot Static System Replaced by 27A	
SL27A	Sep 9, 94	Airspeed Indicators and Pitot Static System (Revised).	All Kitfox TM Owners
SL28	May 1, 94	Sound Absorbing Kit	All Kitfox using Rotax 912 with optional pre-sewn Sound insulation material installed on the firewall
SL29	Apr 6, 94	Vixen Documentation & Upgrade	All S5 Vixen owners
SL30	May 1, 94	Aft CG Limit	All M4 -1200 models
SL30A	Sep 7, 94	Aft CG Limit (Revised)	M1,M2,M3,M4,C4
SL31	Aug 15,94	Tail Skid Bushing	All S5 Vixen 1200# models
SL32	Jun 23, 94	Elevator Push-Pull Tubes	All S5 models
SL33	Jun 24, 94	Fuel Valve Mounting Bushing	All S5 Vixen 1200# models
SL34	Aug 19. 94	Series 5 Horizontal Bushing	All S5 models
SL35	Aug 19, 94	Rotax 582 Choke Control	M1,M2,M3,M4,C4
SL36	Aug 22, 94	Cable Guides	All S5 models
SL37	Aug 22, 94	Series 5 Wing Folding	All S5 models
SL38	Sep 12, 94	Elevator Control Stop Bushing	All S5 models
SL39	Sep 14, 94	Belly Stringer Forward Attach Angle	All S5 models
SL40	Nov 19, 94	Bridge Rectifier	All models
SL41	Oct 19, 94	Charging System	All models

SL42	Nov 9, 94	Centre Firewall Section	All S5 engine kits prior to 31 Nov 94
SL43	Nov 28, 94	Series 5 Speedster Rudder	All S5 Speedsters
SL44	Nov 29, 94	Series 5 Connect Tube Threads	All S5 fuselage kits prior to 31 Nov 94
SL45	Sep 21, 95	Ensuring Proper Fuel System Performance	All models with wing tanks
SL46	Sep 1, 95	Possible Fatigue of Vixen Nose Gear Fork	All S5 Vixens
SL47	Aug 22, 95	Rudder Pedal Torque Tube Cracking	M1,M2,M3,M4,C4
SL48	Aug 22, 95	Welded Landing Gear	All Taildragger A/C with welded landing gear
SL49	Aug 25, 95	Rotax Service Bulletins	All models powered by Rotax engines
SL50	Aug 28, 95	Matco M62 Wheel installation	Models with Matco W62 wheels
SL51	Sep 11, 95	Series 5 Round Cowl, Rotax 912 Exhaust System	S5 models using Round Cowls & Rotax 912 engines

For Rotax engines, there are many Rotax service bulletins dealing with a variety of important safety topics. Copies of the bulletins applicable to individual engines by engine serial can be downloaded directly from the Rotax website at http://www.rotax-aircraft-engines.com More information is available on www.skydrive.co.uk

11. Standard Options

- There are a number of different fuel system options available on the various marks of Kitfox. The simplest system involves a single moulded polythene tank in the forward fuselage, the fuel level in the tank being visible to the pilot directly via a slot in the instrument panel. A common option fits either one or two additional wing-root mounted tanks, which feed by gravity either into the polythene fuselage tank or a small header tank. Header tanks may either be fitted at the front or the rear of the cockpit, although the rear mounted position is favourable, as it enjoys a more direct fuel pipe routing from the wing tanks and so a reduced likelihood of vapour bubbles developing. Many individual Kitfox builders have fitted a low-level fuel warning switch in the header tank to warn the pilot if fuel feed problems are causing the header tank to start to empty. Some fit a pilot-controllable vent valve and overboard drain to the header tank so that the pilot can vent any air out of the fuel system in flight if the low-level switch activates. Other Kitfoxes have the header tank permanently vented to one of the wing tanks

- A number of Kitfoxes have also been fitted (either at build or retrospectively) with the so-called ‘Optima’ modification (designed by John Scott) which alters the wing section to 'flat bottomed', clips the wingspan and flapperons and fits alternative wing tips. The Optima modification significantly improves flight handling and cruise performance with only a minimal degradation of STOL performance. Kitfox Mk 1 and 2 aircraft fitted with the Optima modification are not eligible for transfer to the microlight category.

- Alternative cantilever type ‘Grove’ undercarriage

12. Special Inspection Points

- Inspectors should check all components supplied in the kit carefully for quality before construction starts. One or two of the early examples were snagged for poor welding quality - in one case a complete fuselage had to be rejected. Wing spar tubes were in one case found to have been unacceptably damaged on receipt.
- The build manual is reasonably clear and few construction problems have been reported, although builders need to take great care with the assembly of the wings which require critical drilling and alignment, particularly the fitting of spar tube reinforcements, wing strut attachments and root fittings. Ensure when first assembling and fitting wings that correct wing dihedral is achieved and that there is no unwanted sweep-forward or sweep-back.
- Check any 'squashed and bent' tube ends (e.g. the internal wing bracing struts of some models) carefully for signs of minute cracks caused during manufacture, and dress out any damage to prevent cracks growing from these points in service.
- Ensure that all blind rivets are 'set' squarely and fully, and check that rivet heads are seated properly with a feeler gauge.
- Inspectors must stress to builders the importance of proper surface preparation and cleanliness during all bonding operations.
- Another point to watch is careful assembly of the flying control system.
- The build manual is not particularly detailed regarding engine installation and fuel system details etc. See Rotax installation manual and Rotax installation checklist for guidance, and LAA-required mods.
- The folding wing and flapperon arrangement gives rise to a complex flapperon control system with many joints and short pushrods. In practice, once satisfactorily rigged, the system requires little maintenance, but the inspector should ensure adequate fits and clearances throughout with freedom from backlash etc. Pushrods should not foul the structure when the wing is folded.
- The main undercarriage bungees are not long-life items and may wear rapidly particularly if the exit holes are too small or if they chafe against any structure.
- Refer to construction manual and service information concerning rigging and control surface range of movement. On Kitfox Mk 1, 2 and 3 models, drooping the flapperons to act as flaps reduces aileron effectiveness and increases adverse yaw, both undesirable characteristics. To avoid this, many owners of these models have rendered the drooping capability of the flapperons inoperable by locking the droop lever in the retracted position. This is encouraged by LAA, but not mandatory.
- In addition to the manufacturers maintenance schedule presented in the Pilots Manual, LAMS should be used as a guide to required inspections and this is reflected in the checklist in Section 1 of the LAA's permit renewal application form. Denney and Skystar service information should also be reviewed. Rotax engines should be maintained to the Rotax maintenance schedule. Maintenance of the airframe is typical of a fabric-covered wood and metal airframe.
- Problems have been experienced with cabin doors opening in flight if the latches are not properly adjusted, this causes no particular hazard (it is intended that the aeroplane is able to be flown with doors open in hot weather) but can be alarming if not anticipated. This is most likely to occur during sideslip manoeuvres.

- Due to the openings in the fuselage fabric covering around the undercarriage bungees and wing roots, particular care must be taken to check that exhaust fumes are not entering the cockpit, which has caused difficulties with several examples. It is recommended that a CO detector be fitted. If problems are experienced, sealing the various leakage paths and fitting an extended exhaust tailpipe (approximately eight inches long) has been found to provide a cure.
- Problems have been experienced with fuel flow between the wing tanks and header tank being interrupted by vapour bubbles forming in the pipework, causing engine failure once the contents of the header tank are exhausted. It is essential to check that the fuel pipes connecting the main and header tanks are free of air bubbles and fuel is flowing as desired, particularly after the wings have been folded and unfolded. Some owners blow into the wing tank vent pipes during their pre-flight checks to help clear the fuel pipes of air bubbles.
- Heavy landings are indicated by bent tubes in the vicinity of the undercarriage attachments and bungee attachment structure. Be wary of loosening or detachment of the bonded joints between wing ribs and spars, particularly where the root ribs attach to the rear spar which take a considerable torsion load when the wings are folded especially if fuel is left in the wing tanks. One Kitfox suffered glue failure in this area before its first flight, probably due to having been ‘hangared’ in a dark-coloured container in bright sunshine, causing ambient temperatures inside the container in excess of the epoxy's 'transition' temperature. Remember that the epoxy used to assemble these kits is just as vulnerable to high temperature as the epoxies used in the wet lay-up of composite aircraft, and similar care must be taken. An Australian Kitfox suffered in-flight break-up due to failure of the carry-through tube in the fuselage where the wing struts attach, due to internal corrosion of the steel tubing. This tube is normally sealed at both ends during the welding of the fuselage, so that corrosion should not be able to take place unless it is penetrated by subsequently installed pop-rivets or similar. No internal corrosion in this area is acceptable. Problems have been experienced with fuel leaks from tanks, release of fuel tank 'sloshing sealer' inside tanks and deterioration of fuel hoses through chemical attack (replacement by aeronautical spec fuel tubing such as 'Aeroquip' is desirable). Failure of the rather crude fuel cocks have occurred either through detachment of the round ‘plugs’ supposedly press-fitted into the case of the valve, degradation of their '0 ring' seals when immersed in fuel, or misalignment of the valve stops causing the valve to be partially shut when apparently on the 'fully open’ stop. Any sudden change in the 'feel' of the valve may indicate that the ‘0 ring’ seal is displaced and must be checked before further flight. Pay particular attention to the proper maintenance of the flying control system including freedom from jamming, stiffness, binding of rod-end spherical bearings etc. One AN3 pivot bolt in the flying control system of a Kitfox cracked in service, fortunately without accident. It would not be out of order to insist on critical pivot bolts being withdrawn annually for inspection and being replaced at the first sign of significant wear or other distress. Many Kitfox aircraft on the LAA fleet are now around ten years old are likely to be due for recovering - especially those which have been tied down outside for any length of time. This will also give an opportunity to examine the underlying structure for condition. The 'Bettsometer' can be used to check the fabric strength while doing minimal damage, to the fabric being tested. Contact: Clive Betts of Brighton, tel. 01273 726343.

- As the design employs certain very lightweight design features, in common with most kitplanes of this era particular care needs to be taken to monitor condition in service and replace components as they become worn or develop cracks.
- The fact that the aircraft has folding wings means that it may be more prone to damage while in transport or in storage than a machine kept permanently rigged and hangared. One Kitfox crashed almost certainly as a result of damage caused by a prior road accident in which its trailer was shunted by a car driven by the owner's wife. Another Kitfox's mainspar tube had to be scrapped after it was dented by a collision with a gatepost while being towed.
- Note in particular mandatory recurring MOD/172/023 **Lift Strut Threaded Rod End Inspection** required at each annual check, this follows a wing strut failure in flight. Details are available from LAA and are contained in full in the LAA inspector's SPARS book. **Compliance: -** Initial inspection within 5 flying hours from receipt or at permit renewal whichever soonest. Pilot visual pre-flight thereafter and Inspector visual inspection at permit renewal.

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 Total weight Authorised: Mk 1 and 2: 950 Lbs *
Mk 3 and 4: 1050 Lbs
Mk 4-1200: 1050 Lbs or 1200 Lbs depending on engine fit

* Some very early Kitfox Mk 1 aircraft are cleared with a gross weight of only 850 Lbs.

CG Range: Mk 1, 2, 3 and 4: 10.2 inches to 14.2 inches aft of datum.
Datum Point is: Front face of wing leading edge tube.
CG range: Mk 4-1200: 10.7 to 16.0 inches aft of datum
Datum point is: wing leading edge.

Engine Limitations (Rotax 912-UL)
Maximum Engine RPM: 5800
Maximum continuous engine rpm: 5500
Engine Limitations (Rotax 532/582)
Maximum Engine RPM: 6800
Maximum continuous engine rpm: 6500
Airspeed Limitations
Maximum Indicated Airspeed: Mk 1, 2 and 3: 100 mph
Mk 4: 100 or 125 mph depending on engine fit

Maximum indicated airspeed flaps extended 75 mph

Other Limitations

The aircraft shall be flown by day and under Visual Flight Rules only.
Smoking in the aircraft is prohibited.

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

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

As a microlight aircraft, additional microlight weight placard must be fitted as described in TL2.11 regarding empty weight and payload.

14. Additional Engine Limitations/Placards

With Rotax 582 engine: Max CHT: 150°C (normal 110-130°C)
Max difference 10°C
Max EGT:650°C (normal 500-620°C) max diff. 25°C
Max Coolant temp: 80°C

With Rotax 912-UL: Maximum CHT: 150°C
Max Coolant Temp: 120°C (with 50/50 Glycol/water coolant)
Oil Temp Limits: 50°C to 140°C (Normal 90-110°C)
Oil Pressure 2-5 Bar
Minimum Fuel Pressure: 0.15 bar

15. Special Test Flying Issues

- Rotax 912 flight test schedule if Rotax 912 engine fitted. Rotax two stroke flight test schedule if Rotax 503, 532 or 582 fitted.
- A popular aeroplane which initially suffered a high accident rate in the UK largely because it was built and flown in numbers by inexperienced people, without appreciation of the handling qualities of the type, the hazards of strip flying or the proper operation of two-stroke engines. A proper 'check-out on type' from someone familiar with the Kitfox should be undertaken, especially by those without plenty of previous tailwheel experience. Particular care should be taken not to operate in windy conditions until experience is gained. The book by Ed Downs, 'How to Fly A Kitfox' (available from Skystar) is recommended.
- The throttle control on these aircraft is of 'vernier' type which while allowing accurate fine adjustment, can cause 'finger trouble' when coarse power changes are needed rapidly, for example when landing in gusty conditions.
- If wing-folding is undertaken then carefully check before further flight that apart from the wing leading edge pins being properly locked in place, the fuel pipes from wing fuel tanks have not become kinked at the wing hinge or created an air lock at this point.
- Check for signs of CO contamination in cockpit, if exhaust smell is noticed this must be corrected by attention to exhaust system and cabin seals.
- Check fuel system feeds from all tanks without developing air locks or accumulating air in header tank.

- Some owners of Kitfoxes (in particular the model 1 and 2 with large front fuel tanks) have complained of marginally sufficient elevator authority to carry out a three-point landing power-off. This is improved by sealing the gaps between the elevators and tailplane using a conventional fabric tape seal. The directional stability is also improved by fitting a similar seal between the fin and rudder.

16. Control surface deflections

Ailerons	Up:	TBD degrees
	Down:	TBD degrees
Elevators	Up:	TBD degrees
	Down:	TBD degrees
Rudder	Left	TBD degrees
	Right	TBD degrees
Flap	Down	TBD degrees
Elevator tab	Up and down TBD degrees	

Approved:

F.R.Donaldson
Chief Engineer

---------- END ----------