



LAA TYPE ACCEPTANCE DATA SHEET
TADS 337
SONEX

Issue 2	Addition of tailwheel version. Minor editorial changes.	Dated 13/7/16	JV
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These TADS are 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 Sonex is a small, sporting, two-seat, cantilever, low-wing aircraft with a fixed undercarriage. It is manufactured in kit form by Sonex Aircraft LCC of Oshkosh, Wisconsin. The Sonex is of conventional, riveted aluminium construction, and is supplied in the form of pre-cut and pre-drilled components and raw material.

The Sonex design first flew in the mid 1990s and many examples have subsequently been built in the USA and other countries. UK examples of the type incorporate a number of safety-enhancing modifications developed by the UK agents, Silverfern Microlights.

The wing is of single spar construction, incorporating a full-depth I-section spar consisting of custom-made extrusions forming the spar caps, and a sheet aluminium alloy web. The wing is entirely aluminium alloy covered, as are the ailerons and flaps. The control surfaces are operated by a conventional system of stranded steel cables, pushrods and bellcranks. The flaps are mechanically operated and of the plain type.

The undercarriage is available in nosewheel or tailwheel options. On the nosewheel variant, a conventional steerable nosewheel type undercarriage is fitted, with the noseleg sprung using a steel compression spring. The two main undercarriage units have cantilever spring rod type legs. The crew are provided with four point harnesses. A one-piece sideways-hinged canopy is fitted, retained by a substantial sliding latch.



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The tailwheel type undercarriage consists of two raked-back cantilever titanium spring rod type main legs, similar to those used on the tricycle gear version, bolted into sockets welded into the engine mount, in the same configuration as a Vans RV-3 or Wittman Tailwind. The tailwheel unit is a steerable type mounted on a conventional rod type cantilever spring.

The aircraft may be built using a variety of powerplants and either a nosewheel or tailwheel type undercarriage. Current approved aircraft are fitted with the Jabiru 3300A and Aerovee 2180 engines, both with Sensenich wooden propellers.

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 Sonex is an SEP Aeroplane (colloquially known as 'group A category') with a maximum gross weight of 522 kg. It is not eligible as a microlight in the UK.

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 kit is supplied in the form of pre-cut and pre-drilled components and raw material. In this form, the aircraft easily falls within the 51% rule. A quick build kit is not available, although the spars may be supplied ready-assembled by the factory. A laser-cut aluminium angle pack is also available from the factory. Neither option affects compliance with the 51% rule.

2.2 Build Manual

Build manual reference SNX-B07, Rev A, and a set of associated drawings are supplied with the kit. Supplemental hints and tips are available from the manufacturer's website: <http://www.sonexaircraft.com/support/instructions.html>

2.3 Build Inspections

Build inspection schedule 2 (metal aircraft).
Inspector approval codes A-A or A-M or K. Inspector signing off final inspection also requires 'first flight' endorsement.

2.4 Flight Manual

Sonex Flight Manual SNX-B06, Rev A, is supplied with each kit. Replacements are available from the manufacturer.



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2.5 Mandatory Permit Directives

None applicable to this aircraft type at the current time; however, check the LAA website for MPDs that are non-type specific ([TL2.22](#)).

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

The following modifications are LAA mandatory (details of the modifications are available from the UK agent and are supplied with build documentation):

MOD/337/001	Welded steel tube protection frame added under seat to prevent elevator control jam in the event of seat collapse.	Silverfern mod SFCP 01-07 refers.
MOD/337/002	Reduction of the 'full flap' flap deflection angle from 30° to 22° by alteration of the flap gate accordingly, carried out to reduce nose-down pitch with full flap.	Silverfern mod SFFL 01-07 refers.
MOD/337/003	Installation of factory-optional 'dial-a-trim' spring bias elevator trim system. Trim spring functions as elevator down-spring and enhances pitch stability.	Silverfern mod SFTS 01-07 refers.
MOD/337/004	Elevator trim tab operated by flap lever to reduce pitch trim change with flap deployment and allow spring trim system to continue to function as down-spring when flap deflected.	Silverfern mod SFTS 01-07 refers.
MOD/337/005	Re-positioning of fuel on/off valve to instrument panel.	Silverfern mod SFFT 01-07 refers.
MOD/337/006	Fitting of Flettner strips to elevators acting as tabs operating in conjunction with the down spring to enhance longitudinal stability.	Silverfern mod SFTS 01-07 refers.
MOD/337/007	Inclusion of factory-optional glass fibre fin and tailplane extension tips.	
MOD/337/008	[Not used]	
MOD/337/009	Elevator trim position indicator added to scuttle, actuated by dial-a-trim system, including up/down sense placards and neutral position.	Silverfern mod SFTS 01-07 refers.

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 Jabiru 3300A engine: Maximum RPM: 3300
Maximum CHT: 175°C
Maximum continuous CHT: 150°C
Oil Temp Limits: 15-118°C (normal 80-100°C)
Oil Pressure: 220-525 kPa
Minimum Fuel Pressure: 0.15 bar



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With Aerovee 2180 engine: Maximum RPM: 4000
Maximum CHT: 450°F
Maximum continuous CHT: 420°F
Maximum EGT: 1400°F
Oil Temp Limits: 160-230°F
Oil Pressure: 20-100 psi

2.8 Control surface deflections

Ailerons	Up: 20.5° ±2° Down: 11.5° ±2°
Elevators	Up: 25° ±2° Down: 20° ±2°
Elevator tab	(see MOD/337/004)
Rudder	Left: 25° ±2° Right: 25° ±2°
Flap	Down 0° - 10° ±2° - 22° ±2°

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: 2
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: 522 kg
CG Range: 1620 mm to 1785 mm aft of datum
Datum Point is: tip of propeller spinner
 - 2.3 Engine Limitations
Maximum Engine RPM: 3300 (Jabiru 3300)
 - 2.4 Airspeed Limitations
Maximum Indicated Airspeed (V_{NE}): 197 mph IAS
Max Indicated Airspeed Flaps Extended: 100 mph IAS
 - 2.5 Other Limitations
The aircraft shall be flown by day and under Visual Flight Rules only.
Smoking in the aircraft is prohibited.



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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.

Cockpit placard to be fitted stating “warning – sideslipping this aircraft causes a pronounced nose-down trim change”.

Section 3 – Advice to owners, operators and inspectors

3.1 Maintenance Manual

Sonex flight manual SNX-B06, Rev A, contains maintenance advice specific to the type. Refer to the engine and propeller manuals for additional maintenance advice.

See also LAA Technical Leaflet 2.19.

3.2 Standard Options

‘Sport Trainer’ central controls option (throttle, trim, flap and brake controls on central console).

‘Lowered seats’ option.

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.

<i>Ref</i>	<i>Date</i>	<i>Description</i>	<i>Factory compliance status</i>	<i>Applicability</i>
SNX-SB-001	7/6/02	Rudder pedal service check and upgrade/replacement	Required	All Sonex aircraft with SNX-C02-01 rudder pedal assemblies
SNX-SB-002	22/8/05	Check welded components for cracks	Required	All in-service Sonex aircraft
SNX-SB-003	21/11/05	Upgrade of SNX-F10-03 angle	Optional	All Sonex aircraft
SNX-SB004	7/3/07	Nosewheel push rod spring check	Required	Tri-gear variants purchased prior to 1/5/07
SNX-SB-005	2/11/09	Inspection of engine mount for cracks	Required	All Sonex aircraft



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SNX- SB-006	28/6/11	Inspection of gear leg bolts	Required	All Sonex aircraft
SNX- SB-007	24/8/11	Inspection of engine mount	Required	Tri-gear variants fitted with Jabiru 3300 engines

3.4 Special Inspection Points

None reported.

3.5 Special Test Flying Issues

None reported.

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