

NICOLLIER MENESTREL II

Issue 2			
Revision A	New format.	Dated 11/3/11	JV

Section 1 - Introduction1.1 UK contact

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Plans available from H. Nicollier, 13 Rue de Verdun, 25000 Besancon, France.

1.2 Description

The Menestrel II is a small, two-seat, low-wing aeroplane of all wood fabric-covered construction supplied in the form of a set of drawings. The Menestrel II is a homebuild somewhat similar to a Jodel D18 but with elliptical-shaped flying surfaces and vee-dihedral rather than tip dihedral, and standard fin and rudder, tailplane and elevators rather than an all-flying fin and tailplane. Originally approved with a VW 1834 engine, alternative engine options cleared by the LAA include the Jabiru 2200 and Aerovee 2180.

The Menestrel II is fitted with a tailwheel undercarriage. The Menestrel II is categorised as a 'group A' aeroplane not a microlight in the UK.

The LAA-accepted drawings for building the Menestrel II are of French origin, and are obtained direct from the designer. French materials and metric dimensions are specified. UK material equivalents are as for Jodel D18 (see section 3.2 below).

Section 2 – Mandatory information for owners, operators and inspectors2.1 Fast Build Kit 51% Compliance

Note applicable: plans-built aircraft.

2.2 Build Manual

Nil. Construction drawing set provides all required information, consisting of the following:

- 1 Structure du fuselage
- 2 Cadres, cintres, superstructure fuselage
- 3 Gouvernail de direction
- 4 Empennage horizontal
- 5 Ensemble de l'aile – longeron
- 6 Nervures d'aile
- 7 Aileron
- 8 Commandes de vol
- 9 Atterrisseur principal, roulette arriere
- 10 Reservoirs, tableau de bord
- 11 Volets de courbure
- 12 Commande de volets
- 13 Pesee et centrage

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2.3 Build Inspections

Build inspection schedule 1 (wood aircraft).
Inspector approval codes A-A or A-W. Inspector signing off final inspection also requires 'first flight' endorsement.

2.4 Flight Manual

None available. See [flight test report](#) in *Light Aviation* magazine Feb 2011.

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).

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

It is mandatory to reinforce the lap-strap attachments as per [LAA drawing](#) dated 7/5/97.

2.7 Additional engine operating limitations to be placarded
(or shown by instrument markings)

(Refer to the engine manufacturer's latest documentation for the definitive parameter values.)

With VW engine: Max CHT: 225°C
 Max EGT: 800°C
 Max oil temp: 90°C
 Min oil pressure: 2.5 kg/cm² at 3000 rpm

With Jabiru 2200A engine: Max CHT: 210°C
 Oil temp: 50-110°C
 Oil pressure: 125-525 kPa at 3100 rpm

2.8 Control surface deflections

Ailerons	Up: TBD Down: TBD
Elevators	Up: TBD Down: TBD
Elevator tab	Up: TBD Down: TBD
Rudder	Left: TBD Right: TBD

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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: 499 kg (1100 lb) (see section 2.10 regarding 530 kg option)
CG Range: 9.45 inches to 16.54 inches aft of datum
Datum Point is: leading edge of the wing at the root
 - 2.3 Engine Limitations
Maximum Engine RPM: 3300 (depending on engine installed)
 - 2.4 Airspeed Limitations
Maximum Indicated Airspeed (V_{NE}): 125 knots
Max Indicated Airspeed Flaps Extended: 1st stage: 75 knots
2nd stage: 65 knots
 - 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 weight

Max gross weight is 499 kg with a 60 BHP 1834 VW engine. With higher powered engines, max gross weight can be increased to 530 kg subject to satisfactory climb performance at this weight.

The empty weight of the aircraft should allow sufficient payload for two 86 kg crew to be carried along with enough fuel for at least an hour's flight at max cruise speed, without exceeding the max gross weight.

NICOLLIER MENESTREL II**Section 3 – Advice to owners, operators and inspectors****3.1 Maintenance Manual**

None available – it is recommended that the type is maintained in accordance with the LAMS schedule.

3.2 Standard Options**LAA MOD/169/001 Material Specifications - LAA Classification 'C'**

This information provides British equivalent specifications for plywood, aluminium and steel that can be used in lieu of the French materials detailed on the D18 plans, also applicable to the Menestrel II.

3.3 Manufacturer's Information (including Service Bulletins, Service Letters, etc)

None known for this type.

3.4 Special Inspection Points

- With a VW engine, the design of conversion is to be agreed with LAA Engineering as there is no standard design of VW 1834cc conversion. A dual ignition system (of an accepted type) is required. The LAA VW Engine Build checklist is to be completed during build-up of engine to record critical measurements. Refer to SPARS section on VW engines. An oil cooler will almost certainly be required, and careful ducting to achieve adequate cylinder cooling. The compression ratio must be set up (usually no more than 8.0:1) using a choice of cylinder base shims. Failing to use base shims usually results in excessively high compression ratio and consequent excessively short engine life.
- With a VW conversion, if gravity fuel feed is used, check gravity flow from downstream side of carburettor float valve (by removing float chamber bowl or float chamber drain plug) rather than at carburettor fuel inlet. If an automotive carburettor (e.g. Stromberg CD150) is used with gravity feed, the carburettor float valve is often found to provide inadequate or very marginal flow. This is because automotive carburettors are set up for use with a pump-fed installation not gravity feed. The fuel pressure from a pump allows a carb float jet of only about 1.5 mm diameter to be used. This restricts the flow too much with the much lesser fuel pressure in a typical gravity fed system. This is a common cause of lean running and engine failure. This is cured by fitting a larger diameter jet to the float valve, (typically 2.5 to 3mm diameter) or carefully opening up the existing jet and lapping it in with a household brass polish.
- With a VW engine, quality of fit of propeller hub on the crankshaft nose is critical to the security of the propeller mounting in flight.

3.5 Special Test Flying Issues

- Pay special attention to engine cooling if a Jabiru 2200 or a VW derived engine fitted.
- With the Jabiru engine, it is imperative that the cylinder head bolts and tappets are checked at 5, 10, 15 and 20 hours. Omitting this check can lead to head leaks and damage at around 25-50 hours. Have a good look around the rocker boxes and

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make sure oil is present and that there are no signs of overheating in the form of burnt, lacquered oil. New engines with hydraulic tappets need only to have the head bolts checked.

- With the Jabiru engine, encourage the test pilot to work the engine quite hard to avoid glazed piston bores: vary rpm settings and do not fly at low power settings for too long.

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