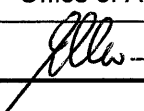


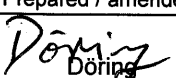


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Approved Type Design Document			
This document may only be revised in accordance with the procedure defined in Chapter 6 of the Aquila Design Organisation Handbook. The Approval is granted for the following applications:			
Type	Model	Date	Office of Airworthiness
AT01	---	01.09.2009	 

The technical content of this document is approved under the authority of DOA-No. EASA.21J.025			
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Prepared / amended:	Verified:	Date of Issue:	Supersedes issue:
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1 General Information

This Maintenance Instruction contains all changes to the affected information's of the Basic Maintenance Manual, which caused by the implementation of the Major Change AT01-00219. All the additional information's relevant to the maintenance and continued airworthiness tasks of the modified aircraft are contained. The maintenance instructions contained in this instruction shall be used in conjunction with the Basic Maintenance Manual and they are an integral part of this. This maintenance instruction must be inserted in the Basic Maintenance Manual.

2 Description of the System / Assembly

The following modifications were done to the aircraft as result of the implementation of the Major Change AT01-00219 'Night-VFR':

- Activation of the internal generator integrated in the ROTAX engine.
- Introduction of instrument lighting.
- Introduction of instrument panel lighting.
- Introduction of a placard bar below the switches on the instrument panel.
- Introduction of self-luminous placards.

2.1 Description of the Sub-Assemblies


2.1.1 Activation of the internal generator integrated in the ROTAX engine

The internal generator of the Rotax-engine has been integrated into the existing electrical system in order to realize a second independent power source. The external generator needs an external power source to supply power. The internal generator is an alternator that does not require an external power source. The excitation is done by a permanent magnet. The electric supply system of the AQUILA AT01 is designed for DC only. The Rotax specified rectifier-regulator is used for the internal generator. The rectification of alternating current and regulates the amount of voltage which is applied to the main bus will be done by this rectifier-regulator.

The voltage stabilization is done by an additional capacitor. Refer the ROTAX installation manual (P/N 898640) for more information about the internal generator and its rectifier-regulator.

2.1.2 Introduction of instrument lighting

All flight instruments important for safety flight must be plainly visible in the night. If instruments do not have lighting they must be illuminated by external light sources. All instruments without internal lighting are illuminated by 'Post Lights' or 'Nulite's. Post Lights have a light-emitting diode. It is durable and resist against vibration. Instruments equipped with 'Nulite's are illuminated equally.

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2.1.3 Introduction of instrument panel lighting

A complete panel lightning is installed in the panel cover as second source in case of failure of one or the entire instrument lighting. One LED row is integrated into the instrument panel cover. It can be switched-off separately from other lights. The brightness of the LED row can be dimmed with the same switch.

2.1.4 Introduction of a Placard bar

All placards must be also plainly readable during the night. The placards below the switches were glued to a bar to meet this requirement. The placards can not be shadow by the switches.

2.2 Hydraulic/Pneumatic/Operating Supplies System

Not used

3 Airworthiness Limitations and Operating Time Limits


The Major Change AA-AT01-00219 does not introduce any time-limited or operating-limited parts and components.

4 Maintenance Checks

4.1 Periodical Checks

4.1.1 Checklist for periodical checks

No.	Title/Maintenance Work Step	Reference	Interval		Sign.
			100 h	Other	
1.	Electrical System Check the electric wires near the centre of engine frame of chafing, kinks and other damages.		X		
2.	Check the electric wiring of the internal Generator, Rectifier-Regulator unit, External Generator as well as their connection to the Engine Plug Connector and the passing through the Firewall for chafing, wear, kinks and other damages. Verify all cable connections for tighten fit, contact and condition.		X		

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5 Maintenance Instruction

Disassembling of the Rectifier-Regulator unit:

1. Disconnect all wires from the rectifier-regulator unit.
2. Remove the attachment bolt and the nuts from the mounting plate and rectifier-regulator unit. Attend to the 'Nordlock' washers.

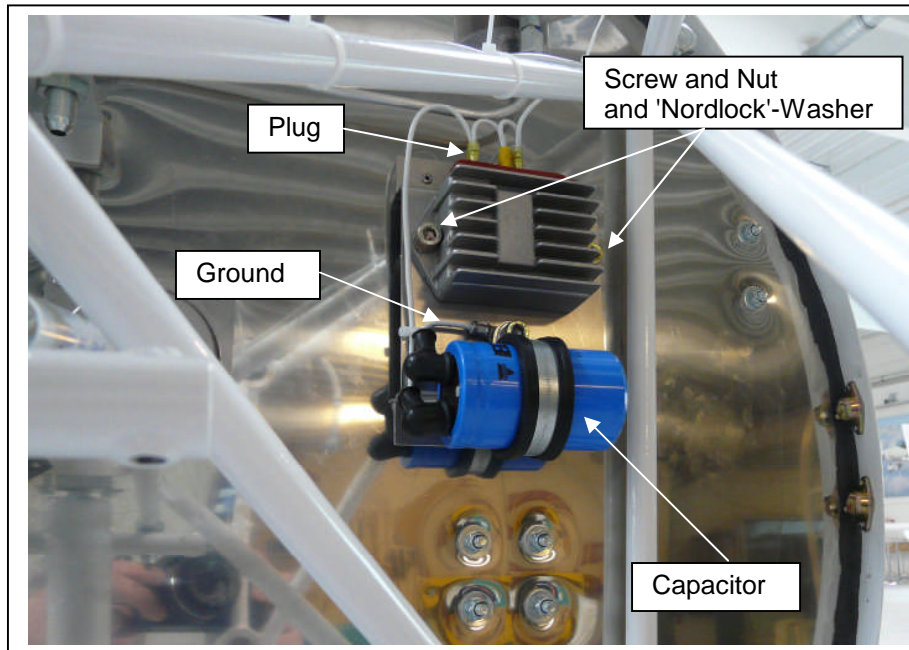


Figure 1: Rectifier-Regulator unit with mounting plate and capacitor

Installation of the Rectifier-Regulator unit:

1. Install the Rectifier-Regulator unit with two screws M8x20 DIN ISO 4762, four 'Nordlock' washer and two nuts M8 DIN ISO 934 on the mounting plate. Attend to the various washers and there installation sequence.
2. Connect the wire to the rectifier-regulator unit.

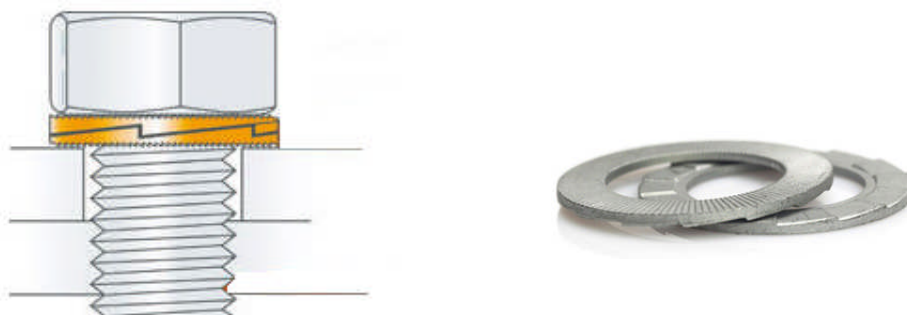



Figure 2: Example for the collection of the 'Nordlock- Washer':

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6 Placards and Markings

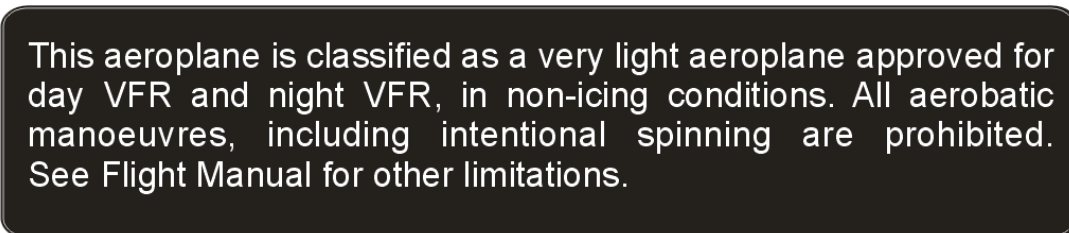
The following placard has to be installed directly above or below the warning lights in the upper middle section of the instrument panel instead of placard G1 in the Maintenance Manual section 11-30-00, page 202:




The following placard has to be installed below the switches in the lower left section of the instrument panel instead of placard F1 in the Maintenance Manual section 11-30-00, page 202:




The following placard has to be installed in the middle section of the instrument panel, below the transponder instead of placard C1 in the Maintenance Manual section 11-30-00, page 202/206:



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The following placard has to be installed in the right section of the instrument panel, adjacent to the circuit breaker instead of placard A in the Maintenance Manual section 11-30-00, page 202/203-204:

FLARM	CDI	Panel Light
COM/NAV 2	Stall Warning	Warning Lights
COM/NAV 1	OAT/CHT	Alternator 1 Excitation
Intercom	Fuel Gauge	Cooler Avionics
Turn Coordin	Instruments 1	Trim Control
Blind Encoder	Instruments 2	Flap Control
Attitude Gyro	12VDC Receptacle	Starter Relay
Directional Gyro	Battery	Flap Actuator
GPS	Alternator 1	Trim Actuator
Transponder		

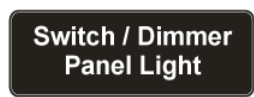
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The placards specified in the following have to be installed in addition to the placards of the Maintenance Manual (section 11-30-00):

- A)** In the right section of the instrument panel over the circuit breaker for the internal generator:



- B)** In the middle section of the instrument panel adjacent to the instruments light dimming control:



7 Appendix – Charts and Diagrams

Not used