

Section 9

Airplane Flight Manual Supplement AVE26

GARMIN G 500

This AFM-Supplement is applicable and must be inserted into section 9 of the airplane flight Manual if the GARMIN MFD (G500-system) is installed in the Aquila AT01. The information of this AFM-Supplement adds or replaces information of the basic Airplane Flight Manual.



The technical content of this Airplane Flight Manual Supplement is approved under the Authority of DOA No. EASA.21J.025.

Schönhagen, 14.09.2011



Head of Airworthiness Department

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0.1 LIST OF REVISION AND AMENDMENTS

Issue	Reason for Amendment /Revision	Affected Pages	Date of Issue
A.01	Initial Issue	All	22. Jul 2010
A.02	Editorial Changes	All	07. Oct 2010
A.03	Documentary changes	All	14. Sept 2011

0.2 LISTE OF EFFECTIVE PAGES

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AVE26-1	A.03	14. Sept 11
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1. General

1.1. Introduction

The information contained within this AFM-Supplement is to be used in conjunction with the complete Airplane Flight Manual.

This supplement provides the information necessary for the efficient operation of the Aquila AT01 when the GARMIN G500 MFD is installed.

This AFM-Supplement is subdivided in the chapter used in the basic airplane flight manual. All the listed chapters are affected by the Minor Change Aquila AT01-00407 „Installation GARMIN G500 MFD“.

To operate the device, a system software is required:

- for the GDU 620 version v3.01 or later;
- for the GRS 77 version v2.12 or later;
- for the GDC 74A version v3.02 or later.

A software update is an SI (Service Information) released on our website (www.aquila-aviation.de). To your current software version you can read in chapter 6.5.1 Equipment List and always keep up to date.

For a detailed description of the GARMIN MFD and full operating instruction, refer to the effective issue of the GARMIN G500 Pilot's Guide, P/N 190-01102-02.

NOTE

The pilot's Guide for the GARMIN G500 is available only in English language.

1.11. Terminology and Abbreviations

1.11.5 Miscellaneous

ADC	Air Data Computer
AHRS	Attitude and Heading Referenz System
GDU	Garmin Display Unit
PFD	Primary Flight Display
MFD	Multifunctional Display

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2. Limitations

2.3 Airspeed Indicator Markings

The Garmin G 500 is an optional equipment, it is just an additional source of information. Its failure is non-critical during any flight phase. The analogue instruments are still the main information source for airspeed, altitude and heading.

On the Primary Flight Display (PFD) will be displayed an Airspeed indicator and an altimeter. The pilot can use these indicators as information source.

The PFD-airspeed indicator markings are equal to the analog airspeed indicator. These markings are conform to the basic airplane flight manual chapter 2.3.

2.12 Kinds of operation limits / Minimum Equipment

If the Aquila is equipped for NVFR-operation the PFD substitute the following instruments: artificial horizon, direction indicator and vertical speed indicator.

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2.16 Placards

5.) On the instrument panel, adjacent to the right side of the circuit breakers:



Depending on the equipment installed in the aircraft, not every position shown above might be actually assigned with a circuit breaker. In those cases the respective positions are covered by a blank plastic plug and reserved for that application by the placard.

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3. Emergency Procedure

3.1 Introduction

This section provides checklists with the recommended procedures for coping with various emergency situations.

Emergencies caused by aircraft or engine malfunctions are extremely rare if all pre-flight inspections and required maintenance activities are conducted properly.

Nevertheless, if an emergency situation occurs, the herein provided emergency procedures are recommended to correct the problem and to master the situation.

However, it is impossible to account for all kinds and combinations of emergency cases that may arise in operation in this manual. Therefore, the pilot must be familiar with the aircraft, its systems, and its flight behaviour. Very important in such cases is a sound judgment and sufficient knowledge of the aircraft and its systems.

3.10 Electrical power supply system malfunctions

3.10.1 Complete Failure of Electrical System

In case of a complete failure of the electrical system the Garmin G500 will be switched off. The stand-by-instruments must be used to continue the flight to the nearest airfield.

3.10.2 Alternator Failure

3.10.2.1 External Alternator Failure (Generator 1)

Additional to the procedures described in the Basic Airplane Flight Manual the brightness of the MFD-display must be adjusted to the lowest usable value (see Pilot's Guide GARMIN G500).

3.10.2.2 Internal Generator Failure (Generator 2)

NOTE

If the Aquila AT01 is equipped for NVFR-operation the electrical system will be supplied by the internal generator too.

The electric power consumption will be covered by the external generator.
No additional actions are necessary.

3.13.4 Primary Flight Display Failure

- | | |
|----------------------------|-------------------|
| 1. Attitude of Flight | STABILIZE |
| 2. Circuit Breaker PFD/MFD | RESET, if tripped |

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3.13.8 ADC Failure

- | | |
|-------------------------|-----------------------------|
| 1. Circuit Breaker ADC | RESET, if tripped |
| 2. For Continued Flight | USE the standby instruments |

NOTE

Complete lost of the Air Data Computer (ADC) is indicated by a red X and yellow text over the Airspeed, Altimeter, Vertical Speed, TAS and OAT display. Some functions, such as true airspeed and wind calculation, will also be lost.

4.0 Normal Procedures

NOTE

Do not navigate exclusively on G500 information/presentation.

4.5.3.1 Dimming the brightness of the Display

The GARMIN G500 has a light sensor which adjusts the brightness of the display depending of the environmental lightning conditions.
The brightness of the display can be manual adjusted additionally via the menu. Turn the large MFD knob to reach the AUX page group. Press the small MFD knob to activate the cursor. The Level will be highlighted. Turn the small MFD knob to select the Display Brightness Level and then press ENT.

4.5.5. Before Take-off

Function of artificial horizon	Check for correct setting
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NOTE

The artificial horizon (ADAHRS-modul) takes few minutes for stabilization.

4.5.13. Engine Shutdown

After switch-off of the power supply the Garmin G500 will be switched off immediatelly.

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5.0 Performance

No change to the basic Airplane Flight Manual.

6.0 Weight and Balance

No change to the basic Airplane Flight Manual.

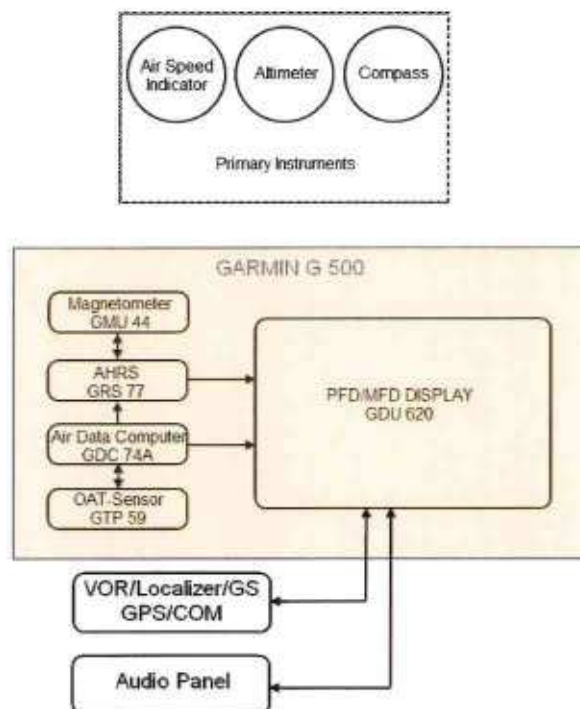
7.0 Systems Description

NOTE

This AFM-Supplement contains the general description of the integration of the GARMIN G500 system into the Aquila AT01 instrument panel. For a detailed description of the GARMIN G500 and full operating instruction, refer to the effective issue of the GARMIN G500 Pilot's Guide (P/N 190-01102-02).

The Garmin G500 PFD/MFD System consists of a Primary Flight Display (PFD) and Multi-Function-Display (MFD) housed in a single Garmin Display Unit (GDU). The system consists additionally an Attitude-Heading Reference System (AHRS) and an Air Data Computer (ADC).

The general arrangement of the GARMIN G500 system will be displayed in the following figure.



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The GDU will be supplied by the Avionic-bus and is protected by push-pull circuit breaker.

The circuit breaker is located in the right area of the instrument panel and is labelled by "PFD/MFD" (see chapter 2.16 of this AFM-supplement). The Avionic-bus will be activated by Avionic-switch. The avionic switch is located in the left lower area of the instrument panel (see chapter 2.16 - Basic Aircraft Flight Manual).

The AHRS-modul and subsequently the magnetometer will be supplied by the Avionic-bus and is protected by an own push-pull circuit breaker. The circuit breaker is located in the right area of the instrument panel and is labelled by "AHRS" (see chapter 2.16 of this AFM-supplement).

The AHRS-modul is installed below the R/H baggage compartment floor. It is connected to the GDU via an own wiring bundle.

The ADC-modul und subsequently the OAT-Sensor will be supplied by the Avionic-bus and is protected by an own push-pull circuit breaker. The circuit breaker is located in the right area of the instrument panel and is labelled by "ADC" (see chapter 2.16 of this AFM-supplement).

The ADC-module is installed below the cabin floor on the L/H side.

8. Handling, Service and Maintenance

8.6 Handling of electronic devices-

As some voltage peaks in the electrical systems are possible during the engine start and shut-down. To save the life-time of the MFD, it is recommended to keep the PFD switched off during engine start and shutdown.

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