

**SECTION 9****Pilot's Operating Handbook Supplement AST-00****Winter Operation**

This supplement is applicable and must be inserted into Section 9 of the Pilot's Operating Handbook when a radiator inlet baffle and / or an engine preheater system from Horn GmbH is installed onto the AQUILA AT01-200. The information in this supplement adds to or replaces information in the basic Pilot's Operating Handbook.

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<i>Document Nr.:</i>	<i>Issue:</i>	<i>supersedes Issue:</i>	<i>Date:</i>	<i>Page:</i>
FM-AT01-1010-280	A.01	--- (first issue)	02.03.2020	AST-00-1



### 0.1 RECORD OF REVISIONS

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### 0.2 LIST OF CURRENT PAGES

Page	Issue	Date
1 - 5	A.01	02.03.2020

Page	Issue	Date

### 0.3 Table of Content

1.	GENERAL.....	3
2.	OPERATING LIMITATIONS .....	3
3.	EMERGENCY PROCEDURES .....	3
4.	NORMAL PROCEDURES .....	4
5.	PERFORMANCE .....	4
6.	WEIGHT AND BALANCE.....	4
7.	SYSTEMS DESCRIPTION.....	4
8.	HANDLING, SERVICE AND MAINTENANCE .....	5

Document Nr.:	Issue:	supersedes Issue:	Date:	Page:
FM-AT01-1010-280	A.01	--- (first issue)	02.03.2020	AST-00-2

## 1. GENERAL

### 1.1 Radiator inlet baffle

For OAT below +5°C (41°F) at the take-off location (GND) the effective area of the water cooler can be reduced by installation of a radiator inlet baffle. At the baffle the following placard has to be affixed:



### 1.2 Engine preheater system Horn GmbH

To minimize wear by engine cold starts an engine preheater system from Horn GmbH can be installed. Operation of this system is only allowed with the aircraft parked and all systems switched off. With this POH supplement only an overview of the system is given. For operating instructions the manufacturer's instructions are obligatory.

## 2. OPERATING LIMITATIONS

### 2.1 Radiator inlet baffle

The maximum tested OAT for take-off with installed radiator inlet baffle is +5°C (41°F).

**The Pilot is anymore responsible to maintain all engine limitations as specified in the basic Pilot's Operating Handbook chapter 2.4.1 g) and h).**

### 2.2 Engine preheater system Horn GmbH

There is no change regarding the information in the basic Pilot's Operating Handbook.

## 3. EMERGENCY PROCEDURES

There is no change regarding the information in the basic Pilot's Operating Handbook.

<i>Document Nr.:</i>	<i>Issue:</i>	<i>supersedes Issue:</i>	<i>Date:</i>	<i>Page:</i>
FM-AT01-1010-280	A.01	--- (first issue)	02.03.2020	AST-00-3

## 4. NORMAL PROCEDURES

### 4.1 Radiator inlet baffle

Expand check item 7d) in chapter 4.3 B) Daily Inspection “Exterior Check” in the basic Pilot's Operating Handbook:

#### Cooler intake (oil, water, intercooler)

- check if free from obstructions and if necessary remove or install the water radiator inlet baffle according to OAT on ground at take-off location

### 4.2 Engine preheater system Horn GmbH

Expand check item 2 in chapter 4.4 Preflight Inspection in the basic Pilot's Operating Handbook:

- tow bar and power supply engine preheater system.....REMOVE

## 5. PERFORMANCE

There is no change regarding the information in the basic Pilot's Operating Handbook.

## 6. WEIGHT AND BALANCE

### 6.1 Radiator inlet baffle

There is no change regarding the information in the basic Pilot's Operating Handbook.

### 6.2 Engine preheater system Horn GmbH

The installation has to be taken into account with a mass of **0.66 lbs (0.3kg)** and a lever of **-35.5 in (-0.901m)** into the weight and balance record of the POH.

## 7. SYSTEMS DESCRIPTION

### 7.1 Radiator inlet baffle

The radiator inlet baffle is a composite angular piece which is installed with 2 integrated quick release fasteners to the lower cowling in front of the water cooler. The effective performance of the water cooler is reduced, whereby the operating temperatures of water and indirectly oil are increased.

### 7.2 Engine preheater system Horn GmbH

The preheater system is installed at the engine compartment. It consists of a 150W heater pad at the bottom of the engine block, a 110W heater pad at the oil tank, connecting cables as well as a connector plug located at the opening for external power connection.

<i>Document Nr.:</i>	<i>Issue:</i>	<i>supersedes Issue:</i>	<i>Date:</i>	<i>Page:</i>
FM-AT01-1010-280	A.01	--- (first issue)	02.03.2020	AST-00-4

## 8. HANDLING, SERVICE AND MAINTENANCE

### 8.1 Radiator inlet baffle

If not in use the baffle should be removed from the cowling by unlocking the 2 quick release fasteners and stored in the baggage compartment.

### 8.2 Engine preheater system Horn GmbH

Operation, Maintenance and any repair has to be in accordance with the manufacturer's instructions (see installation and operation manual engine preheater P/N 120567):

Horn GmbH  
Gewerbestraße 14  
D-78244 Gottmadingen  
fon +49 (0)7731 7803-0  
fax +49 (0)7731 7803-93  
e-mail: [info@horngmbh.com](mailto:info@horngmbh.com)

Before operation of the system it has to be ensured that all wiring, in particular the earth grounding wires to the oil tank and to the engine block are undamaged.  
Earth grounding has to be tested according to national regulations regularly.

Connection to the mains supply is only allowed power-off plugged to the system first via the provided 10m connection cable with integrated earth leakage circuit breaker (ELCB) and second to an 230V AC mains socket with grounding! Disconnection from the mains supply is only allowed vice versa. Otherwise there remains a risk for mains voltage being present on the aircraft structure and also formation of sparks may be possible!

**WARNING**

#### **Danger of electrical shock and sparking!**

The heater pads are controlled by bi-metal strips and can reach up to 311°F (155°C) at their outside.

**WARNING**

#### **Danger of skin burn!**

Do not operate the system unattended! In case of malfunction of a bi-metal strip overheating of the engine compartment and resulting damages can occur!

At every maintenance inspection of the aircraft an additional check for proper adhesion and condition of the heater pads as also proper condition of the wiring and the plug has to be performed.

Repair of components or of the complete preheater system is only allowed after approval from the manufacturer Horn GmbH.

<i>Document Nr.:</i>	<i>Issue:</i>	<i>supersedes Issue:</i>	<i>Date:</i>	<i>Page:</i>
FM-AT01-1010-280	A.01	--- (first issue)	02.03.2020	AST-00-5