State Aviation Administration of Ukraine

SAAU

TYPE CERTIFICATE DATA SHEET № TB 0022

Agusta AB139/AW139

Model: AB139 (from S/N 31001 up to S/N 31054)
    name changed in
AW139 (from S/N 31055 onwards)

Issue 2, 20 December 2012

This Data Sheet which is integral part of Type Certificate № TB 0022 prescribes the
conditions and limitations under which the product(s) for which the Type Certificate was granted
meet(s) the airworthiness requirements and environmental protection requirements, stated in
Certification basis mentioned in this Data Sheet paragraph 2.II.4 of the Section 2.

List of effective Pages:

<table>
<thead>
<tr>
<th>Page No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue No.</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENT

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SECTION 1. GENERAL</td>
<td>3</td>
</tr>
<tr>
<td>SECTION 2. MODEL AB139/AW139.</td>
<td>3</td>
</tr>
<tr>
<td>2.I. General</td>
<td>3</td>
</tr>
<tr>
<td>2.II Certification Basis</td>
<td>3</td>
</tr>
<tr>
<td>2.III Technical Characteristics and Operational Limitations</td>
<td>4</td>
</tr>
<tr>
<td>2.III.1 Aircraft description</td>
<td>4</td>
</tr>
<tr>
<td>2.III.2 Type Design Definition</td>
<td>4</td>
</tr>
<tr>
<td>2.III.3 Required equipment</td>
<td>4</td>
</tr>
<tr>
<td>2.III.4 Dimensions</td>
<td>5</td>
</tr>
<tr>
<td>2.III.5 Engines</td>
<td>5</td>
</tr>
<tr>
<td>2.III.6 Transmission Torque Limits</td>
<td>5</td>
</tr>
<tr>
<td>2.III.7 Rotor Speed Limits</td>
<td>6</td>
</tr>
<tr>
<td>2.III.8 Fluids (Fuel/Oil/Additives/Hydraulics)</td>
<td>6</td>
</tr>
<tr>
<td>2.III.9 Air Speeds Limits</td>
<td>7</td>
</tr>
<tr>
<td>2.III.10 Operating pressure altitude</td>
<td>7</td>
</tr>
<tr>
<td>2.III.11 Ambient air temperature at the see level</td>
<td>7</td>
</tr>
<tr>
<td>2.III.12 Weights, Center of Gravity and Loading</td>
<td>7</td>
</tr>
<tr>
<td>2.III.13 Minimum Flight Crew</td>
<td>7</td>
</tr>
<tr>
<td>2.III.14 Maximum Occupants</td>
<td>7</td>
</tr>
<tr>
<td>2.III.15 Emergency Exits</td>
<td>7</td>
</tr>
<tr>
<td>2.III.16 Placards and marking</td>
<td>8</td>
</tr>
<tr>
<td>2.III.17 Other Limitations</td>
<td>8</td>
</tr>
<tr>
<td>2.IV. Operating and Service Instructions</td>
<td>8</td>
</tr>
<tr>
<td>2.V. Notes</td>
<td>8</td>
</tr>
</tbody>
</table>
Section 1. General

AW139 and AB139 are two names for the same product. They identify two batches of aircraft manufactured in conformity with a unique Type Certificate Data Sheet. Refer to Note 2.V.1. for applicable Serial Numbers.

Where not specifically declared, the content of this document is applicable to both AW139 and AB139.

1.1. Data Sheet (TCDS) №:
TB 0022

1.2. Type Certificate Holder:
AgustaWestland S.p.A., Via Giovanni Agusta, 520-21017 Cascina Costa di Samarate (Va) – Italy.

1.3. Initial Certifying Authority:
ENAC/EASA.

1.4. Airworthiness Category:
Large helicopter (Category A and Category B)

1.5. Manufacturer:
- AgustaWestland S.p.A., Via Giovanni Agusta, 520-21017 Cascina Costa di Samarate (Va) – Italy.

Production Organisation Approval (POA) № IT.21G.0007 issued by ENAC.

- AgustaWestland Philadelphia Corporation (AWPC), 3050 Red Lion Road - Philadelphia, PA 19114 – USA.

Production Certificate PC 120NE (effective 12 December 2008) issued by FAA.

(See Note 2.V.1.)

Section 2. Model AB139/AW139

2.I. General:

2.I.1. Aircraft designation:
Agusta AB139/AW139

2.I.2. Application Date for State Aviation Administration (SAAU) validation:
06.08.2010

2.I.3. SAAU Validation Date:
30.01.2012

2.I.4. Eligible serial number:
AB139 (from S/N 31001 up to S/N 31054) name changed in AW139 (from S/N 31055 onwards)

2.II. Certification Basis:

2.II.1. Reference Application Date for ENAC Certification:
12.03.1999

2.II.2. ENAC Certification Date:
18.06.2003, ENAC SO/A415

2.II.3. ENAC Certification Basis:
JAR 29 Amdt 3 dated 01.04.2002 (ref. CRI A-01)

2.II.4. SAAU Certification Basis:
Additional Technical Conditions based on:
“Airworthiness requirements for transport category rotocraft. Part 29.” (AR-29);
2.II.4.1. Equivalent Safety Findings:
AR 29.1181 (a)(6) - designated fire zone (CRI E-4);
AR 29.1309 (h) – equipment, systems and installation (CRI A-5);
AR 29.1305 - powerplant instruments (CRI E-5).

2.II.4.2. Deviation:
No

2.III. Technical Characteristics and Operational Limitations:

2.III.1. Aircraft description:
The Agusta AB139/AW139 is a large helicopter with two free turbine turboshaft engines. Helicopter is a conventional configuration with a 5-blades fully articulated main rotor, a 4-blades tail rotor and a tricycle retractable wheel landing gear. Helicopter can accommodate 17 persons (2 crew and 15 passengers maximum).

2.III.2. Type Design Definition:
The basic Type Design is defined in the following reports:
139G0000P005 “AW139 – Type Design Definition (Short Nose and Long Nose configuration)”,
139G0000P005/02 “AW139 – Type Design Definition (4 displays configuration, Short Nose configuration)”,
139G0000P005/03 “AW139 – Type Design Definition (Long Nose configuration)”.
See Note 2.V.2. for Ukrainian registered helicopters.

2.III.3. Required equipment:
Report n. 139G0840W002 - Equipment List,
Report n. 139G0840W005 - Equipment List (Long Nose configuration).

The installation of the following is mandatory for Category A operations:
- Service Bulletin P&W S.B. No. 41020,
- Honeywell Primus EPIC s/w P/N MM7030191-004 or later.

The installation of the following is mandatory for operations in Known icing condition:
- Kit Full Ice Protection System P/N 4G3000F00211.
2.III.4. **Dimensions:**

<table>
<thead>
<tr>
<th>Fuselage:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length:</td>
<td>13,533 m (13,733 m for Long Nose configuration)</td>
</tr>
<tr>
<td>Width:</td>
<td>2,26 m</td>
</tr>
<tr>
<td>Height:</td>
<td>3,72 m</td>
</tr>
<tr>
<td><strong>Main Rotor Diameter</strong></td>
<td>13,8 m</td>
</tr>
<tr>
<td><strong>Tail Rotor Diameter:</strong></td>
<td>2,7 m</td>
</tr>
</tbody>
</table>

2.III.5. **Engines:**

2.III.5.1. **Model:**

PRATT & WHITNEY CANADA Inc. - Model PW PT6C-67C free turbine turboshaft engines.
SAAU TC No TD 0055

2.III.5.2. **Number:**

2

2.III.5.3. **Installed Engine Limits:**

<table>
<thead>
<tr>
<th>Max torque</th>
<th>Max ITT</th>
<th>Max gas gen. speed</th>
<th>Max Output Shaft speed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lbft (Nm)</td>
<td>°C</td>
<td>rpm</td>
<td>rpm</td>
</tr>
<tr>
<td>OEl 2 1/2</td>
<td>400 (542)</td>
<td>835</td>
<td>40500</td>
</tr>
<tr>
<td>OEl Continuous</td>
<td>350 (475)</td>
<td>775</td>
<td>39100</td>
</tr>
<tr>
<td>Take Off 5 min</td>
<td>275 (373)</td>
<td>775</td>
<td>39100</td>
</tr>
<tr>
<td>Maximum continuous</td>
<td>250 (339)</td>
<td>735</td>
<td>38200</td>
</tr>
</tbody>
</table>

\(^{(1)}\) for Category A take off and landings below 90KIAS and for external hoist and cargo hook operations.

2.III.6. **Transmission Torque Limits (%):**

<table>
<thead>
<tr>
<th>Transmission</th>
<th>Power @ 100% NR hp (kW)</th>
<th>Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCP Max Continuous OEl</td>
<td>1400 (1044)</td>
<td>140%</td>
</tr>
<tr>
<td>2.5' OEl</td>
<td>1600 (1193)</td>
<td>160%</td>
</tr>
<tr>
<td>MCP Max Continuous AEO</td>
<td>1000 (746) (x 2)</td>
<td>100%</td>
</tr>
<tr>
<td>TOP Take-Off AEO</td>
<td>1100 (820) (x 2)</td>
<td>110%</td>
</tr>
</tbody>
</table>
2.III.7. **Rotor Speed Limitation:**

*Power off:*
- maximum: 110%
- minimum: 95%

*Power on AEO and OEI:*
- maximum: 101%
- minimum: 98%

*Note:* For Category A take off and landings below 90 KIAS and external hoist and cargo hook operations: AEO and OEI Cautionary Operation Range: 101-103 %.

2.III.8. **Fluids (Fuel/Oil/Additives/Hydraulics):**

2.III.8.1. Fuel and additives:

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Applicable Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jet A</td>
<td>ASTM D1655</td>
</tr>
<tr>
<td>Jet A-1</td>
<td>ASTM D1655</td>
</tr>
<tr>
<td>JP5</td>
<td>DEF STAN 91-86 AVCAT/FSII</td>
</tr>
<tr>
<td></td>
<td>MIL -PRF-5624F</td>
</tr>
<tr>
<td></td>
<td>NATO Code F-44</td>
</tr>
<tr>
<td>JP8</td>
<td>DEF STAN 91-87-2002 AVTUR/FSII</td>
</tr>
<tr>
<td></td>
<td>MIL -T-83138D</td>
</tr>
<tr>
<td></td>
<td>NATO Code F-34</td>
</tr>
<tr>
<td>JP8+100</td>
<td>Aeroshell Performance Additive 101</td>
</tr>
<tr>
<td>GOST 10227 RT (PT)</td>
<td>GOST 10227-86</td>
</tr>
<tr>
<td>GOST 10227 TS-1 (TC-1)</td>
<td>GOST 10227-86</td>
</tr>
<tr>
<td>RT</td>
<td>GSTU 320.00149943.007-97</td>
</tr>
<tr>
<td>TS-1</td>
<td>GSTU 320.00149943.011-99</td>
</tr>
</tbody>
</table>

*Note:* Detail information about fuels and additives uses see in Section 1 “Limitations”, page 1-29 of Ukrainian Rotorcraft Flight Manual (RFM Ukraine – see Subsection 2.IV of this Data Sheet).

2.III.8.2. Oils type, conditions and limitations:

see the corresponding Section 1 of RFM and MM – (see Subsection 2.IV of this Data Sheet).

2.III.8.3. Hydraulics:

see Section 1 of RFM (see Subsection 2.IV of this Data Sheet).

2.III.8.4. Fluid capacities (liters):
- usable: 1590
- unusable: 20
2.III.9. **Air Speeds Limits** (unless otherwise specified, speeds are indicated airspeeds):

2.III.9.1. Never exceed Airspeed ($V_{NE}$):

- **OEO:** 167 KIAS,
- **OEI/Power OFF:** 147 KIAS.

*Note:* Decrease $V_{NE}$ for different ambient conditions and other limitation in accordance with the Section 1 of RFM (see Subsection 2.IV of this Data Sheet).

2.III.10. **Operating pressure altitude:**

2.III.10.1. Maximum: 20 000 ft (6 096 m) (See Notes 2.V.4. and 2.V.5.).

2.III.10.2. Maximum without oxygen equipment:

- without passengers: 9 840 ft (3 000 m)
- with passengers: 7 870 ft (2 400 m)

*Note:* If oxygen equipment are used, its installation on the helicopter must be approval by SAAU.

2.III.11. **Ambient air temperature at the see level:**

- **Maximum:** 50 °C
- **Minimum:** -40 °C

2.III.12. **Weights, Center of Gravity and Loading** (see Note 2.V.4.):

2.III.12.1. Maximum weight for take-off and landing:

- Maximum Certified Weight: 6400 kg
- Taxi and Ramp: 6450 kg
- Take Off: 6400 kg
- Landing: 6400 kg

2.III.12.2. Datum:

Longitudinal station 0 (datum) is 3160 mm forward of the front jack point. Lateral station 0 (datum) is ± 905 mm inboard of each main jack point and coincides with the rotorcraft longitudinal plane of symmetry.

2.III.12.3. **Center of Gravity Data:**

in accordance with the RFM (see Subsection 2.IV of this Data Sheet).

2.III.12.4. **Baggage compartment:**

- Maximum baggage weight: 200 kg (400 lb)

2.III.13. **Minimum Flight Crew:** 1 pilot for VRF day only.

2.III.14. **Maximum Passengers:** 15

2.III.15. **Emergency exits:**

6 (3 on each side of the passengers cabin),

4 (2 on each side of the passengers cabin) if the kit Cabin Bubble Windows.
2.III.16. **Placards and markings:** All placards and markings listed in approved RFM (see Subsection 2.IV of this Data Sheet) and Supplements must be installed in the specified locations.

2.III.17. **Other Limitations:** see approved RFM (see Subsection 2.IV of this Data Sheet).

2.IV. **Operating and Service Instructions:**

For Flight operation:
- Master Minimum Equipment List (MMEL) – EASA approved Document No.139G0270Q008.

Instructions for Maintenance and Continued Airworthiness:


2.V. **Notes**

2.V.1. Applicable serial numbers:
- S/N 31001 to 31054: AB139 designation, manufactured by Agusta S.p.A. in Italy;
- S/N 31055 to 31200: AW139 designation, manufactured by Agusta S.p.A. in Italy;
- S/N 31201 to 31399: AW139 Long Nose Configuration, manufactured by Agusta S.p.A. in Italy;
- S/N 41001 to 41200: AW139 designation, manufactured by Agusta S.p.A. in USA;
- S/N 41201 to 41999: AW139 Long Nose Configuration, manufactured by AgustaWestland Philadelphia Corporation (AWPC) in USA.

2.V.2. All placards and markings must be made in accordance with Drawings No. 3G1130A02911 and 3 G1120A01711.

On operator request helicopters should be equipped by:
- portable ELT or portable radio station - for flying over difficult of access and rarely populated regions and large water surfaces;
- HF radio station installation – for areas where the communication by VHF radio station cannot be carried out.
The noise levels of the helicopter are not greater than the noise level prescribed in ICAO, Annex 16, Volume I, Edition 3, Part II, Chapter 8 noise limits. The noise levels are follows:

<table>
<thead>
<tr>
<th>Gmax, kg</th>
<th>Noise levels in control points EPNL, EPNdB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>During take-off</td>
</tr>
<tr>
<td></td>
<td>level</td>
</tr>
<tr>
<td>6800</td>
<td>90,3</td>
</tr>
<tr>
<td>6400</td>
<td>90,5</td>
</tr>
</tbody>
</table>

2.V.4. Operation of the aircraft with MTOW up to 6800 kg is permitted according to RFM 139G0290X002 Supplement No. 50 if kit P/N 4G0000F0011 is installed.

2.V.5. Operation in Known Ice Condition is permitted according to RFM 139G0290X002 Supplement 71 if kit Ice Protection System P/N 4G3000F00211 is installed. The aircraft configuration approved for use in icing condition is described in the Report 139G3000A001 “AW139 Icing Compatibility Reference Handbook”.

2.V.6. Each of the documents listed below that contain a statement that it is approved by the EASA are accepted by the SAAU and are considered SAAU approved. Approvals issued by AgustaWestland S.p.A. under the authority of EASA approved Design Organization Approval (DOA) EASA.21J.005 are considered SAAU approved:

- Rotorcraft Flight Manual;
- Maintenance Manual;
- Vendor manuals referenced in AgustaWestland S.p.A. service bulletins;
- AgustaWestland S.p.A. Service Bulletins and Modifications;
- Repair Manuals;
- Repair Instructions.

* * *

Head of Aeronautical Products
Type Certification Department

S. Haidenko