TYPE CERTIFICATE
DATA SHEET

No. EASA.R.509

for
AW169

Type Certificate Holder
Leonardo S.p.A.

Helicopters
Piazza Monte Grappa, 4
00195 Roma
Italy

For Model: AW169
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SECTION 1: AW169

I. General

1. Type/ Model/ Variant
   1.1 Type AW169
   1.2 Model AW169
   1.3 Variant - - -

2. Airworthiness Category
   Large Rotorcraft, Category A and B

3. Type Certificate Holder
   Leonardo S.p.A. Helicopters
   Piazza Monte Grappa, 4
   00195 Roma, Italy

4. Manufacturer
   See Note 2

5. Type Certification Application Date
   9 February 2011

6. State of Design Authority
   EASA

7. EASA Type Certification Date
   15 July 2015

II. Certification Basis

1. Reference Date for determining the applicable requirements
   9 February 2011

2. Airworthiness Requirements
   - CS-29 Amdt. 2, dated 17 November 2008
   - CS-29 Amdt. 3, dated 11 December 2012 for the following installations and affected areas only:
     - Kit Single Rescue Hoist p/n 6F2591F0011

3. Special Conditions
   - “Loss of Oil from Gearboxes Utilising a Pressurised Lubrication System”
   - “HIRF Protection” in accordance with JAA Interim Policy INT/POL/27&29/1, Issue 3, dated 1 October 2003
   - “Lithium Battery Installation”
   - “Non Rechargeable Lithium Battery Installation”

   - “Extended Take-Off Power Duration”

4. Exemptions
   None

5. Deviations
   None

6. Equivalent Safety Findings
   - CS 29.813 (c) - “Emergency Exit access”
   - CS 29.807 (c) - “Passenger Emergency Exits other than side-of-fuselage”
   - CS 29.807 (d)(2) – “Ditching Emergency Exits for passengers”
   - CS 29.811 (d) “Emergency Exit signs”
   - CS 29.1305, CS 29.1521, CS 29.1549, CS 29.1309 (c) “Power Index indicator”
   - CS 29.1305, CS 29.1521, CS 29.1549, CS 29.1309 (c) “Standby Attitude indicator power supply”
   - CS 29 Subpart B, CS 29.1305, CS 29.1309, CS 29.1549 “Engine Training Mode”
   - CS 29.1545 (b)(4) “Airspeed indicators green arcs”
   - CS 29.601, CS 29.603, CS 29.605, CS 29.865, CS 29.1301 (d) - “Hoist installation”

7. Requirements elected to comply
   - CS-36 Amdt. 3
   - CS 29.1465 Vibration health monitoring, Amdt. 5
8. Environmental Protection Requirements

8.1 Noise Requirements  
See TCDSN EASA.R.509

8.2 Emission Requirements  
Chapter 2 of ICAO Annex 16 Volume II, Amdt. 6, Part II to Chicago Convention (as implemented in CS-34 Initial Issue)

9. Operational Suitability Data (OSD)  
see SECTION 2 below

III. Technical Characteristics and Operational Limitations

1. Type Design Definition  
AW Doc. No. 169F0272N002

2. Description  
Large twin-engine helicopter, conventional configuration, 5-blade fully articulated interblade main rotor, 3-blade fully articulated tail rotor, retractable tricycle landing gear.

3. Equipment  
As per compliance with certification basis and included in Type Design Definition Document

4. Dimensions

4.1 Fuselage  
Length: 12.90 m  
Width hull: 2.15 m  
Height: 3.88 m

4.2 Main Rotor  
Diameter: 12.12 m

4.3 Tail Rotor  
Diameter: 2.40 m

5. Engine

5.1 Model  
Pratt & Whitney Canada

5.2 Type Certificate  
TCCA TC/TCDS: E-36  
EASA TC/TCDS: EASA IM.E.126

5.3 Limitations  
In accordance with PW210A Pratt & Whitney Canada Installation Manual (Ref. to 30L2374)

5.3.1 Installed Engine Limits

<table>
<thead>
<tr>
<th>Rating</th>
<th>Max Torque [% (Nm)]</th>
<th>Max ITT [°C]</th>
<th>Max NG [% (rpm)]</th>
<th>Max NF [% (rpm)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous</td>
<td>118.6 (395.9)</td>
<td>868</td>
<td>96.5 (49 200)</td>
<td></td>
</tr>
<tr>
<td>Take-off 5 min</td>
<td>125.9 (420.3)</td>
<td>930</td>
<td>98.2 (50 100)</td>
<td></td>
</tr>
<tr>
<td>Take-off 30 min(*)</td>
<td>148.3 (494.9)</td>
<td>941</td>
<td>98.9 (50 430)</td>
<td></td>
</tr>
<tr>
<td>Continuous</td>
<td>174.7 (583)</td>
<td>1 020</td>
<td>100.7 (51 360)</td>
<td>107 (28 120)</td>
</tr>
<tr>
<td>OEI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous</td>
<td>140 (470)</td>
<td>14 400</td>
<td>950</td>
<td></td>
</tr>
<tr>
<td>2.5 min</td>
<td>174 (583)</td>
<td>1 180</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*) if Core Avionic SW phase 4.0 P/N 6F4600A00114, or later, is installed.

5.3.2 Transmission Torque Limits

<table>
<thead>
<tr>
<th>Rating</th>
<th>Max Torque [% (Nm)]</th>
<th>Input speed [rpm]</th>
<th>Input power [hp]</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEO</td>
<td></td>
<td>14 400</td>
<td>1 350 (675 x 2)</td>
</tr>
<tr>
<td>Max continuous</td>
<td>2 x 100 (334)</td>
<td></td>
<td>1 500 (750 x 2)</td>
</tr>
<tr>
<td>5 min</td>
<td>2 x 111 (371)</td>
<td></td>
<td>1 500 (750 x 2)</td>
</tr>
<tr>
<td>30 min(*)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OEI</td>
<td></td>
<td>14 400</td>
<td></td>
</tr>
<tr>
<td>Max continuous</td>
<td>140 (470)</td>
<td></td>
<td>950</td>
</tr>
<tr>
<td>2.5 min</td>
<td>174 (583)</td>
<td>1 180</td>
<td></td>
</tr>
</tbody>
</table>

(*) if Core Avionic SW phase 4.0 P/N 6F4600A00114, or later, is installed.
6. Fluids (Fuel/ Oil/ Additives)

6.1 Fuel
JET A, JET A1, JP8, JP8+100, No. 3 Jet Fuel (for code no. specification and more details refer to approved RFM)

6.2 Oil
Transmissions: AeroShell Turbo Oil 555 (DoD-L-85734).
No different specification or brand allowed.

Engine: Refer to approved RFM

Hydraulics: MIL-PRF-83282,
MIL-PRF-87257 (as alternative)

6.3 Additives
Refer to approved RFM

6.4 Coolant
R134a

7. Fluid capacities

<table>
<thead>
<tr>
<th>7.1 Fuel</th>
<th>Total capacity [litres (kg(*))]</th>
<th>Unusable [litres (kg(*))]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two main fuel tanks (LH and RH)</td>
<td>1130 (904)</td>
<td>20 (16)</td>
</tr>
</tbody>
</table>

(*)Fuel mass defined assuming a standard fuel density of 0.8 kg/litre

<table>
<thead>
<tr>
<th>7.2 Oil</th>
<th>Quantity [litres (kg(*))]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine (each)</td>
<td>min 5.25 (4.948) - max 5.78 (5.448)</td>
</tr>
<tr>
<td>Main gearbox (min/max)</td>
<td>min 17 (16.968) - max 19 (18.964)</td>
</tr>
<tr>
<td></td>
<td>(16.8 + 2.2 for oil cooler, oil ducts and filter)</td>
</tr>
<tr>
<td>Intermediate gearbox</td>
<td>0.77 (0.768)</td>
</tr>
<tr>
<td>Tail gearbox</td>
<td>1.10 (1.098)</td>
</tr>
<tr>
<td>Hydraulic (per each Power Control Module)</td>
<td>1.3 (1.1)</td>
</tr>
</tbody>
</table>

(*) Oil mass at 80 °C

7.3 Coolant System Capacity
2.1 kg

8. Air Speed Limitations

<table>
<thead>
<tr>
<th></th>
<th>V\textsubscript{\text{NE}} Power On AEO</th>
<th>V\textsubscript{\text{NE}} Power On OEI</th>
<th>V\textsubscript{\text{NE}} Power Off</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>165 kt</td>
<td>135 kt</td>
<td>125 kt</td>
</tr>
</tbody>
</table>

For reduction of the V\textsubscript{\text{NE}} with density altitude (HP/OAT), refer to approved RFM.

9. Rotor Speed Limitations

<table>
<thead>
<tr>
<th>Condition</th>
<th>Power On AEO[(*)]</th>
<th>Power On OEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Continuous</td>
<td>317.56</td>
<td>304.05</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>354.72</td>
<td>341.21</td>
</tr>
</tbody>
</table>

[(*): Power On AEO]
<table>
<thead>
<tr>
<th>Condition</th>
<th>[rpm]</th>
<th>[%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Continuous</td>
<td>304.05</td>
<td>90.0</td>
</tr>
<tr>
<td>Maximum Continuous</td>
<td>371.61</td>
<td>110.0</td>
</tr>
</tbody>
</table>

(*) Maximum and minimum continuous values of the flight envelope. AVSR provides a governing of the rotor speed at different values depending on airspeed (TAS) and density altitude. As the NR datum is variable, NR green band is variable as well (±2% across the datum value).

Refer to approved RFM for additional rotor speed limitations

10. Maximum Operating Altitude and Temperature

10.1 Altitude

Maximum operating altitude 15 000 ft PA/DA (whichever occurs first), or, 10 000 ft for operation at gross mass above 4 600 kg

Maximum Take-off and Landing altitude 15 000 ft PA/DA (whichever occurs first), or, 10 000 ft for operation at gross mass above 4 600 kg.

10.2 Temperature

-40°C ÷ +50°C (ISA+35°C)

-40°C ÷ +50°C (ISA+35°C) for Cat A operations

For variation of temperature limitations with altitude refer to approved RFM and applicable supplement

11. Operating Limitations

VFR day and night and IFR operations in non-icing conditions

12. Maximum Mass

Take-off and landing: 4 600 kg, or 4 800 kg if P/N 6F0000F00211 is installed

Taxi and Towing: 4 650 kg, or 4 850 kg if P/N 6F0000F00211 is installed

13. Centre of Gravity Range

Refer to approved RFM

14. Datum

Longitudinal:
The datum plane (STA 0) is located at 3 528 mm forward to the front jack point

Lateral:
The datum plane (B.L. 0) is located at ±225 mm inboard of LH/RH front jack points.

15. Levelling Means

Plumb line from ceiling reference point to index plate on floor of baggage compartment; clinometer.

16. Minimum Flight Crew

One (1) for VFR day and night and IFR.

For NVG operations, two (2) pilots or one (1) pilot and one (1) crew member required. Both pilot and crew member must be equipped with NVGs (see Note 3).

17. Maximum Passenger Seating Capacity

8

10 (if the kit 10 Seats Internal Arrangement P/N 6F2520F00111 is installed)

18. Passenger Emergency Exit

2 on each side of the passenger cabin

1 on each side of the passenger cabin, if the kit Sliding Aft Passenger Windows P/N 6F5630F00411 is installed.
19. Maximum Baggage/ Cargo Loads
   250 kg located in the baggage/cargo compartment

20. Rotor Blade Control Movement
   For rigging information, refer to RFM

21. Auxiliary Power Unit (APU)
   None

22. Life-limited Parts
   Refer to the Airworthiness Limitation Section (ALS) of the
   Maintenance Manual

23. Wheels and Tyres
   MLG wheel assembly with 18x5.5 tubeless tyres
   NLG wheel assembly with 5x5.5 tubeless tyres

IV. Operating and Service Instructions

1. Flight Manual
   Doc. No. 168F0290X001,
   initial issue dated 8 July 2015, EASA approved
   15 July 2015, or later approved revisions

   “AW169 Maintenance Planning Information”
   Doc. No. 69-A-AMPI-00-P including:
   - Chapter 4 ALS, EASA approved dated 15 July 2015, or
     later approved revisions;
   - Chapter 5 with Scheduled Maintenance Requirements
     “Maintenance Review Board Report AW169 Helicopter”
     Doc. No. 169F0000M005
     “AW169 Maintenance Publication”
     Doc. No. 69-A-AMP-00-X
     “AW169 Material Data Information”
     Doc. No. 69-A-AMDI-00-X
     “AW169 Corrosion Control Publication”
     Doc. No. 69-A-ACCP-00-X
     “AW169 Fault Isolation Publication”
     Doc. No. 69-A-AFIP-00-X
     “AW169 Wiring Data Publication”
     Doc. No. 69-A-AWDP-00-X

   “AW169 Structural Repair Publication”
   Doc. No. 69-A-ASRP-00-X
   “AW169 Component Repair and Overhaul Publication”
   Doc. No. 69-A-CR&OP-00-X

   Refer to the Section 6 of the RFM and applicable RFMS

5. Illustrated Parts Catalogue
   “AW169 Illustrated Tool and Equipment Publication”
   Doc. No. 69-A-iTEP-00-X
   “AW169 Illustrated Part Data”
   Doc. No. 69-A-IPD-00-X

6. Service Letters and Service Bulletins
   As published by AgustaWestland, Finmeccanica or
   Leonardo

7. Required equipment
   As per compliance with certification basis and included in
   Type Design Definition standard.
   Refer to approved RFM and MMEL.
   Refer to EASA approved RFM and related supplements
   for other approved mandatory and optional equipment.
V. Notes

1. Manufacturer’s eligible serial numbers:
   69005, and subsequent

2. Manufacturer:
   AgustaWestland S.p.A. in Italy(*)
   (*) Effective on 1 January 2016, AgustaWestland S.p.A. ownership was transferred to
   Finmeccanica S.p.A.;
   Effective on 28 July 2016, Finmeccanica S.p.A. name was changed into Leonardo S.p.A.

3. NVG Operations:
   Night Vision Goggle Operations are permitted according to RFM 169F0290X001 Supplement No. 16. The
   aircraft configuration involving internal/external emitting/reflecting equipment approved for use with
   NVG is described in the Report N. 169G3360A001 “AW169 NVG Compatibility Reference Handbook”.
   Subsequent modifications and deviations to the NVG helicopter configuration shall be managed in
   accordance with document 169F3360E001 “AW169 Helicopter NVG Policy”.

* * *
SECTION 2: OPERATIONAL SUITABILITY DATA (OSD)

The OSD elements listed below are approved by the European Aviation Safety Agency as per Commission Regulation (EU) 748/2012, as amended by Commission Regulation (EU) No 69/2014.

I. OSD Certification Basis

I.1 Reference Date for determining the applicable OSD requirements
   For MMEL, FCD and SIMD: 7 October 2014

I.2 MMEL - Certification Basis
   CS-MMEL Initial Issue, dated 31 January 2014

I.3 Flight Crew Data - Certification Basis
   CS-FCD Initial Issue, dated 31 January 2014

I.4 SIM Data - Certification Basis
   Special Condition NPA 2013-17 (CS-SIMD), dated 27 August 2013

I.5 Maintenance Certifying Staff Data - Certification Basis
   Reserved

II. OSD Elements

II.1 MMEL
   AW169 Master Minimum Equipment List - MMEL, Doc.169F0270Q003, issue A dated 16 July 2015, EASA approved on 21 July 2015, or later EASA approved revisions

II.2 Flight Crew Data

II.3 SIM Data
   AW169 FTD Validation Data Roadmap doc. THSS-169F1920U014, issue B, dated 7 May 2015, EASA approved on 19 January 2016, or later EASA approved revisions.
   AW169 FFS Validation Data Roadmap doc. 169F1920U001, issue A, dated 19 May 2016, EASA approved on 13 December 2016, or later EASA approved revisions.
   AW169 FFS Level D Flight Test Results Report doc. 169F1920N001, issue A, dated 25 May 2016, EASA approved on 13 December 2016, or later EASA approved revisions.

II.4 Maintenance Certifying Staff Data
   Reserved
SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AEO</td>
<td>All Engines Operative</td>
</tr>
<tr>
<td>Amtd.</td>
<td>Amendment</td>
</tr>
<tr>
<td>AW</td>
<td>AgustaWestland</td>
</tr>
<tr>
<td>B.L.</td>
<td>Butt Line</td>
</tr>
<tr>
<td>C.G.</td>
<td>Centre of Gravity</td>
</tr>
<tr>
<td>CRI</td>
<td>Certification Review Item</td>
</tr>
<tr>
<td>CS</td>
<td>Certification Specification</td>
</tr>
<tr>
<td>DA</td>
<td>Density Altitude</td>
</tr>
<tr>
<td>Doc.</td>
<td>Document</td>
</tr>
<tr>
<td>HIRF</td>
<td>High Intensity Radiated Fields</td>
</tr>
<tr>
<td>IFR</td>
<td>Instrument Flight Rules</td>
</tr>
<tr>
<td>ISA</td>
<td>International Standard Atmosphere</td>
</tr>
<tr>
<td>JAA</td>
<td>Joint Aviation Authorities</td>
</tr>
<tr>
<td>LH</td>
<td>Left Hand</td>
</tr>
<tr>
<td>MLG</td>
<td>Main Landing Gear</td>
</tr>
<tr>
<td>NLG</td>
<td>Nose Landing Gear</td>
</tr>
<tr>
<td>No.</td>
<td>Number</td>
</tr>
<tr>
<td>NVG</td>
<td>Night Vision Goggle</td>
</tr>
<tr>
<td>OAT</td>
<td>Outside Air Temperature</td>
</tr>
<tr>
<td>OEB</td>
<td>Operational Evaluation Board</td>
</tr>
<tr>
<td>OEI</td>
<td>One Engine Inoperative</td>
</tr>
<tr>
<td>OSD</td>
<td>Operational Suitability Data</td>
</tr>
<tr>
<td>p/n</td>
<td>Part number</td>
</tr>
<tr>
<td>PA</td>
<td>Pressure Altitude</td>
</tr>
<tr>
<td>RFM</td>
<td>Rotorcraft Flight Manual</td>
</tr>
<tr>
<td>RFMS</td>
<td>Rotorcraft Flight Manual Supplement</td>
</tr>
<tr>
<td>RH</td>
<td>Right Hand</td>
</tr>
<tr>
<td>S/n</td>
<td>Serial number</td>
</tr>
<tr>
<td>STA</td>
<td>Station</td>
</tr>
<tr>
<td>TCCA</td>
<td>Transport Canada Civil Aviation</td>
</tr>
<tr>
<td>VNE</td>
<td>Velocity Never Exceed</td>
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<tr>
<td>VFR</td>
<td>Visual Flight Rules</td>
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<tr>
<td>VNE</td>
<td>Velocity Never Exceed</td>
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II. Type Certificate Holder Record.

<table>
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<tr>
<th>Type Certificate Holder</th>
<th>Period</th>
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<tbody>
<tr>
<td>AgustaWestland S.p.A</td>
<td>from 15 July 2015 until 31 December 2015</td>
</tr>
<tr>
<td>Piazza Monte Grappa, 4, 00195 Roma, Italy</td>
<td></td>
</tr>
<tr>
<td>Finmeccanica S.p.A.</td>
<td>From 1 January 2016 until 14 July 2016</td>
</tr>
<tr>
<td>Helicopter Division, Piazza Monte Grappa, 4, 00195 Roma, Italy</td>
<td></td>
</tr>
<tr>
<td>Leonardo S.p.A.</td>
<td>since 15 July 2016</td>
</tr>
<tr>
<td>Helicopters, Piazza Monte Grappa, 4, 00195 Roma, Italy</td>
<td></td>
</tr>
</tbody>
</table>

III. Change Record

<table>
<thead>
<tr>
<th>Issue</th>
<th>Date</th>
<th>Changes</th>
<th>TC issue</th>
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<tbody>
<tr>
<td>Issue 2</td>
<td>21 Jul 2015</td>
<td>AW legal office moved to Rome; OSD approvals for MMEL and FCD</td>
<td>- - -</td>
</tr>
<tr>
<td>Issue 3</td>
<td>13 Jan 2016</td>
<td>TCH company name changed and ownership transferred to Finmeccanica S.p.A.</td>
<td>Re-issued 13 January 2016</td>
</tr>
<tr>
<td>Issue 4</td>
<td>19 Jan 2016</td>
<td>OSD SIM added</td>
<td>- - -</td>
</tr>
<tr>
<td>Issue 6</td>
<td>18 Jan 2017</td>
<td>Introduction of ESF to CS 29.807 (d)(2) – “Ditching Emergency Exits for Passengers”; Take-off and landing</td>
<td>- - -</td>
</tr>
<tr>
<td>Issue</td>
<td>Date</td>
<td>Changes</td>
<td>TC issue</td>
</tr>
<tr>
<td>-------</td>
<td>------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>altitude envelope extended; Introduction of Kit increased Gross Weight 4 800 kg; OSD SIM extended to FFS level D</td>
<td></td>
</tr>
<tr>
<td>Issue 7</td>
<td>4 Oct 2017</td>
<td>Certification Basis: references to CRI are removed; Environmental Protection Requirements are condensed and make direct reference to TCDSN for Noise Requirements; maximum take-off and landing altitude changed for gross mass above 4 600 kg; introduction of clinometer as admissible levelling means; other minor corrections included</td>
<td></td>
</tr>
<tr>
<td>Issue 8</td>
<td>30 Jan 2018</td>
<td>Introduction of Special Condition “Non Rechargeable Lithium Battery Installation”; Introduction of China No. 3 Jet Fuel</td>
<td></td>
</tr>
<tr>
<td>Issue 9</td>
<td>19 Dec 2018</td>
<td>II.3: Special Condition Extended TOP Duration added; II.7.: CS 29.1465 Amdt. 5 added; III.5.3: ‘Extended TOP 30 min’ added</td>
<td></td>
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- end of file -