



OPERATIONAL EVALUATION REPORT

AGUSTAWESTLAND S.p.A.

AW169

GRUPO DE AVALIAÇÃO DE AERONAVES – GAA

BRAZILIAN AIRCRAFT EVALUATION GROUP

AGÊNCIA NACIONAL DE AVIAÇÃO CIVIL

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1 General

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Acronyms

- AC – Alternating Current
- AEO – All Engines Operating
- AFCS – Automatic Flight Control System
- AMLCD – Active Matrix Liquid Crystal Displays
- ANAC – *Agência Nacional de Aviação Civil* (Brazilian National Civil Aviation Agency)
- APU – Auxiliary Power Unit
- ATO – Approved Training Organizations
- ATPL(H) – Airline Transport Pilot's Licence (Helicopter)
- CAS – Crew Alerting System
- CBT – Computer Based Training
- CCP – Crew Coordination Procedure
- CPD – Common Procedures Document (EASA)
- CS-FCD – Certification Specifications for Operational Suitability Data (OSD) Flight Crew Data CS-FCD (EASA)
- CS-FSTD(A) – Certification Specifications for Aeroplane Flight Simulation Training Devices (EASA)
- DAU – Data Acquisition Unit
- DC – Direct Current (electrical)
- DU – Display Unit
- CRM – Crew Resource Management
- DME – Distance Measuring Equipment
- EASA – European Aviation Safety Agency
- ECDU – Electronic Control & Display Units
- EFIS – Electronic Flight Instrument System
- EGPWS – Enhanced Ground Proximity Warning System
- EICAS – Engine Indicating and Crew Alerting System
- ENAC – Ente Nazionale Aviazione Civile
- EU-OPS – Commission Regulation (EC) No 859/2008 of 20 August 2008 (EASA)
- FAA – Federal Aviation Administration
- FADEC – Full Authority Digital Engine Control
- FCL – Flight Crew Licensing
- FD – Flight Director
- FFS – Full Flight Simulator
- FMS – Flight Management System
- FNPT – Flight and Navigation Procedures Trainer
- FSB – Flight Standardization Board
- FSTD – Flight Simulator Training Device
- FTD – Flight Training Device
- FTO – Flight Training Organization

- ❑ F/D – Flight Director
- ❑ GAA – *Grupo de Avaliação de Aeronaves* (Aircraft Evaluation Group)
- ❑ GPS – Global Positioning System
- ❑ GA/TU – Go Around / Transition Up
- ❑ GPWS – Ground Proximity Warning System
- ❑ HEL – Helicopter
- ❑ IEM – Interpretative and Explanatory Material
- ❑ IPT – Instrument Procedure Trainer
- ❑ IFR – Instrument Flight Rules
- ❑ IR – Instrument Rating
- ❑ JAA – Joint Aviation Authorities
- ❑ LIFUS – Line Flying Under Supervision
- ❑ LPC – License Proficiency Check
- ❑ MET-H – Multi Engine Turbine (Helicopter)
- ❑ MCC – Multi Crew Cooperation
- ❑ MCR – Master Common Requirements
- ❑ MDR – Master Difference Requirements
- ❑ MEL – Minimum Equipment List
- ❑ MET – Multi Engine Turbine
- ❑ MFD – Multi Function Flight Display
- ❑ MMC – Multi Crew Coordination
- ❑ MMEL – Master Minimum Equipment List
- ❑ MP – Multi Pilot
- ❑ MPA – Multi-Pilot Aeroplane
- ❑ MTOM – Maximum Take Off Mass
- ❑ N/A – Not Applicable
- ❑ NAA – National Aviation Authority
- ❑ ODR – Operational Difference Requirements
- ❑ OEB – Operational Evaluation Board
- ❑ OEI – One Engine Inoperative
- ❑ OPC – Operator Proficiency Check
- ❑ OPS – Flight Operations
- ❑ OSD – Operational Suitability Data
- ❑ OTD – Other Training Device
- ❑ Part-ARA – Annex VI to Commission Regulation (EU) No 290/2012 of 30 March 2012 (EASA)
- ❑ Part-ARO – Annex II to Commission Regulation (EU) No 965/2012 of 05 Oct 2012 (EASA)
- ❑ Part-CAT – Annex IV to Commission Regulation (EU) No 965/2012 of 05 Oct 2012 (EASA)
- ❑ Part-FCL – Annex I to Commission Regulation (EU) No 1178/2011 of 3 November 2011 (EASA)
- ❑ Part-ORA – Annex VII to Commission Regulation (EU) No 290/2012 of 30 March 2012 (EASA)

- ❑ Part-ORO – Annex III to Commission Regulation (EU) No 965/2012 of 05 Oct 2012 (EASA)
- ❑ Part-SPA – Annex V to Commission Regulation (EU) No 965/2012 of 05 Oct 2012 (EASA)
- ❑ PF – Pilot Flying
- ❑ PFD – Primary Flight Display
- ❑ PIC – Pilot in Command
- ❑ PM – Pilot Monitoring
- ❑ PNF – Pilot not flying
- ❑ POI – Principal Operations Inspector
- ❑ QRH – Quick Reference Handbook
- ❑ RBAC – Regulamento Brasileiro de Aviação Civil
- ❑ RBHA – Regulamento Brasileiro de Homologação Aeronáutica
- ❑ RFM – Rotorcraft Flight Manual
- ❑ Route Sector – as defined in Part-FCL [“Route sector” means a flight comprising take-off, departure, cruise of not less than 15 minutes, arrival, approach and landing phases]
- ❑ RPM – Revolution Per Minute
- ❑ SAR – Search and Rescue
- ❑ SP – Single Pilot
- ❑ SOE – Supervised Operating Experience
- ❑ SOP – Standard Operating Procedure
- ❑ SVS – Synthetic Vision System
- ❑ TASE – Training Areas of Special Emphasis
- ❑ TAWS – Terrain Awareness and Warning System
- ❑ TCAS – Traffic Collision and Avoidance System
- ❑ TCDS – Type Certificate Data Sheet
- ❑ TCH – Type Certificate Holder
- ❑ TRI – Type Rating Instructor
- ❑ TRTC – Type Rating Training Course
- ❑ TRTO – Type Rating Training Organization
- ❑ VIPT – Virtual Interactive Procedural Trainer
- ❑ VFR – Visual Flight Rules
- ❑ VNE – Velocity Never Exceed
- ❑ VOR – Very High Frequency Omnidirectional Range
- ❑ VTOL – Vertical Take Off & Landing

2 Introduction

2.1 Background

This evaluation was conducted by documentation analysis using the information provided by the manufacturer and the determinations of the Operational Suitability Data (OSD) Report, approved by the European Aviation Safety Agency (EASA) under the Type Certificate (EASA TC No R. 509) as part of the Operational Suitability Data (OSD) as per Regulation (EU) 748/2012 as amended by Regulation (EU) N 69/2014.

The EASA evaluation was carried out by EASA with the support of TCCA and ENAC Italy.

The OSD was approved EASA (Approval Number 10053877) on July 21st 2015, in its original revision (Issue A).

Users should take account of subsequent amendments to any references, in particular concerning requirement for civil aviation aircrew and air operations.

Modifications and upgrades to the aircraft evaluated require additional assessment for type designation, training / checking / currency, operational credits, and other elements within the scope of the operational evaluation.

2.2 Methodology

The documental analysis methodology used on this report implies that the GAA team did not get involved in any flight of the aircraft nor in any kind of training session.

Except for pilot rating definition and some references to the Brazilian regulation - RBAC, all the technical data presented in this report are entirely based on the OSD approved by EASA.

In case more detailed information is required, refer to the original OSD Report mentioned above.

2.3 Purpose

The purpose of this report is to define the pilot rating assigned for the AW169 helicopter.

Moreover, this report also recommends:

- a. The minimum requirements for training, checking and currency applicable to flight crew for the AW169, and functionalities;
- b. The specification for the Training Areas of Specific Emphasis (TASE); and
- c. The required Flight Simulation Training Device (FSTD) for crew training and checking.

The recommended items above are based on the evaluations of specific configurations of aircraft models, equipped in a given configuration and in accordance with current EASA regulations and guidance, although there was a task of regulation compliance with ANAC regulations.

Anyway the ANAC GAA does encourage POI 's, Managers, INSPAC 's and other ANAC members who will somehow be involved with the operation of the AW 169 in Brazil to carry a deeper analysis before any operational authorization be given to this helicopter.

Any discrepancy found between this document and the Brazilian requirements must be promptly reported to the ANAC GAA and must be corrected and implemented before the start of any operation.

2.4 Customization of Procedures and Checklists

Before starting the operation, any customization of the procedures and checklists must be evaluated and approved by the ANAC.

2.5 Applicability

This report has been concluded before the Brazilian TC issuance for model AW169. In case of incompatibility, this report must be revised and the recommendations presented herein should be reevaluated before its application.

This report is applicable to:

- a. Brazilian operators of the helicopter identified as AW169 who operate under RBHA 91 and RBAC 135 rules;
- b. Approved Training Organizations certified under Brazilian regulations (RBAC);
- c. Flight Operations Inspectors (INSPAC) related to safety oversight of AW169 helicopter;
- d. ANAC Principal Operations Inspectors (POIs) of AW169 operators.

2.6 Cancellation

Not applicable.

3 Pilot Rating

According to the RBAC 61 Amendment 06, model AW169 requires a multi engine helicopter class rating.

4 Master Difference Requirements (MDR)

Reserved for future related aircraft.

5 Operator Difference Requirements (ODR)

Reserved for future related aircraft.

6 Specifications for Pilot Training

6.1 General

Specifications for training, checking and currency are detailed on the OSD Report mentioned above.

6.2 Course pre-entry requirements

All candidates must follow the requirements of the RBHA 91 and RBAC 61, 135, 141 and 142, as appropriated, and the AW169 Course Program as reported in Appendix 2.

Pilots without previous experience in turbine powered rotorcraft with glass cockpit must first undergo a Glass Cockpit and/or Multi Engine Turbine Course.

6.3 Training course

Theoretical knowledge Syllabus summary

Theoretical instruction must be provided in accordance with the RBHA 91 and RBAC's 61, 135, 141 and 142, as appropriated.

The following sections present a summary of the material a training program should consider. Whilst based on the AgustaWestland programs. For theoretical training methodologies and aids can be used (distance training, virtual reality devises, OTD, etc.) depending on trainees background and technology available. ATOs will set up training programs that guaranties competencies are acquired, with particular emphasis on distance training.

Theoretical Knowledge Syllabus	AW169
Helicopter structure, transmissions, rotors and equipment, normal and abnormal operation of the systems	26h00
Limitations	2h00
Performance, flight planning and monitoring	3h00
Weight and balance, servicing	3h00
Emergency procedures	4h00
Special requirements for helicopters fitted with electronic flight instrument systems or equivalent equipment, System Integration and Display, Navigation, Communication, FMS	22h00
Optional equipment	In addition
Total Theoretical Knowledge Syllabus	60h00
Theoretical examination session	2h00
TOTAL	62h00
In addition 6 VIPT Sessions to consolidate the theoretical knowledge	12h00

On completion of the theoretical phase, the trainee is assessed via a multiple-choice questionnaire and a minimum of 100 questions is covering the entire program either for Single or Multi pilot Training Course. The threshold for passing is 75% of correct answers in the written examination on a range of multiple-choice or computerized questions.

Due to the complexity of the systems of the AW169, especially displays and systems integration, a training device (OTD) should be used during the theoretical training to better understand their function. Those OTDs can be a VIPT, CBT, emulator and if those are not available, upper level devices like FTD, FNPT, FFS or an equivalent way of cockpit training proposed by the training organizations, it could be also the aircraft. No credit towards flight training is given hereby.

Practical training

The following tables summarize the minimum training hours required for each kind of training, depending on the previous experience of the applicant pilot on multi engine turbine helicopters. Standard flight sessions last 1h to 2h but can be reduced at the discretion of the instructor. Additional flight could also be necessary if the trainee has not successfully demonstrated the ability to perform all maneuvers with a sufficient degree of proficiency. This could result in total course length significantly different from the amounts given below.

Additional flights may be required to enhance basic initial training (minimum syllabus) for different purposes; these additional modules are detailed in Special Events Training.

Where ATOs integrate training into an operator's commercial training requirements, figures proposed below may be integrated into the operator's training course. Furthermore, CRM, MCC and line training should provide additional training benefit, which should be aggregated and acknowledged.

- Applicant pilot with no previous experience on multi engine turbine helicopters

VFR Training Course	No previous multi engine turbine experience				
Flight Simulation Training Device & Helicopter	FFS + Hel		FTD + Hel		Hel only
Pre-flight, cockpit (when applicable, engine start, shutdown, basic air work, general handling, various touch-downs)	2h30	-	2h30	-	1h15
Circuits and various touch-downs	-	1h00	-	1h00	1h15
Automatic Flight Control System, Flight Management Computing System, Integration and Display System, Navigation, FMS, System Malfunction, Emergency procedures	4h00	-	4h00	-	3h30
Abnormal and Emergency procedures	1h30	-	1h30	-	2h00
OEI failure, Hydraulic failure, Manual Control of engine power, Auto-rotations	2h00	-	2h00	1h00	1h30
Clear Area CAT “A” take-off and landing AEO and OEI training procedures, CAT “B” profiles	2h00	1h00	2h00	2h00	2h30
Total Flight Simulation Training Device	12h00	-	12h00	-	-
Total Helicopter	-	2h00	-	4h00	12h00
Total Flight Training	14h00		16h00		12h00
Skill test	Required		Required		Required

- Applicant pilot with demonstrated experience on multi engine turbine helicopters

VFR Training Course	Demonstrated multi engine turbine experience				
Flight Simulation Training Device & Helicopter	FFS + Hel		FTD + Hel		Hel only
Pre-flight, cockpit (when applicable, engine start, shutdown, basic air work, general handling, various touch-downs)	1h15	-	1h15	-	1h15
Circuits and various touch-downs	-	1h00	-	1h15	1h15
Automatic Flight Control System, Flight Management Computing System, Integration and Display System, Navigation, FMS, System Malfunction, Emergency procedures	3h00	-	3h00	-	2h30
Abnormal and Emergency procedures	1h15	-	1h15	-	1h30
OEI failure, Hydraulic failure, Manual Control of engine power, Auto-rotations	1h15	-	1h15	1h15	-
Clear Area CAT “A” take-off and landing AEO and OEI training procedures, CAT “B” profiles	1h15	1h00	1h15	1h30	1h30
Total Flight Simulation Training Device	8h00	-	8h00	-	-
Total Helicopter	-	2h00	-	4h00	8h00
Total Flight Training	10h00		12h00		8h00
Skill test	Required		Required		Required

6.4 Training Areas of Special Emphasis (TASE)

The TASE is a continuous process which is subject to updates throughout the helicopters further development for optional equipment and procedures and operational experience.

The following procedures for training must receive special attention. Although they relate to separate issues, they are inter-connected.

The following items must receive special emphasis as specified, during theoretical and practical training:

- All major aspects of CRM and CFIT due to the highly integrated cockpit components. Selection and/or use of various systems such as TCAS, WX Radar, FMS, maps, reconfiguration options;
- The use of component “touchscreen” ECDU;
- Knowledge that, for example “2 GEN” in the RFM and in the CAS message system means “Generator 2” and not a double generator failure;
- Monitoring of fuel level and consumption per operational task as fuel level indication is not obvious on the PFD. Selection of fuel system page for visual queue (display shows fuel flow on tape but quantity gauge only shown on systems page for engines);
- Attention to total fuel quantity during single engine operation. The total fuel quantity is not ‘greyed out’ to indicate the unusable fuel. Consumption is lower though and fuel flow lower than for twin engine operation, but attention needs to be given;
- Inside/outside attitude crosschecks have to be accomplished constantly during close to the ground maneuvering or take-off and landing profiles;
- Basel Key functionalities on PFD/MFD Active Matrix Liquid Crystal Displays (AMLCD) need attention for all functionalities;
- Wiper controls are under “MISC” in EDCU, this is not so logical. Stress location during training and teach procedure to access this system in Type Course. It is recommend to consider software update for dedicated “Pitot” button or rename “MISC” to “Environmental” (ENVIRO);

- F/D upper modes and limitations; Guidelines and recommended practices should be determinate and listed by manufacturer and operator. A thorough understanding of the various lateral and vertical modes and the ability to select and arm the modes during different phases of flight is essential;
- Important to stress MFD switching between 2 pilots to understand who is in control and where to properly identify modes;
- Proper use and mode of CCD and how to identify modes on displays;
- MASTER CAUTION & MASTER WARNING RESET: Emphasizes that these can be reset via light or Collective CAS RST button. Critical for pilots to communicate to each other when one pilot presses CAS RST to ensure both pilots are aware. Stress CRM management for resetting the CAUTION & WARNING. Pushing the more forward button on the collective engages the GA mode;
- By system use of the WOW the automatic pitot heat is turned off on the ground. Adverse meteorological conditions might need to turn it on the ground before lift-off;
- HTAWS – Stress colours to pilots. These are not standard and may vary from other helicopters;
- DMAP menu selections are fairly involved. For single-pilot operations teach pilots to fly with Auto Pilot HDG and ALT modes engaged and stress periodic lookout to avoid collisions / CFIT;
- For pilot walk-around - Stress importance of danger from Ignition Exciter and cables with 3000 VDC – Wait 10 Minutes before handling after shutdown;
- Electrical power must remain ON until Ng reaches 0% for system to complete all cycles and for parameters to be retained critical to system calculations;
- For ease of maintenance from either side without reconfiguration, the engine has “oil filler” and sight gauge on both sides of engine. Critical to verify on walk-around that both caps are secure;
- Stress Torque (Q% or P.I.) limits for AEO and OEI with appropriate time restrictions. Ensure these are shown or demonstrated on

Procedures Trainer so pilots get to see how they will be displayed. Particularly important for pilots new to display system;

- Rotor brake Inhibit – System can activate rotor brake at up to 105% Nr for emergency reasons however the inhibit will allow pilot to start engine #2 and it will automatically release the rotor brake. Should ENGINE #2 SHUT DOWN or pilot chooses to shut down engine #2 the rotor brake will immediately re-engage up to 105% Nr. Pilots must be taught to understand this. NOTE: Recommended 'RFM NOTE' to clearly state that rotor brake switch must be turned for engine #2 start. Or that RFM recommend turning rotor brake off immediately after successful start of engine #2;
- Subsequent engine fire – Though highly unlikely, should this occur pilots must be taught that this will require that they re-arm the system to fire the bottle to the other side of helicopter;
- A/P (autopilot) safety inhibits: Ensure demonstration of safety inhibits in 4 axis conducted. Pilots must be taught capabilities and limitations of system in FTD, FFS or helicopter;
- CAT A Performance: Maneuvers are challenging and require pilot to fly specific speeds to ensure safe take-offs and landings. Clear area and especially vertical CAT A maneuvers at night need a special attention to position and adjust the landing lights to precisely fly the maneuvers;
- FUEL SHUT OFF VALVE MALFUNCTION: Does NOT result in any CAS warning. Recommend software change to show warning. Procedure is NOT in Emergency + Malfunction checklist;
- FLIGHT PLANNING: On Flight Plan page of EDCU pilots MUST ensure they change *PPOS* to the Departure airfield or it could lead to erroneous inputs or confusion on routing;
- SPEEDS: Must be stressed to pilots that all procedures in helicopter are flown reference to Indicated Airspeed for Take-Offs and ground speed for Landing procedures.

6.5 Special Events Training

a. Applicability

Approved Training Organization should refer to the following recommendation.

b. Basic Crew Understanding

Special events training to improve basic crew understanding and confidence regarding aircraft handling qualities, options and procedures as these relate to design characteristics and limitations may include the following:

- recovery from unusual attitudes;
- manual flight with minimum use of automation, including flight under degraded levels of automation;
- handling qualities and procedures during recovery from an upset condition AFCS and degraded modes;
- high altitude high and low speed buffet margins and flight characteristics;
- Controlled Flight Into Terrain (CFIT), TCAS, EGPWS (emphasis on avoidance and escape manoeuvres, altitude awareness, TCAS / EGPWS warnings, situational awareness and crew co-ordination, as appropriate).

For those specific events training FSTDs are strongly recommended.

c. Multi Engine Consolidation

Pilots from a single engine background need to develop skills and competence in operating a multi-engine helicopter. A specific module must be integrated in training to provide trainees with additional multi-engine training:

- OEI during Take-off and Landing;
- OEI scenarios in the cruise;
- Engine shutdown and re-start in flight; and
- Entry into autorotation.

Multi Engine Consolidation – Special Training		
	Theoretical	FSTD of OTD
Recommended minimum duration	3h	2h

d. Transition to Digital Cockpit

The switch from an analogue to a glass/digital cockpit with last generation of AFCS and the Helicopter avionic suite will represent a challenge and imply specific training requirements. To support the acquisition of the identified skills linked to the effective use of such systems, training must be adapted with additional section to consolidate.

- Hands-off into flying maneuvers that are performed “hands-on” on the helicopter types;
- Scanning technique and situational awareness adapted to digital display design and multiple information versus analogue cockpits; and
- Crew workload assessment to tackle the risk for a pilot to be overwhelmed by the availability of data and information.

Transition to Digital Cockpit – Special Training		
	Theoretical	FSTD of OTD
Recommended minimum duration	8h	4h

e. Practical Training Conversion into specific Role

Conversion to Role consists of stand-alone modules that train the knowledge, skills and attitudes required for individual aircraft roles. Using a modularized approach to Conversion Training allows maximum flexibility for companies to target skills appropriate to their needs.

Conversion to role and mission phases are essential for a safe and efficient entry into service of flight crew.

Indication and role training are given below.

- Offshore module Specific Training

Training objectives:

1. Stabilized approach to the Rig;
2. Rig operation procedures. AFCS mode;
3. Take –offs and Landings to stable and moving rig decks;
4. Rig instrument approaches using the GPS – FMS and Weather radar; and
5. Management of emergencies when operating to rig and platform (dichting).

Offshore – Specific Training		
	Theoretical	FSTD of OTD
Recommended minimum duration Without Previous experience	3h	6h
Recommended minimum duration With Demonstrated Previous experience	3h	4h

f. CAT A Training procedures Specific Training

For operations in hostile and congested environment CAT A profiles have to be thought. Based on previous experience of the applicant these CAT A sessions can either be included in the standard training or in addition as followed:

Cat “A” – Specific Training		
	Theoretical	FSTD of OTD
Recommended minimum duration Without Previous experience	2h	3h
Recommended minimum duration With Demonstrated Previous experience	2h	2h

g. SAR Technique module Specific Training

Training objective:

1. SAR technique and procedures;
2. Crew coordination;
3. Search patterns, AFCS Mode;
4. Workload management and optimization of automation;
5. Night search techniques; and
6. Management

SAR Technique – Specific Training		
	Theoretical	FSTD of OTD
Recommended minimum duration Without Previous experience	6h	6h
Recommended minimum duration With Demonstrated Previous experience	3h	4h

6.6 Training Means

Considerations on Distance Learning

Distance Learning concept allows additional value and progressive helicopter discovery and main technical and operational concept which describe its design. Training providers should design their Distance Learning modules focusing on general presentation of helicopter and systems. The intended benefit is to allow self- training during this phase.

It is recommended to take advantage of visualization, interactive and repetition to ensure a deep anchorage of core knowledge.

Computer Based Training (CBT)

On-site and Deployable CBT are a pedagogical approach that aims at putting the trainee in situation to interact with the helicopter system. Based on avionic emulator that can be very realistic and include basic flight loop, CBT will guide the trainee from discovering aviation design to using basic and complex function and modes to get familiar to their use.

AW 169 is a highly automated helicopter and requires a deep understanding of its avionic suite.

CBT is a way to consider knowledge prior to practical training and thus allows better effectiveness of flight and simulator training time.

Other Training Device (OTD)

With regards to the fully avionic of the AW 169 and its high level of automation, trainees must be given the opportunity to get familiar to the avionic general concept and philosophy and its standard use.

Integration of an OTD in a training plan is strongly encouraged by AgustaWestland and ANAC in dedicated instructor lead session. However, as a device should be kept accessible to trainees during the theoretical training phase to support individual consolidation of knowledge.

6.7 OTD Description

The Virtual Interactive Procedural Trainer (VIPT) is considered as an “Other Training Device” (OTD); it is a stand-alone structure provided with touch-screen monitors, pilot and co-pilot seats, simplified pilot flight controls and Instructor Operating Station (IOS).

The mechanical structure includes the computers necessary to simulate the helicopter and its systems in ground and flight conditions.

The touch-screen monitor display a graphical interactive and dynamic representation of the cockpit panels, controls, indicators and displays. The layout of the information displayed on the monitors is representative in terms of size, proportion and displacement, of the actual helicopter.



The Virtual Interactive Procedural Trainer (VIPT) is a procedural and familiarization training tool that gives pilots the ability to “learn by doing”. Pilots can train on a range of normal and abnormal procedures in free play simulation.

In particular, the AW169 VIPT provides a complete training environment for system familiarization and operation, normal and emergency procedures, FMS navigation and display symbology, familiarization related to the systems/subsystems of the basic configuration of the helicopter.

Due to the high level of automation, the AW169 VIPT has dedicated sessions during the theoretical training and, furthermore, in order to enhance the quality of the training and the level of the safety, such device has also a dedicated session, as ground mix, before the first FSTD or helicopter mission, in order to familiarize with the first start up and associated cockpit and system checks.

The above session does not recognize any credit for the attendee. When no VIPT (OTD) are available, the FSTD or the helicopter could be considered as Acceptable Means of Compliance (AMC).

6.8 Recurrent Training (OPC and LPC)

Recurrent training must be compliant with the Brazilian regulation, and include the identified TASE - Training Areas of Special Emphasis.

Operators must establish an approved recurrent training and checking programme, which is relevant to the aircraft variant flown and its intended operation.

The requirements for a recurrent training program may vary with several factors which have a significant influence. Some of these factors are: actual exposure of the flight crew member(s), specific routes and aerodromes used by the operator and new developments in technology. These factors and/or a combination thereof will determine the required recurrent training.

The applicable requirements on this report should be considered as a minimum and expanded, as appropriate, for pilots who have had only limited exposure and/or who do no longer fulfil the currency requirements.

Recurrent training should incorporate special events training as described in this report.

6.9 Line Flying Under Supervision (LIFUS)

When applicable to the Brazilian operators, LIFUS should be performed.

7 Compliance to RBHA 91 and RBAC 135

Compliance Checklists with RBHA 91 and RBAC 135 provided by the manufacturer are presented on Appendix 4.

Compliance checklists are provided as an aid to ANAC operations certification divisions and were not demonstrated to the ANAC Aircraft Evaluation Group – GAA/GCOI/SPO.

8 Technical Publications - RFM

The AW169 RFM - Rotorcraft Flight Manual approved by GGCP/ANAC shall be used by Brazilian operators as a basis for developing their Operator Rotorcraft Operations Manual.

APPENDIX 1

RBAC 135, Subpart C – ‘AIRCRAFT AND EQUIPMENTS’

- Operators must show compliance with applicable elements of RBAC 135 Subpart C prior to beginning commercial transport operations; and
- Operator specific items have not been evaluated.

APPENDIX 2

Course Programme

1. SCOPE OF THE TRAINING

Scope of the AW169 training courses is to enable the pilot achieve the VFR/IR qualification for the AW169 Helicopter.

At the end of the training course, the Attending Pilot shall be able to fly the AW169 completely safely and carry out the VFR and/or IFR procedures specified for normal, abnormal and emergency conditions in a skillful manner according to the Brazilian Regulations.

2. ADMISSION REQUIREMENTS

AW169 Training Courses are divided into two different training patterns:

- One for pilots with no previous experience in multi engine turbine (MET) helicopters; and
- One for pilots with demonstrated experience in multi engine turbine (MET) helicopters.

2.1 AW169 VFR TRAINING - ADMISSION REQUIREMENTS

In order to be admitted to the AgustaWestland ATO, an Attending Pilot must satisfy the following requirements:

- Hold a Helicopter Pilot's License (PPL(H) at least);
- Hold an appropriate Medical Certificate;
- Have a previous experience in glass cockpit aircraft or have completed the "AW169 Glass Cockpit training course";
- Hold English language knowledge both written and spoken (ICAO Level 4).

NOTE: For Pilots not demonstrating a basic knowledge of English language (ICAO Level 4), there is the possibility to use an interpreter during ground and flight training but the IR training will be familiarization.

In addition to that already stated, the AgustaWestland ATO applies the same requirements set by European Civil Standard (Part-FCL) for every Pilot regardless of the ratings already held or country of origin.

In particular, the AgustaWestland ATO applies the following requirements specified for each type of course:

2.1.1 AW169 TRAINING – SINGLE-PILOT

If the attending pilot has no previous qualification/ experience on multi engine helicopters, he or she shall:

- Hold a certificate of satisfactory completion of a pre-entry approved course to be conducted by an ATO or have passed at least the ATP(H) theoretical knowledge examinations, and

NOTE:

The possession of a certificate of satisfactory completion of the pre-entry approved course shall not be a substitute for showing compliance for the grant of an ATPL(H).

- Have logged at least 70 flight hours as Pilot In Command

NOTE:

For an applicant who has satisfactorily followed and completed an integrated flying training course as ATP(H)/IR, ATP(H), or CPL(H)/IR (provided that the flight activity has been carried out entirely in dual control, and were still completed at least 50 hours PIC, all certified by the log book), the requirements of 70 hours as PIC shall be considered satisfactorily.

2.1.2 AW169 TRAINING – MULTI-PILOT OPERATIONS

If the attending pilot has demonstrated previous qualification/ experience on multi-pilot helicopters (multi-pilot operations), he or she shall:

- Have logged at least 70 flight hours as Pilot In Command

NOTE:

An applicant for a AW169 rating in multi-pilot operations graduating from an ATP(H)/IR integrated, ATP(H) integrated, CPL(H) or CPL(H)/IR integrated course (provided that the flight activity has been carried out entirely in dual control, and were still completed at least 50 hours PIC, all certified by the log book) who has less than 70 hours as PIC of helicopters shall have the rating issued limiting the privileges to co-pilot only.

- Hold a certificate of satisfactory completion of MCC course (Multi Crew Cooperation) or have an experience of at least 500 hours as pilot in multi-pilot operations, and

NOTE:

The completion of a MCC course could be considered fulfilled if the Pilot attends the AW169 MCC Embedded training course.

NOTE:

The 500 hours mentioned above can be considered fulfilled if the multi-pilot operations are carried out on single-pilot multi-engine helicopters.

- Have passed the ATPL(H) theoretical knowledge examinations.

NOTE:

The level of theoretical knowledge assumed to be held by holders of the PPL(H) or CPL(H) and ratings for multi-pilot helicopters issued under requirements of Third Countries will not be a substitute for showing compliance with the requirements here above.

2.2 AW169 IR RATING - ADMISSION REQUIREMENTS

In addition to the general requirements necessary to attend a training course at the AgustaWestland ATO, an Attending Pilot shall also hold a:

- Hold a valid AW169 VFR rating on the required helicopter or attend an AW169 VFR + IR rating course.
- Hold a valid IFRH rating or attend a IFRH rating Renewal training course

3. TRAINING AIDS

The training aids foreseen for the Pilots who attend an AW169 training course are:

- Training Manuals
- Normal and emergencies checklists
- Quick Reference Handbook (QRH)
- Rotorcraft Flight Manual (RFM)

4. TRAINING DEVICES

The training devices used for the AW169 training course are:

- AW169 OTD (VIPT)
- AW169 FTD Lev. II
- AW169 FFS Lev. D
- AW169 Helicopter

5. COURSES DURATION

5.1 COURSES DURATION – Single Pilot Operations (SPO)

Course Type		Theoretical Instruction	Training in FSTD			Training in H/C	Skill test
			OTD ⁽¹⁾	FTD	FFS		
No previous MET experience	VFR	60 Hours (including 6 OTD sessions)	3 session	12h	N/A	4h	H/C
			3 session	N/A	12h	2h	FFS or H/C
			3 session	N/A	N/A	12h	H/C
	IFR	N/A	N/A	10h	N/A	2h	FFS or H/C
			N/A	N/A	8h	2h	FFS or H/C
			N/A	N/A	N/A	10h	H/C
Previous MET experience	VFR	60 Hours (including 6 OTD sessions)	2 session	8h	N/A	4h	H/C
			2 session	N/A	8h	2h	FFS or H/C
			2 session	N/A	N/A	8h	H/C
	IFR	N/A	N/A	6h	N/A	N/A	FFS or H/C
			N/A	N/A	6h	N/A	FFS or H/C
			N/A	N/A	N/A	6h	H/C

⁽¹⁾ Each OTD session will take no more than 2 hours.

5.2 COURSES DURATION – Multi Pilot Operations (MPO)

Course Type	Theoretical Instruction	Training in FSTD			Training in H/C	Skill test	
		OTD ⁽¹⁾	FTD	FFS			
No previous MET experience	VFR	60 Hours (including 6 OTD sessions)	3 session	12h PF + PNF*	N/A	4h PF	H/C
			3 session	N/A	12h PF + PNF*	2h PF	FFS or H/C
			3 session	N/A	N/A	12h PF	H/C
	IFR	60 Hours (including 6 OTD sessions) + 25h ⁽²⁾	1 session	N/A	12h PF + 12 PNF	2h PF	FFS or H/C
			N/A	N/A	10h PF + PNF*	2h PF	FFS or H/C
			N/A	N/A	8h PF + PNF*	2h PF	FFS or H/C
			N/A	N/A	N/A	10h PF	H/C
Previous MET experience	VFR	60 Hours (including 6 OTD sessions)	1 session	8h PF + PNF*	N/A	4h PF	H/C
			1 session	N/A	8h PF + PNF*	2h PF	FFS or H/C
			1 session	N/A	N/A	8h PF	H/C
	IFR	N/A	N/A	6h PF + PNF*	N/A	N/A	FFS or H/C
			N/A	N/A	6h PF + PNF*	N/A	FFS or H/C
			N/A	N/A	N/A	6h PF	H/C

⁽¹⁾ Each OTD session will take no more than 2 hours.

⁽²⁾ 25,0 hours: 2 days x 7.5 hrs + 10 hrs. Theory is embedded in pre/post sortie briefings.

* The MPO training programme is designed to be attended by two flight crew members. One flight crew member will operate as PF and the other member as PNF during manoeuvres/ procedures of the scheduled sortie in accordance with MCC. At least 1 sortie as a PNF shall be conducted by each flight crew member.

APPENDIX 3

SP to MP / MP to SP BRIDGE TRAINING PROGRAM

GENERAL INFORMATION:

1. SCOPE OF THE TRAINING

Scope of the SP to MP / MP to SP bridge training program is to extend the privilege of a AW qualified pilot from SPO to MPO (on the same type), or from MPO to SPO.

At the end of the SP to MP training course the Attending Pilot will be able to pilot the AW helicopter completely safely and carry out the VFR and IR procedures specified for normal and emergency conditions in a skillful manner as part of a multi pilot crew.

At the end of the MP to SP training course the Attending Pilot will be able to pilot the AW helicopter completely safely and carry out the VFR and IR procedures specified for normal and emergency conditions in a skillful manner as a single pilot.

2. PRIVILEGES

The privileges of a holder of a rating is to act as a pilot on the type of helicopter specified in the rating.

3. ADMISSION REQUIREMENTS

SP to MP / MP to SP Bridge training courses are divided into two different training patterns:

- Bridge from SP to MP
- Bridge from MP to SP

SP to MP bridge courses are aimed at candidates who hold a SP rating on AW helicopter and wants to achieve the MP qualification on the same helicopter.

MP to SP bridge courses are aimed at candidates who hold a MP rating on AW helicopter and wants to achieve the SP qualification on the same helicopter.

3.1. ADMISSION REQUIREMENTS FOR THE SP TO MP / MP TO SP BRIDGE TRAINING COURSE

In order to be admitted to the AgustaWestland ATO, an Attending Pilot must satisfy the following requirements:

- Hold a Helicopter Pilot's License (CPL(H) or ATPL(H)).
- Hold an appropriate Medical Certificate.
- Hold English language knowledge both written and spoken (ICAO Level 4).

NOTE:

For Pilots not demonstrating a basic knowledge of English language (ICAO Level 4), there is the possibility to use an interpreter during ground and flight training but the IR training will be only a familiarization.

In addition to that already stated, the AgustaWestland ATO applies the same requirements prepared by European Civil Standard (Part-FCL) for every Pilot regardless of the ratings already held or country of origin.

In particular, the AgustaWestland ATO applies the following requirements specified for each course type:

3.1.1. SP TO MP BRIDGE TRAINING COURSE

- Hold a valid AW SP Rating and the IFR privileges on the same type
- Hold a MP Rating (including IFR privileges)

3.1.2. MP TO SP BRIDGE TRAINING COURSE

- Hold a valid AW MP Rating and the IR privileges on the same type

4. CREDITS FOR TRAINING

No credits are foreseen for this type of training.

5. TRAINING AIDS

The training aids foreseen for the Pilots who attend an SP to MP / MP to SP Bridge training course are:

- Training manuals
- Normal and emergencies checklists
- Quick Reference Handbook (QRH)
- Rotorcraft Flight Manual (RFM)
- AW MCC Standard Operational Procedures

6. TRAINING DEVICES

The training devices approved for the SP to MP / MP to SP Bridge training course are:

- AW FFS Lev. D
- AW Helicopters (Refer to "Foglio Flotta")

7. COURSES DURATION

Course Type	Theoretical Instruction	Training in FSTD			Training in H/C	Skill test
		OTD	FTD	FFS		
SP to MP	4h **	N/A	N/A	2h PF + PNF*	1h PF	FFS or H/C
	4h **	N/A	N/A	N/A	2h PF	H/C
MP to SP	N/A	N/A	N/A	4h	1h	FFS or H/C

* One flight crew member will operate as PF and the other member as PNF during manoeuvres/ procedures of the scheduled sortie in accordance with MCC. At least 1 sortie as a PNF shall be conducted by each flight crew member.

** Theory is embedded in Pre-Sortie Briefs.

APPENDIX 4

AW169 Compliance to RBHA 91 and RBAC 135

ITEM	TITLE	COMPLIANCE	AGUSTAWESTLAND S.p.A REMARKS
91.9 (b)	Flight Manual – Available on board	Compliant	Also Quick Reference Handbook is available on request for pilot use
91.9 (c)	Aircraft identified in accordance with the standards RBHA 45	Compliant	
91.9 (d)	Takeoff or landing at a heliport constructed over water.	Not Compliant	
91.21	Portable electronic devices.	Compliant	PED Tolerance assessed, Relevant Notes/limitations are available within RFM
91.107 (a)(3)	Seat or berth with a safety belt and shoulder belts.	Compliant	
91.109 (a)	Dual Controls	Compliant	
91.171	VOR equipment check for IFR operations.	Compliant	
91.189	Category II and III operations: General operating rules.	Not Applicable	
91.191	Category II and Category III manual.	Not Applicable	
91.193	Certificate of authorization for certain Category II operations	Not Applicable	
91.203 (a)(2)	Flight manual and checklist;	Compliant	
91.203 (d)	Certificate of Airworthiness for newly manufactured aircraft.	Compliant	
91.203 (f)	Operation with a fuel tank installed inside the passenger compartment.	Not Applicable	
91.203 (g)	No person may operate a civil airplane (domestic or foreign) into	Compliant	

	or out of an airport in Brazil unless it complies with the fuel venting and exhaust emissions requirements of RBAC 34.		
91.205 (b)(1)	Airspeed indicator for each pilot required;	Compliant	
91.205 (b)(2)	Altimeter for each pilot required;	Compliant	
91.205 (b)(4)	A magnetic direction indicator (compass);	Compliant	
91.205 (b)(5)	Tachometer for each engine.	Compliant	
91.205 (b)(6)	Oil pressure gauge for each engine using pressure system.	Compliant	
91.205 (b)(7)	Temperature gauge for each liquid-cooled engine.	Not Applicable	
91.205 (b)(8)	Oil temperature gauge for each air-cooled engine.	Compliant	
91.205 (b)(9)	Torque gauge and gases temperature gauge for each engine and turbine as applicable;	Compliant	
91.205 (b)(10)	Rotation rotor gauge for each main engine	Compliant	1 RPM for each rotor
91.205 (b)(11)	Manifold pressure gauge for each altitude engine.	Not Applicable	only for reciprocating engines
91.205 (b)(12)	Fuel gauge indicating the quantity of fuel in each tank.	Compliant	
91.205 (b)(13)	Landing gear position indicator, if the aircraft has a retractable landing gear.	Compliant	
91.205 (b)(15)	Approved safety belt	Compliant	
91.205 (b)(16)	Approved shoulder belts on every front seat;	Compliant	
91.205 (b)(17)	An emergency location transmitter, if required by that regulation 91.207;	Compliant	
91.205	Shoulder Harness	Compliant	

(b)(18)			
91.205 (b)(19)	For rotorcraft built after September 16, 1992, a shoulder belt for each seat;	Compliant	
91.205 (b)(20)	Fire extinguisher portable accessible to the members of the crew flight;	Compliant	
91.205 (b)(21)	For hydroplanes and amphibious aircraft, at least one anchor and one drogue.	Not Applicable	
91.205 (b)(22)	VHF, bilateral radio-communication	Compliant	
91.205 (b)(23)	Anti-collision lights	Compliant	
91.205 (c)(1)	Instruments and equipment specified in paragraph (b) of this section being all the instruments adequately illuminated	Compliant	
91.205 (c)(2)	a gyroscopic attitude indicator (artificial horizon);	Compliant	
91.205 (c)(3)	Approved position lights	Compliant	
91.205 (c)(4)	Approved anti-collision light	Compliant	
91.205 (c)(5)	Landing lights	Compliant	
91.205 (c)(6)	An adequate source of electrical energy for all installed electrical and radio equipment.	Compliant	
91.205 (c)(7)	One spare set of fuses, or three spare fuses of each kind required, that are accessible to the pilot in flight	Not Applicable	
91.205 (c)(9)	At least one equipment of radio navigational appropriate to each ground station to be used, when flying in controlled area;	Compliant	
91.205 (d)(1)	Instruments and equipment specified in paragraph (b) of this section, and, for night flight,	Compliant	

	instruments and equipment specified in paragraph (c) of this section.		
91.205 (d)(2)	a VHF system of radio-communication bilateral and at least one equipment of navigation appropriate to the each ground station to be used, including phones (or loudspeakers) and microphones associates;	Compliant	
91.205 (d)(3)	Gyroscopic rate-of-turn indicator for each pilot required	Compliant	
91.205 (d)(4)	Slip-skid indicator for each required pilot	Compliant	
91.205 (d)(5)	Sensitive altimeter adjustable for barometric pressure for each pilot required;	Compliant	
91.205 (d)(6)	a heating system of "pitots" of the anemometric systems;	Compliant	
91.205 (d)(7)	a clock displaying hours, minutes and seconds, sweep second pointer or digital presentation for each pilot required	Compliant	
91.205 (d)(8)	Generator of adequate capacity.	Compliant	
91.205 (d)(9)	Gyroscopic pitch and bank indicator (artificial horizon) for each required pilot	Compliant	
91.205 (d)(10)	Gyroscopic direction indicator (directional gyro or equivalent) for each required pilot	Compliant	
91.205 (d)(11)	a vertical speed indicator for each pilot required.	Compliant	
91.205 (e)	Flight at and above 24,000 ft. MSL (FL 240). DME	Not Applicable	Maximum certified altitude is 15,000 ft
91.205 (f)	Category II operations. Required equipment and instruments	Not Applicable	
91.205 (g)	Category III operations. Required equipment and instruments	Not Applicable	

91.207 (a)(1)	There is attached to the airplane an approved automatic type emergency locator transmitter...	Compliant	
91.207 (a)(2)	For operations other than those specified in paragraph (a)(1) of this section, there must be attached to the airplane an approved personal type or an approved automatic type	Compliant	an approved automatic type is provided
91.207 (b)	Each emergency locator transmitter required by paragraph (a) of this section must be attached to the airplane in such a manner that the probability of damage to the transmitter in the event of crash impact is minimized. Fixed and deployable automatic type transmitters must be attached to the airplane as far aft as practicable.	Compliant	the ELT is fixed in accordance with CS 29 which requires exactly the same, providing the load factors to be applied to simulate crash impact.
91.207 (f)	Paragraph (a) of this section does not apply to--	Operator's Responsibility	
91.207 (h)	Each ELT on board of an aircraft registered in Brazil must meet the requirements of section 91.225 of this regulation.	Compliant	
91.207 (i)	From 01 of January of 2007 any new ELT to be installed in airplane registered in Brazil it must possess the frequencies of 121.5 and 406 MHz...	Compliant	
91.211 (b)	Pressurized cabin aircraft.	Not Applicable	
91.213 (a)	List of minimum equipment and instruments for operation.	Compliant	
91.215	ATC transponder and altitude reporting equipment and use.	Compliant	
91.217 (b)	The equipment was tested and calibrated to transmit altitude data corresponding within 125 feet of the indicated or calibrated datum of the altimeter normally used to maintain flight altitude,	Compliant	

91.217 (c)	Unless the altimeters and digitizers in that equipment meet the standards of TSO-C10b and TSO-C88, respectively.	Compliant	
91.219	Altitude alerting system or device: Turbojet-powered civil airplanes.	Not Applicable	
91.221 (a)	All airspace: Brazil-registered civil aircraft. Any traffic alert and collision avoidance system installed in a Brazil - registered civil aircraft must be approved by the Administrator.	Compliant	equipment and functionalities included in the ANAC validated configuration
91.221 (c)	(Airspace RVSM (Reduced Vertical Separation Minimum). Notwithstanding the provide one in paragraph (b) of this section, when operating an aircraft in airspace RVSM, no person can shall have ACAS system on and operating unless this system is of type ACAS II (TCAS II, type 7.0).	Compliant	
91.221 (d)	Aircraft transport category configured with more than 30 seats, that they have received its first one Airworthiness Certified (independent of the issuer country) in or after 01 of January of 2008, must be equipped with a system ACAS II (TCAS II, type 7.0 or superior).	Not Applicable	Maximum seats number 10 (2 pilot/Copilot + 8 passengers)
91.221 (e)	Aircraft transport category configured with more than 30 seats, that they have received its first one Airworthiness Certified (independent of the issuer country) in or after 01 of January of 2010, must be equipped with a system ACAS II (TCAS II, type 7.0 or superior).	Not Applicable	Maximum seats number 10 (2 pilot/Copilot + 8 passengers)
91.223	Terrain awareness and warning system. (EGPWS)	Compliant	
91.223 (a)	Airplanes manufactured after December 31, 2003....	Optionally compliant	
91.223 (b)	Airplanes manufactured on or	Not Applicable	

	before January 01, 2004....		
91.223 (c)	Airplane Flight Manual. The Airplane Flight Manual shall contain appropriate procedures	Compliant	
91.225	All the electronic equipment on board required by this regulation and the RBHA 121 and 135 that they receive and/or they transmit radio signals of/to control systems stations of air traffic, meteorology and searches and rescue must comply with norms and specifications established by Department of Control of Airspace (Departamento de Controle do Espaço Aéreo – DECEA).	Operator's Responsibility	
91.409 (a)	Inspections.	Operator's Responsibility	
91.409 (a)(1)	Annual Maintenance Inspection (AMI) in accordance with RBHA 43.	Operator's Responsibility	
91.409 (a)(2)	Initial survey to obtain an airworthiness certificate in accordance with RBHA 21	Operator's Responsibility	
91.409 (b)	100 hrs Inspection	Operator's Responsibility	
91.409 (c)	Paragraphs (a) and (b) of this section shall not apply to	Operator's Responsibility	
91.409 (d)	Progressive inspection.	Operator's Responsibility	
91.409 (e)	Large airplanes (to which part 125 is not applicable), turbojet multiengine airplanes, turbo-propeller-powered multiengine airplanes, and turbine-powered rotorcraft.	Operator's Responsibility	
91.409 (f)	Selection of inspection program under paragraph (e) of this section.	Operator's Responsibility	
91.409 (f)(1)	An inspection program for continued airworthiness...	Compliant	Maintenance Manual, ATA chapter 5

91.409 (f)(2)	A program of inspections.	Operator's Responsibility	
91.409 (f)(3)	A current inspection program recommended by the manufacturer.	Compliant	Maintenance Manual, ATA chapter 5
91.409 (f)(4)	Any other inspection program approved by DAC	Operator's Responsibility	
91.409 (g)	Inspection program approved under paragraph (e) of this section.	Operator's Responsibility	
91.409 (h)	Change an inspection program to another.	Operator's Responsibility	
91.410 (a)	Limitation on number of cycle / aircraft.	Not Applicable	
91.410 (b)	Instructions for maintenance and inspection of fuel tank system.	Not Applicable	
91.411 (a)	Testing and inspection static pressure system according to RBHA 43 appendix E.	Operator's Responsibility	this task is included in the ATA Chapter 5 of the Maintenance Manual
91.411 (b)	The tests required by paragraph (a) of this section must be conducted by the manufacturer	Operator's Responsibility	
91.413 (a)(2)	Use an ATC transponder	Compliant	
91.413 (b)(3)	The tests and inspections specified in this section must be conducted by— the manufacturer of the aircraft	Operator's Responsibility	
91.503	Flying equipment and operating information	Operator's Responsibility	
91.505	Familiarization with operational limitations and emergency equipments	Operator's Responsibility	
91.507	Equipment requirements: night VFR operations	Compliant	
91.509	Survival equipment for overwater operations	Compliant	
91.511	Radio communication equipment	Compliant	

	appropriate to the facilities		
91.513	Emergency equipment	Compliant	taking into account that the helicopter may accommodate up to 8 passengers
91.517 (a)	Passenger Information	Compliant	placards in cabin address this requirement (no smoking, seat belts fastened..). Passengers may also be instructed via PA (Public Address) speakers by the crewmembers
91.517 (b)(c)(d)(e)	Passenger Information	Compliant	placards in cabin address this requirement (no smoking, seat belts fastened..). Passengers may also be instructed via PA (Public Address) speakers by the crewmembers
91.519	Oral Instructions to Passengers	Operator's Responsibility	Passengers may also be instructed via PA (Public Address) speakers by the crewmembers
91.521	Shoulder harness	Compliant	installation is compliant with par. 29.785
91.523	Hand Luggage	Not Applicable	maximum seating layout is for 8 passengers, nevertheless a baggage compartment is available to the passengers.
91.525	Carriage of cargo	Compliant	it is possible to carry up to 250 kg of baggage, in the standard configuration
91.527	Operating in icing conditions	Not Compliant	
91.533	Flight attendant requirements	Not Applicable	
91.537	RVSM	Operator's Responsibility	
91.603	Aural speed warning device	Compliant	par. CS 29.1303 (a) and (j) is deemed equivalent to 25.1303 (c)
91.605	Transport category civil airplane weight limitations	Operator's Responsibility	
91.607	Emergency exits for airplanes carrying passengers for hire	Not Applicable	

91.609	Flight data recorders and cockpit voice recorders	Compliant	
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Compliance to RBAC 135 - Checklist Produced by AGUSTAWESTLAND S.p.A:

ITEM	TITLE	COMPLIANCE	AGUSTAWESTLAND S.p.A REMARKS
135.75 (b)	Observer seat in the compartment of the pilots	Not Applicable	
135.83 (a)(2)	Emergency cockpit checklist	Compliant	
135.83 (a)(5)	Performance data on one engine inoperative climb	Compliant	
135.83 (c)	Contents checklist of emergency:	Compliant	
135.87 (a)	Carried in an approved cargo rack, bin, or compartment	Compliant	baggage compartment available
135.87 (b)	Secured by an approved means	Compliant	a Net restrains the cargo in order to avoid shifting
135.87 (d)	Means to prevent articles of baggage stowed under it from sliding under crash impacts	Compliant	a Net restrains the cargo in order to avoid shifting
135.87 (e)	Cargo compartments requiring physical entry of a crew member.	Not Applicable	
135.89 (a)	Unpressurized aircraft.	Compliant	
135.89 (b)	Pressurized aircraft	Not Applicable	
135.93	Autopilot: Minimum altitudes for use.	Operator's Responsibility	RFM includes limitations for MINIMUM USE HEIGHT (MUH)
135.111	Second in command required in category II operations	Not Applicable	Only Cat. I
135.113	Passenger occupancy of pilot seat	Not Applicable	
135.127(a)	The operator shall not permit anyone or flight crew member to smoke in an aircraft operated under this RBAC.	Compliant	specific placards prohibit smoking
135.127(b)	No smoking illuminated sign or placard	Compliant	
135.127(c)	Lavatory	Not Applicable	
135.127(d)	Obstruct, shut down or destroy a	Not Applicable	

	smoke detector installed in the lavatory.		
135.128(a)	Approved seat or bed, with individual seat belts.	Compliant	only seats are used on AW169
135.129	Exit seating	Not Applicable	
135.143(c)	ATC transponder equipment	Compliant	
135.145	Flights Operational Evaluation	Operator's Responsibility	
135.147	Dual controls required.	Compliant	
135.149(a)	Sensitive altimeter	Compliant	
135.149(b)	Heating or deicing equipment for each carburetor	Not Applicable	no carburetor is used for AW169
135.149(c)	Artificial horizon - the third indicator	Compliant	ADI STBY
135.150	Public address and crewmember interphone systems.	Compliant	
135.151	Cockpit voice recorders.	Compliant	
135.152	Flight recorders.	Compliant	
135.152a	Recorder Digital Flight Data for Aircraft with 10-19 seats.	Compliant	
135.153	Ground proximity warning system.	Compliant	
135.154(a) (1)	Airplanes with turbine engines with 10 or more seats for passengers	Not Applicable	
135.154(a) (2)	Airplanes with turbine engines with 6-9 passenger seats	Not Applicable	
135.154(b)	Airplane manufactured on or before January 1, 2004	Not Applicable	
135.154(c)	Airplane Flight Manual.	Not Applicable	
135.155	Fire extinguishers: Passenger-carrying aircraft.	Compliant	
135.157(a)	Unpressurized aircraft.	Compliant	
135.157(b)	Pressurized aircraft.	Not Applicable	
135.158	Pitot heat indication systems.	Compliant	
135.159(a)	A gyroscopic rate-of-turn indicator	Compliant	

135.159 (b)	A slip skid indicator	Compliant	
135.159 (c)	A gyroscopic bank-and-pitch indicator.	Compliant	
135.159 (d)	A gyroscopic direction indicator.	Compliant	
135.159 (e)	A generator or generators able to supply all probable combinations of continuous in-flight electrical loads for required equipment and for recharging the battery	Compliant	
135.159 (f)(1)	An anti-collision light system;	Compliant	
135.159 (f)(2)	Instrument lights	Compliant	
135.159(g)	Continuous electrical load in flight	Compliant	
135.161(a)	Radio equipment for bilateral communications	Compliant	
135.161(b)	Radio navigation equipment	Compliant	
135.163(a)	Required a vertical speed indicator for each pilot.	Compliant	
135.163(b)	A free-air temperature indicator;	Compliant	
135.163(c)	A heated pitot tube for each airspeed indicator;	Compliant	
135.163(d)	A power failure warning device	Compliant	
135.163(e)	An alternate source of static pressure	Compliant	
135.163(f)	For a single-engine aircraft:	Not Applicable	
135.163(g)	For multi-engine aircraft, at least two generators or alternators each of which is on a separate engine	Compliant	
135.163(h)	Two independent sources of energy for gyroscopic instruments	Compliant	
135.165(a)	The reaction plane with 10 or more passenger seats, or engine airplane in an additional operation.	Not Applicable	
135.165(b)(1)	A transmitter;	Compliant	

135.165(b) (2)	Two microphones;	Compliant	
135.165(b) (3)	Two headphones or an earpiece and speaker;	Compliant	
135.165(b) (4)	A marker beacon receiver	Compliant	
135.165(b) (5)	Two independent receivers for navigation;	Compliant	
135.165(b) (6)	Two independent receivers for communications, and	Compliant	
135.165(b) (7)	An additional transmitter.	Compliant	
135.165(b) (8)	Helicopters in offshore operations, if required, a marine VHF.	Not Compliant	
135.167(b)	Liferafts	Compliant	
135.167(c)	Emergency locator transmitter fixed to one of the boats.	Compliant	
135.167(d)	Helicopters operating in fixed or floating platforms.	Compliant	only fixed platform, offshore operations are not allowed
135.169(a)	Operation of a large airplane.	Not Applicable	
135.169(b)	Operation of a small plane with a conventional engine or turboprop, with 10 passenger seats or more.	Not Applicable	
135.169(c)	Small plane with a passenger configuration of 10 seats or more.	Not Applicable	
135.169(d)	Cargo or baggage compartments:	Compliant	baggage compartment
135.169(e)	Reports of conversions and reconfigurations (retrofit.)	Operator's Responsibility	
135.170	Materials for compartment interiors.	Not Applicable	not an STC (or change to TC) issued as per SFAR 41
135.171(a)	The reaction plane or having 10 passenger seats or more	Not Applicable	
135.173	Airborne thunderstorm detection equipment requirements.	Optionally compliant	weather radar kit
135.175	Airborne weather radar equipment requirements.	Optionally compliant	weather radar kit

135.177	First Aid Kit	Compliant	
135.178(a) to (f)	Additional emergency equipment.	Compliant	
135.178(g)	Exterior exit markings. Each passenger emergency exit and the means of opening that exit from the outside must be marked on the outside of the airplane. There must be a 5 cm(2-inch) colored band outlining each passenger emergency exit on the side of the fuselage. Each outside marking, including the band, must be readily distinguishable from the surrounding fuselage area by contrast in color. The markings must comply with the following:	Compliant	in compliance with CS 29.811(f)(2)
135.178(g) (1)	If the reflectance of the darker color is 15 percent or less, the reflectance of the lighter color must be at least 45 percent.	Compliant	in compliance with CS 29.811(f)(2)
135.178(g) (2)	If the reflectance of the darker color is greater than 15 percent, at least a 30 percent difference between its reflectance and the reflectance of the lighter color must be provided.	Compliant	in compliance with CS 29.811(f)(2)
135.178(g) (3)	Exits that are not in the side of the fuselage must have the external means of opening and applicable instructions marked conspicuously in red or, if red is inconspicuous against the background color, in bright chrome yellow. Additionally, when the opening means for such an exit is located on only one side of the fuselage, a conspicuous marking to that effect must be provided on the other side. "Reflectance" is the ratio of the luminous flux reflected by a body to the luminous flux it receives.	Not Applicable	there are no exits located not in the side of the fuselage
135.180	Traffic Alert and Collision Avoidance System.	Compliant	TCAS
135.183(a)	Operating at an altitude required to achieve land in case of engine failure;	Operator's Responsibility	

135.183(c)	Multi-engined aircraft - maximum weight	Compliant	
135.183(d)	Helicopter equipped with flotation device	Compliant	
135.361 to 135.399	Applicability	Operator's Responsibility	
135.421(a)	Type certificated aircraft with a configuration of 9 seats for passengers or less	Compliant	
135.421(b)	Manufacturer's maintenance program	Compliant	
135.421(c)	Single-engine airplane used in operations under IFR passenger transport	Not Applicable	
135.421(d)	Single-engine airplane used in operations under IFR, carrying passengers...	Not Applicable	
135.421(e)	Single-engine airplane carrying passengers in IFR conditions	Not Applicable	