



Islamic Republic of Afghanistan  
Civil Aviation Authority

# AIRWORTHINESS INSPECTORS' QUALIFICATIONS, TRAINING, AND DUTIES

Afghanistan Civil Aviation Directive  
(CAD)

CAD-AIR-016.1

Airworthiness

31 MAY 2016

Revision 1

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Director General  
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Approved:





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## **0 Administration and Control**

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The following list contains key abbreviations used in this document, as well as others likely to be in common use in the respective area.

### **0.1 Abbreviations and Glossary**

ACAA .....	Afghanistan Civil Aviation Authority
ACAR .....	Afghanistan Civil Aviation Regulations
AWI .....	Airworthiness Inspector
CPT .....	Cockpit Procedure Trainer
ETOP .....	Extended Twin Engine Operation
MEL .....	Minimum Equipment List
MMEL .....	Master Minimum Equipment List
MNPS .....	Minimum Navigation Performance Specification
MTOM .....	Maximum Take-Off Mass
NDT .....	Non Destructive Testing
OJT .....	On-Job-Training
RVSM .....	Reduced Vertical Separation Minima
SMS .....	Safety Management System





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## **1 Purpose**

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This Directive is issued to provide information and guidance to the Authority on qualifications and training requirements for Airworthiness Inspectors in order to enable them carry out their duties effectively and efficiently.



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## **2 References**

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- 2.1 The Civil Aviation Law of Afghanistan
- 2.2 The Afghanistan Civil Aviation Regulations –
  - a) Part 2 Personnel Licensing;
  - b) Part 3 Approved Training Organizations;
  - c) Part 4 Registration of Aircraft;
  - d) Part 5 Airworthiness;
  - e) Part 6 Approved Maintenance Organizations;
  - f) Part 7 Instruments and Equipment;
  - g) Part 8 Operation of Aircraft;
  - h) Part 9 Air Operators Certification and Administration;
  - i) Part 10 Commercial Air Operations by Foreign Air Operator;
  - j) Part 11 Aerial Work; and
  - k) Part 14 Air Navigation Services.
- 2.3 ICAO Doc 9389-AN/919 – Manual of Procedures for an Airworthiness Organization
- 2.4 ICAO Doc 9284 Technical Instructions for Safe Transport of Dangerous Goods, by Air
- 2.5 Forms: FORM ACAF-AIR-016.0-1



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## 3 Background

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### 3.1 Section of Airworthiness

The Section of Airworthiness is responsible for performing the Afghanistan Civil Aviation Authority (Authority) obligations of maintaining regular safety oversight of all of the airworthiness aspects of aviation in the country, which includes certification and surveillance of air operators, approved maintenance organizations and oversight of any other person or organization involved in the maintenance/modification/repair of aircraft and training aspects of personnel engaged in civil aviation. The Section is also responsible for the Licensing/approval of maintenance staff as a part of its regular inspection program in support of Personnel Licensing Section.

### 3.2 Effective safety oversight

Effective safety oversight is tenet to aviation safety ensures maintenance of high standards and will fulfil Afghanistan obligations under the Convention on International Civil Aviation for providing safety oversight of all civil aviation activities in the country in line with the requirements of the Afghanistan Civil Aviation Regulations.

### 3.3 Airworthiness Inspectors

The Airworthiness Inspectors are responsible for carrying out all of the safety oversight responsibilities assigned by the Civil Aviation Act 2012 and its Regulations referred to in section [3.2](#) above. In order for Afghanistan to maintain a satisfactory level of airworthiness in line with the legislation requirements and protect public interest it will depend on the competence of the Airworthiness Inspectors.

### 3.4 Educational and technical experience qualifications

Airworthiness inspectors should have educational and technical experience qualifications that compare favourably with the maintenance personnel they will inspect or regulate. Furthermore, they should also enjoy terms and conditions of service consistent with their education, technical knowledge and experience comparable to those personnel they will inspect and supervise.



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## 4 Functions and Staffing of Airworthiness Department

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### 4.1 The airworthiness regulatory functions

The airworthiness regulatory functions include:

- a) Aircraft registration, deregistration and maintenance of civil aircraft register;
- b) Recommendation on acceptance of aircraft type certificate;
- c) Evaluation and advice on the acceptance of the application for production of aircraft or aircraft component;
- d) Approval of changes to the type certificate (modifications & repairs);
- e) Issue/renewal and validation of certificates of airworthiness;
- f) Approval of aircraft maintenance organizations;
- g) Certification of air operators;
- h) Investigation of accidents, incidents and major aircraft defects;
- i) Service bulletins and foreign airworthiness directives review for applicability to national aircraft;
- j) Conducting examinations for applicants of aircraft maintenance licenses;
- k) Development of technical guidance materials for airworthiness practices and procedures; and
- l) Development and recommendation of regulatory changes to civil aviation legislations as appropriate

### 4.2 Carrying out the airworthiness regulatory functions

The Afghanistan Civil Aviation Authority and the Director General is by the Civil Aviation Law empowered to carry out the above functions and through the allocation of functions, the Airworthiness Section is mandated and the inspectors are appropriately delegated by the Director General to carry out the above functions.

### 4.3 Staffing requirements

4.3.1 Staffing of the Airworthiness Section with a sufficient number of suitable Airworthiness Inspectors, experienced, qualified and capable of accomplishing the wide range of activities required specified broadly in section [4.1](#) and in chapters [7](#) and [8](#) below is paramount to the success of the safety oversight obligations of the Afghanistan Civil Aviation Authority.

4.3.2 Airworthiness Inspectors must not only have the knowledge, experience and qualifications to carry out their duties in a professionally sound manner, but also possess the personality to win the respect and confidence of the operators. This would require a reasonable level of tact, understanding, firmness, impartiality, integrity and an exemplary personal conduct both in the office and at the operators' premises.



- 4.3.3 The number of Airworthiness Inspectors required will be determined by the level of and the growth of aviation in the country. A periodic review will take place from time to time to determine whether or not there needs to be a change in the number of Inspectors.
- 4.3.4 Determination of the minimum number that is considered reasonable for Airworthiness Inspectors to carry out their tasks will take into account the number of a particular type or group of types of aircraft to be handled by one Airworthiness Inspector taking also into consideration the number of operators and the complexity of the air operations as these would affect the workload.
- 4.3.5 A rough rule of thumb would be one Airworthiness Inspector per approximately ten aircraft of a particular type or group of a particular category in scheduled operations:
- a) For turbo props up to 30,000 kg MTOM; and
  - b) For jet in two groups of:
    - (i) Medium (single aisle); and
    - (ii) Large transport.
  - c) For general aviation (to include those used for charter operations):
    - (i) Single piston-engine – thirty aircraft, regardless of type, per inspector;
    - (ii) Twin-engine piston – twenty aircraft, regardless of type per inspector.
    - (iii) Turbo props up to 30,000 kg MTOM – approximately twenty aircraft of a particular type or group of a particular category per inspector.

**Note:** *The ratio between required airworthiness inspectors between mechanical and avionics would be determined by the complexity of the fleet e.g. old generation aircraft such as B727 may require more mechanical inspectors (5 to 1) as opposed to new generation aircraft such as A320 will require more avionics inspectors (3 to 1).*



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## **5 Qualifications of Airworthiness Inspectors**

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### **5.1 Academic and Professional Qualifications**

- 5.1.1 A holder of a University Degree in relevant field e.g. aeronautical, mechanical, electrical, electronic or telecommunication; or equivalent professional qualifications.
- a) For graduates, except for aeronautical engineers, they should have attended or be provided with a basic training in aircraft maintenance engineering;
  - b) For equivalent professional qualifications they should possess aircraft maintenance engineer’s licenses with ratings or appropriate approvals, commensurate with their job responsibilities, i.e., Category A or C (mechanical) Licenses with airframe and power plant ratings, category X or R (Avionics) License with ratings in Electrical, Instrument or Radio.

### **5.2 Experience**

- 5.2.1 Have progressed through positions of increased technical and supervisory responsibility in the aviation industry covering civil and military aviation as appropriate.
- 5.2.2 At least five years of employment as a fully qualified aircraft maintenance engineer is normally required to obtain minimum qualifications and experience for an individual to adequately accomplish the duties and responsibilities of a basic starting position in the mechanical or avionics field as an Airworthiness Inspector.

### **5.3 Other Attributes**

- 5.3.1 The Inspectors should possess a high degree of integrity, be impartial in carrying out their tasks, be tactful, have a good understanding of human nature and possess the ability to get along well with people.
- 5.3.2 Should be computer literate.



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## 6 Training of Airworthiness Inspector

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### 6.1 General

The Airworthiness Inspectors should be provided with basic training before assigning him/her for airworthiness inspectors' job functions. In all cases, they must have successfully completed an ACAA approved Basic Course, detailed in section [6.2](#), for Airworthiness Inspectors.

### 6.2 Prerequisite basic training for newly recruited Inspector

For a newly recruited Inspector who meets the requirements specified in chapter [5](#) of this document, the following prerequisite basic training should be provided to qualify him/her as an Inspector:

- a) Civil Aviation Regulations;
- b) Technical Guidance Materials;
- c) Authority acceptable Airworthiness Inspectors Course (e.g. FAA (ICAO endorsed Government Aviation Safety Inspector Airworthiness, UK CAA, JAA, etc.) and;
- d) OJT in specific duties specified in the OJT Appendix hereunder under a qualified senior Inspector;
- e) Aircraft type/systems course (as required).

### 6.3 Advanced/Specialized training required for Airworthiness Inspectors instructions

Advanced/Specialized training required for Airworthiness Inspectors instructions will include:

- a) Human factors – maintenance;
- b) Auditor's Course
- c) Special trainings in different applicable techniques to reflect inspection requirements in line with technological advances e.g. welding, composite materials, destructive testing, dangerous goods; ETOPs operations; MMEL/MEL; SMS etc.
- d) Structural Inspection Programs
- e) Accident Investigation Course
- f) Safety Oversight training
- g) Examination technique
- h) Special training in environment protection matters related to aircraft engine emissions and aircraft noise.

### 6.4 Continuous training

Airworthiness Inspectors must also be provided with continuous training to ensure that they remain current in their profession. Periodic practical and theoretical spe-



cialized (technical) training, including supervisory courses, will enable the Inspectors to maintain a high level of knowledge and expertise to carry out their responsibilities effectively and efficiently.

### **6.5 Training File for Inspector**

To ensure systematic and comprehensive training of Airworthiness Inspectors it is necessary to maintain a Training File for each Inspector. The Training File records must be reviewed and updated at regular intervals. Record of all 'On-Job-Training' imparted to an Inspector must also be maintained in the Training File.

### **6.6 Technical Training of Airworthiness Inspectors**

- 6.6.1 Technical Training of Airworthiness Inspectors may be accomplished from several sources. These can be contracted to an operator who offers a course that is approved in its country or offered by aircraft manufacturers.
- 6.6.2 An Inspector is required to undergo a type-rating course before approving maintenance schedules and related activities. Routine surveillance activities can be accomplished on any aircraft in airline service whether or not the Inspector is type trained on that particular type.
- 6.6.3 Although Airworthiness Inspectors are not required to keep their licenses current when employed by the Authority and performing certification or surveillance activities, they are required to maintain the same level of knowledge as is required of engineers that are exercising the privilege of their licenses.
- 6.6.4 There may be an occasion where there is no inspector qualified on a particular type of aircraft and there is an urgent need for one to accomplish a task that normally required type training. In such cases, the Director General may, at his discretion, relax the requirements, taking into consideration the Inspectors past performance, employment record and experience.



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## **7 Duties of Airworthiness Inspectors**

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### **7.1 Duties and responsibilities of Airworthiness Inspectors**

The duties and responsibilities of Airworthiness Inspectors are as laid down in this Order and are divided into various groups, including:

- a) Granting of Approvals to carry out airworthiness related activity;
- b) Aircraft certification;
- c) Examination/licensing of aircraft maintenance engineers;
- d) Approval of modifications and major repairs; and
- e) Routine surveillance and audit.

### **7.2 Specific duties and responsibilities of individual airworthiness Inspectors**

The specific duties and responsibilities of individual airworthiness Inspectors will vary somewhat depending on their technical specialty (i.e., power plants, avionics, airframes, etc.). But in general terms they should include at least the following:

- a) Conduct inspections and carry out auditing functions;
- b) Prepare detailed reports on inspections and auditing activities;
- c) Enforce compliance with airworthiness regulations and directives;
- d) Report breaches of regulations and directives to the appropriate authority within the authority;
- e) Report defects noted to aircraft operators/owners/type certificate holders and approved airworthiness organizations for remedial action;
- f) Conduct, in co-operation with members of the authority operations section, operator certification inspections;
- g) Monitoring airworthiness certifications and ensuring that they are carried out by persons who are properly authorized, and that the certifications made are for the purpose and in accordance with the requirements of the applicable airworthiness regulations;
- h) Monitoring the implementation of the relevant airworthiness regulations;
- i) Familiarizing himself with the content of all airworthiness directives, service bulletins and similar documents in respect of the aircraft (including power plants) and equipment registering or operating into the state and monitoring the extent of implementation;
- j) Reviewing maintenance procedure manuals, making recommendations in respect of amendments which may be required by the authority prior to approval of the manual;
- k) Undertaking liaison with other inspectors regarding recommendations in respect of issue and renewal of certificates of airworthiness, checking all documents associated with the above including the flight manual amendment status and airframe and engine log books;



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- l) Checking that all relevant work are carried out, and authorizing release for test flight of aircraft and avionics installation issued ensuring that the resulting reports are satisfactory and in accordance with the Authority requirements;
  - m) Approval of preventive maintenance programs;
  - n) Monitoring approved operator maintenance training programs;
  - o) Conducting inspections of operator's route station facilities;
  - p) Adherence to and responding promptly where necessary to all orders/notices/circulars issued by the Authority;
  - q) Using initiative to pursue any matter that needs to be attended to by the Authority, including amendment to regulations and technical guidance, in the interest of air safety and for efficiency of the system;
  - r) Ensuring that confidentiality is always maintained;
  - s) Maintaining a constant dialogue with operators and officials in the aviation industry on professional matters in order to keep up to date with latest developments.





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## **8 Qualifications required for Inspector Activities**

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### **8.1 Highlights for the qualifications required**

The following are highlights for the qualifications required by an inspector for conducting of the various activities under the airworthiness functions:

#### **8.1.1 General Regulatory Matters**

- a) Type of duty – General Regulatory Matters
  - (i) Preparation of Draft regulations and advisory material and recommending changes to the National Civil Aviation law;
  - (ii) Examination of current and new international and foreign Airworthiness standards related to continuing Airworthiness and determination of the need for adoption;
  - (iii) Conferring on National and international levels on matters relating to the regulation of Airworthiness; or
  - (iv) Giving of advice and recommendations to other areas of the Authority responsibilities on legal matters.
- b) Inspectors Qualification required
  - (i) Completion of a basic inspector course; and
  - (ii) A thorough knowledge of the Afghanistan Civil Aviation Regulations and advisory material published by the Authority.

#### **8.1.2 Aircraft Maintenance**

- a) Type of duty - Aircraft Maintenance
  - (i) Survey of aircraft for issue/renewal of the Certificate of Airworthiness;
  - (ii) Evaluation of maintenance programs;
  - (iii) Preparing a report for approval of a maintenance program;
  - (iv) Auditing of Facilities and Equipment for the activity for which the approval is sought;
  - (v) Auditing of required Technical Data and ensuring their status;
  - (vi) Assessment of man power requirements; or
  - (vii) Preparing task report for approval.
- b) Inspectors Qualification required
  - (i) Completion of Basic inspector courses;
  - (ii) Completion of Advanced course (Depending on the activity of the operator);
  - (iii) Completion of type rated course on the type of aircraft, engine and systems as per the specialty of individual.



**8.1.3 Routine Surveillance / Audit of Approved Maintenance Organization**

- a) Type of duty – Routine Surveillance / Audit of Approved Maintenance Organization
  - (i) Carrying out routine and / or specific audits;
  - (ii) Preparing audit reports;
  - (iii) Reporting breaches of regulations and directives to the appropriate authority within the Authority;
  - (iv) Reporting defects noted to aircraft and approved organizations for remedial action;
  - (v) Participating with operation inspectors for operator certification inspection;
  - (vi) Carrying out follow-up audits as required.
- b) Qualification required
  - (i) Completion of Basic Inspector course;
  - (ii) Completion of Advanced course (Audit course in particular);
  - (iii) Type course on Airframe/ Power plant and systems; or
  - (iv) Experience in Airline Maintenance.

**8.1.4 Maintenance Personnel Licensing**

- a) Type of duty – Maintenance Personnel Licensing
  - (i) Preparation of examination papers and marking schemes;
  - (ii) Conducting oral/practical examination;
  - (iii) Marking the examination papers and/or preparing assessment reports;
  - (iv) Keeping records and observing confidentiality.
- b) Inspectors Qualification required:
  - (i) Completion of a Basic Inspector's course;
  - (ii) Completion of a specific type training course on specific trade; and
  - (iii) Completion of examination technique course.

**8.2 Other Activities**

Any other activities as assigned by the Head will require qualifications dependent on the activity for which the inspector is assigned e.g. investigation of incident/accident, will require completion of training in accident investigation; evaluation of specialized function such as NDT or welding or environment protection regulation will require training in that area.



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## **Appendix I Airworthiness Inspector on the Job Training Guide**

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### 1.1 Background

#### 1.1.1 Prerequisites

New inspectors will be programmed for initial and ongoing training based on their assigned duties. The inspector's initial training is commonly referred to as, basic indoctrination training, or initial training. The inspectors initial new hire courses are mandatory and must be completed satisfactorily.

#### 1.1.2 On-Job-Training (OJT)

Newly hired inspectors, and inspectors transitioning to a position that they have not previously received OJT for, are assigned an experienced and qualified inspector who is jointly responsible with the inspector for completion of OJT requirements. The inspector will go through the following levels of OJT training:

- (a) The first level of training is familiarization with Authority guidance relevant to a particular task or job.
- (b) During the second level the inspector observes a qualified inspector performing the task.
- (c) In level three, a qualified inspector observes the trainee perform the task. The OJT training record is certified at each level and signed off when the inspector is competent at performing the task.

#### 1.1.3 Complete CAF-AIR-016 as follows:

- (a) Block 1 enter the name of the inspector receiving OJT training
- (b) Block 2 check specialty of inspector
- (c) Block 3 enter the position the inspector is currently in
- (d) Block 4 enter the task that the inspector is receiving OJT on
- (e) Block 5 enter the corresponding Order number that relates to the task
- (f) Blocks 6, 7 & 8 the experienced inspector and the inspector receiving OJT should enter their initials and the date which the inspector completed that level of OJT training
- (g) Block 9 should be signed and dated by the experienced inspector to confirm that the inspector receiving training has performed and satisfactorily completed OJT in the subject task

### 1.2 The Inspector's Official Training

1.2.1 The Inspector's Official Training and OJT records are maintained by the Authority for the duration of the inspector's employment.

1.2.2 The Authority is responsible for ensuring that all their inspectors receive OJT training for the specific duties that they will be performing on a regular basis and to maintain records documenting the OJT training that has taken place. Additionally, the Authority is responsible to continually monitor the effectiveness of the OJT program and revise as necessary.



- 1.2.3 Newly hired, or newly assigned inspectors will be considered qualified to complete job functions and or tasks associated within their specialty when all profile training requirements, aviation personnel qualifications, and certifications have been satisfactorily completed, verified and documented. For example, the following conditions must be met in order for an Air Operator Operations Inspector to be considered qualified to perform specific job functions without supervision including:
- (a) Satisfactory completion of indoctrination training;
  - (b) Additional Authority programmed and profile training; training profiles;
  - (c) Satisfactory completion of specific training courses for unique job functions, if required; and
  - (d) Satisfactory completion of all OJT requirements for that job function.
- 1.2.4 In certain instances the Authority may authorize the inspector to perform a required job function prior to completing all of the training associated with the inspector's specialty position assignment.
- 1.3 Guide for Training
- 1.3.1 The following guide has been developed to assist with the training of Airworthiness Inspectors. It is provided as a guide and should not be considered limiting. Airworthiness Inspector (AWI) activities often interact with Operations, Cabin Safety, Dangerous Goods. These specialty activities are briefly mentioned within this checklist. The following specialties will normally deal with issues listed:
- 1.3.2 Flight Operations
- (a) Ramp inspections;
  - (b) Cabin enroute inspections;
  - (c) Cockpit enroute inspections;
  - (d) Pilot proficiency and competency checks for operators; and
  - (e) Flight Engineer proficiency checks for operators.
- 1.3.3 Cabin Safety
- (a) Safety Features Cards
  - (b) Cabin Attendant Manuals
  - (c) Cabin Attendant Training Programs
- 1.3.4 Dangerous Goods
- (a) Company Operations Manual Dangerous Goods Chapter Review
  - (b) Company Dangerous Goods Permit(s) for Equivalent Level of Safety
  - (c) Dangerous Goods Specialty Audits and Inspections
  - (d) Dangerous Goods Cargo Facility Inspections
  - (e) Dangerous Goods Random Ramp Inspections
  - (f) Dangerous Goods Passenger Terminal Inspections
  - (g) Dangerous Goods Surveillance Operations
  - (h) Dangerous Goods Packaging Inspections
  - (i) Dangerous Goods Investigations and Compliance Actions



- (j) Company Dangerous Goods Records and Document Retention programs
- (k) ICAO Doc 9284 Technical Instructions for Safe Transport of Dangerous Goods, by Air

1.3.5 This checklist has been written with the intent of capturing most activities encountered by Air Carrier Airworthiness Inspectors. It is not meant to reflect specific tasks, such as certain office routines or methods on how particular situations are dealt with.

1.3.6 A qualified AWI shall be entrusted with activities in Ramp inspections; Cabin enroute inspections; Cabin Safety if specialized inspectors in this area are not available and therefore AWIs should be trained on such issues as Cabin Safety, Carriage of Dangerous goods, enroute inspection etc.



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