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Signed on: 2024-11-20 20:57:59

## **CAR-PART II - CHAPTER 9**

### **ORGANISATION REQUIREMENTS FOR AIRCREW CAR-ORA**

## FOREWORD

(a) For the purpose of this regulation the competent authority shall be the General Civil Aviation Authority designated by the United Arab Emirates Federal Government, and known in this regulation as the "GCAA".

(b) This revision of this regulation:

- **Existing ATO, AeMC and FSTD Qualification Certificates:** promulgates a grandfather rule stipulating that all certificates issued before this Chapter enters into force shall be deemed to have been issued in accordance with this Chapter and this Chapter will apply to them.
- **Entry into force and application:** declares that this Chapter shall enter into force on the 15 June 2015. Any AOC Holder currently conducting activities that will require an ATO Certificate issued against CAR-ORA Subpart B are required to file an application with the GCAA before 15 June 2015 to be authorised to continue such activities after this date.
- **Opt-out provisions:** delays application of the following provisions of this Chapter until further notice:
  - (a) ORA.GEN.200 for only Subpart C and Subpart AeMC.
  - (b) ORA.ATO.105(b)
  - (c) ORA.ATO.125 when related to Flight Test Training Programme
  - (d) ORA.ATO.130(c)
  - (e) ORA.ATO.145(b)
  - (f) ORA.AeMC.200

(c) Regulations requiring Type Rating Training and Operational Suitability Data (OSD):

- Where the AMC's and Guidance Material to this Regulation make reference to the operational suitability data established in accordance with the regulation, and that data is not available for the relevant type aircraft, the applicant for a type rating training course shall comply with the provisions for CAR PART II – CAR-FCL.
- Type rating training courses approved before the approval of the minimum syllabus of pilot type rating training in the operational suitability data for the relevant type of aircraft issued in accordance with CAR Part V – CAR 21 Regulation or equivalent accepted by the GCAA shall include the mandatory training elements not later than 18 December 2017 or within two years after the operational suitability data was approved by the State of Design, whichever is the latest.

(d) "Acceptable Means of Compliance" (AMC) illustrate a means, but not the only means, by which the proposed requirement can be met. Organisations are required to comply with the AMC's unless Alternative Means of Compliance have been accepted by the Authority.

(e) "Guidance Material" (GM) is non-binding material that helps to illustrate the meaning of a requirement or specification and is used to support the interpretation of regulations or AMCs.

## RECORD OF AMENDMENTS

Amendment	Date	Changes introduced
Issue 00 Rev. 00	May 2014	Aviation Safety Affairs Sector
Issue 00 Rev. 01	June 2015	Aviation Safety Affairs Sector

## HIGHLIGHTS OF CHANGE

<b>SUBPART A - GENERAL REQUIREMENTS</b> SECTION I – General	<b>ORA.GEN.105 Competent authority</b> Added wording  <b>ORA.GEN.120 Means of compliance</b> Typo corrected  <b>ORA.GEN.160 Occurrence reporting</b> Wording amended
<b>SUBPART B - APPROVED TRAINING ORGANISATIONS</b>  SECTION I - General	<b>ORA.ATO.120 Record-keeping</b> Wording amended  <b>ORA.ATO.150 Training in ICAO contracting Member State Countries</b> Wording amended
<b>SUBPART C - REQUIREMENTS FOR ORGANISATIONS OPERATING FLIGHT SIMULATION TRAINING DEVICES (FSTD's) AND THE QUALIFICATION OF FSTD's</b> SECTION II - Requirements for the qualification of FSTD's	<b>ORA.FSTD.205 Certification specifications for FSTDs (a)</b> Added wording
<b>SUBPART AEMC - AERO-MEDICAL CENTRES</b> SECTION I - General	<b>ORA.AEMC.135 CONTINUED VALIDITY</b> Added wording
<b>SUBPART AEMC - AERO-MEDICAL CENTRES</b> SECTION II - Management	<b>ORA.AEMC.200 MANAGEMENT SYSTEM</b> Modified and added point (c).  <b>ORA.AEMC.210 PERSONNEL REQUIREMENTS</b> Point (a)-(1),(2) and (b) added wording. Point (3) added to the para.  <b>ORA.AEMC.215 FACILITY REQUIREMENTS</b> Added wording to the para.
<b>Appendix 1 – Means of Compliance</b>	Added wording reserved.

<b>AMC &amp; GM to CAR-ORA</b>  <b>SUBPART B - APPROVED TRAINING ORGANISATIONS</b> <b>SECTION I – GENERAL</b>	<b>AMC1 ORA.ATO.105 Application</b> Text added
<b>AMC &amp; GM to CAR-ORA</b>  <b>SUBPART FSTD –REQUIREMENTS FOR ORGANISATIONS OPERATING FLIGHT SIMULATION TRAINING DEVICES (FSTDs) AND THE QUALIFICATION OF FSTDs</b> <i>SECTION II – REQUIREMENTS FOR THE QUALIFICATION OF FSTDs</i>	<b>AMC1 ORA.FSTD.205(a) Certification Specifications for FSTDs</b> Added text
<b>SUBPART AeMC – AERO-MEDICAL CENTRES</b> <i>SECTION I – GENERAL</i>	<b>AMC1 ORA.AeMC.135 Continued validity(c)</b> Added wording.
<b>SUBPART AeMC – AERO-MEDICAL CENTRES</b> <b>SECTION II – MANAGEMENT</b>	<b>AMC1 ORA.AeMC.200 Management system</b> Text added  <b>GM1 ORA.AeMC.200 Management system</b> Text added  <b>AMC1 ORA.AeMC.210 Personnel requirements</b> Added text (a); (1,3,4,5,); (c), (d)  <b>GM1 ORA.AeMC.210 Personnel requirements</b> Text added  <b>AMC1 ORA.AeMC.215 Facility requirements</b> Added point (f), (g); (1), (2).

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## **SUBPART A - GENERAL REQUIREMENTS**

### **SECTION I – General**

#### **ORA.GEN.105 Competent authority**

For the purpose of this regulation, the General Civil Aviation Authority exercises oversight over organisation certified under this Chapter.

#### **ORA.GEN.115 Application for an organisation certificate**

- (a) The application for an organisation certificate or an amendment to an existing certificate shall be made in a form and manner established by the GCAA, taking into account the applicable requirements of CAR Part II Chapter 2 FCL.
- (b) Applicants for an initial certificate shall provide the GCAA with documentation demonstrating how they will comply with the requirements established in CAR Part II- Chapter 2 FCL. Such documentation shall include a procedure describing how changes not requiring prior approval will be managed and notified to the GCAA.

#### **ORA.GEN.120 Means of compliance**

- (a) Alternative means of compliance to the AMC adopted by the GCAA may be used by an organisation to establish compliance with CAR PART II- CHAPTER 2 FCL.
- (b) When an organisation wishes to use an alternative means of compliance, it shall, prior to implementing it, provide the GCAA with a full description of the alternative means of compliance. The description shall include any revisions to manuals or procedures that may be relevant, as well as an assessment demonstrating that the applicable provisions of CAR PART II- CHAPTER 2 FCL are met.
- (c) The organisation may implement these alternative means of compliance subject to prior approval by the GCAA and upon receipt of the notification as prescribed in Appendix 1 to this regulation.

#### **ORA.GEN.125 Terms of approval and privileges of an organisation**

A certified organisation shall comply with the scope and privileges defined in the terms of approval attached to the organisation's certificate.

#### **ORA.GEN.130 Changes to organisations**

- (a) Any change affecting:
  - (1) the scope of the certificate or the terms of approval of an organisation; or
  - (2) any of the elements of the organisation's management system as required in ORA.GEN.200(a)(1) and (a)(2), shall require prior approval by the GCAA.

- (b) For any changes requiring prior approval in accordance with CAR PART II- CHAPTER 2 FCL, the organisation shall apply for and obtain an approval issued by the GCAA. The application shall be submitted before any such change takes place, in order to enable the GCAA to determine continued compliance with CAR PART II- CHAPTER 2 FCL and to amend, if necessary, the organisation's certificate and related terms of approval attached to it. The organisation shall provide the GCAA with any relevant documentation. The change shall only be implemented upon receipt of formal approval by the GCAA in accordance with Appendix 2 of this regulation.

The organisation shall operate under the conditions prescribed by the GCAA during such changes, as applicable.

- (c) All changes not requiring prior approval shall be managed and notified to the GCAA as defined in the procedure approved by the GCAA in accordance with Appendix 2 of this regulation.

#### **ORA.GEN.135 Continued Validity**

- (a) The organisation's certificate shall remain valid for a maximum period of five years subject to:
  - (1) the organisation remaining in compliance with the Law and applicable relevant regulatory requirements, taking into account the provisions related to the handling of findings as specified under ORA.GEN.150;
  - (2) the GCAA being granted access to the organisation as defined in ORA.GEN.140 to determine continued compliance with Law and applicable relevant regulatory requirements; and
  - (3) the certificate not being surrendered or revoked.
- (b) Upon revocation or surrender the certificate shall be returned to the GCAA without delay.

#### **ORA.GEN.140 Access**

For the purpose of determining compliance with the Law and applicable relevant regulatory requirements, the organisation shall grant access to any facility, aircraft, document, records, data, procedures or any other material relevant to its activity subject to certification, whether it is contracted or not, to any person authorised by:

- (a) the GCAA defined in ORA.GEN.105

#### **ORA.GEN.150 Findings**

After receipt of notification of findings, the organisation shall:

- (a) identify the root cause of the non-compliance;
- (b) define a corrective action plan; and
- (c) demonstrate corrective action implementation to the satisfaction of the GCAA within a period agreed with the GCAA and as defined in Appendix 2 of this regulation.

#### **ORA.GEN.155 Immediate reaction to a safety problem**

The organisation shall implement:

- (a) any safety measures mandated by the GCAA, according applicable procedures, and
- (b) any relevant mandatory safety information issued by the GCAA, or directly applicable, including airworthiness directives.

#### **ORA.GEN.160 Occurrence reporting**

- (a) The organisation shall report to the GCAA, and to any other organisation required by the State of the operator to be informed, any accident, serious incident and occurrence as defined in CAR Part VI Chapter 3 and/or applicable occurrence reporting regulations.
- (b) Without prejudice to paragraph (a) the organisation shall report to the competent authority and to the organisation responsible for the design of the aircraft any incident, malfunction, technical defect, exceeding of technical limitations and any occurrence that would highlight inaccurate, incomplete or ambiguous information contained in the operational suitability data established in accordance with CAR Part V - CAR 21 requirements or other irregular circumstance that has or may have endangered the safe operation of the aircraft and that has not resulted in an accident or serious incident.
- (c) Without prejudice to applicable accident and incident investigation and safety occurrence reporting regulations, the reports referred in paragraphs (a) and (b) shall be made in a form and manner established by the GCAA and contain all pertinent information about the condition known to the organisation.
- (d) Reports shall be made as soon as practicable, but in any case within 72 hours of the organisation identifying the condition to which the report relates, unless exceptional circumstances prevent this.
- (e) Where relevant, the organisation shall produce a follow-up report to provide details of actions it intends to take to prevent similar occurrences in the future, as soon as these actions have been identified.

## **SECTION II – Management**

### **ORA.GEN.200 Management system**

- (a) The organisation shall establish, implement and maintain a management system that includes:
- (1) clearly defined lines of responsibility and accountability throughout the organisation, including a direct safety accountability of the accountable manager;
  - (2) a description of the overall philosophies and principles of the organisation with regard to safety, referred to as the safety policy;
  - (3) the identification of aviation safety hazards entailed by the activities of the organisation, their evaluation and the management of associated risks, including taking actions to mitigate the risk and verify their effectiveness;
  - (4) maintaining personnel trained and competent to perform their tasks;
  - (5) documentation of all management system key processes, including a process for making personnel aware of their responsibilities and the procedure for amending this documentation;
  - (6) a function to monitor compliance of the organisation with the relevant requirements. Compliance monitoring shall include a feedback system of findings to the accountable manager to ensure effective implementation of corrective actions as necessary; and
  - (7) any additional requirements that are prescribed in the relevant subparts of this regulation or other applicable GCAA regulations.

The management system shall correspond to the size of the organisation and the nature and complexity of its activities, taking into account the hazards and associated risks inherent in these activities.

### **ORA.GEN.205 Contracted activities**

- (a) Contracted activities include all activities within the organisation's scope of approval that are performed by another organisation either itself certified to carry out such activity or if not certified, working under the contracting organisation's approval. The organisation shall ensure that when contracting or purchasing any part of its activity, the contracted or purchased service or product conforms to the applicable requirements.
- (b) When the certified organisation contracts any part of its activity to an organisation that is not itself certified in accordance with this regulation to carry out such activity, the contracted organisation shall work under the approval of the contracting organisation. The contracting organisation shall ensure that the GCAA is given access to the contracted organisation, to determine continued compliance with the applicable requirements.

#### **ORA.GEN.210 Personnel requirements**

- (a) The organisation shall appoint an accountable manager, who has the authority for ensuring that all activities can be financed and carried out in accordance with the applicable requirements. The accountable manager shall be responsible for establishing and maintaining an effective management system.
- (b) A person or group of persons shall be nominated by the organisation, with the responsibility of ensuring that the organisation remains in compliance with the applicable requirements. Such person(s) shall be ultimately responsible to the accountable manager.
- (c) The organisation shall have sufficient qualified personnel for the planned tasks and activities to be performed in accordance with the applicable requirements.
- (d) The organisation shall maintain appropriate experience, qualification and training records to show compliance with paragraph (c).
- (e) The organisation shall ensure that all personnel are aware of the rules and procedures relevant to the exercise of their duties.

#### **ORA.GEN.215 Facility requirements**

The organisation shall have facilities allowing the performance and management of all planned tasks and activities in accordance with the applicable requirements.

#### **ORA.GEN.220 Record-keeping**

- (a) The organisation shall establish a system of record-keeping that allows adequate storage and reliable traceability of all activities developed, covering in particular all the elements indicated in ORA.GEN.200.
- (b) The format of the records shall be specified in the organisation's procedures.
- (c) Records shall be stored in a manner that ensures protection from damage, alteration and theft.

## **SUBPART B - APPROVED TRAINING ORGANISATIONS**

### **SECTION I – General**

#### **ORA.ATO.100 Scope**

This Subpart establishes the requirements to be met by organisations providing training for pilot licences and associated ratings and certificates.

#### **ORA.ATO.105 Application**

(a) Applicants for the issue of a certificate as an approved training organisation (ATO) shall provide the GCAA with:

(1) the following information:

- (i) name and address of the training organisation;
- (ii) date of intended commencement of activity;
- (iii) Security clearance issued by the GCAA Security Department of the UAE
- (iv) personal details and qualifications of the Head of Training (HT), Chief Flight Instructor (CFI)/Chief Synthetic Flight Instructor (CSFI), Chief Theoretical Knowledge Instructor (CTKI), the flight instructor(s), flight simulation training instructors and the theoretical knowledge instructor(s);
- (v) name(s) and address(es) of the aerodromes(s) and/or operating site(s) at which the training is to be conducted;
- (vi) list of aircraft to be operated for training, including their group, class or type, registration, owners and category of the certificate of airworthiness, if applicable;
- (vii) list of flight simulation training devices (FSTDs) that the training organisation intends to use, if applicable;
- (viii) the type of training that the training organisation wishes to provide and the corresponding training programme;
- (ix) any other documentation or information required as outlined by the GCAA, and

(2) the operations, compliance, safety and training manuals.

(b) Flight test training organisations. Notwithstanding (a)(1)(v) and (vi), training organisations providing flight test training shall only need to provide:

- (1) the name(s) and address(es) of the main aerodromes and/or operating site(s) at which the training is to be conducted; and

- (2) a list of the types or categories of aircraft to be used for flight test training.
- (c) In the case of a change to the certificate, applicants shall provide the GCAA with the relevant parts of the information and documentation referred to in (a).

#### **ORA.ATO.110 Personnel requirements**

- (a) A HT shall be nominated and shall have:
  - (1) Extensive applicable and acceptable experience as an instructor in the areas relevant for the training provided by the ATO, and
  - (2) Possess sound managerial capability, and
  - (3) Hold or have held in the three years prior to first appointment as a HT, a professional licence and rating(s) issued in accordance with ICAO Annex 1, related to the flying training courses conducted
- (b) The HT's responsibilities shall include:
  - (1) ensuring that the training provided is in compliance with CAR PART II- CHAPTER 2 FCL and, in the case of flight test training, that the relevant requirements of Part-21 and the training programme have been established;
  - (2) ensuring the satisfactory integration of flight training in an aircraft or a flight simulation training device (FSTD) and theoretical knowledge instruction; and
  - (3) supervising the progress of individual students.
  - (4) Nominate qualified staff under his/her supervision:
    - (i) CFI/CSFI.
      - (A) In the case of a CFI for an ATO conducting flight training, the CFI shall hold the highest professional pilot license related to the flying training courses conducted and hold the rating(s) related to the flying training courses conducted. Additionally the CFI shall hold a flight instructor rating for all of the types of the aircraft used on the course; and have completed 1000 hours pilot-in-command of which a minimum of 500 hours shall be on flying duties related to the flying courses conducted of which 200 hours may be instrument ground time.
      - (B) In the case of a CSFI for an ATO conducting Type Rating training, the CSFI shall hold or have held an ATPL and hold or have held at least one Type Rating and a SFI/TRI/SFE/TRE approval related to the flying training courses conducted.
    - (ii) A CTKI. The CTKI shall have a practical background in aviation and have undergone a course of training in instructional techniques or have had extensive previous experience in giving theoretical knowledge instruction applicable to the courses for which approval is sought.

- (iii) Theoretical knowledge instructors that shall have:
  - (A) practical background in aviation in the areas relevant for the training provided and have undergone a course of training in instructional techniques; or
  - (B) previous experience in giving theoretical knowledge instruction and an appropriate theoretical background in the subject on which they will provide theoretical knowledge instruction.
- (iv) Flight instructors and flight simulation training instructors that shall hold the qualifications required by CAR PART II- CHAPTER 2 FCL for the type of training that they are providing

(c) The CFI/CSFI's responsibilities shall include:

- (1) Supervision and standardisation of all instructors reporting to them and the provision of instructor briefing materials.
- (2) Satisfy that adequate arrangements are put in place standardise flight and synthetic flight instructional staff. In discharging his responsibility for the supervision and standardisation of all flight and synthetic flight instructors, it will be acceptable for the CFI/CSFI to be supported by instructors nominated as Standards Instructors or a Deputy CFI/CSFI and accepted for this purpose by the GCAA.
- (3) Student flight and synthetic flight instruction records. The CFI/CSFI shall be responsible for ensuring that suitable arrangements are in place for the signing of all course completion certificates for any courses offered by the specific ATO. Arrangements acceptable to the GCAA are to be made for periodic standardization training and such training is to be detailed within the ATO's Operations Manual, Section D. These requirements are in addition to the requirements outlined in CAR PART II- CHAPTER 2 FCL relating to Instructor and Examiner currency.

(d) The Chief Theoretical Knowledge Instructor shall be responsible for the supervision of all ground instructors and for the standardization of all theoretical knowledge instruction.

#### **ORA.ATO.120 Record-keeping**

The following records shall be kept for a period of at least 5 years after the completion of the training:

- (a) details of ground, flight, and simulated flight training given to individual students;
- (b) detailed and regular progress reports from instructors including assessments, and regular progress flight tests and ground examinations; and
- (c) information on the licences and associated ratings and certificates of the students, including the expiry dates of medical certificates and ratings.



#### **ORA.ATO.125 Training programme**

- (a) A training programme shall be developed for each type of course offered.
- (b) The training programme shall comply with the requirements of CAR PART II - CHAPTER 2 FCL and, in the case of flight test training, the relevant requirements of Part-21.

#### **ORA.ATO.130 Training manual and operations manual**

- (a) The ATO shall establish and maintain a training manual and operations manual containing information and instructions to enable personnel to perform their duties and to give guidance to students on how to comply with course requirements.
- (b) The ATO shall make available to staff and, where appropriate, to students the information contained in the training manual, the operations manual and the ATO's approval documentation.
- (c) In the case of ATOs providing flight test training, the operations manual shall comply with the requirements for the flight test operations manual, as established in Part-21.
- (d) The operations manual shall establish flight time limitation schemes for flight instructors, including the maximum flying hours, maximum flying duty hours and minimum rest time between instructional duties, in accordance with applicable regulation to air operators or at least been acceptable by GCAA.

#### **ORA.ATO.135 Training aircraft and FSTDs**

- (a) The ATO shall use an adequate fleet of training aircraft or FSTDs appropriate to the courses of training provided.
- (b) The ATO shall only provide training in FSTDs when it demonstrates to the GCAA:
  - (1) the adequacy between the FSTD specifications and the related training programme;
  - (2) that the FSTDs used comply with the relevant requirements of CAR PART II- CHAPTER 2 FCL;
  - (3) in the case of full flight simulators (FFSs), that the FFS adequately represents the relevant type of aircraft; and
  - (4) that it has put in place a system to adequately monitor changes to the FSTD and to ensure that those changes do not affect the adequacy of the training programme.
- (c) If the aircraft used for the skill test is of a different type to the FFS used for the visual flight training, the maximum credit shall be limited to that allocated for flight and navigation procedures trainer II (FNPT II) for aeroplanes and FNPT II/III for helicopters in the relevant flight training programme.
- (d) Flight test training organisations. Aircraft used for flight test training shall be appropriately equipped with flight testing instrumentation, according to the purpose of the training.

#### **ORA.ATO.140 Aerodromes and operating sites**

When providing flight training on an aircraft, the ATO shall use aerodromes or operating sites that have the appropriate facilities and characteristics to allow training of the manoeuvres relevant, taking into account the training provided and the category and type of aircraft used. These aerodromes and operating sites must be approved for use by the GCAA.

#### **ORA.ATO.145 Pre-requisites for training**

- (a) The ATO shall ensure that the students meet all the pre-requisites for training established in Part-Medical, Part- FCL, and, if applicable, as defined in the mandatory part of the operational suitability data established in accordance with CAR Part V - CAR 21 regulation.
- (b) In the case of ATOs providing flight test training, the students shall meet all the pre-requisites for training established in accordance with CAR Part V - CAR 21 regulation.

#### **ORA.ATO.150 Training in ICAO contracting Member State Countries**

When the ATO is approved to provide training outside of the United Arab Emirates:

- (a) the training programme shall include theoretical knowledge instruction regarding the specific elements of the airspace in the United Arab Emirates, including a review of the UAE GCAA AIP and associated Instrument charts and approach procedures, and
- (b) the IR skill test shall be conducted by a UAE GCAA Flight Examiner, certificated under CAR PART II-CHAPTER 2 FCL.

## **SECTION II - Additional requirements for ATOs providing training for CPL, MPL and ATPL and the associated ratings and certificates**

### **ORA.ATO.210 Personnel requirements**

The requirements for personnel are as outlined in ORA.ATO.110, ORA.GEN.200, and ORA.GEN.210. Additional requirements may be required based on the size and scope of the ATO as determined by the GCAA.

### **ORA.ATO.225 Training programme**

- (a) The training programme shall include a breakdown of flight and theoretical knowledge instruction, presented in a week-by-week or phase layout, a list of standard exercises and a detailed syllabus summary.
- (b) The content and sequence of the training programme shall be specified in the training manual.
- (c) Instructor and student training materials, as well training guides, shall be provided to the GCAA that are specific to the course of training.

### **ORA.ATO.230 Training manual and operations manual**

- (a) The training manual shall state the standards, objectives and training goals for each phase of training that the students are required to comply with and shall address the following subjects:
  - (1) training plan,
  - (2) briefing and air exercises,
  - (3) flight training in an FSTD, if applicable,
  - (4) theoretical knowledge instruction.
- (b) The operations manual shall provide relevant information to particular groups of personnel, as flight instructors, flight simulation training instructors, theoretical knowledge instructors, operations and maintenance personnel, and shall include general, technical, route and staff training information.

## **SECTION III - Additional Requirements for ATOs Providing Specific Types of Training**

### **Chapter 1 - Distance Learning Course**

#### **ORA.ATO.300 General**

The ATO may be approved to conduct modular course programmes using distance learning in the following cases:

- (a) modular courses of theoretical knowledge instruction;
- (b) courses of additional theoretical knowledge for a class or type rating; or
- (c) courses of approved pre-entry theoretical knowledge instruction for a first type rating for a multi-engine helicopter.

#### **ORA.ATO.305 Classroom Instruction**

- (a) An element of classroom instruction shall be included in all subjects of modular distance learning courses.
- (b) The amount of time spent in actual classroom instruction shall not be less than 10% of the total duration of the course.
- (c) To this effect, classroom accommodation shall be available at the principal place of business of the ATO, or within a suitable facility elsewhere, and approved for use by the GCAA.

#### **ORA.ATO.310 Instructors**

All instructors shall be fully familiar with the requirements of the distance learning course programme and have completed a course of training on the conduct of distance learning training.

### **Chapter 2 - Zero Flight Time Training**

#### **ORA.ATO.330 General**

- (a) Approval for zero flight-time training (ZFTT), as specified in CAR PART II- CHAPTER 2 FCL, shall only be given to ATOs that also have the privileges to conduct commercial air transport operations or ATOs having specific arrangements with commercial air transport operators.
- (b) Approval for ZFTT shall only be given if the operator has at least 90 days of operational experience on the aeroplane type.
- (c) In the case of ZFTT provided by an ATO having a specific arrangement with an operator, the 90 days of operational experience requirements will not apply if the type rating instructor (TRI(A)) involved in the additional take-offs and landings, has operational experience on the aeroplane type.

### **ORA.ATO.335 Full flight simulator**

- (a) The FFS approved for ZFTT shall be serviceable according to the management system criteria of the ATO.
- (b) The motion and the visual system of the FFS shall be fully serviceable, in accordance with the applicable certification specifications for FSTD.

## **Chapter 3 - Multi-Crew Pilot Licence Training**

### **ORA.ATO.350 General**

The privileges to conduct MPL integrated training courses and MPL instructor courses shall only be given to the ATO if it also has the privilege to conduct commercial air transport operations or a specific arrangement with a commercial air transport operator.

## **Chapter 4 - Flight Test Training**

### **ORA.ATO.355 Flight Test Training Organizations**

- (a) The ATO that has been approved to provide flight test training for the issue of a category 1 or 2 flight test rating in accordance with CAR PART II - CHAPTER 2 FCL may have its privileges extended to providing training for other categories of flight tests and other categories of flight test personnel, provided that:
  - (1) the relevant requirements of Part-21 are met; and
  - (2) a specific arrangement exists between the ATO and the Part-21 organisation that employs, or intends to employ, such personnel.
- (b) The training records shall include the written reports by the student, as required by the training programme, including, where applicable, data processing and analysis of recorded parameters relevant to the type of flight test.

**SUBPART C - REQUIREMENTS FOR ORGANISATIONS OPERATING FLIGHT SIMULATION TRAINING DEVICES  
(FSTD's) AND THE QUALIFICATION OF FSTD's**

**SECTION I - Requirements for organisations operating FSTD's**

**ORA.FSTD.100 General**

- (a) The applicant for an FSTD qualification certificate shall demonstrate to the GCAA that it has established a management system in accordance with ORA.GEN Section II. This demonstration shall ensure that the applicant has, directly or through contract, the capability to maintain the performance, functions and other characteristics specified for the FSTD's qualification level and to control the installation of the FSTD.
- (b) If the applicant is the holder of a qualification certificate issued in accordance with this part, the FSTD specifications shall be detailed:
  - (1) in the terms of the ATO certificate; or
  - (2) in the case of an AOC holder, in the training manual.

**ORA.FSTD.105 Maintaining the FSTD qualification**

- (a) In order to maintain the qualification of the FSTD, an FSTD qualification certificate holder shall run the complete set of tests contained within the master qualification test guide (MQTG) and functions and subjective tests progressively over a 12-month period.
- (b) The results shall be dated, marked as analysed and evaluated, and retained, in order to demonstrate that the FSTD standards are being maintained.
- (c) A configuration control system shall be established to ensure the continued integrity of the hardware and software of the qualified FSTD.

**ORA.FSTD.110 Modifications**

- (a) The holder of an FSTD qualification certificate shall establish and maintain a system to identify, assess and incorporate any important modifications into the FSTDs it operates, especially:
  - (1) any aircraft modifications that are essential for training, testing and checking, whether or not enforced by an airworthiness directive; and
  - (2) any modification of an FSTD, including motion and visual systems, when essential for training, testing and checking, as in the case of data revisions.
- (b) Modifications of the FSTD hardware and software that affect handling, performance and systems operation or any major modifications of the motion or visual system shall be evaluated to determine the impact on the original qualification criteria. The organisation shall prepare amendments for any affected validation tests. The organisation shall test the FSTD to the new criteria

- (c) The organisation shall inform the GCAA in advance of any major changes to determine if the tests carried out are satisfactory. The GCAA shall determine if a special evaluation of the FSTD is necessary prior to returning it to training following the modification.

#### **ORA.FSTD.115 Installations**

- (a) The holder of an FSTD qualification certificate shall ensure that:
  - (1) the FSTD is housed in a suitable environment that supports safe and reliable operation;
  - (2) all FSTD occupants and maintenance personnel are briefed on FSTD safety to ensure that they are aware of all safety equipment and procedures in the FSTD in case of an emergency; and
  - (3) the FSTD and its installations comply with the local regulations for health and safety.
- (b) The FSTD safety features, such as emergency stops and emergency lighting, shall be checked at least annually and recorded.

#### **ORA.FSTD.120 Additional equipment**

Where additional equipment has been added to the FSTD, even though not required for qualification, it shall be assessed by the GCAA to ensure that it does not adversely affect the quality of training.

## **SECTION II - Requirements for the qualification of FSTD's**

### **ORA.FSTD.200 Application for FSTD qualification**

- (a) The application for an FSTD qualification certificate shall be made in a form and manner established by the GCAA.
  - (1) in the case of basic instrument training devices (BITDs), by the BITD manufacturer;
  - (2) in all other cases, by the organisation intending to operate the FSTD.
- (b) Applicants for an initial qualification shall provide the GCAA with documentation demonstrating how they will comply with the requirements established in this Regulation. Such documentation shall include the procedures established to ensure compliance with ORA.GEN.130 and ORA.FSTD.230..

### **ORA.FSTD.205 Certification specifications for FSTDs**

- (a) The GCAA shall issue certificates in accordance with acceptable certification specifications for FSTDs.
- (b) Such Certification Specifications shall be sufficiently detailed and specific to indicate to applicants the conditions under which qualifications will be issued.

### **ORA.FSTD.210 Qualification Basis**

- (a) The qualification basis for the issuance of an FSTD qualification certificate shall consist of:
  - (1) the applicable Certification Specifications established by the GCAA that are effective on the date of the application for the initial qualification;
  - (2) the aircraft validation data defined by the mandatory part of the operational suitability data as required by CAR Part V - CAR 21, if applicable; and.
  - (3) any special conditions prescribed by the GCAA if the related Certification Specifications do not contain adequate or appropriate standards for the FSTD because the FSTD has novel or different features to those upon which the applicable Certification Specifications are based.
- (b) The qualification basis shall be applicable for future recurrent qualifications of the FSTD, unless it is re-categorised.

### **ORA.FSTD.225 Duration and continued validity**

- (a) The full flight simulator (FFS), flight training device (FTD) or flight and navigation procedures trainer (FNPT) qualification shall remain valid subject to:
  - (1) the FSTD and the operating organisation remaining in compliance with the applicable requirements;



- (2) the GCAA being granted access to the organisation as defined in ORA.GEN.140 to determine continued compliance with the relevant requirements:
  - (3) the qualification certificate not being surrendered or revoked.
- (b) The period of 12 months established, on recurrent evaluations of the FSTD, may be extended up to a maximum of 36 months, in the following circumstances:
- (1) the FSTD has been subject to an initial and at least one recurrent evaluation that has established its compliance with the qualification basis;
  - (2) the FSTD qualification certificate holder has a satisfactory record of successful regulatory FSTD evaluations during the previous 36 months;
  - (3) the GCAA performs a formal audit of the compliance monitoring system defined in ORA.GEN.200(a)(6) of the organisation every 12 months; and
  - (4) an assigned person of the organisation with adequate experience reviews the regular reruns of the qualification test guide (QTG) and conducts the relevant functions and subjective tests every 12 months and sends a report of the results to the GCAA.
- (c) A BITD (Basic instrument training device model) qualification shall remain valid subject to regular evaluation for compliance with the applicable procedure for continuation of an FSTD qualification basis by the GCAA.
- (d) Upon surrender or revocation, the FSTD qualification certificate shall be returned to the GCAA.

#### **ORA.FSTD.230 Changes to the qualified FSTD**

- (a) The holder of an FSTD qualification certificate shall inform the GCAA of any proposed changes to the FSTD such as:
  - (1) major modifications;
  - (2) relocation of the FSTD; and
  - (3) any de-activation of the FSTD.
- (b) In case of an upgrade of the FSTD qualification level, the organisation shall apply to the GCAA for an upgrade evaluation. The organisation shall run all validation tests for the requested qualification level. Results from previous evaluations shall not be used to validate FSTD performance for the current upgrade.
- (c) When an FSTD is moved to a new location, the organisation shall inform the GCAA before the planned activity along with a schedule of related events.

Prior to returning the FSTD to service at the new location, the organisation shall perform at least one third of the validation tests, and functions and subjective tests to ensure that the FSTD performance

meets its original qualification standard. A copy of the test documentation shall be retained together with the FSTD records for review by the GCAA.

The GCAA may perform an evaluation of the FSTD after relocation. The evaluation shall be in accordance with the original qualification basis of the FSTD.

- (d) If an organisation plans to remove an FSTD from active status for prolonged periods, the GCAA shall be notified and suitable controls established for the period during which the FSTD is inactive.

The organisation shall agree with the GCAA a plan for the de-activation, any storage and re-activation to ensure that the FSTD can be restored to active status at its original qualification level.

#### **ORA.FSTD.235 Transferability of an FSTD Qualification**

- (a) When there is a change of the organisation operating an FSTD, the new organisation shall inform the GCAA in advance in order to agree upon a plan of transfer of the FSTD.
- (b) The GCAA may perform an evaluation in accordance with the original qualification basis of the FSTD.
- (c) When the FSTD no longer complies with its initial qualification basis, the organisation shall apply for a new FSTD qualification certificate

#### **ORA.FSTD.240 Record-keeping**

The holder of an FSTD qualification certificate shall keep records of:

- (a) all documents describing and proving the initial qualification basis and level of the FSTD for the duration of the FSTD's lifetime; and
- (b) any recurrent documents and reports related to each FSTD and to compliance monitoring activities for a period of at least 5 years.

## **SUBPART AEMC - AERO-MEDICAL CENTRES**

### **SECTION I - General**

#### **ORA.AEMC.105 SCOPE**

This Subpart establishes the additional requirements to be met by an organisation to qualify for the issue or continuation of an approval as an aero-medical centre (AeMC) to issue medical certificates, including initial class 1 medical certificates.

#### **ORA.AEMC.115 APPLICATION**

Applicants for an AeMC certificate shall:

- (a) comply with MED.D.005; and
- (b) in addition to the documentation for the approval of an organisation required in ORA.GEN.115, provide details of clinical attachments to or liaison with designated hospitals or medical institutes for the purpose of specialist medical examinations.

#### **ORA.AEMC.135 CONTINUED VALIDITY**

The AeMC certificate shall be issued for up to one year. It shall remain valid subject to the holder and the aero- medical examiners of the organisation:

- (a) complying with MED.D.030;and
- (b) ensuring their continued experience by performing an adequate number of class 1 medical examinations every year.

## **SECTION II - Management**

### **ORA.AEMC.200 MANAGEMENT SYSTEM**

The AeMC shall establish, document, implement and maintain a management system that includes the items addressed in ORA.GEN.200 and, in addition, processes:

- (a) for medical certification in compliance with Part-MED;
- (b) to ensure medical confidentiality at all times; and
- (c) for an internal verification system.

### **ORA.AEMC.210 PERSONNEL REQUIREMENTS**

- (a) The AeMC shall:
  - (1) have a Senior aero-medical examiner (SAME) nominated as Accountable Manager accepted by the GCAA, with privileges to issue class 1 medical certificates and sufficient experience in aviation medicine to exercise his/her duties;
  - (2) have on staff an adequate number of fully qualified and trained AMEs and other technical staff and experts; and
  - (3) have a procedure to deputise to an AME in case of the absence of the Accountable Manager.
- (b) The Accountable Manager shall be responsible for coordinating the assessment of examination results and signing reports, certificates, and initial class 1 medical certificates.

### **ORA.AEMC.215 FACILITY REQUIREMENTS**

The AeMC shall be equipped with medico-technical facilities adequate to perform aero-medical examinations necessary for the exercise of the privileges included in the scope of the approval or (if accepted by the GCAA) arrange with another service provider approved by the GCAA.

### **ORA.AEMC.220 RECORD-KEEPING**

In addition to the records required in ORA.GEN.220, the AeMC shall:

- (a) maintain records with details of medical examinations and assessments performed for the issue, revalidation or renewal of medical certificates and their results, for a minimum period of 10 years after the last examination date; and
- (b) keep all medical records in a way that ensures that medical confidentiality is respected at all times.

**Appendix 1 – Means of Compliance**

RESERVED

## **Appendix 2 – Organisation Oversight**

### **A. INITIAL CERTIFICATION PROCEDURE - ORGANISATIONS**

#### **1. General**

- 1.1 Upon receiving an application for the initial issue of a certificate for an organisation, the GCAA shall verify the organisation's compliance with the applicable requirements.
- 1.2 When satisfied that the organisation is in compliance with the applicable requirements, the GCAA shall issue the certificate(s) to the organisation according applicable procedures. The privileges and scope of the activities that the organisation is approved to conduct shall be specified in the terms of approval attached to the certificate(s).
- 1.3 To enable an organisation to implement changes without prior GCAA approval in accordance with ORA.GEN.130, the GCAA shall approve the procedure submitted by the organisation defining the scope of such changes and describing how such changes will be managed and notified.

### **B. CHANGES TO CERTIFICATION - ORGANISATIONS**

#### **1. General**

- 1.1 Upon receiving an application for a change that requires prior approval, the GCAA shall verify the organisation's compliance with the applicable requirements before issuing the approval.
- 1.2 The GCAA shall prescribe the conditions under which the organisation may operate during the change, unless the GCAA determines that the organisation's certificate needs to be suspended.
- 1.3 When satisfied that the organisation is in compliance with the applicable requirements, the GCAA shall approve the change.
- 1.4 Without prejudice to any additional enforcement measures, when the organisation implements changes requiring prior approval without having received GCAA approval, as defined at 1.1-1.3, the GCAA shall suspend, limit or revoke the organisation's certificate.
- 1.5 For changes not requiring prior approval, the GCAA shall assess the information provided in the notification sent by the organisation in accordance with ORA.GEN.130 to verify compliance with the applicable requirements. In case of any non-compliance, the GCAA shall:
  - (1) notify the organisation about the non-compliance and request further changes; and
  - (2) in case of level 1 or level 2 findings, act in accordance with Section C. and applicable procedures prescribed by the GCAA

### **C. FINDINGS AND CORRECTIVE ACTIONS - ORGANISATIONS**

#### **1. Findings**

- 1.1 The GCAA, for oversight according applicable procedures, shall have a system to analyse findings for their safety significance.

1.2 A level 1 finding shall be issued by the GCAA when any significant non-compliance is detected with the Law or applicable regulatory requirements, with the organisation's procedures and manuals or with the terms of an approval or certificate which lowers safety or seriously hazards flight safety.

1.3 The level 1 findings shall include:

- (1) failure to give the GCAA access to the organisation's facilities as defined in ORA.GEN.140 during normal operating hours and after two written requests ;
- (2) obtaining or maintaining the validity of the organisation certificate by falsification of submitted documentary evidence;
- (3) evidence of malpractice or fraudulent use of the organisation certificate; and
- (4) the lack of an accountable manager.
- (5) the lack of required postholders.
- (6) Non-compliance with the approved Compliance system for the organization

1.4 A level 2 finding shall be issued by the GCAA when any non-compliance is detected with the Law or applicable regulatory requirements, with the organisation's procedures and manuals or with the terms of an approval or certificate which could lower safety or hazard flight safety.

1.5 When a finding is detected during oversight or by any other means, the GCAA shall, without prejudice to any additional action required by applicable procedures, communicate the finding to the organisation in writing and request corrective action to address the non-compliance(s) identified.

## **2. GCAA Actions**

2.1 In the case of level 1 findings the GCAA shall take immediate and appropriate action to prohibit or limit activities and, if appropriate, it shall take action to revoke the certificate or specific approval or to limit or suspend it in whole or in part, depending upon the extent of the level 1 finding, until successful corrective action has been taken by the organisation.

2.2 In the case of level 2 findings, the GCAA shall:

- (1) grant the organisation a corrective action implementation period appropriate to the nature of the finding as agreed with the GCAA that in any case initially shall not be more than 3 months. At the end of this period, and subject to the nature of the finding, the GCAA may extend the agreed period subject to a satisfactory corrective action plan agreed by the GCAA; and
- (2) assess the corrective action and implementation plan proposed by the organisation and, if the assessment concludes that they are sufficient to address the non-compliance(s), accept these.

2.3 Where an organisation fails to submit an acceptable corrective action plan or to perform the corrective action within the time period accepted or extended by the GCAA, the finding shall be raised to a level 1 finding and action taken as outlined above in section 2.1.

The GCAA shall record all findings it has raised or that have been communicated to it and, where applicable, the enforcement measures it has applied, as well as all corrective actions and date of action closure for findings.

## **AMC & GM to CAR-ORA**



## SUBPART A - GENERAL REQUIREMENTS

### SECTION I – GENERAL

#### GM1 ORA.GEN.005

The following provides a list of acronyms used throughout this Regulation:

(A)	aeroplane
(H)	helicopter
AD	airworthiness directive
AIS	aeronautical information service
AM	accountable manager
AMC	Acceptable Means of Compliance
ATC	air traffic control
ATO	approved training organisation
ATPL	airline transport pilot licence
BITD	basic instrument training device
BPL	balloon pilot licence
CBT	computer-based training
CFI	chief flying instructor
CM	compliance monitoring
CMP	compliance monitoring programme
CMS	compliance monitoring system
COP	code of practice
CSFI	Chief Synthetic Flight Instructor
CRM	crew resource management
CTKI	Chief theoretical knowledge instructor
DG	dangerous goods
EC	European Community
ERP	emergency response plan
FATO	final approach and take-off area
FFS	full flight simulator
FMGC	flight management and guidance computer
FMS	flight management system
FNPT	flight navigation and procedures trainer
FSTD	flight simulation training device
FTD	flight training device
FTI	flight test instructor
GM	Guidance Material
GMP	general medical practitioner
HEMS	helicopter emergency medical service
HHO	helicopter hoist operation
HT	head of training
IFR	instrument flight rules
IMC	instrument meteorological conditions
IOS	instructor operation station
LAPL	light aircraft pilot licence
LIFUS	line flying under supervision
LVO	low visibility operation
MCC	multi-crew cooperation

M MEL	master minimum equipment list
M PA	multi-pilot aeroplane
M PL	multi-crew pilot licence
O PC	operator proficiency check
O RA	organisation requirements for aircrew
O SD	operational suitability data
O TD	other training device
P BN	performance-based navigation
P F	pilot flying
P IC	pilot-in-command
P M	pilot monitoring
P PL	private pilot licence
Q TG	qualification test guide
S MM	safety management manual
S MS	safety management system
S OP	standard operating procedure
S PL	sailplane pilot licence
T AWS	terrain awareness warning system
T RE	type rating examiner
T RI	type rating instructor
Z FTT	zero flight-time training

### **AMC1 ORA.GEN.105(a) GCAA**

An ATO is considered to be a single organization staffed, equipped and operated in a suitable environment offering flight training, synthetic flight instruction and/or theoretical knowledge instruction. An ATO may be approved to conduct more than one kind of approved training course. However, the GCAA will determine the necessary additional resources that need to be allocated in order to run multiple courses, in order to ensure satisfactory levels of training are maintained.

### **AMC2 ORA.GEN.105(a) GCAA**

Where training is conducted at multiple locations, all sites will be subject to initial approval and annual inspection in addition to any surveillance oversight deemed appropriate by the GCAA. An application from an ATO whose principal place of business is in the UAE, for approval of additional sites based outside the United Arab Emirates, must be made in accordance with ORA.ATO.105. All costs associated with the approval of overseas bases and their subsequent oversight will be borne by the organization.

### **AMC3 ORA.GEN.115(a) Application for an organisation certificate**

- (a) The application for the initial issuance of an organisation certificate should be submitted at least 90 days before the date of the intended start of operations.
- (b) When a complete application has been received, with all of the applicable documentation, an Inspector will be assigned to oversee the application process and review the documentation. This inspector will be the primary point of contact for the ATO, and a supporting inspector will be assigned to the ATO. These two inspectors will be responsible for all aspects of the application by the ATO.

### **GM1 ORA.GEN.115(a) Application for an organisation certificate**

When making an application for an initial approval, or to vary or renew an existing approval, an ATO should ensure that any required documents provided are complete and accurate. The application material should clearly indicate full compliance with the applicable provisions of CAR-FCL and CAR-ORA. Any omissions or inaccurate data will lead to delays in the approval process.

### **GM2 ORA.GEN.115(a) Application for an organisation certificate**

The fees payable on application are published on the GCAA website, which can be found at;  
[www.gcaa.gov.ae](http://www.gcaa.gov.ae).

### **AMC1 ORA.GEN.120(a) Means of Compliance**

#### **DEMONSTRATION OF COMPLIANCE**

In order to demonstrate that the requirements of CAR-FCL and CAR-ORA have been met, a risk assessment should be completed and documented. The result of this risk assessment should demonstrate that an equivalent level of safety to that established by the Acceptable Means of Compliance (AMC) adopted by the GCAA is reached.

## **AMC1 ORA.GEN.125 Terms of approval and privileges of an organisation**

### **MANAGEMENT SYSTEM DOCUMENTATION**

The management system documentation should contain the privileges and detailed scope of activities for which the organisation is certified, as relevant to the applicable requirements. The scope of activities defined in the management system documentation should be consistent with the terms of approval.

## **AMC1 ORA.GEN.130 Changes to organisations**

### **APPLICATION TIME FRAMES**

- (a) The application for the amendment of an organisation certificate should be submitted at least 30 days before the date of the intended changes.
- (b) In the case of a planned change of a nominated person, the organisation should inform the GCAA at least 30 days before the date of the proposed change.
- (c) Unforeseen events that necessitate changes should be notified at the earliest opportunity, but no longer than 48 hours after the identified need, in order to enable the GCAA to determine continued compliance with the applicable requirements and to amend, if necessary, the organisation certificate and related terms of approval.

## **GM1 ORA.GEN.130(a) Changes to organisations**

### **GENERAL**

- (a) Typical examples of changes that may affect the certificate or the terms of approval are listed below:
  - (1) the name of the organisation;
  - (2) the organisation's principal place of business;
  - (3) the organisation's scope of activities;
  - (4) additional locations of the organisation;
  - (5) the accountable manager;
  - (6) any of the persons referred to in ORA.GEN.210 (a) and (b);
  - (7) the organisation's documentation as required by this Regulation, safety policy and procedures;
  - (8) the facilities.
- (b) Prior approval by the GCAA is required for any changes to the organisation's procedure describing how changes not requiring prior approval will be managed and notified to the GCAA (e.g. such as in the case of utilization of flying orders).
- (c) Changes requiring prior approval may only be implemented upon receipt of formal approval by the GCAA.

## **GM2 ORA.GEN.130(a) Changes to organisations**

### **CHANGE OF NAME OF THE ORGANISATION**

A change of name requires the organisation to submit a new application as a matter of urgency.

Where this is the only change to report, the new application can be accompanied by a copy of the documentation previously submitted to the GCAA under the previous name, as a means of demonstrating how the organisation complies with the applicable requirements.

## **AMC1 ORA.GEN.150(b) Findings**

### **GENERAL**

The corrective action plan defined by the organisation should address the effects of the non-conformity, as well as its root-cause.

## **GM1 ORA.GEN.150 Findings**

### **GENERAL**

- (a) Corrective action is the action to eliminate or mitigate the root cause(s) and prevent recurrence of an existing detected non-compliance or other undesirable condition or situation.
- (b) Proper determination of the root cause is crucial for defining effective corrective actions.

## **AMC1 ORA.GEN.155 Immediate reaction to a safety problem**

The organisation should follow the processes outlined in the approved SMM and report any required immediate reactions to safety problems to the GCAA as soon as possible. If the safety problem necessitates changes to procedures and processes already approved by the GCAA, prior approval is required before that the changes being initiated, which may lead to a temporary cessation of operations in certain circumstances.

## **AMC1 ORA.GEN.160 Occurrence reporting**

### **GENERAL**

- (a) The organisation should report all occurrences defined in the applicable occurrence reporting regulations, as well as those outlined in the Safety Reporting program of the ATO.
- (b) In addition to the reports required by the applicable occurrence reporting regulations, the organisation should report volcanic ash clouds encountered during flight.

## SECTION II – MANAGEMENT

### AMC ORA.GEN.200(a)(1);(2);(3);(5) Management system

#### NON-COMPLEX ORGANISATIONS – GENERAL

- (a) Safety risk management may be performed using hazard checklists or similar risk management tools or processes, which are integrated into the activities of the organisation.
- (b) The organisation should manage safety risks related to a change. The management of change should be a documented process to identify external and internal change that may have an adverse effect on safety. It should make use of the organisation's existing hazard identification, risk assessment and mitigation processes.
- (c) The organisation should identify a person who fulfils the role of safety manager and who is responsible for coordinating the safety management system. This person may be the accountable manager, or a person with an operational role in the organisation. In this case an independent external auditor, acceptable to the GCAA, should complete audits at a minimum of every six months to ensure the SMS is functioning as described in the accepted SMM.
- (d) Within the organisation, responsibilities should be identified for hazard identification, risk assessment and mitigation.
- (e) The safety policy should include a commitment to improve towards the highest safety standards, comply with all applicable legal requirements, meet all applicable standards, consider best practices and provide appropriate resources.
- (f) The organisation should, in cooperation with other stakeholders, develop, coordinate and maintain an emergency response plan (ERP) that ensures orderly and safe transition from normal to emergency operations and return to normal operations. The ERP should provide the actions to be taken by the organisation or specified individuals in an emergency and reflect the size, nature and complexity of the activities performed by the organisation.

### AMC1 ORA.GEN.200(a)(1) Management system

#### COMPLEX ORGANISATIONS - ORGANISATION AND ACCOUNTABILITIES

The management system of an organisation should encompass safety by including a safety manager and a safety review board in the organisational structure.

- (a) Safety manager
  - (1) The safety manager should act as the focal point and be responsible for the development, administration and maintenance of an effective safety management system.
  - (2) The functions of the safety manager should be to:
    - (i) facilitate hazard identification, risk analysis and management;
    - (ii) monitor the implementation of actions taken to mitigate risks, as listed in the safety action plan;

- (iii) provide periodic reports on safety performance;
- (iv) ensure maintenance of safety management documentation;
- (v) ensure that there is safety management training available and that it meets acceptable standards;
- (vi) provide advice on safety matters; and
- (vii) ensure initiation and follow-up of internal occurrence/accident investigations.

(b) Safety review board

- (1) The Safety review board should be a high level committee that considers matters of strategic safety in support of the accountable manager's safety accountability.
- (2) The board should be chaired by the accountable manager and be composed of heads of functional areas.
- (3) The safety review board should monitor:
  - (i) safety performance against the safety policy and objectives;
  - (ii) that any safety action is taken in a timely manner; and
  - (iii) the effectiveness of the organisation's safety management processes.
- (c) The safety review board should ensure that appropriate resources are allocated to achieve the established safety performance.
- (d) The safety manager or any other relevant person may attend, as appropriate, safety review board meetings. He/she may communicate to the accountable manager all information, as necessary, to allow decision making based on safety data.

**GM1 ORA.GEN.200(a)(1) Management system**

SAFETY MANAGER

- (a) Depending on the size of the organisation and the nature and complexity of its activities, the safety manager may be assisted by additional safety personnel for the performance of all safety management related tasks.
- (b) Regardless of the organisational set-up it is important that the safety manager remains the unique focal point as regards the development, administration and maintenance of the organisation's safety management system.

**GM2 ORA.GEN.200(a)(1) Management system**

COMPLEX ORGANISATIONS – SAFETY ACTION GROUP

- (a) A safety action group may be established as a standing group or as an ad-hoc group to assist or act on behalf of the safety review board.
- (b) More than one safety action group may be established depending on the scope of the task and specific expertise required.
- (c) The safety action group should report to and take strategic direction from the safety review board and should be comprised of managers, supervisors and personnel from operational areas.
- (d) The safety action group should:
  - (1) monitor operational safety;
  - (2) resolve identified risks;
  - (3) assess the impact on safety of operational changes; and
  - (4) ensure that safety actions are implemented within agreed timescales.
- (e) The safety action group should review the effectiveness of previous safety recommendations and safety promotion.

#### **AMC1 ORA.GEN.200(a)(2) Management system**

##### **COMPLEX ORGANISATIONS – SAFETY POLICY**

- (a) The safety policy should:
  - (1) be endorsed by the accountable manager;
  - (2) reflect organisational commitments regarding safety and its proactive and systematic management;
  - (3) be communicated, with visible endorsement, throughout the organisation; and
  - (4) include safety reporting principles.
- (b) The safety policy should include a commitment:
  - (1) to improve towards the highest safety standards;
  - (2) to comply with all applicable legislation, meet all applicable standards and consider best practices;
  - (3) to provide appropriate resources;
  - (4) to enforce safety as one primary responsibility of all managers; and
  - (5) not to blame someone for reporting something which would not have been otherwise detected.
- (c) Senior management should:



- (1) continually promote the safety policy to all personnel and demonstrate their commitment to it;
- (2) provide necessary human and financial resources for its implementation;
- (3) and establish safety objectives and performance standards.

#### **GM1 ORA.GEN.200(a)(2) Management system**

##### **SAFETY POLICY**

The safety policy is the means whereby the organisation states its intention to maintain and, where practicable, improve safety levels in all its activities and to minimise its contribution to the risk of an aircraft accident as far as is reasonably practicable.

The safety policy should state that the purpose of safety reporting and internal investigations is to improve safety, not to apportion blame to individuals.

#### **AMC1 ORA.GEN.200(a)(3) Management system**

##### **COMPLEX ORGANISATIONS - SAFETY RISK MANAGEMENT**

###### **(a) Hazard identification processes**

- (1) Reactive and proactive schemes for hazard identification should be the formal means of collecting, recording, analysing, acting on and generating feedback about hazards and the associated risks that affect the safety of the operational activities of the organisation.
- (2) All reporting systems, including confidential reporting schemes, should include an effective feedback process.

###### **(b) Risk assessment and mitigation processes**

- (1) A formal risk management process should be developed and maintained that ensures analysis (in terms of likelihood and severity of occurrence), assessment (in terms of tolerability) and control (in terms of mitigation) of risks to an acceptable level.
- (2) The levels of management who have the authority to make decisions regarding the tolerability of safety risks, in accordance with (b)(1), should be specified.

###### **(c) Internal safety investigation**

- (1) The scope of internal safety investigations should extend beyond the scope of occurrences required to be reported to the GCAA.

###### **(d) Safety performance monitoring and measurement**

- (1) Safety performance monitoring and measurement should be the process by which the safety performance of the organisation is verified in comparison to the safety policy and objectives.
- (2) This process should include:

- (i) safety reporting;
- (ii) safety studies, that is, rather large analyses encompassing broad safety concerns;
- (iii) safety reviews including trends reviews, which would be conducted during introduction and deployment of new technologies, change or implementation of procedures, or in situations of structural change in operations;
- (iv) safety audits focusing on the integrity of the organisation's management system, and periodically assessing the status of safety risk controls; and
- (v) safety surveys, examining particular elements or procedures of a specific operation, such as problem areas or bottlenecks in daily operations, perceptions and opinions of operational personnel and areas of dissent or confusion.

(e) The management of change

The organisation should manage safety risks related to a change. The management of change should be a documented process to identify external and internal change that may have an adverse effect on safety. It should make use of the organisation's existing hazard identification, risk assessment and mitigation processes.

(f) Continuous improvement

The organisation should continuously seek to improve its safety performance. Continuous improvement should be achieved through:

- (1) proactive and reactive evaluations of facilities, equipment, documentation and procedures through safety audits and surveys;
- (2) proactive evaluation of individuals' performance to verify the fulfilment of their safety responsibilities; and
- (3) reactive evaluations in order to verify the effectiveness of the system for control and mitigation of risk.

(g) The emergency response plan (ERP)

- (1) An ERP should be established that provides the actions to be taken by the organisation or specified individuals in an emergency. The ERP should reflect the size, nature and complexity of the activities performed by the organisation.
- (2) The ERP should ensure:
  - (i) an orderly and safe transition from normal to emergency operations;
  - (ii) safe continuation of operations or return to normal operations as soon as practicable; and
  - (iii) coordination with the emergency response plans of other organisations, where appropriate.

## **GM1 ORA.GEN.200(a)(3) Management system**

### **INTERNAL OCCURRENCE REPORTING SCHEME**

- (a) The overall purpose of the scheme is to use reported information to improve the level of safety performance of the organisation and not to attribute blame.
- (b) The objectives of the scheme are to:
  - (1) enable an assessment to be made of the safety implications of each relevant incident and accident, including previous similar occurrences, so that any necessary action can be initiated; and
  - (2) ensure that knowledge of relevant incidents and accidents is disseminated, so that other persons and organisations may learn from them.
- (c) The scheme is an essential part of the overall monitoring function and it is complementary to the normal day-to-day procedures and 'control' systems and is not intended to duplicate or supersede any of them. The scheme is a tool to identify those instances where routine procedures have failed.
- (d) All occurrence reports judged reportable by the person submitting the report should be retained as the significance of such reports may only become obvious at a later date.

## **GM2 ORA.GEN.200(a)(3) Management system**

### **APPROVED TRAINING ORGANISATIONS - RISK MANAGEMENT OF FLIGHT OPERATIONS WITH KNOWN OR FORECAST VOLCANIC ASH CONTAMINATION**

#### **(a) Responsibilities**

The ATO is responsible for the safety of its operations, including within an area with known or forecast volcanic ash contamination.

The ATO should complete this assessment of safety risks related to known or forecast volcanic ash contamination as part of its management system before initiating operations into airspace forecast to be or aerodromes/operating sites known to be contaminated with volcanic ash.

This process is intended to ensure the ATO takes into account the likely accuracy and quality of the information sources it uses in its management system and to demonstrate its own competence and capability to interpret data from different sources in order to achieve the necessary level of data integrity reliably and correctly resolve any conflicts among data sources that may arise.

In order to decide whether or not to operate into airspace forecast to be or aerodromes/operating sites known to be contaminated with volcanic ash, the ATO should make use of the safety risk assessment within its management system as required by ORA.GEN.200.

The ATO's safety risk assessment should take into account all relevant data including data from the type certificate holders (TCHs) regarding the susceptibility of the aircraft they operate to volcanic cloud-related airworthiness effects, the nature and severity of these effects and the related pre-flight, in-flight and post-flight precautions to be observed by the ATO.

The ATO should ensure that personnel required to be familiar with the details of the safety risk assessments receives all relevant information (both pre-flight and in-flight) in order to be in a position to apply appropriate mitigation measures as specified by the safety risk assessments.

#### (b) Procedures

The ATO should have documented procedures for the management of operations into airspace forecast to be or aerodromes/operating sites known to be contaminated with volcanic ash.

These procedures should ensure that, at all times, flight operations remain within the accepted safety boundaries as established through the management system allowing for any variations in information sources, equipment, operational experience or organisation. Procedures should include those for flight crew and any other relevant personnel such that they are in a position to evaluate correctly the risk of flights into airspace forecast to be contaminated by volcanic ash and to plan accordingly.

Continuing airworthiness personnel should be provided with procedures allowing them to correctly assess the need for and to execute relevant maintenance or continuing airworthiness interventions.

The ATO should retain sufficient qualified and competent staff to generate well supported operational risk management decisions and ensure that its staff are appropriately trained and current. It is recommended that the ATO make the necessary arrangements for its relevant staff to take up opportunities to be involved in volcanic ash exercises conducted in their areas of operation.

#### (c) Volcanic activity information and the ATO's potential response

Before and during operations, information valuable to the ATO is generated by various volcano agencies worldwide. The ATO's risk assessment and mitigating actions need to take account of and respond appropriately to the information likely to be available during each phase of the eruptive sequence from pre-eruption through to end of eruptive activity. It is nevertheless noted that eruptions rarely follow a deterministic pattern of behaviour. A typical ATO's response may consist of the following:

##### (1) Pre-eruption

The ATO should have in place a robust mechanism for ensuring that it is constantly vigilant for any alerts of pre-eruption volcanic activity relevant to its operations. The staff involved need to understand the threat to safe operations that such alerts represent.

An ATO whose areas of activity include large, active volcanic areas for which immediate International Airways Volcano Watch (IAVW) alerts may not be available, should define its strategy for capturing information about increased volcanic activity before pre-eruption alerts are generated. For example, an ATO may combine elevated activity information with information concerning the profile and history of the volcano to determine an operating policy, which could include re-routing or restrictions at night. This would be useful when dealing with the 60% of volcanoes which are unmonitored.

Such an ATO should also ensure that its crews are aware that they may be the first to observe an eruption and so need to be vigilant and ready to ensure that this information is made available for wider dissemination as quickly as possible.

##### (2) Start of an eruption

Given the likely uncertainty regarding the status of the eruption during the early stages of an event and regarding the associated volcanic cloud, the ATO's procedures should include a requirement for crews to initiate re-routes to avoid the affected airspace.

The ATO should ensure that flights are planned to remain clear of the affected areas and that consideration is given to available aerodromes/operating sites and fuel requirements.

It is expected that the following initial actions will be taken by the ATO:

- (i) determine if any aircraft in flight could be affected, alert the crew and provide advice on re-routing as required;
- (ii) alert management;
- (iii) for flight departures, brief flight crew and revise flight and fuel planning in accordance with the safety risk assessment;
- (iv) alert flight crew to the need for increased monitoring of information (e.g. special air report (AIREP), volcanic activity report (VAR), significant weather information (SIGMET), NOTAMs and company messages);
- (v) initiate the gathering of all data relevant to determining the risk; and
- (vi) apply mitigations identified in the safety risk assessment.

### (3) On-going eruption

As the eruptive event develops, the ATO can expect the responsible Volcanic Ash Advisory Centre (VAAC) to provide volcanic ash advisory messages (VAA/VAGs) defining, as accurately as possible, the vertical and horizontal extent of areas and layers of volcanic clouds. As a minimum, the ATO should monitor, and take account of, this VAAC information as well as of relevant SIGMETs and NOTAMs.

Other sources of information are likely to be available such as VAR/AIREPs, satellite imagery and a range of other information from State and commercial organisations. The ATO should plan its operations in accordance with its safety risk assessment taking into account the information that it considers accurate and relevant from these additional sources.

The ATO should carefully consider and resolve differences or conflicts among the information sources, notably between published information and observations (pilot reports, airborne measurements, etc.).

Given the dynamic nature of the volcanic hazards, the ATO should ensure that the situation is monitored closely and operations adjusted to suit changing conditions.

The ATO should be aware that, depending on the State concerned the affected or danger areas may be established and presented in a different way than the one currently used in Europe as described in EUR Doc 019-NAT Doc 006.

The ATO should require reports from its crews concerning any encounters with volcanic emissions. These reports should be passed immediately to the appropriate air traffic services (ATS) unit and to the ATO's GCAA.

For the purpose of flight planning, the ATO should treat the horizontal and vertical limits of the temporary danger area (TDA) or airspace forecast to be contaminated by volcanic ash as applicable, to be over-flown as it would mountainous terrain, modified in accordance with its safety risk assessment. The ATO should take account of the risk of cabin depressurisation or engine failure resulting in the inability to maintain level flight above a volcanic cloud. Additional minimum Equipment List (MEL) provisions, if applicable, should be considered in consultation with the TCHs.

Flying below volcanic ash contaminated airspace should be considered on a case by case basis. It should only be planned to reach or leave an aerodrome/operating site close to the boundary of this airspace or where the ash contamination is very high and stable. The establishment of Minimum Sector Altitude (MSA) and the availability of aerodromes/operating sites should be considered.

#### (d) Safety risk assessment

When directed specifically at the issue of intended flight into airspace forecast to be or aerodromes/operating sites known to be contaminated with volcanic ash, the process should involve the following:

##### (1) Identifying the hazards

The generic hazard, in the context of this document, is airspace forecast to be or aerodromes/operating sites known to be contaminated with volcanic ash, and whose characteristics are harmful to the airworthiness and operation of the aircraft.

This GM is referring to volcanic ash contamination since it is the most significant hazard for flight operations in the context of a volcanic eruption. Nevertheless, it might not be the only hazard and therefore the operator should consider additional hazards which could have an adverse effect on aircraft structure or passengers safety such as gases.

Within this generic hazard, the ATO should develop its own list of specific hazards taking into account its specific aircraft, experience, knowledge and type of operation, and any other relevant data stemming from previous eruptions.

- (2) Considering the severity and consequences of the hazard occurring (i.e. the nature and actual level of damage expected to be inflicted on the particular aircraft from exposure to that volcanic ash cloud).
- (3) Evaluating the likelihood of encountering volcanic ash clouds with characteristics harmful to the safe operation of the aircraft.

For each specific hazard within the generic hazard, the likelihood of adverse consequences should be assessed, either qualitatively or quantitatively.

- (4) Determining whether the consequent risk is acceptable and within the ATO's risk performance criteria.

At this stage of the process, the safety risks should be classified as acceptable or unacceptable. The assessment of tolerability will be subjective, based on qualitative data and expert judgement, until specific quantitative data are available in respect of a range of parameters.

- (5) Taking action to reduce the safety risk to a level that is acceptable to the ATO's management.

Appropriate mitigation for each unacceptable risk identified should then be considered in order to reduce the risk to a level acceptable to the ATO's management.

(e) Procedures to be considered when identifying possible mitigations actions

When conducting a volcanic ash safety risk assessment, the ATO should consider the following non-exhaustive list of procedures and processes as mitigation:

(1) Type certificate holders

Obtaining advice from the TCHs and other engineering sources concerning operations in potentially contaminated airspace and/or aerodromes/operating sites contaminated by volcanic ash.

This advice should set out:

- (i) the features of the aircraft that are susceptible to airworthiness effects related to volcanic ash;
- (ii) the nature and severity of these effects;
- (iii) the effect of volcanic ash on operations to/from contaminated aerodromes/operating sites, including the effect on take-off and landing aircraft performance;
- (iv) the related pre-flight, in-flight and post-flight precautions to be observed by the ATO including any necessary amendments to aircraft operating manuals, aircraft maintenance manuals, master minimum equipment list/dispatch deviation or equivalents required to support the ATO; and
- (v) the recommended inspections associated with inadvertent operations in volcanic ash contaminated airspace and operations to/from volcanic ash contaminated aerodromes/operating sites; this may take the form of instructions for continuing airworthiness or other advice.

(2) ATO/contracted organisations' personnel

Definition of procedures for flight planning and operations ensuring that:

- (i) flight crews are in a position to evaluate correctly the risk of encountering volcanic ash contaminated airspace, or aerodromes/operating sites, and can plan accordingly;

- (ii) flight planning and operational procedures enable crews to avoid areas and aerodromes/operating sites with unacceptable volcanic ash contamination;
- (iii) flight crew are aware of the possible signs of entry into a volcanic ash cloud and execute the associated procedures;
- (iv) continuing airworthiness personnel are able to assess the need for, and to execute, any necessary maintenance or other required interventions; and
- (v) crews are provided with appropriate aircraft performance data when operating to/from aerodromes/operating sites contaminated with volcanic ash.

### (3) Provision of enhanced flight watch

This should ensure:

- (i) close and continuous monitoring of VAA, VAR/AIREP, SIGMET, NOTAM and ASHTAM and other relevant information, and information from crews, concerning the volcanic ash cloud hazard;
- (ii) access to plots of the affected areas from SIGMETs, NOTAMs and other relevant information for crews; and
- (iii) communication of the latest information to crews in a timely fashion.

### (4) Flight planning

Flexibility of the process to allow re-planning at short notice should conditions change.

### (5) Departure, destination and alternate aerodromes

For the airspace to be traversed, or the aerodromes/operating sites in use, parameters to evaluate and take account of:

- (i) the probability of contamination;
- (ii) any additional aircraft performance requirements;
- (iii) required maintenance considerations;
- (iv) fuel requirements for re-routeing and extended holding

### (6) Routing policy

Parameters to evaluate and take account of:

- (i) the shortest period in and over the forecast contaminated area;
- (ii) hazards associated with flying over the contaminated area;
- (iii) drift down and emergency descent considerations;



- (iv) the policy for flying below the contaminated airspace and the associated hazards.

(7) Diversion policy

Parameters to evaluate and take account of:

- (i) maximum allowed distance from a suitable aerodrome/operating site;
- (ii) availability of aerodromes/operating sites outside the forecast contaminated area;
- (iii) diversion policy after a volcanic ash encounter.

(8) Minimum equipment list

Additional provisions in the MEL, if applicable, for dispatching aircraft with unserviceability's that might affect the following non-exhaustive list of systems:

- (i) air conditioning packs;
- (ii) engine bleeds;
- (iii) pressurisation system;
- (iv) electrical power distribution system;
- (v) air data system;
- (vi) standby instruments;
- (vii) navigation systems;
- (viii) de-icing systems;
- (ix) engine driven generators;
- (x) auxiliary power unit (APU);
- (xi) airborne collision avoidance system (ACAS);
- (xii) terrain awareness warning system (TAWS);
- (xiii) autoland systems;
- (xiv) provision of crew oxygen; (xv) supplemental oxygen for passengers.

(9) Standard operating procedures

Crew training to ensure they are familiar with normal and abnormal operating procedures and particularly any changes regarding but not limited to:

- (i) pre-flight planning;
- (ii) in-flight monitoring of volcanic ash cloud affected areas and avoidance procedures;
- (iii) diversion;
- (iv) communications with ATC;
- (v) in-flight monitoring of engine and systems potentially affected by volcanic ash cloud contamination;
- (vi) recognition and detection of volcanic ash clouds and reporting procedures;
- (vii) in-flight indications of a volcanic ash cloud encounter;
- (viii) procedures to be followed if a volcanic ash cloud is encountered;
- (ix) unreliable or erroneous airspeed;
- (x) non-normal procedures for engines and systems potentially affected by volcanic ash cloud contamination;
- (xi) engine-out and engine relight;
- (xii) escape routes; and
- (xiii) operations to/from aerodromes/operating sites contaminated with volcanic ash.

#### (10) Provision for aircraft technical log

This should ensure:

- (i) Systematic entry in the aircraft continuing airworthiness records or aircraft log if available related to any actual or suspected volcanic ash encounter whether in-flight or at an aerodrome/operating site; and
- (ii) Checking, prior to flight, of the completion of maintenance actions related to an entry in the continuing airworthiness records or aircraft log if available for a volcanic ash cloud encounter on a previous flight.

#### (11) Incident reporting

Crew requirements for:

- (i) reporting an airborne volcanic ash cloud encounter (VAR);
- (ii) post-flight volcanic ash cloud reporting (VAR);
- (iii) reporting non encounters in airspace forecast to be contaminated; and

- (iv) filing a mandatory occurrence report in accordance with ORA.GEN.160.

(12) Continuing airworthiness procedures

Procedures when operating in or near areas of volcanic ash cloud contamination:

- (i) enhancement of vigilance during inspections and regular maintenance and appropriate adjustments to maintenance practices;
- (ii) definition of a follow-up procedure when a volcanic ash cloud encounter has been reported or suspected;
- (iii) thorough investigation for any sign of unusual or accelerated abrasions or corrosion or of volcanic ash accumulation;
- (iv) reporting to TCHs and the relevant authorities observations and experiences from operations in areas of volcanic ash cloud contamination;
- (v) completion of any additional maintenance recommended by the TCH or by the GCAA.

(f) Reporting

The ATO should ensure that reports are immediately submitted to the nearest ATS unit using the VAR/AIREP procedures followed up by a more detailed VAR on landing together with, as applicable, a report as defined in the applicable Accident and Incident Investigations and Occurrence Reporting regulations, and an aircraft technical log entry for:

- (1) any incident related to volcanic clouds;
- (2) any observation of volcanic ash activity and
- (3) anytime that volcanic ash is not encountered in an area where it was forecast to be

(g) Additional guidance

Further guidance on volcanic ash safety risk assessment is given in ICAO Doc. 9974 (Flight safety and volcanic ash – Risk management of flight operations with known or forecast volcanic ash contamination).

**GM3 ORA.GEN.200(a)(3) Management system**

**SAFETY RISK ASSESSMENT – RISK REGISTER**

The results of the assessment of the potential adverse consequences or outcome of each hazard may be recorded by the ATO in a risk register, an example of which is provided below.

**AMC1 ORA.GEN.200(a)(4) Management system**

**TRAINING AND COMMUNICATION ON SAFETY**

(a) Training

- (1) All personnel should receive safety training as appropriate for their safety responsibilities.
- (2) Adequate records of all safety training provided should be kept.

(b) Communication

- (1) The organisation should establish communication about safety matters that:
  - (i) ensures that all personnel are aware of the safety management activities as appropriate for their safety responsibilities;
  - (ii) conveys safety critical information, especially relating to assessed risks and analysed hazards;
  - (iii) explains why particular actions are taken; and
  - (iv) explains why safety procedures are introduced or changed.
- (2) Regular meetings with personnel where information, actions and procedures are discussed may be used to communicate safety matters.

**GM1 ORA.GEN.200(a)(4) Management system**

TRAINING AND COMMUNICATION ON SAFETY

The safety training programme may consist of self-instruction via a combination of media (newsletters, flight safety magazines), class-room training, e-learning or similar training provided by training service providers.

**AMC1 ORA.GEN.200(a)(5) Management system**

ORGANISATION'S MANAGEMENT SYSTEM DOCUMENTATION

- (a) The organisation's management system documentation should at least include the following information:
  - (1) a statement signed by the accountable manager to confirm that the organisation will continuously work in accordance with the applicable requirements and the organisation's documentation as required by and CAR-ORA;
  - (2) the organisation's scope of activities;
  - (3) the titles and names of persons referred to in ORA.GEN.210 (a) and (b);
  - (4) an organisation chart showing the lines of responsibility between the persons referred to in ORA.GEN.210;
  - (5) a general description and location of the facilities referred to in ORA.GEN.215;
  - (6) procedures specifying how the organisation ensures compliance with the applicable requirements;

- (7) the amendment procedure for the organisation's management system documentation.
- (b) The organisation's management system documentation may be included in a separate manual or in (one of) the manual(s) as required by the applicable Subpart(s). A cross reference should be included.

#### **AMC2 ORA.GEN.200(a)(5) Management system**

##### **COMPLEX ORGANISATIONS – ORGANISATION'S SAFETY MANAGEMENT MANUAL**

- (a) The safety management manual (SMM) should be the key instrument for communicating the approach to safety for the whole of the organisation. The SMM should document all aspects of safety management, including the safety policy, objectives, procedures and individual safety responsibilities.
- (b) The contents of the safety management manual should include all of the following:
  - (1) scope of the safety management system;
  - (2) safety policy and objectives;
  - (3) safety accountability of the accountable manager;
  - (4) safety responsibilities of key safety personnel;
  - (5) documentation control procedures;
  - (6) hazard identification and risk management schemes;
  - (7) safety action planning;
  - (8) safety performance monitoring;
  - (9) incident investigation and reporting;
  - (10) emergency response planning;
  - (11) management of change (including organisational changes with regard to safety responsibilities);
  - (12) safety promotion.
- (c) The SMM may be contained in (one of) the manual(s) of the organisation.

#### **GM1 ORA.GEN.200(a)(5) Management system**

##### **ORGANISATION'S MANAGEMENT SYSTEM DOCUMENTATION**

- (a) It is not required to duplicate information in several manuals, provided all manuals are referenced to the correct information in the host manual. The information may be contained in any of the organisation manuals (e.g. operations manual, training manual).
- (b) The organisation may also choose to document some of the information required to be documented in separate documents (e.g. procedures). In this case, it should ensure that manuals contain adequate

references to any document kept separately. Any such documents are then to be considered an integral part of the organisation's management system documentation.

## **AMC1 ORA.GEN.200(a)(6) Management System**

### **COMPLIANCE MONITORING – GENERAL**

#### **(a) Compliance monitoring**

The implementation and use of a compliance monitoring function should enable the organisation to monitor compliance with the relevant requirements of this Regulation and other applicable Regulations.

- (1) The organisation should specify the basic structure of the compliance monitoring function applicable to the activities conducted.
- (2) The compliance monitoring function should be structured according to the size of the organisation and the complexity of the activities to be monitored.

#### **(b) Organisations should monitor compliance with the procedures they have designed to ensure safe activities. In doing so, they should as a minimum, and where appropriate, monitor:**

- (1) privileges of the organisation;
- (2) manuals, logs, and records;
- (3) training standards;
- (4) management system procedures and manuals.

#### **(c) Organisational set-up**

- (1) To ensure that the organisation continues to meet the requirements of this Regulation and other applicable Regulations, the accountable manager should designate a compliance monitoring manager. The role of the compliance monitoring manager is to ensure that the activities of the organisation are monitored for compliance with the applicable regulatory requirements, and any additional requirements as established by the organisation, and that these activities are being carried out properly under the supervision of the relevant head of functional area.
- (2) The compliance monitoring manager should be responsible for ensuring that the compliance monitoring programme is properly implemented, maintained and continually reviewed and improved.
- (3) The compliance monitoring manager should:
  - (i) have direct access to the accountable manager;
  - (ii) not be one of the other persons referred to in ORA.GEN.210 (b);

- (iii) be able to demonstrate relevant knowledge, background and appropriate experience related to the activities of the organisation; including knowledge and experience in compliance monitoring; and
  - (iv) have access to all parts of the organisation, and as necessary, any contracted organisation.
- (1) In the case of a non-complex organisation, this task may be exercised by the accountable manager provided he/she has demonstrated having the related competence as defined in (c)(3)(iii).
- (2) In a non-complex organization when in the case the same person acts as compliance monitoring manager and as safety manager, the accountable manager, with regards to his/her direct accountability for safety, should ensure that sufficient resources are allocated to both functions, taking into account the size of the organisation and the nature and complexity of its activities.
- (3) The independence of the compliance monitoring function should be established by ensuring that audits and inspections are carried out by personnel not responsible for the function, procedure or products being audited.

In the case that the compliance monitoring function is intended to be outsourced, to external auditors or by other means, it has to be prior accepted by GCAA.

(d) Compliance monitoring documentation

- (1) Relevant documentation should include the relevant part(s) of the organisation's management system documentation.
- (2) In addition, relevant documentation should also include the following:
  - (i) terminology;
  - (ii) specified activity standards;
  - (iii) a description of the organisation;
  - (iv) the allocation of duties and responsibilities;
  - (v) procedures to ensure regulatory compliance;
  - (vi) the compliance monitoring programme, reflecting:
    - (A) schedule of the monitoring programme;
    - (B) audit procedures;
    - (C) reporting procedures;
    - (D) follow-up and corrective action procedures; and
    - (E) recording system.

(vii) the training syllabus referred to in (e)(2);

(viii) document control.

(ix) Training

- (3) Correct and thorough training is essential to optimise compliance in every organisation. In order to achieve significant outcomes of such training, the organisation should ensure that all personnel understand the objectives as laid down in the organisation's management system documentation.
- (4) Those responsible for managing the compliance monitoring function should receive training on this task. Such training should cover the requirements of compliance monitoring, manuals and procedures related to the task, audit techniques, reporting and recording.
- (5) Time should be provided to train all personnel involved in compliance management and for briefing the remainder of the personnel.
- (6) The allocation of time and resources should be governed by the volume and complexity of the activities concerned.

#### **GM1 ORA.GEN.200(a)(6) Management system**

##### **COMPLIANCE MONITORING – GENERAL**

- (a) The organisational set-up of the compliance monitoring function should reflect the size of the organisation and the nature and complexity of its activities. The compliance monitoring manager may perform all audits and inspections himself/herself or appoint one or more auditors by choosing personnel having the related competence as defined in AMC1 ORA.GEN.200(a)(6) point (c)(3)(iii), either from within or outside the organisation.
- (b) Regardless of the option chosen it must be ensured that the independence of the audit function is not affected, in particular in cases where those performing the audit or inspection are also responsible for other functions within the organisation.
- (c) In case external personnel are used to perform compliance audits or inspections:
  - (1) any such audits or inspections are performed under the responsibility of the compliance monitoring manager; and
  - (2) the organisation remains responsible to ensure that the external personnel have relevant knowledge, background and experience as appropriate to the activities being audited or inspected; including knowledge and experience in compliance monitoring.
  - (3) The GCAA should accept the suitability of the selected organization, including personal and procedures.
- (d) The organisation retains the ultimate responsibility for the effectiveness of the compliance monitoring function in particular for the effective implementation and follow-up of all corrective actions.



## **GM2 ORA.GEN.200(a)(6) Management system**

### **COMPLEX ORGANISATIONS - COMPLIANCE MONITORING PROGRAMME FOR ATO's**

- (a) Typical subject areas for compliance monitoring audits and inspections for approved training organisations (ATOs) should be the following:
  - (1) facilities;
  - (2) actual flight and ground training;
  - (3) technical standards.
- (b) ATOs should monitor compliance with the training and operations manuals they have designed to ensure safe and efficient training. In doing so, they should, where appropriate, additionally monitor the following:
  - (1) training procedures;
  - (2) flight safety;
  - (3) flight and duty time limitations, rest requirements and scheduling;
  - (4) aircraft maintenance/operations interface.

## **GM3 ORA.GEN.200(a)(6) Management system**

### **AUDIT AND INSPECTION**

- (a) 'Audit' means a systematic, independent and documented process for obtaining evidence and evaluating it objectively to determine the extent to which requirements are complied with.
- (b) 'Inspection' means an independent documented conformity evaluation by observation and judgement accompanied as appropriate by measurement, testing or gauging, in order to verify compliance with applicable requirements.

## **AMC1 ORA.GEN.200(b) Management system**

### **SIZE, NATURE AND COMPLEXITY OF THE ACTIVITY**

- (a) An organisation should be considered as complex when it has a workforce of more than 20 full time personnel involved in any activity subject to applicable regulatory requirements.
- (b) Organisations with up to 20 full time personnel as stated in AMC1 ORA.GEN.200(b)(a) above, may also be considered complex based on an assessment of the following factors:
  - (1) in terms of complexity, the extent and scope of contracted activities subject to the approval;
  - (2) in terms of risk criteria, whether any of the following are present:

- (i) operations requiring the following specific approvals: performance-based navigation (PBN), low visibility operation (LVO), extended range operations with two-engined aeroplanes (ETOPS), helicopter hoist operation (HHO), helicopter emergency medical service (HEMS), night vision imaging system (NVIS) and dangerous goods (DG);
  - (ii) different types of aircraft used;
  - (iii) the environment (offshore, mountainous area etc.);
  - (iv) the number of courses of training offered, in this case, more than four approved courses of training
- (c) Regardless of the criteria mentioned in (a) and (b), the following organisations should always be considered as non-complex:
  - (1) Approved Training Organisations (ATOs) only providing training for the light aircraft pilot licence (LAPL), private pilot licence (PPL), sailplane pilot licence (SPL) or balloon pilot licence (BPL) and the associated ratings and certificates
  - (2) Aero-Medical Centres (AeMCs).

#### **AMC1 ORA.GEN.205 Contracted activities**

##### **RESPONSIBILITY WHEN CONTRACTING ACTIVITIES**

- (a) The organisation may decide to contract certain activities to external organisations.
- (b) A written agreement should exist between the organisation and the contracted organisation clearly defining the contracted activities and the applicable requirements.
- (c) The contracted safety related activities relevant to the agreement should be included in the organisation's safety management and compliance monitoring programmes.
- (d) The organisation should ensure that the contracted organisation has the necessary authorisation or approval when required, and commands the resources and competence to undertake the task.

#### **GM1 ORA.GEN.205 Contracted activities**

##### **RESPONSIBILITY WHEN CONTRACTING ACTIVITIES**

- (a) Regardless of the approval status of the contracted organisation, the contracting organisation is responsible to ensure that all contracted activities are subject to hazard identification and risk management as required by ORA.GEN.200 (a)(3) and to compliance monitoring as required by ORA.GEN.200 (a)(6).
- (b) When the contracted organisation is itself certified to carry out the contracted activities, the organisation's compliance monitoring should at least check that the approval effectively covers the contracted activities and that it is still valid.

- (c) If the organisation requires the contracted organisation to conduct an activity which exceeds the contracted organisation's terms of approval, this will be considered as the contracted organisation working under the approval of the contracting organisation.

#### **AMC1 ORA.GEN.210 Personnel requirements**

##### **ACCOUNTABLE MANAGER REQUIREMENTS**

- (a) The Accountable Manager should be a person acceptable to the GCAA who has authority for ensuring that all approved activities can be financed and carried out to the standards required by the GCAA, and additional requirements defined by the approved organization. This person should have extensive experience in running successful businesses, preferably in the aviation industry. If the individual has not previously held the post of Accountable Manager, they should attend a GCAA acceptable Accountable Manager training course, a GCAA acceptable compliance course, a GCAA acceptable SMS Course, and any other courses deemed necessary based on the background of the individual.

#### **AMC1 ORA.GEN.215 Facility requirements**

##### **ATOs PROVIDING TRAINING FOR THE CPL, MPL AND ATPL AND THE ASSOCIATED RATINGS AND CERTIFICATES**

- (a) For ATOs providing flight training, the following flight operations accommodation should be available:
- (1) an operations room with facilities to control flying operations;
  - (2) a flight planning room with the following facilities:
    - (i) appropriate current maps and charts;
    - (ii) current aeronautical information service (AIS) information;
    - (iii) current meteorological information;
    - (iv) communications to air traffic control (ATC) and the operations room;
    - (v) any other flight safety related material.
  - (3) adequate briefing rooms/cubicles of sufficient size and number;
  - (4) suitable offices for the supervisory personnel and room(s) to allow flight instructors to write reports on students, complete records and other related documentation;
  - (5) furnished crew-room(s) for instructors and students.
- (b) For ATOs providing theoretical knowledge training, the following facilities for theoretical knowledge instruction should be available:
- (1) adequate classroom accommodation for the current student population;
  - (2) suitable demonstration equipment to support the theoretical knowledge instruction;

- (3) a radiotelephony training and testing facility;
- (4) a reference library containing publications giving coverage of the syllabus;
- (5) offices for the instructional personnel.

#### **AMC2 ORA.GEN.215 Facility requirements**

##### **ATOs PROVIDING TRAINING FOR THE LAPL, PPL, SPL OR BPL AND THE ASSOCIATED RATINGS AND CERTIFICATES**

- (a) The following flight operations accommodation should be available:
  - (1) a flight planning room with the following facilities:
    - (i) appropriate current aviation maps and charts;
    - (ii) current AIS information;
    - (iii) current meteorological information;
    - (iv) communications to ATC (if applicable);
    - (v) any other flight safety related material.
  - (2) adequate briefing room(s)/cubicles of sufficient size and number;
  - (3) suitable office(s) to allow flight instructors to write reports on students, complete records and other related documentation;
  - (4) suitable rest areas for instructors and students, where appropriate to the training task;
  - (5) in the case of ATOs providing training for the BPL or LAPL(B) only, the flight operations accommodation listed in (a)(1) to (a)(4) may be replaced by other suitable facilities when operating outside aerodromes.
- (b) The following facilities for theoretical knowledge instruction should be available:
  - (1) adequate classroom accommodation for the current student population;
  - (2) suitable demonstration equipment to support the theoretical knowledge instruction;
  - (3) suitable office(s) for the instructional personnel.
- (c) A single room will not be sufficient to provide the functions listed in (a) and (b).

## **AMC1 ORA.GEN.220(b) Record-keeping**

### **GENERAL**

- (a) The record-keeping system should ensure that all records are accessible whenever needed within a reasonable time. These records should be organised in a way that ensures traceability and retrievability throughout the required retention period.
- (b) Records should be kept in paper form or in electronic format or a combination of both as agreed with and by the GCAA. Records stored on microfilm or optical disc format are also acceptable. The records should remain legible throughout the required retention period. The retention period starts when the record has been created or last amended.
- (c) Paper systems should use robust material which can withstand normal handling and filing. Computer systems should have at least one backup system which should be updated within 24 hours of any new entry. Computer systems should include safeguards against the ability of unauthorised personnel to alter the data.
- (d) All computer hardware used to ensure data backup should be stored in a different location from that containing the working data and in an environment that ensures they remain in good condition. When hardware or software changes take place, special care should be taken that all necessary data continues to be accessible at least through the full period specified in the relevant Subpart. In the absence of such indication, all records should be kept for a minimum period of 5 years.

## **AMC2 ORA.GEN.220(b) Record-keeping**

### **GENERAL**

Proportionate to the size and scope of the operation, administrative staff should be provided to accomplish the routine administration of courses. The HT or the nominated person should be responsible for ensuring that all records are acceptable to the GCAA and maintained in respect of flight, theoretical knowledge, and synthetic flight training undertaken.

### **CONTENT**

The form and content of the student training records is to be specified in the Training Manual in accordance with ORA.GEN.220, and be acceptable to the GCAA and appropriate to the courses conducted.

The records should include:

- (a) The personal details of each student, including name, address, telephone number, GCAA medical and licence number (if applicable), next of kin information, previous experience and evidence of pre-entry requirements (e.g. copies of licence/rating pages, theoretical knowledge examination passed, course completion certificates, copies of Skill Test forms, and Medical certificates), and qualifications including summary of any credit to which the student may be entitled and an assessment of his/her suitability to undertake the course;
- (b) A cumulative record of theoretical knowledge lessons attended by subject;
- (c) Regular reports by subject with the instructor's name and written (or typed in the case of an electronic system) by the instructor on the student's performance and the progress and other factors such as

attitude, manner during individual lessons, and during the course as a whole. Students should sign each report acknowledging its contents;

- (d) Cumulative flying training achieved, and where applicable, synthetic flight training achieved;
- (e) For each training flight or synthetic flight training event, the date, the aircraft registration, or FSTD identification, the flight time (logged in accordance with AMC1 FCL.050), the instructor's name, the syllabus exercise number and written comments by the instructor on the student's performance, progress and other factors such as attitude and manner during the event and the course as a whole. The record should indicate the standard achieved in relation to the laid down performance standard and any deviation from the syllabus including incomplete items. Students should sign each report acknowledging the event debrief and the content of the record;
- (f) A summary of flying exercises completed with the date on which each exercise was carried out in the air or in a FSTD;
- (g) Relating to the student's progress, summary reports and the results of progress phase tests, skills tests and theoretical knowledge examinations including arrangements for remedial training after failed tests/examinations;
- (h) Training in aircraft emergency procedures, to be recorded separately;
- (i) All records should indicate the date training commenced and the date of completion. Where students do not complete the course the record should indicate the circumstances under which training ceased. The students overall performance and attitude to training should be summarized on completion or termination of the course.
- (j) For all courses of training a GCAA medical certificate should be obtained prior to the commencement of training.
- (k) All applicable training records should be made available to examiners prior to any test in accordance with FCL.030(b).
- (l) All records should be kept for a minimum of five years.

### **AMC3 ORA.GEN.220(b) Record-keeping**

#### **COURSE COMPLETION CERTIFICATES**

On satisfactory completion of a course of instruction, the trainee is to be given a certificate of Course Completion, signed by the HT, and the CFI or CSFI. A sample of the certificate should be included in the training manual, and the names of those individual postholders approved to sign course completion certificates must be listed in the GCAA approved Operations Manual for the ATO.

### **AMC4 ORA.GEN.220(b) Record-keeping**

#### **TRANSFER OF STUDENT RECORDS**

- (a) The GCAA should accept a student transferring from one ATO to another when partway through a course in accordance with the following requirements:

- (b) The receiving ATO should have a copy of all training records and other relevant information as outlined in AMC2 ORA.GEN.220(b), certifying the training and experience completed up until the date of transfer.
- (c) Credit should be given in full for all adequately documented solo, dual instruction, or Pilot-in-Command (PIC) flight time completed as part of an approved course of training for the license, rating or certificate.
- (d) Credit should be given against the receiving ATO's course, and in some cases, this will require additional theoretical knowledge and or flight training in order to meet the receiving ATO's approved course of training.
- (e) The HT of the receiving ATO should assess the student and determine the balance of training and experience required to complete the course and any additional training necessary to cover transition from the previous partly completed course. The HT should then provide a summary and make a recommendation to the Licensing Department of the GCAA to obtain acceptance of the transfer with the associated credit.
- (f) The trainee should complete the balance of all training, examinations, flight time and should complete any additional training necessary as specified by the HT of the receiving ATO, as agreed by the GCAA
- (g) Records can only be released from one ATO to another, once requested by the student. All ATO's are required to give certified true copies to the receiving ATO once the request has been made, within five working days. These records are to be sent directly to the HT of the receiving ATO and the student notified of the transfer being completed. The original records should remain with the originating ATO.

#### **AMC5 ORA.GEN.220(b) Record-keeping**

The format of the records should be accepted by the GCAA as part of the initial approval and re-approval of the ATO's certificate. Changes to the record keeping process should be accepted by the GCAA. The records should be as legible as the original record and remain so for the required retention period

## **SUBPART B - APPROVED TRAINING ORGANISATIONS**

### **SECTION I – GENERAL**

#### **GM1 ORA.ATO.100 Scope**

The content of this Section contains the requirements applicable to all ATO's providing training for pilot licences and the associated ratings and certificates.

It is applicable to ATO's providing training for:

- (a) the LAPL, PPL, SPL and BPL and the associated ratings and certificates; and
- (b) the commercial pilot licence (CPL), multi-crew pilot licence (MPL) and airline transport pilot licence (ATPL) and the associated ratings and certificates.

#### **AMC1 ORA.ATO.105 Application**

##### **APPLICATION FORM**

Applications should be made utilizing appropriate GCAA forms as made available on GCAA website. In addition to these forms all required documentation outlined in CAR-ORA ORA.ATO.105 should be submitted to the GCAA at the time of application.

#### **AMC2 ORA.ATO.105 Application**

##### **OPERATIONAL PUBLICATIONS**

The following operational publications should be immediately available to students and staff and, where applicable, kept current by amendments.

- (a) A full set of UAE GCAA regulations to include at a minimum:
  - (1) UAE GCAA Civil Aviation Regulations
  - (2) UAE GCAA Civil Aviation Advisory Publications
  - (3) UAE GCAA Information Bulletins
  - (4) UAE GCAA Licensing Directives.
  - (5) Any other UAE GCAA applicable Guidance Material
- (b) UAE GCAA Aeronautical Information Publication (AIP)
- (c) light Manuals for the aircraft used on the course(s) on offer
- (d) ATC Flight Plan and explanatory material/guide
- (e) Standard meteorology reports and forecasts (in document or computer based formats)



- (f) Flight planning documents including flight guide supplements, radio navigation charts, TMA/CTR arrival/departure charts, SID/STAR and aerodrome Instrument Approach Procedure charts. These may be in proprietary flight guides acceptable to the GCAA, e.g. Jeppesen
- (g) NOTAM's
- (h) A current copy of the ATO's Operations Manual, Training Manual(s)

Where documents are maintained in electronic format they should be provided on one or more computers dedicated for this purpose. The number of computers should reflect the number of students. They should be located in such a manner that students have access without having to enter staff offices. A form of electronic document control should be employed that identifies the documents held in electronic format and the current amendment state of each document. Web-based documentation is acceptable providing backups are available in hard copy and that the number of computers reflects the number of students

### **AMC3 ORA.ATO.105 Application**

This section sets out the means of compliance for the GCAA to be satisfied that ATO's have sufficient funding available to conduct training to the approved standards and to address the maintenance of acceptable flying training standards throughout the duration of a course. The grant and revalidation of an approval cannot therefore be construed as a guarantee of the underlying financial soundness of the organisation. It is an indication, on the basis of financial information provided, that the approved organisation can provide sufficient facilities and qualified staff such that flying training can be, or can continue to be, provided in accordance with relevant GCAA regulations, training requirements and standards.

Any application for initial approval or revalidation is to be supported by a plan, covering the period of approval which is five years, which includes at least the following information:

- (a) Training facilities and number of students
- (b) Details, as appropriate, of:
  - (1) The number and types of training aircraft that will be used;
  - (2) The number of flight and ground instructors that will be employed;
  - (3) The number of classrooms and other types of training facilities (synthetic training devices, etc.) intended for use;
  - (4) The supporting infrastructure (staff offices, operations room, briefing rooms, rest rooms, hangars, etc.)
  - (5) The planned number of students (by month and course)
- (c) Financial Details
  - (1) Capital expenditure necessary to provide the planned facilities;
  - (2) Costs associated with running each of the courses for which approval is sought;

- (3) Income forecasts for the period of approval;
- (4) A forecast financial operating statement for the business for which approval is sought;
- (5) Details of any other financial trading arrangement on which the viability of the approved organisation may be dependent.

The plan submitted in support of an application for initial approval or revalidation is to be accompanied by a Financial Statement from the applicant's bankers or auditors, which certifies that the applicant has, or has recourse to, sufficient financial resources to meet the applicant's proposals as described in the plan to conduct GCAA approved courses. An appropriately revised Financial Statement will be required whenever the applicants wish to expand their activities in addition to those described in the plan, in order to satisfy the requirements of the GCAA regulations.

After approval has been granted, if the GCAA has reason to believe that the necessary standards of compliance with the GCAA regulations are not being met or may not be met due to a lack or apparent lack of financial resources, the GCAA may require the organisation to demonstrate in a written submission that sufficient funds can and will be made available to continue to meet the terms of approval, or such modifications to it as may have been agreed with the Authority. Any such submission is to be accompanied by a further Financial Statement signed by the approved organisation's bankers or auditors. The GCAA may also require a Financial Statement if it appears to the GCAA that operation of the approved course(s) is significantly at variance with the proposals contained in the business plan.

#### **AMC4 ORA.ATO.105 Application**

##### **APPLICATION PROCESS – GENERAL INFORMATION**

The application process for approval of an ATO consists of five distinct phases:

- (a) Pre-Application Phase.
- (b) Formal Application Phase
- (c) Document Evaluation Phase
- (d) Inspection and Proving Training Flights Evaluation Phase
- (e) Certification Phase

It is the GCAA's experience that considerable resources and effort are required to prepare an initial application for approval, particularly in relation to the development of the required documentation. Therefore, organizations should make realistic assumptions from the outset as to how long it will take to obtain approval, and are strongly recommended to inform the GCAA of their intentions to start an ATO at an early stage of planning.

##### **APPLICATION PROCESS – PRE-APPLICATION PHASE**

The pre-application phase occurs when the applicant meets with the GCAA Director of Licensing (and selected Inspectors from the appropriate Licensing Specialty) and discusses generally the initial plans and the viability of different proposals. The applicant should contact the GCAA office in Dubai and bring a pre-

application statement of intent to this meeting regarding the proposed operations and types of training and sequence of events. This meeting is to be requested when details of the training operations/activities are known and will be attended by the GCAA assigned inspectors.

#### PRE APPLICATION STATEMENT OF INTENT

The pre-application Statement of Intent is reviewed by the Director General of the General Civil Aviation Authority and this statement should be in the form of a letter from the owner and, or sponsor. It should contain at least the information as outlined in CAR-ORA ORA.ATO.105 (a), (b) and (c) as well as the following information (as applicable to the organizational scope and structure):

- (a) Type(s) of Training
- (b) Type(s) of aircraft
- (c) Proposed areas for training
- (d) Nature of aircraft (owned or leased)
- (e) Nature of simulation (owned or leased)
- (f) Location of main base of training and other facilities
- (g) Management organizational structure and the qualifications of the proposed Accountable Manager, Head of Training, Chief Flight Instructor/Chief Synthetic Flight Instructor, Chief Theoretical Knowledge Instructor, Compliance Manager, Safety Manager, and Maintenance Manager.
- (h) Proposed training organization name and corporate body sponsor
- (i) Approximate date of commencement
- (j) Trade License
- (k) Passport copy of owner(s)/sponsor(s) & passport photo of owner(s)/sponsor(s)
- (l) No objection letter or approval to base aircraft at the relevant airport from the Department of Civil Aviation/Department of Transport
- (m) Security Clearance (through GCAA website)

#### PRE APPLICATION PROCESS

On the basis of the information provided by the ATO, as outlined above, the GCAA will provide the applicant with the following information:

- (a) Application procedures including required forms
- (b) Required Documents (as outlined by CAR-FCL and CAR-ORA)
- (c) General operating and airworthiness advice

- (d) Approval requirements for other government authorities
- (e) Regulatory feasibility
- (f) Required GCAA fees

The GCAA requires 30 working days for a final decision to be made on the preliminary assessment.

#### APPLICATION PROCESS – FORMAL APPLICATION PHASE

The application process cannot commence unless the Director General gives his approval to proceed. Based on the information provided, a preliminary assessment will be made to ensure that the proposed training activities / operations are in the national interest. This could take up to 30 working days. The formal application phase commences when the applicant lodges a formal application for a Training Certificate, accompanied by various documents intended to prove or describe the manner in which he intends to conduct the training and the GCAA makes formal assessment of the degree of completeness of the applicant's proposal.

The formal application must be submitted to the GCAA at least 90 working days prior to the proposed commencement date of the training activities / operations. The Operations Manual of the training organization may be submitted later but not less than 60 working days before the date of intended training operations. From past experience, 60 working days is the minimum in case any delay is encountered and it is highly desirable that a greater time be allowed. The application for the renewal of a Training Certificate must be submitted at least 30 days, or otherwise agreed, before the end of the existing period of validity of the Training Certificate.

Submission of the formal application is associated with a meeting attended by the Accountable Manager, nominated post holders or key personnel from both the applicant and the GCAA. The formal application must be signed by the corporate body or national sponsor. An accompanying letter should include the full name and address of the applicant and contact numbers for the applicant's agent or co-ordinator. The letter must contain particulars of the proposed operations / training including details of desired training areas to confirm the pre-application information. During the meeting associated with the lodging of the formal application, the GCAA will nominate the assigned Licensing Inspector who will be available to meet with the applicant's technical management and representatives to develop an action plan and to ensure the application proceeds in a timely manner. The formal application letter must be accompanied by:

- (a) Required documentation.
- (b) Schedule of events, including personnel training.
- (c) Manuals (As outlined in CAR-ORA).
- (d) Compliance statement.
- (e) Completed Postholder Applications
- (f) Aircraft, Synthetic Training Device, facility and services information.
- (g) Proof of adequate financial funds to support the proposed training organization's project (as outlined in AMC3 ORA.ATO.105).

- (h) Organization's structure.

#### REQUIRED DOCUMENTATION

- (a) ATO Application – Fully completed
- (b) Passport copy of owner (of corporate body) or national sponsor.
- (c) Department of Civil Aviation/Department of Transport – No objection
- (d) Trade license
- (e) Aircraft ownership details, sale and purchase agreements or leases signed by names mentioned in the Power of Attorney
- (f) Synthetic Training Device ownership details
- (g) Approval from Ministry of Interior-Security Clearance
- (h) Aircraft Insurance copies
- (i) Compliance statement
- (j) Completed Postholder Application forms (with required supporting paperwork)
- (k) Proposed organization structure
- (l) Proposed compliance system structure
- (m) SMS structure
- (n) CAR subscription
- (o) AIP subscription
- (p) Copy of AED 50,000 application fee receipt
- (q) Application of ATO and Simulator approval (including associated certificate of approval from the GCAA and foreign authority if applicable).
- (r) Complete set of course notes and teaching material for each course to be taught with evidence of an updating system.

#### SCHEDULE OF EVENTS

The Schedule of Events is a list of items, activities, aircraft, and/or facility acquisitions, which the applicant must accomplish or make ready, and the dates on which they will be ready for GCAA inspection. The list should include, but is not limited to, the following and the dates at which they will take place:

- (a) Crew members training.

- (1) Initial training
- (2) Conversion training
- (3) Basic indoctrination
- (b) Maintenance, ground handling and dispatcher personnel training.
- (c) When all facilities will be ready for GCAA inspection.
- (d) When ATO, flight simulator and aircraft will be ready for inspection.
- (e) C of R & C of A requirements
- (f) Aviation Security Training
- (g) GCAA Inspector Training (if required and based on type of aircraft flown).
- (h) When proving flights will begin.
- (i) When proposed training operations will begin

#### REQUIRED MANUALS

The following are the manuals required for submission during the formal meeting:

- (a) Operations Manual- Parts A – D (as described in AMC1 ORA.ATO.230(b)).
- (b) General Maintenance or Exposition Manual (and any other Maintenance manuals as required by the GCAA Airworthiness Department).
- (c) Aircraft Flight Manuals (AFM) and proposed training Standard Operating Procedures (SOP's)
- (d) Course Training Manuals (as described in AMC1 ORA.ATO.230(a))
- (e) Minimum Equipment List (as appropriate to the type of aircraft being used by the operation).
- (f) Security Manual (this may be incorporated in Operations Manual Part A dependent upon approval from the GCAA).
- (g) Dispatch Manual (this may be incorporated in Operations Manual Part A dependent upon approval from the GCAA).
- (h) Safety Management System Manual

The GCAA will approve only courses prepared and delivered in the English language. All course material including any documentation or records required should be in English. Training Organizations should ensure that students for whom English as a second language have a comprehensive understanding of spoken and written English before admitting them to a course.

#### COMPLIANCE STATEMENT

The Compliance Statement refers to the Operations Manual material referenced to the CAR-FCL and CAR-ORA requirements as well the applicable requirements of CAR-OPS 1 or 3 applicable to the type of operation the applicant is proposing. The applicant must provide a brief, narrative description or a reference to a specific section of the applicant's manual or other document which describes how each applicable regulation will be complied with. This compliance statement must be signed by the Accountable Manager and or the Head of Training.

#### APPLICATION PROCESS – DOCUMENT EVALUATION PHASE

The document evaluation phase involves detailed study of the manuals and other documents, which accompanied the formal application, for content and compliance. This study of the procedures and content of these documents gives the GCAA a preliminary assessment of the candidate's technical fitness and organizations are reminded to submit professional documents, which reflect their operation and aircraft. The set of documents and manuals should be complete and the detailed evaluation of them must satisfy the GCAA's requirements before the inspection phase can begin. The inspection phase may reveal the need for some operational changes, which in turn make it necessary for the applicant to amend the documents originally submitted. In that case, it is conceivable that some form of document evaluation may continue until shortly before certification. Nevertheless, the satisfactory evaluation of the documents as originally submitted is a prerequisite for the inspection phase to begin. The GCAA will review the list of documents and manuals ensuring adequacy and compliance for the type of operation proposed by the operator. The documents and manuals should be presented for consideration not less than 60 working days prior to the commencement of the proposed operations to avoid delay. It is only at this stage, when the GCAA has all required documents, that the proposed organization will be advised as to the time the application process will take. Organisations are reminded that incomplete documentation will affect the application completion date.

During the document evaluation phase, the required postholders will be evaluated by the GCAA in order to ensure that they meet the eligibility requirements to hold their requested posts.

#### APPLICATION PROCESS – INSPECTION PHASE

The inspection phase is the phase in which the physical facilities and equipment proposed for use by the applicant are assessed for acceptability. The applicant is required to demonstrate his ability to comply with regulations and safe operating practices before actual training revenue operations can begin. The demonstrations are to prove that the applicant has an adequate organization, method of control and supervision of flight operations, training programs as well as ground handling and maintenance arrangement that are consistent with the nature and extent of operations specified. Staff members that require specific authorization (for example, Flight Examiners and Flight Instructors) will be assessed, and proving flights will be conducted. The applicant must satisfy the GCAA that sufficient qualified personnel are employed and that such personnel are employed on a full time basis where appropriate. Amongst other requirements the applicant should provide adequate facilities and equipment sufficient to permit the staff to carry out their duties related to the conduct of operations in compliance with regulations and manuals, and in safety. During this phase, the GCAA Licensing, Airworthiness and Safety and Security Sections will conduct internal coordination meetings to ensure the application process develops in a timely manner.

The initial inspection will focus on:

- (a) Management and Administration Structure, to include but not limited to:
  - (1) Status of the organization's management

- (2) Conformity with the applicable parts of the Company Operations Manual
  - (3) Qualifications / experience of key personnel
  - (4) Administrative infrastructure
  - (5) Adequacy of staff, facilities, equipment and finances
  - (6) Office support, Printing and / or distribution facilities
  - (7) Scheduling & Rostering
  - (8) Rights of access by GCAA Licensing Inspectors
  - (9) Dispatch personnel and procedures
- (b) Training Facilities, to include but not limited to:
- (1) Classrooms
  - (2) Number / size of classrooms adequate for purpose
  - (3) Student accommodation
  - (4) Whiteboards/Blackboards and screens
  - (5) Lighting, heating cooling and ventilation
  - (6) Training aids examinations
  - (7) Security of storage
  - (8) Examination rooms adequate for purpose
- (c) Aircraft Records, to include but not limited to:
- (1) Maintenance records
  - (2) Technical logs
  - (3) Maintenance programs
  - (4) Training aircraft registration documentation, maintenance and maintenance records, instrument and equipment fit.
- (d) Flight Crew Records, to include but not limited to:
- (1) Flight Duty Time
  - (2) Licence and Medical validity



- (3) Recency
  - (4) PPC check
  - (5) Route & Aerodrome training (as applicable)
  - (6) Training (to include those section described in Section D of the Company Operations Manual)
- (e) Manuals, checklists and other documentation, to include but not limited to:
- (1) Operations Manual
  - (2) Normal & Emergency/Abnormal Checklists
  - (3) Flight Planning and dispatch documents

The requirement for proving flights depends on the size and complexity of the operation. The number of flights will be solely at the discretion of the GCAA and ATO's are advised that proving flights may need to be extended to ensure operating competence is achieved in all areas. These flights should normally be without students and be a representative example of a lesson (selected by the GCAA) that will be taught as part of the approved course offerings. In addition to the proving flights, the GCAA will observe ground, flight and synthetic flight instruction including pre-flight briefing, actual flight and post flight debriefing. The GCAA reserves the right to observe instruction being given both in the air and on the ground.

#### APPLICATION PROCESS – CERTIFICATION PHASE

The certification phase follows the satisfactory completion of all the previous phases. It begins when the GCAA takes the necessary administrative action to actually issue a Training Certificate with associated Training Specifications. At some stage during the inspection phase it will usually become apparent that the applicant is likely to qualify for certification issue, and at that point, parts of the certification phase can commence. If the inspection phase is unsatisfactory, no further action will be taken until the deficiencies are rectified. The certification requirements of this phase are also checked during the renewal of a Training Certificate and its associated Training Specifications.

An approval once issued is not transferable. An application must be made for a new approval to be issued if there is going to be a change in circumstances, for example, where an ATO changes its name or ownership or enters into an arrangement to move an approval to another ATO. The GCAA should be notified at the earliest possible opportunity if such a change is going to take place, in order that advice can be given on what needs to be done to facilitate the issue of a new approval as expeditiously as possible.

#### RE-APPROVAL PROCESS

Applications for re-approval must be submitted well before the expiry of the existing approval. This is to allow adequate time for the GCAA to complete the pre-inspection work, including a review of the ATO funding, make arrangements for and conduct the inspection and complete the post-inspection tasks. The GCAA cannot guarantee to reach a decision in relation to an application for re-approval by the date the validity of the existing approval expires, unless the GCAA receives the application at least 60 working days prior to the expiry of the existing approval. If no application for re-approval is received, the ATO will be notified of the impending expiry of the approval to ascertain its intentions. Should no response be received, the approval will lapse and no further training will be permitted until such time as all of the requirements for an initial approval have been met.

An inspection will follow receipt of the application and the prescribed charge and will focus on the organization's maintenance of the necessary training standards and its compliance with the provisions of CAR-FCL and CAR-ORA. As well as the items reviewed in an inspection for initial approval, the inspection team will concentrate on the day to day conduct of training, the safety of flight operations and the quality of theoretical knowledge instruction given, as applicable to the courses offered. They will pay particular attention to:

- (a) Action taken on any non-conformances raised at the last inspection;
- (b) The operation of the organization's quality system;
- (c) Any changes to the training management team and the current numbers of training staff;
- (d) The training task since the last inspection and forecasts for the next approval period;
- (e) Changes to the location of training facilities;
- (f) Course structure and training aids;
- (g) Training records which must be comprehensive and show that the approved course is being fully covered;
- (h) Briefings, airborne and synthetic flight instructional exercises and classroom lectures which the Inspection Team may wish to observe;
- (i) Flight records which must by content and accuracy promote safety by ensuring timely availability of essential information to pilots and maintenance engineers;
- (j) Evidence of the correct use of Meteorological, ATC and AIS information and facilities;
- (k) Examination results and analysis;
- (l) Future plans.

An organization may not commence, conduct or continue training courses requiring approval unless it has the relevant approval documentation in its possession.

A Training Certificate remains valid for a period of five years, or as stated on the certificate and will only be renewed provided there is a demonstrated compliance with the applicable GCAA regulations.

#### REVOCATION, SUSPENSION OR VARIATION OF APPROVAL

The GCAA may at any time in accordance with its procedures take action to limit, suspend or revoke, authorizations and approvals, if it is established that an applicant has not met or no longer meets, the requirements of the applicable CAR's. In accordance with GCAA Law, an approval issued by the GCAA may be revoked, suspended or varied if the requirements cease to be met in part or in whole, or if the standards on which approval was granted are not maintained. Should there be a failure to meet the requirements or standards, the organization will be formally notified of the non-conformances and, if necessary, a restricted approval document issued to permit the remedial action to be taken within a specified time. Should the organization fail to meet the standards in the specified time, revocation, suspension or variation of the approval will be considered.

## **GM1 ORA.ATO.105 Application**

The security clearance is required to be applied for through the Security Sector of the GCAA. This approval is required prior to any ATO approval being issued by the Aircrew Licensing Section.

## **AMC1 ORA.ATO.110 Personnel Requirements**

### **PERSONNEL CHANGES**

The organization should at all times ensure that they have sufficient qualified personnel for the planned tasks and activities to be performed in accordance with the applicable requirements. Where there is any change to the numbers and availability of staff, this should be discussed with the Aircrew Licensing Inspectors assigned to the ATO, in order to ensure continued approval for training and/or compliance with CAR-FCL and CAR-ORA.

## **AMC2 ORA.ATO.110 Personnel Requirements**

### **POSTHOLDER CHANGES**

It is a condition of the approval that whenever an approved postholder listed in ORA.GEN.210, ORA.ATO.105 and ORA.ATO.110 leaves an organization, the ATO will notify the GCAA. When a postholder leaves an ATO, the GCAA will suspend the ATO approval until the position has been filled or an alternative agreement approved by the GCAA. Notwithstanding the approval by the GCAA of an agreed plan to fill the postholder position, an ATO should not be permitted to continue operating beyond a period of 60 days without the required postholders being in place.

If a postholder at an ATO, leaves the organization, an alternative postholder may, on occasion, be able to assume both positions. However this will only be approved if the existing postholder is qualified to hold the other position

Prior approval of Postholders from the GCAA is required prior to appointment at an ATO, in order to allow the GCAA to determine continued compliance. All nominations for postholders should be made at least 15 days prior to the date of the proposed change.

## **AMC1 ORA.ATO.110(b) Personnel Requirements**

### **HEAD OF TRAINING**

The nominated head of training (HT) should have the overall responsibility to ensure that the training is in compliance with the appropriate requirements. In an ATO providing training courses for different aircraft categories, the HT should be assisted by one or more nominated deputy HT(s) for certain flight training courses.

Alternatively two HT's may be appointed, one for each category of aircraft, however the ATO should then ensure that the reporting of personnel within each division is accomplished with no duplication of role or accountability.

## **AMC1 ORA.ATO.110(c) Personnel Requirements**

### **THEORETICAL KNOWLEDGE INSTRUCTORS**

Theoretical knowledge instructors should, before appointment, prove their competency by giving a test lecture based on material they have developed for the subjects they are to teach. This lecture and all presentation materials, along with an oral evaluation conducted by the CTKI, will be submitted with the application form to the Aircrew Licensing Inspector responsible for the ATO.

TKI's who have not conducted a specific subject in the past will be required to observe an entire course of training conducted by an approved TKI and conduct a series of three observed lectures in the subject prior to being approved to teach in the subject.

Theoretical knowledge instructors should not exceed 30 teaching hours in any one-week, or an average of 25 teaching hours per week in any continuous 12 month period (excluding annual leave). This is applicable for ATO's conducting Ab-Initio training only. These figures should be taken to include all classroom contact time, whether on GCAA approved courses or other courses in which the theoretical knowledge instructor takes part.

### **AMC2 ORA.ATO.110(c) Personnel Requirements**

#### **THEORETICAL KNOWLEDGE INSTRUCTORS**

TKI's conducting theoretical knowledge training in courses outlined in CAR-FCL Appendix 3, will not be approved to teach more than five Theoretical Knowledge subjects. This is applicable for ATO's conducting Ab-Initio training only.

### **AMC1 ORA.ATO.110(d) Personnel Requirements**

#### **CHIEF THEORETICAL KNOWLEDGE INSTRUCTOR**

The nominated Chief Theoretical Knowledge Instructor (CTKI) should be responsible for the supervision of all ground instructors and for the standardization of all theoretical knowledge instruction.

The CTKI may conduct classroom training provided that the responsibilities of the CTKI are accomplished. The CTKI should not exceed 15 teaching hours in any one-week, or an average of 10 teaching hours per week in any continuous 12 month period (excluding annual leave). This is applicable for ATO's conducting Ab-Initio training only. These figures should be taken to include all classroom contact time, whether on GCAA approved courses or other courses in which the theoretical knowledge instructor takes part.

### **AMC1 ORA.ATO.120(a)(b) Record-Keeping**

#### **ATOs PROVIDING TRAINING ONLY FOR THE LAPL, PPL, SPL OR BPL AND THE ASSOCIATED RATINGS AND CERTIFICATES**

The details of ground, flight and flight instruction by using FSTD given to a specific individual student and the detailed progress reports from instructors may be kept also in a student's progress card. This progress card should contain all the exercises of the training syllabus. The instructor should sign this card if a certain exercise has been completed or a specific assessment has been conducted.

### **AMC1 ORA.ATO.125 Training Programme**

#### **GENERAL**

Flight training in an FSTD and theoretical knowledge instruction should be phased in such a manner as to ensure that students are able to apply to flight exercises the knowledge gained on the ground. Arrangements should be made so that problems encountered during instruction can be resolved during subsequent training.

## **AMC2 ORA.ATO.125 Training Programme**

### **TYPE RATING COURSES – AEROPLANES**

#### **(a) Introduction**

- (1) When developing the training programme for a type rating course, in addition to complying with the standards included in the operational suitability data (OSD), as established in accordance with Part-21 for the applicable type, the ATO should also follow any further recommendations contained therein.
- (2) The type rating course should, as far as possible, provide for a continual process of ground, FSTD and flight training to enable the student to assimilate the knowledge and skills required to operate a specific aircraft type safely and efficiently. The student's ability to do this should be determined by the demonstration of a satisfactory level of theoretical knowledge of the aircraft determined by progressive checking of knowledge and examination, progressive assessment by the ATO during flight training and the successful completion of a practical skill test with an examiner.
- (3) The type rating course should normally be conducted as a single, full-time course of study and training. However, in the situation where the course is intended to enable a pilot to fly a further aircraft type while continuing to fly a current type, such as to enable mixed fleet flying with the same operator, some elements of the theoretical knowledge course conducted by self-study may be undertaken while the student continues to fly the current type.

#### **(b) Variants**

- (1) Familiarisation training: Where an aeroplane type rating also includes variants of the same aircraft type requiring familiarisation training, the additional familiarisation training may be included in the theoretical knowledge training of the initial type rating course. Flight training should be conducted on a single variant within the type.
- (2) Differences training: Where an aeroplane type rating also includes variants of the same aircraft type for which difference training is required, the initial training course should be directed towards a single variant. Additional training to operate other variants within the same type rating should be completed after successful completion of the initial type rating course. However, elements of this differences training may be undertaken at appropriate stages of the initial course, with the agreement of the GCAA.

#### **(c) Programme of theoretical knowledge and flight training**

- (1) The training programme should specify the time allocated to theoretical knowledge training, FSTD training and, if not approved for zero flight-time training (ZFTT), the aeroplane. The initial type rating course should be programmed on the basis that the student has the minimum licensing and experience requirements for entry to the course. For a first type rating on a multi-pilot aeroplane (MPA), the course should also provide for consolidation and type-specific

training in those elements of basic multi-crew cooperation (MCC) training relevant to the type or variant.

- (2) If the ATO wishes to provide a training course that includes credit for previous experience on similar types of aircraft, such as those with common systems or operating procedures with the new type, the entry requirements to such courses should be specified by the ATO and should define the minimum level of experience and qualification required of the flight crew member.
- (3) The ATO is permitted to contract elements of training to a third party training provider. In such cases the contracted organisation should normally be approved to conduct such training. When the contracted organisation is not an ATO, the GCAA should, within the approval process of the ATO, include the contracted organisation and be satisfied that the standard of training intended to be given meets the requirements. The other obligations of the ATO, such as student progress monitoring and an adequate management system, can be exercised by the ATO seeking approval and which retains responsibility for the whole course.

## GROUND TRAINING

### (d) Syllabus

The ground training syllabus should provide for the student to gain a thorough understanding of the operation, function and, if appropriate, abnormal and emergency operation of all aircraft systems. This training should also include those systems essential to the operation of the aircraft, such as 'fly-by-wire' flight control systems, even if the flight crew have little or no control of their normal or abnormal operation.

### (e) Theoretical knowledge instruction

The theoretical knowledge instruction training should meet the general objectives of (but not be limited to) giving the student:

- (1) a thorough knowledge of the aircraft structure, powerplant and systems, and their associated limitations, including mass and balance, aircraft performance and flight planning considerations;
- (2) a knowledge of the positioning and operation of the cockpit controls and indicators for the aircraft and its systems;
- (3) an understanding of system malfunctions, their effect on aircraft operations and interaction with other systems; and
- (4) the understanding of normal, abnormal and emergency procedures.

### (f) Facilities and training aids

The ATO should provide adequate facilities for classroom instruction and have available appropriately qualified and experienced instructors. Training aids should enable students to gain practical experience of the operation of systems covered by the theoretical knowledge syllabus and, in the case of multi-pilot aeroplanes, enable such practical application of the knowledge to be carried out in a multi-crew environment. Facilities should be made available for student self-study outside the formal training programme.

(g) Computer-based training (CBT)

CBT provides a valuable source of theoretical instruction, enabling the students to progress at their own pace within specified time limits. Many such systems ensure that syllabus subjects are fully covered and progress can be denied until a satisfactory assimilation of knowledge has been demonstrated. Such systems may allow self-study or distance learning, if they incorporate adequate knowledge testing procedures. When CBT is used as part of the theoretical knowledge instruction phase, the student should also have access to a suitably qualified instructor able to assist with areas of difficulty for the student.

(h) Self-study and distance learning

Elements of the theoretical knowledge syllabus may be adequately addressed by distance learning, if approved, or self-study, particularly when utilising CBT. Progress testing, either by self-assessed or instructor-evaluated means should be included in any self-study programme. If self-study or distance learning is included in the theoretical knowledge training, the course should also provide for an adequate period of supervised consolidation and knowledge testing.

(i) Progress tests and final theoretical knowledge examination

- (1) The theoretical knowledge training programme should provide for progressive testing of the assimilation of the required knowledge. This testing process should also provide for retesting of syllabus items so that a thorough understanding of the required knowledge is assured. This should be achieved by intervention by a qualified instructor or, if using CBT with a self-testing facility, and by further testing during the supervised consolidation phase of the ground course.
- (2) The final theoretical knowledge examination should cover all areas of the theoretical knowledge syllabus. The final examination should be conducted as a supervised written (including computer-based) knowledge test without reference to course material. The pass mark of 75% assumes the achievement of satisfactory levels of knowledge during the progressive phase tests of the course. The student should be advised of any areas of lack of knowledge displayed during the examination and, if necessary, given remedial instruction. A successful pass of the theoretical knowledge course and final examination should be a pre-requisite for progression to the flight training phase of the type rating course, unless otherwise determined in the OSD established in accordance with

## FLIGHT TRAINING

(j) Flight simulation training devices (FSTDs)

A type rating course for a multi-pilot aeroplane should include FSTD training.

The amount of training required when using FSTDs will depend on the complexity of the aeroplane concerned, and to some extent on the previous experience of the pilot. Except for those courses giving credit for previous experience (c.2.), a minimum of 32 hours of FSTD training should be programmed for a crew of a multi-pilot aeroplane, of which at least 16 hours should be in an FFS operating as a crew. FFS time may be reduced if other qualified FSTDs used during the flight training programme accurately replicate the cockpit environment, operation and aeroplane response. Such FSTDs may typically include flight management computer (FMC) training devices using hardware and computer programmes identical to those of the aeroplane.

(k) Aeroplane training with FFS

- (1) with the exception of courses approved for ZFTT, certain training exercises normally involving take-off and landing in various configurations should be completed in the aeroplane rather than an FFS. For MPAs where the student pilot has more than 500 hours of MPA experience in aeroplanes of similar size and performance, these should include at least four landings of which at least one should be a full-stop landing, unless otherwise specified in the OSD, established in accordance with Part-21, when available. In all other cases the student should complete at least six landings. This aeroplane training may be completed after the student pilot has completed the FSTD training and has successfully undertaken the type rating skill test, provided it does not exceed 2 hours of the flight training course.

(2) Courses approved for ZFTT

During the specific simulator session before line flying under supervision (LIFUS), consideration should be given to varying conditions, for example:

- (i) runway surface conditions;
  - (ii) runway length;
  - (iii) flap setting;
  - (iv) power setting;
  - (v) crosswind and turbulence conditions; and
  - (vi) maximum take-off mass (MTOM) and maximum landing mass (MLM).
- (3) the landings should be conducted as full-stop landings. The session should be flown in normal operation.

Special attention should be given to the taxiing technique:

- (i) a training methodology should be agreed with the GCAA that ensures the trainee is fully competent with the exterior inspection of the aeroplane before conducting such an inspection un-supervised;
- (ii) the LIFUS should be performed as soon as possible after the specific FFS session;
- (iii) the licence endorsement should be entered on the licence after the skill test, but before the first four take-offs and landings in the aeroplane. At the discretion of the GCAA, provisional or temporary endorsement and any restriction should be entered on the licence.

Where a specific arrangement exists between the ATO and the commercial air transport operator, the operator proficiency check (OPC) and the ZFTT specific details should be conducted using the operator's standard operating procedures (SOPs).

(l) Aeroplane without FFS



- (1) Flight training conducted solely in an aeroplane without the use of FSTDs cannot cover the crew resource management (CRM) and multi-crew cockpit (MCC) aspects of MPA flight training, and for safety reasons cannot cover all emergency and abnormal aircraft operation required for the training and skill test. In such cases, the ATO should demonstrate to the GCAA that adequate training in these aspects can be achieved by other means. For training conducted solely on an MPA where two pilots are trained together without the use of an FSTD, a minimum of 8 hours of flight training as pilot flying (PF) for each pilot should normally be required. For training on a single-pilot aeroplane, 10 hours of flight training should normally be required. It is accepted that for some relatively simple single or multi-engine aircraft without systems such as pressurisation, flight management system (FMS) or electronic cockpit displays, this minimum may be reduced.
- (2) Aeroplane training normally involves an inherent delay in achieving an acceptable flight situation and configuration for training to be carried out in accordance with the agreed syllabus. These could include ATC or other traffic delay on the ground prior to take-off, the necessity to climb to height or transit to suitable training areas and the unavoidable need to physically reposition the aircraft for subsequent or repeat manoeuvres or instrument approaches. In such cases it should be ensured that the training syllabus provides adequate flexibility to enable the minimum amount of required flight training to be carried out.

#### SKILL TEST

- (m) Upon completion of the flight training, the pilot will be required to undergo a skill test with an examiner to demonstrate adequate competency of aircraft operation for issue of the type rating. The skill test should be separate from the flight training syllabus, and provision for it cannot be included in the minimum requirements or training hours of the agreed flight training programme. The skill test may be conducted in an FFS, the aeroplane or, in exceptional circumstances, a combination of both.

#### COURSE COMPLETION CERTIFICATE

The HT, or a nominated representative, should certify that all training has been carried out before an applicant undertakes a skill test for the type rating to be included in the pilot's licence. If an ATO is unable to provide certain elements of the training that is required to be carried out on an aircraft the ATO may issue such a certificate confirming the completion of the ground training or the training in an FSTD.

#### **AMC3 ORA.ATO.125 Training programme**

##### TYPE RATING COURSES – HELICOPTERS

- (a) Introduction
  - (1) When developing the training programme for a type rating course, in addition to complying with the standards included in the operational suitability data (OSD) as established in accordance with Part-21, for the applicable type, the ATO should also follow any further recommendations contained therein
  - (2) the course should, as far as possible, provide for integrated ground, FSTD and flight training designated to enable the student to operate safely and qualify for the grant of a type rating. The course should be directed towards a helicopter type, but where variants exist, all flying and ground training forming the basis of the course should relate to a single variant.

(b) Variants

- (1) Familiarisation training: where a helicopter type rating also includes variants of the same aircraft type requiring familiarisation training, the additional familiarisation training may be included in the theoretical knowledge training of the initial type rating course.
- (2) Differences training: where a helicopter type rating also includes variants of the same aircraft type for which difference training is required, the initial training course should be directed towards a single variant. Additional training to operate other variants within the same type rating should be completed after successful completion of the initial type rating course, although elements of this differences training may be undertaken at appropriate stages of the initial course, with the agreement of the GCAA.

(c) Training in helicopter and FSTDs

The training programme should specify the amounts of flight training in the helicopter type and in FSTDs (FFSs, flight training devices (FTDs), or other training devices (OTDs)). Where a suitable FFS is geographically remote from the normal training base, the GCAA may agree to some additional training being included in the programme at a remote facility.

(d) Skill test

The content of the flight training programme should be directed towards the skill test for that type. The practical training given in CAR-FCL should be modified as necessary.

The skill test may be completed in a helicopter, in an FFS or partially in a helicopter and in an FSTD. The use of an FSTD for skill tests is governed by the level of approval of the flight simulator and the previous experience of the candidate. Where an FSTD is not available, abnormal operations of systems should not be practised in a helicopter other than as allowed for in the skill test form for the type.

(e) Phase progress tests and final theoretical knowledge examination

Prior to the final theoretical knowledge examination covering the whole syllabus, the training programme should provide for phase progress tests associated with each phase of theoretical knowledge instruction. The phase progress tests should assess the candidate's knowledge on completion of each phase of the training programme.

(f) Facilities: ground school equipment, training facilities and aids

The ATO should provide, as a minimum, facilities for classroom instruction. Additional classroom training aids and equipment including, where appropriate, computers, should reflect the content of the course and the complexity of the helicopter. For multi-engine and multi-pilot helicopters, the minimum level of ground training aids should include equipment that provides a realistic cockpit working environment. Task analysis and the latest state-of-the-art training technology is encouraged and should be fully incorporated into the training facilities wherever possible. Facilities for self and supervised testing should be available to the student.

(g) Training devices

An FTD or OTD may be provided to supplement classroom training in order to enable students to practice and consolidate theoretical instruction. Where suitable equipment is not available, or is not appropriate, a helicopter or flight simulator of the relevant variant should be available. If an FTD

represents a different variant of the same helicopter type for which the student is being trained, then differences or familiarisation training is required.

(h) Computer-based training (CBT)

Where CBT aids are used as a training tool, the ATO should ensure that a fully qualified ground instructor is available at all times when such equipment is being used by course students. Other than for revision periods, CBT lessons should be briefed and debriefed by a qualified ground instructor (TKI).

(i) Theoretical knowledge instruction

The theoretical knowledge instruction training should meet the general objectives of giving the student:

- (1) a thorough knowledge of the helicopter structure, transmissions, rotors and equipment, powerplant and systems, and their associated limitations;
- (2) a knowledge of the positioning and operation of the cockpit controls and indicators for the helicopter and its systems;
- (3) a knowledge of performance, flight planning and monitoring, mass and balance, servicing and optional equipment items;
- (4) an understanding of system malfunctions, their effect on helicopter operations and interaction with other systems; and
- (5) the understanding of normal, abnormal and emergency procedures and giving the student the understanding of potential control problems near the edge of the handling envelope. In particular, the phenomenon of 'servo transparency' (also known as 'jack stall') should be covered for those helicopter types where it is a known problem.

The amount of time and the contents of the theoretical instruction will depend on the complexity of the helicopter type involved and, to some extent, on the previous experience of the student.

(j) Flight training

(1) FSTDs

The level of qualification and the complexity of the type will determine the amount of practical training that may be accomplished in an FSTD, including completion of the skill test. Prior to undertaking the skill test, a student should demonstrate competency in the skill test items during the practical training.

(2) Helicopter (with FSTD)

With the exception of courses approved for ZFTT, the amount of flight time in a helicopter should be adequate for completion of the skill test.

(3) Helicopters (without FSTD)

Whenever a helicopter is used for training, the amount of flight time practical training should be adequate for the completion of the skill test. The amount of flight training will depend on the complexity of the helicopter type involved and, to some extent, on the previous experience of the applicant.

#### **AMC4 ORA.ATO.125 Training programme**

##### **FLIGHT TEST TRAINING COURSES – AEROPLANES AND HELICOPTERS**

###### **(a) Introduction**

- (1) The flight test training course should, as far as possible, provide for a continuous process of ground and flight training to enable the student to assimilate the knowledge and skills required to conduct flight testing safely and efficiently. The student's ability to do this should be determined by the demonstration of a satisfactory level of theoretical knowledge of flight testing determined by progressive checking of knowledge and examination and progressive assessment by the ATO during flying training. There should be no difference in the level of knowledge or competency required of the student, irrespective of the intended role of the student as test pilot or other flight test personnel (for example, flight test engineer) within the flight crew.
- (2) The flight test training course should normally be conducted as a single, full-time course of study and training.

###### **(b) Programme of theoretical knowledge and flight training**

- (1) The training programme should specify the time allocated to theoretical knowledge training and flying training.
- (2) If the ATO wishes to provide a flight test training course that includes credit for previous experience on flight testing activity, the entry requirements to such courses should be specified by the ATO and should define the minimum level of experience and qualification required of the flight test crew member.

##### **GROUND TRAINING**

###### **(c) Syllabus**

- a. The ground training syllabus should provide for the student to gain a thorough understanding of flight testing techniques.

###### **(d) Theoretical knowledge instruction**

- (1) The theoretical knowledge instruction training should give the student a thorough knowledge of the academic requirements of flight testing.

###### **(e) Facilities and training aids**

- (1) The ATO should provide adequate facilities for classroom instruction and have available appropriately qualified and experienced instructors. Training aids should enable students to gain practical experience of flight testing covered by the theoretical knowledge syllabus and enable such practical application of the knowledge to be carried out in a multi-crew environment.

Facilities should be made available for student self-study outside the formal training programme.

(f) Computer-based training (CBT)

- (1) CBT provides a valuable source of theoretical instruction, enabling the student to progress at his/her own pace within specified time limits. Many such systems ensure that syllabus subjects are fully covered and progress can be denied until a satisfactory assimilation of knowledge has been demonstrated. Such systems may allow self-study or distance learning, if they incorporate adequate knowledge testing procedures. When CBT is used as part of the theoretical knowledge instruction phase, the student should also have access to a suitably qualified instructor able to assist with areas of difficulty for the student.

(g) Self-study and distance learning

- (1) Elements of the theoretical knowledge syllabus may be adequately addressed by distance learning, if approved, or self-study, particularly when utilising CBT. Progress testing, either by self-assessed or instructor-evaluated means, should be included in any self-study programme. If self-study or distance learning is included in the theoretical knowledge training, the course should also provide for an adequate period of supervised consolidation and knowledge testing prior to the commencement of flight training.

(h) Progress tests and final theoretical knowledge examination

- (1) The theoretical knowledge training programme should provide for progressive testing of the assimilation of the required knowledge. This testing process should also provide for retesting of syllabus items so that a thorough understanding of the required knowledge is assured. This should be achieved by intervention by a qualified instructor or, if using CBT with a self-testing facility, and by further testing during the supervised consolidation phase of the ground course.
- (2) The theoretical knowledge examinations should cover all areas of the theoretical knowledge syllabus. The examinations should be conducted as supervised written or oral knowledge tests without reference to course material. The pass mark (as defined by the ATO) assumes the achievement of satisfactory levels of knowledge during the progressive phase tests of the course. The student should be advised of any areas of lack of knowledge displayed during the examination and, if necessary, given remedial instruction.

## FLIGHT TRAINING

(i) Aeroplane and helicopter training

- (1) It is widely accepted that flying training normally involves inherent delay in achieving an acceptable flight situation and configuration for training to be carried out in accordance with the agreed syllabus. These could include ATC or other traffic delay on the ground prior to take off, the necessity to climb to height or transit to suitable training areas and the unavoidable need to physically reposition the aircraft for subsequent or repeat manoeuvres or instrument approaches. In such cases it should be ensured that the training syllabus provides adequate flexibility to enable the minimum amount of required flight training to be carried out.

## FINAL IN-FLIGHT EXERCISE

- (j) Upon completion of the flight test training, the test pilot or flight test engineer will be required to undergo in-flight exercise with a flight test instructor (FTI) to demonstrate adequate competency of flight testing for issue of the flight test rating. The final in-flight exercise must be conducted in an appropriate aeroplane or helicopter (as applicable).

## COURSE COMPLETION CERTIFICATE

The HT is required to certify that the applicant has successfully completed the training course.

### **AMC1 ORA.ATO.135 Training aircraft and FSTDs**

#### ALL ATOs, EXCEPT THOSE PROVIDING FLIGHT TEST TRAINING

- (a) The number of training aircraft may be affected by the availability of FSTDs.
- (b) Each training aircraft should be:
  - (1) equipped as required in the training specifications concerning the course in which it is used;
  - (2) except in the case of balloons or single-seat aircraft, fitted with primary flight controls that are instantly accessible by both the student and the instructor (for example dual flight controls or a centre control stick). Swing-over flight controls should not be used.
- (c) The fleet should include, as appropriate to the courses of training:
  - (1) aircraft suitably equipped to simulate instrument meteorological conditions (IMC) and for the instrument flight training required. For flight training and testing for the instrument rating, an adequate number of IFR-certificated aircraft should be available;
  - (2) in the case of aeroplanes and sailplanes, aircraft suitable for demonstrating stalling and spin avoidance;
  - (3) for the flight instructor (FI) training courses on aeroplanes and sailplanes, aircraft suitable for spin recovery at the developed stage;
  - (4) in the case of helicopters, helicopters suitable for autorotation demonstration;
  - (5) in the case of a non-complex ATO, one aircraft fulfilling all the required characteristics for a training aircraft might be sufficient;
  - (6) each FSTD should be equipped as required in the training specifications concerning the course in which it is used.

### **AMC1 ORA.ATO.140 Aerodromes and operating sites**

#### GENERAL

- (a) Except in the case of balloons, the base aerodrome or operating site and any alternative base aerodromes at which flight training is being conducted should have at least the following facilities:

- (1) at least one runway or final approach and take-off area (FATO) that allows training aircraft to make a normal take-off or landing within the performance limits of all the aircraft used for the training flights.
  - (2) a wind direction indicator that is visible at ground level from the ends of each runway or at the appropriate holding points;
  - (3) adequate runway electrical lighting if used for night training;
  - (4) an air traffic service, except for uncontrolled aerodromes or operating sites where the training requirements may be satisfied safely by another acceptable means of air-to-ground communication.
- (b) Except in the case of ATOs providing flight test training, in addition to (a), for helicopters, training sites should be available for:
- (1) confined area operation training;
  - (2) simulated engine off autorotation; and
  - (3) sloping ground operation.
- (c) In the case of balloons, the take-off sites used by the ATO should allow a normal take-off and clearing of all obstacles in the take-off flight path by at least 50 ft.

#### **AMC1 ORA.ATO.145 Pre-requisites for training**

##### **ENTRANCE REQUIREMENTS**

ATOs providing training for other than the LAPL, PPL, SPL or BPL and the associated ratings and certificates should establish entrance requirements for students in their procedures. The entrance requirements should ensure that the students have enough knowledge, particularly of physics and mathematics, to be able to follow the courses.

## **SECTION II – ADDITIONAL REQUIREMENTS FOR ATOs PROVIDING TRAINING FOR CPL, MPL AND ATPL AND THE ASSOCIATED RATINGS AND CERTIFICATES**

### **AMC1 ORA.ATO.210 Personnel requirements**

#### **GENERAL**

- (a) The management structure should ensure supervision of all grades of personnel by persons having the experience and qualities necessary to ensure the maintenance of high standards. Details of the management structure, indicating individual responsibilities, should be included in the ATOs operations manual.
- (b) The ATO should demonstrate to the GCAA that an adequate number of qualified, competent staff is employed.
- (c) In the case of an ATO offering integrated courses, the HT, the chief flying instructor (CFI) and the chief theoretical knowledge instructor (CTKI) should be employed full-time.
- (d) In the case of an ATO offering only one of the following:
  - (1) modular courses,
  - (2) type rating courses,
  - (3) theoretical knowledge instruction,

the positions of HT, CFI and CTKI may be combined and filled by one or two persons with extensive experience in the training conducted by the training organisation, full-time or part-time, depending upon the scope of training offered.
- (e) The ratio of all students to flight instructors, excluding the HT, should not exceed 6:1. This is applicable for ATO's conducting Ab-Initio training only.
- (f) Class numbers in ground subjects involving a high degree of supervision or practical work should not exceed 18 students.
- (g) Computer Based Training (CBT) may form part of the Theoretical Knowledge instruction but must not exceed 25% of the total Theoretical Knowledge course length. The integration of theoretical knowledge instruction with the flying and synthetic flight training must be acceptable to the GCAA. This is applicable for ATO's conducting Ab-Initio training only.

#### **THEORETICAL KNOWLEDGE INSTRUCTORS**

- (h) The theoretical knowledge instruction for type or class ratings should be conducted by instructors holding the appropriate type or class rating, or having appropriate experience in aviation and knowledge of the aircraft concerned.



- (i) For this purpose, a flight engineer, a maintenance engineer or a flight operations officer should be considered as having appropriate experience in aviation and knowledge of the aircraft concerned.
- (j) TKI's conducting theoretical knowledge training in courses outlined in CAR-FCL Appendix 3, will not be approved to teach more than five Theoretical Knowledge subjects.

## **AMC2 ORA.ATO.210 Personnel requirements**

### **QUALIFICATION OF HEAD OF TRAINING AND CHIEF FLIGHT INSTRUCTOR**

#### **(a) Head of training (HT)**

The nominated HT should hold or have held in the 3 years prior to first appointment as HT, a professional pilot licence and associated ratings or certificates issued in accordance with CAR-FCL, related to the flight training courses provided.

## **AMC1 ORA.ATO.230(a) Training manual and operations manual**

### **TRAINING MANUAL**

Training manuals for use at an ATO conducting integrated or modular flight training courses should include the following:

#### **(a) The training plan:**

(1) The aim of the course (ATP, CPL/IR, CPL, etc. as applicable)	A statement of what the student is expected to do as a result of the training, the level of performance, and the training constraints to be observed.
(2) Pre-entry requirements	(i) Minimum age, educational requirements (including language), medical requirements; (ii) Any individual Member State requirements.
(3) Credits for previous experience	To be obtained from the GCAA before training begins.
(4) Training syllabi	As applicable, the flying syllabus (single-engine or multi-engine, as applicable), the flight simulation training syllabus and the theoretical knowledge training syllabus.
(5) The time scale and scale, in weeks, for each syllabus	Arrangements of the course and the integration of syllabi time.
(6) Training programme	(i) The general arrangements of daily and weekly programmes for flying, theoretical knowledge training and training in FSTDs, if applicable; (ii) Bad weather constraints; (iii) Programme constraints in terms of maximum training times, (flying, theoretical knowledge, on FSTDs), for example per day, week or month; (iv) Restrictions in respect of duty periods for students; (v) Duration of dual and solo flights at various stages; (vi) Maximum flying hours in any day or night; (vii) Maximum number of training flights in any day or night; (viii) Minimum rest period between duty periods.

(7) Training records	<ul style="list-style-type: none"> <li>(i) Rules for security of records and documents;</li> <li>(ii) Attendance records;</li> <li>(iii) The form of training records to be kept;</li> <li>(iv) Persons responsible for checking records and students' log books;</li> <li>(v) The nature and frequency of record checks;</li> <li>(vi) Standardisation of entries in training records;</li> <li>(vii) Rules concerning log book entries.</li> </ul>
(8) Safety training	<ul style="list-style-type: none"> <li>(i) Individual responsibilities;</li> <li>(ii) Essential exercises;</li> <li>(iii) Emergency drills (frequency);</li> <li>(iv) Dual checks (frequency at various stages);</li> <li>(v) Requirement before first solo day, night or navigation etc. if applicable.</li> </ul>
(9) Tests and examinations	<ul style="list-style-type: none"> <li>(i) Flying: <ul style="list-style-type: none"> <li>(A) progress checks;</li> <li>(B) skill tests.</li> </ul> </li> <li>(ii) Theoretical knowledge: <ul style="list-style-type: none"> <li>(A) progress tests;</li> <li>(B) theoretical knowledge examinations.</li> </ul> </li> <li>(iii) Authorisation for test;</li> <li>(iv) Rules concerning refresher training before retest;</li> <li>(v) Test reports and records;</li> <li>(vi) Procedures for examination paper preparation, type of question and assessment, standard required for 'pass';</li> <li>(vii) Procedure for question analysis and review and for raising replacement papers;</li> <li>(viii) Examination resit procedures.</li> </ul>
(10) Training effectiveness	<ul style="list-style-type: none"> <li>(i) Individual responsibilities;</li> <li>(ii) General assessment;</li> <li>(iii) Liaison between departments;</li> <li>(iv) Identification of unsatisfactory progress (individual students);</li> <li>(v) Actions to correct unsatisfactory progress;</li> <li>(vi) Procedure for changing instructors;</li> <li>(vii) Maximum number of instructor changes per student;</li> <li>(viii) Internal feedback system for detecting training deficiencies;</li> <li>(ix) Procedure for suspending a student from training;</li> <li>(x) Discipline;</li> <li>(xi) Reporting and documentation.</li> </ul>
(11) Standards and level of performance at various stages	<ul style="list-style-type: none"> <li>(i) Individual responsibilities;</li> <li>(ii) Standardisation;</li> <li>(iii) Standardisation requirements and procedures;</li> <li>(iv) Application of test criteria.</li> </ul>

(b) Briefing and air exercises:

(1) Air exercise	A detailed statement of the content specification of all the air exercises to be taught, arranged in the sequence to be flown with main and subtitles.
(2) Air exercise reference list	An abbreviated list of the above exercises giving only main and subtitles for quick reference, and preferably in flip-card form to facilitate daily use by instructors.
(3) Course structure: phase of training	A statement of how the course will be divided into phases, Indication of how the above air exercises will be divided between the phases and how they will be arranged to ensure that they are completed in the most suitable learning sequence and that essential (emergency) exercises are repeated at the correct frequency. Also, the syllabus hours for each phase and for groups of exercises within each phase should be stated and when progress tests are to be conducted, etc.
(4) Course structure: integration of syllabi	The manner in which theoretical knowledge and flight training in an aircraft or an FSTD will be integrated so that as the flying training exercises are carried out students will be able to apply the knowledge gained from the associated theoretical knowledge instruction and flight training.
(5) Student progress	The requirement for student progress and include a brief but specific statement of what a student is expected to be able to do and the standard of proficiency he/she must achieve before progressing from one phase of air exercise training to the next. Include minimum experience requirements in terms of hours, satisfactory exercise completion, etc. as necessary before significant exercises, for example night flying.
(6) Instructional methods	The ATO requirements, particularly in respect of pre- and post-flying briefing, adherence to syllabi and training specifications, authorisation of solo flights, etc.
(7) Progress tests	The instructions given to examining staff in respect of the conduct and documentation of all progress tests.
(8) Glossary of terms	Definition of significant terms as necessary.
(9) Appendices	(i) Progress test report forms; (ii) Skill test report forms; (iii) ATO certificates of experience, competence, etc. as required.

(c) Flight training in an FSTD, if applicable:

Structure generally as for (b)

(d) Theoretical knowledge instruction:

(1) Structure of the theoretical knowledge course	A statement of the structure of the course, including the general sequence of the topics to be taught in each subject, the time allocated to each topic, the breakdown per subject and an example of a course schedule. Distance learning courses should include instructions of the material to be studied for individual elements of the course.
(2) Lesson plans	A description of each lesson or group of lessons including teaching materials, training aids, progress test organisation and inter-connection of topics with other subjects.
(3) Teaching materials	Specification of the training aids to be used (for example study materials, course manual references, exercises, self-study materials, demonstration equipment).
(4) Student progress	The requirement for student progress, including a brief but specific statement of the standard that must be achieved and the mechanism for achieving this, before application for theoretical knowledge examinations.
(5) Progress testing	The organization of progress testing in each subject, including topics covered, evaluation methods and documentation.
(6) Review procedure	The procedure to be followed if the standard required at any stage of the course is not achieved, including an agreed action plan with remedial training if required.

#### **AMC1 ORA.ATO.230(b) Training manual and operations manual**

ALL ATOs, EXCEPT THOSE PROVIDING FLIGHT TEST TRAINING

##### **OPERATIONS MANUAL**

The operations manual for use at an ATO conducting integrated or modular flight training courses should include the following:

##### **(a) General:**

- (1) a list and description of all volumes in the operations manual;
- (2) administration (function and management);
- (3) responsibilities (all management and administrative staff);
- (4) student discipline and disciplinary action;
- (5) approval or authorisation of flights;
- (6) preparation of flying programme (restriction of numbers of aircraft in poor weather);
- (7) command of aircraft;
- (8) responsibilities of the PIC;
- (9) carriage of passengers;

- (10) aircraft documentation;
- (11) retention of documents;
- (12) flight crew qualification records (licences and ratings);
- (13) revalidation (medical certificates and ratings);
- (14) flight duty period and flight time limitations (flying instructors);
- (15) flight duty period and flight time limitations (students);
- (16) rest periods (flight instructors);
- (17) rest periods (students);
- (18) pilots' log books;
- (19) flight planning (general);
- (20) safety (general): equipment, radio listening watch, hazards, accidents and incidents (including reports), safety pilots etc.

(b) Technical:

- (1) aircraft descriptive notes;
- (2) aircraft handling (including checklists, limitations, maintenance and technical logs, in accordance with relevant requirements, etc.);
- (3) emergency procedures;
- (4) radio and radio navigation aids;
- (5) allowable deficiencies (based on the master minimum equipment list (MMEL), if available).

(c) Route:

- (1) performance (legislation, take-off, route, landing etc.);
- (2) flight planning (fuel, oil, minimum safe altitude, navigation equipment etc.);
- (3) loading (load sheets, mass, balance and limitations);
- (4) weather minima (flying instructors);
- (5) weather minima (students – at various stages of training);
- (6) training routes or areas.

(7) Aerodromes to be used and descriptive notes relating to the aerodromes and surrounding areas.

(d) Personnel training

(1) appointments of persons responsible for standards/competence of flight personnel;

(2) initial training;

(3) refresher training;

(4) standardisation training;

(5) proficiency checks;

(6) upgrading training;

(7) ATO personnel standards evaluation;

(8) CRM training

(9) Other training as required by the operation

## SECTION III – ADDITIONAL REQUIREMENTS FOR ATOs PROVIDING SPECIFIC TYPES OF TRAINING

### *Chapter 1 – Distance Learning Course*

#### **AMC1 ORA.ATO.300 General**

##### DISTANCE LEARNING

- (a) A variety of methods is open to ATOs to present course material. It is, however, necessary for ATOs to maintain comprehensive records in order to ensure that students make satisfactory academic progress and meet the time constraints laid down in CAR-FCL for the completion of modular courses.
- (b) The following are given as planning guidelines for ATOs developing the distance learning element of modular courses:
  - (1) an assumption that a student will study for at least 15 hours per week;
  - (2) an indication throughout the course material of what constitutes a week's study;
  - (3) a recommended course structure and order of teaching;
  - (4) one progress test for each subject for every 15 hours of study, which should be submitted to the ATO for assessment. Additional self-assessed progress tests should be completed at intervals of five to 10 study hours;
  - (5) appropriate contact times throughout the course when a student can have access to an instructor by telephone, fax, email or the Internet;
  - (6) measurement criteria to determine whether a student has satisfactorily completed the appropriate elements of the course to a standard that, in the judgement of the HT, or CGI, will enable them to be entered for the CAR-FCL theoretical examinations with a good prospect of success;
  - (7) if the ATO provides the distance learning by help of IT solutions, for example the Internet, instructors should monitor students' progress by appropriate means.
  - (8) An element of classroom instruction should be included in all subjects of modular distance learning courses. The amount of time spent in actual classroom instruction should be not less than 10% of the total duration of the course.

**AMC1 ORA.ATO.330 General**

**INITIAL APPROVAL**

For an initial approval to conduct ZFTT, the operator should have held an air operator's certificate for commercial air transport for at least 1 year. This period may be reduced where the operator and the ATO have experience of type rating training.



**SUBPART FSTD – REQUIREMENTS FOR ORGANISATIONS OPERATING FLIGHT SIMULATION TRAINING  
DEVICES (FSTDs) AND THE QUALIFICATION OF FSTDs**

**SECTION I - REQUIREMENTS FOR ORGANISATIONS OPERATING FSTDs**

**AMC1 ORA.FSTD.100 General**

**COMPLIANCE MONITORING PROGRAMME – ORGANISATIONS OPERATING FSTD's**

(a) Introduction

- (1) The purpose of this AMC is to provide additional and specific information to an organisation operating FSTD's on how to establish a compliance monitoring programme (CMP) that enables compliance with the applicable requirements.

(b) Compliance monitoring programme

- (1) Typical subject areas for inspections are the following:

- (i) actual FSTD operation;
- (ii) maintenance;
- (iii) technical Standards;
- (iv) FSTD safety features.

(c) Audit scope

- (1) Organisations operating FSTDs are required to monitor compliance with the procedures they have designed to ensure specified performance and functions. In doing so they should as a minimum, and where appropriate, monitor the following:
  - (i) organisation;
  - (ii) plans and objectives;
  - (iii) maintenance procedures;
  - (iv) FSTD qualification level;
  - (v) supervision;
  - (vi) FSTD technical status;
  - (vii) manuals, logs and records;

- (viii) defect deferral;
- (ix) personnel training;
- (x) aircraft modifications;
- (xi) FSTD configuration management.

#### **AMC2 ORA.FSTD.100 General**

##### **COMPLIANCE MONITORING PROGRAMME –ORGANISATIONS OPERATING FSTDs**

One acceptable means of measuring FSTD performance is contained in ARINC report 433-1 (December 14th, 2007 or as amended) Standard Measurements for Flight Simulation Quality.

#### **AMC3 ORA.FSTD.100 General**

##### **COMPLIANCE MONITORING PROGRAMME – ORGANISATIONS OPERATING BASIC INSTRUMENT TRAINING DEVICES (BITDs)**

- (a) The compliance monitoring programme together with a statement acknowledging completion of a periodic review by the accountable manager should include the following:
  - (1) a maintenance facility that provides suitable BITD hardware and software test and maintenance capability;
  - (2) a recording system in the form of a technical log in which defects, deferred defects and development work are listed, interpreted, actioned and reviewed within a specified time scale; and
  - (3) planned routine maintenance of the BITD and periodic running of the qualification test guide (QTG) with adequate manning to cover BITD operating periods and routine maintenance work.
- (b) A planned audit schedule and a periodic review should be used to verify that corrective action was carried out and that it was effective. The auditor should have adequate knowledge of BITDs.

#### **GM1 ORA.FSTD.100 General**

##### **COMPLIANCE MONITORING – ORGANISATIONS OPERATING FSTD's – GENERAL**

- (a) The concept of compliance monitoring (CM) is a fundamental requirement for organisations operating FSTDs. An effective CM function is vitally important in supporting operation of the devices, in a structured way, to ensure they remain in compliance with the technical standards of CS-FSTD(A) and CS-FSTD(H) and continue to be effective training tools. An effective CM function is also essential to support any level of extended recurrent evaluation period as permitted by ORA.FSTD.225(b).
- (b) The following guidance has been developed to provide additional material to help both organisations operating FSTD's and the GCAA in developing effective CM that satisfy the applicable requirements and ensure the highest standards of training are maintained.

- (c) Additional GM provides a compliance checklist for organisations operating FSTDs (GM2 ORA.FSTD.100) and guidance detailing the preparation for an evaluation by the GCAA (GM3 ORA.FSTD.100). The compliance checklist should be used by the competent authorities as a standardised checklist for the elements that are expected in the CM function of an organisation operating FSTDs. The organisation should complete as a minimum the second column of the checklist by providing appropriate manual or procedure references for each of the identified elements of the CM function. Additional information can be provided in the third column to aid assessment of the checklist as appropriate. This would then be provided to the GCAA. Use of this checklist should assist in ensuring a consistent approach by the competent authorities and also provide organisations operating FSTDs with additional guidance on all the elements of a CM function that the competent authorities will expect. The guidance is provided to help organisations operating FSTDs to prepare for GCAA audits.
- (d) The documentation of the CM may be electronic, provided the necessary controls can be demonstrated. This should include control of any paper copies that may be downloaded for use by individuals. It is recommended that any such copies are automatically designated as uncontrolled as part of the download process. Whilst electronic signatures on master documents may be accepted, with appropriate protections, a hardcopy master of the CM manual should be provided, with wet-ink signatures to be held by the applicant.
- (e) It should be recognised that whatever CM is developed, it will not be effective unless it becomes an integral part of the way in which the organisation works. It includes both the necessary procedures for maintaining compliance with all the applicable requirements and a compliance monitoring programme (CMP) to monitor the execution of these procedures. A successful CM will ensure that the highest training tool is available at all times. If the CM is viewed as an add-on to existing processes it will become a burden and it will never be wholly effective. It should also be noted that compliance control or inspection is only a small part of a CM.

If the CM is working effectively, inspections such as fly-outs should become routine revealing little beyond day-to-day unserviceabilities. Systematic defects should be captured by the CMP.

- (f) The GCAA should be satisfied that the accountable manager is able to adequately provide the required level of resources to properly support the FSTD. Detailed knowledge of FSTD requirement standards are not necessary, only sufficient to understand his/her responsibility for ensuring the FSTD is properly supported. The assessment of the compliance monitoring manager should concentrate on establishing that the nominee has sufficient knowledge and experience of both CM management and FSTD operations to operate a compliance monitoring system (CMS) within an organisation operating FSTDs. This is likely to require experience of working in the compliance monitoring field and sufficient knowledge of FSTDs and the technical standards with which they should comply.
- (g) If an organisation operating FSTDs is certified under any international quality standard it should assure that it fully covers the applicable organisation requirements of CAR-ORA and the qualification basis.
- (h) For small organisations, it is perfectly acceptable to combine the roles of compliance monitoring manager and accountable manager. For other organisations that hold multiple certificates and may cover multiple sites, it is advantageous to have a common CM function with an overall compliance monitoring manager. However, it is essential, particularly where sites may be significantly separated geographically, that there is a nominated representative at each site and possibly for each certificate. These representatives should hold the delegated responsibility of the CM manager for the day-to-day CM role at their site and in their function and have the necessary direct reporting line to the overall CM manager. It will also be necessary to ensure that local representatives are also acceptable to the local GCAA, additionally of to the GCAA. In many cases the local representatives may perform other

functions in addition to this role. This is acceptable provided the necessary independence of any compliance monitoring activity is maintained.

- (i) CM, as a whole, begins with the requirements with which the system seeks to comply. These include both the technical standards, in this case the relevant parts of CS-FSTD(A)/(H) plus any other specific standards, for example health and safety regulations, and the compliance monitoring objectives, such as defect rates and rectification intervals and FSTD reliability targets. The CM should define the process by which these standards are made available to those who require them.
- (j) The next part of CM is that part which defines the day-to-day procedures or working practices by which the standards will be achieved. These procedures should include as a minimum defect reporting systems, defect rectification processes, tracking mechanisms, preventative maintenance programmes, spares handling, equipment calibration and configuration management of the device. They should include checks to assess the compliance of the performed actions. These procedures and standards should be made readily available to anybody involved in the maintenance and day-to-day operation of the FSTD.
- (k) The third part of CM is the method by which the organisation operating an FSTD confirms the device is maintained in compliance with the defined standards and is being operated in accordance with the defined procedures. This is the compliance monitoring programme (CMP) and includes the audit methods, reporting and corrective action procedures and feedback, management reviews and schedules for audits of all aspects of the FSTD operation.
- (l) Across all aspects of CM, and most important to it, are the people. CM includes the definition of the responsibilities of all staff and should include a declaration of the minimum levels of resource proposed for the direct support of the FSTD plus the levels of support and managerial staff proposed. The levels of resource can be affected by factors such as local health and safety regulations, existence of weekend and/or night usage of the device(s), etc. CM also includes definition of the skills and experience required for staff and leads to definition of any required training programmes. Training needs cover both technical training and audit training, including QTG running and checking and fly-out techniques for flight crew.
- (m) The documentation of CM may be provided in any number of documents provided there are appropriate cross-references in all documents such that the system is fully traceable in both directions from end to end. For all but small organisations at least two documents would be expected:
  - (1) Firstly, a CM manual containing the policy, terminology, organisational charts and responsibilities, an overview of all processes, within the system, including those for maintaining regulatory compliance such as QTG running and fly-outs (function and subjective testing), CMP including the audit schedule and audit procedures including reporting and corrective action procedures. In addition, the CM manual should include, either directly or by reference, the identification of skills and experience and associated training.
  - (2) Secondly, a procedures manual containing, as a minimum, software and hardware control procedures, configuration control procedures including, for example, control of training loads, updates to visual models, navigation and instructor operation station (IOS) databases, QTG running and checking procedures, fly-out procedures, maintenance procedures including both defect rectification and preventative maintenance processes. Any standard forms and checklists should also be included.

- (n) The CM documentation also includes all records such as technical logs, QTG runs, fly-out reports and maintenance job cards.
- (o) For organisations with several certificates, separate and modular procedures manuals with a single CM manual covering all approvals, may be acceptable.
- (p) It is important to understand the difference between compliance assurance and compliance control. An effective CM will contain elements of both. Compliance control is normally done by inspection of the product; it provides confirmation at the time of the inspection that the product conforms to a defined standard.
- (q) The compliance assurance element is essential to ensure the standard is maintained throughout the periods between product (FSTD) inspections. Within a CMP, the processes are defined that are necessary to provide confidence that the FSTD(s) is/are being supported and maintained to the highest possible standard and in compliance with the relevant requirements. A programme of internal audits is then set in place to confirm that the processes are being followed and are effective. The GCAA would normally oversee a certified organisation by process and system audit, however, in the case of FSTDs, authority oversight includes an inspection element in the form of the recurrent FSTD evaluation.
- (r) In addition to the normal process and system audits, the compliance assurance audit schedule should include the schedule for each FSTD for fly-outs and QTG running through the audit year.
- (s) The audit procedure should include, at least, the following: statement of scope, planning, initiation of audit, collection of evidence, analysis, reporting of findings, identification and agreement of corrective actions and feedback, including reporting significant findings to the GCAA, where appropriate. The review of published material could include, in addition to the CM and procedures manuals, QTG records, fly-out reports, technical log sheets, maintenance records and configuration control records.
- (t) In addition to basic knowledge of FSTD requirements and operation, it is expected that auditors have received training in CM and audit techniques.
- (u) The routine fly-outs of the device are a specialised part of the audit programme. It is essential that the pilots tasked with carrying out these fly-outs are adequately experienced. They would be expected to be type rating instructor/examiner (TRI/TRE) qualified on the type, and should have experience of simulator evaluations carried out by the GCAA. The assignment of such pilots can present difficulties, particularly for the independent organisation operating FSTDs not directly associated with an airline. It is vital for the organisation to ensure their users are aware of the importance of the fly-outs as part of the continued qualification of the device and the need to assist in the provision of suitably qualified pilots to carry them out. It is worth noting that simulator users are required to satisfy themselves that the training devices they use are assessed for continued suitability, as part of their own CMP. Involvement in fly-outs assists in meeting this need.
- (v) Whilst it is accepted that the number of audits required in an organisation with a single device will be significantly less than those in larger organisations with multiple devices, the CMP should still meet the same criteria, and cover all aspects of the operation within a 12 month period. The independence of the audit personnel should be maintained at all times. The audit programme, whether by full audit or by using a checklist system should still be sufficiently comprehensive to provide the necessary level of confidence that the device is maintained and operated to the highest possible standard. This includes monitoring and review of corrective actions and feedback processes.

- (w) The successful use of sub-contractors who play a significant role in the provision of services, such as maintenance or engineering services, to an organisation operating FSTDs is reliant on the sub-contractor operating under the CM of the organisation. All requirements that an organisation is expected to meet are equally applicable to his/her sub-contractor. It is the organisation's responsibility to ensure that the subcontractor complies with its CM.
- (x) It is essential that a proper understanding of the CM and how it applies to each and every staff member is provided by appropriate training to all, not just those directly involved in operating the CM, such as the accountable manager, the CM manager, representatives and the auditors. The training given to those directly involved in CM should cover the CM, audit techniques and applicable technical standards. CM familiarisation training should be an integral part of any induction training and recurrent training. Update training on technical standards for audit personnel, is also of particular importance.
- (y) Any effective CM will include measurement of its effectiveness. The organisation should develop performance measures that can be monitored against objectives. Such measures, often referred to as metrics, should be reviewed by the GCAA as part of its oversight of the CM within the organisation and during recurrent evaluations. In addition they should form part of the data reviewed during scheduled management reviews as part of the CM.
- (z) ARINC 433 provides good guidance on FSTD compliance measurement. Metrics should monitor not only individual FSTD performance but, for larger organisations, how each FSTD is performing within the fleet. It is also recommended that metrics data be shared, regularly, with the FSTD manufacturers to allow monitoring for generic problems such as design issues, which may be best addressed with a fleet-wide solution.

**GM2 ORA.FSTD.100 General**

COMPLIANCE MONITORING – ASSESSMENT FOR ORGANISATIONS OPERATING FSTDs

<b>COMPLIANCE MONITORING ASSESSMENT FOR ORGANISATIONS OPERATING FSTDs</b>			
<b>Organisation:</b>			
<b>Site Assessed:</b>			
<b>Date of Assessment:</b>			
<b>Accountable Manager:</b>			
<b>Compliance Monitoring Manager:</b>			
<b>Number and Type of FSTDs:</b>			
<b>CM Manual Reference:</b>			
<b>Audit Area</b>	<b>CM/Proc Ref</b>	<b>Comments</b>	<b>Satisfactory Y/N</b>
<b>1. ACCOUNTABLE MANAGER</b>			
Has an accountable manager (AM) with overall responsibility for compliance monitoring (CM) been nominated?			
Does the accountable manager have corporate authority to ensure all necessary activities can be financed and carried out to the standard required by the GCAA?			
Has a formal written compliance policy statement been established, included in the CM manual and signed by the accountable manager?			
<b>2. COMPLIANCE MONITORING MANAGER</b>			
Has a compliance monitoring manager (CM manager) been nominated?			

Audit Area	CM/Proc Ref	Comments	Satisfactory Y/N
Are the posts of CM manager and AM combined? If so, is the independence of compliance audits assured?			
Does the CM manager have overall responsibility and authority to: a) verify that standards are met; and  b) ensure that the compliance monitoring programme is established, implemented and maintained?		a)  b)	
Does the CM manager have direct access to the AM?			
Does the CM manager have access to all parts of the organisation operating an FSTD and as necessary any sub-contractor's organisation?			
<b>3. COMPLIANCE MONITORING (CM)</b>			
Has CM been established by the operator?			
Is CM properly documented? (see Section 4)			
Is the CM structured according to the size and complexity of the operator?			
Does the CM include the following as a minimum:  a) monitoring of compliance with required technical standards; b) identification of corrective actions and person responsible for rectification; c) a feedback system to accountable manager to ensure corrective action are promptly addressed; d) reporting of significant non-compliances to the GCAA; e) a compliance monitoring programme to verify continued compliance with applicable requirements, standards and procedures.		a)  b)  c)  d)  e)	



Are the responsibilities of the CM manager defined to include, as a minimum:			
a) monitoring of corrective action programme;		a)	
b) ensuring that the corrective actions contain the necessary elements;		b)	
c) providing management with an independent assessment of corrective action, implementation and completion;		c)	
d) evaluation of the effectiveness of the corrective action programme.		d)	
Are adequate financial, material and human resources in place to support CM?			
Are management evaluations/ reviews of CM held at least quarterly?			
Does the management evaluation ensure that the CMS is working effectively and is it comprehensive and well documented?			
Does the compliance monitoring programme identify the processes necessary and the persons within the organisation who have the training, experience, responsibility and authority to carry out the following:			
a) schedule and perform quality inspections and audits, including unscheduled audits when required;		a)	
b) identify and record any concerns or findings, and the evidence necessary to substantiate such concerns or findings;		b)	
c) initiate or recommend solutions to concerns or findings through designated reporting channels;		c)	
d) verify the implementation of solutions within specific timescales.		d)	
Is there sufficient auditor resource available and can their required level			

of independence be demonstrated?			
Do the auditors report directly to the compliance monitoring manager?			
Does the defined audit schedule cover the following areas, within each 12 month period?  a) organization;  b) plans and objectives;  c) maintenance procedures;  d) FSTD qualification level;  e) supervision;  f) FSTD technical status;  g) manuals, logs and records;  h) defect deferral;  i) personnel training;  j) aircraft and simulator configuration management, including Airworthiness Directives		a)  b)  c)  d)  e)  f)  g)  h)  i)  j)	
How are audit non-compliances recorded?			
Are procedures in place to ensure that corrective actions are taken in response to findings?			
Are records of the compliance monitoring programme:  a) accurate;  b) complete, and  c) readily accessible?		a)  b)  c)	
Is there an acceptable and effective procedure for providing a briefing on the CM to all personnel?			
Is there an acceptable and effective procedure for ensuring that all those responsible for managing the CM receive training covering:			

a) an introduction to the concept of the CM;		a)	
b) compliance management;		b)	
c) the concept of compliance assurance;		c)	
d) CM manuals;		d)	
e) audit techniques;		e)	
f) reporting and recording;		f)	
g) how the CM supports continuous improvement within the organisation.		g)	
Are suitable training records maintained?			
Are activities within the CM sub-contracted out to external agencies?			
Do written agreements exist between the organisation and the sub-contractor clearly defining the services and standard to be provided?			
Are the procedures in place to ensure that the necessary authorisations/approval when required are held by a sub-contractor?			
Are the procedures in place to establish that the sub-contractor has the necessary technical competence?			
<b>4. CM MANUAL</b>			
What is the current status of the CM manual – amendment and issue date?			
Is there a procedure in place to control copies and the distribution of the CM manual?			
Is the CM manual signed by the accountable manager and the compliance monitoring manager?			
Does the CM manual include, either directly or by reference to other documents, the following:			
a) a description of the		a)	

<p>organisation;</p> <p>b) reference to appropriate FSTD technical standards;</p> <p>c) allocation of duties and responsibilities;</p> <p>d) audit procedures;</p> <p>e) reporting procedures;</p> <p>f) follow-up and corrective action procedures;</p> <p>g) document retention policy;</p> <p>h) training records</p>		<p>b)</p> <p>c)</p> <p>d)</p> <p>e)</p> <p>f)</p> <p>g)</p> <p>h)</p>	
<p>Is there a document retention policy covering:</p> <p>a) audit schedules;</p> <p>b) inspection and audit reports;</p> <p>c) responses to findings;</p> <p>d) corrective action reports;</p> <p>e) follow-up and closure reports;</p> <p>f) management evaluation reports.</p>		<p>a)</p> <p>b)</p> <p>c)</p> <p>d)</p> <p>e)</p> <p>f)</p>	
<p>Does the CM manual include, either directly or by reference to other documents, the following procedures for day to day operation of the FSTD:</p> <p>a) defect reporting systems;</p> <p>b) defect rectification processes;</p> <p>c) tracking mechanisms;</p> <p>d) preventative maintenance programmes;</p> <p>e) spares handling;</p> <p>f) equipment calibration;</p> <p>g) configuration management of the device including visual, IOS and navigation databases;</p> <p>h) configuration control system to</p>		<p>a)</p> <p>b)</p> <p>c)</p> <p>d)</p> <p>e)</p> <p>f)</p> <p>g)</p>	

<p>ensure the continued integrity of the hardware and software qualified;</p> <p>i) QTG running and function and subjective tests.</p>		<p>h)</p> <p>i)</p>	
<p>Does the CM manual include, either directly or by reference to other documents, procedures for notification of the competent authorities of the following:</p> <p>a) any change in the organisation including company name, location, management;</p> <p>b) major changes to a qualified device;</p> <p>c) deactivation or relocation of a qualified device;</p> <p>d) major failures of a qualified device;</p> <p>e) major safety issue associated with the installation.</p>		<p>a)</p> <p>b)</p> <p>c)</p> <p>d)</p> <p>e)</p>	
<p>Does the CM manual define acceptable and effective procedures to ensure compliance with applicable health and safety regulations, including:</p> <p>a) safety briefings;</p> <p>b) fire/smoke detection and suppression;</p> <p>c) protection against electrical, mechanical, hydraulic and pneumatic hazards;</p> <p>d) other items as defined in AMC1 ORA.FSTD.115</p>		<p>a)</p> <p>b)</p> <p>c)</p> <p>d)</p>	
<p>Does the CM manual include acceptable and effective procedures for regularly checking FSTD safety features such as emergency stops and emergency lighting, and are such tests recorded?</p>			

## 5. COMPLIANCE MEASURES

Have compliance monitoring objectives been developed from the policy statement, and included either directly or by reference in the CMS manual?

Does the CMS include processes to produce and review appropriate metrics data?

Do these compliance measures track the following:

- a) FSTD availability;
- b) numbers of defects;
- c) open defects;
- d) defect closure rates;
- e) training session interrupt rates;
- f) training session compliance rating.

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Do the compliance measures support the compliance objectives?

Required actions/Comments
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Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**COMPLIANCE MONITORING SYSTEM – GUIDANCE FOR ORGANISATIONS OPERATING FSTDs TO PREPARE FOR A GCAA EVALUATION**

**(a) Introduction**

The following material provides guidance on what is expected by the competent authorities to support the discussion during the preliminary briefing, which is a first step of any initial or recurrent evaluation of an FSTD carried out by a GCAA.

This document has been developed as well to standardise working methods throughout Member States and to develop effective CM spot checks to satisfy the applicable requirements and therefore to ensure the highest standards of training are attained.

**(b) Document form**

Different document forms can be considered. Nevertheless, it appears that the best solution is a dossier, which includes all the information required by the GCAA to perform an evaluation.

**(c) Contents of the dossier for an initial evaluation:**

- (1) type of FSTD and qualification level requested;
- (2) evaluation agenda: including date of evaluation, name of people involved for the GCAA, contact details for the FSTD operator, schedules for the subjective flight profile, QTG rerun;
- (3) FSTD identification and detailed technical specification including, type of FSTD, manufacturer, registration number, date of entry into service, host computer, visual system, motion system, type of IOS, simulated version(s), standards of all the aircraft computers, if applicable. Manuals needed for an evaluation (e.g. flight manuals, system manuals, acceptance test manual, IOS user manual etc. – if applicable) could already be provided as part of the dossier in an electronic format;
- (4) planned modifications;
- (5) subjective open defect(s);
- (6) airport visual databases including for each visual scene, name of the airport, IATA and ICAO codes, type of visual scene (specific or generic), additional capabilities (e.g. snow model, WGS 84 compliance, enhanced ground proximity warning system (EGPWS)); and
- (7) QTG status: the list should include for each QTG test available the status of the tests following the FSTD operator and GCAA reviews.

**(d) Contents of the dossier for a recurrent evaluation:**

- (1) type of FSTD and qualification level requested;
- (2) evaluation agenda, including date of evaluation, name of people involved for the GCAA, contact details for the operator, schedules for the subjective flight profile, QTG rerun and QTG review;
- (3) FSTD identification, including type of FSTD, manufacturer, registration number, date of entry into service, host computer, visual system, motion system, type of IOS, simulated version(s), standards of all the aircraft computers, if applicable;
- (4) status of items raised during the last evaluation and date of closure;
- (5) reliability data: training hours month by month during the past year, numbers of complaints mentioned in the technical log, training hours lost, availability rate;
- (6) operational data: a list of FSTD users over the previous 12 months should be provided, with number of training hours;

- (7) failure tabulation including categorisation of failures (by ATA chapter and Pareto diagram, ARINC classification);
- (8) details of main failures leading to training interruption or multiple occurrences of some failures;
- (9) hardware and/or software updates or changes since last evaluation and planned hardware and/or software updates or changes;
- (10) subjective open defect(s);
- (11) airport visual databases including for each visual scene, name of the airport, ATA and ICAO codes, type of visual scene (specific or generic), additional capabilities (snow model, WGS 84 compliance, EGPWS);
- (12) QTG status: the list should include for each QTG test available, the date of run during the past year, any comment, and the status of the tests; and
- (13) results of scheduled internal audits and additional quality inspections (if any) since last evaluation and a summary of actions taken.

#### **AMC1 ORA.FSTD.110 Modifications**

##### **GENERAL**

- (a) The FSTD, where applicable, should be maintained in a configuration that accurately represents the aircraft being simulated. This may be a specific aircraft tail number or may be a representation of a common standard.
- (b) Users of the device should always establish a differences list for any device they intend to use, and to identify how any differences should be covered in training. In order to ensure each device is maintained in the appropriate configuration, the organisation operating an FSTD should have a system that ensures that all relevant airworthiness directives (ADs) are introduced where applicable on affected FSTDs.
- (c) ADs from both the State of Design of the aircraft and the State where the FSTD is located should be monitored. ADs from the State of Design of an aircraft are usually automatically applicable, unless specifically varied by the aircraft's State of Registry.
- (d) Where appropriate, ADs issued by States where users of the device have aircraft registered should also be monitored. In addition to ADs, the FSTD operator should also put in place processes that ensure all aircraft modifications are reviewed for any effect on training, testing and checking. This can be achieved by reviewing the aircraft manufacturer's service bulletins and may require a specific link to the aircraft manufacturer to be developed. In practice this link is often established through aircraft operators who use the device.
- (e) Organisations operating FSTDs should notify the GCAA of major changes.
- (f) This does not imply that the GCAA will always wish to directly evaluate the change. The GCAA should be mindful of the potential burden placed on the organisation by a special evaluation and should always consider that burden when deciding if such an evaluation is necessary.
- (g) The organisation operating FSTDs should have an internal acceptance process for modifications, to be used when implementing all modifications, even if the GCAA has made a decision to carry out an evaluation.



## **GM1 ORA.FSTD.110 Modifications**

### **EXAMPLES OF MAJOR MODIFICATIONS**

The following are examples of modifications that should be considered as major. This list is not exhaustive and modifications need to be classified on a case-by-case basis:

- (a) any change that affects the QTG;
- (b) introduction of new standards of equipment such as flight management and guidance computer (FMGC) and updated aerodynamic data packages;
- (c) re-hosting of the FSTD software;
- (d) introduction of features that model new training scenarios; e.g. airborne collision avoidance system (ACAS), EGPWS;
- (e) aircraft modifications that could affect the FSTD qualification; and
- (f) FSTD hardware or software modifications that could affect the handling qualities, performance or system representation.

## **AMC1 ORA.FSTD.115 Installations**

### **MINIMUM ELEMENTS FOR SAFE OPERATION**

- (a) Introduction
  - (i) This AMC identifies those elements that are expected to be addressed, as a minimum, to ensure that the FSTD installation provides a safe environment for the users and operators of the FSTD under all circumstances.
- (b) Expected elements
  - (1) Adequate fire/smoke detection, warning and suppression arrangements should be provided to ensure safe passage of personnel from the FSTD.
  - (2) Adequate protection should be provided against electrical, mechanical, hydraulic and pneumatic hazards, including those arising from the control loading and motion systems, to ensure maximum safety of all persons in the vicinity of the FSTD.
  - (3) Other areas that should be addressed include the following:
    - (i) a two-way communication system that remains operational in the event of a total power failure;
    - (ii) emergency lighting;
    - (iii) escape exits and escape routes;
    - (iv) occupant restraints (seats, seat belts etc.);

- (v) external warning of motion and access ramp or stairs activity;
- (vi) danger area markings;
- (vii) guard rails and gates;
- (viii) motion and control loading emergency stop controls accessible from either pilot or instructor seats;
- (ix) a manual or automatic electrical power isolation switch.

## **GM1 ORA.FSTD.115 Installations**

### **GENERAL**

- (a) The intent of ORA.FSTD.115 is to establish that the organisation operating an FSTD has all the necessary procedures in place to ensure that the FSTD installation remains in compliance with all requirements affecting the safety of the device and its users.
- (b) Based on experience, the GCAA should pay particular attention to the quality of safety briefings on the FSTD provided to users and instructors, and to the execution of regular checks on the FSTD safety features.
- (c) It is recognised that certain checks, such as that of the emergency stop, can have adverse impact on the FSTD if carried out in full.
- (d) It is acceptable to develop a procedure that protects elements of the device by shutting them down in advance, in a more controlled manner, provided it can be shown that the procedure still demonstrates the whole device can be shut down by the operation of a single emergency stop button, when required.

## SECTION II – REQUIREMENTS FOR THE QUALIFICATION OF FSTDs

### AMC1 ORA.FSTD.200 Application for FSTD qualification

LETTER OF APPLICATION FOR INITIAL QUALIFICATION OF AN FSTD; EXCEPT BASIC INSTRUMENT TRAINING DEVICE (BITD)

A sample of letter of application is provided overleaf.

#### Part A

**To be submitted not less than 3 months prior to requested qualification date**

(Date)

(Office – GCAA)

(Address) ..... (City)

(Country).....

Type of FSTD	Aircraft Type/class	Qualification Level Sought				
Full Flight Simulator FFS		A	B	C	D	Sp./Cat
Flight Training Device FTD		1	2	3		
Flight and Navigation Procedures Trainer FNPT		I	II	III	II MCC	III MCC

Interim Qualification Level requested: YES/NO

Dear,

<Name of Applicant> requests the evaluation of its flight simulation training device<operator's identification of the FSTD> for qualification. The <FSTD manufacturer's name> FSTD with its <visual system and manufacturer's name, if applicable>visual system.

Evaluation is requested for the following configurations and engine fits as applicable:

e.g. 767 PW/GE and 757RR

1.....

2.....

3 .....

Dates requested are: <date(s)> and the FSTD will be located at <place>.

The objective tests of the QTG will be submitted by <date> and in any event not less than 30 days before the requested evaluation date unless otherwise agreed with the GCAA.

Comments:

Signed

Print name:


Position/appointment held:

Email address:

Telephone number:

Part B

To be completed with attached QTG results

(Date) .....

We have completed tests of the FSTD and declare that it meets all applicable requirements except as noted below.

The following QTG tests still have to be provided:

Tests	Comments
(Add boxes as required)	

It is expected that they will be completed and submitted 3 weeks prior to the evaluation date.

Signed

Print name:

Position/appointment held: .....

E-mail address:

Telephone number:

**Part C**

**To be completed not less than 7 days prior to initial evaluation**

(Date)

The FSTD has been assessed by the following evaluation team:

(Name) ..... Qualification

(Name) ..... Qualification

(Name) ..... Qualification

(Name) ..... Pilot's Licence Nr

(Name) ..... Flight Engineer's Licence Nr (if applicable)

- ☐ FFS/FTD: This team attests that the <type of FSTD> conforms to the aeroplane flight deck/helicopter cockpit configuration of <name of aircraft operator (if applicable), type of aeroplane/helicopter> aeroplane/helicopter within the requirements for <type of FSTD and level> and that the simulated systems and subsystems function equivalently to those in that aeroplane/helicopter. The pilot of this evaluation team has also assessed the performance and the flying qualities of the FSTD and finds that it represents the designated aeroplane/helicopter.
- ☐ FNPT: This team attest(s) that the <type of FSTD> represents the flight deck or cockpit environment of a <aeroplane/helicopter or class of aeroplane/type of helicopter> within the requirements for <type of FSTD and level> and that the simulated systems appear to function as in the class of aeroplane/type of helicopter. The pilot of this evaluation team has also assessed the performance and the flying qualities of the FSTD and finds that it represents the designated class of aeroplane/type of helicopter.

(Additional comments as required)

.....  
.....  
.....

Signed

.....

Print name:

Position/appointment held: .....

E-mail address:

Telephone number:

## **GM1 ORA.FSTD.200 Application for FSTD qualification**

### **USE OF FOOTPRINT TESTS IN QUALIFICATION TEST SUBMISSION**

#### **(a) Introduction**

- (1) Recent experience during initial qualification of some FFSs has required acceptance of increasing numbers of footprint tests. This is particularly true for FFSs of smaller or older aircraft types, where there may be a lack of aircraft flight test data. However, the large number of footprint tests offered in some QTGs has given rise to concern.
- (2) This guidance is applicable to FFS aeroplane, FTD aeroplane, FFS helicopter and FTD helicopter qualifications.

#### **(b) Terminology**

- (1) Footprint test - footprint test data are derived from a subjective assessment carried out on the actual FSTD requiring qualification. The assessment and validation of these data are carried out by a pilot appointed by the GCAA. The resulting data are the footprint validation data for the FSTD concerned.

#### **(c) Recommendation**

- (1) It is permitted to use footprint data where flight test data is not available. Only when all other alternative possible sources of data have been thoroughly reviewed without success may a footprint test be acceptable, subject to a case-by-case review with the competent authorities concerned, and taking into consideration the level of qualification sought for the FSTD.
- (2) Footprint test data should be:
  - (i) constructed with initial conditions and FFS set up in the appropriate configuration (e.g. correct engine rating) for the required validation data;
  - (ii) a manoeuvre representative of the particular aircraft being simulated;
  - (iii) manually flown out by a type rated pilot who has current experience on type\* and is deemed acceptable by the GCAA\*\*;
  - (iv) constructed from validation data obtained from the footprint test manoeuvre and transformed into an automatic test;
  - (v) an automatic test run as a fully integrated test with pilot control inputs; and
  - (vi) automatically run for the initial qualification and recurrent evaluations.

\* In this context, 'current' refers to the pilot experience on the aircraft and not to the Part-FCL standards.

\*\* The same pilot should sign off the complete test as being fully representative.

- (1) A clear rationale should be included in the QTG for each footprint test. These rationales should be added to and clearly recorded within the validation data roadmap (VDR) in accordance with and as defined in Appendix 2 to AMC1-CS-FSTD(A).300.
- (2) Where the number of footprint tests is deemed by the GCAA to be excessive, the maximum level of qualification may be affected. The GCAA should review each area of validation test data where the use of footprint tests as the basis for the validation data is proposed.

Consideration should be given to the extent to which footprint tests are used in any given area.

For example, it would be unacceptable if all or the vast majority of take-off tests were proposed as footprint tests, with little or no flight test data being presented. It should be recognised, therefore, that it may be necessary for new flight test data to be gathered if the use of footprint tests becomes excessive, not just overall, but also in specific areas.

- (3) For recurrent evaluation purposes an essential match is to be expected. Validation tests using footprint data which do not provide an essential match should be justified to the satisfaction of the GCAA.
- (4) The GCAA should be consulted at the point of definition of the aircraft data for qualification prior to the procurement of the device if footprint tests need to be used.

#### **AMC1 ORA.FSTD.205(a) Certification Specifications for FSTDs**

EASA CS-FSTD is acceptable to the GCAA.

#### **AMC1 ORA.FSTD.225(b)(4) Duration and continued validity**

The assigned person should have experience in FSTDs and training. The person may have FSTD experience or training experience with an education in FSTD evaluation procedures only, provided the other element of expertise is available within the organisation and a procedure for undertaking the annual review and reporting to the GCAA is documented within the compliance monitoring function.

#### **AMC1 ORA.FSTD.230(b) Changes to the qualified FSTD**

#### **UPDATING AND UPGRADING EXISTING FSTDs**

- (a) An update is a result of a change to the existing device where it retains its existing qualification level. The change may be certified through a recurrent inspection or an extra inspection if deemed necessary by the GCAA according to the applicable requirements in effect at the time of initial qualification.
- (b) If such a change to an existing device would imply that the performance of the device could no longer meet the requirements at the time of initial qualification, but that the result of the change would, in the opinion of the GCAA, clearly mean an improvement to the performance and training capabilities of the device altogether, then the GCAA might accept the proposed change as an update while allowing the device to retain its original qualification level.
- (c) An upgrade is defined as the raising of the qualification level of a device, or an increase in training credits, which can only be achieved by undergoing an initial qualification according to the latest applicable requirements.
- (d) As long as the qualification level of the device does not change, all changes made to the device should be considered to be updates pending approval by the GCAA.
- (e) An upgrade, and consequent initial qualification according to the latest applicable requirements, is only applicable when the organisation requests another qualification level (recategorisation) for the FSTD.

## **AMC1 ORA.FSTD.240 Record-keeping**

### **FSTD RECORDS**

- (a) FSTD records to be kept should include the following:
  - (1) for the lifetime of the device:
    - (i) the master QTG (MQTG) of the initial evaluation;
    - (ii) the qualification certificate of the initial evaluation; and
    - (iii) the initial evaluation report
  - (2) for a period of at least 5 years (in paper or electronic format):
    - (i) recurrent QTG runs;
    - (ii) recurrent evaluation reports;
    - (iii) reports of internal functions and subjective testing;
    - (iv) technical log;
    - (v) CMS report;
    - (vi) audit schedule;
    - (vii) evaluation programme;
    - (viii) management evaluation reports;
    - (ix) obsolete procedures and forms.



**SUBPART AeMC – AERO-MEDICAL CENTRES**  
**SECTION I – GENERAL**

**AMC1 ORA.AeMC.115 Application**

GENERAL

- (a) The documentation for the approval of an AeMC should include the names and qualifications of all medical staff, a list of medical and technical facilities for initial class 1 aero-medical examinations and of supporting specialist consultants.
- (b) The AeMC should provide details of clinical attachments to hospitals, medical institutions and/or specialists.

**AMC1 ORA.AeMC.135 Continued validity**

EXPERIENCE

- (a) At least 200 class 1 aero-medical examinations and assessments should be performed at the AeMC every year.
- (b) In Member States where the number of aero-medical examinations and assessments mentioned in (a) cannot be reached due a low number of professional pilots, a proportionate number of class 1 aero-medical examinations and assessments should be performed.
- (c) In these cases, the continuing experience of the Accountable Manager and aero-medical examiners on staff should also be ensured by them performing aero-medical examinations and assessments for:
  - (1) Class 2 medical certificates as established in Part-MED; and/or
  - (2) third country Class 1 medical certificates.
- (d) Aero-medical research including publication in peer reviewed journals may also be accepted as contributing to the continued experience of the head of, and aero-medical examiners at, an AeMC.

## SECTION II – MANAGEMENT

### AMC1 ORA.AeMC.200 Management system

The internal Verification system ensures that all AMEs comply with the approved standards while conducting examination, assessment, diagnosis and management before making any medical fitness decisions.

It ensures that given the same or a similar piece of evidence the Aeromedical Inspector and verifiers (in this context Accountable Manager) would come to the same conclusions.

- (a) The Accountable Manager is responsible to develop an internal Audit procedure to confirm:
  - (1) Compliance of all AMEs with GCAA regulation, and
  - (2) The AeMC approved SOP.
  - (3) Performance of AVMED Nurses involved in special investigation part of the GCAA examination.
  - (4) Ensure the compliance of personnel involved in GCAA examination with the code of conduct.
- (b) The Accountable Manager should monitor each activity within the centre on periodic review and document the audit reports securely within the facility for GCAA review and any other audit may be required for quality reason.
- (c) The Accountable Manager will apply any quality improvement actions required to develop the processes where necessary and detail these in the report provided to the AMS for review and approval.
- (d) The Nurses should have a sufficient training on AV MED and documented acceptable competency level in the performed special investigation:
  - (1) CAD test
  - (2) Visual acuity testing
  - (3) Ishihara plates test
  - (4) Urine dipstick test
  - (5) Urine drug testing
  - (6) ECG
  - (7) Audiogram
  - (8) Spirometry/PEF

- (e) Sufficient number of Admin staff aware about all GCAA procedures
- (f) Availability of CPD/CME program within the centre – directly related to GCAA activities.
- (g) Presence of Code of practice (professional ethics) within the facility:
  - (1) It is styled as a code of professional responsibility, which will discuss difficult issues, difficult decisions that will often need to be made, and provide a clear account of what behaviour is considered "ethical" or "correct" or "right" in the circumstances.
  - (2) A code of practice is a good way to state clearly any organisation's position on important subjects like confidentiality, equality, ethics, contracts, conflict of interest and duty of care.
  - (3) Presence of sufficient number of good performer AMEs who will be permitted to do Class 1 and /or cabin crew medicals.

### **GM1 ORA.AeMC.200 Management system**

#### **RESEARCH**

If aero-medical research is conducted at an AeMC, its management system should include processes to conduct that research and publish the results.

#### **SOP**

Standard Operation Procedures (SOP) are detailed and written instructions established to achieve uniformity of the performance of a specific function. It is a written process for the AMEs to perform the task of examination and assessment the same way each time it is completed. It is used to:

- (a) Identify the responsible person for each task.
- (b) Describe actions (i.e. what is to be completed).
- (c) Train staff (new AME, Admin assistance, Nurses) on the processes.
- (d) Monitor the clinic and AME performance.

SOPs ensure that all GCAA Aviation medicine activities conducted within the AeMC follows the updated GCAA regulation, Evidence Based Medicine, international best practices in Aviation medicine and the organizational policies; to protect the rights for all license holders attending GCAA examination at this centre.

SOPs provide autonomy within the clinical site and improve the quality of the data collected, thereby improving the quality of any research in the field.

SOPs are utilized as a reference and guideline as to how research will be conducted within the clinical site on any particular medical condition before issuing or denying any medical certificate.

SOPs may be a training source, but not the single one, for new AMEs

The Elements of SOP should have:

- (a) Header – title, original version date, revision date, effective date, approved by
- (b) Purpose – why one has the policy
- (c) Responsibilities – who the policy pertains to
- (d) Instruction/Procedures – how to accomplish the items of the policy
- (e) References – what the policy is based on
- (f) Appendix – source documents/case report forms

#### **AMC1 ORA.AeMC.210 Personnel requirements**

- (a) The Accountable Manager should be:
  - (1) be an SAME
  - (2) have held class 1 privileges for at least 5 years and have performed at least 200 aero-medical examinations for a class 1 medical certificate before being nominated as head of an AeMC
  - (3) Be Of more than 5 years' experience as Aviation specialist
  - (4) Of excellent performance report within GCAA record
  - (5) Of good understanding to the local law and regulation of aviation medicine.
- (b) The AeMC may provide practical AME training for persons fully qualified and licensed in medicine.
- (c) The AeMC should ensure arrangement with designated hospital or medical institute for purpose of specialist medical examination
- (d) The AeMC should ensure that the nurses have an appropriate training on the AV MED and documented acceptable level of competency in the performed special investigation:
  - CAD test – if applicable
  - Visual acuity testing
  - Ishihara 24 plates test
  - Urine dipstick test
  - Urine drug testing
  - ECG
  - Audiogram
  - Spirometry/PEF
  - GALS – if applicable

#### **GM1 ORA.AeMC.210 Personnel requirements**

Roles and Responsibilities of Accountable Manager are, but not limited to:

- (a) keep all the AMEs records.

- (b) provide training on GCAA regulation to AMEs.
- (c) keep track of scheduled reviews with AMEs and the regulator, and when problems arise, take appropriate corrective and preventive action.
- (d) review the re-instatement forms personally or delegated the task to an SAME within same facility.
- (e) identify their star performers as well as those whose performance is unacceptable.
- (f) supervise all the AMEs medical examinations.
- (g) release the reinstatements for all applicants.
- (h) issue and insert any limitation on medical certificate.
- (i) be focal point for all GCAA communication
- (j) set training plan for designated AME who conduct cabin crew class medical examination if applicable to the AeMC and ensure Availability of CPD/CME program within the centre

#### **AMC1 ORA.AeMC.215 Facility requirements**

##### **MEDICAL-TECHNICAL FACILITIES**

The medical-technical facilities of an AeMC should consist of the equipment of a general medical practice and, in addition, of:

#### **(a) Cardiology**

Facilities to perform:

- (1) 12-lead resting ECG;
- (2) stress ECG;
- (3) 24-hour blood pressure monitoring; and
- (4) 24-hour heart rhythm monitoring.

#### **(b) Ophthalmology**

Facilities for the examination of:

- (1) near, intermediate and distant vision;
- (2) external eye, anatomy, media and funduscopy;
- (3) ocular motility;
- (4) binocular vision;
- (5) colour vision (anomaloscopy or equivalent);

- (6) visual fields;
  - (7) refraction; and
  - (8) heterophoria.
- (c) Hearing
  - (1) pure-tone audiometer
- (d) Otorhinolaryngology

Facilities for the clinical examination of mouth and throat and:

- (1) otoscopy;
  - (2) rhinoscopy;
  - (3) tympanometry or equivalent; and
  - (4) clinical assessment of vestibular system.
- (e) Examination of pulmonary function
  - (1) spirometry
- (f) Laboratory equipment
- (g) Facilities for clinical examination of
  - (1) routine urine tests.
  - (2) drug testing
- (h) The following facilities should be available at the AeMC or arranged with a service provider:
  - (1) clinical laboratory facilities; and
  - (2) ultrasound of the abdomen.