CIVIL AVIATION DIRECTIVE – 1211

AIR TRAFFIC CONTROL APPROVED TRAINING ORGANISATION

ATC – ATO

CIVIL AVIATION AUTHORITY OF MALAYSIA

ISSUE 01
REVISION 01 – 15TH NOVEMBER 2022

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Introduction

In exercise of the powers conferred by Section 24O of the Civil Aviation Act 1969 [*Act 3*], the Chief Executive Officer makes these Civil Aviation Directives 1211 – Air Traffic Control-Approved Training Organisation (CAD 1211 – ATC-ATO), pursuant to Regulation (s) 152, 189, and 193 of the Malaysian Civil Aviation Regulations (MCAR) 2016.

This CAD contains the standards, requirements and procedures pertaining to the provision of ATC Licencing. The standards and requirements in this Directive are based mainly on standards and recommended practices (SARPs) stipulated in International Civil Aviation Organisation (ICAO) Annex 1 to the Chicago Convention – Personnel Licencing.

This Civil Aviation Directives 1211 – Air Traffic Control-Approved Training Organisation (CAD 1211 – ATC-ATO) is published by the Chief Executive Officer under Section 24O of the Civil Aviation Act 1969 [*Act 3*] and come into operation on 15 November 2022.

Non-compliance with this CAD

Any person who contravenes any provision in this CAD commits an offence and shall on conviction be liable to the punishments under Section 24O (2) of the Civil Aviation Act 1969 [*Act 3*] and/or under Malaysia Civil Aviation Regulation 2016.

(Datuk Captain Chester Voo Chee Soon)
Chief Executive Officer
Civil Aviation Authority of Malaysia

Civil Aviation Directive Components and Editorial Practices

This Civil Aviation Directive is made up of the following components and are defined as follows:

Standards: Usually preceded by words such as *"shall"* or *"must"*, are any specification for physical characteristics, configuration, performance, personnel or procedure, where uniform application is necessary for the safety or regularity of air navigation and to which Operators must conform. In the event of impossibility of compliance, notification to the CAAM is compulsory.

Recommended Practices: Usually preceded by the words such as "*should"* or "*may*", are any specification for physical characteristics, configuration, performance, personnel or procedure, where the uniform application is desirable in the interest of safety, regularity or efficiency of air navigation, and to which Operators will endeavour to conform.

Appendices: Material grouped separately for convenience but forms part of the Standards and Recommended Practices stipulated by the CAAM.

Definitions: Terms used in the Standards and Recommended Practices which are not self-explanatory in that they do not have accepted dictionary meanings. A definition does not have an independent status but is an essential part of each Standard and Recommended Practice in which the term is used, since a change in the meaning of the term would affect the specification.

Tables and Figures: These add to or illustrate a Standard or Recommended Practice and which are referred to therein, form part of the associated Standard or Recommended Practice and have the same status.

Notes: Included in the text, where appropriate, Notes give factual information or references bearing on the Standards or Recommended Practices in question but not constituting part of the Standards or Recommended Practices;

Attachments: Material supplementary to the Standards and Recommended Practices or included as a guide to their application.

It is to be noted that some Standards in this Civil Aviation Directive incorporates, by reference, other specifications having the status of Recommended Practices. In such cases, the text of the Recommended Practice becomes part of the Standard.

The units of measurement used in this CAD are in accordance with the International System of Units (SI) as specified in CAD 5. Where CAD 5 permits the use of non-SI alternative units, these are shown in parentheses following the basic units. Where two sets of units are quoted it must not be assumed that the pairs of values are equal and interchangeable. It may, however, be inferred that an equivalent level of safety is achieved when either set of units is used exclusively.

Any reference to a portion of this CAD, which is identified by a number and/or title, includes all subdivisions of that portion.

Throughout this Civil Aviation Directive, the use of the male gender should be understood to include male and female persons

Record of Revisions

Revisions to this CAD shall be made by authorised personnel only. After inserting the revision, enter the required data in the revision sheet below. The *'Initials'* has to be signed off by the personnel responsible for the change.

ISS/REV No.	Revision Date	Revision Details	Initials
ISS01/REV01	15th November 2022	Refer to summary of changes	CAAM

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Summary of Changes

ISS/REV No.	Item No.	Revision Details
ISS01/REV01	Para 10.2.1, 10.2.2, 10.2.3, 10.2.4, 10.2.5, 10.2.8, 10.2.9, 10.3.2, 10.3.2.1, 10.3.3.1, 10.3.3.3, 10.3.3.6, 10.3.4.1, 10.3.4.2, 10.4.2.2 & 10.4.3.2	Incorporated CAC 08/2021
	Para 1.4, 3.1.2, 10.5.1 & 11.2.1	Merger of Aerodrome Standards Division (ASD) and Air Navigation Services Standards Division (ANSSD) into one division known as Air Navigation Services and Aerodrome Division (ANSA).
	Para 2.2.4, 2.5.1, 2.7.3 & 6.1.4	Rename of the ATC-ATO Application Form's name to CAAM/BPUA/ATC-ATO/01

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1 General

1.1 Citation

1.1.1 These Directives are the Civil Aviation Directive 1211 – Air Traffic Control – Approved Training Organisation (CAD 1211 – ATC-ATO), Issue 01/Revision 01, and comes into operation on 15 November 2022.

1.1.2 This CAD contains the standards, requirements and procedures pertaining to the provision of Air Traffic Control – Approved Training Organisation. The standards and requirements in this CAD are based mainly on standards and recommended practices (SARPs) stipulated in International Civil Aviation Organisation (ICAO) Annex 1 to the Chicago Convention Personnel Licencing (PEL) and ICAO Doc 9841 - Manual on the Approval of Training Organisations.

1.1.3 This CAD shall be read together with CAD 1201 – ATC Licencing.

1.2 Applicability

1.2.1 The standards specified in this CAD applies to the person or organisation who is approved by the Authority to provide any Air Traffic Control courses or training or instruction.

1.3 Revocation

1.3.1 This CAD revokes Civil Aviation Directive 1211 – Air Traffic Control Approved Training Organisation (CAD 1211 – ATC-ATO) Issue 01/Revision 00 published on 1 May 2021 and Civil Aviation Circular (CAC) 08/2021 published on 31 December 2021.

1.4 Definitions

When the following terms are used in this CAD, they have the following meanings:

Accountable executive is an individual who has corporate authority for ensuring that all training commitments can be financed and carried out to the standard required by the Authority, and any additional requirements defined by the approved training organisation.

Aerodrome is a defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.

Aerodrome Control Service means Air traffic control service for aerodrome traffic.

Aerodrome control tower is a unit established to provide air traffic control service to aerodrome traffic

Aeronautical Information Publication Is a publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

***Air Navigation Services and Aerodrome Division (ANSA*)**. Air Navigation Services and Aerodrome Division in the Civil Aviation Authority of Malaysia vested with the responsibility to regulate the air navigation services (ANS) provision.

Air traffic. All aircraft in flight or operating on the manoeuvring area of an aerodrome.

Air traffic advisory service is service provided within advisory airspace to ensure separation, in so far as practical, between aircraft which are operating on IFR flight plans.

Air traffic control - approved training organisation is an organisation approved by and operating under the supervision of the Authority in accordance with the requirements to perform approved training for air traffic controllers.

Air traffic control unit is a generic term meaning variously, area control centre, approach control unit or aerodrome control tower.

Air traffic service (ATS) is a generic term meaning variously flight information service, alerting service, air traffic advisory service, aeronautical information service and air traffic control service.

Air traffic services unit is a generic term meaning variously, air traffic control unit, flight information centre or air traffic services reporting office.

Airway means a control area or portion thereof established in the form of a corridor.

Altitude is the vertical distance of a level, a point or an object considered as a point, measured from mean sea level.

Approach Control Service means air traffic control service for arriving or departing controlled flights.

Approach Control Unit is a unit established to provide air traffic control service to controlled flights arriving at, or departing from, one or more aerodromes.

Apron is a defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, fuelling, parking or maintenance.

Approved training is training conducted under special curricula and supervision approved by the Authority.

Approved training organisation is the holder of an approval or authorisation under regulation 152 of the Civil Aviation Regulations 2016.

ATC Examiner (ATCE) is an Air Traffic Controller with specific qualifications and valid Ratings, appointed by the CEO to conduct Examinations pertinent to ATC training courses and air traffic service unit operations.

Authority means the Civil Aviation Authority of Malaysia established under the Civil Aviation Authority of Malaysia Act 2017 [Act 788].

Authorised Examiner is an examiner who is appointed by the authority to conduct examination pertinent to ATC Training Courses and air traffic service unit operations.

Authorised officer is a person employed by the Authority to carry out its regulatory function.

Area Control Centre means a unit established to provide air traffic control service to controlled flights in control areas under its jurisdiction.

Area Control Service means Air Traffic Control service for controlled flights in control areas.

Chief Executive Officer (CEO) is the Chief Executive Officer of Civil Aviation Authority of Malaysia.

Finding means a finding is a conclusion by the operator's or by the CAAM's audit personnel that demonstrates either noncompliance with a regulation or non-conformity with a specific standard.

Clearance limit means the point to which an aircraft is granted an air traffic control clearance.

Control area is a controlled airspace extending upwards from a specified limit above the earth.

Controlled airspace is an airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification.

Control zone means a controlled airspace extending upwards from the surface of the earth to a specified upper limit.

Emergency phase is a generic term meaning, as the case may be, uncertainty phase, alert phase or distress phase.

Evaluator is a generic term used in the context of an ATO to describe a person who is qualified, authorised and assigned to carry out specific assessment, checking, testing and/or auditing duties to determine that all required standards of performance have been satisfactorily achieved.

Flight information region (FIR) means an airspace of defined dimensions within which flight information service and alerting service are provided.

Height is the vertical distance of a level, a point or an object considered as a point, measured from a specified datum.

Human Factors principles means the principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

Human performance means the human capabilities and limitations which have an impact on the safety and efficiency of aeronautical operations.

IFR flight are flights conducted in accordance with the instrument flight rules.

Instrument meteorological conditions means the meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, less than the minima specified for visual meteorological conditions.

Level is a generic term relating to the vertical position of an aircraft in flight and meaning variously, height, altitude or flight level.

Meteorological office is an office designated to provide meteorological service for international air navigation.

Quality means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs.

Quality assurance means all the planned and systematic actions necessary to provide adequate confidence that all training activities satisfy given standards and requirements, including the ones specified by the approved training organisation in relevant manuals.

Quality audit is a systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

Quality inspection means the part of quality management involving quality control. In other words, inspections accomplished to review a document or observe events/actions, etc., in order to verify whether established operational procedures and requirements are being fulfilled during the accomplishment of the event or action, and whether the required standard is being achieved.

Quality manager is the manager responsible for the quality monitoring function and for requesting remedial action.

Radiotelephony means a form of radio communication primarily intended for the exchange of information in the form of speech.

Runway means a defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft.

SIGMET information is Information issued by a meteorological watch office concerning the occurrence or expected occurrence of specified en-route weather and other phenomena in the atmosphere that may affect the safety of aircraft operations.

Special VFR flight is a VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC.

Taxiing means the movement of an aircraft on the surface of an aerodrome under its own power, excluding take-off and landing.

VFR flight is a flight conducted in accordance with the visual flight rules.

Visual meteorological conditions means the meteorological conditions expressed in terms of visibility, distance from cloud, and ceiling, equal to or better than specified minima.

1.5 Abbreviations and Acronyms

When the following abbreviations are used, they have the following meanings:

AIP	=	Aeronautical Information Publication
ANSRM	=	Air Navigation Services Regulatory Manual
ATC	=	air traffic control
ATC-ATO	=	air traffic control approved training organisation
ATCSMA Chart	=	ATC surveillance minimum altitude chart
ATO	=	Approved Training Organisation
ATS	=	Air Traffic Service
ATSU	=	Air Traffic Service Unit
CEO	=	Chief Executive Officer of the Authority
CAAM	=	Civil Aviation Authority of Malaysia
CAP	=	Corrective Actions Plan
DME	=	Distance Measuring Equipment
EAT	=	Expected Approach Time
GA	=	General Aviation
ICAO	=	International Civil Aviation Organisation
IFR	=	The Instrument Flight Rules
IMC	=	Instrument Meteorological Conditions

MATS	=	Manual of Air Traffic Services
METAR	=	aerodrome routine meteorological reports
NAVAIDS	=	Navigational aids
NM	=	Nautical Mile
PQ	=	Protocol Questions
QA	=	Quality Assurance
SARPs	=	Standards and Recommended Practices.
SID	=	Standard Instrument Departure
SPECI	=	aerodrome special meteorological reports
STAR	=	Standard instrument arrival
SVFR	=	Special Visual Flight Rules
RVR	=	Runway Visual Range
TPM	=	Training Procedure Manual
VFR	=	Visual Flight Rules.
VMC	=	Visual Meteorological Conditions
VOR	=	Very high frequency Omni-directional Radio range

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2 ATC-ATO Approval

2.1 Organisational Structure

2.1.1 The design and make-up of its structure shall ensure that the delivery of training meets the client's needs and expectations while maintaining compliance with the applicable regulatory requirements. ATC-ATOs shall have a management structure that is designed around best quality management practices.

2.1.2 The ATC-ATO shall nominate an accountable executive who shall have the final corporate authority on decisions that may impact upon the continued suitability of the organisation to deliver training to aviation personnel for licencing purposes. The accountable executive shall ensure that training commitments are financed and carried out in accordance with requirements of personnel licencing.

2.1.3 The training organisation shall demonstrate that it has sufficient qualified personnel to plan and carry out theoretical and practical training, as well as associated assessments in accordance with the certification.

2.1.4 A focal point for coordination with the Authority shall be nominated.

2.1.5 A job description shall be available and clearly indicate the qualifications, responsibilities, functions and reporting hierarchy of each training and administrative personnel.

2.1.6 ATC-ATO shall have all their services authorised under the terms of their organisation's approval. The content of each approved training programme including the courseware and equipment used shall be documented. Chapter 3 details this requirement while describing the content of the training and procedures manual.

Note. — Appendix 1 provides several recommended organisational structures for consideration.

2.2 Obtaining Approval

2.2.1 Air traffic control training courses shall be conducted at training organisation approved by the Authority.

2.2.2 An application for issuance, renewal or variation of approval or authorisation shall be made in accordance with *Regulation 189 of the Civil Aviation Regulations 2016*.

2.2.3 Any application made under paragraph 2.2.2 shall be accompanied by the fee as prescribed in the *Civil Aviation (Fees and Charges) Regulations 2016*.

2.2.4 An application using Form *CAAM/BPUA/ATC-ATO/01 (Appendix 2)* and a written exposition (suggested layout as in *Appendix 3*), shall be submitted to the Authority by any organisation intending to conduct ATC related training. The exposition shall detail the organisational set-up, facilities, equipment, training device,

accommodation, staffing, assessment processes and quality management system to enable the provision of professional standards in ATC training.

2.2.5 The application shall be submitted along with a copy of the proposed ATC-ATO's training and procedure manual which include course curriculum document, quality manual, list of personnel with job description for key personnel, course programme, together with checklist verifying the compliance with all requirements and signed by an authorised person.

Note 1. — The requirements for the contents of the training procedure manual are stipulated in Chapter 3 and detailed guidance on this subject is provided in Appendix 4.

Note 2. — The guidance for approval and oversight processes is provided in Appendix 9.

2.3 Review and Approval Process

2.3.1 An ATC-ATO shall demonstrate its capability to provide ATC training by holding an ATC-ATO approval certificate, issued by the Authority in accordance with these CAD.

2.3.2 An ATC-ATO shall offer specific curricula inclusive of quality instructional system and evaluation system including the theoretical and simulative aspects of training acceptable and approved by the Authority.

2.3.3 The approval certificate shall contain at least the following:

a) organisation name and location;

b) date of issue;

c) period of validity;

d) terms of approval; and

e) scope of approved training.

Note. — The model of the 'Certificate of ATC-ATO' is mentioned in Appendix 5.

2.3.4 The issuance of an approval certificate to an ATC-ATO and the continued validity of the approval shall depend upon the training organisation developing, publishing and implementing the following:

a) training and procedures manuals / documentation;

b) training programme;

c) quality assurance system;

d) appropriate training facilities;

e) suitably qualified personnel; and

f) systematic retention of training records.

2.4 Validity

2.4.1 The validity of the approval shall be not exceeding twenty-four months from the date of issue or renewal unless:

a) the approval is surrendered, suspended or revoked; or

b) a major change has been made to the ATC-ATO facilities, upon which the ATC-ATO approval is based, without the prior approval of the authority; or

c) the ownership of the ATC-ATO has changed and no application has been submitted to the Authority within the 30 days of change of ownership.

2.5 Renewal

2.5.1 An application using Form *CAAM/BPUA/ATC-ATO/01 (Appendix 2)* shall be submitted to the Authority for renewal of an approval not later than 120 days before the date of expiry together with the following documents:

a) an updated copy of written exposition (suggested layout as in *Appendix 3*), detail the current organisational set-up, facilities, equipment, training device, accommodation, staffing, assessment processes and quality management system to enable the provision of ATC training of professional standards;

b) an updated copy of the ATC-ATO's training and procedure manual with the contents as stipulated in Chapter 3;

c) an updated copy of corrective action report from previous regulatory audit; and

d) a copy of recent internal audit report including the corrective actions taken.

2.5.2 An ATC-ATO shall demonstrate that it meets all provisions set forth for the issuance of the approval including the personnel, facility, training device, approved training programmes, training records, and recent training ability meeting the prescribed requirements.

2.5.3 For the renewal of the approval certificate, an ATC-ATO shall have to be actively involved in the training process.

2.6 Display of Approval Certificate

2.6.1 An ATC-ATO shall prominently display its approval certificate at its premises.

2.6.2 An ATC-ATO shall readily make its approval certificate available for scrutiny when requested by the authorised officials of the authority.

2.7 Changes in the Scope of the Approval

2.7.1 Whenever ATC-ATO requires change in the scope their approval, it should provide supporting information to the Authority that will assess it using the applicable requirements. A variation to the approval document should be issued after a satisfactory assessment.

2.7.2 Changes or modifications in equipment, software, facilities, training device, or key managerial personnel should be reported to the Authority to ensure that any required approvals are obtained without delay.

2.7.3 An application for a variation of approval shall be made using Form *CAAM/BPUA/ATC-ATO/01 (Appendix 2)* and shall be submitted to the Authority with the details of the variation.

2.8 Continued Surveillance

2.8.1 After receiving an approval, the ATC-ATO will be subjected to continued surveillance by the Authority to ensure that the ATC-ATO is operating within the terms of its approval.

2.8.2 Details on the continued surveillance to be conducted by the Authority are provided in *Chapter 12*.

2.9 Course Approval

2.9.1 ATC courses of instruction as prerequisite to the further training for the grant of air traffic control license or additional rating to an air traffic control license shall be approved by the Authority.

2.9.2 Course Curriculum Document

2.9.2.1 ATC-ATO shall submit to the Authority a course curriculum document (CCD) for all ATC courses as part of the training procedure manual. The CCD shall contain a statement from the accountable executive confirming that the course meets the ICAO training requirements and the course objective requirements in *Appendix 8*.

2.9.2.2 The course curriculum document shall demonstrate that:

a) the propose course provides training to enable trainees to reach course objectives in Appendix 8 of this document;

b) the course programme with the theoretical and practical training sessions shall demonstrate that the methodology used to establish details of the content, organisation and duration of training courses is adequate. This will include the method by which examinations or assessments are organised;

c) the syllabus for theory and practical training include the knowledge and skills appropriate to the holder of an air traffic controller license as in ICAO Annex 1 Chapter 4 paragraphs 4.4.1.2 and 4.5.2;

d) all training equipment is adequate for the proposed course of training;

e) simulators comply with the criteria shown in Chapter 6 of this document;

f) the initial training organisation has appropriate processes in place to ensure that the course meets customer requirements;

g) the training organisation has appropriate processes in place to ensure that the course meets regulatory requirements; and

h) the training organisation maintains records of all changes made to the course, either on a temporary or permanent basis, and the reasons for making them.

2.9.2.3 A master copy of the course curriculum document, showing all changes incorporated and the reasons for them shall be maintained by the training organisation. It shall be possible to trace the development of the course from this document.

2.9.2.4 To conduct a new ATC course, the training organisation shall submit a variation application with the new course curriculum document to the Authority at least eight weeks before the ATC-ATO intends to conduct the course together with a checklist verifying the compliance with all requirements and signed by an authorised person.

2.9.3 Maintenance and Review of ATC Training Courses

2.9.3.1 ATC-ATO shall have processes in place to maintain and review ATC training courses to ensure that the training provided meets the requirements of operational ATC units.

2.9.3.2 Changes made as a result of these processes shall be documented in the course curriculum document, together with the reasons for making them.

2.9.3.3 Training organisations shall update their courses in accordance with relevant regulatory requirements.

2.9.3.4 Other changes shall be recorded, together with the reason for the change, by the training organisation.

2.9.3.5 ATC training courses, including training for abnormal and emergency situations, shall be reviewed annually. This shall be achieved by application of one or more of the following methods:

a) monitoring the progress of trainees undertaking on-the-job training to identify additional skills or knowledge required to be taught on the course; and

b) subjecting the courses to review by organisations that provide air traffic control services.

2.9.3.6 Training organisations may change their course in accordance with any findings arising from the reviews provided that these do not result in the course failing to meet the requirements stated in paragraph 2.9.2.3 above. Changes made to initial training courses resulting from the reviews shall be documented in the course curriculum document, together with the reasons for making them.

2.10 Training Plan

2.10.1 ATC-ATO shall submit to the Authority an annual training plan before conducting the first ATC course of the year. This plan shall include the dates for theory and practical training including dates for theory, practical and oral examinations.

2.10.2 Any course planned to be conducted other than those stated in 2.10.1 above shall be submitted to the Authority two weeks before commencing the course.

2.10.3 The course shall follow the programme stated in the training manual or course curriculum document, amended as necessary to comply with any conditions specified in the course approval.

2.10.4 Unavoidable variations shall be logged and retained in the course records.

2.10.5 Modifications to lesson plans due to changes in regulations or similar documents are considered unavoidable and need be recorded in the course curriculum document.

Note. — The guidance for acceptance process is provided in Appendix 9.

2.11 Attendance

2.11.1 ATC-ATO shall maintain records to show that each trainee has undertaken, in full, the approved course of training.

2.11.2 Where periods of absence have occurred, records must show how missed training has been recovered.

3 Training and Procedures Manual

3.1 General

3.1.1 An ATC-ATO shall have an approved training and procedure manual for the use and guidance of its personnel.

3.1.2 The training and procedure manual shall be submitted to ANSA for verification.

3.1.3 The training and procedures manual shall describe the training programmes being offered and the way in which the training organisation conducts its activities.

3.1.4 ATC-ATO shall ensure that the contents of all operational documents, including the training and procedures manual, be consistent with each other and consistent with regulations, other related requirements and human factors principles.

3.1.5 ATC-ATO shall ensure that the manual is used consistently across all departments within the organisation.

3.2 Documentation Management

Note. — The training and procedures manual may be issued in separate parts should the ATC-ATO find it ungainly to have all the required content appear in one single document.

3.2.1 ATC-ATO shall ensure that these documents be maintained to ensure their continued relevancy and compliance with applicable national regulations.

3.3 Content

3.3.1 The content of the training and procedures manual is detailed in *Appendix 4* to this manual provides a more detailed breakdown of the content of the manual. Depending on the size, complexity and scope of the training provided by the organisation, some of the elements contained in the list can be reduced, combined or expanded further.

3.4 Organisation

3.4.1 The training and procedures manual shall be organised according to criteria relating to the information, its importance and use.

3.4.2 The manual shall be consistent with the training organisation’s philosophies, policies, processes and procedures.

3.5 Structure

3.5.1 The structure of the manual shall be easy to understand, appropriate for the information documented and clearly identified through headings and other formatting devices. An explanation of the document structure should be provided at the beginning of the document, explaining organisational elements such as the headings, numbering scheme, main parts of the document and other sources of coding or groupings.

3.5.2 Precise language shall be used wherever possible. Terms for common items and actions shall be consistent throughout the manual and must be clear and easily understood.

3.5.3 Writing style, terminology, formatting and use of graphics and symbols shall be consistent throughout the document, including the location of specific types of information and use of units of measurement and codes.

3.5.4 The manual shall contain a glossary of definitions and significant terms including a list of acronyms and/or abbreviations. The glossary shall be updated on a regular basis to ensure access to the most recent terminology.

3.5.5 For ease of amendment and distribution, an appropriate revision process shall be defined and set up when designing the manual.

3.5.6 The training and procedures manual shall comply with the requirements of the training organisation's quality assurance practices.

3.6 Validation

3.6.1 The training and procedures manual shall be reviewed and tested under realistic conditions before its operational release.

3.7 Deployment and Feedback

3.7.1 The training organisation shall monitor the use of the training and procedures manual after its release. This will ensure appropriate and realistic use of the manual, based on the operational environment, in a way that is operationally relevant and beneficial to the personnel for whom it is intended.

3.7.2 Monitoring should include a formal feedback system to obtain input from principal users of the manual and other persons who would be affected by a new or revised policy, procedure or process.

3.8 Amendment

3.8.1 The training organisation shall develop an effective information gathering and review system to process information obtained from all sources relevant to the organisation, such as the Authority, regulators, training customers, as well as a distribution and revision control system.

3.8.2 The training organisation shall also develop an information review, distribution and revision control system to process information resulting from changes that originate within the organisation. This includes changes to:

a) the organisation's policies, processes, procedures and practices;

b) respond to operating experience;

c) the scope of training provided;

d) the content of training programmes;

e) results stemming from the installation of new equipment;

f) an approval document or certificate; and

g) maintain standardisation.

3.8.3 The training and procedures manual shall be reviewed in association with other operational documents that form the organisation's document control system:

a) on a regular basis;

b) after major events such as mergers, acquisitions, rapid growth or downsizing;

c) after technology changes, e.g. the introduction of new equipment; and

d) after changes to safety regulations.

3.8.4 Permanent changes to the training and procedures manual shall be communicated through a formal amendment process. The manual shall be amended or revised as necessary to ensure that the information contained is kept up to date.

3.8.5 ATC-ATO shall establish a distribution procedure to ensure that all amendments and revisions are distributed promptly to all organisations or persons to whom the manual has been issued

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4 Quality Assurance

Note 1. — The instructions and information contained in this Chapter provide guidance on the quality assurance (QA) that each ATO shall establish in accordance with Appendix 2 *to* ICAO Annex 1.

4.1 Objective

4.1.1 The training organisation shall establish a quality assurance system, acceptable to the Authority, which ensures that training and instructional practices are developed, managed, delivered and sustained in accordance with ICAO Standards and Recommended Practices.

4.1.2 A formal system shall be in place to gather feedbacks from students, instructors and unit heads.

4.2 Elements

4.2.1 The following QA elements should be clearly identifiable in the training and procedures manual:

a) the organisation's training policy (for clients as well as for its own personnel);

b) training standards;

c) allocation of responsibility;

d) resources, organisation and operational processes;

e) procedures to ensure conformity of training with the policy;

f) procedures for identifying deviations from policy and standards and taking corrective action; and

g) the evaluation and analysis of experiences and trends concerning policy and training standards, in order to provide feedback into the system for the continual improvement of the quality of training.

4.3 QA and Quality System

4.3.1 The quality system for an ATO shall encompass well-designed and documented policies, processes and procedures for at least the following activities:

a) training services and process controls;

b) integrity of theory and practical assessment and testing methods;

c) monitor personnel qualifications and training;

d) monitor training document, devices and equipment qualification, calibration and functionality, as applicable;

e) conduct of internal and external audits;

f) develop, implement and monitor corrective and preventive actions and associated reporting systems; and

g) utilise appropriate statistical analysis to identify and respond appropriately to trends.

Note. — Details on the requirements for QA and the development of an overarching quality system for an approved training organisation can be found in Appendix 6.

5 Facilities and Equipment

5.1 Facilities

5.1.1 An ATC-ATO shall have access to facilities appropriate to the size and scope of the intended operations provided in an environment conducive to learning. These facilities shall include:

a) general areas which consist of sufficient:

1) office space for ATO managerial, administrative and training staff;
2) study and examination rooms and reference/library facilities; and
3) storage areas, including secure areas for training and personnel records;

b) classroom areas which are suitably equipped with standard electrical installations for use of computers and projection equipment to effectively deliver the theoretical elements of the training programme in accordance with the training and procedures manual;

c) practical training areas which are designed and equipped to ensure the attainment of end-state competencies;

d) office accommodation of acceptable standards shall be provided for the instructors and practical assessors equipped with a computer and access to scanner and printer and;

e) where applicable, any facilities required under the regulations and from the local government

5.1.2 Any changes to the working conditions and any temporary mitigation measures shall be discussed with the Authority prior to continuing with the scheduled training.

5.1.3 The classroom and practical training areas shall be appropriate for the task to be performed including:

a) lighting or window covering are adjustable, so projected audio-visual aids are easily viewed from all trainee positions;

b) ventilation or air conditioning system provide a conducive temperature for comfortable environment; and

c) walls, floors and roof provide low noise, comfortable and appropriate environment.

5.1.4 A library shall be established to contain all relevant training material. If training material is provided in electronic format, there shall be adequate facilities to allow for production of printed copies. The training organisation is responsible for copyright arrangements of such documents.

5.1.5 The ATC-ATO shall ensure that basic first-aid facilities are made available for the wellbeing of all staff and trainees including any access to information, instruction, training and supervision needed to sustain environment that is safe from injury and risks to their health.

5.2 Training Courseware and Equipment

5.2.1 An ATC-ATO shall ensure that all courseware and equipment required by the training programme, as specified in the training and procedures manual, are available and in good working order.

5.3 Training Device

5.3.1 Each training device that is intended for training, testing or checking in an approved training programme shall to be made available to the Authority, for determination of its suitability.

5.3.2 The ATC-ATO shall ensure that the maintenance personnel are suitably qualified for their job functions which they are assigned with.

5.3.3 Details on the approval for a training device are provided in *Chapter 6*.

6 Training Device Approval

6.1 Obtaining Approval

6.1.1 Any synthetic trainer, training device or simulator used for the training of air traffic control in an approved training organisation (ATO) shall be appropriate for the task to be performed, able to support all planned training programme.

6.1.2 The training devices shall be appropriate for the type of training it is intended for and shall replicate as close as possible, a real time environment. Training devices shall be equipped to enable trainees to achieve the training objectives as specified in *Appendix 8*.

6.1.3 Each training device that is intended for training, testing or checking in an approved training programme and shall be approved by the Authority, for determination of its suitability.

6.1.4 Any application for the approval for a new, renewal or variation of a training device shall be submitted to the Authority using Form *CAAM/BPUA/ATC-ATO/01 (Appendix 2)* accompanied by the prescribed fee set forth in *the Civil Aviation (Fees and Charges) Regulations 2016*.

6.2 General

6.2.1 The training device rooms shall be equipped as nearly as possible in the same way as control units at which the trainees will later be working operationally

6.2.2 The ATC training console is adequate for intended training and shall include:

a) a console to accommodate the controller and the assistant;

b) surveillance display (as applicable), for example flight progress board or display panel, logbooks, maps and procedure charts; and

c) retrieval and playback of audio and surveillance recording (as applicable) facility.

6.2.3 Situations that may actually confront a controller shall be reproduced synthetically. In the simulator, instructors shall have the control on the weather, types and amounts of traffic, availability of navigational aids, aerodrome conditions, emergencies and other factors.

6.2.4 The learning process shall be made in an orderly progression from simple routine operations to more complex problem, and instruction in the proper use of various types of equipment and the performance of functions at each operating position is not hampered by the pressure of real duties.

6.2.5 The exercises conducted in the simulator shall be correlated with the current theory/training objectives in the classroom, thus enabling the student to reinforce the new concepts he is learning, by practical application in the simulator.

6.2.6 All exercises shall be prepared in advance and planned to convey particular lessons in providing air traffic services.

6.2.7 Specific instructions on what is required shall be given to the initiators of the exercise, normally those acting as pseudo pilots of the aircraft.

6.2.8 After a session in the simulator a period shall always be arranged to allow for a thorough debriefing on the conduct of the exercise.

6.2.9 Where the training device is used for examinations, accommodation for examination panel members shall be provided including for the monitoring of radiotelephony and coordination between the examinee, coordinator and pseudo pilots.

6.3 Communication

6.3.1 The training device shall provide communication system for radiotelephony between controller and pseudo pilots, and speech line between controller and the coordinator.

6.3.2 Headsets shall be used to minimise noise and distractions.

6.3.3 There shall be an established mechanism for the exchange of discrete messages between instructor/examiner and coordinator.

6.3.4 Communications for all exercises shall be recorded, and shall be able to be retrieved and replayed for the student to subsequently check his own performance. This will provide valuable practice in phraseology, and enables the student to correct his pronunciation as necessary.

6.4 Maintenance

6.4.1 Each ATO shall implement a routine maintenance programme to ensure that the training devices continue to function properly and, when applicable, continue to accurately replicate any component, system or equipment for which training, checking or testing are being conducted.

6.4.2 Each ATO shall establish and maintain system for reporting of unserviceability and detailed record-keeping process for each training device, which accurately records the device's use and lists any discrepancies with respect to its functionality or intended performance characteristics that may impact training.

6.5 Aerodrome Control Training Device

6.5.1 General

6.5.1.1 The controller's console shall contain at least a display board, radiotelephony microphone, receiver and communication system for simulating the usual telephone link-up available to aerodrome controllers.

6.5.1.2 Other aerodrome control equipment, such as wind speed and direction indicators, light signals and binoculars shall also be provided. This equipment shall be capable of simulated operation.

6.5.2 Aerodrome Control Training Device (Visual 3D)

6.5.2.1 Where applicable, an ATO shall provide a computer aided synthetic aerodrome control training device where the device is capable is to produce the movement of aircraft on and in the vicinity of an aerodrome by projecting spots of lights on to screens placed in front and minimum of 240 degrees around the trainee aerodrome controller.

6.5.2.2 The controller's console shall be able to accommodate the aerodrome controller and the assistant.

6.5.2.3 Accommodation for the simulator personnel and exercise coordinator shall be provided in a separate room.

6.5.2.4 The number of pseudo pilot positions shall be determined by the ability of the system and personnel to conduct the planned control exercises. A minimum of three positions are required for pseudo pilots and a fourth position for the exercise coordinator who is responsible for telephone calls for other area control centres, approach or aerodrome control, clearance room, fire section, meteorological office, company officers, etc.

6.5.3 Basic Aerodrome Training Device

6.5.3.1 Where applicable, an ATO shall provide a basic aerodrome training device where one method is to provide a plan of an aerodrome with model buildings and aerodrome equipment on a large table / raised platform. With few personnel around the table / platform who will simulate the movement of aircraft by moving model aircraft around the simulated circuit; they will also simulate radiotelephony calls from the pilot at the appropriate time, in accordance with the lesson objectives.

6.5.3.2 The aerodrome and model aircraft shall be viewed by the aerodrome controller from a tower cab.

6.5.3.3 The number of pseudo pilot positions shall be determined by the ability of the personnel to conduct the planned control exercises. A position is required for the coordinator who is responsible for telephone calls from the area control centre, clearance room, fire section, meteorological office, company officers, etc.

6.6 Approach and Area Procedural Control Training Device

6.6.1 The controller's console shall be able to accommodate the approach/area controller and the assistant.

6.6.2 The console shall include the flight progress board or display panel. The usual log books, maps and procedure charts used by approach and area controllers shall be provided.

6.6.3 Accommodation for the simulator personnel and exercise coordinator shall be provided in a separate room / partition.

6.6.4 The number of pseudo pilot positions shall be determined by the ability of the system and personnel to conduct the planned control exercises. A minimum of three positions are required for pseudo pilots and a fourth position for the exercise coordinator who is responsible for telephone calls for the area control centre, clearance room, fire section, meteorological office, company officers, etc.

6.6.5 The usual communication on two separate systems is required; one for telephones and the other for radiotelephony.

6.7 Surveillance Control Training Device

6.7.1 A surveillance control training device shall be able to simulate the required approach or area control surveillance training objectives.

6.7.2 The controller's console shall be able to accommodate the surveillance controller and the assistant.

6.7.3 The console shall include a surveillance display and the flight progress board or display panel. The usual log books, maps and procedure charts used by surveillance controller shall be provided.

6.7.4 Accommodation for the simulator personnel and exercise coordinator shall be provided in a separate room / partition.

6.7.5 The number of pseudo pilot positions shall be determined by the ability of the system and personnel to conduct the planned control exercises. A minimum of three positions are required for pseudo pilots and a fourth position for the exercise coordinator who is responsible for telephone calls for other area control centres, approach or aerodrome control, clearance room, fire section, meteorological office, company officers, etc.

6.7.6 The usual communication on two separate systems is required; one for telephones and the other for radiotelephony.

7 ATC-ATO Staffing

7.1 General

7.1.1 Each ATC-ATO shall have accountable executive and key managerial personnel. Typical key positions include:

a) accountable executive;

b) head of training;

c) instructional services manager;

d) quality manager; and

e) maintenance manager, if applicable.

7.1.2 Depending on the size and scope of the organisation and the requirements of the Authority, some of the key positions may be supplemented by subordinates as illustrated in the organisational charts in *Appendix 1*. Small and less complex ATOs may combine some key positions when it becomes clear that the resulting position's roles and responsibilities would not be adversely affected by such a decision.

7.1.3 The organisational and functional chart shall show the key personnel's responsibilities and accountabilities.

7.1.4 An ATC-ATO shall develop policy and organisation set up including the number of staff required to plan and carry out theoretical and practical training. The ATO shall provide the number of qualified and competent instructors and evaluators appropriate to the size and scope of the intended operations, who hold appropriate licences, certificates, qualifications and ratings or authorisations by the Authority.

7.2 Qualification and Training

7.2.1 Instructors and evaluators shall have held an ATC Licence with validation in the rating concerned for a minimum period of three (3) years. The instructors for subjects such as air law, general knowledge, air traffic control equipment, human performance, meteorology, navigation and other emerging specialised areas shall be suitably qualified and experienced subject matter experts.

7.2.2 The ATC-ATO shall ensure that sufficient trained and competent personnel are available for the continued effectiveness of its quality system.

7.2.3 ATC-ATO shall have the control and capability to ensure that instructors meet all requirements in each training discipline and remain current on changes to training programmes.

7.2.4 Instructors and evaluators shall undergo initial training, OJT and recurrent training, relevant to the most recent technology and training methodologies appropriate to

the competencies for which the students are being trained and examined. The trainings shall include, but not limited to:

a) the regulatory requirements;

b) its quality system;

c) the basic instructional techniques; and

d) the developments in their areas of expertise.

7.2.5 Simulator personnel and pseudo pilots shall have completed the appropriate training programme and are competent to assist in the usage of training device for ATC training.

8 Third-Party Providers (Outsourcing)

8.1 Courseware

8.1.1 The ATC-ATO shall be accountable for the quality and suitability of its courseware. Any work being performed by a third-party provider shall be subjected to the same QA practices that the ATC-ATO is expected to apply to its own work.

8.2 Facilities and Equipment

8.2.1 In certain circumstances, an ATC-ATO may utilise another ATC-ATO facilities or equipment. To protect against lapses in QA of temporary utilisation of another ATC-ATO's facilities and equipment including approved training device, ATC-ATOs shall develop and document contingency plans in their quality manual for instances when training demands are such that the use of another ATOs facilities and equipment are required. The temporary utilisation of another ATC-ATO's facilities and equipment shall be subjected to the approval from the Authority.

8.2.2 Any assessment or examination conducted in other ATC-ATO facilities shall be conducted in accordance with the original approval holder processes, and shall not be conducted under the host approved processes.

8.3 Personnel

8.3.1 An ATC-ATO may use temporary instructional and simulator personnel.

8.3.2 To mitigate the risk of temporary instructional personnel delivering non-standard training or non-competent simulator personnel, ATC-ATOs shall establish:

a) a system for detailed, documented policies and processes;

b) procedures that are easy to understand and uniformly applied; and

c) initial indoctrination training.

8.3.3 In addition to training its regular staff, ATC-ATOs shall ensure that recurrent training is implemented on a scheduled basis for part-time or temporary personnel prior to commencing their duties after a specified hiatus. Re-familiarisation with the organisation's quality system and expected levels of service shall be included in this training scheme. As with the contingency plans provided in paragraph 8.2, the policies, processes and procedures to be used for the employment of temporary instructional staff shall be documented in the ATC-ATO's quality manual.

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9 Record-Keeping

9.1 The qualifications required for training personnel and all trainings and assessments shall be recorded in the record-keeping system to ensure that those qualifications are monitored and current to show all requirements of the training course have been met as agreed by the Authority.

9.2 The ATC-ATO shall maintain documents and records of training for trainees, instructors and simulator personnel and maintenance of the training device. These documents shall include, but not limited to:

a) trainee's assessment report to include documentary evidence of training exercises which can allow the reconstruction of the training history of each trainee;

b) record of training programme and plan for every instructor and simulator personnel;

c) record and copy of certificates of all related trainings for every instructor and simulator personnel including where applicable, initial, OJT, recurrent and specialised training;

d) record of initial and periodic assessment for every instructor; and

e) record of malfunction or fault of training facilities and equipment.

9.3 The record-keeping system of an ATC-ATO shall have the following characteristics:

a) ***Completeness***. The records kept by the ATC-ATO shall be sufficient to provide documentary evidence of each training action and allow the reconstruction of the training history of each trainee or instructor; and

b) ***Integrity***. It is important to maintain the integrity of records, ensuring that they are not removed or altered. A backup of the records is also necessary to ensure continuity in case of a major disaster.

9.4 The ATC-ATO shall establish rules for archiving personnel employment and training records that are non-active.

9.5 Records of trainees shall be kept in the manner that ensures preservation and traceability throughout the service of licence holders.

9.6 Records for qualification and training of instructional personnel or approved internal examiner shall be retained for a minimum period of seven years after the instructor or examiner ceases to perform a function for the ATC-ATO.

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10 Assessment and Examination

10.1 Trainee Daily Assessment Procedures

10.1.1 The ATC-ATO shall document all written, practical and oral assessment procedures to gauge trainees' performance and progress.

10.1.2 All assessment shall be carried out by suitably qualified personnel.

10.1.3 Trainees shall sign assessment reports to acknowledge the report contents. They shall be kept aware of their training progress including areas of required improvement to ensure successful completion of the training.

10.2 Conduct of Examination by an ATC-ATO

10.2.1 The ATC-ATO shall establish an examination unit that is independent from the training unit of the ATC-ATO and shall demonstrate that it has a system which is capable of consistent compliance with the standards prescribed by the authority.

10.2.2 The final practical and oral examinations for an ATC course shall be conducted by a panel of two (2) ATC examiners consisting of:

a) Examiner from the ATC-ATO examination unit; and

b) ATC examiner nominated from an ATS Unit; or

c) Authorised ATC-ATO personnel or instructor that is not assigned to the course involved with exam.

10.2.3 With reference to para 10.2.2 a) and c), the examiner from ATC-ATO shall have held an ATC Licence with validation in the rating concerned for a minimum period of three (3) years.

10.2.4 With reference to para 10.2.2 b), the requirements and qualifications shall be in accordance with CAD 1201 Chapter 4 para 4.2.1.2.

10.2.5 Theory examination of specific subjects shall be carried out by the examination unit with questions that has been approved by the Authority as required under examination procedure in this Chapter.

10.2.6 Examination of practical component shall be conducted in an approved simulator and administrated in accordance with the procedures in paragraph 10.3.4.

10.2.7 The task of conducting examination shall be subjected to regular oversight by the Authority as detailed in Chapter 12 of this Directive.

10.3 Examination Procedures

10.3.1 General

10.3.1.1 Examinations are conducted as appropriate, at the completion of an approved ATC training at an ATC-ATO to assess the trainees' achievement of the training performance course objectives as detailed in *Appendix 8* for the following courses;

a) basic induction / primary air traffic control course;

b) aerodrome control course;

c) approach control procedural course;

d) approach control surveillance course;

e) area control procedural course; and

f) area control surveillance course.

10.3.1.2 A trainee who fails the basic induction / primary air traffic control course shall not be allowed to undergo the ATC courses b) to f) above.

10.3.1.3 An ATC course final examination shall consist of the following components:

a) theory;

b) practical; and

c) oral.

10.3.1.4 A trainee shall pass the theory examination as a prerequisite before being allowed to undergo the associated practical examination.

10.3.1.5 If a trainee fails the practical examination, no oral examination shall be conducted. Instead, a debrief session on the practical examination shall be carried out in order to notify the trainee on the areas for improvement.

10.3.2 Panel of Examiners' Requirements and Responsibilities

10.3.2.1 The examination unit of ATC-ATO shall conduct a pre-examination briefing to:

a) the panel of examiners on the following:

1) Course Terms of Reference;

2) Examination procedures and forms; and

3) Details of practical examination including number of traffic.

b) examination candidates on the following:

1) Conduct of examination;

2) Traffic arrangement including abnormal situation(s);

3) Criteria of assessment; and

4) Implication of the assessment.

10.3.2.2 The panel of examiners shall be maintained throughout the duration of practical examinations. If for any reason the panel members cannot be maintained, the matter shall be referred to the Authority.

10.3.2.3 Where possible, a repeat examination shall be conducted by a panel of examiners, with at least one different member.

10.3.2.4 The panel members shall review the daily training performance reports of the trainee and ensure that the trainee has received the required stipulated training hours/period and achieved an acceptable level of competency, before conducting any ATC examination.

10.3.2.5 Panel members shall assess an examinee's ability and knowledge to carry out ATC duties to the required standard. Records of an assessment of performance shall be completed on the relevant forms.

10.3.2.6 The panel members shall discuss the performance of the examinee to achieve consensus on the results, after the examination has been completed.

10.3.2.7 Panel members shall be professional in the conduct of an examination and not pass any opinionated remarks that may affect a trainee performance.

10.3.3 Theory Examinations

10.3.3.1 The final theory examination and repeat theory examination question papers and answer scheme for ATC Courses shall be prepared by the training organisation and submitted to Authority for approval at least fourteen (14) working days prior to the scheduled date of examination.

10.3.3.2 The question papers shall comply with the following general guidelines:

a) the questions must be in accordance with the syllabus;

b) each question shall be clear and not ambiguous;

c) an answer scheme containing the complete and correct answers with the documentation reference and allocated marks, shall be prepared for marking reference; and

d) the question paper shall include details such as marks allocated for each question, total marks for the paper, optional questions selection and the allocated time for the examination.

e) The question set for repeat exam shall not be exactly similar to the first Exam question set. A verbatim adoption of up to 30% of questions from the first exam paper is allowed. Other questions shall be of different subject matter or reworded differently for a similar subject.

f) Each question paper shall consist of the following: Definitions; true or false; multiple choice, fill in the blanks and abnormal situations related questions.

10.3.3.3 The conduct of theory examinations shall be invigilated by the examination unit of ATC-ATO.

10.3.3.4 A question paper shall be administered to the candidates five (5) minutes before the commencement of an examination.

10.3.3.5 The answer schemes are strictly for marking purposes and shall not be distributed to the candidates.

10.3.3.6 The answer papers completed by the candidates shall be marked by the examination unit of ATC-ATO in accordance to the given answer scheme and subsequently be made available to the practical examination panel. The marked papers shall be sent to Authority once marking is completed. Authority will announce the theory examinations results within five (5) working days after receipt of examinations papers from an ATC-ATO.

10.3.3.7 If a candidate fails the theory examination, a re-sit is allowed within fourteen (14) working days from the announcement of the results.

10.3.3.8 A candidate who fails the repeat theory examination is deemed to have failed the whole course.

10.3.4 Practical Examinations

10.3.4.1 ATC-ATO shall submit the following to the authority for approval at least thirty (30) days before the proposed date of any ATC course examinations:

a) examination type;

b) name of candidate(s);

c) duration of training;

d) list of examiners.

10.3.4.2 The final simulated practical examination traffic shall be finalised by an ATC-ATO and notified to the Authority at least fourteen (14) working days prior to the date of the examination based on the guidelines as follows:

a) minimum number of aircraft:

Examination Type	Aircraft
Aerodrome Control	8 + 1
Approach Control Procedural	12 + 1
Approach Control Surveillance	12 + 1
Area Control Procedural	12 + 1
Area Control Surveillance	12 + 1

Note: + 1 denotes the additional injected traffic introduced any time after the examination commences.

b) The traffic pattern shall include arriving, departing, crossing, joining and over-flying aircraft.

10.3.4.3 The simulated traffic scenario shall also include the introduction of one or more of the emergency and unusual situations as specified in CAD 1101 such as the following:

a) distress or urgency situation;

b) radio failure, radar failure or NAVAIDS failure; or

c) diversion or unlawful interference.

10.3.4.4 The performance in practical examination shall be assessed by the criteria listed in the ATC-ATO Practical Course Examination assessment form.

10.3.5 Oral Examinations

10.3.5.1 The purpose of an oral examination is to assess the extent of the candidate's knowledge on matters pertaining to all aspects of ATC e.g. ability to apply knowledge to practical work, suitability in terms of attitude, approach and appreciation towards the ATC task to be performed as detailed in training performance course objectives in *Appendix 8*.

10.3.5.2 If an examinee fails the practical examination, no oral examination shall be conducted. Instead, a debrief session on the practical examination shall be carried out in order to highlight to the examinee the areas for improvements.

10.3.5.3 Oral questions may be posed to the candidate based on the following:

a) Theory examination paper (where applicable) - clarification of incorrect/incomplete answers;

b) Practical examination - incorrect application of standard procedures, separation, phraseology, etc.; and

c) theoretical knowledge on relevant matters.

10.3.6 Passing Marks

10.3.6.1 The passing mark for a written theory examination shall be 70% (seventy percent). If there is more than one paper, each individual subject paper in an ATC course is evaluated separately.

10.3.6.2 The final simulated practical examination shall have a passing mark of 70% based on performance in the categories listed in the assessment form.

10.3.6.3 The oral examination will be graded as a pass or fail, without specific marks allocated. However, this shall be determined by the trainee's capability to satisfy the examiners panel in the subject area.

10.4 Repeat Examinations

10.4.1 Repeat Theory Examinations

10.4.1.1 A trainee who fails to obtain the minimum passing marks in the final theory examination as prescribed in paragraph 10.3.3 shall be allowed to sit for a repeat examination for the failed subject(s) within fourteen (14) working days of the announcement date of the result.

10.4.1.2 A trainee who fails to obtain the minimum passing marks in the repeat theoretical examination is deemed to have failed the whole course.

10.4.2 Repeat Practical Examinations

10.4.2.1 A trainee who fails to achieve the expected minimum performance and passing marks in the simulated practical examination as prescribed in paragraph 10.3.4 shall be allowed to repeat the practical examination within fourteen (14) working days of the announcement date of the final examination result. The trainee shall be required to undergo an extended training period to complete not less than ten (10) exercises.

10.4.2.2 At the end of the extended practical training period, the simulated practical examination shall be conducted by the panel of examiners, as in paragraph 10.2.2.

10.4.2.3 A trainee who fails to obtain the minimum passing marks in the repeat simulated practical examination is deemed to have failed the whole course.

10.4.3 Repeat Oral Examinations

10.4.3.1 A trainee who fails to satisfactorily answer questions posed during an oral examination shall be allowed to repeat the oral examination within fourteen (14) working days of the announcement date of the final examination result.

10.4.3.2 The repeat oral examination shall be conducted by the panel of examiners, as in paragraph 10.2.2. A trainee who fails to obtain the minimum passing marks in the repeat oral examination is deemed to have failed the whole course.

10.5 Final and Repeat Examination Report

10.5.1 An ATC-ATO conducting an ATC course shall submit the final and repeat examination reports within ten (10) working days from the completion day of the examination to the Director of ANSA.

11 Course Completion Certificate and Report

11.1 Course Completion Certificate

11.1.1 An ATC-ATO shall issue a certificate to each trainee who successfully completed the training including the examinations. The certificate shall include:

a) the name of ATC-ATO;

b) the ATC-ATO approval number;

c) the name of trainee to whom it is issued (with the national identification number or service number);

d) the approved course title (as in the approval certificate);

e) the duration of course (start and end) and its completion;

f) a statement that the trainee has satisfactorily completed each required phase of the approved course of training including the tests for those phases;

g) an authentication by an official of the ATC-ATO;

h) a unique certificate serial number; and

i) any other relevant details.

11.2 Course Completion Report

11.2.1 An ATC-ATO conducting an ATC course shall submit the course completion report within 30 working days from the completion day of the course to the following:

a) CEO; and

b) Director of ANSA.

11.2.2 The contents of the report shall include:

a) course description;

b) instructors and trainees name list;

c) classroom and simulator daily schedule;

d) trainee classroom and simulator attendance report;

e) examination results and certificate of final examination panel;

f) trainee practical assessment and evaluation report;

g) training history; and

h) executive summary.

Note. — The guidance for a course completion report is provided in Appendix 7

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12 Safety Regulatory Oversight

12.1 Pursuant to *Regulation 204* of the *Civil Aviation Regulations 2016*, an ATC-ATO shall be subjected to safety regulatory oversight to determine compliance with the regulations and established requirements.

12.2 The main elements of the ATC-ATO activities that are subjected to oversight shall include the following:

a) staff adequacy in terms of number and qualifications;

b) validity of instructors' licences, certificates, ratings and authorisations;

c) logbooks;

d) appropriate and adequate facilities for the training and for the number of students;

e) documentation process (e.g. the review and update of the training and procedures manual), with particular emphasis on course documentation, including records of system updates, training/operations manuals, etc.;

f) training delivery in the classroom and in simulation devices and, if applicable, instruction or on-the-job training, including briefing and de-briefing;

g) instructor training;

h) QA practices;

i) evaluation and testing;

j) training, examination and assessment records; and

k) training device qualification and approval.

12.3 Safety oversight audit shall be conducted on an annual basis using the established protocol questions (PQ).

12.4 In addition to the regular audits, random or non–schedule inspections shall be carried out for which no notification is issued.

Note. — The guidance for the audit, inspection process and the related activities is provided in Appendix 9.

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13 Appendices

13.1 Appendix 1 – Organisational Structure of the ATO

The following organisational charts are by no means exhaustive and do not pretend to meet all operational requirements. They are provided only to assist training organisations in developing and maintaining an organisational structure that is consistent with the needs of an effective quality system governance model.

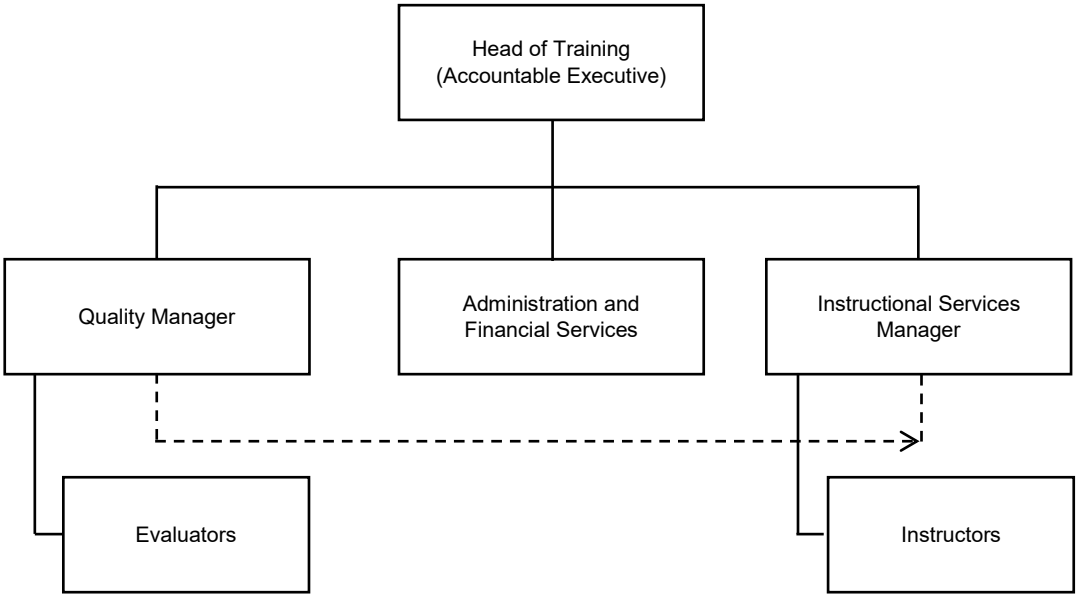

Figure App 1-A (Ref Doc 9841). Example of a very small generic training organisation

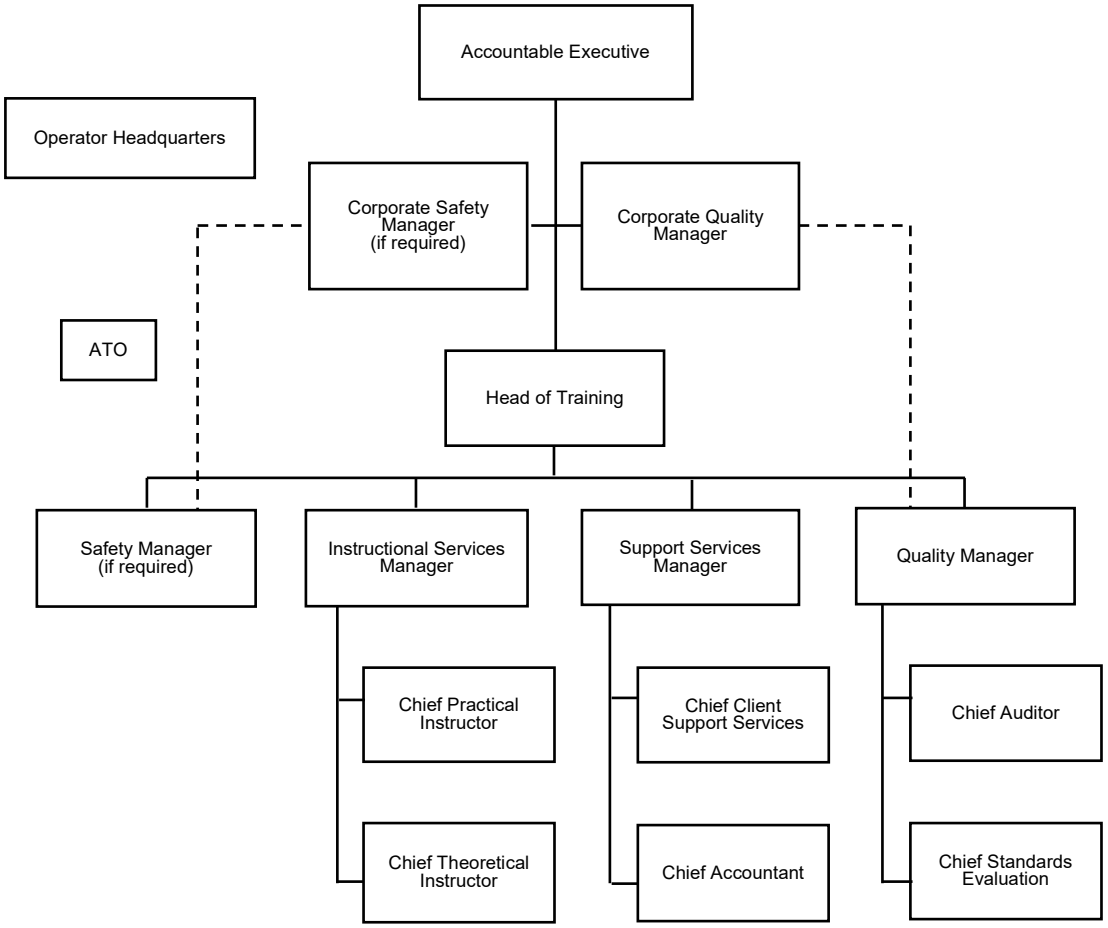

Figure App 1-B (Ref Doc 9841). Example of a small/medium (complex) generic training organisation

This example depicts a training organisation that is part of a much larger company, which oversees it as a business unit.

13.2 Appendix 2 – ATC-ATO Application Form

CAAM/BPUA/ATC-ATO/01

PIHAK BERKUASA PENERBANGAN AWAM MALAYSIA

(CIVIL AVIATION AUTHORITY OF MALAYSIA)

Air Traffic Control – Approved Training Organisation (ATC-ATO)

Note: Please use attachment where necessary

1. Applicant Data

1.1 Organisation

1.2 Address	Line 1
	Line 2
	Line 3
	Post Code & City
	State
1.3 Contact Person *(responsible for this application)*	Name
	Job title
	Telephone
	Fax
	Email
1.4 Location(s) *(List location(s) of training location(s))*	Location 1
	Location 2
	Location 3
	Location 4

2. Identification of Application

2.1 Application *(Tick where appropriate)*	2.1.1 ☐ application for approval or authorisation in relation to approved training organisation (air traffic controller) 2.1.2 ☐ application for renewal of approval or authorisation in relation to approved training organisation (air traffic controller) 2.1.3 ☐ application for variation of approval or authorisation in relation to approved training organisation (air traffic controller)
2.2 Certificate of Approval	2.2.1 ☐ for aerodrome control training 2.2.2 ☐ for approach control procedural training 2.2.3 ☐ for approach control surveillance training 2.2.4 ☐ for area control procedural training 2.2.5 ☐ for area control surveillance training 2.2.6 ☐ for use of each simulator
2.3 Original Approval Reference (*for item 2.1.2 & 2.1.3)*	
2.4 Variation detail (s) (*for item 2.1.3)*	

3. Training Scope

3.1 ATC Courses *(Tick where appropriate)*	Course Name *(Insert name of the course)*
☐ Basic / Primary ATC	
☐ Aerodrome Control	
☐ Approach Control Procedural	
☐ Area Control Procedural	
☐ Approach Control Surveillance	
☐ Area Control Surveillance	

3.2 Training Devices		
No.	Simulator Name *(Insert simulator name)*	Training type *(Insert intended training type)*
i		
ii		
iii		
iv		
v		
vi		
vii		

4. Human Resources *(Please attach list of names)*

4.1 Number of instructors

4.2 Number of examiners (where applicable)

4.3 Number of administrative personnel

4.4 Number of simulator assistants (pseudo pilot)

4.5 Number of simulators maintenance personnel

4.6 Others

5. Documentation Checklist

☐	Copy of approval certificate *(for items 2.1.2 & 2.1.3)*
☐	Organisation Exposition; administrative information including information of the accountable executive, organisation charts and list of instructors; facilities, equipment, and records.
☐	Training Procedure Manual; which include Course Curriculum Document *(Refer CAD 1211 Chapter 2 & 3).*
☐	ATC Courses schedule; Initial Training Plan / Unit Training Plan, as applicable *(for item 3).*
☐	Quality Manual.
☐	Recent Internal Audit Report and Corrective Action Report *(for item 2.1.2).*
☐	List of personnel *(for item 4).*
☐	Job Description for key operational personnel *(Refer CAD 1211 Chapter 7).*
☐	Receipt of the paid applicable fees or charges.

6. Applicant's declaration and acceptance of the General Conditions, and Terms of Payment

☐ I declare that I have the legal capacity to submit this application to the Authority and that all information provided in this application form is correct and complete.

☐ I have understood that I am submitting an application for which fees or charges in accordance with *Civil Aviation (Fees and chargers) Regulation 2016* on the fees and charges levied by the Minister of Transport.

Date Stamp of Accountable Executive Signature

This Application shall be sent to:

Bahagian Perkhidmatan Pemaliman Udara dan Aerodrom
Pihak Berkuasa Penerbangan Awam Malaysia
Aras 1, Blok Podium
27, Persiaran Perdana
Presint 4
62618 Putrajaya

Tel: +60388714000
Fax: +60388714333

13.3 Appendix 3 – Recommended Exposition Layout

In order to obtain the ATC-ATO certificate a training organisation shall submit an exposition containing the information as specified below. The exposition shall be typed, with paragraphs and pages numbered, following the specified sequence.

1. Cover Page

a. Name of training organisation;

b. Title of exposition;

c. Version number; and

d. Date of document.

2. Administrative Information

a. Name and address of the training organisation and, if different, name and address of the training centre to which this application refers;

b. The names, telephone and fax numbers, and email addresses of the following:

i) the Accountable Executive,

ii) the head of the training centre (if different from (i)); and

iii) title and name of person(s) nominated by the training organisation as the focal point for communication with the Authority;

c. A statement signed by the Accountable Executive, describing the extent of compliance of the organisation with this CAD;

d. An organisation chart showing associated chains of responsibility of accountable executive and other key personnel; and

e. A list of instructors and simulator personnel with supporting documents verifying each individual's qualifications and experience.

3. Facilities, Equipment, Material and Records

In this section, the training organisation shall show how it complies with the requirements of this CAD in terms of these items.

4. Consistency of ATCO's Competence Assessment

The applicant shall also apply for the approval of training courses if it has not done so previously.

Note 1.— For items 2d, 2e, 3 and 4, a reference to other supporting documents submitted together with the application form shall be sufficient.

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13.4 Appendix 4 – Content of The Training and Procedures Manual

This appendix covers the content requirements for the training and procedures manual of an ATO. The training and procedures manual shall include the elements in paragraphs 1 to 7 of this appendix as far as they are appropriate to the type of training to be provided.

1. General

1.1. Preamble relating to the use and applicability of the manual.

1.2. Table of contents.

1.3. Amendment, revision and distribution of the manual:

a) procedures for amendment;

b) record of amendments page;

c) distribution list; and

d) list of effective pages.

1.4. Glossary of definitions and significant terms, including a list of acronyms and/or abbreviations.

1.5. Description of the structure and layout of the manual, including:

a) the various parts and sections, as well as their contents and use; and

b) the paragraph numbering system.

1.6. Description of the scope of training authorised under the organisation's terms of approval.

1.7. Organisation (chart of the ATO's management organisation — see examples in *Appendix 1*) and the names of the post holders.

1.8. Qualifications, responsibilities, job descriptions and succession of command of management and key operational personnel, including but not limited to:

a) accountable executive;

b) head of training;

c) instructional services manager;

d) quality manager;

e) maintenance manager, if applicable;

f) instructors; and

g) examiners, evaluators and auditors.

1.9. Policies dealing with:

a) the training organisation's objectives, including ethics and values;

b) the selection of ATO personnel and the qualifications and training (initial, OJT, recurrent and specialised);

c) the design and development of the training programme, including the need for programme validation and review in accordance with Chapter 3, paragraphs 3.6 and 3.8 of this manual, as well as the outsourcing of training programme development to third-party providers in accordance with Chapter 8 of this manual;

d) the evaluation, selection and maintenance of training material and devices;

e) the maintenance of the training facilities and equipment; and

f) the development and maintenance of a quality system governance model (see *Appendix 6*).

1.10. Description of the facilities and equipment available, including:

a) general-use facilities, for example offices, stores, archives, and library or reference areas;

b) the number and size of classrooms, including installed equipment; and

c) the type and number of training devices, including their location if other than at the main training site.

2. Technical Staff Training

2.1. The identification of persons or positions responsible for the maintenance of performance standards to ensure the competency of personnel.

2.2. Details of the procedures to validate the qualifications and determine the competency of instructional personnel in accordance with Chapter 7.

2.3. Details of the initial, OJT recurrent and specialised training programmes for all personnel as required in Chapter 7. This includes awareness training with respect to their responsibilities within the ATO's system governance processes (see *Appendix 6* for details on quality assurance).

2.4. Procedures for proficiency checks and upgrade training.

3. Client Training Programmes

Client training programmes cover each individual training programme conducted by the training organisation for its customers. It shall consist of a training plan, a practical training syllabus and a theoretical knowledge syllabus, if applicable, as described in paragraphs 3.1, 3.2 and 3.3 below.

3.1. Training Plan

3.1.1 The aim of the course in the form of a statement of what the trainee is expected to be able to do as a result of the training, the level of performance and the training constraints to be observed.

3.1.2 Pre-entry requirements, including:

a) minimum age;

b) education or qualification requirements;

c) medical requirements; and

d) linguistic requirements.

3.1.3 Training curricula in the form of course curriculum document as detailed in *Appendix 8*, including:

a) theoretical training as in ICAO Annex 1 Standard 4.4.1.2 (knowledge);

b) practical training as in ICAO Annex 1 Standard 4.5.2 (knowledge and skills);

c) training in the domain of Human Factors (attitudes);

Note. — Guidance material to design training programmes on human performance can be found in Doc 9683.

d) assessment and examinations; and

e) monitoring of the training process, including assessment and examination activities.

3.1.4 Training policies in terms of:

a) restrictions regarding the duration of training periods for trainees and instructors; and

b) if applicable, minimum rest periods.

3.1.5 Policy for the conduct of trainee evaluation, including the:

a) procedures for authorisation to conduct examinations;

b) procedures for remediation training before repeat examinations;

c) examination reports and records;

d) procedures for theory progress test and skill progress tests; and

e) procedures for question analysis and review and for issuing replacement exams (applicable to theory examinations).

3.1.6 Policy regarding training effectiveness, including:

a) liaison procedures between training departments;

b) requirements for reporting and documentation;

c) internal feedback system for detecting training deficiencies;

d) completion standards at various stages of training to ensure standardisation;

e) individual trainee responsibilities;

f) procedures to correct unsatisfactory progress;

g) procedures for changing instructors;

h) maximum number of instructor changes per trainee; and

i) procedures for suspending a trainee from training.

3.2. Syllabi for training programmes

3.2.1 Practical training syllabus

3.2.1.1 The practical training syllabus shall meet the ICAO training requirements and the course objective requirements in *Appendix 8*.

3.2.1.2 A statement of how the course shall be divided into phases, indicating how the phases shall be arranged to ensure completion in the most suitable learning sequence and that exercises shall be repeated at the proper frequency.

3.2.1.3 The syllabus hours for each phase and for groups of lessons within each phase and when progress tests are to be conducted.

3.2.1.4 A statement of the standard of proficiency required before progressing from one phase of training to the next. It includes minimum experience requirements and satisfactory exercise completion before undertaking the next phase.

3.2.1.5 Requirements for instructional methods, particularly with respect to adherence to syllabi and training specifications.

3.2.1.6 Instruction for the conduct and documentation of all progress tests.

3.2.1.7 Instruction, where applicable, given to all examiners regarding the conduct of examinations and tests.

3.2.2 Theoretical knowledge syllabus

3.2.2.1 The syllabus for theoretical knowledge instruction should be structured generally as in 3.2 of this appendix but with a training specification and objective for each subject to meet the ICAO training requirements and the course objective requirements in *Appendix 8*.

4. Tests and Examinations Conducted by the ATO

When an ATO is authorised to conduct the evaluation required in accordance with the training and procedures manual, the manual shall include:

a) the name(s) of the personnel with testing authority and the scope of the authority;

b) the role and duties of the authorised personnel; and

c) the applicable requirements established by the Authority, such as:

- the procedures to be followed in the conduct of examinations and tests; and
- the methods for completion and retention of evaluation records as required by the Authority.

5. Records

Policy and procedures regarding:

a) attendance records;

b) trainee training records;

c) technical staff training and qualification records;

d) persons responsible for checking records and trainee personal logs;

e) nature and frequency of record checks;

f) standardisation of record entries;

g) personal log entries; and

h) security of records and documents.

6. Quality Assurance (QA)

Provide a brief description of the QA practices, as required by *Chapter 4* by reference to a separate quality manual or including the QA practices in the training and procedures manual (refer to *Appendix 6* of this manual, paragraph 9).

7. Appendices

As required:

a) sample progress test forms;

b) sample logs, test reports and records; and

c) a copy of the approved training organisation’s approval document.

13.5 Appendix 5 – Certificate of Air Traffic Control-Approved Training Organisation

PIHAK BERKUASA PENERBANGAN AWAM MALAYSIA

Civil Aviation Authority of Malaysia

CERTIFICATE OF

AIR TRAFFIC CONTROL – APPROVED TRAINING ORGANISATION

NEW / RENEWAL

Reference No: ATC – ATO mm/yyyy

Holder of Certificate: **Name**

Facilities Address: **Address**

This Certificate certifies that the training organisation mentioned above is an approved training organisation under Regulation 152 of the Civil Aviation Regulations 2016 which is authorised to conduct [examination or test] and [to provide course of training or instruction] subject to the terms and conditions contained herein.

This Certificate is not transferrable and shall continue to be in effect unless revoked, suspended or varied.

name
Chief Executive Officer
For CAAM

Date of Issue: **date**

Date of Expiry: **date**

Date of **Initial** Renewal:

Date of Last Audit: **Date**

(See overleaf for Conditions of Approval)

Scope of Certification:	This approval is granted to conduct the following Air Traffic Control Training: a)
Limitations:	1.

(Note: Invalid without reverse side)

13.6 Appendix 6 – Quality Assurance and The Quality System of the ATC- ATO

1. Quality Policy and Strategy

1.1. The ATO shall describe how the organisation formulates, deploys and reviews its policy and strategy and turns them into plans and actions applicable to all levels of the organisation. A formal, written quality policy should be prepared, establishing a commitment by the accountable executive of the training organisation to achieving and maintaining the highest possible standards of quality. The quality policy should reflect the achievement of, and continued compliance with, relevant parts of *Appendix 2* to *ICAO Annex 1*, together with all applicable national regulations and any additional standards specified by the ATO.

1.2. The accountable executive of the training organisation will have the overall responsibility for the standard of quality including the frequency, format and structure of the internal management review and analysis activities and may delegate responsibility for the tasks defined under paragraph 2 of this appendix to a quality manager. Depending on the size and scope of the organisation and the requirements of the Authority, the accountable executive and quality manager may interact in different ways as illustrated in the organisational charts in *Appendix 1* of this directive. The Invigilator is the person in the examination room responsible for conducting a particular examination session in the presence of the examinee(s). Invigilators have a key role in upholding the integrity of the examination process.

2. Quality Manager

2.1. The primary role of the quality manager is to verify, by monitoring activities in the field of training, that the standards as established by the ATO and any additional requirements of the Authority are being carried out properly.

2.2. The quality manager should be responsible for ensuring that the quality system is properly documented, implemented, maintained and continuously reviewed and improved (see paragraph 17 of this appendix).

2.3. The quality manager should:

a) report directly to the head of training (see Note); and

b) have unencumbered access to all parts of the ATO.

Note. — When the head of training is not the accountable executive, reporting mechanisms should be instituted to ensure that the accountable executive is aware of all issues impacting the quality of the training services being provided by the affected ATO (see example 2 in Appendix 1).

2.4. The quality manager should be responsible for ensuring that personnel training related to the quality system is conducted.

3. Quality Assurance (QA)

3.1 The term QA is frequently misunderstood to mean the testing and checking of products and services. Organisations that only do checking and testing activities are merely applying “quality control” measures, which are designed to catch product and service defects but not necessarily prevent them. For example, an ATO that administers exams at the end of the training syllabus, only to discover that a large proportion of the students have failed to meet the required standard, has only identified a deficiency in expected

results. The implication could be that there is a problem with the training programme or the instructor or even the student selection criteria. In this instance the ATO has no idea what the real problem is or what to do about it. Quality control, by itself, provides limited value without the suite of complementary activities that comprise QA.

3.2 QA, on the other hand, attempts to improve and stabilise the training process and to identify and avoid, or at least minimise, issues that lead to problems in the first place. It continuously verifies that standards are adhered to throughout the training process by introducing various checkpoints and controls. It further introduces a system of audits to ensure that documented policies, processes and procedures are consistently followed. It is the "assurance" part of quality management.

3.3 A QA plan for an ATO should encompass well-designed and documented policies, processes and procedures for at least the following activities:

a) monitor training services and process controls;

b) monitor assessment and testing methods;

c) monitor personnel qualifications and training;

d) monitor training devices and equipment qualification, calibration and functionality, as applicable;

e) conduct internal and external audits;

f) develop, implement and monitor corrective and preventive actions and associated reporting systems (see paragraph 8 of this appendix); and

g) utilise appropriate statistical analysis to identify and respond appropriately to trends.

3.4 An effective QA plan will aid significantly in the ATO's compliance with requirements, its conformity with the standards and the adequacy of its training activities. To take the ATO's performance to a higher level requires a structure that ensures that the combined QA effort of the employees reaches its full potential.

Note.— Annex 1 requires ATOs only to establish and implement QA policies, processes and procedures acceptable to the licencing authority granting the approval, which ensures that training and instructional practices comply with all relevant requirements.

3.5 QA plans by themselves are subject to breakdowns in human performance and therefore are in need of robust organisational structures that underpin the QA efforts of individuals. It is for this reason that ATOs and States should embrace the quality system governance model described in this appendix.

4. Quality System for the ATO

4.1 A quality system is the aggregate of all the organisation's activities, plans, policies, processes, procedures, resources, incentives and infrastructure working in unison towards a total quality management approach. It requires an organisational construct complete with policies, processes, procedures and resources that underpins a commitment to achieve excellence in product and service delivery through the implementation of best practices in quality management.

4.2 An ATO that supports its QA plan with a well-designed, implemented and maintained quality system structure should be able to easily and repeatedly achieve results that exceed both the requirements of the applicable national regulations and the expectations of the ATO's clients.

4.3 The basic attributes of an effective quality system should include, but are not necessarily limited to:

a) a managerial structure that facilitates and encourages clear and unencumbered access to the decision makers (*Appendix 1* of this directive provides some examples);

b) an overarching company commitment to achieving excellence in the delivery of training services, rather than meeting minimum requirements;

c) quality policies, processes and procedures that are well-designed, consistently applied and subject to formalised review and refinement processes;

d) an employee training plan that instils and promotes best practices in quality management efforts; and

e) a strategic review of policies and procedures which measures the organisation's current assumptions, objectives and plans by applying a relevance test matched to evolving trends in the industry or changes occurring within the ATO.

5. Coherence Matrix

5.1 A coherence matrix, sometimes known as a correspondence matrix, is a very powerful addition to the ATO's compliance efforts. It is a detailed, tabulated document that lists all the applicable regulatory requirements imposed on the ATO. Beside each listed provision there should be at least two descriptive elements that identify:

a) the existing processes that are designed to ensure continuous compliance with that specific regulatory rule or standard; and

b) the individual managerial position responsible for the effective implementation of each process.

5.2 The coherence matrix should indicate the most recently completed and next intended audits designed to validate the functionality of each of the identified processes. Any recent audit findings should be listed in the matrix or referred to as being documented in a separate "register of findings".

5.3 The coherence matrix is developed and managed by the quality manager and is subject to the management review process outlined in paragraph 4.3 f) of this appendix.

5.4 The current coherence matrix should be readily accessible to all employees so that it can be accurately followed and open to comment for improvement.

6. Corrective and Preventive Action Reports

6.1 QA plans should include a well-structured reporting system to ensure that suggestions by ATO personnel for both corrective and preventive actions are recorded and promptly addressed. Paragraph 3.3 f) of this appendix identifies this as a necessary component of QA.

6.2 After an analysis of the reports submitted, the reporting system should specify who is required to rectify a discrepancy and/or non-conformity in each particular case and the procedure to be followed if corrective action is not completed within an appropriate timescale. Just as important, the reporting system should identify who is required to investigate and act upon any report identifying measures that could prevent a non-conformity from occurring.

6.3 Corrective and preventive action reports should be able to be submitted anonymously, if individuals so choose, to maximise the opportunity for open and effective reporting.

Note.— Since corrective and preventive action reports, in this instance, represent suggestions for improvement in conformity levels and deal with quality issues, this reporting system and its processes should be managed by the quality manager.

7. Quality-Related Documentation

7.1 Relevant documentation includes parts of the training and procedures manual which may be included in a separate quality manual.

7.2 In addition, the relevant documentation should include the following:

a) quality policy and strategy;

b) glossary;

c) coherence matrix;

d) procedures and reporting system for corrective and preventive actions;

e) specified training standards;

f) description of the organisation;

g) assignment of duties and responsibilities; and

h) training procedures related to the quality system to ensure regulatory compliance.

7.3 The QA audit programme documentation should reflect:

a) the schedule of the monitoring process;

b) audit procedures;

c) reporting procedures;

d) procedures for follow-up and corrective actions;

e) the recording system; and

f) document control.

8. QA Audit Programme

The QA audit programme should include all planned and systematic actions necessary to provide confidence that every training activity is being conducted in accordance with all applicable requirements, standards and procedures.

9. Quality Inspection

9.1 The primary purpose of a quality inspection is to review a document or observe a particular event, action, etc., in order to verify whether established training procedures and requirements were followed during the conduct of the inspection and whether the required standard was achieved.

9.2 Examples of typical subject areas for quality inspections are:

a) actual training sessions;

b) maintenance, if applicable;

c) technical standards; and

d) training standards.

10. Quality Audits

10.1 An audit is a systematic and independent comparison between the way in which training is being conducted and the way in which it should be conducted according to the published training procedures.

10.2 Audits should include at least the following quality procedures and processes:

a) a description of the scope of the audit, which should be explained to the personnel to be audited;

b) planning and preparation;

c) gathering and recording evidence; and

d) analysis of the evidence.

10.3 The various techniques that make up an effective audit are:

a) a review of published documents;

b) interviews or discussions with personnel;

c) the examination of an adequate sample of records;

d) the witnessing of the activities which make up the training; and

e) the preservation of documents and the recording of observations.

11. Auditors

11.1 The ATO should decide, depending on the complexity of the organisation and the training being conducted, whether to make use of a dedicated audit team or a single auditor. In any event, the auditor or audit team should have relevant training and/or operational experience.

11.2 The responsibilities of the auditors should be clearly defined in the relevant documentation.

12. Auditor's Independence

12.1 Auditors should not have any day-to-day involvement in the area of the operation or maintenance activity that is to be audited.

12.2 An ATO may, in addition to using the services of full-time dedicated personnel belonging to a separate quality department, undertake the monitoring of specific areas or activities through the use of part-time auditors. An ATO whose structure and size does not justify the establishment of full-time auditors may undertake the audit function using part-time personnel from within its own organisation or from an external source under the terms of an agreement acceptable to the Authority.

12.3 In all cases the ATO should develop suitable procedures to ensure that persons directly responsible for the activities to be audited are not selected as part of the auditing team. Where external auditors are used, it is essential that any external specialist has some familiarity with the type of activity conducted by the ATO.

12.4 The QA audit programme of the ATO should identify the persons within the organisation who have the experience, responsibility and authority to:

a) perform quality inspections and audits as part of ongoing QA;

b) identify and record concerns or findings and the evidence necessary to substantiate such concerns or findings;

c) initiate or recommend solutions to concerns or findings through designated reporting channels;

d) verify the implementation of solutions within specific and reasonable timescales; and

e) report directly to the quality manager.

13. Audit Scheduling

13.1 A QA audit programme should include a defined audit schedule and a periodic review cycle. The schedule should be flexible and allow unscheduled audits when negative trends are identified. The quality manager should schedule follow-up audits when necessary to verify that a corrective action resulting from a finding was carried out and that it is effective.

13.2 An ATO should establish a schedule of audits to be completed during a specific calendar period. This schedule should be influenced by the organisational risk profile and be reflected in both the risk management plan and the coherence matrix documents. As a minimum, all aspects of the training should be reviewed within a period of twelve months in accordance with the audit programme.

13.3 When an ATO defines the audit schedule, it should take into account significant changes to the management, organisation, training or technologies, as well as changes to the standards and requirements as discussed in paragraph 4.3 e) of this appendix.

14. Monitoring and Corrective Action

14.1 The aim of monitoring within the quality system is primarily to investigate and judge its effectiveness and thereby ensure that defined policy and training standards are continuously complied with. Monitoring and corrective action functions fall under the responsibilities of the quality manager. Monitoring activity is based upon:

a) quality inspections;

b) quality audits; and

c) corrective and preventive action reports and subsequent follow-up.

14.2 Any non-conformity identified as a result of monitoring should be communicated by the quality manager to the manager responsible for taking corrective action or, if appropriate, to the head of training or, when circumstances warrant, to the accountable executive. Such non-conformity should be recorded for the purpose of further investigation in order to determine the cause and to enable the recommendation of an appropriate corrective action.

14.3 The QA audit programme should include procedures to ensure that corrective and preventive actions are developed in response to findings. Personnel implementing these procedures should monitor such actions to ensure that they have been completed and verify their effectiveness. Organisational responsibility and accountability for the implementation of corrective action resides with the department where the finding was identified. The accountable executive will have the ultimate responsibility for ensuring, through the quality manager, that the corrective action has re-established conformity with the standard required by the ATO and any additional requirements established by the Authority or the ATO.

14.4 As part of its quality system, the ATO should identify internal and external customers and monitor their satisfaction by measurement and analysis of feedback.

15. Continuous Improvement Process

15.1 As stated in 2.2 of this appendix, the quality manager should be responsible for the review and continuous improvement of the established quality system's policies, processes and procedures. The following tools, on which the quality manager relies, are essential to the continuous improvement process:

a) coherence matrix;

b) corrective and preventive action reports; and

c) inspection and audit reports.

15.2 These tools and processes are interrelated and help define the continuous improvement efforts of the organisation. For example, any corrective or preventive action report could identify a deficiency or an opportunity for improvement. As outlined in paragraph 6.2 of this appendix, the quality manager would then be required to ensure the identified issue was addressed and corrective action effectively implemented. The same would be true if the issue was identified during an inspection or audit.

15.3 The effective implementation of change and the subsequent validation that the change did indeed result in the desired outcome are critical to the continuous improvement process. Simply introducing a well-meaning suggestion for improvement into the organisation without carefully managing that change could have undesirable consequences. It is therefore incumbent upon the quality manager to responsibly introduce, monitor and validate improvement efforts.

16. Management Review and Analysis

16.1 Management should accomplish a comprehensive, systematic and documented review and analysis of the quality system, training policies and procedures and should consider:

a) the results of quality inspections, audits and any other indicators;

b) the overall effectiveness of the management organisation in achieving stated objectives; and

c) the correction of trends and, where applicable, the prevention of future non-conformities.

Note.— Paragraph 4.3 of this appendix identifies the basic attributes which require review and analysis.

16.2 Conclusions and recommendations made as a result of the review and analysis should be submitted to the responsible manager, in writing, for action. The responsible manager should be an individual who has the authority to resolve relevant issues and take action. The head of training should decide on the frequency, format and structure of meetings for internal review and analysis, in coordination with the accountable executive, if different, because the accountable executive has the overall responsibility for the quality system including the frequency, format and structure of the internal management review and analysis activities (see 1.2 of this appendix).

17. Records

17.1 Accurate, complete and readily accessible records documenting the result of the QA audit programme should be maintained by the ATO. Records are essential data to enable an ATO to analyse and determine the root causes of non-conformity so that areas of non-compliance can be identified and subsequently addressed.

17.2 Records should be retained at least for a period of seven years. The relevant records include:

a) audit schedules;

b) quality inspection and audit reports;

c) responses to findings;

d) corrective and preventive action reports;

e) follow-up and closure reports; and

f) management review and analysis reports.

18. QA Responsibility for Outsourcing

18.1 An ATO may decide to outsource certain training activities to external organisations or personnel subject to the approval of the Authority.

18.2 The ultimate responsibility for the outsourced training such as courseware, instructional personnel or usage of training device provided by the third-party provider always remains with the ATO. A written agreement should exist between the ATO and the third-party provider clearly defining the training services to be provided and the level of quality to be assured. The third-party activities relevant to the agreement should be included in the ATO's QA audit programme.

18.3 The ATO should ensure that the third party has the necessary authorisation/approval when required and commands the resources and competence to undertake the task.

19. QA Training

19.1 As outlined in paragraph 4.3 d) of this appendix, appropriate and thorough training is essential to optimise quality in every organisation. To achieve this, the ATO should ensure that all staff members understand the objectives as laid out in the quality manual, to a level relevant to their duties, including:

a) the concept of QA and associated systems;

b) quality management;

c) the quality manual;

d) inspections and audit techniques; and

e) reporting and recording.

19.2 Time and resources should be allocated to provide appropriate levels of QA training to every employee.

19.3 QA courses are available from the various national or international standards institutions, and an ATO should consider whether to offer such courses to those likely to be involved in the management or supervision of QA processes. Organisations with sufficient appropriately qualified staff should consider the possibility of providing in-house training

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13.7 Appendix 7 – Course Completion Report

Note. — This appendix covers the content requirements for a course completion report of a training organisation.

1. Course Description

The contents of this section shall include the following:

a) course name;

b) objective;

c) duration;

d) number of trainees;

e) lessons topic;

f) conduct of theory sessions;

g) explanation of the grading scale;

h) explanation on the conduct of written test including progress test and pass marks;

i) explanation of practical training including the objective of the module;

j) list of reference documents;

k) total hours for each module including theory examinations and simulator training;

l) brief description of final simulation practical and oral examination; and

m) any other information.

2. Instructors and Trainees Name List

This section shall include the full list of:

a) course manager;

b) instructional personnel: and

c) trainees (with the national identification number or service number).

3. Classroom and Simulator Daily Schedule

The classroom and simulator daily schedule from the first day until the last day including tests and examination days shall be included in this section.

4. Trainee Attendance Report

This section shall table each trainee classroom and simulation attendance report. The ATC-ATO shall maintain records to show that adequate studies have been followed by course participants. When periods of absence have occurred, records shall show how any missed training was recovered.

5. Examination Results

The results for progress tests and final examinations including the theory, practical and oral components for all trainees shall be listed in this section.

6. Certificate of Final Examination Panel

Where applicable, the certificate of final examination panel for practical and oral components shall be included in this section.

7. Trainee Evaluation Report

The objective of the trainee evaluation report is to record the technical achievements and personality of the trainee during training and also as a reference in the future investigation, in the case of human factors if necessary.

This report shall include all trainees including those who did not complete the course. The trainee's evaluation report shall include:

a) trainee's name and identification number;

b) theory progress tests and final examinations results;

c) personal attributes including attitude, discipline, classroom participations, temperament and staff relationship;

d) summary of each trainee's progress in the areas of:

   i. communication procedures practices and technique;

   ii. ATC procedures and practices;

   iii. judgement, accuracy and thoroughness in ATC skills; and

   iv. additional remarks and overall performance including strength and the weaknesses in theory and practical evaluations; and

e) the reason(s) for any case of not completing the course.

8. Summary

This section shall summarise the overall conduct of the training including any other pertinent information not stated in other sections.

13.8 Appendix 8 – Course Objectives

Note. — This appendix covers the objective requirements for the ATC courses at an ATO.

1. Basic Induction or Primary Air Traffic Control Course

1.1. The general objective for the Basic Induction or Primary Air Traffic Control Course is for the trainees to gain knowledge in meeting the air traffic control licencing requirements as in *CAD 1* para 4.4.1.2 before attending any of the following courses:

a) Aerodrome Control Course;

b) Approach Control Procedural Course;

c) Approach Control Surveillance Course;

d) Area Control Procedural Course; or

e) Area Control Surveillance Course.

1.2. The syllabus for a primary air traffic control course shall ensure that trainees will have demonstrated a level of knowledge appropriate to the holder of an air traffic controller licence, in at least the following subjects:

a) air law including rules and regulations relevant to the air traffic controller including national and international air law and rules of the air;

Note. — The syllabus of air law may be referred to the CAD 2, AIP Malaysia, Civil Aviation Regulations *and the related directives.*

b) air traffic control equipment - the principles, use and limitations of equipment used in air traffic control;

c) general knowledge - principles of flight; principles of operation and functioning of aircraft, engines and systems; aircraft performance relevant to air traffic control operations;

d) human performance - human performance including principles of threat and error management;

Note. — Guidance material to design training programmes on human performance, including threat and error management, can be found in the Human Factors Training Manual *(Doc 9683).*

e) meteorology including aeronautical meteorology; use and appreciation of meteorological documentation and information; origin and characteristics of weather phenomena affecting flight operations and safety; altimetry; special aircraft observations and non-routine aircraft observations including the relay of air-reports by air traffic service units;

Note. — Guidance material to design training programmes on meteorology can be found in the Training Manual Doc 7192 Part F-1 Meteorology for Air Traffic Controllers and Pilots.

a) navigation - principles of air navigation; principle, limitation and accuracy of navigation systems and visual aids; and

b) operational procedures - air traffic control, communication, radiotelephony and phraseology procedures (routine, non-routine, abbreviations and terms to be transmitted as spoken words; abbreviations and terms to be transmitted using the

individual letters in non-phonetic form; and emergency); use of the relevant aeronautical documentation; safety practices associated with flight.

Note. — Guidance material to operational procedures can be found in the Doc 4444 – PANS-ATM, Annex 10 – Aeronautical Telecommunications, Annex 14 – Aerodromes, Annex 15 – Aeronautical Information Services, Doc 8400 – Abbreviation and Codes, Doc 7910 – Location Indicators, Doc 8585 – Designators for Aircraft Operating Agencies Aeronautical Authorities and Services *and* Doc 9432 – Manual of Radio Telephony.

2. Aerodrome Control Course

2.1. The general objective for Aerodrome Control Course is that trainees shall apply operational procedures to ensure a safe, orderly and expeditious service to aircraft flying in the vicinity of the aerodrome and on the manoeuvring area. Such procedures shall be as specified in *CAD 1101*.

2.2. In an aerodrome control simulator, trainees shall:

a) demonstrate the ability to manage the workload in the tower control position within the specified aerodrome control area of responsibility; and

b) apply operational control and planning techniques and procedures to ensure a safe, orderly and expeditious service to aerodrome traffic

2.3. The general responsibilities of an aerodrome controller are:

a) check and operate communications equipment;

b) communicate from an aerodrome control unit;

c) correlate flight data into appropriate flight progress strips for display;

d) maintain a representative flight data display for aerodrome control;

e) obtain, interpret and disseminate meteorological information;

f) obtain, interpret and disseminate aeronautical information;

g) select the runway-in-use and appropriate visual aids;

h) manage flights operating in the vicinity of the aerodrome;

i) use aerodrome traffic monitor (where applicable);

j) manage aerodrome surface movements;

k) coordinate with other ATC operational positions;

l) effect liaison with other agencies;

m) manage diversions;

n) work as a team member on the aerodrome control operational position; and

o) manage developed emergencies from the aerodrome control unit.

2.4. Specific responsibilities of the aerodrome control controller are:

a) manage inbound aircraft, providing an appropriate service, from the point at which they are transferred by approach control until touchdown. Utilise arrival routes, as appropriate, and apply appropriate spacing;

b) manage the aerodrome traffic circuit, integrating traffic in the circuit with arriving VFR flights and arriving IFR flights flying a visual approach. When necessary, provide flights with appropriate traffic information;

c) manage departing IFR flights to the point where aircraft they are transferred to approach control or area control;

d) manage departing VFR flights to the point where they are clear of the aerodrome control area of responsibility or until they are transferred to approach control;

e) ensure departing flights comply with departure restrictions;

f) manage aircraft transiting through the aerodrome traffic circuit, coordinating with approach control, as appropriate;

g) provide advice and instructions to assist in preventing collisions between aircraft moving on the apron and the manoeuvring area and between aircraft and obstructions on the manoeuvring area; and

h) coordinate with adjacent units as required.

2.5. The feature of a locally used training airspace should enable the generation of the type of traffic situations and the type of tasks similar to those in the following table:

Airspace structure	Control Zone
Airspace classification	Class C
Aerodrome layout	Single instrument runway minimum length 2200m A taxiway system of sufficient complexity to enable surface problems to be taught and assessed Helicopter arrival/departure position Main apron with nose in parking and self-parking stands An airside road network Separate maintenance area Separate general aviation apron Terminal Control tower Rescue and Fire Fighting services
Ground aids	PAPI Approach, runway and taxiway lighting to support CAT 1 and low visibility operations
Weather Information	Automated surface wind and RVR Local routine and special reports
Control room layout	Normal operation will be for a single aerodrome controller and an assistant as surface movement controller
Displayed information	Applicable standard separations table/chart Guidance for light signal Aerodrome crash map
Operating procedures	Aerodrome traffic procedures will be applied according to requirements specified in *CAD 1101*
Aircraft Types	Helicopters Military aircraft

Airline/commuter prop and jet aircraft
Single/twin piston GA aircraft
Executive jet aircraft

2.6. The simulations are planned to last for a minimum of 30 minutes. If the simulations are longer than the minimum 30 minutes, the exercise will require additional traffic loadings and must be proportionate for the additional time allowed. Structured briefing and debriefing will be planned outside the simulations.

2.7. The traffic types and minimum loadings required to be assessed, during practical exercises on the tower control position, shall be as follows:

IFR inbounds	2 per 30 minutes
VFR inbounds	1 per 30 minutes
IFR outbounds	2 per 30 minutes
VFR outbounds:	1 per 30 minutes
Circuit aircraft:	1 active at any time
VFR overflights:	1 per 30 minutes
Helicopter inbound/outbound	1 per 30 minutes
Vehicles:	1 per 30 minutes

2.8. Trainee Progress Assessment

a) The training progress assessment procedure shall provide evidence of consistent and reliable performance.

b) The procedure shall include the assessment of the performance of each trainee during the simulator training on normal traffic situations, during non-availability of visual or non-visual aids and during simulations that include objectives on emergency and abnormal situations as specified in CAD 1101.

2.9. The examination procedure, specified in the course design document, shall provide evidence of consistent and reliable performance on the tower control position, as laid down in these course objectives.

3. Approach Control Procedural Course

3.1 The general objective for Approach Control Procedural Course is that trainees shall apply operational procedures to ensure a safe, orderly and expeditious service. Such procedures shall be as specified in *CAD 1101*.

3.2 In an approach control procedural simulator, trainees shall:

a) demonstrate the ability to manage the workload within the specified approach control procedural area of responsibility; and

b) apply operational control and planning techniques and procedures to ensure a safe, orderly and expeditious service to arriving, holding, departing and transiting aircraft.

3.3 The general responsibilities of the approach control procedural controller are:

a) check and operate communications equipment;

b) communicate from an approach control procedural unit;

c) correlate flight data into appropriate flight progress strips for display, according to requirements specified in CAD 1101;

d) maintain an appropriate approach control procedural flight data display, according to requirements specified in CAD 1101;

e) obtain, interpret and disseminate meteorological information;

f) obtain, interpret and disseminate aeronautical information;

g) provide approach control procedural service;

h) coordinate with other agencies, according to requirements specified in CAD 1101;

i) manage diversions and holding situations;

j) work as a team member on the approach control procedural operational position, according to requirements specified in CAD 1101; and

k) manage developed emergencies from the approach control unit.

3.4 The specific responsibilities for the approach control procedural controller are:

a) manage inbound aircraft approaching from outside controlled airspace, providing an appropriate service;

b) manage inbound aircraft from the release point with the area control unit to touchdown. Utilise arrival routes, STARs and approach procedures, as appropriate, and apply appropriate separation; expect aircraft transferred to be in accordance with area control unit to approach control unit agreements;

c) manage inbound aircraft established in the appropriate holding area at the initial approach fix. Anticipate the need to hold, use holding levels effectively, establish and co-ordinate the landing interval, calculate and issue EATs when required;

d) manage outbound aircraft from aerodrome control to the point where aircraft are transferred to the area control unit. Utilise published departure routes and/or SIDs to expedite departing aircraft, apply appropriate separation prior to transferring aircraft to the area control unit;

e) manage aircraft leaving controlled airspace, providing an appropriate service;

f) approve the departure sequence;

g) manage overflying aircraft and provide an appropriate service;

h) apply tactical flow management to arriving/departing aircraft when necessary; and

i) coordinate with adjacent units, as required.

3.5 The features of a locally used training sector should enable the generation of the type of traffic situations and the type of tasks similar to the ones in the following table:

Airspace structure	Control zone and airways
Airspace classification	Class C Procedures applicable to the provision of approach control procedural in airspace Class C will be demonstrated during the course
Zones/Areas/Restricted	Activation of Restricted / Training Areas

Aerodrome details	Main runway served by ILS/DME VOR approach procedure available VOR/ILS is preferred approach procedure Surveillance is not available at the aerodrome but will be available at one adjacent/parent unit, at least Procedures will be specified in MATS Volume 1
Weather information	Automated wind and RVR Local routine and special weather reports
Operating procedures	Arrival, departure and transit traffic procedures will be applied according to requirements specified in *CAD 1101*
Adjacent areas	Airways adjacent to aerodrome VFR routes
Types of separation	Vertical separation Lateral separation based on VOR/DME Longitudinal separation based on time Deemed separation based on common operational practice, ie, sector (track), vertical and geographical Details as specified in *CAD 1101*
Aircraft types	Helicopters Military aircraft Airline/commuter prop and jet aircraft Single/twin piston GA aircraft Executive jet aircraft
Displayed information	Instrument approach procedures Lateral Separation Chart including holding pattern separation points Local airspace restrictions SIDs/STARs Instrument Approach Chart (MDH/MDA information)

3.6 The simulations are planned to last for a minimum of 45 minutes. Structured briefing and debriefing will be planned outside the simulations.

3.7 The traffic types and minimum loadings required to be assessed during summative exercises shall be as follows:

IFR inbounds from airways	5 per 45 minutes
IFR inbounds from class G	1 per 45 minutes
VFR/SVFR inbounds from class G:	1 per 45 minutes
Outbound IFR flights to airways	5 per 45 minutes
Outbound IFR flights to class G	1 per 45 minutes

Outbound VFR/SVFR flights to class G	1 per 45 minutes
IFR transits crossing the zone to join/ cross airways at levels controlled by approach surveillance	1 per 45 minutes

3.8 VFR inbound and outbound requires traffic information to be passed in respect of other VFR traffic.

3.9 Trainee Assessment procedure

a) A series of assessed simulations, according to the course submission, determines the trainee's performance. Teamwork should be an essential element in the overall assessment of trainee's performance at all times.

b) The procedure shall include the assessment of the performance of each trainee during the simulator training on normal traffic situations, during non-availability of navaids and during simulations that include objectives on emergency and abnormal situations as specified in CAD 1101.

3.10 The examination procedure, specified in the course design document, shall provide evidence of consistent and reliable performance on the approach control procedural position, as laid down in these course objectives.

4. Approach Control Surveillance Course

4.1 The general objective for Approach Control Surveillance Course is that trainees shall apply operational procedures to ensure a safe, orderly and expeditious service. Such procedures shall be specified in CAD 1101.

4.2 As a prerequisite, trainees for Approach Control Surveillance Course shall complete and pass Approach Control Procedural Course.

4.3 Trainees shall also understand the principles, use and limitations of equipment used in surveillance control.

4.4 In an approach control surveillance simulator, trainees shall:

a) demonstrate the ability to manage the workload within the specified approach control surveillance area of responsibility; and

b) apply operational control and planning techniques and procedures to ensure a safe, orderly and expeditious service to arriving, holding, departing and transiting aircraft.

4.5 The general responsibilities of the approach control surveillance unit controller are:

a) check and operate communications equipment;

b) communicate from an approach control surveillance unit;

c) correlate flight data into appropriate flight progress strips and primary and/or secondary radar data for display, according to requirements specified in CAD 1101;

d) obtain, interpret and disseminate meteorological information;

e) obtain, interpret and disseminate aeronautical information;

f) select and set up surveillance equipment;

g) use primary radar;

h) use secondary radar;

i) provide approach control service with the use of surveillance equipment;

j) coordinate with other agencies, according to requirements specified in CAD 1101;

k) with the aid of surveillance, manage diversions and holding situations;

l) work as a team member on the approach control surveillance operational position, according to requirements specified in CAD 1101; and

m) manage developed emergencies from the surveillance-equipped approach control unit.

4.6 The specific responsibilities for the approach control surveillance controller are:

a) manage inbound aircraft approaching from outside controlled airspace, providing an appropriate service;

b) manage inbound aircraft from the release point with the area control unit to touchdown. Utilise arrival routes, STARs and approach control surveillance procedures, as appropriate. Apply appropriate separation. Aircraft transferred will be in accordance with area control and approach control unit agreements;

c) manage inbound aircraft established in the appropriate holding area at the initial approach fix. Anticipate the need to hold, use holding levels effectively, establish and co-ordinate the landing interval, calculate and issue EATs when required;

d) manage outbound aircraft from aerodrome control to the point where aircraft are transferred to the area control unit. Utilise published departure routes, SIDs and/or surveillance techniques to expedite departing aircraft, apply appropriate separation prior to transferring aircraft to the area control unit;

e) manage aircraft leaving controlled airspace, providing an appropriate service;

f) approve the departure sequence;

g) manage overflying aircraft and provide an appropriate service;

h) provide appropriate services to aircraft operating outside controlled airspace; and

i) coordinate with adjacent units, as required.

4.7 The features of a locally used training sector should enable the generation of the type of traffic situations and the type of tasks similar to the ones in the following table:

Airspace structure	Control zone / Terminal area and airways
Airspace classification	Control zone: Class C Terminal control area: Class B or C as appropriate Airways: Class B or A as appropriate
Zones/Areas/Restricted	Minimum of one which will require traffic to avoid
Aerodrome details	Airfield runway configuration Runway is a precision approach runway CAT I Non-precision approach available Primary and secondary radar data is available
Weather information	Automated wind and RVR Local routine and special weather reports Upper wind

Operating procedures	Arrival, departure and transit traffic procedures will be applied according to requirements specified in *CAD 1101* Surveillance will be available at one adjacent/parent unit, at least Procedures will be specified in *CAD 1101* The Authority has approved the application of radar separation between departing aircraft and previously departing traffic, or other radar-controlled traffic Surface wind not to exceed 25 kt within 45 degrees of the runway magnetic heading Realistic upper winds shall be simulated, including at least one wind velocity change during an instrument or surveillance radar approach
Adjacent areas	The airfield control zone shall be contiguous with the airways system
Types of separation	Vertical separation Radar separation, 5NM radar separation is approved for use Lateral separation Longitudinal separation based on time Wake turbulence separation as specified in *CAD 1101*
Arrival spacing	10 NM spacing is required between successive arrivals
Aircraft types	Airline/commuter prop and jet aircraft of all wake turbulence categories Executive jet aircraft Single/twin piston GA aircraft Military aircraft
Displayed information	Instrument approach procedures Wake turbulence separation spacing MDH/MDA information
Surveillance Map	Local airspace restrictions SIDs/STARs ATCSMA Chart Airway and VFR routes Control area boundaries Holding areas Runway/s Runway extended centrelines Approach Fixes

4.8 The simulations are planned to last for a minimum of 45 minutes. Structured briefing and debriefing will be planned outside the simulations.

4.9 The traffic types and minimum loadings required to be assessed during summative exercises shall be as follows:

IFR inbounds from airways	7 per 45 minutes
IFR inbounds from class G	1 per 45 minutes
VFR/SVFR inbounds from class G:	1 per 45 minutes
Outbound IFR flights to airways	3 per 45 minutes
Outbound IFR flights to class G	1 per 45 minutes
Outbound VFR/SVFR flights to class G	1 per 45 minutes
IFR transits crossing the zone to join/ cross airways at levels controlled by approach surveillance	1 per 45 minutes

4.10 Surveillance Degradation/Failure Phase

a) For the Surveillance Degradation/Failure Phase of training, the overall traffic loading will be 3 inbound and 2 outbound or transit IFR flights per 30 minutes.

b) In addition to the objectives in (4c.), the trainees shall able to contain and manage a safe ATC environment during the degradation of surveillance system.

c) In addition to the general responsibilities in (4d.), trainees shall provide an air traffic control service during a surveillance system failure until the situation has been managed and contained (i.e the traffic situation will allow the release of departures).

d) In addition to the specific responsibilities in (4e.), trainees shall be able to:

i) recognise that the surveillance system is degrading or that a failure has taken place;

ii) establish separation and, when practicable, issue essential traffic information;

iii) restrict departures and issues EATs to arriving aircraft; and

iv) terminate surveillance services and coordinate with other ATSUs.

4.11 Trainee Assessment procedure

a) A series of assessed simulations, according to the course submission, determines the trainee's performance. Teamwork should be an essential element in the overall assessment of trainee's performance at all times.

b) The procedure shall include:

i) the assessment of the performance of each trainee during the simulator training on normal traffic situations and during simulations that include objectives on emergency and abnormal situations as specified in CAD 1101; and

ii) either a degradation in the surveillance system or a complete failure of primary or secondary radar or both at a scripted point of the exercise. The exercise shall continue until a point where a safe approach procedural environment has been established and that departures can be released.

4.12 The examination procedure, specified in the course design document, shall provide evidence of consistent and reliable performance on the approach control procedural position, as laid down in these course objectives.

5. Area Control Procedural Course

5.1 The general objective for Area Control Procedural Course is that Trainees shall apply operational procedures to ensure a safe, orderly and expeditious service. Such procedures shall be specified in CAD 1101.

5.2 In an area control procedural simulator, trainees shall:

a) demonstrate the ability to manage the workload within the specified approach control procedural area of responsibility; and

b) apply operational control and planning techniques and procedures to ensure a safe, orderly and expeditious service to arriving, holding, departing and transiting aircraft.

5.3 The general responsibilities of the area control procedural controller are:

a) check and operate communications equipment;

b) communicate from an area control procedural unit;

c) correlate flight data into appropriate flight progress strips for display, according to requirements specified in CAD 1101;

d) maintain an appropriate area control procedural flight data display, according to requirements specified in CAD 1101;

e) obtain, interpret and disseminate meteorological information including the relay of significant weather phenomena or SIGMET to aircraft in flight:

f) relay of special air reports to meteorological watch office;

g) obtain, interpret and disseminate aeronautical information;

h) provide area control procedural service;

i) coordinate with other agencies, according to requirements specified in CAD 1101;

j) manage diversions and holding situations;

k) work as a team member on the area control procedural operational position, according to requirements specified in CAD 1101; and

l) manage developed emergencies from the area control unit.

5.4 The specific responsibilities for the area control procedural controller are:

a) manage en-route aircraft and provide an appropriate service;

b) manage aircraft joining, leaving or crossing controlled airspace and provide an appropriate service;

c) manage inbound aircraft approaching from outside controlled airspace, providing an appropriate service;

d) manage arriving aircraft, providing an appropriate service, until the release point with the appropriate approach control unit. Utilise arrival routes, STARs, as appropriate, and apply appropriate separation; expect aircraft transferred to be in accordance with area control unit to approach control unit agreements;

e) manage outbound aircraft from aerodrome control or approach control to the point where aircraft are transferred to another control unit. Utilise published departure routes and/or SIDs to expedite departing aircraft, apply appropriate separation prior

to transferring aircraft to the adjacent sector in accordance with sector agreements unit;

f) apply tactical flow management to arriving/departing aircraft when necessary; and

g) coordinate with adjacent units, as required.

5.5 The features of a locally used training sector should enable the generation of the type of traffic situations and the type of tasks similar to the ones in the following table:

Airspace structure	Airways and control zones
Airspace classification	Control Areas, Classes A, B and C Control Zone: Class C, with boundaries extending to base of airway system
Zones/Areas/Restricted	One restricted airspace should exist outside controlled airspace, activated as required
Aerodromes details	The training area must contain four airfields having airspace contiguous with the airway system and at least one airfield in an adjacent area
Weather information	METAR and SPECI for all aerodromes Significant weather phenomena SIGMET Upper wind
Operating procedures	Arrival, departure and en-route traffic procedures will be applied according to requirements specified in *CAD 1101* Surveillance is not available but will be available at one adjacent/parent unit
Adjacent areas	Appropriate co-ordination procedures as specified in *CAD 1101*
Types of separation	Vertical separation Lateral separation based on VOR/DME Longitudinal separation based on time including Mach number technique Deemed separation based on common operational practice, i.e. sector (track), vertical and geographical Details as specified in *CAD 1101*
Aircraft types	Military aircraft Airline/commuter prop and jet aircraft Single/twin piston GA aircraft Executive jet aircraft All vortex wake categories shall be included
Displayed information	Area of responsibilities Airways and reporting points Airspace restrictions

SIDs/STARs

Wake turbulence separation spacing

Lateral separation charts

5.6 The simulations are planned to last for a minimum of 45 minutes. Structured briefing and debriefing will be planned outside the simulations.

5.7 The traffic types and minimum loadings required to be assessed during summative exercises shall have 15 aircraft with variable mix of traffic types:

a) IFR en-route, departures and arrivals traffic with conflictions for the application of vertical, lateral and longitudinal separations;

b) IFR departures from 2 aerodromes climbing and descending on same route in reciprocal direction; and

c) IFR outbound of which at least one joins or crosses-controlled airspace and/or leaving control airspace.

5.8 Trainee Assessment procedure

a) A series of assessed simulations, according to the course submission, determines the trainee's performance. Teamwork should be an essential element in the overall assessment of trainee's performance at all times.

b) The procedure shall include the assessment of the performance of each trainee during the simulator training on normal traffic situations, during non-availability of navaids and during simulations that include objectives on emergency and abnormal situations as specified in CAD 1101.

5.9 The examination procedure, specified in the course design document, shall provide evidence of consistent and reliable performance on the area control procedural position, as laid down in these course objectives.

6. Area Control Surveillance Course

6.1 The general objective for Area Control Surveillance Course is that Trainees shall apply operational procedures to ensure a safe, orderly and expeditious service. Such procedures shall be specified in CAD 1101.

6.2 As a prerequisite, trainees for Area Control Surveillance Course shall complete and pass Area Control Procedural Course.

6.3 Trainees shall also understand the principles, use and limitations of equipment used in surveillance control.

6.4 In an area control surveillance simulator, trainees shall:

a) demonstrate the ability to manage the workload within the specified area control surveillance area of responsibility; and

b) apply operational control and planning techniques and procedures to ensure a safe, orderly and expeditious service to arriving, holding, departing and transiting aircraft.

6.5 The general responsibilities of the area control surveillance controller are:

a) check and operate communications equipment;

b) communicate from an area control surveillance unit;

c) correlate flight data into appropriate flight progress strips and primary and/or secondary radar data for display, according to requirements specified in MATS Volume 1;

d) obtain, interpret and disseminate meteorological information including the relay of significant weather phenomena or SIGMET to aircraft in flight;

e) relay of special air reports to meteorological watch office;

f) obtain, interpret and disseminate aeronautical information;

g) select and set up surveillance equipment;

h) use primary radar;

i) use secondary radar;

j) provide area control service with the use of surveillance equipment;

k) coordinate with other agencies, according to requirements specified in CAD 1101;

l) with the aid of surveillance equipment, manage diversions and holding situations;

m) work as a team member on the area control surveillance operational position, according to requirements specified in CAD 1101; and

n) manage developed emergencies from the surveillance -equipped area control unit.

6.6 The specific responsibilities for the area control surveillance controller are:

a) manage en-route aircraft and provide an appropriate service;

b) manage aircraft joining, leaving or crossing controlled airspace and provide an appropriate service;

c) manage inbound aircraft approaching from outside controlled airspace, providing an appropriate service;

d) manage arriving aircraft, providing an appropriate service, until the release point with the appropriate approach control unit. Utilise arrival routes, STARs, as appropriate, and apply appropriate separation; expect aircraft transferred to be in accordance with area control unit to approach control unit agreements;

e) manage outbound aircraft from aerodrome control or approach control to the point where aircraft are transferred to another control unit. Utilise published departure routes and/or SIDs to expedite departing aircraft, apply appropriate separation prior to transferring aircraft to the adjacent sector in accordance with sector agreements unit;

f) apply tactical flow management to arriving/departing aircraft when necessary; and

g) coordinate with adjacent units, as required.

6.7 The features of a locally used training sector should enable the generation of the type of traffic situations and the type of tasks similar to the ones in the following table:

Airspace structure	Airways and control zones
Airspace classification	Control Areas, Classes A, B and C Control zone: Class C, with boundaries extending to base of airway system
Zones/Areas/Restricted	One restricted airspace should exist outside controlled airspace, activated as required

Aerodromes details	The training area must contain four airfields having airspace contiguous with the airway system and at least one airfield in an adjacent area
Weather information	METAR and SPECI for all aerodromes Significant weather phenomena SIGMET Upper wind
Operating procedures	Arrival, departure and en-route traffic procedures will be applied according to requirements specified in *CAD 1101*
Adjacent areas	Appropriate coordination procedures will be specified in *CAD 1101*
Types of separation	Vertical separation Radar separation 10 NM Spacing 10 NM in-trail for same route before transfer to adjacent unit or as coordinated for radar handover Details as specified in *CAD 1101*
Aircraft types	Military aircraft Airline/commuter prop and jet aircraft Single/twin piston GA aircraft Executive jet aircraft All vortex wake categories shall be included
Displayed information	Area of responsibilities Airways and reporting points Airspace restrictions SIDs/STARs ATCSMA Charts

6.8 The simulations are planned to last for a minimum of 45 minutes. Structured briefing and debriefing will be planned outside the simulations.

6.9 The traffic types and minimum loadings required to be assessed during summative exercises shall have 17 aircraft with variable mix of traffic types:

6.10 Surveillance Degradation/Failure Phase

a) For the Surveillance Degradation/Failure Phase of training, the overall traffic loading will be 3 inbound and 2 outbound or transit IFR flights per 30 minutes.

b) In addition to the objectives in (6c.), the trainees shall able to contain and manage a safe ATC environment during the degradation of surveillance system.

c) In addition to the general responsibilities in (6d.), trainees shall provide an air traffic control service during a surveillance system failure until the situation has been managed and contained (i.e. the traffic situation will allow the release of departures).

d) In addition to the specific responsibilities in (6e.), trainees shall be able to:

i) recognise that the surveillance system is degrading or that a failure has taken place;

ii) establish separation and, when practicable, issue essential traffic information;

iii) restrict departures and issues EATs to arriving aircraft; and

iv) terminate surveillance services and coordinate with other ATSUs.

6.11 Trainee Assessment procedure

a) A series of assessed simulations, according to the course submission, determines the trainee's performance. Teamwork should be an essential element in the overall assessment of trainee's performance at all times.

b) The procedure shall include;

i) the assessment of the performance of each trainee during the simulator training on normal traffic situations and during simulations that include objectives on emergency and abnormal situations as specified in CAD 1101; and

ii) either a degradation in the surveillance system or a complete failure of primary or secondary radar or both at a scripted point of the exercise. The exercise shall continue until a point where a safe approach procedural environment has been established and that departures can be released.

6.12 The examination procedure, specified in the course design document, shall provide evidence of consistent and reliable performance on the approach control procedural position, as laid down in these course objectives.

13.9 Appendix 9 – Approval and Oversight Processes

Note. — This appendix provides the guidance for ATC-ATO approval processes i.e. new approval, renewal and variation of the approval as well as the random inspection and training plan acceptance process. This guidance includes the related pre-audit, onsite audit and the post-audit activities.

1. Approval Process

Training Organisation	Authority
Submit: a. application form & exposition b. training programme / course schedule, training procedure manual (TPM), course curriculum document (CCD) including signed checklist of CCD, quality manual, list of personnel and job description, facilities, equipment and records c. checklist of TPM	a. Review exposition and related documents b. Notify training organisation for audit with proposed dates
Follow audit process – Decision on approval	

2. Audit Process

Training Organisation	Authority
Pre-Audit	
Agree on audit dates	Prepare audit plan and programme
Prepare evidence for each PQ, for example a folder every PQ containing all related evidences	Pre-audit preparation by audit team
On-Site Audit	
Provide overview information on audit scope	Conduct open meeting
a. Provide evidence for each PQ b. Provide access to audited facilities, documents or personnel	a. Conduct on-site audit activities b. Draft audit finding
Take note on audit observations and findings	Conduct close meeting
Post Audit	
Prepare corrective actions plan (CAP) or implement corrective actions	Prepare interim audit report (follow deadline)

a. Continue prepare CAP or implement corrective actions b. Submit CAP and corrective action reports with evidence	a. Receive CAP / corrective action reports and evidence b. Prepare and submit final report (follow deadline)
Implement corrective actions in accordance with effective implementation dates	a. Decision on approval b. Take action (if any) in accordance with enforcement procedure

3. Renewal Process

Training Organisation	Authority
Submit: a. application form & updated exposition b. copy of approval certificate, training programme / course schedule, training procedure manual (TPM), course curriculum document (CCD) including signed checklist of CCD, quality manual, list of personnel and job description, facilities, equipment and records c. checklist of TPM d. internal audit and corrective actions report	a. Review exposition and other documents b. Notify training organisation for audit with proposed dates
Follow audit process – Decision on renewal	

4. Variation Process

Training Organisation	Authority
Submit: a. application form b. copy of approval certificate, updated copy of training programme / course schedule, training procedure manual (TPM), course curriculum document (CCD) including signed checklist of CCD, quality manual, list of personnel and job description, facilities, equipment and records c. details of variation	a. Review exposition and other documents b. Notify training organisation for audit with proposed dates
Follow audit process – Decision on variation	

5. Random Inspection Process

Training Organisation	Authority
On-Site Inspection	
a. Provide access to inspected facilities / documents / personnel b. Take note on inspection observations and findings	a. Conduct on-site inspection activities b. Inform ATC-ATO of any non-compliance c. Set deadlines for corrective actions d. Submit non-compliance report
Post Inspection	
a. Implement corrective actions b. Submit corrective action report	a. Review & verify corrective action report b. Take action (if any) accordance with enforcement procedure

6. Training Plan Acceptance Process

Training Organisation	Authority
Submit annual training plan	a. Review document b. Submit observation (if any)
Submit reviewed annual plan	Accept annual plan

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