

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ



ދިވެހިސަރުކާރުގެ ގެޒެޓް

Volume: 54

Issue: 93

Date: 9 Zul Qidaa 1446 – 7 May 2025

Wednesday

Regulation No: 2025/R-56

MCAR 176 Approved Training Organisation for Air Traffic Control

The President's Office
Boduthakurufaanu Magu
Male, Maldives'

Phone: 3336211
Mobile: 7242885

Website: www.gazette.gov.mv

- For publication of regulations and guidelines in the Gazette, send to legallaffairs@po.gov.mv
-



Maldives Civil Aviation Authority
Republic of Maldives

Maldivian Civil Aviation Regulations

MCAR 176 Approved Training Organisation for Air Traffic Control

Issue 1.00, 07 May 2025

Foreword

Maldives Civil Aviation Authority, in exercise of the powers conferred on it under Articles 5 and 6 of the Maldives Civil Aviation Authority Act 2/2012 has developed this Regulation.

This Regulation shall be cited as ‘MCAR 176 - Approved Training Organisation for Air Traffic Control’ and shall come into force on 07th May 2026.

Definitions of the terms and abbreviations used in this Regulation, unless the context requires otherwise, are in MCAR-1 Definitions and Abbreviations.

List of Effective Pages

Chapter	Part	Page	Amendment	Date
	Foreword	ii	Issue: 1.00	07 May 2025
	List of Amendments	iii	Issue: 1.00	07 May 2025
	List of Effective Pages	iv	Issue: 1.00	07 May 2025
	Table of Contents	v	Issue: 1.00	07 May 2025
	Definitions & Abbreviations	vi	Issue: 1.00	07 May 2025
	TECHNICAL REQUIREMENTS	1-4	Issue: 1.00	07 May 2025
APPENDIX 1	REQUIREMENTS FOR INSTRUCTORS	APP 1-1 to APP 1-3	Issue: 1.00	07 May 2025
APPENDIX 2	BASIC TRAINING	APP 2-1 to APP 2-6	Issue: 1.00	07 May 2025
APPENDIX 3	AERODROME CONTROL VISUAL RATING (ADV)	APP 3-1 to APP 3-5	Issue: 1.00	07 May 2025
APPENDIX 4	AERODROME CONTROL INSTRUMENT RATING FOR TOWER — ADI (TWR)	APP 4-1 to APP 4-5	Issue: 1.00	07 May 2025
APPENDIX 5	APPROACH CONTROL PROCEDURAL RATING (APP)	APP 5-1 to APP 5-5	Issue: 1.00	07 May 2025
APPENDIX 6	APPROACH CONTROL SURVEILLANCE RATING (APS)	APP 6-1 to APP 6-5	Issue: 1.00	07 May 2025
APPENDIX 7	AREA CONTROL PROCEDURAL RATING (ACP)	APP 7-1 to APP 7-5	Issue: 1.00	07 May 2025
APPENDIX 8	AREA CONTROL SURVEILLANCE RATING (ACS)	APP 8-1 to APP 8-5	Issue: 1.00	07 May 2025

Table of Contents

Foreword ii
List of Amendments iii
List of Effective Pages iv
Table of Contents v

TECHNICAL REQUIREMENTS ----- 1

1. Regulatory Compliance----- 1
2. Related Regulations ----- 1
3. Purpose----- 1
4. Issue of Approval ----- 2
5. Application for the approval of ATC Training Organisation----- 2
6. Training and procedures manual----- 2
7. Quality assurance system ----- 3
8. Facilities----- 3
9. Personnel ----- 3
10. Records ----- 3
11. Evaluation and checking ----- 4
12. Oversight----- 4
13. Effectivity----- 4

APPENDIX 1. REQUIREMENTS FOR INSTRUCTORS ----- 1

1. Theoretical instructors ----- 1
2. Practical instructors ----- 1
3. On-the-job training instructor (OJTI) privileges----- 1
4. Application for on-the-job training instructor qualification----- 1
5. Validity of on-the-job training instructor qualification----- 1
6. Temporary OJTI authorisation ----- 2
7. Synthetic training device instructor (STDI) privileges ----- 2
8. Application for synthetic training device instructor endorsement ----- 3
9. Validity of synthetic training device instructor endorsement ----- 3

APPENDIX 2. Basic Training----- 1

APPENDIX 3. AERODROME CONTROL VISUAL RATING (ADV) ----- 1

APPENDIX 4. AERODROME CONTROL INSTRUMENT RATING FOR TOWER — ADI (TWR) ----- 1

APPENDIX 5. APPROACH CONTROL PROCEDURAL RATING (APP) ----- 1

APPENDIX 6. APPROACH CONTROL SURVEILLANCE RATING (APS)----- 1

APPENDIX 7.	AREA CONTROL PROCEDURAL RATING (ACP) -----	1
APPENDIX 8.	AREA CONTROL SURVEILLANCE RATING (ACS)-----	1

TECHNICAL REQUIREMENTS

1. Regulatory Compliance

- 1.1 Compliance with this MCAR is mandatory.
- 1.2 These requirements are applicable to any ATC training organization in Maldives utilized by a Maldives Air Traffic Service Provider.

2. Related Regulations

- 2.1 The standards and requirements in this MCAR are based mainly on standards and recommended practices stipulated in ICAO Annex 1 (entitled "Personnel Licensing") to the Chicago Convention on International Civil Aviation (as in force and amended from time to time by the Council of the International Civil Aviation Organisation), and with such modifications as may be determined by the CAA to be applicable in Maldives.

3. Purpose

- 3.1 In accordance with International Civil Aviation Organization (ICAO) Annex 1 – Personnel Licensing requirements, an approved training shall provide a level of competency at least equal to that provided by the minimum experience requirements for personnel not receiving such approved training, the approval of a training organization by the Civil Aviation Authority (MCAA) shall be dependent upon the applicant demonstrating compliance with the requirements of ICAO Annex 1.
- 3.2 Regulation MCAR-65 establishes the various requirements, ratings and privileges prescribed by MCAA for granting, validating and using licenses related to air traffic controller in Maldives.
- 3.3 Approved training for Air Traffic Controller (ATC) shall be conducted within an Approved Training Organization (ATO). It relates primarily to approve training for the issuance of license or rating, but is not intended to include approved training for the maintenance of competence or for an operational qualification after the initial issuance of a license or rating.

4. Issue of Approval

- 4.1 The issuance of an approval for a training organization and the continued validity of the approval shall depend upon the training organization being in compliance with the requirements of this MCAR.
- 4.2 The approval document shall contain at least the following:
- a) organization's name and location;
 - b) date of issue and period of validity (where appropriate);
 - c) terms of approval.

5. Application for the approval of ATC Training Organisation

- 5.1 An application for the grant of an approved ATC training organisation shall include:
- a) an application form (MCAA/ATS/02) duly completed and signed by the person responsible for the organisation or a nominated accountable manager;
 - b) a copy of the training and procedures manual;
 - c) a copy of relevant standard operating procedures in support of the training and procedures manual, if applicable.

6. Training and procedures manual

- 6.1 The training organization shall provide a training and procedures manual for the use and guidance of personnel concerned. This manual may be issued in separate parts and shall contain at least the following information:
- a) a general description of the scope of training authorized under the organization's terms of approval;
 - b) the content of the training programmes offered including the courseware and equipment to be used;
 - c) a description of the organization's quality assurance system in accordance with paragraph 7;
 - d) a description of the organization's facilities;
 - e) the name, duties and qualification of the person designated as responsible for compliance with the requirements of the approval in paragraph 9.1;
 - f) a description of the duties and qualification of the personnel designated as responsible for planning, performing and supervising the training in paragraph 9.2;
 - g) a description of the procedures used to establish and maintain the competence of instructional personnel as required by paragraph 9.3;
 - h) a description of the method used for the completion and retention of the training records required by paragraph 10;
 - i) a description, when applicable, of additional training needed to comply with an operator's procedures and requirements; and

- j) a description of the selection, role and duties of the authorised personnel to conduct the testing required for the issuance of a licence or rating, as well as the applicable requirements established by the CAA.

6.2 The training organization shall ensure that the training and procedures manual is amended as necessary to keep the information contained therein up to date.

6.3 Copies of all amendments to the training and procedures manual shall be furnished promptly to all organizations or persons to whom the manual has been issued.

7. Quality assurance system

7.1 The training organization shall establish a quality assurance system, acceptable to the CAA, which ensures that training and instructional practices comply with all relevant requirements.

8. Facilities

8.1 The facilities and working environment shall be appropriate for the task to be performed and be acceptable to the CAA.

8.2 The training organization shall have, or have access to, the necessary information, equipment, training devices and material to conduct the courses for which it is approved.

8.3 Synthetic training devices shall be approved by MCAA to ensure that they are appropriate to the task.

9. Personnel

9.1 The training organization shall nominate a person responsible for ensuring that it is in compliance with the requirements for an approved organization.

9.2 The organization shall employ the necessary personnel to plan, perform and supervise the training to be conducted.

9.3 The competence of instructional personnel shall be in accordance with procedures and to the level described in the Appendix 1 to this MCAR.

9.4 The training organization shall ensure that all instructional personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities are in line with the standards given in the Appendix 1 to this MCAR. The training programme established by the training organization shall include training in knowledge and skills related to human performance.

Note — Guidance material to design training programmes to develop knowledge and skills in human performance can be found in the Human Factors Training Manual (ICAO Doc 9683).

10. Records

10.1 The training organization shall retain detailed student records to show that all requirements of the training course have been met.

10.2 The training organization shall maintain a system for recording the qualifications and training of instructional and examining staff, where appropriate.

10.3 The records required by paragraph 10.1 shall be kept for a minimum period of two years after completion of the training. The records required by paragraph 10.2 shall be retained for

a minimum period of two years after the instructor or examiner ceases to perform a function for the training organization.

11. Evaluation and checking

11.1 When an approved training organization conducts the testing required for the issuance of a licence or rating, the testing shall be conducted by personnel authorized by the CAA or personnel designated by the training organization in accordance with criteria approved by the MCAA.

12. Oversight

12.1 Oversight is required to ensure that the ATO is continuing compliance with the approval requirements. It includes a review of the ATO's quality assurance system, its administrative, technical and training records, as well as its operational activities. Oversight is an on-going function which can consist of results monitoring, record review, on-site inspections, and/or audit.

13. Effectivity

This regulation will come into force on 7 May 2026.

APPENDIX 1. REQUIREMENTS FOR INSTRUCTORS

1. Theoretical instructors

- a) Theoretical training shall only be carried out by appropriately qualified instructors.
- b) theoretical instructor is appropriately qualified if he/she:
 - i) hold an air traffic controller licence and/or holds a professional qualification appropriate to the subject being taught and/or has demonstrated adequate knowledge and experience to the training organisation;
 - ii) has demonstrated instructional skills to the training organisation.

2. Practical instructors

- 2.1 A person shall only carry out practical training when he/she holds an air traffic controller licence with an on-the-job training instructor (OJTI) qualification or a synthetic training device instructor (STDI) endorsement.

3. On-the-job training instructor (OJTI) privileges

- 3.1 Holders of an OJTI qualification are authorised to provide practical training and supervision on operational working positions for which a valid unit endorsement is held and on synthetic training devices in the ratings held.
- 3.2 Holders of an OJTI qualification shall only exercise the privileges of the qualification if they have:
 - a) exercised for at least two years the privilege of the rating they will instruct in;
 - b) exercised for an immediately preceding period of at least six months the privilege of the valid unit endorsement in which instruction will be given;
 - c) practiced instructional skills in those procedures in which it is intended to provide instruction.
 - d) The period of two years referred to in point 3.2 (a) can be shortened to not less than one year by the competent authority when requested by the training organisation.

4. Application for on-the-job training instructor qualification

- 4.1 Applicants for the issue of an OJTI qualification shall:
 - a) hold an air traffic controller licence with a valid unit endorsement;
 - b) have exercised the privileges of an air traffic controller licence for a period of at least two years immediately preceding the application. This period can be shortened to not less than one year by the CAA when requested by the training organisation; and
 - c) within the year preceding the application, have successfully completed a practical instructional techniques course during which the required knowledge and pedagogical skills are taught and have been appropriately assessed.

5. Validity of on-the-job training instructor qualification

- 5.1 The OJTI qualification shall be valid for a period of three years.

- 5.2 The OJTI qualification may be revalidated by successfully completing refresher training on practical instructional skills during its validity period, provided that the requirements of 4.1 (a) and (b) are met.
- 5.3 If the OJTI qualification has expired, it may be renewed by:
- a) receiving refresher training on practical instructional skills; and
 - b) successfully passing a practical instructor competence assessment;
- within the year preceding the application for renewal, provided that the requirements of 4.1 (a) and (b) are met.
- 5.4 In the case of first issue and renewal the period of validity of the OJTI qualification shall start not later than 30 days from the date on which the assessment has been successfully completed.
- 5.5 If the requirements of 4.1 (a) and (b) are not met the OJTI qualification may be exchanged for an STDI endorsement, provided that compliance with the requirements of sub-clause 9 (2) and (3) is ensured.

6. Temporary OJTI authorisation

- 6.1 When compliance with the requirements provided for in 3.1 & 3.2 is not possible, the competent authority may grant temporary OJTI authorisation based on a safety analysis presented by the air navigation service provider.
- 6.2 The temporary OJTI authorisation referred to in point (a) may be issued to holders of a valid OJTI qualification issued in accordance with 4.1.
- 6.3 The temporary OJTI authorisation referred to in point (a) shall be limited to the instruction necessary to cover exceptional situations and its validity shall not exceed one year or the expiration of the validity of the OJTI qualification issued in accordance with 4.1, whichever occurs sooner.

7. Synthetic training device instructor (STDI) privileges

- 7.1 Holders of an STDI endorsement are authorised to provide practical training on synthetic training devices:
- a) for subjects of practical nature during initial training;
 - b) for unit training other than OJT; and
 - c) for continuation training.
- Where the STDI is providing pre-OJT, he/she shall hold or have held the relevant unit endorsement.
- 7.2 Holders of an STDI endorsement shall only exercise the privileges of the endorsement if they have:
- a) at least two years' experience in the rating they will instruct in;
 - b) demonstrated knowledge of current operational practices;
 - c) practiced instructional techniques in those procedures in which it is intended to provide instruction.
- 7.3 Notwithstanding point 7.2 (a)
- a) for the purpose of basic training any rating held is appropriate;

- b) for the purpose of rating training, training may be provided for specific and selected operational tasks by an STDI holding a rating that is relevant for that specific and selected operational task.

8. Application for synthetic training device instructor endorsement

8.1 Applicants for the issue of an STDI endorsement shall:

- a) have exercised the privileges of an air traffic controller licence in any rating for at least two years; and
- b) within the year preceding the application have successfully completed a practical instructional techniques course during which the required knowledge and pedagogical skills are taught using theoretical and practical methods and have been appropriately assessed.

9. Validity of synthetic training device instructor endorsement

9.1 The STDI endorsement shall be valid for a period of three years.

9.2 The STDI endorsement may be revalidated by successfully completing refresher training on practical instructional skills and on current operational practices during its validity period.

9.3 If the STDI endorsement has expired, it may be renewed by:

- a) receiving refresher training on practical instructional skills and on current operational practices; and
- b) successfully passing a practical instructor competence assessment;

within the year preceding the application for renewal.

9.4 In the case of first issue and renewal the period of validity of the STDI endorsement shall start not later than 30 days from the date on which the assessment has been successfully completed.

APPENDIX 2. Basic Training

TABLE OF CONTENTS

SUBJECT 1: INTRODUCTION TO THE COURSE
SUBJECT 2: AVIATION LAW
SUBJECT 3: AIR TRAFFIC MANAGEMENT
SUBJECT 4: METEOROLOGY
SUBJECT 5: NAVIGATION
SUBJECT 6: AIRCRAFT
SUBJECT 7: HUMAN FACTORS
SUBJECT 8: EQUIPMENT AND SYSTEMS
SUBJECT 9: PROFESSIONAL ENVIRONMENT

SUBJECT 1: INTRODUCTION TO THE COURSE

TOPIC INTRB 1 — COURSE MANAGEMENT
Subtopic INTRB 1.1 — Course introduction
Subtopic INTRB 1.2 — Course administration
Subtopic INTRB 1.3 — Study material and training documentation

TOPIC INTRB 2 — INTRODUCTION TO THE ATC TRAINING COURSE
Subtopic INTRB 2.1 — Course content and organisation
Subtopic INTRB 2.2 — Training ethos
Subtopic INTRB 2.3 — Assessment process

TOPIC INTRB 3 — INTRODUCTION TO THE ATCO'S FUTURE
Subtopic INTRB 3.1 — Job prospect

SUBJECT 2: AVIATION LAW

TOPIC LAWB 1 — INTRODUCTION TO AVIATION LAW
Subtopic LAWB 1.1 — Relevance of aviation law

TOPIC LAWB 2 — INTERNATIONAL ORGANISATIONS
Subtopic LAWB 2.1 — ICAO
Subtopic LAWB 2.2 — European and other agencies
Subtopic LAWB 2.3 — Aviation associations

TOPIC LAWB 3 — NATIONAL ORGANISATIONS
Subtopic LAWB 3.1 — Purpose and function
Subtopic LAWB 3.2 — National legislative procedures
Subtopic LAWB 3.3 — Competent authority
Subtopic LAWB 3.4 — National aviation associations

TOPIC LAWB 4 — ATS SAFETY MANAGEMENT
Subtopic LAWB 4.1 — Safety regulation
Subtopic LAWB 4.2 — Safety management system

TOPIC LAWB 5 — RULES AND REGULATIONS
Subtopic LAWB 5.1 — Units of measurement

Subtopic LAWB 5.2 — ATCO licensing/certification
Subtopic LAWB 5.3 — Overview of ANS and ATS
Subtopic LAWB 5.4 — Rules of the air
Subtopic LAWB 5.5 — Airspace and ATS routes
Subtopic LAWB 5.6 — Flight plan
Subtopic LAWB 5.7 — Aerodromes
Subtopic LAWB 5.8 — Holding procedures for IFR flights
Subtopic LAWB 5.9 — Holding procedures for VFR flights

SUBJECT 3: AIR TRAFFIC MANAGEMENT

TOPIC ATMB 1 — AIR TRAFFIC MANAGEMENT

Subtopic ATMB 1.1 — Application of units of measurement
Subtopic ATMB 1.2 — Air traffic control (ATC) service
Subtopic ATMB 1.3 — Flight information service (FIS)
Subtopic ATMB 1.4 — Alerting service
Subtopic ATMB 1.5 — Air traffic advisory service
Subtopic ATMB 1.6 — ATS system capacity and air traffic flow management
Subtopic ATMB 1.7 — Airspace management (ASM)

TOPIC ATMB 2 — ALTIMETRY AND LEVEL ALLOCATION

Subtopic ATMB 2.1 — Altimetry
Subtopic ATMB 2.2 — Transition level
Subtopic ATMB 2.3 — Level allocation

TOPIC ATMB 3 — RADIOTELEPHONY (RTF)

Subtopic ATMB 3.1 — RTF general operating procedures

TOPIC ATMB 4 — ATC CLEARANCES AND ATC INSTRUCTIONS

Subtopic ATMB 4.1 — Type and content of ATC clearances
Subtopic ATMB 4.2 — ATC instructions

TOPIC ATMB 5 — COORDINATION

Subtopic ATMB 5.1 — Principles, types and content of coordination
Subtopic ATMB 5.2 — Necessity for coordination
Subtopic ATMB 5.3 — Means of coordination

TOPIC ATMB 6 — DATA DISPLAY

Subtopic ATMB 6.1 — Data extraction
Subtopic ATMB 6.2 — Data management

TOPIC ATMB 7 — SEPARATIONS

Subtopic ATMB 7.1 — Vertical separation and procedures
Subtopic ATMB 7.2 — Horizontal separation and procedures
Subtopic ATMB 7.3 — Visual separation
Subtopic ATMB 7.4 — Aerodrome separation and procedures
Subtopic ATMB 7.5 — Separation based on ATS surveillance systems
Subtopic ATMB 7.6 — Wake turbulence separation

TOPIC ATMB 8 — AIRBORNE COLLISION AVOIDANCE SYSTEMS AND GROUND-BASED SAFETY NETS

Subtopic ATMB 8.1 — Airborne collision avoidance systems
Subtopic ATMB 8.2 — Ground-based safety nets

TOPIC ATMB 9 — BASIC PRACTICAL SKILLS

- Subtopic ATMB 9.1 — Traffic management process
- Subtopic ATMB 9.2 — Basic practical skills applicable to all ratings
- Subtopic ATMB 9.3 — Basic practical skills applicable to aerodrome
- Subtopic ATMB 9.4 — Basic practical skills applicable to surveillance

SUBJECT 4: METEOROLOGY

TOPIC METB 1 — INTRODUCTION TO METEOROLOGY

- Subtopic METB 1.1 — Application of units of measurement
- Subtopic METB 1.2 — Aviation and meteorology
- Subtopic METB 1.3 — Organisation of meteorological service

TOPIC METB 2 — ATMOSPHERE

- Subtopic METB 2.1 — Composition and structure
- Subtopic METB 2.2 — Standard atmosphere
- Subtopic METB 2.3 — Heat and temperature
- Subtopic METB 2.4 — Water in the atmosphere
- Subtopic METB 2.5 — Air pressure

TOPIC METB 3 — ATMOSPHERIC CIRCULATION

- Subtopic METB 3.1 — General air circulation
- Subtopic METB 3.2 — Air masses and frontal systems
- Subtopic METB 3.3 — Mesoscale systems
- Subtopic METB 3.4 — Wind

TOPIC METB 4 — METEOROLOGICAL PHENOMENA

- Subtopic METB 4.1 — Clouds
- Subtopic METB 4.2 — Types of precipitation
- Subtopic METB 4.3 — Visibility
- Subtopic METB 4.4 — Meteorological hazards

TOPIC METB 5 — METEOROLOGICAL INFORMATION FOR AVIATION

- Subtopic METB 5.1 — Messages and reports

SUBJECT 5: NAVIGATION

TOPIC NAVB 1 — INTRODUCTION TO NAVIGATION

- Subtopic NAVB 1.1 — Application of units of measurement
- Subtopic NAVB 1.2 — Purpose and use of navigation

TOPIC NAVB 2 — THE EARTH

- Subtopic NAVB 2.1 — Place and movement of the Earth
- Subtopic NAVB 2.2 — System of coordinates, direction and distance
- Subtopic NAVB 2.3 — Magnetism

TOPIC NAVB 3 — MAPS AND AERONAUTICAL CHARTS

- Subtopic NAVB 3.1 — Map making and projections
- Subtopic NAVB 3.2 — Maps and charts used in aviation

TOPIC NAVB 4 — NAVIGATIONAL BASICS

- Subtopic NAVB 4.1 — Influence of wind
- Subtopic NAVB 4.2 — Speed

Subtopic NAVB 4.3 — Visual navigation
Subtopic NAVB 4.4 — Navigational aspects of flight planning

TOPIC NAVB 5 — INSTRUMENT NAVIGATION
Subtopic NAVB 5.1 — Ground-based systems
Subtopic NAVB 5.2 — Inertial navigation systems
Subtopic NAVB 5.3 — Satellite-based systems
Subtopic NAVB 5.4 — Instrument approach procedures

TOPIC NAVB 6 — PERFORMANCE BASED NAVIGATION
Subtopic NAVB 6.1 — Principles and benefits of area navigation
Subtopic NAVB 6.2 — Introduction to PBN
Subtopic NAVB 6.3 — PBN applications

TOPIC NAVB 7 — DEVELOPMENTS IN NAVIGATION
Subtopic NAVB 7.1 — Future developments

SUBJECT 6: AIRCRAFT

TOPIC ACFTB 1 — INTRODUCTION TO AIRCRAFT
Subtopic ACFTB 1.1 — Application of units of measurement
Subtopic ACFTB 1.2 — Aviation and aircraft

TOPIC ACFTB 2 — PRINCIPLES OF FLIGHT
Subtopic ACFTB 2.1 — Forces acting on aircraft
Subtopic ACFTB 2.2 — Structural components and control of an aircraft
Subtopic ACFTB 2.3 — Flight envelope

TOPIC ACFTB 3 — AIRCRAFT CATEGORIES
Subtopic ACFTB 3.1 — Aircraft categories
Subtopic ACFTB 3.2 — Wake turbulence categories
Subtopic ACFTB 3.3 — ICAO approach categories
Subtopic ACFTB 3.4 — Environmental categories

TOPIC ACFTB 4 — AIRCRAFT DATA
Subtopic ACFTB 4.1 — Recognition
Subtopic ACFTB 4.2 — Performance data

TOPIC ACFTB 5 — AIRCRAFT ENGINES
Subtopic ACFTB 5.1 — Piston engines
Subtopic ACFTB 5.2 — Jet engines
Subtopic ACFTB 5.3 — Turboprop engines
Subtopic ACFTB 5.4 — Aviation fuels
TOPIC ACFTB 6 — AIRCRAFT SYSTEMS AND INSTRUMENTS
Subtopic ACFTB 6.1 — Flight instruments
Subtopic ACFTB 6.2 — Navigational instruments
Subtopic ACFTB 6.3 — Engine instruments
Subtopic ACFTB 6.4 — Aircraft systems

TOPIC ACFTB 7 — FACTORS AFFECTING AIRCRAFT PERFORMANCE
Subtopic ACFTB 7.1 — Take-off factors
Subtopic ACFTB 7.2 — Climb factors
Subtopic ACFTB 7.3 — Cruise factors

Subtopic ACFTB 7.4 — Descent and initial approach factors
Subtopic ACFTB 7.5 — Final approach and landing factors
Subtopic ACFTB 7.6 — Economic factors
Subtopic ACFTB 7.7 — Environmental factors

SUBJECT 7: HUMAN FACTORS

TOPIC HUMB 1 — INTRODUCTION TO HUMAN FACTORS

Subtopic HUMB 1.1 — learning techniques
Subtopic HUMB 1.2 — Relevance of human factors for ATC
Subtopic HUMB 1.3 — Human factors and ATC

TOPIC HUMB 2 — HUMAN PERFORMANCE

Subtopic HUMB 2.1 — Individual behaviour
Subtopic HUMB 2.2 — Safety culture and professional conduct
Subtopic HUMB 2.3 — Health and well-being
Subtopic HUMB 2.4 — Teamwork
Subtopic HUMB 2.5 — Basic needs of people at work
Subtopic HUMB 2.6 — Stress

TOPIC HUMB 3 — HUMAN ERROR

Subtopic HUMB 3.1 — Dangers of error
Subtopic HUMB 3.2 — Definition of human error
Subtopic HUMB 3.3 — Classification of human error
Subtopic HUMB 3.4 — Risk analysis and risk management

TOPIC HUMB 4 — COMMUNICATION

Subtopic HUMB 4.1 — Importance of good communications in ATC
Subtopic HUMB 4.2 — Communication process
Subtopic HUMB 4.3 — Communication modes

TOPIC HUMB 5 — THE WORK ENVIRONMENT

Subtopic HUMB 5.1 — Ergonomics and the need for good design
Subtopic HUMB 5.2 — Equipment and tools
Subtopic HUMB 5.3 — Automation

SUBJECT 8: EQUIPMENT AND SYSTEMS

TOPIC EQPSB 1 — ATC EQUIPMENT

Subtopic EQPSB 1.1 — Main types of ATC equipment

TOPIC EQPSB 2 — RADIO

Subtopic EQPSB 2.1 — Radio theory
Subtopic EQPSB 2.2 — Direction finding

TOPIC EQPSB 3 — COMMUNICATION EQUIPMENT

Subtopic EQPSB 3.1 — Radio communications
Subtopic EQPSB 3.2 — Voice communication between ATS units/positions
Subtopic EQPSB 3.3 — Data link communications
Subtopic EQPSB 3.4 — Airline communications

TOPIC EQPSB 4 — INTRODUCTION TO SURVEILLANCE

Subtopic EQPSB 4.1 — Surveillance concept in ATS

TOPIC EQPSB 5 — RADAR

- Subtopic EQPSB 5.1 — Principles of radar
- Subtopic EQPSB 5.2 — Primary radar
- Subtopic EQPSB 5.3 — Secondary radar
- Subtopic EQPSB 5.4 — Use of radars
- Subtopic EQPSB 5.5 — Mode S

TOPIC EQPSB 6 — AUTOMATIC DEPENDENT SURVEILLANCE

- Subtopic EQPSB 6.1 — Principles of automatic dependent surveillance
- Subtopic EQPSB 6.2 — Use of automatic dependent surveillance

TOPIC EQPSB 7 — MULTILATERATION

- Subtopic EQPSB 7.1 — Principles of multilateration
- Subtopic EQPSB 7.2 — Use of multilateration

TOPIC EQPSB 8 — SURVEILLANCE DATA PROCESSING

- Subtopic EQPSB 8.1 — Surveillance data networking
- Subtopic EQPSB 8.2 — Working principles of surveillance data networking

TOPIC EQPSB 9 — FUTURE EQUIPMENT

- Subtopic EQPSB 9.1 — New developments

TOPIC EQPSB 10 — AUTOMATION IN ATS

- Subtopic EQPSB 10.1 — Principles of automation
- Subtopic EQPSB 10.2 — Aeronautical fixed telecommunication network (AFTN)
- Subtopic EQPSB 10.3 — On-line data interchange
- Subtopic EQPSB 10.4 — Systems used for the automatic dissemination of information

TOPIC EQPSB 11 — WORKING POSITIONS

- Subtopic EQPSB 11.1 — Working position equipment
- Subtopic EQPSB 11.2 — Aerodrome control
- Subtopic EQPSB 11.3 — Approach control
- Subtopic EQPSB 11.4 — Area control

SUBJECT 9: PROFESSIONAL ENVIRONMENT

TOPIC PENB 1 — FAMILIARISATION

- Subtopic PENB 1.1 — ATS and aerodrome facilities

TOPIC PENB 2 — AIRSPACE USERS

- Subtopic PENB 2.1 — Civil aviation
- Subtopic PENB 2.2 — Military
- Subtopic PENB 2.3 — Expectations and requirements of pilots

TOPIC PENB 3 — CUSTOMER RELATIONS

- Subtopic PENB 3.1 — Customer relations

TOPIC PENB 4 — ENVIRONMENTAL PROTECTION

- Subtopic PENB 4.1 — Environmental protection

APPENDIX 3. AERODROME CONTROL VISUAL RATING (ADV)

TABLE OF CONTENTS

SUBJECT 1: INTRODUCTION TO THE COURSE
SUBJECT 2: AVIATION LAW
SUBJECT 3: AIR TRAFFIC MANAGEMENT
SUBJECT 4: METEOROLOGY
SUBJECT 5: NAVIGATION
SUBJECT 6: AIRCRAFT
SUBJECT 7: HUMAN FACTORS
SUBJECT 8: EQUIPMENT AND SYSTEMS
SUBJECT 9: PROFESSIONAL ENVIRONMENT
SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS
SUBJECT 11: AERODROMES

SUBJECT 1: INTRODUCTION TO THE COURSE

TOPIC INTR 1 — COURSE MANAGEMENT
Subtopic INTR 1.1 — Course introduction
Subtopic INTR 1.2 — Course administration
Subtopic INTR 1.3 — Study material and training documentation

TOPIC INTR 2 — INTRODUCTION TO THE ATC TRAINING COURSE
Subtopic INTR 2.1 — Course content and organisation
Subtopic INTR 2.2 — Training ethos
Subtopic INTR 2.3 — Assessment process

SUBJECT 2: AVIATION LAW

TOPIC LAW 1 — ATCO LICENSING/CERTIFICATE OF COMPETENCE
Subtopic LAW 1.1 — Privileges and conditions

TOPIC LAW 2 — RULES AND REGULATIONS
Subtopic LAW 2.1 — Reports
Subtopic LAW 2.2 — Airspace

TOPIC LAW 3 — ATC SAFETY MANAGEMENT
Subtopic LAW 3.1 — Feedback process
Subtopic LAW 3.2 — Safety Investigation

SUBJECT 3: AIR TRAFFIC MANAGEMENT

TOPIC ATM 1 — PROVISION OF SERVICES
Subtopic ATM 1.1 — Aerodrome control service
Subtopic ATM 1.2 — Flight information service (FIS)
Subtopic ATM 1.3 — Alerting service (ALRS)
Subtopic ATM 1.4 — ATS system capacity and air traffic flow management

TOPIC ATM 2 — COMMUNICATION

Subtopic ATM 2.1 — Effective communication

TOPIC ATM 3 — ATC CLEARANCES AND ATC INSTRUCTIONS

Subtopic ATM 3.1 — ATC clearances

Subtopic ATM 3.2 — ATC instructions

TOPIC ATM 4 — COORDINATION

Subtopic ATM 4.1 — Necessity for coordination

Subtopic ATM 4.2 — Tools and methods for coordination

Subtopic ATM 4.3 — Coordination procedures

TOPIC ATM 5 — ALTIMETRY AND LEVEL ALLOCATION

Subtopic ATM 5.1 — Altimetry

TOPIC ATM 6 — SEPARATIONS

Subtopic ATM 6.1 — Separation between departing aircraft

Subtopic ATM 6.2 — Separation of landing aircraft and preceding landing or departing aircraft

Subtopic ATM 6.3 — Time based wake turbulence longitudinal separation

Subtopic ATM 6.4 — Reduced separation minima

TOPIC ATM 7 — AIRBORNE COLLISION AVOIDANCE SYSTEMS AND GROUND-BASED SAFETY NETS

Subtopic ATM 7.1 — Airborne collision avoidance systems

Subtopic ATM 7.2 — Ground-based safety nets

TOPIC ATM 8 — DATA DISPLAY

Subtopic ATM 8.1 — Data management

TOPIC ATM 9 — OPERATIONAL ENVIRONMENT (SIMULATED)

Subtopic ATM 9.1 — Integrity of the operational environment

Subtopic ATM 9.2 — Verification of the currency of operational procedures

Subtopic ATM 9.3 — Handover-takeover

TOPIC ATM 10 — PROVISION OF AN AERODROME CONTROL SERVICE

Subtopic ATM 10.1 — Responsibility for the provision

Subtopic ATM 10.2 — Functions of aerodrome control tower

Subtopic ATM 10.3 — Traffic management process

Subtopic ATM 10.4 — Aeronautical ground lights

Subtopic ATM 10.5 — Information to aircraft by aerodrome control tower

Subtopic ATM 10.6 — Control of aerodrome traffic

Subtopic ATM 10.7 — Control of traffic in the traffic circuit

Subtopic ATM 10.8 — Runway in use

SUBJECT 4: METEOROLOGY

TOPIC MET 1 — METEOROLOGICAL PHENOMENA

Subtopic MET 1.1 — Meteorological phenomena

TOPIC MET 2 — SOURCES OF METEOROLOGICAL DATA

Subtopic MET 2.1 — Meteorological instruments

Subtopic MET 2.2 — Other sources of meteorological data

SUBJECT 5: NAVIGATION

TOPIC NAV 1 — MAPS AND AERONAUTICAL CHARTS

Subtopic NAV 1.1 — Maps and charts

TOPIC NAV 2 — INSTRUMENT NAVIGATION

Subtopic NAV 2.1 — Navigational systems

Subtopic NAV 2.2 — Stabilised approach

SUBJECT 6: AIRCRAFT

TOPIC ACFT 1 — AIRCRAFT INSTRUMENTS

Subtopic ACFT 1.1 — Aircraft instruments

TOPIC ACFT 2 — AIRCRAFT CATEGORIES

Subtopic ACFT 2.1 — Wake turbulence

TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE

Subtopic ACFT 3.1 — Take-off factors

Subtopic ACFT 3.2 — Climb factors

Subtopic ACFT 3.3 — Final approach and landing factors

Subtopic ACFT 3.4 — Economic factors

Subtopic ACFT 3.5 — Environmental factors

TOPIC ACFT 4 — AIRCRAFT DATA

Subtopic ACFT 4.1 — Recognition of aircraft types

Subtopic ACFT 4.2 — Performance data

SUBJECT 7: HUMAN FACTORS

TOPIC HUM 1 — PSYCHOLOGICAL FACTORS

Subtopic HUM 1.1 — Cognitive

TOPIC HUM 2 — MEDICAL AND PHYSIOLOGICAL FACTORS

Subtopic HUM 2.1 — Fatigue

Subtopic HUM 2.2 — Fitness

TOPIC HUM 3 — SOCIAL AND ORGANISATIONAL FACTORS

Subtopic HUM 3.1 — Team resource management (TRM)

Subtopic HUM 3.2 — Teamwork and team roles

Subtopic HUM 3.3 — Responsible behaviour

TOPIC HUM 4 — STRESS

Subtopic HUM 4.1 — Stress

Subtopic HUM 4.2 — Stress management

TOPIC HUM 5 — HUMAN ERROR

Subtopic HUM 5.1 — Human error

Subtopic HUM 5.2 — Violation of rules

TOPIC HUM 6 — COLLABORATIVE WORK

- Subtopic HUM 6.1 — Communication
- Subtopic HUM 6.2 — Collaborative work within the same area of responsibility
- Subtopic HUM 6.3 — Collaborative work between different areas of responsibility
- Subtopic HUM 6.4 — Controller/pilot cooperation

SUBJECT 8: EQUIPMENT AND SYSTEMS

TOPIC EQPS 1 — VOICE COMMUNICATIONS

- Subtopic EQPS 1.1 — Radio communications
- Subtopic EQPS 1.2 — Other voice communications

TOPIC EQPS 2 — AUTOMATION IN ATS

- Subtopic EQPS 2.1 — Aeronautical fixed telecommunication network (AFTN)
- Subtopic EQPS 2.2 — Automatic data interchange

TOPIC EQPS 3 — CONTROLLER WORKING POSITION

- Subtopic EQPS 3.1 — Operation and monitoring of equipment
- Subtopic EQPS 3.2 — Situation displays and information systems
- Subtopic EQPS 3.3 — Flight data systems

TOPIC EQPS 4 — FUTURE EQUIPMENT

- Subtopic EQPS 4.1 — New developments

TOPIC EQPS 5 — EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATION

- Subtopic EQPS 5.1 — Reaction to limitation
- Subtopic EQPS 5.2 — Communication equipment degradation
- Subtopic EQPS 5.3 — Navigational equipment degradation

SUBJECT 9: PROFESSIONAL ENVIRONMENT

TOPIC PEN 1 — FAMILIARISATION

- Subtopic PEN 1.1 — Study visit to aerodrome

TOPIC PEN 2 — AIRSPACE USERS

- Subtopic PEN 2.1 — Contributors to civil ATS operations
- Subtopic PEN 2.2 — Contributors to military ATS operations

TOPIC PEN 3 — CUSTOMER RELATIONS

- Subtopic PEN 3.1 — Provision of services and user requirements

TOPIC PEN 4 — ENVIRONMENTAL PROTECTION

- Subtopic PEN 4.1 — Environmental protection

SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

TOPIC ABES 1 — ABNORMAL AND EMERGENCY SITUATIONS (ABES)

- Subtopic ABES 1.1 — Overview of ABES

TOPIC ABES 2 — SKILLS IMPROVEMENT

- Subtopic ABES 2.1 — Communication effectiveness
- Subtopic ABES 2.2 — Avoidance of mental overload

Subtopic ABES 2.3 — Air/ground cooperation

TOPIC ABES 3 — PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

Subtopic ABES 3.1 — Application of procedures for ABES

Subtopic ABES 3.2 — Radio failure

Subtopic ABES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic ABES 3.4 — Strayed or unidentified aircraft

Subtopic ABES 3.5 — Runway incursion

SUBJECT 11: AERODROMES

TOPIC AGA 1 — AERODROME DATA, LAYOUT AND COORDINATION

Subtopic AGA 1.1 — Definitions

Subtopic AGA 1.2 — Coordination

TOPIC AGA 2 — MOVEMENT AREA

Subtopic AGA 2.1 — Movement area

Subtopic AGA 2.2 — Maneuvering area

Subtopic AGA 2.3 — Runways

TOPIC AGA 3 — OBSTACLES

Subtopic AGA 3.1 — Obstacle-free airspace around aerodromes

TOPIC AGA 4 — MISCELLANEOUS EQUIPMENT

Subtopic AGA 4.1 — Location

—

APPENDIX 4. AERODROME CONTROL INSTRUMENT RATING FOR TOWER — ADI (TWR)

TABLE OF CONTENTS

SUBJECT 1: INTRODUCTION TO THE COURSE
SUBJECT 2: AVIATION LAW
SUBJECT 3: AIR TRAFFIC MANAGEMENT
SUBJECT 4: METEOROLOGY
SUBJECT 5: NAVIGATION
SUBJECT 6: AIRCRAFT
SUBJECT 7: HUMAN FACTORS
SUBJECT 8: EQUIPMENT AND SYSTEMS
SUBJECT 9: PROFESSIONAL ENVIRONMENT
SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS
SUBJECT 11: AERODROMES

SUBJECT 1: INTRODUCTION TO THE COURSE

TOPIC INTR 1 — COURSE MANAGEMENT
Subtopic INTR 1.1 — Course introduction
Subtopic INTR 1.2 — Course administration
Subtopic INTR 1.3 — Study material and training documentation

TOPIC INTR 2 — INTRODUCTION TO THE ATC TRAINING COURSE
Subtopic INTR 2.1 — Course content and organisation
Subtopic INTR 2.2 — Training ethos
Subtopic INTR 2.3 — Assessment process

SUBJECT 2: AVIATION LAW

TOPIC LAW 1 — ATCO LICENSING/CERTIFICATE OF COMPETENCE
Subtopic LAW 1.1 — Privileges and conditions

TOPIC LAW 2 — RULES AND REGULATIONS
Subtopic LAW 2.1 — Reports
Subtopic LAW 2.2 — Airspace

TOPIC LAW 3 — ATC SAFETY MANAGEMENT
Subtopic LAW 3.1 — Feedback process
Subtopic LAW 3.2 — Safety Investigation

SUBJECT 3: AIR TRAFFIC MANAGEMENT

TOPIC ATM 1 — PROVISION OF SERVICES
Subtopic ATM 1.1 — Aerodrome control service
Subtopic ATM 1.2 — Flight information service (FIS)
Subtopic ATM 1.3 — Alerting service (ALRS)
Subtopic ATM 1.4 — ATS system capacity and air traffic flow management

TOPIC ATM 2 — COMMUNICATION

Subtopic ATM 2.1 — Effective communication

TOPIC ATM 3 — ATC CLEARANCES AND ATC INSTRUCTIONS

Subtopic ATM 3.1 — ATC clearances

Subtopic ATM 3.2 — ATC instructions

TOPIC ATM 4 — COORDINATION

Subtopic ATM 4.1 — Necessity for coordination

Subtopic ATM 4.2 — Tools and methods for coordination

Subtopic ATM 4.3 — Coordination procedures

TOPIC ATM 5 — ALTIMETRY AND LEVEL ALLOCATION

Subtopic ATM 5.1 — Altimetry

Subtopic ATM 5.2 — Terrain clearance

TOPIC ATM 6 — SEPARATIONS

Subtopic ATM 6.1 — Separation between departing aircraft

Subtopic ATM 6.2 — Separation of departing aircraft from arriving aircraft

Subtopic ATM 6.3 — Separation of landing aircraft and preceding landing or departing aircraft

Subtopic ATM 6.4 — Time-based wake turbulence longitudinal separation

Subtopic ATM 6.5 — Reduced separation minima

TOPIC ATM 7 — AIRBORNE COLLISION AVOIDANCE SYSTEMS AND GROUND-BASED SAFETY NETS

Subtopic ATM 7.1 — Airborne collision avoidance systems

Subtopic ATM 7.2 — Ground-based safety nets

TOPIC ATM 8 — DATA DISPLAY

Subtopic ATM 8.1 — Data management

TOPIC ATM 9 — OPERATIONAL ENVIRONMENT (SIMULATED)

Subtopic ATM 9.1 — Integrity of the operational environment

Subtopic ATM 9.2 — Verification of the currency of operational procedures

Subtopic ATM 9.3 — Handover-takeover

TOPIC ATM 10 — PROVISION OF AN AERODROME CONTROL SERVICE

Subtopic ATM 10.1 — Responsibility for the provision

Subtopic ATM 10.2 — Functions of aerodrome control tower

Subtopic ATM 10.3 — Traffic management process

Subtopic ATM 10.4 — Aeronautical ground lights

Subtopic ATM 10.5 — Information to aircraft by aerodrome control tower

Subtopic ATM 10.6 — Control of aerodrome traffic

Subtopic ATM 10.7 — Control of traffic in the traffic circuit

Subtopic ATM 10.8 — Runway in use

TOPIC ATM 11 — PROVISION OF AERODROME CONTROL — INSTRUMENT

Subtopic ATM 11.1 — Low visibility operations and special VFR

Subtopic ATM 11.2 — Departing traffic

Subtopic ATM 11.3 — Arriving traffic

Subtopic ATM 11.4 — Aerodrome control service with advanced system support

SUBJECT 4: METEOROLOGY

TOPIC MET 1 — METEOROLOGICAL PHENOMENA

Subtopic MET 1.1 — Meteorological phenomena

TOPIC MET 2 — SOURCES OF METEOROLOGICAL DATA

Subtopic MET 2.1 — Meteorological instruments

Subtopic MET 2.2 — Other sources of meteorological data

SUBJECT 5: NAVIGATION

TOPIC NAV 1 — MAPS AND AERONAUTICAL CHARTS

Subtopic NAV 1.1 — Maps and charts

TOPIC NAV 2 — INSTRUMENT NAVIGATION

Subtopic NAV 2.1 — Navigational systems

Subtopic NAV 2.2 — Stabilised approach

Subtopic NAV 2.3 — Instrument departures and arrivals

Subtopic NAV 2.4 — Satellite-based systems

Subtopic NAV 2.5 — PBN applications

SUBJECT 6: AIRCRAFT

TOPIC ACFT 1 — AIRCRAFT INSTRUMENTS

Subtopic ACFT 1.1 — Aircraft instruments

TOPIC ACFT 2 — AIRCRAFT CATEGORIES

Subtopic ACFT 2.1 — Wake turbulence

Subtopic ACFT 2.2 — Application of ICAO approach categories

TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE

Subtopic ACFT 3.1 — Take-off factors

Subtopic ACFT 3.2 — Climb factors

Subtopic ACFT 3.3 — Final approach and landing factors

Subtopic ACFT 3.4 — Economic factors

Subtopic ACFT 3.5 — Environmental factors

TOPIC ACFT 4 — AIRCRAFT DATA

Subtopic ACFT 4.1 — Recognition of aircraft types

Subtopic ACFT 4.2 — Performance data

SUBJECT 7: HUMAN FACTORS

TOPIC HUM 1 — PSYCHOLOGICAL FACTORS

Subtopic HUM 1.1 — Cognitive

TOPIC HUM 2 — MEDICAL AND PHYSIOLOGICAL FACTORS

Subtopic HUM 2.1 — Fatigue

Subtopic HUM 2.2 — Fitness

TOPIC HUM 3 — SOCIAL AND ORGANISATIONAL FACTORS

Subtopic HUM 3.1 — Team resource management (TRM)

Subtopic HUM 3.2 — Teamwork and team roles

Subtopic HUM 3.3 — Responsible behaviour

TOPIC HUM 4 — STRESS

Subtopic HUM 4.1 — Stress

Subtopic HUM 4.2 — Stress management

TOPIC HUM 5 — HUMAN ERROR

Subtopic HUM 5.1 — Human error

Subtopic HUM 5.2 — Violation of rules

TOPIC HUM 6 — COLLABORATIVE WORK

Subtopic HUM 6.1 — Communication

Subtopic HUM 6.2 — Collaborative work within the same area of responsibility

Subtopic HUM 6.3 — Collaborative work between different areas of responsibility

Subtopic HUM 6.4 — Controller/pilot cooperation

SUBJECT 8: EQUIPMENT AND SYSTEMS

TOPIC EQPS 1 — VOICE COMMUNICATIONS

Subtopic EQPS 1.1 — Radio communications

Subtopic EQPS 1.2 — Other voice communications

TOPIC EQPS 2 — AUTOMATION IN AT

Subtopic EQPS 2.1 — Aeronautical fixed telecommunication network (AFTN)

Subtopic EQPS 2.2 — Automatic data interchange

TOPIC EQPS 3 — CONTROLLER WORKING POSITION

Subtopic EQPS 3.1 — Operation and monitoring of equipment

Subtopic EQPS 3.2 — Situation displays and information systems

Subtopic EQPS 3.3 — Flight data systems

TOPIC EQPS 4 — FUTURE EQUIPMENT

Subtopic EQPS 4.1 — New developments

TOPIC EQPS 5 — EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATION

Subtopic EQPS 5.1 — Reaction to limitations

Subtopic EQPS 5.2 — Communication equipment degradation

Subtopic EQPS 5.3 — Navigational equipment degradation

SUBJECT 9: PROFESSIONAL ENVIRONMENT

TOPIC PEN 1 — FAMILIARISATION

Subtopic PEN 1.1 — Study visit to aerodrome

TOPIC PEN 2 — AIRSPACE USERS

Subtopic PEN 2.1 — Contributors to civil ATS operations

Subtopic PEN 2.2 — Contributors to military ATS operations

TOPIC PEN 3 — CUSTOMER RELATIONS

Subtopic PEN 3.1 — Provision of services and user requirements

TOPIC PEN 4 — ENVIRONMENTAL PROTECTION

Subtopic PEN 4.1 — Environmental protection

SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

TOPIC ABES 1 — ABNORMAL AND EMERGENCY SITUATIONS (ABES)

Subtopic ABES 1.1 — Overview of ABES

TOPIC ABES 2 — SKILLS IMPROVEMENT

Subtopic ABES 2.1 — Communication effectiveness

Subtopic ABES 2.2 — Avoidance of mental overload

Subtopic ABES 2.3 — Air/ground cooperation

TOPIC ABES 3 — PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

Subtopic ABES 3.1 — Application of procedures for ABES

Subtopic ABES 3.2 — Radio failure

Subtopic ABES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic ABES 3.4 — Strayed or unidentified aircraft

Subtopic ABES 3.5 — Runway incursion

SUBJECT 11: AERODROMES

TOPIC AGA 1 — AERODROME DATA, LAYOUT AND COORDINATION

Subtopic AGA 1.1 — Definitions

Subtopic AGA 1.2 — Coordination

TOPIC AGA 2 — MOVEMENT AREA

Subtopic AGA 2.1 — Movement area

Subtopic AGA 2.2 — Maneuvering area

Subtopic AGA 2.3 — Runways

TOPIC AGA 3 — OBSTACLES

Subtopic AGA 3.1 — Obstacle-free airspace around aerodromes

TOPIC AGA 4 — MISCELLANEOUS EQUIPMENT

Subtopic AGA 4.1 — Location

—

APPENDIX 5. APPROACH CONTROL PROCEDURAL RATING (APP)

TABLE OF CONTENTS

SUBJECT 1: INTRODUCTION TO THE COURSE
SUBJECT 2: AVIATION LAW
SUBJECT 3: AIR TRAFFIC MANAGEMENT
SUBJECT 4: METEOROLOGY
SUBJECT 5: NAVIGATION
SUBJECT 6: AIRCRAFT
SUBJECT 7: HUMAN FACTORS
SUBJECT 8: EQUIPMENT AND SYSTEMS
SUBJECT 9: PROFESSIONAL ENVIRONMENT
SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS
SUBJECT 11: AERODROMES

SUBJECT 1: INTRODUCTION TO THE COURSE

TOPIC INTR 1 — COURSE MANAGEMENT
Subtopic INTR 1.1 — Course introduction
Subtopic INTR 1.2 — Course administration
Subtopic INTR 1.3 — Study material and training documentation

TOPIC INTR 2 — INTRODUCTION TO THE ATC TRAINING COURSE
Subtopic INTR 2.1 — Course content and organisation
Subtopic INTR 2.2 — Training ethos
Subtopic INTR 2.3 — Assessment process

SUBJECT 2: AVIATION LAW

TOPIC LAW 1 — ATCO LICENSING/CERTIFICATE OF COMPETENCE
Subtopic LAW 1.1 — Privileges and conditions

TOPIC LAW 2 — RULES AND REGULATIONS
Subtopic LAW 2.1 — Reports
Subtopic LAW 2.2 — Airspace

TOPIC LAW 3 — ATC SAFETY MANAGEMENT
Subtopic LAW 3.1 — Feedback process
Subtopic LAW 3.2 — Safety Investigation

SUBJECT 3: AIR TRAFFIC MANAGEMENT

TOPIC ATM 1 — PROVISION OF SERVICES
Subtopic ATM 1.1 — Air traffic control (ATC) service
Subtopic ATM 1.2 — Flight information service (FIS)
Subtopic ATM 1.3 — Alerting service (ALRS)
Subtopic ATM 1.4 — ATS system capacity and air traffic flow management
Subtopic ATM 1.5 — Airspace management (ASM)

TOPIC ATM 2 — COMMUNICATION

Subtopic ATM 2.1 — Effective communication

TOPIC ATM 3 — ATC CLEARANCES AND ATC INSTRUCTIONS

Subtopic ATM 3.1 — ATC clearances

Subtopic ATM 3.2 — ATC instructions

TOPIC ATM 4 — COORDINATION

Subtopic ATM 4.1 — Necessity for coordination

Subtopic ATM 4.2 — Tools and methods for coordination

Subtopic ATM 4.3 — Coordination procedures

TOPIC ATM 5 — ALTIMETRY AND LEVEL ALLOCATION

Subtopic ATM 5.1 — Altimetry

Subtopic ATM 5.2 — Terrain clearance

TOPIC ATM 6 — SEPARATIONS

Subtopic ATM 6.1 — Vertical separation

Subtopic ATM 6.2 — Horizontal separation

Subtopic ATM 6.3 — Delegation of separation

TOPIC ATM 7 — AIRBORNE COLLISION AVOIDANCE SYSTEMS AND GROUND-BASED SAFETY NETS

Subtopic ATM 7.1 — Airborne collision avoidance systems

TOPIC ATM 8 — DATA DISPLAY

Subtopic ATM 8.1 — Data management

TOPIC ATM 9 — OPERATIONAL ENVIRONMENT (SIMULATED)

Subtopic ATM 9.1 — Integrity of the operational environment

Subtopic ATM 9.2 — Verification of the currency of operational procedures

Subtopic ATM 9.3 — Handover-takeover

TOPIC ATM 10 — PROVISION OF CONTROL SERVICE

Subtopic ATM 10.1 — Responsibility and processing of information

Subtopic ATM 10.2 — Approach control

Subtopic ATM 10.3 — Traffic management process

Subtopic ATM 10.4 — Handling traffic

TOPIC ATM 11 — HOLDING

Subtopic ATM 11.1 — General holding procedures

Subtopic ATM 11.2 — Approaching aircraft

SUBJECT 4: METEOROLOGY

TOPIC MET 1 — METEOROLOGICAL PHENOMENA

Subtopic MET 1.1 — Meteorological phenomena

TOPIC MET 2 — SOURCES OF METEOROLOGICAL DATA

Subtopic MET 2.1 — Sources of meteorological information

SUBJECT 5: NAVIGATION

TOPIC NAV 1 — MAPS AND AERONAUTICAL CHARTS

Subtopic NAV 1.1 — Maps and charts

TOPIC NAV 2 — INSTRUMENT NAVIGATION

Subtopic NAV 2.1 — Navigational systems

Subtopic NAV 2.2 — Stabilised approach

Subtopic NAV 2.3 — Instrument departures and arrivals

Subtopic NAV 2.4 — Navigational assistance

Subtopic NAV 2.5 — Satellite-based systems

Subtopic NAV 2.6 — PBN applications

SUBJECT 6: AIRCRAFT

TOPIC ACFT 1 — AIRCRAFT INSTRUMENTS

Subtopic ACFT 1.1 — Aircraft instruments

TOPIC ACFT 2 — AIRCRAFT CATEGORIES

Subtopic ACFT 2.1 — Wake turbulence

Subtopic ACFT 2.2 — Application of ICAO approach categories

TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE

Subtopic ACFT 3.1 — Climb factors

Subtopic ACFT 3.2 — Cruise factors

Subtopic ACFT 3.3 — Descent and initial approach factors

Subtopic ACFT 3.4 — Final approach and landing factors

Subtopic ACFT 3.5 — Economic factors

Subtopic ACFT 3.6 — Environmental factors

TOPIC ACFT 4 — AIRCRAFT DATA

Subtopic ACFT 4.1 — Performance data

SUBJECT 7: HUMAN FACTORS

TOPIC HUM 1 — PSYCHOLOGICAL FACTORS

Subtopic HUM 1.1 — Cognitive

TOPIC HUM 2 — MEDICAL AND PHYSIOLOGICAL FACTORS

Subtopic HUM 2.1 — Fatigue

Subtopic HUM 2.2 — Fitness

TOPIC HUM 3 — SOCIAL AND ORGANISATIONAL FACTORS

Subtopic HUM 3.1 — Team resource management (TRM)

Subtopic HUM 3.2 — Teamwork and team roles

Subtopic HUM 3.3 — Responsible behaviour

TOPIC HUM 4 — STRESS

Subtopic HUM 4.1 — Stress

Subtopic HUM 4.2 — Stress management

TOPIC HUM 5 — HUMAN ERROR

Subtopic HUM 5.1 — Human error
Subtopic HUM 5.2 — Violation of rule

TOPIC HUM 6 — COLLABORATIVE WORK

Subtopic HUM 6.1 — Communication
Subtopic HUM 6.2 — Collaborative work within the same area of responsibility
Subtopic HUM 6.3 — Collaborative work between different areas of responsibility
Subtopic HUM 6.4 — Controller/pilot cooperation

SUBJECT 8: EQUIPMENT AND SYSTEMS

TOPIC EQPS 1 — VOICE COMMUNICATIONS

Subtopic EQPS 1.1 — Radio communications
Subtopic EQPS 1.2 — Other voice communications

TOPIC EQPS 2 — AUTOMATION IN ATS

Subtopic EQPS 2.1 — Aeronautical fixed telecommunication network (AFTN)
Subtopic EQPS 2.2 — Automatic data interchange

TOPIC EQPS 3 — CONTROLLER WORKING POSITION

Subtopic EQPS 3.1 — Operation and monitoring of equipment
Subtopic EQPS 3.2 — Situation displays and information systems
Subtopic EQPS 3.3 — Flight data systems

TOPIC EQPS 4 — FUTURE EQUIPMENT

Subtopic EQPS 4.1 — New developments

TOPIC EQPS 5 — EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATION

Subtopic EQPS 5.1 — Reaction to limitations
Subtopic EQPS 5.2 — Communication equipment degradation
Subtopic EQPS 5.3 — Navigational equipment degradation

SUBJECT 9: PROFESSIONAL ENVIRONMENT

TOPIC PEN 1 — FAMILIARISATION

Subtopic PEN 1.1 — Study visit to approach control unit

TOPIC PEN 2 — AIRSPACE USERS

Subtopic PEN 2.1 — Contributors to civil ATS operations
Subtopic PEN 2.2 — Contributors to military ATS operations

TOPIC PEN 3 — CUSTOMER RELATIONS

Subtopic PEN 3.1 — Provision of services and user requirements

TOPIC PEN 4 — ENVIRONMENTAL PROTECTION

Subtopic PEN 4.1 — Environmental protection

SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

TOPIC ABES 1 — ABNORMAL AND EMERGENCY SITUATIONS (ABES)

Subtopic ABES 1.1 — Overview of ABES

TOPIC ABES 2 — SKILLS IMPROVEMENT

Subtopic ABES 2.1 — Communication effectiveness

Subtopic ABES 2.2 — Avoidance of mental overload

Subtopic ABES 2.3 — Air/ground cooperation

TOPIC ABES 3 — PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

Subtopic ABES 3.1 — Application of procedures for ABES

Subtopic ABES 3.2 — Radio failure

Subtopic ABES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic ABES 3.4 — Strayed or unidentified aircraft

Subtopic ABES 3.5 — Diversions

SUBJECT 11: AERODROMES

TOPIC AGA 1 — DEFINITIONS

Subtopic AGA 1.1 — Aerodrome data

Subtopic AGA 1.2 — Coordination

TOPIC AGA 2 — MOVEMENT AREA

Subtopic AGA 2.1 — Movement area

Subtopic AGA 2.2 — Maneuvering area

Subtopic AGA 2.3 — Runways

TOPIC AGA 3 — OBSTACLES

Subtopic AGA 3.1 — Obstacle-free airspace around aerodromes

TOPIC AGA 4 — MISCELLANEOUS EQUIPMENT

Subtopic AGA 4.1 — Location

—

APPENDIX 6. APPROACH CONTROL SURVEILLANCE RATING (APS)

TABLE OF CONTENTS

SUBJECT 1: INTRODUCTION TO THE COURSE
SUBJECT 2: AVIATION LAW
SUBJECT 3: AIR TRAFFIC MANAGEMENT
SUBJECT 4: METEOROLOGY
SUBJECT 5: NAVIGATION
SUBJECT 6: AIRCRAFT
SUBJECT 7: HUMAN FACTORS
SUBJECT 8: EQUIPMENT AND SYSTEMS
SUBJECT 9: PROFESSIONAL ENVIRONMENT
SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS
SUBJECT 11: AERODROMES

SUBJECT 1: INTRODUCTION TO THE COURSE

TOPIC INTR 1 — COURSE MANAGEMENT
Subtopic INTR 1.1 — Course introduction
Subtopic INTR 1.2 — Course administration
Subtopic INTR 1.3 — Study material and training documentation

TOPIC INTR 2 — INTRODUCTION TO THE ATC TRAINING COURSE
Subtopic INTR 2.1 — Course content and organisation
Subtopic INTR 2.2 — Training ethos
Subtopic INTR 2.3 — Assessment process

SUBJECT 2: AVIATION LAW

TOPIC LAW 1 — ATCO LICENSING/CERTIFICATE OF COMPETENCE
Subtopic LAW 1.1 — Privileges and conditions

TOPIC LAW 2 — RULES AND REGULATIONS
Subtopic LAW 2.1 — Reports
Subtopic LAW 2.2 — Airspace

TOPIC LAW 3 — ATC SAFETY MANAGEMENT
Subtopic LAW 3.1 — Feedback process
Subtopic LAW 3.2 — Safety Investigation

SUBJECT 3: AIR TRAFFIC MANAGEMENT

TOPIC ATM 1 — PROVISION OF SERVICES
Subtopic ATM 1.1 — Air traffic control (ATC) service
Subtopic ATM 1.2 — Flight information service (FIS)
Subtopic ATM 1.3 — Alerting service (ALRS)
Subtopic ATM 1.4 — ATS system capacity and air traffic flow management

Subtopic ATM 1.5 — Airspace management (ASM)

TOPIC ATM 2 — COMMUNICATION

Subtopic ATM 2.1 — Effective communication

TOPIC ATM 3 — ATC CLEARANCES AND ATC INSTRUCTIONS

Subtopic ATM 3.1 — ATC clearances

Subtopic ATM 3.2 — ATC instructions

TOPIC ATM 4 — COORDINATION

Subtopic ATM 4.1 — Necessity for coordination

Subtopic ATM 4.2 — Tools and methods for coordination

Subtopic ATM 4.3 — Coordination procedures

TOPIC ATM 5 — ALTIMETRY AND LEVEL ALLOCATION

Subtopic ATM 5.1 — Altimetry

Subtopic ATM 5.2 — Terrain clearance

TOPIC ATM 6 — SEPARATIONS

Subtopic ATM 6.1 — Vertical separation

Subtopic ATM 6.2 — Longitudinal separation in a surveillance environment

Subtopic ATM 6.3 — Delegation of separation

Subtopic ATM 6.4 — Wake turbulence distance-based separation

Subtopic ATM 6.5 — Separation based on ATS surveillance systems

TOPIC ATM 7 — AIRBORNE COLLISION AVOIDANCE SYSTEMS AND GROUND-BASED SAFETY NETS

Subtopic ATM 7.1 — Airborne collision avoidance systems

Subtopic ATM 7.2 — Ground-based safety nets

TOPIC ATM 8 — DATA DISPLAY

Subtopic ATM 8.1 — Data management

TOPIC ATM 9 — OPERATIONAL ENVIRONMENT (SIMULATED)

Subtopic ATM 9.1 — Integrity of the operational environment

Subtopic ATM 9.2 — Verification of the currency of operational procedures

Subtopic ATM 9.3 — Handover-takeover

TOPIC ATM 10 — PROVISION OF CONTROL SERVICE

Subtopic ATM 10.1 — Responsibility and processing of information

Subtopic ATM 10.2 — ATS surveillance service

Subtopic ATM 10.3 — Traffic management process

Subtopic ATM 10.4 — Handling traffic

Subtopic ATM 10.5 — Control service with advanced system support

TOPIC ATM 11 — HOLDING

Subtopic ATM 11.1 — General holding procedures

Subtopic ATM 11.2 — Approaching aircraft

Subtopic ATM 11.3 — Holding in a surveillance environment

TOPIC ATM 12 — IDENTIFICATION

Subtopic ATM 12.1 — Establishment of identification

Subtopic ATM 12.2 — Maintenance of identification
Subtopic ATM 12.3 — Loss of identity
Subtopic ATM 12.4 — Position Information
Subtopic ATM 12.5 — Transfer of identity

SUBJECT 4: METEOROLOGY

TOPIC MET 1 — METEOROLOGICAL PHENOMENA
Subtopic MET 1.1 — Meteorological phenomena

TOPIC MET 2 — SOURCES OF METEOROLOGICAL DATA
Subtopic MET 2.1 — Sources of meteorological information

SUBJECT 5: NAVIGATION

TOPIC NAV 1 — MAPS AND AERONAUTICAL CHARTS
Subtopic NAV 1.1 — Maps and charts

TOPIC NAV 2 — INSTRUMENT NAVIGATION
Subtopic NAV 2.1 — Navigational systems
Subtopic NAV 2.2 — Stabilised approach
Subtopic NAV 2.3 — Instrument departures and arrivals
Subtopic NAV 2.4 — Navigational assistance
Subtopic NAV 2.5 — Satellite-based systems
Subtopic NAV 2.6 — PBN applications

SUBJECT 6: AIRCRAFT

TOPIC ACFT 1 — AIRCRAFT INSTRUMENTS
Subtopic ACFT 1.1 — Aircraft instruments

TOPIC ACFT 2 — AIRCRAFT CATEGORIES
Subtopic ACFT 2.1 — Wake turbulence
Subtopic ACFT 2.2 — Application of ICAO approach categories

TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE
Subtopic ACFT 3.1 — Climb factors
Subtopic ACFT 3.2 — Cruise factors
Subtopic ACFT 3.3 — Descent and initial approach factors
Subtopic ACFT 3.4 — Final approach and landing factors
Subtopic ACFT 3.5 — Economic factors
Subtopic ACFT 3.6 — Environmental factors

TOPIC ACFT 4 — AIRCRAFT DATA
Subtopic ACFT 4.1 — Performance data

SUBJECT 7: HUMAN FACTORS

TOPIC HUM 1 — PSYCHOLOGICAL FACTORS

Subtopic HUM 1.1 — Cognitive

TOPIC HUM 2 — MEDICAL AND PHYSIOLOGICAL FACTORS

Subtopic HUM 2.1 — Fatigue

Subtopic HUM 2.2 — Fitness

TOPIC HUM 3 — SOCIAL AND ORGANISATIONAL FACTORS

Subtopic HUM 3.1 — Team resource management (TRM)

Subtopic HUM 3.2 — Teamwork and team roles

Subtopic HUM 3.3 — Responsible behaviour

TOPIC HUM 4 — STRESS

Subtopic HUM 4.1 — Stress

Subtopic HUM 4.2 — Stress management

TOPIC HUM 5 — HUMAN ERROR

Subtopic HUM 5.1 — Human error

Subtopic HUM 5.2 — Violation of rules

TOPIC HUM 6 — COLLABORATIVE WORK

Subtopic HUM 6.1 — Communication

Subtopic HUM 6.2 — Collaborative work within the same area of responsibility

Subtopic HUM 6.3 — Collaborative work between different areas of responsibility

Subtopic HUM 6.4 — Controller/pilot cooperation

SUBJECT 8: EQUIPMENT AND SYSTEMS

TOPIC EQPS 1 — VOICE COMMUNICATIONS

Subtopic EQPS 1.1 — Radio communications

Subtopic EQPS 1.2 — Other voice communications

TOPIC EQPS 2 — AUTOMATION IN ATS

Subtopic EQPS 2.1 — Aeronautical fixed telecommunication network (AFTN)

Subtopic EQPS 2.2 — Automatic data interchange

TOPIC EQPS 3 — CONTROLLER WORKING POSITION

Subtopic EQPS 3.1 — Operation and monitoring of equipment

Subtopic EQPS 3.2 — Situation displays and information systems

Subtopic EQPS 3.3 — Flight data systems

Subtopic EQPS 3.4 — Use of ATS surveillance system

Subtopic EQPS 3.5 — Advanced systems

TOPIC EQPS 4 — FUTURE EQUIPMENT

Subtopic EQPS 4.1 — New developments

TOPIC EQPS 5 — EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATIO

Subtopic EQPS 5.1 — Reaction to limitations

Subtopic EQPS 5.2 — Communication equipment degradation

Subtopic EQPS 5.3 — Navigational equipment degradation

Subtopic EQPS 5.4 — Surveillance equipment degradation

Subtopic EQPS 5.5 — ATC processing system degradation

SUBJECT 9: PROFESSIONAL ENVIRONMENT

TOPIC PEN 1 — FAMILIARISATION

Subtopic PEN 1.1 — Study visit to approach control unit

TOPIC PEN 2 — AIRSPACE USERS

Subtopic PEN 2.1 — Contributors to civil ATS operations

Subtopic PEN 2.2 — Contributors to military ATS operations

TOPIC PEN 3 — CUSTOMER RELATIONS

Subtopic PEN 3.1 — Provision of services and user requirements

TOPIC PEN 4 — ENVIRONMENTAL PROTECTION

Subtopic PEN 4.1 — Environmental protection

SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

TOPIC ABES 1 — ABNORMAL AND EMERGENCY SITUATIONS (ABES)

Subtopic ABES 1.1 — Overview of ABES

TOPIC ABES 2 — SKILLS IMPROVEMENT

Subtopic ABES 2.1 — Communication effectiveness

Subtopic ABES 2.2 — Avoidance of mental overload

Subtopic ABES 2.3 — Air/ground cooperation

TOPIC ABES 3 — PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

Subtopic ABES 3.1 — Application of procedures for ABES

Subtopic ABES 3.2 — Radio failure

Subtopic ABES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic ABES 3.4 — Strayed or unidentified aircraft

Subtopic ABES 3.5 — Diversions

Subtopic ABES 3.6 — Transponder failure

SUBJECT 11: AERODROMES

TOPIC AGA 1 — DEFINITIONS

Subtopic AGA 1.1 — Aerodrome data

Subtopic AGA 1.2 — Coordination

TOPIC AGA 2 — MOVEMENT AREA

Subtopic AGA 2.1 — Movement area

Subtopic AGA 2.2 — Manoeuvring area

Subtopic AGA 2.3 — Runways

TOPIC AGA 3 — OBSTACLES

Subtopic AGA 3.1 — Obstacle-free airspace around aerodromes

TOPIC AGA 4 — MISCELLANEOUS EQUIPMENT

Subtopic AGA 4.1 — Location

APPENDIX 7. AREA CONTROL PROCEDURAL RATING (ACP)

TABLE OF CONTENTS

SUBJECT 1: INTRODUCTION TO THE COURSE
SUBJECT 2: AVIATION LAW
SUBJECT 3: AIR TRAFFIC MANAGEMENT
SUBJECT 4: METEOROLOGY
SUBJECT 5: NAVIGATION
SUBJECT 6: AIRCRAFT
SUBJECT 7: HUMAN FACTORS
SUBJECT 8: EQUIPMENT AND SYSTEMS
SUBJECT 9: PROFESSIONAL ENVIRONMENT
SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

SUBJECT 1: INTRODUCTION TO THE COURSE

TOPIC INTR 1 — COURSE MANAGEMENT
Subtopic INTR 1.1 — Course introduction
Subtopic INTR 1.2 — Course administration
Subtopic INTR 1.3 — Study material and training documentation

TOPIC INTR 2 — INTRODUCTION TO THE ATC TRAINING COURSE
Subtopic INTR 2.1 — Course content and organisation
Subtopic INTR 2.2 — Training ethos
Subtopic INTR 2.3 — Assessment process

SUBJECT 2: AVIATION LAW

TOPIC LAW 1 — ATCO LICENSING/CERTIFICATE OF COMPETENCE
Subtopic LAW 1.1 — Privileges and conditions

TOPIC LAW 2 — RULES AND REGULATIONS
Subtopic LAW 2.1 — Reports
Subtopic LAW 2.2 — Airspace

TOPIC LAW 3 — ATC SAFETY MANAGEMENT
Subtopic LAW 3.1 — Feedback process
Subtopic LAW 3.2 — Safety Investigation

SUBJECT 3: AIR TRAFFIC MANAGEMENT

TOPIC ATM 1 — PROVISION OF SERVICES
Subtopic ATM 1.1 — Air traffic control (ATC) service
Subtopic ATM 1.2 — Flight information service (FIS)
Subtopic ATM 1.3 — Alerting service (ALRS)
Subtopic ATM 1.4 — ATS system capacity and air traffic flow management
Subtopic ATM 1.5 — Airspace management (ASM)
TOPIC ATM 2 — COMMUNICATION

Subtopic ATM 2.1 — Effective communication

TOPIC ATM 3 — ATC CLEARANCES AND ATC INSTRUCTIONS

Subtopic ATM 3.1 — ATC clearances

Subtopic ATM 3.2 — ATC instruction

TOPIC ATM 4 — COORDINATION

Subtopic ATM 4.1 — Necessity for coordination

Subtopic ATM 4.2 — Tools and methods for coordination

Subtopic ATM 4.3 — Coordination procedures

TOPIC ATM 5 — ALTIMETRY AND LEVEL ALLOCATION

Subtopic ATM 5.1 — Altimetry

Subtopic ATM 5.2 — Terrain clearance

TOPIC ATM 6 — SEPARATIONS

Subtopic ATM 6.1 — Vertical separation

Subtopic ATM 6.2 — Horizontal separation

TOPIC ATM 7 — AIRBORNE COLLISION AVOIDANCE SYSTEMS AND GROUND-BASED SAFETY NETS

Subtopic ATM 7.1 — Airborne collision avoidance systems

TOPIC ATM 8 — DATA DISPLAY

Subtopic ATM 8.1 — Data management

TOPIC ATM 9 — OPERATIONAL ENVIRONMENT (SIMULATED)

Subtopic ATM 9.1 — Integrity of the operational environment

Subtopic ATM 9.2 — Verification of the currency of operational procedures

Subtopic ATM 9.3 — Handover-takeover

TOPIC ATM 10 — PROVISION OF CONTROL SERVICE

Subtopic ATM 10.1 — Responsibility and processing of information

Subtopic ATM 10.2 — Area control

Subtopic ATM 10.3 — Traffic management process

Subtopic ATM 10.4 — Handling traffic

TOPIC ATM 11 — HOLDING

Subtopic ATM 11.1 — General holding procedures

Subtopic ATM 11.2 — Holding aircraft

SUBJECT 4: METEOROLOGY

TOPIC MET 1 — METEOROLOGICAL PHENOMENA

Subtopic MET 1.1 — Meteorological phenomena

TOPIC MET 2 — SOURCES OF METEOROLOGICAL DATA

Subtopic MET 2.1 — Sources of meteorological information

SUBJECT 5: NAVIGATION

TOPIC NAV 1 — MAPS AND AERONAUTICAL CHARTS

Subtopic NAV 1.1 — Maps and charts

TOPIC NAV 2 — INSTRUMENT NAVIGATION

Subtopic NAV 2.1 — Navigational systems

Subtopic NAV 2.2 — Navigational assistance

Subtopic NAV 2.3 — PBN applications

SUBJECT 6: AIRCRAFT

TOPIC ACFT 1 — AIRCRAFT INSTRUMENTS

Subtopic ACFT 1.1 — Aircraft instruments

TOPIC ACFT 2 — AIRCRAFT CATEGORIES

Subtopic ACFT 2.1 — Wake turbulence

TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE

Subtopic ACFT 3.1 — Climb factors

Subtopic ACFT 3.2 — Cruise factors

Subtopic ACFT 3.3 — Descent factors

Subtopic ACFT 3.4 — Economic factors

Subtopic ACFT 3.5 — Environmental factors

TOPIC ACFT 4 — AIRCRAFT DATA

Subtopic ACFT 4.1 — Performance data

SUBJECT 7: HUMAN FACTORS

TOPIC HUM 1 — PSYCHOLOGICAL FACTORS

Subtopic HUM 1.1 — Cognitive

TOPIC HUM 2 — MEDICAL AND PHYSIOLOGICAL FACTORS

Subtopic HUM 2.1 — Fatigue

Subtopic HUM 2.2 — Fitness

TOPIC HUM 3 — SOCIAL AND ORGANISATIONAL FACTORS

Subtopic HUM 3.1 — Team resource management (TRM)

Subtopic HUM 3.2 — Teamwork and team roles

Subtopic HUM 3.3 — Responsible behaviour

TOPIC HUM 4 — STRESS

Subtopic HUM 4.1 — Stress

Subtopic HUM 4.2 — Stress management

TOPIC HUM 5 — HUMAN ERROR

Subtopic HUM 5.1 — Human error

Subtopic HUM 5.2 — Violation of rules

TOPIC HUM 6 — COLLABORATIVE WORK

Subtopic HUM 6.1 — Communication

Subtopic HUM 6.2 — Collaborative work within the same area of responsibility

Subtopic HUM 6.3 — Collaborative work between different areas of responsibility

Subtopic HUM 6.4 — Controller/pilot cooperation

SUBJECT 8: EQUIPMENT AND SYSTEMS

TOPIC EQPS 1 — VOICE COMMUNICATIONS

Subtopic EQPS 1.1 — Radio communications

Subtopic EQPS 1.2 — Other voice communications

TOPIC EQPS 2 — AUTOMATION IN ATS

Subtopic EQPS 2.1 — Aeronautical fixed telecommunication network (AFTN)

Subtopic EQPS 2.2 — Automatic data interchange

TOPIC EQPS 3 — CONTROLLER WORKING POSITION

Subtopic EQPS 3.1 — Operation and monitoring of equipment

Subtopic EQPS 3.2 — Situation displays and information systems

Subtopic EQPS 3.3 — Flight data systems

TOPIC EQPS 4 — FUTURE EQUIPMENT

Subtopic EQPS 4.1 — New developments

TOPIC EQPS 5 — EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATION

Subtopic EQPS 5.1 — Reaction to limitations

Subtopic EQPS 5.2 — Communication equipment degradation

Subtopic EQPS 5.3 — Navigational equipment degradation

SUBJECT 9: PROFESSIONAL ENVIRONMENT

TOPIC PEN 1 — FAMILIARISATION

Subtopic PEN 1.1 — Study visit to area control centre

TOPIC PEN 2 — AIRSPACE USERS

Subtopic PEN 2.1 — Contributors to civil ATS operations

Subtopic PEN 2.2 — Contributors to military ATS operations

TOPIC PEN 3 — CUSTOMER RELATIONS

Subtopic PEN 3.1 — Provision of services and user requirements

TOPIC PEN 4 — ENVIRONMENTAL PROTECTION

Subtopic PEN 4.1 — Environmental protection

SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

TOPIC ABES 1 — ABNORMAL AND EMERGENCY SITUATIONS (ABES)

Subtopic ABES 1.1 — Overview of ABES

TOPIC ABES 2 — SKILLS IMPROVEMENT

Subtopic ABES 2.1 — Communication effectiveness

Subtopic ABES 2.2 — Avoidance of mental overload

Subtopic ABES 2.3 — Air/ground cooperation

TOPIC ABES 3 — PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

Subtopic ABES 3.1 — Application of procedures for ABES

Subtopic ABES 3.2 — Radio failure

Subtopic ABES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic ABES 3.4 — Strayed or unidentified aircraft

Subtopic ABES 3.5 — Diversions

—

APPENDIX 8. AREA CONTROL SURVEILLANCE RATING (ACS)

TABLE OF CONTENTS

SUBJECT 1: INTRODUCTION TO THE COURSE
SUBJECT 2: AVIATION LAW
SUBJECT 3: AIR TRAFFIC MANAGEMENT
SUBJECT 4: METEOROLOGY
SUBJECT 5: NAVIGATION
SUBJECT 6: AIRCRAFT
SUBJECT 7: HUMAN FACTORS
SUBJECT 8: EQUIPMENT AND SYSTEMS
SUBJECT 9: PROFESSIONAL ENVIRONMENT
SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

SUBJECT 1: INTRODUCTION TO THE COURSE

TOPIC INTR 1 — COURSE MANAGEMENT
Subtopic INTR 1.1 — Course introduction
Subtopic INTR 1.2 — Course administration
Subtopic INTR 1.3 — Study material and training documentation

TOPIC INTR 2 — INTRODUCTION TO THE ATC TRAINING COURSE
Subtopic INTR 2.1 — Course content and organisation
Subtopic INTR 2.2 — Training ethos
Subtopic INTR 2.3 — Assessment process

SUBJECT 2: AVIATION LAW

TOPIC LAW 1 — ATCO LICENSING/CERTIFICATE OF COMPETENCE
Subtopic LAW 1.1 — Privileges and conditions

TOPIC LAW 2 — RULES AND REGULATIONS
Subtopic LAW 2.1 — Reports
Subtopic LAW 2.2 — Airspace

TOPIC LAW 3 — ATC SAFETY MANAGEMENT
Subtopic LAW 3.1 — Feedback process
Subtopic LAW 3.2 — Safety Investigation

SUBJECT 3: AIR TRAFFIC MANAGEMENT

TOPIC ATM 1 — PROVISION OF SERVICES
Subtopic ATM 1.1 — Air traffic control (ATC) service
Subtopic ATM 1.2 — Flight information service (FIS)
Subtopic ATM 1.3 — Alerting service (ALRS)

Subtopic ATM 1.4 — ATS system capacity and air traffic flow management

Subtopic ATM 1.5 — Airspace management (ASM)

TOPIC ATM 2 — COMMUNICATION

Subtopic ATM 2.1 — Effective communication

TOPIC ATM 3 — ATC CLEARANCES AND ATC INSTRUCTIONS

Subtopic ATM 3.1 — ATC clearances

Subtopic ATM 3.2 — ATC instructions

TOPIC ATM 4 — COORDINATION

Subtopic ATM 4.1 — Necessity for coordination

Subtopic ATM 4.2 — Tools and methods for coordination

Subtopic ATM 4.3 — Coordination procedures

TOPIC ATM 5 — ALTIMETRY AND LEVEL ALLOCATION

Subtopic ATM 5.1 — Altimetry

Subtopic ATM 5.2 — Terrain clearance

TOPIC ATM 6 — SEPARATIONS

Subtopic ATM 6.1 — Vertical separation

Subtopic ATM 6.2 — Longitudinal separation in a surveillance environment

Subtopic ATM 6.3 — Wake turbulence distance-based separation

Subtopic ATM 6.4 — Separation based on ATS surveillance systems

TOPIC ATM 7 — AIRBORNE COLLISION AVOIDANCE SYSTEMS AND GROUND-BASED SAFETY NETS

Subtopic ATM 7.1 — Airborne collision avoidance systems

Subtopic ATM 7.2 — Ground-based safety nets

TOPIC ATM 8 — DATA DISPLAY

Subtopic ATM 8.1 — Data management

TOPIC ATM 9 — OPERATIONAL ENVIRONMENT (SIMULATED)

Subtopic ATM 9.1 — Integrity of the operational environment

Subtopic ATM 9.2 — Verification of the currency of operational procedures

Subtopic ATM 9.3 — Handover-takeover

TOPIC ATM 10 — PROVISION OF CONTROL SERVICE

Subtopic ATM 10.1 — Responsibility and processing of information

Subtopic ATM 10.2 — ATS surveillance service

Subtopic ATM 10.3 — Traffic management process

Subtopic ATM 10.4 — Handling traffic

Subtopic ATM 10.5 — Control service with advanced system support

TOPIC ATM 11 — HOLDING

Subtopic ATM 11.1 — General holding procedures

Subtopic ATM 11.2 — Holding aircraft

Subtopic ATM 11.3 — Holding in a surveillance environment

TOPIC ATM 12 — IDENTIFICATION

Subtopic ATM 12.1 — Establishment of identification

Subtopic ATM 12.2 — Maintenance of identification

Subtopic ATM 12.3 — Loss of identity

Subtopic ATM 12.4 — Position Information

Subtopic ATM 12.5 — Transfer of identity

SUBJECT 4: METEOROLOGY

TOPIC MET 1 — METEOROLOGICAL PHENOMENA

Subtopic MET 1.1 — Meteorological phenomena

TOPIC MET 2 — SOURCES OF METEOROLOGICAL DATA

Subtopic MET 2.1 — Sources of meteorological information

SUBJECT 5: NAVIGATION

TOPIC NAV 1 — MAPS AND AERONAUTICAL CHARTS

Subtopic NAV 1.1 — Maps and charts

TOPIC NAV 2 — INSTRUMENT NAVIGATION

Subtopic NAV 2.1 — Navigational systems

Subtopic NAV 2.2 — Navigational assistance

Subtopic NAV 2.3 — PBN applications

SUBJECT 6: AIRCRAFT

TOPIC ACFT 1 — AIRCRAFT INSTRUMENTS

Subtopic ACFT 1.1 — Aircraft instruments

TOPIC ACFT 2 — AIRCRAFT CATEGORIES

Subtopic ACFT 2.1 — Wake turbulence

TOPIC ACFT 3 — FACTORS AFFECTING AIRCRAFT PERFORMANCE

Subtopic ACFT 3.1 — Climb factors

Subtopic ACFT 3.2 — Cruise factors

Subtopic ACFT 3.3 — Descent factors

Subtopic ACFT 3.4 — Economic factors

Subtopic ACFT 3.5 — Environmental factors

TOPIC ACFT 4 — AIRCRAFT DATA

Subtopic ACFT 4.1 — Performance data

SUBJECT 7: HUMAN FACTORS

TOPIC HUM 1 — PSYCHOLOGICAL FACTORS

Subtopic HUM 1.1 — Cognitive

TOPIC HUM 2 — MEDICAL AND PHYSIOLOGICAL FACTORS

Subtopic HUM 2.1 — Fatigue

Subtopic HUM 2.2 — Fitness

TOPIC HUM 3 — SOCIAL AND ORGANISATIONAL FACTORS

Subtopic HUM 3.1 — Team resource management (TRM)

Subtopic HUM 3.2 — Teamwork and team roles

Subtopic HUM 3.3 — Responsible behaviour

TOPIC HUM 4 — STRESS

Subtopic HUM 4.1 — Stress

Subtopic HUM 4.2 — Stress management

TOPIC HUM 5 — HUMAN ERROR

Subtopic HUM 5.1 — Human error

Subtopic HUM 5.2 — Violation of rules

TOPIC HUM 6 — COLLABORATIVE WORK

Subtopic HUM 6.1 — Communication

Subtopic HUM 6.2 — Collaborative work within the same area of responsibility

Subtopic HUM 6.3 — Collaborative work between different areas of responsibility

Subtopic HUM 6.4 — Controller/pilot cooperation

SUBJECT 8: EQUIPMENT AND SYSTEMS

TOPIC EQPS 1 — VOICE COMMUNICATIONS

Subtopic EQPS 1.1 — Radio communications

Subtopic EQPS 1.2 — Other voice communications

TOPIC EQPS 2 — AUTOMATION IN ATS

Subtopic EQPS 2.1 — Aeronautical fixed telecommunication network (AFTN)

Subtopic EQPS 2.2 — Automatic data interchange

TOPIC EQPS 3 — CONTROLLER WORKING POSITION

Subtopic EQPS 3.1 — Operation and monitoring of equipment

Subtopic EQPS 3.2 — Situation displays and information systems

Subtopic EQPS 3.3 — Flight data systems

Subtopic EQPS 3.4 — Use of ATS surveillance system

Subtopic EQPS 3.5 — Advanced systems

TOPIC EQPS 4 — FUTURE EQUIPMENT

Subtopic EQPS 4.1 — New developments

TOPIC EQPS 5 — EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATION

Subtopic EQPS 5.1 — Reaction to limitations

Subtopic EQPS 5.2 — Communication equipment degradation

Subtopic EQPS 5.3 — Navigational equipment degradation

Subtopic EQPS 5.4 — Surveillance equipment degradation

Subtopic EQPS 5.5 — ATC processing system degradation

SUBJECT 9: PROFESSIONAL ENVIRONMENT

TOPIC PEN 1 — FAMILIARISATION

Subtopic PEN 1.1 — Study visit to area control centre

TOPIC PEN 2 — AIRSPACE USERS

Subtopic PEN 2.1 — Contributors to civil ATS operations

Subtopic PEN 2.2 — Contributors to military ATS operations

TOPIC PEN 3 — CUSTOMER RELATIONS

Subtopic PEN 3.1 — Provision of services and user requirements

TOPIC PEN 4 — ENVIRONMENTAL PROTECTION

Subtopic PEN 4.1 — Environmental protection

SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

TOPIC ABES 1 — ABNORMAL AND EMERGENCY SITUATIONS (ABES)

Subtopic ABES 1.1 — Overview of ABES

TOPIC ABES 2 — SKILLS IMPROVEMENT

Subtopic ABES 2.1 — Communication effectiveness

Subtopic ABES 2.2 — Avoidance of mental overload

Subtopic ABES 2.3 — Air/ground cooperation

TOPIC ABES 3 — PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

Subtopic ABES 3.1 — Application of procedures for ABES

Subtopic ABES 3.2 — Radio failure

Subtopic ABES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic ABES 3.4 — Strayed or unidentified aircraft

Subtopic ABES 3.5 — Diversions

Subtopic ABES 3.6 — Transponder failure

—