

Volume: 54 Issue: 93 Date: 9 Zul Qaidaa 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 legalaffairs@po·gov·mv

Volume: 54 Issue No: 93 Regulation No: 2025/R-56 Government Gazette



Maldivian Civil Aviation Regulations

MCAR 176 Approved Training Organisation for Air Traffic Control

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 Amendments

Rev #	Date	Remarks
Issue 1.00	2025-05-07	Initial issue
-		

Issue: 1.00 iii 07 May 2025

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 REQUIREMENTS1				
1.	Regulatory Compliance1			
2.	Related Regulations1			
3.	Purpose1			
4.	' Issue of Approval			
5.	Application for the approval of ATC Training Organisation2			
6.	Training and procedures manual2			
7.	Quality assurance system3			
8.	Facilities3			
9.	Personnel3			
10.	Records3			
11.	Evaluation and checking			
12.	Oversight2			
13.	Effectivity			
APPENDIX 1.	REQUIREMENTS FOR INSTRUCTORS1			
1.	Theoretical instructors1			
2.	Practical instructors1			
3.	On-the-job training instructor (OJTI) privileges1			
4.	Application for on-the-job training instructor qualification1			
5.	Validity of on-the-job training instructor qualification1			
6.	Temporary OJTI authorisation2			
7.	Synthetic training device instructor (STDI) privileges2			
8.	Application for synthetic training device instructor endorsement			
9.	Validity of synthetic training device instructor endorsement			
APPENDIX 2.	Basic Training1			
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			

Issue: 1.00 vi 07 May 2025

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.

Issue: 1.00 1 07 May 2025

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

Issue: 1.00 2 07 May 2025

- 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.
- 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.
- 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

Issue: 1.00 3 07 May 2025

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

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.

Issue: 1.00 4 07 May 2025

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:
 - 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.

Issue: 1.00 APP 1-1 07 May 2025

- 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.
- 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;

Issue: 1.00 APP 1-2 07 May 2025

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.

Issue: 1.00 APP 1-3 07 May 2025

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 f lights

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 f low 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 f light 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

Issue: 1.00 APP 2-6 07 May 2025

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 f low 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

Issue: 1.00 APP 3-5 07 May 2025

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 f low 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 f low 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 f low 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 — Manoeuvering 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 f low 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 f low 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