

European Aviation Safety Agency

NOTICE OF PROPOSED AMENDMENT NPA 2012-18 (B.III)

RMT.0153 & RMT.0154 (ATM.003(a)&(b))

Licensing and medical certification of air traffic controllers

NPA 2012-18 (B.III)

Appendices to draft Commission Regulation (EU) No .../...

(Part-ATCO, Part-ATCO.AR and Part-ATCO.OR)

TABLE OF CONTENTS

APPENDIX 1 FORMAT FOR LICENCES AIR TRAFFIC CONTROLLER	_
LICENCE	5
APPENDIX 2 LANGUAGE PROFICIENCY RATING SCALE	11
APPENDIX 3 BASIC TRAINING	13
TABLE OF CONTENTS SUBJECT 1: INTRODUCTION TO THE COURSE	14 15
SUBJECT 2: AVIATION LAW	16
SUBJECT 3: AIR TRAFFIC MANAGEMENT	17
SUBJECT 4: METEOROLOGY	19
SUBJECT 5: NAVIGATION	20
SUBJECT 6: AIRCRAFT	21
SUBJECT 7: HUMAN FACTORS	22
SUBJECT 8: EQUIPMENT AND SYSTEMS	23
SUBJECT 9: PROFESSIONAL ENVIRONMENT	25
APPENDIX 4 AERODROME CONTROL VISUAL RATING (ADV)	26
TABLE OF CONTENTS SUBJECT 1: INTRODUCTION TO THE COURSE	27 28
SUBJECT 2: AVIATION LAW	29
SUBJECT 3: AIR TRAFFIC MANAGEMENT	30
SUBJECT 4: METEOROLOGY	32
SUBJECT 5: NAVIGATION	33
SUBJECT 6: AIRCRAFT	34
SUBJECT 7: HUMAN FACTORS	35
SUBJECT 8: EQUIPMENT AND SYSTEMS	36
SUBJECT 9: PROFESSIONAL ENVIRONMENT	37
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	38
SUBJECT 11: AERODROMES	39
APPENDIX 5 AERODROME CONTROL INSTRUMENT RATING FOR TOV — ADI (TWR)	VER 40
TABLE OF CONTENTS SUBJECT 1: INTRODUCTION TO THE COURSE	41 42
SUBJECT 2: AVIATION LAW	43
SUBJECT 3: AIR TRAFFIC MANAGEMENT	44
SUBJECT 4: METEOROLOGY	47
SUBJECT 5: NAVIGATION	48
SUBJECT 6: AIRCRAFT	49
SUBJECT 7: HUMAN FACTORS	50

SUBJECT 8: EQUIPMENT AND SYSTEMS	51
SUBJECT 9: PROFESSIONAL ENVIRONMENT	52
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	53
SUBJECT 11: AERODROMES	54
APPENDIX 6 APPROACH CONTROL PROCEDURAL RATING (APP)	55
TABLE OF CONTENTS	56
SUBJECT 1: INTRODUCTION TO THE COURSE	57
SUBJECT 2: AVIATION LAW	58
SUBJECT 3: AIR TRAFFIC MANAGEMENT	59
SUBJECT 4: METEOROLOGY	61
SUBJECT 5: NAVIGATION	62
SUBJECT 6: AIRCRAFT	63
SUBJECT 7: HUMAN FACTORS	64
SUBJECT 8: EQUIPMENT AND SYSTEMS	65
SUBJECT 9: PROFESSIONAL ENVIRONMENT	66
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	67
SUBJECT 11: AERODROMES	68
APPENDIX 7 AREA CONTROL PROCEDURAL RATING (ACP)	69
TABLE OF CONTENTS SUBJECT 1: INTRODUCTION TO THE COURSE	70 71
SUBJECT 2: AVIATION LAW	72
SUBJECT 3: AIR TRAFFIC MANAGEMENT	73
SUBJECT 4: METEOROLOGY	75
SUBJECT 5: NAVIGATION	76
SUBJECT 6: AIRCRAFT	77
SUBJECT 7: HUMAN FACTORS	78
SUBJECT 8: EQUIPMENT AND SYSTEMS	79
SUBJECT 9: PROFESSIONAL ENVIRONMENT	80
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	81
APPENDIX 8 APPROACH CONTROL SURVEILLANCE RATING (APS)	82
TABLE OF CONTENTS SUBJECT 1: INTRODUCTION TO THE COURSE	83 84
SUBJECT 2: AVIATION LAW	85
SUBJECT 3: AIR TRAFFIC MANAGEMENT	86
SUBJECT 4: METEOROLOGY	88
SUBJECT 5: NAVIGATION	89
SUBJECT 6: AIRCRAFT	90
SUBJECT 7: HUMAN FACTORS	91
~~~~~·································	

SUBJECT 8: EQUIPMENT AND SYSTEMS	92
SUBJECT 9: PROFESSIONAL ENVIRONMENT	93
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	94
SUBJECT 11: AERODROMES	95
APPENDIX 9 AREA CONTROL SURVEILLANCE RATING (ACS)	96
TABLE OF CONTENTS SUBJECT 1: INTRODUCTION TO THE COURSE	97 <b>98</b>
SUBJECT 2: AVIATION LAW	99
SUBJECT 3: AIR TRAFFIC MANAGEMENT	100
SUBJECT 4: METEOROLOGY	102
SUBJECT 5: NAVIGATION	103
SUBJECT 6: AIRCRAFT	104
SUBJECT 7: HUMAN FACTORS	105
SUBJECT 8: EQUIPMENT AND SYSTEMS	106
SUBJECT 9: PROFESSIONAL ENVIRONMENT	107
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	108
APPENDIX 10 CERTIFICATE FOR AIR TRAFFIC CONTROLLER TRAINING ORGANISATIONS (ATCO TOS)	IG 109
APPENDIX 11 CERTIFICATE FOR AERO-MEDICAL EXAMINERS (AMES)	111
APPENDIX 12 CERTIFICATE FOR AERO-MEDICAL CENTRES (AEMCS)	113

#### **APPENDIX 1**

#### **FORMAT FOR LICENCES**

#### AIR TRAFFIC CONTROLLER LICENCE

The air traffic controller licence issued in accordance with this Regulation shall conform to the following specifications:

- (A) Content. The item number as defined in point 1 and 2 below shall always be printed in association with the item heading. Items I to XI are the 'permanent' items, and items XII to XIV are the 'variable' items which may appear on a separate or detachable part of the main form as prescribed below. Any separate or detachable part shall be clearly identifiable as part of the licence.
  - Permanent items:
    - (I) State of licence issue;
    - (II) title of licence;
    - (III) serial number of the licence with the United Nations (UN) country code of the State of licence issue and followed by '(ST)ATCOL' and a code of numbers and/or letters in Arabic numerals and in Latin script;
    - (IV) name of holder in full [in Latin script, even if the script of the national language(s) is other than Latin];
    - (IVa) date of birth;
    - (V) holder's address, if desired by the competent authority;
    - (VI) nationality of holder;
    - (VII) signature of holder;
    - (VIII) competent authority;
    - (IX) certification of validity and authorisation for the privileges granted, including the dates when they were first issued;
    - (X) signature of officer issuing the licence and the date of such issue;
    - (XI) seal or stamp of the competent authority.
  - 2. Variable items:
    - (XII) ratings and endorsements with expiry dates. Radio telephony (R/T) privileges may appear on the licence form or on a separate certificate;
    - (XIII) remarks: i.e. special endorsements relating to limitations and endorsements for privileges, including endorsements of language proficiency; and
    - (XIV) any other details required by the competent authority (e.g. place of birth/place of origin).
- (B) The licence shall be accompanied by a valid medical certificate, except when only STDI privileges are exercised.

- A legal identification document containing a photo shall be carried for the purposes of identification of the licence holder.
- (C) Material. First quality paper and/or other suitable storage tools, including plastic cards or electronic devices shall be used and the items mentioned under point (a) must appear clearly thereon.
- (D) Language. Licences shall be written in English and, if desired by Member States, in national language(s) and other languages as deemed appropriate.

#### Cover page

Competent authority's name and logo
[English and any language(s) determined by the competent authority]

Requirements1

EUROPEAN UNION (English only)

'European Union' to be deleted for non-EU Member States.

(STUDENT) AIR TRAFFIC CONTROLLER LICENCE
[(ST)ATCOL]

For the title of the licence the abbreviations to be used will be either ATCOL or STATCOL.

[English and any language(s) determined by the competent authority]

competent authority]
Issued in accordance with Commission Regulation

This licence complies with the ICAO standards
[English and any language(s) determined by the
competent authority]

(EU) No .../...

The size of each page shall be one eighth A4.

EASA Form XXX Issue 1

____

¹ Requirements:

The pages referring to the instructions on how the (ST)ATCOL has to be filled in are intended for use by the competent authority or the assessor specifically authorised to revalidate or renew the unit endorsements. Initial issues of ratings, rating endorsements, language endorsements, instructor and assessor endorsement privileges will always be entered by the competent authority. Revalidation or renewal of unit endorsements will be entered by the competent authority or by the specifically authorised assessors.

#### Page 2

I	State of issue:	Requirements:
ш	Serial number of the licence:	Licence number will always commence with the UN country code of the State of the licence issue followed by '(ST)ATCOL'.
IV	Name of the holder in full:	
IVa	Date of birth:	Standard date format is to be used, i.e. day/month/year in full (e.g., 31.01.2010)
v	Holder's address, if desired by the competent authority:  Street, town, area, postal code	
VI	Nationality of holder:	Indicated by the UN country code of the State
VII	Signature of holder:	
x	Signature of officer issuing the licence and date of issue	
XI	Seal or stamp of issuing competent authority	

#### Page 3

ΙXa	<b>Privileges:</b> The holder is entitled to ex	ercise the privileges of th	Requirements:
	following rating(s) and endo	rsements:	English and any language(s) determined by the competent
	Ratings	Date of first issue	authority.
			The date of first issue of a rating and/or rating endorsement shall be the date of successful completion of the initial training relevant to that rating and/or rating endorsement.
	Rating endorsement	Date of first issue	
	OJTI /STDI /Assessor endorsement	Date of first issue	

#### Page 4

IXb	Validity: The privileges of the licence shall be exercised only if the holder has a valid medical certificate for the required privilege, except when only STDI privileges are exercised.  A legal identification document containing a photo shall be carried for the purposes of identification of the licence holder.	Requirements:
XIIa	Radiotelephony privileges	Radio telephony (R/T) privileges may appear on the licence form or on a separate certificate, if required.
XIII	Remarks: Language proficiency: [language(s)/level/validity date]	All additional licensing information to be entered here. Language proficiency endorsement(s), level and validity date shall be included.
XIV	Other details:	

APPENDIX 1 — FORMAT FOR LICENCES — AIR TRAFFIC CONTROLLER LICENCE

Page 5

#### **XIIb Ratings and endorsements**

The holder is entitled to exercise the functions of the following rating(s) and rating endorsement(s) at the air traffic service unit(s) for which current unit endorsement(s) is/are held as detailed bellow:

Unit (ICAO indicator)*	Sector/ Position*	Rating/ Endorsement***	Expiry date**	Signature/stamp of the authority or licence number and signature of the assessor

 $[\]ensuremath{^{*}}$  Not applicable for STATCOL and OJTI, STDI and assessor endorsements.

^{**} Not applicable for STATCOL.

 $^{^{***}}$  ACS-RAD, APS-RAD, ACS-ADS or APS-ADS issued in accordance with Regulation (EU) No 805/2011 shall be maintained as a limitation on the privileges.

APPENDIX 1 — FORMAT FOR LICENCES — AIR TRAFFIC CONTROLLER LICENCE

Page 6 **Abbreviations used in this licence** 

	Requirements: (e.g. ADV — Aerodrome Control Visual; TWR — Tower Control; etc.)

## APPENDIX 2 LANGUAGE PROFICIENCY RATING SCALE

#### REQUIREMENTS FOR PROFICIENCY IN LANGUAGES

Language proficiency rating scale: expert, extended and operational levels

Level	Pronunciation	Structure	Vocabulary	Fluency	Comprehension	Interactions
	Uses a dialect and/or accent intelligible to the aeronautical community.	Relevant grammatical struc- tures and sentence patterns are determined by language func- tions appropriate to the task.				
Expert 6	Pronunciation, stress, rhythm and intonation, though possibly influenced by the first language or regional variation, almost never interfere with ease of understanding.	Both basic and complex grammatical structures and sentence patterns are con- sistently well controlled.	Vocabulary range and accuracy are sufficient to communicate effectively on a wide variety of familiar and unfamiliar topics. Vocabulary is idiomatic, nuanced, and sensitive to register.	Able to speak at length with a natural, effortless flow. Varies speech flow for stylistic effect, eg. to emphasise a point. Uses appropriate discourse mar- kers and connectors spon- taneously.	Comprehension is consis- tently accurate in nearly all contexts and includes comprehension of linguis- tic and cultural subtleties.	Interacts with ease in nearly all situations. Is sensitive to verbal and non-verbal cues, and responds to them appropriately.
Extended 5	Pronunciation, stress, rhythm and intonation, though influenced by the first language or regional variation, rarely interfere with ease of understanding.	Basic grammatical struc- tures and sentence patterns are consistently well con- trolled. Complex structures are attempted but with errors which sometimes interfere with meaning.	Vocabulary range and accuracy are sufficient to communicate effectively on common, concrete, and work-related topics, paraphrases consistently and successfully. Vocabulary is sometimes idiomatic.	Able to speak at length with relative ease on familiar topics, but may not vary speech flow as a stylistic device. Can make use of appropriate discourse markers or connectors.	Comprehension is accurate on common, concrete, and work-related topics and mostly accurate when the speaker is confronted with a linguistic or situational complication or an unexpected turn of events. Is able to comprehend a range of speech varieties (dialect and/or accent) or registers.	Responses are immediate, appropriate, and informative Manages the speaker/listener relationship effectively.
Operational 4	Pronunciation, stress, rhythm and intonation are influenced by the first lan- guage or regional variation but only sometimes inter- fere with ease of under- standing.	Basic grammatical struc- tures and sentence patterns are used creatively and are usually well controlled. Errors may occur, particu- larly in unusual or unex- pected circumstances, but rarely interfere with mean- ing.	Vocabulary range and accuracy are usually sufficient to communicate effectively on common, concrete, and work-related topics. Can often paraphrase successfully when lacking vocabulary in unusual or unexpected circumstances.	Produces stretches of language at an appropriate tempo. There may be occasional loss of fluency on transition from rehearsed or formulaic speech to spontaneous interaction, but this does not prevent effective communication. Can make limited use of discourse markers or connectors. Fillers are not distracting.	Comprehension is mostly accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. When the speaker is confronted with a linguistic or situational complication or an unexpected turn of events, comprehension may be slower or require clarification strategies.	Responses are usually immediate, appropriate, and informative. Initiates and maintains exchanges even when dealing with an unexpected turn of events. Deals adequately with apparent misunderstandings by checking, confirming, or clarifying

#### Language proficiency rating scale: pre-operational, elementary and pre-elementary levels.

Level	Pronunciation Uses a dialect and/or accent intelligible to the aeronautical community.	Structure Relevant grammatical structures and sentence patterns are determined by language functions appropriate to the task.	Vocabulary	Fluency	Comprehension	Interactions
Pre-operational 3	Pronunciation, stress, rhythm and intonation are influenced by the first lan- guage or regional variation and frequently interfere with ease of understanding.	Basic grammatical struc- tures and sentence patterns associated with predictable situations are not always well controlled. Errors fre- quendy interfere with meaning.	Vocabulary range and accuracy are often sufficient to communicate on common, concrete, or work-related topics but range is limited and the word choice often inappropriate. Is often unable to paraphrase successfully when lacking vocabulary.	Produces stretches of lan- guage, but phrasing and pausing are often inap- propriate. Hesitations or slowness in language pro- cessing may prevent effec- tive communication. Fillers are sometimes distracting.	Comprehension is often accurate on common, concrete, and work-related topics when the accent or variety used is sufficiently intelligible for an international community of users. May fail to understand a linguistic or situational complication or an unexpected turn of events.	Responses are sometimes immediate, appropriate, and informative. Can initiate and maintain exchanges with reasonable ease on familiar topics and in predictable situations. Generally inadequate when dealing with an unexpected turn of events.
Elementary 2	Pronunciation, stress, rhythm and intonation are heavily influenced by the first language or regional variation and usually inter- fere with ease of under- standing.	Shows only limited control of a few simple memorised grammatical structures and sentence patterns.	Limited vocabulary range consisting only of isolated words and memorised phrases.	Can produce very short, isolated, memorised utter- ances with frequent pausing and a distracting use of fillers to search for expressions and to articulate less familiar words.	Comprehension is limited to isolated, memorised phrases when they are carefully and slowly articulated.	Response time is slow, and often inappropriate. Interaction is limited to simple routine exchanges.
Pre-elementary	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.	Performs at a level below the Elementary level.

# APPENDIX 3 BASIC TRAINING

(Reference Annex I — PART-ATCO Subpart D, Section 2, ATCO.D.010(a)(1))

**BASIC TRAINING** 

#### **TABLE OF CONTENTS**

SUBJECT 1: INTRODUCTION TO THE COURSE	15
SUBJECT 2: AVIATION LAW	16
SUBJECT 3: AIR TRAFFIC MANAGEMENT	17
SUBJECT 4: METEOROLOGY	19
SUBJECT 5: NAVIGATION	20
SUBJECT 6: AIRCRAFT	21
SUBJECT 7: HUMAN FACTORS	22
SUBJECT 8: EQUIPMENT AND SYSTEMS	23
SUBJECT 9: PROFESSIONAL ENVIRONMENT	25

#### Subject 1: INTRODUCTION TO THE COURSE

#### The subject objective is:

Learners shall know and understand the training programme that they will follow and how to obtain the appropriate information, and recognise the potential for development of their careers in ATC.

#### **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 prospects

#### Subject 2: AVIATION LAW

#### The subject objective is:

Learners shall apply the regulations governing rules of the air, airspace and flight planning and explain their development and incorporation into national legislation.

#### **TOPIC LAWB 1 — INTRODUCTION TO AVIATION LAW**

Subtopic LAWB 1.1 - National and international organisations

#### **TOPIC LAWB 2 INTERNATIONAL ORGANISATIONS**

Subtopic LAWB 2.1 — ICAO

Subtopic LAWB 2.2 — 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 SAFETY AND SAFETY CULTURE**

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

#### The subject objective is:

Learners shall describe the basic principles of air traffic management and apply basic operational procedures.

#### **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 — Wake turbulence separation

Subtopic ATMB 7.5 — Aerodrome separation and procedures

Subtopic ATMB 7.6 — Separation based on ATS surveillance systems

Subtopic ATMB 7.7 — Applied 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

#### Subject 4: METEOROLOGY

#### The subject objective is:

Learners shall describe how meteorology affects ATS operations and aircraft performance and apply meteorological information in the basic operational procedures of ATS.

#### **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

The subject objective is:

Learners shall explain the basic principles of navigation and use this knowledge in ATS operations.

#### **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 INSTRUMENTAL NAVIGATION**

Subtopic NAVB 5.1 — Ground-based systems

Subtopic NAVB 5.2 — On-board systems

Subtopic NAVB 5.3 — Satellite-based systems

#### **TOPIC NAVB 6 AREA NAVIGATION**

Subtopic NAVB 6.1 — Principles and benefits

Subtopic NAVB 6.2 — Types and techniques

Subtopic NAVB 6.3 — New developments

#### Subject 6: AIRCRAFT

#### The subject objective is:

Learners shall describe the basic principles of the theory of flight and aircraft characteristics and how these influence ATS operations.

#### **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

#### **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

#### **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

Subtopic ACFTB 7.8 — Miscellaneous factors

#### Subject 7: HUMAN FACTORS

The subject objective is:

Learners shall characterise factors which affect personal and team performance.

#### **TOPIC HUMB 1 INTRODUCTION TO HUMAN FACTORS**

Subtopic HUMB 1.1 — Reference documents and learning techniques

Subtopic HUMB 1.2 — Why human factors?

#### **TOPIC HUMB 2 HUMAN PERFORMANCE**

Subtopic HUMB 2.1 — Individual behaviour

Subtopic HUMB 2.2 — 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 — The Reason model

#### **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

#### The subject objective is:

Learners shall explain the basic working principles of equipment that is in general use in ATC and appreciate how this equipment aids the controller in providing safe and efficient ATS.

#### **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 — Radio communications

Subtopic EQPSB 2.3 — Direction finding

#### **TOPIC EQPSB 3 OTHER SYSTEMS AND COMMUNICATIONS**

Subtopic EQPSB 3.1 - ATC communications

Subtopic EQPSB 3.2 — Airline communications

Subtopic EQPSB 3.3 — Air-ground 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 — Closed circuit information system

Subtopic EQPSB 10.5 — 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

The subject objective is:

Learners shall recognise the need for close cooperation with other parties concerning ATM operations and aspects of environmental protection.

#### **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 aviation

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 4 AERODROME CONTROL VISUAL RATING (ADV)

(Reference Annex I — PART-ATCO Subpart D, Section 2, ATCO.D.010(a)(2)(i).))

**AERODROME CONTROL VISUAL RATING (ADV)** 

#### **TABLE OF CONTENTS**

SUBJECT 1: INTRODUCTION TO THE COURSE	28
SUBJECT 2: AVIATION LAW	29
SUBJECT 3: AIR TRAFFIC MANAGEMENT	30
SUBJECT 4: METEOROLOGY	32
SUBJECT 5: NAVIGATION	33
SUBJECT 6: AIRCRAFT	34
SUBJECT 7: HUMAN FACTORS	35
SUBJECT 8: EQUIPMENT AND SYSTEMS	36
SUBJECT 9: PROFESSIONAL ENVIRONMENT	37
SUBJECT 10 UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	38
SUBJECT 11 AERODROMES	39

#### Subject 1: INTRODUCTION TO THE COURSE

#### The subject objective is:

Learners shall know and understand the training programme that they will follow and learn how to obtain the appropriate information.

#### **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

The subject objective is:

Learners shall know, understand and apply the Rules of the Air and the Regulations regarding reporting, airspace and appreciate the Licensing and Competence principles

#### **TOPIC LAW 1 ATC 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

#### Subject 3: AIR TRAFFIC MANAGEMENT

The subject objective is:

Learners shall manage air traffic to ensure safe, orderly and expeditious services.

#### **TOPIC ATM 1 AIR TRAFFIC SERVICES AND AIRSPACE MANAGEMENT**

Subtopic ATM 1.1 — Aerodrome control service

Subtopic ATM 1.2 — Flight information service (FIS)

Subtopic ATM 1.3 — Alerting service

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 — 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**

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 — Aeronautical ground lights

Subtopic ATM 10.4 - Information to aircraft by aerodrome control tower

Subtopic ATM 10.5 — Control of aerodrome traffic

Subtopic ATM 10.6 — Control of traffic in the traffic circuit

Subtopic ATM 10.7 — Runway in use

Subject 4: METEOROLOGY

The subject objective is:

Learners shall acquire, decode and make proper use of meteorological information relevant to the provision of ATS.

#### **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

The subject objective is:

Learners shall analyse all navigational aspects in order to organise the traffic.

#### **TOPIC NAV 1 MAPS AND AERONAUTICAL CHARTS**

Subtopic NAV 1.1 - Maps and charts

#### **TOPIC NAV 2 INSTRUMENTAL NAVIGATION**

Subtopic NAV 2.1 — Navigational systems

**SUBJECT 5: NAVIGATION** 

Subject 6: AIRCRAFT

The subject objective is:

Learners shall assess and integrate aircraft performance in the provision of ATS.

#### **TOPIC ACFT 1 AIRCRAFT INSTRUMENTS**

Subtopic ACFT 1.1 — Aircraft instruments

#### **TOPIC ACFT 2 AIRCRAFT CATEGORIES**

Subtopic ACFT 2.1 - Wake turbulence 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 — Miscellaneous factors

Subtopic ACFT 3.6 — 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

The subject objective is:

Learners shall recognise the necessity to constantly extend their knowledge and analyse factors which affect personal and team performance.

#### **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 WORKING METHODS**

Subtopic HUM 6.1 — Efficiency

#### **TOPIC HUM 7 WORKING KNOWLEDGE**

Subtopic HUM 7.1 — Controller knowledge

#### **TOPIC HUM 8 COLLABORATIVE WORK**

Subtopic HUM 8.1 — Communication

Subtopic HUM 8.2 — Collaborative work within the same area of responsibility

Subtopic HUM 8.3 — Collaborative work between different areas of responsibility

Subtopic HUM 8.4 — Controller/pilot cooperation

#### **TOPIC HUM 9 WORK ENVIRONMENT**

Subtopic HUM 9.1 — Ergonomics

#### **TOPIC HUM 10 ATC SAFETY MANAGEMENT**

Subtopic HUM 10.1 — Experience feedback

Subtopic HUM 10.2 — Safety Investigation Branch

#### Subject 8: EQUIPMENT AND SYSTEMS

#### The subject objective is:

Learners shall integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS.

#### **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

APPENDIX 4 — AERODROME CONTROL VISUAL RATING (ADV)

# Subject 9: PROFESSIONAL ENVIRONMENT

The subject objective is:

Learners shall identify the need for close cooperation with other parties concerning ATM operations and appreciate aspects of environmental protection.

# **TOPIC PEN 1 PROFESSIONAL ENVIRONMENT**

Subtopic PEN 1.1 — Contributors to ATS operations

Subtopic PEN 1.2 — Customer relations

Subtopic PEN 1.3 — Environmental protection

APPENDIX 4 — AERODROME CONTROL VISUAL RATING (ADV)

#### Subject 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

#### The subject objective is:

Learners shall develop professional attitudes to manage traffic in unusual, degraded and emergency situations.

# TOPIC UDES 1 UNUSUAL/DEGRADED/EMERGENCY SITUATIONS (UDES)

Subtopic UDES 1.1 - Overview of UDES

#### **TOPIC UDES 2 SKILLS IMPROVEMENT**

Subtopic UDES 2.1 — Communication effectiveness

Subtopic UDES 2.2 — Avoidance of mental overload

Subtopic UDES 2.3 — Air/ground cooperation

# TOPIC UDES 3 PROCEDURES FOR UNUSUAL/DEGRADED / EMERGENCY SITUATIONS

Subtopic UDES 3.1 — Application of procedures for UDES

Subtopic UDES 3.2 — Radio failure

Subtopic UDES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic UDES 3.4 — Strayed or unidentified aircraft

SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

APPENDIX 4 — AERODROME CONTROL VISUAL RATING (ADV)

Subject 11: AERODROMES

The subject objective is:

Learners shall recognise and understand the design and layout of 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 — 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 5 AERODROME CONTROL INSTRUMENT RATING FOR TOWER — ADI (TWR)

(Reference Annex I — PART-ATCO Subpart D, Section 2, ATCO.D.010(a)(2)(ii))

**AERODROME CONTROL INSTRUMENT RATING FOR TOWER — ADI (TWR)** 

# **TABLE OF CONTENTS**

SUBJECT 1: INTRODUCTION TO THE COURSE	42
SUBJECT 2: AVIATION LAW	43
SUBJECT 3: AIR TRAFFIC MANAGEMENT	44
SUBJECT 4: METEOROLOGY	47
SUBJECT 5: NAVIGATION	48
SUBJECT 6: AIRCRAFT	49
SUBJECT 7: HUMAN FACTORS	50
SUBJECT 8: EQUIPMENT AND SYSTEMS	51
SUBJECT 9: PROFESSIONAL ENVIRONMENT	52
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	53
SUBJECT 11: AERODROMES	54

# Subject 1: INTRODUCTION TO THE COURSE

#### The subject objective is:

Learners shall know and understand the training programme that they will follow and learn how to obtain the appropriate information.

# **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

The subject objective is:

Learners shall know, understand and apply the Rules of the Air and the Regulations regarding reporting, airspace and appreciate the Licensing and Competence principles.

# TOPIC LAW 1 ATC 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

#### Subject 3: AIR TRAFFIC MANAGEMENT

The subject objective is:

Learners shall manage air traffic to ensure safe, orderly and expeditious services.

#### TOPIC ATM 1 AIR TRAFFIC SERVICES AND AIRSPACE MANAGEMENT

Subtopic ATM 1.1 — Aerodrome control service

Subtopic ATM 1.2 — Flight information service (FIS)

Subtopic ATM 1.3 — Alerting service

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**

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 — Aeronautical ground lights

Subtopic ATM 10.4- Information to aircraft by aerodrome control tower

Subtopic ATM 10.5 — Control of aerodrome traffic

Subtopic ATM 10.6 — Control of traffic in the traffic circuit

Subtopic ATM 10.7 — 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

Subject 4: METEOROLOGY

The subject objective is:

Learners shall acquire, decode and make proper use of meteorological information relevant to the provision of ATS.

# **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

The subject objective is:

Learners shall analyse all navigational aspects in order to organise the traffic.

# **TOPIC NAV 1 MAPS AND AERONAUTICAL CHARTS**

Subtopic NAV 1.1 - Maps and charts

# **TOPIC NAV 2 INSTRUMENTAL NAVIGATION**

Subtopic NAV 2.1 - Navigational systems

Subtopic NAV 2.2 — Satellite-based systems

Subject 6: AIRCRAFT

The subject objective is:

Learners shall assess and integrate aircraft performance in the provision of ATS.

# **TOPIC ACFT 1 AIRCRAFT INSTRUMENTS**

Subtopic ACFT 1.1 — Aircraft instruments

#### **TOPIC ACFT 2 AIRCRAFT CATEGORIES**

Subtopic ACFT 2.1 — Wake turbulence categories

Subtopic ACFT 2.2 — 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 — Miscellaneous factors

Subtopic ACFT 3.6 — 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

The subject objective is:

Learners shall recognise the necessity to constantly extend their knowledge and analyse factors which affect personal and team performance.

#### **TOPIC HUM 1 PSYCHOLOGICAL FACTORS**

Subtopic HUM 1.1 — Cognitive

#### **TOPIC HUM 2 MEDICAL AND PHYSIOLOGICAL FACTORS**

Subtopic HUM 2.1 — Fatique

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 WORKING METHODS**

Subtopic HUM 6.1 — Efficiency

#### **TOPIC HUM 7 WORKING KNOWLEDGE**

Subtopic HUM 7.1 — Controller knowledge

#### **TOPIC HUM 8 COLLABORATIVE WORK**

Subtopic HUM 8.1 — Communication

Subtopic HUM 8.2 — Collaborative work within the same area of responsibility

Subtopic HUM 8.3 — Collaborative work between different areas of responsibility

Subtopic HUM 8.4 — Controller/pilot cooperation

# **TOPIC HUM 9 WORK ENVIRONMENT**

Subtopic HUM 9.1 — Ergonomics

#### **TOPIC HUM 10 ATC SAFETY MANAGEMENT**

Subtopic HUM 10.1 — Experience feedback

Subtopic HUM 10.2 — Safety Investigation Branch

#### Subject 8: EQUIPMENT AND SYSTEMS

#### The subject objective is:

Learners shall integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS.

# **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

The subject objective is:

Learners shall identify the need for close cooperation with other parties concerning ATM operations and appreciate aspects of environmental protection.

# **TOPIC PEN 1 PROFESSIONAL ENVIRONMENT**

Subtopic PEN 1.1 — Contributors to ATS operations

Subtopic PEN 1.2 - Customer relations

Subtopic PEN 1.3 — Environmental protection

# Subject 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

# The subject objective is:

Learners shall develop professional attitudes to manage traffic in unusual, degraded and emergency situations.

# TOPIC UDES 1 UNUSUAL/DEGRADED/EMERGENCY SITUATIONS (UDES)

Subtopic UDES 1.1 - Overview of UDES

#### **TOPIC UDES 2 SKILLS IMPROVEMENT**

Subtopic UDES 2.1 — Communication effectiveness

Subtopic UDES 2.2 — Avoidance of mental overload

Subtopic UDES 2.3 — Air/ground cooperation

# TOPIC UDES 3 PROCEDURES FOR UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

Subtopic UDES 3.1 — Application of procedures for UDES

Subtopic UDES 3.2 — Radio failure

Subtopic UDES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic UDES 3.4 — Strayed or unidentified aircraft

# Subject 11: AERODROMES

The subject objective is:

Learners shall recognise and understand the design and layout of 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 — 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

# APPROACH CONTROL PROCEDURAL RATING (APP)

(Reference: Annex I — PART-ATCO Subpart D, Section 2, ATCO.D.010 (a)(2)(iii))

APPROACH CONTROL PROCEDURAL RATING (APP)

# **TABLE OF CONTENTS**

SUBJECT 1: INTRODUCTION TO THE COURSE	57
SUBJECT 2: AVIATION LAW	58
SUBJECT 3: AIR TRAFFIC MANAGEMENT	59
SUBJECT 4: METEOROLOGY	61
SUBJECT 5: NAVIGATION	62
SUBJECT 6: AIRCRAFT	63
SUBJECT 7: HUMAN FACTORS	64
SUBJECT 8: EQUIPMENT AND SYSTEMS	65
SUBJECT 9: PROFESSIONAL ENVIRONMENT	66
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	67
SUBJECT 11: AERODROMES	68

# Subject 1: INTRODUCTION TO THE COURSE

# The subject objective is:

Learners shall know and understand the training programme that they will follow and learn how to obtain the appropriate information.

#### **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

The subject objective is:

Learners shall know, understand and apply the Rules of the Air and the Regulations regarding reporting, airspace and appreciate the Licensing and Competence principles.

# **TOPIC LAW 1 ATC 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

#### Subject 3: AIR TRAFFIC MANAGEMENT

The subject objective is:

Learners shall manage air traffic to ensure safe, orderly and expeditious services.

#### **TOPIC ATM 1 AIR TRAFFIC SERVICES AND AIRSPACE MANAGEMENT**

Subtopic ATM 1.1 — Air traffic control (ATC) service

Subtopic ATM 1.2 — Flight information service (FIS)

Subtopic ATM 1.3 — Alerting service

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**

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 for the provision

Subtopic ATM 10.2 — Approach control

# **TOPIC ATM 11 HOLDING**

Subtopic ATM 11.1 — General holding procedures

Subtopic ATM 11.2 — Vertical separation in holding

Subtopic ATM 11.3 — Approaching aircraft

Subject 4: METEOROLOGY

The subject objective is:

Learners shall acquire, decode and make proper use of meteorological information relevant to the provision of ATS.

# **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

The subject objective is:

Learners shall analyse all navigational aspects in order to organise the traffic.

# **TOPIC NAV 1 MAPS AND AERONAUTICAL CHARTS**

Subtopic NAV 1.1 - Maps and charts

# **TOPIC NAV 2 INSTRUMENTAL NAVIGATION**

Subtopic NAV 2.1 — Navigational systems

Subtopic NAV 2.2 — Navigational assistance

Subtopic NAV 2.3 — Satellite-based systems

Subject 6: AIRCRAFT

The subject objective is:

Learners shall assess and integrate aircraft performance in the provision of ATS.

# **TOPIC ACFT 1 AIRCRAFT INSTRUMENTS**

Subtopic ACFT 1.1 — Aircraft instruments

#### **TOPIC ACFT 2 AIRCRAFT CATEGORIES**

Subtopic ACFT 2.1 - Wake turbulence categories

Subtopic ACFT 2.2 — 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 — Miscellaneous factors

Subtopic ACFT 3.7 — Environmental factors

#### **TOPIC ACFT 4 AIRCRAFT DATA**

Subtopic ACFT 4.1 — Performance data

#### Subject 7: HUMAN FACTORS

The subject objective is:

Learners shall recognise the necessity to constantly extend their knowledge and analyse factors which affect personal and team performance.

#### **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 WORKING METHODS**

Subtopic HUM 6.1 — Efficiency

#### **TOPIC HUM 7 WORKING KNOWLEDGE**

Subtopic HUM 7.1 — Controller knowledge

# **TOPIC HUM 8 COLLABORATIVE WORK**

Subtopic HUM 8.1 — Communication

Subtopic HUM 8.2 — Collaborative work within the same area of responsibility

Subtopic HUM 8.3 — Collaborative work between different areas of responsibility

Subtopic HUM 8.4 — Controller/pilot cooperation

#### **TOPIC HUM 9 WORK ENVIRONMENT**

Subtopic HUM 9.1 — Ergonomics

#### **TOPIC HUM 10 ATC SAFETY MANAGEMENT**

Subtopic HUM 10.1 — Experience feedback

Subtopic HUM 10.2 — Safety Investigation Branch

#### Subject 8: EQUIPMENT AND SYSTEMS

#### The subject objective is:

Learners shall integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS.

# **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

The subject objective is:

Learners shall identify the need for close cooperation with other parties concerning ATM operations and appreciate aspects of environmental protection.

# **TOPIC PEN 1 PROFESSIONAL ENVIRONMENT**

Subtopic PEN 1.1 — Contributors to ATS operations

Subtopic PEN 1.2 — Customer relations

Subtopic PEN 1.3 — Environmental protection

#### Subject 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

#### The subject objective is:

Learners shall develop professional attitudes to manage traffic in unusual, degraded and emergency situations.

# TOPIC UDES 1 UNUSUAL/DEGRADED/EMERGENCY SITUATIONS (UDES)

Subtopic UDES 1.1 - Overview of UDES

#### **TOPIC UDES 2 SKILLS IMPROVEMENT**

Subtopic UDES 2.1 — Communication effectiveness

Subtopic UDES 2.2 — Avoidance of mental overload

Subtopic UDES 2.3 — Air/ground cooperation

# TOPIC UDES 3 PROCEDURES FOR UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

Subtopic UDES 3.1 — Application of procedures for UDES

Subtopic UDES 3.2 — Radio failure

Subtopic UDES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic UDES 3.4 — Strayed or unidentified aircraft

Subtopic UDES 3.5 - Diversions

# Subject 11: AERODROMES

The subject objective is:

Learners shall recognise and understand the design and layout of 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 — 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)

(Reference: Annex I — PART-ATCO Subpart D, Section 2, ATCO.D.010(a)(2)(iv))

AREA CONTROL PROCEDURAL RATING (ACP)

# **TABLE OF CONTENTS**

SUBJECT 1: INTRODUCTION TO THE COURSE	71
SUBJECT 2: AVIATION LAW	72
SUBJECT 3: AIR TRAFFIC MANAGEMENT	73
SUBJECT 4: METEOROLOGY	75
SUBJECT 5: NAVIGATION	76
SUBJECT 6: AIRCRAFT	77
SUBJECT 7: HUMAN FACTORS	78
SUBJECT 8: EQUIPMENT AND SYSTEMS	79
SUBJECT 9: PROFESSIONAL ENVIRONMENT	80
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	81

# Subject 1: INTRODUCTION TO THE COURSE

# The subject objective is:

Learners shall know and understand the training programme that they will follow and learn how to obtain the appropriate information.

# **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

The subject objective is:

Learners shall know, understand and apply the Rules of the Air and the Regulations regarding reporting, airspace and appreciate the Licensing and Competence principles.

# **TOPIC LAW 1 ATC 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

#### Subject 3: AIR TRAFFIC MANAGEMENT

The subject objective is:

Learners shall manage air traffic to ensure safe, orderly and expeditious services.

#### **TOPIC ATM 1 AIR TRAFFIC SERVICES AND AIRSPACE MANAGEMENT**

Subtopic ATM 1.1 — Air traffic control (ATC) service

Subtopic ATM 1.2 — Flight information service (FIS)

Subtopic ATM 1.3 — Alerting service

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**

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

#### **TOPIC ATM 11 HOLDING**

Subtopic ATM 11.1 — General holding procedures

Subtopic ATM 11.2 — Vertical separation in holding

Subtopic ATM 11.3 — Holding aircraft

Subject 4: METEOROLOGY

The subject objective is:

Learners shall acquire, decode and make proper use of meteorological information relevant to the provision of ATS.

#### **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

The subject objective is:

Learners shall analyse all navigational aspects in order to organise the traffic.

#### **TOPIC NAV 1 MAPS AND AERONAUTICAL CHARTS**

Subtopic NAV 1.1 - Maps and charts

#### **TOPIC NAV 2 INSTRUMENTAL NAVIGATION**

Subtopic NAV 2.1 — Navigational systems

Subtopic NAV 2.2 — Navigational assistance

Subject 6: AIRCRAFT

The subject objective is:

Learners shall assess and integrate aircraft performance in the provision of ATS.

#### **TOPIC ACFT 1 AIRCRAFT INSTRUMENTS**

Subtopic ACFT 1.1 — Aircraft instruments

#### **TOPIC ACFT 2 AIRCRAFT CATEGORIES**

Subtopic ACFT 2.1 - Wake turbulence 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 factors

Subtopic ACFT 3.4 — Economic factors

Subtopic ACFT 3.5 — Miscellaneous factors

#### **TOPIC ACFT 4 AIRCRAFT DATA**

Subtopic ACFT 4.1 — Performance data

#### Subject 7: HUMAN FACTORS

The subject objective is:

Learners shall recognise the necessity to constantly extend their knowledge and analyse factors which affect personal and team performance.

#### **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 WORKING METHODS**

Subtopic HUM 6.1 — Efficiency

#### **TOPIC HUM 7 WORKING KNOWLEDGE**

Subtopic HUM 7.1 — Controller knowledge

#### **TOPIC HUM 8 COLLABORATIVE WORK**

Subtopic HUM 8.1 — Communication

Subtopic HUM 8.2 — Collaborative work within the same area of responsibility

Subtopic HUM 8.3 — Collaborative work between different areas of responsibility

Subtopic HUM 8.4 — Controller/pilot cooperation

#### **TOPIC HUM 9 WORK ENVIRONMENT**

Subtopic HUM 9.1 — Ergonomics

#### **TOPIC HUM 10 ATC SAFETY MANAGEMENT**

Subtopic HUM 10.1 — Experience feedback

Subtopic HUM 10.2 — Safety Investigation Branch

#### Subject 8: EQUIPMENT AND SYSTEMS

#### The subject objective is:

Learners shall integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS.

#### **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

The subject objective is:

Learners shall identify the need for close cooperation with other parties concerning ATM operations and appreciate aspects of environmental protection.

#### **TOPIC PEN 1 PROFESSIONAL ENVIRONMENT**

Subtopic PEN 1.1 — Contributors to ATS operations

Subtopic PEN 1.2 — Customer relations

Subtopic PEN 1.3 — Environmental protection

#### Subject 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

#### The subject objective is:

Learners shall develop professional attitudes to manage traffic in unusual, degraded and emergency situations.

## TOPIC UDES 1 UNUSUAL/DEGRADED/EMERGENCY SITUATIONS (UDES)

Subtopic UDES 1.1 - Overview of UDES

#### **TOPIC UDES 2 SKILLS IMPROVEMENT**

Subtopic UDES 2.1 — Communication effectiveness

Subtopic UDES 2.2 — Avoidance of mental overload

Subtopic UDES 2.3 — Air/ground cooperation

### TOPIC UDES 3 PROCEDURES FOR UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

Subtopic UDES 3.1 — Application of procedures for UDES

Subtopic UDES 3.2 — Radio failure

Subtopic UDES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic UDES 3.4 — Strayed or unidentified aircraft

Subtopic UDES 3.5 — Diversions

## APPENDIX 8 APPROACH CONTROL SURVEILLANCE RATING (APS)

(Reference Annex I — PART-ATCO Subpart D, Section 2, ATCO.D.010(a)(2)(v))

APPROACH CONTROL SURVEILLANCE RATING (APS)

#### **TABLE OF CONTENTS**

SUBJECT 1: INTRODUCTION TO THE COURSE	84
SUBJECT 2: AVIATION LAW	85
SUBJECT 3: AIR TRAFFIC MANAGEMENT	86
SUBJECT 4: METEOROLOGY	88
SUBJECT 5: NAVIGATION	89
SUBJECT 6: AIRCRAFT	90
SUBJECT 7: HUMAN FACTORS	91
SUBJECT 8: EQUIPMENT AND SYSTEMS	92
SUBJECT 9: PROFESSIONAL ENVIRONMENT	93
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	94
SUBJECT 11: AERODROMES	95

#### Subject 1: INTRODUCTION TO THE COURSE

#### The subject objective is:

Learners shall know and understand the training programme that they will follow and learn how to obtain the appropriate information.

#### **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

The subject objective is:

Learners shall know, understand and apply the Rules of the Air and the Regulations regarding reporting, airspace and appreciate the Licensing and Competence principles.

#### **TOPIC LAW 1 ATC 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

#### Subject 3: AIR TRAFFIC MANAGEMENT

The subject objective is:

Learners shall manage air traffic to ensure safe, orderly and expeditious services.

#### **TOPIC ATM 1 AIR TRAFFIC SERVICES AND AIRSPACE MANAGEMENT**

Subtopic ATM 1.1 — Air traffic control (ATC) service

Subtopic ATM 1.2 — Flight information service (FIS)

Subtopic ATM 1.3 — Alerting service

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

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**

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 — Vectoring

Subtopic ATM 10.4 - Control service with advanced system support

#### **TOPIC ATM 11 HOLDING**

Subtopic ATM 11.1 — General holding procedures

Subtopic ATM 11.2 — Vertical separation in holding

Subtopic ATM 11.3 — Approaching aircraft

Subtopic ATM 11.4 — 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

The subject objective is:

Learners shall acquire, decode and make proper use of meteorological information relevant to the provision of ATS.

#### **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

The subject objective is:

Learners shall analyse all navigational aspects in order to organise the traffic.

#### **TOPIC NAV 1 MAPS AND AERONAUTICAL CHARTS**

Subtopic NAV 1.1 - Maps and charts

#### **TOPIC NAV 2 INSTRUMENTAL NAVIGATION**

Subtopic NAV 2.1 — Navigational systems

Subtopic NAV 2.2 — Navigational assistance

Subtopic NAV 2.3 — Satellite-based systems

Subject 6: AIRCRAFT

The subject objective is:

Learners shall assess and integrate aircraft performance in the provision of ATS.

#### **TOPIC ACFT 1 AIRCRAFT INSTRUMENTS**

Subtopic ACFT 1.1 — Aircraft instruments

#### **TOPIC ACFT 2 AIRCRAFT CATEGORIES**

Subtopic ACFT 2.1 - Wake turbulence categories

Subtopic ACFT 2.2 — 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 — Miscellaneous factors

Subtopic ACFT 3.7 — Environmental factors

#### **TOPIC ACFT 4 AIRCRAFT DATA**

Subtopic ACFT 4.1 — Performance data

#### Subject 7: HUMAN FACTORS

The subject objective is:

Learners shall recognise the necessity to constantly extend their knowledge and analyse factors which affect personal and team performance.

#### **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 WORKING METHODS**

Subtopic HUM 6.1 — Efficiency

#### **TOPIC HUM 7 WORKING KNOWLEDGE**

Subtopic HUM 7.1 — Controller knowledge

#### **TOPIC HUM 8 COLLABORATIVE WORK**

Subtopic HUM 8.1 — Communication

Subtopic HUM 8.2 — Collaborative work within the same area of responsibility

Subtopic HUM 8.3 — Collaborative work between different areas of responsibility

Subtopic HUM 8.4 — Controller/pilot cooperation

#### **TOPIC HUM 9 WORK ENVIRONMENT**

Subtopic HUM 9.1 — Ergonomics

#### **TOPIC HUM 10 ATC SAFETY MANAGEMENT**

Subtopic HUM 10.1 — Experience feedback

Subtopic HUM 10.2 — Safety Investigation Branch

#### Subject 8: EQUIPMENT AND SYSTEMS

#### The subject objective is:

Learners shall integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS.

#### **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

The subject objective is:

Learners shall identify the need for close cooperation with other parties concerning ATM operations and appreciate aspects of environmental protection.

#### **TOPIC PEN 1 PROFESSIONAL ENVIRONMENT**

Subtopic PEN 1.1 — Contributors to ATS operations

Subtopic PEN 1.2 — Customer relations

Subtopic PEN 1.3 — Environmental protection

#### Subject 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

#### The subject objective is:

Learners shall develop professional attitudes to manage traffic in unusual, degraded and emergency situations.

## TOPIC UDES 1 UNUSUAL/DEGRADED/EMERGENCY SITUATIONS (UDES)

Subtopic UDES 1.1 — Overview of UDES

#### **TOPIC UDES 2 SKILLS IMPROVEMENT**

Subtopic UDES 2.1 — Communication effectiveness

Subtopic UDES 2.2 — Avoidance of mental overload

Subtopic UDES 2.3 — Air/ground cooperation

### TOPIC UDES 3 PROCEDURES FOR UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

Subtopic UDES 3.1 — Application of procedures for UDES

Subtopic UDES 3.2 — Radio failure

Subtopic UDES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic UDES 3.4 — Strayed or unidentified aircraft

Subtopic UDES 3.5 — Diversions

Subtopic UDES 3.6 — Transponder failure

Subject 11: AERODROMES

The subject objective is:

Learners shall recognise and understand the design and layout of 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 — 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 9 AREA CONTROL SURVEILLANCE RATING (ACS)

(Reference: Annex I — PART-ATCO Subpart D, Section 2, ATCO.D.010(a)(2)(vi))

AREA CONTROL SURVEILLANCE RATING (ACS)

#### **TABLE OF CONTENTS**

SUBJECT 1: INTRODUCTION TO THE COURSE	98
SUBJECT 2: AVIATION LAW	99
SUBJECT 3: AIR TRAFFIC MANAGEMENT	100
SUBJECT 4: METEOROLOGY	102
SUBJECT 5: NAVIGATION	103
SUBJECT 6: AIRCRAFT	104
SUBJECT 7: HUMAN FACTORS	105
SUBJECT 8: EQUIPMENT AND SYSTEMS	106
SUBJECT 9: PROFESSIONAL ENVIRONMENT	107
SUBJECT 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS	108

#### Subject 1: INTRODUCTION TO THE COURSE

#### The subject objective is:

Learners shall know and understand the training programme that they will follow and learn how to obtain the appropriate information.

#### **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

The subject objective is:

Learners shall know, understand and apply the Rules of the Air and the Regulations regarding reporting, airspace and appreciate the Licensing and Competence principles.

#### **TOPIC LAW 1 ATC 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

#### Subject 3: AIR TRAFFIC MANAGEMENT

The subject objective is:

Learners shall manage air traffic to ensure safe, orderly and expeditious services.

#### **TOPIC ATM 1 AIR TRAFFIC SERVICES AND AIRSPACE MANAGEMENT**

Subtopic ATM 1.1 — Air traffic control (ATC) service

Subtopic ATM 1.2 — Flight information service (FIS)

Subtopic ATM 1.3 — Alerting service

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 — Wake turbulence distance-based separation

Subtopic ATM 6.4 — Radar separation

## 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**

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 — Vectoring

Subtopic ATM 10.4 — Control service with advanced system support

#### **TOPIC ATM 11 HOLDING**

Subtopic ATM 11.1 — General holding procedures

Subtopic ATM 11.2 — Vertical separation in holding

Subtopic ATM 11.3 — Holding aircraft

Subtopic ATM 11.4 — 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

The subject objective is:

Learners shall acquire, decode and make proper use of meteorological information relevant to the provision of ATS.

#### **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

The subject objective is:

Learners shall analyse all navigational aspects in order to organise the traffic.

#### **TOPIC NAV 1 MAPS AND AERONAUTICAL CHARTS**

Subtopic NAV 1.1 - Maps and charts

#### **TOPIC NAV 2 INSTRUMENTAL NAVIGATION**

Subtopic NAV 2.1 — Navigational systems

Subtopic NAV 2.2 — Navigational assistance

Subject 6: AIRCRAFT

The subject objective is:

Learners shall assess and integrate aircraft performance in the provision of ATS.

#### **TOPIC ACFT 1 AIRCRAFT INSTRUMENTS**

Subtopic ACFT 1.1 — Aircraft instruments

#### **TOPIC ACFT 2 AIRCRAFT CATEGORIES**

Subtopic ACFT 2.1 - Wake turbulence 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 factors

Subtopic ACFT 3.4 — Economic factors

Subtopic ACFT 3.5 — Miscellaneous factors

#### **TOPIC ACFT 4 AIRCRAFT DATA**

Subtopic ACFT 4.1 — Performance data

#### Subject 7: HUMAN FACTORS

The subject objective is:

Learners shall recognise the necessity to constantly extend their knowledge and analyse factors which affect personal and team performance.

#### **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 WORKING METHODS**

Subtopic HUM 6.1 — Efficiency

#### **TOPIC HUM 7 WORKING KNOWLEDGE**

Subtopic HUM 7.1 — Controller knowledge

#### **TOPIC HUM 8 COLLABORATIVE WORK**

Subtopic HUM 8.1 — Communication

Subtopic HUM 8.2 — Collaborative work within the same area of responsibility

Subtopic HUM 8.3 — Collaborative work between different areas of responsibility

Subtopic HUM 8.4 — Controller/pilot cooperation

#### **TOPIC HUM 9 WORK ENVIRONMENT**

Subtopic HUM 9.1 — Ergonomics

#### **TOPIC HUM 10 ATC SAFETY MANAGEMENT**

Subtopic HUM 10.1 — Experience feedback

Subtopic HUM 10.2 — Safety Investigation Branch

#### Subject 8: EQUIPMENT AND SYSTEMS

#### The subject objective is:

Learners shall integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS.

#### **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

The subject objective is:

Learners shall identify the need for close cooperation with other parties concerning ATM operations and appreciate aspects of environmental protection.

#### **TOPIC PEN 1 PROFESSIONAL ENVIRONMENT**

Subtopic PEN 1.1 — Contributors to ATS operations

Subtopic PEN 1.2 — Customer relations

Subtopic PEN 1.3 — Environmental protection

#### Subject 10: UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

#### The subject objective is:

Learners shall develop professional attitudes to manage traffic in unusual, degraded and emergency situations.

## TOPIC UDES 1 UNUSUAL/DEGRADED/EMERGENCY SITUATIONS (UDES)

Subtopic UDES 1.1 — Overview of UDES

#### **TOPIC UDES 2 SKILLS IMPROVEMENT**

Subtopic UDES 2.1 — Communication effectiveness

Subtopic UDES 2.2 — Avoidance of mental overload

Subtopic UDES 2.3 — Air/ground cooperation

### TOPIC UDES 3 PROCEDURES FOR UNUSUAL/DEGRADED/EMERGENCY SITUATIONS

Subtopic UDES 3.1 — Application of procedures for UDES

Subtopic UDES 3.2 — Radio failure

Subtopic UDES 3.3 — Unlawful interference and aircraft bomb threat

Subtopic UDES 3.4 — Strayed or unidentified aircraft

Subtopic UDES 3.5 — Diversions

Subtopic UDES 3.6 — Transponder failure

APPENDIX 10 —
CERTIFICATE FOR AIR TRAFFIC CONTROLLER
TRAINING ORGANISATIONS (ATCO TOs)

# APPENDIX 10 CERTIFICATE FOR AIR TRAFFIC CONTROLLER TRAINING ORGANISATIONS (ATCO TOS)

## European Union² Competent authority

#### AIR TRAFFIC CONTROLLERS TRAINING ORGANISATIONCERTIFICATE

[CERTIFICATE NUMBER/REFERENCE]

Pursuant to Commission Regulation (EU) No .../... and subject to the conditions specified below, the [competent authority] hereby certifies

[NAME OF THE TRAINING ORGANISATION]

[ADDRESS OF THE TRAINING ORGANISATION]

as a Part-ATCO.OR certified training organisation with the privilege to provide Part-ATCO training, as listed in the attached training approval.

Terms of approval and privileges:

This certificate is limited to the privileges and the scope of providing training as listed in the attached training approval.

This certificate is valid whilst the certified organisation remains in compliance with Part-ATCO.OR, Part-ATCO and other applicable regulations.

Subject to compliance with the foregoing terms of approval and privileges, this certificate shall remain valid unless the certificate has been surrendered, superseded, limited, suspended or revoked.

Date of issue:
Signed:
[Competent authority]
* EASA Form XXX Issue 1 — Page 1/2

² 'European Union' to be deleted for non-EU Member States.

APPENDIX 10 —
CERTIFICATE FOR AIR TRAFFIC CONTROLLER
TRAINING ORGANISATIONS (ATCO TOS)

## AIR TRAFFIC CONTROLLERS TRAINING ORGANISATION CERTIFICATE TRAINING APPROVAL

Attachment to ATCO TO certificate number:

[CERTIFICATE NUMBER/REFERENCE]

[NAME OF THE TRAINING ORGANISATION]

has obtained the privileges to provide and conduct the following training in accordance with Part-ATCO:

TYPE(S) OF TRAINING and/or SERVICE(S)			
Type of training	Course	Rating endorsements ³	Remarks ⁴
ATCO Initial training	Basic training	n/a	
	Rating training ⁵		
ATCO Unit training	6		
ATCO Refresher training	n/a		
ATCO Conversion training ⁷	n/a		
Practical instructor training	Initial training	n/a	
	Refresher training	n/a	
Assessor training	Initial training	n/a	
	Refresher training	n/a	

This training course approval is valid as long as:

- (a) the ATCO TO certificate has not been surrendered, superseded, limited, suspended or revoked; and
- (b) all operations are conducted in compliance with Part-ATCO.OR, Part-ATCO, other applicable regulations, and, when relevant, with the procedures in the organisation's documentation as required by Part-ATCO.OR.

Date of issue:

Signed: [Competent authority]

For the Member State/EASA

EASA Form XXX Issue 1 — Page 2/2

³ The competent authority shall specify the rating endorsements according to ATCO.B.015 for which the training is provided, if appropriate.

Wherever necessary.

⁵ The competent authority shall specify the ratings according ATCO.B.010 for which the training is provided.

⁶ The competent authority shall specify the unit endorsement(s) for which the training is provided.

Not generic training, provided on an ad hoc basis following a specific approval by the competent authority.

APPENDIX 11 —
CERTIFICATE FOR AERO-MEDICAL EXAMINERS
(AMEs)

## APPENDIX 11 CERTIFICATE FOR AERO-MEDICAL EXAMINERS (AMEs)⁸

## European Union⁹ Competent authority

#### **AERO-MEDICAL EXAMINER CERTIFICATE**

CERTIFICATE [NUMBER/REFERENCE]:

Pursuant to Commission Regulation (EU) No 290/2012 and subject to the conditions specified below, the [competent authority] hereby certifies

[NAME OF THE AERO-MEDICAL EXAMINER]

[ADDRESS OF THE AERO-MEDICAL EXAMINER]

as aero-medical examiner

#### CONDITIONS:

- 1. This certificate is limited to the privileges specified in the attachment to this AME certificate;
- 2. This certificate requires compliance with the implementing rules and procedures specified in Part-MED and/or ATCO.MED as appropriate.
- 3. This certificate shall remain valid for a period of three years until [xx/yy/zzzz¹⁰] subject to compliance with the requirements of Part-MED and/or Part-ATCO.MED as appropriate unless it has been surrendered, superseded, suspended or revoked.

Date of issue:	Signature: [Competent authority]

⁸ EASA Form 148, Issue 1.

⁹ 'European Union' to be deleted for non-EU Member States.

Expiry date: day/month/year.

APPENDIX 11 — CERTIFICATE FOR AERO-MEDICAL EXAMINERS (AMEs)

#### **CERTIFICATE FOR AERO-MEDICAL EXAMINERS (AMEs)**

Attachment to AME certificate number:

#### PRIVILEGES AND SCOPE

[Name and academic title of the aero-medical examiner] has obtained the privilege(s) to undertake aero-medical examinations and assessments for the issuance of medical certificates as stated in the table below and to issue these medical certificates for:

LAPL	[yes/date]
Class 2	[yes/date]
Class 1 revalidation/renewal	[yes/date]/[no]
Class 3 revalidation/renewal	[yes/date]/[no]

Date of issue:	Signature: [Competent authority]

APPENDIX 12 — CERTIFICATE FOR AERO-MEDICAL CENTRES (AeMCs)

## APPENDIX 12 CERTIFICATE FOR AERO-MEDICAL CENTRES (AeMCs)¹¹

## European Union¹² Competent authority

#### **AERO-MEDICAL CENTRE CERTIFICATE**

#### REFERENCE:

Pursuant to Commission Regulation (EU) No 290/2012 and subject to the conditions specified below, the [competent authority] hereby certifies

[NAME OF THE ORGANISATION]

[ADDRESS OF THE ORGANISATION]

as a Part-ORA certified aero-medical centre with the privileges and the scope of activities as listed in the attached terms of approval.

#### **CONDITIONS:**

- 1. This certificate is limited to that specified in the scope of approval section of the approved organisation manual;
- 2. This certificate requires compliance with the procedures specified in the organisation documentation as required by Part-ORA.
- 3. This certificate shall remain valid subject to compliance with the requirements of Part-ORA unless it has been surrendered, superseded, suspended or revoked.

Date of issue:	Signature: [Competent authority]

EASA Form 146, Issue 1.

^{12 &#}x27;European Union' to be deleted for non-EU Member States.