



**AUTORITATEA AERONAUTICĂ CIVILĂ
A REPUBLICII MOLDOVA**

GM la CT-ATCO

MATERIAL de ÎNDRUMARE (GM)

la

**Cerințele tehnice referitoare la eliberarea
certificatelor controlorilor de trafic aerian**

Ediția 01 / septembrie 2019

Acte ale Autorității Aeronautice Civile**1601 ORDIN**
cu privire la aprobarea materialelor de îndrumare
la Cerințele tehnice referitoare la eliberarea
certificatelor controlorilor de trafic aerian

În temeiul art. 7 alin.(3) subpct.1) lit.d) din Codul Aerian al Republicii Moldova nr.301/2017 și al punctului 10 subpct.1) lit.d.) din Hotărârea Guvernului Republicii Moldova nr.133/2019 cu privire la organizarea și funcționarea Autorității Aeronautice Civile, întru executarea atribuțiilor ce îi revin Autorității Aeronautice Civile în calitate de autoritate administrativă de certificare, supraveghere și control în domeniul aviației civile și în scopul asigurării implementării Cerințelor tehnice referitoare la eliberarea certificatelor controlorilor de trafic aerian,

ORDON:

DIRECTORUL INTERIMAR
AL AUTORITĂȚII AERONAUTICE CIVILE
Nr. 52/GEN. Chișinău, 16 septembrie 2019.

Alexandr FITI

1. Se aprobă ediția 01 a materialelor de îndrumare la Cerințele tehnice referitoare la eliberarea certificatelor controlorilor de trafic aerian, conform anexei la prezentul ordin.

2. Autoritatea Aeronautică Civilă va pune la dispoziția tuturor persoanelor interesate anexa la prezentul ordin prin publicarea pe pagina web oficială www.caa.md, la compartimentul "Cadru Normativ/Materiale de îndrumare (GM)".

3. Prezentul ordin intră în vigoare la data publicării în Monitorul Oficial al Republicii Moldova.

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PART ATCO - REQUIREMENTS FOR THE LICENSING OF AIR TRAFFIC CONTROLLERS**SUBPART A — GENERAL REQUIREMENTS****GM1 ATCO.A.015(b) Exercise of the privileges of licences and provisional inability**

GROUNDS FOR PROVISIONAL INABILITY

Examples of grounds for doubting the ability to safely exercise the privileges of the licence may be that the licence holder is:

- a) under the influence of psychoactive substances;
- b) unfit to perform the duties due to injury, fatigue, sickness, stress, including critical incident stress or other similar causes;
- c) not meeting all the competence-related requirements set out in the unit competence scheme.

GM1 ATCO.A.015(c) Exercise of the privileges of licences and provisional inability

In case of doubt about the medical condition of the air traffic controller, the provisions of ATCO.MED.A.020 should apply.

GM1 ATCO.A.015(d) Exercise of the privileges of licences and provisional inability

PROCEDURES

The procedures developed and implemented to enable licence holders declaring provisional inability to exercise the privileges of their licence, to manage the operational impact of provisional inability cases and to inform the CAA should include but are not limited to:

- a) the processes to declare and terminate provisional inability;
- b) an indicative list of cases when the CAA shall be informed of the declaration or termination of the provisional inability;
- c) the processes to inform the CAA; and
- d) the mitigating measures to be implemented to ensure sufficient capacity and the continuity of the service.

SUBPART B — LICENCES, RATINGS AND ENDORSEMENTS**GM1 ATCO.B.001(b) Student air traffic controller licence**

MATURITY OF AIR TRAFFIC CONTROLLERS

Persons who wish to undertake air traffic controller training at a training organisation satisfying the requirements laid down Part ATCO.OR should be educationally, physically and mentally sufficiently mature. In order to assess their ability to complete air traffic controller training, training organisations may conduct aptitude assessments and/or set out educational or similar requirements which could serve as a prerequisite for commencing air traffic controller training.

GM1 ATCO.B.015(a)(3) Air traffic controller rating endorsements

TOWER CONTROL ENDORSEMENT PRIVILEGES

Where aerodrome control is provided from one operational position, this shall be indicated in the ATC licence by the issue of a Tower Control (TWR) endorsement to the Aerodrome Control Instrument rating. Aerodrome control may either be one operational position or be divided between two operational positions, Ground Movement Control (GMC) and Air Control (AIR).

Consequently, the TWR endorsement entitles the holder of that rating endorsement to either provide aerodrome control from one working position or to provide AIR or GMC separately.

GM1 ATCO.B.020(i) Unit endorsements

COMMENCEMENT OF UNIT ENDORSEMENT VALIDITY IN CASE OF EARLY REVALIDATION

For the purpose of establishing the validity period of the unit endorsement in case of early revalidation, the date of the assessment should be the date of the:

- a) last assessment declaring the licence holder competent in case of a dedicated assessment; and
- b) formal conclusion of declaring the licence holder competent in case of continuous assessment

GM1 ATCO.B.025(a)(3) Unit competence scheme

MINIMUM NUMBER OF HOURS

The minimum number of hours should be defined for each unit endorsement and it should be identical for each unit endorsement holder within the same unit. For licence holders holding more than one unit endorsement in the same ATC unit, the minimum number of hours may be defined as a combined value based on the assessment provided by the air navigation service provider. Nevertheless, maintaining competence should be appropriately ensured for all valid unit endorsements

GM1 ATCO.B.025(a)(5) Unit competence scheme

ASSESSMENTS

- a) Assessments may have one or more components.
- b) One component should be the assessment of practical skills; other components may be oral and/or written examinations.
- c) Practical skills assessments should be conducted as continuous assessment or dedicated practical assessment(s).
- d) Continuous assessment

Continuous assessment should be achieved by the assessor assessing, during normal operational duties, the operational performance compared to the standard of the air traffic control service expected. Where the assessor has not been able to adequately assess the air traffic controller by continuous assessment, he/she should not certify the air traffic controller's competence until a dedicated practical assessment has been conducted.

- e) Dedicated practical assessment

A dedicated practical assessment may consist of a single assessment or a series of assessments.

To conduct a dedicated practical assessment, the assessor(s) should sit with the air traffic controller with the purpose of assessing, under normal operational conditions, the operational performance compared to the standard of the air traffic control service expected.

The air traffic controller concerned should be advised that a dedicated practical assessment is to be conducted and be briefed on the conduct of the assessment.

For those situations where an applicant's performance cannot be observed at the time of the assessment (e.g. low visibility operations, snow clearing, military activity, etc.), the assessment may be supplemented by synthetic training device sessions and/or an oral examination.

- f) The performance objectives' topics to be assessed should be determined in detail by the air navigation service provider. Examples of performance objectives' topics are as follows:

- application of unit regulations and procedures (e.g. minimum separation standards, letters of agreement, Aeronautical Information Publications);
 - traffic analysis and planning;
 - task priority setting;
 - communication, including phraseology;
 - capacity and expedition;
 - accuracy;
 - initiative, adaptability and decision-making;
 - air traffic control techniques;
 - teamwork and other human factors skills;
 - the level of risk associated with the tasks performed (e.g. attitudes to risk).
- g) Procedures when failing
Notwithstanding ATCO.B.025(a)(10), when an air traffic controller fails in one or more of the components of the assessment, he/she should not be allowed to exercise the privilege of this unit endorsement, and provisional inability in accordance with ATCO.A.015(b) may be declared until a successful competence assessment has been performed. Resitting the full competence assessment or the failed part only may be required.
- h) Record keeping
The results of all assessments, including those of the continuous assessment, and examinations should be documented and stored confidentially, accessible to the assessor and the person being assessed.

GM2 ATCO.B.025(a)(5) Unit competence scheme

ASSESSMENTS

Assessments should be adapted to the validity time of the unit endorsement of the ATC unit. The assessment of air traffic controllers at ATC units with seasonal variations should reflect the higher volume and complexity situations.

GM3 ATCO.B.025(a)(5) Unit competence scheme

ASSESSMENTS OF REFRESHER TRAINING SUBJECTS

- a) Assessments should be conducted primarily on a synthetic training device or offline environments.
- b) Assessments should be conducted by appropriately qualified personnel having detailed knowledge of:
 - (1) the training objectives; and
 - (2) the subjects, topics and subtopics being examined or assessed.

GM1 ATCO.B.025(a)(6) Unit competence scheme

ORAL EXAMINATIONS

Oral examinations should be used to test understanding of applicable techniques and the rules governing them, particularly of unit and national air traffic control procedures. Scenario-type questioning allows the assessor to gather additional evidence of how an air traffic controller would react in circumstances that are not observable but are nevertheless considered important to the overall operation at that ATC unit.

The oral examination should give a clear indication that the air traffic controller knows not only what he/she should be doing, but why he/she should be doing it. The oral examination requires considerable skills and it should be undertaken in a way to ensure consistency among individual assessors.

GM1 ATCO.B.025(a)(9) Unit competence scheme**EXAMINATIONS AND ASSESSMENTS DURING CONVERSION TRAINING**

- a) Assessments should be conducted primarily on a synthetic training device or offline environments.
- b) Examinations and assessments should be conducted by appropriately qualified personnel having detailed knowledge of:
 - (1) the training objectives; and
 - (2) the subjects, topics and subtopics being examined or assessed.

GM1 ATCO.B.040 Assessment of language proficiency**LANGUAGE PROFICIENCY ASSESSORS**

(a) Persons responsible for language proficiency assessment should be either aviation specialists (e.g. current or former air traffic controllers) or language specialists with additional aviation-related training. The preferred approach for an assessment would be to form a team consisting of an operational expert and a language expert.

(b) Language proficiency assessors should be trained in the requirements specific to the language proficiency assessment, and assessment and interlocution techniques.

GM2 ATCO.B.040 Assessment of language proficiency

Further information can be found in the 'Manual on the Implementation of ICAO Language Proficiency Requirements' (ICAO Doc 9835) and the Language Testing Criteria for Global Harmonization (ICAO Cir 318 AN/180).

GM1 ATCO.B.045 Language training

While it is true that many licence holders regularly have prolonged and extensive opportunities to practise — and so to maintain — their language proficiency, it is also true that a purely routine use of the language through phraseology, standard procedures and limited social contact only maintains a restricted core usage of the language which might be quite inadequate for managing unexpected and abnormal situations.

Research shows that language proficiency erosion (language attrition) occurs rapidly over time; the lower the initial level, the faster the rate of erosion unless systematic strategies and a high degree of motivation counter this trend.

It is very well documented that one's language and communicative proficiency, even in one's native language, deteriorates sharply under stress, therefore, it is recommended that licence holders participate in available language training.

GM2 ATCO.B.045 Language training

Training for language proficiency skills may be delegated to language training organisations with knowledge in the field of aviation.

SUBPART C — REQUIREMENTS FOR INSTRUCTORS AND ASSESSORS**SECTION 1 - INSTRUCTORS****GM1 ATCO.C.001(b)(1) Theoretical instructors****QUALIFICATION OF THEORETICAL INSTRUCTORS**

Professional qualification appropriate to the subject should ensure sufficient level of current knowledge, which is relevant to the subject and its application in air traffic control.

GM1 ATCO.C.010(c) On-the-job training instructor (OJTI) privileges

SHORTENING OF THE RATING EXPERIENCE REQUIREMENT FOR OJTI

When assessing the training organisations' request for the shortening of the rating experience requirement for OJTIs, the CAA should take into account the complexity of the traffic in the unit where the on-the-job instruction is provided, as well as the impact on the continuity and safety aspects of the service.

GM1 ATCO.C.015(b) Application for on-the-job training instructor endorsement

SHORTENING OF THE LICENCE EXPERIENCE REQUIREMENT FOR OJTI

When assessing the training organisations request for the shortening of the licence experience requirement for OJTIs, the CAA should take into account the complexity of the traffic in the unit where the on-the-job instruction is provided, as well as the impact on the continuity and safety aspects of the service.

GM1 ATCO.C.020(b) Validity of on-the-job training instructor endorsement

REVALIDATION

- a) Successful completion of the refresher training in practical instructional skills may be verified by several means, for example by:
 - (1) dedicated or continuous assessment;
 - (2) peer assessment; or
 - (3) demonstration of the practical instructional skills.
- b) The verification should be undertaken following the completion of the refresher training.

GM1 ATCO.C.025(a) Temporary OJTI authorisation

EXCEPTIONAL SITUATIONS

Exceptional situations for which it may be considered not to be possible to comply with ATCO.C.010(b)(2) for the purpose of the valid unit endorsement experience, and, therefore, a temporary OJTI authorisation may be granted, are the following:

- a) establishment of a new ATC unit or new sector for the air navigation service provider;
- b) the continuity of the existing service is endangered due to the non-availability of personnel as a consequence of a change in the air navigation service provider at the ATC unit;
- c) new rating or rating endorsement put into operation at an ATC unit;
- d) reopening of a temporary ATC unit.

GM1 ATCO.C.030(a)(1) Synthetic training device instructor (STDI) privileges

SUBJECTS OF PRACTICAL NATURE

Subjects with objectives at taxonomy level 3 or higher, related to Air Traffic Management Basic (ATMB), are considered of practical nature during initial training.

GM1 ATCO.C.030(c)(2) Synthetic training device instructor (STDI) privileges

PROVISION OF TRAINING FOR SPECIFIC AND SELECTED OPERATIONAL TASKS

Some of the skills required for the two different aerodrome control ratings, for the two different procedural ratings, as well as for the two different surveillance ratings are the same or similar. Therefore, instruction not being specific for one rating or the training being for specific and selected operational tasks that do not require the learner to practise all of the tasks which are normally associated with a fully operational environment, may

GM1 ATCO.C.040(b) Validity of synthetic training device instructor endorsement

REVALIDATION

- a) Successful completion of the refresher training in practical instructional skills and current operational practices may be verified by several means, for example by:
 - (1) dedicated or continuous assessment;
 - (2) peer assessment; or
 - (3) demonstration of practical instructional skills.
- b) Current operational practices may be refreshed by transitional and pre-on-the-job training.
- c) The verification should be undertaken following the completion of the refresher training.

SECTION 2 - ASSESSORS**GM1 ATCO.C.060(b) Validity of assessor endorsement**

REVALIDATION

- a) Successful completion of the refresher training in assessment skills and current operational practices may be verified by several means, for example by:
 - (1) dedicated or continuous assessment;
 - (2) peer assessment; or
 - (3) demonstration of the practical instructional skills.
- b) Current operational practices may be refreshed by transitional and pre-on-the-job training
- c) The verification should be undertaken following the completion of the refresher training.

GM1 ATCO.C.065(b) Temporary assessor authorisation

EXCEPTIONAL SITUATIONS

Exceptional situations for which it may be considered not to be possible to comply with ATCO.C.045(d)(1) for the purpose of the unit endorsement experience, and, therefore, a temporary assessor authorisation may be granted, are the following:

- a) establishment of a new ATC unit or new sector for the air navigation service provider;
- b) the continuity of the existing service is endangered due to the non-availability of personnel as a consequence of a change in the air navigation service provider at the ATC unit;
- c) new rating or rating endorsement put into operation at an ATC unit;
- d) reopening of a temporary ATC unit.

GM1 ATCO.C.065(c) Temporary assessor authorisation

INDEPENDENCE OF THE ASSESSMENT

In the case of units not having sufficient number of assessors or if the independence and objectivity of the assessment from the training process is otherwise endangered, a temporary assessor authorisation may be granted.

SUBPART D — AIR TRAFFIC CONTROLLER TRAINING**SECTION 1 - GENERAL REQUIREMENTS****GM1 ATCO.D.005(a)(2)(ii) Types of air traffic controller training**

ON-THE-JOB TRAINING

- a) On-the-job training may be supplemented for pedagogical reasons by theoretical instructions and computer-based training, part-task trainers or any type of simulators aiming at increasing knowledge, understanding and application of local procedures.

- b) Hours accumulated using these training tools and methods during this phase cannot be counted towards the minimum duration of on-the-job training established in accordance with AMC1 ATCO.D.055(b)(6), with the exception of training for procedures unlikely to be encountered in the operational environment during the training.

GM1 ATCO.D.010 Composition of initial training

GENERAL

- a) Initial training consists of basic training which is common to all applicants and rating training of which there are six different rating syllabi.
- b) Rating training may be commenced before the completion of the basic training.
- c) If an applicant already holds a student air traffic controller licence or an air traffic controller licence, and there is a requirement for training to achieve an additional rating (and, if relevant, rating endorsement), the applicant should not repeat the basic training objectives; however, there is a requirement to achieve the objectives contained within the relevant rating training plus any additional objectives specific to the local or national environment.

GM1 ATCO.D.020(d) Basic and rating training courses

CERTIFICATE OF COMPLETION OF INITIAL TRAINING

The certificate of completion may take any form and title and may cover multiple candidates.

GM1 ATCO.D.040 Rating training performance objectives

GENERAL

A list of performance objectives tasks can be found in EUROCONTROL's document 'ATCO Rating Training Performance Objectives', Edition 1.0, dated 14.12.2010.

GM1 ATCO.D.045(a) Composition of unit training

If an applicant undertakes unit endorsement training, and there is a requirement for training to achieve an additional unit endorsement, the applicant should not repeat the training objectives covered in the first unit endorsement training; however, the objectives of the additional unit endorsement course(s) should be achieved.

GM1 ATCO.D.055 Unit training plan

GENERAL

Guidance for the development of unit training plans can be found in EUROCONTROL's documents 'Guidelines for the Development of Unit Training Plans', Edition number 1.0, dated 31.08.2005 and 'Annex to the Guidelines for the Development of Unit Training Plans: Examples of UTP', Edition 2.0, dated 10.06.2010.

GM1 ATCO.D.055(a) Unit training plan

ATC UNIT FOR AERODROME CONTROL FROM A REMOTE TOWER

For the purpose of establishing a unit training plan, a Remote Tower Centre (RTC) may be considered as one Air Traffic Control (ATC) unit.

GM1 ATCO.D.055(b)(5) Unit training plan

TRAINING METHODS

Training organisations should consider a variety of methods when conducting training leading to a unit endorsement. Although this list is not exhaustive, such methods could be:

- on-the-job;
- lecture;
- lesson/demonstration;
- case study;
- computer-based practical exercise;
- exercise;
- facilitation;
- group work;
- hands-on;
- interactive training;
- supervised practices;
- part-task practice;
- individual simulation;
- team simulation;
- group simulation;
- briefing/debriefing;
- structured briefing;
- structured debriefing;
- virtual classroom;
- role play;
- skill acquisition;
- self-study;
- self-test;
- resilience training.
-

GM1 ATCO.D.060(c) Unit endorsement course

PERFORMANCE OBJECTIVES FOR AIR TRAFFIC CONTROLLERS PROVIDING SERVICES TO AIRCRAFT CARRYING OUT FLIGHT TESTS

The performance objectives for air traffic controllers providing air traffic control services to aircraft carrying out flight tests should ensure that applicants manage the workload and provide air traffic services and apply specific ATC procedures to aircraft carrying out flight tests within a defined aerodrome, approach control and/or area control area of responsibility.

GM2 ATCO.D.060(c) Unit endorsement course

ADDITIONAL TRAINING FOR AIR TRAFFIC CONTROLLERS PROVIDING SERVICES TO AIRCRAFT CARRYING OUT FLIGHT TESTS

In accordance with ATCO.B.020(d), the unit endorsement course for air traffic controllers providing air traffic control services to aircraft carrying out flight tests may include the following subjects, subject objectives, topics and subtopics:

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 INTRO 1 — COURSE MANAGEMENT

Subtopic INTRO 1.1 — Course introduction

Subtopic INTRO 1.2 — Course administration

Subtopic INTRO 1.3 — Study material and training documentation

TOPIC INTRO 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: SCOPE OF FLIGHT TESTING

The subject objective is:

Learners shall understand the purpose of flight testing and integrate airworthiness issues in the provision of ATS to flight tests.

TOPIC FT 1 — AIRWORTHINESS REQUIREMENTS

Subtopic FT 1.1 — Airworthiness codes

Subtopic FT 1.2 — Flight test guide for CS aircrafts

Subtopic FT 1.3 — Prototypes and concept aircrafts

TOPIC FT 2 TEST AND ACCEPTANCE TRAFFIC ASPECTS

Subtopic FT 2.1 — Performance flight testing methods

Subtopic FT 2.2 — Handling qualities testing methods

Subtopic FT 2.3 — Systems, CNS and on-board safety systems testing methods

Subject 3: REGULATIONS AND EXEMPTIONS

The subject objective is:

Learners shall know, understand and apply the rules of the air and ATM regulations, and the principles of exemptions regarding the needs of flight test, and also take into account licensing and competence principles.

TOPIC REG 1 — ATC LICENSING/CERTIFICATE OF COMPETENCE

Subtopic REG 1.1 — Privileges and conditions

TOPIC REG 2 — EXEMPTIONS REGARDING ATM REGULATIONS

ATCO rules, AMC and GM to Part ATCO

Subtopic REG 2.1 — ICAO annexes and rules of the air

Subtopic REG 2.2 — ATM regulations regarding airspace

Subtopic REG 2.3 — Airworthiness

Subtopic REG 2.4 — Flight test exemptions

Subject 4: AIRCRAFT ENVIRONMENT

The subject objective is:

Learners shall know the theory of flight, aircraft subsystems and integrate aircraft performances, limitations and handling qualities in the provision of ATS to flight tests.

TOPIC ACFT 1 — AIRCRAFT FLIGHT DYNAMICS

Subtopic ACFT 1.1 — Aircraft control and movement

Subtopic ACFT 1.2 — Performance testing

Subtopic ACFT 1.3 — Handling qualities

Subtopic ACFT 1.4 — Aero-elastic/Flutter stability

Subtopic ACFT 1.5 — Flight envelope

Subtopic ACFT 1.6 — Helicopter specific dynamics

TOPIC ACFT 2 — AIRCRAFT ENGINES

Subtopic ACFT 2.1 — The piston engine

Subtopic ACFT 2.2 — The turboshaft engine

Subtopic ACFT 2.3 — Jet and turbofan

TOPIC ACFT 3 — AIRCRAFT SYSTEMS

Subtopic ACFT 3.1 — Flight control systems

Subtopic ACFT 3.2 — Safety systems

Subtopic ACFT 3.3 — Communication and navigation systems

Subject 5: FLIGHT TESTING AIR TRAFFIC MANAGEMENT

The subject objective is:

Learners shall manage air traffic in complete safety, with methods to ensure a satisfactory rate of success regarding flight testing.

TOPIC FTATM 1 — AIR TRAFFIC SERVICES AND AIRSPACE MANAGEMENT

Subtopic FTATM 1.1 — Air traffic control (ATC) service

Subtopic FTATM 1.2 — Flight information service (FIS)

Subtopic FTATM 1.3 — Alerting service

TOPIC FTATM 2 — EXEMPTIONS DUE TO TESTING DEMONSTRATIONS

Subtopic FTATM 2.1 — Demonstration of compliance with airworthiness regulations

Subtopic FTATM 2.2 — Flight test for evaluation of an aircraft

Subtopic FTATM 2.3 — Flight test for evaluation of an aircraft subsystem

TOPIC FTATM 3 — FLIGHT TEST METHODS IN AERODROME CONTROL AREA

Subtopic FTATM 3.1 — Velocity of minimum control on ground

ATCO rules, AMC and GM Annex I

Subtopic FTATM 3.2 — Velocity of minimum unstick

Subtopic FTATM 3.3 — Lapse rate take-off

Subtopic FTATM 3.4 — Rejected take-off

Subtopic FTATM 3.5 — Tower fly-by method

Subtopic FTATM 3.6 — Hover manoeuvre methods

Subtopic FTATM 3.7 — Landing performances testing methods

Subtopic FTATM 3.8 — Other flight testing manoeuvres

TOPIC FTATM 4 — FLIGHT TEST METHODS IN APPROACH CONTROL AREA AND IN AREA CONTROL

Subtopic FTATM 4.1 — Velocity of minimum control in the air/Stalls

Subtopic FTATM 4.2 — Tuning of flight controls protections

Subtopic FTATM 4.3 — Autopilot tuning

Subtopic FTATM 4.4 — Wind milling/RAM air turbine/Engine relights

Subtopic FTATM 4.5 — Trailing pitot static method

Subtopic FTATM 4.6 — Lateral and longitudinal stability flights

Subtopic FTATM 4.7 — Flight in specific meteorological conditions

Subtopic FTATM 4.8 — Supersonic flights

Subtopic FTATM 4.9 — Other flight testing various manoeuvres

Subject 6: HUMAN FACTORS

The subject objective is:

Learners shall recognise the necessity to constantly consider the specific human factors influence on tests activity management.

TOPIC HUM 1 — CUSTOMERS RELATIONS AND ORGANISATION

Subtopic HUM 1.1 — Stress

Subtopic HUM 1.2 — Responsible behaviour

Subtopic HUM 1.3 — Violation of rules

TOPIC HUM 2 — FLIGHT TEST WORKING METHODS

Subtopic HUM 2.1 — Collaborative work within the same area of responsibility

Subtopic HUM 2.2 — Collaborative work between different areas of responsibility

Subtopic HUM 2.3 — FT-ATCO/CREW cooperation

Subtopic HUM 2.4 — Communication

TOPIC HUM 3 — FLIGHT TEST SAFETY CONSOLIDATION

Subtopic HUM 3.1 — Safety risk assessment

Subtopic HUM 3.2 — Experience feedback

Subtopic HUM 3.3 — Unusual/Degraded/Emergency situations

Subtopic HUM 3.4 — Safety Investigation Branch

Subject 7: METEOROLOGY

ATCO rules, AMC and GM to Part ATCO

The subject objective is:

Learners shall acquire, decode and make proper use of meteorological information relevant to the airworthiness issues and the safe provision of ATS to flight tests.

TOPIC MTO 1 — METEOROLOGICAL AND AIRWORTHINESS CONCERNS

Subtopic MTO 1.1 — Airworthiness meteorological requirements

Subtopic MTO 1.2 — Demonstrator flights carrying specific test equipment

Subtopic MTO 1.3 — Phases with specific weather conditions (icing, wind, volcano, etc.)

GM3 ATCO.D.060(c) Unit endorsement course**PERFORMANCE OBJECTIVES FOR AIR TRAFFIC CONTROLLERS PROVIDING AERODROME CONTROL SERVICE FROM A REMOTE TOWER**

The performance objectives for air traffic controllers providing aerodrome control service from a remote tower should ensure, through the use of a Remote Tower Module (RTM), that applicants apply ATC procedures in a manner that airspace users are not negatively impacted/affected, providing at least the same level of safety as from a conventional tower.

GM4 ATCO.D.060(c) Unit endorsement course**TRAINING FOR AIR TRAFFIC CONTROLLERS PROVIDING AERODROME CONTROL SERVICE FROM A REMOTE TOWER**

For air traffic controllers providing aerodrome control service from a remote tower, the following subjects, subject objectives, topics and subtopics should be integrated into the unit endorsement course:

Subject 1: REMOTE TOWER OPERATION

The subject objective is:

Learners shall acquire knowledge of the concept of remote tower operations, the characteristics of the operating environment, as well as the functions and limitations of the equipment.

TOPIC RTO 1 INTRODUCTION TO REMOTE TOWER OPERATION

Subtopic RTO 1.1 — Operational applications

Subtopic RTO 1.2 — Remote Tower Modules (RTMs), Remote Tower Centre (RTC)

Subtopic RTO 1.3 — Advanced Visual Features (AVFs) — Technologies, if available, to enhance visual presentation

TOPIC RTO 2 OPERATING ENVIRONMENT

Subtopic RTO 2.1 — Configuration of the RTM

Subtopic RTO 2.2 — Visual presentation at the RTM, e.g. layout of the visual presentation, end-to-end delay, orientation, differences in light conditions between the aerodrome and the Out-The-Window (OTW) visual presentation, use of filters, recognition of 'dead' pixels

Subtopic RTO 2.3 — Operating methods

Subtopic RTO 2.4 — Set-up and characteristics of the local equipment, including the location of the cameras

Subtopic RTO 2.5 — Familiarisation with the physical aerodrome environment and the different stakeholders via study visit(s)

Subtopic RTO 2.6 — Weather conditions' impact on the equipment and on the visual presentation

Subject 2: HUMAN FACTORS

The subject objective is:

ATCO rules, AMC and GM to Part ATCO

Learners shall appreciate the necessity to consider the specific human factors influence on the remote provision of aerodrome control service.

Subject 3: ABNORMAL SITUATIONS

The subject objective is:

Learners shall recognise specific abnormal situations and manage their impact.

TOPIC ABN 1 LOSS OF VISUAL PRESENTATION

Subtopic ABN 1.1 — Complete loss of visual presentation, e.g. 'blank screens' or frozen presentation

Subtopic ABN 1.2 — Visual presentation not being current

TOPIC ABN 2 DEGRADED MODES OF VISUAL PRESENTATION

Subtopic ABN 2.1 — Partial loss of visual presentation (e.g. loss of a screen(s) or camera failure)

Subtopic ABN 2.2 — Loss or degradation of the labelling system, if available

Subtopic ABN 2.3 — Loss or degradation of the zooming functionality and signalling lamp

GM1 ATCO.D.060(d);(e) Unit endorsement course

TRAINING FOR RATING ENDORSEMENTS

Training for rating endorsement(s) as part of the unit endorsement course may be delegated to training organisations certified for initial training.

GM1 ATCO.D.065 Demonstration of theoretical knowledge and understanding

METHODS OF EXAMINATION

- a) Oral examinations and/or written/computer-based examinations should be used to demonstrate the controller's knowledge and understanding.

(1) Oral examinations

The oral examination is used to test the understanding of applicable techniques and the rules governing them, particularly of unit and national air traffic control procedures.

Scenario-type questioning allows examiners to gather additional evidence of how an applicant would react in circumstances that are not observable, but are nevertheless considered important to the overall operation at that ATC unit.

Oral examinations will give a clear indication that the persons undertaking training know not only what they should be doing, but why they should be doing it. The oral examination requires considerable skills and it should be undertaken in a way to ensure consistency among individual examiners.

(2) Written examinations

The written examination is used to test theoretical knowledge and to a lesser degree the understanding of applicable techniques and the rules governing them, particularly of unit and national air traffic control procedures. It is easier to administer and to ensure the consistency of written examinations particularly when using multiple-choice questioning. Although multiple-choice questioning can test knowledge, it is not appropriate for determining what a controller would do in a particular operational situation.

Written examinations can also be computer-based.

- b) The most comprehensive method of testing the understanding of the person undertaking training, contrary to their possession of pure knowledge, would be a combination of written examinations ATCO rules, AMC and GM to Part ATCO that assess the knowledge of unit and national procedures, together with a separate oral examination which tests the understanding and reactions to operational situations.

GM1 ATCO.D.070 Assessments during unit endorsement courses

a) DEDICATED ASSESSMENTS

- (1) A dedicated assessment should be carried out for the issue or renewal of a unit endorsement.
- (2) A dedicated assessment may consist of a single assessment or a series of assessments, as detailed in the unit training plan.
- (3) To conduct a dedicated assessment, the assessor(s) should sit with the applicant with the purpose of observing the quality and assessing the standard of work being carried out and, if also acting as OJTI at the same time, to maintain a safe, orderly and expeditious flow of air traffic.
- (4) The applicant concerned should be briefed on the conduct of the assessment.
- (5) For those situations where an applicant's performance cannot be observed at the time of the assessment (e.g. low visibility operations, snow clearing, military activity, etc.), the assessment may be supplemented by synthetic training device sessions and oral examination.
- (6) Dedicated assessments may also be conducted at any stage of training as detailed in the unit training plan, where a more definitive measure of the progress is required, for example after 50 hours of practical training.

b) CONTINUOUS ASSESSMENT

- (1) Continuous assessment may be performed by the assessor observing the standard of the air traffic control service provided by those whose competence he/she will certify as he/she works with them during unit training or normal operational duties.
- (2) In cases where the assessors have not had sufficient contact with the applicant to adequately assess his/her performance, they will not certify the applicant's competence until they have conducted a dedicated practical assessment. The applicant concerned must be advised that a dedicated practical assessment is to be conducted.

c) ORAL EXAMINATION

- (1) The oral examination is used to test the understanding of applicable techniques and the rules governing them, particularly of unit and national air traffic control procedures.

Scenario-type questioning allows the examiners to gather additional evidence of how an applicant would react in circumstances that are not observable, but are nevertheless considered important to the overall operation at that ATC unit.

- (2) The oral examination will give a clear indication that the applicant knows not only what he/she should be doing, but why he/she should be doing it. It requires considerable skills and it should be undertaken in a way to ensure consistency among individual examiners.

GM1 ATCO.D.080 Refresher training

REFRESHER TRAINING SUBJECTS

Topics for refresher training subjects may include rarely used procedures and practices, such as seasonally dependent procedures, trends and observations from occurrence reports and results of normal operations safety surveys.

GM2 ATCO.D.080 Refresher training

REFRESHER TRAINING STRUCTURE

Refresher training may be developed and structured in accordance with the established duration of the unit endorsement it refreshes. This may mean structuring the refresher training in modular fashion. For instance, training in standard practices and procedures, abnormal and emergency situations and human factors may be given separately or integrated into any other modules.

GM3 ATCO.D.080 Refresher training

GENERAL

Guidance for the development of refresher training courses can be found in EUROCONTROL's document 'ATC Refresher Training Manual', Edition 1.0., dated 06.03.2015.

GM1 ATCO.D.080(b) Refresher training

TRAINING FOR AIR TRAFFIC CONTROLLERS PROVIDING AERODROME CONTROL SERVICE FROM A REMOTE TOWER

For air traffic controllers providing aerodrome control service from a remote tower, the refresher training should include familiarisation with the physical aerodrome environment and the different stakeholders via study visit(s).

GM1 ATCO.D.080(b)(1);(2) Refresher training

EFFECTIVE COMMUNICATION

Communication misunderstanding is present in many air traffic occurrences and the consistent use of approved phraseology is designed to mitigate such occurrences.

For the purpose of refresher training, emphasis is, therefore, put on effective communication, including the use of approved phraseology, both for the use of standard practices and procedures and for abnormal and emergency situations training.

Effective communication should make use of a variety of communication modes, including the use of appropriate phraseology and radio communication.

Phraseology and radio communication training is part of the linguistic training according to ICAO; radio communication phraseology samples offer learning opportunities and foster harmonisation.

GM1 ATCO.D.085 Conversion training

TRAINING FOR AIR TRAFFIC CONTROLLERS PROVIDING AERODROME CONTROL SERVICE FROM A REMOTE TOWER

When converting from a conventional tower to a remote tower, the conversion training for air traffic controllers providing aerodrome control service from a remote tower should at least include the subjects, subject objectives, topics and subtopics as specified in GM4 ATCO.D.060(c).

When converting from a remote tower to a conventional tower, the training organisation should consider possible additional training needs, if appropriate, required by the change of operational environment.

GM1 ATCO.D.090 Training of practical instructors**PRACTICAL INSTRUCTIONAL TECHNIQUES COURSE FOR OJTIS**

Further information regarding the practical instructional techniques course for OJTIs can be found in EUROCONTROL's document 'Guidelines for ATCO Development Training — OJT Course Syllabus', Edition 2.0, dated 27.08.2009.

GM1 ATCO.D.095(a)(3) Training of assessors**ASSESSMENT OF ASSESSOR COMPETENCE**

The level of harmonisation on competence assessment is low as a result of the variety of methods. Any assessment of assessor competence should be realistic and it could take place during live traffic situations or during training.