

Annex I to ED Decision 2018/011/R

‘Acceptable Means of Compliance (AMC) and Guidance Material (GM) to Part-FCL¹ — Amendment 6’

The Annex to Decision 2011/016/R of 15 December 2011 is hereby amended as follows:

The text of the amendment is arranged to show deleted text, new or amended text as shown below:

- (a) deleted text is struck through;
- (b) new or amended text is highlighted in grey;
- (c) an ellipsis ‘[...]’ indicates that the rest of the text is unchanged.

1. New GM1 FCL.015(a) is inserted as follows:

GM1 FCL.015(a) Application and issue, revalidation and renewal of licences, ratings and certificates

The application for the addition of the remark on the automatic validation of licences under licence item XIII can be submitted either when the pilot applies for the issue, revalidation or renewal of the licence, or independently at any other time.

2. AMC1 FCL.310; FCL.515(b); FCL.615(b) is amended as follows:

‘AMC1 FCL.310; FCL.515(b); FCL.615(b) Theoretical knowledge examinations

[...]

SUBJECT 010 — AIR LAW

[...]

010 01 02 03 *Suppression of Unlawful Acts Against the Safety of Civil Aviation — The ~~Montreal~~ Tokyo Convention of 1988* 8363

010 01 02 03 (01)

Describe the measures and actions to be taken by the pilot-in-command (PIC) of an aircraft in order to suppress unlawful acts against the safety of the aircraft.

Source: ICAO Doc ~~9518~~ — Protocol supplementary to the Convention for the Suppression of Unlawful Acts Against the Safety of Civil Aviation, done at Montreal on 23 September 1971, and signed at Montreal on 24 February 1988 8364 — **Convention on Offences and Certain Other Acts Committed on Board Aircraft, Tokyo, 14 September 1963**

[...]

¹ Decision 2011/016/R of 15 December 2011

010 01 02 05 International private international law

010 01 02 05 (01)

Explain the legal significance of the issue of a passenger ticket or of baggage/cargo documents (that the issue is a form of contract).

Source: ICAO Doc 9740 Convention for the Unification of Certain Rules for International Carriage — The Montreal Convention of 1999

010 01 02 05 (02)

Describe the consequences for an airline or the PIC when a passenger ticket document of carriage is not issued (that the contract is unaffected).

Source: ICAO Doc 9740 Convention for the Unification of Certain Rules for International Carriage — The Montreal Convention of 1999

[...]

010 01 02 05 (04)

Explain the liability limit in relation to destruction, loss, damage or delay of baggage.

Source: ICAO Doc 9740 Convention for the Unification of Certain Rules for International Carriage — The Montreal Convention of 1999

[...]

010 04 02 01 (02)

Define the following: multi-crew cooperation (MCC), multi-pilot aircraft, rating.

Source: Aircrew Regulation, point FCL.010 Definitions; Note: 'rating' is defined in Article 3 of Regulation (EC) No 216/2008

[...]

010 04 02 02 (02)

Explain the requirements to act as a flight crew member of a civil aircraft registered in a Member State, and know the general principles of the licensing system (light aircraft pilot licence (LAPL), private pilot licence (PPL), commercial pilot licence (CPL), multi-crew pilot licence (MPL), airline transport pilot licence (ATPL)).

Source:

Regulation (EC) No 216/2008, Article 7;

Aircrew Regulation, point FCL.015 Application and issue, revalidation and renewal of licences, ratings and certificates

[...]

010 04 02 05 (04)

State the requirements for other ratings, their validity and privileges according to Part-FCL.

Source:

Aircrew Regulation, point FCL.900 Instructor certificates FCL.800 Aerobatic rating;

Aircrew Regulation, point FCL.915 General prerequisites and requirements for instructors FCL.805 Sailplane towing and banner towing ratings;

Aircrew Regulation, point FCL.940 Validity of instructor certificates FCL.810 Night rating;

Aircrew Regulation, point FCL.815 Mountain rating;

Aircrew Regulation, point FCL.820 Flight test rating.

[...]

010 05 01 01 (02)

Explain the scope and main content of SERA.

Source: SERA, Article 1 Subject matter and scope

[...]

010 05 03 01 (02)

Describe the lights, including their angles, to be displayed by aircraft.

Source: SERA.3215 Lights to be displayed by aircraft; ICAO Annex 2, Chapter 3, 3.2.3; ICAO Annex 6, Part I, Chapter 6, 6.10 and Appendix 1; and ICAO Annex 6, Part III, Chapter 4, 4.42.

[...]

010 05 04 00 Visual flight rules (VFRs)

010 05 04 01 Visual flight rules (VFRs) — SERA

010 05 04 01 (01)

Describe the VFRs as contained in Commission Implementing Regulation (EU) No 923/2012.

Source:

SERA.5001 VMC visibility and distance from cloud minima;

SERA.5005 Visual flight rules;

SERA.5010 Special VFR in control zones

[...]

010 05 05 00 Instrument flight rules (IFRs)

010 05 05 01 Instrument flight rules (IFRs) — SERA

010 05 05 01 (01)

Describe the IFRs as contained in Commission Implementing Regulation (EU) No 923/2012.

Source:

SERA.5015 Instrument flight rules (IFR) — Rules applicable to all IFR flights;

SERA.5020 IFR — Rules applicable to IFR flights within controlled airspace;

SERA.5025 IFR — Rules applicable to IFR flights outside controlled airspace

[...]

010 06 07 01 (05)

State where guidance material may be located for simultaneous operations on parallel or near-parallel instrument runways.

Source: ICAO Doc 8168, Volume I, Part III, Section 2, Chapter 1, 1.4

[...]

010 06 09 03 (01)

Describe the ~~structures~~scope of these Parts.

[...]

010 07 01 02 (04)

State on which frequencies a pilot can expect ATC to contact them in case of an emergency.

Source: ICAO Annex 11, Chapter 2, 2.24 Service to aircraft in the event of an emergency, 2.25 In-flight contingencies, Chapter 5, 5.3 Use of communication facilities, and Chapter 6, 6.1.1.1 (referring to Annex 10, Volumes II and V), Chapter 4, 4.1.3.1

[...]

010 08 05 01 (01)

State that Commission Implementing Regulation (EU) ~~No 1035/2011~~ 2017/373 provides:

- general requirements for the provision of air navigation services;
- specific requirements for the provision of air traffic services;
- specific requirements for the provision of meteorological services;
- specific requirements for the provision of aeronautical information services;
- specific requirements for the provision of communication, navigation or surveillance services.

[...]

010 09 01 01 (01) does not apply to ATPL(H)/IR, ATPL(H), CPL(H) and IR. The crosses will be deleted from the applicable columns.

[...]

010 09 02 04 (04)

Explain the different types of frozen water on the RWY and their impact on aircraft braking performance.

Source: ICAO Annex 14, Volume 1, Chapter 1, 1.1 Definitions and Chapter 2, 2.9 Condition of the movement area and related facilities

010 09 02 04 (05)

Describe the five levels of braking action including the associated coefficients and codes.

Source: ICAO Annex 14, Volume I, ~~Annex~~Attachment A, 6. Assessing the surface friction characteristics of snow-, slush-, ice- and frost-covered paved surfaces

[...]

010 09 03 07 (05)

Describe the term 'road holding position'.

Source: ICAO Annex 14, Volume 1, Chapter 1, 1.1 and Chapter 3, 3.12

[...]

010 09 04 03 (07)

Describe the wing bars of the precision approach path indicator (PAPI) and the abbreviated precision approach path indicator (APAPI). Interpret what the pilot will see during the approach using PAPI.

Source: ICAO Annex 14, Volume 1, Chapter 5, 5.3.5.24 to 5.3.5.27 PAPA and APAPI

010 09 04 03 (08) does not apply to IR. The cross will be deleted from the applicable column.

[...]

SUBJECT 021 — AIRCRAFT GENERAL KNOWLEDGE — AIRFRAME, SYSTEMS AND POWER PLANT

[...]

021 09 05 01 (03) applies to ATPL(A), CPL(A), ATPL(H)/IR, ATPL(H) and CPL(H). The crosses will be inserted in the applicable columns.

[...]

SUBJECT 022 — AIRCRAFT GENERAL KNOWLEDGE — INSTRUMENTATION

[...]

022 05 02 01 (10) State that the majority of the IRS data can be accessed through the FMS control and display unit (CDU)/flight management and guidance system (FMGS) multifunctional control and display unit (MCDU).

[...]

022 10 01 02 (03) Explain the purpose of the following parts of the on-board equipment:

- ATSU communications computer;
- control and display unit (CDU)/multifunction control and display unit (MCDU);
- data communication display unit (DCDU);
- ATC message visual annunciator;
- printer.

[...]

022 11 02 01 (01) also applies to the CB-IR(A) and EIR(A)

022 11 02 01 (02) also applies to the CB-IR(A) and EIR(A)

022 11 02 01 (04) also applies to the CB-IR(A) and EIR(A)

[...]

022 11 03 01 (07) also applies to the CB-IR(A) and EIR(A)

[...]

022 11 04 00 **Human-machine interface (control and display unit (CDU)/ multipurpose multifunction control and display unit (MCDU))**

[...]

022 12 08 01 (06)

Explain the potential implications of an faulty radio-altimeter indication and how this in particular may affect the following systems:

- autothrust (flare/retard);
- ground-proximity warning systems (GPWSs).

SUBJECT 031 — FLIGHT PERFORMANCE AND PLANNING: MASS AND BALANCE — AEROPLANES/HELICOPTERS

[...]

031 04 02 01 (01)

Describe the general procedure and regulations relating to when an aircraft should be weighed, reweighed or data recalculated.

Remark: See the applicable operational requirements.

[...]

SUBJECT 032 — FLIGHT PERFORMANCE AND PLANNING: PERFORMANCE — AEROPLANES

[...]

032 01 04 01 (11)

Calculate the all-engine-out and one-engine-out climb gradient from given values of engine thrust and aeroplane drag and weight.

[...]

032 02 00 00 CS-23/EU-OPS APPLICABLE OPERATIONAL REQUIREMENTS PERFORMANCE CLASS B — THEORY

[...]

032 02 03 01 (12)

Describe the net take-off flight path (NTOFP) for a multi-engine, class B aeroplane.

[...]

032 02 03 01 (13)

Describe the dimensions of the NTOFP take off flight path accountability area (domain).

[...]

032 03 00 00 CS-23/EU-OPS APPLICABLE OPERATIONAL REQUIREMENTS PERFORMANCE CLASS B — USE OF AEROPLANE PERFORMANCE DATA FOR SINGLE- AND MULTI-ENGINE AEROPLANES

[...]

032 03 03 01 (05)

Determine ~~NTOP~~ take off flight path for a MEP aeroplane of given mass and given airfield conditions, and calculate the obstacle clearance based on the ~~NTOP~~ take off flight path.

[...]

032 04 00 00 CS-25/EU-OPS APPLICABLE OPERATIONAL REQUIREMENTS PERFORMANCE CLASS A — THEORY

[...]

032 04 01 01 (05)

Define and explain the following speeds in accordance with CS-25 or CS-Definitions:

[...]

— rotation speed (V_R);

— take-off safety speed (V_2);

— minimum take-off safety speed (V_{2MIN});

[...]

032 04 01 02 (07)

Explain the influence of aeroplane mass, air density and flap settings on V_1 , V_2 and V_{2MIN} and thereby on take-off distance.

[...]032 04 01 07 (04) State that when friction coefficient is 0.40 or higher, the expected braking action is good.

Source: ICAO Annex 15, Appendix 2 Annex 14, Vol. I, Attachment A

[...]

032 05 00 00 CS-23/EU-OPS APPLICABLE OPERATIONAL REQUIREMENTS PERFORMANCE CLASS A — USE OF AEROPLANE PERFORMANCE DATA

[...]

SUBJECT 033 — FLIGHT PERFORMANCE AND PLANNING: FLIGHT PLANNING AND MONITORING

[...]

033 02 01 03 (08)

Calculate true altitude from above a given datum using a given pressure altitude and obstacle elevation using, OAT and QNH.

[...]

SUBJECT 040 — HUMAN PERFORMANCE

[...]

040 02 02 03 (09)

State the time necessary for the eye to adapt both to dark and bright light and the dark.

[...]

SUBJECT 061 — GENERAL NAVIGATION

061 01 03 02 (01) applies to ATPL(A), ATPL(H)/IR, ATPL(H), CPL(A) and CPL(H) and crosses will be inserted in the applicable columns.

[...]

SUBJECT 062 — RADIO NAVIGATION

[...]

062 02 06 01 (02)

State that MLS operates in the SHF band on any one of 200 channels, on assigned frequencies.

[...]

062 03 04 02 (02)

Name the interrogation modes:

- Mode A and C, and successor Mode S;
- Mode C;
- Mode S.

[...]

062 03 04 02 (11) is not BK and the X will be deleted from this column.

[...]

~~062 03 04 03 (04)~~

~~State that every aircraft is allocated an ICAO aircraft address which is hard-coded into the airframe Mode S transponder (Mode S address).~~

062 06 02 00 Ground-, satellite- and airborne aircraft-based augmentation

[...]

062 06 02 04 Airborne Aircraft-based augmentation systems (ABASs)

[...]

~~062 06 02 04 (05)~~

~~Define ‘receiver autonomous integrity monitoring’ (RAIM) as a technique that ensures the integrity of the provided data by redundant measurements.~~

~~062 06 02 04 (06)~~

~~State that RAIM is achieved by consistency checks among range measurements.~~

~~062 06 02 04 (07)~~

~~State that basic RAIM requires five satellites. A sixth one is for isolating a faulty satellite from the navigation solution.~~

SUBJECT 070 — OPERATIONAL PROCEDURES

[...]

071 01 02 07 (11)

Explain the requirements regarding the provision of electronic data management products management of aeronautical databases.

Source:

Point CAT.IDE.A.355 '~~Electronic navigation data management~~ Management of aeronautical databases';

AMC1 CAT.IDE.A.355 '~~Electronic navigation data management — ELECTRONIC NAVIGATION DATA PRODUCTS~~ Management of aeronautical databases — AERONAUTICAL DATABASES'

[...]

071 04 01 03 (01)

Explain the standard operating procedures and equipment requirements.

Source:

Point ~~SPO.SPEC.HEC.100~~ SPO.SPEC.HESLO.100 'Standard operating procedures' and related AMCs/GM;

Point ~~SPO.SPEC.HEC.105~~ SPO.SPEC.HESLO.105 'Specific ~~HEC~~ HESLO equipment' and related AMCs/GM

[...]

SUBJECT 081 — PRINCIPLES OF FLIGHT - AEROPLANES

[...]

081 02 03 02 (05) applies to the ATPL(A).

[...]

081 03 01 01 (04)

Describe the properties, advantages and disadvantages of the turbulent boundary layer.

[...]

081 03 01 01 (06)

Explain why the laminar boundary layer separates easier than the turbulent boundary layer does.

3. New GM2 to Appendix 5 is inserted as follows:

GM2 to Appendix 5 Assessment of student competency during take-off and landing training

The required level of competency of a student pilot is assessed by observing the following:

- (a) application of knowledge;
- (b) application of regulations and procedures;
- (c) communication;
- (d) aeroplane flight path management – automation;
- (e) aeroplane flight path management – manual control;

- (f) leadership and teamwork;
- (g) problem-solving and decision-making;
- (h) situational awareness (SA) and information management; and
- (i) workload management.

The competencies referred to in points (b) and (e) are particularly relevant during the training.

This means that the focus is on observing the student pilot performing take-offs and landings in accordance with the standard operating procedures (SOPs) and recommended techniques of the original equipment manufacturer (OEM).

The competency elements and sub-elements stipulated in GM1 to Appendix 5 for take-off and landing provide additional guidance for instructors and student pilots.

Consistency and repeatability of all the competencies above is achieved if the student pilot is able to perform at least three successive take-offs and landings demonstrating the required observable behaviours.

The take-off and landing training in an aeroplane should include at least one go-around.

Due consideration should be given to environmental conditions when evaluating competency.